

1RP - 1594

GW Sampling Report

Appendix C (Part 2)

Laboratory Analysis

Date:

March 30, 2012



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Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

Analytical and Quality Control Report

Jeff Kindley
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Report Date: April 27, 2011

Work Order: 11041523

Project Location: Chavez Co., NM
Project Name: Celero/Rock Queen SWD #1
Project Number: 115-6403134A

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
263877	MW-1	water	2011-04-14	11:00	2011-04-15
263878	MW-2	water	2011-04-14	10:55	2011-04-15
263879	MW-3	water	2011-04-14	11:15	2011-04-15
263880	MW-4	water	2011-04-14	11:55	2011-04-15
263881	MW-5	water	2011-04-14	11:30	2011-04-15
263882	MW-6	water	2011-04-14	11:15	2011-04-15
263883	MW-7	water	2011-04-14	11:35	2011-04-15

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

Michael Abel

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

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Case Narrative

Samples for project Celero/Rock Queen SWD #1 were received by TraceAnalysis, Inc. on 2011-04-15 and assigned to work order 11041523. Samples for work order 11041523 were received intact without headspace and at a temperature of 0.6 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	68257	2011-04-18 at 08:51	80419	2011-04-18 at 08:51
Chloride (IC)	E 300.0	68352	2011-04-19 at 15:05	80544	2011-04-21 at 15:08
Chloride (IC)	E 300.0	68353	2011-04-19 at 15:06	80545	2011-04-21 at 15:09
Chloride (IC)	E 300.0	68437	2011-04-25 at 09:23	80664	2011-04-26 at 15:31
SO4 (IC)	E 300.0	68352	2011-04-19 at 15:05	80544	2011-04-21 at 15:08
SO4 (IC)	E 300.0	68353	2011-04-19 at 15:06	80545	2011-04-21 at 15:09
TDS	SM 2540C	68386	2011-04-19 at 11:50	80661	2011-04-25 at 15:08

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 11041523 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

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

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Work Order: 11041523
Celero/Rock Queen SWD #1

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Analytical Report

Sample: 263877 - MW-1

Laboratory: Midland
Analysis: BTEX
QC Batch: 80419
Prep Batch: 68257

Analytical Method: S 8021B
Date Analyzed: 2011-04-18
Sample Preparation: 2011-04-18

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene			0.00880	mg/L	1	0.00100
Toluene			0.00550	mg/L	1	0.00100
Ethylbenzene			<0.00100	mg/L	1	0.00100
Xylene			<0.00100	mg/L	1	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0684	mg/L	1	0.100	68	67.8 - 129
4-Bromofluorobenzene (4-BFB)			0.0722	mg/L	1	0.100	72	51.1 - 128

Sample: 263877 - MW-1

Laboratory: Midland
Analysis: Chloride (IC)
QC Batch: 80664
Prep Batch: 68437

Analytical Method: E 300.0
Date Analyzed: 2011-04-26
Sample Preparation: 2011-04-25

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			174000	mg/L	5000	2.50

Sample: 263877 - MW-1

Laboratory: Midland
Analysis: SO4 (IC)
QC Batch: 80544
Prep Batch: 68352

Analytical Method: E 300.0
Date Analyzed: 2011-04-21
Sample Preparation: 2011-04-19

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Sulfate			1830	mg/L	100	2.50

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Sample: 263877 - MW-1

Laboratory: Midland
Analysis: TDS
QC Batch: 80661
Prep Batch: 68386

Analytical Method: SM 2540C
Date Analyzed: 2011-04-25
Sample Preparation: 2011-04-19

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Total Dissolved Solids		1	237000	mg/L	100	10.0

Sample: 263878 - MW-2

Laboratory: Midland
Analysis: BTEX
QC Batch: 80419
Prep Batch: 68257

Analytical Method: S 8021B
Date Analyzed: 2011-04-18
Sample Preparation: 2011-04-18

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene		1	0.00760	mg/L	1	0.00100
Toluene		1	<0.00100	mg/L	1	0.00100
Ethylbenzene		1	<0.00100	mg/L	1	0.00100
Xylene		1	<0.00100	mg/L	1	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1	0.0708	mg/L	1	0.100	71	67.8 - 129
4-Bromofluorobenzene (4-BFB)		1	0.0783	mg/L	1	0.100	78	51.1 - 128

Sample: 263878 - MW-2

Laboratory: Midland
Analysis: Chloride (IC)
QC Batch: 80544
Prep Batch: 68352

Analytical Method: E 300.0
Date Analyzed: 2011-04-21
Sample Preparation: 2011-04-19

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1	99700	mg/L	5000	2.50

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Sample: 263878 - MW-2

Laboratory: Midland
Analysis: SO4 (IC)
QC Batch: 80544
Prep Batch: 68352

Analytical Method: E 300.0
Date Analyzed: 2011-04-21
Sample Preparation: 2011-04-19

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Sulfate		1	1820	mg/L	50	2.50

Sample: 263878 - MW-2

Laboratory: Midland
Analysis: TDS
QC Batch: 80661
Prep Batch: 68386

Analytical Method: SM 2540C
Date Analyzed: 2011-04-25
Sample Preparation: 2011-04-19

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Total Dissolved Solids		1	159000	mg/L	100	10.0

Sample: 263879 - MW-3

Laboratory: Midland
Analysis: BTEX
QC Batch: 80419
Prep Batch: 68257

Analytical Method: S 8021B
Date Analyzed: 2011-04-18
Sample Preparation: 2011-04-18

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene		1	0.00590	mg/L	1	0.00100
Toluene		1	<0.00100	mg/L	1	0.00100
Ethylbenzene		1	<0.00100	mg/L	1	0.00100
Xylene		1	<0.00100	mg/L	1	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1	0.0717	mg/L	1	0.100	72	67.8 - 129
4-Bromofluorobenzene (4-BFB)		1	0.0830	mg/L	1	0.100	83	51.1 - 128

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Sample: 263879 - MW-3

Laboratory:	Midland	Analytical Method:	E 300.0	Prep Method:	N/A
Analysis:	Chloride (IC)	Date Analyzed:	2011-04-21	Analyzed By:	AR
QC Batch:	80544	Sample Preparation:	2011-04-19	Prepared By:	AR
Prep Batch:	68352				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1	118000	mg/L	5000	2.50

Sample: 263879 - MW-3

Laboratory:	Midland	Analytical Method:	E 300.0	Prep Method:	N/A
Analysis:	SO4 (IC)	Date Analyzed:	2011-04-21	Analyzed By:	AR
QC Batch:	80544	Sample Preparation:	2011-04-19	Prepared By:	AR
Prep Batch:	68352				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Sulfate		1	1250	mg/L	50	2.50

Sample: 263879 - MW-3

Laboratory:	Midland	Analytical Method:	SM 2540C	Prep Method:	N/A
Analysis:	TDS	Date Analyzed:	2011-04-25	Analyzed By:	AR
QC Batch:	80661	Sample Preparation:	2011-04-19	Prepared By:	AR
Prep Batch:	68386				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Total Dissolved Solids		1	188000	mg/L	100	10.0

Sample: 263880 - MW-4

Laboratory:	Midland	Analytical Method:	S 8021B	Prep Method:	S 5030B
Analysis:	BTEX	Date Analyzed:	2011-04-18	Analyzed By:	ME
QC Batch:	80419	Sample Preparation:	2011-04-18	Prepared By:	ME
Prep Batch:	68257				

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sample 263880 continued ...

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene		1	0.00640	mg/L	1	0.00100
Toluene		1	<0.00100	mg/L	1	0.00100
Ethylbenzene		1	<0.00100	mg/L	1	0.00100
Xylene		1	<0.00100	mg/L	1	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1	0.0720	mg/L	1	0.100	72	67.8 - 129
4-Bromofluorobenzene (4-BFB)		1	0.0776	mg/L	1	0.100	78	51.1 - 128

Sample: 263880 - MW-4

Laboratory: Midland
Analysis: Chloride (IC)
QC Batch: 80545
Prep Batch: 68353

Analytical Method: E 300.0
Date Analyzed: 2011-04-21
Sample Preparation: 2011-04-19

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1	102000	mg/L	5000	2.50

Sample: 263880 - MW-4

Laboratory: Midland
Analysis: SO4 (IC)
QC Batch: 80545
Prep Batch: 68353

Analytical Method: E 300.0
Date Analyzed: 2011-04-21
Sample Preparation: 2011-04-19

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Sulfate		1	1950	mg/L	50	2.50

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Sample: 263880 - MW-4

Laboratory: Midland

Analysis: TDS

QC Batch: 80661

Prep Batch: 68386

Analytical Method: SM 2540C

Date Analyzed: 2011-04-25

Sample Preparation: 2011-04-19

Prep Method: N/A

Analyzed By: AR

Prepared By: AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Total Dissolved Solids		1	159000	mg/L	100	10.0

Sample: 263881 - MW-5

Laboratory: Midland

Analysis: BTEX

QC Batch: 80419

Prep Batch: 68257

Analytical Method: S 8021B

Date Analyzed: 2011-04-18

Sample Preparation: 2011-04-18

Prep Method: S 5030B

Analyzed By: ME

Prepared By: ME

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene		1	<0.00100	mg/L	1	0.00100
Toluene		1	<0.00100	mg/L	1	0.00100
Ethylbenzene		1	<0.00100	mg/L	1	0.00100
Xylene		1	<0.00100	mg/L	1	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1	0.0965	mg/L	1	0.100	96	67.8 - 129
4-Bromofluorobenzene (4-BFB)		1	0.102	mg/L	1	0.100	102	51.1 - 128

Sample: 263881 - MW-5

Laboratory: Midland

Analysis: Chloride (IC)

QC Batch: 80545

Prep Batch: 68353

Analytical Method: E 300.0

Date Analyzed: 2011-04-21

Sample Preparation: 2011-04-19

Prep Method: N/A

Analyzed By: AR

Prepared By: AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1	20000	mg/L	1000	2.50

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Sample: 263881 - MW-5

Laboratory: Midland
Analysis: SO4 (IC)
QC Batch: 80545
Prep Batch: 68353

Analytical Method: E 300.0
Date Analyzed: 2011-04-21
Sample Preparation: 2011-04-19

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Sulfate		1	1070	mg/L	100	2.50

Sample: 263881 - MW-5

Laboratory: Midland
Analysis: TDS
QC Batch: 80661
Prep Batch: 68386

Analytical Method: SM 2540C
Date Analyzed: 2011-04-25
Sample Preparation: 2011-04-19

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Total Dissolved Solids		1	39400	mg/L	100	10.0

Sample: 263882 - MW-6

Laboratory: Midland
Analysis: BTEX
QC Batch: 80419
Prep Batch: 68257

Analytical Method: S 8021B
Date Analyzed: 2011-04-18
Sample Preparation: 2011-04-18

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene		1	<0.00100	mg/L	1	0.00100
Toluene		1	<0.00100	mg/L	1	0.00100
Ethylbenzene		1	<0.00100	mg/L	1	0.00100
Xylene		1	<0.00100	mg/L	1	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1	0.101	mg/L	1	0.100	101	67.8 - 129
4-Bromofluorobenzene (4-BFB)		1	0.103	mg/L	1	0.100	103	51.1 - 128

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Sample: 263882 - MW-6

Laboratory:	Midland	Analytical Method:	E 300.0	Prep Method:	N/A
Analysis:	Chloride (IC)	Date Analyzed:	2011-04-21	Analyzed By:	AR
QC Batch:	80545	Sample Preparation:	2011-04-19	Prepared By:	AR
Prep Batch:	68353				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1	1320	mg/L	100	2.50

Sample: 263882 - MW-6

Laboratory:	Midland	Analytical Method:	E 300.0	Prep Method:	N/A
Analysis:	SO4 (IC)	Date Analyzed:	2011-04-21	Analyzed By:	AR
QC Batch:	80545	Sample Preparation:	2011-04-19	Prepared By:	AR
Prep Batch:	68353				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Sulfate		1	188	mg/L	5	2.50

Sample: 263882 - MW-6

Laboratory:	Midland	Analytical Method:	SM 2540C	Prep Method:	N/A
Analysis:	TDS	Date Analyzed:	2011-04-25	Analyzed By:	AR
QC Batch:	80661	Sample Preparation:	2011-04-19	Prepared By:	AR
Prep Batch:	68386				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Total Dissolved Solids		1	2100	mg/L	5	10.0

Sample: 263883 - MW-7

Laboratory:	Midland	Analytical Method:	S 8021B	Prep Method:	S 5030B
Analysis:	BTEX	Date Analyzed:	2011-04-18	Analyzed By:	ME
QC Batch:	80419	Sample Preparation:	2011-04-18	Prepared By:	ME
Prep Batch:	68257				

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sample 263883 continued ...

