

**1R - 1554**

**04 / 21 / 2014**

**AGWMR**



**TETRA TECH**

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April 21, 2014

Mr. Glenn von Gonten  
New Mexico Energy, Minerals, & Natural Resources  
Oil Conservation Division, Environmental Bureau  
1220 S. St. Francis Drive  
Santa Fe, New Mexico 87504

**Re: 2013 Annual Groundwater Sampling Report for the Celero Energy II, LP, Rock Queen Unit Tank Battery #1, Located in Unit Letter B, Section 25, Township 13 South, Range 31 East, Chaves County, New Mexico (NMOCD 1RP#1554).**

Mr. Von Gonten:

This report details the results of the groundwater sampling events performed at the Celero Energy II, LP (Celero), Rock Queen Unit Tank Battery #1 (Site) for 2013. The Site is located approximately 21.5 miles north of Maljamar, New Mexico. The Site location is shown on Figures 1 and 2.

## **FACILITY BACKGROUND**

### **Pit Closure**

On August 13, 2007, Highlander (Tetra Tech) submitted an Investigation and Characterization work plan (ICP) for an open pit at the Site. The ICP was approved by the New Mexico Oil Conservation Division (NMOCD). On September 4, 2007, Highlander submitted an additional report entitled *Workplan for Capping and Site Closure* for the Pit at this Site.

The Tract 1 Tank Battery pit was dewatered and the residual sludge, tank bottom materials, and liner were removed in late July and early August 2007. Removed fluids were placed into an existing SWD system or taken for disposal, while the sludge, tank bottom materials, and liner were disposed of at Gandy-Marley, Inc.'s landfill site in Lovington, New Mexico. Upon completion of the removal of the fluids, sludge, and liner, the underlying soils were visually inspected for signs of impact. Approximately 200 cubic yards of soil were excavated and transported to Gandy-Marley, Inc. facility for disposal. The pit

Tetra Tech

1910 North Big Spring, Midland TX 79705

Tel 432.682.4559 Fax 432.682.3946 [www.tetrattech.com](http://www.tetrattech.com)



was excavated to a point where the subsoil would support a soil boring rig.

On October 12, 2009, a report entitled *Assessment and Closure Report for the Pit located at the Rock Queen Unit Tank Battery #1* was submitted to the NMOCD. The report detailed the closure of the former pit at the facility.

#### Groundwater Investigation

Between May 2007 and January 2011, Celero installed seven 2-inch monitor wells (MW-1 through MW-7) and one 5-inch recovery well (RW-1) to assess the groundwater quality at the Site. The lithology at the Site was relatively consistent with limestone encountered to approximately 15 to 20 feet below ground surface (bgs), and very fine grain sands extending to approximately 120 to 130 feet bgs. From approximately 130 feet to the terminus of the borings (approximately 135 to 150 feet) the soils consisted of gray clay.

During the investigation, groundwater was encountered at depths of approximately 116 to 121 feet bgs. Monitor Well MW-1 was drilled into the surrounding underlying clay to 150 feet bgs and installed with 40 feet of 0.01 inch slotted screen. The remaining monitor wells were drilled to depths of 130 to 140 feet bgs and installed with 30 feet of 0.02 inch slotted screen. Recovery well RW-1 was drilled to a depth of 130 feet and installed with 20 feet of 0.035 inch slotted screen. From the top of the screens to the surface of the boring, the wells were completed with blank schedule 40 PVC casing.

During the investigation and subsequent sampling, the only constituents of concern which were detected in the groundwater above New Mexico Water Quality Control Commission (NMWQCC) standards were chlorides, Total Dissolved Solids (TDS), Sulfate (SO<sub>4</sub>) and benzene (which was found only in recovery well RW-1). No Phase Separated Hydrocarbons (PSH) has been measured in any of the onsite monitor wells. See Figure 3 detailing the monitor well locations.

#### Historic Gauging and Monitor Well Sampling

On December 28, 2009, initial sampling began at the site. During 2010, additional monitor wells were installed and quarterly sampling initiated. During the sampling events, all monitor wells were gauged and sampled with no PSH measured. Utilizing the water level elevation calculations, groundwater gradient maps were generated for the sampling events with a hydraulic gradient consistently to the south to southwest.

Historically, each of the wells has been sampled for BTEX utilizing method SW8021B, chlorides and sulfates utilizing method E 300.0, total dissolved solids (TDS) utilizing method SM2540C and periodically for general chemistry using methods SM2320B, SW6010B, SM4500-H+. Of the samples collected, only one



sample (RW-1 on April 14, 2011 with a result of 0.0133 milligrams per liter [mg/L]) exceeded the NMWQCC standard of 0.01 mg/L of benzene. The remainder of the samples was below the NMWQCC standards with a majority being at or below detection limits. Chlorides for the sampling have ranged from 40.9 mg/L in up gradient monitor well MW-5 on July 28, 2011 to 203,000 mg/L in monitor well MW-7 on April 11, 2012. With the exception of MW-5 all additional monitor wells exceeded the NMWQCC standard of 250 mg/L chlorides.

### **2013 GROUNDWATER SAMPLING RESULTS**

Tetra Tech, Inc. (Tetra Tech) was onsite January 30, April 24, July 24, and October 30, 2013 to gauge all monitor/recovery wells. No PSH was measured in any of the monitor/recovery wells. Utilizing the water level elevation calculations, groundwater gradient maps were generated for the sampling events with a hydraulic gradient consistently to the south to southwest. Groundwater gradient maps for the sampling events are included as Figures 4 through 7. Gauging data is summarized in Table 1.

On January 30, April 24, July 24 and October 30, 2013, each of the wells was sampled for BTEX utilizing method SW8021B, chlorides and sulfates utilizing method E 300.0, TDS utilizing method SM2540C and periodically for general chemistry using methods SM2320B, SW6010B, SM4500-H+. The samples were collected and submitted to Trace Analysis Inc. (Trace) of Lubbock, Texas. All samples collected and analyzed were below the detection limit, and hence below the NMWQCC standard of 0.01 mg/L of benzene. Chlorides for the sampling period ranged from 66.2 mg/L in up gradient monitor well MW-5 on April 24, 2013 to 147,000 mg/L in monitor well MW-7 on October 30, 2013. With the exception of MW-5, all additional monitor wells exceeded the NMWQCC standard of 250 mg/L chlorides. The general chemistry and BTEX analyses are shown in Tables 2 and 3, respectively. Chloride concentration maps for the sampling events are included as Figures 8 through 11. Copies of the laboratory analyses reports are enclosed in Appendix A.

It was noted during sampling that all seven monitor wells (MW-1 through MW-7) bail dry, while very little drawdown was noted in Recovery Well RW-1.

### **REMEDIATION SYSTEM**

On January 20, 2012, a windmill was installed on recovery well RW-1 in order to recovery chloride impacted groundwater from the site. As of December 31, 2013, a total of approximately 15,975 gallons of water have been recovered and placed back into Celero's onsite system for water flooding. Due to the high salinity of the water, the system has had to be repaired several times, with replacement of the neoprene leathers and stainless steel tubing.



## **CONCLUSIONS**

1. Sampling occurred on January 30, April 24, July 24, and October 30, 2013. During the sampling events, all monitor wells were gauged, purged and sampled. The samples were preserved and delivered to Trace Analysis, Inc. of Midland, Texas and analyzed for BTEX utilizing method SW8021B, chlorides and sulfates utilizing method E 300.0, TDS utilizing method SM2540C, and periodically for general chemistry using methods SM2320B, SW6010B, SM4500.
2. The hydraulic gradient is consistent to a south to southwesterly direction at the site.
3. No Benzene was detected in any of the wells sampled during 2013.
4. With the exception of MW-5, all additional monitor wells exceeded the NMWQCC standard of 250 mg/L chlorides. The chloride concentrations at the site range from 66.2 mg/L in up gradient monitor well MW-5 on April 24, 2013 to 147,000 mg/L in MW-7 on October 30, 2013.
5. A total of 15,975 gallons of chloride impacted groundwater has been recovered by the onsite windmill system installed on recovery well RW-1 since it was installed in 2012.

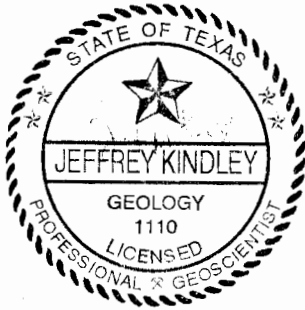
## **RECOMMENDATIONS**

1. Quarterly groundwater monitoring and gauging will be continued throughout the year.
2. Additional monitor wells will be installed at the site in 2014 in order to further delineate the chloride plume.
3. Continued operation and maintenance of the onsite remediation system throughout 2014.
4. Perform slug testing on the underlying groundwater to determine if it meets the criteria of an aquifer system. Determination of either pursuing closure or additional remediation on the site will be based on the results of the testing of the underlying groundwater.



**TETRA TECH**

If you have any questions or comments concerning the assessment or the activities performed at the Site, please call me at (432) 682-4559.

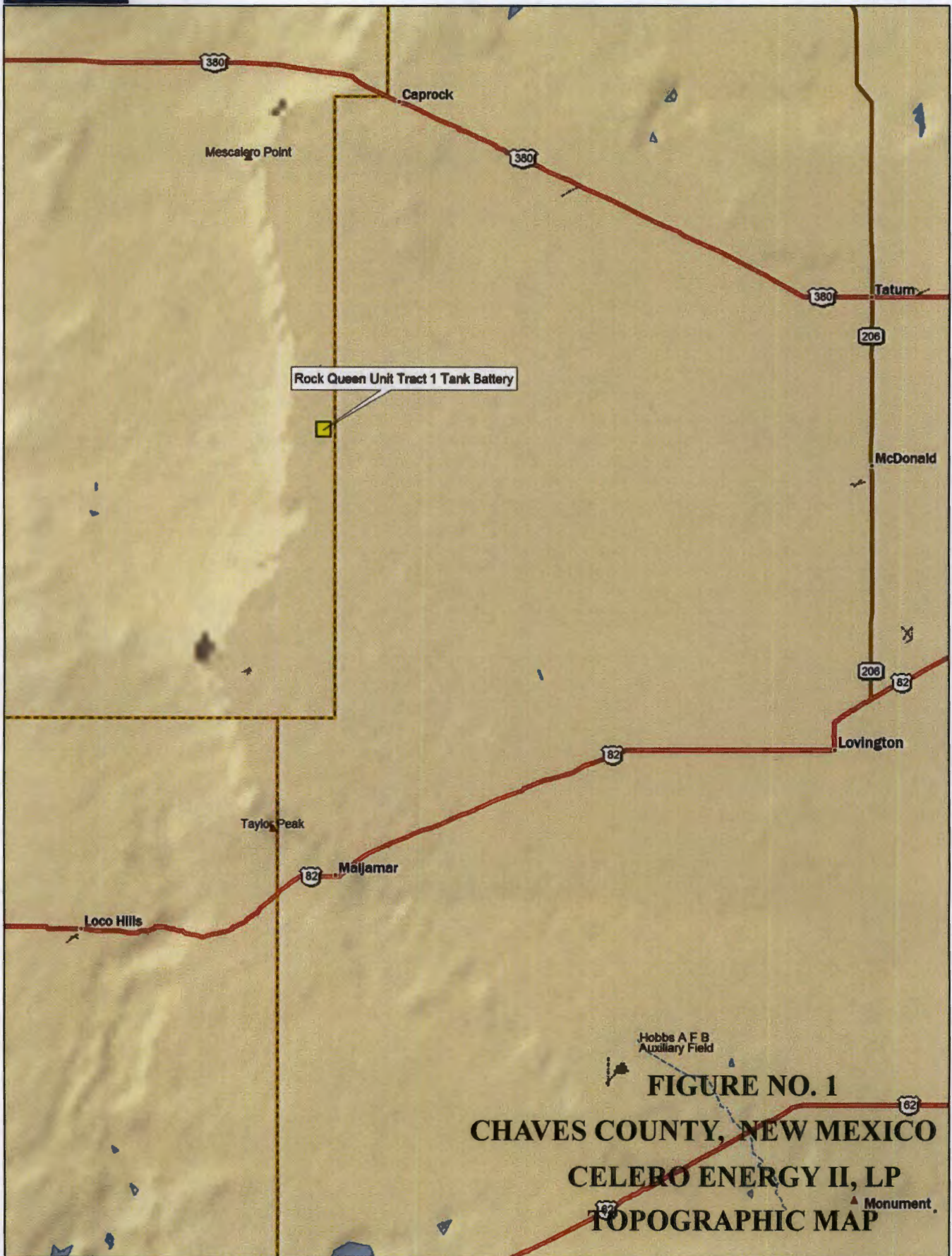


Respectfully submitted,  
Tetra Tech, Inc.

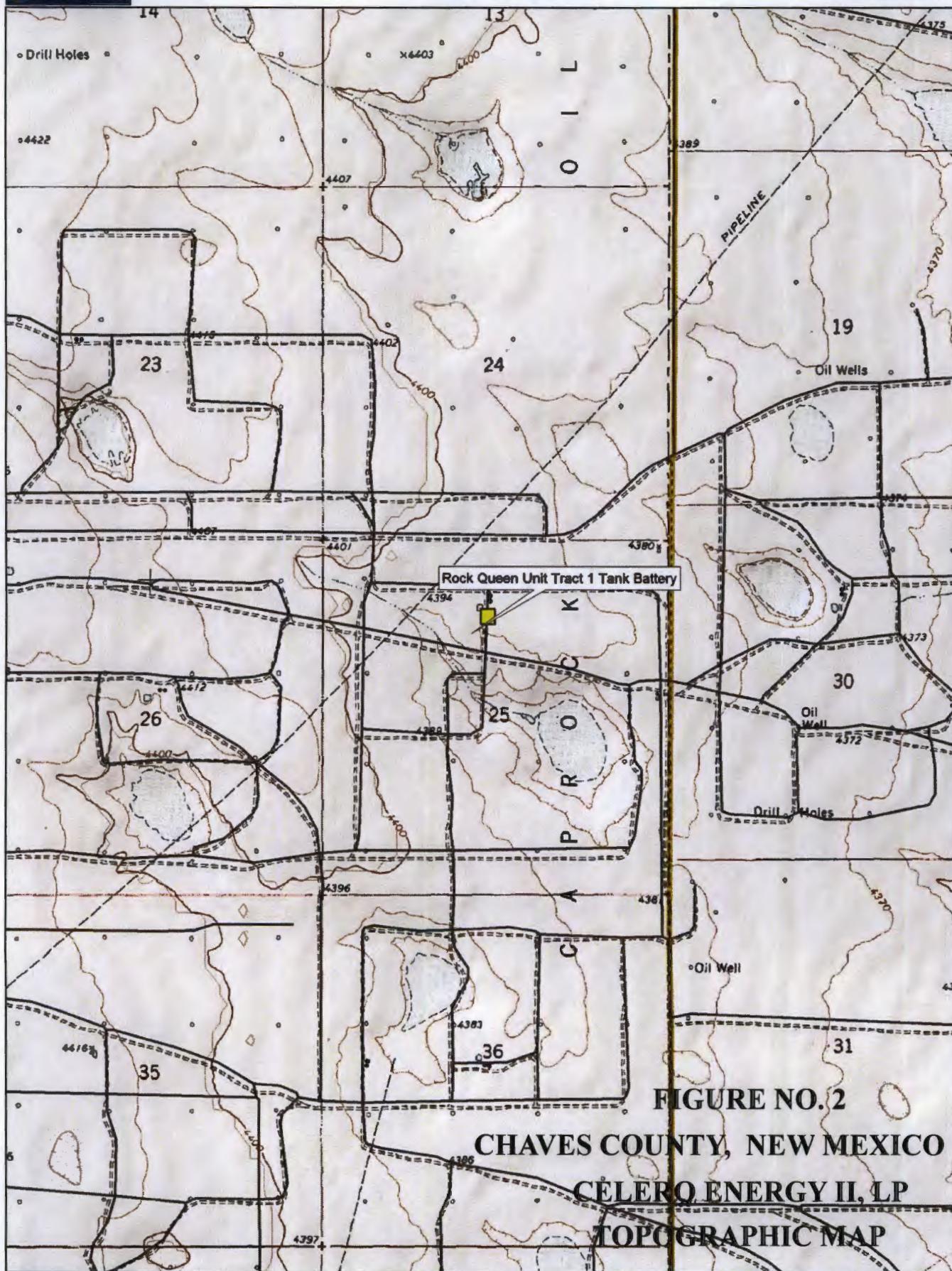
Jeffrey Kindley, P.G.  
Senior Environmental Geologist

cc: Bruce Woodard – Celero Energy II, LP

## FIGURES



**FIGURE NO. 1**  
**CHAVES COUNTY, NEW MEXICO**  
**CELERO ENERGY II, LP**  
**TOPOGRAPHIC MAP**



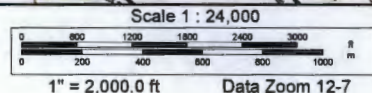
Rock Queen Unit Tract 1 Tank Battery

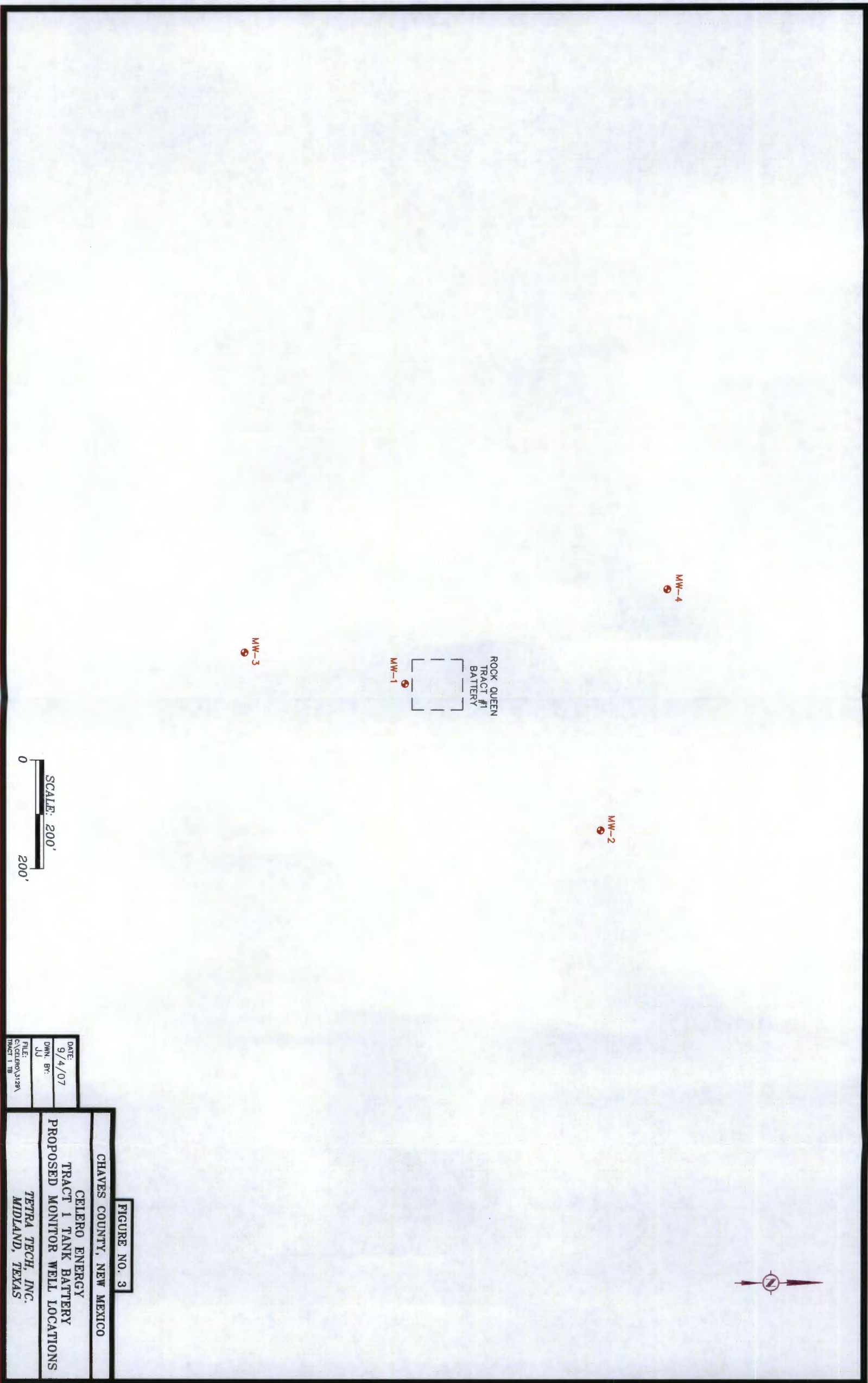
**FIGURE NO. 2**  
**CHAVES COUNTY, NEW MEXICO**  
**CÉLERO ENERGY II, LP**  
**TOPOGRAPHIC MAP**

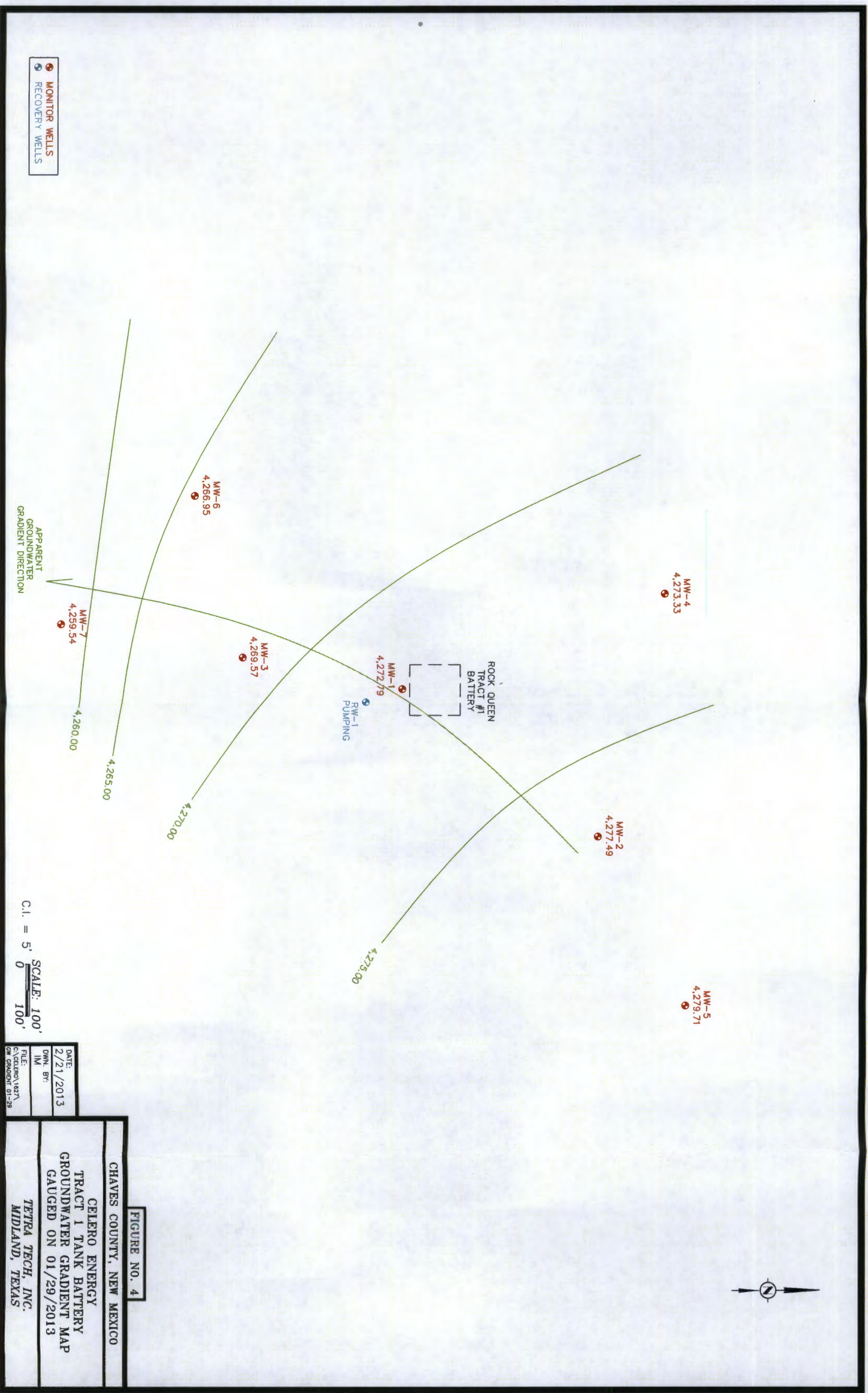
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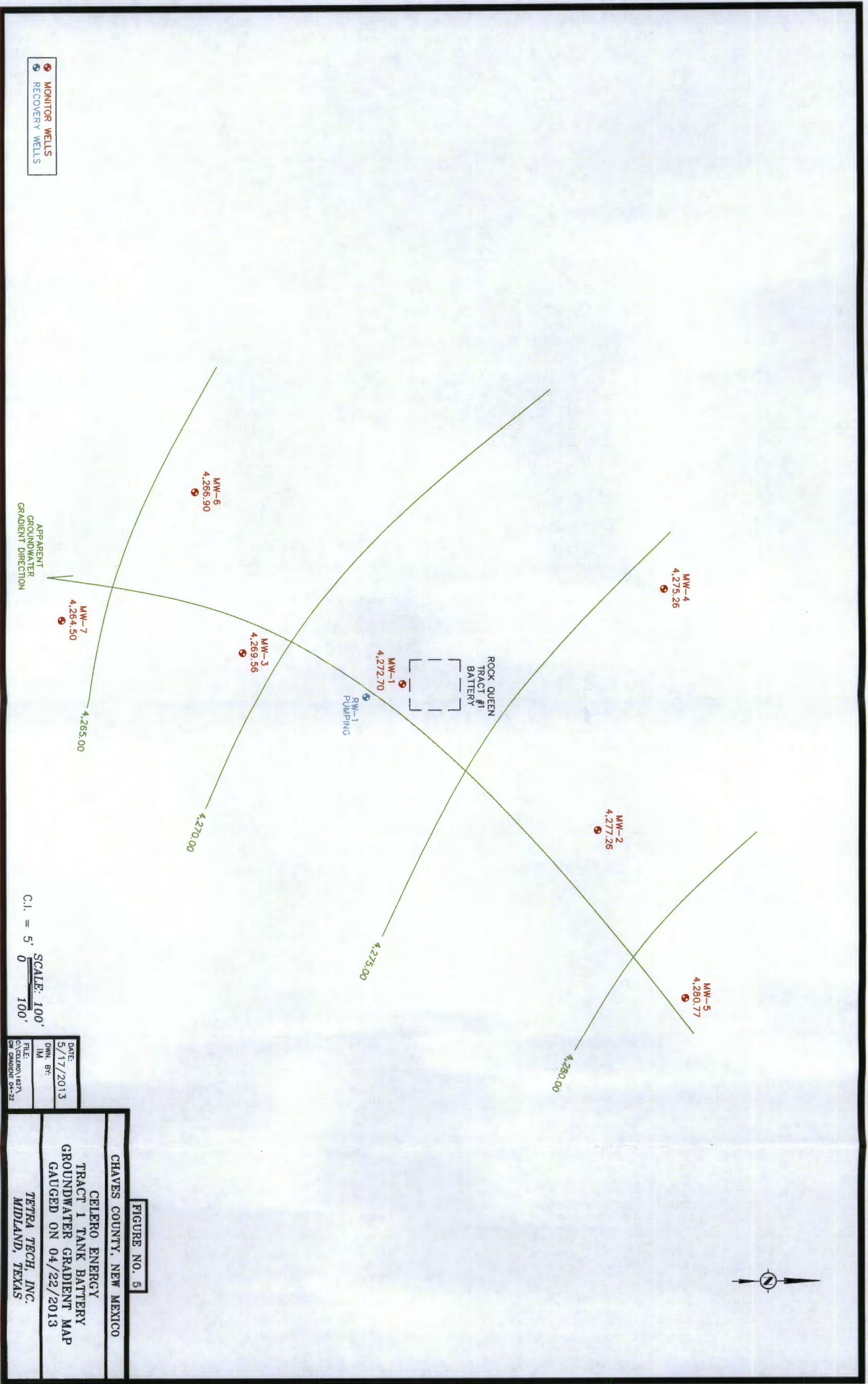
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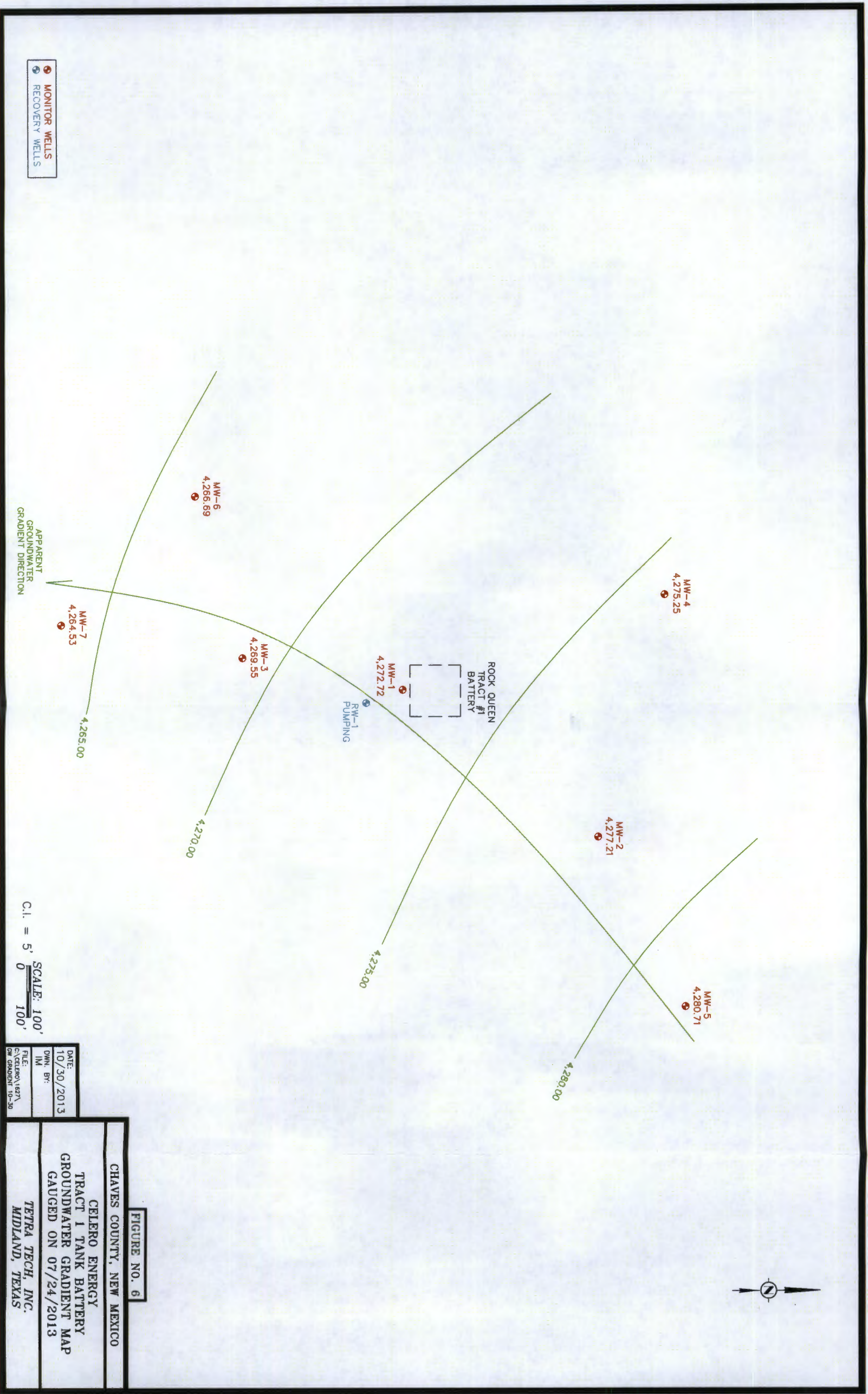
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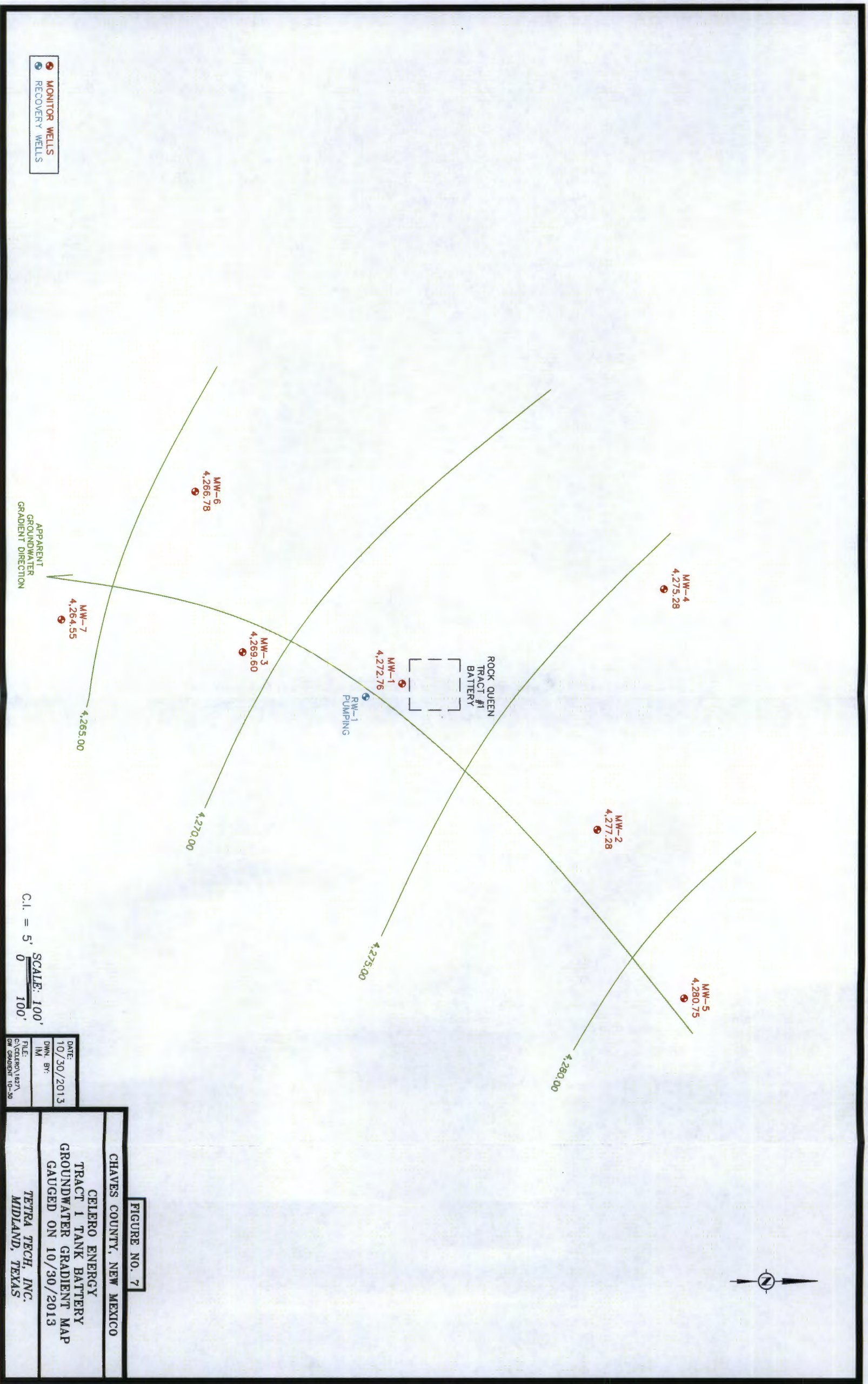


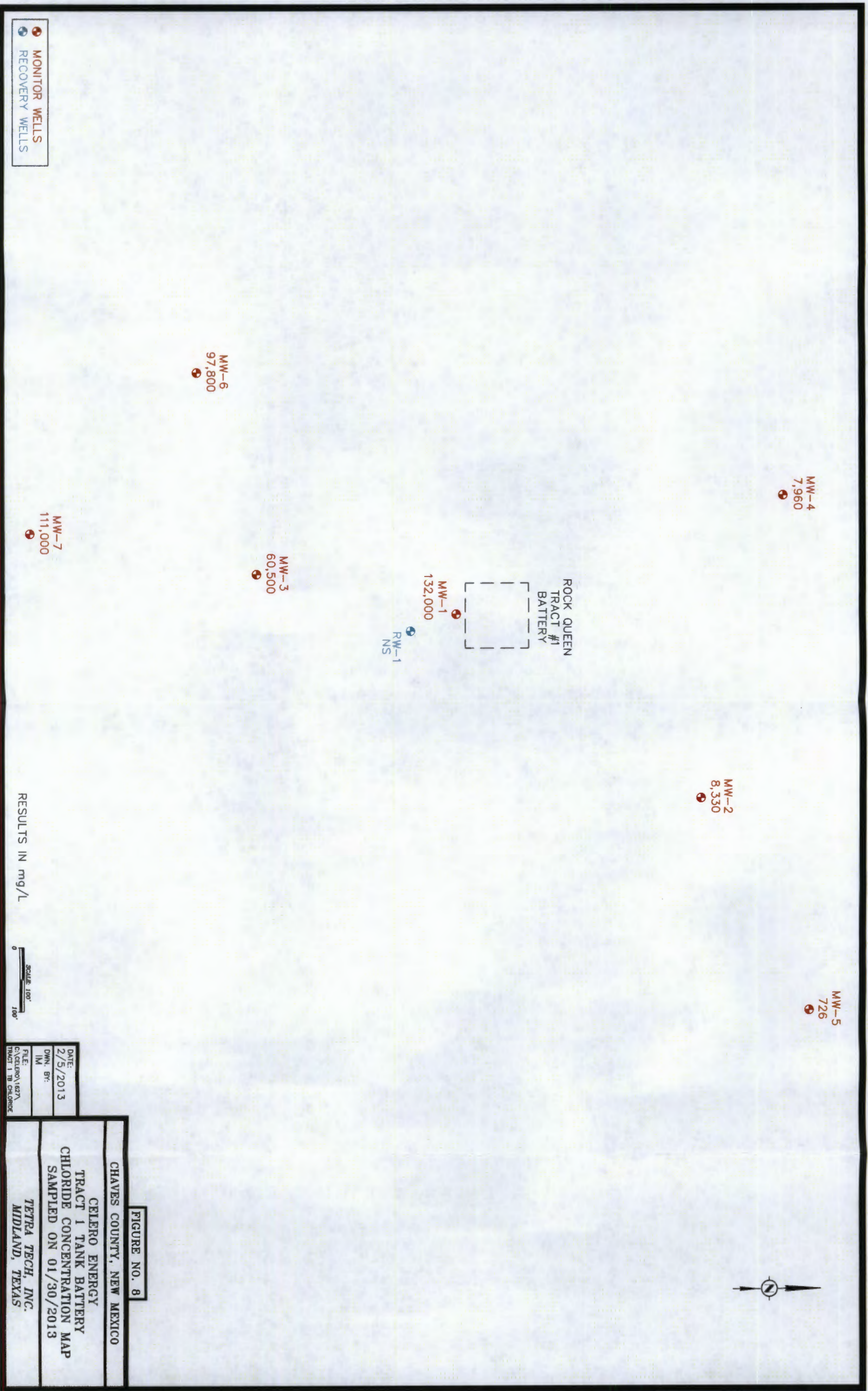


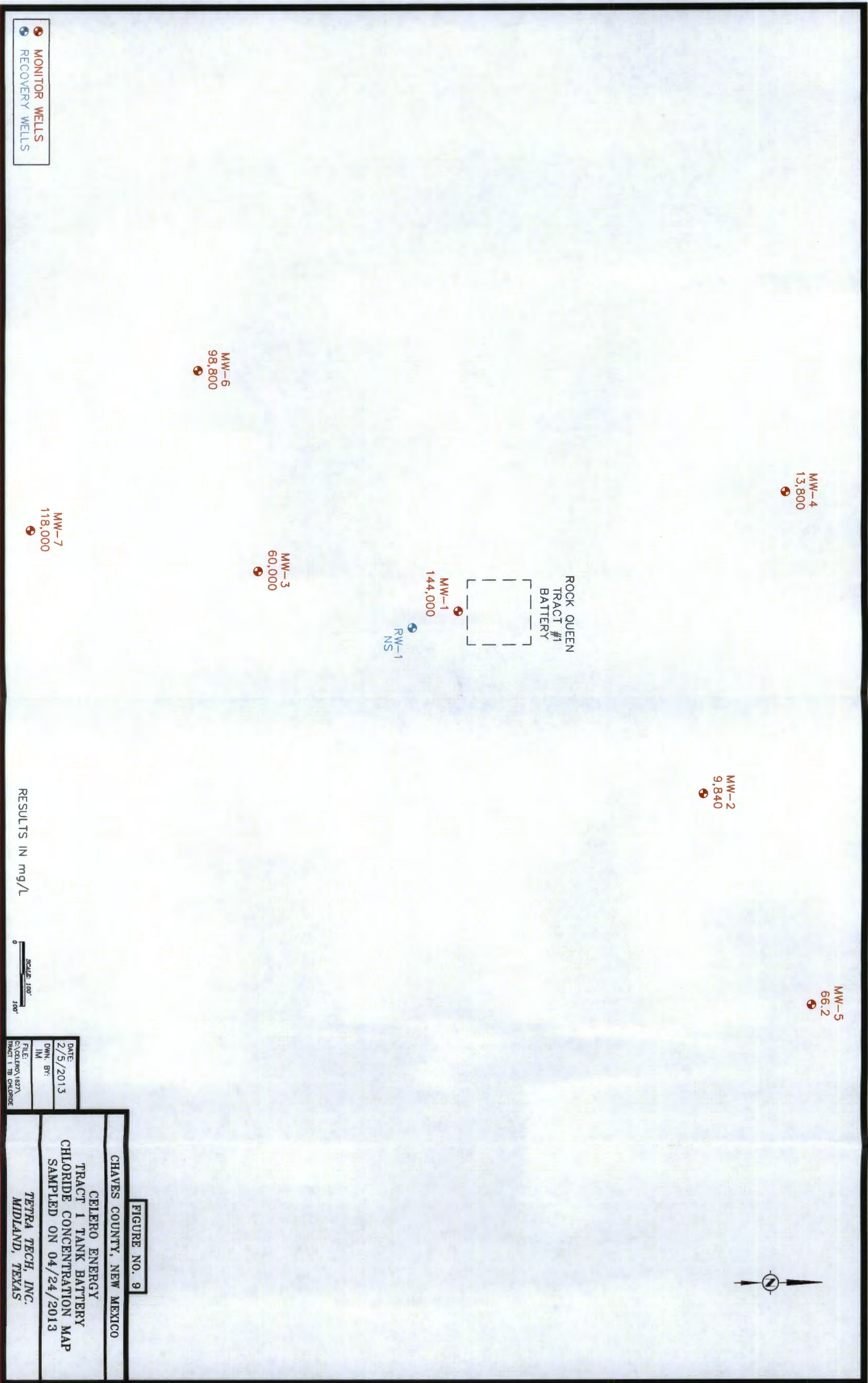


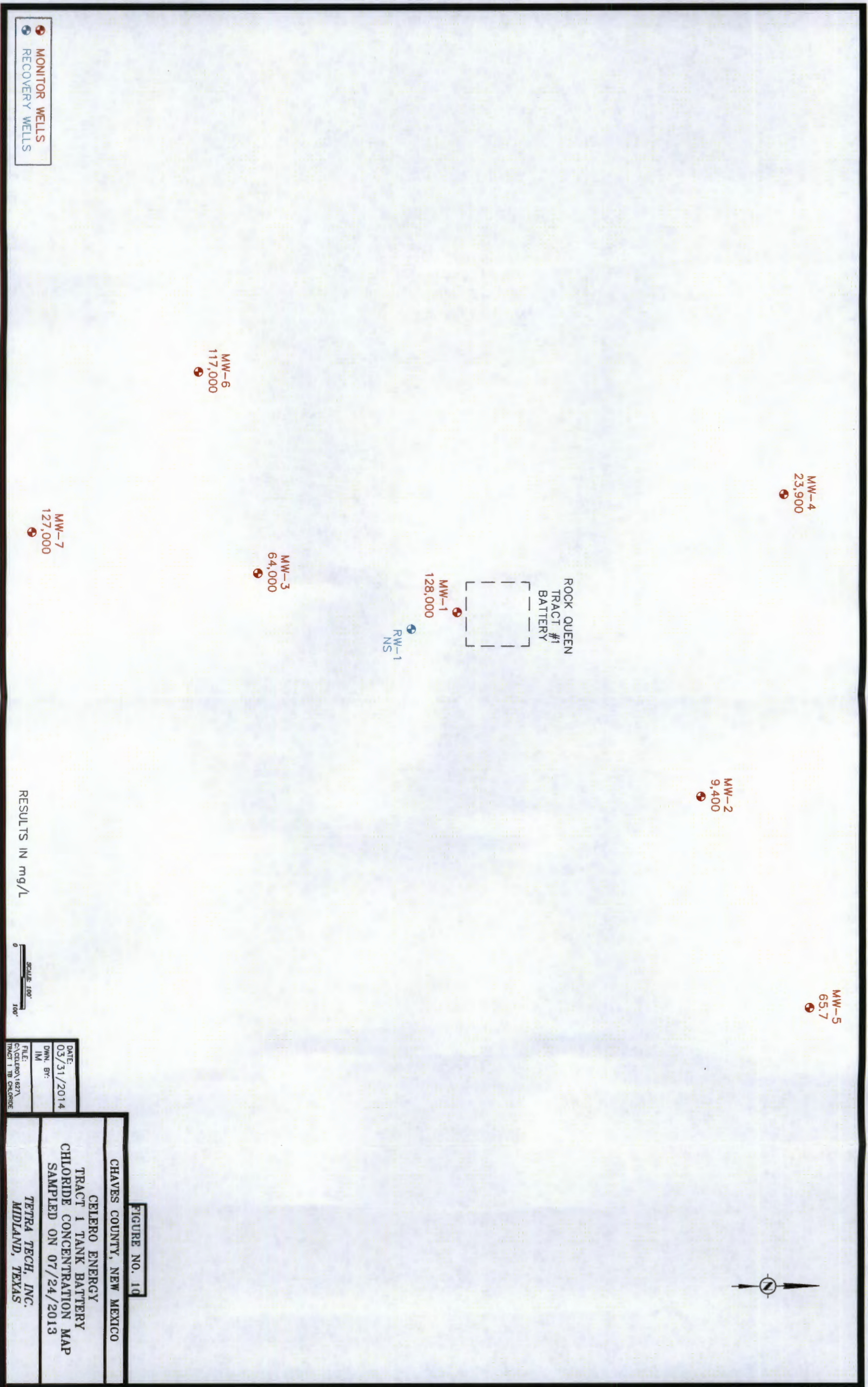


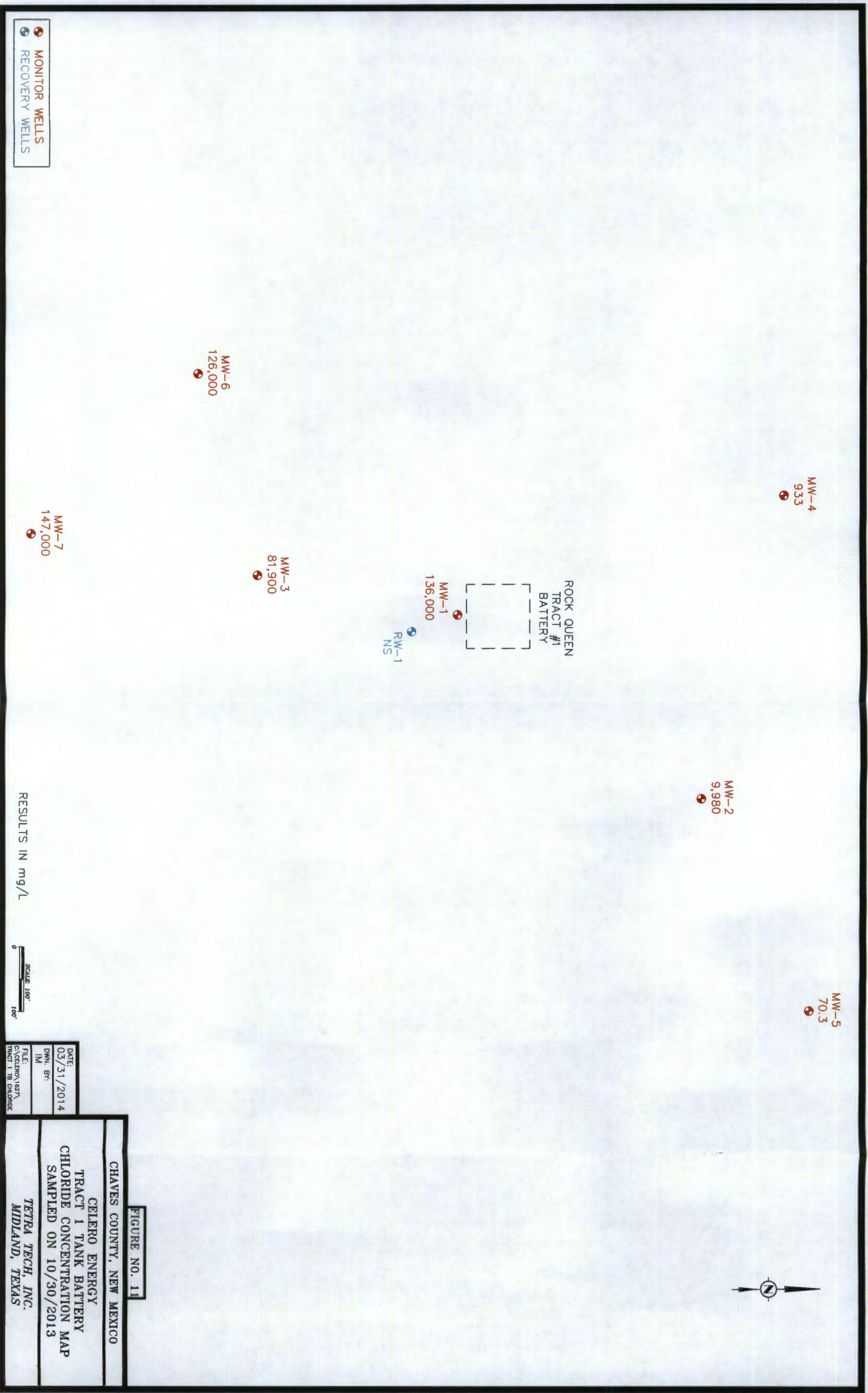












## TABLES

Table 1  
Celero Energy II, LP  
Groundwater Gauging Data  
Rock Queen Unit Tract 1 Tank Battery  
Chaves County, New Mexico

| Monitor Well | Date Gauged | Date Well Installation | TOC Elevation (ft) | Depth of Well (bgs in ft) | Depth to Groundwater (ft) | Groundwater Elevation (ft) |
|--------------|-------------|------------------------|--------------------|---------------------------|---------------------------|----------------------------|
| MW-1         | 05/25/07    | 05/24/07               | 4,393.50           | 152.80                    | 102.80                    | 4,290.70                   |
|              | 02/05/08    |                        |                    |                           | 119.51                    | 4,273.99                   |
|              | 12/28/09    |                        |                    |                           | 120.26                    | 4,273.24                   |
|              | 07/12/10    |                        |                    |                           | 120.34                    | 4,273.16                   |
|              | 10/11/10    |                        |                    |                           | 120.43                    | 4,273.07                   |
|              | 01/17/11    |                        |                    |                           | 120.26                    | 4,273.24                   |
|              | 04/11/11    |                        |                    |                           | 120.31                    | 4,273.19                   |
|              | 07/27/11    |                        |                    |                           | 121.14                    | 4,272.36                   |
|              | 10/24/11    |                        |                    |                           | 120.58                    | 4,272.92                   |
|              | 01/03/12    |                        |                    |                           | 120.53                    | 4,272.97                   |
|              | 04/09/12    |                        |                    |                           | 120.66                    | 4,272.84                   |
|              | 07/23/12    |                        |                    |                           | 120.95                    | 4,272.55                   |
|              | 10/23/12    |                        |                    |                           | 120.54                    | 4,272.96                   |
|              | 01/29/13    |                        |                    |                           | 120.71                    | 4,272.79                   |
| MW-2         | 04/22/13    | 05/30/07               | 4,397.33           | 139.50                    | 120.80                    | 4,272.70                   |
|              | 07/24/13    |                        |                    |                           | 120.78                    | 4,272.72                   |
|              | 10/30/13    |                        |                    |                           | 120.74                    | 4,272.76                   |
|              | 06/01/07    |                        |                    |                           | 94.78                     | 4,302.55                   |
|              | 02/05/08    |                        |                    |                           | 119.89                    | 4,277.44                   |
|              | 12/28/09    |                        |                    |                           | 119.87                    | 4,277.46                   |
|              | 07/12/10    |                        |                    |                           | 119.80                    | 4,277.53                   |
|              | 10/11/10    |                        |                    |                           | 119.77                    | 4,277.56                   |
|              | 01/17/11    |                        |                    |                           | 119.67                    | 4,277.66                   |
|              | 04/11/11    |                        |                    |                           | 119.66                    | 4,277.67                   |
|              | 07/27/11    |                        |                    |                           | 120.36                    | 4,276.97                   |
|              | 10/24/11    |                        |                    |                           | 119.76                    | 4,277.57                   |
|              | 01/03/12    |                        |                    |                           | 119.73                    | 4,277.60                   |
|              | 04/09/12    |                        |                    |                           | 119.84                    | 4,277.49                   |
|              | 07/23/12    |                        |                    |                           | 119.81                    | 4,277.52                   |
|              | 10/23/12    |                        |                    |                           | 121.23                    | 4,276.10                   |
|              | 01/29/13    |                        |                    |                           | 119.84                    | 4,277.49                   |

Table 1  
Celero Energy II, LP  
Groundwater Gauging Data  
Rock Queen Unit Tract 1 Tank Battery  
Chaves County, New Mexico

| Monitor Well | Date Gauged | Date Well Installation | TOC Elevation (ft) | Depth of Well (bgs in ft) | Depth to Groundwater (ft) | Groundwater Elevation (ft) |
|--------------|-------------|------------------------|--------------------|---------------------------|---------------------------|----------------------------|
| MW-2         | 04/22/13    |                        |                    |                           | 120.07                    | 4,277.26                   |
|              | 07/24/13    |                        |                    |                           | 120.12                    | 4,277.21                   |
|              | 10/30/13    |                        |                    |                           | 120.05                    | 4,277.28                   |
| MW-3         | 12/28/09    | 12/09/09               | 4,390.65           | 137.28                    | 120.65                    | 4,270.00                   |
|              | 07/12/10    |                        |                    |                           | 120.34                    | 4,270.31                   |
|              | 10/11/10    |                        |                    |                           | 120.81                    | 4,269.84                   |
|              | 01/17/11    |                        |                    |                           | 120.74                    | 4,269.91                   |
|              | 04/11/11    |                        |                    |                           | 120.78                    | 4,269.87                   |
|              | 07/27/11    |                        |                    |                           | 121.58                    | 4,269.07                   |
|              | 10/24/11    |                        |                    |                           | 120.94                    | 4,269.71                   |
|              | 01/03/12    |                        |                    |                           | 120.94                    | 4,269.71                   |
|              | 04/09/12    |                        |                    |                           | 120.98                    | 4,269.67                   |
|              | 07/23/12    |                        |                    |                           | 120.90                    | 4,269.75                   |
|              | 10/23/12    |                        |                    |                           | 121.05                    | 4,269.60                   |
|              | 01/29/13    |                        |                    |                           | 121.08                    | 4,269.57                   |
|              | 04/22/13    |                        |                    |                           | 121.09                    | 4,269.56                   |
|              | 07/24/13    |                        |                    |                           | 121.10                    | 4,269.55                   |
|              | 10/30/13    |                        |                    |                           | 121.05                    | 4,269.60                   |
| MW-4         | 12/28/09    | 12/10/09               | 4,396.96           | 139.40                    | 121.50                    | 4,275.46                   |
|              | 07/12/10    |                        |                    |                           | 121.46                    | 4,275.50                   |
|              | 10/11/10    |                        |                    |                           | 121.53                    | 4,275.43                   |
|              | 01/17/11    |                        |                    |                           | 121.53                    | 4,275.43                   |
|              | 04/11/11    |                        |                    |                           | 121.52                    | 4,275.44                   |
|              | 07/27/11    |                        |                    |                           | 122.54                    | 4,274.42                   |
|              | 10/24/11    |                        |                    |                           | 121.51                    | 4,275.45                   |
|              | 01/03/12    |                        |                    |                           | 121.55                    | 4,275.41                   |
|              | 04/09/12    |                        |                    |                           | 121.59                    | 4,275.37                   |
|              | 07/23/12    |                        |                    |                           | 121.55                    | 4,275.41                   |
|              | 10/23/12    |                        |                    |                           | 121.68                    | 4,275.28                   |
|              | 01/29/13    |                        |                    |                           | 123.63                    | 4,273.33                   |
|              | 04/22/13    |                        |                    |                           | 121.70                    | 4,275.26                   |

Table 1  
Celero Energy II, LP  
Groundwater Gauging Data  
Rock Queen Unit Tract 1 Tank Battery  
Chaves County, New Mexico

| Monitor Well | Date Gauged                                                                                                                                  | Date Well Installation | TOC Elevation (ft) | Depth of Well (bgs in ft) | Depth to Groundwater (ft)                                                                                            | Groundwater Elevation (ft)                                                                                                                   |
|--------------|----------------------------------------------------------------------------------------------------------------------------------------------|------------------------|--------------------|---------------------------|----------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| MW-4         | 07/24/13<br>10/30/13                                                                                                                         |                        |                    |                           | 121.71<br>121.68                                                                                                     | 4,275.25<br>4,275.28                                                                                                                         |
| MW-5         | 01/17/11<br>04/11/11<br>07/27/11<br>10/24/11<br>01/03/12<br>04/09/12<br>07/23/12<br>10/23/12<br>01/29/13<br>04/22/13<br>07/24/13<br>10/30/13 | 11/23/10               | 4,395.87           | 133.35                    | 116.10<br>116.11<br>116.93<br>116.21<br>116.11<br>116.19<br>116.12<br>116.21<br>116.16<br>115.10<br>115.16<br>115.12 | 4,279.77<br>4,279.76<br>4,278.94<br>4,279.66<br>4,279.76<br>4,279.68<br>4,279.75<br>4,279.66<br>4,279.71<br>4,280.77<br>4,280.71<br>4,280.75 |
| MW-6         | 01/17/11<br>04/11/11<br>07/27/11<br>10/24/11<br>01/03/12<br>04/09/12<br>07/23/12<br>10/23/12<br>01/29/13<br>04/22/13<br>07/24/13<br>10/30/13 | 11/29/10               | 4,390.58           | 142.55                    | 122.41<br>122.47<br>124.24<br>123.78<br>123.21<br>123.57<br>123.57<br>123.65<br>123.63<br>123.68<br>123.89<br>123.80 | 4,268.17<br>4,268.11<br>4,266.34<br>4,266.80<br>4,267.37<br>4,267.01<br>4,267.01<br>4,266.93<br>4,266.95<br>4,266.90<br>4,266.69<br>4,266.78 |
| MW-7         | 01/17/11<br>04/11/11<br>07/27/11<br>10/24/11<br>01/03/12                                                                                     | 11/23/10               | 4,388.41           | 139.00                    | 123.50<br>123.53<br>124.51<br>123.78<br>123.38                                                                       | 4,264.91<br>4,264.88<br>4,263.90<br>4,264.63<br>4,265.03                                                                                     |

Table 1  
Celero Energy II, LP  
Groundwater Gauging Data  
Rock Queen Unit Tract 1 Tank Battery  
Chaves County, New Mexico

| Monitor Well | Date Gauged | Date Well Installation | TOC Elevation (ft) | Depth of Well (bgs in ft) | Depth to Groundwater (ft) | Groundwater Elevation (ft) |
|--------------|-------------|------------------------|--------------------|---------------------------|---------------------------|----------------------------|
| MW-7         | 04/09/12    |                        |                    |                           | 123.80                    | 4,264.61                   |
|              | 07/23/12    |                        |                    |                           | 123.82                    | 4,264.59                   |
|              | 10/23/12    |                        |                    |                           | 128.93                    | 4,259.48                   |
|              | 01/29/13    |                        |                    |                           | 128.87                    | 4,259.54                   |
|              | 04/22/13    |                        |                    |                           | 123.91                    | 4,264.50                   |
|              | 07/24/13    |                        |                    |                           | 123.88                    | 4,264.53                   |
|              | 10/30/13    |                        |                    |                           | 123.86                    | 4,264.55                   |
|              |             |                        |                    |                           |                           |                            |
| RW-1         | 01/17/11    | 12/13/10               | 4,392.97           | 131.40                    | 120.05                    | 4,272.92                   |
|              | 04/11/11    |                        |                    |                           | 120.07                    | 4,272.90                   |
|              | 07/27/11    |                        |                    |                           | 121.07                    | 4,271.90                   |
|              | 10/24/11    |                        |                    |                           | 120.33                    | 4,272.64                   |
|              | 01/03/12    |                        |                    |                           | 120.37                    | 4,272.60                   |
|              | 04/09/12    |                        |                    |                           | Pumping                   | Pumping                    |
|              | 07/23/12    |                        |                    |                           | 121.18                    | 4,271.79                   |
|              | 10/23/12    |                        |                    |                           | 126.75                    | 4,266.22                   |
|              | 01/29/13    |                        |                    |                           | Pumping                   | Pumping                    |
|              | 04/22/13    |                        |                    |                           | Pumping                   | Pumping                    |
|              | 07/24/13    |                        |                    |                           | 120.28                    | 4,272.69                   |
|              | 10/30/13    |                        |                    |                           | 120.25                    | 4,272.72                   |

Table 2  
Celero Energy II, LP  
Groundwater Analytical Results  
Rock Queen Unit Tract 1 Tank Battery  
Chaves County, New Mexico

| Monitor Well | Date Sampled | Dissolved Calcium (mg/L) | Dissolved Magnesium (mg/L) | Dissolved Sodium (mg/L) | Dissolved Potassium (mg/L) | Hydroxide Alkalinity (mg/L) | Carbonate Alkalinity (mg/L) | Bicarbonate Alkalinity (mg/L) | Total Alkalinity (mg/L) | Sulfate (mg/L) | Chloride (mg/L) | TDS (mg/L) | Hardness (mg/L) | pH   |
|--------------|--------------|--------------------------|----------------------------|-------------------------|----------------------------|-----------------------------|-----------------------------|-------------------------------|-------------------------|----------------|-----------------|------------|-----------------|------|
| MW-1         | 05/29/07     | 2,170                    | 3,320                      | 75,500                  | 1380.0                     | <1.00                       | <1.00                       | 154                           | 154                     | 2,290          | 146,000         | 188,300    | 17,400          | 6.61 |
|              | 12/28/09     | 2,520                    | 4,370                      | 64,600                  | 2490.0                     | <1.00                       | <1.00                       | <4.00                         | <4.00                   | 2,230          | 164,000         | 244,000    | 24,300          | 5.27 |
|              | 07/12/10     | -                        | -                          | -                       | -                          | -                           | -                           | -                             | -                       | 1,720          | 49,900          | 98,000     | -               | -    |
|              | 10/11/10     | -                        | -                          | -                       | -                          | -                           | -                           | -                             | -                       | 1,870          | 133,000         | 260,000    | -               | -    |
|              | 01/24/11     | -                        | -                          | -                       | -                          | -                           | -                           | -                             | -                       | 2,560          | 144,000         | 258,000    | -               | -    |
|              | 04/13/11     | -                        | -                          | -                       | -                          | -                           | -                           | -                             | -                       | 2,210          | 168,000         | 250,000    | -               | -    |
|              | 07/28/11     | -                        | -                          | -                       | -                          | -                           | -                           | -                             | -                       | 2,210          | 141,000         | 231,000    | -               | -    |
|              | 10/25/11     | -                        | -                          | -                       | -                          | -                           | -                           | -                             | -                       | 2,270          | 155,000         | 239,000    | -               | -    |
|              | 01/05/12     | -                        | -                          | -                       | -                          | -                           | -                           | -                             | -                       | 2,160          | 150,000         | 205,000    | -               | -    |
|              | 04/11/12     | -                        | -                          | -                       | -                          | -                           | -                           | -                             | -                       | 2,150          | 151,000         | 221,000    | -               | -    |
|              | 07/24/12     | -                        | -                          | -                       | -                          | -                           | -                           | -                             | -                       | -              | 123,000         | -          | -               | -    |
|              | 10/25/12     | -                        | -                          | -                       | -                          | -                           | -                           | -                             | -                       | 2,360          | 169,000         | 227,000    | -               | -    |
|              | 01/30/13     | -                        | -                          | -                       | -                          | -                           | -                           | -                             | -                       | 1,890          | 132,000         | 217,000    | -               | -    |
|              | 04/24/13     | 2,640                    | 3,990                      | 78,500                  | 1,630                      | <20.0                       | <20.0                       | 100                           | 100                     | 1,880          | 144,000         | 244,000    | 23,000          | 5.96 |
|              | 07/24/13     | 2,090                    | 2,830                      | 73,100                  | 1,450                      | <20.0                       | <20.0                       | 100                           | 100                     | <12,500        | 128,000         | 231,000    | 16,900          | 5.90 |
|              | 10/30/13     | 2,120                    | 2,750                      | 56,400                  | 1,150                      | <20.0                       | <20.0                       | 123                           | 123                     | 395            | 136,000         | 197,000    | 16,600          | 6.46 |
| MW-2         | 08/05/08     | -                        | -                          | -                       | -                          | -                           | -                           | -                             | -                       | -              | 5,510           | -          | -               | -    |
|              | 12/28/09     | 1,630                    | 379                        | 1,360                   | 18.0                       | <1.00                       | <1.00                       | 138                           | 138                     | 4.43           | 5,480           | 14,000     | 5,630           | 7.30 |
|              | 07/12/10     | -                        | -                          | -                       | -                          | -                           | -                           | -                             | -                       | 47.80          | 5,930           | 14,100     | -               | -    |
|              | 10/11/10     | -                        | -                          | -                       | -                          | -                           | -                           | -                             | -                       | 88.90          | 6,580           | 11,700     | -               | -    |
|              | 01/24/11     | -                        | -                          | -                       | -                          | -                           | -                           | -                             | -                       | 108            | 7,310           | 26,800     | -               | -    |
|              | 04/13/11     | -                        | -                          | -                       | -                          | -                           | -                           | -                             | -                       | 125            | 8,270           | 29,800     | -               | -    |
|              | 07/28/11     | -                        | -                          | -                       | -                          | -                           | -                           | -                             | -                       | 135            | 9,870           | 25,300     | -               | -    |
|              | 10/25/11     | -                        | -                          | -                       | -                          | -                           | -                           | -                             | -                       | 189            | 9,200           | 14,800     | -               | -    |
|              | 01/05/12     | -                        | -                          | -                       | -                          | -                           | -                           | -                             | -                       | 149            | 9,050           | 36,100     | -               | -    |
|              | 04/11/12     | -                        | -                          | -                       | -                          | -                           | -                           | -                             | -                       | 136            | 8,250           | 20,100     | -               | -    |
|              | 07/24/12     | -                        | -                          | -                       | -                          | -                           | -                           | -                             | -                       | -              | 9,110           | -          | -               | -    |
|              | 10/25/12     | -                        | -                          | -                       | -                          | -                           | -                           | -                             | -                       | 168            | 9,320           | 32,100     | -               | -    |
|              | 01/30/13     | -                        | -                          | -                       | -                          | -                           | -                           | -                             | -                       | 161            | 8,330           | 21,400     | -               | -    |
|              | 04/24/13     | 2,490                    | 575                        | 2,240                   | 22.6                       | <20.0                       | <20.0                       | 134                           | 134                     | 211            | 9,840           | 25,200     | 8,580           | 6.74 |

