Microbac

Laboratory Report Number: L12020220

Results for the mercury section of the report were missing. Incorrect qualifiers were used for some of the mercury results.

Mark Lyon
Environmental Waste Solutions
2440 Louisiana Blvd
Albuquerque, NM 87110

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Stephanie Mossburg – Team Chemist/Data Specialist
(740) 373-4071
Stephanie.Mossburg@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on March 14 2012

David Vandenberg – Managing Director

State of Origin: NM
Accrediting Authority: N/A ID:N/A
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L12020220
Lab Project #: 3005.011
Project Name: White Sands MR
Lab Contact: Stephanie Mossburg

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

There were no discrepancies.

Discrepancy	Resolution

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #
0010325	H	0.0		1002239551060004575000874824308815

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	Were correct perservatives used? (water only)	Yes
11	Were pH ranges acceptable? (voa's excluded)	Yes
12	Were VOA samples free of headspace (less than 6mm)?	NA

Microbac Laboratories ● Ohio Valley Division
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www.microbac.com

Microbac

Lab Report #: L12020220
Lab Project #: 3005.011
Project Name: White Sands MR
Lab Contact: Stephanie Mossburg

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
MPL25-0212-1	L12020220-01	02/06/2012 15:05	02/08/2012 11:10
SMW1-0212-1	L12020220-02	02/07/2012 09:50	02/08/2012 11:10
SMW4-0212-1	L12020220-03	02/07/2012 12:05	02/08/2012 11:10

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Certificate of Analysis

Sample #:	L12020220-01	**PrePrep Method:**	N/A	**Instrument:**	PE-ICP2
Client ID:	MPL25-0212-1	**Prep Method:**	3005A	**Prep Date:**	02/09/2012 06:53
Matrix:	Water	**Analytical Method:**	6010B	**Cal Date:**	02/09/2012 10:02
Workgroup #:	WG389167	**Analyst:**	KHR	**Run Date:**	02/09/2012 11:22
Collect Date:	02/06/2012 15:05	**Dilution:**	1	**File ID:**	P2.020912.112256
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Aluminum, Total	7429-90-5	0.143		0.100	0.0500
Beryllium, Total	7440-41-7		U	0.00200	0.00100
Boron, Total	7440-42-8		U	0.100	0.0500
Calcium, Total	7440-70-2	50.2		0.200	0.100
Iron, Total	7439-89-6	0.232		0.100	0.0500
Magnesium, Total	7439-95-4	9.86		0.500	0.250
Molybdenum, Total	7439-98-7		U	0.0100	0.00500
Potassium, Total	7440-09-7	2.38		1.00	0.500
Sodium, Total	7440-23-5	27.7		0.500	0.250
Tin, Total	7440-31-5		U	0.500	0.250
Vanadium, Total	7440-62-2		U	0.0100	0.00500
Zinc, Total	7440-66-6	0.0102	J	0.0200	0.0100

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Sample #:	L12020220-01	**PrePrep Method:**	N/A	**Instrument:**	ELAN-ICP
Client ID:	MPL25-0212-1	**Prep Method:**	3015	**Prep Date:**	02/09/2012 06:42
Matrix:	Water	**Analytical Method:**	6020	**Cal Date:**	02/09/2012 09:14
Workgroup #:	WG389145	**Analyst:**	JYH	**Run Date:**	02/09/2012 13:31
Collect Date:	02/06/2012 15:05	**Dilution:**	1	**File ID:**	EL.020912.133137
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Antimony, Total	7440-36-0		U	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00155		0.00100	0.000500
Barium, Total	7440-39-3	0.0683		0.00300	0.00150
Cadmium, Total	7440-43-9		U	0.000600	0.000300
Chromium, Total	7440-47-3	0.00199	J	0.00200	0.00100
Cobalt, Total	7440-48-4		U	0.00100	0.000500
Copper, Total	7440-50-8		U	0.00200	0.00100
Lead, Total	7439-92-1		U	0.00100	0.000500
Manganese, Total	7439-96-5	0.00318		0.00200	0.00100
Nickel, Total	7440-02-0	0.00236	J	0.00400	0.00200

Certificate of Analysis

Analyte	CAS #	Result	Qual	LOQ	LOD
Selenium, Total	7782-49-2	0.00534		0.00100	0.000500
Silver, Total	7440-22-4		U	0.00100	0.000500
Thallium, Total	7440-28-0		U	0.000200	0.000100

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Sample #:	L12020220-01	**PrePrep Method:**	N/A	**Instrument:**	HYDRA
Client ID:	MPL25-0212-1	**Prep Method:**	7470A	**Prep Date:**	02/09/2012 09:11
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	02/10/2012 12:44
Workgroup #:	WG389240	**Analyst:**	PDM	**Run Date:**	02/10/2012 13:05
Collect Date:	02/06/2012 15:05	**Dilution:**	1	**File ID:**	HY.021012.130554
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Mercury	7439-97-6	0.000120	J	0.000200	0.000100

J	Estimated value ; the analyte concentration was less than the LOQ.

Sample #:	L12020220-01	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	MPL25-0212-1	**Prep Method:**	300.0	**Prep Date:**	02/15/2012 18:06
Matrix:	Water	**Analytical Method:**	300.0	**Cal Date:**	02/10/2012 10:32
Workgroup #:	WG389618	**Analyst:**	JBK	**Run Date:**	02/15/2012 20:25
Collect Date:	02/06/2012 15:05	**Dilution:**	1	**File ID:**	I10215122025.42
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Fluoride	16984-48-8	0.215		0.200	0.100
Sulfate	14808-79-8	57.2		1.00	0.500

Sample #:	L12020220-01	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	MPL25-0212-1	**Prep Method:**	300.0	**Prep Date:**	02/15/2012 18:06
Matrix:	Water	**Analytical Method:**	300.0	**Cal Date:**	02/10/2012 10:32
Workgroup #:	WG389618	**Analyst:**	JBK	**Run Date:**	02/16/2012 11:56
Collect Date:	02/06/2012 15:05	**Dilution:**	5	**File ID:**	I10216121156.73
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Chloride	16887-00-6	52.9		1.00	0.500

Certificate of Analysis

Sample #:	L12020220-01	**PrePrep Method:**	N/A	**Instrument:**	ORION-4STAR
Client ID:	MPL25-0212-1	**Prep Method:**	9040C	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	9040C	**Cal Date:**	
Workgroup #:	WG389103	**Analyst:**	HJR	**Run Date:**	02/08/2012 14:35
Collect Date:	02/06/2012 15:05	**Dilution:**	1	**File ID:**	OS12021013593001
Sample Tag:		**Units:**	UNITS		

Analyte	CAS #	Result	Qual	LOQ	LOD
Corrosivity pH	10-29-7	7.75		0.000	0.000

Sample #:	L12020220-01	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	MPL25-0212-1	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	02/09/2012 11:13
Workgroup #:	WG389142	**Analyst:**	DIH	**Run Date:**	02/09/2012 11:17
Collect Date:	02/06/2012 15:05	**Dilution:**	1	**File ID:**	SC120209003.015
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Alkalinity, Total (as CaCO3)		83.8		20.0	10.0

Sample #:	L12020220-01	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	MPL25-0212-1	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	02/09/2012 11:13
Workgroup #:	WG389142	**Analyst:**	DIH	**Run Date:**	02/09/2012 11:17
Collect Date:	02/06/2012 15:05	**Dilution:**	1	**File ID:**	SC120209003.015
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Alkalinity, Bicarbonate (as CaCO3)		83.8		20.0	10.0

Sample #:	L12020220-01	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	MPL25-0212-1	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	02/09/2012 11:13
Workgroup #:	WG389142	**Analyst:**	DIH	**Run Date:**	02/09/2012 11:17
Collect Date:	02/06/2012 15:05	**Dilution:**	1	**File ID:**	SC120209003.015
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Alkalinity, Carbonate (as CaCO3)			U	20.0	10.0

U	Analyte was not detected. The concentration is below the reported LOD.

Certificate of Analysis

Sample #:	L12020220-01	**PrePrep Method:**	N/A	**Instrument:**	UV-120-1V
Client ID:	MPL25-0212-1	**Prep Method:**	SM4500-CN-I	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-CN-I	**Cal Date:**	02/14/2012 10:45
Workgroup #:	WG389443	**Analyst:**	DLP	**Run Date:**	02/14/2012 13:45
Collect Date:	02/06/2012 15:05	**Dilution:**	1	**File ID:**	1V.1202141345-09
Sample Tag:	D01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Cyanide, Weak/Dissociable	57-12-5		U	0.0100	0.00500

U	Analyte was not detected. The concentration is below the reported LOD.

Sample #:	L12020220-01	**PrePrep Method:**	N/A	**Instrument:**	UV-120-1V
Client ID:	MPL25-0212-1	**Prep Method:**	9014-9010C	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	9014-9010C	**Cal Date:**	02/14/2012 10:45
Workgroup #:	WG389320	**Analyst:**	DLP	**Run Date:**	02/14/2012 12:00
Collect Date:	02/06/2012 15:05	**Dilution:**	1	**File ID:**	1V.1202141200-16
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Cyanide	57-12-5	0.00707	J	0.0100	0.00500

J	Estimated value ; the analyte concentration was less than the LOQ.

Sample #:	L12020220-01	**PrePrep Method:**	N/A	**Instrument:**	UV-120-1V
Client ID:	MPL25-0212-1	**Prep Method:**	SM4500-CN-C,G	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-CN-C,G	**Cal Date:**	02/14/2012 10:45
Workgroup #:	WG389446	**Analyst:**	DLP	**Run Date:**	02/14/2012 13:40
Collect Date:	02/06/2012 15:05	**Dilution:**	1	**File ID:**	1V.1202141340-08
Sample Tag:	D02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Cyanide, Amenable to Chlor.	57-12-5	0.00574	J	0.0100	0.00500

J	Estimated value ; the analyte concentration was less than the LOQ.

Sample #:	L12020220-01	**PrePrep Method:**	N/A	**Instrument:**	YSI-32
Client ID:	MPL25-0212-1	**Prep Method:**	120.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	120.1	**Cal Date:**	
Workgroup #:	WG389827	**Analyst:**	DLP	**Run Date:**	02/16/2012 13:45
Collect Date:	02/06/2012 15:05	**Dilution:**	1	**File ID:**	32.1202161345-03
Sample Tag:		**Units:**	umhos/cm		

Analyte	CAS #	Result	Qual	LOQ	LOD
Conductivity		483		1.00	0.500

Certificate of Analysis

Sample #:	L12020220-01	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	MPL25-0212-1	**Prep Method:**	350.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	350.1	**Cal Date:**	02/14/2012 11:13
Workgroup #:	WG389495	**Analyst:**	JBK	**Run Date:**	02/14/2012 11:36
Collect Date:	02/06/2012 15:05	**Dilution:**	1	**File ID:**	SC120214002.033
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Nitrogen, Ammonia	7664-41-7	0.0664	J	0.100	0.0500

J	Estimated value ; the analyte concentration was less than the LOQ.

Sample #:	L12020220-01	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	MPL25-0212-1	**Prep Method:**	353.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	353.2	**Cal Date:**	02/14/2012 11:13
Workgroup #:	WG389640	**Analyst:**	JBK	**Run Date:**	02/15/2012 11:13
Collect Date:	02/06/2012 15:05	**Dilution:**	8	**File ID:**	SC12021615495801
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Nitrate-Nitrite (as N)		8.57		0.400	0.200

Sample #:	L12020220-01	**PrePrep Method:**	N/A	**Instrument:**	UV-120-1V
Client ID:	MPL25-0212-1	**Prep Method:**	SM4500-P-E-20th	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-P-E-20th	**Cal Date:**	12/21/2011 14:35
Workgroup #:	WG389101	**Analyst:**	HJR	**Run Date:**	02/08/2012 14:30
Collect Date:	02/06/2012 15:05	**Dilution:**	1	**File ID:**	1V.1202081430-05
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Orthophosphate	14265-44-2		U	0.0500	0.0250

U	Analyte was not detected. The concentration is below the reported LOD.

Sample #:	L12020220-01	**PrePrep Method:**	N/A	**Instrument:**	OVEN
Client ID:	MPL25-0212-1	**Prep Method:**	160.1/SM2540C	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	160.1	**Cal Date:**	
Workgroup #:	WG389178	**Analyst:**	HJR	**Run Date:**	02/09/2012 11:10
Collect Date:	02/06/2012 15:05	**Dilution:**	1	**File ID:**	EN.1202091110-04
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Total Dissolved Solids		282		20.0	10.0

Certificate of Analysis

Sample #:	L12020220-01	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	MPL25-0212-1	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	12/06/2011 09:40
Workgroup #:	WG389146	**Analyst:**	DIH	**Run Date:**	02/09/2012 22:35
Collect Date:	02/06/2012 15:05	**Dilution:**	1	**File ID:**	TC02092012.041
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Total Organic Carbon		1.23		1.00	0.500

Sample #:	L12020220-01	**PrePrep Method:**	N/A	**Instrument:**	OVEN
Client ID:	MPL25-0212-1	**Prep Method:**	160.2/SM2540D	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	160.2	**Cal Date:**	
Workgroup #:	WG389078	**Analyst:**	HJR	**Run Date:**	02/08/2012 13:29
Collect Date:	02/06/2012 15:05	**Dilution:**	1	**File ID:**	EN.1202081329-17
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Total Suspended Solids			U	5.00	2.50

Sample #:	L12020220-02	**PrePrep Method:**	N/A	**Instrument:**	PE-ICP2
Client ID:	SMW1-0212-1	**Prep Method:**	3005A	**Prep Date:**	02/09/2012 06:53
Matrix:	Water	**Analytical Method:**	6010B	**Cal Date:**	02/09/2012 10:02
Workgroup #:	WG389167	**Analyst:**	KHR	**Run Date:**	02/09/2012 11:43
Collect Date:	02/07/2012 09:50	**Dilution:**	1	**File ID:**	P2.020912.114337
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Aluminum, Total	7429-90-5	0.0585	J	0.100	0.0500
Beryllium, Total	7440-41-7		U	0.00200	0.00100
Boron, Total	7440-42-8		U	0.100	0.0500
Calcium, Total	7440-70-2	33.5		0.200	0.100
Iron, Total	7439-89-6	0.177		0.100	0.0500
Magnesium, Total	7439-95-4	8.07		0.500	0.250
Molybdenum, Total	7439-98-7		U	0.0100	0.00500
Potassium, Total	7440-09-7	2.05		1.00	0.500
Sodium, Total	7440-23-5	26.0		0.500	0.250
Tin, Total	7440-31-5		U	0.500	0.250
Vanadium, Total	7440-62-2		U	0.0100	0.00500
Zinc, Total	7440-66-6	0.0151	J	0.0200	0.0100

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Certificate of Analysis

Sample #:	L12020220-02	**PrePrep Method:**	N/A	**Instrument:**	ELAN-ICP
Client ID:	SMW1-0212-1	**Prep Method:**	3015	**Prep Date:**	02/09/2012 06:42
Matrix:	Water	**Analytical Method:**	6020	**Cal Date:**	02/09/2012 09:14
Workgroup #:	WG389145	**Analyst:**	JYH	**Run Date:**	02/09/2012 13:39
Collect Date:	02/07/2012 09:50	**Dilution:**	1	**File ID:**	EL.020912.133924
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Antimony, Total	7440-36-0		U	0.00100	0.000500
Arsenic, Total	7440-38-2	0.000769	J	0.00100	0.000500
Barium, Total	7440-39-3	0.0759		0.00300	0.00150
Cadmium, Total	7440-43-9		U	0.000600	0.000300
Chromium, Total	7440-47-3		U	0.00200	0.00100
Cobalt, Total	7440-48-4		U	0.00100	0.000500
Copper, Total	7440-50-8		U	0.00200	0.00100
Lead, Total	7439-92-1		U	0.00100	0.000500
Manganese, Total	7439-96-5	0.00269		0.00200	0.00100
Nickel, Total	7440-02-0		U	0.00400	0.00200
Selenium, Total	7782-49-2	0.00267		0.00100	0.000500
Silver, Total	7440-22-4		U	0.00100	0.000500
Thallium, Total	7440-28-0		U	0.000200	0.000100

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Sample #:	L12020220-02	**PrePrep Method:**	N/A	**Instrument:**	HYDRA
Client ID:	SMW1-0212-1	**Prep Method:**	7470A	**Prep Date:**	02/09/2012 09:11
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	02/10/2012 12:44
Workgroup #:	WG389240	**Analyst:**	PDM	**Run Date:**	02/10/2012 13:13
Collect Date:	02/07/2012 09:50	**Dilution:**	1	**File ID:**	HY.021012.131329
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Mercury	7439-97-6		U	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Certificate of Analysis

Sample #:	L12020220-02	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	SMW1-0212-1	**Prep Method:**	300.0	**Prep Date:**	02/15/2012 18:06
Matrix:	Water	**Analytical Method:**	300.0	**Cal Date:**	02/10/2012 10:32
Workgroup #:	WG389618	**Analyst:**	JBK	**Run Date:**	02/15/2012 20:43
Collect Date:	02/07/2012 09:50	**Dilution:**	1	**File ID:**	I10215122043.43
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Chloride	16887-00-6	19.0		0.200	0.100
Fluoride	16984-48-8	0.280		0.200	0.100
Sulfate	14808-79-8	61.9		1.00	0.500

Sample #:	L12020220-02	**PrePrep Method:**	N/A	**Instrument:**	ORION-4STAR
Client ID:	SMW1-0212-1	**Prep Method:**	9040C	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	9040C	**Cal Date:**	
Workgroup #:	WG389103	**Analyst:**	HJR	**Run Date:**	02/08/2012 14:38
Collect Date:	02/07/2012 09:50	**Dilution:**	1	**File ID:**	OS12021013593401
Sample Tag:		**Units:**	UNITS		

Analyte	CAS #	Result	Qual	LOQ	LOD
Corrosivity pH	10-29-7	7.06		0.000	0.000

Sample #:	L12020220-02	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	SMW1-0212-1	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	02/09/2012 11:13
Workgroup #:	WG389142	**Analyst:**	DIH	**Run Date:**	02/09/2012 11:18
Collect Date:	02/07/2012 09:50	**Dilution:**	1	**File ID:**	SC120209003.016
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Alkalinity, Carbonate (as CaCO3)			U	20.0	10.0

U	Analyte was not detected. The concentration is below the reported LOD.

Sample #:	L12020220-02	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	SMW1-0212-1	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	02/09/2012 11:13
Workgroup #:	WG389142	**Analyst:**	DIH	**Run Date:**	02/09/2012 11:18
Collect Date:	02/07/2012 09:50	**Dilution:**	1	**File ID:**	SC120209003.016
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Alkalinity, Total (as CaCO3)		70.6		20.0	10.0

Certificate of Analysis

Sample #:	L12020220-02	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	SMW1-0212-1	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	02/09/2012 11:13
Workgroup #:	WG389142	**Analyst:**	DIH	**Run Date:**	02/09/2012 11:18
Collect Date:	02/07/2012 09:50	**Dilution:**	1	**File ID:**	SC120209003.016
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Alkalinity, Bicarbonate (as CaCO3)		70.6		20.0	10.0

Sample #:	L12020220-02	**PrePrep Method:**	N/A	**Instrument:**	UV-120-1V
Client ID:	SMW1-0212-1	**Prep Method:**	SM4500-CN-C,G	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-CN-C,G	**Cal Date:**	02/14/2012 10:45
Workgroup #:	WG389446	**Analyst:**	DLP	**Run Date:**	02/14/2012 13:40
Collect Date:	02/07/2012 09:50	**Dilution:**	1	**File ID:**	1V.1202141340-09
Sample Tag:	D02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Cyanide, Amenable to Chlor.	57-12-5	0.0110		0.0100	0.00500

Sample #:	L12020220-02	**PrePrep Method:**	N/A	**Instrument:**	UV-120-1V
Client ID:	SMW1-0212-1	**Prep Method:**	9014-9010C	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	9014-9010C	**Cal Date:**	02/14/2012 10:45
Workgroup #:	WG389320	**Analyst:**	DLP	**Run Date:**	02/14/2012 12:00
Collect Date:	02/07/2012 09:50	**Dilution:**	1	**File ID:**	1V.1202141200-17
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Cyanide	57-12-5	0.0121		0.0100	0.00500

Sample #:	L12020220-02	**PrePrep Method:**	N/A	**Instrument:**	UV-120-1V
Client ID:	SMW1-0212-1	**Prep Method:**	SM4500-CN-I	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-CN-I	**Cal Date:**	02/14/2012 10:45
Workgroup #:	WG389443	**Analyst:**	DLP	**Run Date:**	02/14/2012 13:45
Collect Date:	02/07/2012 09:50	**Dilution:**	1	**File ID:**	1V.1202141345-10
Sample Tag:	D01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Cyanide, Weak/Dissociable	57-12-5		U	0.0100	0.00500

U	Analyte was not detected. The concentration is below the reported LOD.

Certificate of Analysis

Sample #:	L12020220-02	**PrePrep Method:**	N/A	**Instrument:**	YSI-32
Client ID:	SMW1-0212-1	**Prep Method:**	120.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	120.1	**Cal Date:**	
Workgroup #:	WG389827	**Analyst:**	DLP	**Run Date:**	02/16/2012 13:45
Collect Date:	02/07/2012 09:50	**Dilution:**	1	**File ID:**	32.1202161345-04
Sample Tag:		**Units:**	umhos/cm		

Analyte	CAS #	Result	Qual	LOQ	LOD
Conductivity		358		1.00	0.500

Sample #:	L12020220-02	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	SMW1-0212-1	**Prep Method:**	350.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	350.1	**Cal Date:**	02/14/2012 11:13
Workgroup #:	WG389495	**Analyst:**	JBK	**Run Date:**	02/14/2012 11:37
Collect Date:	02/07/2012 09:50	**Dilution:**	1	**File ID:**	SC120214002.034
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Nitrogen, Ammonia	7664-41-7	0.139		0.100	0.0500

Sample #:	L12020220-02	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	SMW1-0212-1	**Prep Method:**	353.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	353.2	**Cal Date:**	02/14/2012 11:13
Workgroup #:	WG389640	**Analyst:**	JBK	**Run Date:**	02/15/2012 11:13
Collect Date:	02/07/2012 09:50	**Dilution:**	4	**File ID:**	SC12021615500501
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Nitrate-Nitrite (as N)		5.12		0.200	0.100

Sample #:	L12020220-02	**PrePrep Method:**	N/A	**Instrument:**	UV-120-1V
Client ID:	SMW1-0212-1	**Prep Method:**	SM4500-P-E-20th	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-P-E-20th	**Cal Date:**	12/21/2011 14:35
Workgroup #:	WG389101	**Analyst:**	HJR	**Run Date:**	02/08/2012 14:30
Collect Date:	02/07/2012 09:50	**Dilution:**	1	**File ID:**	1V.1202081430-06
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Orthophosphate	14265-44-2	0.0517		0.0500	0.0250

Certificate of Analysis

Sample #:	L12020220-02	**PrePrep Method:**	N/A	**Instrument:**	OVEN
Client ID:	SMW1-0212-1	**Prep Method:**	160.1/SM2540C	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	160.1	**Cal Date:**	
Workgroup #:	WG389178	**Analyst:**	HJR	**Run Date:**	02/09/2012 11:10
Collect Date:	02/07/2012 09:50	**Dilution:**	1	**File ID:**	EN.1202091110-06
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Total Dissolved Solids		214		20.0	10.0

Sample #:	L12020220-02	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	SMW1-0212-1	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	12/06/2011 09:40
Workgroup #:	WG389146	**Analyst:**	DIH	**Run Date:**	02/09/2012 22:47
Collect Date:	02/07/2012 09:50	**Dilution:**	1	**File ID:**	TC02092012.042
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Total Organic Carbon		0.940	J	1.00	0.500

J	Estimated value ; the analyte concentration was less than the LOQ.

Sample #:	L12020220-02	**PrePrep Method:**	N/A	**Instrument:**	OVEN
Client ID:	SMW1-0212-1	**Prep Method:**	160.2/SM2540D	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	160.2	**Cal Date:**	
Workgroup #:	WG389078	**Analyst:**	HJR	**Run Date:**	02/08/2012 13:29
Collect Date:	02/07/2012 09:50	**Dilution:**	1	**File ID:**	EN.1202081329-18
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Total Suspended Solids			U	5.00	2.50

Sample #:	L12020220-03	**PrePrep Method:**	N/A	**Instrument:**	PE-ICP2
Client ID:	SMW4-0212-1	**Prep Method:**	3005A	**Prep Date:**	02/09/2012 06:53
Matrix:	Water	**Analytical Method:**	6010B	**Cal Date:**	02/09/2012 10:02
Workgroup #:	WG389167	**Analyst:**	KHR	**Run Date:**	02/09/2012 11:50
Collect Date:	02/07/2012 12:05	**Dilution:**	1	**File ID:**	P2.020912.115031
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Aluminum, Total	7429-90-5		U	0.100	0.0500
Beryllium, Total	7440-41-7		U	0.00200	0.00100
Boron, Total	7440-42-8		U	0.100	0.0500
Calcium, Total	7440-70-2	38.0		0.200	0.100

Certificate of Analysis

Analyte	CAS #	Result	Qual	LOQ	LOD
Iron, Total	7439-89-6	0.626		0.100	0.0500
Magnesium, Total	7439-95-4	8.29		0.500	0.250
Molybdenum, Total	7439-98-7		U	0.0100	0.00500
Potassium, Total	7440-09-7	2.12		1.00	0.500
Sodium, Total	7440-23-5	26.4		0.500	0.250
Tin, Total	7440-31-5		U	0.500	0.250
Vanadium, Total	7440-62-2		U	0.0100	0.00500
Zinc, Total	7440-66-6	0.0145	J	0.0200	0.0100

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Sample #:	L12020220-03	**PrePrep Method:**	N/A	**Instrument:**	ELAN-ICP
Client ID:	SMW4-0212-1	**Prep Method:**	3015	**Prep Date:**	02/09/2012 06:42
Matrix:	Water	**Analytical Method:**	6020	**Cal Date:**	02/09/2012 09:14
Workgroup #:	WG389145	**Analyst:**	JYH	**Run Date:**	02/09/2012 13:47
Collect Date:	02/07/2012 12:05	**Dilution:**	1	**File ID:**	EL.020912.134712
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Antimony, Total	7440-36-0		U	0.00100	0.000500
Arsenic, Total	7440-38-2	0.000783	J	0.00100	0.000500
Barium, Total	7440-39-3	0.0843		0.00300	0.00150
Cadmium, Total	7440-43-9		U	0.000600	0.000300
Chromium, Total	7440-47-3	0.0646		0.00200	0.00100
Cobalt, Total	7440-48-4		U	0.00100	0.000500
Copper, Total	7440-50-8	0.00189	J	0.00200	0.00100
Lead, Total	7439-92-1		U	0.00100	0.000500
Manganese, Total	7439-96-5	0.00696		0.00200	0.00100
Nickel, Total	7440-02-0	0.102		0.00400	0.00200
Selenium, Total	7782-49-2	0.00236		0.00100	0.000500
Silver, Total	7440-22-4		U	0.00100	0.000500
Thallium, Total	7440-28-0		U	0.000200	0.000100

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Certificate of Analysis

Sample #:	L12020220-03	**PrePrep Method:**	N/A	**Instrument:**	HYDRA
Client ID:	SMW4-0212-1	**Prep Method:**	7470A	**Prep Date:**	02/09/2012 09:11
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	02/10/2012 12:44
Workgroup #:	WG389240	**Analyst:**	PDM	**Run Date:**	02/10/2012 13:15
Collect Date:	02/07/2012 12:05	**Dilution:**	1	**File ID:**	HY.021012.131526
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Mercury	7439-97-6		U	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Sample #:	L12020220-03	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	SMW4-0212-1	**Prep Method:**	300.0	**Prep Date:**	02/15/2012 18:06
Matrix:	Water	**Analytical Method:**	300.0	**Cal Date:**	02/10/2012 10:32
Workgroup #:	WG389618	**Analyst:**	JBK	**Run Date:**	02/15/2012 21:00
Collect Date:	02/07/2012 12:05	**Dilution:**	1	**File ID:**	I10215122100.44
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Fluoride	16984-48-8	0.333		0.200	0.100
Sulfate	14808-79-8	56.2		1.00	0.500

Sample #:	L12020220-03	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	SMW4-0212-1	**Prep Method:**	300.0	**Prep Date:**	02/15/2012 18:06
Matrix:	Water	**Analytical Method:**	300.0	**Cal Date:**	02/10/2012 10:32
Workgroup #:	WG389618	**Analyst:**	JBK	**Run Date:**	02/16/2012 12:13
Collect Date:	02/07/2012 12:05	**Dilution:**	2	**File ID:**	I10216121213.74
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Chloride	16887-00-6	22.0		0.400	0.200

Sample #:	L12020220-03	**PrePrep Method:**	N/A	**Instrument:**	ORION-4STAR
Client ID:	SMW4-0212-1	**Prep Method:**	9040C	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	9040C	**Cal Date:**	
Workgroup #:	WG389103	**Analyst:**	HJR	**Run Date:**	02/08/2012 14:40
Collect Date:	02/07/2012 12:05	**Dilution:**	1	**File ID:**	OS12021013593801
Sample Tag:		**Units:**	UNITS		

Analyte	CAS #	Result	Qual	LOQ	LOD
Corrosivity pH	10-29-7	7.43		0.000	0.000

Certificate of Analysis

Sample #:	L12020220-03	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	SMW4-0212-1	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	02/09/2012 11:13
Workgroup #:	WG389142	**Analyst:**	DIH	**Run Date:**	02/09/2012 11:19
Collect Date:	02/07/2012 12:05	**Dilution:**	1	**File ID:**	SC120209003.017
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Alkalinity, Bicarbonate (as CaCO3)		80.8		20.0	10.0

Sample #:	L12020220-03	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	SMW4-0212-1	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	02/09/2012 11:13
Workgroup #:	WG389142	**Analyst:**	DIH	**Run Date:**	02/09/2012 11:19
Collect Date:	02/07/2012 12:05	**Dilution:**	1	**File ID:**	SC120209003.017
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Alkalinity, Carbonate (as CaCO3)			U	20.0	10.0

U	Analyte was not detected. The concentration is below the reported LOD.

Sample #:	L12020220-03	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	SMW4-0212-1	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	02/09/2012 11:13
Workgroup #:	WG389142	**Analyst:**	DIH	**Run Date:**	02/09/2012 11:19
Collect Date:	02/07/2012 12:05	**Dilution:**	1	**File ID:**	SC120209003.017
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Alkalinity, Total (as CaCO3)		80.8		20.0	10.0

Sample #:	L12020220-03	**PrePrep Method:**	N/A	**Instrument:**	UV-120-1V
Client ID:	SMW4-0212-1	**Prep Method:**	SM4500-CN-I	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-CN-I	**Cal Date:**	02/14/2012 10:45
Workgroup #:	WG389443	**Analyst:**	DLP	**Run Date:**	02/14/2012 13:45
Collect Date:	02/07/2012 12:05	**Dilution:**	1	**File ID:**	1V.1202141345-11
Sample Tag:	D01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Cyanide, Weak/Dissociable	57-12-5		U	0.0100	0.00500

U	Analyte was not detected. The concentration is below the reported LOD.