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene		1	<0.00100	mg/L	1	0.00100
Toluene		1	<0.00100	mg/L	1	0.00100
Ethylbenzene		1	<0.00100	mg/L	1	0.00100
Xylene		1	<0.00100	mg/L	1	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1	0.0875	mg/L	1	0.100	88	67.8 - 129
4-Bromofluorobenzene (4-BFB)		1	0.101	mg/L	1	0.100	101	51.1 - 128

Sample: 263883 - MW-7

Laboratory: Midland	Analytical Method: E 300.0	Prep Method: N/A
Analysis: Chloride (IC)	Date Analyzed: 2011-04-21	Analyzed By: AR
QC Batch: 80545	Sample Preparation: 2011-04-19	Prepared By: AR
Prep Batch: 68353		

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1	61500	mg/L	5000	2.50

Sample: 263883 - MW-7

Laboratory: Midland	Analytical Method: E 300.0	Prep Method: N/A
Analysis: SO4 (IC)	Date Analyzed: 2011-04-21	Analyzed By: AR
QC Batch: 80545	Sample Preparation: 2011-04-19	Prepared By: AR
Prep Batch: 68353		

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Sulfate		1	657	mg/L	50	2.50

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Sample: 263883 - MW-7

Laboratory: Midland

Analysis: TDS

QC Batch: 80661

Prep Batch: 68386

Analytical Method: SM 2540C

Date Analyzed: 2011-04-25

Sample Preparation: 2011-04-19

Prep Method: N/A

Analyzed By: AR

Prepared By: AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Total Dissolved Solids		1	91000	mg/L	100	10.0

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Method Blanks

Method Blank (1) QC Batch: 80419

QC Batch: 80419
Prep Batch: 68257

Date Analyzed: 2011-04-18
QC Preparation: 2011-04-18

Analyzed By: ME
Prepared By: ME

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)		1	0.0911	mg/L	1	0.100	91	70.2 - 118
4-Bromofluorobenzene (4-BFB)		1	0.104	mg/L	1	0.100	104	47.3 - 116

Method Blank (1) QC Batch: 80544

QC Batch: 80544
Prep Batch: 68352

Date Analyzed: 2011-04-21
QC Preparation: 2011-04-19

Analyzed By: AR
Prepared By: AR

Parameter	Flag	Cert	MDL Result	Units	RL
Chloride		1	0.511	mg/L	2.5

Method Blank (1) QC Batch: 80544

QC Batch: 80544
Prep Batch: 68352

Date Analyzed: 2011-04-21
QC Preparation: 2011-04-19

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: 80545

QC Batch: 80545
Prep Batch: 68353

Date Analyzed: 2011-04-21
QC Preparation: 2011-04-19

Analyzed By: AR
Prepared By: AR

Parameter	Flag	Cert	MDL Result	Units	RL
Chloride		1	1.10	mg/L	2.5

Method Blank (1) QC Batch: 80545

QC Batch: 80545
Prep Batch: 68353

Date Analyzed: 2011-04-21
QC Preparation: 2011-04-19

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: 80661

QC Batch: 80661
Prep Batch: 68386

Date Analyzed: 2011-04-25
QC Preparation: 2011-04-19

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: 80664

QC Batch: 80664
Prep Batch: 68437

Date Analyzed: 2011-04-26
QC Preparation: 2011-04-25

Analyzed By: AR
Prepared By: AR

Parameter	Flag	Cert	MDL Result	Units	RL
Chloride		1	0.484	mg/L	2.5

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Duplicates (1) Duplicated Sample: 263885

QC Batch: 80661
Prep Batch: 68386

Date Analyzed: 2011-04-25
QC Preparation: 2011-04-19

Analyzed By: AR
Prepared By: AR

Param		Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
Total Dissolved Solids	1	90500	84500	mg/L	100	7	10

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Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 80419
Prep Batch: 68257

Date Analyzed: 2011-04-18
QC Preparation: 2011-04-18

Analyzed By: ME
Prepared By: ME

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	0.0882	mg/L	1	0.100	<0.000400	88	76.8 - 110
Toluene		1	0.0944	mg/L	1	0.100	<0.000300	94	81 - 108
Ethylbenzene		1	0.0965	mg/L	1	0.100	<0.000300	96	78.8 - 118
Xylene		1	0.291	mg/L	1	0.300	<0.000333	97	80.3 - 119

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	0.0948	mg/L	1	0.100	<0.000400	95	76.8 - 110	7	20
Toluene		1	0.102	mg/L	1	0.100	<0.000300	102	81 - 108	8	20
Ethylbenzene		1	0.104	mg/L	1	0.100	<0.000300	104	78.8 - 118	8	20
Xylene		1	0.314	mg/L	1	0.300	<0.000333	105	80.3 - 119	8	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)		1	0.0994	0.0964	mg/L	1	0.100	99	96	66.6 - 114
4-Bromofluorobenzene (4-BFB)		1	0.119	0.116	mg/L	1	0.100	119	116	68.2 - 124

Laboratory Control Spike (LCS-1)

QC Batch: 80544
Prep Batch: 68352

Date Analyzed: 2011-04-21
QC Preparation: 2011-04-19

Analyzed By: AR
Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	25.2	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.

continued ...

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control spikes continued ...

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		1	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.

Laboratory Control Spike (LCS-1)

QC Batch: 80544
Prep Batch: 68352

Date Analyzed: 2011-04-21
QC Preparation: 2011-04-19

Analyzed By: AR
Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Sulfate		1	24.8	mg/L	1	25.0	<0.177	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
Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Sulfate		1	24.7	mg/L	1	25.0	<0.177	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: 80545
Prep Batch: 68353

Date Analyzed: 2011-04-21
QC Preparation: 2011-04-19

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	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		1	25.5	mg/L	1	25.0	<0.265	102	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: 80545
Prep Batch: 68353

Date Analyzed: 2011-04-21
QC Preparation: 2011-04-19

Analyzed By: AR
Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Sulfate		1	24.6	mg/L	1	25.0	<0.177	98	90 - 110

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Sulfate		1	24.6	mg/L	1	25.0	<0.177	98	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: 80661
Prep Batch: 68386

Date Analyzed: 2011-04-25
QC Preparation: 2011-04-19

Analyzed By: AR
Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Total Dissolved Solids		1	997	mg/L	1	1000	<9.75	100	90 - 110

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Total Dissolved Solids		1	988	mg/L	1	1000	<9.75	99	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: 80664
Prep Batch: 68437

Date Analyzed: 2011-04-26
QC Preparation: 2011-04-25

Analyzed By: AR
Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	25.2	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.

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Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		1	25.5	mg/L	1	25.0	<0.265	102	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: 263879

QC Batch: 80544
Prep Batch: 68352

Date Analyzed: 2011-04-21
QC Preparation: 2011-04-19

Analyzed By: AR
Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	115000	mg/L	50	1380	115000	0	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	116000	mg/L	50	1380	115000	0	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: 263879

QC Batch: 80544
Prep Batch: 68352

Date Analyzed: 2011-04-21
QC Preparation: 2011-04-19

Analyzed By: AR
Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Sulfate		1	2360	mg/L	50	1380	1250	81	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	2370	mg/L	50	1380	1250	81	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: 263882

QC Batch: 80545
Prep Batch: 68353

Date Analyzed: 2011-04-21
QC Preparation: 2011-04-19

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		1	3920	mg/L	100	2750	1320	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
Chloride		1	3900	mg/L	100	2750	1320	94	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: 263882

QC Batch: 80545
Prep Batch: 68353

Date Analyzed: 2011-04-21
QC Preparation: 2011-04-19

Analyzed By: AR
Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Sulfate		1	2890	mg/L	100	2750	438	89	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	2890	mg/L	100	2750	438	89	90 - 110	30	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: 263900

QC Batch: 80664
Prep Batch: 68437

Date Analyzed: 2011-04-26
QC Preparation: 2011-04-25

Analyzed By: AR
Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	354	mg/L	10	275	139	78	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	352	mg/L	10	275	139	77	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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Calibration Standards

Standard (CCV-1)

QC Batch: 80419

Date Analyzed: 2011-04-18

Analyzed By: ME

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	2011-04-18
Toluene		1	mg/L	0.100	0.0973	97	80 - 120	2011-04-18
Ethylbenzene		1	mg/L	0.100	0.0962	96	80 - 120	2011-04-18
Xylene		1	mg/L	0.300	0.292	97	80 - 120	2011-04-18

Standard (CCV-2)

QC Batch: 80419

Date Analyzed: 2011-04-18

Analyzed By: ME

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/L	0.100	0.0964	96	80 - 120	2011-04-18
Toluene		1	mg/L	0.100	0.100	100	80 - 120	2011-04-18
Ethylbenzene		1	mg/L	0.100	0.0997	100	80 - 120	2011-04-18
Xylene		1	mg/L	0.300	0.298	99	80 - 120	2011-04-18

Standard (ICV-1)

QC Batch: 80544

Date Analyzed: 2011-04-21

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	24.1	96	90 - 110	2011-04-21

Standard (ICV-1)

QC Batch: 80544

Date Analyzed: 2011-04-21

Analyzed By: AR

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Param	Flag	Cert	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Sulfate		1	mg/L	25.0	24.8	99	90 - 110	2011-04-21

Standard (CCV-1)

QC Batch: 80544

Date Analyzed: 2011-04-21

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	2011-04-21

Standard (CCV-1)

QC Batch: 80544

Date Analyzed: 2011-04-21

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	25.0	100	90 - 110	2011-04-21

Standard (ICV-1)

QC Batch: 80545

Date Analyzed: 2011-04-21

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	24.4	98	90 - 110	2011-04-21

Standard (ICV-1)

QC Batch: 80545

Date Analyzed: 2011-04-21

Analyzed By: AR

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115-6403134A

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Celero/Rock Queen SWD #1

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Param	Flag	Cert	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Sulfate		1	mg/L	25.0	25.0	100	90 - 110	2011-04-21

Standard (CCV-1)

QC Batch: 80545

Date Analyzed: 2011-04-21

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	24.2	97	90 - 110	2011-04-21

Standard (CCV-1)

QC Batch: 80545

Date Analyzed: 2011-04-21

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	25.1	100	90 - 110	2011-04-21

Standard (ICV-1)

QC Batch: 80664

Date Analyzed: 2011-04-26

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	22.8	91	90 - 110	2011-04-26

Standard (CCV-1)

QC Batch: 80664

Date Analyzed: 2011-04-26

Analyzed By: AR

Report Date: April 27, 2011
115-6403134A

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Celero/Rock Queen SWD #1

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Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/L	25.0	23.3	93	90 - 110	2011-04-26

Appendix

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	T104704392-10-TX	Midland

Standard Flags

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

2WD #: 11041523

Analysis Request of Chain of Custody Record



TETRA TECH

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

PAGE: OF:

ANALYSIS REQUEST
(Circle or Specify Method No.)

CLIENT NAME: Celero

SITE MANAGER: Jeff Kindley

PROJECT NO.: 115-6403134

PROJECT NAME: Rock Queen SWD #1

LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF FILTERED (Y)	HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015	PAH 8270	RCRA Metals	TCLP Metals	TCLP Volatiles	TCLP Semi V	RCI	GC/MS Vol. 8	GC/MS Semim	PCB's 8080/	Pest. 808/60	Chloride	Gamma Spec	Alpha Beta (4	PLM (Asbest	Major Anion	Sulfate	
26877	4/14	1100	W		X	MW-1	4	N	X		X	X	X												X				X	X
878		1055				MW-2																								
879		1115				MW-3																								
880		1155				MW-4																								
881		1130				MW-5																								
882		1115				MW-6																								
883	4/14	1135	W		X	MW-7	4	N	X		X	X	X												X			X	X	

RELINQUISHED BY: (Signature) James Kennedy

Date: 4-15-11
Time: 13:50

RECEIVED BY: (Signature) Jeff Kindley

Date: 4/15/11
Time: 13:50

SAMPLED BY: (Print & Initial) James Kennedy JPK

Date: 4-14-11
Time:

RELINQUISHED BY: (Signature)

Date:
Time:

RECEIVED BY: (Signature)

Date:
Time:

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

AIRBILL #:
OTHER:

RELINQUISHED BY: (Signature)

Date:
Time:

RECEIVED BY: (Signature)

Date:
Time:

TETRA TECH CONTACT PERSON: Jeff Kindley

Results by:

RECEIVING LABORATORY: Trace
ADDRESS: Midland STATE: ZIP:
CONTACT: PHONE: DATE: TIME:

RECEIVED BY: (Signature)

Date:
Time:

RUSH Charges Authorized:
Yes ☐ No ☐

SAMPLE CONDITION WHEN RECEIVED: 0.6 c intact

REMARKS: Xull test Midland



6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296 806•794•1296 FAX 806•794•1298
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E-Mail: lab@traceanalysis.com

Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

Analytical and Quality Control Report (Corrected Report)

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

Report Date: August 26, 2011

Work Order: 11080103



Project Location: Chavez Co., NM
Project Name: Celero/Rock Queen SWD #1
Project Number: 115-6403134

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
273187	MW-1	water	2011-07-29	11:50	2011-07-29
273188	MW-2	water	2011-07-29	11:20	2011-07-29
273189	MW-3	water	2011-07-29	11:40	2011-07-29
273190	MW-4	water	2011-07-29	12:00	2011-07-29
273191	MW-5	water	2011-07-29	12:10	2011-07-29
273192	MW-6	water	2011-07-29	11:10	2011-07-29
273193	MW-7	water	2011-07-29	11:30	2011-07-29

Report Corrections (Work Order 11080103)

- Corrected project number to 115-6403134 per J. Fitch. 8/26/11

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 30 pages and shall not be reproduced except in its entirety, without written approval of

TraceAnalysis, Inc.

