

1RP-1554

Groundwater Sampling Report

Appendix C (Cont.)
Lab Analysis

DATE:
March 29, 2012
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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
6015 Harris Parkway, Suite 110 Ft. Worth, Texas 76132 817•201•5260
E-Mail: lab@traceanalysis.com

Certifications

WBENC: 237019

HUB: 1752439743100-86536
NCTRCA WFWB38444Y0909

DBE: VN 20657

NELAP Certifications

Lubbock: T104704219-08-TX
LELAP-02003
Kansas E-10317

El Paso: T104704221-08-TX
LELAP-02002

Midland: T104704392-08-TX

Analytical and Quality Control Report

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

Report Date: February 8, 2011

Work Order: 11012511



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

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

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
256095	MW-1	water	2011-01-24	16:55	2011-01-25
256096	MW-2	water	2011-01-24	16:45	2011-01-25
256097	MW-3	water	2011-01-24	17:10	2011-01-25
256098	MW-4	water	2011-01-24	16:15	2011-01-25
256099	MW-5	water	2011-01-24	16:32	2011-01-25
256100	MW-6	water	2011-01-24	17:05	2011-01-25
256101	MW-7	water	2011-01-24	17:18	2011-01-25

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

This report consists of a total of 22 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

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

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

Standard Flags

B - The sample contains less than ten times the concentration found in the method blank.

Samples for project Celero/Rock Queen #1 TB were received by TraceAnalysis, Inc. on 2011-01-25 and assigned to work order 11012511. Samples for work order 11012511 were received intact without headspace and at a temperature of 1.6 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	66196	2011-01-25 at 10:00	77170	2011-01-25 at 14:57
Chloride (IC)	E 300.0	66402	2011-02-04 at 11:18	77415	2011-02-04 at 15:32
Chloride (IC)	E 300.0	66403	2011-02-04 at 11:36	77416	2011-02-04 at 20:18
SO4 (IC)	E 300.0	66403	2011-02-04 at 11:36	77416	2011-02-04 at 20:18
SO4 (IC)	E 300.0	66414	2011-02-06 at 10:00	77427	2011-02-07 at 11:31
SO4 (IC)	E 300.0	66439	2011-02-07 at 15:00	77456	2011-02-07 at 16:41
TDS	SM 2540C	66190	2011-01-26 at 13:45	77318	2011-02-01 at 15:05

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 11012511 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: 11012511
Celero/Rock Queen #1 TB

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Analytical Report

Sample: 256095 - MW-1

Laboratory: Midland
Analysis: BTEX
QC Batch: 77170
Prep Batch: 66196

Analytical Method: S 8021B
Date Analyzed: 2011-01-25
Sample Preparation: 2011-01-25

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

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	1	0.0539	mg/L	1	0.100	54	75.4 - 119.4
4-Bromofluorobenzene (4-BFB)		0.0537	mg/L	1	0.100	54	78.6 - 122.8

Sample: 256095 - MW-1

Laboratory: Lubbock
Analysis: Chloride (IC)
QC Batch: 77415
Prep Batch: 66402

Analytical Method: E 300.0
Date Analyzed: 2011-02-04
Sample Preparation: 2011-02-04

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

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		144000	mg/L	10000	2.50

Sample: 256095 - MW-1

Laboratory: Lubbock
Analysis: SO4 (IC)
QC Batch: 77427
Prep Batch: 66414

Analytical Method: E 300.0
Date Analyzed: 2011-02-07
Sample Preparation: 2011-02-06

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

Parameter	Flag	RL Result	Units	Dilution	RL
Sulfate		2560	mg/L	100	2.50

¹SPECIAL - TFT is out of control limits due to an unknown anomaly. However, 4-BFB shows the method to be in control. •

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Sample: 256095 - MW-1

Laboratory: Midland

Analysis: TDS

QC Batch: 77318

Prep Batch: 66190

Analytical Method: SM 2540C

Date Analyzed: 2011-02-01

Sample Preparation: 2011-01-26

Prep Method: N/A

Analyzed By: AR

Prepared By: AR

Parameter	Flag	RL Result	Units	Dilution	RL
Total Dissolved Solids		258000	mg/L	100	10.0

Sample: 256096 - MW-2

Laboratory: Midland

Analysis: BTEX

QC Batch: 77170

Prep Batch: 66196

Analytical Method: S 8021B

Date Analyzed: 2011-01-25

Sample Preparation: 2011-01-25

Prep Method: S 5030B

Analyzed By: AG

Prepared By: AG

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.113	mg/L	1	0.100	113	75.4 - 119.4
4-Bromofluorobenzene (4-BFB)		0.0976	mg/L	1	0.100	98	78.6 - 122.8

Sample: 256096 - MW-2

Laboratory: Lubbock

Analysis: Chloride (IC)

QC Batch: 77415

Prep Batch: 66402

Analytical Method: E 300.0

Date Analyzed: 2011-02-04

Sample Preparation: 2011-02-04

Prep Method: N/A

Analyzed By: PG

Prepared By: PG

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		7310	mg/L	500	2.50

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Sample: 256096 - MW-2

Laboratory: Lubbock
Analysis: SO4 (IC)
QC Batch: 77427
Prep Batch: 66414

Analytical Method: E 300.0
Date Analyzed: 2011-02-07
Sample Preparation: 2011-02-06

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

Parameter	Flag	RL Result	Units	Dilution	RL
Sulfate		108	mg/L	5	2.50

Sample: 256096 - MW-2

Laboratory: Midland
Analysis: TDS
QC Batch: 77318
Prep Batch: 66190

Analytical Method: SM 2540C
Date Analyzed: 2011-02-01
Sample Preparation: 2011-01-26

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

Parameter	Flag	RL Result	Units	Dilution	RL
Total Dissolved Solids		26800	mg/L	100	10.0

Sample: 256097 - MW-3

Laboratory: Midland
Analysis: BTEX
QC Batch: 77170
Prep Batch: 66196

Analytical Method: S 8021B
Date Analyzed: 2011-01-25
Sample Preparation: 2011-01-25

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

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.0754	mg/L	1	0.100	75	75.4 - 119.4
4-Bromofluorobenzene (4-BFB)		0.0702	mg/L	1	0.100	70	78.6 - 122.8

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Sample: 256097 - MW-3

Laboratory: Lubbock

Analysis: Chloride (IC)

QC Batch: 77415

Prep Batch: 66402

Analytical Method: E 300.0

Date Analyzed: 2011-02-04

Sample Preparation: 2011-02-04

Prep Method: N/A

Analyzed By: PG

Prepared By: PG

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		51900	mg/L	10000	2.50

Sample: 256097 - MW-3

Laboratory: Lubbock

Analysis: SO4 (IC)

QC Batch: 77427

Prep Batch: 66414

Analytical Method: E 300.0

Date Analyzed: 2011-02-07

Sample Preparation: 2011-02-06

Prep Method: N/A

Analyzed By: PG

Prepared By: PG

Parameter	Flag	RL Result	Units	Dilution	RL
Sulfate		2280	mg/L	100	2.50

Sample: 256097 - MW-3

Laboratory: Midland

Analysis: TDS

QC Batch: 77318

Prep Batch: 66190

Analytical Method: SM 2540C

Date Analyzed: 2011-02-01

Sample Preparation: 2011-01-26

Prep Method: N/A

Analyzed By: AR

Prepared By: AR

Parameter	Flag	RL Result	Units	Dilution	RL
Total Dissolved Solids		95300	mg/L	100	10.0

Sample: 256098 - MW-4

Laboratory: Midland

Analysis: BTEX

QC Batch: 77170

Prep Batch: 66196

Analytical Method: S 8021B

Date Analyzed: 2011-01-25

Sample Preparation: 2011-01-25

Prep Method: S 5030B

Analyzed By: AG

Prepared By: AG

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

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sample 256098 continued ...

