Analytical and Quality Control Report

William Little
WTS
P.O. Box 363
Building 126 3RD Floor
WSMR, NM, 88002

Report Date: January 19, 2007

Work Order: 7011002

Project Name: HELSTF Groundwater Samples
Project Number: 7

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
113420	HLSF-0085-HMW-161-0107	water	2007-01-09	13:15	2007-01-09

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

Dr. Blair Leftwich, Director

Standard Flags

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

Analytical Report

Sample: 113420 - HLSF-0085-HMW-161-0107

Analysis:	Alkalinity	Analytical Method:	SM 2320B	Prep Method:	N/A
QC Batch:	33694	Date Analyzed:	2007-01-16	Analyzed By:	JG
Prep Batch:	29267	Sample Preparation:	2007-01-16	Prepared By:	JR

Parameter	Flag	Result	RL	Units	Dilution	RL
Hydroxide Alkalinity		<1.00		mg/L as CaCo3	1	1.00
Carbonate Alkalinity		<1.00		mg/L as CaCo3	1	1.00
Bicarbonate Alkalinity		**208**		mg/L as CaCo3	1	4.00
Total Alkalinity		**208**		mg/L as CaCo3	1	4.00

Sample: 113420 - HLSF-0085-HMW-161-0107

Analysis:	Conductivity	Analytical Method:	SM 2510B	Prep Method:	N/A
QC Batch:	33613	Date Analyzed:	2007-01-10	Analyzed By:	DR
Prep Batch:	29207	Sample Preparation:	2007-01-10	Prepared By:	JR

Parameter	Flag	Result	RL	Units	Dilution	RL
Specific Conductance		**17600**		µMHOS/cm	1	0.00

Sample: 113420 - HLSF-0085-HMW-161-0107

Analysis:	Cu, Dissolved	Analytical Method:	S 6010B	Prep Method:	S 3005A
QC Batch:	33563	Date Analyzed:	2007-01-11	Analyzed By:	RR
Prep Batch:	29119	Sample Preparation:	2007-01-10	Prepared By:	TS

Parameter	Flag	Result	RL	Units	Dilution	RL
Dissolved Copper		<0.0125		mg/L	1	0.0125

Sample: 113420 - HLSF-0085-HMW-161-0107

Analysis:	Cu, Total	Analytical Method:	S 6010B	Prep Method:	S 3010A
QC Batch:	33565	Date Analyzed:	2007-01-11	Analyzed By:	RR
Prep Batch:	29147	Sample Preparation:	2007-01-11	Prepared By:	TS

Parameter	Flag	Result	RL	Units	Dilution	RL
Total Copper		<0.00500		mg/L	1	0.00500

Sample: 113420 - HLSF-0085-HMW-161-0107

Analysis:	Ion Chromatography	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	33640	Date Analyzed:	2007-01-11	Analyzed By:	WB
Prep Batch:	29225	Sample Preparation:	2007-01-11	Prepared By:	WB
QC Batch:	33752	Date Analyzed:	2007-01-12	Analyzed By:	WB
Prep Batch:	29287	Sample Preparation:	2007-01-11	Prepared By:	WB
QC Batch:	33757	Date Analyzed:	2007-01-16	Analyzed By:	WB
Prep Batch:	29291	Sample Preparation:	2007-01-17	Prepared By:	WB
QC Batch:	33976	Date Analyzed:	2007-01-25	Analyzed By:	WB
Prep Batch:	29502	Sample Preparation:	2007-01-25	Prepared By:	WB

Parameter	Flag	Result	RL Units	Dilution	RL
Bromide		<1.00	mg/L	5	0.200
Chloride		**3590**	mg/L	500	0.500
Fluoride		**1.78**	mg/L	5	0.200
Nitrite-N		<1.00	mg/L	5	0.200
Nitrate-N		**133**	mg/L	5	0.200
Sulfate		**7790**	mg/L	500	0.500

Sample: 113420 - HLSF-0085-HMW-161-0107

Analysis:	P, Total	Analytical Method:	S 6010B	Prep Method:	S 3010A
QC Batch:	33565	Date Analyzed:	2007-01-11	Analyzed By:	RR
Prep Batch:	29147	Sample Preparation:	2007-01-11	Prepared By:	TS

Parameter	Flag	Result	RL Units	Dilution	RL
Total Phosphorous		<0.0500	mg/L	1	0.0500

Sample: 113420 - HLSF-0085-HMW-161-0107

Analysis:	pH	Analytical Method:	SM 4500-H+	Prep Method:	N/A
QC Batch:	33696	Date Analyzed:	2007-01-10	Analyzed By:	DR
Prep Batch:	29269	Sample Preparation:	2007-01-10	Prepared By:	JR

Parameter	Flag	Result	RL Units	Dilution	RL
pH		**7.25**	s.u.	1	0.00

Sample: 113420 - HLSF-0085-HMW-161-0107

Analysis:	RCRA 7 Metals (Dissolved)	Analytical Method:	S 6010B	Prep Method:	S 3005A
QC Batch:	33563	Date Analyzed:	2007-01-11	Analyzed By:	RR
Prep Batch:	29119	Sample Preparation:	2007-01-10	Prepared By:	TS

Parameter	Flag	Result	RL Units	Dilution	RL
Dissolved Silver		<0.00200	mg/L	1	0.00200

continued . . .

sample 113420 continued . . .