Certificate of Analysis

Sample #:	L12020220-03	**PrePrep Method:**	N/A	**Instrument:**	UV-120-1V
Client ID:	SMW4-0212-1	**Prep Method:**	9014-9010C	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	9014-9010C	**Cal Date:**	02/14/2012 10:45
Workgroup #:	WG389320	**Analyst:**	DLP	**Run Date:**	02/14/2012 12:00
Collect Date:	02/07/2012 12:05	**Dilution:**	1	**File ID:**	1V.1202141200-18
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Cyanide	57-12-5		U	0.0100	0.00500
U	Analyte was not detected. The concentration is below the reported LOD.				

Sample #:	L12020220-03	**PrePrep Method:**	N/A	**Instrument:**	UV-120-1V
Client ID:	SMW4-0212-1	**Prep Method:**	SM4500-CN-C,G	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-CN-C,G	**Cal Date:**	02/14/2012 10:45
Workgroup #:	WG389446	**Analyst:**	DLP	**Run Date:**	02/14/2012 13:40
Collect Date:	02/07/2012 12:05	**Dilution:**	1	**File ID:**	1V.1202141340-10
Sample Tag:	D02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Cyanide, Amenable to Chlor.	57-12-5		U	0.0100	0.00500
U	Analyte was not detected. The concentration is below the reported LOD.				

Sample #:	L12020220-03	**PrePrep Method:**	N/A	**Instrument:**	YSI-32
Client ID:	SMW4-0212-1	**Prep Method:**	120.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	120.1	**Cal Date:**	
Workgroup #:	WG389827	**Analyst:**	DLP	**Run Date:**	02/16/2012 13:45
Collect Date:	02/07/2012 12:05	**Dilution:**	1	**File ID:**	32.1202161345-05
Sample Tag:		**Units:**	umhos/cm		

Analyte	CAS #	Result	Qual	LOQ	LOD
Conductivity		380		1.00	0.500

Sample #:	L12020220-03	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	SMW4-0212-1	**Prep Method:**	350.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	350.1	**Cal Date:**	02/14/2012 11:13
Workgroup #:	WG389495	**Analyst:**	JBK	**Run Date:**	02/14/2012 11:38
Collect Date:	02/07/2012 12:05	**Dilution:**	1	**File ID:**	SC120214002.035
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Nitrogen, Ammonia	7664-41-7		U	0.100	0.0500
U	Analyte was not detected. The concentration is below the reported LOD.				

Certificate of Analysis

Sample #:	L12020220-03	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	SMW4-0212-1	**Prep Method:**	353.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	353.2	**Cal Date:**	02/14/2012 11:13
Workgroup #:	WG389640	**Analyst:**	JBK	**Run Date:**	02/15/2012 11:13
Collect Date:	02/07/2012 12:05	**Dilution:**	4	**File ID:**	SC12021615501401
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Nitrate-Nitrite (as N)		2.82		0.200	0.100

Sample #:	L12020220-03	**PrePrep Method:**	N/A	**Instrument:**	UV-120-1V
Client ID:	SMW4-0212-1	**Prep Method:**	SM4500-P-E-20th	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-P-E-20th	**Cal Date:**	12/21/2011 14:35
Workgroup #:	WG389101	**Analyst:**	HJR	**Run Date:**	02/08/2012 14:30
Collect Date:	02/07/2012 12:05	**Dilution:**	1	**File ID:**	1V.1202081430-07
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Orthophosphate	14265-44-2		U	0.0500	0.0250

U	Analyte was not detected. The concentration is below the reported LOD.

Sample #:	L12020220-03	**PrePrep Method:**	N/A	**Instrument:**	OVEN
Client ID:	SMW4-0212-1	**Prep Method:**	160.1/SM2540C	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	160.1	**Cal Date:**	
Workgroup #:	WG389178	**Analyst:**	HJR	**Run Date:**	02/09/2012 11:10
Collect Date:	02/07/2012 12:05	**Dilution:**	1	**File ID:**	EN.1202091110-05
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Total Dissolved Solids		236		20.0	10.0

Sample #:	L12020220-03	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	SMW4-0212-1	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	12/06/2011 09:40
Workgroup #:	WG389146	**Analyst:**	DIH	**Run Date:**	02/09/2012 22:59
Collect Date:	02/07/2012 12:05	**Dilution:**	1	**File ID:**	TC02092012.043
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Total Organic Carbon		0.955	J	1.00	0.500

J	Estimated value ; the analyte concentration was less than the LOQ.

Certificate of Analysis

Sample #:	L12020220-03	**PrePrep Method:**	N/A	**Instrument:**	OVEN
Client ID:	SMW4-0212-1	**Prep Method:**	160.2/SM2540D	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	160.2	**Cal Date:**	
Workgroup #:	WG389078	**Analyst:**	HJR	**Run Date:**	02/08/2012 13:29
Collect Date:	02/07/2012 12:05	**Dilution:**	1	**File ID:**	EN.1202081329-19
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Total Suspended Solids			U	5.00	2.50

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2.0 Full Sample Data Package

2.1 Metals Data

2.1.1 Metals I C P Data

2.1.1.1 Summary Data

Login Number: L12020220
Department: Metals
Analyst: Kim Rhodes

METHOD

Preparation: SW-846 3005

Analysis: SW-846 6010

HOLDING TIMES

Sample Preparation: All holding times were met.

Sample Analysis: All holding times were met.

PREPARATION

Sample preparation proceeded normally.

CALIBRATION

Initial Calibration: All acceptance criteria were met.

Alternate Source Standards: All acceptance criteria were met.

Interference Check Standards: All acceptance criteria were met.

Continuing Calibration Verification: All acceptance criteria were met.

Continuing Calibration Blank: All acceptance criteria were met.

BATCH QA/QC

Method Blank: All acceptance criteria were met.

Laboratory Control Sample: All acceptance criteria were met.

Serial Dilution/Post Digestion Spikes: WG389167 - Tin was not added to the initial post digestion spike, therefore, the post digestion spike was reanalyzed for all analytes at 15:26.

Matrix Spikes: All acceptance criteria were met.

SAMPLES

Samples: All acceptance criteria were met.

Narrative ID: 42020
Approved By: Sheri Pfalzgraf

Microbac

Lab Report #: L12020220
Lab Project #: 3005.011
Project Name: White Sands MR
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L12020220-01	**PrePrep Method:**	N/A	**Instrument:**	PE-ICP2
Client ID:	MPL25-0212-1	**Prep Method:**	3005A	**Prep Date:**	02/09/2012 06:53
Matrix:	Water	**Analytical Method:**	6010B	**Cal Date:**	02/09/2012 10:02
Workgroup #:	WG389167	**Analyst:**	KHR	**Run Date:**	02/09/2012 11:22
Collect Date:	02/06/2012 15:05	**Dilution:**	1	**File ID:**	P2.020912.112256
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Aluminum, Total	7429-90-5	0.143		0.100	0.0500
Beryllium, Total	7440-41-7		U	0.00200	0.00100
Boron, Total	7440-42-8		U	0.100	0.0500
Calcium, Total	7440-70-2	50.2		0.200	0.100
Iron, Total	7439-89-6	0.232		0.100	0.0500
Magnesium, Total	7439-95-4	9.86		0.500	0.250
Molybdenum, Total	7439-98-7		U	0.0100	0.00500
Potassium, Total	7440-09-7	2.38		1.00	0.500
Sodium, Total	7440-23-5	27.7		0.500	0.250
Tin, Total	7440-31-5		U	0.500	0.250
Vanadium, Total	7440-62-2		U	0.0100	0.00500
Zinc, Total	7440-66-6	0.0102	J	0.0200	0.0100

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Certificate of Analysis

Sample #:	L12020220-02	**PrePrep Method:**	N/A	**Instrument:**	PE-ICP2
Client ID:	SMW1-0212-1	**Prep Method:**	3005A	**Prep Date:**	02/09/2012 06:53
Matrix:	Water	**Analytical Method:**	6010B	**Cal Date:**	02/09/2012 10:02
Workgroup #:	WG389167	**Analyst:**	KHR	**Run Date:**	02/09/2012 11:43
Collect Date:	02/07/2012 09:50	**Dilution:**	1	**File ID:**	P2.020912.114337
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Aluminum, Total	7429-90-5	0.0585	J	0.100	0.0500
Beryllium, Total	7440-41-7		U	0.00200	0.00100
Boron, Total	7440-42-8		U	0.100	0.0500
Calcium, Total	7440-70-2	33.5		0.200	0.100
Iron, Total	7439-89-6	0.177		0.100	0.0500
Magnesium, Total	7439-95-4	8.07		0.500	0.250
Molybdenum, Total	7439-98-7		U	0.0100	0.00500
Potassium, Total	7440-09-7	2.05		1.00	0.500
Sodium, Total	7440-23-5	26.0		0.500	0.250
Tin, Total	7440-31-5		U	0.500	0.250
Vanadium, Total	7440-62-2		U	0.0100	0.00500
Zinc, Total	7440-66-6	0.0151	J	0.0200	0.0100

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Certificate of Analysis

Sample #:	L12020220-03	**PrePrep Method:**	N/A	**Instrument:**	PE-ICP2
Client ID:	SMW4-0212-1	**Prep Method:**	3005A	**Prep Date:**	02/09/2012 06:53
Matrix:	Water	**Analytical Method:**	6010B	**Cal Date:**	02/09/2012 10:02
Workgroup #:	WG389167	**Analyst:**	KHR	**Run Date:**	02/09/2012 11:50
Collect Date:	02/07/2012 12:05	**Dilution:**	1	**File ID:**	P2.020912.115031
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Aluminum, Total	7429-90-5		U	0.100	0.0500
Beryllium, Total	7440-41-7		U	0.00200	0.00100
Boron, Total	7440-42-8		U	0.100	0.0500
Calcium, Total	7440-70-2	38.0		0.200	0.100
Iron, Total	7439-89-6	0.626		0.100	0.0500
Magnesium, Total	7439-95-4	8.29		0.500	0.250
Molybdenum, Total	7439-98-7		U	0.0100	0.00500
Potassium, Total	7440-09-7	2.12		1.00	0.500
Sodium, Total	7440-23-5	26.4		0.500	0.250
Tin, Total	7440-31-5		U	0.500	0.250
Vanadium, Total	7440-62-2		U	0.0100	0.00500
Zinc, Total	7440-66-6	0.0145	J	0.0200	0.0100

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Certificate of Analysis

2.1.1.2 QC Summary Data

Example 6010 Calculations
Perkin Elmer Optima 4300 DV

1.0 Initial Calibration (ICAL) Parameters
The system performs linear regression from data consisting of a blank and three standards.

2.0 Calculating the concentration (C) of an element in water using data from prep log, run log, and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system in ug/mL (ppm)	0.1
Vf = Final volume (mL)	50
Vi = Initial volume (mL)	50
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in ug/mL (mg/L)	0.1

3.0 Calculating the concentration (C) of an element in soil using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (mg/L) (ppm)	0.1
Vf = Final volume (mL)	50
Vi = Initial weight (g)	1
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in ug/g (mg/kg)	5

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

Where:	**Example:**
Cx = Concentration calculated as received (wet basis)	5
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (mg/kg)	6.25

Microbac Laboratories Inc.
Metals Digest Log

Workgroup: WG389125
Analyst: REK
Spike Analyst: REK
Method: 3005A
Run Date: 02/09/2012 06:53
Hotblock Start Temp: 94.5 @ 05:45
Hotblock End Temp: 95.4 @ 09:45

SOP: ME401 Revison 14
Spike Solution: STD49450
Spike Witness: VC
ICP;WG377974 Filter Lot COA15714
HNO3 Lot #: COA15925
HCL Lot #: COA15847
Digestion Tubes Lot #: COA15940

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Spike Amount	Due Date
1	WG389125-02	BLANK	1	50 mL	50 mL		
2	WG389125-03	LCS	1	50 mL	50 mL	5 mL	
3	WG389125-01	REF	1	50 mL	50 mL		
4	L12020220-01	SAMP	1	50 mL	50 mL		02/17/12
5	L12020220-02	SAMP	1	50 mL	50 mL		02/17/12
6	L12020220-03	SAMP	1	50 mL	50 mL		02/17/12
7	L12020221-01	SAMP	1	50 mL	50 mL		02/17/12
8	L12020221-02	SAMP	1	50 mL	50 mL		02/17/12
9	L12020221-03	SAMP	1	50 mL	50 mL		02/17/12
10	L12020221-04	SAMP	1	50 mL	50 mL		02/17/12
11	L12020221-05	SAMP	1	50 mL	50 mL		02/17/12
12	L12020221-06	SAMP	1	50 mL	50 mL		02/17/12
13	L12020221-07	SAMP	1	50 mL	50 mL		02/17/12
14	L12020221-08	SAMP	1	50 mL	50 mL		02/17/12
15	L12020221-09	SAMP	1	50 mL	50 mL		02/17/12
16	L12020221-10	SAMP	1	50 mL	50 mL		02/17/12
17	L12020221-11	SAMP	1	50 mL	50 mL		02/17/12
18	L12020221-12	SAMP	1	50 mL	50 mL		02/17/12
19	L12020221-13	SAMP	1	50 mL	50 mL		02/17/12
20	L12020221-16	SAMP	1	50 mL	50 mL		02/17/12
21	L12020221-17	SAMP	1	50 mL	50 mL		02/17/12
22	WG389125-04	MS	1	50 mL	50 mL	5 mL	
23	WG389125-05	MSD	1	50 mL	50 mL	5 mL	

Analyst: _____

Reviewer: _____

HB_DIG - Modified 09/30/2009
PDF ID: 2303048
Report generated: 02/09/2012 10:01

Microbac Laboratories Inc.

Instrument Run Log

Instrument: PE-ICP2 Dataset: 020912HR2.CSV
Analyst1: KHR Analyst2: N/A
Method: 6010 SOP: ME600E Rev: 11
Maintenance Log ID: 40577

Calibration Std: STD49884 ICV Std: STD49885 Post Spike: STD49449
ICSA: STD50013 ICSAB: STD49804 Int. Std: STD49805
CCV: STD49883 LLCCV: STD49965

Workgroups: 389167

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	P2.020912.093506	WG389200-01	Calibration Point		1		02/09/12 09:35
2	P2.020912.094155	WG389200-02	Calibration Point		1		02/09/12 09:41
3	P2.020912.094845	WG389200-03	Calibration Point		1		02/09/12 09:48
4	P2.020912.095534	WG389200-04	Calibration Point		1		02/09/12 09:55
5	P2.020912.100228	WG389200-05	Calibration Point		1		02/09/12 10:02
6	P2.020912.100924	WG389200-06	Initial Calibration Verification		1		02/09/12 10:09
7	P2.020912.101618	WG389200-07	Initial Calib Blank		1		02/09/12 10:16
8	P2.020912.103006	WG389200-08	Low Level Initial Calibration V		1		02/09/12 10:30
9	P2.020912.103655	WG389200-09	Interference Check		1		02/09/12 10:36
10	P2.020912.104248	WG389200-10	Interference Check		1		02/09/12 10:42
11	P2.020912.104841	WG389200-11	CCV		1		02/09/12 10:48
12	P2.020912.105537	WG389200-12	CCB		1		02/09/12 10:55
13	P2.020912.110146	WG389125-02	Method/Prep Blank	50/50	1		02/09/12 11:01
14	P2.020912.110836	WG389125-03	Laboratory Control S	50/50	1		02/09/12 11:08
15	P2.020912.112256	L12020220-01	MPL25-0212-1		1	WG389125-01	02/09/12 11:22
16	P2.020912.112949	WG389125-04	Matrix Spike	50/50	1	L12020220-01	02/09/12 11:29
17	P2.020912.113643	WG389125-05	Matrix Spike Duplica	50/50	1	L12020220-01	02/09/12 11:36
18	P2.020912.114337	L12020220-02	SMW1-0212-1	50/50	1		02/09/12 11:43
19	P2.020912.115031	L12020220-03	SMW4-0212-1	50/50	1		02/09/12 11:50
20	P2.020912.115724	L12020221-01	MW-8R-2012-0207	50/50	1		02/09/12 11:57
21	P2.020912.120414	WG389167-01	Post Digestion Spike		1	L12020221-01	02/09/12 12:04
22	P2.020912.121108	WG389167-02	Serial Dilution		5	L12020221-01	02/09/12 12:11
23	P2.020912.121758	WG389200-13	CCV		1		02/09/12 12:17
24	P2.020912.122455	WG389200-14	CCB		1		02/09/12 12:24
25	P2.020912.123143	L12020221-02	MW29-23-2012-0207	50/50	1		02/09/12 12:31
26	P2.020912.123839	L12020221-03	MW-9R-2012-0207	50/50	1		02/09/12 12:38
27	P2.020912.124534	L12020221-04	MW29-22-2012-0207	50/50	1		02/09/12 12:45
28	P2.020912.125227	L12020221-05	88MW-7-2012-0207	50/50	1		02/09/12 12:52
29	P2.020912.125920	L12020221-06	MW29-21-2012-0207	50/50	1		02/09/12 12:59
30	P2.020912.130610	L12020221-07	88MW-10-2012-0207	50/50	1		02/09/12 13:06
31	P2.020912.131300	L12020221-08	MW29-8-2012-0207	50/50	1		02/09/12 13:13
32	P2.020912.131950	L12020221-09	MW88-42-2012-0207	50/50	1		02/09/12 13:19
33	P2.020912.132643	L12020221-10	MW88-32-2012-0207	50/50	1		02/09/12 13:26
34	P2.020912.133337	WG389200-15	CCV		1		02/09/12 13:33

Page: 1 Approved: February 10, 2012

Microbac Laboratories Inc.

Instrument Run Log

Instrument: PE-ICP2 Dataset: 020912HR2.CSV
Analyst1: KHR Analyst2: N/A
Method: 6010 SOP: ME600E Rev: 11
Maintenance Log ID: 40577

Calibration Std: STD49884 ICV Std: STD49885 Post Spike: STD49449
ICSA: STD50013 ICSAB: STD49804 Int. Std: STD49805
CCV: STD49883 LLCCV: STD49965

Workgroups: 389167

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	P2.020912.134033	WG389200-16	CCB		1		02/09/12 13:40
36	P2.020912.134721	L12020221-11	Z4-18-2012-0207	50/50	1		02/09/12 13:47
37	P2.020912.135416	L12020221-12	MW88-31-2012-0207	50/50	1		02/09/12 13:54
38	P2.020912.140108	L12020221-13	MW88-39-2012-0207	50/50	1		02/09/12 14:01
39	P2.020912.140802	L12020221-16	MW88-5-2012-0207	50/50	1		02/09/12 14:08
40	P2.020912.141454	L12020221-17	DIW-21-2012-0207	50/50	1		02/09/12 14:14
41	P2.020912.142149	WG389200-17	CCV		1		02/09/12 14:21
42	P2.020912.142845	WG389200-18	CCB		1		02/09/12 14:28
43	P2.020912.143533	WG389200-19	Low Level Continuing Calibra		1		02/09/12 14:35
44	P2.020912.144539	WG389200-20	Linear Range Check		1		02/09/12 14:45
45	P2.020912.145229	WG389200-21	CCV		1		02/09/12 14:52
46	P2.020912.145925	WG389200-22	CCB		1		02/09/12 14:59
47	P2.020912.152645	WG389167-01	Post Digestion Spike		1	L12020221-01	02/09/12 15:26
48	P2.020912.153338	WG389200-23	CCV		1		02/09/12 15:33
49	P2.020912.154033	WG389200-24	CCB		1		02/09/12 15:40

Page: 2 Approved: February 10, 2012

Microbac Laboratories Inc.

Data Checklist

Date: 09-FEB-2012
Analyst: KHR
Analyst: NA
Method: 6010
Instrument: PE-ICP2
Curve Workgroup: 389200
Runlog ID: 45060
Analytical Workgroups: 389167

Calibration/Linearity	X
ICV/CCV	X
ICV RSD <= 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	X
CRI	X
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	
Case Narrative	X
Client Forms	X
Level X	
Level 3	
Level 4	220, 221
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	KHR
Secondary Reviewer	SLP
Comments	

Primary Reviewer:
10-FEB-2012

Secondary Reviewer:
10-FEB-2012

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-10-2012 10:35:30

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6010B

AAB#: WG389167

Login Number: L12020220

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
MPL25-0212-1	01	02/06/12					02/09/12	2.7	180		02/09/12	2.8	180	
SMW1-0212-1	02	02/07/12					02/09/12	1.9	180		02/09/12	2.1	180	
SMW4-0212-1	03	02/07/12					02/09/12	1.8	180		02/09/12	2	180	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 2304017
Report generated 02/10/2012 11:25

Microbac Laboratories Inc.

METHOD BLANK SUMMARY

Login Number: L12020220
Blank File ID: P2.020912.110146
Prep Date: 02/09/12 06:53
Analyzed Date: 02/09/12 11:01
Analyst: KHR

Work Group: WG389167
Blank Sample ID: WG389125-02
Instrument ID: PE-ICP2
Method: 6010B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG389125-03	P2.020912.110836	02/09/12 11:08	01
MPL25-0212-1	L12020220-01	P2.020912.112256	02/09/12 11:22	01
SMW1-0212-1	L12020220-02	P2.020912.114337	02/09/12 11:43	01
SMW4-0212-1	L12020220-03	P2.020912.115031	02/09/12 11:50	01

Report Name: BLANK_SUMMARY
PDF File ID: 2304018
Report generated 02/10/2012 11:25

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L12020220 Prep Date: 02/09/12 06:53 Sample ID: WG389125-02
Instrument ID: PE-ICP2 Run Date: 02/09/12 11:01 Prep Method: 3005A
File ID: P2.020912.110146 Analyst: KHR Method: 6010B
Workgroup (AAB#): WG389167 Matrix: Water Units: mg/L
Contract #: Cal ID: PE-ICP-09-FEB-12

Analytes	LOD	LOQ	Concentration	Dilution	Qualifier
Aluminum, Total	0.0500	0.100	0.0500	1	U
Beryllium, Total	0.00100	0.00200	0.00100	1	U
Boron, Total	0.0500	0.100	0.0500	1	U
Calcium, Total	0.100	0.200	0.100	1	U
Iron, Total	0.0500	0.100	0.0500	1	U
Magnesium, Total	0.250	0.500	0.250	1	U
Molybdenum, Total	0.00500	0.0100	0.00500	1	U
Potassium, Total	0.500	1.00	0.500	1	U
Sodium, Total	0.250	0.500	0.250	1	U
Tin, Total	0.250	0.500	0.250	1	U
Vanadium, Total	0.00500	0.0100	0.00500	1	U
Zinc, Total	0.0100	0.0200	0.0100	1	U

LOD Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 2304019
10-FEB-2012 11:25

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L12020220 Run Date: 02/09/2012 Sample ID: WG389125-03
Instrument ID: PE-ICP2 Run Time: 11:08 Prep Method: 3005A
File ID: P2.020912.110836 Analyst: KHR Method: 6010B
Workgroup (AAB#): WG389167 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD49450 Cal ID: PE-ICP-09-FEB-12

Analytes	Expected	Found	% Rec	LCS Limits	Q
Aluminum, Total	5.00	4.98	99.7	80 - 120	
Beryllium, Total	0.0250	0.0248	99.3	80 - 120	
Boron, Total	1.00	1.01	101	80 - 120	
Calcium, Total	5.00	4.75	95.0	80 - 120	
Iron, Total	2.00	1.92	96.0	80 - 120	
Magnesium, Total	5.00	4.88	97.7	80 - 120	
Molybdenum, Total	0.500	0.496	99.2	80 - 120	
Potassium, Total	25.0	25.1	101	80 - 120	
Sodium, Total	25.0	26.2	105	80 - 120	
Tin, Total	0.500	0.532	106	80 - 120	
Vanadium, Total	0.500	0.496	99.2	80 - 120	
Zinc, Total	0.500	0.500	100	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 2304020
Report generated: 02/10/2012 11:25

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L12020220 Cal ID: PE-ICP2- Worknum: WG389167
Instrument ID: PE-ICP2 Contract #: Method: 6010B
Parent ID: WG389125-01 File ID: P2.020912.112256 Dil: 1 Matrix: WATER
Sample ID: WG389125-04 MS File ID: P2.020912.112949 Dil: 1 Units: mg/L
Sample ID: WG389125-05 MSD File ID: P2.020912.113643 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Aluminum, Total	0.143	5.00	5.22	102	5.00	5.12	99.5	1.97	80 - 120	20	
Beryllium, Total	ND	0.0250	0.0254	102	0.0250	0.0244	97.8	3.90	80 - 120	20	
Boron, Total	ND	1.00	1.06	106	1.00	1.02	102	3.49	80 - 120	20	
Calcium, Total	50.2	5.00	56.5	126	5.00	55.9	114	1.02	80 - 120	20	*
Iron, Total	0.232	2.00	2.17	97.1	2.00	2.13	95.1	1.85	80 - 120	20	
Magnesium, Total	9.86	5.00	15.0	103	5.00	15.1	105	0.933	80 - 120	20	
Molybdenum, Total	ND	0.500	0.516	103	0.500	0.498	99.6	3.50	80 - 120	20	
Potassium, Total	2.38	25.0	28.1	103	25.0	27.8	102	1.17	80 - 120	20	
Sodium, Total	27.7	25.0	53.3	103	25.0	53.6	104	0.550	80 - 120	20	
Tin, Total	ND	0.500	0.569	114	0.500	0.548	110	3.84	80 - 120	20	
Vanadium, Total	ND	0.500	0.518	104	0.500	0.498	99.6	4.02	80 - 120	20	
Zinc, Total	0.0102	0.500	0.523	103	0.500	0.499	97.7	4.67	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 2304021
Report generated 02/10/2012 11:25

Microbac Laboratories Inc.
Serial Dilution Report

Login: L12020220 **Worknum:** WG389167
Instrument: PE-ICP2 **Method:** 6010B
Serial Dil: WG389167-02 **File ID:** P2.020912.121108 **Dil:** 5 **Units:** mg/L
Sample: L12020221-01 **File ID:** P2.020912.115724 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Aluminum	0.262	X	0.255	F	3.02	
Beryllium	0.00118	F	ND	U		
Boron	ND	U	ND	U		
Calcium	10.5		10.8		3.29	
Iron	7.10		7.48		5.35	
Magnesium	1.19	X	1.28	F	7.80	
Molybdenum	ND	U	ND	U		
Potassium	1.04	X	ND	U		
Sodium	6.42	X	6.54	X	1.89	
Tin	ND	U	ND	U		
Vanadium	ND	U	ND	U		
Zinc	ND	U	ND	U		

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 50 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 50 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 2304015
02/10/2012 11:30

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L12020220 **Worknum:** WG389167
Instrument ID: PE-ICP2 **Method:** 6010B
Post Spike ID: WG389167-01 **File ID:** P2.020912.152645 **Dil:** 1 **Units:** mg/L
Sample ID: L12020221-01 **File ID:** P2.020912.115724 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
ALUMINUM	5.06		0.262		5	96.5	75 - 125	
BERYLLIUM	0.0236		0.00118	F	.025	90.2	75 - 125	
BORON	0.966		0	U	1	96.6	75 - 125	
CALCIUM	14.0		10.5		5	90.9	75 - 125	
IRON	8.02		7.10		2	81.6	75 - 125	
MAGNESIUM	5.74		1.19		5	93.5	75 - 125	
MOLYBDENUM	0.468		0	U	.5	93.5	75 - 125	
POTASSIUM	26.1		1.04		25	100.8	75 - 125	
SODIUM	31.4		6.42		25	102.5	75 - 125	
TIN	0.580		0	U	.5	115.9	75 - 125	
VANADIUM	0.474		0	U	.5	94.8	75 - 125	
ZINC	0.468		0	U	.5	93.6	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 2304031
Report generated: 02/10/2012 11:25

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L12020220	Workgroup (AAB#):	WG389167
Analytical Method:	6010B	Instrument ID:	PE-ICP2
ICAL Worknum:	WG389200	Initial Calibration Date:	09-FEB-2012 10:02

	WG389200-01		WG389200-02		WG389200-03		WG389200-04		WG389200-05			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ALUMINUM	0	25.7	.1	263	.2	590	10	29900	20	59700	.999999	
BERYLLIUM	0	-369	.0005	148	.001	316	.05	13900	.1	27300	.999977	
BORON	0	117	NA	NA	.01	313	.5	14400	1	28400	.999989	
CALCIUM	0	-7.24	NA	NA	.2	18.9	10	726	20	1450	.999995	
IRON	0	-0.517	.04	2.79	.08	6.14	4	290	8	585	.999995	
MAGNESIUM	0	6.59	.1	22.2	.2	48.0	10	2530	20	5120	.999988	
MOLYBDENUM	0	-15.1	.01	65.9	.02	136	1	6770	2	13300	.999962	
POTASSIUM	0	-39.8	.5	817	1	1670	50	80100	100	160000	1	
SODIUM	0	-34.6	.5	5560	1	11000	50	524000	100	1060000	1	
TIN	0	10.4	.01	22.6	.02	47.8	1	2350	1	4560	.999886	
VANADIUM	0	5280	.01	915	.02	1760	1	83400	2	165000	.999979	
ZINC	0	-0.778	.01	107	.02	216	1	10700	2	20900	.999926	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 2304024
Report generated: 10-FEB-2012 11:25

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L12020220
Run Date: 02/09/2012
Sample ID: WG389200-07
Instrument ID: PE-ICP2
Run Time: 10:16
Method: 6010B
File ID: P2.020912.101618
Analyst: KHR
Units: mg/L
Workgroup (AAB#): WG389167
Cal ID: PE-ICP2 - 09-FEB-12
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
ALUMINUM	.05	.1	.05	U
BERYLLIUM	.001	.002	.001	U
BORON	.05	.1	.05	U
CALCIUM	.1	.2	.1	U
IRON	.05	.1	.05	U
MAGNESIUM	.25	.5	.25	U
MOLYBDENUM	.005	.01	.005	U
POTASSIUM	.5	1	.5	U
SODIUM	.25	.5	.25	U
TIN	.25	.5	.25	U
VANADIUM	.005	.01	.005	U
ZINC	.01	.02	.01	U

U = Result is less than 2 x MDL
F = Result is between MDL and 2 x MDL
* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 2304026
Report generated 02/10/2012 11:25