Table 2

Celero Energy II, LP  
Groundwater Analytical Results  
Rock Queen Unit Tract 1 Tank Battery  
Chaves County, New Mexico

| Monitor Well | Date Sampled | Dissolved Calcium (mg/L) | Dissolved Magnesium (mg/L) | Dissolved Sodium (mg/L) | Dissolved Potassium (mg/L) | Hydroxide Alkalinity (mg/L) | Carbonate Alkalinity (mg/L) | Bicarbonate Alkalinity (mg/L) | Total Alkalinity (mg/L) | Sulfate (mg/L) | Chloride (mg/L) | TDS (mg/L) | Hardness (mg/L) | pH   |
|--------------|--------------|--------------------------|----------------------------|-------------------------|----------------------------|-----------------------------|-----------------------------|-------------------------------|-------------------------|----------------|-----------------|------------|-----------------|------|
| MW-3         | 07/24/13     | 1,800                    | 525                        | 2,640                   | 35.0                       | <20.0                       | <20.0                       | 127                           | 127                     | <2500          | 9,400           | 18,500     | 6,660           | 6.65 |
|              | 10/30/13     | 1,710                    | 462                        | 3,000                   | 32.0                       | <20.0                       | <20.0                       | 161                           | 161                     | 165            | 9,980           | 21,200     | 6,170           | 6.93 |
|              | 12/28/09     | 2,120                    | 804                        | 12,000                  | 146.0                      | <1.00                       | <1.00                       | 106                           | 106                     | 661            | 22,400          | 40,700     | 8,600           | 6.77 |
|              | 07/12/10     | -                        | -                          | -                       | -                          | -                           | -                           | -                             | -                       | 1,970          | 133,000         | 237,000    | -               | -    |
|              | 10/11/10     | -                        | -                          | -                       | -                          | -                           | -                           | -                             | -                       | 1,630          | 57,300          | 110,000    | -               | -    |
|              | 01/24/11     | -                        | -                          | -                       | -                          | -                           | -                           | -                             | -                       | 2,280          | 51,900          | 95,300     | -               | -    |
|              | 04/13/11     | -                        | -                          | -                       | -                          | -                           | -                           | -                             | -                       | 1,990          | 57,800          | 103,000    | -               | -    |
|              | 07/28/11     | -                        | -                          | -                       | -                          | -                           | -                           | -                             | -                       | 2,070          | 67,300          | 93,400     | -               | -    |
|              | 10/25/11     | -                        | -                          | -                       | -                          | -                           | -                           | -                             | -                       | 2,000          | 60,700          | 110,000    | -               | -    |
|              | 01/05/12     | -                        | -                          | -                       | -                          | -                           | -                           | -                             | -                       | 2,150          | 73,300          | 102,000    | -               | -    |
|              | 04/11/12     | -                        | -                          | -                       | -                          | -                           | -                           | -                             | -                       | 2,110          | 71,600          | 104,000    | -               | -    |
|              | 07/24/12     | -                        | -                          | -                       | -                          | -                           | -                           | -                             | -                       | -              | 70,200          | -          | -               | -    |
|              | 10/25/12     | -                        | -                          | -                       | -                          | -                           | -                           | -                             | -                       | 2,290          | 71,700          | 110,000    | -               | -    |
| MW-4         | 01/30/13     | -                        | -                          | -                       | -                          | -                           | -                           | -                             | -                       | 1,930          | 60,500          | 91,600     | -               | -    |
|              | 04/24/13     | 4,780                    | 2,420                      | 32,100                  | 432                        | <20.0                       | <20.0                       | 100                           | 100                     | 1,780          | 60,000          | 118,000    | 21,900          | 6.41 |
|              | 07/24/13     | 4,120                    | 1,660                      | 32,100                  | 569                        | <20.0                       | <20.0                       | 100                           | 100                     | <12500         | 64,000          | 124,000    | 17,100          | 6.28 |
|              | 10/30/13     | 4,630                    | 2,410                      | 30,600                  | 459                        | <20.0                       | <20.0                       | 131                           | 131                     | 2,040          | 81,900          | 121,000    | 21,500          | 6.55 |
|              | 12/28/09     | 1,660                    | 349                        | 1,020                   | 14.1                       | <1.00                       | <1.00                       | 99                            | 99                      | 148            | 5,070           | 9,900      | 5,580           | 7.51 |
|              | 07/12/10     | -                        | -                          | -                       | -                          | -                           | -                           | -                             | -                       | 71.1           | 1,140           | 1,880      | -               | -    |
|              | 10/11/10     | -                        | -                          | -                       | -                          | -                           | -                           | -                             | -                       | 238.0          | 16,500          | 43,800     | -               | -    |
|              | 01/24/11     | -                        | -                          | -                       | -                          | -                           | -                           | -                             | -                       | 180.0          | 6,230           | 12,400     | -               | -    |
|              | 04/13/11     | -                        | -                          | -                       | -                          | -                           | -                           | -                             | -                       | 193.0          | 7,870           | 18,500     | -               | -    |
|              | 07/28/11     | -                        | -                          | -                       | -                          | -                           | -                           | -                             | -                       | 90.5           | 934             | 1,720      | -               | -    |
|              | 10/25/11     | -                        | -                          | -                       | -                          | -                           | -                           | -                             | -                       | 442            | 23,700          | 48,300     | -               | -    |
|              | 01/05/12     | -                        | -                          | -                       | -                          | -                           | -                           | -                             | -                       | 148            | 3,880           | 7,100      | -               | -    |
|              | 04/11/12     | -                        | -                          | -                       | -                          | -                           | -                           | -                             | -                       | 180            | 7,020           | 12,000     | -               | -    |
|              | 07/24/12     | -                        | -                          | -                       | -                          | -                           | -                           | -                             | -                       | -              | 3,860           | -          | -               | -    |
|              | 10/25/12     | -                        | -                          | -                       | -                          | -                           | -                           | -                             | -                       | 206            | 14,200          | 21,800     | -               | -    |
|              | 01/30/13     | -                        | -                          | -                       | -                          | -                           | -                           | -                             | -                       | 215            | 7,960           | 12,600     | -               | -    |
|              | 04/24/13     | 3,340                    | 768                        | 2,220                   | 21.7                       | <20.0                       | <20.0                       | 135                           | 135                     | 290            | 13,800          | 37,200     | 11,500          | 6.71 |

Table 2

Celero Energy II, LP  
Groundwater Analytical Results  
Rock Queen Unit Tract 1 Tank Battery  
Chaves County, New Mexico

| Monitor Well | Date Sampled | Dissolved Calcium (mg/L) | Dissolved Magnesium (mg/L) | Dissolved Sodium (mg/L) | Potassium (mg/L) | Hydroxide Alkalinity (mg/L) | Carbonate Alkalinity (mg/L) | Bicarbonate Alkalinity (mg/L) | Total Alkalinity (mg/L) | Sulfate (mg/L) | Chloride (mg/L) | TDS (mg/L) | Hardness (mg/L) | pH   |
|--------------|--------------|--------------------------|----------------------------|-------------------------|------------------|-----------------------------|-----------------------------|-------------------------------|-------------------------|----------------|-----------------|------------|-----------------|------|
| MW-4         | 07/24/13     | 6,770                    | 1,150                      | 4,030                   | 135.0            | <20.0                       | <20.0                       | 148                           | 148                     | <2500          | 23,900          | 49,200     | 21,800          | 6.58 |
|              | 10/30/13     | 283                      | 60.5                       | 428                     | <10.0            | <20.0                       | <20.0                       | 143                           | 143                     | 93.7           | 933             | 66,000     | 956             | 6.75 |
| MW-5         | 01/24/11     | -                        | -                          | -                       | -                | -                           | -                           | -                             | -                       | 58.4           | 121             | 518        | -               | -    |
|              | 04/13/11     | -                        | -                          | -                       | -                | -                           | -                           | -                             | -                       | 62.7           | 126             | 458        | -               | -    |
|              | 07/28/11     | -                        | -                          | -                       | -                | -                           | -                           | -                             | -                       | 138            | 40.9            | 414        | -               | -    |
|              | 10/25/11     | -                        | -                          | -                       | -                | -                           | -                           | -                             | -                       | 136            | 128             | 896        | -               | -    |
|              | 01/05/12     | -                        | -                          | -                       | -                | -                           | -                           | -                             | -                       | 143            | 71.8            | 554        | -               | -    |
|              | 04/11/12     | -                        | -                          | -                       | -                | -                           | -                           | -                             | -                       | 132            | 64.5            | 556        | -               | -    |
|              | 07/24/12     | -                        | -                          | -                       | -                | -                           | -                           | -                             | -                       | -              | 72.6            | -          | -               | -    |
|              | 10/25/12     | -                        | -                          | -                       | -                | -                           | -                           | -                             | -                       | 151            | 71.9            | 536        | -               | -    |
|              | 01/30/13     | -                        | -                          | -                       | -                | -                           | -                           | -                             | -                       | 142            | 72.6            | 528        | -               | -    |
|              | 04/24/13     | 90.9                     | 17.3                       | 64.9                    | 1.55             | <20.0                       | <20.0                       | 136                           | 136                     | 133            | 66.2            | 586        | 298             | 7.98 |
|              | 07/24/13     | 68.5                     | 9.9                        | 60.4                    | 2.95             | <20.0                       | <20.0                       | 161                           | 161                     | 132            | 65.7            | 510        | 212             | 8.07 |
|              | 10/30/13     | 76.8                     | 13.0                       | 73.8                    | <10              | <20.0                       | <20.0                       | 139                           | 139                     | 146            | 70.3            | 714        | 245             | 8.01 |
| MW-6         | 01/24/11     | -                        | -                          | -                       | -                | -                           | -                           | -                             | -                       | 2,850          | 88,900          | 161,000    | -               | -    |
|              | 04/13/11     | -                        | -                          | -                       | -                | -                           | -                           | -                             | -                       | 2,310          | 92,900          | 146,000    | -               | -    |
|              | 07/28/11     | -                        | -                          | -                       | -                | -                           | -                           | -                             | -                       | 2,680          | 101,000         | 160,000    | -               | -    |
|              | 10/25/11     | -                        | -                          | -                       | -                | -                           | -                           | -                             | -                       | 2,660          | 111,000         | 160,000    | -               | -    |
|              | 01/05/12     | -                        | -                          | -                       | -                | -                           | -                           | -                             | -                       | 2,600          | 124,000         | 164,000    | -               | -    |
|              | 04/11/12     | -                        | -                          | -                       | -                | -                           | -                           | -                             | -                       | 3,180          | 101,000         | 171,000    | -               | -    |
|              | 07/24/12     | -                        | -                          | -                       | -                | -                           | -                           | -                             | -                       | -              | 107,000         | -          | -               | -    |
|              | 10/25/12     | -                        | -                          | -                       | -                | -                           | -                           | -                             | -                       | 2,860          | 119,000         | 170,000    | -               | -    |
|              | 01/30/13     | -                        | -                          | -                       | -                | -                           | -                           | -                             | -                       | 2,480          | 97,800          | 152,000    | -               | -    |
|              | 04/24/13     | 4,540                    | 3,310                      | 57,500                  | 708              | <20.0                       | <20.0                       | 118                           | 118                     | 2,300          | 98,800          | 169,000    | 25,000          | 6.13 |
|              | 07/24/13     | 4,840                    | 3,050                      | 57,000                  | 780              | <20.0                       | <20.0                       | 174                           | 174                     | <12500         | 117,000         | 197,000    | 24,600          | 6.22 |
|              | 10/30/13     | 3,420                    | 2,660                      | 50,700                  | 803              | <20.0                       | <20.0                       | 175                           | 175                     | 2,430          | 126,000         | 161,000    | 19,500          | 6.35 |
| MW-7         | 01/24/11     | -                        | -                          | -                       | -                | -                           | -                           | -                             | -                       | 2,580          | 92,400          | 179,000    | -               | -    |
|              | 04/13/11     | -                        | -                          | -                       | -                | -                           | -                           | -                             | -                       | 2,330          | 102,000         | 177,000    | -               | -    |
|              | 07/28/11     | -                        | -                          | -                       | -                | -                           | -                           | -                             | -                       | 2,300          | 99,400          | 194,000    | -               | -    |
|              | 10/25/11     | -                        | -                          | -                       | -                | -                           | -                           | -                             | -                       | 2,370          | 99,400          | 170,000    | -               | -    |

Table 2  
Celero Energy II, LP  
Groundwater Analytical Results  
Rock Queen Unit Tract 1 Tank Battery  
Chaves County, New Mexico

| Monitor Well | Date Sampled | Dissolved Calcium (mg/L) | Dissolved Magnesium (mg/L) | Dissolved Sodium (mg/L) | Dissolved Potassium (mg/L) | Hydroxide Alkalinity (mg/L) | Carbonate Alkalinity (mg/L) | Bicarbonate Alkalinity (mg/L) | Total Alkalinity (mg/L) | Sulfate (mg/L) | Chloride (mg/L) | TDS (mg/L) | Hardness (mg/L) | pH   |
|--------------|--------------|--------------------------|----------------------------|-------------------------|----------------------------|-----------------------------|-----------------------------|-------------------------------|-------------------------|----------------|-----------------|------------|-----------------|------|
| MW-7         | 01/05/12     | -                        | -                          | -                       | -                          | -                           | -                           | -                             | -                       | 2,440          | 128,000         | 186,000    | -               | -    |
|              | 04/11/12     | -                        | -                          | -                       | -                          | -                           | -                           | -                             | -                       | 5,980          | 203,000         | 186,000    | -               | -    |
|              | 07/24/12     | -                        | -                          | -                       | -                          | -                           | -                           | -                             | -                       | -              | 120,000         | -          | -               | -    |
|              | 10/12/12     | -                        | -                          | -                       | -                          | -                           | -                           | -                             | -                       | 2,620          | 124,000         | 194,000    | -               | -    |
|              | 01/30/13     | -                        | -                          | -                       | -                          | -                           | -                           | -                             | -                       | 2,280          | 111,000         | 179,000    | -               | -    |
|              | 04/24/13     | 5,520                    | 3,890                      | 66,500                  | 994                        | <20.0                       | <20.0                       | 91.0                          | 91.0                    | 2,010          | 118,000         | 180,000    | 29,800          | 6.23 |
|              | 07/24/13     | 4,900                    | 3,250                      | 58,700                  | 968                        | <20.0                       | <20.0                       | 187.0                         | 187.0                   | <12500         | 127,000         | 213,000    | 25,600          | 6.26 |
|              | 10/30/13     | 4,560                    | 3,210                      | 57,500                  | 939                        | <20.0                       | <20.0                       | 91.0                          | 91.0                    | 2,880          | 147,000         | 199,000    | 24,600          | 6.42 |
|              | 01/24/11     | NS                       | NS                         | NS                      | NS                         | NS                          | NS                          | NS                            | NS                      | NS             | NS              | NS         | NS              | NS   |
|              | 04/13/11     | -                        | -                          | -                       | -                          | -                           | -                           | -                             | -                       | 2,680          | 139,000         | 222,000    | -               | -    |
| RW-1         | 07/28/11     | NS                       | NS                         | NS                      | NS                         | NS                          | NS                          | NS                            | NS                      | NS             | NS              | NS         | NS              | NS   |
|              | 10/25/11     | NS                       | NS                         | NS                      | NS                         | NS                          | NS                          | NS                            | NS                      | NS             | NS              | NS         | NS              | NS   |
|              | 01/05/12     | NS                       | NS                         | NS                      | NS                         | NS                          | NS                          | NS                            | NS                      | NS             | NS              | NS         | NS              | NS   |
|              | 04/11/12     | NS                       | NS                         | NS                      | NS                         | NS                          | NS                          | NS                            | NS                      | NS             | NS              | NS         | NS              | NS   |
|              | 05/21/12     | 3,510                    | 4,130                      | 96,600                  | 2,230                      | <1.00                       | <1.00                       | 201                           | 201                     | 2,410          | 199,000         | 237,000    | 25,800          | -    |
|              | 07/24/12     | NS                       | NS                         | NS                      | NS                         | NS                          | NS                          | NS                            | NS                      | NS             | NS              | NS         | NS              | NS   |
|              | 10/25/12     | NS                       | NS                         | NS                      | NS                         | NS                          | NS                          | NS                            | NS                      | NS             | NS              | NS         | NS              | NS   |
|              | 01/30/13     | NS                       | NS                         | NS                      | NS                         | NS                          | NS                          | NS                            | NS                      | NS             | NS              | NS         | NS              | NS   |
|              | 04/24/13     | NS                       | NS                         | NS                      | NS                         | NS                          | NS                          | NS                            | NS                      | NS             | NS              | NS         | NS              | NS   |
|              | 07/24/13     | NS                       | NS                         | NS                      | NS                         | NS                          | NS                          | NS                            | NS                      | NS             | NS              | NS         | NS              | NS   |
|              | 10/30/13     | NS                       | NS                         | NS                      | NS                         | NS                          | NS                          | NS                            | NS                      | NS             | NS              | NS         | NS              | NS   |

NS - Not sampled

( - ) Not Analyzed

Table 3  
Celero Energy II, LP  
Groundwater Analytical Results  
Rock Queen Unit Tract 1 Tank Battery  
Chaves County, New Mexico

| Monitor Well | Date Sampled | Benzene<br>in<br>(mg/L) | Toluene<br>in<br>(mg/L) | Ethyl-<br>Benzene<br>(mg/L) | Xylene<br>in<br>(mg/L) | Total<br>BTEX<br>(mg/L) |
|--------------|--------------|-------------------------|-------------------------|-----------------------------|------------------------|-------------------------|
| MW-1         | 12/28/09     | <0.001                  | <0.001                  | <0.001                      | <0.001                 | <0.001                  |
|              | 07/12/10     | <0.001                  | <0.001                  | <0.001                      | <0.001                 | <0.001                  |
|              | 10/11/10     | <0.001                  | <0.001                  | <0.001                      | <0.001                 | <0.001                  |
|              | 01/24/11     | <0.001                  | <0.001                  | <0.001                      | <0.001                 | <0.001                  |
|              | 04/14/11     | 0.006                   | <0.001                  | <0.001                      | <0.001                 | 0.006                   |
|              | 07/28/11     | <0.001                  | <0.001                  | <0.001                      | <0.001                 | <0.001                  |
|              | 10/25/11     | <0.001                  | <0.001                  | <0.001                      | 0.0205                 | 0.0205                  |
|              | 01/05/12     | <0.001                  | <0.001                  | <0.001                      | <0.001                 | <0.001                  |
|              | 04/11/12     | <0.0006                 | <0.0004                 | <0.0006                     | <0.0013                | <0.0013                 |
|              | 07/24/12     | <0.001                  | <0.001                  | <0.001                      | <0.001                 | <0.001                  |
|              | 10/25/12     | <0.001                  | <0.001                  | <0.001                      | <0.001                 | <0.001                  |
|              | 01/30/13     | <0.001                  | <0.001                  | <0.001                      | <0.001                 | <0.001                  |
|              | 04/24/13     | <0.001                  | <0.001                  | <0.001                      | <0.001                 | <0.001                  |
|              | 07/24/13     | <0.001                  | <0.001                  | <0.001                      | 0.0221                 | 0.0221                  |
|              | 10/30/13     | <0.001                  | <0.001                  | <0.001                      | <0.001                 | <0.001                  |
| MW-2         | 12/28/09     | <0.001                  | <0.001                  | <0.001                      | <0.001                 | <0.001                  |
|              | 07/12/10     | <0.001                  | <0.001                  | <0.001                      | <0.001                 | <0.001                  |
|              | 10/11/10     | <0.001                  | <0.001                  | <0.001                      | <0.001                 | <0.001                  |
|              | 01/24/11     | <0.001                  | <0.001                  | <0.001                      | <0.001                 | <0.001                  |
|              | 04/14/11     | <0.001                  | <0.001                  | <0.001                      | <0.001                 | <0.001                  |
|              | 07/28/11     | <0.001                  | <0.001                  | <0.001                      | <0.001                 | <0.001                  |
|              | 10/25/11     | <0.001                  | <0.001                  | <0.001                      | <0.001                 | <0.001                  |
|              | 01/05/12     | <0.001                  | <0.001                  | <0.001                      | <0.001                 | <0.001                  |
|              | 04/11/12     | <0.0006                 | <0.0004                 | <0.0006                     | <0.0013                | <0.0013                 |
|              | 07/24/12     | <0.001                  | <0.001                  | 0.002                       | 0.007                  | 0.009                   |
|              | 10/25/12     | <0.001                  | <0.001                  | 0.002                       | 0.007                  | 0.009                   |
|              | 01/30/13     | <0.001                  | <0.001                  | 0.002                       | 0.007                  | 0.009                   |
|              | 04/24/13     | <0.001                  | <0.001                  | <0.001                      | <0.001                 | <0.001                  |
|              | 07/24/13     | <0.001                  | <0.001                  | <0.001                      | <0.001                 | <0.001                  |
|              | 10/30/13     | <0.001                  | <0.001                  | <0.001                      | <0.003                 | <0.003                  |
| MW-3         | 12/28/09     | <0.001                  | <0.001                  | <0.001                      | <0.001                 | <0.001                  |
|              | 07/12/10     | <0.001                  | <0.001                  | <0.001                      | <0.001                 | <0.001                  |
|              | 10/11/10     | <0.001                  | <0.001                  | <0.001                      | <0.001                 | <0.001                  |
|              | 01/24/11     | <0.001                  | <0.001                  | <0.001                      | <0.001                 | <0.001                  |
|              | 04/14/11     | <0.001                  | <0.001                  | <0.001                      | <0.001                 | <0.001                  |
|              | 07/28/11     | <0.001                  | <0.001                  | <0.001                      | <0.001                 | <0.001                  |
|              | 10/25/11     | <0.001                  | <0.001                  | <0.001                      | <0.001                 | <0.001                  |
|              | 01/05/12     | <0.001                  | <0.001                  | <0.001                      | <0.001                 | <0.001                  |
|              | 04/11/12     | <0.0006                 | <0.0004                 | <0.0006                     | <0.0013                | <0.0013                 |

Table 3  
Celero Energy II, LP  
Groundwater Analytical Results  
Rock Queen Unit Tract 1 Tank Battery  
Chaves County, New Mexico

| Monitor Well | Date Sampled | Benzene<br>in<br>(mg/L) | Toluene<br>in<br>(mg/L) | Ethyl-<br>Benzene<br>(mg/L) | Xylene<br>in<br>(mg/L) | Total<br>BTEX<br>(mg/L) |
|--------------|--------------|-------------------------|-------------------------|-----------------------------|------------------------|-------------------------|
| MW-3         | 07/24/12     | <0.001                  | <0.001                  | <0.001                      | <0.001                 | <0.001                  |
|              | 10/25/12     | <0.001                  | <0.001                  | <0.001                      | <0.001                 | <0.001                  |
|              | 01/30/13     | <0.001                  | <0.001                  | <0.001                      | <0.001                 | <0.001                  |
|              | 04/24/13     | <0.001                  | <0.001                  | <0.001                      | <0.001                 | <0.001                  |
|              | 07/24/13     | <0.001                  | <0.001                  | <0.001                      | <0.001                 | <0.001                  |
|              | 10/30/13     | <0.001                  | <0.001                  | <0.001                      | <0.003                 | <0.003                  |
| MW-4         | 12/28/09     | <0.001                  | <0.001                  | <0.001                      | <0.001                 | <0.001                  |
|              | 07/12/10     | <0.001                  | <0.001                  | <0.001                      | <0.001                 | <0.001                  |
|              | 10/11/10     | <0.001                  | <0.001                  | <0.001                      | <0.001                 | <0.001                  |
|              | 01/24/11     | <0.001                  | <0.001                  | <0.001                      | <0.001                 | <0.001                  |
|              | 04/14/11     | <0.001                  | <0.001                  | <0.001                      | <0.001                 | <0.001                  |
|              | 07/28/11     | <0.001                  | <0.001                  | <0.001                      | <0.001                 | <0.001                  |
|              | 10/25/11     | <0.001                  | <0.001                  | <0.001                      | <0.001                 | <0.001                  |
|              | 01/05/12     | <0.001                  | <0.001                  | <0.001                      | <0.001                 | <0.001                  |
|              | 04/11/12     | <0.0006                 | <0.0004                 | <0.0006                     | <0.0013                | <0.0013                 |
|              | 07/24/12     | <0.001                  | <0.001                  | <0.001                      | <0.001                 | <0.001                  |
|              | 10/25/12     | <0.001                  | <0.001                  | <0.001                      | <0.001                 | <0.001                  |
|              | 01/30/13     | <0.001                  | <0.001                  | <0.001                      | <0.001                 | <0.001                  |
|              | 04/24/13     | <0.001                  | <0.001                  | <0.001                      | <0.001                 | <0.001                  |
|              | 07/24/13     | <0.001                  | <0.001                  | <0.001                      | <0.001                 | <0.001                  |
|              | 10/30/13     | <0.001                  | <0.001                  | <0.001                      | <0.003                 | <0.003                  |
| MW-5         | 01/24/11     | <0.001                  | <0.001                  | <0.001                      | <0.001                 | <0.001                  |
|              | 04/14/11     | <0.001                  | <0.001                  | <0.001                      | <0.001                 | <0.001                  |
|              | 07/28/11     | <0.001                  | <0.001                  | <0.001                      | <0.001                 | <0.001                  |
|              | 10/25/11     | <0.001                  | <0.001                  | <0.001                      | <0.001                 | <0.001                  |
|              | 01/05/12     | <0.001                  | <0.001                  | <0.001                      | <0.001                 | <0.001                  |
|              | 04/11/12     | <0.0006                 | <0.0004                 | <0.0006                     | <0.0013                | <0.0013                 |
|              | 07/24/12     | <0.001                  | <0.001                  | <0.001                      | <0.001                 | <0.001                  |
|              | 10/25/12     | <0.001                  | <0.001                  | <0.001                      | <0.001                 | <0.001                  |
|              | 01/30/13     | <0.001                  | <0.001                  | <0.001                      | <0.001                 | <0.001                  |
|              | 04/24/13     | <0.001                  | <0.001                  | <0.001                      | <0.001                 | <0.001                  |
|              | 07/24/13     | <0.001                  | <0.001                  | <0.001                      | <0.001                 | <0.001                  |
|              | 10/30/13     | <0.001                  | <0.001                  | <0.001                      | <0.003                 | <0.003                  |
| MW-6         | 01/24/11     | <0.001                  | <0.001                  | <0.001                      | <0.001                 | <0.001                  |
|              | 04/14/11     | 0.0063                  | 0.0062                  | <0.001                      | <0.001                 | 0.0125                  |
|              | 07/28/11     | <0.001                  | <0.001                  | <0.001                      | <0.001                 | <0.001                  |
|              | 10/25/11     | <0.001                  | <0.001                  | <0.001                      | <0.001                 | <0.001                  |
|              | 01/05/12     | <0.001                  | <0.001                  | <0.001                      | <0.001                 | <0.001                  |
|              | 04/11/12     | 0.0040                  | 0.0040                  | <0.0006                     | <0.0013                | 0.0080                  |

Table 3  
Celero Energy II, LP  
Groundwater Analytical Results  
Rock Queen Unit Tract 1 Tank Battery  
Chaves County, New Mexico

| Monitor Well | Date Sampled | Benzene<br>in<br>(mg/L) | Toluene<br>in<br>(mg/L) | Ethyl-<br>Benzene<br>(mg/L) | Xylene<br>in<br>(mg/L) | Total<br>BTEX<br>(mg/L) |
|--------------|--------------|-------------------------|-------------------------|-----------------------------|------------------------|-------------------------|
| MW-6         | 07/24/12     | <0.001                  | <0.001                  | <0.001                      | <0.001                 | <0.001                  |
|              | 10/25/12     | <0.001                  | <0.001                  | <0.001                      | <0.001                 | <0.001                  |
|              | 01/30/13     | <0.001                  | <0.001                  | <0.001                      | <0.001                 | <0.001                  |
|              | 04/24/13     | <0.001                  | <0.001                  | <0.001                      | <0.001                 | <0.001                  |
|              | 07/24/13     | <0.001                  | <0.001                  | <0.001                      | <0.001                 | <0.001                  |
|              | 10/30/13     | <0.001                  | <0.001                  | <0.001                      | <0.001                 | <0.001                  |
| MW-7         | 01/24/11     | <0.001                  | <0.001                  | <0.001                      | <0.001                 | <0.001                  |
|              | 04/14/11     | <0.001                  | <0.001                  | <0.001                      | <0.001                 | <0.001                  |
|              | 07/28/11     | <0.001                  | <0.001                  | <0.001                      | <0.001                 | <0.001                  |
|              | 10/25/11     | <0.001                  | <0.001                  | <0.001                      | <0.001                 | <0.001                  |
|              | 01/05/12     | <0.001                  | <0.001                  | <0.001                      | <0.001                 | <0.001                  |
|              | 04/11/12     | <0.0006                 | <0.0004                 | <0.0006                     | <0.0013                | <0.0013                 |
|              | 07/24/12     | <0.001                  | <0.001                  | <0.001                      | <0.001                 | <0.001                  |
|              | 10/25/12     | <0.001                  | <0.001                  | <0.001                      | <0.001                 | <0.001                  |
|              | 01/30/13     | <0.001                  | <0.001                  | <0.001                      | <0.001                 | <0.001                  |
|              | 04/24/13     | <0.001                  | <0.001                  | <0.001                      | <0.001                 | <0.001                  |
|              | 07/24/13     | <0.001                  | <0.001                  | <0.001                      | <0.001                 | <0.001                  |
|              | 10/30/13     | <0.001                  | <0.001                  | <0.001                      | <0.001                 | <0.001                  |
| RW-1         | 01/24/11     | NS                      | NS                      | NS                          | NS                     | NS                      |
|              | 04/14/11     | 0.0133                  | <0.001                  | <0.001                      | <0.001                 | 0.0133                  |
|              | 07/28/11     | NS                      | NS                      | NS                          | NS                     | NS                      |
|              | 10/25/11     | NS                      | NS                      | NS                          | NS                     | NS                      |
|              | 01/05/12     | NS                      | NS                      | NS                          | NS                     | NS                      |
|              | 04/11/12     | NS                      | NS                      | NS                          | NS                     | NS                      |
|              | 07/24/12     | NS                      | NS                      | NS                          | NS                     | NS                      |
|              | 10/25/12     | NS                      | NS                      | NS                          | NS                     | NS                      |
|              | 01/30/13     | NS                      | NS                      | NS                          | NS                     | NS                      |
|              | 04/24/13     | NS                      | NS                      | NS                          | NS                     | NS                      |
|              | 07/24/13     | NS                      | NS                      | NS                          | NS                     | NS                      |
|              | 10/30/13     | NS                      | NS                      | NS                          | NS                     | NS                      |

NS - Not sampled

Table 4  
Celero Energy II, LP  
Groundwater Recovery  
Rock Queen Unit Tract 1 Tank Battery  
Chaves County, New Mexico

| Recovery Well | Tank Gauging Date | Amount in Tank<br>in<br>(gallons) | Total Amount<br>Removed<br>(gallons) | Number<br>of<br>Days | Recovery Rate<br>per day<br>(gallons) | Recovery Rate<br>per hour<br>(gallons) |
|---------------|-------------------|-----------------------------------|--------------------------------------|----------------------|---------------------------------------|----------------------------------------|
| RW-1          | 01/20/12          | 0                                 | 0                                    | 0                    | 0.0                                   | 0.0                                    |
|               | 04/23/12          | 2,500                             | 2,500                                | 94                   | 26.60                                 | 1.11                                   |
|               | 04/23/12          | 0                                 | 2,500                                |                      |                                       |                                        |
|               | 05/07/12          | 950                               | 3,450                                | 14                   | 68                                    | 2.83                                   |
|               | 05/21/12          | 1,500                             | 4,000                                | 14                   | 39                                    | 1.64                                   |
|               | 06/04/12          | 2,000                             | 4,500                                | 14                   | 36                                    | 1.49                                   |
|               | 06/18/12          | 2,500                             | 5,000                                | 14                   | 36                                    | 1.49                                   |
|               | 06/18/12          | 0                                 | 5,000                                |                      |                                       |                                        |
|               | 07/02/12          | 1,500                             | 6,500                                | 13                   | 115                                   | 4.81                                   |
|               | 09/17/12          |                                   | 6,500                                |                      |                                       |                                        |
|               | 10/03/12          | 2,000                             | 8,500                                | 16                   | 125                                   | 5.21                                   |
|               | 10/03/12          | 0                                 | 8,500                                |                      |                                       |                                        |
|               | 10/08/12          | 450                               | 8,500                                |                      |                                       |                                        |
|               | 10/22/12          | 1,250                             | 8,500                                |                      |                                       |                                        |
|               | 11/08/12          | 2,500                             | 11,000                               | 36                   | 69                                    | 2.89                                   |
|               | 11/09/12          |                                   | 11,000                               |                      |                                       |                                        |
|               | 11/19/12          | 400                               | 11,000                               |                      |                                       |                                        |
|               | 12/04/12          | 1,900                             | 11,000                               |                      |                                       |                                        |
|               | 12/05/12          | 2,100                             | 13,100                               | 26                   | 81                                    | 3.37                                   |
|               | 12/05/12          | 0                                 | 13,100                               |                      |                                       |                                        |
|               | 12/18/12          | 1,050                             | 13,100                               |                      |                                       |                                        |
|               | 01/02/13          | 2,000                             | 15,100                               | 28                   | 71                                    | 2.98                                   |
|               | 01/16/13          | 1,200                             | 16,300                               | 14                   | 11                                    | 0.45                                   |
|               | 02/27/13          |                                   | 16,300                               |                      |                                       |                                        |
|               | 03/26/13          | 500                               |                                      |                      |                                       |                                        |
|               |                   |                                   | 16,300                               | 283                  | 58                                    | 2.4                                    |

## **APPENDIX A LABORATORY ANALYSIS**



6701 Aberdeen Avenue, Suite 9      Lubbock, Texas 79424      800-375-1296      806-794-1296      FAX 806-794-1296  
200 East Sunset Road, Suite E      El Paso, Texas 79922      915-585-3443      FAX 915-585-4944  
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(BioAquatic) 2501 Mayes Rd., Suite 100      Carrollton, Texas 75006      972-242-7750  
E-Mail: lab@traceanalysis.com      WEB: www.traceanalysis.com

## Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

# Analytical and Quality Control Report

Jeff Kindley  
Tetra Tech  
1910 N. Big Spring Street  
Midland, TX, 79705

Report Date: February 13, 2013

Work Order: 13020137



Project Location: Challenger  
Project Name: Celero/Rock Queen #1 TB  
Project Number: 114-6401627

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

| Sample | Description | Matrix | Date Taken | Time Taken | Date Received |
|--------|-------------|--------|------------|------------|---------------|
| 320197 | MW-1        | water  | 2013-01-30 | 14:15      | 2013-02-01    |
| 320198 | MW-2        | water  | 2013-01-30 | 14:05      | 2013-02-01    |
| 320199 | MW-3        | water  | 2013-01-30 | 14:30      | 2013-02-01    |
| 320200 | MW-4        | water  | 2013-01-30 | 14:55      | 2013-02-01    |
| 320201 | MW-5        | water  | 2013-01-30 | 14:50      | 2013-02-01    |
| 320202 | MW-6        | water  | 2013-01-30 | 14:20      | 2013-02-01    |
| 320203 | MW-7        | water  | 2013-01-30 | 14:40      | 2013-02-01    |

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

This report consists of a total of 32 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

A handwritten signature in black ink that reads "Michael Abel". The signature is written in a cursive style with a large, stylized 'M' and 'A'.

---

Dr. Blair Leftwich, Director  
Dr. Michael Abel, Project Manager

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|                                     |           |
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## Case Narrative

Samples for project Celero/Rock Queen #1 TB were received by TraceAnalysis, Inc. on 2013-02-01 and assigned to work order 13020137. Samples for work order 13020137 were received intact without headspace and at a temperature of -2.1 C.

Samples were analyzed for the following tests using their respective methods.

| Test          | Method   | Prep<br>Batch | Prep<br>Date        | QC<br>Batch | Analysis<br>Date    |
|---------------|----------|---------------|---------------------|-------------|---------------------|
| BTEX          | S 8021B  | 83715         | 2013-02-08 at 12:00 | 98791       | 2013-02-08 at 12:00 |
| BTEX          | S 8021B  | 83745         | 2013-02-11 at 12:00 | 98837       | 2013-02-11 at 12:00 |
| Chloride (IC) | E 300.0  | 83644         | 2013-02-05 at 09:46 | 98814       | 2013-02-06 at 13:34 |
| Chloride (IC) | E 300.0  | 83644         | 2013-02-05 at 09:46 | 98815       | 2013-02-06 at 13:35 |
| SO4 (IC)      | E 300.0  | 83644         | 2013-02-05 at 09:46 | 98815       | 2013-02-06 at 13:35 |
| SO4 (IC)      | E 300.0  | 83645         | 2013-02-06 at 09:48 | 98819       | 2013-02-06 at 14:14 |
| SO4 (IC)      | E 300.0  | 83645         | 2013-02-06 at 09:48 | 98820       | 2013-02-06 at 14:15 |
| TDS           | SM 2540C | 83642         | 2013-02-05 at 09:17 | 98844       | 2013-02-05 at 16:07 |

Results for these samples are reported on a wet weight basis unless data package indicates otherwise.

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 13020137 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

Report Date: February 13, 2013  
114-6401627

Work Order: 13020137  
Celero/Rock Queen #1 TB

Page Number: 6 of 32  
Challenger

## Analytical Report

### Sample: 320197 - MW-1

Laboratory: Midland  
Analysis: BTEX  
QC Batch: 98837  
Prep Batch: 83745

Analytical Method: S 8021B  
Date Analyzed: 2013-02-11  
Sample Preparation: 2013-02-11

Prep Method: S 5030B  
Analyzed By: YG  
Prepared By: YG

| Parameter    | Flag | Cert | RL<br>Result | Units | Dilution | RL      |
|--------------|------|------|--------------|-------|----------|---------|
| Benzene      | U    | 1    | <0.00100     | mg/L  | 1        | 0.00100 |
| Toluene      | U    | 1    | <0.00100     | mg/L  | 1        | 0.00100 |
| Ethylbenzene | U    | 1    | <0.00100     | mg/L  | 1        | 0.00100 |
| Xylene       | U    | 1    | <0.00100     | mg/L  | 1        | 0.00100 |

| Surrogate                    | Flag                         | Cert            | Result | Units | Dilution | Spike<br>Amount | Percent<br>Recovery | Recovery<br>Limits |
|------------------------------|------------------------------|-----------------|--------|-------|----------|-----------------|---------------------|--------------------|
| Trifluorotoluene (TFT)       |                              |                 | 0.0793 | mg/L  | 1        | 0.100           | 79                  | 75.7 - 109         |
| 4-Bromofluorobenzene (4-BFB) | <sup>1</sup> Q <sub>NT</sub> | Q <sub>NT</sub> | 0.0499 | mg/L  | 1        | 0.100           | 50                  | 68.1 - 109         |

### Sample: 320197 - MW-1

Laboratory: Midland  
Analysis: Chloride (IC)  
QC Batch: 98814  
Prep Batch: 83644

Analytical Method: E 300.0  
Date Analyzed: 2013-02-06  
Sample Preparation: 2013-02-05

Prep Method: N/A  
Analyzed By: AR  
Prepared By: AR

| Parameter | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|-----------|------|------|--------------|-------|----------|------|
| Chloride  |      | 1    | 132000       | mg/L  | 5000     | 2.50 |

### Sample: 320197 - MW-1

Laboratory: Midland  
Analysis: SO<sub>4</sub> (IC)  
QC Batch: 98819  
Prep Batch: 83645

Analytical Method: E 300.0  
Date Analyzed: 2013-02-06  
Sample Preparation: 2013-02-06

Prep Method: N/A  
Analyzed By: AR  
Prepared By: AR

| Parameter | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|-----------|------|------|--------------|-------|----------|------|
| Sulfate   |      | 1    | 1890         | mg/L  | 500      | 2.50 |

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**Sample: 320197 - MW-1**

Laboratory: Midland  
Analysis: TDS  
QC Batch: 98844  
Prep Batch: 83642

Analytical Method: SM 2540C  
Date Analyzed: 2013-02-05  
Sample Preparation: 2013-02-06

Prep Method: N/A  
Analyzed By: AR  
Prepared By: AR

| Parameter              | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|------------------------|------|------|--------------|-------|----------|------|
| Total Dissolved Solids |      | 1    | 217000       | mg/L  | 200      | 10.0 |

**Sample: 320198 - MW-2**

Laboratory: Midland  
Analysis: BTEX  
QC Batch: 98791  
Prep Batch: 83715

Analytical Method: S 8021B  
Date Analyzed: 2013-02-08  
Sample Preparation: 2013-02-08

Prep Method: S 5030B  
Analyzed By: YG  
Prepared By: YG

| Parameter    | Flag | Cert | RL<br>Result | Units | Dilution | RL      |
|--------------|------|------|--------------|-------|----------|---------|
| Benzene      | U    | 1    | <0.00100     | mg/L  | 1        | 0.00100 |
| Toluene      | U    | 1    | <0.00100     | mg/L  | 1        | 0.00100 |
| Ethylbenzene | U    | 1    | <0.00100     | mg/L  | 1        | 0.00100 |
| Xylene       | U    | 1    | <0.00100     | mg/L  | 1        | 0.00100 |

| Surrogate                    | Flag            | Cert            | Result | Units | Dilution | Spike<br>Amount | Percent<br>Recovery | Recovery<br>Limits |
|------------------------------|-----------------|-----------------|--------|-------|----------|-----------------|---------------------|--------------------|
| Trifluorotoluene (TFT)       | Q <sub>ST</sub> | Q <sub>ST</sub> | 0.116  | mg/L  | 1        | 0.100           | 116                 | 75.7 - 109         |
| 4-Bromofluorobenzene (4-BFB) |                 |                 | 0.0987 | mg/L  | 1        | 0.100           | 99                  | 68.1 - 109         |

**Sample: 320198 - MW-2**

Laboratory: Midland  
Analysis: Chloride (IC)  
QC Batch: 98814  
Prep Batch: 83644

Analytical Method: E 300.0  
Date Analyzed: 2013-02-06  
Sample Preparation: 2013-02-05

Prep Method: N/A  
Analyzed By: AR  
Prepared By: AR

| Parameter | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|-----------|------|------|--------------|-------|----------|------|
| Chloride  |      | 1    | 8330         | mg/L  | 1000     | 2.50 |

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**Sample: 320198 - MW-2**

|             |          |                     |            |              |     |
|-------------|----------|---------------------|------------|--------------|-----|
| Laboratory: | Midland  | Analytical Method:  | E 300.0    | Prep Method: | N/A |
| Analysis:   | SO4 (IC) | Date Analyzed:      | 2013-02-06 | Analyzed By: | AR  |
| QC Batch:   | 98819    | Sample Preparation: | 2013-02-06 | Prepared By: | AR  |
| Prep Batch: | 83645    |                     |            |              |     |

| Parameter | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|-----------|------|------|--------------|-------|----------|------|
| Sulfate   |      | 1    | 161          | mg/L  | 10       | 2.50 |

**Sample: 320198 - MW-2**

|             |         |                     |            |              |     |
|-------------|---------|---------------------|------------|--------------|-----|
| Laboratory: | Midland | Analytical Method:  | SM 2540C   | Prep Method: | N/A |
| Analysis:   | TDS     | Date Analyzed:      | 2013-02-05 | Analyzed By: | AR  |
| QC Batch:   | 98844   | Sample Preparation: | 2013-02-06 | Prepared By: | AR  |
| Prep Batch: | 83642   |                     |            |              |     |

| Parameter              | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|------------------------|------|------|--------------|-------|----------|------|
| Total Dissolved Solids |      | 1    | 21400        | mg/L  | 100      | 10.0 |

**Sample: 320199 - MW-3**

|             |         |                     |            |              |         |
|-------------|---------|---------------------|------------|--------------|---------|
| Laboratory: | Midland | Analytical Method:  | S 8021B    | Prep Method: | S 5030B |
| Analysis:   | BTEX    | Date Analyzed:      | 2013-02-08 | Analyzed By: | YG      |
| QC Batch:   | 98791   | Sample Preparation: | 2013-02-08 | Prepared By: | YG      |
| Prep Batch: | 83715   |                     |            |              |         |

| Parameter    | Flag | Cert | RL<br>Result | Units | Dilution | RL      |
|--------------|------|------|--------------|-------|----------|---------|
| Benzene      | U    | 1    | <0.00100     | mg/L  | 1        | 0.00100 |
| Toluene      | U    | 1    | <0.00100     | mg/L  | 1        | 0.00100 |
| Ethylbenzene | U    | 1    | <0.00100     | mg/L  | 1        | 0.00100 |
| Xylene       | U    | 1    | <0.00100     | mg/L  | 1        | 0.00100 |

| Surrogate                    | Flag | Cert | Result | Units | Dilution | Spike<br>Amount | Percent<br>Recovery | Recovery<br>Limits |
|------------------------------|------|------|--------|-------|----------|-----------------|---------------------|--------------------|
| Trifluorotoluene (TFT)       |      |      | 0.102  | mg/L  | 1        | 0.100           | 102                 | 75.7 - 109         |
| 4-Bromofluorobenzene (4-BFB) |      |      | 0.0785 | mg/L  | 1        | 0.100           | 78                  | 68.1 - 109         |

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**Sample: 320199 - MW-3**

|             |               |                     |            |              |     |
|-------------|---------------|---------------------|------------|--------------|-----|
| Laboratory: | Midland       | Analytical Method:  | E 300.0    | Prep Method: | N/A |
| Analysis:   | Chloride (IC) | Date Analyzed:      | 2013-02-06 | Analyzed By: | AR  |
| QC Batch:   | 98814         | Sample Preparation: | 2013-02-05 | Prepared By: | AR  |
| Prep Batch: | 83644         |                     |            |              |     |

| Parameter | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|-----------|------|------|--------------|-------|----------|------|
| Chloride  |      | 1    | <b>60500</b> | mg/L  | 5000     | 2.50 |

**Sample: 320199 - MW-3**

|             |          |                     |            |              |     |
|-------------|----------|---------------------|------------|--------------|-----|
| Laboratory: | Midland  | Analytical Method:  | E 300.0    | Prep Method: | N/A |
| Analysis:   | SO4 (IC) | Date Analyzed:      | 2013-02-06 | Analyzed By: | AR  |
| QC Batch:   | 98820    | Sample Preparation: | 2013-02-06 | Prepared By: | AR  |
| Prep Batch: | 83645    |                     |            |              |     |

| Parameter | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|-----------|------|------|--------------|-------|----------|------|
| Sulfate   |      | 1    | <b>1930</b>  | mg/L  | 500      | 2.50 |

**Sample: 320199 - MW-3**

|             |         |                     |            |              |     |
|-------------|---------|---------------------|------------|--------------|-----|
| Laboratory: | Midland | Analytical Method:  | SM 2540C   | Prep Method: | N/A |
| Analysis:   | TDS     | Date Analyzed:      | 2013-02-05 | Analyzed By: | AR  |
| QC Batch:   | 98844   | Sample Preparation: | 2013-02-06 | Prepared By: | AR  |
| Prep Batch: | 83642   |                     |            |              |     |

| Parameter              | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|------------------------|------|------|--------------|-------|----------|------|
| Total Dissolved Solids |      | 1    | <b>91600</b> | mg/L  | 200      | 10.0 |

**Sample: 320200 - MW-4**

|             |         |                     |            |              |         |
|-------------|---------|---------------------|------------|--------------|---------|
| Laboratory: | Midland | Analytical Method:  | S 8021B    | Prep Method: | S 5030B |
| Analysis:   | BTEX    | Date Analyzed:      | 2013-02-08 | Analyzed By: | YG      |
| QC Batch:   | 98791   | Sample Preparation: | 2013-02-08 | Prepared By: | YG      |
| Prep Batch: | 83715   |                     |            |              |         |

*continued ...*

sample 320200 continued ...

| Parameter    | Flag | Cert | RL<br>Result | Units | Dilution | RL      |
|--------------|------|------|--------------|-------|----------|---------|
| Parameter    | Flag | Cert | RL<br>Result | Units | Dilution | RL      |
| Benzene      | U    | 1    | <0.00100     | mg/L  | 1        | 0.00100 |
| Toluene      | U    | 1    | <0.00100     | mg/L  | 1        | 0.00100 |
| Ethylbenzene | U    | 1    | <0.00100     | mg/L  | 1        | 0.00100 |
| Xylene       | U    | 1    | <0.00100     | mg/L  | 1        | 0.00100 |

| Surrogate                    | Flag            | Cert            | Result | Units | Dilution | Spike<br>Amount | Percent<br>Recovery | Recovery<br>Limits |
|------------------------------|-----------------|-----------------|--------|-------|----------|-----------------|---------------------|--------------------|
| Trifluorotoluene (TFT)       | Q <sub>sr</sub> | Q <sub>sr</sub> | 0.115  | mg/L  | 1        | 0.100           | 115                 | 75.7 - 109         |
| 4-Bromofluorobenzene (4-BFB) |                 |                 | 0.0995 | mg/L  | 1        | 0.100           | 100                 | 68.1 - 109         |

**Sample: 320200 - MW-4**

|                         |                                |                  |
|-------------------------|--------------------------------|------------------|
| Laboratory: Midland     | Analytical Method: E 300.0     | Prep Method: N/A |
| Analysis: Chloride (IC) | Date Analyzed: 2013-02-06      | Analyzed By: AR  |
| QC Batch: 98814         | Sample Preparation: 2013-02-05 | Prepared By: AR  |
| Prep Batch: 83644       |                                |                  |

| Parameter | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|-----------|------|------|--------------|-------|----------|------|
| Chloride  |      | 1    | <b>7960</b>  | mg/L  | 1000     | 2.50 |

**Sample: 320200 - MW-4**

|                     |                                |                  |
|---------------------|--------------------------------|------------------|
| Laboratory: Midland | Analytical Method: E 300.0     | Prep Method: N/A |
| Analysis: SO4 (IC)  | Date Analyzed: 2013-02-06      | Analyzed By: AR  |
| QC Batch: 98820     | Sample Preparation: 2013-02-06 | Prepared By: AR  |
| Prep Batch: 83645   |                                |                  |

| Parameter | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|-----------|------|------|--------------|-------|----------|------|
| Sulfate   |      | 1    | <b>215</b>   | mg/L  | 10       | 2.50 |

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**Sample: 320200 - MW-4**

Laboratory: Midland

Analysis: TDS

QC Batch: 98844

Prep Batch: 83642

Analytical Method: SM 2540C

Date Analyzed: 2013-02-05

Sample Preparation: 2013-02-06

Prep Method: N/A

Analyzed By: AR

Prepared By: AR

| Parameter              | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|------------------------|------|------|--------------|-------|----------|------|
| Total Dissolved Solids |      | 1    | 12600        | mg/L  | 100      | 10.0 |

**Sample: 320201 - MW-5**

Laboratory: Midland

Analysis: BTEX

QC Batch: 98791

Prep Batch: 83715

Analytical Method: S 8021B

Date Analyzed: 2013-02-08

Sample Preparation: 2013-02-08

Prep Method: S 5030B

Analyzed By: YG

Prepared By: YG

| Parameter    | Flag | Cert | RL<br>Result | Units | Dilution | RL      |
|--------------|------|------|--------------|-------|----------|---------|
| Benzene      | U    | 1    | <0.00100     | mg/L  | 1        | 0.00100 |
| Toluene      | U    | 1    | <0.00100     | mg/L  | 1        | 0.00100 |
| Ethylbenzene | U    | 1    | <0.00100     | mg/L  | 1        | 0.00100 |
| Xylene       | U    | 1    | <0.00100     | mg/L  | 1        | 0.00100 |

| Surrogate                    | Flag | Cert | Result | Units | Dilution | Spike<br>Amount | Percent<br>Recovery | Recovery<br>Limits |
|------------------------------|------|------|--------|-------|----------|-----------------|---------------------|--------------------|
| Trifluorotoluene (TFT)       | Qsr  | Qsr  | 0.115  | mg/L  | 1        | 0.100           | 115                 | 75.7 - 109         |
| 4-Bromofluorobenzene (4-BFB) |      |      | 0.0988 | mg/L  | 1        | 0.100           | 99                  | 68.1 - 109         |

**Sample: 320201 - MW-5**

Laboratory: Midland

Analysis: Chloride (IC)

QC Batch: 98815

Prep Batch: 83644

Analytical Method: E 300.0

Date Analyzed: 2013-02-06

Sample Preparation: 2013-02-05

Prep Method: N/A

Analyzed By: AR

Prepared By: AR

| Parameter | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|-----------|------|------|--------------|-------|----------|------|
| Chloride  |      | 1    | 72.6         | mg/L  | 5        | 2.50 |

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**Sample: 320201 - MW-5**

Laboratory: Midland  
Analysis: SO4 (IC)  
QC Batch: 98815  
Prep Batch: 83644

Analytical Method: E 300.0  
Date Analyzed: 2013-02-06  
Sample Preparation: 2013-02-05

Prep Method: N/A  
Analyzed By: AR  
Prepared By: AR

| Parameter | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|-----------|------|------|--------------|-------|----------|------|
| Sulfate   |      | 1    | 142          | mg/L  | 5        | 2.50 |

**Sample: 320201 - MW-5**

Laboratory: Midland  
Analysis: TDS  
QC Batch: 98844  
Prep Batch: 83642

Analytical Method: SM 2540C  
Date Analyzed: 2013-02-05  
Sample Preparation: 2013-02-06

Prep Method: N/A  
Analyzed By: AR  
Prepared By: AR

| Parameter              | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|------------------------|------|------|--------------|-------|----------|------|
| Total Dissolved Solids |      | 1    | 528          | mg/L  | 2        | 10.0 |

**Sample: 320202 - MW-6**

Laboratory: Midland  
Analysis: BTEX  
QC Batch: 98837  
Prep Batch: 83745

Analytical Method: S 8021B  
Date Analyzed: 2013-02-11  
Sample Preparation: 2013-02-11

Prep Method: S 5030B  
Analyzed By: YG  
Prepared By: YG

| Parameter    | Flag | Cert | RL<br>Result | Units | Dilution | RL      |
|--------------|------|------|--------------|-------|----------|---------|
| Benzene      | U    | 1    | <0.00100     | mg/L  | 1        | 0.00100 |
| Toluene      | U    | 1    | <0.00100     | mg/L  | 1        | 0.00100 |
| Ethylbenzene | U    | 1    | <0.00100     | mg/L  | 1        | 0.00100 |
| Xylene       | U    | 1    | <0.00100     | mg/L  | 1        | 0.00100 |

| Surrogate                    | Flag             | Cert | Result | Units | Dilution | Spike<br>Amount | Percent<br>Recovery | Recovery<br>Limits |
|------------------------------|------------------|------|--------|-------|----------|-----------------|---------------------|--------------------|
| Trifluorotoluene (TFT)       |                  |      | 0.0864 | mg/L  | 1        | 0.100           | 86                  | 75.7 - 109         |
| 4-Bromofluorobenzene (4-BFB) | 2 <sub>Qsr</sub> | Qsr  | 0.0625 | mg/L  | 1        | 0.100           | 62                  | 68.1 - 109         |

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**Sample: 320202 - MW-6**

|             |               |                     |            |              |     |
|-------------|---------------|---------------------|------------|--------------|-----|
| Laboratory: | Midland       | Analytical Method:  | E 300.0    | Prep Method: | N/A |
| Analysis:   | Chloride (IC) | Date Analyzed:      | 2013-02-06 | Analyzed By: | AR  |
| QC Batch:   | 98815         | Sample Preparation: | 2013-02-05 | Prepared By: | AR  |
| Prep Batch: | 83644         |                     |            |              |     |

| Parameter | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|-----------|------|------|--------------|-------|----------|------|
| Chloride  |      | 1    | <b>97800</b> | mg/L  | 5000     | 2.50 |

**Sample: 320202 - MW-6**

|             |          |                     |            |              |     |
|-------------|----------|---------------------|------------|--------------|-----|
| Laboratory: | Midland  | Analytical Method:  | E 300.0    | Prep Method: | N/A |
| Analysis:   | SO4 (IC) | Date Analyzed:      | 2013-02-06 | Analyzed By: | AR  |
| QC Batch:   | 98820    | Sample Preparation: | 2013-02-06 | Prepared By: | AR  |
| Prep Batch: | 83645    |                     |            |              |     |

| Parameter | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|-----------|------|------|--------------|-------|----------|------|
| Sulfate   |      | 1    | <b>2480</b>  | mg/L  | 500      | 2.50 |

**Sample: 320202 - MW-6**

|             |         |                     |            |              |     |
|-------------|---------|---------------------|------------|--------------|-----|
| Laboratory: | Midland | Analytical Method:  | SM 2540C   | Prep Method: | N/A |
| Analysis:   | TDS     | Date Analyzed:      | 2013-02-05 | Analyzed By: | AR  |
| QC Batch:   | 98844   | Sample Preparation: | 2013-02-06 | Prepared By: | AR  |
| Prep Batch: | 83642   |                     |            |              |     |

| Parameter              | Flag | Cert | RL<br>Result  | Units | Dilution | RL   |
|------------------------|------|------|---------------|-------|----------|------|
| Total Dissolved Solids |      | 1    | <b>152000</b> | mg/L  | 200      | 10.0 |

**Sample: 320203 - MW-7**

|             |         |                     |            |              |         |
|-------------|---------|---------------------|------------|--------------|---------|
| Laboratory: | Midland | Analytical Method:  | S 8021B    | Prep Method: | S 5030B |
| Analysis:   | BTEX    | Date Analyzed:      | 2013-02-11 | Analyzed By: | YG      |
| QC Batch:   | 98837   | Sample Preparation: | 2013-02-11 | Prepared By: | YG      |
| Prep Batch: | 83745   |                     |            |              |         |

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| Parameter    | Flag | Cert | RL<br>Result | Units | Dilution | RL      |
|--------------|------|------|--------------|-------|----------|---------|
| Parameter    | Flag | Cert | RL<br>Result | Units | Dilution | RL      |
| Benzene      | U    | 1    | <0.00100     | mg/L  | 1        | 0.00100 |
| Toluene      | U    | 1    | <0.00100     | mg/L  | 1        | 0.00100 |
| Ethylbenzene | U    | 1    | <0.00100     | mg/L  | 1        | 0.00100 |
| Xylene       | U    | 1    | <0.00100     | mg/L  | 1        | 0.00100 |

| Surrogate                    | Flag                         | Cert            | Result | Units | Dilution | Spike<br>Amount | Percent<br>Recovery | Recovery<br>Limits |
|------------------------------|------------------------------|-----------------|--------|-------|----------|-----------------|---------------------|--------------------|
| Trifluorotoluene (TFT)       |                              |                 | 0.0836 | mg/L  | 1        | 0.100           | 84                  | 75.7 - 109         |
| 4-Bromofluorobenzene (4-BFB) | <sup>3</sup> Q <sub>SR</sub> | Q <sub>SR</sub> | 0.0590 | mg/L  | 1        | 0.100           | 59                  | 68.1 - 109         |

**Sample: 320203 - MW-7**

Laboratory: Midland  
Analysis: Chloride (IC)  
QC Batch: 98815  
Prep Batch: 83644

Analytical Method: E 300.0  
Date Analyzed: 2013-02-06  
Sample Preparation: 2013-02-05

Prep Method: N/A  
Analyzed By: AR  
Prepared By: AR

| Parameter | Flag | Cert | RL<br>Result  | Units | Dilution | RL   |
|-----------|------|------|---------------|-------|----------|------|
| Chloride  |      | 1    | <b>111000</b> | mg/L  | 5000     | 2.50 |

**Sample: 320203 - MW-7**

Laboratory: Midland  
Analysis: SO4 (IC)  
QC Batch: 98820  
Prep Batch: 83645

Analytical Method: E 300.0  
Date Analyzed: 2013-02-06  
Sample Preparation: 2013-02-06

Prep Method: N/A  
Analyzed By: AR  
Prepared By: AR

| Parameter | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|-----------|------|------|--------------|-------|----------|------|
| Sulfate   |      | 1    | <b>2280</b>  | mg/L  | 500      | 2.50 |

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**Sample: 320203 - MW-7**

Laboratory: Midland

Analysis: TDS

QC Batch: 98844

Prep Batch: 83642

Analytical Method: SM 2540C

Date Analyzed: 2013-02-05

Sample Preparation: 2013-02-06

Prep Method: N/A

Analyzed By: AR

Prepared By: AR

| Parameter              | Flag | Cert | RL<br>Result  | Units | Dilution | RL   |
|------------------------|------|------|---------------|-------|----------|------|
| Total Dissolved Solids |      | 1    | <b>179000</b> | mg/L  | 200      | 10.0 |

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## Method Blanks

### Method Blank (1) QC Batch: 98791

QC Batch: 98791 Date Analyzed: 2013-02-08 Analyzed By: YG  
Prep Batch: 83715 QC Preparation: 2013-02-08 Prepared By: YG

| Parameter    | Flag | Cert | MDL<br>Result | Units | RL    |
|--------------|------|------|---------------|-------|-------|
| Benzene      |      | 1    | <0.000200     | mg/L  | 0.001 |
| Toluene      |      | 1    | <0.000300     | mg/L  | 0.001 |
| Ethylbenzene |      | 1    | <0.000400     | mg/L  | 0.001 |
| Xylene       |      | 1    | <0.00120      | mg/L  | 0.001 |

| Surrogate                    | Flag            | Cert            | Result | Units | Dilution | Spike<br>Amount | Percent<br>Recovery | Recovery<br>Limits |
|------------------------------|-----------------|-----------------|--------|-------|----------|-----------------|---------------------|--------------------|
| Trifluorotoluene (TFT)       | Q <sub>sr</sub> | Q <sub>sr</sub> | 0.116  | mg/L  | 1        | 0.100           | 116                 | 75.7 - 109         |
| 4-Bromofluorobenzene (4-BFB) |                 |                 | 0.0990 | mg/L  | 1        | 0.100           | 99                  | 68.1 - 109         |

### Method Blank (1) QC Batch: 98814

QC Batch: 98814 Date Analyzed: 2013-02-06 Analyzed By: AR  
Prep Batch: 83644 QC Preparation: 2013-02-05 Prepared By: AR

| Parameter | Flag | Cert | MDL<br>Result | Units | RL  |
|-----------|------|------|---------------|-------|-----|
| Chloride  |      | 1    | <0.265        | mg/L  | 2.5 |

### Method Blank (1) QC Batch: 98815

QC Batch: 98815 Date Analyzed: 2013-02-06 Analyzed By: AR  
Prep Batch: 83644 QC Preparation: 2013-02-05 Prepared By: AR

| Parameter | Flag | Cert | MDL<br>Result | Units | RL  |
|-----------|------|------|---------------|-------|-----|
| Chloride  |      | 1    | 1.03          | mg/L  | 2.5 |