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.112	mg/L	1	0.100	112	75.4 - 119.4
4-Bromofluorobenzene (4-BFB)		0.0948	mg/L	1	0.100	95	78.6 - 122.8

Sample: 256098 - MW-4

Laboratory: Lubbock
Analysis: Chloride (IC)
QC Batch: 77416
Prep Batch: 66403

Analytical Method: E 300.0
Date Analyzed: 2011-02-04
Sample Preparation: 2011-02-04

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

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		6230	mg/L	500	2.50

Sample: 256098 - MW-4

Laboratory: Lubbock
Analysis: SO4 (IC)
QC Batch: 77456
Prep Batch: 66439

Analytical Method: E 300.0
Date Analyzed: 2011-02-07
Sample Preparation: 2011-02-07

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

Parameter	Flag	RL Result	Units	Dilution	RL
Sulfate		180	mg/L	5	2.50

Sample: 256098 - MW-4

Laboratory: Midland
Analysis: TDS
QC Batch: 77318
Prep Batch: 66190

Analytical Method: SM 2540C
Date Analyzed: 2011-02-01
Sample Preparation: 2011-01-26

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

Parameter	Flag	RL Result	Units	Dilution	RL
Total Dissolved Solids		12400	mg/L	20	10.0

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Sample: 256099 - MW-5

Laboratory: Midland
Analysis: BTEX
QC Batch: 77170
Prep Batch: 66196

Analytical Method: S 8021B
Date Analyzed: 2011-01-25
Sample Preparation: 2011-01-25

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

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.109	mg/L	1	0.100	109	75.4 - 119.4
4-Bromofluorobenzene (4-BFB)		0.0941	mg/L	1	0.100	94	78.6 - 122.8

Sample: 256099 - MW-5

Laboratory: Lubbock
Analysis: Chloride (IC)
QC Batch: 77416
Prep Batch: 66403

Analytical Method: E 300.0
Date Analyzed: 2011-02-04
Sample Preparation: 2011-02-04

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

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		58.4	mg/L	5	2.50

Sample: 256099 - MW-5

Laboratory: Lubbock
Analysis: SO4 (IC)
QC Batch: 77416
Prep Batch: 66403

Analytical Method: E 300.0
Date Analyzed: 2011-02-04
Sample Preparation: 2011-02-04

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

Parameter	Flag	RL Result	Units	Dilution	RL
Sulfate		121	mg/L	5	2.50

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Sample: 256099 - MW-5

Laboratory: Midland
Analysis: TDS
QC Batch: 77318
Prep Batch: 66190

Analytical Method: SM 2540C
Date Analyzed: 2011-02-01
Sample Preparation: 2011-01-26

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

Parameter	Flag	RL Result	Units	Dilution	RL
Total Dissolved Solids		518	mg/L	1	10.0

Sample: 256100 - MW-6

Laboratory: Midland
Analysis: BTEX
QC Batch: 77170
Prep Batch: 66196

Analytical Method: S 8021B
Date Analyzed: 2011-01-25
Sample Preparation: 2011-01-25

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

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	²	0.0519	mg/L	1	0.100	52	75.4 - 119.4
4-Bromofluorobenzene (4-BFB)		0.0518	mg/L	1	0.100	52	78.6 - 122.8

Sample: 256100 - MW-6

Laboratory: Lubbock
Analysis: Chloride (IC)
QC Batch: 77416
Prep Batch: 66403

Analytical Method: E 300.0
Date Analyzed: 2011-02-04
Sample Preparation: 2011-02-04

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

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		88900	mg/L	10000	2.50

²SPECIAL - TFT is out of control limits due to an unknown anomaly. However, 4-BFB shows the method to be in control. •

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Sample: 256100 - MW-6

Laboratory: Lubbock
Analysis: SO4 (IC)
QC Batch: 77427
Prep Batch: 66414

Analytical Method: E 300.0
Date Analyzed: 2011-02-07
Sample Preparation: 2011-02-06

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

Parameter	Flag	RL Result	Units	Dilution	RL
Sulfate		2850	mg/L	100	2.50

Sample: 256100 - MW-6

Laboratory: Midland
Analysis: TDS
QC Batch: 77318
Prep Batch: 66190

Analytical Method: SM 2540C
Date Analyzed: 2011-02-01
Sample Preparation: 2011-01-26

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

Parameter	Flag	RL Result	Units	Dilution	RL
Total Dissolved Solids		161000	mg/L	100	10.0

Sample: 256101 - MW-7

Laboratory: Midland
Analysis: BTEX
QC Batch: 77170
Prep Batch: 66196

Analytical Method: S 8021B
Date Analyzed: 2011-01-25
Sample Preparation: 2011-01-25

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

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	³	0.0642	mg/L	1	0.100	64	75.4 - 119.4
4-Bromofluorobenzene (4-BFB)		0.0640	mg/L	1	0.100	64	78.6 - 122.8

³SPECIAL - TFT is out of control limits due to an unknown anomaly. However, 4-BFB shows the method to be in control. •

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Sample: 256101 - MW-7

Laboratory:	Lubbock	Analytical Method:	E 300.0	Prep Method:	N/A
Analysis:	Chloride (IC)	Date Analyzed:	2011-02-04	Analyzed By:	PG
QC Batch:	77416	Sample Preparation:	2011-02-04	Prepared By:	PG
Prep Batch:	66403				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		92400	mg/L	10000	2.50

Sample: 256101 - MW-7

Laboratory:	Lubbock	Analytical Method:	E 300.0	Prep Method:	N/A
Analysis:	SO4 (IC)	Date Analyzed:	2011-02-07	Analyzed By:	PG
QC Batch:	77427	Sample Preparation:	2011-02-06	Prepared By:	PG
Prep Batch:	66414				

Parameter	Flag	RL Result	Units	Dilution	RL
Sulfate		2580	mg/L	100	2.50

Sample: 256101 - MW-7

Laboratory:	Midland	Analytical Method:	SM 2540C	Prep Method:	N/A
Analysis:	TDS	Date Analyzed:	2011-02-01	Analyzed By:	AR
QC Batch:	77318	Sample Preparation:	2011-01-26	Prepared By:	AR
Prep Batch:	66190				

Parameter	Flag	RL Result	Units	Dilution	RL
Total Dissolved Solids		179000	mg/L	100	10.0

Method Blank (1) QC Batch: 77170

QC Batch:	77170	Date Analyzed:	2011-01-25	Analyzed By:	AG
Prep Batch:	66196	QC Preparation:	2011-01-25	Prepared By:	AG

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

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method blank continued ...