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L12020220
Run Date: 02/09/2012
Sample ID: WG389200-12
Instrument ID: PE-ICP2
Run Time: 10:55
Method: 6010B
File ID: P2.020912.105537
Analyst: KHR
Units: mg/L
Workgroup (AAB#): WG389167
Cal ID: PE-ICP - 09-FEB-12
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0500	0.100	0.0500	U
Beryllium	0.00100	0.00200	0.00100	U
Boron	0.0500	0.100	0.0500	U
Calcium	0.100	0.200	0.100	U
Iron	0.0500	0.100	0.0500	U
Magnesium	0.250	0.500	0.250	U
Molybdenum	0.00500	0.0100	0.00500	U
Potassium	0.500	1.00	0.500	U
Sodium	0.250	0.500	0.250	U
Tin	0.250	0.500	0.250	U
Vanadium	0.00500	0.0100	0.00500	U
Zinc	0.0100	0.0200	0.0100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 2304029
Report generated 02/10/2012 11:25

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L12020220
Run Date: 02/09/2012
Sample ID: WG389200-14
Instrument ID: PE-ICP2
Run Time: 12:24
Method: 6010B
File ID: P2.020912.122455
Analyst: KHR
Units: mg/L
Workgroup (AAB#): WG389167
Cal ID: PE-ICP - 09-FEB-12
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0500	0.100	0.0500	U
Beryllium	0.00100	0.00200	0.00100	U
Boron	0.0500	0.100	0.0500	U
Calcium	0.100	0.200	0.100	U
Iron	0.0500	0.100	0.0500	U
Magnesium	0.250	0.500	0.250	U
Molybdenum	0.00500	0.0100	0.00500	U
Potassium	0.500	1.00	0.500	U
Sodium	0.250	0.500	0.250	U
Tin	0.250	0.500	0.250	U
Vanadium	0.00500	0.0100	0.00500	U
Zinc	0.0100	0.0200	0.0100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 2304029
Report generated 02/10/2012 11:25

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L12020220
Run Date: 02/09/2012
Sample ID: WG389200-18
Instrument ID: PE-ICP2
Run Time: 14:28
Method: 6010B
File ID: P2.020912.142845
Analyst: KHR
Units: mg/L
Workgroup (AAB#): WG389167
Cal ID: PE-ICP - 09-FEB-12
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0500	0.100	0.0500	U
Beryllium	0.00100	0.00200	0.00100	U
Boron	0.0500	0.100	0.0500	U
Calcium	0.100	0.200	0.100	U
Iron	0.0500	0.100	0.0500	U
Magnesium	0.250	0.500	0.250	U
Molybdenum	0.00500	0.0100	0.00500	U
Potassium	0.500	1.00	0.500	U
Sodium	0.250	0.500	0.250	U
Tin	0.250	0.500	0.250	U
Vanadium	0.00500	0.0100	0.00500	U
Zinc	0.0100	0.0200	0.0100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 2304029
Report generated 02/10/2012 11:25

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L12020220
Run Date: 02/09/2012
Sample ID: WG389200-22
Instrument ID: PE-ICP2
Run Time: 14:59
Method: 6010B
File ID: P2.020912.145925
Analyst: KHR
Units: mg/L
Workgroup (AAB#): WG389167
Cal ID: PE-ICP - 09-FEB-12
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0500	0.100	0.0500	U
Beryllium	0.00100	0.00200	0.00100	U
Boron	0.0500	0.100	0.0500	U
Calcium	0.100	0.200	0.100	U
Iron	0.0500	0.100	0.0500	U
Magnesium	0.250	0.500	0.250	U
Molybdenum	0.00500	0.0100	0.00500	U
Potassium	0.500	1.00	0.500	U
Sodium	0.250	0.500	0.250	U
Tin	0.250	0.500	0.250	U
Vanadium	0.00500	0.0100	0.00500	U
Zinc	0.0100	0.0200	0.0100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 2304029
Report generated 02/10/2012 11:25

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L12020220
Run Date: 02/09/2012
Sample ID: WG389200-24
Instrument ID: PE-ICP2
Run Time: 15:40
Method: 6010B
File ID: P2.020912.154033
Analyst: KHR
Units: mg/L
Workgroup (AAB#): WG389167
Cal ID: PE-ICP - 09-FEB-12
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0500	0.100	0.0500	U
Beryllium	0.00100	0.00200	0.00100	U
Boron	0.0500	0.100	0.0500	U
Calcium	0.100	0.200	0.100	U
Iron	0.0500	0.100	0.0500	U
Magnesium	0.250	0.500	0.250	U
Molybdenum	0.00500	0.0100	0.00500	U
Potassium	0.500	1.00	0.500	U
Sodium	0.250	0.500	0.250	U
Tin	0.250	0.500	0.250	U
Vanadium	0.00500	0.0100	0.00500	U
Zinc	0.0100	0.0200	0.0100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 2304029
Report generated 02/10/2012 11:25

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)

(Alternate Source)

Login Number: L12020220 Run Date: 02/09/2012 Sample ID: WG389200-06

Instrument ID: PE-ICP2 Run Time: 10:09 Method: 6010B

File ID: P2.020912.100924 Analyst: KHR Units: mg/L

Workgroup (AAB#): WG389167 Cal ID: PE-ICP - 09-FEB-12

QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Aluminum		10	10.2	102	90 - 110	
Beryllium		.05	0.0517	103	90 - 110	
Boron		.5	0.522	104	90 - 110	
Calcium		10	10.1	101	90 - 110	
Iron		4	4.04	101	90 - 110	
Magnesium		10	10.0	100	90 - 110	
Molybdenum		1	1.00	100	90 - 110	
Potassium		50	50.8	102	90 - 110	
Sodium		50	50.4	101	90 - 110	
Tin		1	1.06	106	90 - 110	
Vanadium		1	1.01	101	90 - 110	
Zinc		1	1.03	103	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 2304025
Report generated 02/10/2012 11:25

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L12020220 Run Date: 02/09/2012 Sample ID: WG389200-11
Instrument ID: PE-ICP2 Run Time: 10:48 Method: 6010B
File ID: P2.020912.104841 Analyst: KHR QC Key: DOD4
Workgroup (AAB#): WG389167 Cal ID: PE-ICP - 09-FEB-12
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.87	mg/L	98.7	90 - 110		
Beryllium		0.0500	0.0507	mg/L	101	90 - 110		
Boron		0.500	0.505	mg/L	101	90 - 110		
Calcium		10.0	9.91	mg/L	99.1	90 - 110		
Iron		4.00	3.90	mg/L	97.5	90 - 110		
Magnesium		10.0	9.80	mg/L	98.0	90 - 110		
Molybdenum		1.00	0.993	mg/L	99.3	90 - 110		
Potassium		50.0	49.5	mg/L	99.1	90 - 110		
Sodium		50.0	51.4	mg/L	103	90 - 110		
Tin		1.00	0.997	mg/L	99.7	90 - 110		
Vanadium		1.00	0.991	mg/L	99.1	90 - 110		
Zinc		1.00	0.990	mg/L	99.0	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 2304028
Report generated 02/10/2012 11:25

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L12020220 Run Date: 02/09/2012 Sample ID: WG389200-13
Instrument ID: PE-ICP2 Run Time: 12:17 Method: 6010B
File ID: P2.020912.121758 Analyst: KHR QC Key: DOD4
Workgroup (AAB#): WG389167 Cal ID: PE-ICP - 09-FEB-12
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.0	mg/L	100	90 - 110		
Beryllium		0.0500	0.0496	mg/L	99.2	90 - 110		
Boron		0.500	0.509	mg/L	102	90 - 110		
Calcium		10.0	10.0	mg/L	100	90 - 110		
Iron		4.00	3.94	mg/L	98.6	90 - 110		
Magnesium		10.0	9.92	mg/L	99.2	90 - 110		
Molybdenum		1.00	0.998	mg/L	99.8	90 - 110		
Potassium		50.0	51.6	mg/L	103	90 - 110		
Sodium		50.0	51.2	mg/L	102	90 - 110		
Tin		1.00	1.04	mg/L	104	90 - 110		
Vanadium		1.00	1.00	mg/L	100	90 - 110		
Zinc		1.00	1.00	mg/L	100	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 2304028
Report generated 02/10/2012 11:25

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L12020220
Run Date: 02/09/2012
Sample ID: WG389200-17
Instrument ID: PE-ICP2
Run Time: 14:21
Method: 6010B
File ID: P2.020912.142149
Analyst: KHR
QC Key: DOD4
Workgroup (AAB#): WG389167
Cal ID: PE-ICP - 09-FEB-12
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.0	mg/L	100	90 - 110		
Beryllium		0.0500	0.0479	mg/L	95.8	90 - 110		
Boron		0.500	0.496	mg/L	99.1	90 - 110		
Calcium		10.0	9.91	mg/L	99.1	90 - 110		
Iron		4.00	3.85	mg/L	96.3	90 - 110		
Magnesium		10.0	9.65	mg/L	96.5	90 - 110		
Molybdenum		1.00	0.977	mg/L	97.7	90 - 110		
Potassium		50.0	52.2	mg/L	104	90 - 110		
Sodium		50.0	52.4	mg/L	105	90 - 110		
Tin		1.00	1.03	mg/L	103	90 - 110		
Vanadium		1.00	1.00	mg/L	100	90 - 110		
Zinc		1.00	0.982	mg/L	98.2	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 2304028
Report generated 02/10/2012 11:25

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L12020220 Run Date: 02/09/2012 Sample ID: WG389200-21
Instrument ID: PE-ICP2 Run Time: 14:52 Method: 6010B
File ID: P2.020912.145229 Analyst: KHR QC Key: DOD4
Workgroup (AAB#): WG389167 Cal ID: PE-ICP - 09-FEB-12
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.94	mg/L	99.4	90 - 110		
Beryllium		0.0500	0.0469	mg/L	93.7	90 - 110		
Boron		0.500	0.485	mg/L	97.1	90 - 110		
Calcium		10.0	9.86	mg/L	98.6	90 - 110		
Iron		4.00	3.81	mg/L	95.3	90 - 110		
Magnesium		10.0	9.58	mg/L	95.8	90 - 110		
Molybdenum		1.00	0.963	mg/L	96.3	90 - 110		
Potassium		50.0	51.8	mg/L	104	90 - 110		
Sodium		50.0	51.2	mg/L	102	90 - 110		
Tin		1.00	1.01	mg/L	101	90 - 110		
Vanadium		1.00	0.983	mg/L	98.3	90 - 110		
Zinc		1.00	0.963	mg/L	96.3	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 2304028
Report generated 02/10/2012 11:25

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L12020220 Run Date: 02/09/2012 Sample ID: WG389200-23
Instrument ID: PE-ICP2 Run Time: 15:33 Method: 6010B
File ID: P2.020912.153338 Analyst: KHR QC Key: DOD4
Workgroup (AAB#): WG389167 Cal ID: PE-ICP - 09-FEB-12
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.88	mg/L	98.8	90 - 110		
Beryllium		0.0500	0.0467	mg/L	93.5	90 - 110		
Boron		0.500	0.484	mg/L	96.7	90 - 110		
Calcium		10.0	9.77	mg/L	97.7	90 - 110		
Iron		4.00	3.78	mg/L	94.6	90 - 110		
Magnesium		10.0	9.46	mg/L	94.6	90 - 110		
Molybdenum		1.00	0.960	mg/L	96.0	90 - 110		
Potassium		50.0	51.2	mg/L	102	90 - 110		
Sodium		50.0	51.0	mg/L	102	90 - 110		
Tin		1.00	0.995	mg/L	99.5	90 - 110		
Vanadium		1.00	0.972	mg/L	97.2	90 - 110		
Zinc		1.00	0.956	mg/L	95.6	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 2304028
Report generated 02/10/2012 11:25

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L12020220 **Workgroup (AAB#):** WG389167
Instrument ID: PE-ICP2 **Method:** 6010B
Sol. A : WG389200-09 **File ID:** P2.020912.103655 **Units:** mg/L
Sol. AB : WG389200-10 **File ID:** P2.020912.104248 **Matrix:** Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Aluminum	250	252	101	250	253	101	
Beryllium	NS	0.000110	NS	0.250	0.252	101	
Boron	NS	-0.0000700	NS	NS	-0.0370	NS	
Calcium	250	258	103	250	255	102	
Iron	100	93.4	93.4	100	93.2	93.2	
Magnesium	250	248	99.2	250	247	98.8	
Molybdenum	NS	0.000650	NS	NS	0.000770	NS	
Potassium	NS	-0.0375	NS	5.00	5.01	100	
Sodium	NS	0.00693	NS	5.00	5.22	104	
Tin	NS	-0.0355	NS	NS	-0.0346	NS	
Vanadium	NS	-0.00348	NS	0.250	0.241	96.4	
Zinc	NS	-0.00468	NS	0.500	0.458	91.6	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 2304027
Report generated 02/10/2012 11:25

LRC SAMPLE

Login Number: L12020220
Run Date: 02/09/2012
Sample ID: WG389200
Instrument ID: PE-ICP2
Run Time: 10:02
Prep Method: 3005A
Analyst: KHR
Method: 6010B
Workgroup (AAB#): WG389167
Matrix: Water
Units: mg/L
Cal ID: 09-FEB-12 - 09-FEB-2012 10:02

Analytes	Expected	Found	% Rec	Limits	Q
Calcium, Total	500	535	107	90 - 110	

KEMRON FORMS - Modified 08/28/2006
Version 1.5 PDF File ID: 2304051
Report generated 02/13/2012 09:05

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L12020220 **Date:** 12/30/2011
Insturment ID: PE-ICP2 **Method:** 6010B

Analyte	Wave Length	AG	AL	AS	B	BA
ALUMINUM	396.15	0	0	0.206	0	0
ANTIMONY	206.84	0	0	-0.740	0	0
ARSENIC	188.98	0	0.0776	0	0	0
BARIUM	233.53	0	0	0	0	0
BERYLLIUM	234.86	0	0	0	0	0
BORON	249.68	0	1.12	0	0	0
CADMIUM	228.80	0	0	3.00	0	0
CALCIUM	227.55	0	0.195	10.0	0	0
CHROMIUM	267.72	0	-0.00252	0	0	0
COBALT	228.62	0	0	0	0	0.337
COPPER	327.39	0	0	0	0	0
IRON	239.56	0	0	0	0	0
LEAD	220.35	0	-0.0265	0	0	0
LITHIUM	670.78	0	0	0	0	0
MAGNESIUM	279.08	0	0	0	0	0
MANGANESE	257.61	-0.185	0	-0.231	-0.0949	-0.230
MOLYBDENUM	202.03	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
POTASSIUM	766.49	0	0	0	0	0
SELENIUM	196.03	0	0.147	0	0	0
SILICON	251.61	0	0	0	0	0
SILVER	328.07	0	0	0	0	0
SODIUM	589.59	0	0	0	0	0
STRONTIUM	407.77	0	0	0	0	0
THALLIUM	190.80	0	0	0	0	0
TIN	189.93	0	0	0	0	0
TITANIUM	334.94	0	0	0	0	0
VANADIUM	290.88	0	0	0.200	0	0.0400
ZINC	206.20	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 2304023
Report generated: 02/10/2012 11:25

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L12020220 **Date:** 12/30/2011
Insturment ID: PE-ICP2 **Method:** 6010B

Analyte	Wave Length	BE	CA	CD	CO	CR
ALUMINUM	396.15	0	0	0	0	0
ANTIMONY	206.84	0	0	0	0	6.33
ARSENIC	188.98	0	0.0200	0	0	-6.59
BARIUM	233.53	0	0	0	0	0
BERYLLIUM	234.86	0	0	0	0	-0.0733
BORON	249.68	0	0	24.1	5.90	1.50
CADMIUM	228.80	0	0	0	0	0
CALCIUM	227.55	0	0	0	300	0
CHROMIUM	267.72	0	0	0	0	0
COBALT	228.62	0	0	0	0	-0.244
COPPER	327.39	0	0	0	0.380	-0.0400
IRON	239.56	0	0	0	1.91	0
LEAD	220.35	0	-0.0480	0	0.116	-0.0700
LITHIUM	670.78	0	0	0	0	0
MAGNESIUM	279.08	0	0	0	0	0
MANGANESE	257.61	-1.04	0	-0.755	-0.0418	-0.110
MOLYBDENUM	202.03	0	0	0	0	0
NICKEL	231.60	0	0	0	-0.566	0
POTASSIUM	766.49	0	0	0	0	0
SELENIUM	196.03	0	-0.300	0	-1.52	0
SILICON	251.61	0	0	0	0	0
SILVER	328.07	0	0	0	0	0
SODIUM	589.59	0	0	0	0	0
STRONTIUM	407.77	0	0	0	0	0
THALLIUM	190.80	0	0.400	0	3.48	0
TIN	189.93	0	0	0	0	0
TITANIUM	334.94	0	-0.0100	0	0	0.297
VANADIUM	290.88	0	0	0	0	0
ZINC	206.20	0	0	0	0	-3.64

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 2304023
Report generated: 02/10/2012 11:25

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L12020220 **Date:** 12/30/2011
Insturment ID: PE-ICP2 **Method:** 6010B

Analyte	Wave Length	CU	FE	K	LI	MG
ALUMINUM	396.15	0	0.0192	0	0	0
ANTIMONY	206.84	0	0	0	0	0
ARSENIC	188.98	0	-0.00250	0	0	0
BARIUM	233.53	0	-0.0187	0	0	0
BERYLLIUM	234.86	0	0.210	0	0	0
BORON	249.68	0	-4.66	0	0	0
CADMIUM	228.80	0	-0.00420	0	0	0
CALCIUM	227.55	-2.00	100	0	0	0.104
CHROMIUM	267.72	0	0.0391	0	0	0
COBALT	228.62	0	0.0262	0	0	0
COPPER	327.39	0	-0.0688	0	0.154	0
IRON	239.56	0	0	0	0	0.0276
LEAD	220.35	0.740	0.0440	0	0	0
LITHIUM	670.78	0	0	0	0	0
MAGNESIUM	279.08	0	0.540	0	0	0
MANGANESE	257.61	-0.0457	-0.0580	-0.0181	-0.794	0.0147
MOLYBDENUM	202.03	0	-0.0494	0	0	0
NICKEL	231.60	0	0	0	0	0
POTASSIUM	766.49	0	0	0	0	0
SELENIUM	196.03	0	-0.465	0	0	0
SILICON	251.61	0	0	0	0	0
SILVER	328.07	0.0717	0.0240	0	0	0
SODIUM	589.59	0	0	0	0	0
STRONTIUM	407.77	0	0.120	0	0	0
THALLIUM	190.80	0	0	0	0	0
TIN	189.93	0	0	0	0	0
TITANIUM	334.94	0	0	0	0	0
VANADIUM	290.88	0	0.134	0	0	0
ZINC	206.20	-0.200	0.0198	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 2304023
Report generated: 02/10/2012 11:25

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L12020220 **Date:** 12/30/2011
Insturment ID: PE-ICP2 **Method:** 6010B

Analyte	Wave Length	MN	MO	NA	NI	PB
ALUMINUM	396.15	0	13.5	0	0	0
ANTIMONY	206.84	0	-7.69	0	0	0
ARSENIC	188.98	0	6.00	0	0	0
BARIUM	233.53	0	-0.548	0	0	0
BERYLLIUM	234.86	-0.131	-1.50	0	-0.00974	0
BORON	249.68	0	-2.20	0	0	0
CADMIUM	228.80	0	-0.00900	0	-0.398	0
CALCIUM	227.55	0	-8.00	0	-900	0
CHROMIUM	267.72	0.434	-0.00100	0	0	0
COBALT	228.62	0	-0.125	0	0.129	0
COPPER	327.39	0	-0.0774	0	0.150	0.257
IRON	239.56	0.480	0	0	0	0.407
LEAD	220.35	0.100	-5.00	0	0.100	0
LITHIUM	670.78	0	0	0	0	0
MAGNESIUM	279.08	0	-5.00	0	0	0.0252
MANGANESE	257.61	0	-0.0482	-0.00916	-0.0340	-0.0413
MOLYBDENUM	202.03	-0.209	0	0	0.120	0
NICKEL	231.60	0	0	0	0	0
POTASSIUM	766.49	0	0	1.00	0	0
SELENIUM	196.03	0.451	0.300	0	0.0940	0
SILICON	251.61	0	15.0	0	0	0
SILVER	328.07	0.130	0.100	0	0	0
SODIUM	589.59	0	0	0	0	0
STRONTIUM	407.77	0	0	0	0	0
THALLIUM	190.80	-1.50	1.20	0	0	0
TIN	189.93	0	0	0	0	0
TITANIUM	334.94	0	0	0	0	0
VANADIUM	290.88	0	0.578	0	0	0
ZINC	206.20	0	0.180	0	-0.200	-0.100

CORR_FACTORS - Modified 03/05/2008
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Report generated: 02/10/2012 11:25

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L12020220 **Date:** 12/30/2011
Insturment ID: PE-ICP2 **Method:** 6010B

Analyte	Wave Length	SB	SE	SI	SN	SR
ALUMINUM	396.15	0	0	0	0	0
ANTIMONY	206.84	0	0	0	0	0
ARSENIC	188.98	0	0	0	0	0
BARIUM	233.53	0	0	0	0	0
BERYLLIUM	234.86	0	0	0	0	0
BORON	249.68	0	0	0	0	0
CADMIUM	228.80	0	0	0	0	0
CALCIUM	227.55	0	0	0	0	0
CHROMIUM	267.72	0	0	0	0	0
COBALT	228.62	0	0	0	0	0
COPPER	327.39	0	0.148	0	0	0
IRON	239.56	0	0	0	0	0
LEAD	220.35	-0.0100	0	0	0	0
LITHIUM	670.78	0	0	0	0	0
MAGNESIUM	279.08	0	-0.0924	0	0	0
MANGANESE	257.61	-0.0505	-0.0281	-0.185	-0.0445	-0.625
MOLYBDENUM	202.03	0	0	0	0	0
NICKEL	231.60	-0.0500	-0.0100	0	0	0
POTASSIUM	766.49	0	0	0	0	0
SELENIUM	196.03	0	0	0	0	0
SILICON	251.61	0	0	0	0	0
SILVER	328.07	0	0	0	0	0.200
SODIUM	589.59	0	0	0	0	0
STRONTIUM	407.77	0	0	0	0	0
THALLIUM	190.80	0	0	0	0	0
TIN	189.93	0	0	0	0	0
TITANIUM	334.94	0	0	0	0	0
VANADIUM	290.88	0	0	0	0	0
ZINC	206.20	-0.300	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
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Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L12020220 **Date:** 12/30/2011
Insturment ID: PE-ICP2 **Method:** 6010B

Analyte	Wave Length	TI	TL	V	ZN
ALUMINUM	396.15	0	0	0	0
ANTIMONY	206.84	0	0	0.000100	0
ARSENIC	188.98	0	0	0.0930	0
BARIUM	233.53	0	0	-2.29	0
BERYLLIUM	234.86	0	0	0	0
BORON	249.68	0	0	0	0
CADMIUM	228.80	0	0	0.0800	0
CALCIUM	227.55	3.00	0	60.0	0
CHROMIUM	267.72	0	0	-0.567	-0.0400
COBALT	228.62	2.21	0	0	0
COPPER	327.39	-1.05	0	-0.700	-0.0613
IRON	239.56	0	0	0	0
LEAD	220.35	0	0	0.0560	0
LITHIUM	670.78	0	0	0	0
MAGNESIUM	279.08	0	0	0	0
MANGANESE	257.61	-0.00931	-0.0414	-0.0601	-0.0552
MOLYBDENUM	202.03	0	0	-0.288	0
NICKEL	231.60	0	0.617	0	0
POTASSIUM	766.49	0	0	0	0
SELENIUM	196.03	-0.220	0	-0.126	0
SILICON	251.61	0	0	0	0
SILVER	328.07	0	0	-1.67	0
SODIUM	589.59	0	0	0	0
STRONTIUM	407.77	0	0	0	0
THALLIUM	190.80	-12.0	0	-1.41	0
TIN	189.93	0	0	0	0
TITANIUM	334.94	0	0	0	0
VANADIUM	290.88	0	0	0	0
ZINC	206.20	0	0	-0.100	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 2304023
Report generated: 02/10/2012 11:25

Microbac Laboratories Inc.
LINEAR RANGE (QUARTERLY)

Login Number: L12020220 **Date:** 01/03/2012
Insturment ID: PE-ICP2 **Method:** 6010B

Analyte	Integration Time (Sec.)	Concentration (mg/L)
Aluminum	10.00	450.0
Antimony	10.00	45.0
Arsenic	10.00	9.0
Barium	10.00	9.0
Beryllium	10.00	4.5
Boron	10.00	45.0
Cadmium	10.00	4.5
Calcium	10.00	450.0
Chromium	10.00	45.0
Cobalt	10.00	45.0
Copper	10.00	45.0
Iron	10.00	450.0
Lead	10.00	90.0
Lithium	10.00	0.9
Magnesium	10.00	450.0
Manganese	10.00	27.0
Molybdenum	10.00	45.0
Nickel	10.00	45.0
Potassium	10.00	72.0
Selenium	10.00	45.0
Silicon	10.00	36.0
Silver	10.00	4.5
Sodium	10.00	180.0
Strontium	10.00	4.5
Thallium	10.00	45.0
Tin	10.00	45.0
Titanium	10.00	27.0
Vanadium	10.00	45.0
Zinc	10.00	45.0

Comments:
All analytes passed acceptance criteria at the specified concentration.

LINEAR_RANGE - Modified 03/06/2008
PDF File ID: 2304022
Report generated: 02/10/2012 11:25

2.1.1.3 Raw Data

==========

Sequence No.: 1 **Autosampler Location: 1**
Sample ID: S0 **Date Collected: 2/9/2012 9:35:06 AM**
Analyst: **Data Type: Reprocessed on 2/10/2012 11:13:15 AM**
Logged In Analyst (Original) : peicp2
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: S0

Analyte	Back Pressure	Flow
All	144.0 kPa	0.50 L/min

Mean Data: S0

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Calib Conc.	Units
Y 371.029	3706359.8	38209.33	1.03%		
YRADIAL	274538.0	6390.76	2.33%		
Ga 417.206	751838.7	7101.60	0.94%		
GaRADIAL	42708.2	626.93	1.47%		
Ag 328.068†	-851.3	78.40	9.21%	[0.00]	mg/L
Al 396.153†	25.7	34.36	133.70%	[0.00]	mg/L
As 188.979†	-1.2	1.85	160.43%	[0.00]	mg/L
Ba 233.527†	-5.6	6.76	120.23%	[0.00]	mg/L
Be 234.861†	-369.2	6.26	1.70%	[0.00]	mg/L
B 249.677†	117.1	6.40	5.46%	[0.00]	mg/L
Ca 227.546†	-7.2	6.14	84.73%	[0.00]	mg/L
Cd 228.802†	32.6	2.46	7.53%	[0.00]	mg/L
Co 228.616†	-13.8	2.30	16.69%	[0.00]	mg/L
Cr 267.716†	95.7	6.54	6.83%	[0.00]	mg/L
Cu 327.393†	-1668.9	66.59	3.99%	[0.00]	mg/L
Fe 239.562†	-0.5	0.42	81.58%	[0.00]	mg/L
Mg 279.077†	6.6	0.86	13.06%	[0.00]	mg/L
Mn 257.610†	65.6	8.88	13.53%	[0.00]	mg/L
Mo 202.031†	-15.1	3.48	23.02%	[0.00]	mg/L
Ni 231.604†	4.3	6.89	160.81%	[0.00]	mg/L
Pb 220.353†	12.7	0.45	3.58%	[0.00]	mg/L
Sb 206.836†	8.1	0.36	4.40%	[0.00]	mg/L
Se 196.026†	5.8	1.77	30.63%	[0.00]	mg/L
Si 251.611†	502.6	5.42	1.08%	[0.00]	mg/L
Sn 189.927†	10.4	2.68	25.79%	[0.00]	mg/L
Ti 334.940†	312.9	97.61	31.20%	[0.00]	mg/L
Tl 190.801†	-14.6	2.23	15.25%	[0.00]	mg/L
V 290.880†	5281.7	96.02	1.82%	[0.00]	mg/L
Zn 206.200†	-0.8	2.07	265.61%	[0.00]	mg/L
K 766.490†	-39.8	110.10	276.43%	[0.00]	mg/L
Na 589.592†	-34.6	85.86	248.34%	[0.00]	mg/L
Sr 407.771†	-642.7	33.85	5.27%	[0.00]	mg/L
Li 670.784†	-66.6	73.53	110.33%	[0.00]	mg/L

==========

Sequence No.: 2 **Autosampler Location: 2**
Sample ID: S1 **Date Collected: 2/9/2012 9:41:55 AM**
Analyst: **Data Type: Reprocessed on 2/10/2012 11:13:17 AM**
Logged In Analyst (Original) : peicp2
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: S1

Analyte	Back Pressure	Flow
All	144.0 kPa	0.50 L/min

Mean Data: S1

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Calib Conc.	Units
Y 371.029	3693980.6	35541.68	0.96%		
YRADIAL	272790.0	3965.70	1.45%		
Ga 417.206	747472.0	10183.76	1.36%		

Approved: February 10, 2012

GaRADIAL	42287.8	575.36	1.36%		
Ag 328.068†	485.3	65.19	13.43%	[0.0040]	mg/L
Al 396.153†	262.7	6.16	2.35%	[0.10]	mg/L
Ba 233.527†	293.6	6.51	2.22%	[0.010]	mg/L
Be 234.861†	148.2	3.09	2.09%	[0.0005]	mg/L
Cd 228.802†	7.4	1.98	26.78%	[0.00050]	mg/L
Co 228.616†	20.1	2.65	13.19%	[0.0020]	mg/L
Cr 267.716†	300.5	5.81	1.93%	[0.0050]	mg/L
Cu 327.393†	570.9	110.53	19.36%	[0.0050]	mg/L
Fe 239.562†	2.8	1.47	52.79%	[0.040]	mg/L
Mg 279.077†	22.2	0.68	3.07%	[0.10]	mg/L
Mn 257.610†	1262.2	19.82	1.57%	[0.0050]	mg/L
Mo 202.031†	65.9	3.10	4.71%	[0.010]	mg/L
Ni 231.604†	81.1	3.40	4.19%	[0.0050]	mg/L
Pb 220.353†	10.8	2.29	21.26%	[0.0050]	mg/L
Sb 206.836†	9.7	1.61	16.55%	[0.012]	mg/L
Si 251.611†	997.4	30.38	3.05%	[0.050]	mg/L
Sn 189.927†	22.6	0.82	3.66%	[0.010]	mg/L
Ti 334.940†	4731.7	53.67	1.13%	[0.010]	mg/L
V 290.880†	915.5	90.71	9.91%	[0.010]	mg/L
Zn 206.200†	107.4	0.97	0.90%	[0.010]	mg/L
K 766.490†	816.5	65.19	7.98%	[0.50]	mg/L
Na 589.592†	5556.4	83.36	1.50%	[0.50]	mg/L
Sr 407.771†	12073.0	153.12	1.27%	[0.010]	mg/L
Li 670.784†	722.8	28.60	3.96%	[0.010]	mg/L