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

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

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Case Narrative

Samples for project Celero/Rock Queen SWD #1 were received by TraceAnalysis, Inc. on 2011-07-29 and assigned to work order 11080103. Samples for work order 11080103 were received intact without headspace and at a temperature of 10.8 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	70921	2011-08-02 at 09:42	83491	2011-08-02 at 09:42
BTEX	S 8021B	70958	2011-08-03 at 09:47	83538	2011-08-03 at 09:47
Chloride (IC)	E 300.0	70867	2011-08-01 at 12:06	83504	2011-08-02 at 11:11
Chloride (IC)	E 300.0	70869	2011-08-01 at 12:42	83505	2011-08-02 at 11:12
SO4 (IC)	E 300.0	70867	2011-08-01 at 12:06	83504	2011-08-02 at 11:11
SO4 (IC)	E 300.0	70869	2011-08-01 at 12:42	83505	2011-08-02 at 11:12
TDS	SM 2540C	70895	2011-08-02 at 08:59	83717	2011-08-09 at 11:17

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 11080103 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.

Samples were received on ice.

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

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Analytical Report

Sample: 273187 - MW-1

Laboratory: Midland

Analysis: BTEX

QC Batch: 83538

Prep Batch: 70958

Analytical Method: S 8021B

Date Analyzed: 2011-08-03

Sample Preparation: 2011-08-03

Prep Method: S 5030B

Analyzed By: ME

Prepared By: ME

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene		1	0.00810	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)			0.0721	mg/L	1	0.100	72	79.1 - 127.2
4-Bromofluorobenzene (4-BFB)			0.0705	mg/L	1	0.100	70	67.5 - 140.8

Sample: 273187 - MW-1

Laboratory: Midland

Analysis: Chloride (IC)

QC Batch: 83504

Prep Batch: 70867

Analytical Method: E 300.0

Date Analyzed: 2011-08-02

Sample Preparation: 2011-08-01

Prep Method: N/A

Analyzed By: AR

Prepared By: AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1	137000	mg/L	5000	2.50

Sample: 273187 - MW-1

Laboratory: Midland

Analysis: SO4 (IC)

QC Batch: 83504

Prep Batch: 70867

Analytical Method: E 300.0

Date Analyzed: 2011-08-02

Sample Preparation: 2011-08-01

Prep Method: N/A

Analyzed By: AR

Prepared By: AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Sulfate		1	1730	mg/L	50	2.50

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Sample: 273187 - MW-1

Laboratory: Midland
Analysis: TDS
QC Batch: 83717
Prep Batch: 70895

Analytical Method: SM 2540C
Date Analyzed: 2011-08-09
Sample Preparation: 2011-08-02

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Total Dissolved Solids		1	223000	mg/L	100	10.0

Sample: 273188 - MW-2

Laboratory: Midland
Analysis: BTEX
QC Batch: 83491
Prep Batch: 70921

Analytical Method: S 8021B
Date Analyzed: 2011-08-02
Sample Preparation: 2011-08-02

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene		1	0.00920	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)			0.0778	mg/L	1	0.100	78	79.1 - 127.2
4-Bromofluorobenzene (4-BFB)			0.0795	mg/L	1	0.100	80	67.5 - 140.8

Sample: 273188 - MW-2

Laboratory: Midland
Analysis: Chloride (IC)
QC Batch: 83504
Prep Batch: 70867

Analytical Method: E 300.0
Date Analyzed: 2011-08-02
Sample Preparation: 2011-08-01

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1	90400	mg/L	5000	2.50

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Sample: 273188 - MW-2

Laboratory: Midland

Analysis: SO4 (IC)

QC Batch: 83504

Prep Batch: 70867

Analytical Method: E 300.0

Date Analyzed: 2011-08-02

Sample Preparation: 2011-08-01

Prep Method: N/A

Analyzed By: AR

Prepared By: AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Sulfate		1	1770	mg/L	50	2.50

Sample: 273188 - MW-2

Laboratory: Midland

Analysis: TDS

QC Batch: 83717

Prep Batch: 70895

Analytical Method: SM 2540C

Date Analyzed: 2011-08-09

Sample Preparation: 2011-08-02

Prep Method: N/A

Analyzed By: AR

Prepared By: AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Total Dissolved Solids		1	155000	mg/L	100	10.0

Sample: 273189 - MW-3

Laboratory: Midland

Analysis: BTEX

QC Batch: 83491

Prep Batch: 70921

Analytical Method: S 8021B

Date Analyzed: 2011-08-02

Sample Preparation: 2011-08-02

Prep Method: S 5030B

Analyzed By: ME

Prepared By: ME

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	u	1	<0.00100	mg/L	1	0.00100
Toluene	u	1	<0.00100	mg/L	1	0.00100
Ethylbenzene	u	1	<0.00100	mg/L	1	0.00100
Xylene	u	1	<0.00100	mg/L	1	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0836	mg/L	1	0.100	84	79.1 - 127.2
4-Bromofluorobenzene (4-BFB)			0.0852	mg/L	1	0.100	85	67.5 - 140.8

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Sample: 273189 - MW-3

Laboratory:	Midland	Analytical Method:	E 300.0	Prep Method:	N/A
Analysis:	Chloride (IC)	Date Analyzed:	2011-08-02	Analyzed By:	AR
QC Batch:	83504	Sample Preparation:	2011-08-01	Prepared By:	AR
Prep Batch:	70867				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1	66900	mg/L	5000	2.50

Sample: 273189 - MW-3

Laboratory:	Midland	Analytical Method:	E 300.0	Prep Method:	N/A
Analysis:	SO4 (IC)	Date Analyzed:	2011-08-02	Analyzed By:	AR
QC Batch:	83504	Sample Preparation:	2011-08-01	Prepared By:	AR
Prep Batch:	70867				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Sulfate		1	1100	mg/L	50	2.50

Sample: 273189 - MW-3

Laboratory:	Midland	Analytical Method:	SM 2540C	Prep Method:	N/A
Analysis:	TDS	Date Analyzed:	2011-08-09	Analyzed By:	AR
QC Batch:	83717	Sample Preparation:	2011-08-02	Prepared By:	AR
Prep Batch:	70895				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Total Dissolved Solids		1	103000	mg/L	100	10.0

Sample: 273190 - MW-4

Laboratory:	Midland	Analytical Method:	S 8021B	Prep Method:	S 5030B
Analysis:	BTEX	Date Analyzed:	2011-08-02	Analyzed By:	ME
QC Batch:	83491	Sample Preparation:	2011-08-02	Prepared By:	ME
Prep Batch:	70921				

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sample 273190 continued ...

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene		1	0.00840	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)			0.0729	mg/L	1	0.100	73	79.1 - 127.2
4-Bromofluorobenzene (4-BFB)			0.0742	mg/L	1	0.100	74	67.5 - 140.8

Sample: 273190 - MW-4

Laboratory: Midland	Analytical Method: E 300.0	Prep Method: N/A
Analysis: Chloride (IC)	Date Analyzed: 2011-08-02	Analyzed By: AR
QC Batch: 83504	Sample Preparation: 2011-08-01	Prepared By: AR
Prep Batch: 70867		

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1	107000	mg/L	5000	2.50

Sample: 273190 - MW-4

Laboratory: Midland	Analytical Method: E 300.0	Prep Method: N/A
Analysis: SO4 (IC)	Date Analyzed: 2011-08-02	Analyzed By: AR
QC Batch: 83504	Sample Preparation: 2011-08-01	Prepared By: AR
Prep Batch: 70867		

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Sulfate		1	2120	mg/L	50	2.50

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Sample: 273190 - MW-4

Laboratory: Midland
Analysis: TDS
QC Batch: 83717
Prep Batch: 70895

Analytical Method: SM 2540C
Date Analyzed: 2011-08-09
Sample Preparation: 2011-08-02

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Total Dissolved Solids		1	171000	mg/L	100	10.0

Sample: 273191 - MW-5

Laboratory: Midland
Analysis: BTEX
QC Batch: 83491
Prep Batch: 70921

Analytical Method: S 8021B
Date Analyzed: 2011-08-02
Sample Preparation: 2011-08-02

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

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)			0.0992	mg/L	1	0.100	99	79.1 - 127.2
4-Bromofluorobenzene (4-BFB)			0.0959	mg/L	1	0.100	96	67.5 - 140.8

Sample: 273191 - MW-5

Laboratory: Midland
Analysis: Chloride (IC)
QC Batch: 83505
Prep Batch: 70869

Analytical Method: E 300.0
Date Analyzed: 2011-08-02
Sample Preparation: 2011-08-01

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1	24300	mg/L	5000	2.50

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Sample: 273191 - MW-5

Laboratory: Midland

Analysis: SO4 (IC)

QC Batch: 83505

Prep Batch: 70869

Analytical Method: E 300.0

Date Analyzed: 2011-08-02

Sample Preparation: 2011-08-01

Prep Method: N/A

Analyzed By: AR

Prepared By: AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Sulfate		1	854	mg/L	50	2.50

Sample: 273191 - MW-5

Laboratory: Midland

Analysis: TDS

QC Batch: 83717

Prep Batch: 70895

Analytical Method: SM 2540C

Date Analyzed: 2011-08-09

Sample Preparation: 2011-08-02

Prep Method: N/A

Analyzed By: AR

Prepared By: AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Total Dissolved Solids		1	46700	mg/L	100	10.0

Sample: 273192 - MW-6

Laboratory: Midland

Analysis: BTEX

QC Batch: 83491

Prep Batch: 70921

Analytical Method: S 8021B

Date Analyzed: 2011-08-02

Sample Preparation: 2011-08-02

Prep Method: S 5030B

Analyzed By: ME

Prepared By: ME

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)			0.0962	mg/L	1	0.100	96	67.5 - 140.8

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Sample: 273192 - MW-6

Laboratory:	Midland		
Analysis:	Chloride (IC)	Analytical Method:	E 300.0
QC Batch:	83505	Date Analyzed:	2011-08-02
Prep Batch:	70869	Sample Preparation:	2011-08-01
		Prep Method:	N/A
		Analyzed By:	AR
		Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1	912	mg/L	100	2.50

Sample: 273192 - MW-6

Laboratory:	Midland		
Analysis:	SO4 (IC)	Analytical Method:	E 300.0
QC Batch:	83505	Date Analyzed:	2011-08-02
Prep Batch:	70869	Sample Preparation:	2011-08-01
		Prep Method:	N/A
		Analyzed By:	AR
		Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Sulfate		1	146	mg/L	5	2.50

Sample: 273192 - MW-6

Laboratory:	Midland		
Analysis:	TDS	Analytical Method:	SM 2540C
QC Batch:	83717	Date Analyzed:	2011-08-09
Prep Batch:	70895	Sample Preparation:	2011-08-02
		Prep Method:	N/A
		Analyzed By:	AR
		Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Total Dissolved Solids		1	1860	mg/L	5	10.0

Sample: 273193 - MW-7

Laboratory:	Midland		
Analysis:	BTEX	Analytical Method:	S 8021B
QC Batch:	83491	Date Analyzed:	2011-08-02
Prep Batch:	70921	Sample Preparation:	2011-08-02
		Prep Method:	S 5030B
		Analyzed By:	ME
		Prepared By:	ME

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sample 273193 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)			0.0989	mg/L	1	0.100	99	79.1 - 127.2
4-Bromofluorobenzene (4-BFB)			0.0939	mg/L	1	0.100	94	67.5 - 140.8

Sample: 273193 - MW-7

Laboratory: Midland
Analysis: Chloride (IC) Analytical Method: E 300.0 Prep Method: N/A
QC Batch: 83505 Date Analyzed: 2011-08-02 Analyzed By: AR
Prep Batch: 70869 Sample Preparation: 2011-08-01 Prepared By: AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1	17400	mg/L	1000	2.50

Sample: 273193 - MW-7

Laboratory: Midland
Analysis: SO4 (IC) Analytical Method: E 300.0 Prep Method: N/A
QC Batch: 83505 Date Analyzed: 2011-08-02 Analyzed By: AR
Prep Batch: 70869 Sample Preparation: 2011-08-01 Prepared By: AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Sulfate		1	172	mg/L	5	2.50

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Sample: 273193 - MW-7

Laboratory: Midland

Analysis: TDS

QC Batch: 83717

Prep Batch: 70895

Analytical Method: SM 2540C

Date Analyzed: 2011-08-09

Sample Preparation: 2011-08-02

Prep Method: N/A

Analyzed By: AR

Prepared By: AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Total Dissolved Solids		1	29500	mg/L	100	10.0