Parameter	Flag	Result	RL	Units	Dilution	RL
Dissolved Arsenic		<0.00500		mg/L	1	0.00500
Dissolved Barium		<0.0100		mg/L	1	0.0100
Dissolved Cadmium		<0.00100		mg/L	1	0.00100
Dissolved Chromium		**0.587**		mg/L	1	0.00500
Dissolved Lead		<0.00500		mg/L	1	0.00500
Dissolved Selenium		**0.141**		mg/L	1	0.0100

Sample: 113420 - HLSF-0085-HMW-161-0107

Analysis:	Salts, Dissolved	Analytical Method:	S 6010B	Prep Method:	S 3005A
QC Batch:	33636	Date Analyzed:	2007-01-12	Analyzed By:	TP
Prep Batch:	29119	Sample Preparation:	2007-01-10	Prepared By:	TS

Parameter	Flag	Result	RL	Units	Dilution	RL
Dissolved Potassium		**74.0**		mg/L	1	0.500
Dissolved Sodium		**3390**		mg/L	100	0.500

Sample: 113420 - HLSF-0085-HMW-161-0107

Analysis:	Salts, Total	Analytical Method:	S 6010B	Prep Method:	S 3010A
QC Batch:	33702	Date Analyzed:	2007-01-16	Analyzed By:	TP
Prep Batch:	29147	Sample Preparation:	2007-01-11	Prepared By:	TS

Parameter	Flag	Result	RL	Units	Dilution	RL
Total Potassium		**74.2**		mg/L	1	0.500
Total Sodium		**3490**		mg/L	100	0.500

Sample: 113420 - HLSF-0085-HMW-161-0107

Analysis:	TDS	Analytical Method:	SM 2540C	Prep Method:	N/A
QC Batch:	33651	Date Analyzed:	2007-01-11	Analyzed By:	JG
Prep Batch:	29234	Sample Preparation:	2007-01-11	Prepared By:	JR

Parameter	Flag	Result	RL	Units	Dilution	RL
Total Dissolved Solids		**16200**		mg/L	1	5.00

Sample: 113420 - HLSF-0085-HMW-161-0107

Analysis:	TOC	Analytical Method:	E 415.1	Prep Method:	N/A
QC Batch:	33817	Date Analyzed:	2007-01-19	Analyzed By:	KV
Prep Batch:	29372	Sample Preparation:		Prepared By:	KV

Parameter	Flag	Result	RL	Units	Dilution	RL
Total Organic Carbon		**1.36**		mg/L	1	1.00

Sample: 113420 - HLSF-0085-HMW-161-0107

Analysis:	Total 8 Metals	Analytical Method:	S 6010B	Prep Method:	S 3010A
QC Batch:	33565	Date Analyzed:	2007-01-11	Analyzed By:	RR
Prep Batch:	29147	Sample Preparation:	2007-01-11	Prepared By:	TS
Analysis:	Total 8 Metals	Analytical Method:	S 7470A	Prep Method:	N/A
QC Batch:	33682	Date Analyzed:	2007-01-16	Analyzed By:	TP
Prep Batch:	29251	Sample Preparation:	2007-01-15	Prepared By:	TP

Parameter	Flag	Result	RL	Units	Dilution	RL
Total Silver		<0.00200		mg/L	1	0.00200
Total Arsenic		<0.0100		mg/L	1	0.0100
Total Barium		<0.0100		mg/L	1	0.0100
Total Cadmium		<0.00100		mg/L	1	0.00100
Total Chromium		**0.540**		mg/L	1	0.00500
Total Mercury		<0.000200		mg/L	1	0.000200
Total Lead		<0.00500		mg/L	1	0.00500
Total Selenium		**0.127**		mg/L	1	0.0100

Sample: 113420 - HLSF-0085-HMW-161-0107

Analysis:	Zn, Dissolved	Analytical Method:	S 6010B	Prep Method:	S 3005A
QC Batch:	33563	Date Analyzed:	2007-01-11	Analyzed By:	RR
Prep Batch:	29119	Sample Preparation:	2007-01-10	Prepared By:	TS

Parameter	Flag	Result	RL	Units	Dilution	RL
Dissolved Zinc		<0.00500		mg/L	1	0.00500

Sample: 113420 - HLSF-0085-HMW-161-0107

Analysis:	Zn, Total	Analytical Method:	S 6010B	Prep Method:	S 3010A
QC Batch:	33565	Date Analyzed:	2007-01-11	Analyzed By:	RR
Prep Batch:	29147	Sample Preparation:	2007-01-11	Prepared By:	TS

Parameter	Flag	Result	RL	Units	Dilution	RL
Total Zinc		<0.00500		mg/L	1	0.00500

Method Blank (1) QC Batch: 33563

QC Batch:	33563	Date Analyzed:	2007-01-11	Analyzed By:	RR
Prep Batch:	29119	QC Preparation:	2007-01-10	Prepared By:	TS

Parameter	Flag	MDL Result	Units	RL
Dissolved Copper		<0.00127	mg/L	0.0125

Method Blank (1) QC Batch: 33563

QC Batch: 33563 | Date Analyzed: 2007-01-11 | Analyzed By: RR
Prep Batch: 29119 | QC Preparation: 2007-01-10 | Prepared By: TS

Parameter	Flag	MDL Result	Units	RL
Dissolved Zinc		<0.00300	mg/L	0.005

Method Blank (1) QC Batch: 33563

QC Batch: 33563 | Date Analyzed: 2007-01-11 | Analyzed By: RR
Prep Batch: 29119 | QC Preparation: 2007-01-10 | Prepared By: TS

Parameter	Flag	MDL Result	Units	RL
Dissolved Silver		<0.000199	mg/L	0.002
Dissolved Arsenic		<0.00360	mg/L	0.005
Dissolved Barium		<0.000450	mg/L	0.01
Dissolved Cadmium		<0.000577	mg/L	0.001
Dissolved Chromium		<0.00357	mg/L	0.005
Dissolved Lead		<0.00398	mg/L	0.005
Dissolved Selenium		<0.00556	mg/L	0.01

Method Blank (1) QC Batch: 33565

QC Batch: 33565 | Date Analyzed: 2007-01-11 | Analyzed By: RR
Prep Batch: 29147 | QC Preparation: 2007-01-11 | Prepared By: TS

Parameter	Flag	MDL Result	Units	RL
Total Copper		<0.00127	mg/L	0.005

Method Blank (1) QC Batch: 33565

QC Batch: 33565 | Date Analyzed: 2007-01-11 | Analyzed By: RR
Prep Batch: 29147 | QC Preparation: 2007-01-11 | Prepared By: TS

Parameter	Flag	MDL Result	Units	RL
Total Phosphorous		<0.0229	mg/L	0.05

Method Blank (1) QC Batch: 33565

QC Batch:	33565	Date Analyzed:	2007-01-11	Analyzed By:	RR
Prep Batch:	29147	QC Preparation:	2007-01-11	Prepared By:	TS