Sequence No.: 3 **Autosampler Location: 3**
Sample ID: S2 **Date Collected: 2/9/2012 9:48:45 AM**
Analyst: **Data Type: Reprocessed on 2/10/2012 11:13:18 AM**
Logged In Analyst (Original) : peicp2
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: S2

Analyte	Back Pressure	Flow
All	145.0 kPa	0.50 L/min

Mean Data: S2

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Conc.	Calib Units
Y 371.029	3648466.1	51860.54	1.42%		
YRADIAL	276223.0	5758.40	2.08%		
Ga 417.206	749512.3	13263.14	1.77%		
GaRADIAL	42908.0	844.23	1.97%		
Ag 328.068†	1096.8	22.39	2.04%	[0.0080]	mg/L
Al 396.153†	590.0	17.71	3.00%	[0.20]	mg/L
As 188.979†	7.0	1.29	18.50%	[0.0080]	mg/L
Ba 233.527†	601.7	12.31	2.05%	[0.020]	mg/L
Be 234.861†	315.7	2.21	0.70%	[0.0010]	mg/L
B 249.677†	312.5	8.28	2.65%	[0.010]	mg/L
Ca 227.546†	18.9	4.15	21.99%	[0.20]	mg/L
Cd 228.802†	15.8	1.06	6.71%	[0.0010]	mg/L
Co 228.616†	37.8	2.18	5.77%	[0.0040]	mg/L
Cr 267.716†	616.3	17.66	2.87%	[0.010]	mg/L
Cu 327.393†	1191.4	67.73	5.68%	[0.010]	mg/L
Fe 239.562†	6.1	0.84	13.71%	[0.080]	mg/L
Mg 279.077†	48.0	2.79	5.81%	[0.20]	mg/L
Mn 257.610†	2616.5	45.41	1.74%	[0.010]	mg/L
Mo 202.031†	136.4	7.98	5.85%	[0.020]	mg/L
Ni 231.604†	159.9	3.82	2.39%	[0.010]	mg/L
Pb 220.353†	22.9	4.86	21.21%	[0.010]	mg/L
Sb 206.836†	22.2	0.81	3.63%	[0.024]	mg/L
Se 196.026†	2.9	2.30	79.03%	[0.0080]	mg/L
Si 251.611†	1949.6	38.54	1.98%	[0.10]	mg/L
Sn 189.927†	47.8	3.27	6.84%	[0.020]	mg/L
Ti 334.940†	9977.3	267.64	2.68%	[0.020]	mg/L
Tl 190.801†	7.3	5.89	81.14%	[0.010]	mg/L
V 290.880†	1763.9	123.23	6.99%	[0.020]	mg/L
Zn 206.200†	216.1	1.29	0.60%	[0.020]	mg/L

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K 766.490†	1669.5	56.98	3.41%	[1.00]	mg/L
Na 589.592†	11013.2	411.94	3.74%	[1.00]	mg/L
Sr 407.771†	24179.8	1057.17	4.37%	[0.020]	mg/L
Li 670.784†	1421.6	86.01	6.05%	[0.020]	mg/L

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Sequence No.: 4 **Autosampler Location: 4**
Sample ID: S3 **Date Collected: 2/9/2012 9:55:34 AM**
Analyst: **Data Type: Reprocessed on 2/10/2012 11:13:19 AM**
Logged In Analyst (Original) : peicp2
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: S3

Analyte	Back Pressure	Flow
All	145.0 kPa	0.50 L/min

Mean Data: S3

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Calib Conc.	Units
Y 371.029	3547551.9	25319.42	0.71%		
YRADIAL	271323.1	2343.16	0.86%		
Ga 417.206	793683.5	9459.65	1.19%		
GaRADIAL	43860.2	872.46	1.99%		
Ag 328.068†	51669.7	714.39	1.38%	[0.40]	mg/L
Al 396.153†	29923.7	36.56	0.12%	[10.00]	mg/L
As 188.979†	197.5	2.58	1.30%	[0.40]	mg/L
Ba 233.527†	29134.0	328.80	1.13%	[1.00]	mg/L
Be 234.861†	13866.5	205.48	1.48%	[0.05]	mg/L
B 249.677†	14360.2	170.49	1.19%	[0.50]	mg/L
Ca 227.546†	726.5	9.30	1.28%	[10.00]	mg/L
Cd 228.802†	631.4	11.80	1.87%	[0.05]	mg/L
Co 228.616†	1826.7	14.76	0.81%	[0.20]	mg/L
Cr 267.716†	29418.0	295.08	1.00%	[0.50]	mg/L
Cu 327.393†	55570.6	854.16	1.54%	[0.50]	mg/L
Fe 239.562†	290.5	6.41	2.21%	[4.00]	mg/L
Mg 279.077†	2531.3	22.26	0.88%	[10.00]	mg/L
Mn 257.610†	123958.9	1385.38	1.12%	[0.50]	mg/L
Mo 202.031†	6768.4	66.02	0.98%	[1.00]	mg/L
Ni 231.604†	7782.9	115.88	1.49%	[0.50]	mg/L
Pb 220.353†	1266.1	10.83	0.86%	[0.50]	mg/L
Sb 206.836†	965.8	17.90	1.85%	[1.20]	mg/L
Se 196.026†	240.2	5.33	2.22%	[0.40]	mg/L
Si 251.611†	88898.1	1339.20	1.51%	[5.00]	mg/L
Sn 189.927†	2350.9	23.50	1.00%	[1.00]	mg/L
Ti 334.940†	489026.0	2874.41	0.59%	[1.00]	mg/L
Tl 190.801†	408.8	4.39	1.07%	[0.50]	mg/L
V 290.880†	83422.0	803.22	0.96%	[1.00]	mg/L
Zn 206.200†	10691.0	161.08	1.51%	[1.00]	mg/L
K 766.490†	80141.7	403.36	0.50%	[50.00]	mg/L
Na 589.592†	523546.9	20175.00	3.85%	[50.00]	mg/L
Sr 407.771†	1182534.6	17665.47	1.49%	[1.00]	mg/L
Li 670.784†	71594.2	386.45	0.54%	[1.00]	mg/L

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Sequence No.: 5 **Autosampler Location: 5**
Sample ID: S4 **Date Collected: 2/9/2012 10:02:28 AM**
Analyst: **Data Type: Reprocessed on 2/10/2012 11:13:20 AM**
Logged In Analyst (Original) : peicp2
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: S4

Analyte	Back Pressure	Flow
All	145.0 kPa	0.50 L/min

Mean Data: S4

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Calib Conc.	Units

Approved: February 10, 2012

Analyte	Intensity	Std.Dev.	RSD	Conc.	Units
Y 371.029	3589518.9	22968.90	0.64%		
YRADIAL	267933.8	2393.33	0.89%		
Ga 417.206	806143.2	8793.94	1.09%		
GaRADIAL	43391.8	582.23	1.34%		
Ag 328.068†	101818.2	2759.12	2.71%	[0.80]	mg/L
Al 396.153†	59740.4	140.95	0.24%	[20.00]	mg/L
As 188.979†	387.4	7.34	1.89%	[0.80]	mg/L
Ba 233.527†	56789.1	1203.74	2.12%	[2.00]	mg/L
Be 234.861†	27338.9	627.88	2.30%	[0.10]	mg/L
B 249.677†	28447.2	914.90	3.22%	[1.00]	mg/L
Ca 227.546†	1446.0	23.97	1.66%	[20.00]	mg/L
Cd 228.802†	1244.3	16.85	1.35%	[0.10]	mg/L
Co 228.616†	3557.8	33.78	0.95%	[0.40]	mg/L
Cr 267.716†	57526.9	1167.41	2.03%	[1.00]	mg/L
Cu 327.393†	109202.6	3244.45	2.97%	[1.00]	mg/L
Fe 239.562†	584.5	4.04	0.69%	[8.00]	mg/L
Mg 279.077†	5116.1	40.60	0.79%	[20.00]	mg/L
Mn 257.610†	240359.7	558.54	0.23%	[1.00]	mg/L
Mo 202.031†	13296.7	262.33	1.97%	[2.00]	mg/L
Ni 231.604†	15074.3	300.71	1.99%	[1.00]	mg/L
Pb 220.353†	2455.5	28.08	1.14%	[1.00]	mg/L
Sb 206.836†	1894.9	30.54	1.61%	[2.40]	mg/L
Se 196.026†	475.0	2.64	0.56%	[0.80]	mg/L
Si 251.611†	173834.7	948.49	0.55%	[10.00]	mg/L
Sn 189.927†	4559.2	57.30	1.26%	[2.00]	mg/L
Ti 334.940†	970531.4	1846.46	0.19%	[2.00]	mg/L
Tl 190.801†	786.6	4.62	0.59%	[1.00]	mg/L
V 290.880†	164591.5	326.67	0.20%	[2.00]	mg/L
Zn 206.200†	20855.4	336.28	1.61%	[2.00]	mg/L
K 766.490†	160124.5	845.43	0.53%	[100.00]	mg/L
Na 589.592†	1057358.4	42847.43	4.05%	[100.00]	mg/L
Sr 407.771†	2403089.7	103498.56	4.31%	[2.00]	mg/L
Li 670.784†	140785.1	358.53	0.25%	[2.00]	mg/L

Calibration Summary

Analyte	Stds.	Equation	Intercept	Slope	Curvature	Corr. Coef.	Reslope
Ag 328.068	4	Lin, Calc Int	111.8	127500	0.00000	0.999974	
Al 396.153	4	Lin, Calc Int	-6.9	2988	0.00000	0.999999	
As 188.979	3	Wt. Lin	3.1	483.2	0.00000	0.999982	
Ba 233.527	4	Lin, Calc Int	105.7	28480	0.00000	0.999921	
Be 234.861	4	Lin, Calc Int	41.4	273700	0.00000	0.999977	
B 249.677	3	Lin, Calc Int	37.6	28460	0.00000	0.999989	
Ca 227.546	3	Lin, Calc Int	2.6	72.21	0.00000	0.999995	
Cd 228.802	4	Lin, Calc Int	2.6	12450	0.00000	0.999975	
Co 228.616	4	Lin, Calc Int	7.4	8920	0.00000	0.999917	
Cr 267.716	4	Lin, Calc Int	98.4	57670	0.00000	0.999940	
Cu 327.393	4	Lin, Calc Int	159.6	109400	0.00000	0.999964	
Fe 239.562	4	Lin, Calc Int	-0.2	73.00	0.00000	0.999995	
Mg 279.077	4	Lin, Calc Int	-5.4	255.6	0.00000	0.999988	
Mn 257.610	4	Lin, Calc Int	556.1	241200	0.00000	0.999886	
Mo 202.031	4	Lin, Calc Int	15.9	6663	0.00000	0.999962	
Ni 231.604	4	Lin, Calc Int	35.3	15130	0.00000	0.999877	
Pb 220.353	4	Lin, Calc Int	3.8	2466	0.00000	0.999882	
Sb 206.836	4	Lin, Calc Int	3.4	790.9	0.00000	0.999957	
Se 196.026	3	Wt. Lin	-1.9	600.7	0.00000	0.999971	
Si 251.611	4	Lin, Calc Int	352.9	17420	0.00000	0.999942	
Sn 189.927	4	Lin, Calc Int	9.5	2288	0.00000	0.999886	
Ti 334.940	4	Lin, Calc Int	515.3	485700	0.00000	0.999993	
Tl 190.801	3	Lin, Calc Int	2.5	789.8	0.00000	0.999791	
V 290.880	4	Lin, Calc Int	206.2	82400	0.00000	0.999979	
Zn 206.200	4	Lin, Calc Int	36.1	10460	0.00000	0.999926	
K 766.490	4	Non Lin, Calc Int	26.5	1604	-0.02707	1.000000	
Na 589.592	4	Non Lin, Calc Int	339.7	10360	2.11497	1.000000	
Sr 407.771	4	Lin, Calc Int	-2303.1	1199000	0.00000	0.999970	
Li 670.784	4	Lin, Calc Int	159.9	70540	0.00000	0.999966	

Sequence No.: 6 **Autosampler Location: 11**
Sample ID: ICV 2nd Vendor **Date Collected: 2/9/2012 10:09:24 AM**

Approved: February 10, 2012

Analyst:
Logged In Analyst (Original) : peicp2
Initial Sample Wt:
Dilution:

Data Type: Reprocessed on 2/10/2012 11:13:21 AM
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: ICV 2nd Vendor

Analyte	Back Pressure	Flow
All	145.0 kPa	0.50 L/min

Mean Data: ICV 2nd Vendor

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3513606.5						77117.01	2.19%
YRADIAL	271849.1						6440.50	2.37%
Ga 417.206	787049.0						19341.15	2.46%
GaRADIAL	44038.9						633.84	1.44%
Ag 328.068†	51922.8	0.408	mg/L	0.0063	0.408	mg/L	0.0063	1.55%
QC value within limits for Ag 328.068 Recovery = 101.88%								
Al 396.153†	30492.9	10.2	mg/L	0.07	10.2	mg/L	0.07	0.71%
QC value within limits for Al 396.153 Recovery = 101.92%								
As 188.979†	199.5	0.403	mg/L	0.0149	0.403	mg/L	0.0149	3.70%
QC value within limits for As 188.979 Recovery = 100.77%								
Ba 233.527†	29654.1	1.04	mg/L	0.012	1.04	mg/L	0.012	1.17%
QC value within limits for Ba 233.527 Recovery = 104.04%								
Be 234.861†	13964.2	0.0517	mg/L	0.00082	0.0517	mg/L	0.00082	1.60%
QC value within limits for Be 234.861 Recovery = 103.35%								
B 249.677†	14630.1	0.522	mg/L	0.0079	0.522	mg/L	0.0079	1.52%
QC value within limits for B 249.677 Recovery = 104.31%								
Ca 227.546†	735.4	10.1	mg/L	0.25	10.1	mg/L	0.25	2.51%
QC value within limits for Ca 227.546 Recovery = 100.88%								
Cd 228.802†	644.4	0.0529	mg/L	0.00140	0.0529	mg/L	0.00140	2.65%
QC value greater than the upper limit for Cd 228.802 Recovery = 105.77%								
Co 228.616†	1859.7	0.205	mg/L	0.0048	0.205	mg/L	0.0048	2.32%
QC value within limits for Co 228.616 Recovery = 102.57%								
Cr 267.716†	29840.9	0.516	mg/L	0.0035	0.516	mg/L	0.0035	0.67%
QC value within limits for Cr 267.716 Recovery = 103.19%								
Cu 327.393†	57070.9	0.522	mg/L	0.0079	0.522	mg/L	0.0079	1.51%
QC value within limits for Cu 327.393 Recovery = 104.34%								
Fe 239.562†	294.7	4.04	mg/L	0.104	4.04	mg/L	0.104	2.58%
QC value within limits for Fe 239.562 Recovery = 100.94%								
Mg 279.077†	2549.2	10.00	mg/L	0.262	10.00	mg/L	0.262	2.62%
QC value within limits for Mg 279.077 Recovery = 99.97%								
Mn 257.610†	126094.6	0.524	mg/L	0.0056	0.524	mg/L	0.0056	1.06%
QC value within limits for Mn 257.610 Recovery = 104.88%								
Mo 202.031†	6702.7	1.00	mg/L	0.009	1.00	mg/L	0.009	0.94%
QC value within limits for Mo 202.031 Recovery = 100.42%								
Ni 231.604†	7904.5	0.520	mg/L	0.0065	0.520	mg/L	0.0065	1.24%
QC value within limits for Ni 231.604 Recovery = 103.99%								
Pb 220.353†	1273.4	0.520	mg/L	0.0137	0.520	mg/L	0.0137	2.63%
QC value within limits for Pb 220.353 Recovery = 104.00%								
Sb 206.836†	989.8	1.25	mg/L	0.030	1.25	mg/L	0.030	2.42%
QC value within limits for Sb 206.836 Recovery = 104.33%								
Se 196.026†	240.0	0.407	mg/L	0.0123	0.407	mg/L	0.0123	3.04%
QC value within limits for Se 196.026 Recovery = 101.66%								
Si 251.611†	90226.7	5.14	mg/L	0.072	5.14	mg/L	0.072	1.41%
QC value within limits for Si 251.611 Recovery = 102.88%								
Sn 189.927†	2434.1	1.06	mg/L	0.023	1.06	mg/L	0.023	2.19%
QC value greater than the upper limit for Sn 189.927 Recovery = 105.96%								
Ti 334.940†	492724.7	1.01	mg/L	0.001	1.01	mg/L	0.001	0.11%
QC value within limits for Ti 334.940 Recovery = 101.33%								
Tl 190.801†	421.6	0.539	mg/L	0.0101	0.539	mg/L	0.0101	1.88%
QC value greater than the upper limit for Tl 190.801 Recovery = 107.81%								
V 290.880†	83815.9	1.01	mg/L	0.009	1.01	mg/L	0.009	0.88%
QC value within limits for V 290.880 Recovery = 101.39%								
Zn 206.200†	10769.6	1.03	mg/L	0.018	1.03	mg/L	0.018	1.73%
QC value within limits for Zn 206.200 Recovery = 102.86%								
K 766.490†	81547.6	50.8	mg/L	0.16	50.8	mg/L	0.16	0.31%
QC value within limits for K 766.490 Recovery = 101.65%								
Na 589.592†	527804.0	50.4	mg/L	1.75	50.4	mg/L	1.75	3.48%
QC value within limits for Na 589.592 Recovery = 100.80%								

