1R – 1554

2013 AGWMR

04 / 21 / 2012

TETRA TECH

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

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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 (SO4) 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

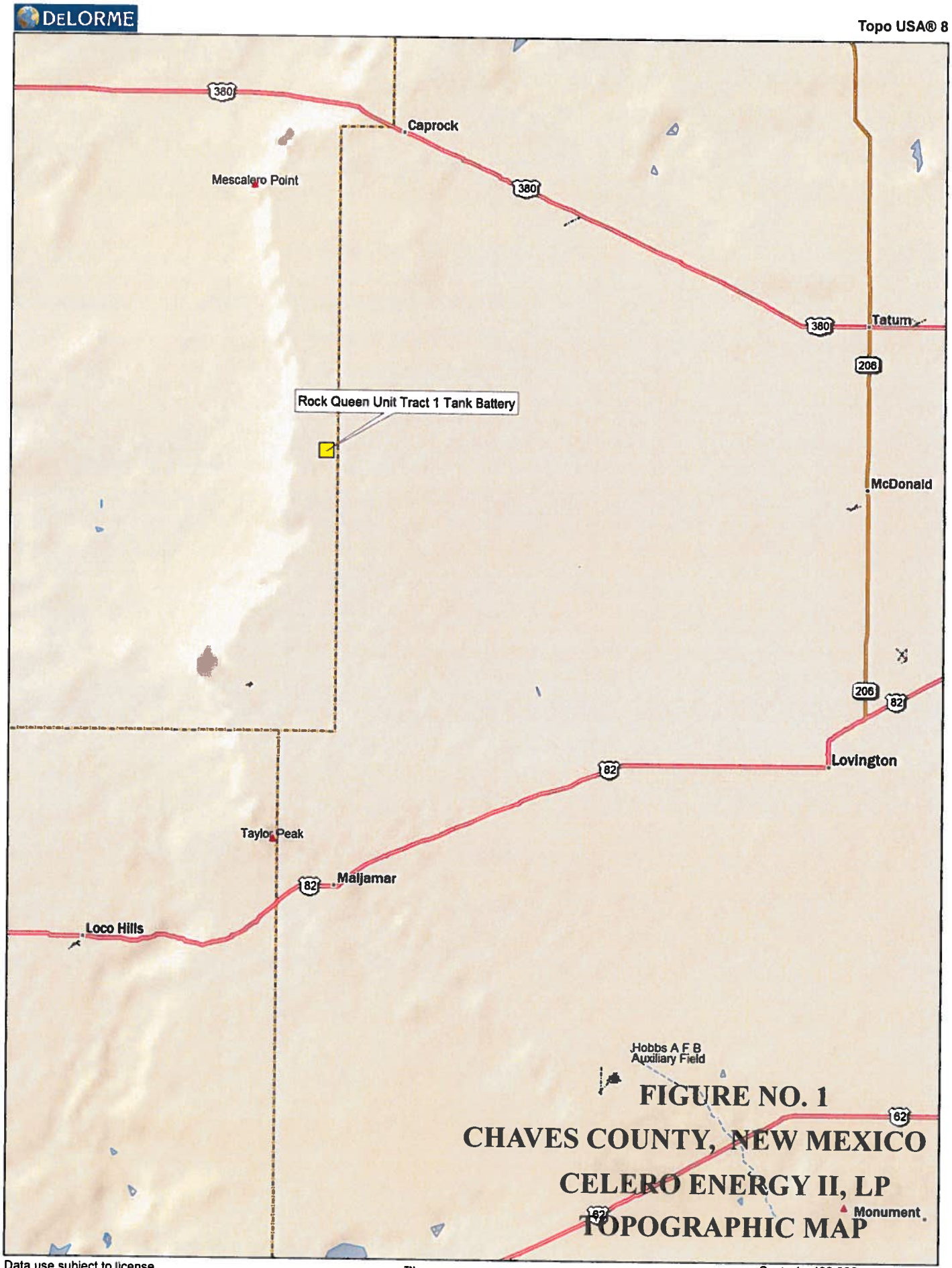

FIGURE NO. 1
CHAVES COUNTY, NEW MEXICO
CELERO ENERGY II, LP
TOPOGRAPHIC MAP

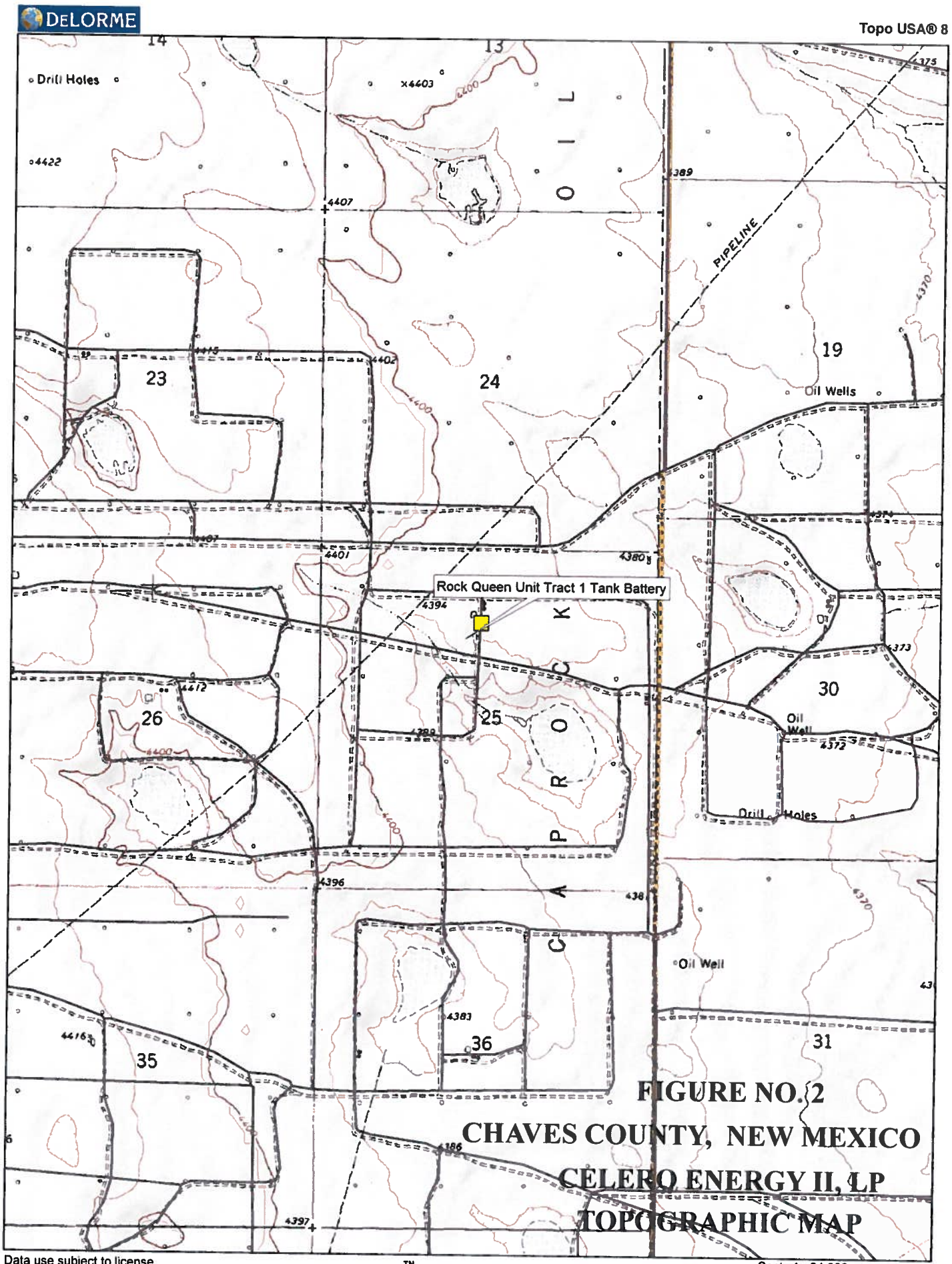

FIGURE NO. 2

CHAVES COUNTY, NEW MEXICO

CELERO ENERGY II, LP

TOPOGRAPHIC MAP

APPENDIX A
LABORATORY ANALYTICAL

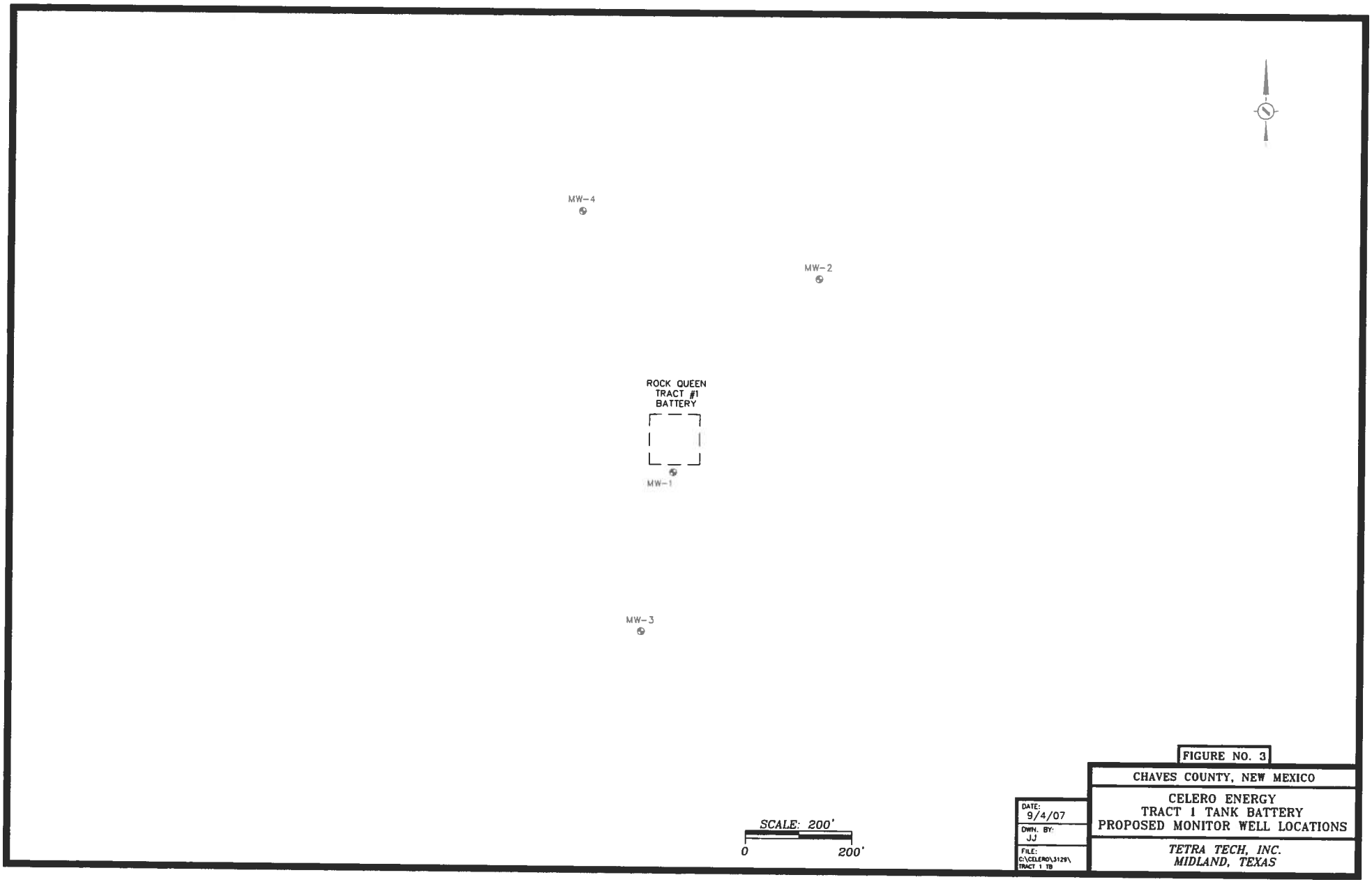

FIGURE NO. 3

CHAVES COUNTY, NEW MEXICO

CELERO ENERGY
TRACT 1 TANK BATTERY
PROPOSED MONITOR WELL LOCATIONS

TETRA TECH, INC.
MIDLAND, TEXAS

DATE: 9/4/07
DWN. BY: JJ
FILE: C:\CELERO\3129\TRACT 1 TB

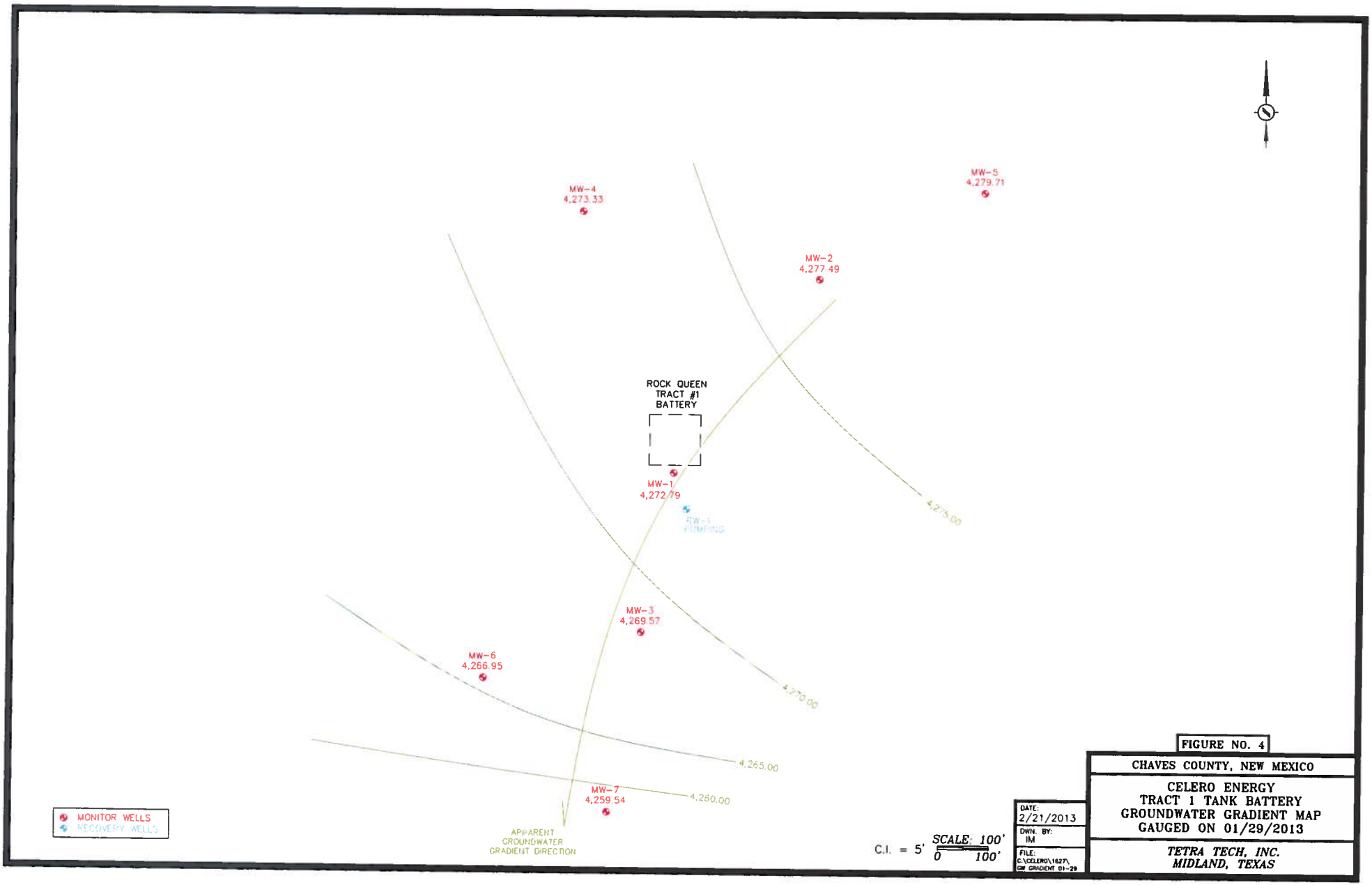

FIGURE NO. 4

CHAVES COUNTY, NEW MEXICO

CELERO ENERGY
TRACT 1 TANK BATTERY
GROUNDWATER GRADIENT MAP
GAUGED ON 01/29/2013

TETRA TECH, INC.
MIDLAND, TEXAS

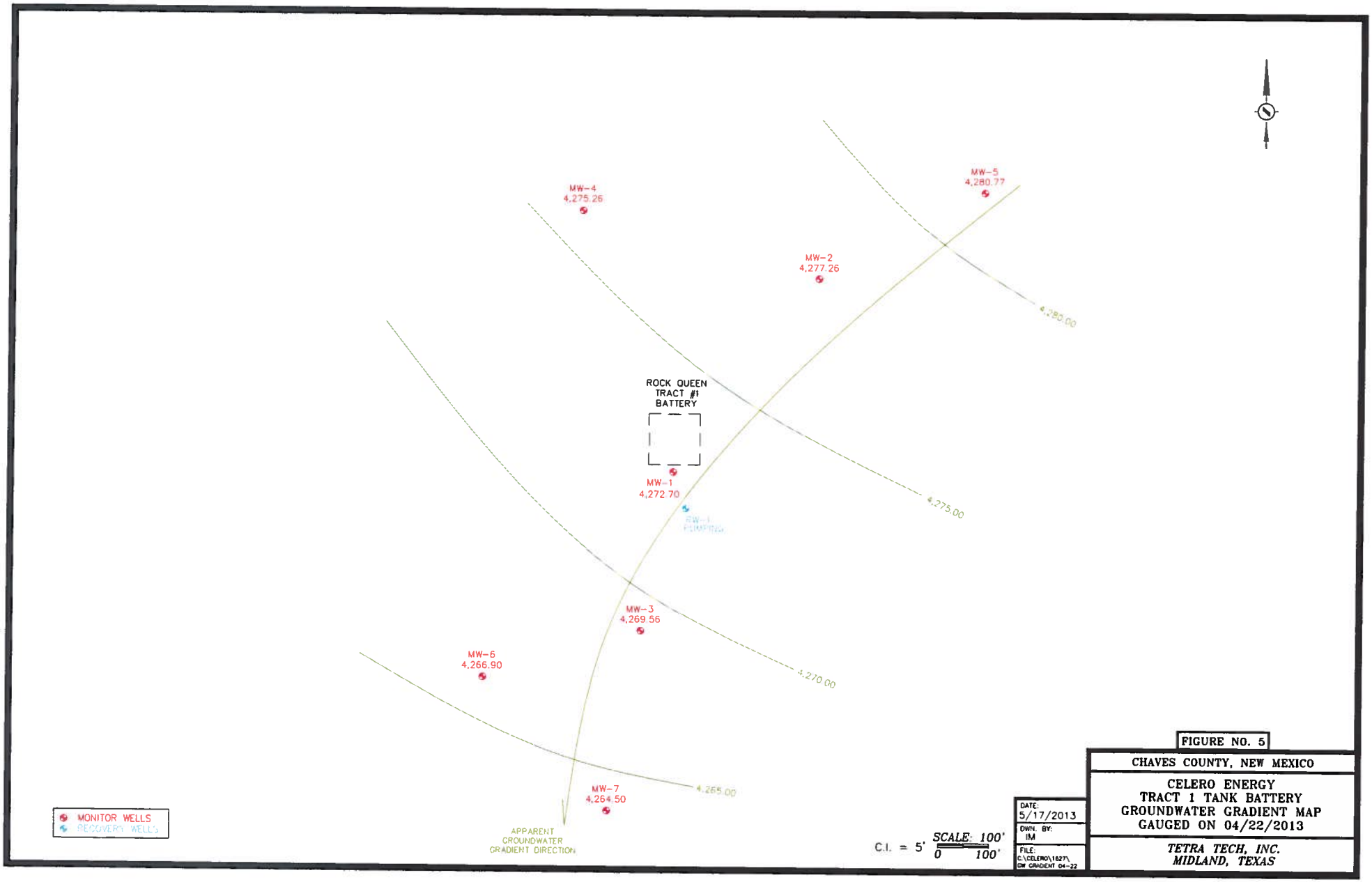

FIGURE NO. 5

CHAVES COUNTY, NEW MEXICO

CELERO ENERGY
TRACT 1 TANK BATTERY
GROUNDWATER GRADIENT MAP
GAUGED ON 04/22/2013

TETRA TECH, INC.
MIDLAND, TEXAS

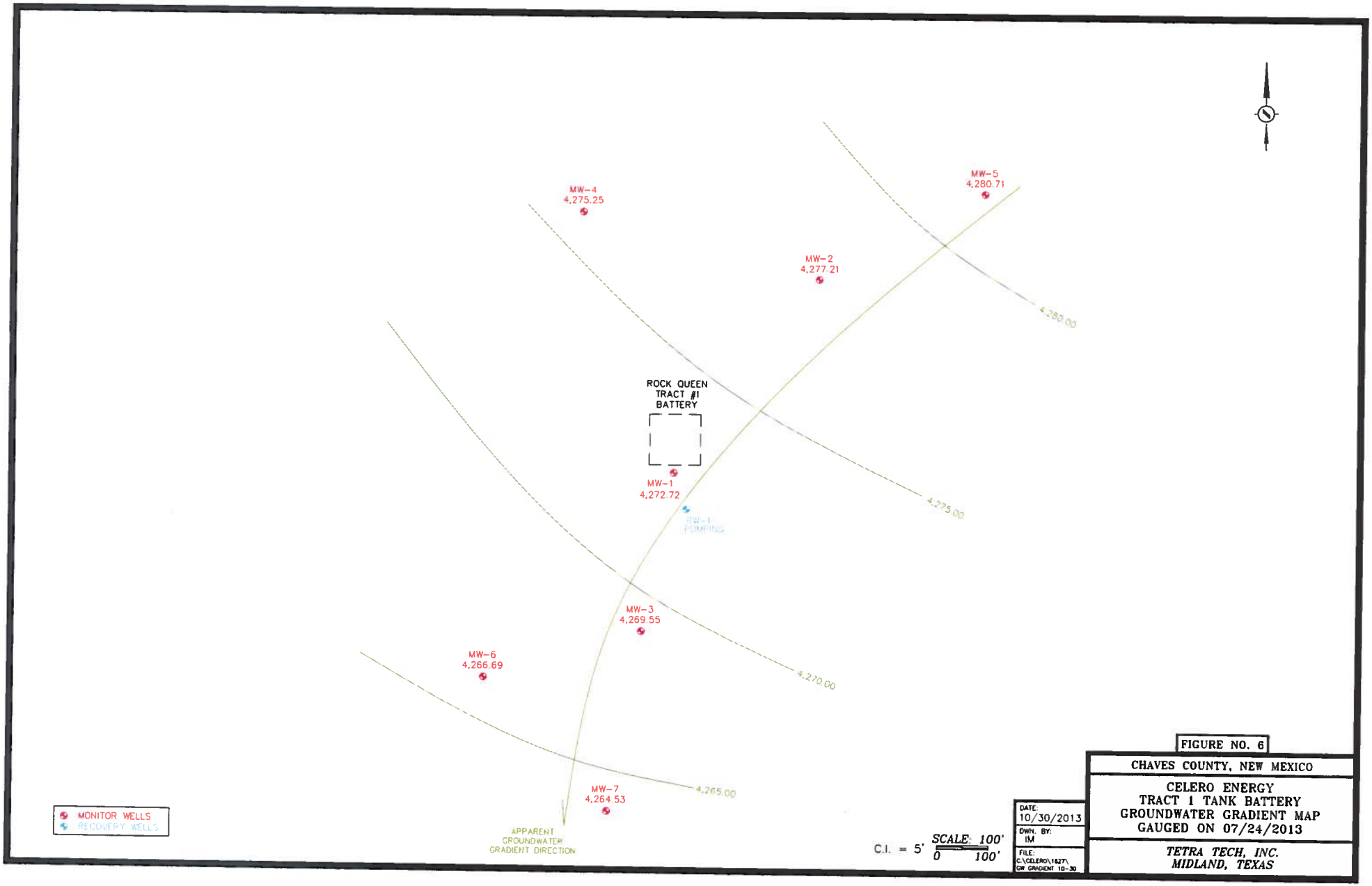

FIGURE NO. 6

CHAVES COUNTY, NEW MEXICO

CELERO ENERGY
TRACT 1 TANK BATTERY
GROUNDWATER GRADIENT MAP
GAUGED ON 07/24/2013

TETRA TECH, INC.
MIDLAND, TEXAS

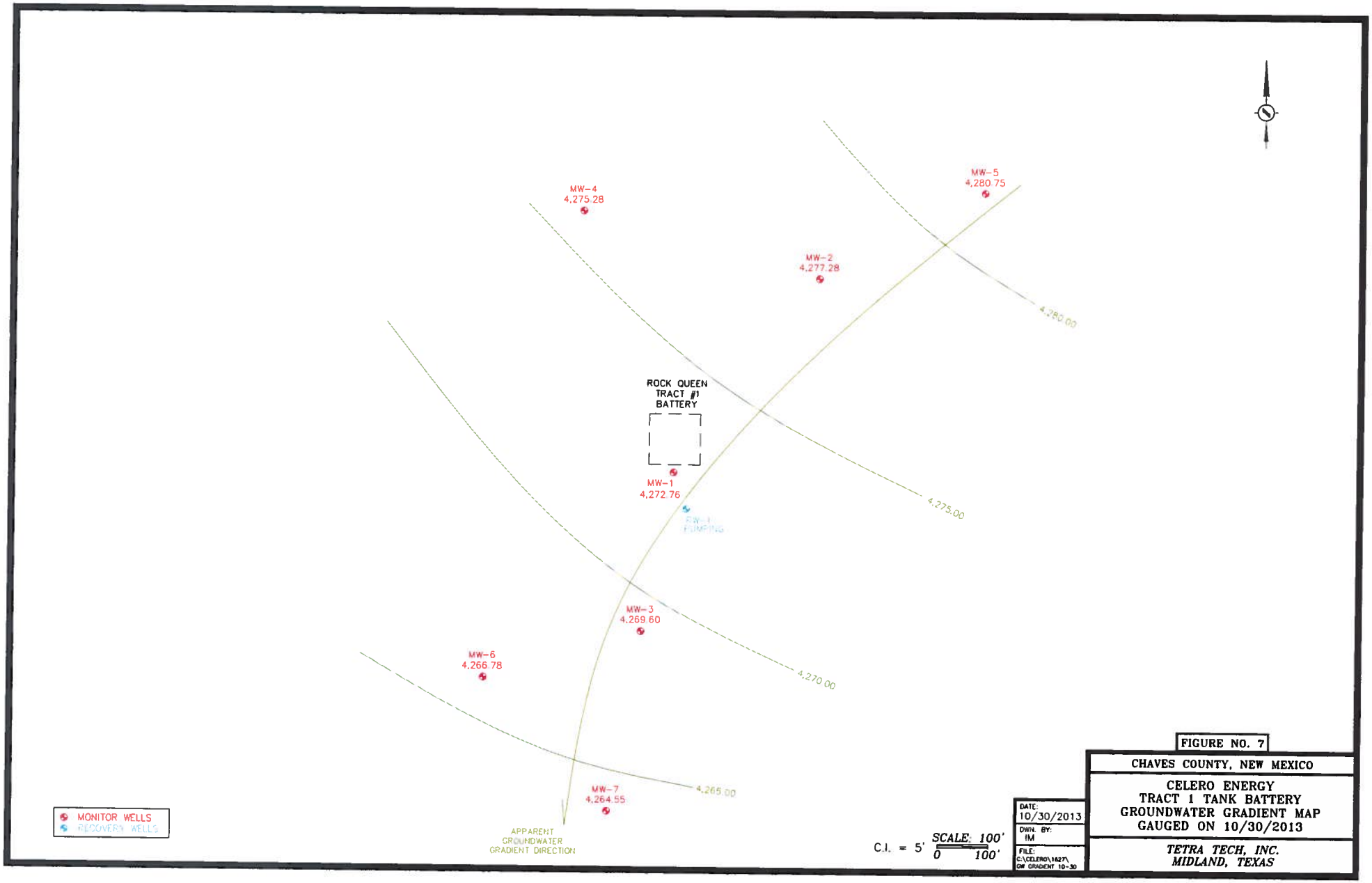

FIGURE NO. 7

CHAVES COUNTY, NEW MEXICO

CELERO ENERGY
TRACT 1 TANK BATTERY
GROUNDWATER GRADIENT MAP
GAUGED ON 10/30/2013

TETRA TECH, INC.
MIDLAND, TEXAS

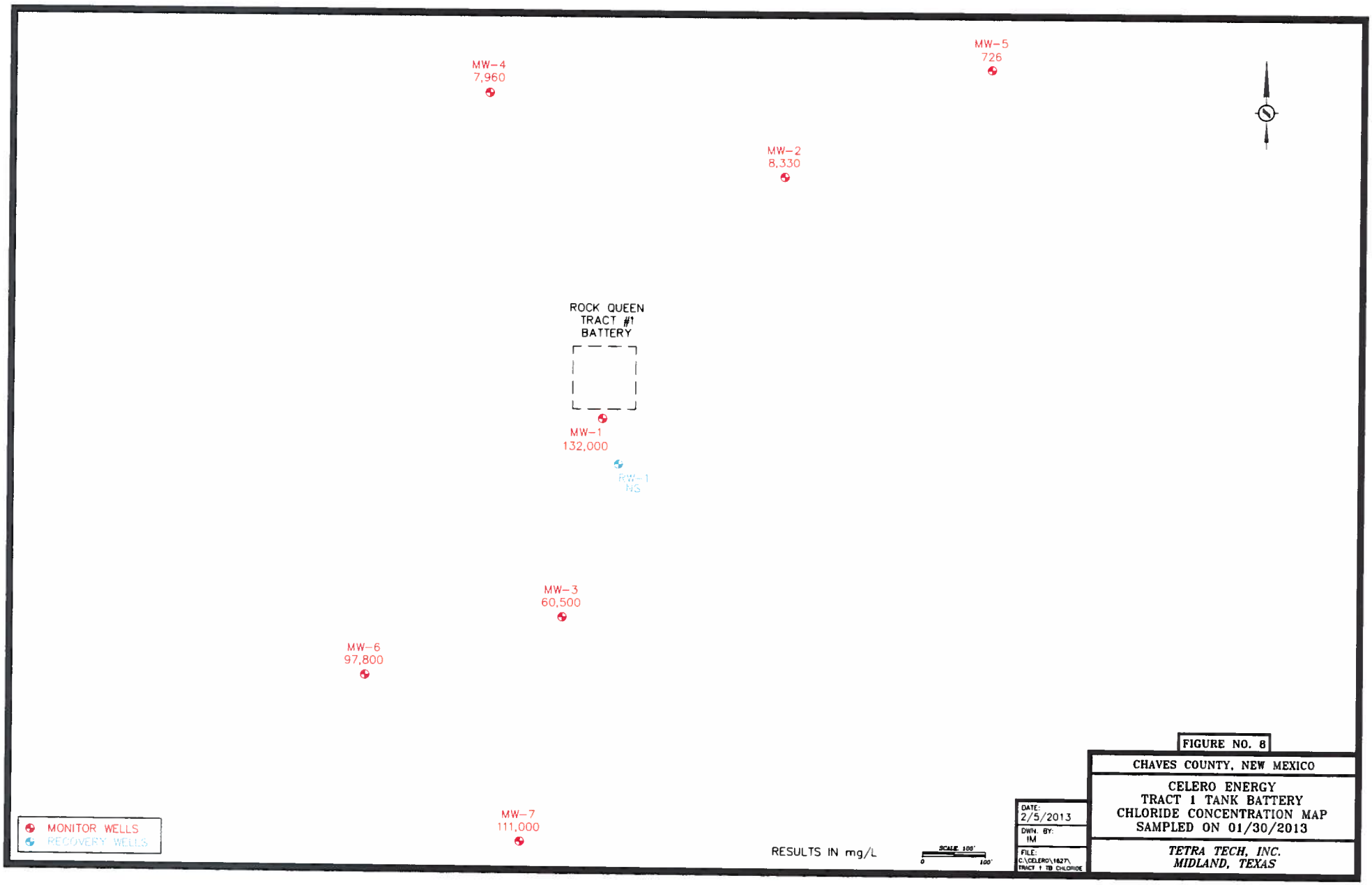

FIGURE NO. 6

CHAVES COUNTY, NEW MEXICO

CELERO ENERGY
TRACT 1 TANK BATTERY
CHLORIDE CONCENTRATION MAP
SAMPLED ON 01/30/2013

TETRA TECH, INC.
MIDLAND, TEXAS

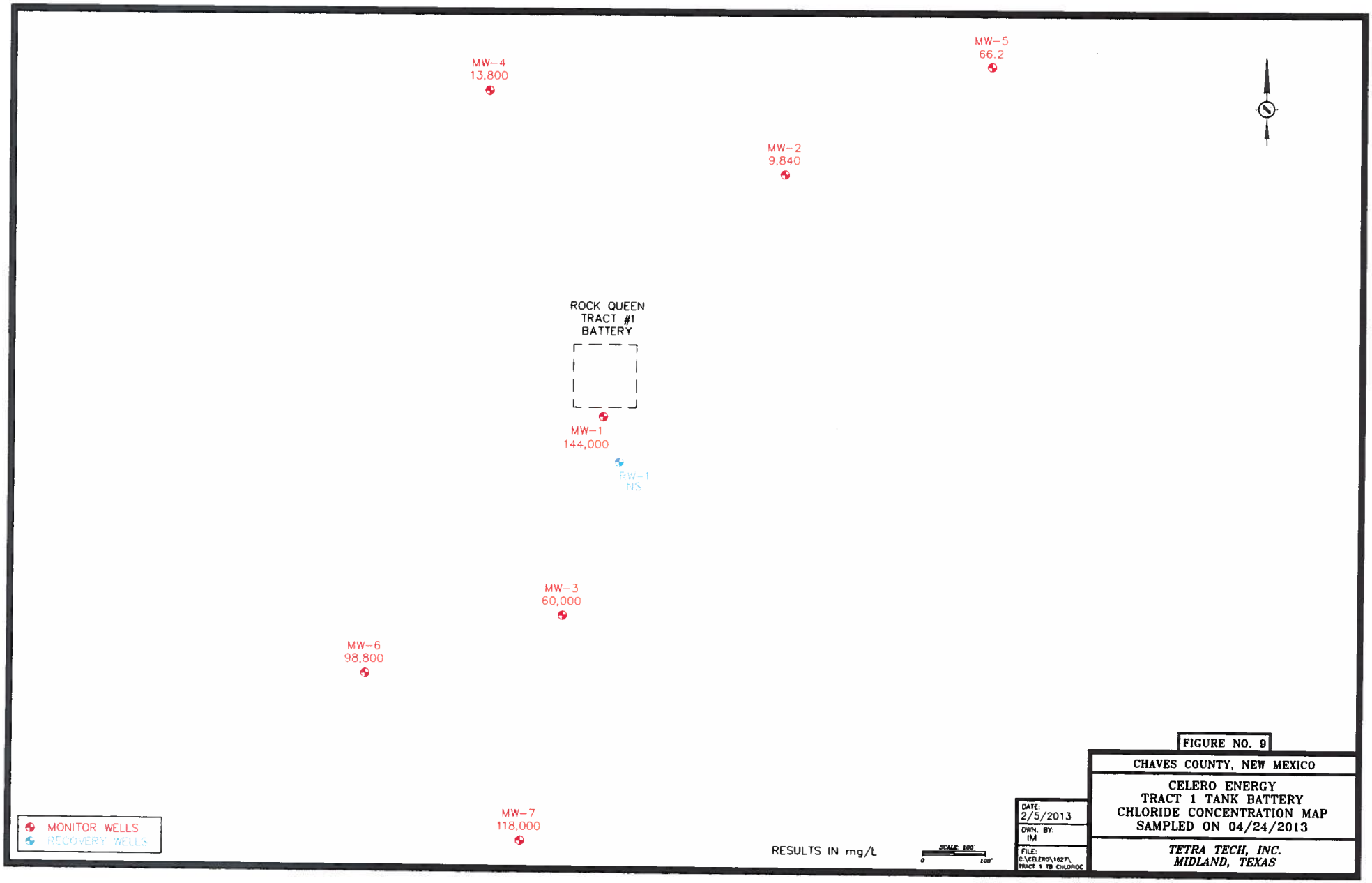

FIGURE NO. 9

CHAVES COUNTY, NEW MEXICO

CELERO ENERGY
TRACT 1 TANK BATTERY
CHLORIDE CONCENTRATION MAP
SAMPLED ON 04/24/2013

TETRA TECH, INC.
MIDLAND, TEXAS

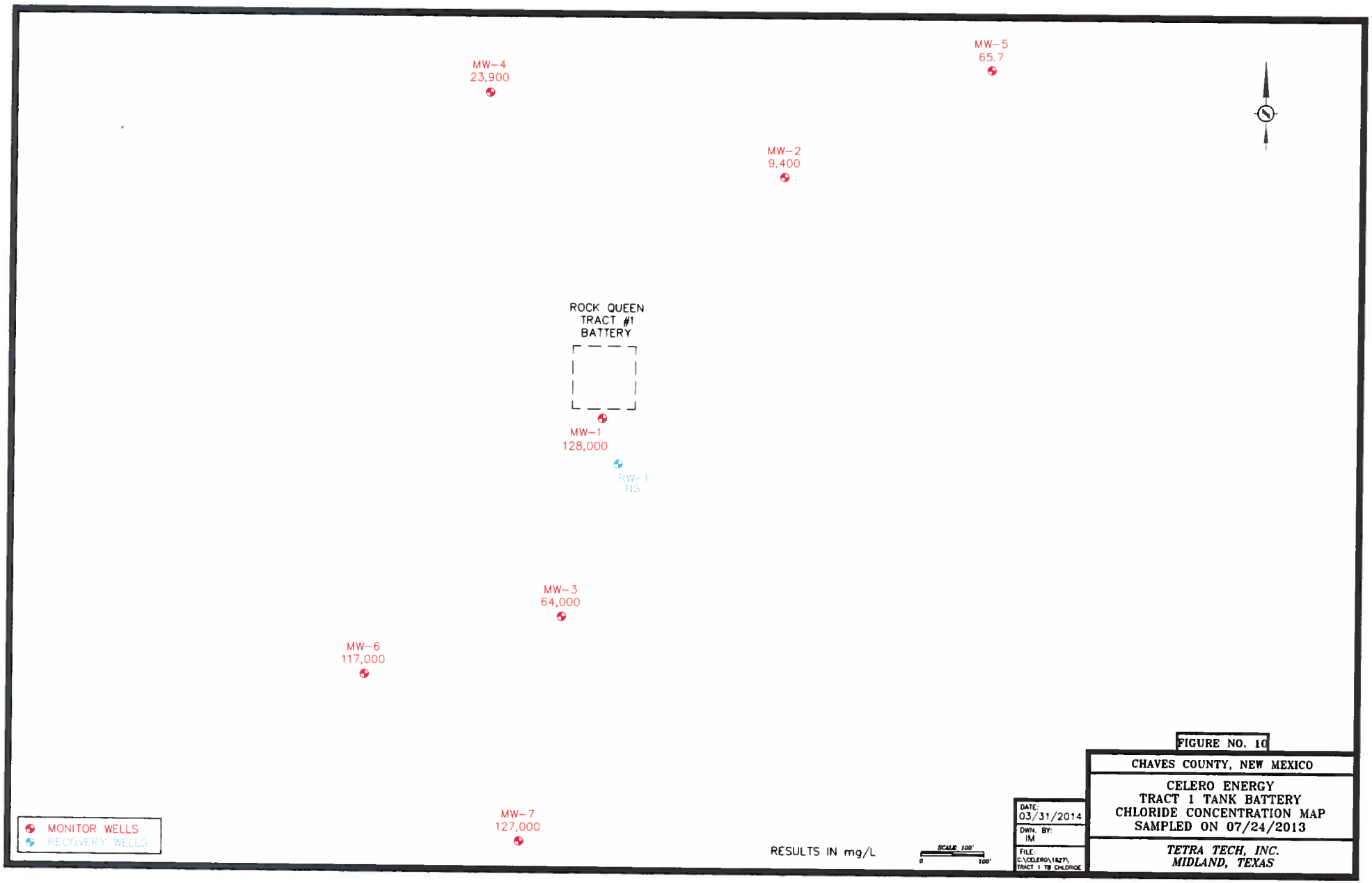

FIGURE NO. 10

CHAVES COUNTY, NEW MEXICO

CELERO ENERGY
TRACT 1 TANK BATTERY
CHLORIDE CONCENTRATION MAP
SAMPLED ON 07/24/2013

TETRA TECH, INC.
MIDLAND, TEXAS

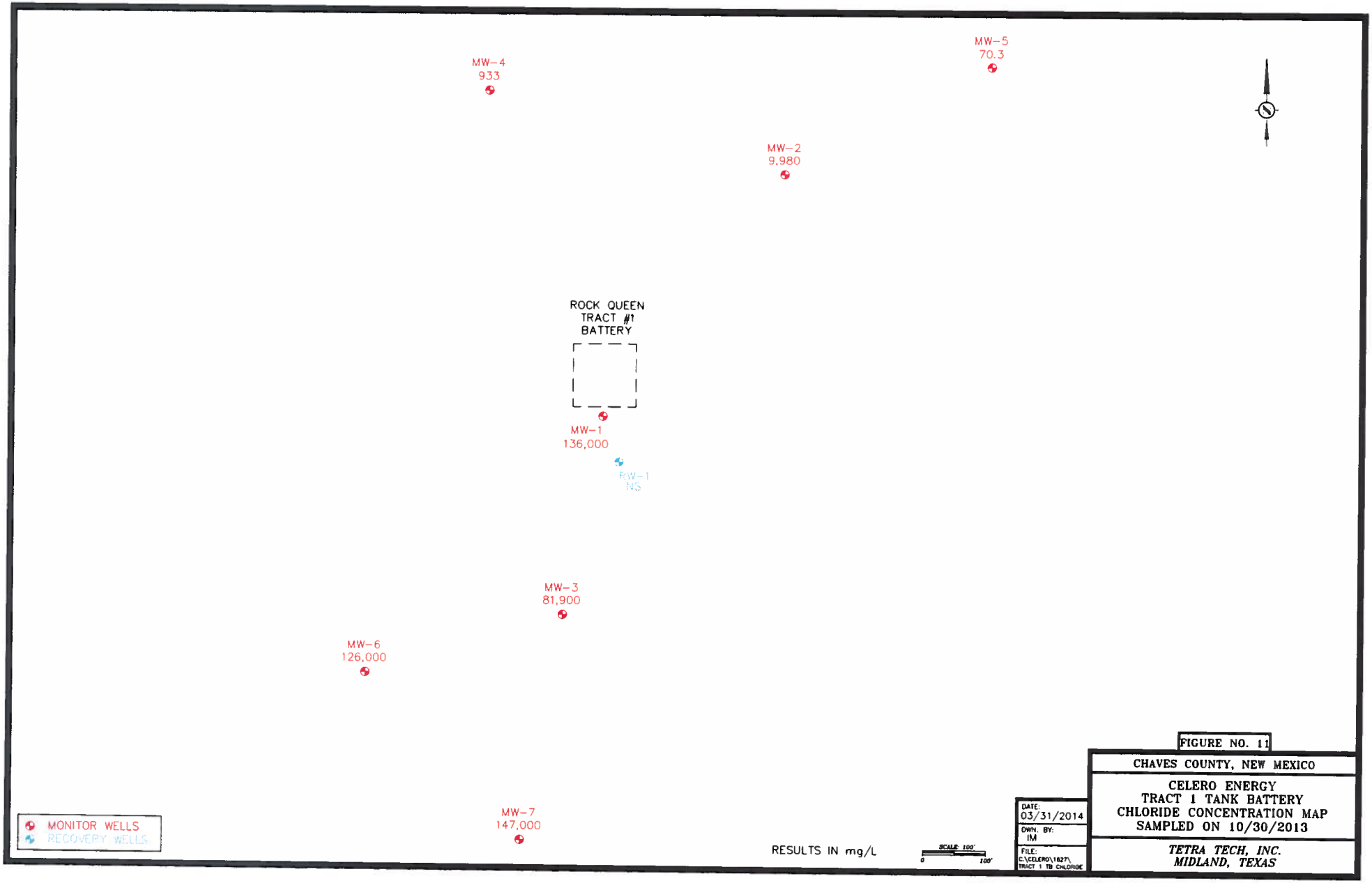

FIGURE NO. 11

CHAVES COUNTY, NEW MEXICO

CELERO ENERGY
TRACT 1 TANK BATTERY
CHLORIDE CONCENTRATION MAP
SAMPLED ON 10/30/2013

TETRA TECH, INC.
MIDLAND, TEXAS

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
	04/22/13				120.80	4,272.70
	07/24/13				120.78	4,272.72
	10/30/13				120.74	4,272.76
MW-2	06/01/07	05/30/07	4,397.33	139.50	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				121.71	4,275.25
	10/30/13				121.68	4,275.28
MW-5	01/17/11	11/23/10	4,395.87	133.35	116.10	4,279.77
	04/11/11				116.11	4,279.76
	07/27/11				116.93	4,278.94
	10/24/11				116.21	4,279.66
	01/03/12				116.11	4,279.76
	04/09/12				116.19	4,279.68
	07/23/12				116.12	4,279.75
	10/23/12				116.21	4,279.66
	01/29/13				116.16	4,279.71
	04/22/13				115.10	4,280.77
	07/24/13				115.16	4,280.71
	10/30/13				115.12	4,280.75
MW-6	01/17/11	11/29/10	4,390.58	142.55	122.41	4,268.17
	04/11/11				122.47	4,268.11
	07/27/11				124.24	4,266.34
	10/24/11				123.78	4,266.80
	01/03/12				123.21	4,267.37
	04/09/12				123.57	4,267.01
	07/23/12				123.57	4,267.01
	10/23/12				123.65	4,266.93
	01/29/13				123.63	4,266.95
	04/22/13				123.68	4,266.90
	07/24/13				123.89	4,266.69
	10/30/13				123.80	4,266.78
MW-7	01/17/11	11/23/10	4,388.41	139.00	123.50	4,264.91
	04/11/11				123.53	4,264.88
	07/27/11				124.51	4,263.90
	10/24/11				123.78	4,264.63
	01/03/12				123.38	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
	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
MW-3	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	-	-
	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
MW-4	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)	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-4	07/24/13	6,770	1,150	4,030	135.0	<20.0	<20.0	148	148	<2500	23,900	49,200	21,600	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	-	-	-
	101/25/12	-	-	-	-	-	-	-	-	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
RW-1	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	-	-
	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 in (mg/L)	Toluene in (mg/L)	Ethyl-Benzene (mg/L)	Xylene in (mg/L)	Total BTEX (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 in (mg/L)	Toluene in (mg/L)	Ethyl-Benzene (mg/L)	Xylene in (mg/L)	Total BTEX (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 in (mg/L)	Toluene in (mg/L)	Ethyl-Benzene (mg/L)	Xylene in (mg/L)	Total BTEX (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 in (gallons)	Total Amount Removed (gallons)	Number of Days	Recovery Rate per day (gallons)	Recovery Rate per hour (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

TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800-378-1296 806-794-1296 FAX 806-794-1298
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
(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.

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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.

Michael Abel

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

Report Contents

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 Batch	Prep Date	QC Batch	Analysis 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.

Analytical Report

Sample: 320197 - MW-1

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

Parameter	Flag	Cert	Result	RL 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 Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0793	mg/L	1	0.100	79	75.7 - 109
4-Bromofluorobenzene (4-BFB)	1 Qsr	Qsr	0.0499	mg/L	1	0.100	50	68.1 - 109

Sample: 320197 - MW-1

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

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride		1	**132000**	mg/L	5000	2.50

Sample: 320197 - MW-1

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

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Sulfate		1	**1890**	mg/L	500	2.50

Sample: 320197 - MW-1

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Total Dissolved Solids		1	**217000**	mg/L	200	10.0

Sample: 320198 - MW-2