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**Method Blank (1)**      QC Batch: 98815

QC Batch: 98815      Date Analyzed: 2013-02-06      Analyzed By: AR  
Prep Batch: 83644      QC Preparation: 2013-02-05      Prepared By: AR

| Parameter | Flag | Cert | MDL<br>Result | Units | RL  |
|-----------|------|------|---------------|-------|-----|
| Sulfate   |      | 1    | <0.177        | mg/L  | 2.5 |

**Method Blank (1)**      QC Batch: 98819

QC Batch: 98819      Date Analyzed: 2013-02-06      Analyzed By: AR  
Prep Batch: 83645      QC Preparation: 2013-02-06      Prepared By: AR

| Parameter | Flag | Cert | MDL<br>Result | Units | RL  |
|-----------|------|------|---------------|-------|-----|
| Sulfate   |      | 1    | <0.177        | mg/L  | 2.5 |

**Method Blank (1)**      QC Batch: 98820

QC Batch: 98820      Date Analyzed: 2013-02-06      Analyzed By: AR  
Prep Batch: 83645      QC Preparation: 2013-02-06      Prepared By: AR

| Parameter | Flag | Cert | MDL<br>Result | Units | RL  |
|-----------|------|------|---------------|-------|-----|
| Sulfate   |      | 1    | <0.177        | mg/L  | 2.5 |

**Method Blank (1)**      QC Batch: 98837

QC Batch: 98837      Date Analyzed: 2013-02-11      Analyzed By: YG  
Prep Batch: 83745      QC Preparation: 2013-02-11      Prepared By: YG

| Parameter    | Flag | Cert | MDL<br>Result | Units | RL    |
|--------------|------|------|---------------|-------|-------|
| Benzene      |      | 1    | <0.000200     | mg/L  | 0.001 |
| Toluene      |      | 1    | <0.000300     | mg/L  | 0.001 |
| Ethylbenzene |      | 1    | <0.000400     | mg/L  | 0.001 |
| Xylene       |      | 1    | <0.00120      | mg/L  | 0.001 |

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| Surrogate                    | Flag            | Cert            | Result | Units | Dilution | Spike Amount | Percent Recovery | Recovery Limits |
|------------------------------|-----------------|-----------------|--------|-------|----------|--------------|------------------|-----------------|
| Trifluorotoluene (TFT)       | Q <sub>sr</sub> | Q <sub>sr</sub> | 0.120  | mg/L  | 1        | 0.100        | 120              | 75.7 - 109      |
| 4-Bromofluorobenzene (4-BFB) |                 |                 | 0.103  | mg/L  | 1        | 0.100        | 103              | 68.1 - 109      |

**Method Blank (1)**      QC Batch: 98844

QC Batch: 98844  
Prep Batch: 83642

Date Analyzed: 2013-02-05  
QC Preparation: 2013-02-05

Analyzed By: AR  
Prepared By: AR

| Parameter              | Flag | Cert | MDL Result | Units | RL |
|------------------------|------|------|------------|-------|----|
| Total Dissolved Solids |      | 1    | <9.75      | mg/L  | 10 |

**Duplicates (1)**      Duplicated Sample: 320196

QC Batch: 98844  
Prep Batch: 83642

Date Analyzed: 2013-02-05  
QC Preparation: 2013-02-05

Analyzed By: AR  
Prepared By: AR

| Param                  |   | Duplicate Result | Sample Result | Units | Dilution | RPD | RPD Limit |
|------------------------|---|------------------|---------------|-------|----------|-----|-----------|
| Total Dissolved Solids | 1 | 45000            | 49200         | mg/L  | 200      | 9   | 10        |

## Laboratory Control Spikes

### Laboratory Control Spike (LCS-1)

QC Batch: 98791  
Prep Batch: 83715

Date Analyzed: 2013-02-08  
QC Preparation: 2013-02-08

Analyzed By: YG  
Prepared By: YG

| Param        | F | C | LCS<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit |
|--------------|---|---|---------------|-------|------|-----------------|------------------|------|---------------|
| Benzene      |   | 1 | 0.107         | mg/L  | 1    | 0.100           | <0.000200        | 107  | 80 - 120      |
| Toluene      |   | 1 | 0.108         | mg/L  | 1    | 0.100           | <0.000300        | 108  | 80 - 120      |
| Ethylbenzene |   | 1 | 0.112         | mg/L  | 1    | 0.100           | <0.000400        | 112  | 70.6 - 120    |
| Xylene       |   | 1 | 0.346         | mg/L  | 1    | 0.300           | <0.00120         | 115  | 79.2 - 120    |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

| Param        | F | C | LCS<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit | RPD | RPD<br>Limit |
|--------------|---|---|---------------|-------|------|-----------------|------------------|------|---------------|-----|--------------|
| Benzene      |   | 1 | 0.105         | mg/L  | 1    | 0.100           | <0.000200        | 105  | 80 - 120      | 2   | 20           |
| Toluene      |   | 1 | 0.106         | mg/L  | 1    | 0.100           | <0.000300        | 106  | 80 - 120      | 2   | 20           |
| Ethylbenzene |   | 1 | 0.110         | mg/L  | 1    | 0.100           | <0.000400        | 110  | 70.6 - 120    | 2   | 20           |
| Xylene       |   | 1 | 0.340         | mg/L  | 1    | 0.300           | <0.00120         | 113  | 79.2 - 120    | 2   | 20           |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

| Surrogate                    |                 |                 | LCS<br>Result | LCS<br>Result | Units | Dil. | Spike<br>Amount | LCS<br>Rec. | LCS<br>Rec. | Rec.<br>Limit |
|------------------------------|-----------------|-----------------|---------------|---------------|-------|------|-----------------|-------------|-------------|---------------|
| Trifluorotoluene (TFT)       | Q <sub>sr</sub> | Q <sub>sr</sub> | 0.116         | 0.116         | mg/L  | 1    | 0.100           | 116         | 116         | 75.7 - 109    |
| 4-Bromofluorobenzene (4-BFB) |                 |                 | 0.104         | 0.102         | mg/L  | 1    | 0.100           | 104         | 102         | 68.1 - 109    |

### Laboratory Control Spike (LCS-1)

QC Batch: 98814  
Prep Batch: 83644

Date Analyzed: 2013-02-06  
QC Preparation: 2013-02-05

Analyzed By: AR  
Prepared By: AR

| Param    | F | C | LCS<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit |
|----------|---|---|---------------|-------|------|-----------------|------------------|------|---------------|
| Chloride |   | 1 | 23.7          | mg/L  | 1    | 25.0            | <0.265           | 95   | 90 - 110      |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

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| Param    | F | C | LCSD<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit | RPD | RPD<br>Limit |
|----------|---|---|----------------|-------|------|-----------------|------------------|------|---------------|-----|--------------|
| Param    | F | C | LCSD<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit | RPD | RPD<br>Limit |
| Chloride |   | 1 | 23.9           | mg/L  | 1    | 25.0            | <0.265           | 96   | 90 - 110      | 1   | 20           |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

#### Laboratory Control Spike (LCS-1)

QC Batch: 98815  
Prep Batch: 83644

Date Analyzed: 2013-02-06  
QC Preparation: 2013-02-05

Analyzed By: AR  
Prepared By: AR

| Param    | F | C | LCS<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit |
|----------|---|---|---------------|-------|------|-----------------|------------------|------|---------------|
| Chloride |   | 1 | 24.2          | mg/L  | 1    | 25.0            | <0.265           | 97   | 90 - 110      |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

| Param    | F | C | LCSD<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit | RPD | RPD<br>Limit |
|----------|---|---|----------------|-------|------|-----------------|------------------|------|---------------|-----|--------------|
| Chloride |   | 1 | 23.7           | mg/L  | 1    | 25.0            | <0.265           | 95   | 90 - 110      | 2   | 20           |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

#### Laboratory Control Spike (LCS-1)

QC Batch: 98815  
Prep Batch: 83644

Date Analyzed: 2013-02-06  
QC Preparation: 2013-02-05

Analyzed By: AR  
Prepared By: AR

| Param   | F | C | LCS<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit |
|---------|---|---|---------------|-------|------|-----------------|------------------|------|---------------|
| Sulfate |   | 1 | 25.5          | mg/L  | 1    | 25.0            | <0.177           | 102  | 90 - 110      |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

| Param   | F | C | LCSD<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit | RPD | RPD<br>Limit |
|---------|---|---|----------------|-------|------|-----------------|------------------|------|---------------|-----|--------------|
| Sulfate |   | 1 | 25.7           | mg/L  | 1    | 25.0            | <0.177           | 103  | 90 - 110      | 1   | 20           |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

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#### Laboratory Control Spike (LCS-1)

QC Batch: 98819  
Prep Batch: 83645

Date Analyzed: 2013-02-06  
QC Preparation: 2013-02-06

Analyzed By: AR  
Prepared By: AR

| Param   | F | C | LCS<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit |
|---------|---|---|---------------|-------|------|-----------------|------------------|------|---------------|
| Sulfate |   | 1 | 25.8          | mg/L  | 1    | 25.0            | <0.177           | 103  | 90 - 110      |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

| Param   | F | C | LCSD<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit | RPD | RPD<br>Limit |
|---------|---|---|----------------|-------|------|-----------------|------------------|------|---------------|-----|--------------|
| Sulfate |   | 1 | 25.5           | mg/L  | 1    | 25.0            | <0.177           | 102  | 90 - 110      | 1   | 20           |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

#### Laboratory Control Spike (LCS-1)

QC Batch: 98820  
Prep Batch: 83645

Date Analyzed: 2013-02-06  
QC Preparation: 2013-02-06

Analyzed By: AR  
Prepared By: AR

| Param   | F | C | LCS<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit |
|---------|---|---|---------------|-------|------|-----------------|------------------|------|---------------|
| Sulfate |   | 1 | 25.6          | mg/L  | 1    | 25.0            | <0.177           | 102  | 90 - 110      |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

| Param   | F | C | LCSD<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit | RPD | RPD<br>Limit |
|---------|---|---|----------------|-------|------|-----------------|------------------|------|---------------|-----|--------------|
| Sulfate |   | 1 | 25.8           | mg/L  | 1    | 25.0            | <0.177           | 103  | 90 - 110      | 1   | 20           |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

#### Laboratory Control Spike (LCS-1)

QC Batch: 98837  
Prep Batch: 83745

Date Analyzed: 2013-02-11  
QC Preparation: 2013-02-11

Analyzed By: YG  
Prepared By: YG

| Param        | F | C | LCS<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit |
|--------------|---|---|---------------|-------|------|-----------------|------------------|------|---------------|
| Benzene      |   | 1 | 0.108         | mg/L  | 1    | 0.100           | <0.000200        | 108  | 80 - 120      |
| Toluene      |   | 1 | 0.109         | mg/L  | 1    | 0.100           | <0.000300        | 109  | 80 - 120      |
| Ethylbenzene |   | 1 | 0.113         | mg/L  | 1    | 0.100           | <0.000400        | 113  | 70.6 - 120    |

*continued ...*

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| Param  | F | C | LCS<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit |
|--------|---|---|---------------|-------|------|-----------------|------------------|------|---------------|
| Xylene |   | 1 | 0.349         | mg/L  | 1    | 0.300           | <0.00120         | 116  | 79.2 - 120    |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

| Param        | F | C | LCSD<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit | RPD | RPD<br>Limit |
|--------------|---|---|----------------|-------|------|-----------------|------------------|------|---------------|-----|--------------|
| Benzene      | 1 |   | 0.106          | mg/L  | 1    | 0.100           | <0.000200        | 106  | 80 - 120      | 2   | 20           |
| Toluene      | 1 |   | 0.108          | mg/L  | 1    | 0.100           | <0.000300        | 108  | 80 - 120      | 1   | 20           |
| Ethylbenzene | 1 |   | 0.112          | mg/L  | 1    | 0.100           | <0.000400        | 112  | 70.6 - 120    | 1   | 20           |
| Xylene       | 1 |   | 0.345          | mg/L  | 1    | 0.300           | <0.00120         | 115  | 79.2 - 120    | 1   | 20           |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

| Surrogate                    |                 |                 | LCS<br>Result | LCSD<br>Result | Units | Dil. | Spike<br>Amount | LCS<br>Rec. | LCSD<br>Rec. | Rec.<br>Limit |
|------------------------------|-----------------|-----------------|---------------|----------------|-------|------|-----------------|-------------|--------------|---------------|
| Trifluorotoluene (TFT)       | Q <sub>sr</sub> | Q <sub>sr</sub> | 0.119         | 0.119          | mg/L  | 1    | 0.100           | 119         | 119          | 75.7 - 109    |
| 4-Bromofluorobenzene (4-BFB) |                 |                 | 0.106         | 0.106          | mg/L  | 1    | 0.100           | 106         | 106          | 68.1 - 109    |

### Laboratory Control Spike (LCS-1)

QC Batch: 98844  
Prep Batch: 83642

Date Analyzed: 2013-02-05  
QC Preparation: 2013-02-05

Analyzed By: AR  
Prepared By: AR

| Param                  | F | C | LCS<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit |
|------------------------|---|---|---------------|-------|------|-----------------|------------------|------|---------------|
| Total Dissolved Solids |   | 1 | 998           | mg/L  | 1    | 1000            | <9.75            | 100  | 90 - 110      |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

| Param                  | F | C | LCSD<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit | RPD | RPD<br>Limit |
|------------------------|---|---|----------------|-------|------|-----------------|------------------|------|---------------|-----|--------------|
| Total Dissolved Solids |   | 1 | 970            | mg/L  | 1    | 1000            | <9.75            | 97   | 90 - 110      | 3   | 10           |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

### Matrix Spike (MS-1) Spiked Sample: 320204

QC Batch: 98791  
Prep Batch: 83715

Date Analyzed: 2013-02-08  
QC Preparation: 2013-02-08

Analyzed By: YG  
Prepared By: YG

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| Param        | F | C | MS<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit |
|--------------|---|---|--------------|-------|------|-----------------|------------------|------|---------------|
| Benzene      |   | 1 | 0.106        | mg/L  | 1    | 0.100           | 0.0045           | 102  | 25.7 - 139    |
| Toluene      |   | 1 | 0.0953       | mg/L  | 1    | 0.100           | <0.000300        | 95   | 32.7 - 134    |
| Ethylbenzene |   | 1 | 0.0906       | mg/L  | 1    | 0.100           | <0.000400        | 91   | 45.9 - 120    |
| Xylene       |   | 1 | 0.302        | mg/L  | 1    | 0.300           | <0.00120         | 101  | 34.9 - 128    |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

| Param        | F | C | MSD<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit | RPD | RPD<br>Limit |
|--------------|---|---|---------------|-------|------|-----------------|------------------|------|---------------|-----|--------------|
| Benzene      |   | 1 | 0.110         | mg/L  | 1    | 0.100           | 0.0045           | 106  | 25.7 - 139    | 4   | 20           |
| Toluene      |   | 1 | 0.0970        | mg/L  | 1    | 0.100           | <0.000300        | 97   | 32.7 - 134    | 2   | 20           |
| Ethylbenzene |   | 1 | 0.0921        | mg/L  | 1    | 0.100           | <0.000400        | 92   | 45.9 - 120    | 2   | 20           |
| Xylene       |   | 1 | 0.306         | mg/L  | 1    | 0.300           | <0.00120         | 102  | 34.9 - 128    | 1   | 20           |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

| Surrogate                    |                 |                 | MS<br>Result | MSD<br>Result | Units | Dil. | Spike<br>Amount | MS<br>Rec. | MSD<br>Rec. | Rec.<br>Limit |
|------------------------------|-----------------|-----------------|--------------|---------------|-------|------|-----------------|------------|-------------|---------------|
| Trifluorotoluene (TFT)       | Q <sub>sr</sub> | Q <sub>sr</sub> | 0.215        | 0.215         | mg/L  | 1    | 0.1             | 215        | 215         | 75.7 - 109    |
| 4-Bromofluorobenzene (4-BFB) |                 |                 | 0.0800       | 0.0810        | mg/L  | 1    | 0.1             | 80         | 81          | 68.1 - 109    |

**Matrix Spike (MS-1)** Spiked Sample: 320198

QC Batch: 98814  
Prep Batch: 83644

Date Analyzed: 2013-02-06  
QC Preparation: 2013-02-05

Analyzed By: AR  
Prepared By: AR

| Param    | F | C | MS<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit |
|----------|---|---|--------------|-------|------|-----------------|------------------|------|---------------|
| Chloride |   | 1 | 39800        | mg/L  | 1000 | 30000           | 8330             | 105  | 80 - 120      |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

| Param    | F | C | MSD<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit | RPD | RPD<br>Limit |
|----------|---|---|---------------|-------|------|-----------------|------------------|------|---------------|-----|--------------|
| Chloride |   | 1 | 39800         | mg/L  | 1000 | 30000           | 8330             | 105  | 80 - 120      | 0   | 20           |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

**Matrix Spike (MS-1)** Spiked Sample: 320201

QC Batch: 98815  
Prep Batch: 83644

Date Analyzed: 2013-02-06  
QC Preparation: 2013-02-05

Analyzed By: AR  
Prepared By: AR

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| Param    | F | C | MS<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit |
|----------|---|---|--------------|-------|------|-----------------|------------------|------|---------------|
| Chloride |   | 1 | 240          | mg/L  | 5    | 150             | 72.6             | 112  | 80 - 120      |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

| Param    | F | C | MSD<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit | RPD | RPD<br>Limit |
|----------|---|---|---------------|-------|------|-----------------|------------------|------|---------------|-----|--------------|
| Chloride |   | 1 | 240           | mg/L  | 5    | 150             | 72.6             | 112  | 80 - 120      | 0   | 20           |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

**Matrix Spike (MS-1)** Spiked Sample: 320201

QC Batch: 98815  
Prep Batch: 83644

Date Analyzed: 2013-02-06  
QC Preparation: 2013-02-05

Analyzed By: AR  
Prepared By: AR

| Param   | F | C | MS<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit |
|---------|---|---|--------------|-------|------|-----------------|------------------|------|---------------|
| Sulfate |   | 1 | 278          | mg/L  | 5    | 150             | 142              | 91   | 80 - 120      |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

| Param   | F | C | MSD<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit | RPD | RPD<br>Limit |
|---------|---|---|---------------|-------|------|-----------------|------------------|------|---------------|-----|--------------|
| Sulfate |   | 1 | 277           | mg/L  | 5    | 150             | 142              | 90   | 80 - 120      | 0   | 20           |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

**Matrix Spike (MS-1)** Spiked Sample: 320206

QC Batch: 98819  
Prep Batch: 83645

Date Analyzed: 2013-02-06  
QC Preparation: 2013-02-06

Analyzed By: AR  
Prepared By: AR

| Param   | F | C | MS<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit |
|---------|---|---|--------------|-------|------|-----------------|------------------|------|---------------|
| Sulfate |   | 1 | 15600        | mg/L  | 500  | 15000           | <88.5            | 104  | 80 - 120      |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

| Param   | F | C | MSD<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit | RPD | RPD<br>Limit |
|---------|---|---|---------------|-------|------|-----------------|------------------|------|---------------|-----|--------------|
| Sulfate |   | 1 | 15500         | mg/L  | 500  | 15000           | <88.5            | 103  | 80 - 120      | 1   | 20           |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

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**Matrix Spike (MS-1)** Spiked Sample: 320207

QC Batch: 98820  
Prep Batch: 83645

Date Analyzed: 2013-02-06  
QC Preparation: 2013-02-06

Analyzed By: AR  
Prepared By: AR

| Param   | F | C | MS<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit |
|---------|---|---|--------------|-------|------|-----------------|------------------|------|---------------|
| Sulfate |   | 1 | 15600        | mg/L  | 500  | 15000           | <88.5            | 104  | 80 - 120      |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

| Param   | F | C | MSD<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit | RPD | RPD<br>Limit |
|---------|---|---|---------------|-------|------|-----------------|------------------|------|---------------|-----|--------------|
| Sulfate |   | 1 | 15600         | mg/L  | 500  | 15000           | <88.5            | 104  | 80 - 120      | 0   | 20           |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

**Matrix Spike (MS-1)** Spiked Sample: 320217

QC Batch: 98837  
Prep Batch: 83745

Date Analyzed: 2013-02-11  
QC Preparation: 2013-02-11

Analyzed By: YG  
Prepared By: YG

| Param        | F | C | MS<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit |
|--------------|---|---|--------------|-------|------|-----------------|------------------|------|---------------|
| Benzene      |   | 1 | 0.107        | mg/L  | 1    | 0.100           | <0.000200        | 107  | 25.7 - 139    |
| Toluene      |   | 1 | 0.108        | mg/L  | 1    | 0.100           | <0.000300        | 108  | 32.7 - 134    |
| Ethylbenzene |   | 1 | 0.113        | mg/L  | 1    | 0.100           | <0.000400        | 113  | 45.9 - 120    |
| Xylene       |   | 1 | 0.346        | mg/L  | 1    | 0.300           | <0.00120         | 115  | 34.9 - 128    |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

| Param        | F | C | MSD<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit | RPD | RPD<br>Limit |
|--------------|---|---|---------------|-------|------|-----------------|------------------|------|---------------|-----|--------------|
| Benzene      |   | 1 | 0.108         | mg/L  | 1    | 0.100           | <0.000200        | 108  | 25.7 - 139    | 1   | 20           |
| Toluene      |   | 1 | 0.109         | mg/L  | 1    | 0.100           | <0.000300        | 109  | 32.7 - 134    | 1   | 20           |
| Ethylbenzene |   | 1 | 0.114         | mg/L  | 1    | 0.100           | <0.000400        | 114  | 45.9 - 120    | 1   | 20           |
| Xylene       |   | 1 | 0.354         | mg/L  | 1    | 0.300           | <0.00120         | 118  | 34.9 - 128    | 2   | 20           |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

| Surrogate                    |                 |                 | MS<br>Result | MSD<br>Result | Units | Dil. | Spike<br>Amount | MS<br>Rec. | MSD<br>Rec. | Rec.<br>Limit |
|------------------------------|-----------------|-----------------|--------------|---------------|-------|------|-----------------|------------|-------------|---------------|
| Trifluorotoluene (TFT)       | Q <sub>sr</sub> | Q <sub>sr</sub> | 0.118        | 0.119         | mg/L  | 1    | 0.1             | 118        | 119         | 75.7 - 109    |
| 4-Bromofluorobenzene (4-BFB) |                 |                 | 0.104        | 0.105         | mg/L  | 1    | 0.1             | 104        | 105         | 68.1 - 109    |

## Calibration Standards

### Standard (CCV-1)

QC Batch: 98791

Date Analyzed: 2013-02-08

Analyzed By: YG

| Param        | Flag | Cert | Units | CCVs<br>True<br>Conc. | CCVs<br>Found<br>Conc. | CCVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|--------------|------|------|-------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| Benzene      |      | 1    | mg/L  | 0.100                 | 0.107                  | 107                         | 80 - 120                      | 2013-02-08       |
| Toluene      |      | 1    | mg/L  | 0.100                 | 0.109                  | 109                         | 80 - 120                      | 2013-02-08       |
| Ethylbenzene |      | 1    | mg/L  | 0.100                 | 0.113                  | 113                         | 80 - 120                      | 2013-02-08       |
| Xylene       |      | 1    | mg/L  | 0.300                 | 0.348                  | 116                         | 80 - 120                      | 2013-02-08       |

### Standard (CCV-2)

QC Batch: 98791

Date Analyzed: 2013-02-08

Analyzed By: YG

| Param        | Flag | Cert | Units | CCVs<br>True<br>Conc. | CCVs<br>Found<br>Conc. | CCVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|--------------|------|------|-------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| Benzene      |      | 1    | mg/L  | 0.100                 | 0.104                  | 104                         | 80 - 120                      | 2013-02-08       |
| Toluene      |      | 1    | mg/L  | 0.100                 | 0.105                  | 105                         | 80 - 120                      | 2013-02-08       |
| Ethylbenzene |      | 1    | mg/L  | 0.100                 | 0.109                  | 109                         | 80 - 120                      | 2013-02-08       |
| Xylene       |      | 1    | mg/L  | 0.300                 | 0.336                  | 112                         | 80 - 120                      | 2013-02-08       |

### Standard (CCV-3)

QC Batch: 98791

Date Analyzed: 2013-02-08

Analyzed By: YG

| Param        | Flag | Cert | Units | CCVs<br>True<br>Conc. | CCVs<br>Found<br>Conc. | CCVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|--------------|------|------|-------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| Benzene      |      | 1    | mg/L  | 0.100                 | 0.107                  | 107                         | 80 - 120                      | 2013-02-08       |
| Toluene      |      | 1    | mg/L  | 0.100                 | 0.108                  | 108                         | 80 - 120                      | 2013-02-08       |
| Ethylbenzene |      | 1    | mg/L  | 0.100                 | 0.112                  | 112                         | 80 - 120                      | 2013-02-08       |
| Xylene       |      | 1    | mg/L  | 0.300                 | 0.347                  | 116                         | 80 - 120                      | 2013-02-08       |

Report Date: February 13, 2013  
114-6401627

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**Standard (CCV-1)**

QC Batch: 98814

Date Analyzed: 2013-02-06

Analyzed By: AR

| Param    | Flag | Cert | Units | CCVs<br>True<br>Conc. | CCVs<br>Found<br>Conc. | CCVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|----------|------|------|-------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| Chloride |      | 1    | mg/L  | 25.0                  | 23.3                   | 93                          | 90 - 110                      | 2013-02-06       |

**Standard (CCV-2)**

QC Batch: 98814

Date Analyzed: 2013-02-06

Analyzed By: AR

| Param    | Flag | Cert | Units | CCVs<br>True<br>Conc. | CCVs<br>Found<br>Conc. | CCVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|----------|------|------|-------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| Chloride |      | 1    | mg/L  | 25.0                  | 23.6                   | 94                          | 90 - 110                      | 2013-02-06       |

**Standard (CCV-1)**

QC Batch: 98815

Date Analyzed: 2013-02-06

Analyzed By: AR

| Param    | Flag | Cert | Units | CCVs<br>True<br>Conc. | CCVs<br>Found<br>Conc. | CCVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|----------|------|------|-------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| Chloride |      | 1    | mg/L  | 25.0                  | 23.6                   | 94                          | 90 - 110                      | 2013-02-06       |

**Standard (CCV-1)**

QC Batch: 98815

Date Analyzed: 2013-02-06

Analyzed By: AR

| Param   | Flag | Cert | Units | CCVs<br>True<br>Conc. | CCVs<br>Found<br>Conc. | CCVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|---------|------|------|-------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| Sulfate |      | 1    | mg/L  | 25.0                  | 25.4                   | 102                         | 90 - 110                      | 2013-02-06       |

**Standard (CCV-2)**

QC Batch: 98815

Date Analyzed: 2013-02-06

Analyzed By: AR

Report Date: February 13, 2013  
114-6401627

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Celero/Rock Queen #1 TB

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| Param    | Flag | Cert | Units | CCVs<br>True<br>Conc. | CCVs<br>Found<br>Conc. | CCVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|----------|------|------|-------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| Chloride |      | 1    | mg/L  | 25.0                  | 23.6                   | 94                          | 90 - 110                      | 2013-02-06       |

**Standard (CCV-2)**

QC Batch: 98815

Date Analyzed: 2013-02-06

Analyzed By: AR

| Param   | Flag | Cert | Units | CCVs<br>True<br>Conc. | CCVs<br>Found<br>Conc. | CCVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|---------|------|------|-------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| Sulfate |      | 1    | mg/L  | 25.0                  | 25.5                   | 102                         | 90 - 110                      | 2013-02-06       |

**Standard (CCV-1)**

QC Batch: 98819

Date Analyzed: 2013-02-06

Analyzed By: AR

| Param   | Flag | Cert | Units | CCVs<br>True<br>Conc. | CCVs<br>Found<br>Conc. | CCVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|---------|------|------|-------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| Sulfate |      | 1    | mg/L  | 25.0                  | 25.4                   | 102                         | 90 - 110                      | 2013-02-06       |

**Standard (CCV-2)**

QC Batch: 98819

Date Analyzed: 2013-02-06

Analyzed By: AR

| Param   | Flag | Cert | Units | CCVs<br>True<br>Conc. | CCVs<br>Found<br>Conc. | CCVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|---------|------|------|-------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| Sulfate |      | 1    | mg/L  | 25.0                  | 25.5                   | 102                         | 90 - 110                      | 2013-02-06       |

**Standard (CCV-1)**

QC Batch: 98820

Date Analyzed: 2013-02-06

Analyzed By: AR

Report Date: February 13, 2013  
114-6401627

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Celero/Rock Queen #1 TB

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| Param   | Flag | Cert | Units | CCVs<br>True<br>Conc. | CCVs<br>Found<br>Conc. | CCVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|---------|------|------|-------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| Sulfate |      | 1    | mg/L  | 25.0                  | 25.5                   | 102                         | 90 - 110                      | 2013-02-06       |

#### Standard (CCV-2)

QC Batch: 98820

Date Analyzed: 2013-02-06

Analyzed By: AR

| Param   | Flag | Cert | Units | CCVs<br>True<br>Conc. | CCVs<br>Found<br>Conc. | CCVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|---------|------|------|-------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| Sulfate |      | 1    | mg/L  | 25.0                  | 25.4                   | 102                         | 90 - 110                      | 2013-02-06       |

#### Standard (CCV-1)

QC Batch: 98837

Date Analyzed: 2013-02-11

Analyzed By: YG

| Param        | Flag | Cert | Units | CCVs<br>True<br>Conc. | CCVs<br>Found<br>Conc. | CCVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|--------------|------|------|-------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| Benzene      |      | 1    | mg/L  | 0.100                 | 0.105                  | 105                         | 80 - 120                      | 2013-02-11       |
| Toluene      |      | 1    | mg/L  | 0.100                 | 0.107                  | 107                         | 80 - 120                      | 2013-02-11       |
| Ethylbenzene |      | 1    | mg/L  | 0.100                 | 0.111                  | 111                         | 80 - 120                      | 2013-02-11       |
| Xylene       |      | 1    | mg/L  | 0.300                 | 0.343                  | 114                         | 80 - 120                      | 2013-02-11       |

#### Standard (CCV-2)

QC Batch: 98837

Date Analyzed: 2013-02-11

Analyzed By: YG

| Param        | Flag | Cert | Units | CCVs<br>True<br>Conc. | CCVs<br>Found<br>Conc. | CCVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|--------------|------|------|-------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| Benzene      |      | 1    | mg/L  | 0.100                 | 0.105                  | 105                         | 80 - 120                      | 2013-02-11       |
| Toluene      |      | 1    | mg/L  | 0.100                 | 0.106                  | 106                         | 80 - 120                      | 2013-02-11       |
| Ethylbenzene |      | 1    | mg/L  | 0.100                 | 0.110                  | 110                         | 80 - 120                      | 2013-02-11       |
| Xylene       |      | 1    | mg/L  | 0.300                 | 0.339                  | 113                         | 80 - 120                      | 2013-02-11       |

Report Date: February 13, 2013  
114-6401627

Work Order: 13020137  
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**Standard (CCV-3)**

QC Batch: 98837

Date Analyzed: 2013-02-11

Analyzed By: YG

| Param        | Flag | Cert | Units | CCVs<br>True<br>Conc. | CCVs<br>Found<br>Conc. | CCVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|--------------|------|------|-------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| Benzene      |      | 1    | mg/L  | 0.100                 | 0.106                  | 106                         | 80 - 120                      | 2013-02-11       |
| Toluene      |      | 1    | mg/L  | 0.100                 | 0.107                  | 107                         | 80 - 120                      | 2013-02-11       |
| Ethylbenzene |      | 1    | mg/L  | 0.100                 | 0.110                  | 110                         | 80 - 120                      | 2013-02-11       |
| Xylene       |      | 1    | mg/L  | 0.300                 | 0.345                  | 115                         | 80 - 120                      | 2013-02-11       |

# Appendix

## Report Definitions

| Name | Definition                 |
|------|----------------------------|
| MDL  | Method Detection Limit     |
| SQL  | Minimum Quantitation Limit |
| SDL  | Sample Detection Limit     |

## Laboratory Certifications

| C | Certifying Authority | Certification Number | Laboratory Location |
|---|----------------------|----------------------|---------------------|
| - | NCTRCA               | WFWB384444Y0909      | TraceAnalysis       |
| - | DBE                  | VN 20657             | TraceAnalysis       |
| - | HUB                  | 1752439743100-86536  | TraceAnalysis       |
| - | WBE                  | 237019               | TraceAnalysis       |
| 1 | NELAP                | T104704392-12-4      | Midland             |

## Standard Flags

| F   | Description                                                                                                                                                                                                                         |
|-----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| B   | Analyte detected in the corresponding method blank above the method detection limit                                                                                                                                                 |
| H   | Analyzed out of hold time                                                                                                                                                                                                           |
| J   | Estimated concentration                                                                                                                                                                                                             |
| Jb  | The analyte is positively identified and the value is approximated between the SDL and SQL. Sample contains less than ten times the concentration found in the method blank. The result should be considered non-detect to the SDL. |
| Je  | Estimated concentration exceeding calibration range.                                                                                                                                                                                |
| MI1 | Split peak or shoulder peak                                                                                                                                                                                                         |
| MI2 | Instrument software did not integrate                                                                                                                                                                                               |
| MI3 | Instrument software misidentified the peak                                                                                                                                                                                          |
| MI4 | Instrument software integrated improperly                                                                                                                                                                                           |
| MI5 | Baseline correction                                                                                                                                                                                                                 |
| Qc  | Calibration check outside of laboratory limits.                                                                                                                                                                                     |
| Qr  | RPD outside of laboratory limits                                                                                                                                                                                                    |
| Qs  | Spike recovery outside of laboratory limits.                                                                                                                                                                                        |
| Qsr | Surrogate recovery outside of laboratory limits.                                                                                                                                                                                    |
| U   | The analyte is not detected above the SDL                                                                                                                                                                                           |

## Result Comments

- 1 Matrix Interference Confirmed by Reanalysis.
- 2 Matrix Interference Confirmed by Reanalysis.
- 3 Matrix Interference Confirmed by Reanalysis.

## Attachments

The scanned attachments will follow this page.  
Please note, each attachment may consist of more than one page.





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## Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

# Analytical and Quality Control Report

Jeff Kindley  
Tetra Tech  
1910 N. Big Spring Street  
Midland, TX, 79705

Report Date: May 8, 2013

Work Order: 13042614



Project Location: Challenger  
Project Name: Celero/Rock Queen #1 TB  
Project Number: 114-6401627

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

| Sample | Description | Matrix | Date Taken | Time Taken | Date Received |
|--------|-------------|--------|------------|------------|---------------|
| 327392 | MW-1        | water  | 2013-04-24 | 10:30      | 2013-04-25    |
| 327393 | MW-2        | water  | 2013-04-24 | 10:25      | 2013-04-25    |
| 327394 | MW-3        | water  | 2013-04-24 | 10:45      | 2013-04-25    |
| 327395 | MW-4        | water  | 2013-04-24 | 11:05      | 2013-04-25    |
| 327396 | MW-5        | water  | 2013-04-24 | 11:30      | 2013-04-25    |
| 327397 | MW-6        | water  | 2013-04-24 | 10:35      | 2013-04-25    |
| 327398 | MW-7        | water  | 2013-04-24 | 10:55      | 2013-04-25    |

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

This report consists of a total of 56 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

*Michael Abel*

---

Dr. Blair Leftwich, Director  
Dr. Michael Abel, Project Manager

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# Case Narrative

Samples for project Celero/Rock Queen #1 TB were received by TraceAnalysis, Inc. on 2013-04-25 and assigned to work order 13042614. Samples for work order 13042614 were received intact without headspace and at a temperature of 5.9 C.

Samples were analyzed for the following tests using their respective methods.

| Test          | Method     | Prep<br>Batch | Prep<br>Date        | QC<br>Batch | Analysis<br>Date    |
|---------------|------------|---------------|---------------------|-------------|---------------------|
| Alkalinity    | SM 2320B   | 85729         | 2013-05-07 at 14:00 | 101151      | 2013-05-07 at 15:26 |
| BTEX          | S 8021B    | 85524         | 2013-04-30 at 12:53 | 100911      | 2013-04-30 at 12:54 |
| BTEX          | S 8021B    | 85587         | 2013-05-02 at 09:25 | 100979      | 2013-05-02 at 09:26 |
| Ca, Dissolved | S 6010C    | 85570         | 2013-05-01 at 12:00 | 101120      | 2013-05-07 at 08:58 |
| Chloride (IC) | E 300.0    | 85703         | 2013-05-03 at 14:00 | 101123      | 2013-05-03 at 15:07 |
| Chloride (IC) | E 300.0    | 85704         | 2013-05-03 at 14:00 | 101124      | 2013-05-03 at 15:07 |
| Chloride (IC) | E 300.0    | 85706         | 2013-05-06 at 14:00 | 101126      | 2013-05-06 at 15:55 |
| Hardness      | S 6010C    | 85570         | 2013-05-01 at 12:00 | 101120      | 2013-05-07 at 08:58 |
| K, Dissolved  | S 6010C    | 85570         | 2013-05-01 at 12:00 | 101120      | 2013-05-07 at 08:58 |
| Mg, Dissolved | S 6010C    | 85570         | 2013-05-01 at 12:00 | 101120      | 2013-05-07 at 08:58 |
| Na, Dissolved | S 6010C    | 85570         | 2013-05-01 at 12:00 | 101120      | 2013-05-07 at 08:58 |
| pH            | SM 4500-H+ | 85498         | 2013-04-26 at 16:03 | 100883      | 2013-04-26 at 17:06 |
| pH            | SM 4500-H+ | 85498         | 2013-04-26 at 16:03 | 100884      | 2013-04-26 at 17:08 |
| SO4 (IC)      | E 300.0    | 85703         | 2013-05-03 at 14:00 | 101123      | 2013-05-03 at 15:07 |
| SO4 (IC)      | E 300.0    | 85704         | 2013-05-03 at 14:00 | 101124      | 2013-05-03 at 15:07 |
| SO4 (IC)      | E 300.0    | 85706         | 2013-05-06 at 14:00 | 101126      | 2013-05-06 at 15:55 |
| TDS           | SM 2540C   | 85494         | 2013-04-26 at 11:39 | 100878      | 2013-04-27 at 15:41 |

Results for these samples are reported on a wet weight basis unless data package indicates otherwise.

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 13042614 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

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## Analytical Report

### Sample: 327392 - MW-1

Laboratory: Lubbock  
Analysis: Alkalinity  
QC Batch: 101151  
Prep Batch: 85729

Analytical Method: SM 2320B  
Date Analyzed: 2013-05-07  
Sample Preparation: 2013-05-07

Prep Method: N/A  
Analyzed By: LM  
Prepared By: LM

| Parameter              | Flag | Cert | RL<br>Result | Units         | Dilution | RL   |
|------------------------|------|------|--------------|---------------|----------|------|
| Hydroxide Alkalinity   | U    | 1    | <20.0        | mg/L as CaCo3 | 1        | 20.0 |
| Carbonate Alkalinity   | U    | 1    | <20.0        | mg/L as CaCo3 | 1        | 20.0 |
| Bicarbonate Alkalinity |      | 1    | 100          | mg/L as CaCo3 | 1        | 20.0 |
| Total Alkalinity       |      | 1    | 100          | mg/L as CaCo3 | 1        | 20.0 |

### Sample: 327392 - MW-1

Laboratory: Midland  
Analysis: BTEX  
QC Batch: 100979  
Prep Batch: 85587

Analytical Method: S 8021B  
Date Analyzed: 2013-05-02  
Sample Preparation: 2013-05-01

Prep Method: S 5030B  
Analyzed By: AH  
Prepared By: AH

| Parameter    | Flag | Cert | RL<br>Result | Units | Dilution | RL      |
|--------------|------|------|--------------|-------|----------|---------|
| Benzene      | Qs,U | 2    | <0.00100     | mg/L  | 1        | 0.00100 |
| Toluene      | Qs,U | 2    | <0.00100     | mg/L  | 1        | 0.00100 |
| Ethylbenzene | Qs,U | 2    | <0.00100     | mg/L  | 1        | 0.00100 |
| Xylene       | Qs,U | 2    | <0.00100     | mg/L  | 1        | 0.00100 |

| Surrogate                    | Flag             | Cert | Result | Units | Dilution | Spike<br>Amount | Percent<br>Recovery | Recovery<br>Limits |
|------------------------------|------------------|------|--------|-------|----------|-----------------|---------------------|--------------------|
| Trifluorotoluene (TFT)       |                  |      | 0.0901 | mg/L  | 1        | 0.100           | 90                  | 70 - 130           |
| 4-Bromofluorobenzene (4-BFB) | <sup>1</sup> Qsr | Qsr  | 0.0376 | mg/L  | 1        | 0.100           | 38                  | 70 - 130           |

### Sample: 327392 - MW-1

Laboratory: Lubbock  
Analysis: Ca, Dissolved  
QC Batch: 101120  
Prep Batch: 85570

Analytical Method: S 6010C  
Date Analyzed: 2013-05-07  
Sample Preparation: 2013-05-01

Prep Method: S 3005A  
Analyzed By: RR  
Prepared By: KV

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| Parameter         | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|-------------------|------|------|--------------|-------|----------|------|
| Dissolved Calcium |      | 1    | 2640         | mg/L  | 100      | 1.00 |

**Sample: 327392 - MW-1**

Laboratory: Lubbock  
Analysis: Chloride (IC)      Analytical Method: E 300.0      Prep Method: N/A  
QC Batch: 101123      Date Analyzed: 2013-05-03      Analyzed By: RL  
Prep Batch: 85703      Sample Preparation: 2013-05-03      Prepared By: RL

| Parameter | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|-----------|------|------|--------------|-------|----------|------|
| Chloride  |      | 1    | 144000       | mg/L  | 5000     | 2.50 |

**Sample: 327392 - MW-1**

Laboratory: Lubbock  
Analysis: Hardness      Analytical Method: S 6010C      Prep Method: N/A  
QC Batch: 101120      Date Analyzed: 2013-05-07      Analyzed By: RR  
Prep Batch: 85570      Sample Preparation: 2013-05-01      Prepared By: KV

| Parameter         | Flag | Cert | RL<br>Result | Units         | Dilution | RL   |
|-------------------|------|------|--------------|---------------|----------|------|
| Hardness (by ICP) |      |      | 23000        | mg eq CaCO3/L | 1        | 0.00 |

**Sample: 327392 - MW-1**

Laboratory: Lubbock  
Analysis: K, Dissolved      Analytical Method: S 6010C      Prep Method: S 3005A  
QC Batch: 101120      Date Analyzed: 2013-05-07      Analyzed By: RR  
Prep Batch: 85570      Sample Preparation: 2013-05-01      Prepared By: KV

| Parameter           | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|---------------------|------|------|--------------|-------|----------|------|
| Dissolved Potassium |      | 1    | 1630         | mg/L  | 100      | 1.00 |

**Sample: 327392 - MW-1**

Laboratory: Lubbock  
Analysis: Mg, Dissolved      Analytical Method: S 6010C      Prep Method: S 3005A  
QC Batch: 101120      Date Analyzed: 2013-05-07      Analyzed By: RR  
Prep Batch: 85570      Sample Preparation: 2013-05-01      Prepared By: KV

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| Parameter           | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|---------------------|------|------|--------------|-------|----------|------|
| Dissolved Magnesium |      | 1    | 3990         | mg/L  | 100      | 1.00 |

**Sample: 327392 - MW-1**

Laboratory: Lubbock  
Analysis: Na, Dissolved      Analytical Method: S 6010C      Prep Method: S 3005A  
QC Batch: 101120      Date Analyzed: 2013-05-07      Analyzed By: RR  
Prep Batch: 85570      Sample Preparation: 2013-05-01      Prepared By: KV

| Parameter        | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|------------------|------|------|--------------|-------|----------|------|
| Dissolved Sodium |      | 1    | 78500        | mg/L  | 1000     | 1.00 |

**Sample: 327392 - MW-1**

Laboratory: Midland  
Analysis: pH      Analytical Method: SM 4500-H+      Prep Method: N/A  
QC Batch: 100883      Date Analyzed: 2013-04-26      Analyzed By: AR  
Prep Batch: 85498      Sample Preparation: 2013-04-26      Prepared By: AR

| Parameter | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|-----------|------|------|--------------|-------|----------|------|
| pH        |      | 2    | 5.96         | s.u.  | 1        | 0.00 |

**Sample: 327392 - MW-1**

Laboratory: Lubbock  
Analysis: SO4 (IC)      Analytical Method: E 300.0      Prep Method: N/A  
QC Batch: 101123      Date Analyzed: 2013-05-03      Analyzed By: RL  
Prep Batch: 85703      Sample Preparation: 2013-05-03      Prepared By: RL

| Parameter | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|-----------|------|------|--------------|-------|----------|------|
| Sulfate   |      | 1    | <12500       | mg/L  | 5000     | 2.50 |

**Sample: 327392 - MW-1**

Laboratory: Midland  
Analysis: TDS      Analytical Method: SM 2540C      Prep Method: N/A  
QC Batch: 100878      Date Analyzed: 2013-04-27      Analyzed By: AR  
Prep Batch: 85494      Sample Preparation: 2013-04-26      Prepared By: AR

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| Parameter              | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|------------------------|------|------|--------------|-------|----------|------|
| Total Dissolved Solids |      | 2    | 244000       | mg/L  | 100      | 10.0 |

**Sample: 327393 - MW-2**

Laboratory: Lubbock  
Analysis: Alkalinity  
QC Batch: 101151  
Prep Batch: 85729

Analytical Method: SM 2320B  
Date Analyzed: 2013-05-07  
Sample Preparation: 2013-05-07

Prep Method: N/A  
Analyzed By: LM  
Prepared By: LM

| Parameter              | Flag | Cert | RL<br>Result | Units         | Dilution | RL   |
|------------------------|------|------|--------------|---------------|----------|------|
| Hydroxide Alkalinity   | U    | 1    | <20.0        | mg/L as CaCo3 | 1        | 20.0 |
| Carbonate Alkalinity   | U    | 1    | <20.0        | mg/L as CaCo3 | 1        | 20.0 |
| Bicarbonate Alkalinity |      | 1    | 134          | mg/L as CaCo3 | 1        | 20.0 |
| Total Alkalinity       |      | 1    | 134          | mg/L as CaCo3 | 1        | 20.0 |

**Sample: 327393 - MW-2**

Laboratory: Midland  
Analysis: BTEX  
QC Batch: 100911  
Prep Batch: 85524

Analytical Method: S 8021B  
Date Analyzed: 2013-04-30  
Sample Preparation: 2013-04-29

Prep Method: S 5030B  
Analyzed By: AH  
Prepared By: AH

| Parameter    | Flag      | Cert | RL<br>Result | Units | Dilution | RL      |
|--------------|-----------|------|--------------|-------|----------|---------|
| Benzene      | Qr, Qs, U | 2    | <0.00100     | mg/L  | 1        | 0.00100 |
| Toluene      | Qr, Qs, U | 2    | <0.00100     | mg/L  | 1        | 0.00100 |
| Ethylbenzene | Qr, Qs, U | 2    | <0.00100     | mg/L  | 1        | 0.00100 |
| Xylene       | Qr, Qs, U | 2    | <0.00100     | mg/L  | 1        | 0.00100 |

| Surrogate                    | Flag | Cert | Result | Units | Dilution | Spike<br>Amount | Percent<br>Recovery | Recovery<br>Limits |
|------------------------------|------|------|--------|-------|----------|-----------------|---------------------|--------------------|
| Trifluorotoluene (TFT)       |      |      | 0.0844 | mg/L  | 1        | 0.100           | 84                  | 70 - 130           |
| 4-Bromofluorobenzene (4-BFB) |      |      | 0.0761 | mg/L  | 1        | 0.100           | 76                  | 70 - 130           |

**Sample: 327393 - MW-2**

Laboratory: Lubbock  
Analysis: Ca, Dissolved  
QC Batch: 101120  
Prep Batch: 85570

Analytical Method: S 6010C  
Date Analyzed: 2013-05-07  
Sample Preparation: 2013-05-01

Prep Method: S 3005A  
Analyzed By: RR  
Prepared By: KV

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| Parameter         | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|-------------------|------|------|--------------|-------|----------|------|
| Dissolved Calcium |      | 1    | 2490         | mg/L  | 100      | 1.00 |

**Sample: 327393 - MW-2**

Laboratory: Lubbock  
Analysis: Chloride (IC)      Analytical Method: E 300.0      Prep Method: N/A  
QC Batch: 101124      Date Analyzed: 2013-05-03      Analyzed By: RL  
Prep Batch: 85704      Sample Preparation: 2013-05-03      Prepared By: RL

| Parameter | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|-----------|------|------|--------------|-------|----------|------|
| Chloride  |      | 1    | 9840         | mg/L  | 500      | 2.50 |

**Sample: 327393 - MW-2**

Laboratory: Lubbock  
Analysis: Hardness      Analytical Method: S 6010C      Prep Method: N/A  
QC Batch: 101120      Date Analyzed: 2013-05-07      Analyzed By: RR  
Prep Batch: 85570      Sample Preparation: 2013-05-01      Prepared By: KV

| Parameter         | Flag | Cert | RL<br>Result | Units         | Dilution | RL   |
|-------------------|------|------|--------------|---------------|----------|------|
| Hardness (by ICP) |      |      | 8580         | mg eq CaCO3/L | 1        | 0.00 |

**Sample: 327393 - MW-2**

Laboratory: Lubbock  
Analysis: K, Dissolved      Analytical Method: S 6010C      Prep Method: S 3005A  
QC Batch: 101120      Date Analyzed: 2013-05-07      Analyzed By: RR  
Prep Batch: 85570      Sample Preparation: 2013-05-01      Prepared By: KV

| Parameter           | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|---------------------|------|------|--------------|-------|----------|------|
| Dissolved Potassium |      | 1    | 22.6         | mg/L  | 10       | 1.00 |

**Sample: 327393 - MW-2**

Laboratory: Lubbock  
Analysis: Mg, Dissolved      Analytical Method: S 6010C      Prep Method: S 3005A  
QC Batch: 101120      Date Analyzed: 2013-05-07      Analyzed By: RR  
Prep Batch: 85570      Sample Preparation: 2013-05-01      Prepared By: KV

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| Parameter           | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|---------------------|------|------|--------------|-------|----------|------|
| Dissolved Magnesium |      | 1    | 575          | mg/L  | 10       | 1.00 |

**Sample: 327393 - MW-2**

|             |               |                     |            |              |         |
|-------------|---------------|---------------------|------------|--------------|---------|
| Laboratory: | Lubbock       |                     |            |              |         |
| Analysis:   | Na, Dissolved | Analytical Method:  | S 6010C    | Prep Method: | S 3005A |
| QC Batch:   | 101120        | Date Analyzed:      | 2013-05-07 | Analyzed By: | RR      |
| Prep Batch: | 85570         | Sample Preparation: | 2013-05-01 | Prepared By: | KV      |

| Parameter        | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|------------------|------|------|--------------|-------|----------|------|
| Dissolved Sodium |      | 1    | 2240         | mg/L  | 100      | 1.00 |

**Sample: 327393 - MW-2**

|             |         |                     |            |              |     |
|-------------|---------|---------------------|------------|--------------|-----|
| Laboratory: | Midland |                     |            |              |     |
| Analysis:   | pH      | Analytical Method:  | SM 4500-H+ | Prep Method: | N/A |
| QC Batch:   | 100883  | Date Analyzed:      | 2013-04-26 | Analyzed By: | AR  |
| Prep Batch: | 85498   | Sample Preparation: | 2013-04-26 | Prepared By: | AR  |

| Parameter | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|-----------|------|------|--------------|-------|----------|------|
| pH        |      | 2    | 6.74         | s.u.  | 1        | 0.00 |

**Sample: 327393 - MW-2**

|             |          |                     |            |              |     |
|-------------|----------|---------------------|------------|--------------|-----|
| Laboratory: | Lubbock  |                     |            |              |     |
| Analysis:   | SO4 (IC) | Analytical Method:  | E 300.0    | Prep Method: | N/A |
| QC Batch:   | 101124   | Date Analyzed:      | 2013-05-03 | Analyzed By: | RL  |
| Prep Batch: | 85704    | Sample Preparation: | 2013-05-03 | Prepared By: | RL  |

| Parameter | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|-----------|------|------|--------------|-------|----------|------|
| Sulfate   |      | 1    | <1250        | mg/L  | 500      | 2.50 |

**Sample: 327393 - MW-2**

|             |         |                     |            |              |     |
|-------------|---------|---------------------|------------|--------------|-----|
| Laboratory: | Midland |                     |            |              |     |
| Analysis:   | TDS     | Analytical Method:  | SM 2540C   | Prep Method: | N/A |
| QC Batch:   | 100878  | Date Analyzed:      | 2013-04-27 | Analyzed By: | AR  |
| Prep Batch: | 85494   | Sample Preparation: | 2013-04-26 | Prepared By: | AR  |

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| Parameter              | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|------------------------|------|------|--------------|-------|----------|------|
| Total Dissolved Solids |      | 2    | <b>25200</b> | mg/L  | 50       | 10.0 |

**Sample: 327394 - MW-3**

Laboratory: Lubbock  
Analysis: Alkalinity  
QC Batch: 101151  
Prep Batch: 85729

Analytical Method: SM 2320B  
Date Analyzed: 2013-05-07  
Sample Preparation: 2013-05-07

Prep Method: N/A  
Analyzed By: LM  
Prepared By: LM

| Parameter              | Flag | Cert | RL<br>Result | Units         | Dilution | RL   |
|------------------------|------|------|--------------|---------------|----------|------|
| Hydroxide Alkalinity   | U    | 1    | <20.0        | mg/L as CaCo3 | 1        | 20.0 |
| Carbonate Alkalinity   | U    | 1    | <20.0        | mg/L as CaCo3 | 1        | 20.0 |
| Bicarbonate Alkalinity |      | 1    | <b>100</b>   | mg/L as CaCo3 | 1        | 20.0 |
| Total Alkalinity       |      | 1    | <b>100</b>   | mg/L as CaCo3 | 1        | 20.0 |

**Sample: 327394 - MW-3**

Laboratory: Midland  
Analysis: BTEX  
QC Batch: 100979  
Prep Batch: 85587

Analytical Method: S 8021B  
Date Analyzed: 2013-05-02  
Sample Preparation: 2013-05-01

Prep Method: S 5030B  
Analyzed By: AH  
Prepared By: AH

| Parameter    | Flag | Cert | RL<br>Result | Units | Dilution | RL      |
|--------------|------|------|--------------|-------|----------|---------|
| Benzene      | Qs,U | 2    | <0.00100     | mg/L  | 1        | 0.00100 |
| Toluene      | Qs,U | 2    | <0.00100     | mg/L  | 1        | 0.00100 |
| Ethylbenzene | Qs,U | 2    | <0.00100     | mg/L  | 1        | 0.00100 |
| Xylene       | Qs,U | 2    | <0.00100     | mg/L  | 1        | 0.00100 |

| Surrogate                    | Flag | Cert | Result | Units | Dilution | Spike<br>Amount | Percent<br>Recovery | Recovery<br>Limits |
|------------------------------|------|------|--------|-------|----------|-----------------|---------------------|--------------------|
| Trifluorotoluene (TFT)       |      |      | 0.0827 | mg/L  | 1        | 0.100           | 83                  | 70 - 130           |
| 4-Bromofluorobenzene (4-BFB) |      |      | 0.0750 | mg/L  | 1        | 0.100           | 75                  | 70 - 130           |

**Sample: 327394 - MW-3**

Laboratory: Lubbock  
Analysis: Ca, Dissolved  
QC Batch: 101120  
Prep Batch: 85570

Analytical Method: S 6010C  
Date Analyzed: 2013-05-07  
Sample Preparation: 2013-05-01

Prep Method: S 3005A  
Analyzed By: RR  
Prepared By: KV

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| Parameter         | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|-------------------|------|------|--------------|-------|----------|------|
| Dissolved Calcium |      | 1    | 4780         | mg/L  | 100      | 1.00 |

**Sample: 327394 - MW-3**

|             |               |                     |            |              |     |
|-------------|---------------|---------------------|------------|--------------|-----|
| Laboratory: | Lubbock       |                     |            |              |     |
| Analysis:   | Chloride (IC) | Analytical Method:  | E 300.0    | Prep Method: | N/A |
| QC Batch:   | 101124        | Date Analyzed:      | 2013-05-03 | Analyzed By: | RL  |
| Prep Batch: | 85704         | Sample Preparation: | 2013-05-03 | Prepared By: | RL  |

| Parameter | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|-----------|------|------|--------------|-------|----------|------|
| Chloride  |      | 1    | 60000        | mg/L  | 5000     | 2.50 |

**Sample: 327394 - MW-3**

|             |          |                     |            |              |     |
|-------------|----------|---------------------|------------|--------------|-----|
| Laboratory: | Lubbock  |                     |            |              |     |
| Analysis:   | Hardness | Analytical Method:  | S 6010C    | Prep Method: | N/A |
| QC Batch:   | 101120   | Date Analyzed:      | 2013-05-07 | Analyzed By: | RR  |
| Prep Batch: | 85570    | Sample Preparation: | 2013-05-01 | Prepared By: | KV  |

| Parameter         | Flag | Cert | RL<br>Result | Units         | Dilution | RL   |
|-------------------|------|------|--------------|---------------|----------|------|
| Hardness (by ICP) |      |      | 21900        | mg eq CaCO3/L | 1        | 0.00 |

**Sample: 327394 - MW-3**

|             |              |                     |            |              |         |
|-------------|--------------|---------------------|------------|--------------|---------|
| Laboratory: | Lubbock      |                     |            |              |         |
| Analysis:   | K, Dissolved | Analytical Method:  | S 6010C    | Prep Method: | S 3005A |
| QC Batch:   | 101120       | Date Analyzed:      | 2013-05-07 | Analyzed By: | RR      |
| Prep Batch: | 85570        | Sample Preparation: | 2013-05-01 | Prepared By: | KV      |

| Parameter           | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|---------------------|------|------|--------------|-------|----------|------|
| Dissolved Potassium |      | 1    | 432          | mg/L  | 100      | 1.00 |

**Sample: 327394 - MW-3**

|             |               |                     |            |              |         |
|-------------|---------------|---------------------|------------|--------------|---------|
| Laboratory: | Lubbock       |                     |            |              |         |
| Analysis:   | Mg, Dissolved | Analytical Method:  | S 6010C    | Prep Method: | S 3005A |
| QC Batch:   | 101120        | Date Analyzed:      | 2013-05-07 | Analyzed By: | RR      |
| Prep Batch: | 85570         | Sample Preparation: | 2013-05-01 | Prepared By: | KV      |

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| Parameter           | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|---------------------|------|------|--------------|-------|----------|------|
| Dissolved Magnesium |      | 1    | <b>2420</b>  | mg/L  | 100      | 1.00 |

**Sample: 327394 - MW-3**

|             |               |                     |            |              |         |
|-------------|---------------|---------------------|------------|--------------|---------|
| Laboratory: | Lubbock       |                     |            |              |         |
| Analysis:   | Na, Dissolved | Analytical Method:  | S 6010C    | Prep Method: | S 3005A |
| QC Batch:   | 101120        | Date Analyzed:      | 2013-05-07 | Analyzed By: | RR      |
| Prep Batch: | 85570         | Sample Preparation: | 2013-05-01 | Prepared By: | KV      |

| Parameter        | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|------------------|------|------|--------------|-------|----------|------|
| Dissolved Sodium |      | 1    | <b>32100</b> | mg/L  | 1000     | 1.00 |

**Sample: 327394 - MW-3**

|             |         |                     |            |              |     |
|-------------|---------|---------------------|------------|--------------|-----|
| Laboratory: | Midland |                     |            |              |     |
| Analysis:   | pH      | Analytical Method:  | SM 4500-H+ | Prep Method: | N/A |
| QC Batch:   | 100883  | Date Analyzed:      | 2013-04-26 | Analyzed By: | AR  |
| Prep Batch: | 85498   | Sample Preparation: | 2013-04-26 | Prepared By: | AR  |

| Parameter | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|-----------|------|------|--------------|-------|----------|------|
| pH        |      | 2    | <b>6.41</b>  | s.u.  | 1        | 0.00 |

**Sample: 327394 - MW-3**

|             |          |                     |            |              |     |
|-------------|----------|---------------------|------------|--------------|-----|
| Laboratory: | Lubbock  |                     |            |              |     |
| Analysis:   | SO4 (IC) | Analytical Method:  | E 300.0    | Prep Method: | N/A |
| QC Batch:   | 101124   | Date Analyzed:      | 2013-05-03 | Analyzed By: | RL  |
| Prep Batch: | 85704    | Sample Preparation: | 2013-05-03 | Prepared By: | RL  |

| Parameter | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|-----------|------|------|--------------|-------|----------|------|
| Sulfate   |      | 1    | <12500       | mg/L  | 5000     | 2.50 |

**Sample: 327394 - MW-3**

|             |         |                     |            |              |     |
|-------------|---------|---------------------|------------|--------------|-----|
| Laboratory: | Midland |                     |            |              |     |
| Analysis:   | TDS     | Analytical Method:  | SM 2540C   | Prep Method: | N/A |
| QC Batch:   | 100878  | Date Analyzed:      | 2013-04-27 | Analyzed By: | AR  |
| Prep Batch: | 85494   | Sample Preparation: | 2013-04-26 | Prepared By: | AR  |

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| Parameter              | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|------------------------|------|------|--------------|-------|----------|------|
| Total Dissolved Solids |      | 2    | 118000       | mg/L  | 100      | 10.0 |

**Sample: 327395 - MW-4**

Laboratory: Lubbock  
Analysis: Alkalinity  
QC Batch: 101151  
Prep Batch: 85729

Analytical Method: SM 2320B  
Date Analyzed: 2013-05-07  
Sample Preparation: 2013-05-07

Prep Method: N/A  
Analyzed By: LM  
Prepared By: LM

| Parameter              | Flag | Cert | RL<br>Result | Units         | Dilution | RL   |
|------------------------|------|------|--------------|---------------|----------|------|
| Hydroxide Alkalinity   | U    | 1    | <20.0        | mg/L as CaCo3 | 1        | 20.0 |
| Carbonate Alkalinity   | U    | 1    | <20.0        | mg/L as CaCo3 | 1        | 20.0 |
| Bicarbonate Alkalinity |      | 1    | 135          | mg/L as CaCo3 | 1        | 20.0 |
| Total Alkalinity       |      | 1    | 135          | mg/L as CaCo3 | 1        | 20.0 |

**Sample: 327395 - MW-4**

Laboratory: Midland  
Analysis: BTEX  
QC Batch: 100911  
Prep Batch: 85524

Analytical Method: S 8021B  
Date Analyzed: 2013-04-30  
Sample Preparation: 2013-04-29

Prep Method: S 5030B  
Analyzed By: AH  
Prepared By: AH

| Parameter    | Flag      | Cert | RL<br>Result | Units | Dilution | RL      |
|--------------|-----------|------|--------------|-------|----------|---------|
| Benzene      | Qr, Qs, U | 2    | <0.00100     | mg/L  | 1        | 0.00100 |
| Toluene      | Qr, Qs, U | 2    | <0.00100     | mg/L  | 1        | 0.00100 |
| Ethylbenzene | Qr, Qs, U | 2    | <0.00100     | mg/L  | 1        | 0.00100 |
| Xylene       | Qr, Qs, U | 2    | <0.00100     | mg/L  | 1        | 0.00100 |

| Surrogate                    | Flag | Cert | Result | Units | Dilution | Spike<br>Amount | Percent<br>Recovery | Recovery<br>Limits |
|------------------------------|------|------|--------|-------|----------|-----------------|---------------------|--------------------|
| Trifluorotoluene (TFT)       |      |      | 0.0840 | mg/L  | 1        | 0.100           | 84                  | 70 - 130           |
| 4-Bromofluorobenzene (4-BFB) |      |      | 0.0754 | mg/L  | 1        | 0.100           | 75                  | 70 - 130           |

**Sample: 327395 - MW-4**

Laboratory: Lubbock  
Analysis: Ca, Dissolved  
QC Batch: 101120  
Prep Batch: 85570

Analytical Method: S 6010C  
Date Analyzed: 2013-05-07  
Sample Preparation: 2013-05-01

Prep Method: S 3005A  
Analyzed By: RR  
Prepared By: KV

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| Parameter         | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|-------------------|------|------|--------------|-------|----------|------|
| Dissolved Calcium |      | 1    | 3340         | mg/L  | 100      | 1.00 |

**Sample: 327395 - MW-4**

Laboratory: Lubbock  
Analysis: Chloride (IC)      Analytical Method: E 300.0      Prep Method: N/A  
QC Batch: 101124      Date Analyzed: 2013-05-03      Analyzed By: RL  
Prep Batch: 85704      Sample Preparation: 2013-05-03      Prepared By: RL

| Parameter | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|-----------|------|------|--------------|-------|----------|------|
| Chloride  |      | 1    | 13800        | mg/L  | 500      | 2.50 |

**Sample: 327395 - MW-4**

Laboratory: Lubbock  
Analysis: Hardness      Analytical Method: S 6010C      Prep Method: N/A  
QC Batch: 101120      Date Analyzed: 2013-05-07      Analyzed By: RR  
Prep Batch: 85570      Sample Preparation: 2013-05-01      Prepared By: KV

| Parameter         | Flag | Cert | RL<br>Result | Units         | Dilution | RL   |
|-------------------|------|------|--------------|---------------|----------|------|
| Hardness (by ICP) |      |      | 11500        | mg eq CaCO3/L | 1        | 0.00 |