Approved: February 10, 2012

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Sr 407.771†          1204367.5        1.01 mg/L         0.015        1.01 mg/L         0.015   1.52%
   QC value within limits for Sr 407.771  Recovery = 100.54%
Li 670.784†            72837.4        1.03 mg/L         0.003        1.03 mg/L         0.003   0.27%
   QC value within limits for Li 670.784  Recovery = 103.04%
QC Failed.  Continue with analysis.
```

Sequence No.: 7 **Autosampler Location: 1**
Sample ID: ICB **Date Collected: 2/9/2012 10:16:18 AM**
Analyst: **Data Type: Reprocessed on 2/10/2012 11:13:23 AM**
Logged In Analyst (Original) : peicp2
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: ICB

Analyte	Back Pressure	Flow
All	145.0 kPa	0.50 L/min

Mean Data: ICB

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3648873.0						21080.91	0.58%
YRADIAL	271045.6						2013.26	0.74%
Ga 417.206	739446.4						3584.03	0.48%
GaRADIAL	42211.8						989.17	2.34%
Ag 328.068†	-92.1	-0.00160	mg/L	0.000834	-0.00160	mg/L	0.000834	52.09%
QC value within limits for Ag 328.068 Recovery = Not calculated								
Al 396.153†	6.8	0.00465	mg/L	0.014304	0.00465	mg/L	0.014304	307.88%
QC value within limits for Al 396.153 Recovery = Not calculated								
As 188.979†	0.1	-0.00627	mg/L	0.002448	-0.00627	mg/L	0.002448	39.06%
QC value within limits for As 188.979 Recovery = Not calculated								
Ba 233.527†	-2.2	-0.00379	mg/L	0.000096	-0.00379	mg/L	0.000096	2.54%
QC value within limits for Ba 233.527 Recovery = Not calculated								
Be 234.861†	16.1	-0.00010	mg/L	0.000020	-0.00010	mg/L	0.000020	20.15%
QC value within limits for Be 234.861 Recovery = Not calculated								
B 249.677†	150.9	0.00409	mg/L	0.000362	0.00409	mg/L	0.000362	8.84%
QC value within limits for B 249.677 Recovery = Not calculated								
Ca 227.546†	1.4	-0.0207	mg/L	0.01115	-0.0207	mg/L	0.01115	53.96%
QC value within limits for Ca 227.546 Recovery = Not calculated								
Cd 228.802†	2.9	0.00000	mg/L	0.000079	0.00000	mg/L	0.000079	>999.9%
QC value within limits for Cd 228.802 Recovery = Not calculated								
Co 228.616†	-1.1	-0.00095	mg/L	0.000116	-0.00095	mg/L	0.000116	12.23%
QC value within limits for Co 228.616 Recovery = Not calculated								
Cr 267.716†	-16.5	-0.00199	mg/L	0.000056	-0.00199	mg/L	0.000056	2.80%
QC value within limits for Cr 267.716 Recovery = Not calculated								
Cu 327.393†	-74.1	-0.00214	mg/L	0.000203	-0.00214	mg/L	0.000203	9.52%
QC value within limits for Cu 327.393 Recovery = Not calculated								
Fe 239.562†	1.5	0.0234	mg/L	0.02431	0.0234	mg/L	0.02431	103.82%
QC value within limits for Fe 239.562 Recovery = Not calculated								
Mg 279.077†	-1.4	0.0153	mg/L	0.01324	0.0153	mg/L	0.01324	86.67%
QC value within limits for Mg 279.077 Recovery = Not calculated								
Mn 257.610†	8.2	-0.00228	mg/L	0.000020	-0.00228	mg/L	0.000020	0.87%
QC value within limits for Mn 257.610 Recovery = Not calculated								
Mo 202.031†	-1.6	-0.00261	mg/L	0.000118	-0.00261	mg/L	0.000118	4.53%
QC value within limits for Mo 202.031 Recovery = Not calculated								
Ni 231.604†	8.3	-0.00178	mg/L	0.000096	-0.00178	mg/L	0.000096	5.42%
QC value within limits for Ni 231.604 Recovery = Not calculated								
Pb 220.353†	-1.5	-0.00216	mg/L	0.001330	-0.00216	mg/L	0.001330	61.47%
QC value within limits for Pb 220.353 Recovery = Not calculated								
Sb 206.836†	1.0	-0.00311	mg/L	0.002955	-0.00311	mg/L	0.002955	95.09%
QC value within limits for Sb 206.836 Recovery = Not calculated								
Se 196.026†	-4.0	-0.00352	mg/L	0.005301	-0.00352	mg/L	0.005301	150.78%
QC value within limits for Se 196.026 Recovery = Not calculated								
Si 251.611†	64.7	-0.0165	mg/L	0.00021	-0.0165	mg/L	0.00021	1.26%
QC value within limits for Si 251.611 Recovery = Not calculated								
Sn 189.927†	5.3	-0.00182	mg/L	0.001380	-0.00182	mg/L	0.001380	75.65%
QC value within limits for Sn 189.927 Recovery = Not calculated								
Ti 334.940†	-85.1	-0.00124	mg/L	0.000116	-0.00124	mg/L	0.000116	9.37%
QC value within limits for Ti 334.940 Recovery = Not calculated								
Tl 190.801†	-2.2	-0.00602	mg/L	0.002475	-0.00602	mg/L	0.002475	41.09%

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QC value within limits for Tl 190.801 Recovery = Not calculated

V 290.880†	164.7	-0.00050	mg/L	0.001765	-0.00050	mg/L	0.001765	350.11%

QC value within limits for V 290.880 Recovery = Not calculated

Zn 206.200†	3.4	-0.00314	mg/L	0.000245	-0.00314	mg/L	0.000245	7.80%

QC value within limits for Zn 206.200 Recovery = Not calculated

K 766.490†	59.8	0.0208	mg/L	0.03263	0.0208	mg/L	0.03263	156.82%

QC value within limits for K 766.490 Recovery = Not calculated

Na 589.592†	-15.8	-0.0343	mg/L	0.00982	-0.0343	mg/L	0.00982	28.61%

QC value within limits for Na 589.592 Recovery = Not calculated

Sr 407.771†	-26.7	0.00189	mg/L	0.000012	0.00189	mg/L	0.000012	0.64%

QC value within limits for Sr 407.771 Recovery = Not calculated

Li 670.784†	-32.5	-0.00273	mg/L	0.000666	-0.00273	mg/L	0.000666	24.41%

QC value within limits for Li 670.784 Recovery = Not calculated

All analyte(s) passed QC.

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Sequence No.: 8 **Autosampler Location: 14**
Sample ID: LLICV **Date Collected: 2/9/2012 10:30:06 AM**
Analyst: KHR **Data Type: Reprocessed on 2/10/2012 11:13:24 AM**
Logged In Analyst (Original) : peicp2
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: LLICV

Analyte	Back Pressure	Flow
All	145.0 kPa	0.50 L/min

Mean Data: LLICV

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3719900.8						60420.64	1.62%
YRADIAL	273195.4						3388.46	1.24%
Ga 417.206	757511.9						16672.17	2.20%
GaRADIAL	42585.9						94.61	0.22%
Ag 328.068†	867.0	0.00594	mg/L	0.000482	0.00594	mg/L	0.000482	8.12%
Al 396.153†	-3.7	0.00114	mg/L	0.008687	0.00114	mg/L	0.008687	764.32%
As 188.979†	1.1	-0.00403	mg/L	0.000755	-0.00403	mg/L	0.000755	18.76%
Ba 233.527†	301.5	0.00689	mg/L	0.000143	0.00689	mg/L	0.000143	2.08%
Be 234.861†	545.5	0.00184	mg/L	0.000015	0.00184	mg/L	0.000015	0.80%
B 249.677†	94.3	0.00165	mg/L	0.000422	0.00165	mg/L	0.000422	25.58%
Ca 227.546†	-29.1	-0.0926	mg/L	0.01681	-0.0926	mg/L	0.01681	18.16%
Cd 228.802†	115.8	0.00913	mg/L	0.000209	0.00913	mg/L	0.000209	2.29%
Co 228.616†	177.8	0.0191	mg/L	0.00030	0.0191	mg/L	0.00030	1.58%
Cr 267.716†	1156.6	0.0184	mg/L	0.00028	0.0184	mg/L	0.00028	1.54%
Cu 327.393†	2365.9	0.0201	mg/L	0.00071	0.0201	mg/L	0.00071	3.54%
Fe 239.562†	0.2	0.00516	mg/L	0.013043	0.00516	mg/L	0.013043	252.92%
Mg 279.077†	-2.5	0.0111	mg/L	0.01312	0.0111	mg/L	0.01312	118.10%
Mn 257.610†	2547.3	0.00829	mg/L	0.000231	0.00829	mg/L	0.000231	2.78%
Mo 202.031†	-1.5	-0.00265	mg/L	0.000268	-0.00265	mg/L	0.000268	10.09%
Ni 231.604†	5985.8	0.393	mg/L	0.0052	0.393	mg/L	0.0052	1.33%
Pb 220.353†	-2.7	-0.00272	mg/L	0.001572	-0.00272	mg/L	0.001572	57.74%
Sb 206.836†	0.4	-0.00393	mg/L	0.002016	-0.00393	mg/L	0.002016	51.35%
Se 196.026†	-3.6	-0.00301	mg/L	0.004891	-0.00301	mg/L	0.004891	162.67%
Si 251.611†	40.9	-0.0179	mg/L	0.00211	-0.0179	mg/L	0.00211	11.79%
Sn 189.927†	3.5	-0.00260	mg/L	0.001731	-0.00260	mg/L	0.001731	66.47%
Ti 334.940†	-19.4	-0.00111	mg/L	0.000108	-0.00111	mg/L	0.000108	9.73%
Tl 190.801†	3.1	0.00082	mg/L	0.002432	0.00082	mg/L	0.002432	295.23%
V 290.880†	931.7	0.00881	mg/L	0.000436	0.00881	mg/L	0.000436	4.95%
Zn 206.200†	212.6	0.0170	mg/L	0.00038	0.0170	mg/L	0.00038	2.24%
K 766.490†	39.5	0.00762	mg/L	0.007702	0.00762	mg/L	0.007702	101.06%
Na 589.592†	5353.5	0.484	mg/L	0.0174	0.484	mg/L	0.0174	3.60%
Sr 407.771†	-63.1	0.00187	mg/L	0.000012	0.00187	mg/L	0.000012	0.63%
Li 670.784†	47.1	-0.00160	mg/L	0.001095	-0.00160	mg/L	0.001095	68.50%

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Sequence No.: 9 **Autosampler Location: 12**
Sample ID: ICSA **Date Collected: 2/9/2012 10:36:55 AM**
Analyst: **Data Type: Reprocessed on 2/10/2012 11:13:25 AM**
Logged In Analyst (Original) : peicp2
Initial Sample Wt: **Initial Sample Vol:**

Approved: February 10, 2012

Dilution: Sample Prep Vol:

Nebulizer Parameters: ICSA

Analyte	Back Pressure	Flow
All	145.0 kPa	0.50 L/min

Mean Data: ICSA

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3350810.9						73546.78	2.19%
YRADIAL	267831.3						4900.76	1.83%
Ga 417.206	773923.3						31676.31	4.09%
GaRADIAL	43433.1						904.72	2.08%
Ag 328.068†	172.3	-0.00391	mg/L	0.000835	-0.00391	mg/L	0.000835	21.39%
QC value within limits for Ag 328.068 Recovery = Not calculated								
Al 396.153†	751836.7	252	mg/L	1.0	252	mg/L	1.0	0.40%
QC value within limits for Al 396.153 Recovery = 100.63%								
As 188.979†	12.7	0.00436	mg/L	0.009383	0.00436	mg/L	0.009383	215.21%
QC value within limits for As 188.979 Recovery = Not calculated								
Ba 233.527†	102.8	0.00000	mg/L	0.000158	0.00000	mg/L	0.000158	>999.9%
QC value within limits for Ba 233.527 Recovery = Not calculated								
Be 234.861†	5210.5	0.00011	mg/L	0.000638	0.00011	mg/L	0.000638	576.17%
QC value within limits for Be 234.861 Recovery = Not calculated								
B 249.677†	-5997.9	-0.00007	mg/L	0.016349	-0.00007	mg/L	0.016349	>999.9%
QC value within limits for B 249.677 Recovery = Not calculated								
Ca 227.546†	19339.4	258	mg/L	7.6	258	mg/L	7.6	2.95%
QC value within limits for Ca 227.546 Recovery = 103.34%								
Cd 228.802†	-5.0	0.00000	mg/L	0.000264	0.00000	mg/L	0.000264	>999.9%
QC value within limits for Cd 228.802 Recovery = Not calculated								
Co 228.616†	12.8	-0.00184	mg/L	0.000240	-0.00184	mg/L	0.000240	13.05%
QC value within limits for Co 228.616 Recovery = Not calculated								
Cr 267.716†	353.5	-0.00018	mg/L	0.000193	-0.00018	mg/L	0.000193	104.60%
QC value within limits for Cr 267.716 Recovery = Not calculated								
Cu 327.393†	-405.9	-0.00394	mg/L	0.000834	-0.00394	mg/L	0.000834	21.16%
QC value within limits for Cu 327.393 Recovery = Not calculated								
Fe 239.562†	6817.1	93.4	mg/L	1.75	93.4	mg/L	1.75	1.88%
QC value within limits for Fe 239.562 Recovery = 93.38%								
Mg 279.077†	63482.5	248	mg/L	6.1	248	mg/L	6.1	2.44%
QC value within limits for Mg 279.077 Recovery = 99.34%								
Mn 257.610†	27.5	-0.00040	mg/L	0.000205	-0.00040	mg/L	0.000205	51.20%
QC value within limits for Mn 257.610 Recovery = Not calculated								
Mo 202.031†	-10.6	0.00065	mg/L	0.000709	0.00065	mg/L	0.000709	109.19%
QC value within limits for Mo 202.031 Recovery = Not calculated								
Ni 231.604†	-27.8	-0.00423	mg/L	0.000279	-0.00423	mg/L	0.000279	6.60%
QC value within limits for Ni 231.604 Recovery = Not calculated								
Pb 220.353†	-50.6	-0.00281	mg/L	0.001714	-0.00281	mg/L	0.001714	60.91%
QC value within limits for Pb 220.353 Recovery = Not calculated								
Sb 206.836†	21.7	0.0231	mg/L	0.00038	0.0231	mg/L	0.00038	1.66%
QC value within limits for Sb 206.836 Recovery = Not calculated								
Se 196.026†	-61.7	-0.00028	mg/L	0.007879	-0.00028	mg/L	0.007879	>999.9%
QC value within limits for Se 196.026 Recovery = Not calculated								
Si 251.611†	3667.2	0.190	mg/L	0.0055	0.190	mg/L	0.0055	2.89%
QC value within limits for Si 251.611 Recovery = Not calculated								
Sn 189.927†	-71.7	-0.0355	mg/L	0.00342	-0.0355	mg/L	0.00342	9.64%
QC value within limits for Sn 189.927 Recovery = Not calculated								
Ti 334.940†	-1071.9	-0.00059	mg/L	0.000169	-0.00059	mg/L	0.000169	28.64%
QC value within limits for Ti 334.940 Recovery = Not calculated								
Tl 190.801†	87.6	0.00052	mg/L	0.009758	0.00052	mg/L	0.009758	>999.9%
QC value within limits for Tl 190.801 Recovery = Not calculated								
V 290.880†	-42.7	-0.00348	mg/L	0.001535	-0.00348	mg/L	0.001535	44.10%
QC value within limits for V 290.880 Recovery = Not calculated								
Zn 206.200†	6.3	-0.00468	mg/L	0.000361	-0.00468	mg/L	0.000361	7.71%
QC value within limits for Zn 206.200 Recovery = Not calculated								
K 766.490†	-33.6	-0.0375	mg/L	0.02581	-0.0375	mg/L	0.02581	68.77%
QC value within limits for K 766.490 Recovery = Not calculated								
Na 589.592†	411.5	0.00693	mg/L	0.007776	0.00693	mg/L	0.007776	112.15%
QC value within limits for Na 589.592 Recovery = Not calculated								
Sr 407.771†	32997.8	0.00815	mg/L	0.000577	0.00815	mg/L	0.000577	7.08%
QC value within limits for Sr 407.771 Recovery = Not calculated								
Li 670.784†	102.3	-0.00082	mg/L	0.000704	-0.00082	mg/L	0.000704	86.33%

Approved: February 10, 2012

QC value within limits for Li 670.784 Recovery = Not calculated
All analyte(s) passed QC.

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Sequence No.: 10 **Autosampler Location: 13**
Sample ID: ICSAB **Date Collected: 2/9/2012 10:42:48 AM**
Analyst: **Data Type: Reprocessed on 2/10/2012 11:13:27 AM**
Logged In Analyst (Original) : peicp2
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: ICSAB

Analyte	Back Pressure	Flow
All	145.0 kPa	0.50 L/min

Mean Data: ICSAB

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3353466.5						44143.48	1.32%
YRADIAL	270977.0						3892.79	1.44%
Ga 417.206	774631.8						18621.38	2.40%
GaRADIAL	43591.3						651.95	1.50%
Ag 328.068†	64568.5	0.502	mg/L	0.0146	0.502	mg/L	0.0146	2.91%
QC value within limits for Ag 328.068 Recovery = 100.32%								
Al 396.153†	757051.0	253	mg/L	0.3	253	mg/L	0.3	0.13%
QC value within limits for Al 396.153 Recovery = 101.33%								
As 188.979†	129.7	0.248	mg/L	0.0131	0.248	mg/L	0.0131	5.30%
QC value within limits for As 188.979 Recovery = 99.22%								
Ba 233.527†	7156.2	0.248	mg/L	0.0037	0.248	mg/L	0.0037	1.48%
QC value within limits for Ba 233.527 Recovery = 99.29%								
Be 234.861†	74121.2	0.252	mg/L	0.0096	0.252	mg/L	0.0096	3.79%
QC value within limits for Be 234.861 Recovery = 100.80%								
B 249.677†	-6645.8	-0.0370	mg/L	0.00940	-0.0370	mg/L	0.00940	25.39%
QC value within limits for B 249.677 Recovery = Not calculated								
Ca 227.546†	19083.3	255	mg/L	7.3	255	mg/L	7.3	2.85%
QC value within limits for Ca 227.546 Recovery = 102.07%								
Cd 228.802†	5173.2	0.417	mg/L	0.0102	0.417	mg/L	0.0102	2.44%
QC value within limits for Cd 228.802 Recovery = 83.37%								
Co 228.616†	2091.7	0.231	mg/L	0.0029	0.231	mg/L	0.0029	1.24%
QC value within limits for Co 228.616 Recovery = 92.46%								
Cr 267.716†	14397.1	0.243	mg/L	0.0055	0.243	mg/L	0.0055	2.25%
QC value within limits for Cr 267.716 Recovery = 97.35%								
Cu 327.393†	27395.5	0.250	mg/L	0.0073	0.250	mg/L	0.0073	2.90%
QC value within limits for Cu 327.393 Recovery = 100.03%								
Fe 239.562†	6803.3	93.2	mg/L	1.15	93.2	mg/L	1.15	1.23%
QC value within limits for Fe 239.562 Recovery = 93.19%								
Mg 279.077†	63084.0	247	mg/L	1.6	247	mg/L	1.6	0.65%
QC value within limits for Mg 279.077 Recovery = 98.71%								
Mn 257.610†	58972.7	0.245	mg/L	0.0057	0.245	mg/L	0.0057	2.31%
QC value within limits for Mn 257.610 Recovery = 98.04%								
Mo 202.031†	-10.2	0.00077	mg/L	0.000857	0.00077	mg/L	0.000857	112.00%
QC value within limits for Mo 202.031 Recovery = Not calculated								
Ni 231.604†	7041.3	0.463	mg/L	0.0055	0.463	mg/L	0.0055	1.19%
QC value within limits for Ni 231.604 Recovery = 92.57%								
Pb 220.353†	1154.8	0.486	mg/L	0.0044	0.486	mg/L	0.0044	0.90%
QC value within limits for Pb 220.353 Recovery = 97.12%								
Sb 206.836†	410.3	0.513	mg/L	0.0055	0.513	mg/L	0.0055	1.07%
QC value within limits for Sb 206.836 Recovery = 102.62%								
Se 196.026†	93.6	0.257	mg/L	0.0041	0.257	mg/L	0.0041	1.58%
QC value within limits for Se 196.026 Recovery = 102.90%								
Si 251.611†	109.7	-0.0139	mg/L	0.00199	-0.0139	mg/L	0.00199	14.32%
QC value within limits for Si 251.611 Recovery = Not calculated								
Sn 189.927†	-69.8	-0.0346	mg/L	0.00231	-0.0346	mg/L	0.00231	6.67%
QC value within limits for Sn 189.927 Recovery = Not calculated								
Ti 334.940†	-1123.0	-0.00080	mg/L	0.000034	-0.00080	mg/L	0.000034	4.22%
QC value within limits for Ti 334.940 Recovery = Not calculated								
Tl 190.801†	466.5	0.482	mg/L	0.0140	0.482	mg/L	0.0140	2.90%
QC value within limits for Tl 190.801 Recovery = 96.33%								
V 290.880†	20114.8	0.241	mg/L	0.0044	0.241	mg/L	0.0044	1.84%
QC value within limits for V 290.880 Recovery = 96.40%								

Approved: February 10, 2012

Zn 206.200†	4834.5	0.458 mg/L	0.0073	0.458 mg/L	0.0073	1.60%
QC value within limits for Zn 206.200 Recovery = 91.64%						
K 766.490†	8075.4	5.01 mg/L	0.089	5.01 mg/L	0.089	1.77%
QC value within limits for K 766.490 Recovery = 100.28%						
Na 589.592†	54501.2	5.22 mg/L	0.012	5.22 mg/L	0.012	0.23%
QC value within limits for Na 589.592 Recovery = 104.46%						
Sr 407.771†	33160.5	0.00833 mg/L	0.000208	0.00833 mg/L	0.000208	2.49%
QC value within limits for Sr 407.771 Recovery = Not calculated						
Li 670.784†	140.6	-0.00027 mg/L	0.000520	-0.00027 mg/L	0.000520	190.24%
QC value within limits for Li 670.784 Recovery = Not calculated						

All analyte(s) passed QC.

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Sequence No.: 11 **Autosampler Location: 6**
Sample ID: CCV **Date Collected: 2/9/2012 10:48:41 AM**
Analyst: **Data Type: Reprocessed on 2/10/2012 11:13:28 AM**
Logged In Analyst (Original) : peicp2
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: CCV

Analyte	Back Pressure	Flow
All	144.0 kPa	0.50 L/min

Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3575997.2						63140.16	1.77%
YRADIAL	273426.4						5303.25	1.94%
Ga 417.206	803556.4						18120.84	2.26%
GaRADIAL	43145.5						839.92	1.95%
Ag 328.068†	50713.6	0.398	mg/L	0.0078	0.398	mg/L	0.0078	1.95%
QC value within limits for Ag 328.068 Recovery = 99.50%								
Al 396.153†	29520.9	9.87	mg/L	0.048	9.87	mg/L	0.048	0.49%
QC value within limits for Al 396.153 Recovery = 98.67%								
As 188.979†	192.9	0.389	mg/L	0.0057	0.389	mg/L	0.0057	1.46%
QC value within limits for As 188.979 Recovery = 97.32%								
Ba 233.527†	28586.7	1.00	mg/L	0.016	1.00	mg/L	0.016	1.61%
QC value within limits for Ba 233.527 Recovery = 100.29%								
Be 234.861†	13688.6	0.0507	mg/L	0.00110	0.0507	mg/L	0.00110	2.17%
QC value within limits for Be 234.861 Recovery = 101.35%								
B 249.677†	14155.5	0.505	mg/L	0.0112	0.505	mg/L	0.0112	2.22%
QC value within limits for B 249.677 Recovery = 100.92%								
Ca 227.546†	722.0	9.91	mg/L	0.291	9.91	mg/L	0.291	2.94%
QC value within limits for Ca 227.546 Recovery = 99.05%								
Cd 228.802†	620.4	0.0509	mg/L	0.00125	0.0509	mg/L	0.00125	2.46%
QC value within limits for Cd 228.802 Recovery = 101.83%								
Co 228.616†	1794.5	0.198	mg/L	0.0030	0.198	mg/L	0.0030	1.51%
QC value within limits for Co 228.616 Recovery = 98.96%								
Cr 267.716†	28849.0	0.499	mg/L	0.0078	0.499	mg/L	0.0078	1.55%
QC value within limits for Cr 267.716 Recovery = 99.75%								
Cu 327.393†	54679.1	0.500	mg/L	0.0103	0.500	mg/L	0.0103	2.05%
QC value within limits for Cu 327.393 Recovery = 99.96%								
Fe 239.562†	284.5	3.90	mg/L	0.126	3.90	mg/L	0.126	3.22%
QC value within limits for Fe 239.562 Recovery = 97.46%								
Mg 279.077†	2499.2	9.80	mg/L	0.250	9.80	mg/L	0.250	2.55%
QC value within limits for Mg 279.077 Recovery = 98.02%								
Mn 257.610†	121464.3	0.505	mg/L	0.0086	0.505	mg/L	0.0086	1.70%
QC value within limits for Mn 257.610 Recovery = 101.02%								
Mo 202.031†	6625.3	0.993	mg/L	0.0102	0.993	mg/L	0.0102	1.03%
QC value within limits for Mo 202.031 Recovery = 99.25%								
Ni 231.604†	7663.1	0.504	mg/L	0.0088	0.504	mg/L	0.0088	1.75%
QC value within limits for Ni 231.604 Recovery = 100.80%								
Pb 220.353†	1242.6	0.507	mg/L	0.0074	0.507	mg/L	0.0074	1.47%
QC value within limits for Pb 220.353 Recovery = 101.50%								
Sb 206.836†	949.1	1.20	mg/L	0.026	1.20	mg/L	0.026	2.19%
QC value within limits for Sb 206.836 Recovery = 100.04%								
Se 196.026†	237.7	0.403	mg/L	0.0083	0.403	mg/L	0.0083	2.07%
QC value within limits for Se 196.026 Recovery = 100.69%								
Si 251.611†	86660.2	4.94	mg/L	0.097	4.94	mg/L	0.097	1.96%

Approved: February 10, 2012

QC value within limits for Si 251.611 Recovery = 98.79%

Sn 189.927†	2289.8	0.997 mg/L	0.0140	0.997 mg/L	0.0140	1.41%
QC value within limits for Sn 189.927 Recovery = 99.66%						
Ti 334.940†	478863.8	0.985 mg/L	0.0019	0.985 mg/L	0.0019	0.20%
QC value within limits for Ti 334.940 Recovery = 98.48%						
Tl 190.801†	406.1	0.519 mg/L	0.0098	0.519 mg/L	0.0098	1.88%
QC value within limits for Tl 190.801 Recovery = 103.81%						
V 290.880†	81916.2	0.991 mg/L	0.0173	0.991 mg/L	0.0173	1.74%
QC value within limits for V 290.880 Recovery = 99.09%						
Zn 206.200†	10369.3	0.990 mg/L	0.0162	0.990 mg/L	0.0162	1.63%
QC value within limits for Zn 206.200 Recovery = 99.03%						
K 766.490†	79497.7	49.5 mg/L	0.06	49.5 mg/L	0.06	0.12%
QC value within limits for K 766.490 Recovery = 99.09%						
Na 589.592†	538019.8	51.4 mg/L	2.21	51.4 mg/L	2.21	4.31%
QC value within limits for Na 589.592 Recovery = 102.73%						
Sr 407.771†	1177798.5	0.983 mg/L	0.0165	0.983 mg/L	0.0165	1.68%
QC value within limits for Sr 407.771 Recovery = 98.32%						
Li 670.784†	71392.6	1.01 mg/L	0.008	1.01 mg/L	0.008	0.77%
QC value within limits for Li 670.784 Recovery = 100.99%						

All analyte(s) passed QC.

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Sequence No.: 12 **Autosampler Location: 1**
Sample ID: CCB **Date Collected: 2/9/2012 10:55:37 AM**
Analyst: **Data Type: Reprocessed on 2/10/2012 11:13:29 AM**
Logged In Analyst (Original) : peicp2
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: CCB

Analyte	Back Pressure	Flow
All	144.0 kPa	0.50 L/min

Mean Data: CCB

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3653328.4						49587.59	1.36%
YRADIAL	270656.6						14132.19	5.22%
Ga 417.206	740745.3						11095.08	1.50%
GaRADIAL	42194.1						2866.72	6.79%
Ag 328.068†	-118.6	-0.00181	mg/L	0.000291	-0.00181	mg/L	0.000291	16.08%
QC value within limits for Ag 328.068 Recovery = Not calculated								
Al 396.153†	-9.9	-0.00097	mg/L	0.014726	-0.00097	mg/L	0.014726	>999.9%
QC value within limits for Al 396.153 Recovery = Not calculated								
As 188.979†	0.4	-0.00564	mg/L	0.003890	-0.00564	mg/L	0.003890	68.97%
QC value within limits for As 188.979 Recovery = Not calculated								
Ba 233.527†	0.9	-0.00368	mg/L	0.000070	-0.00368	mg/L	0.000070	1.91%
QC value within limits for Ba 233.527 Recovery = Not calculated								
Be 234.861†	11.1	-0.00012	mg/L	0.000017	-0.00012	mg/L	0.000017	13.72%
QC value within limits for Be 234.861 Recovery = Not calculated								
B 249.677†	88.1	0.00196	mg/L	0.000159	0.00196	mg/L	0.000159	8.12%
QC value within limits for B 249.677 Recovery = Not calculated								
Ca 227.546†	2.2	-0.0123	mg/L	0.03569	-0.0123	mg/L	0.03569	290.64%
QC value within limits for Ca 227.546 Recovery = Not calculated								
Cd 228.802†	-0.5	-0.00026	mg/L	0.000242	-0.00026	mg/L	0.000242	92.18%
QC value within limits for Cd 228.802 Recovery = Not calculated								
Co 228.616†	0.1	-0.00081	mg/L	0.000073	-0.00081	mg/L	0.000073	8.94%
QC value within limits for Co 228.616 Recovery = Not calculated								
Cr 267.716†	-23.2	-0.00211	mg/L	0.000150	-0.00211	mg/L	0.000150	7.12%
QC value within limits for Cr 267.716 Recovery = Not calculated								
Cu 327.393†	-29.8	-0.00173	mg/L	0.001419	-0.00173	mg/L	0.001419	81.98%
QC value within limits for Cu 327.393 Recovery = Not calculated								
Fe 239.562†	2.6	0.0385	mg/L	0.02446	0.0385	mg/L	0.02446	63.60%
QC value greater than the upper limit for Fe 239.562 Recovery = Not calculated								
Mg 279.077†	0.4	0.0224	mg/L	0.01087	0.0224	mg/L	0.01087	48.61%
QC value within limits for Mg 279.077 Recovery = Not calculated								
Mn 257.610†	8.4	-0.00227	mg/L	0.000013	-0.00227	mg/L	0.000013	0.59%
QC value within limits for Mn 257.610 Recovery = Not calculated								
Mo 202.031†	1.9	-0.00209	mg/L	0.000316	-0.00209	mg/L	0.000316	15.11%
QC value within limits for Mo 202.031 Recovery = Not calculated								

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Ni 231.604†	-0.0	-0.00233	mg/L	0.000400	-0.00233	mg/L	0.000400	17.15%
QC value within limits for Ni 231.604 Recovery = Not calculated								
Pb 220.353†	2.0	-0.00073	mg/L	0.001537	-0.00073	mg/L	0.001537	209.79%
QC value within limits for Pb 220.353 Recovery = Not calculated								
Sb 206.836†	1.2	-0.00284	mg/L	0.001878	-0.00284	mg/L	0.001878	66.20%
QC value within limits for Sb 206.836 Recovery = Not calculated								
Se 196.026†	-1.7	0.00043	mg/L	0.002200	0.00043	mg/L	0.002200	516.53%