Parameter	Flag	MDL Result	Units	RL
Total Zinc		<0.000666	mg/L	0.005

Method Blank (1) QC Batch: 33565

QC Batch:	33565	Date Analyzed:	2007-01-11	Analyzed By:	RR
Prep Batch:	29147	QC Preparation:	2007-01-11	Prepared By:	TS

Parameter	Flag	MDL Result	Units	RL
Total Silver		<0.000274	mg/L	0.002
Total Arsenic		<0.00489	mg/L	0.01
Total Barium		<0.000450	mg/L	0.01
Total Cadmium		<0.000268	mg/L	0.001
Total Chromium		<0.00357	mg/L	0.005
Total Lead		<0.00310	mg/L	0.005
Total Selenium		<0.00556	mg/L	0.01

Method Blank (1) QC Batch: 33613

QC Batch:	33613	Date Analyzed:	2007-01-10	Analyzed By:	DR
Prep Batch:	29207	QC Preparation:	2007-01-10	Prepared By:	DR

Parameter	Flag	MDL Result	Units	RL
Specific Conductance		0.00	μMHOS/cm	

Method Blank (1) QC Batch: 33636

QC Batch:	33636	Date Analyzed:	2007-01-12	Analyzed By:	TP
Prep Batch:	29119	QC Preparation:	2007-01-10	Prepared By:	TS

Parameter	Flag	MDL Result	Units	RL
Dissolved Potassium		<0.0297	mg/L	0.5
Dissolved Sodium		2.21	mg/L	0.5

Method Blank (1) QC Batch: 33640

QC Batch: 33640 | Date Analyzed: 2007-01-11 | Analyzed By: WB
Prep Batch: 29225 | QC Preparation: 2007-01-11 | Prepared By: WB

Parameter	Flag	MDL Result	Units	RL
Fluoride		<0.0119	mg/L	0.2
Nitrite-N		<0.0128	mg/L	0.2
Nitrate-N		<0.0106	mg/L	0.2

Method Blank (1) QC Batch: 33651

QC Batch: 33651 | Date Analyzed: 2007-01-11 | Analyzed By: JG
Prep Batch: 29234 | QC Preparation: 2007-01-11 | Prepared By: JG

Parameter	Flag	MDL Result	Units	RL
Total Dissolved Solids		<5.00	mg/L	5

Method Blank (1) QC Batch: 33682

QC Batch: 33682 | Date Analyzed: 2007-01-16 | Analyzed By: TP
Prep Batch: 29251 | QC Preparation: 2007-01-15 | Prepared By: TP

Parameter	Flag	MDL Result	Units	RL
Total Mercury		<0.0000217	mg/L	0.0002

Method Blank (1) QC Batch: 33694

QC Batch: 33694 | Date Analyzed: 2007-01-16 | Analyzed By: JG
Prep Batch: 29267 | QC Preparation: 2007-01-16 | Prepared By: JG

Parameter	Flag	MDL Result	Units	RL
Hydroxide Alkalinity		<1.00	mg/L as CaCo3	1
Carbonate Alkalinity		<1.00	mg/L as CaCo3	1
Bicarbonate Alkalinity		<4.00	mg/L as CaCo3	4
Total Alkalinity		<2.38	mg/L as CaCo3	4

Method Blank (1) QC Batch: 33702

QC Batch: 33702 | Date Analyzed: 2007-01-16 | Analyzed By: TP
Prep Batch: 29147 | QC Preparation: 2007-01-11 | Prepared By: TS

Parameter	Flag	MDL Result	Units	RL
Total Potassium		0.598	mg/L	0.5
Total Sodium		1.06	mg/L	0.5

Method Blank (1) QC Batch: 33752

QC Batch: 33752 Date Analyzed: 2007-01-12 Analyzed By: WB
Prep Batch: 29287 QC Preparation: 2007-01-11 Prepared By: WB

Parameter	Flag	MDL Result	Units	RL
Chloride		<0.0181	mg/L	0.5

Method Blank (1) QC Batch: 33757

QC Batch: 33757 Date Analyzed: 2007-01-16 Analyzed By: WB
Prep Batch: 29291 QC Preparation: 2007-01-17 Prepared By: WB

Parameter	Flag	MDL Result	Units	RL
Bromide		<0.0429	mg/L	0.2

Method Blank (1) QC Batch: 33817

QC Batch: 33817 Date Analyzed: 2007-01-19 Analyzed By: KV
Prep Batch: 29372 QC Preparation: 2007-01-19 Prepared By: KV

Parameter	Flag	MDL Result	Units	RL
Total Organic Carbon		<0.382	mg/L	1

Method Blank (1) QC Batch: 33976

QC Batch: 33976 Date Analyzed: 2007-01-25 Analyzed By: WB
Prep Batch: 29502 QC Preparation: 2007-01-25 Prepared By: WB

Parameter	Flag	MDL Result	Units	RL
Sulfate		<0.0485	mg/L	0.5

Duplicates (1)

QC Batch: 33613 | Date Analyzed: 2007-01-10 | Analyzed By: DR
Prep Batch: 29207 | QC Preparation: 2007-01-10 | Prepared By: DR

Param	Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
Specific Conductance	13900	13900	µMHOS/cm	1	0	6.7

Duplicates (1)

QC Batch: 33651 | Date Analyzed: 2007-01-11 | Analyzed By: JG
Prep Batch: 29234 | QC Preparation: 2007-01-11 | Prepared By: JG

Param	Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
Total Dissolved Solids	16400	16200	mg/L	1	1	20

Duplicates (1)

QC Batch: 33694 | Date Analyzed: 2007-01-16 | Analyzed By: JG
Prep Batch: 29267 | QC Preparation: 2007-01-16 | Prepared By: JG

Param	Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
Hydroxide Alkalinity	<1.00	<1.00	mg/L as CaCo3	1	0	6.3
Carbonate Alkalinity	<1.00	<1.00	mg/L as CaCo3	1	0	6.3
Bicarbonate Alkalinity	206	202	mg/L as CaCo3	1	2	6.3
Total Alkalinity	206	202	mg/L as CaCo3	1	2	6.3