**Sample: 327395 - MW-4**

Laboratory: Lubbock  
Analysis: K, Dissolved      Analytical Method: S 6010C      Prep Method: S 3005A  
QC Batch: 101120      Date Analyzed: 2013-05-07      Analyzed By: RR  
Prep Batch: 85570      Sample Preparation: 2013-05-01      Prepared By: KV

| Parameter           | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|---------------------|------|------|--------------|-------|----------|------|
| Dissolved Potassium |      | 1    | 21.7         | mg/L  | 10       | 1.00 |

**Sample: 327395 - MW-4**

Laboratory: Lubbock  
Analysis: Mg, Dissolved      Analytical Method: S 6010C      Prep Method: S 3005A  
QC Batch: 101120      Date Analyzed: 2013-05-07      Analyzed By: RR  
Prep Batch: 85570      Sample Preparation: 2013-05-01      Prepared By: KV

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| Parameter           | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|---------------------|------|------|--------------|-------|----------|------|
| Dissolved Magnesium |      | 1    | 768          | mg/L  | 10       | 1.00 |

**Sample: 327395 - MW-4**

Laboratory: Lubbock  
Analysis: Na, Dissolved      Analytical Method: S 6010C      Prep Method: S 3005A  
QC Batch: 101120      Date Analyzed: 2013-05-07      Analyzed By: RR  
Prep Batch: 85570      Sample Preparation: 2013-05-01      Prepared By: KV

| Parameter        | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|------------------|------|------|--------------|-------|----------|------|
| Dissolved Sodium |      | 1    | 2220         | mg/L  | 100      | 1.00 |

**Sample: 327395 - MW-4**

Laboratory: Midland  
Analysis: pH      Analytical Method: SM 4500-H+      Prep Method: N/A  
QC Batch: 100884      Date Analyzed: 2013-04-26      Analyzed By: AR  
Prep Batch: 85498      Sample Preparation: 2013-04-26      Prepared By: AR

| Parameter | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|-----------|------|------|--------------|-------|----------|------|
| pH        |      | 2    | 6.71         | s.u.  | 1        | 0.00 |

**Sample: 327395 - MW-4**

Laboratory: Lubbock  
Analysis: SO4 (IC)      Analytical Method: E 300.0      Prep Method: N/A  
QC Batch: 101124      Date Analyzed: 2013-05-03      Analyzed By: RL  
Prep Batch: 85704      Sample Preparation: 2013-05-03      Prepared By: RL

| Parameter | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|-----------|------|------|--------------|-------|----------|------|
| Sulfate   |      | 1    | <1250        | mg/L  | 500      | 2.50 |

**Sample: 327395 - MW-4**

Laboratory: Midland  
Analysis: TDS      Analytical Method: SM 2540C      Prep Method: N/A  
QC Batch: 100878      Date Analyzed: 2013-04-27      Analyzed By: AR  
Prep Batch: 85494      Sample Preparation: 2013-04-26      Prepared By: AR

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| Parameter              | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|------------------------|------|------|--------------|-------|----------|------|
| Total Dissolved Solids |      | 2    | <b>37200</b> | mg/L  | 100      | 10.0 |

**Sample: 327396 - MW-5**

Laboratory: Lubbock  
Analysis: Alkalinity  
QC Batch: 101151  
Prep Batch: 85729

Analytical Method: SM 2320B  
Date Analyzed: 2013-05-07  
Sample Preparation: 2013-05-07

Prep Method: N/A  
Analyzed By: LM  
Prepared By: LM

| Parameter              | Flag | Cert | RL<br>Result | Units         | Dilution | RL   |
|------------------------|------|------|--------------|---------------|----------|------|
| Hydroxide Alkalinity   | U    | 1    | <20.0        | mg/L as CaCo3 | 1        | 20.0 |
| Carbonate Alkalinity   | U    | 1    | <20.0        | mg/L as CaCo3 | 1        | 20.0 |
| Bicarbonate Alkalinity |      | 1    | <b>136</b>   | mg/L as CaCo3 | 1        | 20.0 |
| Total Alkalinity       |      | 1    | <b>136</b>   | mg/L as CaCo3 | 1        | 20.0 |

**Sample: 327396 - MW-5**

Laboratory: Midland  
Analysis: BTEX  
QC Batch: 100911  
Prep Batch: 85524

Analytical Method: S 8021B  
Date Analyzed: 2013-04-30  
Sample Preparation: 2013-04-29

Prep Method: S 5030B  
Analyzed By: AH  
Prepared By: AH

| Parameter    | Flag      | Cert | RL<br>Result | Units | Dilution | RL      |
|--------------|-----------|------|--------------|-------|----------|---------|
| Benzene      | Qr, Qs, U | 2    | <0.00100     | mg/L  | 1        | 0.00100 |
| Toluene      | Qr, Qs, U | 2    | <0.00100     | mg/L  | 1        | 0.00100 |
| Ethylbenzene | Qr, Qs, U | 2    | <0.00100     | mg/L  | 1        | 0.00100 |
| Xylene       | Qr, Qs, U | 2    | <0.00100     | mg/L  | 1        | 0.00100 |

| Surrogate                    | Flag | Cert | Result | Units | Dilution | Spike<br>Amount | Percent<br>Recovery | Recovery<br>Limits |
|------------------------------|------|------|--------|-------|----------|-----------------|---------------------|--------------------|
| Trifluorotoluene (TFT)       |      |      | 0.0852 | mg/L  | 1        | 0.100           | 85                  | 70 - 130           |
| 4-Bromofluorobenzene (4-BFB) |      |      | 0.0772 | mg/L  | 1        | 0.100           | 77                  | 70 - 130           |

**Sample: 327396 - MW-5**

Laboratory: Lubbock  
Analysis: Ca, Dissolved  
QC Batch: 101120  
Prep Batch: 85570

Analytical Method: S 6010C  
Date Analyzed: 2013-05-07  
Sample Preparation: 2013-05-01

Prep Method: S 3005A  
Analyzed By: RR  
Prepared By: KV

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| Parameter         | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|-------------------|------|------|--------------|-------|----------|------|
| Dissolved Calcium |      | 1    | <b>90.9</b>  | mg/L  | 1        | 1.00 |

**Sample: 327396 - MW-5**

Laboratory: Lubbock  
Analysis: Chloride (IC)      Analytical Method: E 300.0      Prep Method: N/A  
QC Batch: 101124      Date Analyzed: 2013-05-03      Analyzed By: RL  
Prep Batch: 85704      Sample Preparation: 2013-05-03      Prepared By: RL

| Parameter | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|-----------|------|------|--------------|-------|----------|------|
| Chloride  |      | 1    | <b>66.2</b>  | mg/L  | 5        | 2.50 |

**Sample: 327396 - MW-5**

Laboratory: Lubbock  
Analysis: Hardness      Analytical Method: S 6010C      Prep Method: N/A  
QC Batch: 101120      Date Analyzed: 2013-05-07      Analyzed By: RR  
Prep Batch: 85570      Sample Preparation: 2013-05-01      Prepared By: KV

| Parameter         | Flag | Cert | RL<br>Result | Units                      | Dilution | RL   |
|-------------------|------|------|--------------|----------------------------|----------|------|
| Hardness (by ICP) |      |      | <b>298</b>   | mg eq CaCO <sub>3</sub> /L | 1        | 0.00 |

**Sample: 327396 - MW-5**

Laboratory: Lubbock  
Analysis: K, Dissolved      Analytical Method: S 6010C      Prep Method: S 3005A  
QC Batch: 101120      Date Analyzed: 2013-05-07      Analyzed By: RR  
Prep Batch: 85570      Sample Preparation: 2013-05-01      Prepared By: KV

| Parameter           | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|---------------------|------|------|--------------|-------|----------|------|
| Dissolved Potassium |      | 1    | <b>1.55</b>  | mg/L  | 1        | 1.00 |

**Sample: 327396 - MW-5**

Laboratory: Lubbock  
Analysis: Mg, Dissolved      Analytical Method: S 6010C      Prep Method: S 3005A  
QC Batch: 101120      Date Analyzed: 2013-05-07      Analyzed By: RR  
Prep Batch: 85570      Sample Preparation: 2013-05-01      Prepared By: KV

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| Parameter           | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|---------------------|------|------|--------------|-------|----------|------|
| Dissolved Magnesium |      | 1    | 17.3         | mg/L  | 1        | 1.00 |

**Sample: 327396 - MW-5**

Laboratory: Lubbock  
Analysis: Na, Dissolved      Analytical Method: S 6010C      Prep Method: S 3005A  
QC Batch: 101120      Date Analyzed: 2013-05-07      Analyzed By: RR  
Prep Batch: 85570      Sample Preparation: 2013-05-01      Prepared By: KV

| Parameter        | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|------------------|------|------|--------------|-------|----------|------|
| Dissolved Sodium |      | 1    | 64.9         | mg/L  | 1        | 1.00 |

**Sample: 327396 - MW-5**

Laboratory: Midland  
Analysis: pH      Analytical Method: SM 4500-H+      Prep Method: N/A  
QC Batch: 100884      Date Analyzed: 2013-04-26      Analyzed By: AR  
Prep Batch: 85498      Sample Preparation: 2013-04-26      Prepared By: AR

| Parameter | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|-----------|------|------|--------------|-------|----------|------|
| pH        |      | 2    | 7.98         | s.u.  | 1        | 0.00 |

**Sample: 327396 - MW-5**

Laboratory: Lubbock  
Analysis: SO4 (IC)      Analytical Method: E 300.0      Prep Method: N/A  
QC Batch: 101124      Date Analyzed: 2013-05-03      Analyzed By: RL  
Prep Batch: 85704      Sample Preparation: 2013-05-03      Prepared By: RL

| Parameter | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|-----------|------|------|--------------|-------|----------|------|
| Sulfate   |      | 1    | 133          | mg/L  | 5        | 2.50 |

**Sample: 327396 - MW-5**

Laboratory: Midland  
Analysis: TDS      Analytical Method: SM 2540C      Prep Method: N/A  
QC Batch: 100878      Date Analyzed: 2013-04-27      Analyzed By: AR  
Prep Batch: 85494      Sample Preparation: 2013-04-26      Prepared By: AR

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| Parameter              | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|------------------------|------|------|--------------|-------|----------|------|
| Total Dissolved Solids |      | 2    | 586          | mg/L  | 2        | 10.0 |

**Sample: 327397 - MW-6**

Laboratory: Lubbock  
Analysis: Alkalinity  
QC Batch: 101151  
Prep Batch: 85729

Analytical Method: SM 2320B  
Date Analyzed: 2013-05-07  
Sample Preparation: 2013-05-07

Prep Method: N/A  
Analyzed By: LM  
Prepared By: LM

| Parameter              | Flag | Cert | RL<br>Result | Units         | Dilution | RL   |
|------------------------|------|------|--------------|---------------|----------|------|
| Hydroxide Alkalinity   | U    | 1    | <20.0        | mg/L as CaCo3 | 1        | 20.0 |
| Carbonate Alkalinity   | U    | 1    | <20.0        | mg/L as CaCo3 | 1        | 20.0 |
| Bicarbonate Alkalinity |      | 1    | 118          | mg/L as CaCo3 | 1        | 20.0 |
| Total Alkalinity       |      | 1    | 118          | mg/L as CaCo3 | 1        | 20.0 |

**Sample: 327397 - MW-6**

Laboratory: Midland  
Analysis: BTEX  
QC Batch: 100979  
Prep Batch: 85587

Analytical Method: S 8021B  
Date Analyzed: 2013-05-02  
Sample Preparation: 2013-05-01

Prep Method: S 5030B  
Analyzed By: AH  
Prepared By: AH

| Parameter    | Flag | Cert | RL<br>Result | Units | Dilution | RL      |
|--------------|------|------|--------------|-------|----------|---------|
| Benzene      | Qs,U | 2    | <0.00100     | mg/L  | 1        | 0.00100 |
| Toluene      | Qs,U | 2    | <0.00100     | mg/L  | 1        | 0.00100 |
| Ethylbenzene | Qs,U | 2    | <0.00100     | mg/L  | 1        | 0.00100 |
| Xylene       | Qs,U | 2    | <0.00100     | mg/L  | 1        | 0.00100 |

| Surrogate                    | Flag  | Cert | Result | Units | Dilution | Spike<br>Amount | Percent<br>Recovery | Recovery<br>Limits |
|------------------------------|-------|------|--------|-------|----------|-----------------|---------------------|--------------------|
| Trifluorotoluene (TFT)       | 2 Qsf | Qsf  | 0.0693 | mg/L  | 1        | 0.100           | 69                  | 70 - 130           |
| 4-Bromofluorobenzene (4-BFB) | Qsf   | Qsf  | 0.0571 | mg/L  | 1        | 0.100           | 57                  | 70 - 130           |

**Sample: 327397 - MW-6**

Laboratory: Lubbock  
Analysis: Ca, Dissolved  
QC Batch: 101120  
Prep Batch: 85570

Analytical Method: S 6010C  
Date Analyzed: 2013-05-07  
Sample Preparation: 2013-05-01

Prep Method: S 3005A  
Analyzed By: RR  
Prepared By: KV

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| Parameter         | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|-------------------|------|------|--------------|-------|----------|------|
| Dissolved Calcium |      | 1    | 4540         | mg/L  | 100      | 1.00 |

**Sample: 327397 - MW-6**

Laboratory: Lubbock  
Analysis: Chloride (IC)      Analytical Method: E 300.0      Prep Method: N/A  
QC Batch: 101124      Date Analyzed: 2013-05-03      Analyzed By: RL  
Prep Batch: 85704      Sample Preparation: 2013-05-03      Prepared By: RL

| Parameter | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|-----------|------|------|--------------|-------|----------|------|
| Chloride  |      | 1    | 98800        | mg/L  | 5000     | 2.50 |

**Sample: 327397 - MW-6**

Laboratory: Lubbock  
Analysis: Hardness      Analytical Method: S 6010C      Prep Method: N/A  
QC Batch: 101120      Date Analyzed: 2013-05-07      Analyzed By: RR  
Prep Batch: 85570      Sample Preparation: 2013-05-01      Prepared By: KV

| Parameter         | Flag | Cert | RL<br>Result | Units         | Dilution | RL   |
|-------------------|------|------|--------------|---------------|----------|------|
| Hardness (by ICP) |      |      | 25000        | mg eq CaCO3/L | 1        | 0.00 |

**Sample: 327397 - MW-6**

Laboratory: Lubbock  
Analysis: K, Dissolved      Analytical Method: S 6010C      Prep Method: S 3005A  
QC Batch: 101120      Date Analyzed: 2013-05-07      Analyzed By: RR  
Prep Batch: 85570      Sample Preparation: 2013-05-01      Prepared By: KV

| Parameter           | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|---------------------|------|------|--------------|-------|----------|------|
| Dissolved Potassium |      | 1    | 708          | mg/L  | 100      | 1.00 |

**Sample: 327397 - MW-6**

Laboratory: Lubbock  
Analysis: Mg, Dissolved      Analytical Method: S 6010C      Prep Method: S 3005A  
QC Batch: 101120      Date Analyzed: 2013-05-07      Analyzed By: RR  
Prep Batch: 85570      Sample Preparation: 2013-05-01      Prepared By: KV

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| Parameter           | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|---------------------|------|------|--------------|-------|----------|------|
| Dissolved Magnesium |      | 1    | <b>3310</b>  | mg/L  | 100      | 1.00 |

**Sample: 327397 - MW-6**

Laboratory: Lubbock  
Analysis: Na, Dissolved      Analytical Method: S 6010C      Prep Method: S 3005A  
QC Batch: 101120      Date Analyzed: 2013-05-07      Analyzed By: RR  
Prep Batch: 85570      Sample Preparation: 2013-05-01      Prepared By: KV

| Parameter        | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|------------------|------|------|--------------|-------|----------|------|
| Dissolved Sodium |      | 1    | <b>57500</b> | mg/L  | 1000     | 1.00 |

**Sample: 327397 - MW-6**

Laboratory: Midland  
Analysis: pH      Analytical Method: SM 4500-H+      Prep Method: N/A  
QC Batch: 100884      Date Analyzed: 2013-04-26      Analyzed By: AR  
Prep Batch: 85498      Sample Preparation: 2013-04-26      Prepared By: AR

| Parameter | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|-----------|------|------|--------------|-------|----------|------|
| pH        |      | 2    | <b>6.13</b>  | s.u.  | 1        | 0.00 |

**Sample: 327397 - MW-6**

Laboratory: Lubbock  
Analysis: SO4 (IC)      Analytical Method: E 300.0      Prep Method: N/A  
QC Batch: 101124      Date Analyzed: 2013-05-03      Analyzed By: RL  
Prep Batch: 85704      Sample Preparation: 2013-05-03      Prepared By: RL

| Parameter | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|-----------|------|------|--------------|-------|----------|------|
| Sulfate   |      | 1    | <12500       | mg/L  | 5000     | 2.50 |

**Sample: 327397 - MW-6**

Laboratory: Midland  
Analysis: TDS      Analytical Method: SM 2540C      Prep Method: N/A  
QC Batch: 100878      Date Analyzed: 2013-04-27      Analyzed By: AR  
Prep Batch: 85494      Sample Preparation: 2013-04-26      Prepared By: AR

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| Parameter              | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|------------------------|------|------|--------------|-------|----------|------|
| Total Dissolved Solids |      | 2    | 169000       | mg/L  | 100      | 10.0 |

**Sample: 327398 - MW-7**

Laboratory: Lubbock  
Analysis: Alkalinity  
QC Batch: 101151  
Prep Batch: 85729

Analytical Method: SM 2320B  
Date Analyzed: 2013-05-07  
Sample Preparation: 2013-05-07

Prep Method: N/A  
Analyzed By: LM  
Prepared By: LM

| Parameter              | Flag | Cert | RL<br>Result | Units         | Dilution | RL   |
|------------------------|------|------|--------------|---------------|----------|------|
| Hydroxide Alkalinity   | U    | 1    | <20.0        | mg/L as CaCo3 | 1        | 20.0 |
| Carbonate Alkalinity   | U    | 1    | <20.0        | mg/L as CaCo3 | 1        | 20.0 |
| Bicarbonate Alkalinity |      | 1    | 91.0         | mg/L as CaCo3 | 1        | 20.0 |
| Total Alkalinity       |      | 1    | 91.0         | mg/L as CaCo3 | 1        | 20.0 |

**Sample: 327398 - MW-7**

Laboratory: Midland  
Analysis: BTEX  
QC Batch: 100979  
Prep Batch: 85587

Analytical Method: S 8021B  
Date Analyzed: 2013-05-02  
Sample Preparation: 2013-05-01

Prep Method: S 5030B  
Analyzed By: AH  
Prepared By: AH

| Parameter    | Flag              | Cert | RL<br>Result | Units | Dilution | RL      |
|--------------|-------------------|------|--------------|-------|----------|---------|
| Benzene      | Q <sub>s</sub> ,U | 2    | <0.00100     | mg/L  | 1        | 0.00100 |
| Toluene      | Q <sub>s</sub> ,U | 2    | <0.00100     | mg/L  | 1        | 0.00100 |
| Ethylbenzene | Q <sub>s</sub> ,U | 2    | <0.00100     | mg/L  | 1        | 0.00100 |
| Xylene       | Q <sub>s</sub> ,U | 2    | <0.00100     | mg/L  | 1        | 0.00100 |

| Surrogate                    | Flag                        | Cert            | Result | Units | Dilution | Spike<br>Amount | Percent<br>Recovery | Recovery<br>Limits |
|------------------------------|-----------------------------|-----------------|--------|-------|----------|-----------------|---------------------|--------------------|
| Trifluorotoluene (TFT)       | 3 <sub>Q<sub>sr</sub></sub> | Q <sub>sr</sub> | 0.0671 | mg/L  | 1        | 0.100           | 67                  | 70 - 130           |
| 4-Bromofluorobenzene (4-BFB) | Q <sub>sr</sub>             | Q <sub>sr</sub> | 0.0529 | mg/L  | 1        | 0.100           | 53                  | 70 - 130           |

**Sample: 327398 - MW-7**

Laboratory: Lubbock  
Analysis: Ca, Dissolved  
QC Batch: 101120  
Prep Batch: 85570

Analytical Method: S 6010C  
Date Analyzed: 2013-05-07  
Sample Preparation: 2013-05-01

Prep Method: S 3005A  
Analyzed By: RR  
Prepared By: KV

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| Parameter         | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|-------------------|------|------|--------------|-------|----------|------|
| Dissolved Calcium |      | 1    | 5520         | mg/L  | 100      | 1.00 |

**Sample: 327398 - MW-7**

Laboratory: Lubbock  
Analysis: Chloride (IC)      Analytical Method: E 300.0      Prep Method: N/A  
QC Batch: 101126      Date Analyzed: 2013-05-06      Analyzed By: RL  
Prep Batch: 85706      Sample Preparation: 2013-05-06      Prepared By: RL

| Parameter | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|-----------|------|------|--------------|-------|----------|------|
| Chloride  |      | 1    | 118000       | mg/L  | 5000     | 2.50 |

**Sample: 327398 - MW-7**

Laboratory: Lubbock  
Analysis: Hardness      Analytical Method: S 6010C      Prep Method: N/A  
QC Batch: 101120      Date Analyzed: 2013-05-07      Analyzed By: RR  
Prep Batch: 85570      Sample Preparation: 2013-05-01      Prepared By: KV

| Parameter         | Flag | Cert | RL<br>Result | Units         | Dilution | RL   |
|-------------------|------|------|--------------|---------------|----------|------|
| Hardness (by ICP) |      |      | 29800        | mg eq CaCO3/L | 1        | 0.00 |

**Sample: 327398 - MW-7**

Laboratory: Lubbock  
Analysis: K, Dissolved      Analytical Method: S 6010C      Prep Method: S 3005A  
QC Batch: 101120      Date Analyzed: 2013-05-07      Analyzed By: RR  
Prep Batch: 85570      Sample Preparation: 2013-05-01      Prepared By: KV

| Parameter           | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|---------------------|------|------|--------------|-------|----------|------|
| Dissolved Potassium |      | 1    | 994          | mg/L  | 100      | 1.00 |

**Sample: 327398 - MW-7**

Laboratory: Lubbock  
Analysis: Mg, Dissolved      Analytical Method: S 6010C      Prep Method: S 3005A  
QC Batch: 101120      Date Analyzed: 2013-05-07      Analyzed By: RR  
Prep Batch: 85570      Sample Preparation: 2013-05-01      Prepared By: KV

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| Parameter           | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|---------------------|------|------|--------------|-------|----------|------|
| Dissolved Magnesium |      | 1    | <b>3890</b>  | mg/L  | 100      | 1.00 |

**Sample: 327398 - MW-7**

|             |               |                     |            |              |         |
|-------------|---------------|---------------------|------------|--------------|---------|
| Laboratory: | Lubbock       |                     |            |              |         |
| Analysis:   | Na, Dissolved | Analytical Method:  | S 6010C    | Prep Method: | S 3005A |
| QC Batch:   | 101120        | Date Analyzed:      | 2013-05-07 | Analyzed By: | RR      |
| Prep Batch: | 85570         | Sample Preparation: | 2013-05-01 | Prepared By: | KV      |

| Parameter        | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|------------------|------|------|--------------|-------|----------|------|
| Dissolved Sodium |      | 1    | <b>66500</b> | mg/L  | 1000     | 1.00 |

**Sample: 327398 - MW-7**

|             |         |                     |            |              |     |
|-------------|---------|---------------------|------------|--------------|-----|
| Laboratory: | Midland |                     |            |              |     |
| Analysis:   | pH      | Analytical Method:  | SM 4500-H+ | Prep Method: | N/A |
| QC Batch:   | 100884  | Date Analyzed:      | 2013-04-26 | Analyzed By: | AR  |
| Prep Batch: | 85498   | Sample Preparation: | 2013-04-26 | Prepared By: | AR  |

| Parameter | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|-----------|------|------|--------------|-------|----------|------|
| pH        |      | 2    | <b>6.23</b>  | s.u.  | 1        | 0.00 |

**Sample: 327398 - MW-7**

|             |          |                     |            |              |     |
|-------------|----------|---------------------|------------|--------------|-----|
| Laboratory: | Lubbock  |                     |            |              |     |
| Analysis:   | SO4 (IC) | Analytical Method:  | E 300.0    | Prep Method: | N/A |
| QC Batch:   | 101126   | Date Analyzed:      | 2013-05-06 | Analyzed By: | RL  |
| Prep Batch: | 85706    | Sample Preparation: | 2013-05-06 | Prepared By: | RL  |

| Parameter | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|-----------|------|------|--------------|-------|----------|------|
| Sulfate   |      | 1    | <12500       | mg/L  | 5000     | 2.50 |

**Sample: 327398 - MW-7**

|             |         |                     |            |              |     |
|-------------|---------|---------------------|------------|--------------|-----|
| Laboratory: | Midland |                     |            |              |     |
| Analysis:   | TDS     | Analytical Method:  | SM 2540C   | Prep Method: | N/A |
| QC Batch:   | 100878  | Date Analyzed:      | 2013-04-27 | Analyzed By: | AR  |
| Prep Batch: | 85494   | Sample Preparation: | 2013-04-26 | Prepared By: | AR  |

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| Parameter              | Flag | Cert | RL<br>Result  | Units | Dilution | RL   |
|------------------------|------|------|---------------|-------|----------|------|
| Total Dissolved Solids |      | 2    | <b>180000</b> | mg/L  | 100      | 10.0 |

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## Method Blanks

### Method Blank (1) QC Batch: 100878

QC Batch: 100878 Date Analyzed: 2013-04-27 Analyzed By: AR  
Prep Batch: 85494 QC Preparation: 2013-04-26 Prepared By: AR

| Parameter              | Flag | Cert | MDL<br>Result | Units | RL |
|------------------------|------|------|---------------|-------|----|
| Total Dissolved Solids |      | 2    | <9.75         | mg/L  | 10 |

### Method Blank (1) QC Batch: 100911

QC Batch: 100911 Date Analyzed: 2013-04-30 Analyzed By: AH  
Prep Batch: 85524 QC Preparation: 2013-04-30 Prepared By: AH

| Parameter    | Flag | Cert | MDL<br>Result | Units | RL    |
|--------------|------|------|---------------|-------|-------|
| Benzene      |      | 2    | <0.000200     | mg/L  | 0.001 |
| Toluene      |      | 2    | <0.000300     | mg/L  | 0.001 |
| Ethylbenzene |      | 2    | <0.000400     | mg/L  | 0.001 |
| Xylene       |      | 2    | <0.00120      | mg/L  | 0.001 |

| Surrogate                    | Flag | Cert | Result | Units | Dilution | Spike<br>Amount | Percent<br>Recovery | Recovery<br>Limits |
|------------------------------|------|------|--------|-------|----------|-----------------|---------------------|--------------------|
| Trifluorotoluene (TFT)       |      |      | 0.0852 | mg/L  | 1        | 0.100           | 85                  | 70 - 130           |
| 4-Bromofluorobenzene (4-BFB) |      |      | 0.0773 | mg/L  | 1        | 0.100           | 77                  | 70 - 130           |

### Method Blank (1) QC Batch: 100979

QC Batch: 100979 Date Analyzed: 2013-05-02 Analyzed By: AH  
Prep Batch: 85587 QC Preparation: 2013-05-02 Prepared By: AH

| Parameter | Flag | Cert | MDL<br>Result | Units | RL    |
|-----------|------|------|---------------|-------|-------|
| Benzene   |      | 2    | <0.000200     | mg/L  | 0.001 |
| Toluene   |      | 2    | <0.000300     | mg/L  | 0.001 |

*continued ...*

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*method blank continued ...*

| Parameter    | Flag | Cert | MDL<br>Result | Units | RL    |
|--------------|------|------|---------------|-------|-------|
| Ethylbenzene |      | 2    | <0.000400     | mg/L  | 0.001 |
| Xylene       |      | 2    | <0.00120      | mg/L  | 0.001 |

| Surrogate                    | Flag | Cert | Result | Units | Dilution | Spike<br>Amount | Percent<br>Recovery | Recovery<br>Limits |
|------------------------------|------|------|--------|-------|----------|-----------------|---------------------|--------------------|
| Trifluorotoluene (TFT)       |      |      | 0.0988 | mg/L  | 1        | 0.100           | 99                  | 70 - 130           |
| 4-Bromofluorobenzene (4-BFB) |      |      | 0.0962 | mg/L  | 1        | 0.100           | 96                  | 70 - 130           |

**Method Blank (1)**      QC Batch: 101120

QC Batch: 101120  
Prep Batch: 85570

Date Analyzed: 2013-05-07  
QC Preparation: 2013-05-01

Analyzed By: RR  
Prepared By: KV

| Parameter         | Flag | Cert | MDL<br>Result | Units | RL |
|-------------------|------|------|---------------|-------|----|
| Dissolved Calcium |      | 1    | <0.0441       | mg/L  | 1  |

**Method Blank (1)**      QC Batch: 101120

QC Batch: 101120  
Prep Batch: 85570

Date Analyzed: 2013-05-07  
QC Preparation: 2013-05-01

Analyzed By: RR  
Prepared By: KV

| Parameter           | Flag | Cert | MDL<br>Result | Units | RL |
|---------------------|------|------|---------------|-------|----|
| Dissolved Potassium |      | 1    | <0.0443       | mg/L  | 1  |

**Method Blank (1)**      QC Batch: 101120

QC Batch: 101120  
Prep Batch: 85570

Date Analyzed: 2013-05-07  
QC Preparation: 2013-05-01

Analyzed By: RR  
Prepared By: KV

| Parameter           | Flag | Cert | MDL<br>Result | Units | RL |
|---------------------|------|------|---------------|-------|----|
| Dissolved Magnesium |      | 1    | <0.0296       | mg/L  | 1  |

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**Method Blank (1)**      QC Batch: 101120

QC Batch: 101120      Date Analyzed: 2013-05-07      Analyzed By: RR  
Prep Batch: 85570      QC Preparation: 2013-05-01      Prepared By: KV

| Parameter        | Flag | Cert | MDL<br>Result | Units | RL |
|------------------|------|------|---------------|-------|----|
| Dissolved Sodium |      | 1    | <0.172        | mg/L  | 1  |

**Method Blank (1)**      QC Batch: 101123

QC Batch: 101123      Date Analyzed: 2013-05-03      Analyzed By: RL  
Prep Batch: 85703      QC Preparation: 2013-05-03      Prepared By: RL

| Parameter | Flag | Cert | MDL<br>Result | Units | RL  |
|-----------|------|------|---------------|-------|-----|
| Chloride  |      | 1    | <0.169        | mg/L  | 2.5 |

**Method Blank (1)**      QC Batch: 101123

QC Batch: 101123      Date Analyzed: 2013-05-03      Analyzed By: RL  
Prep Batch: 85703      QC Preparation: 2013-05-03      Prepared By: RL

| Parameter | Flag | Cert | MDL<br>Result | Units | RL  |
|-----------|------|------|---------------|-------|-----|
| Sulfate   |      | 1    | <0.224        | mg/L  | 2.5 |

**Method Blank (1)**      QC Batch: 101124

QC Batch: 101124      Date Analyzed: 2013-05-03      Analyzed By: RL  
Prep Batch: 85704      QC Preparation: 2013-05-03      Prepared By: RL

| Parameter | Flag | Cert | MDL<br>Result | Units | RL  |
|-----------|------|------|---------------|-------|-----|
| Chloride  |      | 1    | 0.223         | mg/L  | 2.5 |

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**Method Blank (1)**      QC Batch: 101124

QC Batch: 101124      Date Analyzed: 2013-05-03      Analyzed By: RL  
Prep Batch: 85704      QC Preparation: 2013-05-03      Prepared By: RL

| Parameter | Flag | Cert | MDL<br>Result | Units | RL  |
|-----------|------|------|---------------|-------|-----|
| Sulfate   |      | 1    | <0.224        | mg/L  | 2.5 |

**Method Blank (1)**      QC Batch: 101126

QC Batch: 101126      Date Analyzed: 2013-05-06      Analyzed By: RL  
Prep Batch: 85706      QC Preparation: 2013-05-06      Prepared By: RL

| Parameter | Flag | Cert | MDL<br>Result | Units | RL  |
|-----------|------|------|---------------|-------|-----|
| Chloride  |      | 1    | 0.182         | mg/L  | 2.5 |

**Method Blank (1)**      QC Batch: 101126

QC Batch: 101126      Date Analyzed: 2013-05-06      Analyzed By: RL  
Prep Batch: 85706      QC Preparation: 2013-05-06      Prepared By: RL

| Parameter | Flag | Cert | MDL<br>Result | Units | RL  |
|-----------|------|------|---------------|-------|-----|
| Sulfate   |      | 1    | <0.224        | mg/L  | 2.5 |

**Method Blank (1)**      QC Batch: 101151

QC Batch: 101151      Date Analyzed: 2013-05-07      Analyzed By: LM  
Prep Batch: 85729      QC Preparation: 2013-05-07      Prepared By: LM

| Parameter              | Flag | Cert | MDL<br>Result | Units         | RL |
|------------------------|------|------|---------------|---------------|----|
| Hydroxide Alkalinity   |      | 1    | <1.00         | mg/L as CaCo3 | 20 |
| Carbonate Alkalinity   |      | 1    | <1.00         | mg/L as CaCo3 | 20 |
| Bicarbonate Alkalinity |      | 1    | 2.00          | mg/L as CaCo3 | 20 |
| Total Alkalinity       |      | 1    | <20.0         | mg/L as CaCo3 | 20 |

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**Duplicates (2)** Duplicated Sample: 327401

QC Batch: 100878 Date Analyzed: 2013-04-27 Analyzed By: AR  
Prep Batch: 85494 QC Preparation: 2013-04-26 Prepared By: AR

| Param                  |   | Duplicate<br>Result | Sample<br>Result | Units | Dilution | RPD | RPD<br>Limit |
|------------------------|---|---------------------|------------------|-------|----------|-----|--------------|
| Total Dissolved Solids | 2 | 93100               | 98000            | mg/L  | 100      | 5   | 10           |

**Duplicates (1)** Duplicated Sample: 327298

QC Batch: 100883 Date Analyzed: 2013-04-26 Analyzed By: AR  
Prep Batch: 85498 QC Preparation: 2013-04-26 Prepared By: AR

| Param |   | Duplicate<br>Result | Sample<br>Result | Units | Dilution | RPD | RPD<br>Limit |
|-------|---|---------------------|------------------|-------|----------|-----|--------------|
| pH    | 2 | 5.85                | 5.78             | s.u.  | 1        | 1   | 10           |

**Duplicates (1)** Duplicated Sample: 327401

QC Batch: 100884 Date Analyzed: 2013-04-26 Analyzed By: AR  
Prep Batch: 85498 QC Preparation: 2013-04-26 Prepared By: AR

| Param |   | Duplicate<br>Result | Sample<br>Result | Units | Dilution | RPD | RPD<br>Limit |
|-------|---|---------------------|------------------|-------|----------|-----|--------------|
| pH    | 2 | 6.38                | 6.38             | s.u.  | 1        | 0   | 10           |

**Duplicates (1)** Duplicated Sample: 327401

QC Batch: 101151 Date Analyzed: 2013-05-07 Analyzed By: LM  
Prep Batch: 85729 QC Preparation: 2013-05-07 Prepared By: LM

| Param                  |   | Duplicate<br>Result | Sample<br>Result | Units         | Dilution | RPD | RPD<br>Limit |
|------------------------|---|---------------------|------------------|---------------|----------|-----|--------------|
| Hydroxide Alkalinity   | 1 | <1.00               | <1.00            | mg/L as CaCo3 | 1        | 0   | 20           |
| Carbonate Alkalinity   | 1 | <1.00               | <1.00            | mg/L as CaCo3 | 1        | 0   | 20           |
| Bicarbonate Alkalinity | 1 | 131                 | 132              | mg/L as CaCo3 | 1        | 1   | 20           |

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| <i>duplicate continued ...</i> |   |                     |                  |               |          |              |
|--------------------------------|---|---------------------|------------------|---------------|----------|--------------|
| Param                          |   | Duplicate<br>Result | Sample<br>Result | Units         | Dilution | RPD<br>Limit |
| Total Alkalinity               | 1 | 131                 | 132              | mg/L as CaCo3 | 1        | 1<br>20      |

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## Laboratory Control Spikes

### Laboratory Control Spike (LCS-1)

QC Batch: 100878  
Prep Batch: 85494

Date Analyzed: 2013-04-27  
QC Preparation: 2013-04-26

Analyzed By: AR  
Prepared By: AR

| Param                  | F | C | LCS<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit |
|------------------------|---|---|---------------|-------|------|-----------------|------------------|------|---------------|
| Total Dissolved Solids |   | 2 | 1030          | mg/L  | 1    | 1000            | <9.75            | 103  | 90 - 110      |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

| Param                  | F | C | LCSD<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit | RPD | RPD<br>Limit |
|------------------------|---|---|----------------|-------|------|-----------------|------------------|------|---------------|-----|--------------|
| Total Dissolved Solids |   | 2 | 1050           | mg/L  | 1    | 1000            | <9.75            | 105  | 90 - 110      | 2   | 10           |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

### Laboratory Control Spike (LCS-2)

QC Batch: 100878  
Prep Batch: 85494

Date Analyzed: 2013-04-27  
QC Preparation: 2013-04-26

Analyzed By: AR  
Prepared By: AR

| Param                  | F | C | LCS<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit |
|------------------------|---|---|---------------|-------|------|-----------------|------------------|------|---------------|
| Total Dissolved Solids |   | 2 | 987           | mg/L  | 1    | 1000            | <9.75            | 99   | 90 - 110      |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

| Param                  | F | C | LCSD<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit | RPD | RPD<br>Limit |
|------------------------|---|---|----------------|-------|------|-----------------|------------------|------|---------------|-----|--------------|
| Total Dissolved Solids |   | 2 | 1010           | mg/L  | 1    | 1000            | <9.75            | 101  | 90 - 110      | 2   | 10           |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

### Laboratory Control Spike (LCS-1)

QC Batch: 100911  
Prep Batch: 85524

Date Analyzed: 2013-04-30  
QC Preparation: 2013-04-30

Analyzed By: AH  
Prepared By: AH

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| Param        | F | C | LCS<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit |
|--------------|---|---|---------------|-------|------|-----------------|------------------|------|---------------|
| Benzene      |   | 2 | 0.0958        | mg/L  | 1    | 0.100           | <0.000200        | 96   | 70 - 130      |
| Toluene      |   | 2 | 0.0938        | mg/L  | 1    | 0.100           | <0.000300        | 94   | 70 - 130      |
| Ethylbenzene |   | 2 | 0.0935        | mg/L  | 1    | 0.100           | <0.000400        | 94   | 70 - 130      |
| Xylene       |   | 2 | 0.279         | mg/L  | 1    | 0.300           | <0.00120         | 93   | 70 - 130      |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

| Param        | F | C | LCSD<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit | RPD | RPD<br>Limit |
|--------------|---|---|----------------|-------|------|-----------------|------------------|------|---------------|-----|--------------|
| Benzene      |   | 2 | 0.0931         | mg/L  | 1    | 0.100           | <0.000200        | 93   | 70 - 130      | 3   | 20           |
| Toluene      |   | 2 | 0.0916         | mg/L  | 1    | 0.100           | <0.000300        | 92   | 70 - 130      | 2   | 20           |
| Ethylbenzene |   | 2 | 0.0909         | mg/L  | 1    | 0.100           | <0.000400        | 91   | 70 - 130      | 3   | 20           |
| Xylene       |   | 2 | 0.272          | mg/L  | 1    | 0.300           | <0.00120         | 91   | 70 - 130      | 2   | 20           |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

| Surrogate                    | LCS<br>Result | LCSD<br>Result | Units | Dil. | Spike<br>Amount | LCS<br>Rec. | LCSD<br>Rec. | Rec.<br>Limit |
|------------------------------|---------------|----------------|-------|------|-----------------|-------------|--------------|---------------|
| Trifluorotoluene (TFT)       | 0.0855        | 0.0851         | mg/L  | 1    | 0.100           | 86          | 85           | 70 - 130      |
| 4-Bromofluorobenzene (4-BFB) | 0.0787        | 0.0795         | mg/L  | 1    | 0.100           | 79          | 80           | 70 - 130      |

### Laboratory Control Spike (LCS-1)

QC Batch: 100979  
Prep Batch: 85587

Date Analyzed: 2013-05-02  
QC Preparation: 2013-05-02

Analyzed By: AH  
Prepared By: AH

| Param        | F | C | LCS<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit |
|--------------|---|---|---------------|-------|------|-----------------|------------------|------|---------------|
| Benzene      |   | 2 | 0.0986        | mg/L  | 1    | 0.100           | <0.000200        | 99   | 70 - 130      |
| Toluene      |   | 2 | 0.0969        | mg/L  | 1    | 0.100           | <0.000300        | 97   | 70 - 130      |
| Ethylbenzene |   | 2 | 0.0962        | mg/L  | 1    | 0.100           | <0.000400        | 96   | 70 - 130      |
| Xylene       |   | 2 | 0.280         | mg/L  | 1    | 0.300           | <0.00120         | 93   | 70 - 130      |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

| Param        | F | C | LCSD<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit | RPD | RPD<br>Limit |
|--------------|---|---|----------------|-------|------|-----------------|------------------|------|---------------|-----|--------------|
| Benzene      |   | 2 | 0.102          | mg/L  | 1    | 0.100           | <0.000200        | 102  | 70 - 130      | 3   | 20           |
| Toluene      |   | 2 | 0.100          | mg/L  | 1    | 0.100           | <0.000300        | 100  | 70 - 130      | 3   | 20           |
| Ethylbenzene |   | 2 | 0.0990         | mg/L  | 1    | 0.100           | <0.000400        | 99   | 70 - 130      | 3   | 20           |
| Xylene       |   | 2 | 0.287          | mg/L  | 1    | 0.300           | <0.00120         | 96   | 70 - 130      | 2   | 20           |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

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| Surrogate                    | LCS<br>Result | LCSD<br>Result | Units | Dil. | Spike<br>Amount | LCS<br>Rec. | LCSD<br>Rec. | Rec.<br>Limit |
|------------------------------|---------------|----------------|-------|------|-----------------|-------------|--------------|---------------|
| Surrogate                    | LCS<br>Result | LCSD<br>Result | Units | Dil. | Spike<br>Amount | LCS<br>Rec. | LCSD<br>Rec. | Rec.<br>Limit |
| Trifluorotoluene (TFT)       | 0.0972        | 0.0977         | mg/L  | 1    | 0.100           | 97          | 98           | 70 - 130      |
| 4-Bromofluorobenzene (4-BFB) | 0.0968        | 0.0976         | mg/L  | 1    | 0.100           | 97          | 98           | 70 - 130      |

#### Laboratory Control Spike (LCS-1)

QC Batch: 101120  
Prep Batch: 85570

Date Analyzed: 2013-05-07  
QC Preparation: 2013-05-01

Analyzed By: RR  
Prepared By: KV

| Param             | F | C | LCS<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit |
|-------------------|---|---|---------------|-------|------|-----------------|------------------|------|---------------|
| Dissolved Calcium |   | 1 | 52.1          | mg/L  | 1    | 50.0            | <0.0441          | 104  | 85 - 115      |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

| Param             | F | C | LCSD<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit | RPD | RPD<br>Limit |
|-------------------|---|---|----------------|-------|------|-----------------|------------------|------|---------------|-----|--------------|
| Dissolved Calcium |   | 1 | 51.8           | mg/L  | 1    | 50.0            | <0.0441          | 104  | 85 - 115      | 1   | 20           |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

#### Laboratory Control Spike (LCS-1)

QC Batch: 101120  
Prep Batch: 85570

Date Analyzed: 2013-05-07  
QC Preparation: 2013-05-01

Analyzed By: RR  
Prepared By: KV

| Param               | F | C | LCS<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit |
|---------------------|---|---|---------------|-------|------|-----------------|------------------|------|---------------|
| Dissolved Potassium |   | 1 | 50.1          | mg/L  | 1    | 50.0            | <0.0443          | 100  | 85 - 115      |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

| Param               | F | C | LCSD<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit | RPD | RPD<br>Limit |
|---------------------|---|---|----------------|-------|------|-----------------|------------------|------|---------------|-----|--------------|
| Dissolved Potassium |   | 1 | 48.1           | mg/L  | 1    | 50.0            | <0.0443          | 96   | 85 - 115      | 4   | 20           |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

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#### Laboratory Control Spike (LCS-1)

QC Batch: 101120  
Prep Batch: 85570

Date Analyzed: 2013-05-07  
QC Preparation: 2013-05-01

Analyzed By: RR  
Prepared By: KV

| Param               | F | C | LCS<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit |
|---------------------|---|---|---------------|-------|------|-----------------|------------------|------|---------------|
| Dissolved Magnesium |   | 1 | 49.8          | mg/L  | 1    | 50.0            | <0.0296          | 100  | 85 - 115      |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

| Param               | F | C | LCSD<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit | RPD | RPD<br>Limit |
|---------------------|---|---|----------------|-------|------|-----------------|------------------|------|---------------|-----|--------------|
| Dissolved Magnesium |   | 1 | 49.9           | mg/L  | 1    | 50.0            | <0.0296          | 100  | 85 - 115      | 0   | 20           |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

#### Laboratory Control Spike (LCS-1)

QC Batch: 101120  
Prep Batch: 85570

Date Analyzed: 2013-05-07  
QC Preparation: 2013-05-01

Analyzed By: RR  
Prepared By: KV

| Param            | F | C | LCS<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit |
|------------------|---|---|---------------|-------|------|-----------------|------------------|------|---------------|
| Dissolved Sodium |   | 1 | 50.7          | mg/L  | 1    | 50.0            | <0.172           | 101  | 85 - 115      |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

| Param            | F | C | LCSD<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit | RPD | RPD<br>Limit |
|------------------|---|---|----------------|-------|------|-----------------|------------------|------|---------------|-----|--------------|
| Dissolved Sodium |   | 1 | 50.0           | mg/L  | 1    | 50.0            | <0.172           | 100  | 85 - 115      | 1   | 20           |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

#### Laboratory Control Spike (LCS-1)

QC Batch: 101123  
Prep Batch: 85703

Date Analyzed: 2013-05-03  
QC Preparation: 2013-05-03

Analyzed By: RL  
Prepared By: RL

| Param    | F | C | LCS<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit |
|----------|---|---|---------------|-------|------|-----------------|------------------|------|---------------|
| Chloride |   | 1 | 24.2          | mg/L  | 1    | 25.0            | <0.169           | 97   | 90 - 110      |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

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| Param    | F | C | LCSD<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit | RPD | RPD<br>Limit |
|----------|---|---|----------------|-------|------|-----------------|------------------|------|---------------|-----|--------------|
| Chloride |   | 1 | 24.9           | mg/L  | 1    | 25.0            | <0.169           | 100  | 90 - 110      | 3   | 20           |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

#### Laboratory Control Spike (LCS-1)

QC Batch: 101123  
Prep Batch: 85703

Date Analyzed: 2013-05-03  
QC Preparation: 2013-05-03

Analyzed By: RL  
Prepared By: RL

| Param   | F | C | LCS<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit |
|---------|---|---|---------------|-------|------|-----------------|------------------|------|---------------|
| Sulfate |   | 1 | 24.6          | mg/L  | 1    | 25.0            | <0.224           | 98   | 90 - 110      |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

| Param   | F | C | LCSD<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit | RPD | RPD<br>Limit |
|---------|---|---|----------------|-------|------|-----------------|------------------|------|---------------|-----|--------------|
| Sulfate |   | 1 | 26.1           | mg/L  | 1    | 25.0            | <0.224           | 104  | 90 - 110      | 6   | 20           |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

#### Laboratory Control Spike (LCS-1)

QC Batch: 101124  
Prep Batch: 85704

Date Analyzed: 2013-05-03  
QC Preparation: 2013-05-03

Analyzed By: RL  
Prepared By: RL

| Param    | F | C | LCS<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit |
|----------|---|---|---------------|-------|------|-----------------|------------------|------|---------------|
| Chloride |   | 1 | 24.4          | mg/L  | 1    | 25.0            | <0.169           | 98   | 90 - 110      |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

| Param    | F | C | LCSD<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit | RPD | RPD<br>Limit |
|----------|---|---|----------------|-------|------|-----------------|------------------|------|---------------|-----|--------------|
| Chloride |   | 1 | 24.7           | mg/L  | 1    | 25.0            | <0.169           | 99   | 90 - 110      | 1   | 20           |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

#### Laboratory Control Spike (LCS-1)

QC Batch: 101124  
Prep Batch: 85704

Date Analyzed: 2013-05-03  
QC Preparation: 2013-05-03

Analyzed By: RL  
Prepared By: RL

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| Param   | F | C | LCS<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit |
|---------|---|---|---------------|-------|------|-----------------|------------------|------|---------------|
| Sulfate |   | 1 | 25.3          | mg/L  | 1    | 25.0            | <0.224           | 101  | 90 - 110      |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

| Param   | F | C | LCSD<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit | RPD | RPD<br>Limit |
|---------|---|---|----------------|-------|------|-----------------|------------------|------|---------------|-----|--------------|
| Sulfate |   | 1 | 25.2           | mg/L  | 1    | 25.0            | <0.224           | 101  | 90 - 110      | 0   | 20           |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

#### Laboratory Control Spike (LCS-1)

QC Batch: 101126  
Prep Batch: 85706

Date Analyzed: 2013-05-06  
QC Preparation: 2013-05-06

Analyzed By: RL  
Prepared By: RL

| Param    | F | C | LCS<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit |
|----------|---|---|---------------|-------|------|-----------------|------------------|------|---------------|
| Chloride |   | 1 | 24.9          | mg/L  | 1    | 25.0            | <0.169           | 100  | 90 - 110      |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

| Param    | F | C | LCSD<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit | RPD | RPD<br>Limit |
|----------|---|---|----------------|-------|------|-----------------|------------------|------|---------------|-----|--------------|
| Chloride |   | 1 | 24.8           | mg/L  | 1    | 25.0            | <0.169           | 99   | 90 - 110      | 0   | 20           |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

#### Laboratory Control Spike (LCS-1)

QC Batch: 101126  
Prep Batch: 85706

Date Analyzed: 2013-05-06  
QC Preparation: 2013-05-06

Analyzed By: RL  
Prepared By: RL

| Param   | F | C | LCS<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit |
|---------|---|---|---------------|-------|------|-----------------|------------------|------|---------------|
| Sulfate |   | 1 | 26.2          | mg/L  | 1    | 25.0            | <0.224           | 105  | 90 - 110      |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

| Param   | F | C | LCSD<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit | RPD | RPD<br>Limit |
|---------|---|---|----------------|-------|------|-----------------|------------------|------|---------------|-----|--------------|
| Sulfate |   | 1 | 25.7           | mg/L  | 1    | 25.0            | <0.224           | 103  | 90 - 110      | 2   | 20           |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

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**Matrix Spike (MS-1)** Spiked Sample: 327126

QC Batch: 100911  
Prep Batch: 85524

Date Analyzed: 2013-04-30  
QC Preparation: 2013-04-30

Analyzed By: AH  
Prepared By: AH

| Param        | F              | C              | MS<br>Result | Units   | Dil. | Spike<br>Amount | Matrix<br>Result | Rec.      | Rec.<br>Limit |
|--------------|----------------|----------------|--------------|---------|------|-----------------|------------------|-----------|---------------|
| Benzene      | Q <sup>s</sup> | Q <sup>s</sup> | 2            | 0.00590 | mg/L | 1               | 0.100            | <0.000200 | 6 70 - 130    |
| Toluene      | Q <sup>s</sup> | Q <sup>s</sup> | 2            | 0.0216  | mg/L | 1               | 0.100            | <0.000300 | 22 70 - 130   |
| Ethylbenzene | Q <sup>s</sup> | Q <sup>s</sup> | 2            | 0.00700 | mg/L | 1               | 0.100            | <0.000400 | 7 70 - 130    |
| Xylene       | Q <sup>s</sup> | Q <sup>s</sup> | 2            | 0.0338  | mg/L | 1               | 0.300            | <0.00120  | 11 70 - 130   |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

| Param        | F                                            | C                               | MSD<br>Result | Units   | Dil. | Spike<br>Amount | Matrix<br>Result | Rec.      | Rec.<br>Limit | RPD | RPD<br>Limit |
|--------------|----------------------------------------------|---------------------------------|---------------|---------|------|-----------------|------------------|-----------|---------------|-----|--------------|
| Benzene      | <sup>4</sup> Q <sub>r</sub> , Q <sub>s</sub> | Q <sub>r</sub> , Q <sub>s</sub> | 2             | 0.00950 | mg/L | 1               | 0.100            | <0.000200 | 10 70 - 130   | 47  | 20           |
| Toluene      | Q <sub>r</sub> , Q <sub>s</sub>              | Q <sub>r</sub> , Q <sub>s</sub> | 2             | 0.0346  | mg/L | 1               | 0.100            | <0.000300 | 35 70 - 130   | 46  | 20           |
| Ethylbenzene | Q <sub>r</sub> , Q <sub>s</sub>              | Q <sub>r</sub> , Q <sub>s</sub> | 2             | 0.0109  | mg/L | 1               | 0.100            | <0.000400 | 11 70 - 130   | 44  | 20           |
| Xylene       | Q <sub>r</sub> , Q <sub>s</sub>              | Q <sub>r</sub> , Q <sub>s</sub> | 2             | 0.0506  | mg/L | 1               | 0.300            | <0.00120  | 17 70 - 130   | 40  | 20           |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

| Surrogate                    | MS<br>Result | MSD<br>Result | Units | Dil. | Spike<br>Amount | MS<br>Rec. | MSD<br>Rec. | Rec.<br>Limit |
|------------------------------|--------------|---------------|-------|------|-----------------|------------|-------------|---------------|
| Trifluorotoluene (TFT)       | 0.0898       | 0.0899        | mg/L  | 1    | 0.1             | 90         | 90          | 70 - 130      |
| 4-Bromofluorobenzene (4-BFB) | 0.0787       | 0.0785        | mg/L  | 1    | 0.1             | 79         | 78          | 70 - 130      |

**Matrix Spike (MS-1)** Spiked Sample: 327406

QC Batch: 100979  
Prep Batch: 85587

Date Analyzed: 2013-05-02  
QC Preparation: 2013-05-02

Analyzed By: AH  
Prepared By: AH

| Param        | F              | C              | MS<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec.      | Rec.<br>Limit |
|--------------|----------------|----------------|--------------|-------|------|-----------------|------------------|-----------|---------------|
| Benzene      | Q <sup>s</sup> | Q <sup>s</sup> | 2            | 0.179 | mg/L | 1               | 0.100            | <0.000200 | 179 70 - 130  |
| Toluene      | Q <sup>s</sup> | Q <sup>s</sup> | 2            | 0.174 | mg/L | 1               | 0.100            | <0.000300 | 174 70 - 130  |
| Ethylbenzene | Q <sup>s</sup> | Q <sup>s</sup> | 2            | 0.171 | mg/L | 1               | 0.100            | <0.000400 | 171 70 - 130  |
| Xylene       | Q <sup>s</sup> | Q <sup>s</sup> | 2            | 0.495 | mg/L | 1               | 0.300            | <0.00120  | 165 70 - 130  |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

| Param   | F              | C              | MSD<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec.      | Rec.<br>Limit | RPD | RPD<br>Limit |
|---------|----------------|----------------|---------------|-------|------|-----------------|------------------|-----------|---------------|-----|--------------|
| Benzene | Q <sup>s</sup> | Q <sup>s</sup> | 2             | 0.147 | mg/L | 1               | 0.100            | <0.000200 | 147 70 - 130  | 20  | 20           |
| Toluene | Q <sup>s</sup> | Q <sup>s</sup> | 2             | 0.143 | mg/L | 1               | 0.100            | <0.000300 | 143 70 - 130  | 20  | 20           |

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| Param        | F  | C  | MSD<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec.      | Rec.<br>Limit | RPD      | RPD<br>Limit |
|--------------|----|----|---------------|-------|------|-----------------|------------------|-----------|---------------|----------|--------------|
| Ethylbenzene | Qs | Qs | 2             | 0.140 | mg/L | 1               | 0.100            | <0.000400 | 140           | 70 - 130 | 20           |
| Xylene       | Qs | Qs | 2             | 0.405 | mg/L | 1               | 0.300            | <0.00120  | 135           | 70 - 130 | 20           |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

| Surrogate                    | MS<br>Result | MSD<br>Result | Units | Dil. | Spike<br>Amount | MS<br>Rec. | MSD<br>Rec. | Rec.<br>Limit |
|------------------------------|--------------|---------------|-------|------|-----------------|------------|-------------|---------------|
| Trifluorotoluene (TFT)       | 0.0974       | 0.0968        | mg/L  | 1    | 0.1             | 97         | 97          | 70 - 130      |
| 4-Bromofluorobenzene (4-BFB) | 0.0981       | 0.0960        | mg/L  | 1    | 0.1             | 98         | 96          | 70 - 130      |

**Matrix Spike (MS-1)** Spiked Sample: 327393

QC Batch: 101120  
Prep Batch: 85570

Date Analyzed: 2013-05-07  
QC Preparation: 2013-05-01

Analyzed By: RR  
Prepared By: KV

| Param             | F | C | MS<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit |
|-------------------|---|---|--------------|-------|------|-----------------|------------------|------|---------------|
| Dissolved Calcium |   | 1 | 2940         | mg/L  | 1    | 500             | 2490             | 90   | 75 - 125      |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

| Param             | F | C | MSD<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit | RPD | RPD<br>Limit |
|-------------------|---|---|---------------|-------|------|-----------------|------------------|------|---------------|-----|--------------|
| Dissolved Calcium |   | 1 | 2970          | mg/L  | 1    | 500             | 2490             | 96   | 75 - 125      | 1   | 20           |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

**Matrix Spike (MS-1)** Spiked Sample: 327393

QC Batch: 101120  
Prep Batch: 85570

Date Analyzed: 2013-05-07  
QC Preparation: 2013-05-01

Analyzed By: RR  
Prepared By: KV

| Param               | F | C | MS<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit |
|---------------------|---|---|--------------|-------|------|-----------------|------------------|------|---------------|
| Dissolved Potassium |   | 1 | 539          | mg/L  | 1    | 500             | 22.6             | 103  | 75 - 125      |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

| Param               | F | C | MSD<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit | RPD | RPD<br>Limit |
|---------------------|---|---|---------------|-------|------|-----------------|------------------|------|---------------|-----|--------------|
| Dissolved Potassium |   | 1 | 535           | mg/L  | 1    | 500             | 22.6             | 102  | 75 - 125      | 1   | 20           |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

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**Matrix Spike (MS-1)** Spiked Sample: 327393

QC Batch: 101120  
Prep Batch: 85570

Date Analyzed: 2013-05-07  
QC Preparation: 2013-05-01

Analyzed By: RR  
Prepared By: KV

| Param               | F | C | MS<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit |
|---------------------|---|---|--------------|-------|------|-----------------|------------------|------|---------------|
| Dissolved Magnesium |   | 1 | 1020         | mg/L  | 1    | 500             | 575              | 89   | 75 - 125      |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

| Param               | F | C | MSD<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit | RPD | RPD<br>Limit |
|---------------------|---|---|---------------|-------|------|-----------------|------------------|------|---------------|-----|--------------|
| Dissolved Magnesium |   | 1 | 1050          | mg/L  | 1    | 500             | 575              | 95   | 75 - 125      | 3   | 20           |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

**Matrix Spike (MS-1)** Spiked Sample: 327393

QC Batch: 101120  
Prep Batch: 85570

Date Analyzed: 2013-05-07  
QC Preparation: 2013-05-01

Analyzed By: RR  
Prepared By: KV

| Param            | F | C | MS<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit |
|------------------|---|---|--------------|-------|------|-----------------|------------------|------|---------------|
| Dissolved Sodium |   | 1 | 2750         | mg/L  | 1    | 500             | 2240             | 102  | 75 - 125      |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

| Param            | F | C | MSD<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit | RPD | RPD<br>Limit |
|------------------|---|---|---------------|-------|------|-----------------|------------------|------|---------------|-----|--------------|
| Dissolved Sodium |   | 1 | 2740          | mg/L  | 1    | 500             | 2240             | 100  | 75 - 125      | 0   | 20           |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

**Matrix Spike (MS-1)** Spiked Sample: 327303

QC Batch: 101123  
Prep Batch: 85703

Date Analyzed: 2013-05-03  
QC Preparation: 2013-05-03

Analyzed By: RL  
Prepared By: RL

| Param    | F | C | MS<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit |
|----------|---|---|--------------|-------|------|-----------------|------------------|------|---------------|
| Chloride |   | 1 | 6180         | mg/L  | 100  | 2500            | 3570             | 104  | 80 - 120      |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

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| Param    | F | C | MSD<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit | RPD | RPD<br>Limit |
|----------|---|---|---------------|-------|------|-----------------|------------------|------|---------------|-----|--------------|
| Chloride |   | 1 | 6550          | mg/L  | 100  | 2500            | 3570             | 119  | 80 - 120      | 6   | 20           |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

**Matrix Spike (MS-1)** Spiked Sample: 327303

QC Batch: 101123  
Prep Batch: 85703

Date Analyzed: 2013-05-03  
QC Preparation: 2013-05-03

Analyzed By: RL  
Prepared By: RL

| Param   | F | C | MS<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit |
|---------|---|---|--------------|-------|------|-----------------|------------------|------|---------------|
| Sulfate |   | 1 | 2750         | mg/L  | 100  | 2500            | 172              | 103  | 80 - 120      |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

| Param   | F | C | MSD<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit | RPD | RPD<br>Limit |
|---------|---|---|---------------|-------|------|-----------------|------------------|------|---------------|-----|--------------|
| Sulfate |   | 1 | 2710          | mg/L  | 100  | 2500            | 172              | 102  | 80 - 120      | 2   | 20           |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

**Matrix Spike (MS-1)** Spiked Sample: 327396

QC Batch: 101124  
Prep Batch: 85704

Date Analyzed: 2013-05-03  
QC Preparation: 2013-05-03

Analyzed By: RL  
Prepared By: RL

| Param    | F | C | MS<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit |
|----------|---|---|--------------|-------|------|-----------------|------------------|------|---------------|
| Chloride |   | 1 | 205          | mg/L  | 5    | 125             | 66.2             | 111  | 80 - 120      |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

| Param    | F | C | MSD<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit | RPD | RPD<br>Limit |
|----------|---|---|---------------|-------|------|-----------------|------------------|------|---------------|-----|--------------|
| Chloride |   | 1 | 204           | mg/L  | 5    | 125             | 66.2             | 110  | 80 - 120      | 0   | 20           |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

**Matrix Spike (MS-1)** Spiked Sample: 327396

QC Batch: 101124  
Prep Batch: 85704

Date Analyzed: 2013-05-03  
QC Preparation: 2013-05-03

Analyzed By: RL  
Prepared By: RL

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| Param   | F | C | MS<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit |
|---------|---|---|--------------|-------|------|-----------------|------------------|------|---------------|
| Sulfate |   | 1 | 282          | mg/L  | 5    | 125             | 133              | 119  | 80 - 120      |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

| Param   | F | C | MSD<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit | RPD | RPD<br>Limit |
|---------|---|---|---------------|-------|------|-----------------|------------------|------|---------------|-----|--------------|
| Sulfate |   | 1 | 281           | mg/L  | 5    | 125             | 133              | 118  | 80 - 120      | 0   | 20           |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

**Matrix Spike (MS-1)** Spiked Sample: 327406

QC Batch: 101126  
Prep Batch: 85706

Date Analyzed: 2013-05-06  
QC Preparation: 2013-05-06

Analyzed By: RL  
Prepared By: RL

| Param    | F | C | MS<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit |
|----------|---|---|--------------|-------|------|-----------------|------------------|------|---------------|
| Chloride |   | 1 | 231          | mg/L  | 5    | 125             | 89.8             | 113  | 80 - 120      |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

| Param    | F | C | MSD<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit | RPD | RPD<br>Limit |
|----------|---|---|---------------|-------|------|-----------------|------------------|------|---------------|-----|--------------|
| Chloride |   | 1 | 231           | mg/L  | 5    | 125             | 89.8             | 113  | 80 - 120      | 0   | 20           |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

**Matrix Spike (MS-1)** Spiked Sample: 327406

QC Batch: 101126  
Prep Batch: 85706

Date Analyzed: 2013-05-06  
QC Preparation: 2013-05-06

Analyzed By: RL  
Prepared By: RL

| Param   | F | C | MS<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit |
|---------|---|---|--------------|-------|------|-----------------|------------------|------|---------------|
| Sulfate |   | 1 | 252          | mg/L  | 5    | 125             | 109              | 114  | 80 - 120      |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

| Param   | F | C | MSD<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit | RPD | RPD<br>Limit |
|---------|---|---|---------------|-------|------|-----------------|------------------|------|---------------|-----|--------------|
| Sulfate |   | 1 | 254           | mg/L  | 5    | 125             | 109              | 116  | 80 - 120      | 1   | 20           |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

## Calibration Standards

### Standard (ICV-1)

QC Batch: 100883

Date Analyzed: 2013-04-26

Analyzed By: AR

| Param | Flag | Cert | Units | ICVs<br>True<br>Conc. | ICVs<br>Found<br>Conc. | ICVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|-------|------|------|-------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| pH    |      | 2    | s.u.  | 7.00                  | 7.03                   | 100                         | 98 - 102                      | 2013-04-26       |