Parameter	Flag	MDL Result	Units	RL
Xylene		<0.000333	mg/L	0.001

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.111	mg/L	1	0.100	111	70.8 - 117.4
4-Bromofluorobenzene (4-BFB)		0.0994	mg/L	1	0.100	99	79 - 113.4

Method Blank (1) QC Batch: 77318

QC Batch: 77318 Date Analyzed: 2011-02-01 Analyzed By: AR
Prep Batch: 66190 QC Preparation: 2011-01-26 Prepared By: AR

Parameter	Flag	MDL Result	Units	RL
Total Dissolved Solids		10.0	mg/L	10

Method Blank (1) QC Batch: 77415

QC Batch: 77415 Date Analyzed: 2011-02-04 Analyzed By: PG
Prep Batch: 66402 QC Preparation: 2011-02-04 Prepared By: PG

Parameter	Flag	MDL Result	Units	RL
Chloride		<0.0142	mg/L	2.5

Method Blank (1) QC Batch: 77416

QC Batch: 77416 Date Analyzed: 2011-02-04 Analyzed By: PG
Prep Batch: 66403 QC Preparation: 2011-02-04 Prepared By: PG

Parameter	Flag	MDL Result	Units	RL
Chloride		<0.0142	mg/L	2.5

Method Blank (1) QC Batch: 77416

QC Batch: 77416 Date Analyzed: 2011-02-04 Analyzed By: PG
Prep Batch: 66403 QC Preparation: 2011-02-04 Prepared By: PG

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Parameter	Flag	MDL Result	Units	RL
Sulfate		<0.126	mg/L	2.5

Method Blank (1) QC Batch: 77427

QC Batch: 77427 Date Analyzed: 2011-02-07 Analyzed By: PG
Prep Batch: 66414 QC Preparation: 2011-02-06 Prepared By: PG

Parameter	Flag	MDL Result	Units	RL
Sulfate		<0.126	mg/L	2.5

Method Blank (1) QC Batch: 77456

QC Batch: 77456 Date Analyzed: 2011-02-07 Analyzed By: PG
Prep Batch: 66439 QC Preparation: 2011-02-07 Prepared By: PG

Parameter	Flag	MDL Result	Units	RL
Sulfate		<0.126	mg/L	2.5

Duplicates (1) Duplicated Sample: 256101

QC Batch: 77318 Date Analyzed: 2011-02-01 Analyzed By: AR
Prep Batch: 66190 QC Preparation: 2011-01-26 Prepared By: AR

Param	Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
Total Dissolved Solids	178000	179000	mg/L	100	1	10

Laboratory Control Spike (LCS-1)

QC Batch: 77170 Date Analyzed: 2011-01-25 Analyzed By: AG
Prep Batch: 66196 QC Preparation: 2011-01-25 Prepared By: AG

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	0.0891	mg/L	1	0.100	<0.000400	89	76.8 - 110.3
Toluene	0.103	mg/L	1	0.100	<0.000300	103	81 - 108.2
Ethylbenzene	0.108	mg/L	1	0.100	<0.000300	108	78.8 - 111

continued ...

control spikes continued ...

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Xylene	0.328	mg/L	1	0.300	<0.000333	109	80.3 - 111.4

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene	0.0843	mg/L	1	0.100	<0.000400	84	76.8 - 110.3	6	20
Toluene	0.0988	mg/L	1	0.100	<0.000300	99	81 - 108.2	4	20
Ethylbenzene	0.103	mg/L	1	0.100	<0.000300	103	78.8 - 111	5	20
Xylene	0.312	mg/L	1	0.300	<0.000333	104	80.3 - 111.4	5	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)	0.112	0.111	mg/L	1	0.100	112	111	66.6 - 114.5
4-Bromofluorobenzene (4-BFB)	0.108	0.106	mg/L	1	0.100	108	106	77.1 - 114.4

Laboratory Control Spike (LCS-1)

QC Batch: 77318
Prep Batch: 66190

Date Analyzed: 2011-02-01
QC Preparation: 2011-01-26

Analyzed By: AR
Prepared By: AR

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Total Dissolved Solids	1080	mg/L	1	1000	<9.75	108	90 - 110

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Total Dissolved Solids	1000	mg/L	1	1000	<9.75	100	90 - 110	8	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: 77415
Prep Batch: 66402

Date Analyzed: 2011-02-04
QC Preparation: 2011-02-04

Analyzed By: PG
Prepared By: PG

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	23.6	mg/L	1	25.0	<0.0142	94	90 - 110

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

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Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	23.7	mg/L	1	25.0	<0.0142	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: 77416
Prep Batch: 66403

Date Analyzed: 2011-02-04
QC Preparation: 2011-02-04

Analyzed By: PG
Prepared By: PG

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	23.6	mg/L	1	25.0	<0.0142	94	90 - 110

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	23.6	mg/L	1	25.0	<0.0142	94	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: 77416
Prep Batch: 66403

Date Analyzed: 2011-02-04
QC Preparation: 2011-02-04

Analyzed By: PG
Prepared By: PG

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Sulfate	24.0	mg/L	1	25.0	<0.126	96	90 - 110

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Sulfate	24.1	mg/L	1	25.0	<0.126	96	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: 77427
Prep Batch: 66414

Date Analyzed: 2011-02-07
QC Preparation: 2011-02-06

Analyzed By: PG
Prepared By: PG

continued ...

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control spikes continued ...

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Sulfate	24.7	mg/L	1	25.0	<0.126	99	90 - 110

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Sulfate	24.6	mg/L	1	25.0	<0.126	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: 77456
Prep Batch: 66439

Date Analyzed: 2011-02-07
QC Preparation: 2011-02-07

Analyzed By: PG
Prepared By: PG

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Sulfate	25.3	mg/L	1	25.0	<0.126	101	90 - 110

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Sulfate	25.1	mg/L	1	25.0	<0.126	100	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: 256101

QC Batch: 77170
Prep Batch: 66196

Date Analyzed: 2011-01-25
QC Preparation: 2011-01-25

Analyzed By: AG
Prepared By: AG

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	0.0827	mg/L	1	0.100	<0.000400	83	68.2 - 119.3
Toluene	0.0851	mg/L	1	0.100	<0.000300	85	74.6 - 110.8
Ethylbenzene	0.0786	mg/L	1	0.100	<0.000300	79	71.6 - 111.9
Xylene	⁴ 0.204	mg/L	1	0.300	<0.000333	68	71.3 - 113.4

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

⁴Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.