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

Parameter	Flag	Cert	RL 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 Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	Qsr	Qsr		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)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	98814	Date Analyzed:	2013-02-06	Analyzed By:	AR
Prep Batch:	83644	Sample Preparation:	2013-02-05	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1	**8330**	mg/L	1000	2.50

Sample: 320198 - MW-2

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Sulfate		1	**161**	mg/L	10	2.50

Sample: 320198 - MW-2

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Total Dissolved Solids		1	**21400**	mg/L	100	10.0

Sample: 320199 - MW-3

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

Parameter	Flag	Cert	RL 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 Amount	Percent Recovery	Recovery 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

Sample: 320199 - MW-3

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

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride		1	**60500**	mg/L	5000	2.50

Sample: 320199 - MW-3

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

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Sulfate		1	**1930**	mg/L	500	2.50

Sample: 320199 - MW-3

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

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Total Dissolved Solids		1	**91600**	mg/L	200	10.0

Sample: 320200 - MW-4

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

continued ...

sample 320200 continued ...

Parameter	Flag	Cert	RL Result	Units	Dilution	RL

Parameter	Flag	Cert	RL 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 Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	Qsr	Qsr		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
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 Result	Units	Dilution	RL
Chloride		1	**7960**	mg/L	1000	2.50

Sample: 320200 - MW-4

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 Result	Units	Dilution	RL
Sulfate		1	**215**	mg/L	10	2.50

Sample: 320200 - MW-4

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Total Dissolved Solids		1	**12600**	mg/L	100	10.0

Sample: 320201 - MW-5

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

Parameter	Flag	Cert	RL 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 Amount	Percent Recovery	Recovery 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)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	98815	Date Analyzed:	2013-02-06	Analyzed By:	AR
Prep Batch:	83644	Sample Preparation:	2013-02-05	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1	**72.6**	mg/L	5	2.50

Sample: 320201 - MW-5

Laboratory:	Midland				
Analysis:	SO4 (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	98815	Date Analyzed:	2013-02-06	Analyzed By:	AR
Prep Batch:	83644	Sample Preparation:	2013-02-05	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Sulfate		1	**142**	mg/L	5	2.50

Sample: 320201 - MW-5

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Total Dissolved Solids		1	**528**	mg/L	2	10.0

Sample: 320202 - MW-6

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

Parameter	Flag	Cert	RL 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 Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0864	mg/L	1	0.100	86	75.7 - 109
4-Bromofluorobenzene (4-BFB)	2 Qsr	Qsr	0.0625	mg/L	1	0.100	62	68.1 - 109

Sample: 320202 - MW-6

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1	**97800**	mg/L	5000	2.50

Sample: 320202 - MW-6

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Sulfate		1	**2480**	mg/L	500	2.50

Sample: 320202 - MW-6

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Total Dissolved Solids		1	**152000**	mg/L	200	10.0

Sample: 320203 - MW-7

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

continued ...

sample 320203 continued ...

Parameter	Flag	Cert	RL Result	Units	Dilution	RL

Parameter	Flag	Cert	RL 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 Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0836	mg/L	1	0.100	84	75.7 - 109
4-Bromofluorobenzene (4-BFB)	3 Qsr	Qsr	0.0590	mg/L	1	0.100	59	68.1 - 109

Sample: 320203 - MW-7

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1	**111000**	mg/L	5000	2.50

Sample: 320203 - MW-7

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Sulfate		1	**2280**	mg/L	500	2.50

Sample: 320203 - MW-7

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Total Dissolved Solids		1	**179000**	mg/L	200	10.0

Method Blanks

Method Blank (1) QC Batch: 98791

QC Batch: 98791
Prep Batch: 83715

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

Analyzed By: YG
Prepared By: YG

Parameter	Flag	Cert	MDL 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 Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	QSr	QSr	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
Prep Batch: 83644

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

Analyzed By: AR
Prepared By: AR

Parameter	Flag	Cert	MDL Result	Units	RL
Chloride		1	<0.265	mg/L	2.5

Method Blank (1) QC Batch: 98815

QC Batch: 98815
Prep Batch: 83644

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

Analyzed By: AR
Prepared By: AR

Parameter	Flag	Cert	MDL Result	Units	RL
Chloride		1	1.03	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 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 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 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 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 Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	Q=1	Q=1		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 Date Analyzed: 2013-02-05 Analyzed By: AR
Prep Batch: 83642 QC Preparation: 2013-02-05 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 Date Analyzed: 2013-02-05 Analyzed By: AR
Prep Batch: 83642 QC Preparation: 2013-02-05 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 Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. 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	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD 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 Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	Qsr	Qsr	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 Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. 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.