### Standard (CCV-1)

QC Batch: 100883

Date Analyzed: 2013-04-26

Analyzed By: AR

| Param | Flag | Cert | Units | CCVs<br>True<br>Conc. | CCVs<br>Found<br>Conc. | CCVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|-------|------|------|-------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| pH    |      | 2    | s.u.  | 7.00                  | 7.08                   | 101                         | 98 - 102                      | 2013-04-26       |

### Standard (ICV-1)

QC Batch: 100884

Date Analyzed: 2013-04-26

Analyzed By: AR

| Param | Flag | Cert | Units | ICVs<br>True<br>Conc. | ICVs<br>Found<br>Conc. | ICVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|-------|------|------|-------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| pH    |      | 2    | s.u.  | 7.00                  | 7.08                   | 101                         | 98 - 102                      | 2013-04-26       |

### Standard (CCV-1)

QC Batch: 100884

Date Analyzed: 2013-04-26

Analyzed By: AR

| Param | Flag | Cert | Units | CCVs<br>True<br>Conc. | CCVs<br>Found<br>Conc. | CCVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|-------|------|------|-------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| pH    |      | 2    | s.u.  | 7.00                  | 7.09                   | 101                         | 98 - 102                      | 2013-04-26       |

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**Standard (CCV-1)**

QC Batch: 100911

Date Analyzed: 2013-04-30

Analyzed By: AH

| Param        | Flag | Cert | Units | CCVs<br>True<br>Conc. | CCVs<br>Found<br>Conc. | CCVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|--------------|------|------|-------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| Benzene      |      | 2    | mg/L  | 0.100                 | 0.0872                 | 87                          | 80 - 120                      | 2013-04-30       |
| Toluene      |      | 2    | mg/L  | 0.100                 | 0.0855                 | 86                          | 80 - 120                      | 2013-04-30       |
| Ethylbenzene |      | 2    | mg/L  | 0.100                 | 0.0850                 | 85                          | 80 - 120                      | 2013-04-30       |
| Xylene       |      | 2    | mg/L  | 0.300                 | 0.253                  | 84                          | 80 - 120                      | 2013-04-30       |

**Standard (CCV-2)**

QC Batch: 100911

Date Analyzed: 2013-04-30

Analyzed By: AH

| Param        | Flag | Cert | Units | CCVs<br>True<br>Conc. | CCVs<br>Found<br>Conc. | CCVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|--------------|------|------|-------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| Benzene      |      | 2    | mg/L  | 0.100                 | 0.0953                 | 95                          | 80 - 120                      | 2013-04-30       |
| Toluene      |      | 2    | mg/L  | 0.100                 | 0.0930                 | 93                          | 80 - 120                      | 2013-04-30       |
| Ethylbenzene |      | 2    | mg/L  | 0.100                 | 0.0928                 | 93                          | 80 - 120                      | 2013-04-30       |
| Xylene       |      | 2    | mg/L  | 0.300                 | 0.276                  | 92                          | 80 - 120                      | 2013-04-30       |

**Standard (CCV-3)**

QC Batch: 100911

Date Analyzed: 2013-04-30

Analyzed By: AH

| Param        | Flag | Cert | Units | CCVs<br>True<br>Conc. | CCVs<br>Found<br>Conc. | CCVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|--------------|------|------|-------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| Benzene      |      | 2    | mg/L  | 0.100                 | 0.0962                 | 96                          | 80 - 120                      | 2013-04-30       |
| Toluene      |      | 2    | mg/L  | 0.100                 | 0.0945                 | 94                          | 80 - 120                      | 2013-04-30       |
| Ethylbenzene |      | 2    | mg/L  | 0.100                 | 0.0941                 | 94                          | 80 - 120                      | 2013-04-30       |
| Xylene       |      | 2    | mg/L  | 0.300                 | 0.280                  | 93                          | 80 - 120                      | 2013-04-30       |

**Standard (CCV-1)**

QC Batch: 100979

Date Analyzed: 2013-05-02

Analyzed By: AH

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| Param        | Flag | Cert | Units | CCVs<br>True<br>Conc. | CCVs<br>Found<br>Conc. | CCVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|--------------|------|------|-------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| Benzene      |      | 2    | mg/L  | 0.100                 | 0.0943                 | 94                          | 80 - 120                      | 2013-05-02       |
| Toluene      |      | 2    | mg/L  | 0.100                 | 0.0918                 | 92                          | 80 - 120                      | 2013-05-02       |
| Ethylbenzene |      | 2    | mg/L  | 0.100                 | 0.0901                 | 90                          | 80 - 120                      | 2013-05-02       |
| Xylene       |      | 2    | mg/L  | 0.300                 | 0.261                  | 87                          | 80 - 120                      | 2013-05-02       |

#### Standard (CCV-2)

QC Batch: 100979

Date Analyzed: 2013-05-02

Analyzed By: AH

| Param        | Flag | Cert | Units | CCVs<br>True<br>Conc. | CCVs<br>Found<br>Conc. | CCVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|--------------|------|------|-------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| Benzene      |      | 2    | mg/L  | 0.100                 | 0.100                  | 100                         | 80 - 120                      | 2013-05-02       |
| Toluene      |      | 2    | mg/L  | 0.100                 | 0.0981                 | 98                          | 80 - 120                      | 2013-05-02       |
| Ethylbenzene |      | 2    | mg/L  | 0.100                 | 0.0966                 | 97                          | 80 - 120                      | 2013-05-02       |
| Xylene       |      | 2    | mg/L  | 0.300                 | 0.280                  | 93                          | 80 - 120                      | 2013-05-02       |

#### Standard (CCV-3)

QC Batch: 100979

Date Analyzed: 2013-05-02

Analyzed By: AH

| Param        | Flag | Cert | Units | CCVs<br>True<br>Conc. | CCVs<br>Found<br>Conc. | CCVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|--------------|------|------|-------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| Benzene      |      | 2    | mg/L  | 0.100                 | 0.0993                 | 99                          | 80 - 120                      | 2013-05-02       |
| Toluene      |      | 2    | mg/L  | 0.100                 | 0.0969                 | 97                          | 80 - 120                      | 2013-05-02       |
| Ethylbenzene |      | 2    | mg/L  | 0.100                 | 0.0953                 | 95                          | 80 - 120                      | 2013-05-02       |
| Xylene       |      | 2    | mg/L  | 0.300                 | 0.276                  | 92                          | 80 - 120                      | 2013-05-02       |

#### Standard (CCV-4)

QC Batch: 100979

Date Analyzed: 2013-05-02

Analyzed By: AH

| Param   | Flag | Cert | Units | CCVs<br>True<br>Conc. | CCVs<br>Found<br>Conc. | CCVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|---------|------|------|-------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| Benzene |      | 2    | mg/L  | 0.100                 | 0.101                  | 101                         | 80 - 120                      | 2013-05-02       |

*continued ...*

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standard continued ...

| Param        | Flag | Cert | Units | CCVs<br>True<br>Conc. | CCVs<br>Found<br>Conc. | CCVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|--------------|------|------|-------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| Toluene      |      | 2    | mg/L  | 0.100                 | 0.0994                 | 99                          | 80 - 120                      | 2013-05-02       |
| Ethylbenzene |      | 2    | mg/L  | 0.100                 | 0.0985                 | 98                          | 80 - 120                      | 2013-05-02       |
| Xylene       |      | 2    | mg/L  | 0.300                 | 0.286                  | 95                          | 80 - 120                      | 2013-05-02       |

#### Standard (CCV-5)

QC Batch: 100979

Date Analyzed: 2013-05-02

Analyzed By: AH

| Param        | Flag | Cert | Units | CCVs<br>True<br>Conc. | CCVs<br>Found<br>Conc. | CCVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|--------------|------|------|-------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| Benzene      |      | 2    | mg/L  | 0.100                 | 0.102                  | 102                         | 80 - 120                      | 2013-05-02       |
| Toluene      |      | 2    | mg/L  | 0.100                 | 0.101                  | 101                         | 80 - 120                      | 2013-05-02       |
| Ethylbenzene |      | 2    | mg/L  | 0.100                 | 0.0997                 | 100                         | 80 - 120                      | 2013-05-02       |
| Xylene       |      | 2    | mg/L  | 0.300                 | 0.289                  | 96                          | 80 - 120                      | 2013-05-02       |

#### Standard (ICV-1)

QC Batch: 101120

Date Analyzed: 2013-05-07

Analyzed By: RR

| Param             | Flag | Cert | Units | ICVs<br>True<br>Conc. | ICVs<br>Found<br>Conc. | ICVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|-------------------|------|------|-------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| Dissolved Calcium |      | 1    | mg/L  | 51.0                  | 52.1                   | 102                         | 90 - 110                      | 2013-05-07       |

#### Standard (ICV-1)

QC Batch: 101120

Date Analyzed: 2013-05-07

Analyzed By: RR

| Param               | Flag | Cert | Units | ICVs<br>True<br>Conc. | ICVs<br>Found<br>Conc. | ICVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|---------------------|------|------|-------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| Dissolved Potassium |      | 1    | mg/L  | 55.0                  | 55.7                   | 101                         | 90 - 110                      | 2013-05-07       |

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**Standard (ICV-1)**

QC Batch: 101120

Date Analyzed: 2013-05-07

Analyzed By: RR

| Param               | Flag | Cert | Units | ICVs<br>True<br>Conc. | ICVs<br>Found<br>Conc. | ICVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|---------------------|------|------|-------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| Dissolved Magnesium |      | 1    | mg/L  | 51.0                  | 51.3                   | 100                         | 90 - 110                      | 2013-05-07       |

**Standard (ICV-1)**

QC Batch: 101120

Date Analyzed: 2013-05-07

Analyzed By: RR

| Param            | Flag | Cert | Units | ICVs<br>True<br>Conc. | ICVs<br>Found<br>Conc. | ICVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|------------------|------|------|-------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| Dissolved Sodium |      | 1    | mg/L  | 51.0                  | 51.8                   | 102                         | 90 - 110                      | 2013-05-07       |

**Standard (CCV-1)**

QC Batch: 101120

Date Analyzed: 2013-05-07

Analyzed By: RR

| Param             | Flag | Cert | Units | CCVs<br>True<br>Conc. | CCVs<br>Found<br>Conc. | CCVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|-------------------|------|------|-------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| Dissolved Calcium |      | 1    | mg/L  | 51.0                  | 53.8                   | 105                         | 90 - 110                      | 2013-05-07       |

**Standard (CCV-1)**

QC Batch: 101120

Date Analyzed: 2013-05-07

Analyzed By: RR

| Param               | Flag | Cert | Units | CCVs<br>True<br>Conc. | CCVs<br>Found<br>Conc. | CCVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|---------------------|------|------|-------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| Dissolved Potassium |      | 1    | mg/L  | 55.0                  | 57.1                   | 104                         | 90 - 110                      | 2013-05-07       |

**Standard (CCV-1)**

QC Batch: 101120

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Analyzed By: RR

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| Param               | Flag | Cert | Units | CCVs<br>True<br>Conc. | CCVs<br>Found<br>Conc. | CCVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|---------------------|------|------|-------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| Dissolved Magnesium |      | 1    | mg/L  | 51.0                  | 52.6                   | 103                         | 90 - 110                      | 2013-05-07       |

**Standard (CCV-1)**

QC Batch: 101120

Date Analyzed: 2013-05-07

Analyzed By: RR

| Param            | Flag | Cert | Units | CCVs<br>True<br>Conc. | CCVs<br>Found<br>Conc. | CCVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|------------------|------|------|-------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| Dissolved Sodium |      | 1    | mg/L  | 51.0                  | 53.1                   | 104                         | 90 - 110                      | 2013-05-07       |

**Standard (CCV-1)**

QC Batch: 101123

Date Analyzed: 2013-05-03

Analyzed By: RL

| Param    | Flag | Cert | Units | CCVs<br>True<br>Conc. | CCVs<br>Found<br>Conc. | CCVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|----------|------|------|-------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| Chloride |      | 1    | mg/L  | 25.0                  | 23.9                   | 96                          | 90 - 110                      | 2013-05-03       |

**Standard (CCV-1)**

QC Batch: 101123

Date Analyzed: 2013-05-03

Analyzed By: RL

| Param   | Flag | Cert | Units | CCVs<br>True<br>Conc. | CCVs<br>Found<br>Conc. | CCVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|---------|------|------|-------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| Sulfate |      | 1    | mg/L  | 25.0                  | 24.5                   | 98                          | 90 - 110                      | 2013-05-03       |

**Standard (CCV-2)**

QC Batch: 101123

Date Analyzed: 2013-05-03

Analyzed By: RL

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| Param    | Flag | Cert | Units | CCVs<br>True<br>Conc. | CCVs<br>Found<br>Conc. | CCVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|----------|------|------|-------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| Chloride |      | 1    | mg/L  | 25.0                  | 24.6                   | 98                          | 90 - 110                      | 2013-05-03       |

**Standard (CCV-2)**

QC Batch: 101123

Date Analyzed: 2013-05-03

Analyzed By: RL

| Param   | Flag | Cert | Units | CCVs<br>True<br>Conc. | CCVs<br>Found<br>Conc. | CCVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|---------|------|------|-------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| Sulfate |      | 1    | mg/L  | 25.0                  | 25.9                   | 104                         | 90 - 110                      | 2013-05-03       |

**Standard (CCV-1)**

QC Batch: 101124

Date Analyzed: 2013-05-03

Analyzed By: RL

| Param    | Flag | Cert | Units | CCVs<br>True<br>Conc. | CCVs<br>Found<br>Conc. | CCVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|----------|------|------|-------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| Chloride |      | 1    | mg/L  | 25.0                  | 24.6                   | 98                          | 90 - 110                      | 2013-05-03       |

**Standard (CCV-1)**

QC Batch: 101124

Date Analyzed: 2013-05-03

Analyzed By: RL

| Param   | Flag | Cert | Units | CCVs<br>True<br>Conc. | CCVs<br>Found<br>Conc. | CCVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|---------|------|------|-------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| Sulfate |      | 1    | mg/L  | 25.0                  | 25.9                   | 104                         | 90 - 110                      | 2013-05-03       |

**Standard (CCV-2)**

QC Batch: 101124

Date Analyzed: 2013-05-03

Analyzed By: RL

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Work Order: 13042614  
Celero/Rock Queen #1 TB

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Challenger

| Param    | Flag | Cert | Units | CCVs<br>True<br>Conc. | CCVs<br>Found<br>Conc. | CCVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|----------|------|------|-------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| Chloride |      | 1    | mg/L  | 25.0                  | 24.5                   | 98                          | 90 - 110                      | 2013-05-03       |

**Standard (CCV-2)**

QC Batch: 101124

Date Analyzed: 2013-05-03

Analyzed By: RL

| Param   | Flag | Cert | Units | CCVs<br>True<br>Conc. | CCVs<br>Found<br>Conc. | CCVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|---------|------|------|-------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| Sulfate |      | 1    | mg/L  | 25.0                  | 25.1                   | 100                         | 90 - 110                      | 2013-05-03       |

**Standard (CCV-1)**

QC Batch: 101126

Date Analyzed: 2013-05-06

Analyzed By: RL

| Param    | Flag | Cert | Units | CCVs<br>True<br>Conc. | CCVs<br>Found<br>Conc. | CCVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|----------|------|------|-------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| Chloride |      | 1    | mg/L  | 25.0                  | 24.8                   | 99                          | 90 - 110                      | 2013-05-06       |

**Standard (CCV-1)**

QC Batch: 101126

Date Analyzed: 2013-05-06

Analyzed By: RL

| Param   | Flag | Cert | Units | CCVs<br>True<br>Conc. | CCVs<br>Found<br>Conc. | CCVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|---------|------|------|-------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| Sulfate |      | 1    | mg/L  | 25.0                  | 25.9                   | 104                         | 90 - 110                      | 2013-05-06       |

**Standard (CCV-2)**

QC Batch: 101126

Date Analyzed: 2013-05-06

Analyzed By: RL

Report Date: May 8, 2013  
114-6401627

Work Order: 13042614  
Celero/Rock Queen #1 TB

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Challenger

| Param    | Flag | Cert | Units | CCVs<br>True<br>Conc. | CCVs<br>Found<br>Conc. | CCVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|----------|------|------|-------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| Chloride |      | 1    | mg/L  | 25.0                  | 24.7                   | 99                          | 90 - 110                      | 2013-05-06       |

#### Standard (CCV-2)

QC Batch: 101126

Date Analyzed: 2013-05-06

Analyzed By: RL

| Param   | Flag | Cert | Units | CCVs<br>True<br>Conc. | CCVs<br>Found<br>Conc. | CCVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|---------|------|------|-------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| Sulfate |      | 1    | mg/L  | 25.0                  | 25.7                   | 103                         | 90 - 110                      | 2013-05-06       |

#### Standard (ICV-1)

QC Batch: 101151

Date Analyzed: 2013-05-07

Analyzed By: LM

| Param                  | Flag | Cert | Units         | ICVs<br>True<br>Conc. | ICVs<br>Found<br>Conc. | ICVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|------------------------|------|------|---------------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| Hydroxide Alkalinity   |      | 1    | mg/L as CaCo3 | 0.00                  | <20.0                  |                             | -                             | 2013-05-07       |
| Carbonate Alkalinity   |      | 1    | mg/L as CaCo3 | 0.00                  | 228                    |                             | -                             | 2013-05-07       |
| Bicarbonate Alkalinity |      | 1    | mg/L as CaCo3 | 0.00                  | <20.0                  |                             | -                             | 2013-05-07       |
| Total Alkalinity       |      | 1    | mg/L as CaCo3 | 250                   | 230                    | 92                          | 90 - 110                      | 2013-05-07       |

#### Standard (CCV-1)

QC Batch: 101151

Date Analyzed: 2013-05-07

Analyzed By: LM

| Param                  | Flag | Cert | Units         | CCVs<br>True<br>Conc. | CCVs<br>Found<br>Conc. | CCVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|------------------------|------|------|---------------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| Hydroxide Alkalinity   |      | 1    | mg/L as CaCo3 | 0.00                  | <20.0                  |                             | -                             | 2013-05-07       |
| Carbonate Alkalinity   |      | 1    | mg/L as CaCo3 | 0.00                  | 226                    |                             | -                             | 2013-05-07       |
| Bicarbonate Alkalinity |      | 1    | mg/L as CaCo3 | 0.00                  | <20.0                  |                             | -                             | 2013-05-07       |
| Total Alkalinity       |      | 1    | mg/L as CaCo3 | 250                   | 239                    | 96                          | 90 - 110                      | 2013-05-07       |

# Appendix

## Report Definitions

| Name | Definition                 |
|------|----------------------------|
| MDL  | Method Detection Limit     |
| MQL  | Minimum Quantitation Limit |
| SDL  | Sample Detection Limit     |

## Laboratory Certifications

|   | Certifying Authority | Certification Number | Laboratory Location |
|---|----------------------|----------------------|---------------------|
| - | NCTRCA               | WFWB384444Y0909      | TraceAnalysis       |
| - | DBE                  | VN 20657             | TraceAnalysis       |
| - | HUB                  | 1752439743100-86536  | TraceAnalysis       |
| - | WBE                  | 237019               | TraceAnalysis       |
| 1 | NELAP                | T104704219-13-9      | Lubbock             |
| 2 | NELAP                | T104704392-12-4      | Midland             |

## Standard Flags

| F   | Description                                                                                                                                                                                                                         |
|-----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| B   | Analyte detected in the corresponding method blank above the method detection limit                                                                                                                                                 |
| H   | Analyzed out of hold time                                                                                                                                                                                                           |
| J   | Estimated concentration                                                                                                                                                                                                             |
| Jb  | The analyte is positively identified and the value is approximated between the SDL and MQL. Sample contains less then ten times the concentration found in the method blank. The result should be considered non-detect to the SDL. |
| Je  | Estimated concentration exceeding calibration range.                                                                                                                                                                                |
| MI1 | Split peak or shoulder peak                                                                                                                                                                                                         |
| MI2 | Instrument software did not integrate                                                                                                                                                                                               |
| MI3 | Instrument software misidentified the peak                                                                                                                                                                                          |
| MI4 | Instrument software integrated improperly                                                                                                                                                                                           |
| MI5 | Baseline correction                                                                                                                                                                                                                 |
| Qc  | Calibration check outside of laboratory limits.                                                                                                                                                                                     |
| Qr  | RPD outside of laboratory limits                                                                                                                                                                                                    |
| Qs  | Spike recovery outside of laboratory limits.                                                                                                                                                                                        |
| Qsr | Surrogate recovery outside of laboratory limits.                                                                                                                                                                                    |
| U   | The analyte is not detected above the SDL                                                                                                                                                                                           |

## Result Comments

- 1 Sample confirmed by reanalysis, surrogates failed due to matrix effect.
- 2 Sample confirmed by reanalysis, surrogates failed due to matrix effect.
- 3 Sample confirmed by reanalysis, surrogates failed due to matrix effect.
- 4 RPD for LCS/LCSD is within limits.

## Attachments

The scanned attachments will follow this page.  
Please note, each attachment may consist of more than one page.

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# Analysis Request of Chain of Custody Record

PAGE: 1 OF: 1  
ANALYSIS REQUEST  
(Circle or Specify Method No.)

**TETRA TECH**  
1910 N. Big Spring St.  
Midland, Texas 79705  
(432) 682-4559 • Fax (432) 682-3946

|                                                 |         |                                                                            |                                                      |
|-------------------------------------------------|---------|----------------------------------------------------------------------------|------------------------------------------------------|
| CLIENT NAME: <u>Celero</u>                      |         | SITE MANAGER: <u>Jeff Kindley</u>                                          |                                                      |
| PROJECT NO.: <u>1141-6401127</u>                |         | PROJECT NAME: <u>Celero / Rock Queen #1 TB</u>                             |                                                      |
| LAB I.D. NUMBER                                 | DATE    | TIME                                                                       | SAMPLE IDENTIFICATION                                |
|                                                 |         |                                                                            |                                                      |
| 327392                                          | 4/24/13 | 1030                                                                       | MW-1<br>MW-2<br>MW-3<br>MW-4<br>MW-5<br>MW-6<br>MW-7 |
| 327393                                          | 1       | 1025                                                                       |                                                      |
| 327394                                          | 1       | 1045                                                                       |                                                      |
| 327395                                          | 1       | 1105                                                                       |                                                      |
| 327396                                          | 1       | 1130                                                                       |                                                      |
| 327397                                          | 1       | 1035                                                                       |                                                      |
| 327398                                          | 1       | 1055                                                                       |                                                      |
| RELINQUISHED BY: (Signature) <u>[Signature]</u> |         | Date: <u>4/25/13</u>                                                       | RECEIVED BY: (Signature) <u>[Signature]</u>          |
| RELINQUISHED BY: (Signature) <u>[Signature]</u> |         | Date: <u>4/25/13</u>                                                       | RECEIVED BY: (Signature) <u>[Signature]</u>          |
| RELINQUISHED BY: (Signature) <u>[Signature]</u> |         | Date: <u>4/25/13</u>                                                       | RECEIVED BY: (Signature) <u>[Signature]</u>          |
| RECEIVING LABORATORY: <u>Tetra Tech</u>         |         | RECEIVED BY: (Signature) <u>[Signature]</u>                                |                                                      |
| ADDRESS: <u>Midland</u>                         |         | STATE: <u>TX</u>                                                           | ZIP: <u>79705</u>                                    |
| CONTACT: <u>Jeff Kindley</u>                    |         | PHONE: <u>682-4559</u>                                                     | DATE: <u>4/30/13</u>                                 |
| SAMPLE CONDITION WHEN RECEIVED: <u>5.9</u>      |         | REMARKS: <u>Midland - BTEX, pH + TDS</u><br><u>Whack - All other tests</u> |                                                      |

|                                    |          |                                     |                                     |                |                     |     |                          |                           |                |               |          |             |                  |                |                               |   |
|------------------------------------|----------|-------------------------------------|-------------------------------------|----------------|---------------------|-----|--------------------------|---------------------------|----------------|---------------|----------|-------------|------------------|----------------|-------------------------------|---|
| TPH 8015 MOD. TX1005 (Ext. to C35) | PAH 8270 | RCRA Metals Ag As Ba Cd Cr Pb Hg Se | TCLP Metals Ag As Ba Cd Vr Pd Hg Se | TCLP Volatiles | TCLP Semi Volatiles | RCI | GC/MS Vol. 8240/8260/624 | GC/MS Semi. Vol. 8270/625 | PCB's 8080/608 | Post. 808/608 | Chloride | Gamma Spec. | Alpha Beta (Air) | PLM (Asbestos) | Major Anions/Cations, pH, TDS |   |
| X                                  |          |                                     |                                     |                |                     |     |                          |                           |                |               | X        |             |                  |                |                               | X |

DATE: 4/25/13 TIME: 1645  
SAMPLED BY: (Print & Initial) RS/LS  
SAMPLE SHIPPED BY: (Circle) FEDEX ☒ HAND DELIVERED ☐ BUS ☐ UPS ☐  
TETRA TECH CONTACT PERSON: Jeff Kindley  
RESULTS BY: Jeff Kindley  
RUSH CHARGES AUTHORIZED: Yes ☐ No ☒

## DATE: 5/8/2013

5/8/2013

| Sample # | Calcium<br>in meq/L | Magnesium<br>in meq/L | Sodium<br>in meq/L | Potassium<br>in meq/L | Alkalinity<br>in meq/L | Sulfate<br>in meq/L | Chloride<br>in meq/L | Nitrate-N<br>in meq/L | Fluoride<br>in meq/L | Bromide<br>in meq/L | Total               |                    |
|----------|---------------------|-----------------------|--------------------|-----------------------|------------------------|---------------------|----------------------|-----------------------|----------------------|---------------------|---------------------|--------------------|
|          |                     |                       |                    |                       |                        |                     |                      |                       |                      |                     | Cations<br>In meq/L | Anions<br>in meq/L |
| 327392   | 131.74              | 328.34                | 3414.75            | 41.70                 | 2.00                   | 39.14               | 4062.24              | 0.00                  | 0.00                 | 0.00                | 3916.52             | 4103.38            |
| 327393   | 124.25              | 47.32                 | 97.44              | 0.58                  | 2.68                   | 4.39                | 277.59               | 0.00                  | 0.00                 | 0.00                | 269.59              | 284.66             |
| 327394   | 238.52              | 199.14                | 1396.35            | 11.05                 | 2.00                   | 37.06               | 1692.60              | 0.00                  | 0.00                 | 0.00                | 1845.06             | 1731.66            |
| 327395   | 166.67              | 63.20                 | 96.57              | 0.56                  | 2.70                   | 6.04                | 389.30               | 0.00                  | 0.00                 | 0.00                | 326.99              | 398.04             |
| 327396   | 4.54                | 1.42                  | 2.82               | 0.04                  | 2.72                   | 2.77                | 1.87                 | 0.00                  | 0.00                 | 0.00                | 8.82                | 7.36               |
| 327397   | 226.55              | 272.38                | 2501.25            | 18.11                 | 2.36                   | 47.89               | 2787.15              | 0.00                  | 0.00                 | 0.00                | 3018.29             | 2837.39            |
| 327398   | 275.45              | 320.11                | 2892.75            | 25.43                 | 1.82                   | 41.85               | 3328.78              | 0.00                  | 0.00                 | 0.00                | 3513.73             | 3372.45            |

| TDS/EC  | TDS/Cat | TDS/Anion |
|---------|---------|-----------|
| #DIV/0! | 0.62    | 0.60      |
| #DIV/0! | 0.93    | 0.89      |
| #DIV/0! | 0.64    | 0.68      |
| #DIV/0! | 1.14    | 0.93      |
| #DIV/0! | 0.66    | 0.80      |
| #DIV/0! | 0.56    | 0.59      |
| #DIV/0! | 0.51    | 0.53      |

[illegible]





6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800-378-1296 806-794-1296 FAX 806-794-1296  
200 East Sunset Road, Suite E El Paso, Texas 79922 915-585-3443 FAX 915-585-4944  
5002 Basin Street, Suite A1 Midland, Texas 79703 432-689-6301 FAX 432-689-6313  
(BioAquec) 2501 Mayes Rd., Suite 100 Carrollton, Texas 75006 972-242-7750  
E-Mail: lab@traceanalysis.com WEB: www.traceanalysis.com

## Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

# Analytical and Quality Control Report

(Corrected Report)

Greg Pope  
Tetra Tech  
1910 N. Big Spring Street  
Midland, TX, 79705

Report Date: August 20, 2013

Work Order: 13072617



Project Location: Challenger  
Project Name: Celero/Rock Queen #1 TB  
Project Number: 114-6401627

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

| Sample | Description | Matrix | Date Taken | Time Taken | Date Received |
|--------|-------------|--------|------------|------------|---------------|
| 336647 | MW-1        | water  | 2013-07-24 | 14:25      | 2013-07-26    |
| 336648 | MW-2        | water  | 2013-07-24 | 14:35      | 2013-07-26    |
| 336649 | MW-3        | water  | 2013-07-24 | 14:10      | 2013-07-26    |
| 336650 | MW-4        | water  | 2013-07-24 | 14:55      | 2013-07-26    |
| 336651 | MW-5        | water  | 2013-07-24 | 15:10      | 2013-07-26    |
| 336652 | MW-6        | water  | 2013-07-24 | 12:45      | 2013-07-26    |
| 336653 | MW-7        | water  | 2013-07-24 | 14:45      | 2013-07-26    |

### Report Corrections (Work Order 13072617)

- 8/20/13: Re-ran Salts for sample 336650.
- 8/20/13: Re-ran SO<sub>4</sub> and Cl for samples 336647 and 336649.
- 8/20/13: Re-ran TDS for sample 336648.

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

This report consists of a total of 56 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

A handwritten signature in black ink that reads "Michael Abel". The signature is written in a cursive, flowing style.

---

Dr. Blair Leftwich, Director  
Dr. Michael Abel, Project Manager

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# Case Narrative

Samples for project Celero/Rock Queen #1 TB were received by TraceAnalysis, Inc. on 2013-07-26 and assigned to work order 13072617. Samples for work order 13072617 were received intact without headspace and at a temperature of 3.3 C.

Samples were analyzed for the following tests using their respective methods.

| Test          | Method     | Prep Batch | Prep Date           | QC Batch | Analysis Date       |
|---------------|------------|------------|---------------------|----------|---------------------|
| Alkalinity    | SM 2320B   | 87699      | 2013-07-29 at 15:01 | 103654   | 2013-07-30 at 14:50 |
| Alkalinity    | SM 2320B   | 87699      | 2013-07-29 at 15:01 | 103656   | 2013-07-31 at 15:00 |
| BTEX          | S 8021B    | 87705      | 2013-07-29 at 15:10 | 103610   | 2013-08-01 at 10:18 |
| BTEX          | S 8021B    | 87919      | 2013-08-05 at 11:30 | 103765   | 2013-08-07 at 09:40 |
| BTEX          | S 8021B    | 87929      | 2013-08-06 at 08:00 | 103777   | 2013-08-07 at 12:45 |
| Ca, Dissolved | S 6010C    | 87738      | 2013-07-30 at 16:21 | 103949   | 2013-08-12 at 16:26 |
| Ca, Dissolved | S 6010C    | 87738      | 2013-07-30 at 16:21 | 103950   | 2013-08-12 at 16:30 |
| Ca, Dissolved | S 6010C    | 87768      | 2013-07-31 at 14:48 | 103972   | 2013-08-13 at 11:53 |
| Chloride (IC) | E 300.0    | 87895      | 2013-08-05 at 09:00 | 103740   | 2013-08-05 at 09:51 |
| Chloride (IC) | E 300.0    | 87957      | 2013-08-06 at 14:00 | 103814   | 2013-08-06 at 15:10 |
| Chloride (IC) | E 300.0    | 88241      | 2013-08-16 at 08:30 | 104141   | 2013-08-16 at 09:05 |
| Hardness      | S 6010C    | 87738      | 2013-07-30 at 16:21 | 103949   | 2013-08-12 at 16:26 |
| Hardness      | S 6010C    | 87738      | 2013-07-30 at 16:21 | 103950   | 2013-08-12 at 16:30 |
| Hardness      | S 6010C    | 87768      | 2013-07-31 at 14:48 | 103972   | 2013-08-13 at 11:53 |
| K, Dissolved  | S 6010C    | 87738      | 2013-07-30 at 16:21 | 103949   | 2013-08-12 at 16:26 |
| K, Dissolved  | S 6010C    | 87738      | 2013-07-30 at 16:21 | 103950   | 2013-08-12 at 16:30 |
| K, Dissolved  | S 6010C    | 87768      | 2013-07-31 at 14:48 | 103972   | 2013-08-13 at 11:53 |
| Mg, Dissolved | S 6010C    | 87738      | 2013-07-30 at 16:21 | 103949   | 2013-08-12 at 16:26 |
| Mg, Dissolved | S 6010C    | 87738      | 2013-07-30 at 16:21 | 103950   | 2013-08-12 at 16:30 |
| Mg, Dissolved | S 6010C    | 87768      | 2013-07-31 at 14:48 | 103972   | 2013-08-13 at 11:53 |
| Na, Dissolved | S 6010C    | 87738      | 2013-07-30 at 16:21 | 103949   | 2013-08-12 at 16:26 |
| Na, Dissolved | S 6010C    | 87738      | 2013-07-30 at 16:21 | 103950   | 2013-08-12 at 16:30 |
| Na, Dissolved | S 6010C    | 87768      | 2013-07-31 at 14:48 | 103972   | 2013-08-13 at 11:53 |
| pH            | SM 4500-H+ | 87639      | 2013-07-26 at 10:44 | 103499   | 2013-07-26 at 15:31 |
| pH            | SM 4500-H+ | 87639      | 2013-07-26 at 10:44 | 103501   | 2013-07-26 at 15:32 |
| SO4 (IC)      | E 300.0    | 87895      | 2013-08-05 at 09:00 | 103740   | 2013-08-05 at 09:51 |
| SO4 (IC)      | E 300.0    | 87957      | 2013-08-06 at 14:00 | 103814   | 2013-08-06 at 15:10 |
| SO4 (IC)      | E 300.0    | 88241      | 2013-08-16 at 08:30 | 104141   | 2013-08-16 at 09:05 |
| TDS           | SM 2540C   | 87794      | 2013-07-25 at 11:48 | 103618   | 2013-07-26 at 16:50 |
| TDS           | SM 2540C   | 87794      | 2013-07-25 at 11:48 | 103619   | 2013-07-30 at 16:52 |
| TDS           | SM 2540C   | 88264      | 2013-08-15 at 10:38 | 104170   | 2013-08-16 at 16:38 |

Results for these samples are reported on a wet weight basis unless data package indicates otherwise.

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 13072617 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with

each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

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## Analytical Report

### Sample: 336647 - MW-1

Laboratory: Midland  
Analysis: Alkalinity  
QC Batch: 103654  
Prep Batch: 87699

Analytical Method: SM 2320B  
Date Analyzed: 2013-07-30  
Sample Preparation: 2013-07-29

Prep Method: N/A  
Analyzed By: AR  
Prepared By: AR

| Parameter              | Flag | Cert | RL<br>Result | Units         | Dilution | RL   |
|------------------------|------|------|--------------|---------------|----------|------|
| Hydroxide Alkalinity   | U    | 2    | <20.0        | mg/L as CaCo3 | 1        | 20.0 |
| Carbonate Alkalinity   | U    | 2    | <20.0        | mg/L as CaCo3 | 1        | 20.0 |
| Bicarbonate Alkalinity |      | 2    | 100          | mg/L as CaCo3 | 1        | 20.0 |
| Total Alkalinity       |      | 2    | 100          | mg/L as CaCo3 | 1        | 20.0 |

### Sample: 336647 - MW-1

Laboratory: Midland  
Analysis: BTEX  
QC Batch: 103765  
Prep Batch: 87919

Analytical Method: S 8021B  
Date Analyzed: 2013-08-07  
Sample Preparation: 2013-08-05

Prep Method: S 5030B  
Analyzed By: KC  
Prepared By: KC

| Parameter    | Flag               | Cert | RL<br>Result | Units | Dilution | RL      |
|--------------|--------------------|------|--------------|-------|----------|---------|
| Benzene      |                    | 2    | <0.00100     | mg/L  | 1        | 0.00100 |
| Toluene      | U                  | 2    | <0.00100     | mg/L  | 1        | 0.00100 |
| Ethylbenzene | Q <sub>N</sub> , U | 2    | <0.00100     | mg/L  | 1        | 0.00100 |
| Xylene       | Q <sub>N</sub>     | 2    | 0.0221       | mg/L  | 1        | 0.00100 |

| Surrogate                    | Flag             | Cert           | Result | Units | Dilution | Spike<br>Amount | Percent<br>Recovery | Recovery<br>Limits |
|------------------------------|------------------|----------------|--------|-------|----------|-----------------|---------------------|--------------------|
| Trifluorotoluene (TFT)       |                  |                | 0.0747 | mg/L  | 1        | 0.100           | 75                  | 70 - 130           |
| 4-Bromofluorobenzene (4-BFB) | 1 Q <sub>N</sub> | Q <sub>N</sub> | 0.0414 | mg/L  | 1        | 0.100           | 41                  | 70 - 130           |

### Sample: 336647 - MW-1

Laboratory: Lubbock  
Analysis: Cations  
QC Batch: 103950  
Prep Batch: 87738

Analytical Method: S 6010C  
Date Analyzed: 2013-08-12  
Sample Preparation: 2013-07-30

Prep Method: S 3005A  
Analyzed By: RR  
Prepared By: PM

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| Parameter           | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|---------------------|------|------|--------------|-------|----------|------|
| Dissolved Calcium   |      | 1    | <b>2090</b>  | mg/L  | 100      | 1.00 |
| Dissolved Potassium |      | 1    | <b>1450</b>  | mg/L  | 100      | 1.00 |
| Dissolved Magnesium |      | 1    | <b>2830</b>  | mg/L  | 1        | 1.00 |
| Dissolved Sodium    |      | 1    | <b>73100</b> | mg/L  | 1000     | 1.00 |

**Sample: 336647 - MW-1**

|                         |                                |                  |
|-------------------------|--------------------------------|------------------|
| Laboratory: Lubbock     | Analytical Method: E 300.0     | Prep Method: N/A |
| Analysis: Chloride (IC) | Date Analyzed: 2013-08-16      | Analyzed By: RL  |
| QC Batch: 104141        | Sample Preparation: 2013-08-16 | Prepared By: RL  |
| Prep Batch: 88241       |                                |                  |

| Parameter | Flag | Cert | RL<br>Result  | Units | Dilution | RL   |
|-----------|------|------|---------------|-------|----------|------|
| Chloride  |      | 1    | <b>128000</b> | mg/L  | 5000     | 2.50 |

**Sample: 336647 - MW-1**

|                     |                                |                  |
|---------------------|--------------------------------|------------------|
| Laboratory: Lubbock | Analytical Method: S 6010C     | Prep Method: N/A |
| Analysis: Hardness  | Date Analyzed: 2013-08-12      | Analyzed By: RR  |
| QC Batch: 103950    | Sample Preparation: 2013-07-30 | Prepared By: PM  |
| Prep Batch: 87738   |                                |                  |

| Parameter         | Flag | Cert | RL<br>Result | Units         | Dilution | RL   |
|-------------------|------|------|--------------|---------------|----------|------|
| Hardness (by ICP) |      |      | <b>16900</b> | mg eq CaCO3/L | 1        | 0.00 |

**Sample: 336647 - MW-1**

|                     |                                |                  |
|---------------------|--------------------------------|------------------|
| Laboratory: Midland | Analytical Method: SM 4500-H+  | Prep Method: N/A |
| Analysis: pH        | Date Analyzed: 2013-07-26      | Analyzed By: AR  |
| QC Batch: 103499    | Sample Preparation: 2013-07-26 | Prepared By: AR  |
| Prep Batch: 87639   |                                |                  |

| Parameter | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|-----------|------|------|--------------|-------|----------|------|
| pH        |      | 2    | <b>5.90</b>  | s.u.  | 1        | 0.00 |

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**Sample: 336647 - MW-1**

|             |          |                     |            |              |     |
|-------------|----------|---------------------|------------|--------------|-----|
| Laboratory: | Lubbock  | Analytical Method:  | E 300.0    | Prep Method: | N/A |
| Analysis:   | SO4 (IC) | Date Analyzed:      | 2013-08-16 | Analyzed By: | RL  |
| QC Batch:   | 104141   | Sample Preparation: | 2013-08-16 | Prepared By: | RL  |
| Prep Batch: | 88241    |                     |            |              |     |

| Parameter | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|-----------|------|------|--------------|-------|----------|------|
| Sulfate   |      | 1    | <12500       | mg/L  | 5000     | 2.50 |

**Sample: 336647 - MW-1**

|             |         |                     |            |              |     |
|-------------|---------|---------------------|------------|--------------|-----|
| Laboratory: | Midland | Analytical Method:  | SM 2540C   | Prep Method: | N/A |
| Analysis:   | TDS     | Date Analyzed:      | 2013-07-26 | Analyzed By: | AR  |
| QC Batch:   | 103618  | Sample Preparation: | 2013-07-25 | Prepared By: | AR  |
| Prep Batch: | 87794   |                     |            |              |     |

| Parameter              | Flag | Cert | RL<br>Result  | Units | Dilution | RL   |
|------------------------|------|------|---------------|-------|----------|------|
| Total Dissolved Solids |      | 2    | <b>231000</b> | mg/L  | 100      | 2.50 |

**Sample: 336648 - MW-2**

|             |            |                     |            |              |     |
|-------------|------------|---------------------|------------|--------------|-----|
| Laboratory: | Midland    | Analytical Method:  | SM 2320B   | Prep Method: | N/A |
| Analysis:   | Alkalinity | Date Analyzed:      | 2013-07-30 | Analyzed By: | AR  |
| QC Batch:   | 103654     | Sample Preparation: | 2013-07-29 | Prepared By: | AR  |
| Prep Batch: | 87699      |                     |            |              |     |

| Parameter              | Flag | Cert | RL<br>Result | Units         | Dilution | RL   |
|------------------------|------|------|--------------|---------------|----------|------|
| Hydroxide Alkalinity   | u    | 2    | <20.0        | mg/L as CaCo3 | 1        | 20.0 |
| Carbonate Alkalinity   | u    | 2    | <20.0        | mg/L as CaCo3 | 1        | 20.0 |
| Bicarbonate Alkalinity |      | 2    | <b>127</b>   | mg/L as CaCo3 | 1        | 20.0 |
| Total Alkalinity       |      | 2    | <b>127</b>   | mg/L as CaCo3 | 1        | 20.0 |

**Sample: 336648 - MW-2**

|             |         |                     |            |              |         |
|-------------|---------|---------------------|------------|--------------|---------|
| Laboratory: | Midland | Analytical Method:  | S 8021B    | Prep Method: | S 5030B |
| Analysis:   | BTEX    | Date Analyzed:      | 2013-08-01 | Analyzed By: | AH      |
| QC Batch:   | 103610  | Sample Preparation: | 2013-07-29 | Prepared By: | AH      |
| Prep Batch: | 87705   |                     |            |              |         |

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| Parameter    | Flag | Cert | RL<br>Result | Units | Dilution | RL      |
|--------------|------|------|--------------|-------|----------|---------|
| Benzene      | U    | 2    | <0.00100     | mg/L  | 1        | 0.00100 |
| Toluene      | U    | 2    | <0.00100     | mg/L  | 1        | 0.00100 |
| Ethylbenzene | U    | 2    | <0.00100     | mg/L  | 1        | 0.00100 |
| Xylene       | U    | 2    | <0.00100     | mg/L  | 1        | 0.00100 |

| Surrogate                    | Flag | Cert | Result | Units | Dilution | Spike<br>Amount | Percent<br>Recovery | Recovery<br>Limits |
|------------------------------|------|------|--------|-------|----------|-----------------|---------------------|--------------------|
| Trifluorotoluene (TFT)       |      |      | 0.0945 | mg/L  | 1        | 0.100           | 94                  | 70 - 130           |
| 4-Bromofluorobenzene (4-BFB) |      |      | 0.0901 | mg/L  | 1        | 0.100           | 90                  | 70 - 130           |

**Sample: 336648 - MW-2**

Laboratory: Lubbock  
Analysis: Cations  
QC Batch: 103950  
Prep Batch: 87738

Analytical Method: S 6010C  
Date Analyzed: 2013-08-12  
Sample Preparation: 2013-07-30

Prep Method: S 3005A  
Analyzed By: RR  
Prepared By: PM

| Parameter           | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|---------------------|------|------|--------------|-------|----------|------|
| Dissolved Calcium   |      | 1    | 1800         | mg/L  | 100      | 1.00 |
| Dissolved Potassium |      | 1    | 35.0         | mg/L  | 1        | 1.00 |
| Dissolved Magnesium |      | 1    | 525          | mg/L  | 1        | 1.00 |
| Dissolved Sodium    |      | 1    | 2640         | mg/L  | 100      | 1.00 |

**Sample: 336648 - MW-2**

Laboratory: Lubbock  
Analysis: Chloride (IC)  
QC Batch: 103740  
Prep Batch: 87895

Analytical Method: E 300.0  
Date Analyzed: 2013-08-05  
Sample Preparation: 2013-08-05

Prep Method: N/A  
Analyzed By: RL  
Prepared By: RL

| Parameter | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|-----------|------|------|--------------|-------|----------|------|
| Chloride  |      | 1    | 9400         | mg/L  | 1000     | 2.50 |

**Sample: 336648 - MW-2**

Laboratory: Lubbock  
Analysis: Hardness  
QC Batch: 103950  
Prep Batch: 87738

Analytical Method: S 6010C  
Date Analyzed: 2013-08-12  
Sample Preparation: 2013-07-30

Prep Method: N/A  
Analyzed By: RR  
Prepared By: PM

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| Parameter         | Flag | Cert | RL<br>Result | Units         | Dilution | RL   |
|-------------------|------|------|--------------|---------------|----------|------|
| Hardness (by ICP) |      |      | <b>6660</b>  | mg eq CaCO3/L | 1        | 0.00 |

**Sample: 336648 - MW-2**

Laboratory: Midland  
Analysis: pH  
QC Batch: 103499  
Prep Batch: 87639

Analytical Method: SM 4500-H+  
Date Analyzed: 2013-07-26  
Sample Preparation: 2013-07-26

Prep Method: N/A  
Analyzed By: AR  
Prepared By: AR

| Parameter | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|-----------|------|------|--------------|-------|----------|------|
| pH        |      | 2    | <b>6.65</b>  | s.u.  | 1        | 0.00 |

**Sample: 336648 - MW-2**

Laboratory: Lubbock  
Analysis: SO4 (IC)  
QC Batch: 103740  
Prep Batch: 87895

Analytical Method: E 300.0  
Date Analyzed: 2013-08-05  
Sample Preparation: 2013-08-05

Prep Method: N/A  
Analyzed By: RL  
Prepared By: RL

| Parameter | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|-----------|------|------|--------------|-------|----------|------|
| Sulfate   | u    | 1    | <2500        | mg/L  | 1000     | 2.50 |

**Sample: 336648 - MW-2**

Laboratory: Midland  
Analysis: TDS  
QC Batch: 104170  
Prep Batch: 88264

Analytical Method: SM 2540C  
Date Analyzed: 2013-08-16  
Sample Preparation: 2013-08-15

Prep Method: N/A  
Analyzed By: AR  
Prepared By: AR

| Parameter              | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|------------------------|------|------|--------------|-------|----------|------|
| Total Dissolved Solids |      | 2    | <b>18500</b> | mg/L  | 20       | 2.50 |

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**Sample: 336649 - MW-3**

Laboratory: Midland  
Analysis: Alkalinity  
QC Batch: 103654  
Prep Batch: 87699

Analytical Method: SM 2320B  
Date Analyzed: 2013-07-30  
Sample Preparation: 2013-07-29

Prep Method: N/A  
Analyzed By: AR  
Prepared By: AR

| Parameter              | Flag | Cert | RL<br>Result | Units         | Dilution | RL   |
|------------------------|------|------|--------------|---------------|----------|------|
| Hydroxide Alkalinity   | U    | 2    | <20.0        | mg/L as CaCo3 | 1        | 20.0 |
| Carbonate Alkalinity   | U    | 2    | <20.0        | mg/L as CaCo3 | 1        | 20.0 |
| Bicarbonate Alkalinity |      | 2    | 100          | mg/L as CaCo3 | 1        | 20.0 |
| Total Alkalinity       |      | 2    | 100          | mg/L as CaCo3 | 1        | 20.0 |

**Sample: 336649 - MW-3**

Laboratory: Midland  
Analysis: BTEX  
QC Batch: 103610  
Prep Batch: 87705

Analytical Method: S 8021B  
Date Analyzed: 2013-08-01  
Sample Preparation: 2013-07-29

Prep Method: S 5030B  
Analyzed By: AH  
Prepared By: AH

| Parameter    | Flag | Cert | RL<br>Result | Units | Dilution | RL      |
|--------------|------|------|--------------|-------|----------|---------|
| Benzene      | U    | 2    | <0.00100     | mg/L  | 1        | 0.00100 |
| Toluene      | U    | 2    | <0.00100     | mg/L  | 1        | 0.00100 |
| Ethylbenzene | U    | 2    | <0.00100     | mg/L  | 1        | 0.00100 |
| Xylene       | U    | 2    | <0.00100     | mg/L  | 1        | 0.00100 |

| Surrogate                    | Flag | Cert | Result | Units | Dilution | Spike<br>Amount | Percent<br>Recovery | Recovery<br>Limits |
|------------------------------|------|------|--------|-------|----------|-----------------|---------------------|--------------------|
| Trifluorotoluene (TFT)       |      |      | 0.0842 | mg/L  | 1        | 0.100           | 84                  | 70 - 130           |
| 4-Bromofluorobenzene (4-BFB) |      |      | 0.0751 | mg/L  | 1        | 0.100           | 75                  | 70 - 130           |

**Sample: 336649 - MW-3**

Laboratory: Lubbock  
Analysis: Cations  
QC Batch: 103949  
Prep Batch: 87738

Analytical Method: S 6010C  
Date Analyzed: 2013-08-12  
Sample Preparation: 2013-07-30

Prep Method: S 3005A  
Analyzed By: RR  
Prepared By: PM

| Parameter           | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|---------------------|------|------|--------------|-------|----------|------|
| Dissolved Calcium   |      | 1    | 4120         | mg/L  | 100      | 1.00 |
| Dissolved Potassium |      | 1    | 569          | mg/L  | 1        | 1.00 |
| Dissolved Magnesium |      | 1    | 1660         | mg/L  | 100      | 1.00 |

*continued ...*

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*sample 336649 continued . . .*

| Parameter        | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|------------------|------|------|--------------|-------|----------|------|
| Dissolved Sodium |      | 1    | <b>32100</b> | mg/L  | 1000     | 1.00 |

**Sample: 336649 - MW-3**

|             |               |                     |            |              |     |
|-------------|---------------|---------------------|------------|--------------|-----|
| Laboratory: | Lubbock       | Analytical Method:  | E 300.0    | Prep Method: | N/A |
| Analysis:   | Chloride (IC) | Date Analyzed:      | 2013-08-16 | Analyzed By: | RL  |
| QC Batch:   | 104141        | Sample Preparation: | 2013-08-16 | Prepared By: | RL  |
| Prep Batch: | 88241         |                     |            |              |     |

| Parameter | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|-----------|------|------|--------------|-------|----------|------|
| Chloride  |      | 1    | <b>64000</b> | mg/L  | 5000     | 2.50 |

**Sample: 336649 - MW-3**

|             |          |                     |            |              |     |
|-------------|----------|---------------------|------------|--------------|-----|
| Laboratory: | Lubbock  | Analytical Method:  | S 6010C    | Prep Method: | N/A |
| Analysis:   | Hardness | Date Analyzed:      | 2013-08-12 | Analyzed By: | RR  |
| QC Batch:   | 103949   | Sample Preparation: | 2013-07-30 | Prepared By: | PM  |
| Prep Batch: | 87738    |                     |            |              |     |

| Parameter         | Flag | Cert | RL<br>Result | Units         | Dilution | RL   |
|-------------------|------|------|--------------|---------------|----------|------|
| Hardness (by ICP) |      |      | <b>17100</b> | mg eq CaCO3/L | 1        | 0.00 |

**Sample: 336649 - MW-3**

|             |         |                     |            |              |     |
|-------------|---------|---------------------|------------|--------------|-----|
| Laboratory: | Midland | Analytical Method:  | SM 4500-H+ | Prep Method: | N/A |
| Analysis:   | pH      | Date Analyzed:      | 2013-07-26 | Analyzed By: | AR  |
| QC Batch:   | 103499  | Sample Preparation: | 2013-07-26 | Prepared By: | AR  |
| Prep Batch: | 87639   |                     |            |              |     |

| Parameter | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|-----------|------|------|--------------|-------|----------|------|
| pH        |      | 2    | <b>6.28</b>  | s.u.  | 1        | 0.00 |

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**Sample: 336649 - MW-3**

Laboratory: Lubbock  
Analysis: SO4 (IC)  
QC Batch: 104141  
Prep Batch: 88241

Analytical Method: E 300.0  
Date Analyzed: 2013-08-16  
Sample Preparation: 2013-08-16

Prep Method: N/A  
Analyzed By: RL  
Prepared By: RL

| Parameter | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|-----------|------|------|--------------|-------|----------|------|
| Sulfate   |      | 1    | <12500       | mg/L  | 5000     | 2.50 |

**Sample: 336649 - MW-3**

Laboratory: Midland  
Analysis: TDS  
QC Batch: 103618  
Prep Batch: 87794

Analytical Method: SM 2540C  
Date Analyzed: 2013-07-26  
Sample Preparation: 2013-07-25

Prep Method: N/A  
Analyzed By: AR  
Prepared By: AR

| Parameter              | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|------------------------|------|------|--------------|-------|----------|------|
| Total Dissolved Solids |      | 2    | 124000       | mg/L  | 100      | 2.50 |

**Sample: 336650 - MW-4**

Laboratory: Midland  
Analysis: Alkalinity  
QC Batch: 103656  
Prep Batch: 87699

Analytical Method: SM 2320B  
Date Analyzed: 2013-07-31  
Sample Preparation: 2013-07-29

Prep Method: N/A  
Analyzed By: AR  
Prepared By: AR

| Parameter              | Flag | Cert | RL<br>Result | Units         | Dilution | RL   |
|------------------------|------|------|--------------|---------------|----------|------|
| Hydroxide Alkalinity   | U    | 2    | <20.0        | mg/L as CaCo3 | 1        | 20.0 |
| Carbonate Alkalinity   | U    | 2    | <20.0        | mg/L as CaCo3 | 1        | 20.0 |
| Bicarbonate Alkalinity |      | 2    | 148          | mg/L as CaCo3 | 1        | 20.0 |
| Total Alkalinity       |      | 2    | 148          | mg/L as CaCo3 | 1        | 20.0 |

**Sample: 336650 - MW-4**

Laboratory: Midland  
Analysis: BTEX  
QC Batch: 103610  
Prep Batch: 87705

Analytical Method: S 8021B  
Date Analyzed: 2013-08-01  
Sample Preparation: 2013-07-29

Prep Method: S 5030B  
Analyzed By: AH  
Prepared By: AH

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| Parameter    | Flag | Cert | RL<br>Result | Units | Dilution | RL      |
|--------------|------|------|--------------|-------|----------|---------|
| Benzene      | U    | 2    | <0.00100     | mg/L  | 1        | 0.00100 |
| Toluene      | U    | 2    | <0.00100     | mg/L  | 1        | 0.00100 |
| Ethylbenzene | U    | 2    | <0.00100     | mg/L  | 1        | 0.00100 |
| Xylene       | U    | 2    | <0.00100     | mg/L  | 1        | 0.00100 |

| Surrogate                    | Flag | Cert | Result | Units | Dilution | Spike<br>Amount | Percent<br>Recovery | Recovery<br>Limits |
|------------------------------|------|------|--------|-------|----------|-----------------|---------------------|--------------------|
| Trifluorotoluene (TFT)       |      |      | 0.0962 | mg/L  | 1        | 0.100           | 96                  | 70 - 130           |
| 4-Bromofluorobenzene (4-BFB) |      |      | 0.0907 | mg/L  | 1        | 0.100           | 91                  | 70 - 130           |

**Sample: 336650 - MW-4**

Laboratory: Lubbock  
Analysis: Cations  
QC Batch: 103972  
Prep Batch: 87768

Analytical Method: S 6010C  
Date Analyzed: 2013-08-13  
Sample Preparation: 2013-07-31

Prep Method: S 3005A  
Analyzed By: RR  
Prepared By: PM

| Parameter           | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|---------------------|------|------|--------------|-------|----------|------|
| Dissolved Calcium   |      | 1    | <b>6770</b>  | mg/L  | 100      | 1.00 |
| Dissolved Potassium |      | 1    | <b>135</b>   | mg/L  | 10       | 1.00 |
| Dissolved Magnesium |      | 1    | <b>1150</b>  | mg/L  | 100      | 1.00 |
| Dissolved Sodium    |      | 1    | <b>4030</b>  | mg/L  | 100      | 1.00 |

**Sample: 336650 - MW-4**

Laboratory: Lubbock  
Analysis: Chloride (IC)  
QC Batch: 103740  
Prep Batch: 87895

Analytical Method: E 300.0  
Date Analyzed: 2013-08-05  
Sample Preparation: 2013-08-05

Prep Method: N/A  
Analyzed By: RL  
Prepared By: RL

| Parameter | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|-----------|------|------|--------------|-------|----------|------|
| Chloride  |      | 1    | <b>23900</b> | mg/L  | 1000     | 2.50 |

**Sample: 336650 - MW-4**

Laboratory: Lubbock  
Analysis: Hardness  
QC Batch: 103972  
Prep Batch: 87768

Analytical Method: S 6010C  
Date Analyzed: 2013-08-13  
Sample Preparation: 2013-07-31

Prep Method: N/A  
Analyzed By: RR  
Prepared By: PM

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| Parameter         | Flag | Cert | RL<br>Result | Units         | Dilution | RL   |
|-------------------|------|------|--------------|---------------|----------|------|
| Hardness (by ICP) |      |      | <b>21600</b> | mg eq CaCO3/L | 1        | 0.00 |

**Sample: 336650 - MW-4**

|             |         |                     |            |              |     |
|-------------|---------|---------------------|------------|--------------|-----|
| Laboratory: | Midland |                     |            |              |     |
| Analysis:   | pH      | Analytical Method:  | SM 4500-H+ | Prep Method: | N/A |
| QC Batch:   | 103501  | Date Analyzed:      | 2013-07-26 | Analyzed By: | AR  |
| Prep Batch: | 87639   | Sample Preparation: | 2013-07-26 | Prepared By: | AR  |

| Parameter | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|-----------|------|------|--------------|-------|----------|------|
| pH        |      | 2    | <b>6.58</b>  | s.u.  | 1        | 0.00 |

**Sample: 336650 - MW-4**

|             |          |                     |            |              |     |
|-------------|----------|---------------------|------------|--------------|-----|
| Laboratory: | Lubbock  |                     |            |              |     |
| Analysis:   | SO4 (IC) | Analytical Method:  | E 300.0    | Prep Method: | N/A |
| QC Batch:   | 103740   | Date Analyzed:      | 2013-08-05 | Analyzed By: | RL  |
| Prep Batch: | 87895    | Sample Preparation: | 2013-08-05 | Prepared By: | RL  |

| Parameter | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|-----------|------|------|--------------|-------|----------|------|
| Sulfate   |      | 1    | <2500        | mg/L  | 1000     | 2.50 |

**Sample: 336650 - MW-4**

|             |         |                     |            |              |     |
|-------------|---------|---------------------|------------|--------------|-----|
| Laboratory: | Midland |                     |            |              |     |
| Analysis:   | TDS     | Analytical Method:  | SM 2540C   | Prep Method: | N/A |
| QC Batch:   | 103619  | Date Analyzed:      | 2013-07-30 | Analyzed By: | AR  |
| Prep Batch: | 87794   | Sample Preparation: | 2013-07-25 | Prepared By: | AR  |

| Parameter              | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|------------------------|------|------|--------------|-------|----------|------|
| Total Dissolved Solids |      | 2    | <b>49200</b> | mg/L  | 100      | 2.50 |

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**Sample: 336651 - MW-5**

Laboratory: Midland  
Analysis: Alkalinity  
QC Batch: 103656  
Prep Batch: 87699

Analytical Method: SM 2320B  
Date Analyzed: 2013-07-31  
Sample Preparation: 2013-07-29

Prep Method: N/A  
Analyzed By: AR  
Prepared By: AR

| Parameter              | Flag | Cert | RL<br>Result | Units         | Dilution | RL   |
|------------------------|------|------|--------------|---------------|----------|------|
| Hydroxide Alkalinity   | U    | 2    | <20.0        | mg/L as CaCo3 | 1        | 20.0 |
| Carbonate Alkalinity   | U    | 2    | <20.0        | mg/L as CaCo3 | 1        | 20.0 |
| Bicarbonate Alkalinity |      | 2    | 161          | mg/L as CaCo3 | 1        | 20.0 |
| Total Alkalinity       |      | 2    | 161          | mg/L as CaCo3 | 1        | 20.0 |

**Sample: 336651 - MW-5**

Laboratory: Midland  
Analysis: BTEX  
QC Batch: 103610  
Prep Batch: 87705

Analytical Method: S 8021B  
Date Analyzed: 2013-08-01  
Sample Preparation: 2013-07-29

Prep Method: S 5030B  
Analyzed By: AH  
Prepared By: AH

| Parameter    | Flag | Cert | RL<br>Result | Units | Dilution | RL      |
|--------------|------|------|--------------|-------|----------|---------|
| Benzene      | U    | 2    | <0.00100     | mg/L  | 1        | 0.00100 |
| Toluene      | U    | 2    | <0.00100     | mg/L  | 1        | 0.00100 |
| Ethylbenzene | U    | 2    | <0.00100     | mg/L  | 1        | 0.00100 |
| Xylene       | U    | 2    | <0.00100     | mg/L  | 1        | 0.00100 |

| Surrogate                    | Flag | Cert | Result | Units | Dilution | Spike<br>Amount | Percent<br>Recovery | Recovery<br>Limits |
|------------------------------|------|------|--------|-------|----------|-----------------|---------------------|--------------------|
| Trifluorotoluene (TFT)       |      |      | 0.100  | mg/L  | 1        | 0.100           | 100                 | 70 - 130           |
| 4-Bromofluorobenzene (4-BFB) |      |      | 0.0952 | mg/L  | 1        | 0.100           | 95                  | 70 - 130           |

**Sample: 336651 - MW-5**

Laboratory: Lubbock  
Analysis: Cations  
QC Batch: 103972  
Prep Batch: 87768

Analytical Method: S 6010C  
Date Analyzed: 2013-08-13  
Sample Preparation: 2013-07-31

Prep Method: S 3005A  
Analyzed By: RR  
Prepared By: PM

| Parameter           | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|---------------------|------|------|--------------|-------|----------|------|
| Dissolved Calcium   |      | 1    | 68.5         | mg/L  | 1        | 1.00 |
| Dissolved Potassium |      | 1    | 2.95         | mg/L  | 1        | 1.00 |
| Dissolved Magnesium |      | 1    | 9.90         | mg/L  | 1        | 1.00 |

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| Parameter        | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|------------------|------|------|--------------|-------|----------|------|
| Dissolved Sodium |      | 1    | 60.4         | mg/L  | 1        | 1.00 |

**Sample: 336651 - MW-5**

|             |               |                     |            |              |     |
|-------------|---------------|---------------------|------------|--------------|-----|
| Laboratory: | Lubbock       | Analytical Method:  | E 300.0    | Prep Method: | N/A |
| Analysis:   | Chloride (IC) | Date Analyzed:      | 2013-08-06 | Analyzed By: | RL  |
| QC Batch:   | 103814        | Sample Preparation: | 2013-08-06 | Prepared By: | RL  |
| Prep Batch: | 87957         |                     |            |              |     |

| Parameter | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|-----------|------|------|--------------|-------|----------|------|
| Chloride  |      | 1    | 65.7         | mg/L  | 5        | 2.50 |

**Sample: 336651 - MW-5**

|             |          |                     |            |              |     |
|-------------|----------|---------------------|------------|--------------|-----|
| Laboratory: | Lubbock  | Analytical Method:  | S 6010C    | Prep Method: | N/A |
| Analysis:   | Hardness | Date Analyzed:      | 2013-08-13 | Analyzed By: | RR  |
| QC Batch:   | 103972   | Sample Preparation: | 2013-07-31 | Prepared By: | PM  |
| Prep Batch: | 87768    |                     |            |              |     |

| Parameter         | Flag | Cert | RL<br>Result | Units         | Dilution | RL   |
|-------------------|------|------|--------------|---------------|----------|------|
| Hardness (by ICP) |      |      | 212          | mg eq CaCO3/L | 1        | 0.00 |

**Sample: 336651 - MW-5**

|             |         |                     |            |              |     |
|-------------|---------|---------------------|------------|--------------|-----|
| Laboratory: | Midland | Analytical Method:  | SM 4500-H+ | Prep Method: | N/A |
| Analysis:   | pH      | Date Analyzed:      | 2013-07-26 | Analyzed By: | AR  |
| QC Batch:   | 103501  | Sample Preparation: | 2013-07-26 | Prepared By: | AR  |
| Prep Batch: | 87639   |                     |            |              |     |

| Parameter | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|-----------|------|------|--------------|-------|----------|------|
| pH        |      | 2    | 8.07         | s.u.  | 1        | 0.00 |