Duplicates (1)

QC Batch: 33696 | Date Analyzed: 2007-01-10 | Analyzed By: DR
Prep Batch: 29269 | QC Preparation: 2007-01-10 | Prepared By: DR

Param	Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
pH	7.35	7.35	s.u.	1	0	20

Laboratory Control Spike (LCS-1)

QC Batch: 33563 | Date Analyzed: 2007-01-11 | Analyzed By: RR
Prep Batch: 29119 | QC Preparation: 2007-01-10 | Prepared By: TS

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Dissolved Copper	0.123	mg/L	1	0.125	<0.00127	98	84.3 - 114

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
Dissolved Copper	0.119	mg/L	1	0.125	<0.00127	95	84.3 - 114	3	20

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

Laboratory Control Spike (LCS-1)

QC Batch: 33563 Date Analyzed: 2007-01-11 Analyzed By: RR
Prep Batch: 29119 QC Preparation: 2007-01-10 Prepared By: TS

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Dissolved Zinc	0.227	mg/L	1	0.250	<0.00300	91	84.7 - 113

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
Dissolved Zinc	0.224	mg/L	1	0.250	<0.00300	90	84.7 - 113	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: 33563 Date Analyzed: 2007-01-11 Analyzed By: RR
Prep Batch: 29119 QC Preparation: 2007-01-10 Prepared By: TS

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Dissolved Silver	0.118	mg/L	1	0.125	<0.000199	94	86.2 - 116
Dissolved Arsenic	0.515	mg/L	1	0.500	<0.00360	103	78.7 - 116
Dissolved Barium	0.953	mg/L	1	1.00	<0.000450	95	85 - 114
Dissolved Cadmium	0.231	mg/L	1	0.250	<0.000577	92	83.3 - 113
Dissolved Chromium	0.102	mg/L	1	0.100	<0.00357	102	83 - 112
Dissolved Lead	0.492	mg/L	1	0.500	<0.00398	98	81.1 - 111
Dissolved Selenium	0.455	mg/L	1	0.500	<0.00556	91	69.6 - 111

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
Dissolved Silver	0.116	mg/L	1	0.125	<0.000199	93	86.2 - 116	2	20
Dissolved Arsenic	0.447	mg/L	1	0.500	<0.00360	89	78.7 - 116	14	20
Dissolved Barium	0.943	mg/L	1	1.00	<0.000450	94	85 - 114	1	20
Dissolved Cadmium	0.231	mg/L	1	0.250	<0.000577	92	83.3 - 113	0	20
Dissolved Chromium	0.0980	mg/L	1	0.100	<0.00357	98	83 - 112	4	20
Dissolved Lead	0.491	mg/L	1	0.500	<0.00398	98	81.1 - 111	0	20
Dissolved Selenium	0.432	mg/L	1	0.500	<0.00556	86	69.6 - 111	5	20

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

Laboratory Control Spike (LCS-1)

QC Batch: 33565 | Date Analyzed: 2007-01-11 | Analyzed By: RR
Prep Batch: 29147 | QC Preparation: 2007-01-11 | Prepared By: TS

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Total Copper	0.133	mg/L	1	0.125	<0.00127	106	83.4 - 117

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 Copper	0.132	mg/L	1	0.125	<0.00127	106	83.4 - 117	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: 33565 | Date Analyzed: 2007-01-11 | Analyzed By: RR
Prep Batch: 29147 | QC Preparation: 2007-01-11 | Prepared By: TS

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Total Phosphorous	0.507	mg/L	1	0.500	<0.0229	101	87.3 - 114

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 Phosphorous	0.480	mg/L	1	0.500	<0.0229	96	87.3 - 114	6	20

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

Laboratory Control Spike (LCS-1)

QC Batch: 33565 | Date Analyzed: 2007-01-11 | Analyzed By: RR
Prep Batch: 29147 | QC Preparation: 2007-01-11 | Prepared By: TS

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Total Zinc	0.245	mg/L	1	0.250	<0.000666	98	82.9 - 109

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 Zinc	0.238	mg/L	1	0.250	<0.000666	95	82.9 - 109	3	20

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

Laboratory Control Spike (LCS-1)

QC Batch: 33565 | Date Analyzed: 2007-01-11 | Analyzed By: RR
Prep Batch: 29147 | QC Preparation: 2007-01-11 | Prepared By: TS

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Total Silver	0.127	mg/L	1	0.125	<0.000274	102	87.9 - 111
Total Arsenic	0.526	mg/L	1	0.500	<0.00489	105	86.8 - 108
Total Barium	1.05	mg/L	1	1.00	<0.000450	105	88.8 - 110
Total Cadmium	0.255	mg/L	1	0.250	<0.000268	102	86.8 - 110
Total Chromium	0.0990	mg/L	1	0.100	<0.00357	99	86.5 - 115
Total Lead	0.525	mg/L	1	0.500	<0.00310	105	83 - 109
Total Selenium	0.457	mg/L	1	0.500	<0.00556	91	75 - 112

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 Silver	0.126	mg/L	1	0.125	<0.000274	101	87.9 - 111	1	20
Total Arsenic	0.508	mg/L	1	0.500	<0.00489	102	86.8 - 108	4	20
Total Barium	1.03	mg/L	1	1.00	<0.000450	103	88.8 - 110	2	20
Total Cadmium	0.248	mg/L	1	0.250	<0.000268	99	86.8 - 110	3	20
Total Chromium	0.0930	mg/L	1	0.100	<0.00357	93	86.5 - 115	6	20
Total Lead	0.507	mg/L	1	0.500	<0.00310	101	83 - 109	4	20
Total Selenium	0.463	mg/L	1	0.500	<0.00556	93	75 - 112	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: 33636 Date Analyzed: 2007-01-12 Analyzed By: TP
Prep Batch: 29119 QC Preparation: 2007-01-10 Prepared By: TS

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Dissolved Potassium	50.9	mg/L	1	50.0	<0.0297	102	78.8 - 114
Dissolved Sodium	49.8	mg/L	1	50.0	<0.0309	100	79.4 - 123