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Celero/Rock Queen #1 TB

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Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene	0.0777	mg/L	1	0.100	<0.000400	78	68.2 - 119.3	6	20
Toluene	0.0814	mg/L	1	0.100	<0.000300	81	74.6 - 110.8	4	20
Ethylbenzene	⁵ 0.0750	mg/L	1	0.100	<0.000300	75	71.6 - 111.9	5	20
Xylene	⁶ 0.193	mg/L	1	0.300	<0.000333	64	71.3 - 113.4	6	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.0829	0.0831	mg/L	1	0.1	83	83	68.2 - 110.1
4-Bromofluorobenzene (4-BFB)	0.0830	0.0816	mg/L	1	0.1	83	82	78.7 - 116.2

Matrix Spike (MS-1) Spiked Sample: 256097

QC Batch: 77415
Prep Batch: 66402

Date Analyzed: 2011-02-04
QC Preparation: 2011-02-04

Analyzed By: PG
Prepared By: PG

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	300000	mg/L	10000	250000	51900	99	90 - 110

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	299000	mg/L	10000	250000	51900	99	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: 256357

QC Batch: 77416
Prep Batch: 66403

Date Analyzed: 2011-02-04
QC Preparation: 2011-02-04

Analyzed By: PG
Prepared By: PG

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	13400	mg/L	500	12500	1430	96	90 - 110

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	13400	mg/L	500	12500	1430	96	90 - 110	0	20

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

⁵MSD analyte out of range. MS/MSD has a RPD within limits. Therefore, MS shows extraction occurred properly.

⁶Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.

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Matrix Spike (MS-1) Spiked Sample: 256357

QC Batch: 77416
Prep Batch: 66403

Date Analyzed: 2011-02-04
QC Preparation: 2011-02-04

Analyzed By: PG
Prepared By: PG

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Sulfate	14000	mg/L	500	12500	1870	97	90 - 110

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Sulfate	14000	mg/L	500	12500	1870	97	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: 256101

QC Batch: 77427
Prep Batch: 66414

Date Analyzed: 2011-02-07
QC Preparation: 2011-02-06

Analyzed By: PG
Prepared By: PG

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Sulfate	5290	mg/L	100	2500	2580	108	90 - 110

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Sulfate	5280	mg/L	100	2500	2580	108	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: 256847

QC Batch: 77456
Prep Batch: 66439

Date Analyzed: 2011-02-07
QC Preparation: 2011-02-07

Analyzed By: PG
Prepared By: PG

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Sulfate	9210	mg/L	50	1250	19.4	735	90 - 110

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

continued ...

⁷ Matrix spikes ran with batch but spiked sample was not reported in batch. Use LCS/LCSD to show analysis is under control •

Report Date: February 8, 2011
115-6403129

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Celero/Rock Queen #1 TB

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matrix spikes continued ...

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Sulfate	⁸ 9140	mg/L	50	1250	19.4	731	90 - 110	1	20

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

Standard (CCV-1)

QC Batch: 77170

Date Analyzed: 2011-01-25

Analyzed By: AG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/L	0.100	0.0857	86	80 - 120	2011-01-25
Toluene		mg/L	0.100	0.100	100	80 - 120	2011-01-25
Ethylbenzene		mg/L	0.100	0.104	104	80 - 120	2011-01-25
Xylene		mg/L	0.300	0.314	105	80 - 120	2011-01-25

Standard (CCV-2)

QC Batch: 77170

Date Analyzed: 2011-01-25

Analyzed By: AG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/L	0.100	0.0873	87	80 - 120	2011-01-25
Toluene		mg/L	0.100	0.101	101	80 - 120	2011-01-25
Ethylbenzene		mg/L	0.100	0.105	105	80 - 120	2011-01-25
Xylene		mg/L	0.300	0.315	105	80 - 120	2011-01-25

Standard (CCV-3)

QC Batch: 77170

Date Analyzed: 2011-01-25

Analyzed By: AG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/L	0.100	0.0844	84	80 - 120	2011-01-25
Toluene		mg/L	0.100	0.0988	99	80 - 120	2011-01-25
Ethylbenzene		mg/L	0.100	0.103	103	80 - 120	2011-01-25
Xylene		mg/L	0.300	0.310	103	80 - 120	2011-01-25

⁸Matrix spikes ran with batch but spiked sample was not reported in batch. Use LCS/LCSD to show analysis is under control •

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115-6403129

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Standard (CCV-1)

QC Batch: 77415

Date Analyzed: 2011-02-04

Analyzed By: PG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/L	25.0	24.0	96	90 - 110	2011-02-04

Standard (CCV-2)

QC Batch: 77415

Date Analyzed: 2011-02-04

Analyzed By: PG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/L	25.0	23.5	94	90 - 110	2011-02-04

Standard (CCV-1)

QC Batch: 77416

Date Analyzed: 2011-02-04

Analyzed By: PG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/L	25.0	23.5	94	90 - 110	2011-02-04

Standard (CCV-1)

QC Batch: 77416

Date Analyzed: 2011-02-04

Analyzed By: PG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Sulfate		mg/L	25.0	24.0	96	90 - 110	2011-02-04

Standard (CCV-2)

QC Batch: 77416

Date Analyzed: 2011-02-04

Analyzed By: PG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/L	25.0	23.6	94	90 - 110	2011-02-04

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115-6403129

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Standard (CCV-2)

QC Batch: 77416

Date Analyzed: 2011-02-04

Analyzed By: PG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Sulfate		mg/L	25.0	24.1	96	90 - 110	2011-02-04

Standard (CCV-1)

QC Batch: 77427

Date Analyzed: 2011-02-07

Analyzed By: PG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Sulfate		mg/L	25.0	24.7	99	90 - 110	2011-02-07

Standard (CCV-2)

QC Batch: 77427

Date Analyzed: 2011-02-07

Analyzed By: PG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Sulfate		mg/L	25.0	24.5	98	90 - 110	2011-02-07

Standard (CCV-1)

QC Batch: 77456

Date Analyzed: 2011-02-07

Analyzed By: PG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Sulfate		mg/L	25.0	25.5	102	90 - 110	2011-02-07

Standard (CCV-2)

QC Batch: 77456

Date Analyzed: 2011-02-07

Analyzed By: PG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Sulfate		mg/L	25.0	25.5	102	90 - 110	2011-02-07

XWO #: 11012511

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:

Celere

SITE MANAGER:

Jeff Kindley

PROJECT NO.:

115-6403129

PROJECT NAME:

Rock Creek #1 TB

LAB I.D.
NUMBERDATE
3011

TIME

MATRIX
COMP
GRAB
 Chavez Co W/M
 SAMPLE IDENTIFICATION

NUMBER OF CONTAINERS

FILTERED (Y/N)

HCL

HNO3

ICE

NONE

PRESERVATIVE
METHOD

BTX 8021B

TPH 8015 MOD. TX1005 (Ext. to C35)

PAH 8270

RCRA Metals Ag As Ba Cd Cr Pb Hg Se

TCLP Metals Ag As Ba Cd Cr Pb Hg Se

TCLP Volatiles

TCLP Semi Volatiles

RCI

GC/MS Vol. 8240/8260/624

GC/MS Semi. Vol. 8270/625

PCB's 8080/608

Pest. 809/608

Chloride

Gamma Spec.