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**Sample: 336651 - MW-5**

|             |          |                     |            |              |     |
|-------------|----------|---------------------|------------|--------------|-----|
| Laboratory: | Lubbock  | Analytical Method:  | E 300.0    | Prep Method: | N/A |
| Analysis:   | SO4 (IC) | Date Analyzed:      | 2013-08-06 | Analyzed By: | RL  |
| QC Batch:   | 103814   | Sample Preparation: | 2013-08-06 | Prepared By: | RL  |
| Prep Batch: | 87957    |                     |            |              |     |

| Parameter | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|-----------|------|------|--------------|-------|----------|------|
| Sulfate   |      | 1    | 132          | mg/L  | 5        | 2.50 |

**Sample: 336651 - MW-5**

|             |         |                     |            |              |     |
|-------------|---------|---------------------|------------|--------------|-----|
| Laboratory: | Midland | Analytical Method:  | SM 2540C   | Prep Method: | N/A |
| Analysis:   | TDS     | Date Analyzed:      | 2013-07-30 | Analyzed By: | AR  |
| QC Batch:   | 103619  | Sample Preparation: | 2013-07-25 | Prepared By: | AR  |
| Prep Batch: | 87794   |                     |            |              |     |

| Parameter              | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|------------------------|------|------|--------------|-------|----------|------|
| Total Dissolved Solids |      | 2    | 510          | mg/L  | 1        | 2.50 |

**Sample: 336652 - MW-6**

|             |            |                     |            |              |     |
|-------------|------------|---------------------|------------|--------------|-----|
| Laboratory: | Midland    | Analytical Method:  | SM 2320B   | Prep Method: | N/A |
| Analysis:   | Alkalinity | Date Analyzed:      | 2013-07-31 | Analyzed By: | AR  |
| QC Batch:   | 103656     | Sample Preparation: | 2013-07-29 | Prepared By: | AR  |
| Prep Batch: | 87699      |                     |            |              |     |

| Parameter              | Flag | Cert | RL<br>Result | Units         | Dilution | RL   |
|------------------------|------|------|--------------|---------------|----------|------|
| Hydroxide Alkalinity   | U    | 2    | <20.0        | mg/L as CaCo3 | 1        | 20.0 |
| Carbonate Alkalinity   | U    | 2    | <20.0        | mg/L as CaCo3 | 1        | 20.0 |
| Bicarbonate Alkalinity |      | 2    | 174          | mg/L as CaCo3 | 1        | 20.0 |
| Total Alkalinity       |      | 2    | 174          | mg/L as CaCo3 | 1        | 20.0 |

**Sample: 336652 - MW-6**

|             |         |                     |            |              |         |
|-------------|---------|---------------------|------------|--------------|---------|
| Laboratory: | Midland | Analytical Method:  | S 8021B    | Prep Method: | S 5030B |
| Analysis:   | BTEX    | Date Analyzed:      | 2013-08-07 | Analyzed By: | KC      |
| QC Batch:   | 103765  | Sample Preparation: | 2013-08-05 | Prepared By: | KC      |
| Prep Batch: | 87919   |                     |            |              |         |

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| Parameter    | Flag              | Cert | RL<br>Result | Units | Dilution | RL      |
|--------------|-------------------|------|--------------|-------|----------|---------|
| Benzene      | U                 | 2    | <0.00100     | mg/L  | 1        | 0.00100 |
| Toluene      | U                 | 2    | <0.00100     | mg/L  | 1        | 0.00100 |
| Ethylbenzene | Q <sub>S</sub> ,U | 2    | <0.00100     | mg/L  | 1        | 0.00100 |
| Xylene       | Q <sub>S</sub> ,U | 2    | <0.00100     | mg/L  | 1        | 0.00100 |

| Surrogate                    | Flag              | Cert            | Result | Units | Dilution | Spike<br>Amount | Percent<br>Recovery | Recovery<br>Limits |
|------------------------------|-------------------|-----------------|--------|-------|----------|-----------------|---------------------|--------------------|
| Trifluorotoluene (TFT)       |                   |                 | 0.0718 | mg/L  | 1        | 0.100           | 72                  | 70 - 130           |
| 4-Bromofluorobenzene (4-BFB) | 2 Q <sub>Sr</sub> | Q <sub>Sr</sub> | 0.0543 | mg/L  | 1        | 0.100           | 54                  | 70 - 130           |

**Sample: 336652 - MW-6**

Laboratory: Lubbock  
Analysis: Cations  
QC Batch: 103972  
Prep Batch: 87768

Analytical Method: S 6010C  
Date Analyzed: 2013-08-13  
Sample Preparation: 2013-07-31

Prep Method: S 3005A  
Analyzed By: RR  
Prepared By: PM

| Parameter           | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|---------------------|------|------|--------------|-------|----------|------|
| Dissolved Calcium   |      | 1    | <b>4840</b>  | mg/L  | 100      | 1.00 |
| Dissolved Potassium |      | 1    | <b>780</b>   | mg/L  | 10       | 1.00 |
| Dissolved Magnesium |      | 1    | <b>3050</b>  | mg/L  | 100      | 1.00 |
| Dissolved Sodium    |      | 1    | <b>57000</b> | mg/L  | 1000     | 1.00 |

**Sample: 336652 - MW-6**

Laboratory: Lubbock  
Analysis: Chloride (IC)  
QC Batch: 103814  
Prep Batch: 87957

Analytical Method: E 300.0  
Date Analyzed: 2013-08-06  
Sample Preparation: 2013-08-06

Prep Method: N/A  
Analyzed By: RL  
Prepared By: RL

| Parameter | Flag | Cert | RL<br>Result  | Units | Dilution | RL   |
|-----------|------|------|---------------|-------|----------|------|
| Chloride  |      | 1    | <b>117000</b> | mg/L  | 5000     | 2.50 |

**Sample: 336652 - MW-6**

Laboratory: Lubbock  
Analysis: Hardness  
QC Batch: 103972  
Prep Batch: 87768

Analytical Method: S 6010C  
Date Analyzed: 2013-08-13  
Sample Preparation: 2013-07-31

Prep Method: N/A  
Analyzed By: RR  
Prepared By: PM

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| Parameter         | Flag | Cert | RL<br>Result | Units         | Dilution | RL   |
|-------------------|------|------|--------------|---------------|----------|------|
| Hardness (by ICP) |      |      | 24600        | mg eq CaCO3/L | 1        | 0.00 |

**Sample: 336652 - MW-6**

Laboratory: Midland  
Analysis: pH  
QC Batch: 103501  
Prep Batch: 87639

Analytical Method: SM 4500-H+  
Date Analyzed: 2013-07-26  
Sample Preparation: 2013-07-26

Prep Method: N/A  
Analyzed By: AR  
Prepared By: AR

| Parameter | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|-----------|------|------|--------------|-------|----------|------|
| pH        |      | 2    | 6.22         | s.u.  | 1        | 0.00 |

**Sample: 336652 - MW-6**

Laboratory: Lubbock  
Analysis: SO4 (IC)  
QC Batch: 103814  
Prep Batch: 87957

Analytical Method: E 300.0  
Date Analyzed: 2013-08-06  
Sample Preparation: 2013-08-06

Prep Method: N/A  
Analyzed By: RL  
Prepared By: RL

| Parameter | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|-----------|------|------|--------------|-------|----------|------|
| Sulfate   |      | 1    | <12500       | mg/L  | 5000     | 2.50 |

**Sample: 336652 - MW-6**

Laboratory: Midland  
Analysis: TDS  
QC Batch: 103619  
Prep Batch: 87794

Analytical Method: SM 2540C  
Date Analyzed: 2013-07-30  
Sample Preparation: 2013-07-25

Prep Method: N/A  
Analyzed By: AR  
Prepared By: AR

| Parameter              | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|------------------------|------|------|--------------|-------|----------|------|
| Total Dissolved Solids |      | 2    | 197000       | mg/L  | 100      | 2.50 |

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**Sample: 336653 - MW-7**

Laboratory: Midland  
Analysis: Alkalinity  
QC Batch: 103656  
Prep Batch: 87699

Analytical Method: SM 2320B  
Date Analyzed: 2013-07-31  
Sample Preparation: 2013-07-29

Prep Method: N/A  
Analyzed By: AR  
Prepared By: AR

| Parameter              | Flag | Cert | RL<br>Result | Units         | Dilution | RL   |
|------------------------|------|------|--------------|---------------|----------|------|
| Hydroxide Alkalinity   | U    | 2    | <20.0        | mg/L as CaCo3 | 1        | 20.0 |
| Carbonate Alkalinity   | U    | 2    | <20.0        | mg/L as CaCo3 | 1        | 20.0 |
| Bicarbonate Alkalinity |      | 2    | 187          | mg/L as CaCo3 | 1        | 20.0 |
| Total Alkalinity       |      | 2    | 187          | mg/L as CaCo3 | 1        | 20.0 |

**Sample: 336653 - MW-7**

Laboratory: Midland  
Analysis: BTEX  
QC Batch: 103777  
Prep Batch: 87929

Analytical Method: S 8021B  
Date Analyzed: 2013-08-07  
Sample Preparation: 2013-08-06

Prep Method: S 5030B  
Analyzed By: KC  
Prepared By: KC

| Parameter    | Flag      | Cert | RL<br>Result | Units | Dilution | RL      |
|--------------|-----------|------|--------------|-------|----------|---------|
| Benzene      | Qr, Qs, U | 2    | <0.00100     | mg/L  | 1        | 0.00100 |
| Toluene      | Qr, Qs, U | 2    | <0.00100     | mg/L  | 1        | 0.00100 |
| Ethylbenzene | Qr, Qs, U | 2    | <0.00100     | mg/L  | 1        | 0.00100 |
| Xylene       | Qr, Qs, U | 2    | <0.00100     | mg/L  | 1        | 0.00100 |

| Surrogate                    | Flag             | Cert | Result | Units | Dilution | Spike<br>Amount | Percent<br>Recovery | Recovery<br>Limits |
|------------------------------|------------------|------|--------|-------|----------|-----------------|---------------------|--------------------|
| Trifluorotoluene (TFT)       | <sup>3</sup> Qsr | Qsr  | 0.0643 | mg/L  | 1        | 0.100           | 64                  | 70 - 130           |
| 4-Bromofluorobenzene (4-BFB) | Qsr              | Qsr  | 0.0549 | mg/L  | 1        | 0.100           | 55                  | 70 - 130           |

**Sample: 336653 - MW-7**

Laboratory: Lubbock  
Analysis: Cations  
QC Batch: 103972  
Prep Batch: 87768

Analytical Method: S 6010C  
Date Analyzed: 2013-08-13  
Sample Preparation: 2013-07-31

Prep Method: S 3005A  
Analyzed By: RR  
Prepared By: PM

| Parameter           | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|---------------------|------|------|--------------|-------|----------|------|
| Dissolved Calcium   |      | 1    | 4900         | mg/L  | 100      | 1.00 |
| Dissolved Potassium |      | 1    | 968          | mg/L  | 10       | 1.00 |
| Dissolved Magnesium |      | 1    | 3250         | mg/L  | 100      | 1.00 |

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*sample 336653 continued . . .*

| Parameter        | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|------------------|------|------|--------------|-------|----------|------|
| Dissolved Sodium |      | 1    | <b>58700</b> | mg/L  | 1000     | 1.00 |

**Sample: 336653 - MW-7**

|             |               |                     |            |              |     |
|-------------|---------------|---------------------|------------|--------------|-----|
| Laboratory: | Lubbock       |                     |            |              |     |
| Analysis:   | Chloride (IC) | Analytical Method:  | E 300.0    | Prep Method: | N/A |
| QC Batch:   | 103814        | Date Analyzed:      | 2013-08-06 | Analyzed By: | RL  |
| Prep Batch: | 87957         | Sample Preparation: | 2013-08-06 | Prepared By: | RL  |

| Parameter | Flag | Cert | RL<br>Result  | Units | Dilution | RL   |
|-----------|------|------|---------------|-------|----------|------|
| Chloride  |      | 1    | <b>127000</b> | mg/L  | 5000     | 2.50 |

**Sample: 336653 - MW-7**

|             |          |                     |            |              |     |
|-------------|----------|---------------------|------------|--------------|-----|
| Laboratory: | Lubbock  |                     |            |              |     |
| Analysis:   | Hardness | Analytical Method:  | S 6010C    | Prep Method: | N/A |
| QC Batch:   | 103972   | Date Analyzed:      | 2013-08-13 | Analyzed By: | RR  |
| Prep Batch: | 87768    | Sample Preparation: | 2013-07-31 | Prepared By: | PM  |

| Parameter         | Flag | Cert | RL<br>Result | Units         | Dilution | RL   |
|-------------------|------|------|--------------|---------------|----------|------|
| Hardness (by ICP) |      |      | <b>25600</b> | mg eq CaCO3/L | 1        | 0.00 |

**Sample: 336653 - MW-7**

|             |         |                     |            |              |     |
|-------------|---------|---------------------|------------|--------------|-----|
| Laboratory: | Midland |                     |            |              |     |
| Analysis:   | pH      | Analytical Method:  | SM 4500-H+ | Prep Method: | N/A |
| QC Batch:   | 103501  | Date Analyzed:      | 2013-07-26 | Analyzed By: | AR  |
| Prep Batch: | 87639   | Sample Preparation: | 2013-07-26 | Prepared By: | AR  |

| Parameter | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|-----------|------|------|--------------|-------|----------|------|
| pH        |      | 2    | <b>6.26</b>  | s.u.  | 1        | 0.00 |

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**Sample: 336653 - MW-7**

|             |          |                     |            |              |     |
|-------------|----------|---------------------|------------|--------------|-----|
| Laboratory: | Lubbock  | Analytical Method:  | E 300.0    | Prep Method: | N/A |
| Analysis:   | SO4 (IC) | Date Analyzed:      | 2013-08-06 | Analyzed By: | RL  |
| QC Batch:   | 103814   | Sample Preparation: | 2013-08-06 | Prepared By: | RL  |
| Prep Batch: | 87957    |                     |            |              |     |

| Parameter | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|-----------|------|------|--------------|-------|----------|------|
| Sulfate   |      | 1    | <12500       | mg/L  | 5000     | 2.50 |

**Sample: 336653 - MW-7**

|             |         |                     |            |              |     |
|-------------|---------|---------------------|------------|--------------|-----|
| Laboratory: | Midland | Analytical Method:  | SM 2540C   | Prep Method: | N/A |
| Analysis:   | TDS     | Date Analyzed:      | 2013-07-30 | Analyzed By: | AR  |
| QC Batch:   | 103619  | Sample Preparation: | 2013-07-25 | Prepared By: | AR  |
| Prep Batch: | 87794   |                     |            |              |     |

| Parameter              | Flag | Cert | RL<br>Result  | Units | Dilution | RL   |
|------------------------|------|------|---------------|-------|----------|------|
| Total Dissolved Solids |      | 2    | <b>213000</b> | mg/L  | 100      | 2.50 |

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## Method Blanks

### Method Blank (1) QC Batch: 103610

QC Batch: 103610 Date Analyzed: 2013-08-01 Analyzed By: AH  
Prep Batch: 87705 QC Preparation: 2013-07-29 Prepared By: AH

| Parameter    | Flag | Cert | MDL<br>Result | Units | RL    |
|--------------|------|------|---------------|-------|-------|
| Benzene      |      | 2    | <0.000200     | mg/L  | 0.001 |
| Toluene      |      | 2    | <0.000300     | mg/L  | 0.001 |
| Ethylbenzene |      | 2    | <0.000400     | mg/L  | 0.001 |
| Xylene       |      | 2    | <0.00120      | mg/L  | 0.001 |

| Surrogate                    | Flag | Cert | Result | Units | Dilution | Spike<br>Amount | Percent<br>Recovery | Recovery<br>Limits |
|------------------------------|------|------|--------|-------|----------|-----------------|---------------------|--------------------|
| Trifluorotoluene (TFT)       |      |      | 0.101  | mg/L  | 1        | 0.100           | 101                 | 70 - 130           |
| 4-Bromofluorobenzene (4-BFB) |      |      | 0.0956 | mg/L  | 1        | 0.100           | 96                  | 70 - 130           |

### Method Blank (1) QC Batch: 103618

QC Batch: 103618 Date Analyzed: 2013-07-26 Analyzed By: AR  
Prep Batch: 87794 QC Preparation: 2013-07-25 Prepared By: AR

| Parameter              | Flag | Cert | MDL<br>Result | Units | RL  |
|------------------------|------|------|---------------|-------|-----|
| Total Dissolved Solids |      | 2    | <2.50         | mg/L  | 2.5 |

### Method Blank (1) QC Batch: 103619

QC Batch: 103619 Date Analyzed: 2013-07-30 Analyzed By: AR  
Prep Batch: 87794 QC Preparation: 2013-07-25 Prepared By: AR

| Parameter              | Flag | Cert | MDL<br>Result | Units | RL  |
|------------------------|------|------|---------------|-------|-----|
| Total Dissolved Solids |      | 2    | 9.00          | mg/L  | 2.5 |

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**Method Blank (1)**      QC Batch: 103654

QC Batch: 103654      Date Analyzed: 2013-07-30      Analyzed By: AR  
Prep Batch: 87699      QC Preparation: 2013-07-29      Prepared By: AR

| Parameter              | Flag | Cert | MDL<br>Result | Units         | RL |
|------------------------|------|------|---------------|---------------|----|
| Hydroxide Alkalinity   |      | 2    | <20.0         | mg/L as CaCo3 | 20 |
| Carbonate Alkalinity   |      | 2    | <20.0         | mg/L as CaCo3 | 20 |
| Bicarbonate Alkalinity |      | 2    | <20.0         | mg/L as CaCo3 | 20 |
| Total Alkalinity       |      | 2    | <20.0         | mg/L as CaCo3 | 20 |

**Method Blank (1)**      QC Batch: 103656

QC Batch: 103656      Date Analyzed: 2013-07-31      Analyzed By: AR  
Prep Batch: 87699      QC Preparation: 2013-07-29      Prepared By: AR

| Parameter              | Flag | Cert | MDL<br>Result | Units         | RL |
|------------------------|------|------|---------------|---------------|----|
| Hydroxide Alkalinity   |      | 2    | <20.0         | mg/L as CaCo3 | 20 |
| Carbonate Alkalinity   |      | 2    | <20.0         | mg/L as CaCo3 | 20 |
| Bicarbonate Alkalinity |      | 2    | <20.0         | mg/L as CaCo3 | 20 |
| Total Alkalinity       |      | 2    | <20.0         | mg/L as CaCo3 | 20 |

**Method Blank (1)**      QC Batch: 103740

QC Batch: 103740      Date Analyzed: 2013-08-05      Analyzed By: RL  
Prep Batch: 87895      QC Preparation: 2013-08-05      Prepared By: RL

| Parameter | Flag | Cert | MDL<br>Result | Units | RL  |
|-----------|------|------|---------------|-------|-----|
| Chloride  |      | 1    | <0.169        | mg/L  | 2.5 |

**Method Blank (1)**      QC Batch: 103740

QC Batch: 103740      Date Analyzed: 2013-08-05      Analyzed By: RL  
Prep Batch: 87895      QC Preparation: 2013-08-05      Prepared By: RL

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| Parameter | Flag | Cert | MDL<br>Result | Units | RL  |
|-----------|------|------|---------------|-------|-----|
| Sulfate   |      | 1    | <0.224        | mg/L  | 2.5 |

**Method Blank (1)**      QC Batch: 103765

QC Batch: 103765  
Prep Batch: 87919

Date Analyzed: 2013-08-07  
QC Preparation: 2013-08-05

Analyzed By: KC  
Prepared By: KC

| Parameter    | Flag | Cert | MDL<br>Result | Units | RL    |
|--------------|------|------|---------------|-------|-------|
| Benzene      |      | 2    | <0.000200     | mg/L  | 0.001 |
| Toluene      |      | 2    | <0.000300     | mg/L  | 0.001 |
| Ethylbenzene |      | 2    | <0.000400     | mg/L  | 0.001 |
| Xylene       |      | 2    | <0.00120      | mg/L  | 0.001 |

| Surrogate                    | Flag | Cert | Result | Units | Dilution | Spike<br>Amount | Percent<br>Recovery | Recovery<br>Limits |
|------------------------------|------|------|--------|-------|----------|-----------------|---------------------|--------------------|
| Trifluorotoluene (TFT)       |      |      | 0.100  | mg/L  | 1        | 0.100           | 100                 | 70 - 130           |
| 4-Bromofluorobenzene (4-BFB) |      |      | 0.0959 | mg/L  | 1        | 0.100           | 96                  | 70 - 130           |

**Method Blank (1)**      QC Batch: 103777

QC Batch: 103777  
Prep Batch: 87929

Date Analyzed: 2013-08-07  
QC Preparation: 2013-08-06

Analyzed By: KC  
Prepared By: KC

| Parameter    | Flag | Cert | MDL<br>Result | Units | RL    |
|--------------|------|------|---------------|-------|-------|
| Benzene      |      | 2    | <0.000200     | mg/L  | 0.001 |
| Toluene      |      | 2    | <0.000300     | mg/L  | 0.001 |
| Ethylbenzene |      | 2    | <0.000400     | mg/L  | 0.001 |
| Xylene       |      | 2    | <0.00120      | mg/L  | 0.001 |

| Surrogate                    | Flag | Cert | Result | Units | Dilution | Spike<br>Amount | Percent<br>Recovery | Recovery<br>Limits |
|------------------------------|------|------|--------|-------|----------|-----------------|---------------------|--------------------|
| Trifluorotoluene (TFT)       |      |      | 0.106  | mg/L  | 1        | 0.100           | 106                 | 70 - 130           |
| 4-Bromofluorobenzene (4-BFB) |      |      | 0.101  | mg/L  | 1        | 0.100           | 101                 | 70 - 130           |

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**Method Blank (1)**      QC Batch: 103814

QC Batch: 103814      Date Analyzed: 2013-08-06      Analyzed By: RL  
Prep Batch: 87957      QC Preparation: 2013-08-06      Prepared By: RL

| Parameter | Flag | Cert | MDL<br>Result | Units | RL  |
|-----------|------|------|---------------|-------|-----|
| Chloride  |      | 1    | 0.235         | mg/L  | 2.5 |

**Method Blank (1)**      QC Batch: 103814

QC Batch: 103814      Date Analyzed: 2013-08-06      Analyzed By: RL  
Prep Batch: 87957      QC Preparation: 2013-08-06      Prepared By: RL

| Parameter | Flag | Cert | MDL<br>Result | Units | RL  |
|-----------|------|------|---------------|-------|-----|
| Sulfate   |      | 1    | <0.224        | mg/L  | 2.5 |

**Method Blank (1)**      QC Batch: 103949

QC Batch: 103949      Date Analyzed: 2013-08-12      Analyzed By: RR  
Prep Batch: 87738      QC Preparation: 2013-07-30      Prepared By: PM

| Parameter           | Flag | Cert | MDL<br>Result | Units | RL |
|---------------------|------|------|---------------|-------|----|
| Dissolved Calcium   |      | 1    | <0.0441       | mg/L  | 1  |
| Dissolved Potassium |      | 1    | <0.0443       | mg/L  | 1  |
| Dissolved Magnesium |      | 1    | <0.0296       | mg/L  | 1  |
| Dissolved Sodium    |      | 1    | <0.172        | mg/L  | 1  |

**Method Blank (1)**      QC Batch: 103950

QC Batch: 103950      Date Analyzed: 2013-08-12      Analyzed By: RR  
Prep Batch: 87738      QC Preparation: 2013-07-30      Prepared By: PM

| Parameter         | Flag | Cert | MDL<br>Result | Units | RL |
|-------------------|------|------|---------------|-------|----|
| Dissolved Calcium |      | 1    | <0.0441       | mg/L  | 1  |

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*method blank continued ...*

| Parameter           | Flag | Cert | MDL<br>Result | Units | RL |
|---------------------|------|------|---------------|-------|----|
| Dissolved Potassium |      | 1    | <0.0443       | mg/L  | 1  |
| Dissolved Magnesium |      | 1    | <0.0296       | mg/L  | 1  |
| Dissolved Sodium    |      | 1    | <0.172        | mg/L  | 1  |

**Method Blank (1)**      QC Batch: 103972

QC Batch: 103972  
Prep Batch: 87768

Date Analyzed: 2013-08-13  
QC Preparation: 2013-07-31

Analyzed By: RR  
Prepared By: PM

| Parameter           | Flag | Cert | MDL<br>Result | Units | RL |
|---------------------|------|------|---------------|-------|----|
| Dissolved Calcium   |      | 1    | <0.0441       | mg/L  | 1  |
| Dissolved Potassium |      | 1    | <0.0443       | mg/L  | 1  |
| Dissolved Magnesium |      | 1    | <0.0296       | mg/L  | 1  |
| Dissolved Sodium    |      | 1    | <0.172        | mg/L  | 1  |

**Method Blank (1)**      QC Batch: 104141

QC Batch: 104141  
Prep Batch: 88241

Date Analyzed: 2013-08-16  
QC Preparation: 2013-08-16

Analyzed By: RL  
Prepared By: RL

| Parameter | Flag | Cert | MDL<br>Result | Units | RL  |
|-----------|------|------|---------------|-------|-----|
| Chloride  |      | 1    | 0.175         | mg/L  | 2.5 |

**Method Blank (1)**      QC Batch: 104141

QC Batch: 104141  
Prep Batch: 88241

Date Analyzed: 2013-08-16  
QC Preparation: 2013-08-16

Analyzed By: RL  
Prepared By: RL

| Parameter | Flag | Cert | MDL<br>Result | Units | RL  |
|-----------|------|------|---------------|-------|-----|
| Sulfate   |      | 1    | <0.224        | mg/L  | 2.5 |

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**Method Blank (1)**      QC Batch: 104170

QC Batch: 104170      Date Analyzed: 2013-08-16      Analyzed By: AR  
Prep Batch: 88264      QC Preparation: 2013-08-15      Prepared By: AR

| Parameter              | Flag | Cert | MDL<br>Result | Units | RL  |
|------------------------|------|------|---------------|-------|-----|
| Total Dissolved Solids |      | 2    | <2.50         | mg/L  | 2.5 |

**Duplicates (2)**      Duplicated Sample: 336649

QC Batch: 103618      Date Analyzed: 2013-07-26      Analyzed By: AR  
Prep Batch: 87794      QC Preparation: 2013-07-25      Prepared By: AR

| Param                  |   | Duplicate<br>Result | Sample<br>Result | Units | Dilution | RPD | RPD<br>Limit |
|------------------------|---|---------------------|------------------|-------|----------|-----|--------------|
| Total Dissolved Solids | 2 | 137000              | 124000           | mg/L  | 100      | 10  | 10           |

**Duplicates (2)**      Duplicated Sample: 336665

QC Batch: 103619      Date Analyzed: 2013-07-30      Analyzed By: AR  
Prep Batch: 87794      QC Preparation: 2013-07-25      Prepared By: AR

| Param                  |   | Duplicate<br>Result | Sample<br>Result | Units | Dilution | RPD | RPD<br>Limit |
|------------------------|---|---------------------|------------------|-------|----------|-----|--------------|
| Total Dissolved Solids | 2 | 100000              | 94900            | mg/L  | 100      | 5   | 10           |

**Duplicates (1)**      Duplicated Sample: 336633

QC Batch: 104170      Date Analyzed: 2013-08-16      Analyzed By: AR  
Prep Batch: 88264      QC Preparation: 2013-08-15      Prepared By: AR

| Param                  |   | Duplicate<br>Result | Sample<br>Result | Units | Dilution | RPD | RPD<br>Limit |
|------------------------|---|---------------------|------------------|-------|----------|-----|--------------|
| Total Dissolved Solids | 2 | 3720                | 3900             | mg/L  | 5        | 5   | 10           |

## Laboratory Control Spikes

### Laboratory Control Spike (LCS-1)

QC Batch: 103610  
Prep Batch: 87705

Date Analyzed: 2013-08-01  
QC Preparation: 2013-07-29

Analyzed By: AH  
Prepared By: AH

| Param        | F | C | LCS<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit |
|--------------|---|---|---------------|-------|------|-----------------|------------------|------|---------------|
| Benzene      |   | 2 | 0.101         | mg/L  | 1    | 0.100           | <0.000200        | 101  | 70 - 130      |
| Toluene      |   | 2 | 0.100         | mg/L  | 1    | 0.100           | <0.000300        | 100  | 70 - 130      |
| Ethylbenzene |   | 2 | 0.101         | mg/L  | 1    | 0.100           | <0.000400        | 101  | 70 - 130      |
| Xylene       |   | 2 | 0.300         | mg/L  | 1    | 0.300           | <0.00120         | 100  | 70 - 130      |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

| Param        | F | C | LCSD<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit | RPD | RPD<br>Limit |
|--------------|---|---|----------------|-------|------|-----------------|------------------|------|---------------|-----|--------------|
| Benzene      |   | 2 | 0.105          | mg/L  | 1    | 0.100           | <0.000200        | 105  | 70 - 130      | 4   | 20           |
| Toluene      |   | 2 | 0.104          | mg/L  | 1    | 0.100           | <0.000300        | 104  | 70 - 130      | 4   | 20           |
| Ethylbenzene |   | 2 | 0.104          | mg/L  | 1    | 0.100           | <0.000400        | 104  | 70 - 130      | 3   | 20           |
| Xylene       |   | 2 | 0.312          | mg/L  | 1    | 0.300           | <0.00120         | 104  | 70 - 130      | 4   | 20           |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

| Surrogate                    | LCS<br>Result | LCSD<br>Result | Units | Dil. | Spike<br>Amount | LCS<br>Rec. | LCSD<br>Rec. | Rec.<br>Limit |
|------------------------------|---------------|----------------|-------|------|-----------------|-------------|--------------|---------------|
| Trifluorotoluene (TFT)       | 0.0991        | 0.0936         | mg/L  | 1    | 0.100           | 99          | 94           | 70 - 130      |
| 4-Bromofluorobenzene (4-BFB) | 0.102         | 0.0971         | mg/L  | 1    | 0.100           | 102         | 97           | 70 - 130      |

### Laboratory Control Spike (LCS-2)

QC Batch: 103618  
Prep Batch: 87794

Date Analyzed: 2013-07-26  
QC Preparation: 2013-07-25

Analyzed By: AR  
Prepared By: AR

| Param                  | F | C | LCS<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit |
|------------------------|---|---|---------------|-------|------|-----------------|------------------|------|---------------|
| Total Dissolved Solids |   | 2 | 1030          | mg/L  | 1    | 1000            | <2.50            | 103  | 87.8 - 109.1  |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

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| Param                  | F | C | LCSD<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit | RPD | RPD<br>Limit |
|------------------------|---|---|----------------|-------|------|-----------------|------------------|------|---------------|-----|--------------|
| Param                  | F | C | LCSD<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit | RPD | RPD<br>Limit |
| Total Dissolved Solids |   | 2 | 1010           | mg/L  | 1    | 1000            | <2.50            | 101  | 87.8 - 109.1  | 2   | 10           |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

#### Laboratory Control Spike (LCS-1)

QC Batch: 103619  
Prep Batch: 87794

Date Analyzed: 2013-07-30  
QC Preparation: 2013-07-25

Analyzed By: AR  
Prepared By: AR

| Param                  | F | C | LCS<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit |
|------------------------|---|---|---------------|-------|------|-----------------|------------------|------|---------------|
| Total Dissolved Solids |   | 2 | 1080          | mg/L  | 1    | 1000            | <2.50            | 108  | 87.8 - 109.1  |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

| Param                  | F | C | LCSD<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit | RPD | RPD<br>Limit |
|------------------------|---|---|----------------|-------|------|-----------------|------------------|------|---------------|-----|--------------|
| Total Dissolved Solids |   | 2 | 1020           | mg/L  | 1    | 1000            | <2.50            | 102  | 87.8 - 109.1  | 6   | 10           |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

#### Laboratory Control Spike (LCS-1)

QC Batch: 103740  
Prep Batch: 87895

Date Analyzed: 2013-08-05  
QC Preparation: 2013-08-05

Analyzed By: RL  
Prepared By: RL

| Param    | F | C | LCS<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit |
|----------|---|---|---------------|-------|------|-----------------|------------------|------|---------------|
| Chloride |   | 1 | 25.0          | mg/L  | 1    | 25.0            | <0.169           | 100  | 90 - 110      |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

| Param    | F | C | LCSD<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit | RPD | RPD<br>Limit |
|----------|---|---|----------------|-------|------|-----------------|------------------|------|---------------|-----|--------------|
| Chloride |   | 1 | 25.0           | mg/L  | 1    | 25.0            | <0.169           | 100  | 90 - 110      | 0   | 20           |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

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#### Laboratory Control Spike (LCS-1)

QC Batch: 103740  
Prep Batch: 87895

Date Analyzed: 2013-08-05  
QC Preparation: 2013-08-05

Analyzed By: RL  
Prepared By: RL

| Param   | F | C | LCS<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit |
|---------|---|---|---------------|-------|------|-----------------|------------------|------|---------------|
| Sulfate |   | 1 | 25.7          | mg/L  | 1    | 25.0            | <0.224           | 103  | 90 - 110      |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

| Param   | F | C | LCSD<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit | RPD | RPD<br>Limit |
|---------|---|---|----------------|-------|------|-----------------|------------------|------|---------------|-----|--------------|
| Sulfate |   | 1 | 25.5           | mg/L  | 1    | 25.0            | <0.224           | 102  | 90 - 110      | 1   | 20           |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

#### Laboratory Control Spike (LCS-1)

QC Batch: 103765  
Prep Batch: 87919

Date Analyzed: 2013-08-07  
QC Preparation: 2013-08-05

Analyzed By: KC  
Prepared By: KC

| Param        | F | C | LCS<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit |
|--------------|---|---|---------------|-------|------|-----------------|------------------|------|---------------|
| Benzene      |   | 2 | 0.108         | mg/L  | 1    | 0.100           | <0.000200        | 108  | 70 - 130      |
| Toluene      |   | 2 | 0.106         | mg/L  | 1    | 0.100           | <0.000300        | 106  | 70 - 130      |
| Ethylbenzene |   | 2 | 0.105         | mg/L  | 1    | 0.100           | <0.000400        | 105  | 70 - 130      |
| Xylene       |   | 2 | 0.315         | mg/L  | 1    | 0.300           | <0.00120         | 105  | 70 - 130      |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

| Param        | F | C | LCSD<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit | RPD | RPD<br>Limit |
|--------------|---|---|----------------|-------|------|-----------------|------------------|------|---------------|-----|--------------|
| Benzene      |   | 2 | 0.106          | mg/L  | 1    | 0.100           | <0.000200        | 106  | 70 - 130      | 2   | 20           |
| Toluene      |   | 2 | 0.105          | mg/L  | 1    | 0.100           | <0.000300        | 105  | 70 - 130      | 1   | 20           |
| Ethylbenzene |   | 2 | 0.103          | mg/L  | 1    | 0.100           | <0.000400        | 103  | 70 - 130      | 2   | 20           |
| Xylene       |   | 2 | 0.309          | mg/L  | 1    | 0.300           | <0.00120         | 103  | 70 - 130      | 2   | 20           |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

| Surrogate                    | LCS<br>Result | LCSD<br>Result | Units | Dil. | Spike<br>Amount | LCS<br>Rec. | LCSD<br>Rec. | Rec.<br>Limit |
|------------------------------|---------------|----------------|-------|------|-----------------|-------------|--------------|---------------|
| Trifluorotoluene (TFT)       | 0.0984        | 0.0953         | mg/L  | 1    | 0.100           | 98          | 95           | 70 - 130      |
| 4-Bromofluorobenzene (4-BFB) | 0.0997        | 0.0976         | mg/L  | 1    | 0.100           | 100         | 98           | 70 - 130      |

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#### Laboratory Control Spike (LCS-1)

QC Batch: 103777  
Prep Batch: 87929

Date Analyzed: 2013-08-07  
QC Preparation: 2013-08-06

Analyzed By: KC  
Prepared By: KC

| Param        | F | C | LCS<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit |
|--------------|---|---|---------------|-------|------|-----------------|------------------|------|---------------|
| Benzene      |   | 2 | 0.107         | mg/L  | 1    | 0.100           | <0.000200        | 107  | 70 - 130      |
| Toluene      |   | 2 | 0.108         | mg/L  | 1    | 0.100           | <0.000300        | 108  | 70 - 130      |
| Ethylbenzene |   | 2 | 0.104         | mg/L  | 1    | 0.100           | <0.000400        | 104  | 70 - 130      |
| Xylene       |   | 2 | 0.314         | mg/L  | 1    | 0.300           | <0.00120         | 105  | 70 - 130      |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

| Param        | F | C | LCS<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit | RPD | RPD<br>Limit |
|--------------|---|---|---------------|-------|------|-----------------|------------------|------|---------------|-----|--------------|
| Benzene      |   | 2 | 0.110         | mg/L  | 1    | 0.100           | <0.000200        | 110  | 70 - 130      | 3   | 20           |
| Toluene      |   | 2 | 0.110         | mg/L  | 1    | 0.100           | <0.000300        | 110  | 70 - 130      | 2   | 20           |
| Ethylbenzene |   | 2 | 0.108         | mg/L  | 1    | 0.100           | <0.000400        | 108  | 70 - 130      | 4   | 20           |
| Xylene       |   | 2 | 0.324         | mg/L  | 1    | 0.300           | <0.00120         | 108  | 70 - 130      | 3   | 20           |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

| Surrogate                    | LCS<br>Result | LCS<br>Result | Units | Dil. | Spike<br>Amount | LCS<br>Rec. | LCS<br>Rec. | Rec.<br>Limit |
|------------------------------|---------------|---------------|-------|------|-----------------|-------------|-------------|---------------|
| Trifluorotoluene (TFT)       | 0.102         | 0.102         | mg/L  | 1    | 0.100           | 102         | 102         | 70 - 130      |
| 4-Bromofluorobenzene (4-BFB) | 0.108         | 0.107         | mg/L  | 1    | 0.100           | 108         | 107         | 70 - 130      |

#### Laboratory Control Spike (LCS-1)

QC Batch: 103814  
Prep Batch: 87957

Date Analyzed: 2013-08-06  
QC Preparation: 2013-08-06

Analyzed By: RL  
Prepared By: RL

| Param    | F | C | LCS<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit |
|----------|---|---|---------------|-------|------|-----------------|------------------|------|---------------|
| Chloride |   | 1 | 26.4          | mg/L  | 1    | 25.0            | <0.169           | 106  | 90 - 110      |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

| Param    | F | C | LCS<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit | RPD | RPD<br>Limit |
|----------|---|---|---------------|-------|------|-----------------|------------------|------|---------------|-----|--------------|
| Chloride |   | 1 | 25.9          | mg/L  | 1    | 25.0            | <0.169           | 104  | 90 - 110      | 2   | 20           |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

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#### Laboratory Control Spike (LCS-1)

QC Batch: 103814  
Prep Batch: 87957

Date Analyzed: 2013-08-06  
QC Preparation: 2013-08-06

Analyzed By: RL  
Prepared By: RL

| Param   | F | C | LCS<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit |
|---------|---|---|---------------|-------|------|-----------------|------------------|------|---------------|
| Sulfate |   | 1 | 25.8          | mg/L  | 1    | 25.0            | <0.224           | 103  | 90 - 110      |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

| Param   | F | C | LCSD<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit | RPD | RPD<br>Limit |
|---------|---|---|----------------|-------|------|-----------------|------------------|------|---------------|-----|--------------|
| Sulfate |   | 1 | 26.0           | mg/L  | 1    | 25.0            | <0.224           | 104  | 90 - 110      | 1   | 20           |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

#### Laboratory Control Spike (LCS-1)

QC Batch: 103949  
Prep Batch: 87738

Date Analyzed: 2013-08-12  
QC Preparation: 2013-07-30

Analyzed By: RR  
Prepared By: PM

| Param               | F | C | LCS<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit |
|---------------------|---|---|---------------|-------|------|-----------------|------------------|------|---------------|
| Dissolved Calcium   |   | 1 | 52.1          | mg/L  | 1    | 50.0            | <0.0441          | 104  | 85 - 115      |
| Dissolved Potassium |   | 1 | 51.6          | mg/L  | 1    | 50.0            | <0.0443          | 103  | 85 - 115      |
| Dissolved Magnesium |   | 1 | 53.3          | mg/L  | 1    | 50.0            | <0.0296          | 107  | 85 - 115      |
| Dissolved Sodium    |   | 1 | 53.1          | mg/L  | 1    | 50.0            | <0.172           | 106  | 85 - 115      |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

| Param               | F | C | LCSD<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit | RPD | RPD<br>Limit |
|---------------------|---|---|----------------|-------|------|-----------------|------------------|------|---------------|-----|--------------|
| Dissolved Calcium   |   | 1 | 52.2           | mg/L  | 1    | 50.0            | <0.0441          | 104  | 85 - 115      | 0   | 20           |
| Dissolved Potassium |   | 1 | 51.9           | mg/L  | 1    | 50.0            | <0.0443          | 104  | 85 - 115      | 1   | 20           |
| Dissolved Magnesium |   | 1 | 51.7           | mg/L  | 1    | 50.0            | <0.0296          | 103  | 85 - 115      | 3   | 20           |
| Dissolved Sodium    |   | 1 | 52.9           | mg/L  | 1    | 50.0            | <0.172           | 106  | 85 - 115      | 0   | 20           |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

#### Laboratory Control Spike (LCS-1)

QC Batch: 103950  
Prep Batch: 87738

Date Analyzed: 2013-08-12  
QC Preparation: 2013-07-30

Analyzed By: RR  
Prepared By: PM

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| Param               | F | C | LCS<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit |
|---------------------|---|---|---------------|-------|------|-----------------|------------------|------|---------------|
| Dissolved Calcium   |   | 1 | 52.1          | mg/L  | 1    | 50.0            | <0.0441          | 104  | 85 - 115      |
| Dissolved Potassium |   | 1 | 51.6          | mg/L  | 1    | 50.0            | <0.0443          | 103  | 85 - 115      |
| Dissolved Magnesium |   | 1 | 53.3          | mg/L  | 1    | 50.0            | <0.0296          | 107  | 85 - 115      |
| Dissolved Sodium    |   | 1 | 53.1          | mg/L  | 1    | 50.0            | <0.172           | 106  | 85 - 115      |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

| Param               | F | C | LCS<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit | RPD | RPD<br>Limit |
|---------------------|---|---|---------------|-------|------|-----------------|------------------|------|---------------|-----|--------------|
| Dissolved Calcium   |   | 1 | 52.2          | mg/L  | 1    | 50.0            | <0.0441          | 104  | 85 - 115      | 0   | 20           |
| Dissolved Potassium |   | 1 | 51.9          | mg/L  | 1    | 50.0            | <0.0443          | 104  | 85 - 115      | 1   | 20           |
| Dissolved Magnesium |   | 1 | 51.7          | mg/L  | 1    | 50.0            | <0.0296          | 103  | 85 - 115      | 3   | 20           |
| Dissolved Sodium    |   | 1 | 52.9          | mg/L  | 1    | 50.0            | <0.172           | 106  | 85 - 115      | 0   | 20           |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

#### Laboratory Control Spike (LCS-1)

QC Batch: 103972  
Prep Batch: 87768

Date Analyzed: 2013-08-13  
QC Preparation: 2013-07-31

Analyzed By: RR  
Prepared By: PM

| Param               | F | C | LCS<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit |
|---------------------|---|---|---------------|-------|------|-----------------|------------------|------|---------------|
| Dissolved Calcium   |   | 1 | 53.9          | mg/L  | 1    | 50.0            | <0.0441          | 108  | 85 - 115      |
| Dissolved Potassium |   | 1 | 51.3          | mg/L  | 1    | 50.0            | <0.0443          | 103  | 85 - 115      |
| Dissolved Magnesium |   | 1 | 52.1          | mg/L  | 1    | 50.0            | <0.0296          | 104  | 85 - 115      |
| Dissolved Sodium    |   | 1 | 53.9          | mg/L  | 1    | 50.0            | <0.172           | 108  | 85 - 115      |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

| Param               | F | C | LCS<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit | RPD | RPD<br>Limit |
|---------------------|---|---|---------------|-------|------|-----------------|------------------|------|---------------|-----|--------------|
| Dissolved Calcium   |   | 1 | 53.0          | mg/L  | 1    | 50.0            | <0.0441          | 106  | 85 - 115      | 2   | 20           |
| Dissolved Potassium |   | 1 | 50.1          | mg/L  | 1    | 50.0            | <0.0443          | 100  | 85 - 115      | 2   | 20           |
| Dissolved Magnesium |   | 1 | 52.5          | mg/L  | 1    | 50.0            | <0.0296          | 105  | 85 - 115      | 1   | 20           |
| Dissolved Sodium    |   | 1 | 52.7          | mg/L  | 1    | 50.0            | <0.172           | 105  | 85 - 115      | 2   | 20           |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

#### Laboratory Control Spike (LCS-1)

QC Batch: 104141  
Prep Batch: 88241

Date Analyzed: 2013-08-16  
QC Preparation: 2013-08-16

Analyzed By: RL  
Prepared By: RL

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| Param    | F | C | LCS<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit |
|----------|---|---|---------------|-------|------|-----------------|------------------|------|---------------|
| Chloride |   | 1 | 25.0          | mg/L  | 1    | 25.0            | <0.169           | 100  | 90 - 110      |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

| Param    | F | C | LCSD<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit | RPD | RPD<br>Limit |
|----------|---|---|----------------|-------|------|-----------------|------------------|------|---------------|-----|--------------|
| Chloride |   | 1 | 25.8           | mg/L  | 1    | 25.0            | <0.169           | 103  | 90 - 110      | 3   | 20           |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

#### Laboratory Control Spike (LCS-1)

QC Batch: 104141  
Prep Batch: 88241

Date Analyzed: 2013-08-16  
QC Preparation: 2013-08-16

Analyzed By: RL  
Prepared By: RL

| Param   | F | C | LCS<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit |
|---------|---|---|---------------|-------|------|-----------------|------------------|------|---------------|
| Sulfate |   | 1 | 25.1          | mg/L  | 1    | 25.0            | <0.224           | 100  | 90 - 110      |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

| Param   | F | C | LCSD<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit | RPD | RPD<br>Limit |
|---------|---|---|----------------|-------|------|-----------------|------------------|------|---------------|-----|--------------|
| Sulfate |   | 1 | 26.3           | mg/L  | 1    | 25.0            | <0.224           | 105  | 90 - 110      | 5   | 20           |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

#### Laboratory Control Spike (LCS-1)

QC Batch: 104170  
Prep Batch: 88264

Date Analyzed: 2013-08-16  
QC Preparation: 2013-08-15

Analyzed By: AR  
Prepared By: AR

| Param                  | F | C | LCS<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit |
|------------------------|---|---|---------------|-------|------|-----------------|------------------|------|---------------|
| Total Dissolved Solids |   | 2 | 1010          | mg/L  | 1    | 1000            | <2.50            | 101  | 87.8 - 109.1  |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

| Param                  | F | C | LCSD<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit | RPD | RPD<br>Limit |
|------------------------|---|---|----------------|-------|------|-----------------|------------------|------|---------------|-----|--------------|
| Total Dissolved Solids |   | 2 | 1020           | mg/L  | 1    | 1000            | <2.50            | 102  | 87.8 - 109.1  | 1   | 10           |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

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**Matrix Spike (MS-1)** Spiked Sample: 336651

QC Batch: 103610  
Prep Batch: 87705

Date Analyzed: 2013-08-01  
QC Preparation: 2013-07-29

Analyzed By: AH  
Prepared By: AH

| Param        | F | C | MS<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit |
|--------------|---|---|--------------|-------|------|-----------------|------------------|------|---------------|
| Benzene      |   | 2 | 0.101        | mg/L  | 1    | 0.100           | <0.000200        | 101  | 70 - 130      |
| Toluene      |   | 2 | 0.0997       | mg/L  | 1    | 0.100           | <0.000300        | 100  | 70 - 130      |
| Ethylbenzene |   | 2 | 0.0981       | mg/L  | 1    | 0.100           | <0.000400        | 98   | 70 - 130      |
| Xylene       |   | 2 | 0.291        | mg/L  | 1    | 0.300           | <0.00120         | 97   | 70 - 130      |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

| Param        | F | C | MSD<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit | RPD | RPD<br>Limit |
|--------------|---|---|---------------|-------|------|-----------------|------------------|------|---------------|-----|--------------|
| Benzene      |   | 2 | 0.105         | mg/L  | 1    | 0.100           | <0.000200        | 105  | 70 - 130      | 4   | 20           |
| Toluene      |   | 2 | 0.104         | mg/L  | 1    | 0.100           | <0.000300        | 104  | 70 - 130      | 4   | 20           |
| Ethylbenzene |   | 2 | 0.102         | mg/L  | 1    | 0.100           | <0.000400        | 102  | 70 - 130      | 4   | 20           |
| Xylene       |   | 2 | 0.304         | mg/L  | 1    | 0.300           | <0.00120         | 101  | 70 - 130      | 4   | 20           |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

| Surrogate                    | MS<br>Result | MSD<br>Result | Units | Dil. | Spike<br>Amount | MS<br>Rec. | MSD<br>Rec. | Rec.<br>Limit |
|------------------------------|--------------|---------------|-------|------|-----------------|------------|-------------|---------------|
| Trifluorotoluene (TFT)       | 0.0958       | 0.0981        | mg/L  | 1    | 0.1             | 96         | 98          | 70 - 130      |
| 4-Bromofluorobenzene (4-BFB) | 0.100        | 0.101         | mg/L  | 1    | 0.1             | 100        | 101         | 70 - 130      |

**Matrix Spike (MS-1)** Spiked Sample: 336650

QC Batch: 103740  
Prep Batch: 87895

Date Analyzed: 2013-08-05  
QC Preparation: 2013-08-05

Analyzed By: RL  
Prepared By: RL

| Param    | F | C | MS<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit |
|----------|---|---|--------------|-------|------|-----------------|------------------|------|---------------|
| Chloride |   | 1 | 54000        | mg/L  | 1000 | 25000           | 23900            | 120  | 80 - 120      |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

| Param    | F | C | MSD<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit | RPD | RPD<br>Limit |
|----------|---|---|---------------|-------|------|-----------------|------------------|------|---------------|-----|--------------|
| Chloride |   | 1 | 54000         | mg/L  | 1000 | 25000           | 23900            | 120  | 80 - 120      | 0   | 20           |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

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**Matrix Spike (MS-1)** Spiked Sample: 336650

QC Batch: 103740  
Prep Batch: 87895

Date Analyzed: 2013-08-05  
QC Preparation: 2013-08-05

Analyzed By: RL  
Prepared By: RL

| Param   | F | C | MS<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit |
|---------|---|---|--------------|-------|------|-----------------|------------------|------|---------------|
| Sulfate |   | 1 | 27500        | mg/L  | 1000 | 25000           | 365              | 108  | 80 - 120      |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

| Param   | F | C | MSD<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit | RPD | RPD<br>Limit |
|---------|---|---|---------------|-------|------|-----------------|------------------|------|---------------|-----|--------------|
| Sulfate |   | 1 | 27200         | mg/L  | 1000 | 25000           | 365              | 107  | 80 - 120      | 1   | 20           |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

**Matrix Spike (MS-1)** Spiked Sample: 336652

QC Batch: 103765  
Prep Batch: 87919

Date Analyzed: 2013-08-07  
QC Preparation: 2013-08-05

Analyzed By: KC  
Prepared By: KC

| Param        |                |                | MS     | Units  | Dil. | Spike<br>Amount | Matrix | Rec.      | Rec.<br>Limit |          |
|--------------|----------------|----------------|--------|--------|------|-----------------|--------|-----------|---------------|----------|
|              | F              | C              | Result |        |      |                 | Result |           |               |          |
| Benzene      |                |                | 2      | 0.0967 | mg/L | 1               | 0.100  | <0.000200 | 97            | 70 - 130 |
| Toluene      |                |                | 2      | 0.0812 | mg/L | 1               | 0.100  | <0.000300 | 81            | 70 - 130 |
| Ethylbenzene | Q <sub>s</sub> | Q <sub>s</sub> | 2      | 0.0680 | mg/L | 1               | 0.100  | <0.000400 | 68            | 70 - 130 |
| Xylene       | Q <sub>s</sub> | Q <sub>s</sub> | 2      | 0.166  | mg/L | 1               | 0.300  | <0.00120  | 55            | 70 - 130 |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

| Param        | F              | C              | MSD    |        | Dil. | Spike  | Matrix | Rec.      | Rec.  | RPD      | RPD   |    |
|--------------|----------------|----------------|--------|--------|------|--------|--------|-----------|-------|----------|-------|----|
|              |                |                | Result | Units  |      | Amount | Result |           | Limit |          | Limit |    |
| Benzene      |                |                | 2      | 0.100  | mg/L | 1      | 0.100  | <0.000200 | 100   | 70 - 130 | 3     | 20 |
| Toluene      |                |                | 2      | 0.0850 | mg/L | 1      | 0.100  | <0.000300 | 85    | 70 - 130 | 5     | 20 |
| Ethylbenzene |                |                | 2      | 0.0719 | mg/L | 1      | 0.100  | <0.000400 | 72    | 70 - 130 | 6     | 20 |
| Xylene       | Q <sub>s</sub> | Q <sub>s</sub> | 2      | 0.165  | mg/L | 1      | 0.300  | <0.00120  | 55    | 70 - 130 | 1     | 20 |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

| Surrogate                    |                 |                 | MS<br>Result | MSD<br>Result | Units | Dil. | Spike<br>Amount | MS<br>Rec. | MSD<br>Rec. | Rec.<br>Limit |
|------------------------------|-----------------|-----------------|--------------|---------------|-------|------|-----------------|------------|-------------|---------------|
| Trifluorotoluene (TFT)       |                 |                 | 0.0722       | 0.0705        | mg/L  | 1    | 0.1             | 72         | 70          | 70 - 130      |
| 4-Bromofluorobenzene (4-BFB) | Q <sub>sr</sub> | Q <sub>sr</sub> | 0.0651       | 0.0614        | mg/L  | 1    | 0.1             | 65         | 61          | 70 - 130      |

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**Matrix Spike (MS-1)** Spiked Sample: 337354

QC Batch: 103777  
Prep Batch: 87929

Date Analyzed: 2013-08-07  
QC Preparation: 2013-08-06

Analyzed By: KC  
Prepared By: KC

| Param        | F  | C  | MS Result | Units  | Dil. | Spike Amount | Matrix Result | Rec.      | Rec. Limit  |
|--------------|----|----|-----------|--------|------|--------------|---------------|-----------|-------------|
| Benzene      | Qs | Qs | 2         | 0.0267 | mg/L | 1            | 0.100         | <0.000200 | 27 70 - 130 |
| Toluene      | Qs | Qs | 2         | 0.0247 | mg/L | 1            | 0.100         | <0.000300 | 25 70 - 130 |
| Ethylbenzene | Qs | Qs | 2         | 0.0228 | mg/L | 1            | 0.100         | <0.000400 | 23 70 - 130 |
| Xylene       | Qs | Qs | 2         | 0.0660 | mg/L | 1            | 0.300         | <0.00120  | 22 70 - 130 |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

| Param        | F                   | C      | MSD Result | Units  | Dil. | Spike Amount | Matrix Result | Rec.      | Rec. Limit  | RPD | RPD Limit |
|--------------|---------------------|--------|------------|--------|------|--------------|---------------|-----------|-------------|-----|-----------|
| Benzene      | <sup>4</sup> Qr, Qs | Qr, Qs | 2          | 0.0144 | mg/L | 1            | 0.100         | <0.000200 | 14 70 - 130 | 60  | 20        |
| Toluene      | Qr, Qs              | Qr, Qs | 2          | 0.0134 | mg/L | 1            | 0.100         | <0.000300 | 13 70 - 130 | 59  | 20        |
| Ethylbenzene | Qr, Qs              | Qr, Qs | 2          | 0.0143 | mg/L | 1            | 0.100         | <0.000400 | 14 70 - 130 | 46  | 20        |
| Xylene       | Qr, Qs              | Qr, Qs | 2          | 0.0417 | mg/L | 1            | 0.300         | <0.00120  | 14 70 - 130 | 45  | 20        |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

| Surrogate                    | MS Result | MSD Result | Units | Dil. | Spike Amount | MS Rec. | MSD Rec. | Rec. Limit |
|------------------------------|-----------|------------|-------|------|--------------|---------|----------|------------|
| Trifluorotoluene (TFT)       | 0.0960    | 0.0977     | mg/L  | 1    | 0.1          | 96      | 98       | 70 - 130   |
| 4-Bromofluorobenzene (4-BFB) | 0.0958    | 0.0962     | mg/L  | 1    | 0.1          | 96      | 96       | 70 - 130   |

**Matrix Spike (MS-1)** Spiked Sample: 336656

QC Batch: 103814  
Prep Batch: 87957

Date Analyzed: 2013-08-06  
QC Preparation: 2013-08-06

Analyzed By: RL  
Prepared By: RL

| Param    | F | C | MS Result | Units | Dil. | Spike Amount | Matrix Result | Rec. | Rec. Limit |
|----------|---|---|-----------|-------|------|--------------|---------------|------|------------|
| Chloride |   | 1 | 19900     | mg/L  | 500  | 12500        | 6190          | 110  | 80 - 120   |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

| Param    | F | C | MSD Result | Units | Dil. | Spike Amount | Matrix Result | Rec. | Rec. Limit | RPD | RPD Limit |
|----------|---|---|------------|-------|------|--------------|---------------|------|------------|-----|-----------|
| Chloride |   | 1 | 19600      | mg/L  | 500  | 12500        | 6190          | 107  | 80 - 120   | 2   | 20        |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

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**Matrix Spike (MS-1)** Spiked Sample: 336656

QC Batch: 103814  
Prep Batch: 87957

Date Analyzed: 2013-08-06  
QC Preparation: 2013-08-06

Analyzed By: RL  
Prepared By: RL

| Param   | F | C | MS<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit |
|---------|---|---|--------------|-------|------|-----------------|------------------|------|---------------|
| Sulfate |   | 1 | 13200        | mg/L  | 500  | 12500           | 125              | 105  | 80 - 120      |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

| Param   | F | C | MSD<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit | RPD | RPD<br>Limit |
|---------|---|---|---------------|-------|------|-----------------|------------------|------|---------------|-----|--------------|
| Sulfate |   | 1 | 13200         | mg/L  | 500  | 12500           | 125              | 105  | 80 - 120      | 0   | 20           |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

**Matrix Spike (MS-1)** Spiked Sample: 336634

QC Batch: 103949  
Prep Batch: 87738

Date Analyzed: 2013-08-12  
QC Preparation: 2013-07-30

Analyzed By: RR  
Prepared By: PM

| Param               | F | C | MS<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit |
|---------------------|---|---|--------------|-------|------|-----------------|------------------|------|---------------|
| Dissolved Calcium   |   | 1 | 649          | mg/L  | 1    | 500             | 138              | 102  | 75 - 125      |
| Dissolved Potassium |   | 1 | 524          | mg/L  | 1    | 500             | 7                | 103  | 75 - 125      |
| Dissolved Magnesium |   | 1 | 533          | mg/L  | 1    | 500             | 1.5              | 106  | 75 - 125      |
| Dissolved Sodium    |   | 1 | 543          | mg/L  | 1    | 500             | 16               | 105  | 75 - 125      |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

| Param               | F | C | MSD<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit | RPD | RPD<br>Limit |
|---------------------|---|---|---------------|-------|------|-----------------|------------------|------|---------------|-----|--------------|
| Dissolved Calcium   |   | 1 | 679           | mg/L  | 1    | 500             | 138              | 108  | 75 - 125      | 4   | 20           |
| Dissolved Potassium |   | 1 | 555           | mg/L  | 1    | 500             | 7                | 110  | 75 - 125      | 6   | 20           |
| Dissolved Magnesium |   | 1 | 570           | mg/L  | 1    | 500             | 1.5              | 114  | 75 - 125      | 7   | 20           |
| Dissolved Sodium    |   | 1 | 575           | mg/L  | 1    | 500             | 16               | 112  | 75 - 125      | 6   | 20           |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

**Matrix Spike (MS-1)** Spiked Sample: 336637

QC Batch: 103950  
Prep Batch: 87738

Date Analyzed: 2013-08-12  
QC Preparation: 2013-07-30

Analyzed By: RR  
Prepared By: PM

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| Param               | F | C | MS<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit |
|---------------------|---|---|--------------|-------|------|-----------------|------------------|------|---------------|
| Dissolved Calcium   |   | 1 | 664          | mg/L  | 1    | 500             | 133              | 106  | 75 - 125      |
| Dissolved Potassium |   | 1 | 540          | mg/L  | 1    | 500             | 5.37             | 107  | 75 - 125      |
| Dissolved Magnesium |   | 1 | 560          | mg/L  | 1    | 500             | 4.61             | 111  | 75 - 125      |
| Dissolved Sodium    |   | 1 | 554          | mg/L  | 1    | 500             | 58.5             | 99   | 75 - 125      |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

| Param               | F | C | MSD<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit | RPD | RPD<br>Limit |
|---------------------|---|---|---------------|-------|------|-----------------|------------------|------|---------------|-----|--------------|
| Dissolved Calcium   |   | 1 | 721           | mg/L  | 1    | 500             | 133              | 118  | 75 - 125      | 8   | 20           |
| Dissolved Potassium |   | 1 | 585           | mg/L  | 1    | 500             | 5.37             | 116  | 75 - 125      | 8   | 20           |
| Dissolved Magnesium |   | 1 | 585           | mg/L  | 1    | 500             | 4.61             | 116  | 75 - 125      | 4   | 20           |
| Dissolved Sodium    |   | 1 | 631           | mg/L  | 1    | 500             | 58.5             | 114  | 75 - 125      | 13  | 20           |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

**Matrix Spike (MS-1)** Spiked Sample: 336650

QC Batch: 103972  
Prep Batch: 87768

Date Analyzed: 2013-08-13  
QC Preparation: 2013-07-31

Analyzed By: RR  
Prepared By: PM

| Param               | F | C | MS<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit |
|---------------------|---|---|--------------|-------|------|-----------------|------------------|------|---------------|
| Dissolved Calcium   |   | 1 | 7340         | mg/L  | 1    | 500             | 6770             | 114  | 75 - 125      |
| Dissolved Potassium |   | 1 | 579          | mg/L  | 1    | 500             | 135              | 89   | 75 - 125      |
| Dissolved Magnesium |   | 1 | 1630         | mg/L  | 1    | 500             | 1150             | 96   | 75 - 125      |
| Dissolved Sodium    |   | 1 | 4460         | mg/L  | 1    | 500             | 4030             | 86   | 75 - 125      |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

| Param               | F | C | MSD<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit | RPD | RPD<br>Limit |
|---------------------|---|---|---------------|-------|------|-----------------|------------------|------|---------------|-----|--------------|
| Dissolved Calcium   |   | 1 | 7380          | mg/L  | 1    | 500             | 6770             | 122  | 75 - 125      | 0   | 20           |
| Dissolved Potassium |   | 1 | 613           | mg/L  | 1    | 500             | 135              | 96   | 75 - 125      | 6   | 20           |
| Dissolved Magnesium |   | 1 | 1700          | mg/L  | 1    | 500             | 1150             | 110  | 75 - 125      | 4   | 20           |
| Dissolved Sodium    |   | 1 | 4580          | mg/L  | 1    | 500             | 4030             | 110  | 75 - 125      | 3   | 20           |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

**Matrix Spike (MS-1)** Spiked Sample: 336633

QC Batch: 104141  
Prep Batch: 88241

Date Analyzed: 2013-08-16  
QC Preparation: 2013-08-16

Analyzed By: RL  
Prepared By: RL

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| Param    | F | C | MS<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit |
|----------|---|---|--------------|-------|------|-----------------|------------------|------|---------------|
| Chloride |   | 1 | 4330         | mg/L  | 100  | 2500            | 1520             | 112  | 80 - 120      |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

| Param    | F | C | MSD<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit | RPD | RPD<br>Limit |
|----------|---|---|---------------|-------|------|-----------------|------------------|------|---------------|-----|--------------|
| Chloride |   | 1 | 4320          | mg/L  | 100  | 2500            | 1520             | 112  | 80 - 120      | 0   | 20           |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

**Matrix Spike (MS-1)** Spiked Sample: 336633

QC Batch: 104141  
Prep Batch: 88241

Date Analyzed: 2013-08-16  
QC Preparation: 2013-08-16

Analyzed By: RL  
Prepared By: RL

| Param   | F | C | MS<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit |
|---------|---|---|--------------|-------|------|-----------------|------------------|------|---------------|
| Sulfate |   | 1 | 2690         | mg/L  | 100  | 2500            | 82.7             | 104  | 80 - 120      |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

| Param   | F | C | MSD<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit | RPD | RPD<br>Limit |
|---------|---|---|---------------|-------|------|-----------------|------------------|------|---------------|-----|--------------|
| Sulfate |   | 1 | 2630          | mg/L  | 100  | 2500            | 82.7             | 102  | 80 - 120      | 2   | 20           |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

## Calibration Standards

### Standard (ICV-1)

QC Batch: 103499

Date Analyzed: 2013-07-26

Analyzed By: AR

| Param | Flag | Cert | Units | ICVs<br>True<br>Conc. | ICVs<br>Found<br>Conc. | ICVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|-------|------|------|-------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| pH    |      | 2    | s.u.  | 7.00                  | 7.10                   | 101                         | 98 - 102                      | 2013-07-26       |