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
Dissolved Potassium	51.5	mg/L	1	50.0	<0.0297	103	78.8 - 114	1	20
Dissolved Sodium	49.8	mg/L	1	50.0	<0.0309	100	79.4 - 123	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: 33640 Date Analyzed: 2007-01-11 Analyzed By: WB
Prep Batch: 29225 QC Preparation: 2007-01-11 Prepared By: WB

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Fluoride	2.41	mg/L	1	2.50	<0.0119	96	90 - 110
Nitrite-N	2.51	mg/L	1	2.50	<0.0128	100	90 - 110
Nitrate-N	2.50	mg/L	1	2.50	<0.0106	100	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
Fluoride	2.47	mg/L	1	2.50	<0.0119	99	90 - 110	2	20
Nitrite-N	2.52	mg/L	1	2.50	<0.0128	101	90 - 110	0	20
Nitrate-N	2.51	mg/L	1	2.50	<0.0106	100	90 - 110	0	20

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

Laboratory Control Spike (LCS-1)

QC Batch: 33682 Date Analyzed: 2007-01-16 Analyzed By: TP
Prep Batch: 29251 QC Preparation: 2007-01-15 Prepared By: TP

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Total Mercury	0.000980	mg/L	1	0.00100	<0.0000217	98	85.8 - 107.3

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 Mercury	0.00101	mg/L	1	0.00100	<0.0000217	101	85.8 - 107.3	3	20

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

Laboratory Control Spike (LCS-1)

QC Batch: 33702 Date Analyzed: 2007-01-16 Analyzed By: TP
Prep Batch: 29147 QC Preparation: 2007-01-11 Prepared By: TS

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Total Potassium	53.5	mg/L	1	50.0	<0.0297	107	85 - 115
Total Sodium	54.2	mg/L	1	50.0	<0.0309	108	87.3 - 124

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 Potassium	52.5	mg/L	1	50.0	<0.0297	105	85 - 115	2	20
Total Sodium	53.4	mg/L	1	50.0	<0.0309	107	87.3 - 124	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: 33752 Date Analyzed: 2007-01-12 Analyzed By: WB
Prep Batch: 29287 QC Preparation: 2007-01-11 Prepared By: WB

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	11.7	mg/L	1	12.5	<0.0181	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	11.5	mg/L	1	12.5	<0.0181	92	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: 33757 Date Analyzed: 2007-01-16 Analyzed By: WB
Prep Batch: 29291 QC Preparation: 2007-01-17 Prepared By: WB

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Bromide	2.35	mg/L	1	2.50	<0.0429	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
Bromide	2.47	mg/L	1	2.50	<0.0429	99	90 - 110	5	20

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

Laboratory Control Spike (LCS-1)

QC Batch: 33817 Date Analyzed: 2007-01-19 Analyzed By: KV
Prep Batch: 29372 QC Preparation: 2007-01-19 Prepared By: KV

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Total Organic Carbon	8.83	mg/L	1	10.0	<0.382	88	70 - 130

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 Organic Carbon	8.25	mg/L	1	10.0	<0.382	82	70 - 130	7	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: 33976 Date Analyzed: 2007-01-25 Analyzed By: WB
Prep Batch: 29502 QC Preparation: 2007-01-25 Prepared By: WB

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Sulfate	13.5	mg/L	1	12.5	<0.0485	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
Sulfate	12.7	mg/L	1	12.5	<0.0485	102	90 - 110	6	20

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

Matrix Spike (MS-1) Spiked Sample: 113374

QC Batch: 33563 | Date Analyzed: 2007-01-11 | Analyzed By: RR
Prep Batch: 29119 | QC Preparation: 2007-01-10 | Prepared By: TS

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Dissolved Copper	0.124	mg/L	1	0.125	<0.00127	99	81.5 - 125

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
Dissolved Copper	0.122	mg/L	1	0.125	<0.00127	98	81.5 - 125	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: 113374

QC Batch: 33563 | Date Analyzed: 2007-01-11 | Analyzed By: RR
Prep Batch: 29119 | QC Preparation: 2007-01-10 | Prepared By: TS

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Dissolved Zinc	0.226	mg/L	1	0.250	<0.00300	90	80.4 - 120

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
Dissolved Zinc	0.225	mg/L	1	0.250	<0.00300	90	80.4 - 120	0	20

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

Matrix Spike (MS-1) Spiked Sample: 113374

QC Batch: 33563 | Date Analyzed: 2007-01-11 | Analyzed By: RR
Prep Batch: 29119 | QC Preparation: 2007-01-10 | Prepared By: TS

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Dissolved Silver	0.118	mg/L	1	0.125	<0.000199	94	90.1 - 120
Dissolved Arsenic	5.20	mg/L	1	0.500	4.76	88	75 - 114
Dissolved Barium	0.946	mg/L	1	1.00	0.013	93	75 - 125
Dissolved Cadmium	0.233	mg/L	1	0.250	<0.000577	93	75 - 112
Dissolved Chromium	0.0980	mg/L	1	0.100	<0.00357	98	75 - 121
Dissolved Lead	0.489	mg/L	1	0.500	<0.00398	98	75 - 111
Dissolved Selenium	0.477	mg/L	1	0.500	<0.00556	95	75 - 118

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
Dissolved Silver	0.120	mg/L	1	0.125	<0.000199	96	90.1 - 120	2	20

continued . . .

matrix spikes continued . . .