QC value within limits for Se 196.026 Recovery = Not calculated								
Si 251.611†	11.9	-0.0195	mg/L	0.00008	-0.0195	mg/L	0.00008	0.41%
QC value within limits for Si 251.611 Recovery = Not calculated								
Sn 189.927†	-0.0	-0.00415	mg/L	0.002159	-0.00415	mg/L	0.002159	51.99%
QC value within limits for Sn 189.927 Recovery = Not calculated								
Ti 334.940†	-127.7	-0.00132	mg/L	0.000241	-0.00132	mg/L	0.000241	18.18%
QC value within limits for Ti 334.940 Recovery = Not calculated								
Tl 190.801†	2.9	0.00039	mg/L	0.001896	0.00039	mg/L	0.001896	483.91%
QC value within limits for Tl 190.801 Recovery = Not calculated								
V 290.880†	162.5	-0.00053	mg/L	0.003056	-0.00053	mg/L	0.003056	571.68%
QC value within limits for V 290.880 Recovery = Not calculated								
Zn 206.200†	-1.3	-0.00359	mg/L	0.000184	-0.00359	mg/L	0.000184	5.11%
QC value within limits for Zn 206.200 Recovery = Not calculated								
K 766.490†	35.9	0.00587	mg/L	0.033996	0.00587	mg/L	0.033996	578.89%
QC value within limits for K 766.490 Recovery = Not calculated								
Na 589.592†	53.8	-0.0276	mg/L	0.00624	-0.0276	mg/L	0.00624	22.61%
QC value within limits for Na 589.592 Recovery = Not calculated								
Sr 407.771†	-63.5	0.00186	mg/L	0.000013	0.00186	mg/L	0.000013	0.68%
QC value within limits for Sr 407.771 Recovery = Not calculated								
Li 670.784†	-24.9	-0.00262	mg/L	0.000100	-0.00262	mg/L	0.000100	3.81%
QC value within limits for Li 670.784 Recovery = Not calculated								

QC Failed. Continue with analysis.

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Sequence No.: 13 **Autosampler Location: 71**
Sample ID: PBW B4 WG389167-02 **Date Collected: 2/9/2012 11:01:46 AM**
Analyst: KHR **Data Type: Reprocessed on 2/10/2012 11:13:30 AM**
Logged In Analyst (Original) : peicp2
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: PBW B4 WG389167-02

Analyte	Back Pressure	Flow
All	144.0 kPa	0.50 L/min

Mean Data: PBW B4 WG389167-02

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3678036.4						9408.42	0.26%
YRADIAL	276979.2						5171.04	1.87%
Ga 417.206	773926.3						6412.83	0.83%
GaRADIAL	43964.2						673.89	1.53%
Ag 328.068†	-146.1	-0.00202	mg/L	0.000089	-0.00202	mg/L	0.000089	4.38%
Al 396.153†	6.5	0.00452	mg/L	0.011195	0.00452	mg/L	0.011195	247.69%
As 188.979†	2.2	-0.00197	mg/L	0.000921	-0.00197	mg/L	0.000921	46.79%
Ba 233.527†	0.8	-0.00369	mg/L	0.000131	-0.00369	mg/L	0.000131	3.54%
Be 234.861†	33.1	-0.00004	mg/L	0.000010	-0.00004	mg/L	0.000010	24.53%
B 249.677†	52.4	0.00067	mg/L	0.000265	0.00067	mg/L	0.000265	39.32%
Ca 227.546†	1.8	-0.0161	mg/L	0.04833	-0.0161	mg/L	0.04833	300.57%
Cd 228.802†	2.1	-0.00004	mg/L	0.000134	-0.00004	mg/L	0.000134	321.85%
Co 228.616†	-0.6	-0.00090	mg/L	0.000291	-0.00090	mg/L	0.000291	32.42%
Cr 267.716†	-29.8	-0.00222	mg/L	0.000024	-0.00222	mg/L	0.000024	1.08%
Cu 327.393†	16.4	-0.00131	mg/L	0.000347	-0.00131	mg/L	0.000347	26.52%
Fe 239.562†	2.2	0.0330	mg/L	0.02364	0.0330	mg/L	0.02364	71.72%
Mg 279.077†	-2.0	0.0129	mg/L	0.01433	0.0129	mg/L	0.01433	111.06%
Mn 257.610†	8.8	-0.00227	mg/L	0.000009	-0.00227	mg/L	0.000009	0.39%
Mo 202.031†	-2.0	-0.00268	mg/L	0.000154	-0.00268	mg/L	0.000154	5.74%
Ni 231.604†	8.9	-0.00174	mg/L	0.000262	-0.00174	mg/L	0.000262	15.08%
Pb 220.353†	-1.9	-0.00231	mg/L	0.000673	-0.00231	mg/L	0.000673	29.12%
Sb 206.836†	1.1	-0.00295	mg/L	0.000269	-0.00295	mg/L	0.000269	9.13%
Se 196.026†	-2.7	-0.00131	mg/L	0.004756	-0.00131	mg/L	0.004756	362.72%
Si 251.611†	40.9	-0.0179	mg/L	0.00081	-0.0179	mg/L	0.00081	4.54%
Sn 189.927†	-1.6	-0.00484	mg/L	0.000732	-0.00484	mg/L	0.000732	15.11%

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Ti 334.940†	-101.3	-0.00127	mg/L	0.000063	-0.00127	mg/L	0.000063	4.99%
Tl 190.801†	-1.0	-0.00453	mg/L	0.002729	-0.00453	mg/L	0.002729	60.20%
V 290.880†	168.3	-0.00046	mg/L	0.001308	-0.00046	mg/L	0.001308	282.12%
Zn 206.200†	19.0	-0.00165	mg/L	0.000199	-0.00165	mg/L	0.000199	12.07%
K 766.490†	20.4	-0.00381	mg/L	0.033119	-0.00381	mg/L	0.033119	868.50%
Na 589.592†	48.0	-0.0282	mg/L	0.00263	-0.0282	mg/L	0.00263	9.33%
Sr 407.771†	-24.2	0.00189	mg/L	0.000033	0.00189	mg/L	0.000033	1.75%
Li 670.784†	-54.3	-0.00304	mg/L	0.000273	-0.00304	mg/L	0.000273	8.98%

Sequence No.: 14 **Autosampler Location: 72**
Sample ID: LCSW B4 WG389125-03 **Date Collected: 2/9/2012 11:08:36 AM**
Analyst: KHR **Data Type: Reprocessed on 2/10/2012 11:13:31 AM**
Logged In Analyst (Original) : peicp2
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: LCSW B4 WG389125-03

Analyte	Back Pressure	Flow
All	144.0 kPa	0.50 L/min

Mean Data: LCSW B4 WG389125-03

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3665019.4						50874.33	1.39%
YRADIAL	277048.7						1764.79	0.64%
Ga 417.206	823016.0						12393.50	1.51%
GaRADIAL	44444.1						996.67	2.24%
Ag 328.068†	25405.3	0.199	mg/L	0.0040	0.199	mg/L	0.0040	2.00%
Al 396.153†	14907.8	4.98	mg/L	0.103	4.98	mg/L	0.103	2.06%
As 188.979†	95.5	0.189	mg/L	0.0023	0.189	mg/L	0.0023	1.21%
Ba 233.527†	14312.2	0.500	mg/L	0.0101	0.500	mg/L	0.0101	2.01%
Be 234.861†	6720.8	0.0248	mg/L	0.00050	0.0248	mg/L	0.00050	2.03%
B 249.677†	28669.8	1.01	mg/L	0.022	1.01	mg/L	0.022	2.19%
Ca 227.546†	347.2	4.75	mg/L	0.054	4.75	mg/L	0.054	1.14%
Cd 228.802†	304.4	0.0249	mg/L	0.00027	0.0249	mg/L	0.00027	1.10%
Co 228.616†	894.3	0.0982	mg/L	0.00132	0.0982	mg/L	0.00132	1.34%
Cr 267.716†	14394.2	0.248	mg/L	0.0048	0.248	mg/L	0.0048	1.94%
Cu 327.393†	27522.6	0.251	mg/L	0.0069	0.251	mg/L	0.0069	2.74%
Fe 239.562†	140.1	1.92	mg/L	0.028	1.92	mg/L	0.028	1.45%
Mg 279.077†	1242.5	4.88	mg/L	0.031	4.88	mg/L	0.031	0.64%
Mn 257.610†	60045.2	0.249	mg/L	0.0050	0.249	mg/L	0.0050	2.01%
Mo 202.031†	3319.0	0.496	mg/L	0.0087	0.496	mg/L	0.0087	1.75%
Ni 231.604†	3903.0	0.256	mg/L	0.0045	0.256	mg/L	0.0045	1.75%
Pb 220.353†	617.2	0.251	mg/L	0.0026	0.251	mg/L	0.0026	1.04%
Sb 206.836†	465.5	0.587	mg/L	0.0118	0.587	mg/L	0.0118	2.01%
Se 196.026†	113.5	0.194	mg/L	0.0065	0.194	mg/L	0.0065	3.36%
Si 251.611†	44564.8	2.53	mg/L	0.051	2.53	mg/L	0.051	2.00%
Sn 189.927†	1227.5	0.532	mg/L	0.0064	0.532	mg/L	0.0064	1.21%
Ti 334.940†	237896.7	0.489	mg/L	0.0020	0.489	mg/L	0.0020	0.41%
Tl 190.801†	203.4	0.258	mg/L	0.0051	0.258	mg/L	0.0051	1.97%
V 290.880†	41096.8	0.496	mg/L	0.0118	0.496	mg/L	0.0118	2.38%
Zn 206.200†	5256.8	0.500	mg/L	0.0071	0.500	mg/L	0.0071	1.42%
K 766.490†	40380.2	25.1	mg/L	0.56	25.1	mg/L	0.56	2.22%
Na 589.592†	273405.4	26.2	mg/L	0.27	26.2	mg/L	0.27	1.02%
Sr 407.771†	593697.5	0.497	mg/L	0.0094	0.497	mg/L	0.0094	1.89%
Li 670.784†	37320.2	0.527	mg/L	0.0146	0.527	mg/L	0.0146	2.77%

Sequence No.: 15 **Autosampler Location: 73**
Sample ID: L1202022001 WG389125-01 **Date Collected: 2/9/2012 11:22:56 AM**
Analyst: KHR **Data Type: Reprocessed on 2/10/2012 11:13:32 AM**
Logged In Analyst (Original) : peicp2
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1202022001 WG389125-01

Analyte	Back Pressure	Flow
All	144.0 kPa	0.50 L/min

Approved: February 10, 2012

Mean Data: L1202022001 WG389125-01

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	3600134.5						12544.86	0.35%
YRADIAL	272985.4						1516.43	0.56%
Ga 417.206	830223.3						7687.90	0.93%
GaRADIAL	44534.4						458.94	1.03%
Ag 328.068†	97.4	-0.00019	mg/L	0.000430	-0.00019	mg/L	0.000430	221.80%
Al 396.153†	419.9	0.143	mg/L	0.0060	0.143	mg/L	0.0060	4.19%
As 188.979†	9.5	0.0122	mg/L	0.00381	0.0122	mg/L	0.00381	31.32%
Ba 233.527†	2024.3	0.0674	mg/L	0.00021	0.0674	mg/L	0.00021	0.31%
Be 234.861†	70.9	0.00006	mg/L	0.000023	0.00006	mg/L	0.000023	36.73%
B 249.677†	634.5	0.0220	mg/L	0.00030	0.0220	mg/L	0.00030	1.36%
Ca 227.546†	3631.1	50.2	mg/L	0.37	50.2	mg/L	0.37	0.74%
Cd 228.802†	-3.5	-0.00045	mg/L	0.000150	-0.00045	mg/L	0.000150	33.33%
Co 228.616†	0.2	-0.00084	mg/L	0.000099	-0.00084	mg/L	0.000099	11.78%
Cr 267.716†	87.2	-0.00020	mg/L	0.000098	-0.00020	mg/L	0.000098	48.72%
Cu 327.393†	44.9	-0.00104	mg/L	0.000248	-0.00104	mg/L	0.000248	23.92%
Fe 239.562†	16.8	0.232	mg/L	0.0287	0.232	mg/L	0.0287	12.38%
Mg 279.077†	2514.0	9.86	mg/L	0.105	9.86	mg/L	0.105	1.06%
Mn 257.610†	904.1	0.00187	mg/L	0.000024	0.00187	mg/L	0.000024	1.26%
Mo 202.031†	18.4	0.00040	mg/L	0.000539	0.00040	mg/L	0.000539	136.19%
Ni 231.604†	10.8	-0.00166	mg/L	0.000656	-0.00166	mg/L	0.000656	39.62%
Pb 220.353†	-7.3	-0.00210	mg/L	0.001607	-0.00210	mg/L	0.001607	76.62%
Sb 206.836†	6.5	0.00387	mg/L	0.003787	0.00387	mg/L	0.003787	97.87%
Se 196.026†	-11.3	-0.00049	mg/L	0.008359	-0.00049	mg/L	0.008359	>999.9%
Si 251.611†	355967.5	20.4	mg/L	0.20	20.4	mg/L	0.20	0.98%
Sn 189.927†	0.2	-0.00407	mg/L	0.001605	-0.00407	mg/L	0.001605	39.45%
Ti 334.940†	2645.6	0.00489	mg/L	0.000104	0.00489	mg/L	0.000104	2.14%
Tl 190.801†	48.2	0.0378	mg/L	0.00296	0.0378	mg/L	0.00296	7.83%
V 290.880†	470.2	0.00398	mg/L	0.001480	0.00398	mg/L	0.001480	37.16%
Zn 206.200†	142.5	0.0102	mg/L	0.00011	0.0102	mg/L	0.00011	1.09%
K 766.490†	3893.8	2.38	mg/L	0.060	2.38	mg/L	0.060	2.53%
Na 589.592†	288380.1	27.7	mg/L	0.27	27.7	mg/L	0.27	0.99%
Sr 407.771†	447864.5	0.375	mg/L	0.0046	0.375	mg/L	0.0046	1.22%
Li 670.784†	745.5	0.00830	mg/L	0.000404	0.00830	mg/L	0.000404	4.87%

Sequence No.: 16
Sample ID: L1202022001S WG389125-04
Analyst: KHR
Logged In Analyst (Original) : peicp2
Initial Sample Wt:
Dilution:

Autosampler Location: 74
Date Collected: 2/9/2012 11:29:49 AM
Data Type: Reprocessed on 2/10/2012 11:13:33 AM
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1202022001S WG389125-04

Analyte	Back Pressure	Flow
All	145.0 kPa	0.50 L/min

Mean Data: L1202022001S WG389125-04

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	3544002.1						84217.93	2.38%
YRADIAL	272996.1						554.53	0.20%
Ga 417.206	826225.2						19264.70	2.33%
GaRADIAL	45034.0						1253.96	2.78%
Ag 328.068†	25312.9	0.198	mg/L	0.0065	0.198	mg/L	0.0065	3.28%
Al 396.153†	15620.9	5.22	mg/L	0.011	5.22	mg/L	0.011	0.21%
As 188.979†	106.1	0.210	mg/L	0.0054	0.210	mg/L	0.0054	2.57%
Ba 233.527†	16840.8	0.589	mg/L	0.0187	0.589	mg/L	0.0187	3.18%
Be 234.861†	6890.1	0.0254	mg/L	0.00080	0.0254	mg/L	0.00080	3.14%
B 249.677†	29949.4	1.06	mg/L	0.028	1.06	mg/L	0.028	2.66%
Ca 227.546†	4087.2	56.5	mg/L	1.24	56.5	mg/L	1.24	2.19%
Cd 228.802†	302.1	0.0248	mg/L	0.00047	0.0248	mg/L	0.00047	1.88%
Co 228.616†	901.6	0.0990	mg/L	0.00207	0.0990	mg/L	0.00207	2.09%
Cr 267.716†	14952.1	0.258	mg/L	0.0081	0.258	mg/L	0.0081	3.13%
Cu 327.393†	27174.8	0.248	mg/L	0.0083	0.248	mg/L	0.0083	3.34%
Fe 239.562†	158.6	2.17	mg/L	0.031	2.17	mg/L	0.031	1.45%

Approved: February 10, 2012

Mg 279.077†	3824.3	15.0	mg/L	0.45	15.0	mg/L	0.45	2.97%
Mn 257.610†	62517.1	0.259	mg/L	0.0091	0.259	mg/L	0.0091	3.53%
Mo 202.031†	3451.6	0.516	mg/L	0.0115	0.516	mg/L	0.0115	2.23%
Ni 231.604†	3839.5	0.251	mg/L	0.0047	0.251	mg/L	0.0047	1.85%
Pb 220.353†	628.0	0.258	mg/L	0.0059	0.258	mg/L	0.0059	2.28%
Sb 206.836†	478.4	0.603	mg/L	0.0152	0.603	mg/L	0.0152	2.52%
Se 196.026†	109.5	0.203	mg/L	0.0113	0.203	mg/L	0.0113	5.55%
Si 251.611†	411461.2	23.6	mg/L	0.86	23.6	mg/L	0.86	3.63%
Sn 189.927†	1312.5	0.569	mg/L	0.0128	0.569	mg/L	0.0128	2.25%
Ti 334.940†	251231.0	0.517	mg/L	0.0178	0.517	mg/L	0.0178	3.44%
Tl 190.801†	250.5	0.298	mg/L	0.0140	0.298	mg/L	0.0140	4.70%
V 290.880†	42888.3	0.518	mg/L	0.0192	0.518	mg/L	0.0192	3.71%
Zn 206.200†	5491.3	0.523	mg/L	0.0119	0.523	mg/L	0.0119	2.27%
K 766.490†	45147.3	28.1	mg/L	0.11	28.1	mg/L	0.11	0.38%
Na 589.592†	558693.4	53.3	mg/L	1.64	53.3	mg/L	1.64	3.07%
Sr 407.771†	1057235.3	0.883	mg/L	0.0088	0.883	mg/L	0.0088	0.99%
Li 670.784†	38465.0	0.543	mg/L	0.0087	0.543	mg/L	0.0087	1.60%

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Sequence No.: 17 **Autosampler Location: 75**
Sample ID: L1202022001SD WG389125-05 **Date Collected: 2/9/2012 11:36:43 AM**
Analyst: KHR **Data Type: Reprocessed on 2/10/2012 11:13:34 AM**
Logged In Analyst (Original) : peicp2
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1202022001SD WG389125-05

Analyte	Back Pressure	Flow
All	144.0 kPa	0.50 L/min

Mean Data: L1202022001SD WG389125-05

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3586398.8						29142.57	0.81%
YRADIAL	272353.7						6925.17	2.54%
Ga 417.206	836468.0						8241.38	0.99%
GaRADIAL	44945.7						415.32	0.92%
Ag 328.068†	24447.2	0.191	mg/L	0.0015	0.191	mg/L	0.0015	0.80%
Al 396.153†	15315.2	5.12	mg/L	0.011	5.12	mg/L	0.011	0.21%
As 188.979†	101.4	0.201	mg/L	0.0065	0.201	mg/L	0.0065	3.23%
Ba 233.527†	16202.8	0.567	mg/L	0.0035	0.567	mg/L	0.0035	0.62%
Be 234.861†	6629.4	0.0244	mg/L	0.00012	0.0244	mg/L	0.00012	0.48%
B 249.677†	28920.8	1.02	mg/L	0.008	1.02	mg/L	0.008	0.82%
Ca 227.546†	4046.0	55.9	mg/L	1.03	55.9	mg/L	1.03	1.84%
Cd 228.802†	292.2	0.0239	mg/L	0.00046	0.0239	mg/L	0.00046	1.92%
Co 228.616†	870.5	0.0955	mg/L	0.00102	0.0955	mg/L	0.00102	1.07%
Cr 267.716†	14389.3	0.248	mg/L	0.0011	0.248	mg/L	0.0011	0.42%
Cu 327.393†	26222.9	0.239	mg/L	0.0021	0.239	mg/L	0.0021	0.87%
Fe 239.562†	155.7	2.13	mg/L	0.029	2.13	mg/L	0.029	1.34%
Mg 279.077†	3860.2	15.1	mg/L	0.37	15.1	mg/L	0.37	2.46%
Mn 257.610†	60182.0	0.250	mg/L	0.0015	0.250	mg/L	0.0015	0.62%
Mo 202.031†	3333.3	0.498	mg/L	0.0017	0.498	mg/L	0.0017	0.33%
Ni 231.604†	3722.9	0.244	mg/L	0.0003	0.244	mg/L	0.0003	0.14%
Pb 220.353†	604.1	0.248	mg/L	0.0057	0.248	mg/L	0.0057	2.30%
Sb 206.836†	461.0	0.581	mg/L	0.0028	0.581	mg/L	0.0028	0.48%
Se 196.026†	102.2	0.191	mg/L	0.0067	0.191	mg/L	0.0067	3.49%
Si 251.611†	405349.7	23.2	mg/L	0.13	23.2	mg/L	0.13	0.57%
Sn 189.927†	1263.5	0.548	mg/L	0.0087	0.548	mg/L	0.0087	1.59%
Ti 334.940†	241703.8	0.497	mg/L	0.0007	0.497	mg/L	0.0007	0.14%
Tl 190.801†	242.7	0.288	mg/L	0.0075	0.288	mg/L	0.0075	2.62%
V 290.880†	41203.1	0.498	mg/L	0.0043	0.498	mg/L	0.0043	0.87%
Zn 206.200†	5242.3	0.499	mg/L	0.0071	0.499	mg/L	0.0071	1.43%
K 766.490†	44624.2	27.8	mg/L	0.21	27.8	mg/L	0.21	0.74%
Na 589.592†	561806.0	53.6	mg/L	1.02	53.6	mg/L	1.02	1.91%
Sr 407.771†	1061296.9	0.886	mg/L	0.0075	0.886	mg/L	0.0075	0.85%
Li 670.784†	37719.6	0.532	mg/L	0.0041	0.532	mg/L	0.0041	0.77%

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Sequence No.: 18 **Autosampler Location: 76**
Sample ID: L1202022002 **Date Collected: 2/9/2012 11:43:37 AM**

Approved: February 10, 2012

Analyst: KHR **Data Type: Reprocessed on 2/10/2012 11:13:35 AM**
Logged In Analyst (Original) : peicp2
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1202022002

Analyte	Back Pressure	Flow
All	144.0 kPa	0.50 L/min

Mean Data: L1202022002

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3684985.3						46140.71	1.25%
YRADIAL	279788.5						622.09	0.22%
Ga 417.206	844964.8						14098.52	1.67%
GaRADIAL	45782.7						638.01	1.39%
Ag 328.068†	-14.6	-0.00105	mg/L	0.000781	-0.00105	mg/L	0.000781	74.31%
Al 396.153†	168.0	0.0585	mg/L	0.01406	0.0585	mg/L	0.01406	24.03%
As 188.979†	5.1	0.00342	mg/L	0.004217	0.00342	mg/L	0.004217	123.34%
Ba 233.527†	2255.9	0.0755	mg/L	0.00113	0.0755	mg/L	0.00113	1.49%
Be 234.861†	77.9	0.00010	mg/L	0.000027	0.00010	mg/L	0.000027	26.51%
B 249.677†	588.2	0.0202	mg/L	0.00065	0.0202	mg/L	0.00065	3.21%
Ca 227.546†	2423.1	33.5	mg/L	0.59	33.5	mg/L	0.59	1.77%
Cd 228.802†	-4.5	-0.00056	mg/L	0.000172	-0.00056	mg/L	0.000172	30.93%
Co 228.616†	0.3	-0.00083	mg/L	0.000416	-0.00083	mg/L	0.000416	49.83%
Cr 267.716†	30.7	-0.00118	mg/L	0.000091	-0.00118	mg/L	0.000091	7.72%
Cu 327.393†	-24.5	-0.00167	mg/L	0.000937	-0.00167	mg/L	0.000937	56.06%
Fe 239.562†	12.8	0.177	mg/L	0.0145	0.177	mg/L	0.0145	8.18%
Mg 279.077†	2057.2	8.07	mg/L	0.030	8.07	mg/L	0.030	0.37%
Mn 257.610†	656.9	0.00078	mg/L	0.000052	0.00078	mg/L	0.000052	6.61%
Mo 202.031†	36.2	0.00306	mg/L	0.000532	0.00306	mg/L	0.000532	17.36%
Ni 231.604†	12.1	-0.00156	mg/L	0.000508	-0.00156	mg/L	0.000508	32.59%
Pb 220.353†	-4.4	-0.00168	mg/L	0.001836	-0.00168	mg/L	0.001836	108.97%
Sb 206.836†	8.1	0.00600	mg/L	0.001443	0.00600	mg/L	0.001443	24.03%
Se 196.026†	-12.4	-0.00734	mg/L	0.006539	-0.00734	mg/L	0.006539	89.08%
Si 251.611†	358017.6	20.5	mg/L	0.15	20.5	mg/L	0.15	0.75%
Sn 189.927†	0.8	-0.00380	mg/L	0.001043	-0.00380	mg/L	0.001043	27.41%
Ti 334.940†	1838.9	0.00306	mg/L	0.000265	0.00306	mg/L	0.000265	8.66%
Tl 190.801†	40.7	0.0350	mg/L	0.00259	0.0350	mg/L	0.00259	7.41%
V 290.880†	396.5	0.00295	mg/L	0.000422	0.00295	mg/L	0.000422	14.31%
Zn 206.200†	194.2	0.0151	mg/L	0.00035	0.0151	mg/L	0.00035	2.33%
K 766.490†	3350.0	2.05	mg/L	0.011	2.05	mg/L	0.011	0.54%
Na 589.592†	270809.2	26.0	mg/L	0.32	26.0	mg/L	0.32	1.22%
Sr 407.771†	323733.7	0.272	mg/L	0.0043	0.272	mg/L	0.0043	1.57%
Li 670.784†	477.7	0.00451	mg/L	0.001199	0.00451	mg/L	0.001199	26.62%

Sequence No.: 19 **Autosampler Location: 77**
Sample ID: L1202022003 **Date Collected: 2/9/2012 11:50:31 AM**
Analyst: KHR **Data Type: Reprocessed on 2/10/2012 11:13:37 AM**
Logged In Analyst (Original) : peicp2
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1202022003

Analyte	Back Pressure	Flow
All	144.0 kPa	0.50 L/min

Mean Data: L1202022003

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3582790.1						61569.37	1.72%
YRADIAL	276534.6						2373.52	0.86%
Ga 417.206	830506.7						17167.19	2.07%
GaRADIAL	45231.0						319.37	0.71%
Ag 328.068†	-44.7	-0.00131	mg/L	0.000368	-0.00131	mg/L	0.000368	28.07%
Al 396.153†	104.4	0.0372	mg/L	0.00575	0.0372	mg/L	0.00575	15.45%
As 188.979†	6.8	0.00717	mg/L	0.005658	0.00717	mg/L	0.005658	78.94%

Approved: February 10, 2012

Ba 233.527†	2536.2	0.0854	mg/L	0.00154	0.0854	mg/L	0.00154	1.80%
Be 234.861†	112.5	0.00014	mg/L	0.000090	0.00014	mg/L	0.000090	62.60%
B 249.677†	504.7	0.0192	mg/L	0.00047	0.0192	mg/L	0.00047	2.46%
Ca 227.546†	2740.9	38.0	mg/L	0.74	38.0	mg/L	0.74	1.95%
Cd 228.802†	-1.7	-0.00031	mg/L	0.000037	-0.00031	mg/L	0.000037	11.93%
Co 228.616†	0.2	-0.00086	mg/L	0.000192	-0.00086	mg/L	0.000192	22.44%
Cr 267.716†	3619.3	0.0610	mg/L	0.00054	0.0610	mg/L	0.00054	0.88%
Cu 327.393†	83.0	-0.00070	mg/L	0.000466	-0.00070	mg/L	0.000466	66.85%
Fe 239.562†	45.5	0.626	mg/L	0.0009	0.626	mg/L	0.0009	0.14%
Mg 279.077†	2113.8	8.29	mg/L	0.074	8.29	mg/L	0.074	0.90%
Mn 257.610†	1689.9	0.00512	mg/L	0.000120	0.00512	mg/L	0.000120	2.35%
Mo 202.031†	32.7	0.00255	mg/L	0.000124	0.00255	mg/L	0.000124	4.86%
Ni 231.604†	1705.6	0.110	mg/L	0.0015	0.110	mg/L	0.0015	1.36%
Pb 220.353†	-2.6	-0.00078	mg/L	0.000633	-0.00078	mg/L	0.000633	81.43%
Sb 206.836†	8.9	0.00656	mg/L	0.004442	0.00656	mg/L	0.004442	67.68%
Se 196.026†	-11.3	-0.00407	mg/L	0.003863	-0.00407	mg/L	0.003863	94.87%
Si 251.611†	360143.4	20.7	mg/L	0.14	20.7	mg/L	0.14	0.67%
Sn 189.927†	-1.3	-0.00472	mg/L	0.000881	-0.00472	mg/L	0.000881	18.68%
Ti 334.940†	1487.5	0.00236	mg/L	0.001242	0.00236	mg/L	0.001242	52.56%
Tl 190.801†	36.2	0.0274	mg/L	0.00493	0.0274	mg/L	0.00493	17.96%
V 290.880†	525.4	0.00443	mg/L	0.002038	0.00443	mg/L	0.002038	46.03%
Zn 206.200†	185.0	0.0145	mg/L	0.00026	0.0145	mg/L	0.00026	1.77%
K 766.490†	3460.9	2.12	mg/L	0.018	2.12	mg/L	0.018	0.85%
Na 589.592†	274926.7	26.4	mg/L	0.41	26.4	mg/L	0.41	1.56%
Sr 407.771†	350390.6	0.294	mg/L	0.0052	0.294	mg/L	0.0052	1.77%
Li 670.784†	462.7	0.00429	mg/L	0.000812	0.00429	mg/L	0.000812	18.91%

Sequence No.: 20
Sample ID: L1202022101
Analyst: KHR
Logged In Analyst (Original) : peicp2
Initial Sample Wt:
Dilution:

Autosampler Location: 78
Date Collected: 2/9/2012 11:57:24 AM
Data Type: Reprocessed on 2/10/2012 11:13:38 AM
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1202022101

Analyte	Back Pressure	Flow
All	144.0 kPa	0.50 L/min

Mean Data: L1202022101

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3705403.1						58857.71	1.59%
YRADIAL	279614.0						4350.00	1.56%
Ga 417.206	825128.5						10216.75	1.24%
GaRADIAL	45493.1						490.23	1.08%
Ag 328.068†	-179.1	-0.00263	mg/L	0.000316	-0.00263	mg/L	0.000316	12.05%
Al 396.153†	777.6	0.262	mg/L	0.0028	0.262	mg/L	0.0028	1.08%
As 188.979†	4.9	0.00354	mg/L	0.006854	0.00354	mg/L	0.006854	193.48%
Ba 233.527†	893.6	0.0277	mg/L	0.00050	0.0277	mg/L	0.00050	1.80%
Be 234.861†	756.1	0.00118	mg/L	0.000134	0.00118	mg/L	0.000134	11.29%
B 249.677†	265.9	0.0409	mg/L	0.00087	0.0409	mg/L	0.00087	2.12%
Ca 227.546†	811.4	10.5	mg/L	0.16	10.5	mg/L	0.16	1.56%
Cd 228.802†	-1.2	-0.00025	mg/L	0.000053	-0.00025	mg/L	0.000053	21.07%
Co 228.616†	2.5	-0.00075	mg/L	0.000611	-0.00075	mg/L	0.000611	81.26%
Cr 267.716†	33.0	-0.00142	mg/L	0.000159	-0.00142	mg/L	0.000159	11.18%
Cu 327.393†	44.5	-0.00095	mg/L	0.000632	-0.00095	mg/L	0.000632	66.50%
Fe 239.562†	518.1	7.10	mg/L	0.149	7.10	mg/L	0.149	2.10%
Mg 279.077†	299.4	1.19	mg/L	0.025	1.19	mg/L	0.025	2.14%
Mn 257.610†	8837.9	0.0349	mg/L	0.00015	0.0349	mg/L	0.00015	0.42%
Mo 202.031†	-4.7	-0.00273	mg/L	0.000556	-0.00273	mg/L	0.000556	20.32%
Ni 231.604†	14.0	-0.00141	mg/L	0.000404	-0.00141	mg/L	0.000404	28.63%
Pb 220.353†	-1.0	-0.00171	mg/L	0.002580	-0.00171	mg/L	0.002580	150.69%
Sb 206.836†	3.1	-0.00035	mg/L	0.002595	-0.00035	mg/L	0.002595	742.68%
Se 196.026†	-6.7	-0.00218	mg/L	0.000459	-0.00218	mg/L	0.000459	21.07%
Si 251.611†	219331.5	12.6	mg/L	0.10	12.6	mg/L	0.10	0.79%
Sn 189.927†	-8.2	-0.00772	mg/L	0.001099	-0.00772	mg/L	0.001099	14.23%
Ti 334.940†	2931.8	0.00509	mg/L	0.000588	0.00509	mg/L	0.000588	11.56%
Tl 190.801†	11.6	0.00708	mg/L	0.003440	0.00708	mg/L	0.003440	48.60%
V 290.880†	471.7	0.00168	mg/L	0.000777	0.00168	mg/L	0.000777	46.12%

Approved: February 10, 2012

Zn 206.200†	46.9	0.00089 mg/L	0.000258	0.00089 mg/L	0.000258	29.13%
K 766.490†	1710.7	1.04 mg/L	0.009	1.04 mg/L	0.009	0.86%
Na 589.592†	66885.4	6.42 mg/L	0.077	6.42 mg/L	0.077	1.20%
Sr 407.771†	83423.7	0.0699 mg/L	0.00117	0.0699 mg/L	0.00117	1.68%
Li 670.784†	253.6	0.00133 mg/L	0.000890	0.00133 mg/L	0.000890	67.02%

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Sequence No.: 21 **Autosampler Location: 79**
Sample ID: L1202022101PS WG389167-01 **Date Collected: 2/9/2012 12:04:14 PM**
Analyst: KHR **Data Type: Reprocessed on 2/10/2012 11:13:39 AM**
Logged In Analyst (Original) : peicp2
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1202022101PS WG389167-01

Analyte	Back Pressure	Flow
All	144.0 kPa	0.50 L/min

Mean Data: L1202022101PS WG389167-01

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3646678.8						84510.72	2.32%
YRADIAL	280197.1						5948.46	2.12%
Ga 417.206	835630.2						20742.79	2.48%
GaRADIAL	44993.3						1449.05	3.22%
Ag 328.068†	24326.9	0.190	mg/L	0.0026	0.190	mg/L	0.0026	1.39%
Al 396.153†	15390.2	5.15	mg/L	0.191	5.15	mg/L	0.191	3.72%
As 188.979†	97.8	0.194	mg/L	0.0045	0.194	mg/L	0.0045	2.33%
Ba 233.527†	14816.8	0.518	mg/L	0.0059	0.518	mg/L	0.0059	1.14%
Be 234.861†	7124.5	0.0250	mg/L	0.00018	0.0250	mg/L	0.00018	0.74%
B 249.677†	28046.6	1.02	mg/L	0.005	1.02	mg/L	0.005	0.51%
Ca 227.546†	1089.5	14.4	mg/L	0.25	14.4	mg/L	0.25	1.73%
Cd 228.802†	298.4	0.0244	mg/L	0.00046	0.0244	mg/L	0.00046	1.87%
Co 228.616†	888.7	0.0974	mg/L	0.00246	0.0974	mg/L	0.00246	2.53%
Cr 267.716†	14117.0	0.243	mg/L	0.0032	0.243	mg/L	0.0032	1.30%
Cu 327.393†	26382.9	0.241	mg/L	0.0023	0.241	mg/L	0.0023	0.96%
Fe 239.562†	606.4	8.31	mg/L	0.276	8.31	mg/L	0.276	3.32%
Mg 279.077†	1502.0	5.90	mg/L	0.161	5.90	mg/L	0.161	2.73%
Mn 257.610†	66529.5	0.276	mg/L	0.0035	0.276	mg/L	0.0035	1.26%
Mo 202.031†	3251.9	0.486	mg/L	0.0080	0.486	mg/L	0.0080	1.64%
Ni 231.604†	3769.5	0.247	mg/L	0.0003	0.247	mg/L	0.0003	0.11%
Pb 220.353†	607.6	0.248	mg/L	0.0043	0.248	mg/L	0.0043	1.72%
Sb 206.836†	454.8	0.573	mg/L	0.0137	0.573	mg/L	0.0137	2.39%
Se 196.026†	109.0	0.192	mg/L	0.0049	0.192	mg/L	0.0049	2.57%
Si 251.611†	240116.5	13.8	mg/L	0.19	13.8	mg/L	0.19	1.35%
Sn 189.927†	-16.7	-0.0114	mg/L	0.00027	-0.0114	mg/L	0.00027	2.39%
Ti 334.940†	242057.0	0.497	mg/L	0.0051	0.497	mg/L	0.0051	1.02%
Tl 190.801†	211.7	0.265	mg/L	0.0073	0.265	mg/L	0.0073	2.75%
V 290.880†	40377.4	0.486	mg/L	0.0054	0.486	mg/L	0.0054	1.12%
Zn 206.200†	5222.2	0.497	mg/L	0.0066	0.497	mg/L	0.0066	1.33%
K 766.490†	42244.9	26.3	mg/L	0.90	26.3	mg/L	0.90	3.44%
Na 589.592†	334294.1	32.0	mg/L	0.97	32.0	mg/L	0.97	3.04%
Sr 407.771†	668860.0	0.558	mg/L	0.0134	0.558	mg/L	0.0134	2.40%
Li 670.784†	37650.1	0.532	mg/L	0.0246	0.532	mg/L	0.0246	4.63%

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Sequence No.: 22 **Autosampler Location: 80**
Sample ID: L1202022101DL WG389167-02 **Date Collected: 2/9/2012 12:11:08 PM**
Analyst: KHR **Data Type: Reprocessed on 2/10/2012 11:13:40 AM**
Logged In Analyst (Original) : peicp2
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1202022101DL WG389167-02

Analyte	Back Pressure	Flow
All	144.0 kPa	0.50 L/min