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Method Blanks

Method Blank (1) QC Batch: 83491

QC Batch: 83491
Prep Batch: 70921

Date Analyzed: 2011-08-02
QC Preparation: 2011-08-02

Analyzed By: ME
Prepared By: ME

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)			0.0926	mg/L	1	0.100	93	61.1 - 118.4
4-Bromofluorobenzene (4-BFB)			0.0850	mg/L	1	0.100	85	45.9 - 126.4

Method Blank (1) QC Batch: 83504

QC Batch: 83504
Prep Batch: 70867

Date Analyzed: 2011-08-02
QC Preparation: 2011-08-01

Analyzed By: AR
Prepared By: AR

Parameter	Flag	Cert	MDL Result	Units	RL
Chloride		1	2.71	mg/L	2.5

Method Blank (1) QC Batch: 83504

QC Batch: 83504
Prep Batch: 70867

Date Analyzed: 2011-08-02
QC Preparation: 2011-08-01

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: 83505

QC Batch: 83505
Prep Batch: 70869

Date Analyzed: 2011-08-02
QC Preparation: 2011-08-01

Analyzed By: AR
Prepared By: AR

Parameter	Flag	Cert	MDL Result	Units	RL
Chloride		1	0.780	mg/L	2.5

Method Blank (1) QC Batch: 83505

QC Batch: 83505
Prep Batch: 70869

Date Analyzed: 2011-08-02
QC Preparation: 2011-08-01

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: 83538

QC Batch: 83538
Prep Batch: 70958

Date Analyzed: 2011-08-03
QC Preparation: 2011-08-03

Analyzed By: ME
Prepared By: ME

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)			0.103	mg/L	1	0.100	103	61.1 - 118.4
4-Bromofluorobenzene (4-BFB)			0.0946	mg/L	1	0.100	95	45.9 - 126.4

Method Blank (1) QC Batch: 83717

QC Batch: 83717
Prep Batch: 70895

Date Analyzed: 2011-08-09
QC Preparation: 2011-08-02

Analyzed By: AR
Prepared By: AR

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

Duplicates (1) Duplicated Sample: 273196

QC Batch: 83717
Prep Batch: 70895

Date Analyzed: 2011-08-09
QC Preparation: 2011-08-02

Analyzed By: AR
Prepared By: AR

Param		Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
Total Dissolved Solids	1	99100	93400	mg/L	100	6	10

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Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 83491
Prep Batch: 70921

Date Analyzed: 2011-08-02
QC Preparation: 2011-08-02

Analyzed By: ME
Prepared By: ME

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	0.104	mg/L	1	0.100	<0.000400	104	76.8 - 110.3
Toluene		1	0.101	mg/L	1	0.100	<0.000300	101	90.9 - 122.2
Ethylbenzene		1	0.0945	mg/L	1	0.100	<0.000300	94	72.7 - 120.2
Xylene		1	0.284	mg/L	1	0.300	<0.000333	95	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	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	0.104	mg/L	1	0.100	<0.000400	104	76.8 - 110.3	0	20
Toluene		1	0.101	mg/L	1	0.100	<0.000300	101	90.9 - 122.2	0	20
Ethylbenzene		1	0.0952	mg/L	1	0.100	<0.000300	95	72.7 - 120.2	1	20
Xylene		1	0.286	mg/L	1	0.300	<0.000333	95	72.1 - 121.5	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)	0.0993	0.0992	mg/L	1	0.100	99	99	61.9 - 119.2
4-Bromofluorobenzene (4-BFB)	0.0973	0.0980	mg/L	1	0.100	97	98	56.4 - 127.9

Laboratory Control Spike (LCS-1)

QC Batch: 83504
Prep Batch: 70867

Date Analyzed: 2011-08-02
QC Preparation: 2011-08-01

Analyzed By: AR
Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	26.0	mg/L	1	25.0	<0.265	104	90.9 - 113.9

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

continued ...

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control spikes continued ...

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		1	26.1	mg/L	1	25.0	<0.265	104	90.9 - 113.9	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: 83504
Prep Batch: 70867

Date Analyzed: 2011-08-02
QC Preparation: 2011-08-01

Analyzed By: AR
Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Sulfate		1	24.9	mg/L	1	25.0	<0.177	100	99 - 113.6

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	25.4	mg/L	1	25.0	<0.177	102	99 - 113.6	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: 83505
Prep Batch: 70869

Date Analyzed: 2011-08-02
QC Preparation: 2011-08-01

Analyzed By: AR
Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	25.6	mg/L	1	25.0	<0.265	102	90.9 - 113.9

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	25.7	mg/L	1	25.0	<0.265	103	90.9 - 113.9	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: 83505
Prep Batch: 70869

Date Analyzed: 2011-08-02
QC Preparation: 2011-08-01

Analyzed By: AR
Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Sulfate		1	25.0	mg/L	1	25.0	<0.177	100	99 - 113.6

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	24.8	mg/L	1	25.0	<0.177	99	99 - 113.6	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: 83538
Prep Batch: 70958

Date Analyzed: 2011-08-03
QC Preparation: 2011-08-03

Analyzed By: ME
Prepared By: ME

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	0.101	mg/L	1	0.100	<0.000400	101	76.8 - 110.3
Toluene		1	0.0979	mg/L	1	0.100	<0.000300	98	90.9 - 122.2
Ethylbenzene		1	0.0919	mg/L	1	0.100	<0.000300	92	72.7 - 120.2
Xylene		1	0.276	mg/L	1	0.300	<0.000333	92	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	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	0.103	mg/L	1	0.100	<0.000400	103	76.8 - 110.3	2	20
Toluene		1	0.0996	mg/L	1	0.100	<0.000300	100	90.9 - 122.2	2	20
Ethylbenzene		1	0.0942	mg/L	1	0.100	<0.000300	94	72.7 - 120.2	2	20
Xylene		1	0.282	mg/L	1	0.300	<0.000333	94	72.1 - 121.5	2	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.0992	0.0894	mg/L	1	0.100	99	89	61.9 - 119.2
4-Bromofluorobenzene (4-BFB)	0.0986	0.0880	mg/L	1	0.100	99	88	56.4 - 127.9

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Laboratory Control Spike (LCS-1)

QC Batch: 83717
Prep Batch: 70895

Date Analyzed: 2011-08-09
QC Preparation: 2011-08-02

Analyzed By: AR
Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Total Dissolved Solids		1	964	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	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Total Dissolved Solids		1	1010	mg/L	1	1000	<9.75	101	85.5 - 112.7	5	10

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

Matrix Spike (MS-1) Spiked Sample: 273205

QC Batch: 83491
Prep Batch: 70921

Date Analyzed: 2011-08-02
QC Preparation: 2011-08-02

Analyzed By: ME
Prepared By: ME

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	0.0992	mg/L	1	0.100	<0.000400	99	66.9 - 128.2
Toluene		1	0.0931	mg/L	1	0.100	<0.000300	93	81.6 - 122.9
Ethylbenzene		1	0.0805	mg/L	1	0.100	<0.000300	80	62.7 - 117.9
Xylene		1	0.241	mg/L	1	0.300	<0.000333	80	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	0.107	mg/L	1	0.100	<0.000400	107	66.9 - 128.2	8	20
Toluene		1	0.0999	mg/L	1	0.100	<0.000300	100	81.6 - 122.9	7	20
Ethylbenzene		1	0.0868	mg/L	1	0.100	<0.000300	87	62.7 - 117.9	8	20
Xylene		1	0.259	mg/L	1	0.300	<0.000333	86	62.9 - 118.2	7	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)	0.0945	0.0975	mg/L	1	0.1	94	98	58.6 - 119.7
4-Bromofluorobenzene (4-BFB)	0.0964	0.0997	mg/L	1	0.1	96	100	52.2 - 135.8

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Matrix Spike (MS-1) Spiked Sample: 273188

QC Batch: 83504
Prep Batch: 70867

Date Analyzed: 2011-08-02
QC Preparation: 2011-08-01

Analyzed By: AR
Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	76800	mg/L	50	1380	<13.2	5585	48.4 - 143.2

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
Chloride		1	76800	mg/L	50	1380	<13.2	5585	48.4 - 143.2	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: 273188

QC Batch: 83504
Prep Batch: 70867

Date Analyzed: 2011-08-02
QC Preparation: 2011-08-01

Analyzed By: AR
Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Sulfate		1	2800	mg/L	50	1380	1770	75	59.7 - 115.4

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
Sulfate		1	2790	mg/L	50	1380	1770	74	59.7 - 115.4	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: 273192

QC Batch: 83505
Prep Batch: 70869

Date Analyzed: 2011-08-02
QC Preparation: 2011-08-01

Analyzed By: AR
Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	3210	mg/L	100	2750	912	84	48.4 - 143.2

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	3260	mg/L	100	2750	912	85	48.4 - 143.2	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: 273192

QC Batch: 83505
Prep Batch: 70869

Date Analyzed: 2011-08-02
QC Preparation: 2011-08-01

Analyzed By: AR
Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Sulfate		1	2400	mg/L	100	2750	148	82	59.7 - 115.4

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
Sulfate		1	2430	mg/L	100	2750	148	83	59.7 - 115.4	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: 273037

QC Batch: 83538
Prep Batch: 70958

Date Analyzed: 2011-08-03
QC Preparation: 2011-08-03

Analyzed By: ME
Prepared By: ME

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	0.587	mg/L	5	0.500	0.127	92	66.9 - 128.2
Toluene		1	0.544	mg/L	5	0.500	0.1205	85	81.6 - 122.9
Ethylbenzene		1	0.421	mg/L	5	0.500	<0.00150	84	62.7 - 117.9
Xylene		1	1.29	mg/L	5	1.50	0.1543	76	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	0.607	mg/L	5	0.500	0.127	96	66.9 - 128.2	3	20
Toluene		1	0.563	mg/L	5	0.500	0.1205	88	81.6 - 122.9	3	20
Ethylbenzene		1	0.438	mg/L	5	0.500	<0.00150	88	62.7 - 117.9	4	20
Xylene		1	1.34	mg/L	5	1.50	0.1543	79	62.9 - 118.2	4	20

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

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115-6403134

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Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.511	0.468	mg/L	5	0.5	102	94	58.6 - 119.7
4-Bromofluorobenzene (4-BFB)	0.502	0.461	mg/L	5	0.5	100	92	52.2 - 135.8

Calibration Standards

Standard (CCV-1)

QC Batch: 83491

Date Analyzed: 2011-08-02

Analyzed By: ME

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/L	0.100	0.0972	97	80 - 120	2011-08-02
Toluene		1	mg/L	0.100	0.0955	96	80 - 120	2011-08-02
Ethylbenzene		1	mg/L	0.100	0.0882	88	80 - 120	2011-08-02
Xylene		1	mg/L	0.300	0.273	91	80 - 120	2011-08-02

Standard (CCV-2)

QC Batch: 83491

Date Analyzed: 2011-08-02

Analyzed By: ME

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/L	0.100	0.104	104	80 - 120	2011-08-02
Toluene		1	mg/L	0.100	0.0994	99	80 - 120	2011-08-02
Ethylbenzene		1	mg/L	0.100	0.0933	93	80 - 120	2011-08-02
Xylene		1	mg/L	0.300	0.279	93	80 - 120	2011-08-02

Standard (ICV-1)

QC Batch: 83504

Date Analyzed: 2011-08-02

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	26.0	104	90 - 110	2011-08-02

Standard (ICV-1)

QC Batch: 83504

Date Analyzed: 2011-08-02

Analyzed By: AR

Report Date: August 26, 2011
115-6403134

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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	2011-08-02

Standard (CCV-1)

QC Batch: 83504

Date Analyzed: 2011-08-02

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	26.6	106	90 - 110	2011-08-02

Standard (CCV-1)

QC Batch: 83504

Date Analyzed: 2011-08-02

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	26.3	105	90 - 110	2011-08-02

Standard (ICV-1)

QC Batch: 83505

Date Analyzed: 2011-08-02

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	26.6	106	90 - 110	2011-08-02

Standard (ICV-1)

QC Batch: 83505

Date Analyzed: 2011-08-02

Analyzed By: AR

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Param	Flag	Cert	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Sulfate		1	mg/L	25.0	26.3	105	90 - 110	2011-08-02

Standard (CCV-1)

QC Batch: 83505

Date Analyzed: 2011-08-02

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	25.9	104	90 - 110	2011-08-02

Standard (CCV-1)

QC Batch: 83505

Date Analyzed: 2011-08-02

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	24.9	100	90 - 110	2011-08-02

Standard (CCV-1)

QC Batch: 83538

Date Analyzed: 2011-08-03

Analyzed By: ME

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/L	0.100	0.0989	99	80 - 120	2011-08-03
Toluene		1	mg/L	0.100	0.0948	95	80 - 120	2011-08-03
Ethylbenzene		1	mg/L	0.100	0.0892	89	80 - 120	2011-08-03
Xylene		1	mg/L	0.300	0.271	90	80 - 120	2011-08-03

Standard (CCV-2)

QC Batch: 83538

Date Analyzed: 2011-08-03

Analyzed By: ME

Report Date: August 26, 2011
115-6403134

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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	0.102	102	80 - 120	2011-08-03
Toluene		1	mg/L	0.100	0.0980	98	80 - 120	2011-08-03
Ethylbenzene		1	mg/L	0.100	0.0920	92	80 - 120	2011-08-03
Xylene		1	mg/L	0.300	0.276	92	80 - 120	2011-08-03

Appendix

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	T104704392-10-TX	Midland

Standard Flags

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

AWD #: 11080103

Analysis Request of Chain of Custody Record



TETRA TECH

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

PAGE: 1 OF: 1

ANALYSIS REQUEST
(Circle or Specify Method No.)

