

1R – 1554

2012 AGWMR

03 / 25 / 2012



TETRA TECH

March 25, 2013

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: 2012 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 2012. The Site is located approximately 21.50 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 was chlorides, TDS, 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 milligrams per liter (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 168,000 mg/L in monitor well MW-1 on April 13, 2011. With the exception of MW-5 all additional monitor wells exceeded the NMWQCC standard of 250 mg/L chlorides.

2012 GROUNDWATER SAMPLING RESULTS

Tetra Tech, Inc. (Tetra Tech) was onsite January 3, April 9, July 23, and October 23, 2012 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 5, April 11, July 24 and October 25, 2012, each of the wells was 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+. 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 milligrams per liter (mg/L) of benzene. Chlorides for the sampling period ranged from 64.5 mg/L in up gradient monitor well MW-5 on April 11, 2012 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. 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 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.

REMEDATION 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 January 2, 2013, a total of approximately 15,100 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 twice, both for replacement of the neoprene leathers and stainless steel tubing.



CONCLUSIONS

1. Sampling occurred on January 5, April 11, July 24, and October 25, 2012. During the sampling events, all monitor wells were gauged, purged and sampled. The samples were preserved, delivered to Trace Analysis, Inc. of Midland, Texas and analyzed for BTEX utilizing method SW8021B, chlorides and sulfates utilizing method E 300.0, total dissolved solids (TDS) utilizing method SM2540C.
2. The hydraulic gradient indicates a south to southwesterly direction at the site.
3. No BTEX was detected in any of the sampled wells for 2012.
4. With the exception of MW-5 all additional monitor wells exceeded the NMWQCC standard of 250 mg/L chlorides. Chloride concentrations exceed the NMWQCC standards of 250 mg/L in all monitor/recover wells with the exception of up gradient MW-5. The chloride concentrations at the site range from 64.5 mg/L in up gradient monitor well MW-5 on April 11, 2012 to 203,000 mg/L in MW-7 on April 11, 2012.
5. A total of 15,100 gallons of chloride impacted groundwater was removed in 2012 from the onsite windmill system installed on recovery well RW-1.

RECOMMENDATIONS

1. Quarterly groundwater monitoring and gauging will be continued throughout the year.
2. Additional monitor wells will be installed in order to further delineate the chloride plume at the site.
3. Continued operation and maintenance of the onsite remediation system throughout 2013.
4. Perform pump test 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

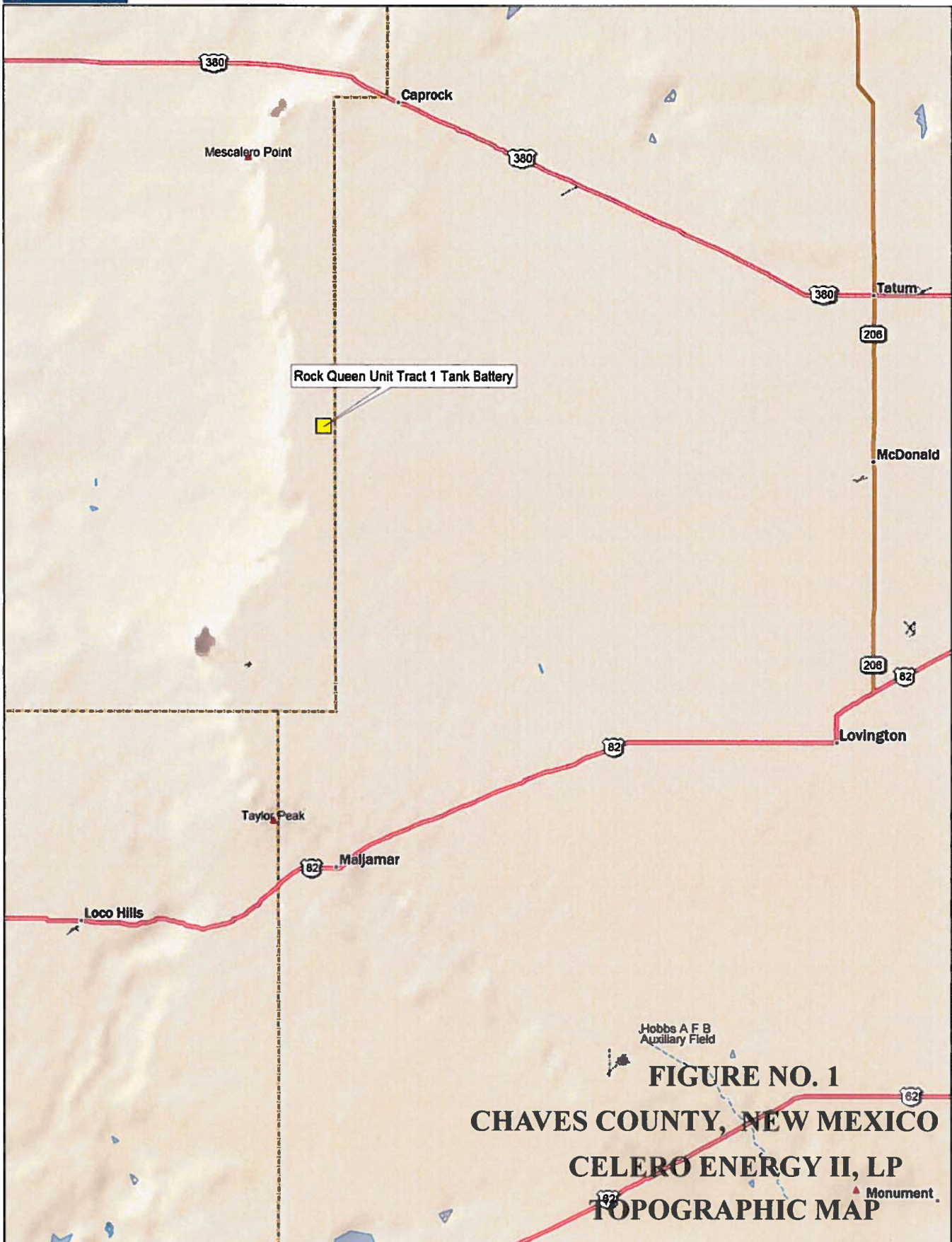
If you have any question or comments concerning the assessment or the activities performed at the Site, please call me at (432) 682-4559.

Respectfully submitted,
Tetra Tech, Inc.


Jeffrey Kindley, P.G.
Senior Environmental Geologist

cc: Bruce Woodard – Celero Energy II, LP

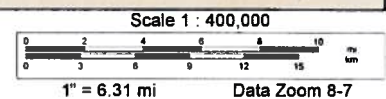
FIGURES

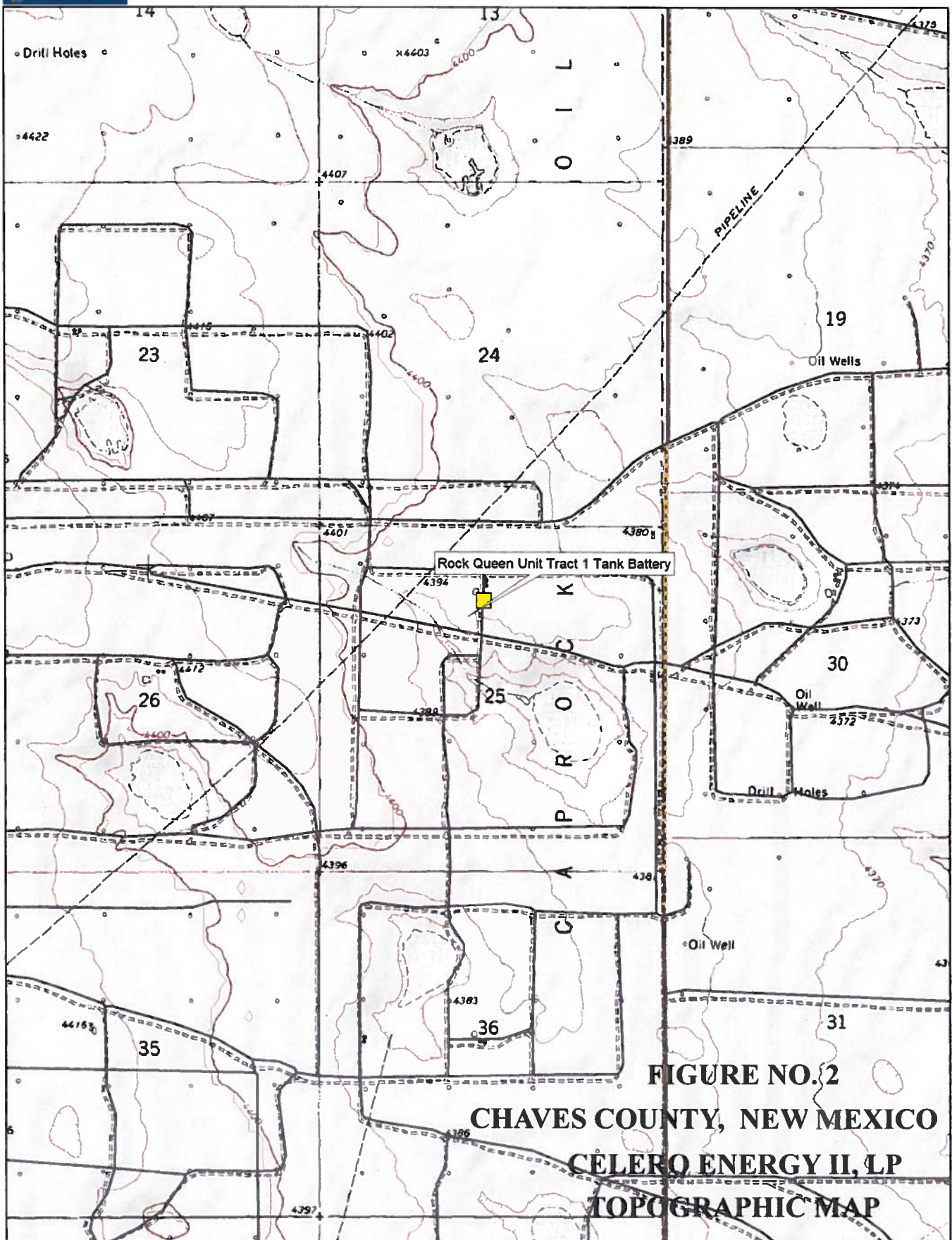


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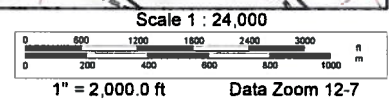




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MW-5

MW-2

MW-4

ROCK QUEEN
TRACT #1
BATTERY



MW-1

TR-1

MW-3

MW-6

MW-7

SCALE: 200'
0 200'

FIGURE NO. 3

CHAVES COUNTY, NEW MEXICO

CELERO ENERGY
TRACT 1 TANK BATTERY
SITE MAP

TETRA TECH, INC.
MIDLAND, TEXAS

DATE: 9/4/07
DRAWN BY: JM
FILE: C:\CELERO\J128A
TRACT 1 TB

MONITOR WELLS
RECOVERY WELLS



MW-5
4,279.76

MW-2
4,277.60

MW-4
4,275.41

ROCK QUEEN
TRACT #1
BATTERY

MW-1
4,272.97

MW-1
4,272.97

MW-3
4,269.71

MW-6
4,267.37

MW-7
4,265.03

APPARENT
GROUNDWATER
GRADIENT DIRECTION

C.I. = 5' 0" 100'
SCALE: 100'

MONITOR WELLS
REQUIRE WELLS

FIGURE NO. 4

CHAVES COUNTY, NEW MEXICO

CELERO ENERGY
TRACT 1 TANK BATTERY
GROUNDWATER GRADIENT MAP
GAUGED ON 01/03/2012

TETRA TECH, INC.
MIDLAND, TEXAS

DATE: 1/3/2012
DRAWN BY: JLM
CHECKED: JLM
SCALE: 1"=100'



MW-5
4,279.68

MW-2
4,277.49

MW-4
4,275.37

ROCK QUEEN
TRACT #1
BATTERY

MW-1
4,272.84

MW-3
4,269.67

MW-6
4,267.01

MW-7
4,264.61

4,275.00

4,270.00

4,265.00

APPARENT
GROUNDWATER
GRADIENT DIRECTION

DATE	4/9/2012
BY	W. B.
FILE	CAUTION/12A
OF	ORIGIN 4-9-12

C.I. = 5' SCALE: 100' 0 100'

FIGURE NO. 5

CHAVES COUNTY, NEW MEXICO

CELERO ENERGY
TRACT 1 TANK BATTERY
GROUNDWATER GRADIENT MAP
GAUGED ON 04/09/2012

TETRA TECH, INC.
MIDLAND, TEXAS





MW-5
4,279.75

MW-2
4,277.52

MW-4
4,275.41

ROCK QUEEN
TRACT #1
BATTERY

MW-1
4,272.55

MW-3
4,271.79

MW-3
4,269.75

MW-6
4,267.01

MW-7
4,264.59

APPARENT
GROUNDWATER
GRADIENT DIRECTION

DATE	7/23/2012
DRAWN BY	WJ
CHECKED BY	WJ
SCALE	AS SHOWN

C.I. = 5' SCALE: 100' 0 100'

MONITOR WELLS
RECOVERY WELLS

FIGURE NO. 6

CHAVES COUNTY, NEW MEXICO

CELERO ENERGY
TRACT 1 TANK BATTERY
GROUNDWATER GRADIENT MAP
GAUGED ON 07/23/2012

TETRA TECH, INC.
MIDLAND, TEXAS



MW-5
4,279.66

MW-2
4,276.10

MW-4
4,275.28

ROCK QUEEN
TRACT #1
BATTERY

MW-1
4,272.96

MW-3
4,269.60

MW-6
4,266.93

MW-7
4,259.48

4,279.00

4,270.00

4,265.00

4,260.00

APPARENT
GROUNDWATER
GRADIENT DIRECTION

MONITOR WELLS
RECOVERY WELLS

FIGURE NO. 7

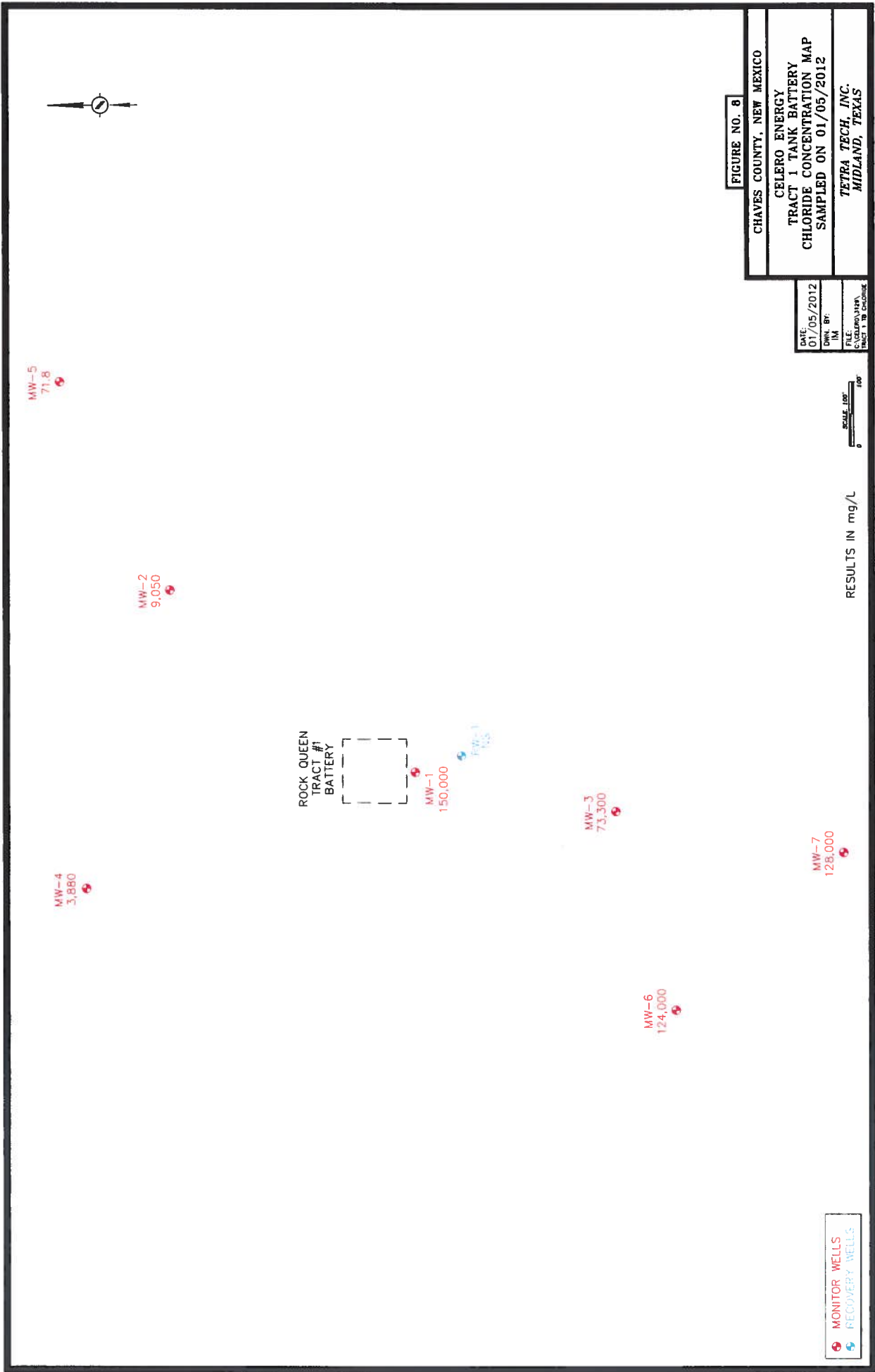
CHAVES COUNTY, NEW MEXICO

CELERO ENERGY
TRACT 1 TANK BATTERY
GROUNDWATER GRADIENT MAP
GAUGED ON 10/23/2012

TETRA TECH, INC.
MIDLAND, TEXAS

DATE
10/23/2012
DRAWN BY
IM
FILE
C:\CELERO\DATA\NEW
FOR GRADIENT 10-23

C.I. = 5' SCALE: 100'
0 100'



MW-5
64.5

MW-2
8,250

MW-4
7,020

ROCK QUEEN
TRACT #1
BATTERY



MW-1
151,000

PW-1
NS

MW-3
71,600

MW-6
101,000

MW-7
203,000



SCALE 100' 100'