Mean Data: L1202022101DL WG389167-02

Approved: February 10, 2012

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3688884.9						41255.84	1.12%
YRADIAL	274939.4						2857.25	1.04%
Ga 417.206	793895.8						7006.23	0.88%
GaRADIAL	44229.0						297.31	0.67%
Ag 328.068†	-254.0	-0.00294	mg/L	0.000527	-0.00294	mg/L	0.000527	17.90%
Al 396.153†	145.2	0.0509	mg/L	0.00413	0.0509	mg/L	0.00413	8.11%
As 188.979†	1.7	-0.00302	mg/L	0.001724	-0.00302	mg/L	0.001724	57.16%
Ba 233.527†	173.9	0.00240	mg/L	0.000061	0.00240	mg/L	0.000061	2.54%
Be 234.861†	224.1	0.00036	mg/L	0.000103	0.00036	mg/L	0.000103	28.33%
B 249.677†	177.0	0.0118	mg/L	0.00030	0.0118	mg/L	0.00030	2.50%
Ca 227.546†	170.0	2.17	mg/L	0.034	2.17	mg/L	0.034	1.58%
Cd 228.802†	-1.1	-0.00030	mg/L	0.000091	-0.00030	mg/L	0.000091	30.45%
Co 228.616†	-0.3	-0.00091	mg/L	0.000160	-0.00091	mg/L	0.000160	17.63%
Cr 267.716†	-31.6	-0.00231	mg/L	0.000159	-0.00231	mg/L	0.000159	6.86%
Cu 327.393†	-123.5	-0.00257	mg/L	0.000563	-0.00257	mg/L	0.000563	21.95%
Fe 239.562†	109.0	1.50	mg/L	0.030	1.50	mg/L	0.030	1.98%
Mg 279.077†	60.4	0.256	mg/L	0.0106	0.256	mg/L	0.0106	4.14%
Mn 257.610†	1826.9	0.00538	mg/L	0.000066	0.00538	mg/L	0.000066	1.22%
Mo 202.031†	-2.7	-0.00271	mg/L	0.000260	-0.00271	mg/L	0.000260	9.61%
Ni 231.604†	7.4	-0.00184	mg/L	0.000173	-0.00184	mg/L	0.000173	9.40%
Pb 220.353†	3.3	-0.00017	mg/L	0.002895	-0.00017	mg/L	0.002895	>999.9%
Sb 206.836†	2.1	-0.00165	mg/L	0.001117	-0.00165	mg/L	0.001117	67.78%
Se 196.026†	-5.6	-0.00500	mg/L	0.004758	-0.00500	mg/L	0.004758	95.15%
Si 251.611†	46738.4	2.66	mg/L	0.022	2.66	mg/L	0.022	0.81%
Sn 189.927†	-3.7	-0.00577	mg/L	0.001537	-0.00577	mg/L	0.001537	26.64%
Ti 334.940†	448.4	-0.00011	mg/L	0.000224	-0.00011	mg/L	0.000224	196.99%
Tl 190.801†	3.3	0.00010	mg/L	0.002796	0.00010	mg/L	0.002796	>999.9%
V 290.880†	176.7	-0.00068	mg/L	0.001430	-0.00068	mg/L	0.001430	210.34%
Zn 206.200†	15.4	-0.00202	mg/L	0.000231	-0.00202	mg/L	0.000231	11.45%
K 766.490†	324.9	0.185	mg/L	0.0203	0.185	mg/L	0.0203	10.99%
Na 589.592†	13886.4	1.31	mg/L	0.015	1.31	mg/L	0.015	1.14%
Sr 407.771†	17122.0	0.0159	mg/L	0.00006	0.0159	mg/L	0.00006	0.36%
Li 670.784†	61.1	-0.00140	mg/L	0.001052	-0.00140	mg/L	0.001052	75.13%

Sequence No.: 23
Sample ID: CCV
Analyst:
Logged In Analyst (Original) : peicp2
Initial Sample Wt:
Dilution:

Autosampler Location: 6
Date Collected: 2/9/2012 12:17:58 PM
Data Type: Reprocessed on 2/10/2012 11:13:41 AM

Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: CCV

Analyte	Back Pressure	Flow
All	144.0 kPa	0.50 L/min

Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3558746.9						43578.19	1.22%
YRADIAL	271042.1						1329.51	0.49%
Ga 417.206	808886.9						14220.79	1.76%
GaRADIAL	44474.0						1007.36	2.27%
Ag 328.068†	50416.5	0.396	mg/L	0.0060	0.396	mg/L	0.0060	1.52%
QC value within limits for Ag 328.068 Recovery = 98.92%								
Al 396.153†	29941.7	10.0	mg/L	0.07	10.0	mg/L	0.07	0.73%
QC value within limits for Al 396.153 Recovery = 100.08%								
As 188.979†	192.4	0.388	mg/L	0.0067	0.388	mg/L	0.0067	1.72%
QC value within limits for As 188.979 Recovery = 97.10%								
Ba 233.527†	28829.9	1.01	mg/L	0.009	1.01	mg/L	0.009	0.87%
QC value within limits for Ba 233.527 Recovery = 101.15%								
Be 234.861†	13390.5	0.0496	mg/L	0.00092	0.0496	mg/L	0.00092	1.86%
QC value within limits for Be 234.861 Recovery = 99.18%								
B 249.677†	14269.0	0.509	mg/L	0.0092	0.509	mg/L	0.0092	1.81%
QC value within limits for B 249.677 Recovery = 101.73%								
Ca 227.546†	730.5	10.0	mg/L	0.08	10.0	mg/L	0.08	0.80%
QC value within limits for Ca 227.546 Recovery = 100.21%								
Cd 228.802†	619.6	0.0508	mg/L	0.00085	0.0508	mg/L	0.00085	1.68%

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   QC value within limits for Cd 228.802  Recovery = 101.70%
Co 228.616†            1819.8       0.201 mg/L        0.0020       0.201 mg/L        0.0020   1.00%
   QC value within limits for Co 228.616  Recovery = 100.35%
Cr 267.716†           29159.7       0.504 mg/L        0.0065       0.504 mg/L        0.0065   1.29%
   QC value within limits for Cr 267.716  Recovery = 100.82%
Cu 327.393†           54125.4       0.495 mg/L        0.0079       0.495 mg/L        0.0079   1.60%
   QC value within limits for Cu 327.393  Recovery = 98.95%
Fe 239.562†             287.9        3.94 mg/L         0.113        3.94 mg/L         0.113   2.88%
   QC value within limits for Fe 239.562  Recovery = 98.61%
Mg 279.077†            2529.9        9.92 mg/L         0.145        9.92 mg/L         0.145   1.46%
   QC value within limits for Mg 279.077  Recovery = 99.22%
Mn 257.610†          122169.1       0.508 mg/L        0.0053       0.508 mg/L        0.0053   1.04%
   QC value within limits for Mn 257.610  Recovery = 101.63%
Mo 202.031†            6664.8       0.998 mg/L        0.0132       0.998 mg/L        0.0132   1.32%
   QC value within limits for Mo 202.031  Recovery = 99.85%
Ni 231.604†            7750.9       0.510 mg/L        0.0063       0.510 mg/L        0.0063   1.24%
   QC value within limits for Ni 231.604  Recovery = 101.96%
Pb 220.353†            1260.7       0.515 mg/L        0.0068       0.515 mg/L        0.0068   1.32%
   QC value within limits for Pb 220.353  Recovery = 102.97%
Sb 206.836†             946.1        1.20 mg/L         0.022        1.20 mg/L         0.022   1.87%
   QC value within limits for Sb 206.836  Recovery = 99.73%
Se 196.026†             236.6       0.401 mg/L        0.0085       0.401 mg/L        0.0085   2.12%
   QC value within limits for Se 196.026  Recovery = 100.25%
Si 251.611†           86740.7        4.94 mg/L         0.080        4.94 mg/L         0.080   1.62%
   QC value within limits for Si 251.611  Recovery = 98.88%
Sn 189.927†            2383.4        1.04 mg/L         0.013        1.04 mg/L         0.013   1.28%
   QC value within limits for Sn 189.927  Recovery = 103.75%
Ti 334.940†          487391.0        1.00 mg/L         0.001        1.00 mg/L         0.001   0.07%
   QC value within limits for Ti 334.940  Recovery = 100.24%
Tl 190.801†             409.5       0.524 mg/L        0.0044       0.524 mg/L        0.0044   0.84%
   QC value within limits for Tl 190.801  Recovery = 104.72%
V 290.880†            82959.3        1.00 mg/L         0.011        1.00 mg/L         0.011   1.09%
   QC value within limits for V 290.880  Recovery = 100.36%
Zn 206.200†           10504.2        1.00 mg/L         0.012        1.00 mg/L         0.012   1.19%
   QC value within limits for Zn 206.200  Recovery = 100.32%
K 766.490†            82855.9        51.6 mg/L          0.58        51.6 mg/L          0.58   1.13%
   QC value within limits for K 766.490  Recovery = 103.29%
Na 589.592†          536266.6        51.2 mg/L          1.65        51.2 mg/L          1.65   3.22%
   QC value within limits for Na 589.592  Recovery = 102.40%
Sr 407.771†         1213291.9        1.01 mg/L         0.023        1.01 mg/L         0.023   2.28%
   QC value within limits for Sr 407.771  Recovery = 101.28%
Li 670.784†           75314.1        1.07 mg/L         0.010        1.07 mg/L         0.010   0.96%
   QC value within limits for Li 670.784  Recovery = 106.55%
All analyte(s) passed QC.

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Sequence No.: 24                                    Autosampler Location: 1
Sample ID: CCB                                      Date Collected: 2/9/2012 12:24:55 PM
Analyst:                                            Data Type: Reprocessed on 2/10/2012 11:13:42 AM
Logged In Analyst (Original) : peicp2
Initial Sample Wt:                                  Initial Sample Vol:
Dilution:                                           Sample Prep Vol:

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Nebulizer Parameters: CCB
Analyte                 Back Pressure    Flow
All                    144.0 kPa         0.50 L/min

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Mean Data: CCB
                   Mean Corrected         Calib.                          Sample
Analyte               Intensity      Conc. Units      Std.Dev.      Conc. Units      Std.Dev.   RSD
Y 371.029           3686406.1                                                      43135.36   1.17%
YRADIAL              279466.8                                                       3823.24   1.37%
Ga 417.206           768787.2                                                      11328.64   1.47%
GaRADIAL              44041.3                                                       1189.01   2.70%
Ag 328.068†            -282.1    -0.00309 mg/L      0.000188    -0.00309 mg/L      0.000188   6.07%
   QC value within limits for Ag 328.068  Recovery = Not calculated
Al 396.153†              -6.7     0.00010 mg/L      0.023301     0.00010 mg/L      0.023301 >999.9%
   QC value within limits for Al 396.153  Recovery = Not calculated
As 188.979†               2.1    -0.00211 mg/L      0.002518    -0.00211 mg/L      0.002518 119.29%
   QC value within limits for As 188.979  Recovery = Not calculated
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Ba 233.527†	-6.7	-0.00395 mg/L	0.000059	-0.00395 mg/L	0.000059	1.49%
QC value within limits for Ba 233.527 Recovery = Not calculated						
Be 234.861†	62.2	0.00007 mg/L	0.000008	0.00007 mg/L	0.000008	11.41%
QC value within limits for Be 234.861 Recovery = Not calculated						
B 249.677†	127.9	0.00327 mg/L	0.000417	0.00327 mg/L	0.000417	12.74%
QC value within limits for B 249.677 Recovery = Not calculated						
Ca 227.546†	0.5	-0.0330 mg/L	0.01290	-0.0330 mg/L	0.01290	39.09%
QC value within limits for Ca 227.546 Recovery = Not calculated						
Cd 228.802†	-0.0	-0.00021 mg/L	0.000199	-0.00021 mg/L	0.000199	92.71%
QC value within limits for Cd 228.802 Recovery = Not calculated						
Co 228.616†	-3.7	-0.00124 mg/L	0.000080	-0.00124 mg/L	0.000080	6.43%
QC value within limits for Co 228.616 Recovery = Not calculated						
Cr 267.716†	-37.1	-0.00235 mg/L	0.000010	-0.00235 mg/L	0.000010	0.43%
QC value within limits for Cr 267.716 Recovery = Not calculated						
Cu 327.393†	-111.3	-0.00248 mg/L	0.000429	-0.00248 mg/L	0.000429	17.33%
QC value within limits for Cu 327.393 Recovery = Not calculated						
Fe 239.562†	1.2	0.0191 mg/L	0.00773	0.0191 mg/L	0.00773	40.59%
QC value within limits for Fe 239.562 Recovery = Not calculated						
Mg 279.077†	-4.4	0.00364 mg/L	0.001930	0.00364 mg/L	0.001930	52.96%
QC value within limits for Mg 279.077 Recovery = Not calculated						
Mn 257.610†	19.4	-0.00223 mg/L	0.000033	-0.00223 mg/L	0.000033	1.47%
QC value within limits for Mn 257.610 Recovery = Not calculated						
Mo 202.031†	-1.6	-0.00262 mg/L	0.000532	-0.00262 mg/L	0.000532	20.30%
QC value within limits for Mo 202.031 Recovery = Not calculated						
Ni 231.604†	8.9	-0.00174 mg/L	0.000640	-0.00174 mg/L	0.000640	36.83%
QC value within limits for Ni 231.604 Recovery = Not calculated						
Pb 220.353†	-0.5	-0.00177 mg/L	0.000641	-0.00177 mg/L	0.000641	36.27%
QC value within limits for Pb 220.353 Recovery = Not calculated						
Sb 206.836†	1.9	-0.00193 mg/L	0.001703	-0.00193 mg/L	0.001703	88.16%
QC value within limits for Sb 206.836 Recovery = Not calculated						
Se 196.026†	-2.0	-0.00017 mg/L	0.006466	-0.00017 mg/L	0.006466	>999.9%
QC value within limits for Se 196.026 Recovery = Not calculated						
Si 251.611†	55.8	-0.0170 mg/L	0.00100	-0.0170 mg/L	0.00100	5.90%
QC value within limits for Si 251.611 Recovery = Not calculated						
Sn 189.927†	-1.1	-0.00462 mg/L	0.001540	-0.00462 mg/L	0.001540	33.32%
QC value within limits for Sn 189.927 Recovery = Not calculated						
Ti 334.940†	-223.4	-0.00152 mg/L	0.000080	-0.00152 mg/L	0.000080	5.23%
QC value within limits for Ti 334.940 Recovery = Not calculated						
Tl 190.801†	-3.4	-0.00750 mg/L	0.003321	-0.00750 mg/L	0.003321	44.25%
QC value within limits for Tl 190.801 Recovery = Not calculated						
V 290.880†	161.2	-0.00055 mg/L	0.002112	-0.00055 mg/L	0.002112	385.94%
QC value within limits for V 290.880 Recovery = Not calculated						
Zn 206.200†	2.9	-0.00319 mg/L	0.000294	-0.00319 mg/L	0.000294	9.21%
QC value within limits for Zn 206.200 Recovery = Not calculated						
K 766.490†	-23.2	-0.0310 mg/L	0.03246	-0.0310 mg/L	0.03246	104.74%
QC value within limits for K 766.490 Recovery = Not calculated						
Na 589.592†	-31.8	-0.0359 mg/L	0.00588	-0.0359 mg/L	0.00588	16.39%
QC value within limits for Na 589.592 Recovery = Not calculated						
Sr 407.771†	-135.7	0.00180 mg/L	0.000022	0.00180 mg/L	0.000022	1.24%
QC value within limits for Sr 407.771 Recovery = Not calculated						
Li 670.784†	7.1	-0.00217 mg/L	0.000355	-0.00217 mg/L	0.000355	16.40%
QC value within limits for Li 670.784 Recovery = Not calculated						

All analyte(s) passed QC.

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Sequence No.: 25 **Autosampler Location: 81**
Sample ID: L1202022102 **Date Collected: 2/9/2012 12:31:43 PM**
Analyst: KHR **Data Type: Reprocessed on 2/10/2012 11:13:43 AM**
Logged In Analyst (Original) : peicp2
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1202022102

Analyte	**Back Pressure**	**Flow**
All	144.0 kPa	0.50 L/min

Mean Data: L1202022102

Analyte	**Mean Corrected Intensity**	**Calib. Conc.**	**Units**	**Std.Dev.**	**Sample Conc.**	**Units**	**Std.Dev.**	**RSD**
Y 371.029	3575922.3						76316.00	2.13%

Approved: February 10, 2012

YRADIAL	278924.7							5652.54	2.03%
Ga 417.206	857482.9							27650.25	3.22%
GaRADIAL	45402.4							967.15	2.13%
Ag 328.068†	-48.6	-0.00181	mg/L	0.000304	-0.00181	mg/L	0.000304		16.74%
Al 396.153†	3017.3	1.01	mg/L	0.010	1.01	mg/L	0.010		0.96%
As 188.979†	9.3	0.00980	mg/L	0.004145	0.00980	mg/L	0.004145		42.28%
Ba 233.527†	1385.5	0.0449	mg/L	0.00102	0.0449	mg/L	0.00102		2.26%
Be 234.861†	542.6	0.00034	mg/L	0.000135	0.00034	mg/L	0.000135		39.44%
B 249.677†	2709.0	0.128	mg/L	0.0033	0.128	mg/L	0.0033		2.61%
Ca 227.546†	10665.6	147	mg/L	3.8	147	mg/L	3.8		2.62%
Cd 228.802†	-5.5	-0.00057	mg/L	0.000116	-0.00057	mg/L	0.000116		20.37%
Co 228.616†	-1.1	-0.00120	mg/L	0.000337	-0.00120	mg/L	0.000337		28.11%
Cr 267.716†	130.5	0.00017	mg/L	0.000067	0.00017	mg/L	0.000067		39.48%
Cu 327.393†	-299.4	-0.00407	mg/L	0.000074	-0.00407	mg/L	0.000074		1.81%
Fe 239.562†	549.5	7.53	mg/L	0.108	7.53	mg/L	0.108		1.43%
Mg 279.077†	3315.6	13.0	mg/L	0.23	13.0	mg/L	0.23		1.77%
Mn 257.610†	51526.3	0.212	mg/L	0.0037	0.212	mg/L	0.0037		1.75%
Mo 202.031†	-2.3	-0.00231	mg/L	0.000276	-0.00231	mg/L	0.000276		11.93%
Ni 231.604†	35.1	-0.00006	mg/L	0.000268	-0.00006	mg/L	0.000268		427.30%
Pb 220.353†	-8.8	0.00167	mg/L	0.001455	0.00167	mg/L	0.001455		87.13%
Sb 206.836†	13.1	0.0123	mg/L	0.00096	0.0123	mg/L	0.00096		7.83%
Se 196.026†	-21.3	0.0145	mg/L	0.00193	0.0145	mg/L	0.00193		13.35%
Si 251.611†	280658.8	16.1	mg/L	0.25	16.1	mg/L	0.25		1.58%
Sn 189.927†	-11.8	-0.00932	mg/L	0.002645	-0.00932	mg/L	0.002645		28.38%
Ti 334.940†	8163.6	0.0172	mg/L	0.00304	0.0172	mg/L	0.00304		17.64%
Tl 190.801†	65.8	0.0216	mg/L	0.00451	0.0216	mg/L	0.00451		20.86%
V 290.880†	280.7	0.00027	mg/L	0.000716	0.00027	mg/L	0.000716		268.07%
Zn 206.200†	386.6	0.0334	mg/L	0.00060	0.0334	mg/L	0.00060		1.79%
K 766.490†	5249.8	3.24	mg/L	0.003	3.24	mg/L	0.003		0.09%
Na 589.592†	225172.4	21.6	mg/L	0.42	21.6	mg/L	0.42		1.95%
Sr 407.771†	1071701.6	0.894	mg/L	0.0093	0.894	mg/L	0.0093		1.04%
Li 670.784†	509.2	0.00495	mg/L	0.001220	0.00495	mg/L	0.001220		24.63%

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Sequence No.: 26
Sample ID: L1202022103
Analyst: KHR
Logged In Analyst (Original) : peicp2
Initial Sample Wt:
Dilution:

Autosampler Location: 82
Date Collected: 2/9/2012 12:38:39 PM
Data Type: Reprocessed on 2/10/2012 11:13:44 AM
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1202022103

Analyte	Back Pressure	Flow
All	144.0 kPa	0.50 L/min

Mean Data: L1202022103

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3616845.1						35573.59	0.98%
YRADIAL	278781.7						2584.41	0.93%
Ga 417.206	841532.2						6901.53	0.82%
GaRADIAL	45690.1						1351.38	2.96%
Ag 328.068†	-206.9	-0.00271	mg/L	0.000350	-0.00271	mg/L	0.000350	12.90%
Al 396.153†	-18.8	-0.00400	mg/L	0.008641	-0.00400	mg/L	0.008641	216.20%
As 188.979†	7.2	0.00763	mg/L	0.006132	0.00763	mg/L	0.006132	80.40%
Ba 233.527†	991.4	0.0311	mg/L	0.00045	0.0311	mg/L	0.00045	1.46%
Be 234.861†	303.8	0.00027	mg/L	0.000189	0.00027	mg/L	0.000189	68.71%
B 249.677†	565.3	0.0345	mg/L	0.00041	0.0345	mg/L	0.00041	1.18%
Ca 227.546†	3291.3	45.2	mg/L	0.59	45.2	mg/L	0.59	1.31%
Cd 228.802†	-4.9	-0.00056	mg/L	0.000260	-0.00056	mg/L	0.000260	46.65%
Co 228.616†	-5.9	-0.00159	mg/L	0.000548	-0.00159	mg/L	0.000548	34.49%
Cr 267.716†	-19.6	-0.00220	mg/L	0.000024	-0.00220	mg/L	0.000024	1.08%
Cu 327.393†	-180.6	-0.00306	mg/L	0.000784	-0.00306	mg/L	0.000784	25.59%
Fe 239.562†	248.6	3.41	mg/L	0.082	3.41	mg/L	0.082	2.40%
Mg 279.077†	986.4	3.88	mg/L	0.041	3.88	mg/L	0.041	1.07%
Mn 257.610†	9680.7	0.0383	mg/L	0.00056	0.0383	mg/L	0.00056	1.46%
Mo 202.031†	-2.3	-0.00254	mg/L	0.000888	-0.00254	mg/L	0.000888	34.93%
Ni 231.604†	3.4	-0.00214	mg/L	0.000115	-0.00214	mg/L	0.000115	5.35%
Pb 220.353†	-5.2	-0.00163	mg/L	0.001548	-0.00163	mg/L	0.001548	95.10%
Sb 206.836†	9.6	0.00789	mg/L	0.002089	0.00789	mg/L	0.002089	26.48%

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Se 196.026†	-17.2	-0.0107	mg/L	0.00128	-0.0107	mg/L	0.00128 12.00%
Si 251.611†	286221.4	16.4	mg/L	0.03	16.4	mg/L	0.03 0.21%
Sn 189.927†	-5.7	-0.00663	mg/L	0.002075	-0.00663	mg/L	0.002075 31.30%
Ti 334.940†	2.4	-0.00060	mg/L	0.000206	-0.00060	mg/L	0.000206 34.30%
Tl 190.801†	45.0	0.0356	mg/L	0.00123	0.0356	mg/L	0.00123 3.47%
V 290.880†	282.0	0.00046	mg/L	0.001577	0.00046	mg/L	0.001577 341.65%
Zn 206.200†	43.1	0.00059	mg/L	0.000293	0.00059	mg/L	0.000293 49.71%
K 766.490†	2880.8	1.77	mg/L	0.044	1.77	mg/L	0.044 2.47%
Na 589.592†	113492.0	10.9	mg/L	0.06	10.9	mg/L	0.06 0.58%
Sr 407.771†	282879.3	0.237	mg/L	0.0035	0.237	mg/L	0.0035 1.46%
Li 670.784†	776.5	0.00874	mg/L	0.000913	0.00874	mg/L	0.000913 10.45%

Sequence No.: 27 **Autosampler Location: 83**
Sample ID: L1202022104 **Date Collected: 2/9/2012 12:45:34 PM**
Analyst: KHR **Data Type: Reprocessed on 2/10/2012 11:13:45 AM**
Logged In Analyst (Original) : peicp2
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1202022104

Analyte	Back Pressure	Flow
All	145.0 kPa	0.50 L/min

Mean Data: L1202022104

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3602488.2						73620.46	2.04%
YRADIAL	275134.4						1691.15	0.61%
Ga 417.206	864876.5						16624.89	1.92%
GaRADIAL	45715.2						953.12	2.08%
Ag 328.068†	-73.7	-0.00212	mg/L	0.000582	-0.00212	mg/L	0.000582	27.51%
Al 396.153†	52.6	0.0198	mg/L	0.00180	0.0198	mg/L	0.00180	9.08%
As 188.979†	9.8	0.0106	mg/L	0.00324	0.0106	mg/L	0.00324	30.58%
Ba 233.527†	1464.3	0.0477	mg/L	0.00095	0.0477	mg/L	0.00095	1.99%
Be 234.861†	662.3	0.00023	mg/L	0.000265	0.00023	mg/L	0.000265	112.71%
B 249.677†	100.8	0.0499	mg/L	0.00078	0.0499	mg/L	0.00078	1.57%
Ca 227.546†	11432.9	157	mg/L	2.1	157	mg/L	2.1	1.31%
Cd 228.802†	-5.1	-0.00051	mg/L	0.000051	-0.00051	mg/L	0.000051	9.93%
Co 228.616†	-2.4	-0.00138	mg/L	0.000182	-0.00138	mg/L	0.000182	13.22%
Cr 267.716†	-8.9	-0.00235	mg/L	0.000153	-0.00235	mg/L	0.000153	6.50%
Cu 327.393†	-318.9	-0.00423	mg/L	0.000875	-0.00423	mg/L	0.000875	20.68%
Fe 239.562†	746.4	10.2	mg/L	0.18	10.2	mg/L	0.18	1.74%
Mg 279.077†	2053.5	8.05	mg/L	0.045	8.05	mg/L	0.045	0.55%
Mn 257.610†	54537.8	0.225	mg/L	0.0028	0.225	mg/L	0.0028	1.24%
Mo 202.031†	-17.5	-0.00446	mg/L	0.000661	-0.00446	mg/L	0.000661	14.82%
Ni 231.604†	-1.8	-0.00250	mg/L	0.000781	-0.00250	mg/L	0.000781	31.23%
Pb 220.353†	-6.1	0.00310	mg/L	0.002131	0.00310	mg/L	0.002131	68.63%
Sb 206.836†	12.8	0.0119	mg/L	0.00320	0.0119	mg/L	0.00320	26.96%
Se 196.026†	-20.8	0.0196	mg/L	0.00175	0.0196	mg/L	0.00175	8.96%
Si 251.611†	330115.7	18.9	mg/L	0.04	18.9	mg/L	0.04	0.23%
Sn 189.927†	-15.6	-0.0110	mg/L	0.00159	-0.0110	mg/L	0.00159	14.48%
Ti 334.940†	-348.9	-0.00020	mg/L	0.000354	-0.00020	mg/L	0.000354	181.02%
Tl 190.801†	66.7	0.0182	mg/L	0.00587	0.0182	mg/L	0.00587	32.22%
V 290.880†	351.9	0.00009	mg/L	0.002181	0.00009	mg/L	0.002181	>999.9%
Zn 206.200†	884.1	0.0809	mg/L	0.00176	0.0809	mg/L	0.00176	2.18%
K 766.490†	3931.6	2.42	mg/L	0.034	2.42	mg/L	0.034	1.41%
Na 589.592†	145467.1	14.0	mg/L	0.11	14.0	mg/L	0.11	0.82%
Sr 407.771†	936662.8	0.781	mg/L	0.0069	0.781	mg/L	0.0069	0.88%
Li 670.784†	678.7	0.00735	mg/L	0.000677	0.00735	mg/L	0.000677	9.21%

Sequence No.: 28 **Autosampler Location: 84**
Sample ID: L1202022105 **Date Collected: 2/9/2012 12:52:27 PM**
Analyst: KHR **Data Type: Reprocessed on 2/10/2012 11:13:46 AM**
Logged In Analyst (Original) : peicp2
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Approved: February 10, 2012

Nebulizer Parameters: L1202022105

Analyte	Back Pressure	Flow
All	144.0 kPa	0.50 L/min

Mean Data: L1202022105

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3687907.9						11311.12	0.31%
YRADIAL	278714.9						7245.12	2.60%
Ga 417.206	856897.6						9656.23	1.13%
GaRADIAL	45658.2						965.94	2.12%
Ag 328.068†	-112.4	-0.00187	mg/L	0.000392	-0.00187	mg/L	0.000392	21.00%
Al 396.153†	880.3	0.297	mg/L	0.0170	0.297	mg/L	0.0170	5.74%
As 188.979†	8.2	0.00981	mg/L	0.003604	0.00981	mg/L	0.003604	36.74%
Ba 233.527†	892.2	0.0276	mg/L	0.00018	0.0276	mg/L	0.00018	0.66%
Be 234.861†	193.1	0.00029	mg/L	0.000033	0.00029	mg/L	0.000033	11.31%
B 249.677†	590.7	0.0253	mg/L	0.00150	0.0253	mg/L	0.00150	5.92%
Ca 227.546†	2719.4	37.5	mg/L	0.33	37.5	mg/L	0.33	0.88%
Cd 228.802†	-4.2	-0.00050	mg/L	0.000102	-0.00050	mg/L	0.000102	20.33%
Co 228.616†	-3.1	-0.00124	mg/L	0.000304	-0.00124	mg/L	0.000304	24.54%
Cr 267.716†	29.1	-0.00128	mg/L	0.000010	-0.00128	mg/L	0.000010	0.77%
Cu 327.393†	-129.8	-0.00261	mg/L	0.000580	-0.00261	mg/L	0.000580	22.19%
Fe 239.562†	95.8	1.31	mg/L	0.057	1.31	mg/L	0.057	4.34%
Mg 279.077†	934.1	3.67	mg/L	0.105	3.67	mg/L	0.105	2.85%
Mn 257.610†	13457.9	0.0538	mg/L	0.00043	0.0538	mg/L	0.00043	0.79%
Mo 202.031†	-2.7	-0.00272	mg/L	0.000773	-0.00272	mg/L	0.000773	28.47%
Ni 231.604†	13.4	-0.00147	mg/L	0.000205	-0.00147	mg/L	0.000205	13.92%
Pb 220.353†	-4.3	-0.00155	mg/L	0.000790	-0.00155	mg/L	0.000790	51.07%
Sb 206.836†	5.8	0.00298	mg/L	0.001342	0.00298	mg/L	0.001342	44.98%
Se 196.026†	-13.0	-0.00682	mg/L	0.002055	-0.00682	mg/L	0.002055	30.13%
Si 251.611†	246213.4	14.1	mg/L	0.23	14.1	mg/L	0.23	1.62%
Sn 189.927†	-4.1	-0.00596	mg/L	0.001463	-0.00596	mg/L	0.001463	24.56%
Ti 334.940†	5262.0	0.0101	mg/L	0.00789	0.0101	mg/L	0.00789	77.72%
Tl 190.801†	37.6	0.0296	mg/L	0.00793	0.0296	mg/L	0.00793	26.82%
V 290.880†	251.2	0.00055	mg/L	0.000567	0.00055	mg/L	0.000567	102.39%
Zn 206.200†	62.8	0.00252	mg/L	0.000369	0.00252	mg/L	0.000369	14.63%
K 766.490†	2768.8	1.70	mg/L	0.025	1.70	mg/L	0.025	1.50%
Na 589.592†	116636.1	11.2	mg/L	0.17	11.2	mg/L	0.17	1.54%
Sr 407.771†	238331.3	0.200	mg/L	0.0044	0.200	mg/L	0.0044	2.19%
Li 670.784†	584.5	0.00602	mg/L	0.000572	0.00602	mg/L	0.000572	9.50%

Sequence No.: 29
Sample ID: L1202022106
Analyst: KHR
Logged In Analyst (Original) : peicp2
Initial Sample Wt:
Dilution:

Autosampler Location: 85
Date Collected: 2/9/2012 12:59:20 PM
Data Type: Reprocessed on 2/10/2012 11:13:48 AM
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1202022106

Analyte	Back Pressure	Flow
All	145.0 kPa	0.50 L/min

Mean Data: L1202022106

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3582466.5						43106.63	1.20%
YRADIAL	272421.8						1879.97	0.69%
Ga 417.206	843046.6						10658.09	1.26%
GaRADIAL	44718.0						703.93	1.57%
Ag 328.068†	-221.0	-0.00313	mg/L	0.000148	-0.00313	mg/L	0.000148	4.71%
Al 396.153†	355.8	0.121	mg/L	0.0031	0.121	mg/L	0.0031	2.54%
As 188.979†	7.8	0.00880	mg/L	0.002857	0.00880	mg/L	0.002857	32.46%
Ba 233.527†	1191.1	0.0381	mg/L	0.00070	0.0381	mg/L	0.00070	1.83%
Be 234.861†	724.5	0.00054	mg/L	0.000042	0.00054	mg/L	0.000042	7.62%
B 249.677†	-34.4	0.0429	mg/L	0.00034	0.0429	mg/L	0.00034	0.78%
Ca 227.546†	2972.6	40.2	mg/L	0.59	40.2	mg/L	0.59	1.47%
Cd 228.802†	-4.6	-0.00049	mg/L	0.000162	-0.00049	mg/L	0.000162	33.24%
Co 228.616†	4.1	-0.00064	mg/L	0.000226	-0.00064	mg/L	0.000226	35.18%

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Cr 267.716†	66.8	-0.00099	mg/L	0.000092	-0.00099	mg/L	0.000092	9.27%