CLIENT NAME:
Cetro

SITE MANAGER:
Jeff Kindley

PROJECT NO.:
115-L40 330

PROJECT NAME:
Cetro Rock Green SWD #1

LAB I.D. NUMBER DATE TIME MATRIX COMP. GRAB SAMPLE IDENTIFICATION

273187	7/29	1150	W	X	MW-1
188		1120			MW-2
189		1140			MW-3
190		1200			MW-4
191		1210			MW-5
192		1110			MW-6
193		1130			MW-7

NUMBER OF CONTAINERS
FILTERED (Y/N)

PRESERVATIVE METHOD
HCL HNO3 ICE NONE

4	N	X	X	

TPH 8015 MOD. TX1005 (Ext. to C35)	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC/MS Vol. 8240/8260/824	GC/MS Semi. Vol. 8270/825	PCB's 8080/808	Pest. 808/808	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS	TDS	Sulfates
X											X					X	X

RELINQUISHED BY: (Signature) [Signature] Date: 7/29/11 Time: 1535

RECEIVED BY: (Signature) [Signature] Date: 7/29/11 Time: 1535

SAMPLED BY: (Print & Initial) JS/RS Date: 7/29/11 Time: 1535

RELINQUISHED BY: (Signature) [Signature] Date: 7/29/11 Time: 1535

RECEIVED BY: (Signature) [Signature] Date: 7/29/11 Time: 1535

SAMPLE SHIPPED BY: (Circle) HAND DELIVERED AIRBILL #:

RELINQUISHED BY: (Signature) [Signature] Date: 7/29/11 Time: 1535

RECEIVED BY: (Signature) [Signature] Date: 7/29/11 Time: 1535

TETRA TECH CONTACT PERSON: Jeff Kindley Results by:

RECEIVING LABORATORY: Tetra ADDRESS: Midland CITY: Midland STATE: TX ZIP: PHONE: DATE: TIME:

RECEIVED BY: (Signature) [Signature] DATE: TIME:

RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED:
10.82 intact

REMARKS:
X All test-B-Midland



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200 East Sunset Road, Suite E El Paso, Texas 79922 888•588•3443 915•585•3443 FAX 915•585•4944
5002 Basin Street, Suite A1 Midland, Texas 79703 432•689•6301 FAX 432•689•6313
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Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

Analytical and Quality Control Report

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

Report Date: November 10, 2011

Work Order: 11103126



Project Location: Chavez Co., NM
Project Name: Celero/Rock Queen SWD #1
Project Number: 115-6403134A

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
281147	MW-6	water	2011-10-27	13:25	2011-10-31
281148	MW-7	water	2011-10-27	14:25	2011-10-31
281149	MW-5	water	2011-10-27	15:10	2011-10-31
281150	MW-3	water	2011-10-27	15:47	2011-10-31
281151	MW-2	water	2011-10-28	12:50	2011-10-31
281152	MW-4	water	2011-10-28	13:10	2011-10-31
281153	MW-1	water	2011-10-28	13:05	2011-10-31

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

This report consists of a total of 27 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

Michael Abel

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

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Case Narrative

Samples for project Celero/Rock Queen SWD #1 were received by TraceAnalysis, Inc. on 2011-10-31 and assigned to work order 11103126. Samples for work order 11103126 were received intact without headspace and at a temperature of 3.9 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	73013	2011-11-01 at 15:26	85998	2011-11-01 at 15:26
BTEX	S 8021B	73017	2011-11-01 at 15:26	86000	2011-11-01 at 15:26
BTEX	S 8021B	73038	2011-11-02 at 12:52	86025	2011-11-02 at 12:52
BTEX	S 8021B	73126	2011-11-04 at 12:58	86112	2011-11-04 at 12:58
Chloride (IC)	E 300.0	73088	2011-11-02 at 10:34	86079	2011-11-03 at 02:52
Chloride (IC)	E 300.0	73105	2011-11-03 at 09:29	86198	2011-11-03 at 11:29
Chloride (IC)	E 300.0	73106	2011-11-03 at 09:30	86199	2011-11-03 at 11:31

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 11103126 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

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

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Analytical Report

Sample: 281147 - MW-6

Laboratory: Lubbock
Analysis: BTEX
QC Batch: 85998
Prep Batch: 73013

Analytical Method: S 8021B
Date Analyzed: 2011-11-01
Sample Preparation: 2011-11-01

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

		RL					
Parameter		Flag	Cert	Result	Units	Dilution	RL
Benzene	u	U	1	<0.00100	mg/L	1	0.00100
Toluene	u	U	1	<0.00100	mg/L	1	0.00100
Ethylbenzene	u	U	1	<0.00100	mg/L	1	0.00100
Xylene	u	U	1	<0.00100	mg/L	1	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0985	mg/L	1	0.100	98	70 - 130
4-Bromofluorobenzene (4-BFB)			0.0984	mg/L	1	0.100	98	70 - 130

Sample: 281147 - MW-6

Laboratory: Midland
Analysis: Chloride (IC)
QC Batch: 86079
Prep Batch: 73088

Analytical Method: E 300.0
Date Analyzed: 2011-11-03
Sample Preparation: 2011-11-02

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

Parameter		Flag	Cert	RL Result	Units	Dilution	RL
Chloride	Qs	Qs	2	1110	mg/L	100	2.50

Sample: 281148 - MW-7

Laboratory: Lubbock
Analysis: BTEX
QC Batch: 85998
Prep Batch: 73013

Analytical Method: S 8021B
Date Analyzed: 2011-11-01
Sample Preparation: 2011-11-01

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

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		RL					
Parameter		Flag	Cert	Result	Units	Dilution	RL
Benzene	u	U	1	<0.00100	mg/L	1	0.00100
Toluene	u	U	1	<0.00100	mg/L	1	0.00100
Ethylbenzene	u	U	1	<0.00100	mg/L	1	0.00100
Xylene	u	U	1	<0.00100	mg/L	1	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.108	mg/L	1	0.100	108	70 - 130
4-Bromofluorobenzene (4-BFB)			0.114	mg/L	1	0.100	114	70 - 130

Sample: 281148 - MW-7

Laboratory: Midland
Analysis: Chloride (IC)
QC Batch: 86079
Prep Batch: 73088

Analytical Method: E 300.0
Date Analyzed: 2011-11-03
Sample Preparation: 2011-11-02

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL	
Chloride	Qs	Qs	2	49000	mg/L	5000	2.50

Sample: 281149 - MW-5

Laboratory: Lubbock
Analysis: BTEX
QC Batch: 85998
Prep Batch: 73013

Analytical Method: S 8021B
Date Analyzed: 2011-11-01
Sample Preparation: 2011-11-01

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

		RL					
Parameter		Flag	Cert	Result	Units	Dilution	RL
Benzene	u	U	1	<0.00100	mg/L	1	0.00100
Toluene	u	U	1	<0.00100	mg/L	1	0.00100
Ethylbenzene	u	U	1	<0.00100	mg/L	1	0.00100
Xylene	u	U	1	<0.00100	mg/L	1	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.107	mg/L	1	0.100	107	70 - 130
4-Bromofluorobenzene (4-BFB)			0.113	mg/L	1	0.100	113	70 - 130

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Sample: 281149 - MW-5

Laboratory: Midland
Analysis: Chloride (IC)
QC Batch: 86079
Prep Batch: 73088

Analytical Method: E 300.0
Date Analyzed: 2011-11-03
Sample Preparation: 2011-11-02

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	Qs	2	<12500	mg/L	5000	2.50

Sample: 281150 - MW-3

Laboratory: Lubbock
Analysis: BTEX
QC Batch: 86025
Prep Batch: 73038

Analytical Method: S 8021B
Date Analyzed: 2011-11-02
Sample Preparation: 2011-11-02

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene		1	0.00120	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		1	0.00440	mg/L	1	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	Qsr	Qsr	0.134	mg/L	1	0.100	134	70 - 130
4-Bromofluorobenzene (4-BFB)			0.113	mg/L	1	0.100	113	70 - 130

Sample: 281150 - MW-3

Laboratory: Midland
Analysis: Chloride (IC)
QC Batch: 86198
Prep Batch: 73105

Analytical Method: E 300.0
Date Analyzed: 2011-11-03
Sample Preparation: 2011-11-03

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	Qs	2	123000	mg/L	5000	2.50

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Sample: 281151 - MW-2

Laboratory: Lubbock

Analysis: BTEX

QC Batch: 85998

Prep Batch: 73013

Analytical Method: S 8021B

Date Analyzed: 2011-11-01

Sample Preparation: 2011-11-01

Prep Method: S 5030B

Analyzed By: ZLM

Prepared By: ZLM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene		1	0.00390	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)			0.0987	mg/L	1	0.100	99	70 - 130
4-Bromofluorobenzene (4-BFB)			0.104	mg/L	1	0.100	104	70 - 130

Sample: 281151 - MW-2

Laboratory: Midland

Analysis: Chloride (IC)

QC Batch: 86198

Prep Batch: 73105

Analytical Method: E 300.0

Date Analyzed: 2011-11-03

Sample Preparation: 2011-11-03

Prep Method: N/A

Analyzed By: AR

Prepared By: AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	Qs	2	80300	mg/L	5000	2.50

Sample: 281152 - MW-4

Laboratory: Lubbock

Analysis: BTEX

QC Batch: 86000

Prep Batch: 73017

Analytical Method: S 8021B

Date Analyzed: 2011-11-01

Sample Preparation: 2011-11-01

Prep Method: S 5030B

Analyzed By: ZLM

Prepared By: ZLM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene		1	0.00280	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

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Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.106	mg/L	1	0.100	106	70 - 130
4-Bromofluorobenzene (4-BFB)			0.113	mg/L	1	0.100	113	70 - 130

Sample: 281152 - MW-4

Laboratory: Midland
Analysis: Chloride (IC)
QC Batch: 86198
Prep Batch: 73105

Analytical Method: E 300.0
Date Analyzed: 2011-11-03
Sample Preparation: 2011-11-03

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	Qs	Qs	2	124000 mg/L	5000	2.50

Sample: 281153 - MW-1

Laboratory: Lubbock
Analysis: BTEX
QC Batch: 86112
Prep Batch: 73126

Analytical Method: S 8021B
Date Analyzed: 2011-11-04
Sample Preparation: 2011-11-04

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	Qr,Qs	Qr,Qs	1	0.00400 mg/L	1	0.00100
Toluene	Qr,Qs,U	Qr,Qs,U	1	<0.00100 mg/L	1	0.00100
Ethylbenzene	Qr,Qs,U	Qr,Qs,U	1	<0.00100 mg/L	1	0.00100
Xylene	Qr,Qs	Qr,Qs	1	0.00630 mg/L	1	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.129	mg/L	1	0.100	129	70 - 130
4-Bromofluorobenzene (4-BFB)			0.111	mg/L	1	0.100	111	70 - 130

Sample: 281153 - MW-1

Laboratory: Midland
Analysis: Chloride (IC)
QC Batch: 86199
Prep Batch: 73106

Analytical Method: E 300.0
Date Analyzed: 2011-11-03
Sample Preparation: 2011-11-03

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

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Parameter		Flag	Cert	RL Result	Units	Dilution	RL
Chloride	Qs	Qs	2	143000	mg/L	10000	2.50

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Method Blanks

Method Blank (1) QC Batch: 85998

QC Batch: 85998
Prep Batch: 73013

Date Analyzed: 2011-11-01
QC Preparation: 2011-11-01

Analyzed By: ZLM
Prepared By: ZLM

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		1	<0.000765	mg/L	0.001
Toluene		1	<0.000719	mg/L	0.001
Ethylbenzene		1	<0.000860	mg/L	0.001
Xylene		1	<0.000942	mg/L	0.001

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0927	mg/L	1	0.100	93	70 - 130
4-Bromofluorobenzene (4-BFB)			0.0945	mg/L	1	0.100	94	70 - 130

Method Blank (1) QC Batch: 86000

QC Batch: 86000
Prep Batch: 73017

Date Analyzed: 2011-11-01
QC Preparation: 2011-11-01

Analyzed By: ZLM
Prepared By: ZLM

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		1	<0.000765	mg/L	0.001
Toluene		1	<0.000719	mg/L	0.001
Ethylbenzene		1	<0.000860	mg/L	0.001
Xylene		1	<0.000942	mg/L	0.001

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.106	mg/L	1	0.100	106	70 - 130
4-Bromofluorobenzene (4-BFB)			0.105	mg/L	1	0.100	105	70 - 130

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Method Blank (1) QC Batch: 86025

QC Batch: 86025
Prep Batch: 73038

Date Analyzed: 2011-11-02
QC Preparation: 2011-11-02

Analyzed By: MT
Prepared By: MT

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		1	<0.000765	mg/L	0.001
Toluene		1	<0.000719	mg/L	0.001
Ethylbenzene		1	<0.000860	mg/L	0.001
Xylene		1	<0.000942	mg/L	0.001

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.111	mg/L	1	0.100	111	70 - 130
4-Bromofluorobenzene (4-BFB)			0.113	mg/L	1	0.100	113	70 - 130

Method Blank (1) QC Batch: 86079

QC Batch: 86079
Prep Batch: 73088

Date Analyzed: 2011-11-03
QC Preparation: 2011-11-02

Analyzed By: AR
Prepared By: AR

Parameter	Flag	Cert	MDL Result	Units	RL
Chloride		2	0.677	mg/L	2.5

Method Blank (1) QC Batch: 86112

QC Batch: 86112
Prep Batch: 73126

Date Analyzed: 2011-11-04
QC Preparation: 2011-11-04

Analyzed By: MT
Prepared By: MT

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		1	<0.000765	mg/L	0.001
Toluene		1	<0.000719	mg/L	0.001
Ethylbenzene		1	<0.000860	mg/L	0.001
Xylene		1	<0.000942	mg/L	0.001

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.107	mg/L	1	0.100	107	70 - 130

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method blank continued ...