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Dissolved Arsenic	5.19	mg/L	1	0.500	4.76	86	75 - 114	0	20
Dissolved Barium	0.928	mg/L	1	1.00	0.013	92	75 - 125	2	20
Dissolved Cadmium	0.231	mg/L	1	0.250	<0.000577	92	75 - 112	1	20
Dissolved Chromium	0.0960	mg/L	1	0.100	<0.00357	96	75 - 121	2	20
Dissolved Lead	0.499	mg/L	1	0.500	<0.00398	100	75 - 111	2	20
Dissolved Selenium	0.442	mg/L	1	0.500	<0.00556	88	75 - 118	8	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: 113419

QC Batch: 33565 | Date Analyzed: 2007-01-11 | Analyzed By: RR
Prep Batch: 29147 | QC Preparation: 2007-01-11 | Prepared By: TS

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Total Copper	0.118	mg/L	1	0.125	<0.00127	94	83.8 - 118

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
Total Copper	0.123	mg/L	1	0.125	<0.00127	98	83.8 - 118	4	20

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

Matrix Spike (MS-1) Spiked Sample: 113419

QC Batch: 33565 | Date Analyzed: 2007-01-11 | Analyzed By: RR
Prep Batch: 29147 | QC Preparation: 2007-01-11 | Prepared By: TS

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Total Phosphorous	0.464	mg/L	1	0.500	<0.0229	93	70.1 - 115

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
Total Phosphorous	0.507	mg/L	1	0.500	<0.0229	101	70.1 - 115	9	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: 113419

QC Batch: 33565 | Date Analyzed: 2007-01-11 | Analyzed By: RR
Prep Batch: 29147 | QC Preparation: 2007-01-11 | Prepared By: TS

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Total Zinc	0.227	mg/L	1	0.250	<0.000666	91	75.5 - 113

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
Total Zinc	0.231	mg/L	1	0.250	<0.000666	92	75.5 - 113	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: 113419

QC Batch: 33565 | Date Analyzed: 2007-01-11 | Analyzed By: RR
Prep Batch: 29147 | QC Preparation: 2007-01-11 | Prepared By: TS

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Total Silver	0.120	mg/L	1	0.125	<0.000274	96	88.2 - 114
Total Arsenic	0.434	mg/L	1	0.500	<0.00489	87	75.9 - 116
Total Barium	0.878	mg/L	1	1.00	<0.000450	88	64.9 - 129
Total Cadmium	0.221	mg/L	1	0.250	<0.000268	88	66.5 - 121
Total Chromium	0.661	mg/L	1	0.100	0.564	97	69.2 - 129
Total Lead	0.472	mg/L	1	0.500	<0.00310	94	71.9 - 115
Total Selenium	0.591	mg/L	1	0.500	0.097	99	66.8 - 116

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
Total Silver	0.116	mg/L	1	0.125	<0.000274	93	88.2 - 114	3	20
Total Arsenic	0.444	mg/L	1	0.500	<0.00489	89	75.9 - 116	2	20
Total Barium	0.861	mg/L	1	1.00	<0.000450	86	64.9 - 129	2	20
Total Cadmium	0.223	mg/L	1	0.250	<0.000268	89	66.5 - 121	1	20
Total Chromium	0.664	mg/L	1	0.100	0.564	100	69.2 - 129	0	20
Total Lead	0.482	mg/L	1	0.500	<0.00310	96	71.9 - 115	2	20
Total Selenium	0.552	mg/L	1	0.500	0.097	91	66.8 - 116	7	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: 113374

QC Batch: 33636 | Date Analyzed: 2007-01-12 | Analyzed By: TP
Prep Batch: 29119 | QC Preparation: 2007-01-10 | Prepared By: TS

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Dissolved Potassium	67.4	mg/L	1	50.0	15.9	103	76.8 - 117
Dissolved Sodium [1]	662	mg/L	1	50.0	623	78	84.2 - 120

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
Dissolved Potassium	68.5	mg/L	1	50.0	15.9	105	76.8 - 117	2	20

continued . . .

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

matrix spikes continued . . .

Param		MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Dissolved Sodium	[2]	661	mg/L	1	50.0	623	76	84.2 - 120	0	20

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

Matrix Spike (MS-1) Spiked Sample: 113688

QC Batch: 33640 Date Analyzed: 2007-01-11 Analyzed By: WB
Prep Batch: 29225 QC Preparation: 2007-01-11 Prepared By: WB

Param		MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Fluoride		15.2	mg/L	5	12.5	3.5968	93	73.4 - 119
Nitrite-N	[3]	4.16	mg/L	5	12.5	<0.0640	33	90.5 - 115
Nitrate-N	[4]	23.3	mg/L	5	12.5	1.72	173	88.4 - 118

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
Fluoride		15.2	mg/L	5	12.5	3.5968	93	73.4 - 119	0	20
Nitrite-N	[5]	4.17	mg/L	5	12.5	<0.0640	33	90.5 - 115	0	20
Nitrate-N	[6]	23.4	mg/L	5	12.5	1.72	173	88.4 - 118	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: 113769

QC Batch: 33682 Date Analyzed: 2007-01-16 Analyzed By: TP
Prep Batch: 29251 QC Preparation: 2007-01-15 Prepared By: TP

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Total Mercury	0.000970	mg/L	1	0.00100	<0.0000217	97	77.5 - 108.9

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
Total Mercury	0.000930	mg/L	1	0.00100	<0.0000217	93	77.5 - 108.9	4	20

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

Matrix Spike (MS-1) Spiked Sample: 113463

QC Batch: 33702 Date Analyzed: 2007-01-16 Analyzed By: TP
Prep Batch: 29147 QC Preparation: 2007-01-11 Prepared By: TS

[2]Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.
[3]Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.
[4]Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.
[5]Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.
[6]Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Total Potassium	101	mg/L	1	50.0	49.4	103	75 - 125
Total Sodium [7]	1200	mg/L	1	50.0	1170	60	75 - 125

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
Total Potassium	103	mg/L	1	50.0	49.4	107	75 - 125	2	20
Total Sodium	1220	mg/L	1	50.0	1170	100	75 - 125	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: 113420

QC Batch: 33752 Date Analyzed: 2007-01-12 Analyzed By: WB
Prep Batch: 29287 QC Preparation: 2007-01-11 Prepared By: WB

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	9630	mg/L	500	6250	3590	97	10 - 188

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	9220	mg/L	500	6250	3590	90	10 - 188	4	20

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

Matrix Spike (MS-1) Spiked Sample: 113420

QC Batch: 33757 Date Analyzed: 2007-01-16 Analyzed By: WB
Prep Batch: 29291 QC Preparation: 2007-01-17 Prepared By: WB

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Bromide [8]	19.9	mg/L	5	12.5	<0.214	159	91.1 - 123