RESULTS IN mg/L

FIGURE NO. 9

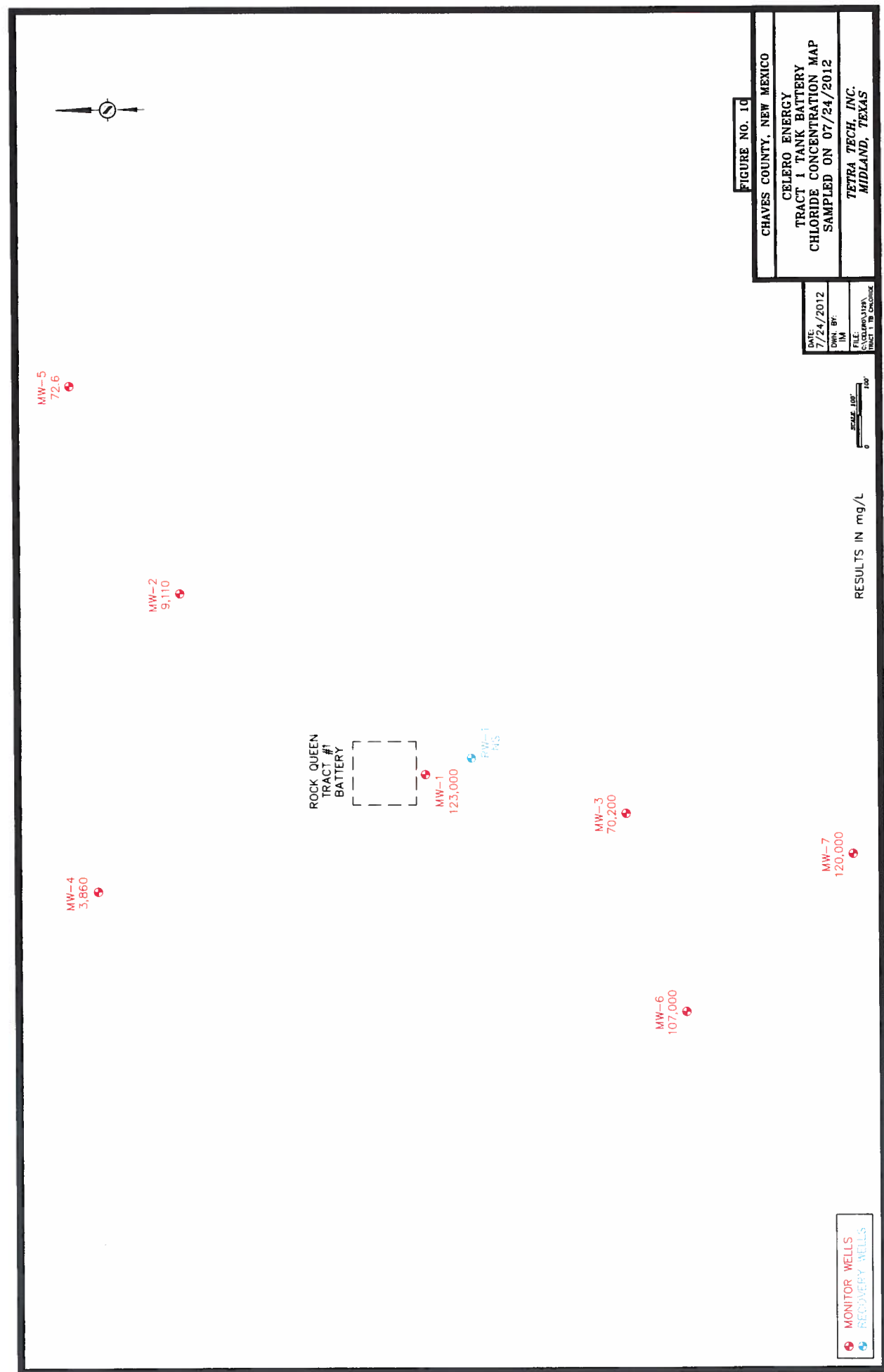
CHAVES COUNTY, NEW MEXICO

CELERO ENERGY
TRACT 1 TANK BATTERY
CHLORIDE CONCENTRATION MAP
SAMPLED ON 04/11/2012

TETRA TECH, INC.
MIDLAND, TEXAS

DATE: 04/11/2012
DRAWN BY: JM
FILE: C:\COLLABORATION\PROJECT 10 CHLORIDE

MONITOR WELLS
RECOVERY WELLS





MW-5
719

MW-2
9,320

MW-4
14,200

ROCK QUEEN
TRACT #1
BATTERY



MW-1
169,000

FW-1
115

MW-3
71,700

MW-6
119,000

MW-7
124,000

SCALE 100'
0 100'

RESULTS IN mg/L

FIGURE NO. 11

CHAVES COUNTY, NEW MEXICO

CELERO ENERGY
TRACT 1 TANK BATTERY
CHLORIDE CONCENTRATION MAP
SAMPLED ON 10/25/2012

TETRA TECH, INC.
MIDLAND, TEXAS

DATE: 10/25/2012
DRAWN BY: JM
FILE: C:\CELERO\31281
TRACT 1 TB CHLORIDE

MONITOR WELLS
RECOVERY WELLS

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
MW-2	10/23/12	05/30/07	4,397.33	139.50	120.54	4,272.96
	06/01/07				94.78	4,302.55
	02/05/08				119.89	4,277.44
	12/28/09				119.87	4,277.46
	07/12/10				119.80	4,277.53
	10/11/10				119.77	4,277.56
	01/17/11				119.67	4,277.66
	04/11/11				119.66	4,277.67
	07/27/11				120.36	4,276.97
	10/24/11				119.76	4,277.57
	01/03/12				119.73	4,277.60
	04/09/12				119.84	4,277.49
MW-3	07/23/12	12/09/09	4,390.65	137.28	119.81	4,277.52
	10/23/12				121.23	4,276.10
	12/28/09				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

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-3	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
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
MW-5	10/23/12				121.68	4,275.28
	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
MW-6	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
	01/17/11	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

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	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
	04/09/12				123.80	4,264.61
	07/23/12				123.82	4,264.59
	10/23/12				128.93	4,259.48
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

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	-	-
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	-	-
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	-	-

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

Monitor Well	Date Sampled	Dissolved Calcium (mg/L)	Dissolved Magnesium (mg/L)	Dissolved Sodium (mg/L)	Dissolved Potassium (mg/L)	Hydroxide Alkalinity (mg/L)	Carbonate Alkalinity (mg/L)	Bicarbonate Alkalinity (mg/L)	Total Alkalinity (mg/L)	Sulfate (mg/L)	Chloride (mg/L)	TDS (mg/L)	Hardness (mg/L)	pH
MW-3	01/05/12	-	-	-	-	-	-	-	-	2,150	73,300	102,000	-	-
	04/11/12	-	-	-	-	-	-	-	-	2,110	71,600	104,000	-	-
	07/24/12	-	-	-	-	-	-	-	-	-	70,200	-	-	-
	10/25/12	-	-	-	-	-	-	-	-	2,290	71,700	110,000	-	-
MW-4	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	-	-
	01/24/11	-	-	-	-	-	-	-	-	58.4	121	518	-	-
MW-5	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	-	-
	01/24/11	-	-	-	-	-	-	-	-	2,850	88,900	161,000	-	-
MW-6	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	-	-
	01/24/11	-	-	-	-	-	-	-	-	2,580	92,400	179,000	-	-
MW-7	04/13/11	-	-	-	-	-	-	-	-	2,330	102,000	177,000	-	-

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	07/28/11	-	-	-	-	-	-	-	-	2,300	99,400	194,000	-	-
	10/25/11	-	-	-	-	-	-	-	-	2,370	99,400	170,000	-	-
	01/05/12	-	-	-	-	-	-	-	-	2,440	128,000	186,000	-	-
	04/11/12	-	-	-	-	-	-	-	-	5,980	203,000	186,000	-	-
	07/24/12	-	-	-	-	-	-	-	-	-	120,000	-	-	-
	10/25/12	-	-	-	-	-	-	-	-	2,620	124,000	194,000	-	-
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

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
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
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
	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
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

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-4	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
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
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
	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
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
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

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)	Comments
RW-1	01/20/12	0	0	0	0.0	0.0	System installed Tank pumped dry
	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	Tank pumped dry
	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	Tank pumped dry
	06/18/12	0	5,000				
	07/02/12	1,500	6,500	13	115	4.81	
	09/17/12		6,500				Restarted after repairs Tank pumped dry
	10/03/12	2,000	8,500	16	125	5.21	
	10/03/12	0	8,500				
	10/08/12	450	8,500				Tank pumped dry
	10/22/12	1,250	8,500				
	11/08/12	2,500	11,000	36	69	2.89	
	11/09/12		11,000				Tank pumped dry
	11/19/12	400	11,000				
	12/04/12	1,900	11,000				
	12/05/12	2,100	13,100	26	81	3.37	Tank pumped dry
	12/05/12	0	13,100				
	12/18/12	1,050	13,100				
			13,100	241	54	2.3	

APPENDIX A

LABORATORY ANALYTICAL



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Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

Analytical and Quality Control Report

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

Report Date: January 19, 2012

Work Order: 12010634



Project Location: Chavez Co., NM
Project Name: Celero/Rock Queen #1 TB
Project Number: 115-6403129

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
285914	MW-1	water	2012-01-05	16:30	2012-01-06
285915	MW-2	water	2012-01-05	16:20	2012-01-06
285916	MW-3	water	2012-01-05	16:40	2012-01-06
285917	MW-4	water	2012-01-05	17:10	2012-01-06
285918	MW-5	water	2012-01-05	16:10	2012-01-06
285919	MW-6	water	2012-01-05	16:50	2012-01-06
285920	MW-7	water	2012-01-05	17:00	2012-01-06

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 29 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

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

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

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QC Batch 87756 - LCS (1)	20
QC Batch 87756 - LCS (1)	20
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QC Batch 87813 - LCS (1)	21
QC Batch 87830 - LCS (1)	21
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QC Batch 87755 - MS (1)	22
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QC Batch 87756 - ICV (1)	26
QC Batch 87756 - ICV (1)	26
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Case Narrative

Samples for project Celero/Rock Queen #1 TB were received by TraceAnalysis, Inc. on 2012-01-06 and assigned to work order 12010634. Samples for work order 12010634 were received intact without headspace and at a temperature of 1.3 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	74456	2012-01-09 at 13:30	87691	2012-01-09 at 14:28
Chloride (IC)	E 300.0	74521	2012-01-11 at 14:01	87756	2012-01-12 at 04:30
Chloride (IC)	E 300.0	74566	2012-01-16 at 10:03	87830	2012-01-17 at 14:42
SO4 (IC)	E 300.0	74520	2012-01-11 at 14:01	87755	2012-01-11 at 20:29
SO4 (IC)	E 300.0	74521	2012-01-11 at 14:01	87756	2012-01-12 at 04:30
SO4 (IC)	E 300.0	74525	2012-01-12 at 14:05	87760	2012-01-12 at 18:37
TDS	SM 2540C	74508	2012-01-06 at 10:01	87813	2012-01-11 at 16:57

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 12010634 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: 285914 - MW-1

Laboratory: Midland
Analysis: BTEX
QC Batch: 87691
Prep Batch: 74456

Analytical Method: S 8021B
Date Analyzed: 2012-01-09
Sample Preparation: 2012-01-09

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

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)			0.0866	mg/L	1	0.100	87	79.1 - 127.2
4-Bromofluorobenzene (4-BFB)			0.0754	mg/L	1	0.100	75	67.5 - 140.8

Sample: 285914 - MW-1

Laboratory: Midland
Analysis: Chloride (IC)
QC Batch: 87830
Prep Batch: 74566

Analytical Method: E 300.0
Date Analyzed: 2012-01-17
Sample Preparation: 2012-01-16

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	Qs	1	150000	mg/L	5000	2.50

Sample: 285914 - MW-1

Laboratory: Midland
Analysis: SO4 (IC)
QC Batch: 87755
Prep Batch: 74520

Analytical Method: E 300.0
Date Analyzed: 2012-01-11
Sample Preparation: 2012-01-11

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Sulfate	Qs	1	2160	mg/L	50	2.50

Report Date: January 19, 2012
115-6403129

Work Order: 12010634
Celero/Rock Queen #1 TB

Page Number: 7 of 29
Chavez Co., NM

Sample: 285914 - MW-1

Laboratory: Midland
Analysis: TDS
QC Batch: 87813
Prep Batch: 74508

Analytical Method: SM 2540C
Date Analyzed: 2012-01-11
Sample Preparation: 2012-01-06

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Total Dissolved Solids		1	205000	mg/L	100	10.0

Sample: 285915 - MW-2

Laboratory: Midland
Analysis: BTEX
QC Batch: 87691
Prep Batch: 74456

Analytical Method: S 8021B
Date Analyzed: 2012-01-09
Sample Preparation: 2012-01-09

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

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)			0.106	mg/L	1	0.100	106	79.1 - 127.2
4-Bromofluorobenzene (4-BFB)			0.0742	mg/L	1	0.100	74	67.5 - 140.8

Sample: 285915 - MW-2

Laboratory: Midland
Analysis: Chloride (IC)
QC Batch: 87756
Prep Batch: 74521

Analytical Method: E 300.0
Date Analyzed: 2012-01-12
Sample Preparation: 2012-01-11

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	Q*	1	9050	mg/L	500	2.50

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Sample: 285915 - MW-2

Laboratory: Midland
Analysis: SO4 (IC)
QC Batch: 87756
Prep Batch: 74521

Analytical Method: E 300.0
Date Analyzed: 2012-01-12
Sample Preparation: 2012-01-11

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Sulfate	Q*	1	149	mg/L	50	2.50

Sample: 285915 - MW-2

Laboratory: Midland
Analysis: TDS
QC Batch: 87813
Prep Batch: 74508

Analytical Method: SM 2540C
Date Analyzed: 2012-01-11
Sample Preparation: 2012-01-06

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Total Dissolved Solids		1	36100	mg/L	100	10.0

Sample: 285916 - MW-3

Laboratory: Midland
Analysis: BTEX
QC Batch: 87691
Prep Batch: 74456

Analytical Method: S 8021B
Date Analyzed: 2012-01-09
Sample Preparation: 2012-01-09

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

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	79.1 - 127.2
4-Bromofluorobenzene (4-BFB)			0.0810	mg/L	1	0.100	81	67.5 - 140.8

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Sample: 285916 - MW-3

Laboratory:	Midland	Analytical Method:	E 300.0	Prep Method:	N/A
Analysis:	Chloride (IC)	Date Analyzed:	2012-01-12	Analyzed By:	AR
QC Batch:	87756	Sample Preparation:	2012-01-11	Prepared By:	AR
Prep Batch:	74521				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	Q*	1	73300	mg/L	5000	2.50

Sample: 285916 - MW-3

Laboratory:	Midland	Analytical Method:	E 300.0	Prep Method:	N/A
Analysis:	SO4 (IC)	Date Analyzed:	2012-01-12	Analyzed By:	AR
QC Batch:	87756	Sample Preparation:	2012-01-11	Prepared By:	AR
Prep Batch:	74521				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Sulfate	Q*	1	2150	mg/L	50	2.50

Sample: 285916 - MW-3

Laboratory:	Midland	Analytical Method:	SM 2540C	Prep Method:	N/A
Analysis:	TDS	Date Analyzed:	2012-01-11	Analyzed By:	AR
QC Batch:	87813	Sample Preparation:	2012-01-06	Prepared By:	AR
Prep Batch:	74508				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Total Dissolved Solids		1	102000	mg/L	100	10.0

Sample: 285917 - MW-4

Laboratory:	Midland	Analytical Method:	S 8021B	Prep Method:	S 5030B
Analysis:	BTEX	Date Analyzed:	2012-01-09	Analyzed By:	AG
QC Batch:	87691	Sample Preparation:	2012-01-09	Prepared By:	AG
Prep Batch:	74456				

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sample 285917 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)			0.0959	mg/L	1	0.100	96	79.1 - 127.2
4-Bromofluorobenzene (4-BFB)	Q _{sr}	Q _{sr}	0.0654	mg/L	1	0.100	65	67.5 - 140.8

Sample: 285917 - MW-4

Laboratory: Midland	Analytical Method: E 300.0	Prep Method: N/A
Analysis: Chloride (IC)	Date Analyzed: 2012-01-12	Analyzed By: AR
QC Batch: 87756	Sample Preparation: 2012-01-11	Prepared By: AR
Prep Batch: 74521		

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	Q _s	1	3880	mg/L	500	2.50

Sample: 285917 - MW-4

Laboratory: Midland	Analytical Method: E 300.0	Prep Method: N/A
Analysis: SO4 (IC)	Date Analyzed: 2012-01-12	Analyzed By: AR
QC Batch: 87756	Sample Preparation: 2012-01-11	Prepared By: AR
Prep Batch: 74521		

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Sulfate	Q _s	1	148	mg/L	50	2.50

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Sample: 285917 - MW-4

Laboratory: Midland
Analysis: TDS
QC Batch: 87813
Prep Batch: 74508

Analytical Method: SM 2540C
Date Analyzed: 2012-01-11
Sample Preparation: 2012-01-06

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Total Dissolved Solids		1	7100	mg/L	10	10.0

Sample: 285918 - MW-5

Laboratory: Midland
Analysis: BTEX
QC Batch: 87691
Prep Batch: 74456

Analytical Method: S 8021B
Date Analyzed: 2012-01-09
Sample Preparation: 2012-01-09

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

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)			0.0972	mg/L	1	0.100	97	79.1 - 127.2
4-Bromofluorobenzene (4-BFB)	Q=1	Q=1	0.0641	mg/L	1	0.100	64	67.5 - 140.8

Sample: 285918 - MW-5

Laboratory: Midland
Analysis: Chloride (IC)
QC Batch: 87756
Prep Batch: 74521

Analytical Method: E 300.0
Date Analyzed: 2012-01-12
Sample Preparation: 2012-01-11

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	Q=1	1	71.8	mg/L	5	2.50

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Sample: 285918 - MW-5

Laboratory: Midland
Analysis: SO4 (IC)
QC Batch: 87756
Prep Batch: 74521

Analytical Method: E 300.0
Date Analyzed: 2012-01-12
Sample Preparation: 2012-01-11

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Sulfate	Q*	1	143	mg/L	5	2.50

Sample: 285918 - MW-5

Laboratory: Midland
Analysis: TDS
QC Batch: 87813
Prep Batch: 74508

Analytical Method: SM 2540C
Date Analyzed: 2012-01-11
Sample Preparation: 2012-01-06

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Total Dissolved Solids		1	554	mg/L	1	10.0

Sample: 285919 - MW-6

Laboratory: Midland
Analysis: BTEX
QC Batch: 87691
Prep Batch: 74456

Analytical Method: S 8021B
Date Analyzed: 2012-01-09
Sample Preparation: 2012-01-09

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

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)			0.0939	mg/L	1	0.100	94	79.1 - 127.2
4-Bromofluorobenzene (4-BFB)			0.0790	mg/L	1	0.100	79	67.5 - 140.8

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Sample: 285919 - MW-6

Laboratory:	Midland	Analytical Method:	E 300.0	Prep Method:	N/A
Analysis:	Chloride (IC)	Date Analyzed:	2012-01-17	Analyzed By:	AR
QC Batch:	87830	Sample Preparation:	2012-01-16	Prepared By:	AR
Prep Batch:	74566				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	Q*	1	124000	mg/L	5000	2.50

Sample: 285919 - MW-6

Laboratory:	Midland	Analytical Method:	E 300.0	Prep Method:	N/A
Analysis:	SO4 (IC)	Date Analyzed:	2012-01-12	Analyzed By:	AR
QC Batch:	87760	Sample Preparation:	2012-01-12	Prepared By:	AR
Prep Batch:	74525				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Sulfate	Q*	1	2600	mg/L	50	2.50