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
4-Bromofluorobenzene (4-BFB)			0.108	mg/L	1	0.100	108	70 - 130

Method Blank (1) QC Batch: 86198

QC Batch: 86198
Prep Batch: 73105

Date Analyzed: 2011-11-03
QC Preparation: 2011-11-03

Analyzed By: AR
Prepared By: AR

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

Method Blank (1) QC Batch: 86199

QC Batch: 86199
Prep Batch: 73106

Date Analyzed: 2011-11-03
QC Preparation: 2011-11-03

Analyzed By: AR
Prepared By: AR

Parameter	Flag	Cert	MDL Result	Units	RL
Chloride		2	0.704	mg/L	2.5

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Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 85998
Prep Batch: 73013

Date Analyzed: 2011-11-01
QC Preparation: 2011-11-01

Analyzed By: ZLM
Prepared By: ZLM

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	0.0989	mg/L	1	0.100	<0.000765	99	70 - 130
Toluene		1	0.0957	mg/L	1	0.100	<0.000719	96	70 - 130
Ethylbenzene		1	0.0945	mg/L	1	0.100	<0.000860	94	70 - 130
Xylene		1	0.279	mg/L	1	0.300	<0.000942	93	70 - 130

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	0.0991	mg/L	1	0.100	<0.000765	99	70 - 130	0	20
Toluene		1	0.0949	mg/L	1	0.100	<0.000719	95	70 - 130	1	20
Ethylbenzene		1	0.0941	mg/L	1	0.100	<0.000860	94	70 - 130	0	20
Xylene		1	0.280	mg/L	1	0.300	<0.000942	93	70 - 130	0	20

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

Surrogate	LCS Result	LCS Result	Units	Dil.	Spike Amount	LCS Rec.	LCS Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.0935	0.0945	mg/L	1	0.100	94	94	70 - 130
4-Bromofluorobenzene (4-BFB)	0.0948	0.0979	mg/L	1	0.100	95	98	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 86000
Prep Batch: 73017

Date Analyzed: 2011-11-01
QC Preparation: 2011-11-01

Analyzed By: ZLM
Prepared By: ZLM

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	0.103	mg/L	1	0.100	<0.000765	103	70 - 130
Toluene		1	0.0993	mg/L	1	0.100	<0.000719	99	70 - 130
Ethylbenzene		1	0.0973	mg/L	1	0.100	<0.000860	97	70 - 130
Xylene		1	0.289	mg/L	1	0.300	<0.000942	96	70 - 130

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

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Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	0.107	mg/L	1	0.100	<0.000765	107	70 - 130	4	20
Toluene		1	0.102	mg/L	1	0.100	<0.000719	102	70 - 130	3	20
Ethylbenzene		1	0.0998	mg/L	1	0.100	<0.000860	100	70 - 130	2	20
Xylene		1	0.294	mg/L	1	0.300	<0.000942	98	70 - 130	2	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.100	0.0953	mg/L	1	0.100	100	95	70 - 130
4-Bromofluorobenzene (4-BFB)	0.0975	0.0923	mg/L	1	0.100	98	92	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 86025
Prep Batch: 73038

Date Analyzed: 2011-11-02
QC Preparation: 2011-11-02

Analyzed By: MT
Prepared By: MT

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	0.109	mg/L	1	0.100	<0.000765	109	70 - 130
Toluene		1	0.103	mg/L	1	0.100	<0.000719	103	70 - 130
Ethylbenzene		1	0.101	mg/L	1	0.100	<0.000860	101	70 - 130
Xylene		1	0.301	mg/L	1	0.300	<0.000942	100	70 - 130

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	0.106	mg/L	1	0.100	<0.000765	106	70 - 130	3	20
Toluene		1	0.102	mg/L	1	0.100	<0.000719	102	70 - 130	1	20
Ethylbenzene		1	0.0990	mg/L	1	0.100	<0.000860	99	70 - 130	2	20
Xylene		1	0.295	mg/L	1	0.300	<0.000942	98	70 - 130	2	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.105	0.102	mg/L	1	0.100	105	102	70 - 130
4-Bromofluorobenzene (4-BFB)	0.103	0.101	mg/L	1	0.100	103	101	70 - 130

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Laboratory Control Spike (LCS-1)

QC Batch: 86079
Prep Batch: 73088

Date Analyzed: 2011-11-03
QC Preparation: 2011-11-02

Analyzed By: AR
Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		2	23.8	mg/L	1	25.0	<0.265	95	90 - 110

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		2	23.8	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: 86112
Prep Batch: 73126

Date Analyzed: 2011-11-04
QC Preparation: 2011-11-04

Analyzed By: MT
Prepared By: MT

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	0.105	mg/L	1	0.100	<0.000765	105	70 - 130
Toluene		1	0.101	mg/L	1	0.100	<0.000719	101	70 - 130
Ethylbenzene		1	0.100	mg/L	1	0.100	<0.000860	100	70 - 130
Xylene		1	0.293	mg/L	1	0.300	<0.000942	98	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	0.108	mg/L	1	0.100	<0.000765	108	70 - 130	3	20
Toluene		1	0.101	mg/L	1	0.100	<0.000719	101	70 - 130	0	20
Ethylbenzene		1	0.0990	mg/L	1	0.100	<0.000860	99	70 - 130	1	20
Xylene		1	0.294	mg/L	1	0.300	<0.000942	98	70 - 130	0	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.103	0.102	mg/L	1	0.100	103	102	70 - 130
4-Bromofluorobenzene (4-BFB)	0.0952	0.0962	mg/L	1	0.100	95	96	70 - 130

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Laboratory Control Spike (LCS-1)

QC Batch: 86198
Prep Batch: 73105

Date Analyzed: 2011-11-03
QC Preparation: 2011-11-03

Analyzed By: AR
Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		2	22.8	mg/L	1	25.0	<0.265	91	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		2	22.7	mg/L	1	25.0	<0.265	91	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: 86199
Prep Batch: 73106

Date Analyzed: 2011-11-03
QC Preparation: 2011-11-03

Analyzed By: AR
Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		2	23.0	mg/L	1	25.0	<0.265	92	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		2	23.2	mg/L	1	25.0	<0.265	93	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: 281133

QC Batch: 85998
Prep Batch: 73013

Date Analyzed: 2011-11-01
QC Preparation: 2011-11-01

Analyzed By: ZLM
Prepared By: ZLM

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	0.104	mg/L	1	0.100	<0.000765	104	70 - 130
Toluene		1	0.0987	mg/L	1	0.100	<0.000719	99	70 - 130
Ethylbenzene		1	0.0972	mg/L	1	0.100	<0.000860	97	70 - 130

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matrix spikes continued ...

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Xylene		1	0.290	mg/L	1	0.300	<0.000942	97	70 - 130

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	0.104	mg/L	1	0.100	<0.000765	104	70 - 130	0	20
Toluene		1	0.100	mg/L	1	0.100	<0.000719	100	70 - 130	1	20
Ethylbenzene		1	0.0979	mg/L	1	0.100	<0.000860	98	70 - 130	1	20
Xylene		1	0.294	mg/L	1	0.300	<0.000942	98	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)	0.101	0.0978	mg/L	1	0.1	101	98	70 - 130
4-Bromofluorobenzene (4-BFB)	0.0984	0.0961	mg/L	1	0.1	98	96	70 - 130

Matrix Spike (MS-1) Spiked Sample: 281152

QC Batch: 86000
Prep Batch: 73017

Date Analyzed: 2011-11-01
QC Preparation: 2011-11-01

Analyzed By: ZLM
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	<0.000765	102	70 - 130
Toluene		1	0.0935	mg/L	1	0.100	<0.000719	94	70 - 130
Ethylbenzene		1	0.0881	mg/L	1	0.100	<0.000860	88	70 - 130
Xylene		1	0.260	mg/L	1	0.300	<0.000942	87	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	0.0891	mg/L	1	0.100	<0.000765	89	70 - 130	14	20
Toluene		1	0.0813	mg/L	1	0.100	<0.000719	81	70 - 130	14	20
Ethylbenzene		1	0.0776	mg/L	1	0.100	<0.000860	78	70 - 130	13	20
Xylene		1	0.228	mg/L	1	0.300	<0.000942	76	70 - 130	13	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)	0.102	0.101	mg/L	1	0.1	102	101	70 - 130
4-Bromofluorobenzene (4-BFB)	0.107	0.106	mg/L	1	0.1	107	106	70 - 130

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Matrix Spike (MS-1) Spiked Sample: 281232

QC Batch: 86025
Prep Batch: 73038

Date Analyzed: 2011-11-02
QC Preparation: 2011-11-02

Analyzed By: MT
Prepared By: MT

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	5.41	mg/L	50	5.00	<0.0382	108	70 - 130
Toluene		1	5.16	mg/L	50	5.00	<0.0360	103	70 - 130
Ethylbenzene		1	5.11	mg/L	50	5.00	<0.0430	102	70 - 130
Xylene		1	15.1	mg/L	50	15.0	<0.0471	101	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	5.26	mg/L	50	5.00	<0.0382	105	70 - 130	3	20
Toluene		1	5.06	mg/L	50	5.00	<0.0360	101	70 - 130	2	20
Ethylbenzene		1	5.03	mg/L	50	5.00	<0.0430	101	70 - 130	2	20
Xylene		1	14.9	mg/L	50	15.0	<0.0471	99	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)	5.33	5.12	mg/L	50	5	107	102	70 - 130
4-Bromofluorobenzene (4-BFB)	5.13	5.06	mg/L	50	5	103	101	70 - 130

Matrix Spike (MS-1) Spiked Sample: 281145

QC Batch: 86079
Prep Batch: 73088

Date Analyzed: 2011-11-03
QC Preparation: 2011-11-02

Analyzed By: AR
Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	Qs	Qs	7210	mg/L	50	1380	6710	36	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	Qs	Qs	7250	mg/L	50	1380	6710	39	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: 281561

QC Batch: 86112
Prep Batch: 73126

Date Analyzed: 2011-11-04
QC Preparation: 2011-11-04

Analyzed By: MT
Prepared By: MT

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	0.111	mg/L	1	0.100	<0.000765	111	70 - 130
Toluene		1	0.106	mg/L	1	0.100	<0.000719	106	70 - 130
Ethylbenzene		1	0.106	mg/L	1	0.100	<0.000860	106	70 - 130
Xylene		1	0.312	mg/L	1	0.300	<0.000942	104	70 - 130

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

Param		F	C	MSD		Dil.	Spike	Matrix	Rec.	Rec.	RPD	RPD
				Result	Units		Amount	Result		Limit		Limit
Benzene	Qr,Qs	Qr,Qs	1	0.0623	mg/L	1	0.100	<0.000765	62	70 - 130	56	20
Toluene	Qr,Qs	Qr,Qs	1	0.0595	mg/L	1	0.100	<0.000719	60	70 - 130	56	20
Ethylbenzene	Qr,Qs	Qr,Qs	1	0.0606	mg/L	1	0.100	<0.000860	61	70 - 130	54	20
Xylene	Qr,Qs	Qr,Qs	1	0.178	mg/L	1	0.300	<0.000942	59	70 - 130	55	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)	0.103	0.0940	mg/L	1	0.1	103	94	70 - 130
4-Bromofluorobenzene (4-BFB)	0.0988	0.0914	mg/L	1	0.1	99	91	70 - 130