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
Bromide [9]	20.4	mg/L	5	12.5	<0.214	163	91.1 - 123	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: 113420

QC Batch: 33817 Date Analyzed: 2007-01-19 Analyzed By: KV
Prep Batch: 29372 QC Preparation: 2007-01-19 Prepared By: KV

[7]Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.
[8]Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.
[9]Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Total Organic Carbon	10.9	mg/L	1	10.0	1.36	95	70 - 130

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
Total Organic Carbon	12.0	mg/L	1	10.0	1.36	106	70 - 130	10	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: 114541

QC Batch: 33976 Date Analyzed: 2007-01-25 Analyzed By: WB
Prep Batch: 29502 QC Preparation: 2007-01-25 Prepared By: WB

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Sulfate	1140	mg/L	50	625	465	108	83.1 - 114

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	1150	mg/L	50	625	465	110	83.1 - 114	1	20

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

Standard (ICV-1)

QC Batch: 33563 Date Analyzed: 2007-01-11 Analyzed By: RR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Dissolved Copper		mg/L	1.00	0.936	94	90 - 110	2007-01-11

Standard (ICV-1)

QC Batch: 33563 Date Analyzed: 2007-01-11 Analyzed By: RR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Dissolved Zinc		mg/L	1.00	0.961	96	90 - 110	2007-01-11

Standard (ICV-1)

QC Batch: 33563 Date Analyzed: 2007-01-11 Analyzed By: RR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Dissolved Silver		mg/L	0.125	0.120	96	90 - 110	2007-01-11
Dissolved Arsenic		mg/L	1.00	0.969	97	90 - 110	2007-01-11
Dissolved Barium		mg/L	1.00	0.954	95	90 - 110	2007-01-11
Dissolved Cadmium		mg/L	1.00	0.954	95	95 - 105	2007-01-11
Dissolved Chromium		mg/L	1.00	0.911	91	90 - 110	2007-01-11
Dissolved Lead		mg/L	1.00	0.976	98	90 - 110	2007-01-11
Dissolved Selenium		mg/L	1.00	0.924	92	90 - 110	2007-01-11

Standard (CCV-1)

QC Batch: 33563 Date Analyzed: 2007-01-11 Analyzed By: RR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Dissolved Copper		mg/L	1.00	1.07	107	90 - 110	2007-01-11

Standard (CCV-1)

QC Batch: 33563 Date Analyzed: 2007-01-11 Analyzed By: RR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Dissolved Zinc		mg/L	1.00	1.03	103	90 - 110	2007-01-11

Standard (CCV-1)

QC Batch: 33563 Date Analyzed: 2007-01-11 Analyzed By: RR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Dissolved Silver		mg/L	0.125	0.127	102	90 - 110	2007-01-11
Dissolved Arsenic		mg/L	1.00	1.04	104	90 - 110	2007-01-11
Dissolved Barium		mg/L	1.00	1.06	106	90 - 110	2007-01-11
Dissolved Cadmium		mg/L	1.00	1.06	106	90 - 110	2007-01-11
Dissolved Chromium		mg/L	1.00	1.06	106	90 - 110	2007-01-11
Dissolved Lead		mg/L	1.00	1.06	106	90 - 110	2007-01-11
Dissolved Selenium		mg/L	1.00	1.08	108	90 - 110	2007-01-11

Standard (ICV-1)

QC Batch: 33565 Date Analyzed: 2007-01-11 Analyzed By: RR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Copper		mg/L	1.00	0.936	94	90 - 110	2007-01-11

Standard (ICV-1)

QC Batch: 33565 Date Analyzed: 2007-01-11 Analyzed By: RR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Phosphorous		mg/L	5.00	4.51	90	90 - 110	2007-01-11

Standard (ICV-1)

QC Batch: 33565 Date Analyzed: 2007-01-11 Analyzed By: RR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Zinc		mg/L	1.00	0.961	96	90 - 110	2007-01-11

Standard (ICV-1)

QC Batch: 33565 Date Analyzed: 2007-01-11 Analyzed By: RR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Silver		mg/L	0.125	0.120	96	90 - 110	2007-01-11
Total Arsenic		mg/L	1.00	0.969	97	90 - 110	2007-01-11
Total Barium		mg/L	1.00	0.954	95	90 - 110	2007-01-11
Total Cadmium		mg/L	1.00	0.954	95	90 - 110	2007-01-11
Total Chromium		mg/L	1.00	0.911	91	90 - 110	2007-01-11
Total Lead		mg/L	1.00	0.976	98	90 - 110	2007-01-11
Total Selenium		mg/L	1.00	0.924	92	90 - 110	2007-01-11

Standard (CCV-1)

QC Batch: 33565 Date Analyzed: 2007-01-11 Analyzed By: RR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Copper		mg/L	1.00	1.02	102	90 - 110	2007-01-11

Standard (CCV-1)

QC Batch: 33565 Date Analyzed: 2007-01-11 Analyzed By: RR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Phosphorous		mg/L	5.00	4.90	98	90 - 110	2007-01-11

Standard (CCV-1)

QC Batch: 33565 Date Analyzed: 2007-01-11 Analyzed By: RR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Zinc		mg/L	1.00	1.05	105	90 - 110	2007-01-11

Standard (CCV-1)

QC Batch: 33565 Date Analyzed: 2007-01-11 Analyzed By: RR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Silver		mg/L	0.125	0.131	105	90 - 110	2007-01-11
Total Arsenic		mg/L	1.00	1.03	103	90 - 110	2007-01-11
Total Barium		mg/L	1.00	1.02	102	90 - 110	2007-01-11
Total Cadmium		mg/L	1.00	0.987	99	90 - 110	2007-01-11
Total Chromium		mg/L	1.00	0.986	99	90 - 110	2007-01-11
Total Lead		mg/L	1.00	0.983	98	90 - 110	2007-01-11
Total Selenium		mg/L	1.00	1.02	102	90 - 110	2007-01-11

Standard (ICV-1)

QC Batch: 33613 Date Analyzed: 2007-01-10 Analyzed By: DR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Specific Conductance		µMHOS/cm	1410	1400	99	96.7 - 108	2007-01-10

Standard (CCV-1)