Sample: 285919 - MW-6

Laboratory:	Midland	Analytical Method:	SM 2540C	Prep Method:	N/A
Analysis:	TDS	Date Analyzed:	2012-01-11	Analyzed By:	AR
QC Batch:	87813	Sample Preparation:	2012-01-06	Prepared By:	AR
Prep Batch:	74508				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Total Dissolved Solids		1	164000	mg/L	100	10.0

Sample: 285920 - MW-7

Laboratory:	Midland	Analytical Method:	S 8021B	Prep Method:	S 5030B
Analysis:	BTEX	Date Analyzed:	2012-01-09	Analyzed By:	AG
QC Batch:	87691	Sample Preparation:	2012-01-09	Prepared By:	AG
Prep Batch:	74456				

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sample 285920 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)			0.0916	mg/L	1	0.100	92	79.1 - 127.2
4-Bromofluorobenzene (4-BFB)			0.0754	mg/L	1	0.100	75	67.5 - 140.8

Sample: 285920 - MW-7

Laboratory: Midland	Analytical Method: E 300.0	Prep Method: N/A
Analysis: Chloride (IC)	Date Analyzed: 2012-01-17	Analyzed By: AR
QC Batch: 87830	Sample Preparation: 2012-01-16	Prepared By: AR
Prep Batch: 74566		

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

Sample: 285920 - MW-7

Laboratory: Midland	Analytical Method: E 300.0	Prep Method: N/A
Analysis: SO4 (IC)	Date Analyzed: 2012-01-12	Analyzed By: AR
QC Batch: 87760	Sample Preparation: 2012-01-12	Prepared By: AR
Prep Batch: 74525		

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Sulfate	Q*	1	2440	mg/L	50	2.50

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Sample: 285920 - MW-7

Laboratory: Midland
Analysis: TDS
QC Batch: 87813
Prep Batch: 74508

Analytical Method: SM 2540C
Date Analyzed: 2012-01-11
Sample Preparation: 2012-01-06

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Total Dissolved Solids		1	186000	mg/L	100	10.0

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Method Blanks

Method Blank (1) QC Batch: 87691

QC Batch: 87691
Prep Batch: 74456

Date Analyzed: 2012-01-09
QC Preparation: 2012-01-09

Analyzed By: AG
Prepared By: AG

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		1	<0.000400	mg/L	0.001
Toluene		1	<0.000300	mg/L	0.001
Ethylbenzene		1	<0.000300	mg/L	0.001
Xylene		1	<0.000333	mg/L	0.001

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.102	mg/L	1	0.100	102	61.1 - 118.4
4-Bromofluorobenzene (4-BFB)			0.0735	mg/L	1	0.100	74	45.9 - 126.4

Method Blank (1) QC Batch: 87755

QC Batch: 87755
Prep Batch: 74520

Date Analyzed: 2012-01-11
QC Preparation: 2012-01-11

Analyzed By: AR
Prepared By: AR

Parameter	Flag	Cert	MDL Result	Units	RL
Sulfate		1	<0.177	mg/L	2.5

Method Blank (1) QC Batch: 87756

QC Batch: 87756
Prep Batch: 74521

Date Analyzed: 2012-01-12
QC Preparation: 2012-01-11

Analyzed By: AR
Prepared By: AR

Parameter	Flag	Cert	MDL Result	Units	RL
Chloride		1	1.05	mg/L	2.5

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Method Blank (1) QC Batch: 87756

QC Batch: 87756 Date Analyzed: 2012-01-12 Analyzed By: AR
Prep Batch: 74521 QC Preparation: 2012-01-11 Prepared By: AR

Parameter	Flag	Cert	MDL Result	Units	RL
Sulfate		1	<0.177	mg/L	2.5

Method Blank (1) QC Batch: 87760

QC Batch: 87760 Date Analyzed: 2012-01-12 Analyzed By: AR
Prep Batch: 74525 QC Preparation: 2012-01-12 Prepared By: AR

Parameter	Flag	Cert	MDL Result	Units	RL
Sulfate		1	<0.177	mg/L	2.5

Method Blank (1) QC Batch: 87813

QC Batch: 87813 Date Analyzed: 2012-01-11 Analyzed By: AR
Prep Batch: 74508 QC Preparation: 2012-01-06 Prepared By: AR

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

Method Blank (1) QC Batch: 87830

QC Batch: 87830 Date Analyzed: 2012-01-17 Analyzed By: AR
Prep Batch: 74566 QC Preparation: 2012-01-16 Prepared By: AR

Parameter	Flag	Cert	MDL Result	Units	RL
Chloride		1	1.11	mg/L	2.5

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Duplicates (2) Duplicated Sample: 285944

QC Batch: 87813
Prep Batch: 74508

Date Analyzed: 2012-01-11
QC Preparation: 2012-01-06

Analyzed By: AR
Prepared By: AR

Param		Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
Total Dissolved Solids	1	5050	4610	mg/L	5	9	10
Total Dissolved Solids	1	5050	678	mg/L	5	9	10

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Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 87691
Prep Batch: 74456

Date Analyzed: 2012-01-09
QC Preparation: 2012-01-09

Analyzed By: AG
Prepared By: AG

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	0.100	mg/L	1	0.100	<0.000400	100	76.8 - 120.3
Toluene		1	0.0952	mg/L	1	0.100	<0.000300	95	80.9 - 122.2
Ethylbenzene		1	0.0890	mg/L	1	0.100	<0.000300	89	72.7 - 120.2
Xylene		1	0.263	mg/L	1	0.300	<0.000333	88	72.1 - 121.5

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

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	0.105	mg/L	1	0.100	<0.000400	105	76.8 - 120.3	5	20
Toluene		1	0.102	mg/L	1	0.100	<0.000300	102	80.9 - 122.2	7	20
Ethylbenzene		1	0.0971	mg/L	1	0.100	<0.000300	97	72.7 - 120.2	9	20
Xylene		1	0.286	mg/L	1	0.300	<0.000333	95	72.1 - 121.5	8	20

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

Surrogate	LCS Result	LCS Result	Units	Dil.	Spike Amount	LCS Rec.	LCS Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.102	0.103	mg/L	1	0.100	102	103	61.9 - 119.2
4-Bromofluorobenzene (4-BFB)	0.0885	0.0921	mg/L	1	0.100	88	92	56.4 - 127.9

Laboratory Control Spike (LCS-1)

QC Batch: 87755
Prep Batch: 74520

Date Analyzed: 2012-01-11
QC Preparation: 2012-01-11

Analyzed By: AR
Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Sulfate		1	25.7	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.

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Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Sulfate		1	25.6	mg/L	1	25.0	<0.177	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: 87756
Prep Batch: 74521

Date Analyzed: 2012-01-12
QC Preparation: 2012-01-11

Analyzed By: AR
Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	25.4	mg/L	1	25.0	<0.265	102	90 - 110

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

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		1	25.2	mg/L	1	25.0	<0.265	101	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: 87756
Prep Batch: 74521

Date Analyzed: 2012-01-12
QC Preparation: 2012-01-11

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	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Sulfate		1	25.9	mg/L	1	25.0	<0.177	104	90 - 110	0	20

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

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Laboratory Control Spike (LCS-1)

QC Batch: 87760
Prep Batch: 74525

Date Analyzed: 2012-01-12
QC Preparation: 2012-01-12

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	25.5	mg/L	1	25.0	<0.177	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: 87813
Prep Batch: 74508

Date Analyzed: 2012-01-11
QC Preparation: 2012-01-06

Analyzed By: AR
Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Total Dissolved Solids		1	934	mg/L	1	1000	<9.75	93	85.5 - 112.7

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	952	mg/L	1	1000	<9.75	95	85.5 - 112.7	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: 87830
Prep Batch: 74566

Date Analyzed: 2012-01-17
QC Preparation: 2012-01-16

Analyzed By: AR
Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	25.3	mg/L	1	25.0	<0.265	101	90 - 110

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

Report Date: January 19, 2012
115-6403129

Work Order: 12010634
Celero/Rock Queen #1 TB

Page Number: 22 of 29
Chavez Co., NM

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	<0.265	101	90 - 110	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: 285929

QC Batch: 87691
Prep Batch: 74456

Date Analyzed: 2012-01-09
QC Preparation: 2012-01-09

Analyzed By: AG
Prepared By: AG

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	0.114	mg/L	1	0.100	<0.000400	114	66.9 - 128.2
Toluene		1	0.103	mg/L	1	0.100	<0.000300	103	81.6 - 122.9
Ethylbenzene		1	0.0884	mg/L	1	0.100	<0.000300	88	62.7 - 117.9
Xylene		1	0.260	mg/L	1	0.300	<0.000333	87	62.9 - 118.2

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	<0.000400	110	66.9 - 128.2	4	20
Toluene		1	0.101	mg/L	1	0.100	<0.000300	101	81.6 - 122.9	2	20
Ethylbenzene		1	0.0865	mg/L	1	0.100	<0.000300	86	62.7 - 117.9	2	20
Xylene		1	0.257	mg/L	1	0.300	<0.000333	86	62.9 - 118.2	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)	0.0981	0.103	mg/L	1	0.1	98	103	58.6 - 119.7
4-Bromofluorobenzene (4-BFB)	0.0893	0.0958	mg/L	1	0.1	89	96	52.2 - 135.8

Matrix Spike (MS-1) Spiked Sample: 285945

QC Batch: 87755
Prep Batch: 74520

Date Analyzed: 2012-01-11
QC Preparation: 2012-01-11

Analyzed By: AR
Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Sulfate	Q*	Q*	1	2060	mg/L	50	1380	932	82

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

Report Date: January 19, 2012
115-6403129

Work Order: 12010634
Celero/Rock Queen #1 TB

Page Number: 23 of 29
Chavez Co., NM

Param	F		C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Sulfate	Q*	Q*	1	2060	mg/L	50	1380	932	82	90 - 110	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: 285915

QC Batch: 87756
Prep Batch: 74521

Date Analyzed: 2012-01-12
QC Preparation: 2012-01-11

Analyzed By: AR
Prepared By: AR

Param			MS			Spike	Matrix		Rec.
	F	C	Result	Units	Dil.	Amount	Result	Rec.	Limit
Chloride	Q ^s	Q ^s	1	10500	mg/L	50	1380	9710	57
									90 - 110

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	Q*	Q*		1	10700	mg/L	50	1380	9710	72	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: 285915

QC Batch: 87756
Prep Batch: 74521

Date Analyzed: 2012-01-12
QC Preparation: 2012-01-11

Analyzed By: AR
Prepared By: AR

Param				MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Sulfate	Q*	Q*	1	1380	mg/L	50	1380	149	90	90 - 110

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	Q*	Q*	1	1380	mg/L	50	1380	149	90	90 - 110	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: 285919

QC Batch: 87760
Prep Batch: 74525

Date Analyzed: 2012-01-12
QC Preparation: 2012-01-12

Analyzed By: AR
Prepared By: AR

Report Date: January 19, 2012
115-6403129

Work Order: 12010634
Celero/Rock Queen #1 TB

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Param	F		C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Sulfate	Q _s	Q _s	1	3540	mg/L	50	1380	2600	68	90 - 110

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	Q _s	Q _s	1	3540	mg/L	50	1380	2600	68	90 - 110	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: 285935

QC Batch: 87830
Prep Batch: 74566

Date Analyzed: 2012-01-17
QC Preparation: 2012-01-16

Analyzed By: AR
Prepared By: AR

Param				MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	Q _s	Q _s	1	20200	mg/L	100	2750	19400	29	90 - 110

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	Q _s	Q _s	1		20200	mg/L	100	2750	19400	29	90 - 110	0	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: 87691

Date Analyzed: 2012-01-09

Analyzed By: AG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/L	0.100	0.101	101	80 - 120	2012-01-09
Toluene		1	mg/L	0.100	0.0946	95	80 - 120	2012-01-09
Ethylbenzene		1	mg/L	0.100	0.0882	88	80 - 120	2012-01-09
Xylene		1	mg/L	0.300	0.262	87	80 - 120	2012-01-09

Standard (CCV-2)

QC Batch: 87691

Date Analyzed: 2012-01-09

Analyzed By: AG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/L	0.100	0.101	101	80 - 120	2012-01-09
Toluene		1	mg/L	0.100	0.0957	96	80 - 120	2012-01-09
Ethylbenzene		1	mg/L	0.100	0.0889	89	80 - 120	2012-01-09
Xylene		1	mg/L	0.300	0.260	87	80 - 120	2012-01-09

Standard (CCV-3)

QC Batch: 87691

Date Analyzed: 2012-01-09

Analyzed By: AG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/L	0.100	0.103	103	80 - 120	2012-01-09
Toluene		1	mg/L	0.100	0.0980	98	80 - 120	2012-01-09
Ethylbenzene		1	mg/L	0.100	0.0918	92	80 - 120	2012-01-09
Xylene		1	mg/L	0.300	0.270	90	80 - 120	2012-01-09

Report Date: January 19, 2012
115-6403129

Work Order: 12010634
Celero/Rock Queen #1 TB

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Standard (ICV-1)

QC Batch: 87755

Date Analyzed: 2012-01-11

Analyzed By: AR

Param	Flag	Cert	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Sulfate		1	mg/L	25.0	25.5	102	90 - 110	2012-01-11

Standard (CCV-1)

QC Batch: 87755

Date Analyzed: 2012-01-11

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	25.7	103	90 - 110	2012-01-11

Standard (ICV-1)

QC Batch: 87756

Date Analyzed: 2012-01-12

Analyzed By: AR

Param	Flag	Cert	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1	mg/L	25.0	24.9	100	90 - 110	2012-01-12

Standard (ICV-1)

QC Batch: 87756

Date Analyzed: 2012-01-12

Analyzed By: AR

Param	Flag	Cert	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Sulfate		1	mg/L	25.0	25.7	103	90 - 110	2012-01-12

Standard (CCV-1)

QC Batch: 87756

Date Analyzed: 2012-01-12

Analyzed By: AR

Report Date: January 19, 2012
115-6403129

Work Order: 12010634
Celero/Rock Queen #1 TB

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Chavez Co., NM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1	mg/L	25.0	25.0	100	90 - 110	2012-01-12

Standard (CCV-1)

QC Batch: 87756

Date Analyzed: 2012-01-12

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	25.7	103	90 - 110	2012-01-12

Standard (ICV-1)

QC Batch: 87760

Date Analyzed: 2012-01-12

Analyzed By: AR

Param	Flag	Cert	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Sulfate		1	mg/L	25.0	25.7	103	90 - 110	2012-01-12

Standard (CCV-1)

QC Batch: 87760

Date Analyzed: 2012-01-12

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	2012-01-12

Standard (CCV-1)

QC Batch: 87830

Date Analyzed: 2012-01-17

Analyzed By: AR

Report Date: January 19, 2012
115-6403129

Work Order: 12010634
Celero/Rock Queen #1 TB

Page Number: 28 of 29
Chavez Co., NM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1	mg/L	25.0	25.0	100	90 - 110	2012-01-17

Standard (CCV-2)

QC Batch: 87830

Date Analyzed: 2012-01-17

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	25.2	101	90 - 110	2012-01-17

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	T104704392-11-3	Midland

Standard Flags

F	Description
B	Analyte detected in the corresponding method blank above the method detection limit
H	Analyzed out of hold time
J	Estimated concentration
Jb	The analyte is positively identified and the value is approximated between the SDL and MQL. Sample contains less than ten times the concentration found in the method blank. The result should be considered non-detect to the SDL.
Je	Estimated concentration exceeding calibration range.
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

Attachments

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

#1200634

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
 PROJECT NO.: 115-6403124
 PROJECT NAME: Celero
 SITE MANAGER: Jeff Knudley
 SAMPLE IDENTIFICATION: Rock Queen #1 TB

LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP	GRAB	SAMPLE IDENTIFICATION														NUMBER OF FILTERED	HCL	HNO3	ICE	NONE	BTEX 802	TPH 80	PAH 8270	RCRA Me	TCLP Me	TCLP Vol	TCLP Sol	RCI	GC,MS V	GC,MS S	PCB's 80	Pest. 808	Chloride	Gamma	Alpha B	PLM (As	Major A	50																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
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RELINQUISHED BY: (Signature) [Signature] Date: 1/10/12 Time: 1510
 RECEIVED BY: (Signature) [Signature] Date: 1/10/12 Time: 1510

RELINQUISHED BY: (Signature) [Signature] Date: 1/10/12 Time: 1510
 RECEIVED BY: (Signature) [Signature] Date: 1/10/12 Time: 1510

RELINQUISHED BY: (Signature) [Signature] Date: 1/10/12 Time: 1510
 RECEIVED BY: (Signature) [Signature] Date: 1/10/12 Time: 1510

RECEIVING LABORATORY: Tetra Tech
 ADDRESS: Midland STATE: TX ZIP: 79705
 CITY: Midland PHONE: (432) 682-4559
 CONTACT: Jeff Knudley

REMARKS: None

SAMPLE CONDITION WHEN RECEIVED: 130

DATE: 1/10/12 TIME: 1510
 SAMPLE SHIPPED BY: (Circle) BUS
 AIRBILL #: 5125
 OTHER: None

RESULTS BY: Jeff Knudley
 RUSH CHARGES AUTHORIZED: Yes No No

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



6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800-378-1296 806-794-1296 FAX 806-794-1296
200 East Sunset Road, Suite E El Paso, Texas 79922 915-585-3443 FAX 915-585-4944
5002 Basin Street, Suite A1 Midland, Texas 79703 432-689-6301 FAX 432-689-6313
(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: April 24, 2012

Work Order: 12041220



Project Location: Chavez Co., NM
Project Name: Celero/Rock Queen #1 TB
Project Number: 115-6403129A

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
294126	MW-1	water	2012-04-11	14:00	2012-04-12
294127	MW-2	water	2012-04-11	14:10	2012-04-12
294128	MW-3	water	2012-04-11	14:50	2012-04-12
294129	MW-4	water	2012-04-11	15:10	2012-04-12
294130	MW-5	water	2012-04-11	14:30	2012-04-12
294131	MW-6	water	2012-04-11	14:40	2012-04-12
294132	MW-7	water	2012-04-11	15:00	2012-04-12

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 34 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

Notes:

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

A handwritten signature in black ink, reading "Blair Leftwich". The signature is written in a cursive style and is underlined with a double horizontal line.