### Standard (CCV-1)

QC Batch: 103499

Date Analyzed: 2013-07-26

Analyzed By: AR

| Param | Flag | Cert | Units | CCVs<br>True<br>Conc. | CCVs<br>Found<br>Conc. | CCVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|-------|------|------|-------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| pH    |      | 2    | s.u.  | 7.00                  | 7.04                   | 100                         | 98 - 102                      | 2013-07-26       |

### Standard (ICV-1)

QC Batch: 103501

Date Analyzed: 2013-07-26

Analyzed By: AR

| Param | Flag | Cert | Units | ICVs<br>True<br>Conc. | ICVs<br>Found<br>Conc. | ICVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|-------|------|------|-------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| pH    |      | 2    | s.u.  | 7.00                  | 7.10                   | 101                         | 98 - 102                      | 2013-07-26       |

### Standard (CCV-1)

QC Batch: 103501

Date Analyzed: 2013-07-26

Analyzed By: AR

| Param | Flag | Cert | Units | CCVs<br>True<br>Conc. | CCVs<br>Found<br>Conc. | CCVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|-------|------|------|-------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| pH    |      | 2    | s.u.  | 7.00                  | 7.10                   | 101                         | 98 - 102                      | 2013-07-26       |

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#### Standard (CCV-1)

QC Batch: 103610

Date Analyzed: 2013-08-01

Analyzed By: AH

| Param        | Flag | Cert | Units | CCVs<br>True<br>Conc. | CCVs<br>Found<br>Conc. | CCVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|--------------|------|------|-------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| Benzene      |      | 2    | mg/L  | 0.100                 | 0.107                  | 107                         | 80 - 120                      | 2013-08-01       |
| Toluene      |      | 2    | mg/L  | 0.100                 | 0.107                  | 107                         | 80 - 120                      | 2013-08-01       |
| Ethylbenzene |      | 2    | mg/L  | 0.100                 | 0.108                  | 108                         | 80 - 120                      | 2013-08-01       |
| Xylene       |      | 2    | mg/L  | 0.300                 | 0.320                  | 107                         | 80 - 120                      | 2013-08-01       |

#### Standard (CCV-2)

QC Batch: 103610

Date Analyzed: 2013-08-01

Analyzed By: AH

| Param        | Flag | Cert | Units | CCVs<br>True<br>Conc. | CCVs<br>Found<br>Conc. | CCVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|--------------|------|------|-------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| Benzene      |      | 2    | mg/L  | 0.100                 | 0.105                  | 105                         | 80 - 120                      | 2013-08-01       |
| Toluene      |      | 2    | mg/L  | 0.100                 | 0.104                  | 104                         | 80 - 120                      | 2013-08-01       |
| Ethylbenzene |      | 2    | mg/L  | 0.100                 | 0.104                  | 104                         | 80 - 120                      | 2013-08-01       |
| Xylene       |      | 2    | mg/L  | 0.300                 | 0.311                  | 104                         | 80 - 120                      | 2013-08-01       |

#### Standard (CCV-3)

QC Batch: 103610

Date Analyzed: 2013-08-01

Analyzed By: AH

| Param        | Flag | Cert | Units | CCVs<br>True<br>Conc. | CCVs<br>Found<br>Conc. | CCVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|--------------|------|------|-------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| Benzene      |      | 2    | mg/L  | 0.100                 | 0.104                  | 104                         | 80 - 120                      | 2013-08-01       |
| Toluene      |      | 2    | mg/L  | 0.100                 | 0.105                  | 105                         | 80 - 120                      | 2013-08-01       |
| Ethylbenzene |      | 2    | mg/L  | 0.100                 | 0.106                  | 106                         | 80 - 120                      | 2013-08-01       |
| Xylene       |      | 2    | mg/L  | 0.300                 | 0.315                  | 105                         | 80 - 120                      | 2013-08-01       |

#### Standard (ICV-1)

QC Batch: 103654

Date Analyzed: 2013-07-30

Analyzed By: AR

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| Param                  | Flag | Cert | Units         | ICVs<br>True<br>Conc. | ICVs<br>Found<br>Conc. | ICVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|------------------------|------|------|---------------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| Hydroxide Alkalinity   |      | 2    | mg/L as CaCo3 | 0.00                  | <20.0                  |                             | -                             | 2013-07-30       |
| Carbonate Alkalinity   |      | 2    | mg/L as CaCo3 | 0.00                  | 242                    |                             | -                             | 2013-07-30       |
| Bicarbonate Alkalinity |      | 2    | mg/L as CaCo3 | 0.00                  | <20.0                  |                             | -                             | 2013-07-30       |
| Total Alkalinity       |      | 2    | mg/L as CaCo3 | 250                   | 244                    | 98                          | 90 - 110                      | 2013-07-30       |

#### Standard (CCV-1)

QC Batch: 103654

Date Analyzed: 2013-07-30

Analyzed By: AR

| Param                  | Flag | Cert | Units         | CCVs<br>True<br>Conc. | CCVs<br>Found<br>Conc. | CCVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|------------------------|------|------|---------------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| Hydroxide Alkalinity   |      | 2    | mg/L as CaCo3 | 0.00                  | 39.0                   |                             | -                             | 2013-07-30       |
| Carbonate Alkalinity   |      | 2    | mg/L as CaCo3 | 0.00                  | 190                    |                             | -                             | 2013-07-30       |
| Bicarbonate Alkalinity |      | 2    | mg/L as CaCo3 | 0.00                  | <4.00                  |                             | -                             | 2013-07-30       |
| Total Alkalinity       |      | 2    | mg/L as CaCo3 | 250                   | 229                    | 92                          | 90 - 110                      | 2013-07-30       |

#### Standard (ICV-1)

QC Batch: 103656

Date Analyzed: 2013-07-31

Analyzed By: AR

| Param                  | Flag | Cert | Units         | ICVs<br>True<br>Conc. | ICVs<br>Found<br>Conc. | ICVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|------------------------|------|------|---------------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| Hydroxide Alkalinity   |      | 2    | mg/L as CaCo3 | 0.00                  | <20.0                  |                             | -                             | 2013-07-31       |
| Carbonate Alkalinity   |      | 2    | mg/L as CaCo3 | 0.00                  | 238                    |                             | -                             | 2013-07-31       |
| Bicarbonate Alkalinity |      | 2    | mg/L as CaCo3 | 0.00                  | <20.0                  |                             | -                             | 2013-07-31       |
| Total Alkalinity       |      | 2    | mg/L as CaCo3 | 250                   | 246                    | 98                          | 90 - 110                      | 2013-07-31       |

#### Standard (CCV-1)

QC Batch: 103656

Date Analyzed: 2013-07-31

Analyzed By: AR

| Param                | Flag | Cert | Units         | CCVs<br>True<br>Conc. | CCVs<br>Found<br>Conc. | CCVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|----------------------|------|------|---------------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| Hydroxide Alkalinity |      | 2    | mg/L as CaCo3 | 0.00                  | 6.00                   |                             | -                             | 2013-07-31       |

*continued ...*

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standard continued ...

| Param                  | Flag | Cert | Units         | CCVs<br>True<br>Conc. | CCVs<br>Found<br>Conc. | CCVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|------------------------|------|------|---------------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| Carbonate Alkalinity   |      | 2    | mg/L as CaCo3 | 0.00                  | 252                    |                             | -                             | 2013-07-31       |
| Bicarbonate Alkalinity |      | 2    | mg/L as CaCo3 | 0.00                  | <4.00                  |                             | -                             | 2013-07-31       |
| Total Alkalinity       |      | 2    | mg/L as CaCo3 | 250                   | 258                    | 103                         | 90 - 110                      | 2013-07-31       |

#### Standard (CCV-1)

QC Batch: 103740

Date Analyzed: 2013-08-05

Analyzed By: RL

| Param    | Flag | Cert | Units | CCVs<br>True<br>Conc. | CCVs<br>Found<br>Conc. | CCVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|----------|------|------|-------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| Chloride |      | 1    | mg/L  | 25.0                  | 25.1                   | 100                         | 90 - 110                      | 2013-08-05       |

#### Standard (CCV-1)

QC Batch: 103740

Date Analyzed: 2013-08-05

Analyzed By: RL

| Param   | Flag | Cert | Units | CCVs<br>True<br>Conc. | CCVs<br>Found<br>Conc. | CCVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|---------|------|------|-------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| Sulfate |      | 1    | mg/L  | 25.0                  | 25.9                   | 104                         | 90 - 110                      | 2013-08-05       |

#### Standard (CCV-2)

QC Batch: 103740

Date Analyzed: 2013-08-05

Analyzed By: RL

| Param    | Flag | Cert | Units | CCVs<br>True<br>Conc. | CCVs<br>Found<br>Conc. | CCVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|----------|------|------|-------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| Chloride |      | 1    | mg/L  | 25.0                  | 24.8                   | 99                          | 90 - 110                      | 2013-08-05       |

#### Standard (CCV-2)

QC Batch: 103740

Date Analyzed: 2013-08-05

Analyzed By: RL

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| Param   | Flag | Cert | Units | CCVs<br>True<br>Conc. | CCVs<br>Found<br>Conc. | CCVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|---------|------|------|-------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| Sulfate |      | 1    | mg/L  | 25.0                  | 25.6                   | 102                         | 90 - 110                      | 2013-08-05       |

#### Standard (CCV-1)

QC Batch: 103765

Date Analyzed: 2013-08-07

Analyzed By: KC

| Param        | Flag | Cert | Units | CCVs<br>True<br>Conc. | CCVs<br>Found<br>Conc. | CCVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|--------------|------|------|-------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| Benzene      |      | 2    | mg/L  | 0.100                 | 0.104                  | 104                         | 80 - 120                      | 2013-08-07       |
| Toluene      |      | 2    | mg/L  | 0.100                 | 0.103                  | 103                         | 80 - 120                      | 2013-08-07       |
| Ethylbenzene |      | 2    | mg/L  | 0.100                 | 0.101                  | 101                         | 80 - 120                      | 2013-08-07       |
| Xylene       |      | 2    | mg/L  | 0.300                 | 0.304                  | 101                         | 80 - 120                      | 2013-08-07       |

#### Standard (CCV-2)

QC Batch: 103765

Date Analyzed: 2013-08-07

Analyzed By: KC

| Param        | Flag | Cert | Units | CCVs<br>True<br>Conc. | CCVs<br>Found<br>Conc. | CCVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|--------------|------|------|-------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| Benzene      |      | 2    | mg/L  | 0.100                 | 0.103                  | 103                         | 80 - 120                      | 2013-08-07       |
| Toluene      |      | 2    | mg/L  | 0.100                 | 0.101                  | 101                         | 80 - 120                      | 2013-08-07       |
| Ethylbenzene |      | 2    | mg/L  | 0.100                 | 0.100                  | 100                         | 80 - 120                      | 2013-08-07       |
| Xylene       |      | 2    | mg/L  | 0.300                 | 0.301                  | 100                         | 80 - 120                      | 2013-08-07       |

#### Standard (CCV-3)

QC Batch: 103765

Date Analyzed: 2013-08-07

Analyzed By: KC

| Param        | Flag | Cert | Units | CCVs<br>True<br>Conc. | CCVs<br>Found<br>Conc. | CCVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|--------------|------|------|-------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| Benzene      |      | 2    | mg/L  | 0.100                 | 0.115                  | 115                         | 80 - 120                      | 2013-08-07       |
| Toluene      |      | 2    | mg/L  | 0.100                 | 0.114                  | 114                         | 80 - 120                      | 2013-08-07       |
| Ethylbenzene |      | 2    | mg/L  | 0.100                 | 0.112                  | 112                         | 80 - 120                      | 2013-08-07       |
| Xylene       |      | 2    | mg/L  | 0.300                 | 0.333                  | 111                         | 80 - 120                      | 2013-08-07       |

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**Standard (CCV-4)**

QC Batch: 103765

Date Analyzed: 2013-08-07

Analyzed By: KC

| Param        | Flag | Cert | Units | CCVs<br>True<br>Conc. | CCVs<br>Found<br>Conc. | CCVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|--------------|------|------|-------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| Benzene      |      | 2    | mg/L  | 0.100                 | 0.102                  | 102                         | 80 - 120                      | 2013-08-07       |
| Toluene      |      | 2    | mg/L  | 0.100                 | 0.102                  | 102                         | 80 - 120                      | 2013-08-07       |
| Ethylbenzene |      | 2    | mg/L  | 0.100                 | 0.101                  | 101                         | 80 - 120                      | 2013-08-07       |
| Xylene       |      | 2    | mg/L  | 0.300                 | 0.302                  | 101                         | 80 - 120                      | 2013-08-07       |

**Standard (CCV-5)**

QC Batch: 103765

Date Analyzed: 2013-08-07

Analyzed By: KC

| Param        | Flag | Cert | Units | CCVs<br>True<br>Conc. | CCVs<br>Found<br>Conc. | CCVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|--------------|------|------|-------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| Benzene      |      | 2    | mg/L  | 0.100                 | 0.102                  | 102                         | 80 - 120                      | 2013-08-07       |
| Toluene      |      | 2    | mg/L  | 0.100                 | 0.102                  | 102                         | 80 - 120                      | 2013-08-07       |
| Ethylbenzene |      | 2    | mg/L  | 0.100                 | 0.0997                 | 100                         | 80 - 120                      | 2013-08-07       |
| Xylene       |      | 2    | mg/L  | 0.300                 | 0.300                  | 100                         | 80 - 120                      | 2013-08-07       |

**Standard (CCV-1)**

QC Batch: 103777

Date Analyzed: 2013-08-07

Analyzed By: KC

| Param        | Flag | Cert | Units | CCVs<br>True<br>Conc. | CCVs<br>Found<br>Conc. | CCVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|--------------|------|------|-------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| Benzene      |      | 2    | mg/L  | 0.100                 | 0.106                  | 106                         | 80 - 120                      | 2013-08-07       |
| Toluene      |      | 2    | mg/L  | 0.100                 | 0.106                  | 106                         | 80 - 120                      | 2013-08-07       |
| Ethylbenzene |      | 2    | mg/L  | 0.100                 | 0.105                  | 105                         | 80 - 120                      | 2013-08-07       |
| Xylene       |      | 2    | mg/L  | 0.300                 | 0.314                  | 105                         | 80 - 120                      | 2013-08-07       |

**Standard (CCV-2)**

QC Batch: 103777

Date Analyzed: 2013-08-07

Analyzed By: KC

Report Date: August 20, 2013  
114-6401627

Work Order: 13072617  
Celero/Rock Queen #1 TB

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Challenger

| Param        | Flag | Cert | Units | CCVs<br>True<br>Conc. | CCVs<br>Found<br>Conc. | CCVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|--------------|------|------|-------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| Benzene      |      | 2    | mg/L  | 0.100                 | 0.112                  | 112                         | 80 - 120                      | 2013-08-07       |
| Toluene      |      | 2    | mg/L  | 0.100                 | 0.110                  | 110                         | 80 - 120                      | 2013-08-07       |
| Ethylbenzene |      | 2    | mg/L  | 0.100                 | 0.109                  | 109                         | 80 - 120                      | 2013-08-07       |
| Xylene       |      | 2    | mg/L  | 0.300                 | 0.326                  | 109                         | 80 - 120                      | 2013-08-07       |

#### Standard (CCV-1)

QC Batch: 103814

Date Analyzed: 2013-08-06

Analyzed By: RL

| Param    | Flag | Cert | Units | CCVs<br>True<br>Conc. | CCVs<br>Found<br>Conc. | CCVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|----------|------|------|-------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| Chloride |      | 1    | mg/L  | 25.0                  | 25.5                   | 102                         | 90 - 110                      | 2013-08-06       |

#### Standard (CCV-1)

QC Batch: 103814

Date Analyzed: 2013-08-06

Analyzed By: RL

| Param   | Flag | Cert | Units | CCVs<br>True<br>Conc. | CCVs<br>Found<br>Conc. | CCVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|---------|------|------|-------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| Sulfate |      | 1    | mg/L  | 25.0                  | 26.1                   | 104                         | 90 - 110                      | 2013-08-06       |

#### Standard (CCV-2)

QC Batch: 103814

Date Analyzed: 2013-08-06

Analyzed By: RL

| Param    | Flag | Cert | Units | CCVs<br>True<br>Conc. | CCVs<br>Found<br>Conc. | CCVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|----------|------|------|-------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| Chloride |      | 1    | mg/L  | 25.0                  | 25.7                   | 103                         | 90 - 110                      | 2013-08-06       |

#### Standard (CCV-2)

QC Batch: 103814

Date Analyzed: 2013-08-06

Analyzed By: RL

Report Date: August 20, 2013  
114-6401627

Work Order: 13072617  
Celero/Rock Queen #1 TB

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| Param   | Flag | Cert | Units | CCVs<br>True<br>Conc. | CCVs<br>Found<br>Conc. | CCVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|---------|------|------|-------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| Sulfate |      | 1    | mg/L  | 25.0                  | 25.5                   | 102                         | 90 - 110                      | 2013-08-06       |

#### Standard (ICV-1)

QC Batch: 103949

Date Analyzed: 2013-08-12

Analyzed By: RR

| Param               | Flag | Cert | Units | ICVs<br>True<br>Conc. | ICVs<br>Found<br>Conc. | ICVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|---------------------|------|------|-------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| Dissolved Calcium   |      | 1    | mg/L  | 51.0                  | 48.3                   | 95                          | 90 - 110                      | 2013-08-12       |
| Dissolved Potassium |      | 1    | mg/L  | 55.0                  | 52.4                   | 95                          | 90 - 110                      | 2013-08-12       |
| Dissolved Magnesium |      | 1    | mg/L  | 51.0                  | 51.5                   | 101                         | 90 - 110                      | 2013-08-12       |
| Dissolved Sodium    |      | 1    | mg/L  | 51.0                  | 50.1                   | 98                          | 90 - 110                      | 2013-08-12       |

#### Standard (CCV-1)

QC Batch: 103949

Date Analyzed: 2013-08-12

Analyzed By: RR

| Param               | Flag | Cert | Units | CCVs<br>True<br>Conc. | CCVs<br>Found<br>Conc. | CCVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|---------------------|------|------|-------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| Dissolved Calcium   |      | 1    | mg/L  | 51.0                  | 53.3                   | 104                         | 90 - 110                      | 2013-08-12       |
| Dissolved Potassium |      | 1    | mg/L  | 55.0                  | 56.9                   | 103                         | 90 - 110                      | 2013-08-12       |
| Dissolved Magnesium |      | 1    | mg/L  | 51.0                  | 53.3                   | 104                         | 90 - 110                      | 2013-08-12       |
| Dissolved Sodium    |      | 1    | mg/L  | 51.0                  | 53.4                   | 105                         | 90 - 110                      | 2013-08-12       |

#### Standard (ICV-1)

QC Batch: 103950

Date Analyzed: 2013-08-12

Analyzed By: RR

| Param               | Flag | Cert | Units | ICVs<br>True<br>Conc. | ICVs<br>Found<br>Conc. | ICVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|---------------------|------|------|-------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| Dissolved Calcium   |      | 1    | mg/L  | 51.0                  | 48.3                   | 95                          | 90 - 110                      | 2013-08-12       |
| Dissolved Potassium |      | 1    | mg/L  | 55.0                  | 52.4                   | 95                          | 90 - 110                      | 2013-08-12       |
| Dissolved Magnesium |      | 1    | mg/L  | 51.0                  | 51.5                   | 101                         | 90 - 110                      | 2013-08-12       |
| Dissolved Sodium    |      | 1    | mg/L  | 51.0                  | 50.1                   | 98                          | 90 - 110                      | 2013-08-12       |

Report Date: August 20, 2013  
114-6401627

Work Order: 13072617  
Celero/Rock Queen #1 TB

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Challenger

**Standard (CCV-1)**

QC Batch: 103950

Date Analyzed: 2013-08-12

Analyzed By: RR

| Param               | Flag | Cert | Units | CCVs<br>True<br>Conc. | CCVs<br>Found<br>Conc. | CCVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|---------------------|------|------|-------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| Dissolved Calcium   |      | 1    | mg/L  | 51.0                  | 54.1                   | 106                         | 90 - 110                      | 2013-08-12       |
| Dissolved Potassium |      | 1    | mg/L  | 55.0                  | 57.2                   | 104                         | 90 - 110                      | 2013-08-12       |
| Dissolved Magnesium |      | 1    | mg/L  | 51.0                  | 52.8                   | 104                         | 90 - 110                      | 2013-08-12       |
| Dissolved Sodium    |      | 1    | mg/L  | 51.0                  | 53.0                   | 104                         | 90 - 110                      | 2013-08-12       |

**Standard (ICV-1)**

QC Batch: 103972

Date Analyzed: 2013-08-13

Analyzed By: RR

| Param               | Flag | Cert | Units | ICVs<br>True<br>Conc. | ICVs<br>Found<br>Conc. | ICVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|---------------------|------|------|-------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| Dissolved Calcium   |      | 1    | mg/L  | 51.0                  | 50.4                   | 99                          | 90 - 110                      | 2013-08-13       |
| Dissolved Potassium |      | 1    | mg/L  | 55.0                  | 54.0                   | 98                          | 90 - 110                      | 2013-08-13       |
| Dissolved Magnesium |      | 1    | mg/L  | 51.0                  | 51.6                   | 101                         | 90 - 110                      | 2013-08-13       |
| Dissolved Sodium    |      | 1    | mg/L  | 51.0                  | 51.3                   | 100                         | 90 - 110                      | 2013-08-13       |

**Standard (CCV-1)**

QC Batch: 103972

Date Analyzed: 2013-08-13

Analyzed By: RR

| Param               | Flag | Cert | Units | CCVs<br>True<br>Conc. | CCVs<br>Found<br>Conc. | CCVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|---------------------|------|------|-------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| Dissolved Calcium   |      | 1    | mg/L  | 51.0                  | 52.3                   | 102                         | 90 - 110                      | 2013-08-13       |
| Dissolved Potassium |      | 1    | mg/L  | 55.0                  | 55.6                   | 101                         | 90 - 110                      | 2013-08-13       |
| Dissolved Magnesium |      | 1    | mg/L  | 51.0                  | 52.9                   | 104                         | 90 - 110                      | 2013-08-13       |
| Dissolved Sodium    |      | 1    | mg/L  | 51.0                  | 52.7                   | 103                         | 90 - 110                      | 2013-08-13       |

**Standard (CCV-1)**

QC Batch: 104141

Date Analyzed: 2013-08-16

Analyzed By: RL

Report Date: August 20, 2013  
114-6401627

Work Order: 13072617  
Celero/Rock Queen #1 TB

Page Number: 54 of 56  
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| Param    | Flag | Cert | Units | CCVs<br>True<br>Conc. | CCVs<br>Found<br>Conc. | CCVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|----------|------|------|-------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| Chloride |      | 1    | mg/L  | 25.0                  | 25.7                   | 103                         | 90 - 110                      | 2013-08-16       |

#### Standard (CCV-1)

QC Batch: 104141

Date Analyzed: 2013-08-16

Analyzed By: RL

| Param   | Flag | Cert | Units | CCVs<br>True<br>Conc. | CCVs<br>Found<br>Conc. | CCVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|---------|------|------|-------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| Sulfate |      | 1    | mg/L  | 25.0                  | 26.0                   | 104                         | 90 - 110                      | 2013-08-16       |

#### Standard (CCV-2)

QC Batch: 104141

Date Analyzed: 2013-08-16

Analyzed By: RL

| Param    | Flag | Cert | Units | CCVs<br>True<br>Conc. | CCVs<br>Found<br>Conc. | CCVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|----------|------|------|-------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| Chloride |      | 1    | mg/L  | 25.0                  | 25.9                   | 104                         | 90 - 110                      | 2013-08-16       |

#### Standard (CCV-2)

QC Batch: 104141

Date Analyzed: 2013-08-16

Analyzed By: RL

| Param   | Flag | Cert | Units | CCVs<br>True<br>Conc. | CCVs<br>Found<br>Conc. | CCVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|---------|------|------|-------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| Sulfate |      | 1    | mg/L  | 25.0                  | 26.1                   | 104                         | 90 - 110                      | 2013-08-16       |

## Appendix

### Report Definitions

| Name | Definition                 |
|------|----------------------------|
| MDL  | Method Detection Limit     |
| MQL  | Minimum Quantitation Limit |
| SDL  | Sample Detection Limit     |

### Laboratory Certifications

| C | Certifying Authority | Certification Number | Laboratory Location |
|---|----------------------|----------------------|---------------------|
| - | NCTRCA               | WFWB384444Y0909      | TraceAnalysis       |
| - | DBE                  | VN 20657             | TraceAnalysis       |
| - | HUB                  | 1752439743100-86536  | TraceAnalysis       |
| - | WBE                  | 237019               | TraceAnalysis       |
| 1 | NELAP                | T104704219-13-9      | Lubbock             |
| 2 | NELAP                | T104704392-12-4      | Midland             |

### Standard Flags

| F   | Description                                                                                                                                                                                                                         |
|-----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| B   | Analyte detected in the corresponding method blank above the method detection limit                                                                                                                                                 |
| H   | Analyzed out of hold time                                                                                                                                                                                                           |
| J   | Estimated concentration                                                                                                                                                                                                             |
| Jb  | The analyte is positively identified and the value is approximated between the SDL and MQL. Sample contains less than ten times the concentration found in the method blank. The result should be considered non-detect to the SDL. |
| Je  | Estimated concentration exceeding calibration range.                                                                                                                                                                                |
| MI1 | Split peak or shoulder peak                                                                                                                                                                                                         |
| MI2 | Instrument software did not integrate                                                                                                                                                                                               |
| MI3 | Instrument software misidentified the peak                                                                                                                                                                                          |
| MI4 | Instrument software integrated improperly                                                                                                                                                                                           |
| MI5 | Baseline correction                                                                                                                                                                                                                 |
| Qc  | Calibration check outside of laboratory limits.                                                                                                                                                                                     |
| Qr  | RPD outside of laboratory limits                                                                                                                                                                                                    |
| Qs  | Spike recovery outside of laboratory limits.                                                                                                                                                                                        |
| Qsr | Surrogate recovery outside of laboratory limits.                                                                                                                                                                                    |
| U   | The analyte is not detected above the SDL                                                                                                                                                                                           |

## Result Comments

- 1 Sample confirmed by reanalysis.
- 2 MS/MSD confirm matrix interference with 4-BFB.
- 3 Surrogate failure confirmed by sample reanalysis.
- 4 RPD failing due to prep error. LCS/LCSD show recovery for batch to be under control.

## Attachments

The scanned attachments will follow this page.  
Please note, each attachment may consist of more than one page.





## DATE: 8/20/2013

Sample #

| Sample # | Calcium<br>in meq/L | Magnesium<br>in meq/L | Sodium<br>in meq/L | Potassium<br>in meq/L | Alkalinity<br>in meq/L | Sulfate<br>in meq/L | Chloride<br>in meq/L | Nitrate-N<br>in meq/L | Fluoride<br>in meq/L | Bromide<br>in meq/L | Total               |                    | % | Difference* |
|----------|---------------------|-----------------------|--------------------|-----------------------|------------------------|---------------------|----------------------|-----------------------|----------------------|---------------------|---------------------|--------------------|---|-------------|
|          |                     |                       |                    |                       |                        |                     |                      |                       |                      |                     | Cations<br>in meq/L | Anions<br>in meq/L |   |             |
| 336647   | 104.29              | 232.88                | 3179.85            | 37.09                 | 2.00                   | 43.31               | 3610.88              | 0.00                  | 0.00                 | 0.00                | 3554.11             | 3656.19            |   | 1.415654329 |
| 336648   | 89.82               | 43.20                 | 114.84             | 0.90                  | 2.54                   | 0.00                | 265.17               | 0.00                  | 0.00                 | 0.00                | 248.76              | 267.71             |   | 3.670376422 |
| 336649   | 205.59              | 136.60                | 1396.35            | 14.56                 | 2.00                   | 39.35               | 1805.44              | 0.00                  | 0.00                 | 0.00                | 1753.09             | 1846.79            |   | 2.602733151 |
| 336650   | 337.82              | 94.63                 | 175.31             | 3.45                  | 2.96                   | 7.60                | 674.22               | 0.00                  | 0.00                 | 0.00                | 611.21              | 694.78             |   | 5.676226208 |
| 336651   | 3.42                | 0.81                  | 2.63               | 0.08                  | 3.22                   | 2.75                | 1.85                 | 0.00                  | 0.00                 | 0.00                | 6.94                | 7.82               |   | 6.003495621 |
| 336652   | 241.52              | 250.98                | 2479.50            | 19.95                 | 3.48                   | 50.18               | 3300.57              | 0.00                  | 0.00                 | 0.00                | 2991.95             | 3354.23            |   | 5.708526253 |
| 336653   | 244.51              | 267.44                | 2553.45            | 24.76                 | 3.74                   | 45.80               | 3582.67              | 0.00                  | 0.00                 | 0.00                | 3090.16             | 3632.21            |   | 8.063367827 |

| TDS/EC  | TDS/Cat | TDS/Anion |
|---------|---------|-----------|
| #DIV/0! | 0.65    | 0.63      |
| #DIV/0! | 0.74    | 0.69      |
| #DIV/0! | 0.71    | 0.67      |
| #DIV/0! | 0.80    | 0.72      |
| #DIV/0! | 0.74    | 0.65      |
| #DIV/0! | 0.66    | 0.59      |
| #DIV/0! | 0.69    | 0.59      |



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## Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

# Analytical and Quality Control Report

Greg Pope  
Tetra Tech  
1910 N. Big Spring Street  
Midland, TX, 79705

Report Date: November 15, 2013

Work Order: 13103133



Project Location: Challenger  
Project Name: Celero/Rock Queen #1 TB  
Project Number: 114-6401627

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

| Sample | Description | Matrix | Date Taken | Time Taken | Date Received |
|--------|-------------|--------|------------|------------|---------------|
| 345377 | MW-1        | water  | 2013-10-30 | 11:00      | 2013-10-31    |
| 345378 | MW-2        | water  | 2013-10-30 | 11:10      | 2013-10-31    |
| 345379 | MW-3        | water  | 2013-10-30 | 10:30      | 2013-10-31    |
| 345380 | MW-4        | water  | 2013-10-30 | 11:25      | 2013-10-31    |
| 345381 | MW-5        | water  | 2013-10-30 | 11:45      | 2013-10-31    |
| 345382 | MW-6        | water  | 2013-10-30 | 10:45      | 2013-10-31    |
| 345383 | MW-7        | water  | 2013-10-30 | 10:15      | 2013-10-31    |

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

This report consists of a total of 46 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

A handwritten signature in black ink that reads "Michael Abel". The signature is written in a cursive, slightly slanted style.

---

Dr. Blair Leftwich, Director  
Dr. Michael Abel, Project Manager

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# Case Narrative

Samples for project Celero/Rock Queen #1 TB were received by TraceAnalysis, Inc. on 2013-10-31 and assigned to work order 13103133. Samples for work order 13103133 were received intact without headspace and at a temperature of 1.8 C.

Samples were analyzed for the following tests using their respective methods.

| Test          | Method     | Prep Batch | Prep Date           | QC Batch | Analysis Date       |
|---------------|------------|------------|---------------------|----------|---------------------|
| Alkalinity    | SM 2320B   | 90171      | 2013-11-01 at 10:25 | 106461   | 2013-11-01 at 16:26 |
| Alkalinity    | SM 2320B   | 90295      | 2013-11-03 at 12:14 | 106621   | 2013-11-04 at 12:15 |
| BTEX          | S 8021B    | 90156      | 2013-11-01 at 12:38 | 106459   | 2013-11-01 at 15:39 |
| BTEX          | S 8021B    | 90196      | 2013-11-04 at 13:59 | 106530   | 2013-11-05 at 12:11 |
| Ca, Dissolved | S 6010C    | 90268      | 2013-11-06 at 14:46 | 106734   | 2013-11-13 at 10:25 |
| Chloride (IC) | E 300.0    | 90366      | 2013-11-08 at 10:30 | 106706   | 2013-11-08 at 11:32 |
| Chloride (IC) | E 300.0    | 90367      | 2013-11-08 at 10:30 | 106707   | 2013-11-08 at 11:32 |
| Hardness      | S 6010C    | 90268      | 2013-11-06 at 14:46 | 106734   | 2013-11-13 at 10:25 |
| K, Dissolved  | S 6010C    | 90268      | 2013-11-06 at 14:46 | 106734   | 2013-11-13 at 10:25 |
| Mg, Dissolved | S 6010C    | 90268      | 2013-11-06 at 14:46 | 106734   | 2013-11-13 at 10:25 |
| Na, Dissolved | S 6010C    | 90268      | 2013-11-06 at 14:46 | 106734   | 2013-11-13 at 10:25 |
| pH            | SM 4500-H+ | 90131      | 2013-10-31 at 13:47 | 106464   | 2013-10-31 at 16:42 |
| pH            | SM 4500-H+ | 90131      | 2013-10-31 at 13:47 | 106465   | 2013-10-31 at 16:47 |
| SO4 (IC)      | E 300.0    | 90367      | 2013-11-08 at 10:30 | 106707   | 2013-11-08 at 11:32 |
| SO4 (IC)      | E 300.0    | 90395      | 2013-11-12 at 15:00 | 106738   | 2013-11-12 at 16:20 |
| TDS           | SM 2540C   | 90164      | 2013-11-01 at 09:10 | 106604   | 2013-11-02 at 18:13 |
| TDS           | SM 2540C   | 90201      | 2013-11-02 at 11:09 | 106606   | 2013-11-03 at 15:21 |

Results for these samples are reported on a wet weight basis unless data package indicates otherwise.

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 13103133 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

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## Analytical Report

### Sample: 345377 - MW-1

Laboratory: Midland  
Analysis: Alkalinity  
QC Batch: 106461  
Prep Batch: 90171

Analytical Method: SM 2320B  
Date Analyzed: 2013-11-01  
Sample Preparation: 2013-11-01

Prep Method: N/A  
Analyzed By: AR  
Prepared By: AR

| Parameter              | Flag | Cert | RL<br>Result | Units         | Dilution | RL   |
|------------------------|------|------|--------------|---------------|----------|------|
| Hydroxide Alkalinity   | U    | 2    | <20.0        | mg/L as CaCo3 | 1        | 20.0 |
| Carbonate Alkalinity   | U    | 2    | <20.0        | mg/L as CaCo3 | 1        | 20.0 |
| Bicarbonate Alkalinity |      | 2    | <b>123</b>   | mg/L as CaCo3 | 1        | 20.0 |
| Total Alkalinity       |      | 2    | <b>123</b>   | mg/L as CaCo3 | 1        | 20.0 |

### Sample: 345377 - MW-1

Laboratory: Midland  
Analysis: BTEX  
QC Batch: 106530  
Prep Batch: 90196

Analytical Method: S 8021B  
Date Analyzed: 2013-11-05  
Sample Preparation: 2013-11-04

Prep Method: S 5030B  
Analyzed By: AK  
Prepared By: AK

| Parameter    | Flag | Cert | RL<br>Result | Units | Dilution | RL      |
|--------------|------|------|--------------|-------|----------|---------|
| Benzene      | U    | 2    | <0.00100     | mg/L  | 1        | 0.00100 |
| Toluene      | U    | 2    | <0.00100     | mg/L  | 1        | 0.00100 |
| Ethylbenzene | U    | 2    | <0.00100     | mg/L  | 1        | 0.00100 |
| Xylene       | U    | 2    | <0.00100     | mg/L  | 1        | 0.00100 |

| Surrogate                    | Flag             | Cert | Result | Units | Dilution | Spike<br>Amount | Percent<br>Recovery | Recovery<br>Limits |
|------------------------------|------------------|------|--------|-------|----------|-----------------|---------------------|--------------------|
| Trifluorotoluene (TFT)       | <sup>1</sup> QSR | QSR  | 0.0681 | mg/L  | 1        | 0.100           | 68                  | 70 - 130           |
| 4-Bromofluorobenzene (4-BFB) |                  |      | 0.0736 | mg/L  | 1        | 0.100           | 74                  | 70 - 130           |

### Sample: 345377 - MW-1

Laboratory: Lubbock  
Analysis: Cations  
QC Batch: 106734  
Prep Batch: 90268

Analytical Method: S 6010C  
Date Analyzed: 2013-11-13  
Sample Preparation: 2013-11-09

Prep Method: S 3005A  
Analyzed By: RR  
Prepared By: PM

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| Parameter           | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|---------------------|------|------|--------------|-------|----------|------|
| Dissolved Calcium   |      | 1    | <b>2120</b>  | mg/L  | 100      | 1.00 |
| Dissolved Potassium |      | 1    | <b>1150</b>  | mg/L  | 100      | 1.00 |
| Dissolved Magnesium |      | 1    | <b>2750</b>  | mg/L  | 100      | 1.00 |
| Dissolved Sodium    |      | 1    | <b>56400</b> | mg/L  | 1000     | 1.00 |

**Sample: 345377 - MW-1**

|                         |                                |                  |
|-------------------------|--------------------------------|------------------|
| Laboratory: Lubbock     | Analytical Method: E 300.0     | Prep Method: N/A |
| Analysis: Chloride (IC) | Date Analyzed: 2013-11-08      | Analyzed By: RL  |
| QC Batch: 106706        | Sample Preparation: 2013-11-08 | Prepared By: RL  |
| Prep Batch: 90366       |                                |                  |

| Parameter | Flag | Cert | RL<br>Result  | Units | Dilution | RL   |
|-----------|------|------|---------------|-------|----------|------|
| Chloride  |      | 1    | <b>136000</b> | mg/L  | 5000     | 2.50 |

**Sample: 345377 - MW-1**

|                     |                                |                  |
|---------------------|--------------------------------|------------------|
| Laboratory: Lubbock | Analytical Method: S 6010C     | Prep Method: N/A |
| Analysis: Hardness  | Date Analyzed: 2013-11-13      | Analyzed By: RR  |
| QC Batch: 106734    | Sample Preparation: 2013-11-06 | Prepared By: PM  |
| Prep Batch: 90268   |                                |                  |

| Parameter         | Flag | Cert | RL<br>Result | Units         | Dilution | RL   |
|-------------------|------|------|--------------|---------------|----------|------|
| Hardness (by ICP) |      |      | <b>16600</b> | mg eq CaCO3/L | 1        | 0.00 |

**Sample: 345377 - MW-1**

|                     |                                |                  |
|---------------------|--------------------------------|------------------|
| Laboratory: Midland | Analytical Method: SM 4500-H+  | Prep Method: N/A |
| Analysis: pH        | Date Analyzed: 2013-10-31      | Analyzed By: AR  |
| QC Batch: 106464    | Sample Preparation: 2013-10-31 | Prepared By: AR  |
| Prep Batch: 90131   |                                |                  |

| Parameter | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|-----------|------|------|--------------|-------|----------|------|
| pH        |      | 2    | <b>6.46</b>  | s.u.  | 1        | 0.00 |

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**Sample: 345377 - MW-1**

|             |          |                     |            |              |     |
|-------------|----------|---------------------|------------|--------------|-----|
| Laboratory: | Lubbock  | Analytical Method:  | E 300.0    | Prep Method: | N/A |
| Analysis:   | SO4 (IC) | Date Analyzed:      | 2013-11-12 | Analyzed By: | RL  |
| QC Batch:   | 106738   | Sample Preparation: | 2013-11-12 | Prepared By: | RL  |
| Prep Batch: | 90395    |                     |            |              |     |

| Parameter | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|-----------|------|------|--------------|-------|----------|------|
| Sulfate   |      | 1    | <b>395</b>   | mg/L  | 100      | 2.50 |

**Sample: 345377 - MW-1**

|             |         |                     |            |              |     |
|-------------|---------|---------------------|------------|--------------|-----|
| Laboratory: | Midland | Analytical Method:  | SM 2540C   | Prep Method: | N/A |
| Analysis:   | TDS     | Date Analyzed:      | 2013-11-02 | Analyzed By: | AR  |
| QC Batch:   | 106604  | Sample Preparation: | 2013-11-01 | Prepared By: | AR  |
| Prep Batch: | 90164   |                     |            |              |     |

| Parameter              | Flag | Cert | RL<br>Result  | Units | Dilution | RL   |
|------------------------|------|------|---------------|-------|----------|------|
| Total Dissolved Solids |      | 2    | <b>197000</b> | mg/L  | 100      | 2.50 |

**Sample: 345378 - MW-2**

|             |            |                     |            |              |     |
|-------------|------------|---------------------|------------|--------------|-----|
| Laboratory: | Midland    | Analytical Method:  | SM 2320B   | Prep Method: | N/A |
| Analysis:   | Alkalinity | Date Analyzed:      | 2013-11-01 | Analyzed By: | AR  |
| QC Batch:   | 106461     | Sample Preparation: | 2013-11-01 | Prepared By: | AR  |
| Prep Batch: | 90171      |                     |            |              |     |

| Parameter              | Flag | Cert | RL<br>Result | Units         | Dilution | RL   |
|------------------------|------|------|--------------|---------------|----------|------|
| Hydroxide Alkalinity   | U    | 2    | <20.0        | mg/L as CaCo3 | 1        | 20.0 |
| Carbonate Alkalinity   | U    | 2    | <20.0        | mg/L as CaCo3 | 1        | 20.0 |
| Bicarbonate Alkalinity |      | 2    | <b>161</b>   | mg/L as CaCo3 | 1        | 20.0 |
| Total Alkalinity       |      | 2    | <b>161</b>   | mg/L as CaCo3 | 1        | 20.0 |

**Sample: 345378 - MW-2**

|             |         |                     |            |              |         |
|-------------|---------|---------------------|------------|--------------|---------|
| Laboratory: | Midland | Analytical Method:  | S 8021B    | Prep Method: | S 5030B |
| Analysis:   | BTEX    | Date Analyzed:      | 2013-11-01 | Analyzed By: | AK      |
| QC Batch:   | 106459  | Sample Preparation: | 2013-11-01 | Prepared By: | AK      |
| Prep Batch: | 90156   |                     |            |              |         |

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| Parameter    | Flag | Cert | RL<br>Result | Units | Dilution | RL      |
|--------------|------|------|--------------|-------|----------|---------|
| Benzene      | U    | 2    | <0.00100     | mg/L  | 1        | 0.00100 |
| Toluene      | U    | 2    | <0.00100     | mg/L  | 1        | 0.00100 |
| Ethylbenzene | QS,U | 2    | <0.00100     | mg/L  | 1        | 0.00100 |
| Xylene       | QS,U | 2    | <0.00300     | mg/L  | 1        | 0.00300 |

| Surrogate                    | Flag | Cert | Result | Units | Dilution | Spike<br>Amount | Percent<br>Recovery | Recovery<br>Limits |
|------------------------------|------|------|--------|-------|----------|-----------------|---------------------|--------------------|
| Trifluorotoluene (TFT)       |      |      | 0.0853 | mg/L  | 1        | 0.100           | 85                  | 70 - 130           |
| 4-Bromofluorobenzene (4-BFB) |      |      | 0.0768 | mg/L  | 1        | 0.100           | 77                  | 70 - 130           |

**Sample: 345378 - MW-2**

Laboratory: Lubbock

Analysis: Cations

QC Batch: 106734

Prep Batch: 90268

Analytical Method: S 6010C

Date Analyzed: 2013-11-13

Sample Preparation: 2013-11-09

Prep Method: S 3005A

Analyzed By: RR

Prepared By: PM

| Parameter           | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|---------------------|------|------|--------------|-------|----------|------|
| Dissolved Calcium   |      | 1    | <b>1710</b>  | mg/L  | 100      | 1.00 |
| Dissolved Potassium |      | 1    | <b>32.0</b>  | mg/L  | 10       | 1.00 |
| Dissolved Magnesium |      | 1    | <b>462</b>   | mg/L  | 10       | 1.00 |
| Dissolved Sodium    |      | 1    | <b>3000</b>  | mg/L  | 100      | 1.00 |

**Sample: 345378 - MW-2**

Laboratory: Lubbock

Analysis: Chloride (IC)

QC Batch: 106707

Prep Batch: 90367

Analytical Method: E 300.0

Date Analyzed: 2013-11-08

Sample Preparation: 2013-11-08

Prep Method: N/A

Analyzed By: RL

Prepared By: RL

| Parameter | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|-----------|------|------|--------------|-------|----------|------|
| Chloride  |      | 1    | <b>9980</b>  | mg/L  | 500      | 2.50 |

**Sample: 345378 - MW-2**

Laboratory: Lubbock

Analysis: Hardness

QC Batch: 106734

Prep Batch: 90268

Analytical Method: S 6010C

Date Analyzed: 2013-11-13

Sample Preparation: 2013-11-06

Prep Method: N/A

Analyzed By: RR

Prepared By: PM

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| Parameter         | Flag | Cert | RL<br>Result | Units         | Dilution | RL   |
|-------------------|------|------|--------------|---------------|----------|------|
| Hardness (by ICP) |      |      | <b>6170</b>  | mg eq CaCO3/L | 1        | 0.00 |

**Sample: 345378 - MW-2**

|             |         |                     |            |                  |
|-------------|---------|---------------------|------------|------------------|
| Laboratory: | Midland |                     |            |                  |
| Analysis:   | pH      | Analytical Method:  | SM 4500-H+ | Prep Method: N/A |
| QC Batch:   | 106464  | Date Analyzed:      | 2013-10-31 | Analyzed By: AR  |
| Prep Batch: | 90131   | Sample Preparation: | 2013-10-31 | Prepared By: AR  |

| Parameter | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|-----------|------|------|--------------|-------|----------|------|
| pH        |      | 2    | <b>6.93</b>  | s.u.  | 1        | 0.00 |

**Sample: 345378 - MW-2**

|             |          |                     |            |                  |
|-------------|----------|---------------------|------------|------------------|
| Laboratory: | Lubbock  |                     |            |                  |
| Analysis:   | SO4 (IC) | Analytical Method:  | E 300.0    | Prep Method: N/A |
| QC Batch:   | 106738   | Date Analyzed:      | 2013-11-12 | Analyzed By: RL  |
| Prep Batch: | 90395    | Sample Preparation: | 2013-11-12 | Prepared By: RL  |

| Parameter | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|-----------|------|------|--------------|-------|----------|------|
| Sulfate   |      | 1    | <b>165</b>   | mg/L  | 50       | 2.50 |

**Sample: 345378 - MW-2**

|             |         |                     |            |                  |
|-------------|---------|---------------------|------------|------------------|
| Laboratory: | Midland |                     |            |                  |
| Analysis:   | TDS     | Analytical Method:  | SM 2540C   | Prep Method: N/A |
| QC Batch:   | 106604  | Date Analyzed:      | 2013-11-02 | Analyzed By: AR  |
| Prep Batch: | 90164   | Sample Preparation: | 2013-11-01 | Prepared By: AR  |

| Parameter              | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|------------------------|------|------|--------------|-------|----------|------|
| Total Dissolved Solids |      | 2    | <b>21200</b> | mg/L  | 20       | 2.50 |

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**Sample: 345379 - MW-3**

Laboratory: Midland  
Analysis: Alkalinity  
QC Batch: 106461  
Prep Batch: 90171

Analytical Method: SM 2320B  
Date Analyzed: 2013-11-01  
Sample Preparation: 2013-11-01

Prep Method: N/A  
Analyzed By: AR  
Prepared By: AR

| Parameter              | Flag | Cert | RL<br>Result | Units         | Dilution | RL   |
|------------------------|------|------|--------------|---------------|----------|------|
| Hydroxide Alkalinity   | U    | 2    | <20.0        | mg/L as CaCo3 | 1        | 20.0 |
| Carbonate Alkalinity   | U    | 2    | <20.0        | mg/L as CaCo3 | 1        | 20.0 |
| Bicarbonate Alkalinity |      | 2    | 131          | mg/L as CaCo3 | 1        | 20.0 |
| Total Alkalinity       |      | 2    | 131          | mg/L as CaCo3 | 1        | 20.0 |

**Sample: 345379 - MW-3**

Laboratory: Midland  
Analysis: BTEX  
QC Batch: 106459  
Prep Batch: 90156

Analytical Method: S 8021B  
Date Analyzed: 2013-11-01  
Sample Preparation: 2013-11-01

Prep Method: S 5030B  
Analyzed By: AK  
Prepared By: AK

| Parameter    | Flag | Cert | RL<br>Result | Units | Dilution | RL      |
|--------------|------|------|--------------|-------|----------|---------|
| Benzene      | U    | 2    | <0.00100     | mg/L  | 1        | 0.00100 |
| Toluene      | U    | 2    | <0.00100     | mg/L  | 1        | 0.00100 |
| Ethylbenzene | Qs,U | 2    | <0.00100     | mg/L  | 1        | 0.00100 |
| Xylene       | Qs,U | 2    | <0.00300     | mg/L  | 1        | 0.00300 |

| Surrogate                    | Flag | Cert | Result | Units | Dilution | Spike<br>Amount | Percent<br>Recovery | Recovery<br>Limits |
|------------------------------|------|------|--------|-------|----------|-----------------|---------------------|--------------------|
| Trifluorotoluene (TFT)       |      |      | 0.0806 | mg/L  | 1        | 0.100           | 81                  | 70 - 130           |
| 4-Bromofluorobenzene (4-BFB) |      |      | 0.0737 | mg/L  | 1        | 0.100           | 74                  | 70 - 130           |

**Sample: 345379 - MW-3**

Laboratory: Lubbock  
Analysis: Cations  
QC Batch: 106734  
Prep Batch: 90268

Analytical Method: S 6010C  
Date Analyzed: 2013-11-13  
Sample Preparation: 2013-11-09

Prep Method: S 3005A  
Analyzed By: RR  
Prepared By: PM

| Parameter           | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|---------------------|------|------|--------------|-------|----------|------|
| Dissolved Calcium   |      | 1    | 4630         | mg/L  | 100      | 1.00 |
| Dissolved Potassium |      | 1    | 459          | mg/L  | 10       | 1.00 |
| Dissolved Magnesium |      | 1    | 2410         | mg/L  | 100      | 1.00 |

*continued ...*

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*sample 345379 continued ...*

| Parameter        | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|------------------|------|------|--------------|-------|----------|------|
| Dissolved Sodium |      | 1    | <b>30600</b> | mg/L  | 1000     | 1.00 |

**Sample: 345379 - MW-3**

|             |               |                     |            |              |     |
|-------------|---------------|---------------------|------------|--------------|-----|
| Laboratory: | Lubbock       |                     |            |              |     |
| Analysis:   | Chloride (IC) | Analytical Method:  | E 300.0    | Prep Method: | N/A |
| QC Batch:   | 106707        | Date Analyzed:      | 2013-11-08 | Analyzed By: | RL  |
| Prep Batch: | 90367         | Sample Preparation: | 2013-11-08 | Prepared By: | RL  |

| Parameter | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|-----------|------|------|--------------|-------|----------|------|
| Chloride  |      | 1    | <b>81900</b> | mg/L  | 5000     | 2.50 |

**Sample: 345379 - MW-3**

|             |          |                     |            |              |     |
|-------------|----------|---------------------|------------|--------------|-----|
| Laboratory: | Lubbock  |                     |            |              |     |
| Analysis:   | Hardness | Analytical Method:  | S 6010C    | Prep Method: | N/A |
| QC Batch:   | 106734   | Date Analyzed:      | 2013-11-13 | Analyzed By: | RR  |
| Prep Batch: | 90268    | Sample Preparation: | 2013-11-06 | Prepared By: | PM  |

| Parameter         | Flag | Cert | RL<br>Result | Units         | Dilution | RL   |
|-------------------|------|------|--------------|---------------|----------|------|
| Hardness (by ICP) |      |      | <b>21500</b> | mg eq CaCO3/L | 1        | 0.00 |

**Sample: 345379 - MW-3**

|             |         |                     |            |              |     |
|-------------|---------|---------------------|------------|--------------|-----|
| Laboratory: | Midland |                     |            |              |     |
| Analysis:   | pH      | Analytical Method:  | SM 4500-H+ | Prep Method: | N/A |
| QC Batch:   | 106464  | Date Analyzed:      | 2013-10-31 | Analyzed By: | AR  |
| Prep Batch: | 90131   | Sample Preparation: | 2013-10-31 | Prepared By: | AR  |

| Parameter | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|-----------|------|------|--------------|-------|----------|------|
| pH        |      | 2    | <b>6.55</b>  | s.u.  | 1        | 0.00 |

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**Sample: 345379 - MW-3**

Laboratory: Lubbock  
Analysis: SO4 (IC)  
QC Batch: 106738  
Prep Batch: 90395

Analytical Method: E 300.0  
Date Analyzed: 2013-11-12  
Sample Preparation: 2013-11-12

Prep Method: N/A  
Analyzed By: RL  
Prepared By: RL

| Parameter | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|-----------|------|------|--------------|-------|----------|------|
| Sulfate   |      | 1    | 2040         | mg/L  | 100      | 2.50 |

**Sample: 345379 - MW-3**

Laboratory: Midland  
Analysis: TDS  
QC Batch: 106604  
Prep Batch: 90164

Analytical Method: SM 2540C  
Date Analyzed: 2013-11-02  
Sample Preparation: 2013-11-01

Prep Method: N/A  
Analyzed By: AR  
Prepared By: AR

| Parameter              | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|------------------------|------|------|--------------|-------|----------|------|
| Total Dissolved Solids |      | 2    | 121000       | mg/L  | 100      | 2.50 |

**Sample: 345380 - MW-4**

Laboratory: Midland  
Analysis: Alkalinity  
QC Batch: 106461  
Prep Batch: 90171

Analytical Method: SM 2320B  
Date Analyzed: 2013-11-01  
Sample Preparation: 2013-11-01

Prep Method: N/A  
Analyzed By: AR  
Prepared By: AR

| Parameter              | Flag | Cert | RL<br>Result | Units         | Dilution | RL   |
|------------------------|------|------|--------------|---------------|----------|------|
| Hydroxide Alkalinity   | U    | 2    | <20.0        | mg/L as CaCo3 | 1        | 20.0 |
| Carbonate Alkalinity   | U    | 2    | <20.0        | mg/L as CaCo3 | 1        | 20.0 |
| Bicarbonate Alkalinity |      | 2    | 143          | mg/L as CaCo3 | 1        | 20.0 |
| Total Alkalinity       |      | 2    | 143          | mg/L as CaCo3 | 1        | 20.0 |

**Sample: 345380 - MW-4**

Laboratory: Midland  
Analysis: BTEX  
QC Batch: 106459  
Prep Batch: 90156

Analytical Method: S 8021B  
Date Analyzed: 2013-11-01  
Sample Preparation: 2013-11-01

Prep Method: S 5030B  
Analyzed By: AK  
Prepared By: AK

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| Parameter    | Flag | Cert | RL<br>Result | Units | Dilution | RL      |
|--------------|------|------|--------------|-------|----------|---------|
| Benzene      | U    | 2    | <0.00100     | mg/L  | 1        | 0.00100 |
| Toluene      | U    | 2    | <0.00100     | mg/L  | 1        | 0.00100 |
| Ethylbenzene | Qs,U | 2    | <0.00100     | mg/L  | 1        | 0.00100 |
| Xylene       | Qs,U | 2    | <0.00300     | mg/L  | 1        | 0.00300 |

| Surrogate                    | Flag | Cert | Result | Units | Dilution | Spike<br>Amount | Percent<br>Recovery | Recovery<br>Limits |
|------------------------------|------|------|--------|-------|----------|-----------------|---------------------|--------------------|
| Trifluorotoluene (TFT)       |      |      | 0.0849 | mg/L  | 1        | 0.100           | 85                  | 70 - 130           |
| 4-Bromofluorobenzene (4-BFB) |      |      | 0.0772 | mg/L  | 1        | 0.100           | 77                  | 70 - 130           |

**Sample: 345380 - MW-4**

Laboratory: Lubbock  
Analysis: Cations  
QC Batch: 106734  
Prep Batch: 90268

Analytical Method: S 6010C  
Date Analyzed: 2013-11-13  
Sample Preparation: 2013-11-09

Prep Method: S 3005A  
Analyzed By: RR  
Prepared By: PM

| Parameter           | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|---------------------|------|------|--------------|-------|----------|------|
| Dissolved Calcium   |      | 1    | <b>283</b>   | mg/L  | 10       | 1.00 |
| Dissolved Potassium |      | 1    | <10.0        | mg/L  | 10       | 1.00 |
| Dissolved Magnesium |      | 1    | <b>60.5</b>  | mg/L  | 10       | 1.00 |
| Dissolved Sodium    |      | 1    | <b>428</b>   | mg/L  | 10       | 1.00 |

**Sample: 345380 - MW-4**

Laboratory: Lubbock  
Analysis: Chloride (IC)  
QC Batch: 106707  
Prep Batch: 90367

Analytical Method: E 300.0  
Date Analyzed: 2013-11-08  
Sample Preparation: 2013-11-08

Prep Method: N/A  
Analyzed By: RL  
Prepared By: RL

| Parameter | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|-----------|------|------|--------------|-------|----------|------|
| Chloride  |      | 1    | <b>933</b>   | mg/L  | 100      | 2.50 |

**Sample: 345380 - MW-4**

Laboratory: Lubbock  
Analysis: Hardness  
QC Batch: 106734  
Prep Batch: 90268

Analytical Method: S 6010C  
Date Analyzed: 2013-11-13  
Sample Preparation: 2013-11-06

Prep Method: N/A  
Analyzed By: RR  
Prepared By: PM

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| Parameter         | Flag | Cert | RL<br>Result | Units         | Dilution | RL   |
|-------------------|------|------|--------------|---------------|----------|------|
| Hardness (by ICP) |      |      | 956          | mg eq CaCO3/L | 1        | 0.00 |

**Sample: 345380 - MW-4**

|             |         |                     |            |              |     |
|-------------|---------|---------------------|------------|--------------|-----|
| Laboratory: | Midland |                     |            |              |     |
| Analysis:   | pH      | Analytical Method:  | SM 4500-H+ | Prep Method: | N/A |
| QC Batch:   | 106464  | Date Analyzed:      | 2013-10-31 | Analyzed By: | AR  |
| Prep Batch: | 90131   | Sample Preparation: | 2013-10-31 | Prepared By: | AR  |

| Parameter | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|-----------|------|------|--------------|-------|----------|------|
| pH        |      | 2    | 6.75         | s.u.  | 1        | 0.00 |

**Sample: 345380 - MW-4**

|             |          |                     |            |              |     |
|-------------|----------|---------------------|------------|--------------|-----|
| Laboratory: | Lubbock  |                     |            |              |     |
| Analysis:   | SO4 (IC) | Analytical Method:  | E 300.0    | Prep Method: | N/A |
| QC Batch:   | 106738   | Date Analyzed:      | 2013-11-12 | Analyzed By: | RL  |
| Prep Batch: | 90395    | Sample Preparation: | 2013-11-12 | Prepared By: | RL  |

| Parameter | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|-----------|------|------|--------------|-------|----------|------|
| Sulfate   |      | 1    | 93.7         | mg/L  | 10       | 2.50 |

**Sample: 345380 - MW-4**

|             |         |                     |            |              |     |
|-------------|---------|---------------------|------------|--------------|-----|
| Laboratory: | Midland |                     |            |              |     |
| Analysis:   | TDS     | Analytical Method:  | SM 2540C   | Prep Method: | N/A |
| QC Batch:   | 106604  | Date Analyzed:      | 2013-11-02 | Analyzed By: | AR  |
| Prep Batch: | 90164   | Sample Preparation: | 2013-11-01 | Prepared By: | AR  |

| Parameter              | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|------------------------|------|------|--------------|-------|----------|------|
| Total Dissolved Solids |      | 2    | 66000        | mg/L  | 50       | 2.50 |

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**Sample: 345381 - MW-5**

|             |            |                     |            |              |     |
|-------------|------------|---------------------|------------|--------------|-----|
| Laboratory: | Midland    | Analytical Method:  | SM 2320B   | Prep Method: | N/A |
| Analysis:   | Alkalinity | Date Analyzed:      | 2013-11-01 | Analyzed By: | AR  |
| QC Batch:   | 106461     | Sample Preparation: | 2013-11-01 | Prepared By: | AR  |
| Prep Batch: | 90171      |                     |            |              |     |

| Parameter              | Flag | Cert | RL<br>Result | Units         | Dilution | RL   |
|------------------------|------|------|--------------|---------------|----------|------|
| Hydroxide Alkalinity   | U    | 2    | <20.0        | mg/L as CaCo3 | 1        | 20.0 |
| Carbonate Alkalinity   | U    | 2    | <20.0        | mg/L as CaCo3 | 1        | 20.0 |
| Bicarbonate Alkalinity |      | 2    | 139          | mg/L as CaCo3 | 1        | 20.0 |
| Total Alkalinity       |      | 2    | 139          | mg/L as CaCo3 | 1        | 20.0 |

**Sample: 345381 - MW-5**

|             |         |                     |            |              |         |
|-------------|---------|---------------------|------------|--------------|---------|
| Laboratory: | Midland | Analytical Method:  | S 8021B    | Prep Method: | S 5030B |
| Analysis:   | BTEX    | Date Analyzed:      | 2013-11-01 | Analyzed By: | AK      |
| QC Batch:   | 106459  | Sample Preparation: | 2013-11-01 | Prepared By: | AK      |
| Prep Batch: | 90156   |                     |            |              |         |

| Parameter    | Flag | Cert | RL<br>Result | Units | Dilution | RL      |
|--------------|------|------|--------------|-------|----------|---------|
| Benzene      | U    | 2    | <0.00100     | mg/L  | 1        | 0.00100 |
| Toluene      | U    | 2    | <0.00100     | mg/L  | 1        | 0.00100 |
| Ethylbenzene | Qs,U | 2    | <0.00100     | mg/L  | 1        | 0.00100 |
| Xylene       | Qs,U | 2    | <0.00300     | mg/L  | 1        | 0.00300 |

| Surrogate                    | Flag | Cert | Result | Units | Dilution | Spike<br>Amount | Percent<br>Recovery | Recovery<br>Limits |
|------------------------------|------|------|--------|-------|----------|-----------------|---------------------|--------------------|
| Trifluorotoluene (TFT)       |      |      | 0.0847 | mg/L  | 1        | 0.100           | 85                  | 70 - 130           |
| 4-Bromofluorobenzene (4-BFB) |      |      | 0.0777 | mg/L  | 1        | 0.100           | 78                  | 70 - 130           |

**Sample: 345381 - MW-5**

|             |         |                     |            |              |         |
|-------------|---------|---------------------|------------|--------------|---------|
| Laboratory: | Lubbock | Analytical Method:  | S 6010C    | Prep Method: | S 3005A |
| Analysis:   | Cations | Date Analyzed:      | 2013-11-13 | Analyzed By: | RR      |
| QC Batch:   | 106734  | Sample Preparation: | 2013-11-09 | Prepared By: | PM      |
| Prep Batch: | 90268   |                     |            |              |         |

| Parameter           | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|---------------------|------|------|--------------|-------|----------|------|
| Dissolved Calcium   |      | 1    | 76.8         | mg/L  | 10       | 1.00 |
| Dissolved Potassium |      | 1    | <10.0        | mg/L  | 10       | 1.00 |
| Dissolved Magnesium |      | 1    | 13.0         | mg/L  | 10       | 1.00 |

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*sample 345381 continued ...*

| Parameter        | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|------------------|------|------|--------------|-------|----------|------|
| Dissolved Sodium |      | 1    | <b>73.8</b>  | mg/L  | 10       | 1.00 |

**Sample: 345381 - MW-5**

|             |               |                     |            |              |     |
|-------------|---------------|---------------------|------------|--------------|-----|
| Laboratory: | Lubbock       |                     |            |              |     |
| Analysis:   | Chloride (IC) | Analytical Method:  | E 300.0    | Prep Method: | N/A |
| QC Batch:   | 106707        | Date Analyzed:      | 2013-11-08 | Analyzed By: | RL  |
| Prep Batch: | 90367         | Sample Preparation: | 2013-11-08 | Prepared By: | RL  |

| Parameter | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|-----------|------|------|--------------|-------|----------|------|
| Chloride  |      | 1    | <b>70.3</b>  | mg/L  | 5        | 2.50 |

**Sample: 345381 - MW-5**

|             |          |                     |            |              |     |
|-------------|----------|---------------------|------------|--------------|-----|
| Laboratory: | Lubbock  |                     |            |              |     |
| Analysis:   | Hardness | Analytical Method:  | S 6010C    | Prep Method: | N/A |
| QC Batch:   | 106734   | Date Analyzed:      | 2013-11-13 | Analyzed By: | RR  |
| Prep Batch: | 90268    | Sample Preparation: | 2013-11-06 | Prepared By: | PM  |

| Parameter         | Flag | Cert | RL<br>Result | Units         | Dilution | RL   |
|-------------------|------|------|--------------|---------------|----------|------|
| Hardness (by ICP) |      |      | <b>245</b>   | mg eq CaCO3/L | 1        | 0.00 |

**Sample: 345381 - MW-5**

|             |         |                     |            |              |     |
|-------------|---------|---------------------|------------|--------------|-----|
| Laboratory: | Midland |                     |            |              |     |
| Analysis:   | pH      | Analytical Method:  | SM 4500-H+ | Prep Method: | N/A |
| QC Batch:   | 106464  | Date Analyzed:      | 2013-10-31 | Analyzed By: | AR  |
| Prep Batch: | 90131   | Sample Preparation: | 2013-10-31 | Prepared By: | AR  |

| Parameter | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|-----------|------|------|--------------|-------|----------|------|
| pH        |      | 2    | <b>8.01</b>  | s.u.  | 1        | 0.00 |