Matrix Spike (MS-1) Spiked Sample: 281152

QC Batch: 86198
Prep Batch: 73105

Date Analyzed: 2011-11-03
QC Preparation: 2011-11-03

Analyzed By: AR
Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	
Chloride	Qs	Qs	2	121000	mg/L	50	1380	121000	0	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	Qs	Qs	2	121000	mg/L	50	1380	121000	0	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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Matrix Spike (MS-1) Spiked Sample: 281154

QC Batch: 86199
Prep Batch: 73106

Date Analyzed: 2011-11-03
QC Preparation: 2011-11-03

Analyzed By: AR
Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	Qs	Qs	2	448	mg/L	10	275	228	80 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	Qs	Qs	2	443	mg/L	10	275	228	78 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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Calibration Standards

Standard (CCV-2)

QC Batch: 85998

Date Analyzed: 2011-11-01

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	0.104	104	80 - 120	2011-11-01
Toluene		1	mg/L	0.100	0.0999	100	80 - 120	2011-11-01
Ethylbenzene		1	mg/L	0.100	0.0984	98	80 - 120	2011-11-01
Xylene		1	mg/L	0.300	0.292	97	80 - 120	2011-11-01

Standard (CCV-3)

QC Batch: 85998

Date Analyzed: 2011-11-01

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	0.105	105	80 - 120	2011-11-01
Toluene		1	mg/L	0.100	0.100	100	80 - 120	2011-11-01
Ethylbenzene		1	mg/L	0.100	0.0986	99	80 - 120	2011-11-01
Xylene		1	mg/L	0.300	0.290	96	80 - 120	2011-11-01

Standard (CCV-1)

QC Batch: 86000

Date Analyzed: 2011-11-01

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	0.106	106	80 - 120	2011-11-01
Toluene		1	mg/L	0.100	0.102	102	80 - 120	2011-11-01
Ethylbenzene		1	mg/L	0.100	0.0994	99	80 - 120	2011-11-01
Xylene		1	mg/L	0.300	0.297	99	80 - 120	2011-11-01

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Standard (CCV-2)

QC Batch: 86000

Date Analyzed: 2011-11-01

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	0.109	109	80 - 120	2011-11-01
Toluene		1	mg/L	0.100	0.104	104	80 - 120	2011-11-01
Ethylbenzene		1	mg/L	0.100	0.101	101	80 - 120	2011-11-01
Xylene		1	mg/L	0.300	0.300	100	80 - 120	2011-11-01

Standard (CCV-1)

QC Batch: 86025

Date Analyzed: 2011-11-02

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	0.109	109	80 - 120	2011-11-02
Toluene		1	mg/L	0.100	0.104	104	80 - 120	2011-11-02
Ethylbenzene		1	mg/L	0.100	0.103	103	80 - 120	2011-11-02
Xylene		1	mg/L	0.300	0.301	100	80 - 120	2011-11-02

Standard (CCV-2)

QC Batch: 86025

Date Analyzed: 2011-11-02

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	0.107	107	80 - 120	2011-11-02
Toluene		1	mg/L	0.100	0.102	102	80 - 120	2011-11-02
Ethylbenzene		1	mg/L	0.100	0.0986	99	80 - 120	2011-11-02
Xylene		1	mg/L	0.300	0.296	99	80 - 120	2011-11-02

Standard (CCV-1)

QC Batch: 86079

Date Analyzed: 2011-11-03

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
Chloride		2	mg/L	25.0	23.8	95	90 - 110	2011-11-03

Standard (CCV-2)

QC Batch: 86079

Date Analyzed: 2011-11-03

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	23.2	93	90 - 110	2011-11-03

Standard (CCV-1)

QC Batch: 86112

Date Analyzed: 2011-11-04

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	0.108	108	80 - 120	2011-11-04
Toluene		1	mg/L	0.100	0.102	102	80 - 120	2011-11-04
Ethylbenzene		1	mg/L	0.100	0.102	102	80 - 120	2011-11-04
Xylene		1	mg/L	0.300	0.297	99	80 - 120	2011-11-04

Standard (CCV-2)

QC Batch: 86112

Date Analyzed: 2011-11-04

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	0.106	106	80 - 120	2011-11-04
Toluene		1	mg/L	0.100	0.100	100	80 - 120	2011-11-04
Ethylbenzene		1	mg/L	0.100	0.0999	100	80 - 120	2011-11-04
Xylene		1	mg/L	0.300	0.292	97	80 - 120	2011-11-04

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Standard (CCV-1)

QC Batch: 86198

Date Analyzed: 2011-11-03

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	23.5	94	90 - 110	2011-11-03

Standard (CCV-2)

QC Batch: 86198

Date Analyzed: 2011-11-03

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	22.6	90	90 - 110	2011-11-03

Standard (CCV-1)

QC Batch: 86199

Date Analyzed: 2011-11-03

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	22.6	90	90 - 110	2011-11-03

Standard (CCV-2)

QC Batch: 86199

Date Analyzed: 2011-11-03

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	22.6	90	90 - 110	2011-11-03

Appendix

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	T104704219-11-4	Lubbock
2	NELAP	T104704392-10-TX	Midland

Standard Flags

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

XWO #1103126

Analysis Request of Chain of Custody Record

**TETRA TECH**

1910 N. Big Spring St.

Midland, Texas 79705

(432) 682-4559 • Fax (432) 682-3946

PAGE:

Ct.

ANALYSIS REQUEST
(Circle or Specify Method No.)

CLIENT NAME:

Celero

SITE MANAGER:

Jeff Kindley

PROJECT NO.:

115-6403134

PROJECT NAME:

Celero Rock Queen GWD #1

LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF FILTERED (Y/N)	HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015	PAH 8270	RCRA Metals	TCLP Metals	TCLP Volatiles	TCLP Semi V	RCI	GC/MS Vol.	GC/MS Semi	PCB's 8080/	Pest. 808/808	Chloride	Gamma Spec	Alpha Beta (	PLM (Asbest	Major Anion
281147	10/27	1325	W		X	MW-6	4	N	X	X		X												X				
148		1425				MW-7																						
149		1510				MW-5																						
150		1547				MW-3																						
151	10/28	1250				MW-2																						
152		1310				MW-4																						
153		1305				MW-1																						

RELINQUISHED BY: (Signature)

Date:

10/21/11

Time:

1140

RECEIVED BY: (Signature)

Date:

10/21/11

Time:

1140

SAMPLED BY: (Print & Initial)

JR/SA

Date:

Time:

RELINQUISHED BY: (Signature)

Date:

Time:

RECEIVED BY: (Signature)

Date:

Time:

SAMPLE SHIPPED BY: (Circle)

FEDEX

BUS

AIRBILL #:

RELINQUISHED BY: (Signature)

Date:

Time:

RECEIVED BY: (Signature)

Date:

Time:

TETRA TECH CONTACT PERSON:

Jeff Kindley

OTHER:

Results by:

RUSH Charges
Authorized:

Yes

No

RECEIVING LABORATORY:

ADDRESS:

CITY: Midland

STATE: TX

ZIP:

CONTACT:

PHONE:

DATE:

TIME:

SAMPLE CONDITION WHEN RECEIVED:

Intact

5.9°C

REMARKS:

Midland-Chloride & Lubbock - BTEX

5.9°C

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

XWO #1103126

Analysis Request of Chain of Custody Record

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

PAGE: Cr.

 ANALYSIS REQUEST
 (Circle or Specify Method No.)

CLIENT NAME:		SITE MANAGER:		NUMBER OF CONTAINERS	PRESERVATIVE METHOD				ANALYSIS REQUEST (Circle or Specify Method No.)																			
PROJECT NO.:		PROJECT NAME:			NUMBER OF CONTAINERS	FILTERED (Y/N)	HCL	HNO3	ICE	NONE	TPH 8015 MOD. TX1005 (Ext. to C35)	PAH 8270	ROA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC/MS Vol. 8240/8260/824	GC/MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS		
LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION																						
201147	10/27	1325	W		X	MW-6				4	N	X		X														
148		1425				MW-7																						
149		1510				MW-5																						
150		1547				MW-3																						
151	10/28	1250				MW-2																						
152		1310				MW-4																						
153		1305				MW-1																						

RELINQUISHED BY: (Signature)	Date: 10/31/11	RECEIVED BY: (Signature)	Date: 10/31/11	SAMPLED BY: (Print & Initial)	Date: 10/31/11
RELINQUISHED BY: (Signature)	Date: 10/31/11	RECEIVED BY: (Signature)	Date: 10/31/11	SAMPLE SHIPPED BY: (Circle)	AIRBILL #:
RELINQUISHED BY: (Signature)	Date: 10/31/11	RECEIVED BY: (Signature)	Date: 10/31/11	FEDEX	BUS
				HAND DELIVERED	UPS
RECEIVING LABORATORY: Trace				TETRA TECH CONTACT PERSON:	
ADDRESS: Midland				Left Kindley	
CITY: Midland STATE: TX ZIP: PHONE: DATE: 11/1/11 TIME: 8:40				RESULTS by:	
SAMPLE CONDITION WHEN RECEIVED: Intact 3.9°C				RUSH Charges Authorized: Yes No	
REMARKS: Midland-Chloride & Dubboch - BTEX				3.9°	

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

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6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296 806•794•1296 FAX 806•794•1298
200 East Sunset Road, Suite E El Paso, Texas 79922 888•588•3443 915•585•3443 FAX 915•585•4944
5002 Basin Street, Suite A1 Midland, Texas 79703 432•689•6301 FAX 432•689•6313
6615 Harris Parkway, Suite 110 Ft. Worth, Texas 76132 817•201•5260
E-Mail: lab@traceanalysis.com

Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

Analytical and Quality Control Report (Corrected Report)

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

Report Date: December 1, 2011

Work Order: 11103126



Project Location: Chavez Co., NM
Project Name: Celero/Rock Queen SWD #1
Project Number: 115-6403134A

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
281147	MW-6	water	2011-10-27	13:25	2011-10-31
281148	MW-7	water	2011-10-27	14:25	2011-10-31
281149	MW-5	water	2011-10-27	15:10	2011-10-31
281150	MW-3	water	2011-10-27	15:47	2011-10-31
281151	MW-2	water	2011-10-28	12:50	2011-10-31
281152	MW-4	water	2011-10-28	13:10	2011-10-31
281153	MW-1	water	2011-10-28	13:05	2011-10-31

Report Corrections (Work Order 11103126)

- Added TDS,SO4 on 281148,281148,281149,281150,281151,281152,281153

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

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

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Case Narrative

Samples for project Celero/Rock Queen SWD #1 were received by TraceAnalysis, Inc. on 2011-10-31 and assigned to work order 11103126. Samples for work order 11103126 were received intact without headspace and at a temperature of 3.9 C.

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

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
SO4 (IC)	E 300.0	73346	2011-11-01 at 10:24	86374	2011-11-02 at 10:33
SO4 (IC)	E 300.0	73346	2011-11-01 at 10:24	86375	2011-11-03 at 10:35
SO4 (IC)	E 300.0	73346	2011-11-01 at 10:24	86376	2011-11-03 at 10:36
TDS	SM 2540C	73371	2011-11-14 at 13:39	86618	2011-11-17 at 15:43
TDS	SM 2540C	73460	2011-11-16 at 15:57	86754	2011-11-21 at 15:15

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 11103126 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: 281147 - MW-6

Laboratory: Midland
Analysis: SO4 (IC) Analytical Method: E 300.0 Prep Method: N/A
QC Batch: 86374 Date Analyzed: 2011-11-02 Analyzed By: AR
Prep Batch: 73346 Sample Preparation: 2011-11-03 Prepared By: AR

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Sulfate	J,Qs	1	191	<250	<17.7	mg/L	100	17.7	2.5	0.177

Sample: 281147 - MW-6

Laboratory: Midland
Analysis: TDS Analytical Method: SM 2540C Prep Method: N/A
QC Batch: 86754 Date Analyzed: 2011-11-21 Analyzed By: AR
Prep Batch: 73460 Sample Preparation: 2011-11-17 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		1	2240	2240	<19.5	mg/L	2	19.5	10	9.75

Sample: 281148 - MW-7

Laboratory: Midland
Analysis: SO4 (IC) Analytical Method: E 300.0 Prep Method: N/A
QC Batch: 86374 Date Analyzed: 2011-11-02 Analyzed By: AR
Prep Batch: 73346 Sample Preparation: 2011-11-03 Prepared By: AR

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Sulfate	J,Qs	1	529	<1250	<88.5	mg/L	500	88.5	2.5	0.177

Sample: 281148 - MW-7

Laboratory: Midland
Analysis: TDS Analytical Method: SM 2540C Prep Method: N/A

Report Date: December 1, 2011
115-6403134A

Work Order: 11103126
Celero/Rock Queen SWD #1

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Chavez Co., NM

QC Batch: 86754
Prep Batch: 73460

Date Analyzed: 2011-11-21
Sample Preparation: 2011-11-17

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		1	75700	75700	<975	mg/L	100	975	10	9.75