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

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Case Narrative

Samples for project Celero/Rock Queen #1 TB were received by TraceAnalysis, Inc. on 2012-04-12 and assigned to work order 12041220. Samples for work order 12041220 were received intact without headspace and at a temperature of 2.9 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	76629	2012-04-16 at 09:29	90315	2012-04-16 at 11:02
BTEX	S 8021B	76700	2012-04-19 at 10:35	90401	2012-04-20 at 11:02
Chloride (IC)	E 300.0	76737	2012-04-19 at 12:00	90445	2012-04-20 at 09:09
Chloride (IC)	E 300.0	76739	2012-04-20 at 11:00	90450	2012-04-23 at 09:20
Chloride (IC)	E 300.0	76740	2012-04-21 at 14:00	90451	2012-04-23 at 09:36
SO4 (IC)	E 300.0	76737	2012-04-19 at 12:00	90445	2012-04-20 at 09:09
SO4 (IC)	E 300.0	76739	2012-04-20 at 11:00	90450	2012-04-23 at 09:20
SO4 (IC)	E 300.0	76740	2012-04-21 at 14:00	90451	2012-04-23 at 09:36
SO4 (IC)	E 300.0	76787	2012-04-23 at 17:02	90504	2012-04-23 at 17:03
TDS	SM 2540C	76561	2012-04-13 at 09:43	90242	2012-04-15 at 16:30
TDS	SM 2540C	76564	2012-04-15 at 13:31	90279	2012-04-16 at 14:22

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 12041220 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: 294126 - MW-1

Laboratory: Midland

Analysis: BTEX

QC Batch: 90315

Prep Batch: 76629

Analytical Method: S 8021B

Date Analyzed: 2012-04-16

Sample Preparation: 2012-04-16

Prep Method: S 5030B

Analyzed By: tc

Prepared By: tc

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Benzene	Q _{tr} , U	2	<0.000600	<0.00100	<0.000600	mg/L	1	0.000600	0.001	0.0006
Toluene	U	2	<0.000400	<0.00100	<0.000400	mg/L	1	0.000400	0.001	0.0004
Ethylbenzene	Q _{tr} , U	2	<0.000600	<0.00100	<0.000600	mg/L	1	0.000600	0.001	0.0006
Xylene	Q _{tr} , U	2	<0.00130	<0.00100	<0.00130	mg/L	1	0.00130	0.001	0.0013

Surrogate	F	C	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene ('TF1')	Q _{tr}		0.0557	mg/L	1	0.100	56	73.5 - 123.1
4-Bromofluorobenzene (4-BFB)			0.0593	mg/L	1	0.100	59	51.1 - 122.9

Sample: 294126 - MW-1

Laboratory: Lubbock

Analysis: Chloride (IC)

QC Batch: 90450

Prep Batch: 76739

Analytical Method: E 300.0

Date Analyzed: 2012-04-23

Sample Preparation: 2012-04-20

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	151000	151000	<1040	mg/L	5000	1040	2.5	0.209

Sample: 294126 - MW-1

Laboratory: Lubbock

Analysis: SO4 (IC)

QC Batch: 90445

Prep Batch: 76737

Analytical Method: E 300.0

Date Analyzed: 2012-04-20

Sample Preparation: 2012-04-19

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	2150	2150	<89.5	mg/L	500	89.5	2.5	0.179

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Sample: 294126 - MW-1

Laboratory: Midland

Analysis: TDS

QC Batch: 90242

Prep Batch: 76561

Analytical Method: SM 2540C

Date Analyzed: 2012-04-15

Sample Preparation: 2012-04-13

Prep Method: N/A

Analyzed By: AR

Prepared By: AR

Parameter	F	C	SDL Based Result	SQL Based Result	Method Blank Result	Units	Dilution	SDL	SQL (Unadjusted)	MDL (Unadjusted)
Total Dissolved Solids		2	221000	221000	<975	mg/L	100	975	10	9.75

Sample: 294127 - MW-2

Laboratory: Midland

Analysis: BTEX

QC Batch: 90315

Prep Batch: 76629

Analytical Method: S 8021B

Date Analyzed: 2012-04-16

Sample Preparation: 2012-04-16

Prep Method: S 5030B

Analyzed By: tc

Prepared By: tc

Parameter	F	C	SDL Based Result	SQL Based Result	Method Blank Result	Units	Dilution	SDL	SQL (Unadjusted)	MDL (Unadjusted)
Benzene	Q _n ,U	2	<0.000600	<0.00100	<0.000600	mg/L	1	0.000600	0.001	0.0006
Toluene	U	2	<0.000400	<0.00100	<0.000400	mg/L	1	0.000400	0.001	0.0004
Ethylbenzene	Q _n ,U	2	<0.000600	<0.00100	<0.000600	mg/L	1	0.000600	0.001	0.0006
Xylene	Q _n ,U	2	<0.00130	<0.00100	<0.00130	mg/L	1	0.00130	0.001	0.0013

Surrogate	F	C	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TF'T)			0.0956	mg/L	1	0.100	96	73.5 - 123.1
4-Bromofluorobenzene (4-BFB)			0.106	mg/L	1	0.100	106	51.1 - 122.9

Sample: 294127 - MW-2

Laboratory: Lubbock

Analysis: Chloride (IC)

QC Batch: 90445

Prep Batch: 76737

Analytical Method: E 300.0

Date Analyzed: 2012-04-20

Sample Preparation: 2012-04-19

Prep Method: N/A

Analyzed By: RL

Prepared By: RL

Parameter	F	C	SDL Based Result	SQL Based Result	Method Blank Result	Units	Dilution	SDL	SQL (Unadjusted)	MDL (Unadjusted)
Chloride		1	8250	8250	<104	mg/L	500	104	2.5	0.209

Sample: 294127 - MW-2

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Laboratory: Lubbock
Analysis: SO4 (IC)
QC Batch: 90451
Prep Batch: 76740

Analytical Method: E 300.0
Date Analyzed: 2012-04-23
Sample Preparation: 2012-04-21

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

Parameter	F	C	SDL Based Result	SQL Based Result	Method Blank Result	Units	Dilution	SDL	SQL (Unadjusted)	MDL (Unadjusted)
Sulfate		1	136	136	<8.95	mg/L	50	8.95	2.5	0.179

Sample: 294127 - MW-2

Laboratory: Midland
Analysis: TDS
QC Batch: 90242
Prep Batch: 76561

Analytical Method: SM 2540C
Date Analyzed: 2012-04-15
Sample Preparation: 2012-04-13

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

Parameter	F	C	SDL Based Result	SQL Based Result	Method Blank Result	Units	Dilution	SDL	SQL (Unadjusted)	MDL (Unadjusted)
Total Dissolved Solids		2	20100	20100	<975	mg/L	100	975	10	9.75

Sample: 294128 - MW-3

Laboratory: Midland
Analysis: BTEX
QC Batch: 90401
Prep Batch: 76700

Analytical Method: S 8021B
Date Analyzed: 2012-04-20
Sample Preparation: 2012-04-19

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

Parameter	F	C	SDL Based Result	SQL Based Result	Method Blank Result	Units	Dilution	SDL	SQL (Unadjusted)	MDL (Unadjusted)
Benzene	Q _{n,U}	2	<0.000600	<0.00100	<0.000600	mg/L	1	0.000600	0.001	0.0006
Toluene	Q _{n,U}	2	<0.000400	<0.00100	<0.000400	mg/L	1	0.000400	0.001	0.0004
Ethylbenzene	Q _{n,U}	2	<0.000600	<0.00100	<0.000600	mg/L	1	0.000600	0.001	0.0006
Xylene	Q _{n,U}	2	<0.00130	<0.00100	<0.00130	mg/L	1	0.00130	0.001	0.0013

Surrogate	F	C	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0905	mg/L	1	0.100	90	73.5 - 123.1
4-Bromofluorobenzene (4-BFB)			0.0884	mg/L	1	0.100	88	51.1 - 122.9

Sample: 294128 - MW-3

Laboratory: Lubbock

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Analysis: Chloride (IC) Analytical Method: E 300.0 Prep Method: N/A
QC Batch: 90445 Date Analyzed: 2012-04-20 Analyzed By: RL
Prep Batch: 76737 Sample Preparation: 2012-04-19 Prepared By: RL

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Chloride		1	71600	71600	<522	mg/L	2500	522	2.5	0.209

Sample: 294128 - MW-3

Laboratory: Lubbock
Analysis: SO4 (IC) Analytical Method: E 300.0 Prep Method: N/A
QC Batch: 90445 Date Analyzed: 2012-04-20 Analyzed By: RL
Prep Batch: 76737 Sample Preparation: 2012-04-19 Prepared By: RL

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Sulfate		1	2110	2110	<89.5	mg/L	500	89.5	2.5	0.179

Sample: 294128 - MW-3

Laboratory: Midland
Analysis: TDS Analytical Method: SM 2540C Prep Method: N/A
QC Batch: 90279 Date Analyzed: 2012-04-16 Analyzed By: AR
Prep Batch: 76564 Sample Preparation: 2012-04-15 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	104000	104000	<975	mg/L	100	975	10	9.75

Sample: 294129 - MW-4

Laboratory: Midland
Analysis: BTEX Analytical Method: S 8021B Prep Method: S 5030B
QC Batch: 90315 Date Analyzed: 2012-04-16 Analyzed By: tc
Prep Batch: 76629 Sample Preparation: 2012-04-16 Prepared By: tc

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Benzene	Q-U	2	<0.000600	<0.00100	<0.000600	mg/L	1	0.000600	0.001	0.0006

continued ...

sample 294129 continued ...

Parameter	F	C	SDL Based Result	SQL Based Result	Method Blank Result	Units	Dilution	SDL	SQL (Unadjusted)	MDL (Unadjusted)
Toluene	U	2	<0.000400	<0.00100	<0.000400	mg/L	1	0.000400	0.001	0.0004
Ethylbenzene	Q _u U	2	<0.000600	<0.00100	<0.000600	mg/L	1	0.000600	0.001	0.0006
Xylene	Q _u U	2	<0.00130	<0.00100	<0.00130	mg/L	1	0.00130	0.001	0.0013

Surrogate	F	C	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	Q _u		0.0616	mg/L	1	0.100	62	73.5 - 123.1
4-Bromofluorobenzene (4-BFB)			0.0613	mg/L	1	0.100	61	51.1 - 122.9

Sample: 294129 - MW-4

Laboratory: Lubbock
 Analysis: Chloride (IC) Analytical Method: E 300.0 Prep Method: N/A
 QC Batch: 90445 Date Analyzed: 2012-04-20 Analyzed By: RL
 Prep Batch: 76737 Sample Preparation: 2012-04-19 Prepared By: RL

Parameter	F	C	SDL Based Result	SQL Based Result	Method Blank Result	Units	Dilution	SDL	SQL (Unadjusted)	MDL (Unadjusted)
Chloride		1	7020	7020	<104	mg/L	500	104	2.5	0.209

Sample: 294129 - MW-4

Laboratory: Lubbock
 Analysis: SO4 (IC) Analytical Method: E 300.0 Prep Method: N/A
 QC Batch: 90451 Date Analyzed: 2012-04-23 Analyzed By: RL
 Prep Batch: 76740 Sample Preparation: 2012-04-21 Prepared By: RL

Parameter	F	C	SDL Based Result	SQL Based Result	Method Blank Result	Units	Dilution	SDL	SQL (Unadjusted)	MDL (Unadjusted)
Sulfate		1	180	180	<8.95	mg/L	50	8.95	2.5	0.179

Sample: 294129 - MW-4

Laboratory: Midland
 Analysis: TDS Analytical Method: SM 2540C Prep Method: N/A
 QC Batch: 90279 Date Analyzed: 2012-04-16 Analyzed By: AR
 Prep Batch: 76564 Sample Preparation: 2012-04-15 Prepared By: AR

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Parameter	F	C	SDL Based Result	SQL Based Result	Method Blank Result	Units	Dilution	SDL	SQL (Unadjusted)	MDL (Unadjusted)
Total Dissolved Solids		2	12000	12000	<97.5	mg/L	10	97.5	10	9.75

Sample: 294130 - MW-5

Laboratory: Midland

Analysis: BTEX

QC Batch: 90315

Prep Batch: 76629

Analytical Method: S 8021B

Date Analyzed: 2012-04-16

Sample Preparation: 2012-04-16

Prep Method: S 5030B

Analyzed By: tc

Prepared By: tc

Parameter	F	C	SDL Based Result	SQL Based Result	Method Blank Result	Units	Dilution	SDL	SQL (Unadjusted)	MDL (Unadjusted)
Benzene	Q _n U	2	<0.000600	<0.00100	<0.000600	mg/L	1	0.000600	0.001	0.0006
Toluene	U	2	<0.000400	<0.00100	<0.000400	mg/L	1	0.000400	0.001	0.0004
Ethylbenzene	Q _n U	2	<0.000600	<0.00100	<0.000600	mg/L	1	0.000600	0.001	0.0006
Xylene	Q _n U	2	<0.00130	<0.00100	<0.00130	mg/L	1	0.00130	0.001	0.0013

Surrogate	F	C	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.110	mg/L	1	0.100	110	73.5 - 123.1
4-Bromofluorobenzene (4-BFB)			0.117	mg/L	1	0.100	117	51.1 - 122.9

Sample: 294130 - MW-5

Laboratory: Lubbock

Analysis: Chloride (IC)

QC Batch: 90445

Prep Batch: 76737

Analytical Method: E 300.0

Date Analyzed: 2012-04-20

Sample Preparation: 2012-04-19

Prep Method: N/A

Analyzed By: RL

Prepared By: RL

Parameter	F	C	SDL Based Result	SQL Based Result	Method Blank Result	Units	Dilution	SDL	SQL (Unadjusted)	MDL (Unadjusted)
Chloride		1	64.5	64.5	<1.04	mg/L	5	1.04	2.5	0.209

Sample: 294130 - MW-5

Laboratory: Lubbock

Analysis: SO₄ (IC)

QC Batch: 90445

Prep Batch: 76737

Analytical Method: E 300.0

Date Analyzed: 2012-04-20

Sample Preparation: 2012-04-19

Prep Method: N/A

Analyzed By: RL

Prepared By: RL

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Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Sulfate		1	132	132	<0.895	mg/L	5	0.895	2.5	0.179

Sample: 294130 - MW-5

Laboratory: Midland

Analysis: TDS

QC Batch: 90279

Prep Batch: 76564

Analytical Method: SM 2540C

Date Analyzed: 2012-04-16

Sample Preparation: 2012-04-15

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	556	556	<9.75	mg/L	1	9.75	10	9.75

Sample: 294131 - MW-6

Laboratory: Midland

Analysis: BTEX

QC Batch: 90401

Prep Batch: 76700

Analytical Method: S 8021B

Date Analyzed: 2012-04-20

Sample Preparation: 2012-04-19

Prep Method: S 5030B

Analyzed By: tc

Prepared By: tc

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Benzene	Q _n	2	0.00400	0.00400	<0.000600	mg/L	1	0.000600	0.001	0.0006
Toluene	Q _n	2	0.00460	0.00460	<0.000400	mg/L	1	0.000400	0.001	0.0004
Ethylbenzene	Q _{n,U}	2	<0.000600	<0.00100	<0.000600	mg/L	1	0.000600	0.001	0.0006
Xylene	Q _{n,U}	2	<0.00130	<0.00100	<0.00130	mg/L	1	0.00130	0.001	0.0013

Surrogate	F	C	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		Q _{n,r}	0.0626	mg/L	1	0.100	63	73.5 - 123.1
4-Bromofluorobenzene (4-BFB)			0.0589	mg/L	1	0.100	59	51.1 - 122.9

Sample: 294131 - MW-6

Laboratory: Lubbock

Analysis: Chloride (IC)

QC Batch: 90450

Prep Batch: 76739

Analytical Method: E 300.0

Date Analyzed: 2012-04-23

Sample Preparation: 2012-04-20

Prep Method: N/A

Analyzed By: RL

Prepared By: RL

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Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Chloride		1	101000	101000	<2090	mg/L	10000	2090	2.5	0.209

Sample: 294131 - MW-6

Laboratory: Lubbock

Analysis: SO4 (IC)

QC Batch: 90450

Prep Batch: 76739

Analytical Method: E 300.0

Date Analyzed: 2012-04-23

Sample Preparation: 2012-04-20

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	3180	<25000	<1790	mg/L	10000	1790	2.5	0.179

Sample: 294131 - MW-6

Laboratory: Midland

Analysis: TDS

QC Batch: 90279

Prep Batch: 76564

Analytical Method: SM 2540C

Date Analyzed: 2012-04-16

Sample Preparation: 2012-04-15

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	171000	171000	<975	mg/L	100	975	10	9.75

Sample: 294132 - MW-7

Laboratory: Midland

Analysis: BTEX

QC Batch: 90401

Prep Batch: 76700

Analytical Method: S 8021B

Date Analyzed: 2012-04-20

Sample Preparation: 2012-04-19

Prep Method: S 5030B

Analyzed By: tc

Prepared By: tc

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Benzene	Q ^u , U	2	<0.000600	<0.00100	<0.000600	mg/L	1	0.000600	0.001	0.0006
Toluene	Q ^u , U	2	<0.000400	<0.00100	<0.000400	mg/L	1	0.000400	0.001	0.0004
Ethylbenzene	Q ^u , U	2	<0.000600	<0.00100	<0.000600	mg/L	1	0.000600	0.001	0.0006
Xylene	Q ^u , U	2	<0.00130	<0.00100	<0.00130	mg/L	1	0.00130	0.001	0.0013

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Surrogate	F	C	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0809	mg/L	1	0.100	81	73.5 - 123.1
4-Bromofluorobenzene (4-BFB)			0.0798	mg/L	1	0.100	80	51.1 - 122.9

Sample: 294132 - MW-7

Laboratory: Lubbock
Analysis: Chloride (IC) Analytical Method: E 300.0 Prep Method: N/A
QC Batch: 90451 Date Analyzed: 2012-04-23 Analyzed By: RL
Prep Batch: 76740 Sample Preparation: 2012-04-21 Prepared By: RL

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Chloride	Q _u	1	203000	203000	<10400	mg/L	50000	10400	2.5	0.209

Sample: 294132 - MW-7

Laboratory: Lubbock
Analysis: SO4 (IC) Analytical Method: E 300.0 Prep Method: N/A
QC Batch: 90504 Date Analyzed: 2012-04-23 Analyzed By: RL
Prep Batch: 76787 Sample Preparation: 2012-04-23 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	5980	<62500	<4480	mg/L	25000	4480	2.5	0.179

Sample: 294132 - MW-7

Laboratory: Midland
Analysis: TDS Analytical Method: SM 2540C Prep Method: N/A
QC Batch: 90279 Date Analyzed: 2012-04-16 Analyzed By: AR
Prep Batch: 76564 Sample Preparation: 2012-04-15 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	186000	186000	<975	mg/L	100	975	10	9.75

Method Blanks

Method Blank (1)

QC Batch: 90242
Prep Batch: 76561

Date Analyzed: 2012-04-15
QC Preparation: 2012-04-13

Analyzed By: AR
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: 90279
Prep Batch: 76564

Date Analyzed: 2012-04-16
QC Preparation: 2012-04-15

Analyzed By: AR
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: 90315
Prep Batch: 76629

Date Analyzed: 2012-04-16
QC Preparation: 2012-04-16

Analyzed By: tc
Prepared By: tc

Parameter	F	C	Result	Units	Reporting Limits
Benzene		2	<0.000600	mg/L	0.0006
Toluene		2	<0.000400	mg/L	0.0004
Ethylbenzene		2	<0.000600	mg/L	0.0006
Xylene		2	<0.00130	mg/L	0.0013

Surrogate	F	C	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.101	mg/L	1	0.100	101	74.2 - 126
4-Bromofluorobenzene (4-BFB)			0.100	mg/L	1	0.100	100	51.3 - 124.6

Method Blank (1)