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**Sample: 345381 - MW-5**

|             |          |                     |            |              |     |
|-------------|----------|---------------------|------------|--------------|-----|
| Laboratory: | Lubbock  | Analytical Method:  | E 300.0    | Prep Method: | N/A |
| Analysis:   | SO4 (IC) | Date Analyzed:      | 2013-11-08 | Analyzed By: | RL  |
| QC Batch:   | 106707   | Sample Preparation: | 2013-11-08 | Prepared By: | RL  |
| Prep Batch: | 90367    |                     |            |              |     |

| Parameter | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|-----------|------|------|--------------|-------|----------|------|
| Sulfate   |      | 1    | 146          | mg/L  | 5        | 2.50 |

**Sample: 345381 - MW-5**

|             |         |                     |            |              |     |
|-------------|---------|---------------------|------------|--------------|-----|
| Laboratory: | Midland | Analytical Method:  | SM 2540C   | Prep Method: | N/A |
| Analysis:   | TDS     | Date Analyzed:      | 2013-11-02 | Analyzed By: | AR  |
| QC Batch:   | 106604  | Sample Preparation: | 2013-11-01 | Prepared By: | AR  |
| Prep Batch: | 90164   |                     |            |              |     |

| Parameter              | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|------------------------|------|------|--------------|-------|----------|------|
| Total Dissolved Solids |      | 2    | 714          | mg/L  | 2        | 2.50 |

**Sample: 345382 - MW-6**

|             |            |                     |            |              |     |
|-------------|------------|---------------------|------------|--------------|-----|
| Laboratory: | Midland    | Analytical Method:  | SM 2320B   | Prep Method: | N/A |
| Analysis:   | Alkalinity | Date Analyzed:      | 2013-11-04 | Analyzed By: | AR  |
| QC Batch:   | 106621     | Sample Preparation: | 2013-11-03 | Prepared By: | AR  |
| Prep Batch: | 90295      |                     |            |              |     |

| Parameter              | Flag | Cert | RL<br>Result | Units         | Dilution | RL   |
|------------------------|------|------|--------------|---------------|----------|------|
| Hydroxide Alkalinity   | u    | 2    | <20.0        | mg/L as CaCo3 | 1        | 20.0 |
| Carbonate Alkalinity   | u    | 2    | <20.0        | mg/L as CaCo3 | 1        | 20.0 |
| Bicarbonate Alkalinity |      | 2    | 175          | mg/L as CaCo3 | 1        | 20.0 |
| Total Alkalinity       |      | 2    | 175          | mg/L as CaCo3 | 1        | 20.0 |

**Sample: 345382 - MW-6**

|             |         |                     |            |              |         |
|-------------|---------|---------------------|------------|--------------|---------|
| Laboratory: | Midland | Analytical Method:  | S 8021B    | Prep Method: | S 5030B |
| Analysis:   | BTEX    | Date Analyzed:      | 2013-11-05 | Analyzed By: | AK      |
| QC Batch:   | 106530  | Sample Preparation: | 2013-11-04 | Prepared By: | AK      |
| Prep Batch: | 90196   |                     |            |              |         |

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| Parameter    | Flag | Cert | RL<br>Result | Units | Dilution | RL      |
|--------------|------|------|--------------|-------|----------|---------|
| Benzene      | U    | 2    | <0.00100     | mg/L  | 1        | 0.00100 |
| Toluene      | U    | 2    | <0.00100     | mg/L  | 1        | 0.00100 |
| Ethylbenzene | U    | 2    | <0.00100     | mg/L  | 1        | 0.00100 |
| Xylene       | U    | 2    | <0.00100     | mg/L  | 1        | 0.00100 |

| Surrogate                    | Flag | Cert | Result | Units | Dilution | Spike<br>Amount | Percent<br>Recovery | Recovery<br>Limits |
|------------------------------|------|------|--------|-------|----------|-----------------|---------------------|--------------------|
| Trifluorotoluene (TFT)       |      |      | 0.0717 | mg/L  | 1        | 0.100           | 72                  | 70 - 130           |
| 4-Bromofluorobenzene (4-BFB) |      |      | 0.0768 | mg/L  | 1        | 0.100           | 77                  | 70 - 130           |

**Sample: 345382 - MW-6**

Laboratory: Lubbock

Analysis: Cations

QC Batch: 106734

Prep Batch: 90268

Analytical Method: S 6010C

Date Analyzed: 2013-11-13

Sample Preparation: 2013-11-09

Prep Method: S 3005A

Analyzed By: RR

Prepared By: PM

| Parameter           | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|---------------------|------|------|--------------|-------|----------|------|
| Dissolved Calcium   |      | 1    | <b>3420</b>  | mg/L  | 100      | 1.00 |
| Dissolved Potassium |      | 1    | <b>803</b>   | mg/L  | 10       | 1.00 |
| Dissolved Magnesium |      | 1    | <b>2660</b>  | mg/L  | 100      | 1.00 |
| Dissolved Sodium    |      | 1    | <b>50700</b> | mg/L  | 1000     | 1.00 |

**Sample: 345382 - MW-6**

Laboratory: Lubbock

Analysis: Chloride (IC)

QC Batch: 106707

Prep Batch: 90367

Analytical Method: E 300.0

Date Analyzed: 2013-11-08

Sample Preparation: 2013-11-08

Prep Method: N/A

Analyzed By: RL

Prepared By: RL

| Parameter | Flag | Cert | RL<br>Result  | Units | Dilution | RL   |
|-----------|------|------|---------------|-------|----------|------|
| Chloride  |      | 1    | <b>126000</b> | mg/L  | 5000     | 2.50 |

**Sample: 345382 - MW-6**

Laboratory: Lubbock

Analysis: Hardness

QC Batch: 106734

Prep Batch: 90268

Analytical Method: S 6010C

Date Analyzed: 2013-11-13

Sample Preparation: 2013-11-06

Prep Method: N/A

Analyzed By: RR

Prepared By: PM

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| Parameter         | Flag | Cert | RL<br>Result | Units         | Dilution | RL   |
|-------------------|------|------|--------------|---------------|----------|------|
| Hardness (by ICP) |      |      | 19500        | mg eq CaCO3/L | 1        | 0.00 |

**Sample: 345382 - MW-6**

Laboratory: Midland  
Analysis: pH  
QC Batch: 106465  
Prep Batch: 90131

Analytical Method: SM 4500-H+  
Date Analyzed: 2013-10-31  
Sample Preparation: 2013-10-31

Prep Method: N/A  
Analyzed By: AR  
Prepared By: AR

| Parameter | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|-----------|------|------|--------------|-------|----------|------|
| pH        |      | 2    | 6.35         | s.u.  | 1        | 0.00 |

**Sample: 345382 - MW-6**

Laboratory: Lubbock  
Analysis: SO4 (IC)  
QC Batch: 106738  
Prep Batch: 90395

Analytical Method: E 300.0  
Date Analyzed: 2013-11-12  
Sample Preparation: 2013-11-12

Prep Method: N/A  
Analyzed By: RL  
Prepared By: RL

| Parameter | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|-----------|------|------|--------------|-------|----------|------|
| Sulfate   |      | 1    | 2430         | mg/L  | 100      | 2.50 |

**Sample: 345382 - MW-6**

Laboratory: Midland  
Analysis: TDS  
QC Batch: 106606  
Prep Batch: 90201

Analytical Method: SM 2540C  
Date Analyzed: 2013-11-03  
Sample Preparation: 2013-11-02

Prep Method: N/A  
Analyzed By: AR  
Prepared By: AR

| Parameter              | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|------------------------|------|------|--------------|-------|----------|------|
| Total Dissolved Solids |      | 2    | 161000       | mg/L  | 100      | 2.50 |

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**Sample: 345383 - MW-7**

|             |            |                     |            |              |     |
|-------------|------------|---------------------|------------|--------------|-----|
| Laboratory: | Midland    | Analytical Method:  | SM 2320B   | Prep Method: | N/A |
| Analysis:   | Alkalinity | Date Analyzed:      | 2013-11-04 | Analyzed By: | AR  |
| QC Batch:   | 106621     | Sample Preparation: | 2013-11-03 | Prepared By: | AR  |
| Prep Batch: | 90295      |                     |            |              |     |

| Parameter              | Flag | Cert | RL<br>Result | Units         | Dilution | RL   |
|------------------------|------|------|--------------|---------------|----------|------|
| Hydroxide Alkalinity   | U    | 2    | <20.0        | mg/L as CaCo3 | 1        | 20.0 |
| Carbonate Alkalinity   | U    | 2    | <20.0        | mg/L as CaCo3 | 1        | 20.0 |
| Bicarbonate Alkalinity |      | 2    | 91.0         | mg/L as CaCo3 | 1        | 20.0 |
| Total Alkalinity       |      | 2    | 91.0         | mg/L as CaCo3 | 1        | 20.0 |

**Sample: 345383 - MW-7**

|             |         |                     |            |              |         |
|-------------|---------|---------------------|------------|--------------|---------|
| Laboratory: | Midland | Analytical Method:  | S 8021B    | Prep Method: | S 5030B |
| Analysis:   | BTEX    | Date Analyzed:      | 2013-11-05 | Analyzed By: | AK      |
| QC Batch:   | 106530  | Sample Preparation: | 2013-11-04 | Prepared By: | AK      |
| Prep Batch: | 90196   |                     |            |              |         |

| Parameter    | Flag | Cert | RL<br>Result | Units | Dilution | RL      |
|--------------|------|------|--------------|-------|----------|---------|
| Benzene      | U    | 2    | <0.00100     | mg/L  | 1        | 0.00100 |
| Toluene      | U    | 2    | <0.00100     | mg/L  | 1        | 0.00100 |
| Ethylbenzene | U    | 2    | <0.00100     | mg/L  | 1        | 0.00100 |
| Xylene       | U    | 2    | <0.00100     | mg/L  | 1        | 0.00100 |

| Surrogate                    | Flag  | Cert | Result | Units | Dilution | Spike<br>Amount | Percent<br>Recovery | Recovery<br>Limits |
|------------------------------|-------|------|--------|-------|----------|-----------------|---------------------|--------------------|
| Trifluorotoluene (TFT)       | 2 Qsr | Qsr  | 0.0655 | mg/L  | 1        | 0.100           | 66                  | 70 - 130           |
| 4-Bromofluorobenzene (4-BFB) |       |      | 0.0719 | mg/L  | 1        | 0.100           | 72                  | 70 - 130           |

**Sample: 345383 - MW-7**

|             |         |                     |            |              |         |
|-------------|---------|---------------------|------------|--------------|---------|
| Laboratory: | Lubbock | Analytical Method:  | S 6010C    | Prep Method: | S 3005A |
| Analysis:   | Cations | Date Analyzed:      | 2013-11-13 | Analyzed By: | RR      |
| QC Batch:   | 106734  | Sample Preparation: | 2013-11-09 | Prepared By: | PM      |
| Prep Batch: | 90268   |                     |            |              |         |

| Parameter           | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|---------------------|------|------|--------------|-------|----------|------|
| Dissolved Calcium   |      | 1    | 4560         | mg/L  | 100      | 1.00 |
| Dissolved Potassium |      | 1    | 939          | mg/L  | 10       | 1.00 |
| Dissolved Magnesium |      | 1    | 3210         | mg/L  | 100      | 1.00 |

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*sample 345383 continued ...*

| Parameter        | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|------------------|------|------|--------------|-------|----------|------|
| Dissolved Sodium |      | 1    | <b>57500</b> | mg/L  | 1000     | 1.00 |

**Sample: 345383 - MW-7**

|             |               |                     |            |              |     |
|-------------|---------------|---------------------|------------|--------------|-----|
| Laboratory: | Lubbock       |                     |            |              |     |
| Analysis:   | Chloride (IC) | Analytical Method:  | E 300.0    | Prep Method: | N/A |
| QC Batch:   | 106707        | Date Analyzed:      | 2013-11-08 | Analyzed By: | RL  |
| Prep Batch: | 90367         | Sample Preparation: | 2013-11-08 | Prepared By: | RL  |

| Parameter | Flag | Cert | RL<br>Result  | Units | Dilution | RL   |
|-----------|------|------|---------------|-------|----------|------|
| Chloride  |      | 1    | <b>147000</b> | mg/L  | 5000     | 2.50 |

**Sample: 345383 - MW-7**

|             |          |                     |            |              |     |
|-------------|----------|---------------------|------------|--------------|-----|
| Laboratory: | Lubbock  |                     |            |              |     |
| Analysis:   | Hardness | Analytical Method:  | S 6010C    | Prep Method: | N/A |
| QC Batch:   | 106734   | Date Analyzed:      | 2013-11-13 | Analyzed By: | RR  |
| Prep Batch: | 90268    | Sample Preparation: | 2013-11-06 | Prepared By: | PM  |

| Parameter         | Flag | Cert | RL<br>Result | Units         | Dilution | RL   |
|-------------------|------|------|--------------|---------------|----------|------|
| Hardness (by ICP) |      |      | <b>24600</b> | mg eq CaCO3/L | 1        | 0.00 |

**Sample: 345383 - MW-7**

|             |         |                     |            |              |     |
|-------------|---------|---------------------|------------|--------------|-----|
| Laboratory: | Midland |                     |            |              |     |
| Analysis:   | pH      | Analytical Method:  | SM 4500-H+ | Prep Method: | N/A |
| QC Batch:   | 106465  | Date Analyzed:      | 2013-10-31 | Analyzed By: | AR  |
| Prep Batch: | 90131   | Sample Preparation: | 2013-10-31 | Prepared By: | AR  |

| Parameter | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|-----------|------|------|--------------|-------|----------|------|
| pH        |      | 2    | <b>6.42</b>  | s.u.  | 1        | 0.00 |

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**Sample: 345383 - MW-7**

|             |          |                     |            |              |     |
|-------------|----------|---------------------|------------|--------------|-----|
| Laboratory: | Lubbock  | Analytical Method:  | E 300.0    | Prep Method: | N/A |
| Analysis:   | SO4 (IC) | Date Analyzed:      | 2013-11-12 | Analyzed By: | RL  |
| QC Batch:   | 106738   | Sample Preparation: | 2013-11-12 | Prepared By: | RL  |
| Prep Batch: | 90395    |                     |            |              |     |

| Parameter | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|-----------|------|------|--------------|-------|----------|------|
| Sulfate   |      | 1    | <b>2880</b>  | mg/L  | 100      | 2.50 |

**Sample: 345383 - MW-7**

|             |         |                     |            |              |     |
|-------------|---------|---------------------|------------|--------------|-----|
| Laboratory: | Midland | Analytical Method:  | SM 2540C   | Prep Method: | N/A |
| Analysis:   | TDS     | Date Analyzed:      | 2013-11-03 | Analyzed By: | AR  |
| QC Batch:   | 106606  | Sample Preparation: | 2013-11-02 | Prepared By: | AR  |
| Prep Batch: | 90201   |                     |            |              |     |

| Parameter              | Flag | Cert | RL<br>Result  | Units | Dilution | RL   |
|------------------------|------|------|---------------|-------|----------|------|
| Total Dissolved Solids |      | 2    | <b>199000</b> | mg/L  | 100      | 2.50 |

## Method Blanks

### Method Blank (1) QC Batch: 106459

QC Batch: 106459 Date Analyzed: 2013-11-01 Analyzed By: AK  
Prep Batch: 90156 QC Preparation: 2013-11-01 Prepared By: AK

| Parameter    | Flag | Cert | MDL<br>Result | Units | RL    |
|--------------|------|------|---------------|-------|-------|
| Benzene      |      | 2    | <0.000600     | mg/L  | 0.001 |
| Toluene      |      | 2    | <0.000400     | mg/L  | 0.001 |
| Ethylbenzene |      | 2    | <0.000600     | mg/L  | 0.001 |
| Xylene       |      | 2    | <0.00130      | mg/L  | 0.003 |

| Surrogate                    | Flag | Cert | Result | Units | Dilution | Spike<br>Amount | Percent<br>Recovery | Recovery<br>Limits |
|------------------------------|------|------|--------|-------|----------|-----------------|---------------------|--------------------|
| Trifluorotoluene (TFT)       |      |      | 0.0881 | mg/L  | 1        | 0.100           | 88                  | 70 - 130           |
| 4-Bromofluorobenzene (4-BFB) |      |      | 0.0780 | mg/L  | 1        | 0.100           | 78                  | 70 - 130           |

### Method Blank (1) QC Batch: 106461

QC Batch: 106461 Date Analyzed: 2013-11-01 Analyzed By: AR  
Prep Batch: 90171 QC Preparation: 2013-11-01 Prepared By: AR

| Parameter              | Flag | Cert | MDL<br>Result | Units         | RL |
|------------------------|------|------|---------------|---------------|----|
| Hydroxide Alkalinity   |      | 2    | <20.0         | mg/L as CaCo3 | 20 |
| Carbonate Alkalinity   |      | 2    | <20.0         | mg/L as CaCo3 | 20 |
| Bicarbonate Alkalinity |      | 2    | <20.0         | mg/L as CaCo3 | 20 |
| Total Alkalinity       |      | 2    | <20.0         | mg/L as CaCo3 | 20 |

### Method Blank (1) QC Batch: 106530

QC Batch: 106530 Date Analyzed: 2013-11-05 Analyzed By: AK  
Prep Batch: 90196 QC Preparation: 2013-11-04 Prepared By: AK

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| Parameter    | Flag | Cert | MDL<br>Result | Units | RL    |
|--------------|------|------|---------------|-------|-------|
| Benzene      |      | 2    | <0.000200     | mg/L  | 0.001 |
| Toluene      |      | 2    | <0.000300     | mg/L  | 0.001 |
| Ethylbenzene |      | 2    | <0.000400     | mg/L  | 0.001 |
| Xylene       |      | 2    | <0.00120      | mg/L  | 0.001 |

| Surrogate                    | Flag | Cert | Result | Units | Dilution | Spike<br>Amount | Percent<br>Recovery | Recovery<br>Limits |
|------------------------------|------|------|--------|-------|----------|-----------------|---------------------|--------------------|
| Trifluorotoluene (TFT)       |      |      | 0.105  | mg/L  | 1        | 0.100           | 105                 | 70 - 130           |
| 4-Bromofluorobenzene (4-BFB) |      |      | 0.0993 | mg/L  | 1        | 0.100           | 99                  | 70 - 130           |

**Method Blank (1)**      QC Batch: 106604

QC Batch: 106604      Date Analyzed: 2013-11-02      Analyzed By: AR  
Prep Batch: 90164      QC Preparation: 2013-11-01      Prepared By: AR

| Parameter              | Flag | Cert | MDL<br>Result | Units | RL  |
|------------------------|------|------|---------------|-------|-----|
| Total Dissolved Solids |      | 2    | <2.50         | mg/L  | 2.5 |

**Method Blank (1)**      QC Batch: 106606

QC Batch: 106606      Date Analyzed: 2013-11-03      Analyzed By: AR  
Prep Batch: 90201      QC Preparation: 2013-11-02      Prepared By: AR

| Parameter              | Flag | Cert | MDL<br>Result | Units | RL  |
|------------------------|------|------|---------------|-------|-----|
| Total Dissolved Solids |      | 2    | <2.50         | mg/L  | 2.5 |

**Method Blank (1)**      QC Batch: 106621

QC Batch: 106621      Date Analyzed: 2013-11-04      Analyzed By: AR  
Prep Batch: 90295      QC Preparation: 2013-11-03      Prepared By: AR

| Parameter            | Flag | Cert | MDL<br>Result | Units         | RL |
|----------------------|------|------|---------------|---------------|----|
| Hydroxide Alkalinity |      | 2    | <20.0         | mg/L as CaCo3 | 20 |

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*method blank continued . . .*

| Parameter              | Flag | Cert | MDL<br>Result | Units         | RL |
|------------------------|------|------|---------------|---------------|----|
| Carbonate Alkalinity   |      | 2    | <20.0         | mg/L as CaCo3 | 20 |
| Bicarbonate Alkalinity |      | 2    | <20.0         | mg/L as CaCo3 | 20 |
| Total Alkalinity       |      | 2    | <20.0         | mg/L as CaCo3 | 20 |

**Method Blank (1)**      QC Batch: 106706

QC Batch: 106706      Date Analyzed: 2013-11-08      Analyzed By: RL  
Prep Batch: 90366      QC Preparation: 2013-11-08      Prepared By: RL

| Parameter | Flag | Cert | MDL<br>Result | Units | RL  |
|-----------|------|------|---------------|-------|-----|
| Chloride  |      | 1    | <0.254        | mg/L  | 2.5 |

**Method Blank (1)**      QC Batch: 106707

QC Batch: 106707      Date Analyzed: 2013-11-08      Analyzed By: RL  
Prep Batch: 90367      QC Preparation: 2013-11-08      Prepared By: RL

| Parameter | Flag | Cert | MDL<br>Result | Units | RL  |
|-----------|------|------|---------------|-------|-----|
| Chloride  |      | 1    | <0.254        | mg/L  | 2.5 |

**Method Blank (1)**      QC Batch: 106707

QC Batch: 106707      Date Analyzed: 2013-11-08      Analyzed By: RL  
Prep Batch: 90367      QC Preparation: 2013-11-08      Prepared By: RL

| Parameter | Flag | Cert | MDL<br>Result | Units | RL  |
|-----------|------|------|---------------|-------|-----|
| Sulfate   |      | 1    | <0.132        | mg/L  | 2.5 |

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**Method Blank (1)**      QC Batch: 106734

QC Batch: 106734  
Prep Batch: 90268

Date Analyzed: 2013-11-13  
QC Preparation: 2013-11-06

Analyzed By: RR  
Prepared By: PM

| Parameter           | Flag | Cert | MDL<br>Result | Units | RL |
|---------------------|------|------|---------------|-------|----|
| Dissolved Calcium   |      | 1    | <0.0441       | mg/L  | 1  |
| Dissolved Potassium |      | 1    | <0.0443       | mg/L  | 1  |
| Dissolved Magnesium |      | 1    | <0.0296       | mg/L  | 1  |
| Dissolved Sodium    |      | 1    | <0.172        | mg/L  | 1  |

**Method Blank (1)**      QC Batch: 106738

QC Batch: 106738  
Prep Batch: 90395

Date Analyzed: 2013-11-12  
QC Preparation: 2013-11-12

Analyzed By: RL  
Prepared By: RL

| Parameter | Flag | Cert | MDL<br>Result | Units | RL  |
|-----------|------|------|---------------|-------|-----|
| Sulfate   |      | 1    | <0.132        | mg/L  | 2.5 |

**Duplicates (1)**      Duplicated Sample: 345371

QC Batch: 106461  
Prep Batch: 90171

Date Analyzed: 2013-11-01  
QC Preparation: 2013-11-01

Analyzed By: AR  
Prepared By: AR

| Param                  |   | Duplicate<br>Result | Sample<br>Result | Units         | Dilution | RPD | RPD<br>Limit |
|------------------------|---|---------------------|------------------|---------------|----------|-----|--------------|
| Hydroxide Alkalinity   | 2 | <20.0               | <20.0            | mg/L as CaCo3 | 1        | 0   | 20           |
| Carbonate Alkalinity   | 2 | <20.0               | <20.0            | mg/L as CaCo3 | 1        | 0   | 20           |
| Bicarbonate Alkalinity | 2 | 149                 | 126              | mg/L as CaCo3 | 1        | 17  | 20           |
| Total Alkalinity       | 2 | 149                 | 126              | mg/L as CaCo3 | 1        | 17  | 20           |

**Duplicates (1)**      Duplicated Sample: 345371

QC Batch: 106464  
Prep Batch: 90131

Date Analyzed: 2013-10-31  
QC Preparation: 2013-10-31

Analyzed By: AR  
Prepared By: AR

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| Param |   | Duplicate<br>Result | Sample<br>Result | Units | Dilution | RPD | RPD<br>Limit |
|-------|---|---------------------|------------------|-------|----------|-----|--------------|
| pH    | 2 | 6.59                | 6.56             | s.u.  | 1        | 0   | 10           |

**Duplicates (1)** Duplicated Sample: 345382

QC Batch: 106465 Date Analyzed: 2013-10-31 Analyzed By: AR  
Prep Batch: 90131 QC Preparation: 2013-10-31 Prepared By: AR

| Param |   | Duplicate<br>Result | Sample<br>Result | Units | Dilution | RPD | RPD<br>Limit |
|-------|---|---------------------|------------------|-------|----------|-----|--------------|
| pH    | 2 | 6.38                | 6.35             | s.u.  | 1        | 0   | 10           |

**Duplicates (1)** Duplicated Sample: 345371

QC Batch: 106604 Date Analyzed: 2013-11-02 Analyzed By: AR  
Prep Batch: 90164 QC Preparation: 2013-11-01 Prepared By: AR

| Param                  |   | Duplicate<br>Result | Sample<br>Result | Units | Dilution | RPD | RPD<br>Limit |
|------------------------|---|---------------------|------------------|-------|----------|-----|--------------|
| Total Dissolved Solids | 2 | 121000              | 113000           | mg/L  | 100      | 7   | 10           |

**Duplicates (1)** Duplicated Sample: 345390

QC Batch: 106606 Date Analyzed: 2013-11-03 Analyzed By: AR  
Prep Batch: 90201 QC Preparation: 2013-11-02 Prepared By: AR

| Param                  |   | Duplicate<br>Result | Sample<br>Result | Units | Dilution | RPD | RPD<br>Limit |
|------------------------|---|---------------------|------------------|-------|----------|-----|--------------|
| Total Dissolved Solids | 2 | 3610                | 3580             | mg/L  | 5        | 1   | 10           |

**Duplicates (1)** Duplicated Sample: 345382

QC Batch: 106621 Date Analyzed: 2013-11-04 Analyzed By: AR  
Prep Batch: 90295 QC Preparation: 2013-11-03 Prepared By: AR

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| Param                  |   | Duplicate<br>Result | Sample<br>Result | Units         | Dilution | RPD | RPD<br>Limit |
|------------------------|---|---------------------|------------------|---------------|----------|-----|--------------|
| Hydroxide Alkalinity   | 2 | <20.0               | <20.0            | mg/L as CaCo3 | 1        | 0   | 20           |
| Carbonate Alkalinity   | 2 | <20.0               | <20.0            | mg/L as CaCo3 | 1        | 0   | 20           |
| Bicarbonate Alkalinity | 2 | 184                 | 175              | mg/L as CaCo3 | 1        | 5   | 20           |
| Total Alkalinity       | 2 | 184                 | 175              | mg/L as CaCo3 | 1        | 5   | 20           |

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## Laboratory Control Spikes

### Laboratory Control Spike (LCS-1)

QC Batch: 106459  
Prep Batch: 90156

Date Analyzed: 2013-11-01  
QC Preparation: 2013-11-01

Analyzed By: AK  
Prepared By: AK

| Param        | F | C | LCS<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit |
|--------------|---|---|---------------|-------|------|-----------------|------------------|------|---------------|
| Benzene      |   | 2 | 0.0900        | mg/L  | 1    | 0.100           | <0.000600        | 90   | 70 - 130      |
| Toluene      |   | 2 | 0.0892        | mg/L  | 1    | 0.100           | <0.000400        | 89   | 70 - 130      |
| Ethylbenzene |   | 2 | 0.0872        | mg/L  | 1    | 0.100           | <0.000600        | 87   | 70 - 130      |
| Xylene       |   | 2 | 0.266         | mg/L  | 1    | 0.300           | <0.00130         | 89   | 70 - 130      |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

| Param        | F | C | LCSD<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit | RPD | RPD<br>Limit |
|--------------|---|---|----------------|-------|------|-----------------|------------------|------|---------------|-----|--------------|
| Benzene      |   | 2 | 0.0895         | mg/L  | 1    | 0.100           | <0.000600        | 90   | 70 - 130      | 1   | 20           |
| Toluene      |   | 2 | 0.0892         | mg/L  | 1    | 0.100           | <0.000400        | 89   | 70 - 130      | 0   | 20           |
| Ethylbenzene |   | 2 | 0.0868         | mg/L  | 1    | 0.100           | <0.000600        | 87   | 70 - 130      | 0   | 20           |
| Xylene       |   | 2 | 0.265          | mg/L  | 1    | 0.300           | <0.00130         | 88   | 70 - 130      | 0   | 20           |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

| Surrogate                    | LCS<br>Result | LCSD<br>Result | Units | Dil. | Spike<br>Amount | LCS<br>Rec. | LCSD<br>Rec. | Rec.<br>Limit |
|------------------------------|---------------|----------------|-------|------|-----------------|-------------|--------------|---------------|
| Trifluorotoluene (TFT)       | 0.0899        | 0.0914         | mg/L  | 1    | 0.100           | 90          | 91           | 70 - 130      |
| 4-Bromofluorobenzene (4-BFB) | 0.0936        | 0.0945         | mg/L  | 1    | 0.100           | 94          | 94           | 70 - 130      |

### Laboratory Control Spike (LCS-1)

QC Batch: 106530  
Prep Batch: 90196

Date Analyzed: 2013-11-05  
QC Preparation: 2013-11-04

Analyzed By: AK  
Prepared By: AK

| Param        | F | C | LCS<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit |
|--------------|---|---|---------------|-------|------|-----------------|------------------|------|---------------|
| Benzene      |   | 2 | 0.104         | mg/L  | 1    | 0.100           | <0.000200        | 104  | 70 - 130      |
| Toluene      |   | 2 | 0.102         | mg/L  | 1    | 0.100           | <0.000300        | 102  | 70 - 130      |
| Ethylbenzene |   | 2 | 0.0984        | mg/L  | 1    | 0.100           | <0.000400        | 98   | 70 - 130      |
| Xylene       |   | 2 | 0.298         | mg/L  | 1    | 0.300           | <0.00120         | 99   | 70 - 130      |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

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| Param        | F | C | LCSD<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit | RPD | RPD<br>Limit |
|--------------|---|---|----------------|-------|------|-----------------|------------------|------|---------------|-----|--------------|
| Benzene      |   | 2 | 0.109          | mg/L  | 1    | 0.100           | <0.000200        | 109  | 70 - 130      | 5   | 20           |
| Toluene      |   | 2 | 0.105          | mg/L  | 1    | 0.100           | <0.000300        | 105  | 70 - 130      | 3   | 20           |
| Ethylbenzene |   | 2 | 0.102          | mg/L  | 1    | 0.100           | <0.000400        | 102  | 70 - 130      | 4   | 20           |
| Xylene       |   | 2 | 0.308          | mg/L  | 1    | 0.300           | <0.00120         | 103  | 70 - 130      | 3   | 20           |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

| Surrogate                    | LCS<br>Result | LCSD<br>Result | Units | Dil. | Spike<br>Amount | LCS<br>Rec. | LCSD<br>Rec. | Rec.<br>Limit |
|------------------------------|---------------|----------------|-------|------|-----------------|-------------|--------------|---------------|
| Trifluorotoluene (TFT)       | 0.101         | 0.104          | mg/L  | 1    | 0.100           | 101         | 104          | 70 - 130      |
| 4-Bromofluorobenzene (4-BFB) | 0.103         | 0.107          | mg/L  | 1    | 0.100           | 103         | 107          | 70 - 130      |

#### Laboratory Control Spike (LCS-1)

QC Batch: 106604  
Prep Batch: 90164

Date Analyzed: 2013-11-02  
QC Preparation: 2013-11-01

Analyzed By: AR  
Prepared By: AR

| Param                  | F | C | LCS<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit |
|------------------------|---|---|---------------|-------|------|-----------------|------------------|------|---------------|
| Total Dissolved Solids |   | 2 | 1010          | mg/L  | 1    | 1000            | <2.50            | 101  | 90 - 110      |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

| Param                  | F | C | LCSD<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit | RPD | RPD<br>Limit |
|------------------------|---|---|----------------|-------|------|-----------------|------------------|------|---------------|-----|--------------|
| Total Dissolved Solids |   | 2 | 981            | mg/L  | 1    | 1000            | <2.50            | 98   | 90 - 110      | 3   | 10           |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

#### Laboratory Control Spike (LCS-1)

QC Batch: 106606  
Prep Batch: 90201

Date Analyzed: 2013-11-03  
QC Preparation: 2013-11-02

Analyzed By: AR  
Prepared By: AR

| Param                  | F | C | LCS<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit |
|------------------------|---|---|---------------|-------|------|-----------------|------------------|------|---------------|
| Total Dissolved Solids |   | 2 | 1050          | mg/L  | 1    | 1000            | <2.50            | 105  | 90 - 110      |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

| Param                  | F | C | LCSD<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit | RPD | RPD<br>Limit |
|------------------------|---|---|----------------|-------|------|-----------------|------------------|------|---------------|-----|--------------|
| Total Dissolved Solids |   | 2 | 960            | mg/L  | 1    | 1000            | <2.50            | 96   | 90 - 110      | 9   | 10           |

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Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

#### Laboratory Control Spike (LCS-1)

QC Batch: 106706  
Prep Batch: 90366

Date Analyzed: 2013-11-08  
QC Preparation: 2013-11-08

Analyzed By: RL  
Prepared By: RL

| Param    | F | C | LCS<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit |
|----------|---|---|---------------|-------|------|-----------------|------------------|------|---------------|
| Chloride |   | 1 | 25.5          | mg/L  | 1    | 25.0            | <0.254           | 102  | 90 - 110      |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

| Param    | F | C | LCSD<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit | RPD | RPD<br>Limit |
|----------|---|---|----------------|-------|------|-----------------|------------------|------|---------------|-----|--------------|
| Chloride |   | 1 | 25.4           | mg/L  | 1    | 25.0            | <0.254           | 102  | 90 - 110      | 0   | 20           |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

#### Laboratory Control Spike (LCS-1)

QC Batch: 106707  
Prep Batch: 90367

Date Analyzed: 2013-11-08  
QC Preparation: 2013-11-08

Analyzed By: RL  
Prepared By: RL

| Param    | F | C | LCS<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit |
|----------|---|---|---------------|-------|------|-----------------|------------------|------|---------------|
| Chloride |   | 1 | 25.3          | mg/L  | 1    | 25.0            | <0.254           | 101  | 90 - 110      |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

| Param    | F | C | LCSD<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit | RPD | RPD<br>Limit |
|----------|---|---|----------------|-------|------|-----------------|------------------|------|---------------|-----|--------------|
| Chloride |   | 1 | 25.2           | mg/L  | 1    | 25.0            | <0.254           | 101  | 90 - 110      | 0   | 20           |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

#### Laboratory Control Spike (LCS-1)

QC Batch: 106707  
Prep Batch: 90367

Date Analyzed: 2013-11-08  
QC Preparation: 2013-11-08

Analyzed By: RL  
Prepared By: RL

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| Param   | F | C | LCS<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit |
|---------|---|---|---------------|-------|------|-----------------|------------------|------|---------------|
| Sulfate |   | 1 | 26.4          | mg/L  | 1    | 25.0            | <0.132           | 106  | 90 - 110      |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

| Param   | F | C | LCSD<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit | RPD | RPD<br>Limit |
|---------|---|---|----------------|-------|------|-----------------|------------------|------|---------------|-----|--------------|
| Sulfate |   | 1 | 25.6           | mg/L  | 1    | 25.0            | <0.132           | 102  | 90 - 110      | 3   | 20           |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

#### Laboratory Control Spike (LCS-1)

QC Batch: 106734  
Prep Batch: 90268

Date Analyzed: 2013-11-13  
QC Preparation: 2013-11-06

Analyzed By: RR  
Prepared By: PM

| Param               | F | C | LCS<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit |
|---------------------|---|---|---------------|-------|------|-----------------|------------------|------|---------------|
| Dissolved Calcium   |   | 1 | 54.6          | mg/L  | 1    | 52.5            | <0.0441          | 104  | 85 - 115      |
| Dissolved Potassium |   | 1 | 52.3          | mg/L  | 1    | 52.5            | <0.0443          | 100  | 85 - 115      |
| Dissolved Magnesium |   | 1 | 53.7          | mg/L  | 1    | 52.5            | <0.0296          | 102  | 85 - 115      |
| Dissolved Sodium    |   | 1 | 53.6          | mg/L  | 1    | 52.5            | <0.172           | 102  | 85 - 115      |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

| Param               | F | C | LCSD<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit | RPD | RPD<br>Limit |
|---------------------|---|---|----------------|-------|------|-----------------|------------------|------|---------------|-----|--------------|
| Dissolved Calcium   |   | 1 | 55.6           | mg/L  | 1    | 52.5            | <0.0441          | 106  | 85 - 115      | 2   | 20           |
| Dissolved Potassium |   | 1 | 53.3           | mg/L  | 1    | 52.5            | <0.0443          | 102  | 85 - 115      | 2   | 20           |
| Dissolved Magnesium |   | 1 | 54.7           | mg/L  | 1    | 52.5            | <0.0296          | 104  | 85 - 115      | 2   | 20           |
| Dissolved Sodium    |   | 1 | 54.3           | mg/L  | 1    | 52.5            | <0.172           | 103  | 85 - 115      | 1   | 20           |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

#### Laboratory Control Spike (LCS-1)

QC Batch: 106738  
Prep Batch: 90395

Date Analyzed: 2013-11-12  
QC Preparation: 2013-11-12

Analyzed By: RL  
Prepared By: RL

| Param   | F | C | LCS<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit |
|---------|---|---|---------------|-------|------|-----------------|------------------|------|---------------|
| Sulfate |   | 1 | 26.6          | mg/L  | 1    | 25.0            | <0.132           | 106  | 90 - 110      |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

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| Param   | F | C | LCSD<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit | RPD | RPD<br>Limit |
|---------|---|---|----------------|-------|------|-----------------|------------------|------|---------------|-----|--------------|
| Sulfate |   | 1 | 26.3           | mg/L  | 1    | 25.0            | <0.132           | 105  | 90 - 110      | 1   | 20           |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

**Matrix Spike (MS-1)** Spiked Sample: 345371

QC Batch: 106459  
Prep Batch: 90156

Date Analyzed: 2013-11-01  
QC Preparation: 2013-11-01

Analyzed By: AK  
Prepared By: AK

| Param        |                |                | MS     |        |      | Spike  | Matrix |           | Rec.  |
|--------------|----------------|----------------|--------|--------|------|--------|--------|-----------|-------|
|              | F              | C              | Result | Units  | Dil. | Amount | Result | Rec.      | Limit |
| Benzene      |                |                | 2      | 0.0833 | mg/L | 1      | 0.100  | <0.000600 | 83    |
| Toluene      |                |                | 2      | 0.0783 | mg/L | 1      | 0.100  | <0.000400 | 78    |
| Ethylbenzene | Q <sub>z</sub> | Q <sub>z</sub> | 2      | 0.0693 | mg/L | 1      | 0.100  | <0.000600 | 69    |
| Xylene       | Q <sub>z</sub> | Q <sub>z</sub> | 2      | 0.207  | mg/L | 1      | 0.300  | <0.00130  | 69    |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

| Param        | F  | C  | MSD    |        | Dil. | Spike<br>Amount | Matrix<br>Result | Rec.      | Rec.  |          | RPD   |    |
|--------------|----|----|--------|--------|------|-----------------|------------------|-----------|-------|----------|-------|----|
|              |    |    | Result | Units  |      |                 |                  |           | Limit | RPD      | Limit |    |
| Benzene      |    |    | 2      | 0.0836 | mg/L | 1               | 0.100            | <0.000600 | 84    | 70 - 130 | 0     | 20 |
| Toluene      |    |    | 2      | 0.0793 | mg/L | 1               | 0.100            | <0.000400 | 79    | 70 - 130 | 1     | 20 |
| Ethylbenzene | Qs | Qs | 2      | 0.0696 | mg/L | 1               | 0.100            | <0.000600 | 70    | 70 - 130 | 0     | 20 |
| Xylene       |    |    | 2      | 0.211  | mg/L | 1               | 0.300            | <0.00130  | 70    | 70 - 130 | 2     | 20 |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

| Surrogate                    | MS<br>Result | MSD<br>Result | Units | Dil. | Spike<br>Amount | MS<br>Rec. | MSD<br>Rec. | Rec.<br>Limit |
|------------------------------|--------------|---------------|-------|------|-----------------|------------|-------------|---------------|
| Trifluorotoluene (TFT)       | 0.0833       | 0.0825        | mg/L  | 1    | 0.1             | 83         | 82          | 70 - 130      |
| 4-Bromofluorobenzene (4-BFB) | 0.0863       | 0.0870        | mg/L  | 1    | 0.1             | 86         | 87          | 70 - 130      |

**Matrix Spike (MS-1)** Spiked Sample: 345429

QC Batch: 106530  
Prep Batch: 90196

Date Analyzed: 2013-11-05  
QC Preparation: 2013-11-04

Analyzed By: AK  
Prepared By: AK

| Param        | F | C | MS<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit |
|--------------|---|---|--------------|-------|------|-----------------|------------------|------|---------------|
| Benzene      |   | 2 | 0.104        | mg/L  | 1    | 0.100           | <0.000200        | 104  | 70 - 130      |
| Toluene      |   | 2 | 0.103        | mg/L  | 1    | 0.100           | <0.000300        | 103  | 70 - 130      |
| Ethylbenzene |   | 2 | 0.0970       | mg/L  | 1    | 0.100           | <0.000400        | 97   | 70 - 130      |

*continued ...*

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| Param  | F | C | MS<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit |
|--------|---|---|--------------|-------|------|-----------------|------------------|------|---------------|
| Xylene |   | 2 | 0.294        | mg/L  | 1    | 0.300           | <0.00120         | 98   | 70 - 130      |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

| Param        | F | C | MSD<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit | RPD | RPD<br>Limit |
|--------------|---|---|---------------|-------|------|-----------------|------------------|------|---------------|-----|--------------|
| Benzene      |   | 2 | 0.100         | mg/L  | 1    | 0.100           | <0.000200        | 100  | 70 - 130      | 4   | 20           |
| Toluene      |   | 2 | 0.0929        | mg/L  | 1    | 0.100           | <0.000300        | 93   | 70 - 130      | 10  | 20           |
| Ethylbenzene |   | 2 | 0.0972        | mg/L  | 1    | 0.100           | <0.000400        | 97   | 70 - 130      | 0   | 20           |
| Xylene       |   | 2 | 0.246         | mg/L  | 1    | 0.300           | <0.00120         | 82   | 70 - 130      | 18  | 20           |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

| Surrogate                    | MS<br>Result | MSD<br>Result | Units | Dil. | Spike<br>Amount | MS<br>Rec. | MSD<br>Rec. | Rec.<br>Limit |
|------------------------------|--------------|---------------|-------|------|-----------------|------------|-------------|---------------|
| Trifluorotoluene (TFT)       | 0.100        | 0.0977        | mg/L  | 1    | 0.1             | 100        | 98          | 70 - 130      |
| 4-Bromofluorobenzene (4-BFB) | 0.104        | 0.0989        | mg/L  | 1    | 0.1             | 104        | 99          | 70 - 130      |

**Matrix Spike (MS-1)** Spiked Sample: 345377

QC Batch: 106706  
Prep Batch: 90366

Date Analyzed: 2013-11-08  
QC Preparation: 2013-11-08

Analyzed By: RL  
Prepared By: RL

| Param    | F | C | MS<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit |
|----------|---|---|--------------|-------|------|-----------------|------------------|------|---------------|
| Chloride |   | 1 | 286000       | mg/L  | 5000 | 125000          | 135837           | 120  | 80 - 120      |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

| Param    | F | C | MSD<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit | RPD | RPD<br>Limit |
|----------|---|---|---------------|-------|------|-----------------|------------------|------|---------------|-----|--------------|
| Chloride |   | 1 | 284000        | mg/L  | 5000 | 125000          | 135837           | 118  | 80 - 120      | 1   | 20           |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

**Matrix Spike (MS-1)** Spiked Sample: 346046

QC Batch: 106707  
Prep Batch: 90367

Date Analyzed: 2013-11-08  
QC Preparation: 2013-11-08

Analyzed By: RL  
Prepared By: RL

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| Param    | F | C | MS<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit |
|----------|---|---|--------------|-------|------|-----------------|------------------|------|---------------|
| Chloride |   | 1 | 1860         | mg/L  | 50   | 1250            | 428              | 114  | 80 - 120      |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

| Param    | F | C | MSD<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit | RPD | RPD<br>Limit |
|----------|---|---|---------------|-------|------|-----------------|------------------|------|---------------|-----|--------------|
| Chloride |   | 1 | 1860          | mg/L  | 50   | 1250            | 428              | 114  | 80 - 120      | 0   | 20           |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

**Matrix Spike (MS-1)** Spiked Sample: 346046

QC Batch: 106707  
Prep Batch: 90367

Date Analyzed: 2013-11-08  
QC Preparation: 2013-11-08

Analyzed By: RL  
Prepared By: RL

| Param   | F | C | MS<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit |
|---------|---|---|--------------|-------|------|-----------------|------------------|------|---------------|
| Sulfate |   | 1 | 1530         | mg/L  | 50   | 1250            | 138              | 111  | 80 - 120      |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

| Param   | F | C | MSD<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit | RPD | RPD<br>Limit |
|---------|---|---|---------------|-------|------|-----------------|------------------|------|---------------|-----|--------------|
| Sulfate |   | 1 | 1530          | mg/L  | 50   | 1250            | 138              | 111  | 80 - 120      | 0   | 20           |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

**Matrix Spike (MS-1)** Spiked Sample: 345371

QC Batch: 106734  
Prep Batch: 90268

Date Analyzed: 2013-11-13  
QC Preparation: 2013-11-06

Analyzed By: RR  
Prepared By: PM

| Param               | F | C | MS<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit |
|---------------------|---|---|--------------|-------|------|-----------------|------------------|------|---------------|
| Dissolved Calcium   |   | 1 | 6650         | mg/L  | 1    | 500             | 6210             | 88   | 75 - 125      |
| Dissolved Potassium |   | 1 | 664          | mg/L  | 1    | 500             | 147              | 103  | 75 - 125      |
| Dissolved Magnesium |   | 1 | 3470         | mg/L  | 1    | 500             | 3000             | 94   | 75 - 125      |
| Dissolved Sodium    |   | 1 | 26800        | mg/L  | 1    | 500             | 26300            | 100  | 75 - 125      |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

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*matrix spikes continued ...*

| Param               | F | C | MSD<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit | RPD | RPD<br>Limit |
|---------------------|---|---|---------------|-------|------|-----------------|------------------|------|---------------|-----|--------------|
| Param               | F | C | MSD<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit | RPD | RPD<br>Limit |
| Dissolved Calcium   |   | 1 | 6700          | mg/L  | 1    | 500             | 6210             | 98   | 75 - 125      | 1   | 20           |
| Dissolved Potassium |   | 1 | 640           | mg/L  | 1    | 500             | 147              | 99   | 75 - 125      | 4   | 20           |
| Dissolved Magnesium |   | 1 | 3390          | mg/L  | 1    | 500             | 3000             | 78   | 75 - 125      | 2   | 20           |
| Dissolved Sodium    |   | 1 | 26800         | mg/L  | 1    | 500             | 26300            | 100  | 75 - 125      | 0   | 20           |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

**Matrix Spike (MS-1)**      Spiked Sample: 346002

QC Batch: 106738  
Prep Batch: 90395

Date Analyzed: 2013-11-12  
QC Preparation: 2013-11-12

Analyzed By: RL  
Prepared By: RL

| Param   | F | C | MS<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit |
|---------|---|---|--------------|-------|------|-----------------|------------------|------|---------------|
| Sulfate |   | 1 | 381          | mg/L  | 10   | 250             | 81.9             | 120  | 80 - 120      |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

| Param   | F | C | MSD<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit | RPD | RPD<br>Limit |
|---------|---|---|---------------|-------|------|-----------------|------------------|------|---------------|-----|--------------|
| Sulfate |   | 1 | 358           | mg/L  | 10   | 250             | 81.9             | 110  | 80 - 120      | 6   | 20           |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

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## Calibration Standards

### Standard (CCV-1)

QC Batch: 106459

Date Analyzed: 2013-11-01

Analyzed By: AK

| Param        | Flag | Cert | Units | CCVs<br>True<br>Conc. | CCVs<br>Found<br>Conc. | CCVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|--------------|------|------|-------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| Benzene      |      | 2    | mg/L  | 0.100                 | 0.0895                 | 90                          | 80 - 120                      | 2013-11-01       |
| Toluene      |      | 2    | mg/L  | 0.100                 | 0.0887                 | 89                          | 80 - 120                      | 2013-11-01       |
| Ethylbenzene |      | 2    | mg/L  | 0.100                 | 0.0871                 | 87                          | 80 - 120                      | 2013-11-01       |
| Xylene       |      | 2    | mg/L  | 0.300                 | 0.264                  | 88                          | 80 - 120                      | 2013-11-01       |

### Standard (CCV-2)

QC Batch: 106459

Date Analyzed: 2013-11-01

Analyzed By: AK

| Param        | Flag | Cert | Units | CCVs<br>True<br>Conc. | CCVs<br>Found<br>Conc. | CCVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|--------------|------|------|-------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| Benzene      |      | 2    | mg/L  | 0.100                 | 0.0855                 | 86                          | 80 - 120                      | 2013-11-01       |
| Toluene      |      | 2    | mg/L  | 0.100                 | 0.0853                 | 85                          | 80 - 120                      | 2013-11-01       |
| Ethylbenzene |      | 2    | mg/L  | 0.100                 | 0.0851                 | 85                          | 80 - 120                      | 2013-11-01       |
| Xylene       |      | 2    | mg/L  | 0.300                 | 0.256                  | 85                          | 80 - 120                      | 2013-11-01       |

### Standard (CCV-3)

QC Batch: 106459

Date Analyzed: 2013-11-01

Analyzed By: AK

| Param        | Flag | Cert | Units | CCVs<br>True<br>Conc. | CCVs<br>Found<br>Conc. | CCVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|--------------|------|------|-------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| Benzene      |      | 2    | mg/L  | 0.100                 | 0.0898                 | 90                          | 80 - 120                      | 2013-11-01       |
| Toluene      |      | 2    | mg/L  | 0.100                 | 0.0877                 | 88                          | 80 - 120                      | 2013-11-01       |
| Ethylbenzene |      | 2    | mg/L  | 0.100                 | 0.0871                 | 87                          | 80 - 120                      | 2013-11-01       |
| Xylene       |      | 2    | mg/L  | 0.300                 | 0.263                  | 88                          | 80 - 120                      | 2013-11-01       |

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#### Standard (CCV-4)

QC Batch: 106459

Date Analyzed: 2013-11-01

Analyzed By: AK

| Param        | Flag | Cert | Units | CCVs<br>True<br>Conc. | CCVs<br>Found<br>Conc. | CCVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|--------------|------|------|-------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| Benzene      |      | 2    | mg/L  | 0.100                 | 0.0905                 | 90                          | 80 - 120                      | 2013-11-01       |
| Toluene      |      | 2    | mg/L  | 0.100                 | 0.0889                 | 89                          | 80 - 120                      | 2013-11-01       |
| Ethylbenzene |      | 2    | mg/L  | 0.100                 | 0.0872                 | 87                          | 80 - 120                      | 2013-11-01       |
| Xylene       |      | 2    | mg/L  | 0.300                 | 0.263                  | 88                          | 80 - 120                      | 2013-11-01       |

#### Standard (ICV-1)

QC Batch: 106461

Date Analyzed: 2013-11-01

Analyzed By: AR

| Param                  | Flag | Cert | Units         | ICVs<br>True<br>Conc. | ICVs<br>Found<br>Conc. | ICVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|------------------------|------|------|---------------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| Hydroxide Alkalinity   |      | 2    | mg/L as CaCo3 | 0.00                  | <20.0                  |                             | -                             | 2013-11-01       |
| Carbonate Alkalinity   |      | 2    | mg/L as CaCo3 | 0.00                  | 232                    |                             | -                             | 2013-11-01       |
| Bicarbonate Alkalinity |      | 2    | mg/L as CaCo3 | 0.00                  | <20.0                  |                             | -                             | 2013-11-01       |
| Total Alkalinity       |      | 2    | mg/L as CaCo3 | 250                   | 233                    | 93                          | 90 - 110                      | 2013-11-01       |

#### Standard (CCV-1)

QC Batch: 106461

Date Analyzed: 2013-11-01

Analyzed By: AR

| Param                  | Flag | Cert | Units         | CCVs<br>True<br>Conc. | CCVs<br>Found<br>Conc. | CCVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|------------------------|------|------|---------------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| Hydroxide Alkalinity   |      | 2    | mg/L as CaCo3 | 0.00                  | <20.0                  |                             | -                             | 2013-11-01       |
| Carbonate Alkalinity   |      | 2    | mg/L as CaCo3 | 0.00                  | 214                    |                             | -                             | 2013-11-01       |
| Bicarbonate Alkalinity |      | 2    | mg/L as CaCo3 | 0.00                  | <20.0                  |                             | -                             | 2013-11-01       |
| Total Alkalinity       |      | 2    | mg/L as CaCo3 | 250                   | 232                    | 93                          | 90 - 110                      | 2013-11-01       |

#### Standard (ICV-1)

QC Batch: 106464

Date Analyzed: 2013-10-31

Analyzed By: AR

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| Param | Flag | Cert | Units | ICVs<br>True<br>Conc. | ICVs<br>Found<br>Conc. | ICVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|-------|------|------|-------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| pH    |      | 2    | s.u.  | 7.00                  | 6.99                   | 100                         | 98 - 102                      | 2013-10-31       |

**Standard (CCV-1)**

QC Batch: 106464

Date Analyzed: 2013-10-31

Analyzed By: AR

| Param | Flag | Cert | Units | CCVs<br>True<br>Conc. | CCVs<br>Found<br>Conc. | CCVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|-------|------|------|-------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| pH    |      | 2    | s.u.  | 7.00                  | 7.05                   | 101                         | 98 - 102                      | 2013-10-31       |

**Standard (ICV-1)**

QC Batch: 106465

Date Analyzed: 2013-10-31

Analyzed By: AR

| Param | Flag | Cert | Units | ICVs<br>True<br>Conc. | ICVs<br>Found<br>Conc. | ICVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|-------|------|------|-------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| pH    |      | 2    | s.u.  | 7.00                  | 7.04                   | 100                         | 98 - 102                      | 2013-10-31       |

**Standard (CCV-1)**

QC Batch: 106465

Date Analyzed: 2013-10-31

Analyzed By: AR

| Param | Flag | Cert | Units | CCVs<br>True<br>Conc. | CCVs<br>Found<br>Conc. | CCVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|-------|------|------|-------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| pH    |      | 2    | s.u.  | 7.00                  | 7.09                   | 101                         | 98 - 102                      | 2013-10-31       |

**Standard (CCV-1)**

QC Batch: 106530

Date Analyzed: 2013-11-05

Analyzed By: AK

Report Date: November 15, 2013  
114-6401627

Work Order: 13103133  
Celero/Rock Queen #1 TB

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| Param        | Flag | Cert | Units | CCVs<br>True<br>Conc. | CCVs<br>Found<br>Conc. | CCVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|--------------|------|------|-------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| Benzene      |      | 2    | mg/L  | 0.100                 | 0.105                  | 105                         | 80 - 120                      | 2013-11-05       |
| Toluene      |      | 2    | mg/L  | 0.100                 | 0.104                  | 104                         | 80 - 120                      | 2013-11-05       |
| Ethylbenzene |      | 2    | mg/L  | 0.100                 | 0.102                  | 102                         | 80 - 120                      | 2013-11-05       |
| Xylene       |      | 2    | mg/L  | 0.300                 | 0.308                  | 103                         | 80 - 120                      | 2013-11-05       |

#### Standard (CCV-2)

QC Batch: 106530

Date Analyzed: 2013-11-05

Analyzed By: AK

| Param        | Flag | Cert | Units | CCVs<br>True<br>Conc. | CCVs<br>Found<br>Conc. | CCVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|--------------|------|------|-------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| Benzene      |      | 2    | mg/L  | 0.100                 | 0.101                  | 101                         | 80 - 120                      | 2013-11-05       |
| Toluene      |      | 2    | mg/L  | 0.100                 | 0.0996                 | 100                         | 80 - 120                      | 2013-11-05       |
| Ethylbenzene |      | 2    | mg/L  | 0.100                 | 0.0963                 | 96                          | 80 - 120                      | 2013-11-05       |
| Xylene       |      | 2    | mg/L  | 0.300                 | 0.290                  | 97                          | 80 - 120                      | 2013-11-05       |

#### Standard (ICV-1)

QC Batch: 106621

Date Analyzed: 2013-11-04

Analyzed By: AR

| Param                  | Flag | Cert | Units         | ICVs<br>True<br>Conc. | ICVs<br>Found<br>Conc. | ICVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|------------------------|------|------|---------------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| Hydroxide Alkalinity   |      | 2    | mg/L as CaCo3 | 0.00                  | 21.0                   | -                           | -                             | 2013-11-04       |
| Carbonate Alkalinity   |      | 2    | mg/L as CaCo3 | 0.00                  | 210                    | -                           | -                             | 2013-11-04       |
| Bicarbonate Alkalinity |      | 2    | mg/L as CaCo3 | 0.00                  | <20.0                  | -                           | -                             | 2013-11-04       |
| Total Alkalinity       |      | 2    | mg/L as CaCo3 | 250                   | 231                    | 92                          | 90 - 110                      | 2013-11-04       |

#### Standard (CCV-1)

QC Batch: 106621

Date Analyzed: 2013-11-04

Analyzed By: AR

| Param                | Flag | Cert | Units         | CCVs<br>True<br>Conc. | CCVs<br>Found<br>Conc. | CCVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|----------------------|------|------|---------------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| Hydroxide Alkalinity |      | 2    | mg/L as CaCo3 | 0.00                  | 32.0                   | -                           | -                             | 2013-11-04       |

*continued ...*

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114-6401627

Work Order: 13103133  
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standard continued ...

| Param                  | Flag | Cert | Units         | CCVs<br>True<br>Conc. | CCVs<br>Found<br>Conc. | CCVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|------------------------|------|------|---------------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| Carbonate Alkalinity   |      | 2    | mg/L as CaCo3 | 0.00                  | 198                    |                             | -                             | 2013-11-04       |
| Bicarbonate Alkalinity |      | 2    | mg/L as CaCo3 | 0.00                  | <20.0                  |                             | -                             | 2013-11-04       |
| Total Alkalinity       |      | 2    | mg/L as CaCo3 | 250                   | 230                    | 92                          | 90 - 110                      | 2013-11-04       |

#### Standard (CCV-1)

QC Batch: 106706

Date Analyzed: 2013-11-08

Analyzed By: RL

| Param    | Flag | Cert | Units | CCVs<br>True<br>Conc. | CCVs<br>Found<br>Conc. | CCVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|----------|------|------|-------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| Chloride |      | 1    | mg/L  | 25.0                  | 25.3                   | 101                         | 90 - 110                      | 2013-11-08       |

#### Standard (CCV-2)

QC Batch: 106706

Date Analyzed: 2013-11-08

Analyzed By: RL

| Param    | Flag | Cert | Units | CCVs<br>True<br>Conc. | CCVs<br>Found<br>Conc. | CCVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|----------|------|------|-------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| Chloride |      | 1    | mg/L  | 25.0                  | 25.3                   | 101                         | 90 - 110                      | 2013-11-08       |

#### Standard (CCV-1)

QC Batch: 106707

Date Analyzed: 2013-11-08

Analyzed By: RL

| Param    | Flag | Cert | Units | CCVs<br>True<br>Conc. | CCVs<br>Found<br>Conc. | CCVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|----------|------|------|-------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| Chloride |      | 1    | mg/L  | 25.0                  | 25.3                   | 101                         | 90 - 110                      | 2013-11-08       |

#### Standard (CCV-1)

QC Batch: 106707

Date Analyzed: 2013-11-08

Analyzed By: RL

Report Date: November 15, 2013  
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| Param   | Flag | Cert | Units | CCVs<br>True<br>Conc. | CCVs<br>Found<br>Conc. | CCVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|---------|------|------|-------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| Sulfate |      | 1    | mg/L  | 25.0                  | 26.3                   | 105                         | 90 - 110                      | 2013-11-08       |

#### Standard (CCV-2)

QC Batch: 106707

Date Analyzed: 2013-11-08

Analyzed By: RL

| Param    | Flag | Cert | Units | CCVs<br>True<br>Conc. | CCVs<br>Found<br>Conc. | CCVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|----------|------|------|-------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| Chloride |      | 1    | mg/L  | 25.0                  | 25.2                   | 101                         | 90 - 110                      | 2013-11-08       |

#### Standard (CCV-2)

QC Batch: 106707

Date Analyzed: 2013-11-08

Analyzed By: RL

| Param   | Flag | Cert | Units | CCVs<br>True<br>Conc. | CCVs<br>Found<br>Conc. | CCVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|---------|------|------|-------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| Sulfate |      | 1    | mg/L  | 25.0                  | 26.1                   | 104                         | 90 - 110                      | 2013-11-08       |

#### Standard (ICV-1)

QC Batch: 106734

Date Analyzed: 2013-11-13

Analyzed By: RR

| Param               | Flag | Cert | Units | ICVs<br>True<br>Conc. | ICVs<br>Found<br>Conc. | ICVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|---------------------|------|------|-------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| Dissolved Calcium   |      | 1    | mg/L  | 51.0                  | 52.9                   | 104                         | 90 - 110                      | 2013-11-13       |
| Dissolved Potassium |      | 1    | mg/L  | 55.0                  | 56.3                   | 102                         | 90 - 110                      | 2013-11-13       |
| Dissolved Magnesium |      | 1    | mg/L  | 51.0                  | 52.7                   | 103                         | 90 - 110                      | 2013-11-13       |
| Dissolved Sodium    |      | 1    | mg/L  | 51.0                  | 50.8                   | 100                         | 90 - 110                      | 2013-11-13       |

#### Standard (CCV-1)

QC Batch: 106734

Date Analyzed: 2013-11-13

Analyzed By: RR

Report Date: November 15, 2013  
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Celero/Rock Queen #1 TB

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| Param               | Flag | Cert | Units | CCVs<br>True<br>Conc. | CCVs<br>Found<br>Conc. | CCVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|---------------------|------|------|-------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| Dissolved Calcium   |      | 1    | mg/L  | 51.0                  | 51.6                   | 101                         | 90 - 110                      | 2013-11-13       |
| Dissolved Potassium |      | 1    | mg/L  | 55.0                  | 54.8                   | 100                         | 90 - 110                      | 2013-11-13       |
| Dissolved Magnesium |      | 1    | mg/L  | 51.0                  | 51.1                   | 100                         | 90 - 110                      | 2013-11-13       |
| Dissolved Sodium    |      | 1    | mg/L  | 51.0                  | 50.8                   | 100                         | 90 - 110                      | 2013-11-13       |

#### Standard (CCV-1)

QC Batch: 106738

Date Analyzed: 2013-11-12

Analyzed By: RL

| Param   | Flag | Cert | Units | CCVs<br>True<br>Conc. | CCVs<br>Found<br>Conc. | CCVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|---------|------|------|-------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| Sulfate |      | 1    | mg/L  | 25.0                  | 26.4                   | 106                         | 90 - 110                      | 2013-11-12       |

#### Standard (CCV-2)

QC Batch: 106738

Date Analyzed: 2013-11-12

Analyzed By: RL

| Param   | Flag | Cert | Units | CCVs<br>True<br>Conc. | CCVs<br>Found<br>Conc. | CCVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|---------|------|------|-------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| Sulfate |      | 1    | mg/L  | 25.0                  | 26.0                   | 104                         | 90 - 110                      | 2013-11-12       |

## Appendix

### Report Definitions

| Name | Definition                 |
|------|----------------------------|
| MDL  | Method Detection Limit     |
| MQL  | Minimum Quantitation Limit |
| SDL  | Sample Detection Limit     |

### Laboratory Certifications

|   | Certifying Authority | Certification Number | Laboratory Location |
|---|----------------------|----------------------|---------------------|
| - | NCTRCA               | WFWB384444Y0909      | TraceAnalysis       |
| - | DBE                  | VN 20657             | TraceAnalysis       |
| - | HUB                  | 1752439743100-86536  | TraceAnalysis       |
| - | WBE                  | 237019               | TraceAnalysis       |
| 1 | NELAP                | T104704219-13-9      | Lubbock             |
| 2 | NELAP                | T104704392-13-7      | Midland             |

### Standard Flags

| F   | Description                                                                                                                                                                                                                         |
|-----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| B   | Analyte detected in the corresponding method blank above the method detection limit                                                                                                                                                 |
| H   | Analyzed out of hold time                                                                                                                                                                                                           |
| J   | Estimated concentration                                                                                                                                                                                                             |
| Jb  | The analyte is positively identified and the value is approximated between the SDL and MQL. Sample contains less than ten times the concentration found in the method blank. The result should be considered non-detect to the SDL. |
| Je  | Estimated concentration exceeding calibration range.                                                                                                                                                                                |
| MI1 | Split peak or shoulder peak                                                                                                                                                                                                         |
| MI2 | Instrument software did not integrate                                                                                                                                                                                               |
| MI3 | Instrument software misidentified the peak                                                                                                                                                                                          |
| MI4 | Instrument software integrated improperly                                                                                                                                                                                           |
| MI5 | Baseline correction                                                                                                                                                                                                                 |
| Qc  | Calibration check outside of laboratory limits.                                                                                                                                                                                     |
| Qr  | RPD outside of laboratory limits                                                                                                                                                                                                    |
| Qs  | Spike recovery outside of laboratory limits.                                                                                                                                                                                        |
| Qsr | Surrogate recovery outside of laboratory limits.                                                                                                                                                                                    |
| U   | The analyte is not detected above the SDL                                                                                                                                                                                           |

## Result Comments

- 1 Sample confirmed by reanalysis, TFT failed due to matrix effect.
- 2 Sample confirmed by reanalysis, TFT failed due to matrix effect.

## Attachments

The scanned attachments will follow this page.  
Please note, each attachment may consist of more than one page.