Sample: 281149 - MW-5

Laboratory: Midland
Analysis: SO4 (IC)
QC Batch: 86374
Prep Batch: 73346

Analytical Method: E 300.0
Date Analyzed: 2011-11-02
Sample Preparation: 2011-11-03

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)
Sulfate	J,Qs	1	701	<1250	<88.5	mg/L	500	88.5	2.5	0.177

Sample: 281149 - MW-5

Laboratory: Midland
Analysis: TDS
QC Batch: 86754
Prep Batch: 73460

Analytical Method: SM 2540C
Date Analyzed: 2011-11-21
Sample Preparation: 2011-11-17

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		1	91900	91900	<975	mg/L	100	975	10	9.75

Sample: 281150 - MW-3

Laboratory: Midland
Analysis: SO4 (IC)
QC Batch: 86375
Prep Batch: 73346

Analytical Method: E 300.0
Date Analyzed: 2011-11-03
Sample Preparation: 2011-11-03

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)
Sulfate	J,Qs	1	1160	<1250	<88.5	mg/L	500	88.5	2.5	0.177

Report Date: December 1, 2011
115-6403134A

Work Order: 11103126
Celero/Rock Queen SWD #1

Page Number: 7 of 17
Chavez Co., NM

Sample: 281150 - MW-3

Laboratory: Midland
Analysis: TDS
QC Batch: 86754
Prep Batch: 73460

Analytical Method: SM 2540C
Date Analyzed: 2011-11-21
Sample Preparation: 2011-11-17

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

Parameter	F	C	SDL	MQL	Method	Units	Dilution	SDL	MQL	MDL
			Based Result	Based Result	Blank Result				(Unadjusted)	(Unadjusted)
Total Dissolved Solids		1	184000	184000	<975	mg/L	100	975	10	9.75

Sample: 281151 - MW-2

Laboratory: Midland
Analysis: SO4 (IC)
QC Batch: 86375
Prep Batch: 73346

Analytical Method: E 300.0
Date Analyzed: 2011-11-03
Sample Preparation: 2011-11-03

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

Parameter	F	C	SDL	MQL	Method	Units	Dilution	SDL	MQL	MDL
			Based Result	Based Result	Blank Result				(Unadjusted)	(Unadjusted)
Sulfate	Qs	1	1460	1460	<88.5	mg/L	500	88.5	2.5	0.177

Sample: 281151 - MW-2

Laboratory: Midland
Analysis: TDS
QC Batch: 86754
Prep Batch: 73460

Analytical Method: SM 2540C
Date Analyzed: 2011-11-21
Sample Preparation: 2011-11-17

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

Parameter	F	C	SDL	MQL	Method	Units	Dilution	SDL	MQL	MDL
			Based Result	Based Result	Blank Result				(Unadjusted)	(Unadjusted)
Total Dissolved Solids		1	135000	135000	<975	mg/L	100	975	10	9.75

Sample: 281152 - MW-4

Laboratory: Midland
Analysis: SO4 (IC)
QC Batch: 86375
Prep Batch: 73346

Analytical Method: E 300.0
Date Analyzed: 2011-11-03
Sample Preparation: 2011-11-03

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

Report Date: December 1, 2011
115-6403134A

Work Order: 11103126
Celero/Rock Queen SWD #1

Page Number: 8 of 17
Chavez Co., NM

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Sulfate	Qs	1	2180	2180	<8.85	mg/L	50	8.85	2.5	0.177

Sample: 281152 - MW-4

Laboratory: Midland

Analysis: TDS

QC Batch: 86618

Prep Batch: 73371

Analytical Method: SM 2540C

Date Analyzed: 2011-11-17

Sample Preparation: 2011-11-14

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		1	171000	171000	<975	mg/L	100	975	10	9.75

Sample: 281153 - MW-1

Laboratory: Midland

Analysis: SO4 (IC)

QC Batch: 86376

Prep Batch: 73346

Analytical Method: E 300.0

Date Analyzed: 2011-11-03

Sample Preparation: 2011-11-03

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)
Sulfate	Qs	1	1870	1870	<17.7	mg/L	100	17.7	2.5	0.177

Sample: 281153 - MW-1

Laboratory: Midland

Analysis: TDS

QC Batch: 86618

Prep Batch: 73371

Analytical Method: SM 2540C

Date Analyzed: 2011-11-17

Sample Preparation: 2011-11-14

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		1	258000	258000	<975	mg/L	100	975	10	9.75

Method Blanks

Method Blank (1)

QC Batch: 86374
Prep Batch: 73346

Date Analyzed: 2011-11-02
QC Preparation: 2011-11-01

Analyzed By: AR
Prepared By: AR

Parameter	F	C	Result	Units	Reporting Limits
Sulfate		1	<0.177	mg/L	0.177

Method Blank (1)

QC Batch: 86375
Prep Batch: 73346

Date Analyzed: 2011-11-03
QC Preparation: 2011-11-01

Analyzed By: AR
Prepared By: AR

Parameter	F	C	Result	Units	Reporting Limits
Sulfate		1	<0.177	mg/L	0.177

Method Blank (1)

QC Batch: 86376
Prep Batch: 73346

Date Analyzed: 2011-11-03
QC Preparation: 2011-11-01

Analyzed By: AR
Prepared By: AR

Parameter	F	C	Result	Units	Reporting Limits
Sulfate		1	<0.177	mg/L	0.177

Method Blank (1)

QC Batch: 86618
Prep Batch: 73371

Date Analyzed: 2011-11-17
QC Preparation: 2011-11-14

Analyzed By: AR
Prepared By: AR

Report Date: December 1, 2011
115-6403134A

Work Order: 11103126
Celero/Rock Queen SWD #1

Page Number: 10 of 17
Chavez Co., NM

Parameter	F	C	Result	Units	Reporting Limits
Total Dissolved Solids		1	<9.75	mg/L	9.75

Method Blank (1)

QC Batch: 86754
Prep Batch: 73460

Date Analyzed: 2011-11-21
QC Preparation: 2011-11-16

Analyzed By: AR
Prepared By: AR

Parameter	F	C	Result	Units	Reporting Limits
Total Dissolved Solids		1	<9.75	mg/L	9.75

Duplicate (1) Duplicated Sample: 281161

QC Batch: 86618
Prep Batch: 73371

Date Analyzed: 2011-11-17
QC Preparation: 2011-11-14

Analyzed By: AR
Prepared By: AR

Param	F	C	Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
Total Dissolved Solids		1	168000	170000	mg/L	100	1	10

Duplicate (1) Duplicated Sample: 281151

QC Batch: 86754
Prep Batch: 73460

Date Analyzed: 2011-11-21
QC Preparation: 2011-11-16

Analyzed By: AR
Prepared By: AR

Param	F	C	Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
Total Dissolved Solids		1	130000	135000	mg/L	100	4	10

Report Date: December 1, 2011
115-6403134A

Work Order: 11103126
Celero/Rock Queen SWD #1

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Chavez Co., NM

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 86374
Prep Batch: 73346

Date Analyzed: 2011-11-02
QC Preparation: 2011-11-01

Analyzed By: AR
Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Sulfate		1	24.7	mg/L	1	25.0	<0.177	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
Sulfate		1	25.3	mg/L	1	25.0	<0.177	101	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: 86375
Prep Batch: 73346

Date Analyzed: 2011-11-03
QC Preparation: 2011-11-01

Analyzed By: AR
Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Sulfate		1	23.7	mg/L	1	25.0	<0.177	95	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	24.2	mg/L	1	25.0	<0.177	97	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: 86376
Prep Batch: 73346

Date Analyzed: 2011-11-03
QC Preparation: 2011-11-01

Analyzed By: AR
Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Sulfate		1	24.6	mg/L	1	25.0	<0.177	98	90 - 110

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

Report Date: December 1, 2011
115-6403134A

Work Order: 11103126
Celero/Rock Queen SWD #1

Page Number: 12 of 17
Chavez Co., NM

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Sulfate		1	24.7	mg/L	1	25.0	<0.177	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: 86618
Prep Batch: 73371

Date Analyzed: 2011-11-17
QC Preparation: 2011-11-14

Analyzed By: AR
Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Total Dissolved Solids		1	1040	mg/L	1	1000	<9.75	104	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	1010	mg/L	1	1000	<9.75	101	85.5 - 112.7	3	10

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

Laboratory Control Spike (LCS-1)

QC Batch: 86754
Prep Batch: 73460

Date Analyzed: 2011-11-21
QC Preparation: 2011-11-16

Analyzed By: AR
Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Total Dissolved Solids		1	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		1	1030	mg/L	1	1000	<9.75	103	85.5 - 112.7	3	10

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

Matrix Spike (MS-1) Spiked Sample: 281145

QC Batch: 86374
Prep Batch: 73346

Date Analyzed: 2011-11-02
QC Preparation: 2011-11-01

Analyzed By: AR
Prepared By: AR

Report Date: December 1, 2011
115-6403134A

Work Order: 11103126
Celero/Rock Queen SWD #1

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Chavez Co., NM

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Sulfate	Qs	1	1280	mg/L	50	1380	143	83	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	Qs	1	1280	mg/L	50	1380	143	83	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: 281152

QC Batch: 86375
Prep Batch: 73346

Date Analyzed: 2011-11-03
QC Preparation: 2011-11-01

Analyzed By: AR
Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Sulfate	Qs	1	3110	mg/L	50	1380	2180	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	Qs	1	3140	mg/L	50	1380	2180	70	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: 281154

QC Batch: 86376
Prep Batch: 73346

Date Analyzed: 2011-11-03
QC Preparation: 2011-11-01

Analyzed By: AR
Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Sulfate	Qs	1	296	mg/L	5	138	65.5	168	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	Qs	1	297	mg/L	5	138	65.5	168	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 (ICV-1)

QC Batch: 86374

Date Analyzed: 2011-11-02

Analyzed By: AR

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	2011-11-02

Standard (CCV-1)

QC Batch: 86374

Date Analyzed: 2011-11-02

Analyzed By: AR

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	2011-11-02

Standard (ICV-1)

QC Batch: 86375

Date Analyzed: 2011-11-03

Analyzed By: AR

Param	F	C	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Sulfate		1	mg/L	25.0	24.9	100	90 - 110	2011-11-03

Standard (CCV-1)

QC Batch: 86375

Date Analyzed: 2011-11-03

Analyzed By: AR

Param	F	C	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Sulfate		1	mg/L	25.0	24.3	97	90 - 110	2011-11-03

Report Date: December 1, 2011
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Celero/Rock Queen SWD #1

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Standard (ICV-1)

QC Batch: 86376

Date Analyzed: 2011-11-03

Analyzed By: AR

Param	F	C	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Sulfate		1	mg/L	25.0	24.3	97	90 - 110	2011-11-03

Standard (CCV-1)

QC Batch: 86376

Date Analyzed: 2011-11-03

Analyzed By: AR

Param	F	C	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Sulfate		1	mg/L	25.0	24.3	97	90 - 110	2011-11-03

Report Date: December 1, 2011
115-6403134A

Work Order: 11103126
Celero/Rock Queen SWD #1

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Chavez Co., NM

Limits of Detection (LOD)

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	T104704392-10-TX	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.

XWO #1103126

Analysis Request of Chain of Custody Record

**TETRA TECH**

1910 N. Big Spring St.

Midland, Texas 79705

(432) 682-4559 • Fax (432) 682-3946

PAGE:

Cn.

ANALYSIS REQUEST
(Circle or Specify Method No.)

CLIENT NAME:

Celero

SITE MANAGER:

Jeff Kindley

PROJECT NO.:

115-6403134

PROJECT NAME:

Celero Rock Queen SWD #1

LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF FILTERED (Y/N)	HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015	PAH 8270	RCRA Metals	TCLP Metals	TCLP Volatile	TCLP Semi V	RCI	GC/MS Vol. 8	GC/MS Semi	PCB's 8080/600	Pest. 808/600	Chloride	Gamma Spec	Alpha Beta (u)	PLM (Asbest	Major Anions
281147	10/27	1325	W		X	MW-6	4	N	X	X		X												X				
148		1425				MW-7																						
149		1510				MW-5																						
150		1547				MW-3																						
151	10/28	1250				MW-2																						
152		1310				MW-4																						
153		1305				MW-1																						

RELINQUISHED BY: (Signature)

Date:

Time:

RECEIVED BY: (Signature)

Date:

Time:

SAMPLED BY: (Print & Initial)

Date:

Time:

RELINQUISHED BY: (Signature)

Date:

Time:

RECEIVED BY: (Signature)

Date:

Time:

SAMPLE SHIPPED BY: (Circle)

AIRBILL #:

RELINQUISHED BY: (Signature)

Date:

Time:

RECEIVED BY: (Signature)

Date:

Time:

TETRA TECH CONTACT PERSON:

OTHER:

RECEIVING LABORATORY:

ADDRESS:

CITY:

STATE:

ZIP:

CONTACT:

PHONE:

DATE:

TIME:

RECEIVED BY: (Signature)

SAMPLE CONDITION WHEN RECEIVED:

REMARKS:

Intact

3.9°C

Midland-Chloride & Lubbock - BTEX

3.9°C

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