QC Batch: 90401
Prep Batch: 76700

Date Analyzed: 2012-04-20
QC Preparation: 2012-04-19

Analyzed By: tc
Prepared By: tc

Parameter	F	C	Result	Units	Reporting Limits
Benzene		2	<0.000600	mg/L	0.0006
Toluene		2	<0.000400	mg/L	0.0004
Ethylbenzene		2	<0.000600	mg/L	0.0006
Xylene		2	<0.00130	mg/L	0.0013

Surrogate	F	C	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.105	mg/L	1	0.100	105	74.2 - 126
4-Bromofluorobenzene (4-BFB)			0.101	mg/L	1	0.100	101	51.3 - 124.6

Method Blank (1)

QC Batch: 90445
Prep Batch: 76737

Date Analyzed: 2012-04-20
QC Preparation: 2012-04-19

Analyzed By: RL
Prepared By: RL

Parameter	F	C	Result	Units	Reporting Limits
Chloride		1	<0.209	mg/L	0.209

Method Blank (1)

QC Batch: 90445
Prep Batch: 76737

Date Analyzed: 2012-04-20
QC Preparation: 2012-04-19

Analyzed By: RL
Prepared By: RL

Parameter	F	C	Result	Units	Reporting Limits
Sulfate		1	<0.179	mg/L	0.179

Method Blank (1)

QC Batch: 90450
Prep Batch: 76739

Date Analyzed: 2012-04-23
QC Preparation: 2012-04-20

Analyzed By: RL
Prepared By: RL

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Parameter	F	C	Result	Units	Reporting Limits
Chloride		1	0.239	mg/L	0.209

Method Blank (1)

QC Batch: 90450
Prep Batch: 76739

Date Analyzed: 2012-04-23
QC Preparation: 2012-04-20

Analyzed By: RL
Prepared By: RL

Parameter	F	C	Result	Units	Reporting Limits
Sulfate		1	<0.179	mg/L	0.179

Method Blank (1)

QC Batch: 90451
Prep Batch: 76740

Date Analyzed: 2012-04-23
QC Preparation: 2012-04-21

Analyzed By: RL
Prepared By: RL

Parameter	F	C	Result	Units	Reporting Limits
Chloride		1	0.322	mg/L	0.209

Method Blank (1)

QC Batch: 90451
Prep Batch: 76740

Date Analyzed: 2012-04-23
QC Preparation: 2012-04-21

Analyzed By: RL
Prepared By: RL

Parameter	F	C	Result	Units	Reporting Limits
Sulfate		1	<0.179	mg/L	0.179

Method Blank (1)

QC Batch: 90504
Prep Batch: 76787

Date Analyzed: 2012-04-23
QC Preparation: 2012-04-23

Analyzed By: RL
Prepared By: RL

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Parameter	F	C	Result	Units	Reporting Limits
Sulfate		1	<0.179	mg/L	0.179

Duplicate (1) Duplicated Sample: 294127

QC Batch: 90242 Date Analyzed: 2012-04-15 Analyzed By: AR
Prep Batch: 76561 QC Preparation: 2012-04-13 Prepared By: AR

Param	F	C	Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
Total Dissolved Solids		2	18500	20100	mg/L	100	8	10

Duplicate (2) Duplicated Sample: 294156

QC Batch: 90279 Date Analyzed: 2012-04-16 Analyzed By: AR
Prep Batch: 76564 QC Preparation: 2012-04-15 Prepared By: AR

Param	F	C	Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
Total Dissolved Solids		2	3850	212000	mg/L	5	1	10
Total Dissolved Solids		2	3850	3820	mg/L	5	1	10

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 90242
Prep Batch: 76561

Date Analyzed: 2012-04-15
QC Preparation: 2012-04-13

Analyzed By: AR
Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Total Dissolved Solids		2	963	mg/L	1	1000	<9.75	96	85.5 - 112.7

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	910	mg/L	1	1000	<9.75	91	85.5 - 112.7	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: 90279
Prep Batch: 76564

Date Analyzed: 2012-04-16
QC Preparation: 2012-04-15

Analyzed By: AR
Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Total Dissolved Solids		2	1000	mg/L	1	1000	<9.75	100	85.5 - 112.7

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	<9.75	102	85.5 - 112.7	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: 90315
Prep Batch: 76629

Date Analyzed: 2012-04-16
QC Preparation: 2012-04-16

Analyzed By: tc
Prepared By: tc

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		2	0.104	mg/L	1	0.100	<0.000600	104	79.7 - 117.6

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Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Toluene		2	0.103	mg/L	1	0.100	<0.000400	103	73.9 - 123.9
Ethylbenzene		2	0.101	mg/L	1	0.100	<0.000600	101	76.8 - 120.8
Xylene		2	0.302	mg/L	1	0.300	<0.00130	101	76.2 - 120.5

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

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		2	0.106	mg/L	1	0.100	<0.000600	106	79.7 - 117.6	2	20
Toluene		2	0.106	mg/L	1	0.100	<0.000400	106	73.9 - 123.9	3	20
Ethylbenzene		2	0.104	mg/L	1	0.100	<0.000600	104	76.8 - 120.8	3	20
Xylene		2	0.312	mg/L	1	0.300	<0.00130	104	76.2 - 120.5	3	20

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

Surrogate	F	C	LCS Result	LCS Result	Units	Dil.	Spike Amount	LCS Rec.	LCS Rec.	Rec. Limit
Trifluorotoluene (TFT)			0.0919	0.0923	mg/L	1	0.100	92	92	72.5 - 117
4-Bromofluorobenzene (4-BFB)			0.0912	0.0949	mg/L	1	0.100	91	95	69.4 - 124

Laboratory Control Spike (LCS-1)

QC Batch: 90401
Prep Batch: 76700

Date Analyzed: 2012-04-20
QC Preparation: 2012-04-19

Analyzed By: tc
Prepared By: tc

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		2	0.102	mg/L	1	0.100	<0.000600	102	79.7 - 117.6
Toluene		2	0.102	mg/L	1	0.100	<0.000400	102	73.9 - 123.9
Ethylbenzene		2	0.102	mg/L	1	0.100	<0.000600	102	76.8 - 120.8
Xylene		2	0.306	mg/L	1	0.300	<0.00130	102	76.2 - 120.5

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

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		2	0.108	mg/L	1	0.100	<0.000600	108	79.7 - 117.6	6	20
Toluene		2	0.108	mg/L	1	0.100	<0.000400	108	73.9 - 123.9	6	20
Ethylbenzene		2	0.109	mg/L	1	0.100	<0.000600	109	76.8 - 120.8	7	20
Xylene		2	0.328	mg/L	1	0.300	<0.00130	109	76.2 - 120.5	7	20

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

Surrogate	F	C	LCS Result	LCS Result	Units	Dil.	Spike Amount	LCS Rec.	LCS Rec.	Rec. Limit
Trifluorotoluene (TFT)			0.0898	0.0924	mg/L	1	0.100	90	92	72.5 - 117
4-Bromofluorobenzene (4-BFB)			0.0920	0.0933	mg/L	1	0.100	92	93	69.4 - 124

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Laboratory Control Spike (LCS-1)

QC Batch: 90445
Prep Batch: 76737

Date Analyzed: 2012-04-20
QC Preparation: 2012-04-19

Analyzed By: RL
Prepared By: RL

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	24.7	mg/L	1	25.0	<0.209	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
Chloride		1	24.8	mg/L	1	25.0	<0.209	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: 90445
Prep Batch: 76737

Date Analyzed: 2012-04-20
QC Preparation: 2012-04-19

Analyzed By: RL
Prepared By: RL

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Sulfate		1	24.9	mg/L	1	25.0	<0.179	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	24.9	mg/L	1	25.0	<0.179	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: 90450
Prep Batch: 76739

Date Analyzed: 2012-04-23
QC Preparation: 2012-04-20

Analyzed By: RL
Prepared By: RL

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	25.4	mg/L	1	25.0	<0.209	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	25.2	mg/L	1	25.0	<0.209	101	90 - 110	1	20

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

Laboratory Control Spike (LCS-1)

QC Batch: 90450
Prep Batch: 76739

Date Analyzed: 2012-04-23
QC Preparation: 2012-04-20

Analyzed By: RL
Prepared By: RL

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Sulfate		1	25.4	mg/L	1	25.0	<0.179	102	90 - 110

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

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Sulfate		1	25.1	mg/L	1	25.0	<0.179	100	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: 90451
Prep Batch: 76740

Date Analyzed: 2012-04-23
QC Preparation: 2012-04-21

Analyzed By: RL
Prepared By: RL

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	25.2	mg/L	1	25.0	<0.209	101	90 - 110

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

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		1	25.5	mg/L	1	25.0	<0.209	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: 90451
Prep Batch: 76740

Date Analyzed: 2012-04-23
QC Preparation: 2012-04-21

Analyzed By: RL
Prepared By: RL

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Sulfate		1	25.0	mg/L	1	25.0	<0.179	100	90 - 110

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

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Param	F	C	LCSD		Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
			Result	Units							
Sulfate		1	25.3	mg/L	1	25.0	<0.179	101	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: 90504
Prep Batch: 76787

Date Analyzed: 2012-04-23
QC Preparation: 2012-04-23

Analyzed By: RL
Prepared By: RL

Param	F	C	LCS		Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
			Result	Units					
Sulfate		1	25.1	mg/L	1	25.0	<0.179	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		Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
			Result	Units							
Sulfate		1	25.2	mg/L	1	25.0	<0.179	101	90 - 110	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: 294303

QC Batch: 90315
Prep Batch: 76629

Date Analyzed: 2012-04-16
QC Preparation: 2012-04-16

Analyzed By: tc
Prepared By: tc

Param	F	C	MS		Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
			Result	Units					
Benzene	Q ⁿ	2	0.308	mg/L	10	1.00	0.1368	17	86.6 - 130.3
Toluene		2	1.25	mg/L	10	1.00	0.0521	120	82.2 - 120.1
Ethylbenzene	Q ⁿ	2	1.42	mg/L	10	1.00	1.2127	21	66.8 - 119.2
Xylene	Q ⁿ	2	2.73	mg/L	10	3.00	1.5002	41	66.5 - 118.4

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

Param	F	C	MSD		Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
			Result	Units							
Benzene	Q ⁿ	2	0.338	mg/L	10	1.00	0.1368	20	86.6 - 130.3	9	20
Toluene		2	1.19	mg/L	10	1.00	0.0521	114	82.2 - 120.1	5	20
Ethylbenzene	Q ⁿ	2	1.47	mg/L	10	1.00	1.2127	26	66.8 - 119.2	4	20
Xylene	Q ⁿ	2	2.81	mg/L	10	3.00	1.5002	44	66.5 - 118.4	3	20

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

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Surrogate	F	C	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Surrogate	F	C	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)			0.957	1.04	mg/L	10	1	96	104	73.2 - 116.6
4-Bromofluorobenzene (4-BFB)			0.980	1.03	mg/L	10	1	98	103	64.8 - 125.7

Matrix Spike (MS-1) Spiked Sample: 294170

QC Batch: 90401
Prep Batch: 76700

Date Analyzed: 2012-04-20
QC Preparation: 2012-04-19

Analyzed By: tc
Prepared By: tc

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	Q*	2	<0.000600	mg/L	1	0.100	<0.000600	0	86.6 - 130.3
Toluene	Q*	2	<0.000400	mg/L	1	0.100	<0.000400	0	82.2 - 120.1
Ethylbenzene	Q*	2	<0.000600	mg/L	1	0.100	<0.000600	0	66.8 - 119.2
Xylene	Q*	2	<0.00130	mg/L	1	0.300	<0.00130	0	66.5 - 118.4

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	Q*	2	<0.000600	mg/L	1	0.100	<0.000600	0	86.6 - 130.3	0	20
Toluene	Q*	2	<0.000400	mg/L	1	0.100	<0.000400	0	82.2 - 120.1	0	20
Ethylbenzene	Q*	2	<0.000600	mg/L	1	0.100	<0.000600	0	66.8 - 119.2	0	20
Xylene	Q*	2	<0.00130	mg/L	1	0.300	<0.00130	0	66.5 - 118.4	0	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)			0.0780	0.0955	mg/L	1	0.1	78	96	73.2 - 116.6
4-Bromofluorobenzene (4-BFB)			0.0747	0.0956	mg/L	1	0.1	75	96	64.8 - 125.7

Matrix Spike (MS-1) Spiked Sample: 294152

QC Batch: 90445
Prep Batch: 76737

Date Analyzed: 2012-04-20
QC Preparation: 2012-04-19

Analyzed By: RL
Prepared By: RL

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	150	mg/L	5	104	42.2	104	90 - 110

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

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Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		1	149	mg/L	5	104	42.2	103	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: 294152

QC Batch: 90445
Prep Batch: 76737

Date Analyzed: 2012-04-20
QC Preparation: 2012-04-19

Analyzed By: RL
Prepared By: RL

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Sulfate		1	139	mg/L	5	104	45.3	90	90 - 110

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	144	mg/L	5	104	45.3	95	90 - 110	4	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: 294161

QC Batch: 90450
Prep Batch: 76739

Date Analyzed: 2012-04-23
QC Preparation: 2012-04-20

Analyzed By: RL
Prepared By: RL

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	191	mg/L	5	104	87.5	100	90 - 110

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	192	mg/L	5	104	87.5	100	90 - 110	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: 294161

QC Batch: 90450
Prep Batch: 76739

Date Analyzed: 2012-04-23
QC Preparation: 2012-04-20

Analyzed By: RL
Prepared By: RL

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Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Sulfate		1	204	mg/L	5	104	106	94	90 - 110

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	206	mg/L	5	104	106	96	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: 294163

QC Batch: 90451
Prep Batch: 76740

Date Analyzed: 2012-04-23
QC Preparation: 2012-04-21

Analyzed By: RL
Prepared By: RL

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	Q*	1	505	mg/L	10	417	42.7	111	90 - 110

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	Q*	1	507	mg/L	10	417	42.7	111	90 - 110	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: 294163

QC Batch: 90451
Prep Batch: 76740

Date Analyzed: 2012-04-23
QC Preparation: 2012-04-21

Analyzed By: RL
Prepared By: RL

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Sulfate		1	607	mg/L	10	417	157	108	90 - 110

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	611	mg/L	10	417	157	109	90 - 110	1	20

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

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Matrix Spike (MS-1) Spiked Sample: 294132

QC Batch: 90504
Prep Batch: 76787

Date Analyzed: 2012-04-23
QC Preparation: 2012-04-23

Analyzed By: RL
Prepared By: RL

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Sulfate		1	518000	mg/L	25000	521000	5980	98	90 - 110

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	528000	mg/L	25000	521000	5980	101	90 - 110	2	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: 90315

Date Analyzed: 2012-04-16

Analyzed By: tc

Param	F	C	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		2	mg/L	0.100	0.110	110	80 - 120	2012-04-16
Toluene		2	mg/L	0.100	0.110	110	80 - 120	2012-04-16
Ethylbenzene		2	mg/L	0.100	0.108	108	80 - 120	2012-04-16
Xylene		2	mg/L	0.300	0.324	108	80 - 120	2012-04-16

Standard (CCV-2)

QC Batch: 90315

Date Analyzed: 2012-04-16

Analyzed By: tc

Param	F	C	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		2	mg/L	0.100	0.112	112	80 - 120	2012-04-16
Toluene		2	mg/L	0.100	0.112	112	80 - 120	2012-04-16
Ethylbenzene		2	mg/L	0.100	0.113	113	80 - 120	2012-04-16
Xylene		2	mg/L	0.300	0.337	112	80 - 120	2012-04-16

Standard (CCV-3)

QC Batch: 90315

Date Analyzed: 2012-04-16

Analyzed By: tc

Param	F	C	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		2	mg/L	0.100	0.107	107	80 - 120	2012-04-16
Toluene		2	mg/L	0.100	0.106	106	80 - 120	2012-04-16
Ethylbenzene		2	mg/L	0.100	0.106	106	80 - 120	2012-04-16
Xylene		2	mg/L	0.300	0.318	106	80 - 120	2012-04-16

Standard (CCV-1)

QC Batch: 90401

Date Analyzed: 2012-04-20

Analyzed By: tc

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Param	F	C	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		2	mg/L	0.100	0.104	104	80 - 120	2012-04-20
Toluene		2	mg/L	0.100	0.105	105	80 - 120	2012-04-20
Ethylbenzene		2	mg/L	0.100	0.107	107	80 - 120	2012-04-20
Xylene		2	mg/L	0.300	0.320	107	80 - 120	2012-04-20

Standard (CCV-2)

QC Batch: 90401

Date Analyzed: 2012-04-20

Analyzed By: tc

Param	F	C	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		2	mg/L	0.100	0.104	104	80 - 120	2012-04-20
Toluene		2	mg/L	0.100	0.105	105	80 - 120	2012-04-20
Ethylbenzene		2	mg/L	0.100	0.104	104	80 - 120	2012-04-20
Xylene		2	mg/L	0.300	0.312	104	80 - 120	2012-04-20

Standard (CCV-1)

QC Batch: 90445

Date Analyzed: 2012-04-20

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	2012-04-20

Standard (CCV-1)

QC Batch: 90445

Date Analyzed: 2012-04-20

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	25.2	101	90 - 110	2012-04-20

Standard (CCV-2)

QC Batch: 90445

Date Analyzed: 2012-04-20

Analyzed By: RL

Report Date: April 24, 2012
115-6403129A

Work Order: 12041220
Celero/Rock Queen #1 TB

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Param	F	C	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1	mg/L	25.0	23.7	95	90 - 110	2012-04-20

Standard (CCV-2)

QC Batch: 90445

Date Analyzed: 2012-04-20

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	23.6	94	90 - 110	2012-04-20

Standard (CCV-1)

QC Batch: 90450

Date Analyzed: 2012-04-23

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	2012-04-23

Standard (CCV-1)

QC Batch: 90450

Date Analyzed: 2012-04-23

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	25.0	100	90 - 110	2012-04-23

Standard (CCV-2)

QC Batch: 90450

Date Analyzed: 2012-04-23

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	25.8	103	90 - 110	2012-04-23

Standard (CCV-2)

QC Batch: 90450

Date Analyzed: 2012-04-23

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	25.6	102	90 - 110	2012-04-23

Standard (CCV-1)

QC Batch: 90451

Date Analyzed: 2012-04-23

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	25.3	101	90 - 110	2012-04-23

Standard (CCV-1)

QC Batch: 90451

Date Analyzed: 2012-04-23

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	25.3	101	90 - 110	2012-04-23

Standard (CCV-2)

QC Batch: 90451

Date Analyzed: 2012-04-23

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	26.1	104	90 - 110	2012-04-23

Standard (CCV-2)

QC Batch: 90451

Date Analyzed: 2012-04-23

Analyzed By: RL

Report Date: April 24, 2012
115-6403129A

Work Order: 12041220
Celero/Rock Queen #1 TB

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Chavez Co., NM

Param	F	C	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Sulfate		1	mg/L	25.0	25.4	102	90 - 110	2012-04-23

Standard (CCV-1)

QC Batch: 90504

Date Analyzed: 2012-04-23

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	24.8	99	90 - 110	2012-04-23

Standard (CCV-2)

QC Batch: 90504

Date Analyzed: 2012-04-23

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	25.2	101	90 - 110	2012-04-23

Limits of Detection (LOD)

Test	Method	Matrix	Instrument	Analyte	Spike Amount	Pass
BTEX	S 8021B	water	BTEX-1	Benzene	0.00	-
BTEX	S 8021B	water	BTEX-1	Toluene	0.00	-
BTEX	S 8021B	water	BTEX-1	Ethylbenzene	0.00	-
BTEX	S 8021B	water	BTEX-1	Xylene	0.00	-
Chloride (IC)	E 300.0	water	Dionex IC	Chloride	0.0400	Pass
SO4 (IC)	E 300.0	water	Dionex IC	Sulfate	1.25	Pass

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	T104704219-12-7	Lubbock
2	NELAP	T104704392-11-3	Midland

Standard Flags

F	Description
B	Analyte detected in the corresponding method blank above the method detection limit
H	Analyzed out of hold time
J	Estimated concentration
Jb	The analyte is positively identified and the value is approximated between the SDL and MQL. Sample contains less than ten times the concentration found in the method blank. The result should be considered non-detect to the SDL.
Je	Estimated concentration exceeding calibration range.
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

Attachments

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

12041220

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 Kinclley

PROJECT NO.:

115-4103129A

PROJECT NAME:

Celero / Rock Queen #1

LAB I.D. NUMBER

DATE

TIME

ZGIZ

MATRIX

COMP

GRAB

SAMPLE IDENTIFICATION

NUMBER OF CONTAINERS

FILTERED (Y/N)

PRESERVATIVE METHOD

HCL

HNO3

ICE

NONE

TPH 8015 MOD. TX1005 (Ext. to C35)

BTX 8021B

PAH 8270

RCRA Metals Ag As Ba Cd Cr Pb Hg Se

TCLP Metals Ag As Ba Cd Cr Pb Hg Se

TCLP Volatiles

TCLP Semi Volatiles

RCI

GC/MS Vol. 8240/8260/624

GC/MS Semi. Vol. 8270/625

PCB's 8080/608

Post. 808/608

Chloride

Gamma Spec.