Alpha Beta (Air)

PLM (Asbestos)

Major Anions/Cations, pH (TDS)

Sulfate

RELINQUISHED BY: (Signature)

Date: 1-25-11

Time: 11:27

RECEIVED BY: (Signature)

Date: 1-25-11

Time: 11:27

SAMPLED BY: (Print & Initial)

TJ KD

Date: 1-24-11

Time:

RELINQUISHED BY: (Signature)

Date: 1-25-11

Time: 10:00

RECEIVED BY: (Signature)

Date:

Time:

SAMPLE SHIPPED BY: (Circle)

FEDEX

BUS

AIRBILL #:

RELINQUISHED BY: (Signature)

Date:

Time:

RECEIVED BY: (Signature)

Date:

Time:

HAND DELIVERED

UPS

OTHER:

RECEIVING LABORATORY:

Tetra

ADDRESS:

CITY: Midland

STATE: TX

ZIP:

CONTACT:

PHONE:

RECEIVED BY: (Signature)

S. McCreary TA

DATE: 01/26/11

LS ZK957723

TIME: 925

TETRA TECH CONTACT PERSON:

Jeff Kindley

Results by:

RUSH Charges

Authorized:

Yes

No

SAMPLE CONDITION WHEN RECEIVED:

1.6 c intact

REMARKS:

Midland-BTEX, MS x Lubbock - McBride, 204

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



6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296 806•794•1296 FAX 806•794•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
6015 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

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

Report Date: May 4, 2011

Work Order: 11041530

Project Location: Chavez County, NM
Project Name: Celero/Rock Queen #1 TB
Project Number: 114-6403129

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

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
263909	MW-1	water	2011-04-13	10:30	2011-04-15
263910	MW-2	water	2011-04-13	11:00	2011-04-15
263911	MW-3	water	2011-04-13	11:05	2011-04-15
263912	MW-4	water	2011-04-13	10:50	2011-04-15
263913	MW-5	water	2011-04-13	10:40	2011-04-15
263914	MW-6	water	2011-04-13	11:30	2011-04-15
263915	MW-7	water	2011-04-13	11:20	2011-04-15
263916	RW-1	water	2011-04-13	10:40	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 31 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

Michael Abel

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

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Case Narrative

Samples for project Celero/Rock Queen #1 TB were received by TraceAnalysis, Inc. on 2011-04-15 and assigned to work order 11041530. Samples for work order 11041530 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	68300	2011-04-19 at 09:52	80470	2011-04-20 at 01:20
Chloride (IC)	E 300.0	68439	2011-04-25 at 14:24	80666	2011-04-26 at 15:33
Chloride (IC)	E 300.0	68477	2011-04-26 at 12:02	80692	2011-04-27 at 10:03
Chloride (IC)	E 300.0	68478	2011-04-26 at 13:03	80693	2011-04-27 at 10:06
SO4 (IC)	E 300.0	68439	2011-04-25 at 14:24	80666	2011-04-26 at 15:33
SO4 (IC)	E 300.0	68477	2011-04-26 at 12:02	80692	2011-04-27 at 10:03
SO4 (IC)	E 300.0	68478	2011-04-26 at 13:03	80693	2011-04-27 at 10:06
TDS	SM 2540C	68433	2011-04-25 at 12:18	80869	2011-05-02 at 09:35
TDS	SM 2540C	68476	2011-04-26 at 12:00	80871	2011-05-02 at 09:55

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 11041530 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: 263909 - MW-1

Laboratory: Midland
Analysis: BTEX
QC Batch: 80470
Prep Batch: 68300

Analytical Method: S 8021B
Date Analyzed: 2011-04-20
Sample Preparation: 2011-04-19

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene		1	0.00600	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	0.0528	mg/L	1	0.100	53	67.8 - 129
4-Bromofluorobenzene (4-BFB)		1	0.0654	mg/L	1	0.100	65	51.1 - 128

Sample: 263909 - MW-1

Laboratory: Midland
Analysis: Chloride (IC)
QC Batch: 80666
Prep Batch: 68439

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		1	168000	mg/L	5000	2.50

Sample: 263909 - MW-1

Laboratory: Midland
Analysis: SO4 (IC)
QC Batch: 80666
Prep Batch: 68439

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
Sulfate		1	2210	mg/L	50	2.50

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Sample: 263909 - MW-1

Laboratory: Midland
Analysis: TDS
QC Batch: 80869
Prep Batch: 68433

Analytical Method: SM 2540C
Date Analyzed: 2011-05-02
Sample Preparation: 2011-04-26

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Total Dissolved Solids		1	250000	mg/L	100	10.0

Sample: 263910 - MW-2

Laboratory: Midland
Analysis: BTEX
QC Batch: 80470
Prep Batch: 68300

Analytical Method: S 8021B
Date Analyzed: 2011-04-20
Sample Preparation: 2011-04-19

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	0.0966	mg/L	1	0.100	97	67.8 - 129
4-Bromofluorobenzene (4-BFB)		1	0.104	mg/L	1	0.100	104	51.1 - 128

Sample: 263910 - MW-2

Laboratory: Midland
Analysis: Chloride (IC)
QC Batch: 80666
Prep Batch: 68439

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		1	8270	mg/L	100	2.50

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Sample: 263910 - MW-2

Laboratory: Midland
Analysis: SO4 (IC)
QC Batch: 80666
Prep Batch: 68439

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
Sulfate		1	125	mg/L	5	2.50

Sample: 263910 - MW-2

Laboratory: Midland
Analysis: TDS
QC Batch: 80869
Prep Batch: 68433

Analytical Method: SM 2540C
Date Analyzed: 2011-05-02
Sample Preparation: 2011-04-26

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Total Dissolved Solids		1	29800	mg/L	100	10.0

Sample: 263911 - MW-3

Laboratory: Midland
Analysis: BTEX
QC Batch: 80470
Prep Batch: 68300

Analytical Method: S 8021B
Date Analyzed: 2011-04-20
Sample Preparation: 2011-04-19

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	0.0759	mg/L	1	0.100	76	67.8 - 129
4-Bromofluorobenzene (4-BFB)		1	0.0874	mg/L	1	0.100	87	51.1 - 128