continued ...

control spikes continued ...

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD 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 Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. 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 Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD 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 Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. 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 Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD 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.

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 Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. 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 Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD 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 Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. 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 Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD 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 Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. 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 ...

control spikes continued ...

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. 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 Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD 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 Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	Qsr	Qsr	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 Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. 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 Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD 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

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. 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 Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD 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 Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	Qsr	Qsr	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 Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. 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 Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD 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

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. 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 Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD 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 Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. 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 Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD 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 Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. 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 Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD 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.

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 Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. 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 Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD 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 Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. 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 Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD 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 Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	Qsr	Qsr	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 True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date 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 True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date 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 True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date 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

Standard (CCV-1)

QC Batch: 98814 Date Analyzed: 2013-02-06 Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date 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 True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date 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 True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date 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 True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date 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

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date 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 True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date 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 True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date 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 True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date 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

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date 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 True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date 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 True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date 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 True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date 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

Standard (CCV-3)

QC Batch: 98837

Date Analyzed: 2013-02-11

Analyzed By: YG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date 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
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	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 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.

'3020137

Analysis Request of Chain of Custody Record

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

→ 114-6401627

CLIENT NAME: Cidero Energy
SITE MANAGER: Jeff Kindley
PROJECT NO.: ~~115-6403129A~~ (JMF)
PROJECT NAME: Cidero - Rock Queen #1 TB

ANALYSIS REQUEST (Circle or Specify Method No.)

LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	HCL	HNO3	ICE	NONE	(BTEX 8021B)	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	Pest. 808/608	(Chloride)	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	~~Major Anions/Cations, pH,~~ (TDS) (SO4) SO4/TDS
320197	1/30/13	1415	W		X	MW1	4		X		X		X												X				X
198		1405	W		X	MW2	4		X		X		X												X				X
199		1430	W		X	MW3	4		X		X		X												X				X
200		1455	W		X	MW4	4		X		X		X												X				X
201		1450	W		X	MW5	4		X		X		X												X				X
202		1420	W		X	MW6	4		X		X		X												X				X
203		1440	W		X	MW7	4		X		X		X												X				X

RELINQUISHED BY: (Signature) [signature] Date: 2-1-13 Time: 1415
RECEIVED BY: (Signature) [signature] Date: 2/1/13 Time: 1415

RELINQUISHED BY: (Signature) Date: Time:
RECEIVED BY: (Signature) Date: Time:

RELINQUISHED BY: (Signature) Date: Time:
RECEIVED BY: (Signature) Date: Time:

RECEIVING LABORATORY: Trace
ADDRESS:
CITY: Midland STATE: ZIP:
CONTACT: PHONE:
RECEIVED BY: (Signature)
DATE: TIME:

SAMPLED BY: (Print & Initial) Ryan Reich / Marcus Kiiskila Date: Time:
SAMPLE SHIPPED BY: (Circle) FEDEX BUS (HAND DELIVERED) UPS AIRBILL #: OTHER:
TETRA TECH CONTACT PERSON: Jeff Kindley
Results by:
RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: -2.1

REMARKS: BTEX, Cl, SO4, TDS
MW-5-one VOA froze and broke Mailed all

Please fill out all copies - Laboratory retains Yellow copy - Return Orginal copy to Tetra Tech - Project Manager retains Pink copy - Accounting receives Gold copy.

TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800-378-1296 806-794-1296 FAX 806-794-1298
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
(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

(Corrected Report)

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

Report Date: May 9, 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

Report Corrections (Work Order 13042614)

- 5/9/13: J-flag report required.

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.

Notes:

For inorganic analyses, the term MQL should actually read PQL.

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

Report Contents

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 Batch	Prep Date	QC Batch	Analysis 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.

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	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Hydroxide Alkalinity	U	1	<1.00	<1.00	<1.00	mg/L as CaCo3	1	1.00	1	1
Carbonate Alkalinity	U	1	<1.00	<1.00	<1.00	mg/L as CaCo3	1	1.00	1	1
Bicarbonate Alkalinity		1	**100**	**100**	<1.00	mg/L as CaCo3	1	1.00	1	1
Total Alkalinity		1	**100**	**100**	<20.0	mg/L as CaCo3	1	20.0	20	20

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	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Benzene	Qs,U	2	<0.000200	<0.00100	<0.000200	mg/L	1	0.000200	0.001	0.0002
Toluene	Qs,U	2	<0.000300	<0.00100	<0.000300	mg/L	1	0.000300	0.001	0.0003
Ethylbenzene	Qs,U	2	<0.000400	<0.00100	<0.000400	mg/L	1	0.000400	0.001	0.0004
Xylene	Qs,U	2	<0.00120	<0.00100	<0.00120	mg/L	1	0.00120	0.001	0.0012

Surrogate		F	C	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)				0.0901	mg/L	1	0.100	90	70 - 130
4-Bromofluorobenzene (4-BFB)	1	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

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Dissolved Calcium		1	**2640**	**2640**	<4.41	mg/L	100	4.41	1	0.0441

Sample: 327392 - MW-1

Laboratory: Lubbock
Analysis: Chloride (IC)
QC Batch: 101123
Prep Batch: 85703

Analytical Method: E 300.0
Date Analyzed: 2013-05-03
Sample Preparation: 2013-05-03

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

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Chloride		1	**144000**	**144000**	<845	mg/L	5000	845	2.5	0.169

Sample: 327392 - MW-1

Laboratory: Lubbock
Analysis: Hardness
QC Batch: 101120
Prep Batch: 85570

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

Prep Method: N/A
Analyzed By: RR
Prepared By: KV

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Hardness (by ICP)			**23000**	**23000**	0.00	mg eq CaCO3/L	1	0.00		

Sample: 327392 - MW-1

Laboratory: Lubbock
Analysis: K, 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

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Dissolved Potassium		1	**1630**	**1630**	<4.43	mg/L	100	4.43	1	0.0443

Sample: 327392 - MW-1

Laboratory: Lubbock
Analysis: Mg, Dissolved

Analytical Method: S 6010C

Prep Method: S 3005A

QC Batch: 101120
Prep Batch: 85570

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

Analyzed By: RR
Prepared By: KV

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Dissolved Magnesium		1	**3990**	**3990**	<2.96	mg/L	100	2.96	1	0.0296

Sample: 327392 - MW-1

Laboratory: Lubbock
Analysis: Na, 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

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Dissolved Sodium		1	**78500**	**78500**	<172	mg/L	1000	172	1	0.172

Sample: 327392 - MW-1

Laboratory: Midland
Analysis: pH
QC Batch: 100883
Prep Batch: 85498

Analytical Method: SM 4500-H+
Date Analyzed: 2013-04-26
Sample Preparation: 2013-04-26

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

Parameter	F	C	RL Result	Units	Dilution	RL
pH		2	5.96	s.u.	1	0

Sample: 327392 - MW-1

Laboratory: Lubbock
Analysis: SO4 (IC)
QC Batch: 101123
Prep Batch: 85703

Analytical Method: E 300.0
Date Analyzed: 2013-05-03
Sample Preparation: 2013-05-03

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

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Sulfate	J	1	**1880**	<12500	<1120	mg/L	5000	1120	2.5	0.224

Sample: 327392 - MW-1

Laboratory: Midland
Analysis: TDS
QC Batch: 100878
Prep Batch: 85494

Analytical Method: SM 2540C
Date Analyzed: 2013-04-27
Sample Preparation: 2013-04-26

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

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Total Dissolved Solids		2	**244000**	**244000**	<975	mg/L	100	975	10	9.75

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	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Hydroxide Alkalinity	U	1	<1.00	<1.00	<1.00	mg/L as CaCo3	1	1.00	1	1
Carbonate Alkalinity	U	1	<1.00	<1.00	<1.00	mg/L as CaCo3	1	1.00	1	1
Bicarbonate Alkalinity		1	**134**	**134**	<1.00	mg/L as CaCo3	1	1.00	1	1
Total Alkalinity		1	**134**	**134**	<20.0	mg/L as CaCo3	1	20.0	20	20

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	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Benzene	Qr,Qs,U	2	<0.000200	<0.00100	<0.000200	mg/L	1	0.000200	0.001	0.0002
Toluene	Qr,Qs,U	2	<0.000300	<0.00100	<0.000300	mg/L	1	0.000300	0.001	0.0003
Ethylbenzene	Qr,Qs,U	2	<0.000400	<0.00100	<0.000400	mg/L	1	0.000400	0.001	0.0004
Xylene	Qr,Qs,U	2	<0.00120	<0.00100	<0.00120	mg/L	1	0.00120	0.001	0.0012

Surrogate	F	C	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery 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	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	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Dissolved Calcium		1	**2490**	**2490**	<4.41	mg/L	100	4.41	1	0.0441

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	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Chloride		1	**9840**	**9840**	<84.5	mg/L	500	84.5	2.5	0.169

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	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Hardness (by ICP)			**8580**	**8580**	0.00	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

continued . . .

sample 327393 continued ...

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Dissolved Potassium		1	**22.6**	**22.6**	<0.443	mg/L	10	0.443	1	0.0443

Sample: 327393 - MW-2

Laboratory: Lubbock
Analysis: Mg, 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

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Dissolved Magnesium		1	**575**	**575**	<0.296	mg/L	10	0.296	1	0.0296

Sample: 327393 - MW-2

Laboratory: Lubbock
Analysis: Na, 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

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Dissolved Sodium		1	**2240**	**2240**	<17.2	mg/L	100	17.2	1	0.172

Sample: 327393 - MW-2

Laboratory: Midland
Analysis: pH
QC Batch: 100883
Prep Batch: 85498

Analytical Method: SM 4500-H+
Date Analyzed: 2013-04-26
Sample Preparation: 2013-04-26

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

Parameter	F	C	RL Result	Units	Dilution	RL
pH		2	6.74	s.u.	1	0

Sample: 327393 - MW-2

Laboratory: Lubbock
Analysis: SO4 (IC)
QC Batch: 101124
Prep Batch: 85704

Analytical Method: E 300.0
Date Analyzed: 2013-05-03
Sample Preparation: 2013-05-03

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

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Sulfate	J	1	**211**	<1250	<112	mg/L	500	112	2.5	0.224

Sample: 327393 - MW-2

Laboratory: Midland
Analysis: TDS
QC Batch: 100878
Prep Batch: 85494

Analytical Method: SM 2540C
Date Analyzed: 2013-04-27
Sample Preparation: 2013-04-26

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

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Total Dissolved Solids		2	**25200**	**25200**	<488	mg/L	50	488	10	9.75

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	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Hydroxide Alkalinity	U	1	<1.00	<1.00	<1.00	mg/L as CaCo3	1	1.00	1	1
Carbonate Alkalinity	U	1	<1.00	<1.00	<1.00	mg/L as CaCo3	1	1.00	1	1
Bicarbonate Alkalinity		1	**100**	**100**	<1.00	mg/L as CaCo3	1	1.00	1	1
Total Alkalinity		1	**100**	**100**	<20.0	mg/L as CaCo3	1	20.0	20	20

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	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Benzene	Q[3],U	2	<0.000200	<0.00100	<0.000200	mg/L	1	0.000200	0.001	0.0002
Toluene	Q[3],U	2	<0.000300	<0.00100	<0.000300	mg/L	1	0.000300	0.001	0.0003
Ethylbenzene	Q[3],U	2	<0.000400	<0.00100	<0.000400	mg/L	1	0.000400	0.001	0.0004
Xylene	Q[3],U	2	<0.00120	<0.00100	<0.00120	mg/L	1	0.00120	0.001	0.0012

Surrogate	F	C	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery 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

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Dissolved Calcium		1	**4780**	**4780**	<4.41	mg/L	100	4.41	1	0.0441

Sample: 327394 - MW-3

Laboratory: Lubbock
Analysis: Chloride (IC)
QC Batch: 101124
Prep Batch: 85704

Analytical Method: E 300.0
Date Analyzed: 2013-05-03
Sample Preparation: 2013-05-03

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

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Chloride		1	**60000**	**60000**	<845	mg/L	5000	845	2.5	0.169

Sample: 327394 - MW-3

Laboratory: Lubbock
Analysis: Hardness
QC Batch: 101120
Prep Batch: 85570

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

Prep Method: N/A
Analyzed By: RR
Prepared By: KV

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Hardness (by ICP)			**21900**	**21900**	0.00	mg eq CaCO3/L	1	0.00		

Sample: 327394 - MW-3

Laboratory: Lubbock
Analysis: K, 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

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Dissolved Potassium		1	**432**	**432**	<4.43	mg/L	100	4.43	1	0.0443

Sample: 327394 - MW-3

Laboratory: Lubbock
Analysis: Mg, 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

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Dissolved Magnesium		1	**2420**	**2420**	<2.96	mg/L	100	2.96	1	0.0296

Sample: 327394 - MW-3

Laboratory: Lubbock
Analysis: Na, 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

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Dissolved Sodium		1	**32100**	**32100**	<172	mg/L	1000	172	1	0.172

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	F	C	RL Result	Units	Dilution	RL
pH		2	6.41	s.u.	1	0

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	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Sulfate	J	1	**1780**	<12500	<1120	mg/L	5000	1120	2.5	0.224

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

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Total Dissolved Solids		2	**118000**	**118000**	<975	mg/L	100	975	10	9.75

Sample: 327395 - MW-4

Laboratory: Lubbock
Analysis: Alkalinity Analytical Method: SM 2320B Prep Method: N/A
QC Batch: 101151 Date Analyzed: 2013-05-07 Analyzed By: LM
Prep Batch: 85729 Sample Preparation: 2013-05-07 Prepared By: LM

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Hydroxide Alkalinity	U	1	<1.00	<1.00	<1.00	mg/L as CaCo3	1	1.00	1	1
Carbonate Alkalinity	U	1	<1.00	<1.00	<1.00	mg/L as CaCo3	1	1.00	1	1
Bicarbonate Alkalinity		1	**135**	**135**	<1.00	mg/L as CaCo3	1	1.00	1	1

continued ...

sample 327395 continued . . .

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Total Alkalinity		1	**135**	**135**	<20.0	mg/L as CaCo3	1	20.0	20	20

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	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Benzene	Qr,Qs,U	2	<0.000200	<0.00100	<0.000200	mg/L	1	0.000200	0.001	0.0002
Toluene	Qr,Qs,U	2	<0.000300	<0.00100	<0.000300	mg/L	1	0.000300	0.001	0.0003
Ethylbenzene	Qr,Qs,U	2	<0.000400	<0.00100	<0.000400	mg/L	1	0.000400	0.001	0.0004
Xylene	Qr,Qs,U	2	<0.00120	<0.00100	<0.00120	mg/L	1	0.00120	0.001	0.0012

Surrogate	F	C	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery 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

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Dissolved Calcium		1	**3340**	**3340**	<4.41	mg/L	100	4.41	1	0.0441

Sample: 327395 - MW-4

Laboratory: Lubbock
Analysis: Chloride (IC)
QC Batch: 101124
Prep Batch: 85704

Analytical Method: E 300.0
Date Analyzed: 2013-05-03
Sample Preparation: 2013-05-03

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

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Chloride		1	**13800**	**13800**	<84.5	mg/L	500	84.5	2.5	0.169

Sample: 327395 - MW-4

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

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Hardness (by ICP)			**11500**	**11500**	0.00	mg eq CaCO3/L	1	0.00		

Sample: 327395 - MW-4

Laboratory: Lubbock
Analysis: K, 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

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Dissolved Potassium		1	**21.7**	**21.7**	<0.443	mg/L	10	0.443	1	0.0443

Sample: 327395 - MW-4

Laboratory: Lubbock
Analysis: Mg, 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

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Dissolved Magnesium		1	**768**	**768**	<0.296	mg/L	10	0.296	1	0.0296

Sample: 327395 - MW-4

Laboratory: Lubbock
Analysis: Na, Dissolved
Analytical Method: S 6010C
Prep Method: S 3005A

QC Batch: 101120
Prep Batch: 85570

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

Analyzed By: RR
Prepared By: KV

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Dissolved Sodium		1	**2220**	**2220**	<17.2	mg/L	100	17.2	1	0.172

Sample: 327395 - MW-4

Laboratory: Midland
Analysis: pH
QC Batch: 100884
Prep Batch: 85498

Analytical Method: SM 4500-H+
Date Analyzed: 2013-04-26
Sample Preparation: 2013-04-26

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

Parameter	F	C	RL Result	Units	Dilution	RL
pH		2	6.71	s.u.	1	0

Sample: 327395 - MW-4

Laboratory: Lubbock
Analysis: SO4 (IC)
QC Batch: 101124
Prep Batch: 85704

Analytical Method: E 300.0
Date Analyzed: 2013-05-03
Sample Preparation: 2013-05-03

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

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Sulfate	J	1	**290**	<1250	<112	mg/L	500	112	2.5	0.224

Sample: 327395 - MW-4

Laboratory: Midland
Analysis: TDS
QC Batch: 100878
Prep Batch: 85494

Analytical Method: SM 2540C
Date Analyzed: 2013-04-27
Sample Preparation: 2013-04-26

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

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Total Dissolved Solids		2	**37200**	**37200**	<975	mg/L	100	975	10	9.75

Sample: 327396 - MW-5

Laboratory:	Lubbock				
Analysis:	Alkalinity	Analytical Method:	SM 2320B	Prep Method:	N/A
QC Batch:	101151	Date Analyzed:	2013-05-07	Analyzed By:	LM
Prep Batch:	85729	Sample Preparation:	2013-05-07	Prepared By:	LM

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Hydroxide Alkalinity	U	1	<1.00	<1.00	<1.00	mg/L as CaCo3	1	1.00	1	1
Carbonate Alkalinity	U	1	<1.00	<1.00	<1.00	mg/L as CaCo3	1	1.00	1	1
Bicarbonate Alkalinity		1	**136**	**136**	<1.00	mg/L as CaCo3	1	1.00	1	1
Total Alkalinity		1	**136**	**136**	<20.0	mg/L as CaCo3	1	20.0	20	20

Sample: 327396 - MW-5

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	100911	Date Analyzed:	2013-04-30	Analyzed By:	AH
Prep Batch:	85524	Sample Preparation:	2013-04-29	Prepared By:	AH

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Benzene	Qr,Qs,U	2	<0.000200	<0.00100	<0.000200	mg/L	1	0.000200	0.001	0.0002
Toluene	Qr,Qs,U	2	<0.000300	<0.00100	<0.000300	mg/L	1	0.000300	0.001	0.0003
Ethylbenzene	Qr,Qs,U	2	<0.000400	<0.00100	<0.000400	mg/L	1	0.000400	0.001	0.0004
Xylene	Qr,Qs,U	2	<0.00120	<0.00100	<0.00120	mg/L	1	0.00120	0.001	0.0012

Surrogate	F	C	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery 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	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	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Dissolved Calcium		1	**90.9**	**90.9**	<0.0441	mg/L	1	0.0441	1	0.0441

Sample: 327396 - MW-5

Laboratory: Lubbock
Analysis: Chloride (IC)
QC Batch: 101124
Prep Batch: 85704

Analytical Method: E 300.0
Date Analyzed: 2013-05-03
Sample Preparation: 2013-05-03

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

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Chloride		1	**66.2**	**66.2**	<0.845	mg/L	5	0.845	2.5	0.169

Sample: 327396 - MW-5

Laboratory: Lubbock
Analysis: Hardness
QC Batch: 101120
Prep Batch: 85570

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

Prep Method: N/A
Analyzed By: RR
Prepared By: KV

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Hardness (by ICP)			**298**	**298**	0.00	mg eq CaCO3/L	1	0.00		

Sample: 327396 - MW-5

Laboratory: Lubbock
Analysis: K, 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

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Dissolved Potassium		1	**1.55**	**1.55**	<0.0443	mg/L	1	0.0443	1	0.0443

Sample: 327396 - MW-5

Laboratory: Lubbock
Analysis: Mg, 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

continued ...

sample 327396 continued . . .