Alpha Beta (Air)

PLM (Asbestos)

Major Anions/Cations, pH (TDS)

504

PAGE: 1

OF: 1

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

12041220

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: Celeo SITE MANAGER: Jeff Kinley
PROJECT NO.: 115-6403124A PROJECT NAME: Celeo / Rock Queen #1

LAB I.D. NUMBER	DATE	TIME	SAMPLE IDENTIFICATION		
			MATRIX	COMP.	GRAB
127	4/11	1400	W		X
128		1410			
129		1450			
130		1510			
131		1430			
132		1440			
		1500			

224126	4/11	1400	W	X	MW-1
127		1410			MW-2
128		1450			MW-3
129		1570			MW-4
130		1430			MW-5
131		1440			MW-6
132		1500			MW-7

RELINQUISHED BY: (Signature) [Signature] Date: 4/12/12 Time: 15:10
RECEIVED BY: (Signature) [Signature] Date: 4/12/12 Time: 15:30
RELINQUISHED BY: (Signature) [Signature] Date: 4/12/12 Time: 15:30
RECEIVED BY: (Signature) [Signature] Date: 4/12/12 Time: 15:30

RECEIVING LABORATORY: Midland STATE: TX PHONE: 432-682-4559 ZIP: 79705
ADDRESS: 1910 N. Big Spring St.
CONTACT: Jeff Kinley

SAMPLE CONDITION WHEN RECEIVED: 3.2 REMARKS: 311
2.7 instant

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

PAGE: 1 OF: 1

ANALYSIS REQUEST
(Circle or Specify Method No.)

SAMPLED BY: (Print & Initial) JKS Date: 4/12/12 Time: 15:10
SAMPLE SHIPPED BY: (Circle) BUS AIRBILL #: 7112
FEDEX HAND DELIVERED UPS
OTHER: UPS
TETRA TECH CONTACT PERSON: Jeff Kinley
Results by: Jeff Kinley
RUSH Charges Authorized: Yes No A



6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800-378-1296 806-794-1296 FAX 806-794-1296
200 East Sunset Road, Suite E El Paso, Texas 79922 915-585-3443 FAX 915-585-4944
5002 Basin Street, Suite A1 Midland, Texas 79703 432-689-6301 FAX 432-689-6313
(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: August 8, 2012

Work Order: 12072626



Project Location: Chavez Co., NM
Project Name: Celero/Rock Queen #1 TB
Project Number: 115-6403129A

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
304889	MW-1	water	2012-07-24	16:00	2012-07-26
304890	MW-2	water	2012-07-24	16:10	2012-07-26
304891	MW-3	water	2012-07-24	16:20	2012-07-26
304892	MW-4	water	2012-07-24	16:30	2012-07-26
304893	MW-5	water	2012-07-24	16:40	2012-07-26
304894	MW-6	water	2012-07-24	16:50	2012-07-26
304895	MW-7	water	2012-07-24	17:00	2012-07-26

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 25 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

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

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

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QC Batch 93654 - CCV (1)	21
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Case Narrative

Samples for project Celero/Rock Queen #1 TB were received by TraceAnalysis, Inc. on 2012-07-26 and assigned to work order 12072626. Samples for work order 12072626 were received intact without headspace and at a temperature of 4.0 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	79321	2012-08-01 at 15:45	93539	2012-08-01 at 15:37
BTEX	S 8021B	79393	2012-08-03 at 16:37	93654	2012-08-03 at 16:37
BTEX	S 8021B	79409	2012-08-06 at 13:02	93674	2012-08-06 at 13:02
Chloride (IC)	E 300.0	79286	2012-07-31 at 14:53	93589	2012-08-02 at 10:22
Chloride (IC)	E 300.0	79316	2012-08-01 at 09:16	93590	2012-08-02 at 10:23

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 12072626 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

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

Report Date: August 8, 2012
115-6403129A

Work Order: 12072626
Celero/Rock Queen #1 TB

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Chavez Co., NM

Analytical Report

Sample: 304889 - MW-1

Laboratory: Lubbock
Analysis: BTEX
QC Batch: 93674
Prep Batch: 79409

Analytical Method: S 8021B
Date Analyzed: 2012-08-06
Sample Preparation: 2012-08-06

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

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)			0.0801	mg/L	1	0.100	80	70 - 130
4-Bromofluorobenzene (4-BFB)	Q _{sr}	Q _{sr}	0.0652	mg/L	1	0.100	65	70 - 130

Sample: 304889 - MW-1

Laboratory: Midland
Analysis: Chloride (IC)
QC Batch: 93589
Prep Batch: 79286

Analytical Method: E 300.0
Date Analyzed: 2012-08-02
Sample Preparation: 2012-08-01

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	Q _{sr}	2	123000	mg/L	5000	2.50

Sample: 304890 - MW-2

Laboratory: Lubbock
Analysis: BTEX
QC Batch: 93539
Prep Batch: 79321

Analytical Method: S 8021B
Date Analyzed: 2012-08-01
Sample Preparation: 2012-08-01

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

Report Date: August 8, 2012
115-6403129A

Work Order: 12072626
Celero/Rock Queen #1 TB

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Chavez Co., NM

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		1	0.00200	mg/L	1	0.00100
Xylene	U	1	0.00740	mg/L	1	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0848	mg/L	1	0.100	85	70 - 130
4-Bromofluorobenzene (4-BFB)			0.0799	mg/L	1	0.100	80	70 - 130

Sample: 304890 - MW-2

Laboratory: Midland
Analysis: Chloride (IC)
QC Batch: 93589
Prep Batch: 79286

Analytical Method: E 300.0
Date Analyzed: 2012-08-02
Sample Preparation: 2012-08-01

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	Q*	2	9110	mg/L	1000	2.50

Sample: 304891 - MW-3

Laboratory: Lubbock
Analysis: BTEX
QC Batch: 93654
Prep Batch: 79393

Analytical Method: S 8021B
Date Analyzed: 2012-08-03
Sample Preparation: 2012-08-03

Prep Method: S 5030B
Analyzed By: MT
Prepared By: ZLM

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)			0.0918	mg/L	1	0.100	92	70 - 130
4-Bromofluorobenzene (4-BFB)			0.0915	mg/L	1	0.100	92	70 - 130

Report Date: August 8, 2012
115-6403129A

Work Order: 12072626
Celero/Rock Queen #1 TB

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Chavez Co., NM

Sample: 304891 - MW-3

Laboratory: Midland
Analysis: Chloride (IC)
QC Batch: 93589
Prep Batch: 79286

Analytical Method: E 300.0
Date Analyzed: 2012-08-02
Sample Preparation: 2012-08-01

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	Q*	2	70200	mg/L	5000	2.50

Sample: 304892 - MW-4

Laboratory: Lubbock
Analysis: BTEX
QC Batch: 93539
Prep Batch: 79321

Analytical Method: S 8021B
Date Analyzed: 2012-08-01
Sample Preparation: 2012-08-01

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

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)			0.0846	mg/L	1	0.100	85	70 - 130
4-Bromofluorobenzene (4-BFB)			0.0801	mg/L	1	0.100	80	70 - 130

Sample: 304892 - MW-4

Laboratory: Midland
Analysis: Chloride (IC)
QC Batch: 93589
Prep Batch: 79286

Analytical Method: E 300.0
Date Analyzed: 2012-08-02
Sample Preparation: 2012-08-01

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	Q*	2	3860	mg/L	500	2.50

Report Date: August 8, 2012
115-6403129A

Work Order: 12072626
Celero/Rock Queen #1 TB

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Chavez Co., NM

Sample: 304893 - MW-5

Laboratory: Lubbock
Analysis: BTEX
QC Batch: 93539
Prep Batch: 79321

Analytical Method: S 8021B
Date Analyzed: 2012-08-01
Sample Preparation: 2012-08-01

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

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)			0.0863	mg/L	1	0.100	86	70 - 130
4-Bromofluorobenzene (4-BFB)			0.0811	mg/L	1	0.100	81	70 - 130

Sample: 304893 - MW-5

Laboratory: Midland
Analysis: Chloride (IC)
QC Batch: 93590
Prep Batch: 79316

Analytical Method: E 300.0
Date Analyzed: 2012-08-02
Sample Preparation: 2012-08-01

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	Qs	2	72.6	mg/L	5	2.50

Sample: 304894 - MW-6

Laboratory: Lubbock
Analysis: BTEX
QC Batch: 93654
Prep Batch: 79393

Analytical Method: S 8021B
Date Analyzed: 2012-08-03
Sample Preparation: 2012-08-03

Prep Method: S 5030B
Analyzed By: MT
Prepared By: ZLM

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

Report Date: August 8, 2012
115-6403129A

Work Order: 12072626
Celero/Rock Queen #1 TB

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Chavez Co., NM

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0752	mg/L	1	0.100	75	70 - 130
4-Bromofluorobenzene (4-BFB)			0.0742	mg/L	1	0.100	74	70 - 130

Sample: 304894 - MW-6

Laboratory: Midland
Analysis: Chloride (IC)
QC Batch: 93590
Prep Batch: 79316

Analytical Method: E 300.0
Date Analyzed: 2012-08-02
Sample Preparation: 2012-08-01

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	Q*	2	107000	mg/L	5000	2.50

Sample: 304895 - MW-7

Laboratory: Lubbock
Analysis: BTEX
QC Batch: 93654
Prep Batch: 79393

Analytical Method: S 8021B
Date Analyzed: 2012-08-03
Sample Preparation: 2012-08-03

Prep Method: S 5030B
Analyzed By: MT
Prepared By: ZLM

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)			0.0754	mg/L	1	0.100	75	70 - 130
4-Bromofluorobenzene (4-BFB)			0.0702	mg/L	1	0.100	70	70 - 130

Sample: 304895 - MW-7

Laboratory: Midland
Analysis: Chloride (IC)
QC Batch: 93590
Prep Batch: 79316

Analytical Method: E 300.0
Date Analyzed: 2012-08-02
Sample Preparation: 2012-08-01

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

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Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	Q*	2	120000	mg/L	5000	2.50

Method Blanks

Method Blank (1) QC Batch: 93539

QC Batch: 93539
Prep Batch: 79321

Date Analyzed: 2012-08-01
QC Preparation: 2012-08-01

Analyzed By: ZLM
Prepared By: ZLM

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		1	<0.000310	mg/L	0.001
Toluene		1	0.000400	mg/L	0.001
Ethylbenzene		1	<0.000291	mg/L	0.001
Xylene		1	0.00190	mg/L	0.001

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0896	mg/L	1	0.100	90	70 - 130
4-Bromofluorobenzene (4-BFB)			0.0843	mg/L	1	0.100	84	70 - 130

Method Blank (1) QC Batch: 93589

QC Batch: 93589
Prep Batch: 79286

Date Analyzed: 2012-08-02
QC Preparation: 2012-07-31

Analyzed By: AR
Prepared By: AR

Parameter	Flag	Cert	MDL Result	Units	RL
Chloride		2	0.815	mg/L	2.5

Method Blank (1) QC Batch: 93590

QC Batch: 93590
Prep Batch: 79316

Date Analyzed: 2012-08-02
QC Preparation: 2012-08-01

Analyzed By: AR
Prepared By: AR

Parameter	Flag	Cert	MDL Result	Units	RL
Chloride		2	<0.265	mg/L	2.5

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Method Blank (1) QC Batch: 93654

QC Batch: 93654
Prep Batch: 79393

Date Analyzed: 2012-08-03
QC Preparation: 2012-08-03

Analyzed By: MT
Prepared By: ZLM

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		1	<0.000371	mg/L	0.001
Toluene		1	<0.000347	mg/L	0.001
Ethylbenzene		1	<0.000326	mg/L	0.001
Xylene		1	<0.000357	mg/L	0.001

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0984	mg/L	1	0.100	98	70 - 130
4-Bromofluorobenzene (4-BFB)			0.100	mg/L	1	0.100	100	70 - 130

Method Blank (1) QC Batch: 93674

QC Batch: 93674
Prep Batch: 79409

Date Analyzed: 2012-08-06
QC Preparation: 2012-08-06

Analyzed By: ZLM
Prepared By: ZLM

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		1	<0.000371	mg/L	0.001
Toluene		1	<0.000347	mg/L	0.001
Ethylbenzene		1	<0.000326	mg/L	0.001
Xylene		1	<0.000357	mg/L	0.001

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.102	mg/L	1	0.100	102	70 - 130
4-Bromofluorobenzene (4-BFB)			0.105	mg/L	1	0.100	105	70 - 130

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 93539
Prep Batch: 79321

Date Analyzed: 2012-08-01
QC Preparation: 2012-08-01

Analyzed By: ZLM
Prepared By: ZLM

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	0.0890	mg/L	1	0.100	<0.000310	89	74.2 - 120
Toluene		1	0.0890	mg/L	1	0.100	0.0004	89	75.8 - 120
Ethylbenzene		1	0.0894	mg/L	1	0.100	<0.000291	89	71.8 - 120
Xylene		1	0.276	mg/L	1	0.300	0.0019	92	73.8 - 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	0.0899	mg/L	1	0.100	<0.000310	90	74.2 - 120	1	20
Toluene		1	0.0901	mg/L	1	0.100	0.0004	90	75.8 - 120	1	20
Ethylbenzene		1	0.0901	mg/L	1	0.100	<0.000291	90	71.8 - 120	1	20
Xylene		1	0.276	mg/L	1	0.300	0.0019	92	73.8 - 120	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)	0.0909	0.0931	mg/L	1	0.100	91	93	70 - 130
4-Bromofluorobenzene (4-BFB)	0.0861	0.0885	mg/L	1	0.100	86	88	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 93589
Prep Batch: 79286

Date Analyzed: 2012-08-02
QC Preparation: 2012-07-31

Analyzed By: AR
Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		2	25.4	mg/L	1	25.0	<0.265	102	90 - 110

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

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control spikes continued . . .

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		2	25.3	mg/L	1	25.0	<0.265	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: 93590
Prep Batch: 79316

Date Analyzed: 2012-08-02
QC Preparation: 2012-08-01

Analyzed By: AR
Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		2	25.5	mg/L	1	25.0	<0.265	102	90 - 110

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

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		2	24.9	mg/L	1	25.0	<0.265	100	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: 93654
Prep Batch: 79393

Date Analyzed: 2012-08-03
QC Preparation: 2012-08-03

Analyzed By: MT
Prepared By: ZLM

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	0.0971	mg/L	1	0.100	<0.000371	97	78.6 - 120
Toluene		1	0.101	mg/L	1	0.100	<0.000347	101	79.6 - 120
Ethylbenzene		1	0.104	mg/L	1	0.100	<0.000326	104	80 - 120
Xylene		1	0.308	mg/L	1	0.300	<0.000357	102	79.3 - 120

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

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	0.0986	mg/L	1	0.100	<0.000371	99	78.6 - 120	2	20
Toluene		1	0.102	mg/L	1	0.100	<0.000347	102	79.6 - 120	1	20

continued . . .

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control spikes continued ...