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Sample: 263911 - MW-3

Laboratory:	Midland	Analytical Method:	E 300.0	Prep Method:	N/A
Analysis:	Chloride (IC)	Date Analyzed:	2011-04-27	Analyzed By:	AR
QC Batch:	80692	Sample Preparation:	2011-04-26	Prepared By:	AR
Prep Batch:	68477				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1	57800	mg/L	5000	2.50

Sample: 263911 - MW-3

Laboratory:	Midland	Analytical Method:	E 300.0	Prep Method:	N/A
Analysis:	SO4 (IC)	Date Analyzed:	2011-04-27	Analyzed By:	AR
QC Batch:	80692	Sample Preparation:	2011-04-26	Prepared By:	AR
Prep Batch:	68477				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Sulfate		1	1990	mg/L	50	2.50

Sample: 263911 - MW-3

Laboratory:	Midland	Analytical Method:	SM 2540C	Prep Method:	N/A
Analysis:	TDS	Date Analyzed:	2011-05-02	Analyzed By:	AR
QC Batch:	80869	Sample Preparation:	2011-04-26	Prepared By:	AR
Prep Batch:	68433				

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

Sample: 263912 - MW-4

Laboratory:	Midland	Analytical Method:	S 8021B	Prep Method:	S 5030B
Analysis:	BTEX	Date Analyzed:	2011-04-20	Analyzed By:	ME
QC Batch:	80470	Sample Preparation:	2011-04-19	Prepared By:	ME
Prep Batch:	68300				

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sample 263912 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	0.0928	mg/L	1	0.100	93	67.8 - 129
4-Bromofluorobenzene (4-BFB)		1	0.102	mg/L	1	0.100	102	51.1 - 128

Sample: 263912 - MW-4

Laboratory: Midland
Analysis: Chloride (IC)
QC Batch: 80692
Prep Batch: 68477

Analytical Method: E 300.0
Date Analyzed: 2011-04-27
Sample Preparation: 2011-04-26

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1	7870	mg/L	1000	2.50

Sample: 263912 - MW-4

Laboratory: Midland
Analysis: SO4 (IC)
QC Batch: 80692
Prep Batch: 68477

Analytical Method: E 300.0
Date Analyzed: 2011-04-27
Sample Preparation: 2011-04-26

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Sulfate		1	193	mg/L	5	2.50

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Sample: 263912 - MW-4

Laboratory: Midland
Analysis: TDS
QC Batch: 80869
Prep Batch: 68433

Analytical Method: SM 2540C
Date Analyzed: 2011-05-02
Sample Preparation: 2011-04-26

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Total Dissolved Solids		1	18500	mg/L	100	10.0

Sample: 263913 - MW-5

Laboratory: Midland
Analysis: BTEX
QC Batch: 80470
Prep Batch: 68300

Analytical Method: S 8021B
Date Analyzed: 2011-04-20
Sample Preparation: 2011-04-19

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	0.0927	mg/L	1	0.100	93	67.8 - 129
4-Bromofluorobenzene (4-BFB)		1	0.0941	mg/L	1	0.100	94	51.1 - 128

Sample: 263913 - MW-5

Laboratory: Midland
Analysis: Chloride (IC)
QC Batch: 80692
Prep Batch: 68477

Analytical Method: E 300.0
Date Analyzed: 2011-04-27
Sample Preparation: 2011-04-26

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1	62.7	mg/L	5	2.50

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Sample: 263913 - MW-5

Laboratory: Midland
Analysis: SO4 (IC)
QC Batch: 80692
Prep Batch: 68477

Analytical Method: E 300.0
Date Analyzed: 2011-04-27
Sample Preparation: 2011-04-26

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Sulfate		1	126	mg/L	5	2.50

Sample: 263913 - MW-5

Laboratory: Midland
Analysis: TDS
QC Batch: 80869
Prep Batch: 68433

Analytical Method: SM 2540C
Date Analyzed: 2011-05-02
Sample Preparation: 2011-04-26

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Total Dissolved Solids		1	458	mg/L	2	10.0

Sample: 263914 - MW-6

Laboratory: Midland
Analysis: BTEX
QC Batch: 80470
Prep Batch: 68300

Analytical Method: S 8021B
Date Analyzed: 2011-04-20
Sample Preparation: 2011-04-19

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene		1	0.00630	mg/L	1	0.00100
Toluene		1	0.00620	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	0.0610	mg/L	1	0.100	61	67.8 - 129
4-Bromofluorobenzene (4-BFB)		1	0.0759	mg/L	1	0.100	76	51.1 - 128

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Sample: 263914 - MW-6

Laboratory:	Midland	Analytical Method:	E 300.0	Prep Method:	N/A
Analysis:	Chloride (IC)	Date Analyzed:	2011-04-27	Analyzed By:	AR
QC Batch:	80692	Sample Preparation:	2011-04-26	Prepared By:	AR
Prep Batch:	68477				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1	92900	mg/L	5000	2.50

Sample: 263914 - MW-6

Laboratory:	Midland	Analytical Method:	E 300.0	Prep Method:	N/A
Analysis:	SO4 (IC)	Date Analyzed:	2011-04-27	Analyzed By:	AR
QC Batch:	80692	Sample Preparation:	2011-04-26	Prepared By:	AR
Prep Batch:	68477				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Sulfate		1	2310	mg/L	50	2.50

Sample: 263914 - MW-6

Laboratory:	Midland	Analytical Method:	SM 2540C	Prep Method:	N/A
Analysis:	TDS	Date Analyzed:	2011-05-02	Analyzed By:	AR
QC Batch:	80869	Sample Preparation:	2011-04-26	Prepared By:	AR
Prep Batch:	68433				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Total Dissolved Solids		1	146000	mg/L	100	10.0

Sample: 263915 - MW-7

Laboratory:	Midland	Analytical Method:	S 8021B	Prep Method:	S 5030B
Analysis:	BTEX	Date Analyzed:	2011-04-20	Analyzed By:	ME
QC Batch:	80470	Sample Preparation:	2011-04-19	Prepared By:	ME
Prep Batch:	68300				

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sample 263915 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	0.0610	mg/L	1	0.100	61	67.8 - 129
4-Bromofluorobenzene (4-BFB)		1	0.0744	mg/L	1	0.100	74	51.1 - 128

Sample: 263915 - MW-7

Laboratory: Midland
Analysis: Chloride (IC)
QC Batch: 80693
Prep Batch: 68478

Analytical Method: E 300.0
Date Analyzed: 2011-04-27
Sample Preparation: 2011-04-26

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: 263915 - MW-7

Laboratory: Midland
Analysis: SO4 (IC)
QC Batch: 80693
Prep Batch: 68478

Analytical Method: E 300.0
Date Analyzed: 2011-04-27
Sample Preparation: 2011-04-26

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Sulfate		1	2330	mg/L	50	2.50