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Dissolved Magnesium		1	**17.3**	**17.3**	<0.0296	mg/L	1	0.0296	1	0.0296

Sample: 327396 - MW-5

Laboratory: Lubbock
Analysis: Na, 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

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Dissolved Sodium		1	**64.9**	**64.9**	<0.172	mg/L	1	0.172	1	0.172

Sample: 327396 - MW-5

Laboratory: Midland
Analysis: pH
QC Batch: 100884
Prep Batch: 85498

Analytical Method: SM 4500-H+
Date Analyzed: 2013-04-26
Sample Preparation: 2013-04-26

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

Parameter	F	C	RL Result	Units	Dilution	RL
pH		2	7.98	s.u.	1	0

Sample: 327396 - MW-5

Laboratory: Lubbock
Analysis: SO4 (IC)
QC Batch: 101124
Prep Batch: 85704

Analytical Method: E 300.0
Date Analyzed: 2013-05-03
Sample Preparation: 2013-05-03

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

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Sulfate		1	**133**	**133**	<1.12	mg/L	5	1.12	2.5	0.224

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

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Total Dissolved Solids		2	**586**	**586**	<19.5	mg/L	2	19.5	10	9.75

Sample: 327397 - MW-6

Laboratory:	Lubbock				
Analysis:	Alkalinity	Analytical Method:	SM 2320B	Prep Method:	N/A
QC Batch:	101151	Date Analyzed:	2013-05-07	Analyzed By:	LM
Prep Batch:	85729	Sample Preparation:	2013-05-07	Prepared By:	LM

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Hydroxide Alkalinity	U	1	<1.00	<1.00	<1.00	mg/L as CaCo3	1	1.00	1	1
Carbonate Alkalinity	U	1	<1.00	<1.00	<1.00	mg/L as CaCo3	1	1.00	1	1
Bicarbonate Alkalinity		1	**118**	**118**	<1.00	mg/L as CaCo3	1	1.00	1	1
Total Alkalinity		1	**118**	**118**	<20.0	mg/L as CaCo3	1	20.0	20	20

Sample: 327397 - MW-6

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	100979	Date Analyzed:	2013-05-02	Analyzed By:	AH
Prep Batch:	85587	Sample Preparation:	2013-05-01	Prepared By:	AH

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Benzene	Q*,U	2	<0.000200	<0.00100	<0.000200	mg/L	1	0.000200	0.001	0.0002
Toluene	Q*,U	2	<0.000300	<0.00100	<0.000300	mg/L	1	0.000300	0.001	0.0003
Ethylbenzene	Q*,U	2	<0.000400	<0.00100	<0.000400	mg/L	1	0.000400	0.001	0.0004
Xylene	Q*,U	2	<0.00120	<0.00100	<0.00120	mg/L	1	0.00120	0.001	0.0012

Surrogate	F	C	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT) [2]	Q*r		0.0693	mg/L	1	0.100	69	70 - 130
4-Bromofluorobenzene (4-BFB)	Q*r		0.0571	mg/L	1	0.100	57	70 - 130

Sample: 327397 - MW-6

Laboratory:	Lubbock				
Analysis:	Ca, 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	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Dissolved Calcium		1	**4540**	**4540**	<4.41	mg/L	100	4.41	1	0.0441

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	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Chloride		1	**98800**	**98800**	<845	mg/L	5000	845	2.5	0.169

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	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Hardness (by ICP)			**25000**	**25000**	0.00	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

continued ...

sample 327397 continued ...

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Dissolved Potassium		1	**708**	**708**	<4.43	mg/L	100	4.43	1	0.0443

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

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Dissolved Magnesium		1	**3310**	**3310**	<2.96	mg/L	100	2.96	1	0.0296

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	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Dissolved Sodium		1	**57500**	**57500**	<172	mg/L	1000	172	1	0.172

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	F	C	RL Result	Units	Dilution	RL
pH		2	6.13	s.u.	1	0

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	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Sulfate	J	1	**2300**	<12500	<1120	mg/L	5000	1120	2.5	0.224

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

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Total Dissolved Solids		2	**169000**	**169000**	<975	mg/L	100	975	10	9.75

Sample: 327398 - MW-7

Laboratory:	Lubbock				
Analysis:	Alkalinity	Analytical Method:	SM 2320B	Prep Method:	N/A
QC Batch:	101151	Date Analyzed:	2013-05-07	Analyzed By:	LM
Prep Batch:	85729	Sample Preparation:	2013-05-07	Prepared By:	LM

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Hydroxide Alkalinity	U	1	<1.00	<1.00	<1.00	mg/L as CaCo3	1	1.00	1	1
Carbonate Alkalinity	U	1	<1.00	<1.00	<1.00	mg/L as CaCo3	1	1.00	1	1
Bicarbonate Alkalinity		1	**91.0**	**91.0**	<1.00	mg/L as CaCo3	1	1.00	1	1
Total Alkalinity		1	**91.0**	**91.0**	<20.0	mg/L as CaCo3	1	20.0	20	20

Sample: 327398 - MW-7

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	100979	Date Analyzed:	2013-05-02	Analyzed By:	AH
Prep Batch:	85587	Sample Preparation:	2013-05-01	Prepared By:	AH

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Benzene	Q8,U	2	<0.000200	<0.00100	<0.000200	mg/L	1	0.000200	0.001	0.0002
Toluene	Q8,U	2	<0.000300	<0.00100	<0.000300	mg/L	1	0.000300	0.001	0.0003
Ethylbenzene	Q8,U	2	<0.000400	<0.00100	<0.000400	mg/L	1	0.000400	0.001	0.0004
Xylene	Q8,U	2	<0.00120	<0.00100	<0.00120	mg/L	1	0.00120	0.001	0.0012

Surrogate	F	C	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	3 Qsr		0.0671	mg/L	1	0.100	67	70 - 130
4-Bromofluorobenzene (4-BFB)	Qsr		0.0529	mg/L	1	0.100	53	70 - 130

Sample: 327398 - MW-7

Laboratory: Lubbock
Analysis: Ca, 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	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Dissolved Calcium		1	**5520**	**5520**	<4.41	mg/L	100	4.41	1	0.0441

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	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Chloride		1	**118000**	**118000**	<845	mg/L	5000	845	2.5	0.169

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	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Hardness (by ICP)			**29800**	**29800**	0.00	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	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Dissolved Potassium		1	**994**	**994**	<4.43	mg/L	100	4.43	1	0.0443

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

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Dissolved Magnesium		1	**3890**	**3890**	<2.96	mg/L	100	2.96	1	0.0296

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	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Dissolved Sodium		1	**66500**	**66500**	<172	mg/L	1000	172	1	0.172

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	F	C	RL Result	Units	Dilution	RL
pH		2	6.23	s.u.	1	0

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	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Sulfate	J	1	**2010**	<12500	<1120	mg/L	5000	1120	2.5	0.224

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

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Total Dissolved Solids		2	**180000**	**180000**	<975	mg/L	100	975	10	9.75

Method Blanks

Method Blank (1)

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

Parameter	F	C	Result	Units	Reporting Limits
Total Dissolved Solids		2	<9.75	mg/L	9.75

Method Blank (1)

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

Parameter	F	C	Result	Units	Reporting Limits
Benzene		2	<0.000200	mg/L	0.0002
Toluene		2	<0.000300	mg/L	0.0003
Ethylbenzene		2	<0.000400	mg/L	0.0004
Xylene		2	<0.00120	mg/L	0.0012

Surrogate	F	C	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery 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 | Date Analyzed: 2013-05-02 | Analyzed By: AH
Prep Batch: 85587 | QC Preparation: 2013-05-02 | Prepared By: AH

Parameter	F	C	Result	Units	Reporting Limits
Benzene		2	<0.000200	mg/L	0.0002
Toluene		2	<0.000300	mg/L	0.0003
Ethylbenzene		2	<0.000400	mg/L	0.0004
Xylene		2	<0.00120	mg/L	0.0012

Surrogate	F	C	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery 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
Prep Batch: 85570
Date Analyzed: 2013-05-07
QC Preparation: 2013-05-01
Analyzed By: RR
Prepared By: KV

Parameter	F	C	Result	Units	Reporting Limits
Dissolved Calcium		1	<0.0441	mg/L	0.0441

Method Blank (1)

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

Parameter	F	C	Result	Units	Reporting Limits
Dissolved Potassium		1	<0.0443	mg/L	0.0443

Method Blank (1)

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

Parameter	F	C	Result	Units	Reporting Limits
Dissolved Magnesium		1	<0.0296	mg/L	0.0296

Method Blank (1)

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

Parameter	F	C	Result	Units	Reporting Limits
Dissolved Sodium		1	<0.172	mg/L	0.172

Method Blank (1)

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

Parameter	F	C	Result	Units	Reporting Limits
Chloride		1	<0.169	mg/L	0.169

Method Blank (1)

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

Parameter	F	C	Result	Units	Reporting Limits
Sulfate		1	<0.224	mg/L	0.224

Method Blank (1)

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

Parameter	F	C	Result	Units	Reporting Limits
Chloride		1	0.223	mg/L	0.169

Method Blank (1)

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

Parameter	F	C	Result	Units	Reporting Limits
Sulfate		1	<0.224	mg/L	0.224

Method Blank (1)

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

Parameter	F	C	Result	Units	Reporting Limits
Chloride		1	0.182	mg/L	0.169

Method Blank (1)

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

Parameter	F	C	Result	Units	Reporting Limits
Sulfate		1	<0.224	mg/L	0.224

Method Blank (1)

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

Parameter	F	C	Result	Units	Reporting Limits
Hydroxide Alkalinity		1	<1.00	mg/L as CaCo3	1
Carbonate Alkalinity		1	<1.00	mg/L as CaCo3	1
Bicarbonate Alkalinity		1	2.00	mg/L as CaCo3	1
Total Alkalinity		1	<20.0	mg/L as CaCo3	20

Duplicate (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	F	C	Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
Total Dissolved Solids		2	93100	98000	mg/L	100	5	10

Duplicate (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	F	C	Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
pH		2	5.85	5.78	s.u.	1	1	10

Duplicate (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	F	C	Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
pH		2	6.38	6.38	s.u.	1	0	10

Duplicate (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	F	C	Duplicate Result	Sample Result	Units	Dilution	RPD	RPD 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
Total Alkalinity		1	131	132	mg/L as CaCo3	1	1	20

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

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

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. 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 Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD 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 | Date Analyzed: 2013-04-27 | Analyzed By: AR
Prep Batch: 85494 | QC Preparation: 2013-04-26 | Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. 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 Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD 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 | Date Analyzed: 2013-04-30 | Analyzed By: AH
Prep Batch: 85524 | QC Preparation: 2013-04-30 | Prepared By: AH

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		2	0.0958	mg/L	1	0.100	<0.000200	96	70 - 130

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control spikes continued ...

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
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 Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD 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	F	C	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. 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 | Date Analyzed: 2013-05-02 | Analyzed By: AH
Prep Batch: 85587 | QC Preparation: 2013-05-02 | Prepared By: AH

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. 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 Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD 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.

Surrogate	F	C	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. 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 | Date Analyzed: 2013-05-07 | Analyzed By: RR
Prep Batch: 85570 | QC Preparation: 2013-05-01 | Prepared By: KV

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. 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 Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD 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 | Date Analyzed: 2013-05-07 | Analyzed By: RR
Prep Batch: 85570 | QC Preparation: 2013-05-01 | Prepared By: KV

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. 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 Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD 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.

Laboratory Control Spike (LCS-1)

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

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. 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 Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD 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 | Date Analyzed: 2013-05-07 | Analyzed By: RR
Prep Batch: 85570 | QC Preparation: 2013-05-01 | Prepared By: KV

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. 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 Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD 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 | Date Analyzed: 2013-05-03 | Analyzed By: RL
Prep Batch: 85703 | QC Preparation: 2013-05-03 | Prepared By: RL

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. 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.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD 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 | Date Analyzed: 2013-05-03 | Analyzed By: RL
Prep Batch: 85703 | QC Preparation: 2013-05-03 | Prepared By: RL

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. 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 Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD 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 Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. 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 Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD 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

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. 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 Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD 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 Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. 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 Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD 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 Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. 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 Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD 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.

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 Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	Qs	2	0.00590	mg/L	1	0.100	<0.000200	6	70 - 130
Toluene	Qs	2	0.0216	mg/L	1	0.100	<0.000300	22	70 - 130
Ethylbenzene	Qs	2	0.00700	mg/L	1	0.100	<0.000400	7	70 - 130
Xylene	Qs	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 Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene	Qr,Qs	2	0.00950	mg/L	1	0.100	<0.000200	10	70 - 130	47	20
Toluene	Qr,Qs	2	0.0346	mg/L	1	0.100	<0.000300	35	70 - 130	46	20
Ethylbenzene	Qr,Qs	2	0.0109	mg/L	1	0.100	<0.000400	11	70 - 130	44	20

continued ...

matrix spikes continued ...

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Xylene	Qr,Qs	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	F	C	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. 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 Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	Qs	2	0.179	mg/L	1	0.100	<0.000200	179	70 - 130
Toluene	Qs	2	0.174	mg/L	1	0.100	<0.000300	174	70 - 130
Ethylbenzene	Qs	2	0.171	mg/L	1	0.100	<0.000400	171	70 - 130
Xylene	Qs	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 Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene	Qs	2	0.147	mg/L	1	0.100	<0.000200	147	70 - 130	20	20
Toluene	Qs	2	0.143	mg/L	1	0.100	<0.000300	143	70 - 130	20	20
Ethylbenzene	Qs	2	0.140	mg/L	1	0.100	<0.000400	140	70 - 130	20	20
Xylene	Qs	2	0.405	mg/L	1	0.300	<0.00120	135	70 - 130	20	20

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

Surrogate	F	C	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. 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

continued ...

matrix spikes continued ...

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. 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 Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD 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 Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. 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 Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD 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.

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 Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. 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 Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD 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 | Date Analyzed: 2013-05-07 | Analyzed By: RR
Prep Batch: 85570 | QC Preparation: 2013-05-01 | Prepared By: KV

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. 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 Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD 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 | Date Analyzed: 2013-05-03 | Analyzed By: RL
Prep Batch: 85703 | QC Preparation: 2013-05-03 | Prepared By: RL

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. 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.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD 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 | Date Analyzed: 2013-05-03 | Analyzed By: RL
Prep Batch: 85703 | QC Preparation: 2013-05-03 | Prepared By: RL

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. 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 Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD 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 Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. 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 Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD 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

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. 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 Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD 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 Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. 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 Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD 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 Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. 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 Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD 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	F	C	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date 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	F	C	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date 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	F	C	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date 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	F	C	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
pH		2	s.u.	7.00	7.09	101	98 - 102	2013-04-26

Standard (CCV-1)

QC Batch: 100911 Date Analyzed: 2013-04-30 Analyzed By: AH

Param	F	C	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date 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	F	C	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date 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	F	C	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date 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

Param	F	C	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		2	mg/L	0.100	0.0943	94	80 - 120	2013-05-02

continued . . .

standard continued ...

Param	F	C	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
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	F	C	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date 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	F	C	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date 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	F	C	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		2	mg/L	0.100	0.101	101	80 - 120	2013-05-02
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	F	C	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date 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	F	C	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date 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	F	C	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Dissolved Potassium		1	mg/L	55.0	55.7	101	90 - 110	2013-05-07

Standard (ICV-1)

QC Batch: 101120 Date Analyzed: 2013-05-07 Analyzed By: RR

Param	F	C	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date 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	F	C	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date 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	F	C	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date 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	F	C	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Dissolved Potassium		1	mg/L	55.0	57.1	104	90 - 110	2013-05-07

Standard (CCV-1)

QC Batch: 101120 Date Analyzed: 2013-05-07 Analyzed By: RR

Param	F	C	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date 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	F	C	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date 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	F	C	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date 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	F	C	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date 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

Param	F	C	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date 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	F	C	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date 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	F	C	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date 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	F	C	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date 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

Param	F	C	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date 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	F	C	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date 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	F	C	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date 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	F	C	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date 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

Param	F	C	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date 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	F	C	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date 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	F	C	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date 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	F	C	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date 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

Limits of Detection (LOD)

Test	Method	Matrix	Instrument	Analyte	Spike Amount	Pass
Alkalinity	SM 2320B	water	N/A	Hydroxide Alkalinity	0.00	-
Alkalinity	SM 2320B	water	N/A	Carbonate Alkalinity	0.00	-
Alkalinity	SM 2320B	water	N/A	Bicarbonate Alkalinity	0.00	-
Alkalinity	SM 2320B	water	N/A	Total Alkalinity	0.00	-
BTEX	S 8021B	water	BTEX-2	Benzene	0.00100	Pass
BTEX	S 8021B	water	BTEX-2	Toluene	0.00100	Pass
BTEX	S 8021B	water	BTEX-2	Ethylbenzene	0.00100	Pass
BTEX	S 8021B	water	BTEX-2	Xylene	0.00100	Pass
Ca, Dissolved	S 6010C	water	PE 8300	Dissolved Calcium	0.250	Pass
Chloride (IC)	E 300.0	water	Dionex IC	Chloride	0.400	Pass
Hardness	S 6010C	water	PE 8300	Hardness (by ICP)	0.00	-
K, Dissolved	S 6010C	water	PE 8300	Dissolved Potassium	0.250	Pass
Mg, Dissolved	S 6010C	water	PE 8300	Dissolved Magnesium	0.200	Pass
Na, Dissolved	S 6010C	water	PE 8300	Dissolved Sodium	0.250	Pass
pH	SM 4500-H+	water	pH Meter	pH	0.00	-
SO4 (IC)	E 300.0	water	Dionex IC	Sulfate	0.600	Pass
TDS	SM 2540C	water	N/A	Total Dissolved Solids	0.00	-

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 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.

Analysis Request of Chain of Custody Record

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

CLIENT NAME: Celero
SITE MANAGER: Jeff Kindley
PROJECT NO.: 114-6401627
PROJECT NAME: Celero / Rock Queen #1 TB

ANALYSIS REQUEST (Circle or Specify Method No.)