QC Batch: 33613 Date Analyzed: 2007-01-10 Analyzed By: DR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Specific Conductance		µMHOS/cm	1410	1400	99	96.7 - 108	2007-01-10

Standard (ICV-1)

QC Batch: 33636 Date Analyzed: 2007-01-12 Analyzed By: TP

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Dissolved Potassium		mg/L	50.0	50.2	100	90 - 110	2007-01-12
Dissolved Sodium		mg/L	50.0	50.2	100	90 - 110	2007-01-12

Standard (CCV-1)

QC Batch: 33636 Date Analyzed: 2007-01-12 Analyzed By: TP

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Dissolved Potassium		mg/L	50.0	49.7	99	90 - 110	2007-01-12
Dissolved Sodium		mg/L	50.0	49.7	99	90 - 110	2007-01-12

Standard (ICV-1)

QC Batch: 33640 Date Analyzed: 2007-01-11 Analyzed By: WB

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Fluoride		mg/L	2.50	2.42	97	90 - 110	2007-01-11
Nitrite-N		mg/L	2.50	2.52	101	90 - 110	2007-01-11
Nitrate-N		mg/L	2.50	2.49	100	90 - 110	2007-01-11

Standard (CCV-1)

QC Batch: 33640 Date Analyzed: 2007-01-11 Analyzed By: WB

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Fluoride		mg/L	2.50	2.49	100	90 - 110	2007-01-11
Nitrite-N		mg/L	2.50	2.52	101	90 - 110	2007-01-11
Nitrate-N		mg/L	2.50	2.50	100	90 - 110	2007-01-11

Standard (ICV-1)

QC Batch: 33651 Date Analyzed: 2007-01-11 Analyzed By: JG

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Dissolved Solids		mg/L	1000	998	100	94.4 - 106	2007-01-11

Standard (CCV-1)

QC Batch: 33651 Date Analyzed: 2007-01-11 Analyzed By: JG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Dissolved Solids		mg/L	1000	1010	101	94.4 - 106	2007-01-11

Standard (ICV-1)

QC Batch: 33682 Date Analyzed: 2007-01-16 Analyzed By: TP

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Mercury		mg/L	0.00100	0.00101	101	80 - 120	2007-01-16

Standard (CCV-1)

QC Batch: 33682 Date Analyzed: 2007-01-16 Analyzed By: TP

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Mercury		mg/L	0.00100	0.000990	99	80 - 120	2007-01-16

Standard (ICV-1)

QC Batch: 33694 Date Analyzed: 2007-01-16 Analyzed By: JG

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Hydroxide Alkalinity		mg/L as CaCo3	0.00	<1.00		0 - 105	2007-01-16
Carbonate Alkalinity		mg/L as CaCo3	0.00	236		0 - 105	2007-01-16
Bicarbonate Alkalinity		mg/L as CaCo3	0.00	8.00		0 - 105	2007-01-16
Total Alkalinity		mg/L as CaCo3	250	244	98	93.7 - 99.9	2007-01-16

Standard (CCV-1)

QC Batch: 33694 Date Analyzed: 2007-01-16 Analyzed By: JG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Hydroxide Alkalinity		mg/L as CaCo3	0.00	<1.00		0 - 105	2007-01-16
Carbonate Alkalinity		mg/L as CaCo3	0.00	236		0 - 105	2007-01-16
Bicarbonate Alkalinity		mg/L as CaCo3	0.00	14.0		0 - 105	2007-01-16
Total Alkalinity		mg/L as CaCo3	250	250	100	93.7 - 99.9	2007-01-16

Standard (ICV-1)

QC Batch: 33696 Date Analyzed: 2007-01-10 Analyzed By: DR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
pH		s.u.	7.00	6.98	100	98.8 - 101	2007-01-10

Standard (CCV-1)

QC Batch: 33696 Date Analyzed: 2007-01-10 Analyzed By: DR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
pH		s.u.	7.00	7.00	100	98.8 - 101	2007-01-10

Standard (ICV-1)

QC Batch: 33702 Date Analyzed: 2007-01-16 Analyzed By: TP

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Potassium		mg/L	50.0	51.8	104	90 - 110	2007-01-16
Total Sodium		mg/L	50.0	52.0	104	90 - 110	2007-01-16

Standard (CCV-1)

QC Batch: 33702 Date Analyzed: 2007-01-16 Analyzed By: TP

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Potassium		mg/L	50.0	50.0	100	90 - 110	2007-01-16
Total Sodium		mg/L	50.0	50.5	101	90 - 110	2007-01-16

Standard (ICV-1)

QC Batch: 33752 Date Analyzed: 2007-01-12 Analyzed By: WB

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/L	12.5	11.6	93	90 - 110	2007-01-12

Standard (CCV-1)

QC Batch: 33752 Date Analyzed: 2007-01-12 Analyzed By: WB

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/L	12.5	11.6	93	90 - 110	2007-01-12

Standard (ICV-1)

QC Batch: 33757 Date Analyzed: 2007-01-16 Analyzed By: WB

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Bromide		mg/L	2.50	2.40	96	90 - 110	2007-01-16

Standard (CCV-1)

QC Batch: 33757 Date Analyzed: 2007-01-16 Analyzed By: WB

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Bromide		mg/L	2.50	2.51	100	90 - 110	2007-01-16

Standard (ICV-1)

QC Batch: 33817 Date Analyzed: 2007-01-19 Analyzed By: KV

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Organic Carbon		mg/L	5.00	4.41	88	80 - 120	2007-01-19

Standard (CCV-1)

QC Batch: 33817 Date Analyzed: 2007-01-19 Analyzed By: KV

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Organic Carbon		mg/L	5.00	4.74	95	80 - 120	2007-01-19

Standard (ICV-1)

QC Batch: 33976 Date Analyzed: 2007-01-25 Analyzed By: WB

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Sulfate		mg/L	12.5	13.5	108	90 - 110	2007-01-25

Standard (CCV-1)

QC Batch: 33976 Date Analyzed: 2007-01-25 Analyzed By: WB

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Sulfate		mg/L	12.5	12.6	101	90 - 110	2007-01-25