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Ethylbenzene		1	0.106	mg/L	1	0.100	<0.000326	106	80 - 120	2	20
Xylene		1	0.311	mg/L	1	0.300	<0.000357	104	79.3 - 120	1	20

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

Surrogate	LCS Result	LCS Result	Units	Dil.	Spike Amount	LCS Rec.	LCS Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.0967	0.0969	mg/L	1	0.100	97	97	70 - 130
4-Bromofluorobenzene (4-BFB)	0.0949	0.0958	mg/L	1	0.100	95	96	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 93674
Prep Batch: 79409

Date Analyzed: 2012-08-06
QC Preparation: 2012-08-06

Analyzed By: ZLM
Prepared By: ZLM

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	0.0983	mg/L	1	0.100	<0.000371	98	78.6 - 120
Toluene		1	0.102	mg/L	1	0.100	<0.000347	102	79.6 - 120
Ethylbenzene		1	0.105	mg/L	1	0.100	<0.000326	105	80 - 120
Xylene		1	0.310	mg/L	1	0.300	<0.000357	103	79.3 - 120

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

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	0.102	mg/L	1	0.100	<0.000371	102	78.6 - 120	4	20
Toluene		1	0.106	mg/L	1	0.100	<0.000347	106	79.6 - 120	4	20
Ethylbenzene		1	0.112	mg/L	1	0.100	<0.000326	112	80 - 120	6	20
Xylene		1	0.325	mg/L	1	0.300	<0.000357	108	79.3 - 120	5	20

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

Surrogate	LCS Result	LCS Result	Units	Dil.	Spike Amount	LCS Rec.	LCS Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.0976	0.0979	mg/L	1	0.100	98	98	70 - 130
4-Bromofluorobenzene (4-BFB)	0.0962	0.0960	mg/L	1	0.100	96	96	70 - 130

Matrix Spike (MS-1) Spiked Sample: 304889

QC Batch: 93539
Prep Batch: 79321

Date Analyzed: 2012-08-01
QC Preparation: 2012-08-01

Analyzed By: ZLM
Prepared By: ZLM

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Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	0.0679	mg/L	1	0.100	<0.000310	68	47 - 131
Toluene		1	0.0600	mg/L	1	0.100	<0.000259	60	52.2 - 128
Ethylbenzene		1	0.0622	mg/L	1	0.100	<0.000291	62	26.5 - 154
Xylene		1	0.191	mg/L	1	0.300	0.0025	63	50.1 - 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		1	0.0635	mg/L	1	0.100	<0.000310	64	47 - 131	7	20
Toluene		1	0.0551	mg/L	1	0.100	<0.000259	55	52.2 - 128	8	20
Ethylbenzene		1	0.0585	mg/L	1	0.100	<0.000291	58	26.5 - 154	6	20
Xylene		1	0.179	mg/L	1	0.300	0.0025	59	50.1 - 130	6	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)	Q _{sr}	Q _{sr}	0.0389	0.0405	mg/L	1	0.1	39	40	70 - 130
4-Bromofluorobenzene (4-BFB)	Q _{sr}	Q _{sr}	0.0355	0.0369	mg/L	1	0.1	36	37	70 - 130

Matrix Spike (MS-1) Spiked Sample: 304892

QC Batch: 93589
Prep Batch: 79286

Date Analyzed: 2012-08-02
QC Preparation: 2012-07-31

Analyzed By: AR
Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	Q _s	Q _s	20400	mg/L	500	13800	3860	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		2	20300	mg/L	500	13800	3860	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: 304893

QC Batch: 93590
Prep Batch: 79316

Date Analyzed: 2012-08-02
QC Preparation: 2012-08-01

Analyzed By: AR
Prepared By: AR

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Param	F		C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	Q _s	Q _s	2	242	mg/L	5	138	72.6	123	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	Q _n	Q _n	2	244	mg/L	5	138	72.6	125	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: 305349

QC Batch: 93654
Prep Batch: 79393

Date Analyzed: 2012-08-03
QC Preparation: 2012-08-03

Analyzed By: MT
Prepared By: ZLM

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	0.102	mg/L	1	0.100	0.0006	101	42.2 - 136
Toluene		1	0.104	mg/L	1	0.100	<0.000347	104	44.3 - 133
Ethylbenzene		1	0.106	mg/L	1	0.100	<0.000326	106	45.6 - 132
Xylene		1	0.312	mg/L	1	0.300	<0.000357	104	44.7 - 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	0.102	mg/L	1	0.100	0.0006	101	42.2 - 136	0	20
Toluene		1	0.106	mg/L	1	0.100	<0.000347	106	44.3 - 133	2	20
Ethylbenzene		1	0.109	mg/L	1	0.100	<0.000326	109	45.6 - 132	3	20
Xylene		1	0.319	mg/L	1	0.300	<0.000357	106	44.7 - 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)	0.0991	0.0988	mg/L	1	0.1	99	99	70 - 130
4-Bromofluorobenzene (4-BFB)	0.0929	0.0921	mg/L	1	0.1	93	92	70 - 130

Matrix Spike (MS-1) Spiked Sample: 305411

QC Batch: 93674
Prep Batch: 79409

Date Analyzed: 2012-08-06
QC Preparation: 2012-08-06

Analyzed By: ZLM
Prepared By: ZLM

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	0.499	mg/L	5	0.500	<0.00186	100	42.2 - 136
Toluene		1	0.522	mg/L	5	0.500	<0.00174	104	44.3 - 133
Ethylbenzene		1	0.532	mg/L	5	0.500	<0.00163	106	45.6 - 132
Xylene		1	1.57	mg/L	5	1.50	<0.00178	105	44.7 - 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	0.488	mg/L	5	0.500	<0.00186	98	42.2 - 136	2	20
Toluene		1	0.513	mg/L	5	0.500	<0.00174	103	44.3 - 133	2	20
Ethylbenzene		1	0.523	mg/L	5	0.500	<0.00163	105	45.6 - 132	2	20
Xylene		1	1.55	mg/L	5	1.50	<0.00178	103	44.7 - 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)	0.498	0.498	mg/L	5	0.5	100	100	70 - 130
4-Bromofluorobenzene (4-BFB)	0.498	0.497	mg/L	5	0.5	100	99	70 - 130

Calibration Standards

Standard (CCV-1)

QC Batch: 93539

Date Analyzed: 2012-08-01

Analyzed By: ZLM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/L	0.100	0.0872	87	80 - 120	2012-08-01
Toluene		1	mg/L	0.100	0.0893	89	80 - 120	2012-08-01
Ethylbenzene		1	mg/L	0.100	0.0892	89	80 - 120	2012-08-01
Xylene		1	mg/L	0.300	0.276	92	80 - 120	2012-08-01

Standard (CCV-2)

QC Batch: 93539

Date Analyzed: 2012-08-01

Analyzed By: ZLM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/L	0.100	0.0851	85	80 - 120	2012-08-01
Toluene		1	mg/L	0.100	0.0864	86	80 - 120	2012-08-01
Ethylbenzene		1	mg/L	0.100	0.0856	86	80 - 120	2012-08-01
Xylene		1	mg/L	0.300	0.262	87	80 - 120	2012-08-01

Standard (CCV-3)

QC Batch: 93539

Date Analyzed: 2012-08-01

Analyzed By: ZLM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/L	0.100	0.0880	88	80 - 120	2012-08-01
Toluene		1	mg/L	0.100	0.0875	88	80 - 120	2012-08-01
Ethylbenzene		1	mg/L	0.100	0.0873	87	80 - 120	2012-08-01
Xylene		1	mg/L	0.300	0.267	89	80 - 120	2012-08-01

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Standard (CCV-1)

QC Batch: 93589

Date Analyzed: 2012-08-02

Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		2	mg/L	25.0	25.5	102	90 - 110	2012-08-02

Standard (CCV-2)

QC Batch: 93589

Date Analyzed: 2012-08-02

Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		2	mg/L	25.0	25.5	102	90 - 110	2012-08-02

Standard (CCV-1)

QC Batch: 93590

Date Analyzed: 2012-08-02

Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		2	mg/L	25.0	25.5	102	90 - 110	2012-08-02

Standard (CCV-2)

QC Batch: 93590

Date Analyzed: 2012-08-02

Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		2	mg/L	25.0	24.9	100	90 - 110	2012-08-02

Standard (CCV-1)

QC Batch: 93654

Date Analyzed: 2012-08-03

Analyzed By: MT

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Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/L	0.100	0.101	101	80 - 120	2012-08-03
Toluene		1	mg/L	0.100	0.104	104	80 - 120	2012-08-03
Ethylbenzene		1	mg/L	0.100	0.108	108	80 - 120	2012-08-03
Xylene		1	mg/L	0.300	0.314	105	80 - 120	2012-08-03

Standard (CCV-2)

QC Batch: 93654

Date Analyzed: 2012-08-03

Analyzed By: MT

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/L	0.100	0.100	100	80 - 120	2012-08-03
Toluene		1	mg/L	0.100	0.104	104	80 - 120	2012-08-03
Ethylbenzene		1	mg/L	0.100	0.105	105	80 - 120	2012-08-03
Xylene		1	mg/L	0.300	0.308	103	80 - 120	2012-08-03

Standard (CCV-3)

QC Batch: 93654

Date Analyzed: 2012-08-03

Analyzed By: MT

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/L	0.100	0.101	101	80 - 120	2012-08-03
Toluene		1	mg/L	0.100	0.104	104	80 - 120	2012-08-03
Ethylbenzene		1	mg/L	0.100	0.106	106	80 - 120	2012-08-03
Xylene		1	mg/L	0.300	0.312	104	80 - 120	2012-08-03

Standard (CCV-1)

QC Batch: 93674

Date Analyzed: 2012-08-06

Analyzed By: ZLM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/L	0.100	0.101	101	80 - 120	2012-08-06

continued ...

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standard continued ...

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Toluene		1	mg/L	0.100	0.105	105	80 - 120	2012-08-06
Ethylbenzene		1	mg/L	0.100	0.107	107	80 - 120	2012-08-06
Xylene		1	mg/L	0.300	0.317	106	80 - 120	2012-08-06

Standard (CCV-2)

QC Batch: 93674

Date Analyzed: 2012-08-06

Analyzed By: ZLM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/L	0.100	0.0990	99	80 - 120	2012-08-06
Toluene		1	mg/L	0.100	0.104	104	80 - 120	2012-08-06
Ethylbenzene		1	mg/L	0.100	0.109	109	80 - 120	2012-08-06
Xylene		1	mg/L	0.300	0.313	104	80 - 120	2012-08-06

Standard (CCV-3)

QC Batch: 93674

Date Analyzed: 2012-08-06

Analyzed By: ZLM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/L	0.100	0.0928	93	80 - 120	2012-08-06
Toluene		1	mg/L	0.100	0.0956	96	80 - 120	2012-08-06
Ethylbenzene		1	mg/L	0.100	0.0962	96	80 - 120	2012-08-06
Xylene		1	mg/L	0.300	0.285	95	80 - 120	2012-08-06

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	T104704219-12-8	Lubbock
2	NELAP	T104704392-12-4	Midland

Standard Flags

F	Description
B	Analyte detected in the corresponding method blank above the method detection limit
H	Analyzed out of hold time
J	Estimated concentration
Jb	The analyte is positively identified and the value is approximated between the SDL and MQL. Sample contains less than ten times the concentration found in the method blank. The result should be considered non-detect to the SDL.
Je	Estimated concentration exceeding calibration range.
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 was reran to confirm matrix interference with the surrogate recovery.

Attachments

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



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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: November 6, 2012

Work Order: 12102916



Project Location: Chavez Co., NM
Project Name: Celero/Rock Queen #1 TB
Project Number: 115-6403129A

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
312899	MW-1	water	2012-10-25	13:30	2012-10-26
312900	MW-2	water	2012-10-25	13:25	2012-10-26
312901	MW-3	water	2012-10-25	13:40	2012-10-26
312902	MW-4	water	2012-10-25	14:10	2012-10-26
312903	MW-5	water	2012-10-25	14:00	2012-10-26
312904	MW-6	water	2012-10-25	15:35	2012-10-26
312905	MW-7	water	2012-10-25	13:50	2012-10-26

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 33 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

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

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

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Case Narrative

Samples for project Celero/Rock Queen #1 TB were received by TraceAnalysis, Inc. on 2012-10-26 and assigned to work order 12102916. Samples for work order 12102916 were received intact without headspace and at a temperature of 2.5 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	81562	2012-11-01 at 09:16	96232	2012-11-01 at 09:16
BTEX	S 8021B	81633	2012-11-05 at 09:49	96325	2012-11-05 at 09:49
Chloride (IC)	E 300.0	81501	2012-10-31 at 12:31	96260	2012-11-03 at 13:47
Chloride (IC)	E 300.0	81502	2012-10-31 at 12:32	96261	2012-11-03 at 13:48
Chloride (IC)	E 300.0	81544	2012-11-01 at 14:30	96262	2012-11-03 at 13:49
SO4 (IC)	E 300.0	81501	2012-10-31 at 12:31	96260	2012-11-03 at 13:47
SO4 (IC)	E 300.0	81502	2012-10-31 at 12:32	96261	2012-11-03 at 13:48
SO4 (IC)	E 300.0	81544	2012-11-01 at 14:30	96262	2012-11-03 at 13:49
TDS	SM 2540C	81536	2012-10-30 at 13:35	96264	2012-10-31 at 15:34

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 12102916 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: 312899 - MW-1

Laboratory: Midland
Analysis: BTEX
QC Batch: 96325
Prep Batch: 81633

Analytical Method: S 8021B
Date Analyzed: 2012-11-05
Sample Preparation: 2012-11-05

Prep Method: S 5030B
Analyzed By: YG
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)			0.0811	mg/L	1	0.100	81	70 - 130
4-Bromofluorobenzene (4-BFB)	¹ Q _{sr}	Q _{sr}	0.0386	mg/L	1	0.100	39	70 - 130

Sample: 312899 - MW-1

Laboratory: Midland
Analysis: Chloride (IC)
QC Batch: 96260
Prep Batch: 81501

Analytical Method: E 300.0
Date Analyzed: 2012-11-03
Sample Preparation: 2012-10-31

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1	169000	mg/L	5000	2.50

Sample: 312899 - MW-1

Laboratory: Midland
Analysis: SO4 (IC)
QC Batch: 96260
Prep Batch: 81501

Analytical Method: E 300.0
Date Analyzed: 2012-11-03
Sample Preparation: 2012-10-31

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Sulfate		1	2360	mg/L	50	2.50

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Sample: 312899 - MW-1

Laboratory: Midland
Analysis: TDS
QC Batch: 96264
Prep Batch: 81536

Analytical Method: SM 2540C
Date Analyzed: 2012-10-31
Sample Preparation: 2012-10-30

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Total Dissolved Solids		1	227000	mg/L	100	10.0

Sample: 312900 - MW-2

Laboratory: Midland
Analysis: BTEX
QC Batch: 96232
Prep Batch: 81562

Analytical Method: S 8021B
Date Analyzed: 2012-11-01
Sample Preparation: 2012-11-01

Prep Method: S 5030B
Analyzed By: YG
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)			0.0908	mg/L	1	0.100	91	70 - 130
4-Bromofluorobenzene (4-BFB)			0.0798	mg/L	1	0.100	80	70 - 130

Sample: 312900 - MW-2

Laboratory: Midland
Analysis: Chloride (IC)
QC Batch: 96260
Prep Batch: 81501

Analytical Method: E 300.0
Date Analyzed: 2012-11-03
Sample Preparation: 2012-10-31

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1	9320	mg/L	1000	2.50

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Sample: 312900 - MW-2

Laboratory: Midland
Analysis: SO4 (IC)
QC Batch: 96260
Prep Batch: 81501

Analytical Method: E 300.0
Date Analyzed: 2012-11-03
Sample Preparation: 2012-10-31

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Sulfate		1	168	mg/L	10	2.50

Sample: 312900 - MW-2

Laboratory: Midland
Analysis: TDS
QC Batch: 96264
Prep Batch: 81536

Analytical Method: SM 2540C
Date Analyzed: 2012-10-31
Sample Preparation: 2012-10-30

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Total Dissolved Solids		1	32100	mg/L	100	10.0

Sample: 312901 - MW-3

Laboratory: Midland
Analysis: BTEX
QC Batch: 96325
Prep Batch: 81633

Analytical Method: S 8021B
Date Analyzed: 2012-11-05
Sample Preparation: 2012-11-05

Prep Method: S 5030B
Analyzed By: YG
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)			0.0780	mg/L	1	0.100	78	70 - 130
4-Bromofluorobenzene (4-BFB)	2	Q _{nr}	0.0693	mg/L	1	0.100	69	70 - 130

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Sample: 312901 - MW-3

Laboratory:	Midland	Analytical Method:	E 300.0	Prep Method:	N/A
Analysis:	Chloride (IC)	Date Analyzed:	2012-11-03	Analyzed By:	AR
QC Batch:	96261	Sample Preparation:	2012-10-31	Prepared By:	AR
Prep Batch:	81502				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	Qs	i	71700	mg/L	5000	2.50

Sample: 312901 - MW-3

Laboratory:	Midland	Analytical Method:	E 300.0	Prep Method:	N/A
Analysis:	SO4 (IC)	Date Analyzed:	2012-11-03	Analyzed By:	AR
QC Batch:	96261	Sample Preparation:	2012-10-31	Prepared By:	AR
Prep Batch:	81502				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Sulfate		i	2290	mg/L	50	2.50

Sample: 312901 - MW-3

Laboratory:	Midland	Analytical Method:	SM 2540C	Prep Method:	N/A
Analysis:	TDS	Date Analyzed:	2012-10-31	Analyzed By:	AR
QC Batch:	96264	Sample Preparation:	2012-10-30	Prepared By:	AR
Prep Batch:	81536				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Total Dissolved Solids		i	110000	mg/L	100	10.0

Sample: 312902 - MW-4

Laboratory:	Midland	Analytical Method:	S 8021B	Prep Method:	S 5030B
Analysis:	BTEX	Date Analyzed:	2012-11-01	Analyzed By:	YG
QC Batch:	96232	Sample Preparation:	2012-11-01	Prepared By:	YG
Prep Batch:	81562				

continued ...

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Celero/Rock Queen #1 TB

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sample 312902 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)			0.0893	mg/L	1	0.100	89	70 - 130
4-Bromofluorobenzene (4-BFB)			0.0805	mg/L	1	0.100	80	70 - 130

Sample: 312902 - MW-4

Laboratory: Midland
Analysis: Chloride (IC)
QC Batch: 96261
Prep Batch: 81502

Analytical Method: E 300.0
Date Analyzed: 2012-11-03
Sample Preparation: 2012-10-31

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	Qs	1	14200	mg/L	1000	2.50

Sample: 312902 - MW-4

Laboratory: Midland
Analysis: SO4 (IC)
QC Batch: 96261
Prep Batch: 81502

Analytical Method: E 300.0
Date Analyzed: 2012-11-03
Sample Preparation: 2012-10-31

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Sulfate		1	206	mg/L	10	2.50

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Sample: 312902 - MW-4

Laboratory: Midland

Analysis: TDS

QC Batch: 96264

Prep Batch: 81536

Analytical Method: SM 2540C

Date Analyzed: 2012-10-31

Sample Preparation: 2012-10-30

Prep Method: N/A

Analyzed By: AR

Prepared By: AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Total Dissolved Solids		1	21800	mg/L	100	10.0

Sample: 312903 - MW-5

Laboratory: Midland

Analysis: BTEX

QC Batch: 96232

Prep Batch: 81562

Analytical Method: S 8021B

Date Analyzed: 2012-11-01

Sample Preparation: 2012-11-01

Prep Method: S 5030B

Analyzed By: YG

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)			0.0908	mg/L	1	0.100	91	70 - 130
4-Bromofluorobenzene (4-BFB)			0.0809	mg/L	1	0.100	81	70 - 130

Sample: 312903 - MW-5

Laboratory: Midland

Analysis: Chloride (IC)

QC Batch: 96261

Prep Batch: 81502

Analytical Method: E 300.0

Date Analyzed: 2012-11-03

Sample Preparation: 2012-10-31

Prep Method: N/A

Analyzed By: AR

Prepared By: AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	Q	1	71.9	mg/L	5	2.50

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Sample: 312903 - MW-5

Laboratory:	Midland	Analytical Method:	E 300.0	Prep Method:	N/A
Analysis:	SO4 (IC)	Date Analyzed:	2012-11-03	Analyzed By:	AR
QC Batch:	96261	Sample Preparation:	2012-10-31	Prepared By:	AR
Prep Batch:	81502				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Sulfate		1	151	mg/L	5	2.50

Sample: 312903 - MW-5

Laboratory:	Midland	Analytical Method:	SM 2540C	Prep Method:	N/A
Analysis:	TDS	Date Analyzed:	2012-10-31	Analyzed By:	AR
QC Batch:	96264	Sample Preparation:	2012-10-30	Prepared By:	AR
Prep Batch:	81536				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Total Dissolved Solids		1	536	mg/L	1	10.0

Sample: 312904 - MW-6

Laboratory:	Midland	Analytical Method:	S 8021B	Prep Method:	S 5030B
Analysis:	BTEX	Date Analyzed:	2012-11-05	Analyzed By:	YG
QC Batch:	96325	Sample Preparation:	2012-11-05	Prepared By:	YG
Prep Batch:	81633				

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)	3 Q _{NT}	Q _{NT}	0.0671	mg/L	1	0.100	67	70 - 130
4-Bromofluorobenzene (4-BFB)	4 Q _{NT}	Q _{NT}	0.0520	mg/L	1	0.100	52	70 - 130