LAB I.D. NUMBER	DATE 2013	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B (circled)	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	Pest. 808/608	Chloride (circled)	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS (circled) sulphates; pH, TDS
327392	4-24-13	1030	W		✓	mw-1	4	N	X		✓		X												X				X
327393	↓	1025	↓		↓	mw-2	↓	↓	↓		↓		↓												↓				•
327394	↓	1045	↓		↓	mw-3	↓	↓	↓		↓		↓												↓				•
327395	↓	1105	↓		↓	mw-4	↓	↓	↓		↓		↓												↓				•
327396	↓	1130	↓		↓	mw-5	↓	↓	↓		↓		↓												↓				•
327397	↓	1035	↓		↓	mw-6	↓	↓	↓		↓		↓												↓				•
327398	↓	1055	↓		↓	mw-7	↓	↓	↓		↓		↓												↓				•

RELINQUISHED BY: (Signature) [signature] Date: 4.25.13 Time: 1645
RECEIVED BY: (Signature) [signature] Date: 4/25/13 Time: 1645

RELINQUISHED BY: (Signature) [signature] Date: 4/25 Time: 1530
RECEIVED BY: (Signature) Date: Time:

RELINQUISHED BY: (Signature) Date: Time:
RECEIVED BY: (Signature) Date: Time:

RECEIVING LABORATORY: Trace
ADDRESS:
CITY: Midland STATE: ZIP:
CONTACT: PHONE:
RECEIVED BY: (Signature) Brenda Ward
DATE: 4/30/13 TIME: 9:05

SAMPLE CONDITION WHEN RECEIVED: 5.9°
REMARKS: LS ZP896047

SAMPLED BY: (Print & Initial) RC/KD Date: 4-25-13 Time: 1645
SAMPLE SHIPPED BY: (Circle) FEDEX BUS AIRBILL #: HAND DELIVERED (circled) UPS OTHER:
TETRA TECH CONTACT PERSON: Jeff Kindley
Results by:
RUSH Charges Authorized: Yes No

AK

Please fill out all copies - Laboratory retains Yellow copy - Return Orginal copy to Tetra Tech - Project Manager retains Pink copy - Accounting receives Gold copy.

Midland - BTEX, pH + TDS
Lubbock - All other tests

Cation-Anion Balance Sheet

DATE: 5/8/2013

Sample #	Calcium ppm	Magnesium ppm	Sodium ppm	Potassium ppm	Alkalinity ppm	Sulfate ppm	Chloride ppm	Nitrate-N ppm	Fluoride ppm	Bromide ppm	TDS ppm	EC µMHOs/cm
327392	2640	3990	78500	1630	100.00	1880	144000				244200	
327393	2490	575	2240	22.6	134.00	211	9840				25200	
327394	4780	2420	32100	432	100.00	1780	60000				118500	
327395	3340	768	2220	21.7	135.00	290	13800				37200	
327396	90.9	17.3	64.9	1.55	136.00	133	66.2				586	
327397	4540	3310	57500	708	118.00	2300	98800				168800	
327398	5520	3890	66500	994	91.00	2010	118000				180300	

Sample #	Calcium in meq/L	Magnesium in meq/L	Sodium in meq/L	Potassium in meq/L	Alkalinity in meq/L	Sulfate in meq/L	Chloride in meq/L	Nitrate-N in meq/L	Fluoride in meq/L	Bromide in meq/L	**Total Cations In meq/L**	**Total Anions In meq/L**	**% Difference***
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	2.329992864
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	2.719655466
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	3.170632156
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	9.799101358
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	9.059732659
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	3.089180476
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	2.051709412

	EC/Cation	EC/Anion				
327392	391651.85	410338.16	range	0	to	0
327393	26958.5858	28465.942	range	0	to	0
327394	184506.436	173165.96	range	0	to	0
327395	32698.9806	39803.58	range	0	to	0
327396	882.2326	735.6562	range	0	to	0
327397	301828.654	283739.4	range	0	to	0
327398	351373.262	337244.82	range	0	to	0

TDS/EC	TDS/Cat		TDS/Anion	
#DIV/0!	0.62		0.60	needs to be 0.55-0.77
#DIV/0!	0.93		0.89	needs to be 0.55-0.77
#DIV/0!	0.64		0.68	needs to be 0.55-0.77
#DIV/0!	1.14		0.93	needs to be 0.55-0.77
#DIV/0!	0.66		0.80	needs to be 0.55-0.77
#DIV/0!	0.56		0.59	needs to be 0.55-0.77
#DIV/0!	0.51		0.53	needs to be 0.55-0.77

Analysis Request of Chain of Custody Record

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

PAGE: 1 OF: 1

CLIENT NAME: Celero

SITE MANAGER: Jeff Kindley

PROJECT NO.: 114-6401627

PROJECT NAME: Celero / Rock Queen #1 TB

LAB I.D. NUMBER	DATE 2013	TIME	MATRIX	COMP	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	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	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS	
327392	4-24-13	1030	W		G	MW-1	4	N	X		X		X											X				X	
327393		1025				MW-2																							
327394		1045				MW-3																							
327395		1105				MW-4																							
327396		1130				MW-5																							
327397		1035				MW-6																							
327398		1055				MW-7																							

ANALYSIS REQUEST (Circle or Specify Method No.)

RELINQUISHED BY: (Signature) Date: 4.25.13 Time: 1645

RECEIVED BY: (Signature) Date: 4/25/13 Time: 1645

SAMPLED BY: (Print & Initial) RS/ED Date: 4.25.13 Time: 1645

RELINQUISHED BY: (Signature) Date: Time: 1530

RECEIVED BY: (Signature) Date: Time:

SAMPLE SHIPPED BY: (Circle) FEDEX BUS HAND DELIVERED UPS

AIRBILL #:

OTHER:

RELINQUISHED BY: (Signature) Date: Time:

RECEIVED BY: (Signature) Date: Time:

RECEIVING LABORATORY: Trace

ADDRESS:

CITY: Midland STATE: ZIP:

CONTACT: PHONE

RECEIVED BY: (Signature) Brenda Ward

DATE: 4/30/13 TIME: 9:05

TETRA TECH CONTACT PERSON: Jeff Kindley

Results by:

RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: 5-9°

REMARKS: LS ZP896047

Please fill out all copies - Laboratory retains Yellow copy - Return Orginal copy to Tetra Tech - Project Manager retains Pink copy - Accounting receives Gold copy.

Midland - BTEX, pH + TDS
Lubbock - all other tests

TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800-378-1296 806-794-1296 FAX 806-794-1298
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
(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

(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 SO4 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.

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

Report Contents

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.

Analytical Report

Sample: 336647 - MW-1

Laboratory:	Midland				
Analysis:	Alkalinity	Analytical Method:	SM 2320B	Prep Method:	N/A
QC Batch:	103654	Date Analyzed:	2013-07-30	Analyzed By:	AR
Prep Batch:	87699	Sample Preparation:	2013-07-29	Prepared By:	AR

Parameter	Flag	Cert	Result	RL	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	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	103765	Date Analyzed:	2013-08-07	Analyzed By:	KC
Prep Batch:	87919	Sample Preparation:	2013-08-05	Prepared By:	KC

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
Benzene		2	<0.00100		mg/L	1	0.00100
Toluene	U	2	<0.00100		mg/L	1	0.00100
Ethylbenzene	Q[3],U	2	<0.00100		mg/L	1	0.00100
Xylene	Q[3]	2	**0.0221**		mg/L	1	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0747	mg/L	1	0.100	75	70 - 130
4-Bromofluorobenzene (4-BFB)	[1] Q[3r]	Q[3r]	0.0414	mg/L	1	0.100	41	70 - 130

Sample: 336647 - MW-1

Laboratory:	Lubbock				
Analysis:	Cations	Analytical Method:	S 6010C	Prep Method:	S 3005A
QC Batch:	103950	Date Analyzed:	2013-08-12	Analyzed By:	RR
Prep Batch:	87738	Sample Preparation:	2013-07-30	Prepared By:	PM

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
Dissolved Calcium		1	**2090**		mg/L	100	1.00
Dissolved Potassium		1	**1450**		mg/L	100	1.00
Dissolved Magnesium		1	**2830**		mg/L	1	1.00
Dissolved Sodium		1	**73100**		mg/L	1000	1.00

Sample: 336647 - MW-1

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

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
Chloride		1	**128000**		mg/L	5000	2.50

Sample: 336647 - MW-1

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

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
Hardness (by ICP)			**16900**		mg eq CaCO3/L	1	0.00

Sample: 336647 - MW-1

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

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
pH		2	**5.90**		s.u.	1	0.00

Sample: 336647 - MW-1

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

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

Sample: 336647 - MW-1

Laboratory:	Midland				
Analysis:	TDS	Analytical Method:	SM 2540C	Prep Method:	N/A
QC Batch:	103618	Date Analyzed:	2013-07-26	Analyzed By:	AR
Prep Batch:	87794	Sample Preparation:	2013-07-25	Prepared By:	AR

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
Total Dissolved Solids		2	**231000**		mg/L	100	2.50

Sample: 336648 - MW-2

Laboratory:	Midland				
Analysis:	Alkalinity	Analytical Method:	SM 2320B	Prep Method:	N/A
QC Batch:	103654	Date Analyzed:	2013-07-30	Analyzed By:	AR
Prep Batch:	87699	Sample Preparation:	2013-07-29	Prepared By:	AR

Parameter	Flag	Cert	Result	RL	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	**127**		mg/L as CaCo3	1	20.0
Total Alkalinity		2	**127**		mg/L as CaCo3	1	20.0

Sample: 336648 - MW-2

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	103610	Date Analyzed:	2013-08-01	Analyzed By:	AH
Prep Batch:	87705	Sample Preparation:	2013-07-29	Prepared By:	AH

Parameter	Flag	Cert	Result	RL 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 Amount	Percent Recovery	Recovery 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	Result	RL 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	Result	RL 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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Hardness (by ICP)			**6660**	mg eq CaCO3/L	1	0.00

Sample: 336648 - MW-2

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
pH		2	**6.65**	s.u.	1	0.00

Sample: 336648 - MW-2

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 Result	Units	Dilution	RL
Sulfate	U	1	<2500	mg/L	1000	2.50

Sample: 336648 - MW-2

Laboratory:	Midland				
Analysis:	TDS	Analytical Method:	SM 2540C	Prep Method:	N/A
QC Batch:	104170	Date Analyzed:	2013-08-16	Analyzed By:	AR
Prep Batch:	88264	Sample Preparation:	2013-08-15	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Total Dissolved Solids		2	**18500**	mg/L	20	2.50

Sample: 336649 - MW-3

Laboratory:	Midland				
Analysis:	Alkalinity	Analytical Method:	SM 2320B	Prep Method:	N/A
QC Batch:	103654	Date Analyzed:	2013-07-30	Analyzed By:	AR
Prep Batch:	87699	Sample Preparation:	2013-07-29	Prepared By:	AR

Parameter	Flag	Cert	RL 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	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	103610	Date Analyzed:	2013-08-01	Analyzed By:	AH
Prep Batch:	87705	Sample Preparation:	2013-07-29	Prepared By:	AH

Parameter	Flag	Cert	RL 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 Amount	Percent Recovery	Recovery 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	Analytical Method:	S 6010C	Prep Method:	S 3005A
QC Batch:	103949	Date Analyzed:	2013-08-12	Analyzed By:	RR
Prep Batch:	87738	Sample Preparation:	2013-07-30	Prepared By:	PM

Parameter	Flag	Cert	RL 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 ...

sample 336649 continued ...

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Dissolved Sodium		1	**32100**	mg/L	1000	1.00

Sample: 336649 - MW-3

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1	**64000**	mg/L	5000	2.50

Sample: 336649 - MW-3

Laboratory:	Lubbock				
Analysis:	Hardness	Analytical Method:	S 6010C	Prep Method:	N/A
QC Batch:	103949	Date Analyzed:	2013-08-12	Analyzed By:	RR
Prep Batch:	87738	Sample Preparation:	2013-07-30	Prepared By:	PM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Hardness (by ICP)			**17100**	mg eq CaCO3/L	1	0.00

Sample: 336649 - MW-3

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
pH		2	**6.28**	s.u.	1	0.00

Sample: 336649 - MW-3

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

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

Sample: 336649 - MW-3

Laboratory:	Midland				
Analysis:	TDS	Analytical Method:	SM 2540C	Prep Method:	N/A
QC Batch:	103618	Date Analyzed:	2013-07-26	Analyzed By:	AR
Prep Batch:	87794	Sample Preparation:	2013-07-25	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Total Dissolved Solids		2	**124000**	mg/L	100	2.50

Sample: 336650 - MW-4

Laboratory:	Midland				
Analysis:	Alkalinity	Analytical Method:	SM 2320B	Prep Method:	N/A
QC Batch:	103656	Date Analyzed:	2013-07-31	Analyzed By:	AR
Prep Batch:	87699	Sample Preparation:	2013-07-29	Prepared By:	AR

Parameter	Flag	Cert	RL 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	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	103610	Date Analyzed:	2013-08-01	Analyzed By:	AH
Prep Batch:	87705	Sample Preparation:	2013-07-29	Prepared By:	AH

Parameter	Flag	Cert	Result	RL 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 Amount	Percent Recovery	Recovery 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	Result	RL Units	Dilution	RL
Dissolved Calcium		1	**6770**	mg/L	100	1.00
Dissolved Potassium		1	**135**	mg/L	10	1.00
Dissolved Magnesium		1	**1150**	mg/L	100	1.00
Dissolved Sodium		1	**4030**	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	Result	RL Units	Dilution	RL
Chloride		1	**23900**	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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Hardness (by ICP)			**21600**	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 Result	Units	Dilution	RL
pH		2	**6.58**	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 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 Result	Units	Dilution	RL
Total Dissolved Solids		2	**49200**	mg/L	100	2.50

Sample: 336651 - MW-5

Laboratory:	Midland				
Analysis:	Alkalinity	Analytical Method:	SM 2320B	Prep Method:	N/A
QC Batch:	103656	Date Analyzed:	2013-07-31	Analyzed By:	AR
Prep Batch:	87699	Sample Preparation:	2013-07-29	Prepared By:	AR

Parameter	Flag	Cert	RL 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	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	103610	Date Analyzed:	2013-08-01	Analyzed By:	AH
Prep Batch:	87705	Sample Preparation:	2013-07-29	Prepared By:	AH

Parameter	Flag	Cert	RL 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 Amount	Percent Recovery	Recovery 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	Analytical Method:	S 6010C	Prep Method:	S 3005A
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 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

continued ...

sample 336651 continued ...

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Dissolved Sodium		1	**60.4**	mg/L	1	1.00

Sample: 336651 - MW-5

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 Result	Units	Dilution	RL
Chloride		1	**65.7**	mg/L	5	2.50

Sample: 336651 - MW-5

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 Result	Units	Dilution	RL
Hardness (by ICP)			**212**	mg eq CaCO3/L	1	0.00

Sample: 336651 - MW-5

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 Result	Units	Dilution	RL
pH		2	**8.07**	s.u.	1	0.00

Sample: 336651 - MW-5

Laboratory:	Lubbock				
Analysis:	SO4 (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 Result	Units	Dilution	RL
Sulfate		1	**132**	mg/L	5	2.50

Sample: 336651 - MW-5

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 Result	Units	Dilution	RL
Total Dissolved Solids		2	**510**	mg/L	1	2.50

Sample: 336652 - MW-6

Laboratory:	Midland				
Analysis:	Alkalinity	Analytical Method:	SM 2320B	Prep Method:	N/A
QC Batch:	103656	Date Analyzed:	2013-07-31	Analyzed By:	AR
Prep Batch:	87699	Sample Preparation:	2013-07-29	Prepared By:	AR

Parameter	Flag	Cert	RL 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				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	103765	Date Analyzed:	2013-08-07	Analyzed By:	KC
Prep Batch:	87919	Sample Preparation:	2013-08-05	Prepared By:	KC

Parameter	Flag	Cert	RL 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	Q8,U	2	<0.00100	mg/L	1	0.00100
Xylene	Q8,U	2	<0.00100	mg/L	1	0.00100

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)				0.0718	mg/L	1	0.100	72	70 - 130
4-Bromofluorobenzene (4-BFB)	2 Q8r	Q8r		0.0543	mg/L	1	0.100	54	70 - 130

Sample: 336652 - MW-6

Laboratory:	Lubbock				
Analysis:	Cations	Analytical Method:	S 6010C	Prep Method:	S 3005A
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 Result	Units	Dilution	RL
Dissolved Calcium		1	**4840**	mg/L	100	1.00
Dissolved Potassium		1	**780**	mg/L	10	1.00
Dissolved Magnesium		1	**3050**	mg/L	100	1.00
Dissolved Sodium		1	**57000**	mg/L	1000	1.00

Sample: 336652 - MW-6

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 Result	Units	Dilution	RL
Chloride		1	**117000**	mg/L	5000	2.50

Sample: 336652 - MW-6

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	Result	RL	Units	Dilution	RL
Hardness (by ICP)			**24600**		mg eq CaCO3/L	1	0.00

Sample: 336652 - MW-6

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	Result	RL	Units	Dilution	RL
pH		2	**6.22**		s.u.	1	0.00

Sample: 336652 - MW-6

Laboratory:	Lubbock				
Analysis:	SO4 (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	Result	RL	Units	Dilution	RL
Sulfate		1	<12500		mg/L	5000	2.50

Sample: 336652 - MW-6

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	Result	RL	Units	Dilution	RL
Total Dissolved Solids		2	**197000**		mg/L	100	2.50

Sample: 336653 - MW-7

Laboratory:	Midland				
Analysis:	Alkalinity	Analytical Method:	SM 2320B	Prep Method:	N/A
QC Batch:	103656	Date Analyzed:	2013-07-31	Analyzed By:	AR
Prep Batch:	87699	Sample Preparation:	2013-07-29	Prepared By:	AR

Parameter	Flag	Cert	RL 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	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	103777	Date Analyzed:	2013-08-07	Analyzed By:	KC
Prep Batch:	87929	Sample Preparation:	2013-08-06	Prepared By:	KC

Parameter	Flag	Cert	RL 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 Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	3 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	Analytical Method:	S 6010C	Prep Method:	S 3005A
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 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

continued ...

sample 336653 continued ...