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Sample: 263915 - MW-7

Laboratory: Midland

Analysis: TDS

QC Batch: 80871

Prep Batch: 68476

Analytical Method: SM 2540C

Date Analyzed: 2011-05-02

Sample Preparation: 2011-04-28

Prep Method: N/A

Analyzed By: AR

Prepared By: AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Total Dissolved Solids		1	177000	mg/L	100	10.0

Sample: 263916 - RW-1

Laboratory: Midland

Analysis: BTEX

QC Batch: 80470

Prep Batch: 68300

Analytical Method: S 8021B

Date Analyzed: 2011-04-20

Sample Preparation: 2011-04-19

Prep Method: S 5030B

Analyzed By: ME

Prepared By: ME

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene		1	0.0133	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	0.0589	mg/L	1	0.100	59	67.8 - 129
4-Bromofluorobenzene (4-BFB)		1	0.0765	mg/L	1	0.100	76	51.1 - 128

Sample: 263916 - RW-1

Laboratory: Midland

Analysis: Chloride (IC)

QC Batch: 80693

Prep Batch: 68478

Analytical Method: E 300.0

Date Analyzed: 2011-04-27

Sample Preparation: 2011-04-26

Prep Method: N/A

Analyzed By: AR

Prepared By: AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1	139000	mg/L	5000	2.50

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Sample: 263916 - RW-1

Laboratory:	Midland	Analytical Method:	E 300.0	Prep Method:	N/A
Analysis:	SO4 (IC)	Date Analyzed:	2011-04-27	Analyzed By:	AR
QC Batch:	80693	Sample Preparation:	2011-04-26	Prepared By:	AR
Prep Batch:	68478				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Sulfate		1	2680	mg/L	50	2.50

Sample: 263916 - RW-1

Laboratory:	Midland	Analytical Method:	SM 2540C	Prep Method:	N/A
Analysis:	TDS	Date Analyzed:	2011-05-02	Analyzed By:	AR
QC Batch:	80871	Sample Preparation:	2011-04-28	Prepared By:	AR
Prep Batch:	68476				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Total Dissolved Solids		1	222000	mg/L	100	10.0

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Method Blanks

Method Blank (1) QC Batch: 80470

QC Batch: 80470
Prep Batch: 68300

Date Analyzed: 2011-04-20
QC Preparation: 2011-04-19

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	0.0880	mg/L	1	0.100	88	70.2 - 118
4-Bromofluorobenzene (4-BFB)		1	0.0959	mg/L	1	0.100	96	47.3 - 116

Method Blank (1) QC Batch: 80666

QC Batch: 80666
Prep Batch: 68439

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	0.724	mg/L	2.5

Method Blank (1) QC Batch: 80666

QC Batch: 80666
Prep Batch: 68439

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

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: 80692

QC Batch: 80692
Prep Batch: 68477

Date Analyzed: 2011-04-27
QC Preparation: 2011-04-26

Analyzed By: AR
Prepared By: AR

Parameter	Flag	Cert	MDL Result	Units	RL
Chloride		1	0.571	mg/L	2.5

Method Blank (1) QC Batch: 80692

QC Batch: 80692
Prep Batch: 68477

Date Analyzed: 2011-04-27
QC Preparation: 2011-04-26

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: 80693

QC Batch: 80693
Prep Batch: 68478

Date Analyzed: 2011-04-27
QC Preparation: 2011-04-26

Analyzed By: AR
Prepared By: AR

Parameter	Flag	Cert	MDL Result	Units	RL
Chloride		1	0.691	mg/L	2.5

Method Blank (1) QC Batch: 80693

QC Batch: 80693
Prep Batch: 68478

Date Analyzed: 2011-04-27
QC Preparation: 2011-04-26

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: 80869

QC Batch: 80869
Prep Batch: 68433

Date Analyzed: 2011-05-02
QC Preparation: 2011-04-25

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: 80871

QC Batch: 80871
Prep Batch: 68476

Date Analyzed: 2011-05-02
QC Preparation: 2011-04-26

Analyzed By: AR
Prepared By: AR

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

Duplicates (1) Duplicated Sample: 263914

QC Batch: 80869
Prep Batch: 68433

Date Analyzed: 2011-05-02
QC Preparation: 2011-04-25

Analyzed By: AR
Prepared By: AR

Param		Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
Total Dissolved Solids	1	151000	146000	mg/L	100	3	10

Duplicates (1) Duplicated Sample: 263916

QC Batch: 80871
Prep Batch: 68476

Date Analyzed: 2011-05-02
QC Preparation: 2011-04-26

Analyzed By: AR
Prepared By: AR

Param		Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
Total Dissolved Solids	1	228000	222000	mg/L	100	3	10

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Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 80470
Prep Batch: 68300

Date Analyzed: 2011-04-20
QC Preparation: 2011-04-19

Analyzed By: ME
Prepared By: ME

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	0.0942	mg/L	1	0.100	<0.000400	94	76.8 - 110
Toluene		1	0.101	mg/L	1	0.100	<0.000300	101	81 - 108
Ethylbenzene		1	0.101	mg/L	1	0.100	<0.000300	101	78.8 - 118
Xylene		1	0.304	mg/L	1	0.300	<0.000333	101	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	0.0870	mg/L	1	0.100	<0.000400	87	76.8 - 110	8	20
Toluene		1	0.0940	mg/L	1	0.100	<0.000300	94	81 - 108	7	20
Ethylbenzene		1	0.0934	mg/L	1	0.100	<0.000300	93	78.8 - 118	8	20
Xylene		1	0.284	mg/L	1	0.300	<0.000333	95	80.3 - 119	7	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	0.0920	0.0856	mg/L	1	0.100	92	86	66.6 - 114
4-Bromofluorobenzene (4-BFB)		1	0.108	0.0993	mg/L	1	0.100	108	99	68.2 - 124

Laboratory Control Spike (LCS-1)

QC Batch: 80666
Prep Batch: 68439

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	27.3	mg/L	1	25.0	<0.265	109	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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Celero/Rock Queen #1 TB

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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	27.4	mg/L	1	25.0	<0.265	110	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: 80666
Prep Batch: 68439

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
Sulfate		1	25.8	mg/L	1	25.0	<0.177	103	90 - 110

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Sulfate		1	25.6	mg/L	1	25.0	<0.177	102	90 - 110	1	20

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

Laboratory Control Spike (LCS-1)

QC Batch: 80692
Prep Batch: 68477

Date Analyzed: 2011-04-27
QC Preparation: 2011-04-26

Analyzed By: AR
Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	27.5	mg/L	1	25.0	<0.265	110	90 - 110

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		1	27.5	mg/L	1	25.0	<0.265	110	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: 80692
Prep Batch: 68477

Date Analyzed: 2011-04-27
QC Preparation: 2011-04-26

Analyzed By: AR
Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Sulfate		1	27.3	mg/L	1	25.0	<0.177	109	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	27.1	mg/L	1	25.0	<0.177	108	90 - 110	1	20

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

Laboratory Control Spike (LCS-1)

QC Batch: 80693
Prep Batch: 68478

Date Analyzed: 2011-04-27
QC Preparation: 2011-04-26

Analyzed By: AR
Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	26.4	mg/L	1	25.0	<0.265	106	90 - 110

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		1	26.4	mg/L	1	25.0	<0.265	106	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: 80693
Prep Batch: 68478

Date Analyzed: 2011-04-27
QC Preparation: 2011-04-26

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.