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Sample: 312904 - MW-6

Laboratory:	Midland	Analytical Method:	E 300.0	Prep Method:	N/A
Analysis:	Chloride (IC)	Date Analyzed:	2012-11-03	Analyzed By:	AR
QC Batch:	96262	Sample Preparation:	2012-11-01	Prepared By:	AR
Prep Batch:	81544				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1	119000	mg/L	5000	2.50

Sample: 312904 - MW-6

Laboratory:	Midland	Analytical Method:	E 300.0	Prep Method:	N/A
Analysis:	SO4 (IC)	Date Analyzed:	2012-11-03	Analyzed By:	AR
QC Batch:	96262	Sample Preparation:	2012-11-01	Prepared By:	AR
Prep Batch:	81544				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Sulfate	Q*	1	2860	mg/L	50	2.50

Sample: 312904 - MW-6

Laboratory:	Midland	Analytical Method:	SM 2540C	Prep Method:	N/A
Analysis:	TDS	Date Analyzed:	2012-10-31	Analyzed By:	AR
QC Batch:	96264	Sample Preparation:	2012-10-30	Prepared By:	AR
Prep Batch:	81536				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Total Dissolved Solids		1	170000	mg/L	100	10.0

Sample: 312905 - MW-7

Laboratory:	Midland	Analytical Method:	S 8021B	Prep Method:	S 5030B
Analysis:	BTEX	Date Analyzed:	2012-11-05	Analyzed By:	YG
QC Batch:	96325	Sample Preparation:	2012-11-05	Prepared By:	YG
Prep Batch:	81633				

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sample 312905 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)	⁵ Q _{sr}	Q _{sr}	0.0645	mg/L	1	0.100	64	70 - 130
4-Bromofluorobenzene (4-BFB)	⁶ Q _{sr}	Q _{sr}	0.0487	mg/L	1	0.100	49	70 - 130

Sample: 312905 - MW-7

Laboratory: Midland	Analytical Method: E 300.0	Prep Method: N/A
Analysis: Chloride (IC)	Date Analyzed: 2012-11-03	Analyzed By: AR
QC Batch: 96262	Sample Preparation: 2012-11-01	Prepared By: AR
Prep Batch: 81544		

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1	124000	mg/L	5000	2.50

Sample: 312905 - MW-7

Laboratory: Midland	Analytical Method: E 300.0	Prep Method: N/A
Analysis: SO4 (IC)	Date Analyzed: 2012-11-03	Analyzed By: AR
QC Batch: 96262	Sample Preparation: 2012-11-01	Prepared By: AR
Prep Batch: 81544		

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Sulfate	Q _s	1	2620	mg/L	50	2.50

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Sample: 312905 - MW-7

Laboratory: Midland
Analysis: TDS
QC Batch: 96264
Prep Batch: 81536

Analytical Method: SM 2540C
Date Analyzed: 2012-10-31
Sample Preparation: 2012-10-30

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Total Dissolved Solids		1	194000	mg/L	100	10.0

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Method Blanks

Method Blank (1) QC Batch: 96232

QC Batch: 96232
Prep Batch: 81562

Date Analyzed: 2012-11-01
QC Preparation: 2012-11-01

Analyzed By: YG
Prepared By: YG

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		1	<0.000600	mg/L	0.001
Toluene		1	<0.000600	mg/L	0.001
Ethylbenzene		1	<0.000800	mg/L	0.001
Xylene		1	<0.000767	mg/L	0.001

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0913	mg/L	1	0.100	91	70 - 130
4-Bromofluorobenzene (4-BFB)			0.0818	mg/L	1	0.100	82	70 - 130

Method Blank (1) QC Batch: 96260

QC Batch: 96260
Prep Batch: 81501

Date Analyzed: 2012-11-03
QC Preparation: 2012-10-31

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: 96260

QC Batch: 96260
Prep Batch: 81501

Date Analyzed: 2012-11-03
QC Preparation: 2012-10-31

Analyzed By: AR
Prepared By: AR

Parameter	Flag	Cert	MDL Result	Units	RL
Sulfate		1	<0.177	mg/L	2.5

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Method Blank (1) QC Batch: 96261

QC Batch: 96261
Prep Batch: 81502

Date Analyzed: 2012-11-03
QC Preparation: 2012-10-31

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: 96261

QC Batch: 96261
Prep Batch: 81502

Date Analyzed: 2012-11-03
QC Preparation: 2012-10-31

Analyzed By: AR
Prepared By: AR

Parameter	Flag	Cert	MDL Result	Units	RL
Sulfate		1	<0.177	mg/L	2.5

Method Blank (1) QC Batch: 96262

QC Batch: 96262
Prep Batch: 81544

Date Analyzed: 2012-11-03
QC Preparation: 2012-11-01

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: 96262

QC Batch: 96262
Prep Batch: 81544

Date Analyzed: 2012-11-03
QC Preparation: 2012-11-01

Analyzed By: AR
Prepared By: AR

Parameter	Flag	Cert	MDL Result	Units	RL
Sulfate		1	<0.177	mg/L	2.5

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Method Blank (1) QC Batch: 96264

QC Batch: 96264
Prep Batch: 81536

Date Analyzed: 2012-10-31
QC Preparation: 2012-10-30

Analyzed By: AR
Prepared By: AR

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

Method Blank (1) QC Batch: 96325

QC Batch: 96325
Prep Batch: 81633

Date Analyzed: 2012-11-05
QC Preparation: 2012-11-05

Analyzed By: YG
Prepared By: YG

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		1	<0.000600	mg/L	0.001
Toluene		1	<0.000600	mg/L	0.001
Ethylbenzene		1	<0.000800	mg/L	0.001
Xylene		1	<0.000767	mg/L	0.001

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0855	mg/L	1	0.100	86	70 - 130
4-Bromofluorobenzene (4-BFB)			0.0856	mg/L	1	0.100	86	70 - 130

Duplicates (2) Duplicated Sample: 312917

QC Batch: 96264
Prep Batch: 81536

Date Analyzed: 2012-10-31
QC Preparation: 2012-10-30

Analyzed By: AR
Prepared By: AR

Param		Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
Total Dissolved Solids	1	635	695	mg/L	5	9	10
Total Dissolved Solids	1	635	227000	mg/L	5	9	10

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Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 96232
Prep Batch: 81562

Date Analyzed: 2012-11-01
QC Preparation: 2012-11-01

Analyzed By: YG
Prepared By: YG

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	0.0985	mg/L	1	0.100	<0.000600	98	70 - 130
Toluene		1	0.0951	mg/L	1	0.100	<0.000600	95	70 - 130
Ethylbenzene		1	0.0881	mg/L	1	0.100	<0.000800	88	70 - 130
Xylene		1	0.276	mg/L	1	0.300	<0.000767	92	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		1	0.0973	mg/L	1	0.100	<0.000600	97	70 - 130	1	20
Toluene		1	0.0942	mg/L	1	0.100	<0.000600	94	70 - 130	1	20
Ethylbenzene		1	0.0873	mg/L	1	0.100	<0.000800	87	70 - 130	1	20
Xylene		1	0.274	mg/L	1	0.300	<0.000767	91	70 - 130	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)	0.0923	0.0923	mg/L	1	0.100	92	92	70 - 130
4-Bromofluorobenzene (4-BFB)	0.0847	0.0840	mg/L	1	0.100	85	84	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 96260
Prep Batch: 81501

Date Analyzed: 2012-11-03
QC Preparation: 2012-10-31

Analyzed By: AR
Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	23.6	mg/L	1	25.0	<0.265	94	90 - 110

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

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control spikes continued ...

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Param	F	C	LCS 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	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: 96260
Prep Batch: 81501

Date Analyzed: 2012-11-03
QC Preparation: 2012-10-31

Analyzed By: AR
Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Sulfate		1	25.1	mg/L	1	25.0	<0.177	100	90 - 110

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

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Sulfate		1	25.0	mg/L	1	25.0	<0.177	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: 96261
Prep Batch: 81502

Date Analyzed: 2012-11-03
QC Preparation: 2012-10-31

Analyzed By: AR
Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	24.7	mg/L	1	25.0	<0.265	99	90 - 110

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

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		1	24.7	mg/L	1	25.0	<0.265	99	90 - 110	0	20

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

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Laboratory Control Spike (LCS-1)

QC Batch: 96261
Prep Batch: 81502

Date Analyzed: 2012-11-03
QC Preparation: 2012-10-31

Analyzed By: AR
Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Sulfate		1	26.3	mg/L	1	25.0	<0.177	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	26.2	mg/L	1	25.0	<0.177	105	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: 96262
Prep Batch: 81544

Date Analyzed: 2012-11-03
QC Preparation: 2012-11-01

Analyzed By: AR
Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	26.2	mg/L	1	25.0	<0.265	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
Chloride		1	24.3	mg/L	1	25.0	<0.265	97	90 - 110	8	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: 96262
Prep Batch: 81544

Date Analyzed: 2012-11-03
QC Preparation: 2012-11-01

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.

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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	<0.177	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: 96264
Prep Batch: 81536

Date Analyzed: 2012-10-31
QC Preparation: 2012-10-30

Analyzed By: AR
Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Total Dissolved Solids		1	1060	mg/L	1	1000	<9.75	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
Total Dissolved Solids		1	1050	mg/L	1	1000	<9.75	105	90 - 110	1	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: 96325
Prep Batch: 81633

Date Analyzed: 2012-11-05
QC Preparation: 2012-11-05

Analyzed By: YG
Prepared By: YG

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	0.0908	mg/L	1	0.100	<0.000600	91	70 - 130
Toluene		1	0.0886	mg/L	1	0.100	<0.000600	89	70 - 130
Ethylbenzene		1	0.0823	mg/L	1	0.100	<0.000800	82	70 - 130
Xylene		1	0.259	mg/L	1	0.300	<0.000767	86	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		1	0.0947	mg/L	1	0.100	<0.000600	95	70 - 130	4	20
Toluene		1	0.0931	mg/L	1	0.100	<0.000600	93	70 - 130	5	20
Ethylbenzene		1	0.0874	mg/L	1	0.100	<0.000800	87	70 - 130	6	20
Xylene		1	0.274	mg/L	1	0.300	<0.000767	91	70 - 130	6	20

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

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Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.0820	0.0875	mg/L	1	0.100	82	88	70 - 130
4-Bromofluorobenzene (4-BFB)	0.0847	0.0894	mg/L	1	0.100	85	89	70 - 130

Matrix Spike (MS-1) Spiked Sample: 312900

QC Batch: 96232
Prep Batch: 81562

Date Analyzed: 2012-11-01
QC Preparation: 2012-11-01

Analyzed By: YG
Prepared By: YG

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	0.0970	mg/L	1	0.100	<0.000600	97	70 - 130
Toluene		1	0.0933	mg/L	1	0.100	<0.000600	93	70 - 130
Ethylbenzene		1	0.0855	mg/L	1	0.100	<0.000800	86	70 - 130
Xylene		1	0.268	mg/L	1	0.300	<0.000767	89	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		1	0.0953	mg/L	1	0.100	<0.000600	95	70 - 130	2	20
Toluene		1	0.0920	mg/L	1	0.100	<0.000600	92	70 - 130	1	20
Ethylbenzene		1	0.0848	mg/L	1	0.100	<0.000800	85	70 - 130	1	20
Xylene		1	0.266	mg/L	1	0.300	<0.000767	89	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)	0.0903	0.0905	mg/L	1	0.1	90	90	70 - 130
4-Bromofluorobenzene (4-BFB)	0.0823	0.0819	mg/L	1	0.1	82	82	70 - 130

Matrix Spike (MS-1) Spiked Sample: 312864

QC Batch: 96260
Prep Batch: 81501

Date Analyzed: 2012-11-03
QC Preparation: 2012-10-31

Analyzed By: AR
Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	301	mg/L	5	150	154	98	80 - 120

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

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Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		1	305	mg/L	5	150	154	101	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: 312864

QC Batch: 96260
Prep Batch: 81501

Date Analyzed: 2012-11-03
QC Preparation: 2012-10-31

Analyzed By: AR
Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Sulfate		1	225	mg/L	5	150	89	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	227	mg/L	5	150	89	92	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: 312902

QC Batch: 96261
Prep Batch: 81502

Date Analyzed: 2012-11-03
QC Preparation: 2012-10-31

Analyzed By: AR
Prepared By: AR

Param	F		C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	Q*	Q*	1	37200	mg/L	1000	30000	14200	77	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	Q*	Q*	1	37400	mg/L	1000	30000	14200	77	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: 312902

QC Batch: 96261
Prep Batch: 81502

Date Analyzed: 2012-11-03
QC Preparation: 2012-10-31

Analyzed By: AR
Prepared By: AR

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Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Sulfate		1	31000	mg/L	1000	30000	354	102	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	31300	mg/L	1000	30000	354	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: 312904

QC Batch: 96262
Prep Batch: 81544

Date Analyzed: 2012-11-03
QC Preparation: 2012-11-01

Analyzed By: AR
Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	1720000	mg/L	50000	1500000	145000	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	1710000	mg/L	50000	1500000	145000	104	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: 312904

QC Batch: 96262
Prep Batch: 81544

Date Analyzed: 2012-11-03
QC Preparation: 2012-11-01

Analyzed By: AR
Prepared By: AR

Param			F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Sulfate	Q*	Q*		1	1380000	mg/L	50000	3000000	<8850	46	80 - 120

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

Param				MSD			Spike	Matrix		Rec.		RPD
	F	C		Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Sulfate	Q*	Q*	1	1390000	mg/L	50000	3000000	<8850	46	80 - 120	1	20

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

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Matrix Spike (MS-1) Spiked Sample: 313026

QC Batch: 96325
Prep Batch: 81633

Date Analyzed: 2012-11-05
QC Preparation: 2012-11-05

Analyzed By: YG
Prepared By: YG

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	0.0932	mg/L	1	0.100	<0.000600	93	70 - 130
Toluene		1	0.0917	mg/L	1	0.100	<0.000600	92	70 - 130
Ethylbenzene		1	0.0863	mg/L	1	0.100	<0.000800	86	70 - 130
Xylene		1	0.270	mg/L	1	0.300	<0.000767	90	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		1	0.0949	mg/L	1	0.100	<0.000600	95	70 - 130	2	20
Toluene		1	0.0930	mg/L	1	0.100	<0.000600	93	70 - 130	1	20
Ethylbenzene		1	0.0870	mg/L	1	0.100	<0.000800	87	70 - 130	1	20
Xylene		1	0.273	mg/L	1	0.300	<0.000767	91	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)	0.0862	0.0863	mg/L	1	0.1	86	86	70 - 130
4-Bromofluorobenzene (4-BFB)	0.0885	0.0880	mg/L	1	0.1	88	88	70 - 130

Calibration Standards

Standard (CCV-1)

QC Batch: 96232

Date Analyzed: 2012-11-01

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	0.0975	98	80 - 120	2012-11-01
Toluene		1	mg/L	0.100	0.0942	94	80 - 120	2012-11-01
Ethylbenzene		1	mg/L	0.100	0.0870	87	80 - 120	2012-11-01
Xylene		1	mg/L	0.300	0.273	91	80 - 120	2012-11-01

Standard (CCV-2)

QC Batch: 96232

Date Analyzed: 2012-11-01

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	0.0963	96	80 - 120	2012-11-01
Toluene		1	mg/L	0.100	0.0931	93	80 - 120	2012-11-01
Ethylbenzene		1	mg/L	0.100	0.0861	86	80 - 120	2012-11-01
Xylene		1	mg/L	0.300	0.269	90	80 - 120	2012-11-01

Standard (CCV-1)

QC Batch: 96260

Date Analyzed: 2012-11-03

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	25.4	102	90 - 110	2012-11-03

Standard (CCV-1)

QC Batch: 96260

Date Analyzed: 2012-11-03

Analyzed By: AR

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Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Sulfate		1	mg/L	25.0	27.0	108	90 - 110	2012-11-03

Standard (CCV-2)

QC Batch: 96260

Date Analyzed: 2012-11-03

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	25.3	101	90 - 110	2012-11-03

Standard (CCV-2)

QC Batch: 96260

Date Analyzed: 2012-11-03

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	26.5	106	90 - 110	2012-11-03

Standard (CCV-1)

QC Batch: 96261

Date Analyzed: 2012-11-03

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	25.3	101	90 - 110	2012-11-03

Standard (CCV-1)

QC Batch: 96261

Date Analyzed: 2012-11-03

Analyzed By: AR

Report Date: November 6, 2012
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Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Sulfate		1	mg/L	25.0	26.5	106	90 - 110	2012-11-03

Standard (CCV-2)

QC Batch: 96261

Date Analyzed: 2012-11-03

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	24.7	99	90 - 110	2012-11-03

Standard (CCV-2)

QC Batch: 96261

Date Analyzed: 2012-11-03

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	26.0	104	90 - 110	2012-11-03

Standard (CCV-1)

QC Batch: 96262

Date Analyzed: 2012-11-03

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	24.7	99	90 - 110	2012-11-03

Standard (CCV-1)

QC Batch: 96262

Date Analyzed: 2012-11-03

Analyzed By: AR

Report Date: November 6, 2012
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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	2012-11-03

Standard (CCV-2)

QC Batch: 96262

Date Analyzed: 2012-11-03

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	24.4	98	90 - 110	2012-11-03

Standard (CCV-2)

QC Batch: 96262

Date Analyzed: 2012-11-03

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	25.7	103	90 - 110	2012-11-03

Standard (CCV-1)

QC Batch: 96325

Date Analyzed: 2012-11-05

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	0.0891	89	80 - 120	2012-11-05
Toluene		1	mg/L	0.100	0.0870	87	80 - 120	2012-11-05
Ethylbenzene		1	mg/L	0.100	0.0811	81	80 - 120	2012-11-05
Xylene		1	mg/L	0.300	0.255	85	80 - 120	2012-11-05

Standard (CCV-2)

QC Batch: 96325

Date Analyzed: 2012-11-05

Analyzed By: YG

Report Date: November 6, 2012
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Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/L	0.100	0.0932	93	80 - 120	2012-11-05
Toluene		1	mg/L	0.100	0.0906	91	80 - 120	2012-11-05
Ethylbenzene		1	mg/L	0.100	0.0840	84	80 - 120	2012-11-05
Xylene		1	mg/L	0.300	0.264	88	80 - 120	2012-11-05

Standard (CCV-3)

QC Batch: 96325

Date Analyzed: 2012-11-05

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	0.0939	94	80 - 120	2012-11-05
Toluene		1	mg/L	0.100	0.0925	92	80 - 120	2012-11-05
Ethylbenzene		1	mg/L	0.100	0.0865	86	80 - 120	2012-11-05
Xylene		1	mg/L	0.300	0.272	91	80 - 120	2012-11-05

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 than ten times the concentration found in the method blank. The result should be considered non-detect to the SDL.
Je	Estimated concentration exceeding calibration range.
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 Data confirmed by reanalysis.
- 2 Data confirmed by reanalysis.
- 3 Data confirmed by reanalysis.
- 4 Data confirmed by reanalysis.

- 5 Data confirmed by reanalysis.
- 6 Data confirmed by reanalysis.

Attachments

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