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Dissolved Sodium		1	**58700**	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 Result	Units	Dilution	RL
Chloride		1	**127000**	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 Result	Units	Dilution	RL
Hardness (by ICP)			**25600**	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 Result	Units	Dilution	RL
pH		2	**6.26**	s.u.	1	0.00

Sample: 336653 - MW-7

Laboratory:	Lubbock				
Analysis:	SO4 (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 Result	Units	Dilution	RL
Sulfate		1	<12500	mg/L	5000	2.50

Sample: 336653 - MW-7

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 Result	Units	Dilution	RL
Total Dissolved Solids		2	**213000**	mg/L	100	2.50

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 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 Amount	Percent Recovery	Recovery 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 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 Result	Units	RL
Total Dissolved Solids		2	9.00	mg/L	2.5

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 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 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 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

Parameter	Flag	Cert	MDL Result	Units	RL
Sulfate		1	<0.224	mg/L	2.5

Method Blank (1) QC Batch: 103765

QC Batch: 103765 Date Analyzed: 2013-08-07 Analyzed By: KC
Prep Batch: 87919 QC Preparation: 2013-08-05 Prepared By: KC

Parameter	Flag	Cert	MDL 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 Amount	Percent Recovery	Recovery 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 Date Analyzed: 2013-08-07 Analyzed By: KC
Prep Batch: 87929 QC Preparation: 2013-08-06 Prepared By: KC

Parameter	Flag	Cert	MDL 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 Amount	Percent Recovery	Recovery 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

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 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 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 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 Result	Units	RL
Dissolved Calcium		1	<0.0441	mg/L	1

continued ...

method blank continued ...

Parameter	Flag	Cert	MDL 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 Date Analyzed: 2013-08-13 Analyzed By: RR
Prep Batch: 87768 QC Preparation: 2013-07-31 Prepared By: PM

Parameter	Flag	Cert	MDL 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 Date Analyzed: 2013-08-16 Analyzed By: RL
Prep Batch: 88241 QC Preparation: 2013-08-16 Prepared By: RL

Parameter	Flag	Cert	MDL Result	Units	RL
Chloride		1	0.175	mg/L	2.5

Method Blank (1) QC Batch: 104141

QC Batch: 104141 Date Analyzed: 2013-08-16 Analyzed By: RL
Prep Batch: 88241 QC Preparation: 2013-08-16 Prepared By: RL

Parameter	Flag	Cert	MDL Result	Units	RL
Sulfate		1	<0.224	mg/L	2.5

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 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 Result	Sample Result	Units	Dilution	RPD	RPD 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 Result	Sample Result	Units	Dilution	RPD	RPD 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 Result	Sample Result	Units	Dilution	RPD	RPD Limit
Total Dissolved Solids	2	3720	3900	mg/L	5	5	10

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 103610 | Date Analyzed: 2013-08-01 | Analyzed By: AH
Prep Batch: 87705 | QC Preparation: 2013-07-29 | Prepared By: AH

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. 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 Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD 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 Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. 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 | Date Analyzed: 2013-07-26 | Analyzed By: AR
Prep Batch: 87794 | QC Preparation: 2013-07-25 | Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. 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.

continued ...

control spikes continued ...

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD 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 | Date Analyzed: 2013-07-30 | Analyzed By: AR
Prep Batch: 87794 | QC Preparation: 2013-07-25 | Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. 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 Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD 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 | Date Analyzed: 2013-08-05 | Analyzed By: RL
Prep Batch: 87895 | QC Preparation: 2013-08-05 | Prepared By: RL

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. 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 Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD 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.

Laboratory Control Spike (LCS-1)

QC Batch: 103740 | Date Analyzed: 2013-08-05 | Analyzed By: RL
Prep Batch: 87895 | QC Preparation: 2013-08-05 | Prepared By: RL

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. 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 Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD 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 | Date Analyzed: 2013-08-07 | Analyzed By: KC
Prep Batch: 87919 | QC Preparation: 2013-08-05 | Prepared By: KC

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. 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 Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD 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 Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. 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

Laboratory Control Spike (LCS-1)

QC Batch: 103777 | Date Analyzed: 2013-08-07 | Analyzed By: KC
Prep Batch: 87929 | QC Preparation: 2013-08-06 | Prepared By: KC

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. 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	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD 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 Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. 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 | Date Analyzed: 2013-08-06 | Analyzed By: RL
Prep Batch: 87957 | QC Preparation: 2013-08-06 | Prepared By: RL

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. 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	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD 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.

Laboratory Control Spike (LCS-1)

QC Batch: 103814 | Date Analyzed: 2013-08-06 | Analyzed By: RL
Prep Batch: 87957 | QC Preparation: 2013-08-06 | Prepared By: RL

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. 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 Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD 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 | Date Analyzed: 2013-08-12 | Analyzed By: RR
Prep Batch: 87738 | QC Preparation: 2013-07-30 | Prepared By: PM

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. 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 Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD 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 | Date Analyzed: 2013-08-12 | Analyzed By: RR
Prep Batch: 87738 | QC Preparation: 2013-07-30 | Prepared By: PM

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. 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 Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD 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 | Date Analyzed: 2013-08-13 | Analyzed By: RR
Prep Batch: 87768 | QC Preparation: 2013-07-31 | Prepared By: PM

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. 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	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD 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 | Date Analyzed: 2013-08-16 | Analyzed By: RL
Prep Batch: 88241 | QC Preparation: 2013-08-16 | Prepared By: RL

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. 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 Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD 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 | Date Analyzed: 2013-08-16 | Analyzed By: RL
Prep Batch: 88241 | QC Preparation: 2013-08-16 | Prepared By: RL

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. 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 Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD 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 | Date Analyzed: 2013-08-16 | Analyzed By: AR
Prep Batch: 88264 | QC Preparation: 2013-08-15 | Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. 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 Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD 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.

Matrix Spike (MS-1) Spiked Sample: 336651

QC Batch: 103610 | Date Analyzed: 2013-08-01 | Analyzed By: AH
Prep Batch: 87705 | QC Preparation: 2013-07-29 | Prepared By: AH

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. 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 Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD 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 Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. 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 | Date Analyzed: 2013-08-05 | Analyzed By: RL
Prep Batch: 87895 | QC Preparation: 2013-08-05 | Prepared By: RL

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. 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 Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD 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.

Matrix Spike (MS-1) Spiked Sample: 336650

QC Batch: 103740 | Date Analyzed: 2013-08-05 | Analyzed By: RL
Prep Batch: 87895 | QC Preparation: 2013-08-05 | Prepared By: RL

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. 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 Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD 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 | Date Analyzed: 2013-08-07 | Analyzed By: KC
Prep Batch: 87919 | QC Preparation: 2013-08-05 | Prepared By: KC

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
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	Qs	Qs	2	0.0680	mg/L	1	0.100	<0.000400	68	70 - 130
Xylene	Qs	Qs	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 Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD 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	Qs	Qs	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 Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)			0.0722	0.0705	mg/L	1	0.1	72	70	70 - 130
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr	0.0651	0.0614	mg/L	1	0.1	65	61	70 - 130

Matrix Spike (MS-1) Spiked Sample: 337354

QC Batch: 103777 | Date Analyzed: 2013-08-07 | Analyzed By: KC
Prep Batch: 87929 | QC Preparation: 2013-08-06 | Prepared By: KC

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	Qs	Qs	0.0267	mg/L	1	0.100	<0.000200	27	70 - 130
Toluene	Qs	Qs	0.0247	mg/L	1	0.100	<0.000300	25	70 - 130
Ethylbenzene	Qs	Qs	0.0228	mg/L	1	0.100	<0.000400	23	70 - 130
Xylene	Qs	Qs	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	Qr,Qs	Qr,Qs	0.0144	mg/L	1	0.100	<0.000200	14	70 - 130	60	20
Toluene	Qr,Qs	Qr,Qs	0.0134	mg/L	1	0.100	<0.000300	13	70 - 130	59	20
Ethylbenzene	Qr,Qs	Qr,Qs	0.0143	mg/L	1	0.100	<0.000400	14	70 - 130	46	20
Xylene	Qr,Qs	Qr,Qs	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 | Date Analyzed: 2013-08-06 | Analyzed By: RL
Prep Batch: 87957 | QC Preparation: 2013-08-06 | 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.

Matrix Spike (MS-1) Spiked Sample: 336656

QC Batch: 103814 | Date Analyzed: 2013-08-06 | Analyzed By: RL
Prep Batch: 87957 | QC Preparation: 2013-08-06 | Prepared By: RL

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. 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 Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD 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 | Date Analyzed: 2013-08-12 | Analyzed By: RR
Prep Batch: 87738 | QC Preparation: 2013-07-30 | Prepared By: PM

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. 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 Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD 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 | Date Analyzed: 2013-08-12 | Analyzed By: RR
Prep Batch: 87738 | QC Preparation: 2013-07-30 | Prepared By: PM

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. 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 Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD 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 | Date Analyzed: 2013-08-13 | Analyzed By: RR
Prep Batch: 87768 | QC Preparation: 2013-07-31 | Prepared By: PM

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. 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 Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD 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 | Date Analyzed: 2013-08-16 | Analyzed By: RL
Prep Batch: 88241 | QC Preparation: 2013-08-16 | Prepared By: RL

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. 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 Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD 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 | Date Analyzed: 2013-08-16 | Analyzed By: RL
Prep Batch: 88241 | QC Preparation: 2013-08-16 | Prepared By: RL

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. 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 Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD 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 True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date 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 True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date 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 True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date 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 True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
pH		2	s.u.	7.00	7.10	101	98 - 102	2013-07-26

Standard (CCV-1)

QC Batch: 103610 Date Analyzed: 2013-08-01 Analyzed By: AH

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date 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 True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date 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 True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date 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

Param	Flag	Cert	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date 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 True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date 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 True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date 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 True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Hydroxide Alkalinity		2	mg/L as CaCo3	0.00	6.00		-	2013-07-31

continued ...

standard continued ...

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date 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 True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date 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 True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date 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 True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date 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

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date 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 True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date 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 True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date 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 True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date 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

Standard (CCV-4)

QC Batch: 103765 | Date Analyzed: 2013-08-07 | Analyzed By: KC

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date 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 True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date 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 True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date 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

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date 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 True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date 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 True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date 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 True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date 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

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date 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 True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date 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 True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date 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 True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date 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: 103950 Date Analyzed: 2013-08-12 Analyzed By: RR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date 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 True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date 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 True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date 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

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date 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 True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date 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 True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date 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 True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date 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 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.
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.

~~1306 2617~~ 1307 2617

Analysis Request of Chain of Custody Record

PAGE: 1 OF: 1

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

CLIENT NAME: Celero Energy

SITE MANAGER: Greg Pop

PROJECT NO.: 114-6401627

PROJECT NAME: Rock Queen TB #1

ANALYSIS REQUEST (Circle or Specify Method No.)

LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	HCL	HNO3	ICE	NONE	BTEX 8021B	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	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS SO4/Cl	Alk/TDS	Hardness/Cl/SO4/Na/K/Ca/Mg
336647	7/24/13	1425	W		X	MW-1	5	N	X		X		X												X				X		
648	↓	1435	↓		↓	MW-2	↓	↓	↓		↓		↓												↓				↓		
649	↓	1410	↓		↓	MW-3	↓	↓	↓		↓		↓												↓				↓		
650	↓	1455	↓		↓	MW-4	↓	↓	↓		↓		↓												↓				↓		
651	↓	1510	↓		↓	MW-5	↓	↓	↓		↓		↓												↓				↓		
652	↓	1245	↓		↓	MW-6	↓	↓	↓		↓		↓												↓				↓		
653	↓	1445	↓		↓	MW-7	↓	↓	↓		↓		↓												↓				↓		

RELINQUISHED BY: (Signature) [signature] Date: Time:

RECEIVED BY: (Signature) [signature] Date: 7-26-13 Time: 830

SAMPLED BY: (Print & Initial) CF/AD Date: Time:

RELINQUISHED BY: (Signature) [signature] Date: 7-26-13 Time: 830

RECEIVED BY: (Signature) [signature] Date: 7/26/13 Time: 8:30

SAMPLE SHIPPED BY: (Circle) FEDEX BUS HAND DELIVERED UPS AIRBILL #: OTHER:

RELINQUISHED BY: (Signature) Date: Time:

RECEIVED BY: (Signature) Date: Time:

TETRA TECH CONTACT PERSON: AH

Results by:

RECEIVING LABORATORY:
ADDRESS:
CITY: STATE: ZIP:
CONTACT: PHONE:

RECEIVED BY: (Signature)
DATE: TIME:

RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: 3.3°

REMARKS:

Please fill out all copies - Laboratory retains Yellow copy - Return Orginal copy to Tetra Tech - Project Manager retains Pink copy - Accounting receives Gold copy.

1306261T 13072617

Analysis Request of Chain of Custody Record

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

PAGE: 1 OF: 1

ANALYSIS REQUEST
(Circle or Specify Method No.)

CLIENT NAME: Celero Energy
SITE MANAGER: Greg Pop
PROJECT NO.: 114-6401627
PROJECT NAME: Rock Queen TB #1

LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	HCL	HNO3	ICE	NONE	BTEX 8021B	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	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS (pH/alk/TDS; Hardness/Cl/SO4/Na/K/Ca/Mg)
336647	7/24/13	1425	W		X	mw-1	5	N	X		X		X												X				X
648		1435				mw-2																							
649		1410				mw-3																							
650		1455				mw-4																							
651		1510				mw-5																							
652		1245				mw-6																							
653		1445				mw-7																							

RELINQUISHED BY: (Signature) [signature] Date: Time:
RECEIVED BY: (Signature) [signature] Date: 7-26-13 Time: 830

RELINQUISHED BY: (Signature) [signature] Date: 7-26-13 Time: 830
RECEIVED BY: (Signature) [signature] Date: 7/26/13 Time: 8:30

RELINQUISHED BY: (Signature) [signature] Date: 7/29/13 Time: 15:30
RECEIVED BY: (Signature) Date: Time:

RECEIVING LABORATORY:
ADDRESS:
CITY: STATE: ZIP:
CONTACT: PHONE:
RECEIVED BY: (Signature) Brenda Ward TA LUBBOCK
DATE: 7/30/13 TIME: 8:45

SAMPLE CONDITION WHEN RECEIVED: 3.3°

REMARKS: Midland - TDS/pH/alk/BTEX Lubbock - all others

SAMPLED BY: (Print & Initial) CF/AD Date: Time:

SAMPLE SHIPPED BY: (Circle)
FEDEX BUS AIRBILL #:
HAND DELIVERED UPS OTHER:

TETRA TECH CONTACT PERSON: LS 3.6/3.9 AH ZQ 19885

Results by:

RUSH Charges Authorized: Yes No

Please fill out all copies - Laboratory retains Yellow copy - Return Orginal copy to Tetra Tech - Project Manager retains Pink copy - Accounting receives Gold copy.

Cation-Anion Balance Sheet

DATE: 8/20/2013

Sample #	Calcium ppm	Magnesium ppm	Sodium ppm	Potassium ppm	Alkalinity ppm	Sulfate ppm	Chloride ppm	Nitrate-N ppm	Fluoride ppm	Bromide ppm	TDS ppm	EC µMHOs/cm
336647	2090	2830	73100	1450	100.00	2080	128000				231000	
336648	1800	525	2640	35	127.00	0	9400				18480	
336649	4120	1660	32100	569	100.00	1890	64000				124500	
336650	6770	1150	4030	135	148.00	365	23900				49200	
336651	68.5	9.9	60.4	2.95	161.00	132	65.7				510	
336652	4840	3050	57000	780	174.00	2410	117000				196800	
336653	4900	3250	58700	968	187.00	2200	127000				213100	

Sample #	Calcium in meq/L	Magnesium in meq/L	Sodium in meq/L	Potassium in meq/L	Alkalinity in meq/L	Sulfate in meq/L	Chloride in meq/L	Nitrate-N in meq/L	Fluoride in meq/L	Bromide in meq/L	**Total Cations in meq/L**	**Total Anions in meq/L**	**% Difference***
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	684.78	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

	EC/Cation	EC/Anion				
336647	355411.27	365618.56	range	0	to	0
336648	24875.755	26771.4	range	0	to	0
336649	175309.442	184678.98	range	0	to	0
336650	61121.48	68477.83	range	0	to	0
336651	693.5682	782.1637	range	0	to	0
336652	299195.29	335422.62	range	0	to	0
336653	309016.394	363221.4	range	0	to	0

TDS/EC	TDS/Cat		TDS/Anion	
#DIV/0!	0.65		0.63	needs to be 0.55-0.77
#DIV/0!	0.74		0.69	needs to be 0.55-0.77
#DIV/0!	0.71		0.67	needs to be 0.55-0.77
#DIV/0!	0.80		0.72	needs to be 0.55-0.77
#DIV/0!	0.74		0.65	needs to be 0.55-0.77
#DIV/0!	0.66		0.59	needs to be 0.55-0.77
#DIV/0!	0.69		0.59	needs to be 0.55-0.77

TRACEANALYSIS, INC.

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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.

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

Report Contents

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.