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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: 80869
Prep Batch: 68433

Date Analyzed: 2011-05-02
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
Total Dissolved Solids		1	1030	mg/L	1	1000	<9.75	103	90 - 110

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Total Dissolved Solids		1	990	mg/L	1	1000	<9.75	99	90 - 110	4	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: 80871
Prep Batch: 68476

Date Analyzed: 2011-05-02
QC Preparation: 2011-04-26

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	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	1070	mg/L	1	1000	<9.75	107	90 - 110	3	10

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

Matrix Spike (MS-1) Spiked Sample: 263910

QC Batch: 80666
Prep Batch: 68439

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

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	10400	mg/L	100	2750	8280	77	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	10400	mg/L	100	2750	8280	77	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: 263910

QC Batch: 80666
Prep Batch: 68439

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
Sulfate		1	2470	mg/L	100	2750	167	84	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	2490	mg/L	100	2750	167	84	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: 263913

QC Batch: 80692
Prep Batch: 68477

Date Analyzed: 2011-04-27
QC Preparation: 2011-04-26

Analyzed By: AR
Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	338	mg/L	10	275	62.2	100	90 - 110

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		1	339	mg/L	10	275	62.2	101	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: 263913

QC Batch: 80692
Prep Batch: 68477

Date Analyzed: 2011-04-27
QC Preparation: 2011-04-26

Analyzed By: AR
Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Sulfate		1	373	mg/L	10	275	124	90	90 - 110

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Sulfate		1	373	mg/L	10	275	124	90	90 - 110	0	20

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

Matrix Spike (MS-1) Spiked Sample: 263916

QC Batch: 80693
Prep Batch: 68478

Date Analyzed: 2011-04-27
QC Preparation: 2011-04-26

Analyzed By: AR
Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	143000	mg/L	50	1380	132000	800	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	143000	mg/L	50	1380	132000	800	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: 263916

QC Batch: 80693
Prep Batch: 68478

Date Analyzed: 2011-04-27
QC Preparation: 2011-04-26

Analyzed By: AR
Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Sulfate		1	3590	mg/L	50	1380	2680	66	90 - 110

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

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Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Sulfate		1	3570	mg/L	50	1380	2680	65	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: 80470

Date Analyzed: 2011-04-20

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	0.0916	92	80 - 120	2011-04-20
Toluene		1	mg/L	0.100	0.0996	100	80 - 120	2011-04-20
Ethylbenzene		1	mg/L	0.100	0.0983	98	80 - 120	2011-04-20
Xylene		1	mg/L	0.300	0.298	99	80 - 120	2011-04-20

Standard (CCV-2)

QC Batch: 80470

Date Analyzed: 2011-04-20

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	0.0907	91	80 - 120	2011-04-20
Toluene		1	mg/L	0.100	0.0978	98	80 - 120	2011-04-20
Ethylbenzene		1	mg/L	0.100	0.0964	96	80 - 120	2011-04-20
Xylene		1	mg/L	0.300	0.290	97	80 - 120	2011-04-20

Standard (ICV-1)

QC Batch: 80666

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	23.1	92	90 - 110	2011-04-26

Standard (ICV-1)

QC Batch: 80666

Date Analyzed: 2011-04-26

Analyzed By: AR

Report Date: May 4, 2011
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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	24.2	97	90 - 110	2011-04-26

Standard (CCV-1)

QC Batch: 80666

Date Analyzed: 2011-04-26

Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1	mg/L	25.0	23.1	92	90 - 110	2011-04-26

Standard (CCV-1)

QC Batch: 80666

Date Analyzed: 2011-04-26

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	24.0	96	90 - 110	2011-04-26

Standard (ICV-1)

QC Batch: 80692

Date Analyzed: 2011-04-27

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	23.1	92	90 - 110	2011-04-27

Standard (ICV-1)

QC Batch: 80692

Date Analyzed: 2011-04-27

Analyzed By: AR

Report Date: May 4, 2011
114-6403129

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Celero/Rock Queen #1 TB

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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	24.1	96	90 - 110	2011-04-27

Standard (CCV-1)

QC Batch: 80692

Date Analyzed: 2011-04-27

Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1	mg/L	25.0	23.8	95	90 - 110	2011-04-27

Standard (CCV-1)

QC Batch: 80692

Date Analyzed: 2011-04-27

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	24.3	97	90 - 110	2011-04-27

Standard (ICV-1)

QC Batch: 80693

Date Analyzed: 2011-04-27

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	23.8	95	90 - 110	2011-04-27

Standard (ICV-1)

QC Batch: 80693

Date Analyzed: 2011-04-27

Analyzed By: AR

Report Date: May 4, 2011
114-6403129

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Celero/Rock Queen #1 TB

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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	24.3	97	90 - 110	2011-04-27

Standard (CCV-1)

QC Batch: 80693

Date Analyzed: 2011-04-27

Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1	mg/L	25.0	23.1	92	90 - 110	2011-04-27

Standard (CCV-1)

QC Batch: 80693

Date Analyzed: 2011-04-27

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	24.4	98	90 - 110	2011-04-27

Appendix

Laboratory Certifications

	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.

211041530

Analysis Request of Chain of Custody Record



TETRA TECH

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

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ANALYSIS REQUEST
(Circle or Specify Method No.)

CLIENT NAME:

Celero

SITE MANAGER:

Jeff Kindley

PROJECT NO.:

115-6403129

PROJECT NAME:

Rock Queen #1 TB

LAB I.D.
NUMBER

DATE

TIME

MATRIX

COMP.

GRAB

SAMPLE IDENTIFICATION

NUMBER OF CONTAINERS

FILTERED (Y/N)

HCL

HNO3

ICE

NONE

PRESERVATIVE
METHOD

BTEX 8021B

TPH 8015 MOD. TX1005 (Ext. to C35)

PAH 8270

PCRA Metals Ag As Ba Cd Cr Pb Hg Se

TCLP Metals Ag As Ba Cd Cr Pb Hg Se

TCLP Volatiles

TCLP Semi Volatiles

FCI

GC/MS Vol. 8240/8260/624

GC/MS Semi. Vol. 8270/625

PCB's 8080/608

Pest. 808/608

Chloride

Gamma Spec.

Alpha Beta (Air)

PLM (Asbestos)

Major Anions/Cations, pH, TDS

Sulfates

263909

4/13

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mw-1

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