Analytical Report

Sample: 345377 - MW-1

Laboratory:	Midland				
Analysis:	Alkalinity	Analytical Method:	SM 2320B	Prep Method:	N/A
QC Batch:	106461	Date Analyzed:	2013-11-01	Analyzed By:	AR
Prep Batch:	90171	Sample Preparation:	2013-11-01	Prepared By:	AR

Parameter	Flag	Cert	RL 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	**123**	mg/L as CaCo3	1	20.0
Total Alkalinity		2	**123**	mg/L as CaCo3	1	20.0

Sample: 345377 - MW-1

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	106530	Date Analyzed:	2013-11-05	Analyzed By:	AK
Prep Batch:	90196	Sample Preparation:	2013-11-04	Prepared By:	AK

Parameter	Flag	Cert	RL 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 Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	[1] 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	Analytical Method:	S 6010C	Prep Method:	S 3005A
QC Batch:	106734	Date Analyzed:	2013-11-13	Analyzed By:	RR
Prep Batch:	90268	Sample Preparation:	2013-11-09	Prepared By:	PM

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
Dissolved Calcium		1	**2120**		mg/L	100	1.00
Dissolved Potassium		1	**1150**		mg/L	100	1.00
Dissolved Magnesium		1	**2750**		mg/L	100	1.00
Dissolved Sodium		1	**56400**		mg/L	1000	1.00

Sample: 345377 - MW-1

Laboratory: Lubbock
Analysis: Chloride (IC)
QC Batch: 106706
Prep Batch: 90366

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	Result	RL	Units	Dilution	RL
Chloride		1	**136000**		mg/L	5000	2.50

Sample: 345377 - MW-1

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

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
Hardness (by ICP)			**16600**		mg eq CaCO3/L	1	0.00

Sample: 345377 - MW-1

Laboratory: Midland
Analysis: pH
QC Batch: 106464
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	Result	RL	Units	Dilution	RL
pH		2	**6.46**		s.u.	1	0.00

Sample: 345377 - MW-1

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 Result	Units	Dilution	RL
Sulfate		1	**395**	mg/L	100	2.50

Sample: 345377 - MW-1

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 Result	Units	Dilution	RL
Total Dissolved Solids		2	**197000**	mg/L	100	2.50

Sample: 345378 - MW-2

Laboratory:	Midland				
Analysis:	Alkalinity	Analytical Method:	SM 2320B	Prep Method:	N/A
QC Batch:	106461	Date Analyzed:	2013-11-01	Analyzed By:	AR
Prep Batch:	90171	Sample Preparation:	2013-11-01	Prepared By:	AR

Parameter	Flag	Cert	RL 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: 345378 - MW-2

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	106459	Date Analyzed:	2013-11-01	Analyzed By:	AK
Prep Batch:	90156	Sample Preparation:	2013-11-01	Prepared By:	AK

Parameter	Flag	Cert	RL 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 Amount	Percent Recovery	Recovery 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 Result	Units	Dilution	RL
Dissolved Calcium		1	**1710**	mg/L	100	1.00
Dissolved Potassium		1	**32.0**	mg/L	10	1.00
Dissolved Magnesium		1	**462**	mg/L	10	1.00
Dissolved Sodium		1	**3000**	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 Result	Units	Dilution	RL
Chloride		1	**9980**	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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Hardness (by ICP)			**6170**	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 Result	Units	Dilution	RL
pH		2	**6.93**	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 Result	Units	Dilution	RL
Sulfate		1	**165**	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 Result	Units	Dilution	RL
Total Dissolved Solids		2	**21200**	mg/L	20	2.50

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 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 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	Q8,U	2	<0.00100	mg/L	1	0.00100
Xylene	Q8,U	2	<0.00300	mg/L	1	0.00300

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery 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 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 . . .

sample 345379 continued ...

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Dissolved Sodium		1	**30600**	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 Result	Units	Dilution	RL
Chloride		1	**81900**	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 Result	Units	Dilution	RL
Hardness (by ICP)			**21500**	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 Result	Units	Dilution	RL
pH		2	**6.55**	s.u.	1	0.00

Sample: 345379 - MW-3

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 Result	Units	Dilution	RL
Sulfate		1	**2040**	mg/L	100	2.50

Sample: 345379 - MW-3

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 Result	Units	Dilution	RL
Total Dissolved Solids		2	**121000**	mg/L	100	2.50

Sample: 345380 - MW-4

Laboratory:	Midland				
Analysis:	Alkalinity	Analytical Method:	SM 2320B	Prep Method:	N/A
QC Batch:	106461	Date Analyzed:	2013-11-01	Analyzed By:	AR
Prep Batch:	90171	Sample Preparation:	2013-11-01	Prepared By:	AR

Parameter	Flag	Cert	RL 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	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	106459	Date Analyzed:	2013-11-01	Analyzed By:	AK
Prep Batch:	90156	Sample Preparation:	2013-11-01	Prepared By:	AK

Parameter	Flag	Cert	RL 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 Amount	Percent Recovery	Recovery 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	Analytical Method:	S 6010C	Prep Method:	S 3005A
QC Batch:	106734	Date Analyzed:	2013-11-13	Analyzed By:	RR
Prep Batch:	90268	Sample Preparation:	2013-11-09	Prepared By:	PM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Dissolved Calcium		1	**283**	mg/L	10	1.00
Dissolved Potassium		1	<10.0	mg/L	10	1.00
Dissolved Magnesium		1	**60.5**	mg/L	10	1.00
Dissolved Sodium		1	**428**	mg/L	10	1.00

Sample: 345380 - MW-4

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 Result	Units	Dilution	RL
Chloride		1	**933**	mg/L	100	2.50

Sample: 345380 - MW-4

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 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 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 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 Result	Units	Dilution	RL
Total Dissolved Solids		2	**66000**	mg/L	50	2.50

Sample: 345381 - MW-5

Laboratory:	Midland				
Analysis:	Alkalinity	Analytical Method:	SM 2320B	Prep Method:	N/A
QC Batch:	106461	Date Analyzed:	2013-11-01	Analyzed By:	AR
Prep Batch:	90171	Sample Preparation:	2013-11-01	Prepared By:	AR

Parameter	Flag	Cert	Result	RL 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				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	106459	Date Analyzed:	2013-11-01	Analyzed By:	AK
Prep Batch:	90156	Sample Preparation:	2013-11-01	Prepared By:	AK

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene	U	2	<0.00100	mg/L	1	0.00100
Toluene	U	2	<0.00100	mg/L	1	0.00100
Ethylbenzene	Q8,U	2	<0.00100	mg/L	1	0.00100
Xylene	Q8,U	2	<0.00300	mg/L	1	0.00300

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery 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				
Analysis:	Cations	Analytical Method:	S 6010C	Prep Method:	S 3005A
QC Batch:	106734	Date Analyzed:	2013-11-13	Analyzed By:	RR
Prep Batch:	90268	Sample Preparation:	2013-11-09	Prepared By:	PM

Parameter	Flag	Cert	Result	RL 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

continued ...

sample 345381 continued ...

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Dissolved Sodium		1	**73.8**	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 Result	Units	Dilution	RL
Chloride		1	**70.3**	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 Result	Units	Dilution	RL
Hardness (by ICP)			**245**	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 Result	Units	Dilution	RL
pH		2	**8.01**	s.u.	1	0.00

Sample: 345381 - MW-5

Laboratory:	Lubbock				
Analysis:	SO4 (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 Result	Units	Dilution	RL
Sulfate		1	**146**	mg/L	5	2.50

Sample: 345381 - MW-5

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 Result	Units	Dilution	RL
Total Dissolved Solids		2	**714**	mg/L	2	2.50

Sample: 345382 - MW-6

Laboratory:	Midland				
Analysis:	Alkalinity	Analytical Method:	SM 2320B	Prep Method:	N/A
QC Batch:	106621	Date Analyzed:	2013-11-04	Analyzed By:	AR
Prep Batch:	90295	Sample Preparation:	2013-11-03	Prepared By:	AR

Parameter	Flag	Cert	RL 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				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	106530	Date Analyzed:	2013-11-05	Analyzed By:	AK
Prep Batch:	90196	Sample Preparation:	2013-11-04	Prepared By:	AK

Parameter	Flag	Cert	RL 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 Amount	Percent Recovery	Recovery 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 | Analytical Method: S 6010C | Prep Method: S 3005A
QC Batch: 106734 | Date Analyzed: 2013-11-13 | Analyzed By: RR
Prep Batch: 90268 | Sample Preparation: 2013-11-09 | Prepared By: PM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Dissolved Calcium		1	**3420**	mg/L	100	1.00
Dissolved Potassium		1	**803**	mg/L	10	1.00
Dissolved Magnesium		1	**2660**	mg/L	100	1.00
Dissolved Sodium		1	**50700**	mg/L	1000	1.00

Sample: 345382 - MW-6

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 Result	Units	Dilution	RL
Chloride		1	**126000**	mg/L	5000	2.50

Sample: 345382 - MW-6

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	Result	RL	Units	Dilution	RL
Hardness (by ICP)			**19500**		mg eq CaCO3/L	1	0.00

Sample: 345382 - MW-6

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	Result	RL	Units	Dilution	RL
pH		2	**6.35**		s.u.	1	0.00

Sample: 345382 - MW-6

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	Result	RL	Units	Dilution	RL
Sulfate		1	**2430**		mg/L	100	2.50

Sample: 345382 - MW-6

Laboratory:	Midland				
Analysis:	TDS	Analytical Method:	SM 2540C	Prep Method:	N/A
QC Batch:	106606	Date Analyzed:	2013-11-03	Analyzed By:	AR
Prep Batch:	90201	Sample Preparation:	2013-11-02	Prepared By:	AR

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
Total Dissolved Solids		2	**161000**		mg/L	100	2.50

Sample: 345383 - MW-7

Laboratory:	Midland				
Analysis:	Alkalinity	Analytical Method:	SM 2320B	Prep Method:	N/A
QC Batch:	106621	Date Analyzed:	2013-11-04	Analyzed By:	AR
Prep Batch:	90295	Sample Preparation:	2013-11-03	Prepared By:	AR

Parameter	Flag	Cert	RL 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				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	106530	Date Analyzed:	2013-11-05	Analyzed By:	AK
Prep Batch:	90196	Sample Preparation:	2013-11-04	Prepared By:	AK

Parameter	Flag	Cert	RL 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 Amount	Percent Recovery	Recovery 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				
Analysis:	Cations	Analytical Method:	S 6010C	Prep Method:	S 3005A
QC Batch:	106734	Date Analyzed:	2013-11-13	Analyzed By:	RR
Prep Batch:	90268	Sample Preparation:	2013-11-09	Prepared By:	PM

Parameter	Flag	Cert	RL 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

continued ...

sample 345383 continued ...

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Dissolved Sodium		1	**57500**	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 Result	Units	Dilution	RL
Chloride		1	**147000**	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 Result	Units	Dilution	RL
Hardness (by ICP)			**24600**	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 Result	Units	Dilution	RL
pH		2	**6.42**	s.u.	1	0.00

Sample: 345383 - MW-7

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 Result	Units	Dilution	RL
Sulfate		1	**2880**	mg/L	100	2.50

Sample: 345383 - MW-7

Laboratory:	Midland				
Analysis:	TDS	Analytical Method:	SM 2540C	Prep Method:	N/A
QC Batch:	106606	Date Analyzed:	2013-11-03	Analyzed By:	AR
Prep Batch:	90201	Sample Preparation:	2013-11-02	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Total Dissolved Solids		2	**199000**	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 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 Amount	Percent Recovery	Recovery 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 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

Parameter	Flag	Cert	MDL 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 Amount	Percent Recovery	Recovery 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 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 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 Result	Units	RL
Hydroxide Alkalinity		2	<20.0	mg/L as CaCo3	20

continued ...

method blank continued ...

Parameter	Flag	Cert	MDL 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 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 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 Result	Units	RL
Sulfate		1	<0.132	mg/L	2.5

Method Blank (1) QC Batch: 106734

QC Batch: 106734 | Date Analyzed: 2013-11-13 | Analyzed By: RR
Prep Batch: 90268 | QC Preparation: 2013-11-06 | Prepared By: PM

Parameter	Flag	Cert	MDL 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 | Date Analyzed: 2013-11-12 | Analyzed By: RL
Prep Batch: 90395 | QC Preparation: 2013-11-12 | Prepared By: RL

Parameter	Flag	Cert	MDL Result	Units	RL
Sulfate		1	<0.132	mg/L	2.5

Duplicates (1) Duplicated Sample: 345371

QC Batch: 106461 | Date Analyzed: 2013-11-01 | Analyzed By: AR
Prep Batch: 90171 | QC Preparation: 2013-11-01 | Prepared By: AR

Param		Duplicate Result	Sample Result	Units	Dilution	RPD	RPD 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 | Date Analyzed: 2013-10-31 | Analyzed By: AR
Prep Batch: 90131 | QC Preparation: 2013-10-31 | Prepared By: AR

Param		Duplicate Result	Sample Result	Units	Dilution	RPD	RPD 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 Result	Sample Result	Units	Dilution	RPD	RPD 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 Result	Sample Result	Units	Dilution	RPD	RPD 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 Result	Sample Result	Units	Dilution	RPD	RPD 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

Param		Duplicate Result	Sample Result	Units	Dilution	RPD	RPD 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

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 Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. 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 Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD 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 Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. 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 Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. 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.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD 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 Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. 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 | Date Analyzed: 2013-11-02 | Analyzed By: AR
Prep Batch: 90164 | QC Preparation: 2013-11-01 | Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. 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 Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD 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 | Date Analyzed: 2013-11-03 | Analyzed By: AR
Prep Batch: 90201 | QC Preparation: 2013-11-02 | Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. 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 Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Total Dissolved Solids		2	960	mg/L	1	1000	<2.50	96	90 - 110	9	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: 106706 | Date Analyzed: 2013-11-08 | Analyzed By: RL
Prep Batch: 90366 | QC Preparation: 2013-11-08 | Prepared By: RL

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. 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 Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD 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 | Date Analyzed: 2013-11-08 | Analyzed By: RL
Prep Batch: 90367 | QC Preparation: 2013-11-08 | Prepared By: RL

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. 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 Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD 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 | Date Analyzed: 2013-11-08 | Analyzed By: RL
Prep Batch: 90367 | QC Preparation: 2013-11-08 | Prepared By: RL

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. 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 Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD 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 | Date Analyzed: 2013-11-13 | Analyzed By: RR
Prep Batch: 90268 | QC Preparation: 2013-11-06 | Prepared By: PM

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. 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 Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD 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 | Date Analyzed: 2013-11-12 | Analyzed By: RL
Prep Batch: 90395 | QC Preparation: 2013-11-12 | Prepared By: RL

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. 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.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD 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 | Date Analyzed: 2013-11-01 | Analyzed By: AK
Prep Batch: 90156 | QC Preparation: 2013-11-01 | Prepared By: AK

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		2	0.0833	mg/L	1	0.100	<0.000600	83	70 - 130
Toluene		2	0.0783	mg/L	1	0.100	<0.000400	78	70 - 130
Ethylbenzene	Q8	Q8	2	0.0693	mg/L	1	0.100	<0.000600	69	70 - 130
Xylene	Q8	Q8	2	0.207	mg/L	1	0.300	<0.00130	69	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		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	Q8	Q8	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 Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. 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 | Date Analyzed: 2013-11-05 | Analyzed By: AK
Prep Batch: 90196 | QC Preparation: 2013-11-04 | Prepared By: AK

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. 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 ...

matrix spikes continued ...

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. 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 Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD 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 Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. 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 | Date Analyzed: 2013-11-08 | Analyzed By: RL
Prep Batch: 90366 | QC Preparation: 2013-11-08 | Prepared By: RL

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. 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 Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD 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 | Date Analyzed: 2013-11-08 | Analyzed By: RL
Prep Batch: 90367 | QC Preparation: 2013-11-08 | Prepared By: RL

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. 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 Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD 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 | Date Analyzed: 2013-11-08 | Analyzed By: RL
Prep Batch: 90367 | QC Preparation: 2013-11-08 | Prepared By: RL

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. 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 Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD 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 | Date Analyzed: 2013-11-13 | Analyzed By: RR
Prep Batch: 90268 | QC Preparation: 2013-11-06 | Prepared By: PM

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. 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.

continued ...

matrix spikes continued ...

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD 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 | Date Analyzed: 2013-11-12 | Analyzed By: RL
Prep Batch: 90395 | QC Preparation: 2013-11-12 | Prepared By: RL

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. 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 Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD 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.

Calibration Standards

Standard (CCV-1)

QC Batch: 106459 Date Analyzed: 2013-11-01 Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date 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 True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date 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 True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date 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

Standard (CCV-4)

QC Batch: 106459 Date Analyzed: 2013-11-01 Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date 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 True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date 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 True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date 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

Param	Flag	Cert	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date 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 True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date 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 True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date 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 True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date 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

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date 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 True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date 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 True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date 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 True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Hydroxide Alkalinity		2	mg/L as CaCo3	0.00	32.0		-	2013-11-04

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standard continued ...

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date 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 True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date 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 True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date 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 True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date 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 True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date 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 True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date 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 True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date 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 True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date 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

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date 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 True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date 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 True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date 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

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	T104704392-13-7	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 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, 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.

13103133

Analysis Request of Chain of Custody Record

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

ANALYSIS REQUEST (Circle or Specify Method No.)

CLIENT NAME: Celero Energy
SITE MANAGER: Greg Pope
PROJECT NO.: 114-6401627
PROJECT NAME: Rock Queen #1 TB

LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	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	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS sulfides
345377	10/30/13	1100	W		X	MW-1	5	N	X		X		X												X				X
378	↓	1110	↓		↓	MW-2	↓	↓	↓		↓		↓												↓				↓
379	↓	1030	↓		↓	MW-3	↓	↓	↓		↓		↓												↓				↓
380	↓	1125	↓		↓	MW-4	↓	↓	↓		↓		↓												↓				↓
381	↓	1145	↓		↓	MW-5	↓	↓	↓		↓		↓												↓				↓
382	↓	1045	↓		↓	MW-6	↓	↓	↓		↓		↓												↓				↓
383	↓	1015	↓		↓	MW-7	↓	↓	↓		↓		↓												↓				↓

RELINQUISHED BY: (Signature) [signature] Date: 10/31/13 Time: 1229
RECEIVED BY: (Signature) [signature] Date: 10/31/13 Time: 1229

RELINQUISHED BY: (Signature) Date: Time:
RECEIVED BY: (Signature) Date: Time:

RELINQUISHED BY: (Signature) Date: Time:
RECEIVED BY: (Signature) Date: Time:

RECEIVING LABORATORY:
ADDRESS.
CITY: STATE: ZIP:
CONTACT: PHONE.

RECEIVED BY: (Signature) Tracie Lubbock
DATE: ~~10~~ 11/1/13 TIME: 9:40

SAMPLED BY: (Print & Initial) CF/RD Date: Time:

SAMPLE SHIPPED BY: (Circle) FEDEX BUS HAND DELIVERED UPS
AIRBILL #: EQ536293
OTHER:

TETRA TECH CONTACT PERSON:
Results by:
RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: 1.8°/IR3 3.2/3.1

REMARKS: Midland - BTEX/pH/TDS/alk Lubbock cations/anions AJ

Please fill out all copies - Laboratory retains Yellow copy - Return Original copy to Tetra Tech - Project Manager retains Pink copy - Accounting receives Gold copy.