Cu 327.393†	-152.0	-0.00272	mg/L	0.000617	-0.00272	mg/L	0.000617	22.64%
Fe 239.562†	713.1	9.77	mg/L	0.105	9.77	mg/L	0.105	1.07%
Mg 279.077†	840.7	3.31	mg/L	0.017	3.31	mg/L	0.017	0.52%
Mn 257.610†	35544.9	0.146	mg/L	0.0022	0.146	mg/L	0.0022	1.50%
Mo 202.031†	-13.7	-0.00393	mg/L	0.000307	-0.00393	mg/L	0.000307	7.80%
Ni 231.604†	885.1	0.0561	mg/L	0.00107	0.0561	mg/L	0.00107	1.91%
Pb 220.353†	-2.9	-0.00121	mg/L	0.001487	-0.00121	mg/L	0.001487	122.93%
Sb 206.836†	8.2	0.00599	mg/L	0.001420	0.00599	mg/L	0.001420	23.70%
Se 196.026†	-14.0	-0.00446	mg/L	0.007867	-0.00446	mg/L	0.007867	176.28%
Si 251.611†	329438.3	18.9	mg/L	0.09	18.9	mg/L	0.09	0.47%
Sn 189.927†	-12.7	-0.00968	mg/L	0.000156	-0.00968	mg/L	0.000156	1.61%
Ti 334.940†	639.5	0.00067	mg/L	0.000202	0.00067	mg/L	0.000202	30.23%
Tl 190.801†	33.3	0.0227	mg/L	0.00551	0.0227	mg/L	0.00551	24.25%
V 290.880†	562.0	0.00234	mg/L	0.001172	0.00234	mg/L	0.001172	50.02%
Zn 206.200†	144.4	0.0102	mg/L	0.00056	0.0102	mg/L	0.00056	5.47%
K 766.490†	6384.2	3.94	mg/L	0.049	3.94	mg/L	0.049	1.24%
Na 589.592†	275758.4	26.4	mg/L	0.13	26.4	mg/L	0.13	0.49%
Sr 407.771†	336275.4	0.280	mg/L	0.0025	0.280	mg/L	0.0025	0.88%
Li 670.784†	670.8	0.00724	mg/L	0.001294	0.00724	mg/L	0.001294	17.87%

Sequence No.: 30
Sample ID: L1202022107
Analyst: KHR
Logged In Analyst (Original) : peicp2
Initial Sample Wt:
Dilution:

Autosampler Location: 86
Date Collected: 2/9/2012 1:06:10 PM
Data Type: Reprocessed on 2/10/2012 11:13:49 AM
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1202022107

Analyte	Back Pressure	Flow
All	144.0 kPa	0.50 L/min

Mean Data: L1202022107

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3670077.0						22744.50	0.62%
YRADIAL	281443.2						1452.08	0.52%
Ga 417.206	833700.9						4659.64	0.56%
GaRADIAL	45924.1						778.49	1.70%
Ag 328.068†	-285.3	-0.00314	mg/L	0.000111	-0.00314	mg/L	0.000111	3.52%
Al 396.153†	1976.7	0.664	mg/L	0.0324	0.664	mg/L	0.0324	4.89%
As 188.979†	1.9	-0.00276	mg/L	0.000767	-0.00276	mg/L	0.000767	27.78%
Ba 233.527†	4401.1	0.151	mg/L	0.0028	0.151	mg/L	0.0028	1.88%
Be 234.861†	288.1	0.00086	mg/L	0.000045	0.00086	mg/L	0.000045	5.26%
B 249.677†	986.6	0.0339	mg/L	0.00093	0.0339	mg/L	0.00093	2.75%
Ca 227.546†	370.2	5.07	mg/L	0.070	5.07	mg/L	0.070	1.38%
Cd 228.802†	-4.1	-0.00054	mg/L	0.000164	-0.00054	mg/L	0.000164	30.19%
Co 228.616†	2.7	-0.00061	mg/L	0.000403	-0.00061	mg/L	0.000403	66.14%
Cr 267.716†	-0.5	-0.00175	mg/L	0.000056	-0.00175	mg/L	0.000056	3.23%
Cu 327.393†	-55.4	-0.00195	mg/L	0.000673	-0.00195	mg/L	0.000673	34.56%
Fe 239.562†	17.0	0.235	mg/L	0.0154	0.235	mg/L	0.0154	6.56%
Mg 279.077†	518.7	2.05	mg/L	0.028	2.05	mg/L	0.028	1.36%
Mn 257.610†	12589.9	0.0501	mg/L	0.00079	0.0501	mg/L	0.00079	1.57%
Mo 202.031†	-5.9	-0.00325	mg/L	0.000256	-0.00325	mg/L	0.000256	7.87%
Ni 231.604†	19.1	-0.00107	mg/L	0.000332	-0.00107	mg/L	0.000332	31.06%
Pb 220.353†	4.0	0.00031	mg/L	0.002154	0.00031	mg/L	0.002154	695.63%
Sb 206.836†	3.1	-0.00045	mg/L	0.002012	-0.00045	mg/L	0.002012	443.34%
Se 196.026†	-3.9	-0.00177	mg/L	0.007158	-0.00177	mg/L	0.007158	404.55%
Si 251.611†	104149.4	5.96	mg/L	0.064	5.96	mg/L	0.064	1.07%
Sn 189.927†	-6.1	-0.00680	mg/L	0.001034	-0.00680	mg/L	0.001034	15.20%
Ti 334.940†	7184.0	0.0138	mg/L	0.00071	0.0138	mg/L	0.00071	5.16%
Tl 190.801†	1.5	-0.00306	mg/L	0.002737	-0.00306	mg/L	0.002737	89.31%
V 290.880†	331.7	0.00164	mg/L	0.000677	0.00164	mg/L	0.000677	41.31%
Zn 206.200†	71.8	0.00340	mg/L	0.000085	0.00340	mg/L	0.000085	2.49%
K 766.490†	2355.1	1.44	mg/L	0.054	1.44	mg/L	0.054	3.74%
Na 589.592†	111130.1	10.7	mg/L	0.11	10.7	mg/L	0.11	1.08%
Sr 407.771†	81976.8	0.0702	mg/L	0.00091	0.0702	mg/L	0.00091	1.29%
Li 670.784†	159.8	0.00000	mg/L	0.000764	0.00000	mg/L	0.000764	>999.9%

Approved: February 10, 2012

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Sequence No.: 31 **Autosampler Location: 87**
Sample ID: L1202022108 **Date Collected: 2/9/2012 1:13:00 PM**
Analyst: KHR **Data Type: Reprocessed on 2/10/2012 11:13:50 AM**
Logged In Analyst (Original) : peicp2
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1202022108

Analyte	Back Pressure	Flow
All	144.0 kPa	0.50 L/min

Mean Data: L1202022108

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3687673.6						41464.07	1.12%
YRADIAL	276542.5						4660.30	1.69%
Ga 417.206	865870.2						16758.47	1.94%
GaRADIAL	45235.1						1210.03	2.67%
Ag 328.068†	-213.5	-0.00317	mg/L	0.000471	-0.00317	mg/L	0.000471	14.87%
Al 396.153†	19756.9	6.61	mg/L	0.038	6.61	mg/L	0.038	0.57%
As 188.979†	11.5	0.0163	mg/L	0.00435	0.0163	mg/L	0.00435	26.66%
Ba 233.527†	2423.2	0.0814	mg/L	0.00126	0.0814	mg/L	0.00126	1.55%
Be 234.861†	983.1	0.00090	mg/L	0.000154	0.00090	mg/L	0.000154	17.14%
B 249.677†	-373.0	0.0389	mg/L	0.00131	0.0389	mg/L	0.00131	3.37%
Ca 227.546†	2805.8	37.6	mg/L	0.76	37.6	mg/L	0.76	2.03%
Cd 228.802†	-0.8	-0.00014	mg/L	0.000360	-0.00014	mg/L	0.000360	256.40%
Co 228.616†	26.0	0.00157	mg/L	0.000200	0.00157	mg/L	0.000200	12.69%
Cr 267.716†	572.9	0.00768	mg/L	0.000068	0.00768	mg/L	0.000068	0.88%
Cu 327.393†	140.3	0.00008	mg/L	0.000482	0.00008	mg/L	0.000482	626.50%
Fe 239.562†	926.9	12.7	mg/L	0.30	12.7	mg/L	0.30	2.38%
Mg 279.077†	661.2	2.60	mg/L	0.035	2.60	mg/L	0.035	1.36%
Mn 257.610†	23313.0	0.0954	mg/L	0.00101	0.0954	mg/L	0.00101	1.06%
Mo 202.031†	-6.4	-0.00269	mg/L	0.000408	-0.00269	mg/L	0.000408	15.20%
Ni 231.604†	125.4	0.00593	mg/L	0.000633	0.00593	mg/L	0.000633	10.67%
Pb 220.353†	15.2	0.00618	mg/L	0.001374	0.00618	mg/L	0.001374	22.24%
Sb 206.836†	7.4	0.00495	mg/L	0.001888	0.00495	mg/L	0.001888	38.15%
Se 196.026†	-15.8	-0.00748	mg/L	0.004633	-0.00748	mg/L	0.004633	61.91%
Si 251.611†	437940.2	25.1	mg/L	0.41	25.1	mg/L	0.41	1.63%
Sn 189.927†	-17.9	-0.0120	mg/L	0.00182	-0.0120	mg/L	0.00182	15.17%
Ti 334.940†	34730.4	0.0708	mg/L	0.00093	0.0708	mg/L	0.00093	1.31%
Tl 190.801†	37.7	0.0300	mg/L	0.00582	0.0300	mg/L	0.00582	19.41%
V 290.880†	1695.5	0.0154	mg/L	0.00110	0.0154	mg/L	0.00110	7.19%
Zn 206.200†	367.4	0.0315	mg/L	0.00044	0.0315	mg/L	0.00044	1.39%
K 766.490†	4738.2	2.92	mg/L	0.034	2.92	mg/L	0.034	1.17%
Na 589.592†	224987.1	21.6	mg/L	0.28	21.6	mg/L	0.28	1.29%
Sr 407.771†	222776.0	0.185	mg/L	0.0021	0.185	mg/L	0.0021	1.15%
Li 670.784†	456.5	0.00421	mg/L	0.000295	0.00421	mg/L	0.000295	7.01%

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Sequence No.: 32 **Autosampler Location: 88**
Sample ID: L1202022109 **Date Collected: 2/9/2012 1:19:50 PM**
Analyst: KHR **Data Type: Reprocessed on 2/10/2012 11:13:51 AM**
Logged In Analyst (Original) : peicp2
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1202022109

Analyte	Back Pressure	Flow
All	145.0 kPa	0.50 L/min

Mean Data: L1202022109

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3679052.1						39091.71	1.06%
YRADIAL	281119.0						3324.48	1.18%
Ga 417.206	858576.2						8770.40	1.02%
GaRADIAL	45968.9						1130.70	2.46%

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Ag 328.068†	-194.5	-0.00252	mg/L	0.000406	-0.00252	mg/L	0.000406	16.13%
Al 396.153†	74.6	0.0273	mg/L	0.00842	0.0273	mg/L	0.00842	30.88%
As 188.979†	9.3	0.0120	mg/L	0.00548	0.0120	mg/L	0.00548	45.46%
Ba 233.527†	1294.4	0.0417	mg/L	0.00057	0.0417	mg/L	0.00057	1.37%
Be 234.861†	200.0	0.00031	mg/L	0.000166	0.00031	mg/L	0.000166	53.76%
B 249.677†	482.6	0.0220	mg/L	0.00037	0.0220	mg/L	0.00037	1.69%
Ca 227.546†	2409.5	33.2	mg/L	0.33	33.2	mg/L	0.33	1.01%
Cd 228.802†	-5.2	-0.00058	mg/L	0.000118	-0.00058	mg/L	0.000118	20.28%
Co 228.616†	-4.8	-0.00142	mg/L	0.000371	-0.00142	mg/L	0.000371	26.20%
Cr 267.716†	-21.0	-0.00215	mg/L	0.000069	-0.00215	mg/L	0.000069	3.19%
Cu 327.393†	-127.6	-0.00260	mg/L	0.000457	-0.00260	mg/L	0.000457	17.56%
Fe 239.562†	100.1	1.37	mg/L	0.009	1.37	mg/L	0.009	0.67%
Mg 279.077†	909.7	3.58	mg/L	0.053	3.58	mg/L	0.053	1.49%
Mn 257.610†	15986.4	0.0643	mg/L	0.00178	0.0643	mg/L	0.00178	2.77%
Mo 202.031†	-0.1	-0.00231	mg/L	0.000383	-0.00231	mg/L	0.000383	16.60%
Ni 231.604†	14.4	-0.00140	mg/L	0.000187	-0.00140	mg/L	0.000187	13.36%
Pb 220.353†	-1.3	-0.00056	mg/L	0.002506	-0.00056	mg/L	0.002506	448.96%
Sb 206.836†	9.1	0.00726	mg/L	0.000190	0.00726	mg/L	0.000190	2.61%
Se 196.026†	-9.6	-0.00232	mg/L	0.002010	-0.00232	mg/L	0.002010	86.46%
Si 251.611†	208992.7	12.0	mg/L	0.04	12.0	mg/L	0.04	0.32%
Sn 189.927†	-9.9	-0.00848	mg/L	0.001547	-0.00848	mg/L	0.001547	18.25%
Ti 334.940†	626.6	0.00056	mg/L	0.001396	0.00056	mg/L	0.001396	247.85%
Tl 190.801†	31.8	0.0238	mg/L	0.00152	0.0238	mg/L	0.00152	6.41%
V 290.880†	156.5	-0.00062	mg/L	0.001941	-0.00062	mg/L	0.001941	313.88%
Zn 206.200†	45.1	0.00082	mg/L	0.000114	0.00082	mg/L	0.000114	13.84%
K 766.490†	2919.9	1.79	mg/L	0.018	1.79	mg/L	0.018	1.03%
Na 589.592†	123503.8	11.9	mg/L	0.07	11.9	mg/L	0.07	0.55%
Sr 407.771†	235694.3	0.198	mg/L	0.0023	0.198	mg/L	0.0023	1.18%
Li 670.784†	483.4	0.00459	mg/L	0.001194	0.00459	mg/L	0.001194	26.03%

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Sequence No.: 33
Sample ID: L1202022110
Analyst: KHR
Logged In Analyst (Original) : peicp2
Initial Sample Wt:
Dilution:

Autosampler Location: 89
Date Collected: 2/9/2012 1:26:43 PM
Data Type: Reprocessed on 2/10/2012 11:13:52 AM
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1202022110

Analyte	Back Pressure	Flow
All	145.0 kPa	0.50 L/min

Mean Data: L1202022110

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3603426.4						13418.21	0.37%
YRADIAL	280352.6						3149.44	1.12%
Ga 417.206	869052.8						8493.53	0.98%
GaRADIAL	46207.9						326.52	0.71%
Ag 328.068†	-23.6	-0.00165	mg/L	0.000839	-0.00165	mg/L	0.000839	50.86%
Al 396.153†	474.7	0.161	mg/L	0.0032	0.161	mg/L	0.0032	1.98%
As 188.979†	10.6	0.0124	mg/L	0.00458	0.0124	mg/L	0.00458	37.07%
Ba 233.527†	2343.9	0.0786	mg/L	0.00058	0.0786	mg/L	0.00058	0.74%
Be 234.861†	647.0	0.00040	mg/L	0.000079	0.00040	mg/L	0.000079	19.89%
B 249.677†	227.7	0.0490	mg/L	0.00106	0.0490	mg/L	0.00106	2.16%
Ca 227.546†	11649.0	160	mg/L	1.3	160	mg/L	1.3	0.82%
Cd 228.802†	-8.5	-0.00079	mg/L	0.000223	-0.00079	mg/L	0.000223	28.37%
Co 228.616†	-3.1	-0.00145	mg/L	0.000129	-0.00145	mg/L	0.000129	8.93%
Cr 267.716†	202.5	0.00137	mg/L	0.000071	0.00137	mg/L	0.000071	5.16%
Cu 327.393†	-399.7	-0.00499	mg/L	0.000169	-0.00499	mg/L	0.000169	3.38%
Fe 239.562†	665.5	9.12	mg/L	0.166	9.12	mg/L	0.166	1.82%
Mg 279.077†	2759.4	10.8	mg/L	0.12	10.8	mg/L	0.12	1.14%
Mn 257.610†	43440.3	0.179	mg/L	0.0009	0.179	mg/L	0.0009	0.49%
Mo 202.031†	-12.8	-0.00381	mg/L	0.000487	-0.00381	mg/L	0.000487	12.77%
Ni 231.604†	83.7	0.00315	mg/L	0.000816	0.00315	mg/L	0.000816	25.88%
Pb 220.353†	-6.9	0.00297	mg/L	0.000564	0.00297	mg/L	0.000564	19.03%
Sb 206.836†	13.7	0.0130	mg/L	0.00303	0.0130	mg/L	0.00303	23.24%
Se 196.026†	-18.8	0.0234	mg/L	0.00233	0.0234	mg/L	0.00233	9.95%
Si 251.611†	343672.8	19.7	mg/L	0.23	19.7	mg/L	0.23	1.16%
Sn 189.927†	-18.4	-0.0122	mg/L	0.00172	-0.0122	mg/L	0.00172	14.11%

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Ti 334.940†	1758.9	0.00417 mg/L	0.000683	0.00417 mg/L	0.000683	16.38%
Tl 190.801†	67.9	0.0185 mg/L	0.00288	0.0185 mg/L	0.00288	15.53%
V 290.880†	318.0	0.00017 mg/L	0.000847	0.00017 mg/L	0.000847	508.25%
Zn 206.200†	267.4	0.0219 mg/L	0.00039	0.0219 mg/L	0.00039	1.78%
K 766.490†	11638.8	7.22 mg/L	0.048	7.22 mg/L	0.048	0.67%
Na 589.592†	232751.0	22.3 mg/L	0.67	22.3 mg/L	0.67	3.00%
Sr 407.771†	836062.2	0.697 mg/L	0.0083	0.697 mg/L	0.0083	1.19%
Li 670.784†	1365.7	0.0171 mg/L	0.00036	0.0171 mg/L	0.00036	2.10%

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Sequence No.: 34
Sample ID: CCV
Analyst:
Logged In Analyst (Original) : peicp2
Initial Sample Wt:
Dilution:

Autosampler Location: 6
Date Collected: 2/9/2012 1:33:37 PM
Data Type: Reprocessed on 2/10/2012 11:13:53 AM

Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: CCV

Analyte	Back Pressure	Flow
All	144.0 kPa	0.50 L/min

Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3572794.5						51996.56	1.46%
YRADIAL	268246.1						4096.70	1.53%
Ga 417.206	822356.6						14684.03	1.79%
GaRADIAL	44481.5						1474.78	3.32%
Ag 328.068†	49141.0	0.386	mg/L	0.0095	0.386	mg/L	0.0095	2.45%
QC value within limits for Ag 328.068 Recovery = 96.41%								
Al 396.153†	30745.0	10.3	mg/L	0.39	10.3	mg/L	0.39	3.78%
QC value within limits for Al 396.153 Recovery = 102.77%								
As 188.979†	187.9	0.379	mg/L	0.0069	0.379	mg/L	0.0069	1.82%
QC value within limits for As 188.979 Recovery = 94.79%								
Ba 233.527†	28457.6	0.998	mg/L	0.0184	0.998	mg/L	0.0184	1.84%
QC value within limits for Ba 233.527 Recovery = 99.84%								
Be 234.861†	12890.2	0.0477	mg/L	0.00071	0.0477	mg/L	0.00071	1.48%
QC value within limits for Be 234.861 Recovery = 95.45%								
B 249.677†	13852.6	0.494	mg/L	0.0104	0.494	mg/L	0.0104	2.10%
QC value within limits for B 249.677 Recovery = 98.82%								
Ca 227.546†	726.0	9.95	mg/L	0.179	9.95	mg/L	0.179	1.80%
QC value within limits for Ca 227.546 Recovery = 99.49%								
Cd 228.802†	598.6	0.0491	mg/L	0.00092	0.0491	mg/L	0.00092	1.87%
QC value within limits for Cd 228.802 Recovery = 98.27%								
Co 228.616†	1801.7	0.199	mg/L	0.0020	0.199	mg/L	0.0020	0.99%
QC value within limits for Co 228.616 Recovery = 99.34%								
Cr 267.716†	28764.4	0.497	mg/L	0.0087	0.497	mg/L	0.0087	1.76%
QC value within limits for Cr 267.716 Recovery = 99.45%								
Cu 327.393†	52757.5	0.482	mg/L	0.0114	0.482	mg/L	0.0114	2.36%
QC value within limits for Cu 327.393 Recovery = 96.45%								
Fe 239.562†	292.3	4.01	mg/L	0.085	4.01	mg/L	0.085	2.13%
QC value within limits for Fe 239.562 Recovery = 100.15%								
Mg 279.077†	2544.9	9.98	mg/L	0.184	9.98	mg/L	0.184	1.84%
QC value within limits for Mg 279.077 Recovery = 99.81%								
Mn 257.610†	120173.3	0.500	mg/L	0.0090	0.500	mg/L	0.0090	1.80%
QC value within limits for Mn 257.610 Recovery = 99.99%								
Mo 202.031†	6571.1	0.984	mg/L	0.0218	0.984	mg/L	0.0218	2.21%
QC value within limits for Mo 202.031 Recovery = 98.44%								
Ni 231.604†	7666.6	0.504	mg/L	0.0117	0.504	mg/L	0.0117	2.33%
QC value within limits for Ni 231.604 Recovery = 100.85%								
Pb 220.353†	1239.9	0.506	mg/L	0.0069	0.506	mg/L	0.0069	1.37%
QC value within limits for Pb 220.353 Recovery = 101.28%								
Sb 206.836†	922.9	1.17	mg/L	0.017	1.17	mg/L	0.017	1.46%
QC value within limits for Sb 206.836 Recovery = 97.28%								
Se 196.026†	235.6	0.399	mg/L	0.0051	0.399	mg/L	0.0051	1.28%
QC value within limits for Se 196.026 Recovery = 99.81%								
Si 251.611†	85251.0	4.86	mg/L	0.121	4.86	mg/L	0.121	2.50%
QC value within limits for Si 251.611 Recovery = 97.18%								
Sn 189.927†	2376.7	1.03	mg/L	0.013	1.03	mg/L	0.013	1.28%
QC value within limits for Sn 189.927 Recovery = 103.45%								

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Ti 334.940†	488606.1	1.00 mg/L	0.007	1.00 mg/L	0.007	0.65%
QC value within limits for Ti 334.940 Recovery = 100.49%						
Tl 190.801†	398.8	0.510 mg/L	0.0080	0.510 mg/L	0.0080	1.57%
QC value within limits for Tl 190.801 Recovery = 102.01%						
V 290.880†	82044.3	0.992 mg/L	0.0198	0.992 mg/L	0.0198	2.00%
QC value within limits for V 290.880 Recovery = 99.25%						
Zn 206.200†	10306.0	0.984 mg/L	0.0192	0.984 mg/L	0.0192	1.95%
QC value within limits for Zn 206.200 Recovery = 98.42%						
K 766.490†	85937.3	53.6 mg/L	1.71	53.6 mg/L	1.71	3.19%
QC value within limits for K 766.490 Recovery = 107.13%						
Na 589.592†	546216.8	52.1 mg/L	2.74	52.1 mg/L	2.74	5.25%
QC value within limits for Na 589.592 Recovery = 104.28%						
Sr 407.771†	1255975.5	1.05 mg/L	0.034	1.05 mg/L	0.034	3.25%
QC value within limits for Sr 407.771 Recovery = 104.84%						
Li 670.784†	78913.8	1.12 mg/L	0.040	1.12 mg/L	0.040	3.63%
QC value greater than the upper limit for Li 670.784 Recovery = 111.65%						

QC Failed. Continue with analysis.

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Sequence No.: 35 **Autosampler Location: 1**
Sample ID: CCB **Date Collected: 2/9/2012 1:40:33 PM**
Analyst: **Data Type: Reprocessed on 2/10/2012 11:13:54 AM**
Logged In Analyst (Original) : peicp2
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: CCB

Analyte	Back Pressure	Flow
All	144.0 kPa	0.50 L/min

Mean Data: CCB

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3654717.8						29027.11	0.79%
YRADIAL	278949.9						10215.37	3.66%
Ga 417.206	772752.9						3093.43	0.40%
GaRADIAL	44277.9						855.06	1.93%
Ag 328.068†	-428.0	-0.00423	mg/L	0.000271	-0.00423	mg/L	0.000271	6.41%
QC value less than the lower limit for Ag 328.068 Recovery = Not calculated								
Al 396.153†	18.0	0.00839	mg/L	0.005179	0.00839	mg/L	0.005179	61.72%
QC value within limits for Al 396.153 Recovery = Not calculated								
As 188.979†	-0.2	-0.00684	mg/L	0.002342	-0.00684	mg/L	0.002342	34.26%
QC value within limits for As 188.979 Recovery = Not calculated								
Ba 233.527†	-6.9	-0.00395	mg/L	0.000116	-0.00395	mg/L	0.000116	2.94%
QC value within limits for Ba 233.527 Recovery = Not calculated								
Be 234.861†	83.1	0.00014	mg/L	0.000028	0.00014	mg/L	0.000028	19.74%
QC value within limits for Be 234.861 Recovery = Not calculated								
B 249.677†	39.2	0.00016	mg/L	0.000265	0.00016	mg/L	0.000265	168.77%
QC value within limits for B 249.677 Recovery = Not calculated								
Ca 227.546†	0.5	-0.0330	mg/L	0.02100	-0.0330	mg/L	0.02100	63.61%
QC value within limits for Ca 227.546 Recovery = Not calculated								
Cd 228.802†	-5.0	-0.00063	mg/L	0.000150	-0.00063	mg/L	0.000150	23.90%
QC value less than the lower limit for Cd 228.802 Recovery = Not calculated								
Co 228.616†	-6.6	-0.00157	mg/L	0.000344	-0.00157	mg/L	0.000344	21.95%
QC value within limits for Co 228.616 Recovery = Not calculated								
Cr 267.716†	-43.4	-0.00246	mg/L	0.000071	-0.00246	mg/L	0.000071	2.87%
QC value within limits for Cr 267.716 Recovery = Not calculated								
Cu 327.393†	-239.6	-0.00365	mg/L	0.000629	-0.00365	mg/L	0.000629	17.24%
QC value within limits for Cu 327.393 Recovery = Not calculated								
Fe 239.562†	1.2	0.0186	mg/L	0.00880	0.0186	mg/L	0.00880	47.29%
QC value within limits for Fe 239.562 Recovery = Not calculated								
Mg 279.077†	-2.2	0.0123	mg/L	0.00496	0.0123	mg/L	0.00496	40.34%
QC value within limits for Mg 279.077 Recovery = Not calculated								
Mn 257.610†	23.1	-0.00222	mg/L	0.000047	-0.00222	mg/L	0.000047	2.14%
QC value within limits for Mn 257.610 Recovery = Not calculated								
Mo 202.031†	-6.0	-0.00328	mg/L	0.000085	-0.00328	mg/L	0.000085	2.58%
QC value within limits for Mo 202.031 Recovery = Not calculated								
Ni 231.604†	6.5	-0.00190	mg/L	0.000244	-0.00190	mg/L	0.000244	12.85%
QC value within limits for Ni 231.604 Recovery = Not calculated								
Pb 220.353†	4.3	0.00018	mg/L	0.000817	0.00018	mg/L	0.000817	442.34%

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   QC value within limits for Pb 220.353  Recovery = Not calculated
Sb 206.836†                1.7    -0.00223 mg/L      0.002364    -0.00223 mg/L      0.002364 106.04%
   QC value within limits for Sb 206.836  Recovery = Not calculated
Se 196.026†               -2.8    -0.00145 mg/L      0.004661    -0.00145 mg/L      0.004661 321.49%
   QC value within limits for Se 196.026  Recovery = Not calculated
Si 251.611†              148.5     -0.0117 mg/L       0.00118     -0.0117 mg/L       0.00118  10.13%
   QC value within limits for Si 251.611  Recovery = Not calculated
Sn 189.927†               -3.2    -0.00555 mg/L      0.001636    -0.00555 mg/L      0.001636  29.49%
   QC value within limits for Sn 189.927  Recovery = Not calculated
Ti 334.940†             -244.1    -0.00156 mg/L      0.000069    -0.00156 mg/L      0.000069   4.40%
   QC value within limits for Ti 334.940  Recovery = Not calculated
Tl 190.801†               -1.2    -0.00473 mg/L      0.001521    -0.00473 mg/L      0.001521  32.13%
   QC value within limits for Tl 190.801  Recovery = Not calculated
V 290.880†               208.3     0.00003 mg/L      0.002683     0.00003 mg/L      0.002683 >999.9%
   QC value within limits for V 290.880  Recovery = Not calculated
Zn 206.200†                3.5    -0.00313 mg/L      0.000132    -0.00313 mg/L      0.000132   4.22%
   QC value within limits for Zn 206.200  Recovery = Not calculated
K 766.490†                16.8    -0.00605 mg/L      0.042813    -0.00605 mg/L      0.042813 707.11%
   QC value within limits for K 766.490  Recovery = Not calculated
Na 589.592†               28.7     -0.0300 mg/L       0.00583     -0.0300 mg/L       0.00583  19.41%
   QC value within limits for Na 589.592  Recovery = Not calculated
Sr 407.771†             -153.6     0.00179 mg/L      0.000022     0.00179 mg/L      0.000022   1.23%
   QC value within limits for Sr 407.771  Recovery = Not calculated
Li 670.784†              -48.8    -0.00296 mg/L      0.001690    -0.00296 mg/L      0.001690  57.12%
   QC value within limits for Li 670.784  Recovery = Not calculated
QC Failed.  Continue with analysis.

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Sequence No.: 36                                  Autosampler Location: 90
Sample ID: L1202022111                            Date Collected: 2/9/2012 1:47:21 PM
Analyst: KHR                                      Data Type: Reprocessed on 2/10/2012 11:13:55 AM
Logged In Analyst (Original) : peicp2
Initial Sample Wt:                                Initial Sample Vol:
Dilution:                                         Sample Prep Vol:

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Nebulizer Parameters: L1202022111
Analyte                 Back Pressure    Flow
All                    144.0 kPa        0.50 L/min

------------------------------------------------------------------------------------------
Mean Data: L1202022111
                   Mean Corrected        Calib.                          Sample
Analyte               Intensity     Conc. Units      Std.Dev.      Conc. Units      Std.Dev.   RSD
Y 371.029            3407721.2                                                    53908.72   1.58%
YRADIAL               271276.0                                                     2168.94   0.80%
Ga 417.206            836483.9                                                    17120.46   2.05%
GaRADIAL               45706.2                                                      411.04   0.90%
Ag 328.068†               62.5    -0.00178 mg/L      0.000515    -0.00178 mg/L      0.000515  28.92%
Al 396.153†              -37.8     -0.0107 mg/L       0.00295     -0.0107 mg/L       0.00295  27.55%
As 188.979†               12.5      0.0125 mg/L       0.00522      0.0125 mg/L       0.00522  41.90%
Ba 233.527†             5727.7       0.197 mg/L        0.0029       0.197 mg/L        0.0029   1.47%
Be 234.861†             1365.3     0.00058 mg/L      0.000153     0.00058 mg/L      0.000153  26.34%
B 249.677†                53.7       0.100 mg/L        0.0004       0.100 mg/L        0.0004   0.44%
Ca 227.546†            25154.5         346 mg/L           2.0         346 mg/L           2.0   0.57%
Cd 228.802†               -4.0    -0.00035 mg/L      0.000085    -0.00035 mg/L      0.000085  24.43%
Co 228.616†                1.0    -0.00134 mg/L      0.000247    -0.00134 mg/L      0.000247  18.39%
Cr 267.716†              188.9     0.00060 mg/L      0.000176     0.00060 mg/L      0.000176  29.53%
Cu 327.393†             -862.5    -0.00906 mg/L      0.000395    -0.00906 mg/L      0.000395   4.36%
Fe 239.562†             1559.7        21.4 mg/L          0.05        21.4 mg/L          0.05   0.23%
Mg 279.077†             7467.9        29.2 mg/L          0.29        29.2 mg/L          0.29   1.00%
Mn 257.610†            77792.1       0.323 mg/L        0.0012       0.323 mg/L        0.0012   0.38%
Mo 202.031†               -4.4    -0.00192 mg/L      0.000519    -0.00192 mg/L      0.000519  27.05%
Ni 231.604†              139.0     0.00680 mg/L      0.000558     0.00680 mg/L      0.000558   8.20%
Pb 220.353†               -9.7      0.0103 mg/L       0.00287      0.0103 mg/L       0.00287  27.91%
Sb 206.836†               16.4      0.0164 mg/L       0.00309      0.0164 mg/L       0.00309  18.89%
Se 196.026†              -26.7      0.0706 mg/L       0.00868      0.0706 mg/L       0.00868  12.30%
Si 251.611†           430336.5        24.7 mg/L          0.13        24.7 mg/L          0.13   0.54%
Sn 189.927†              -33.9     -0.0190 mg/L       0.00202     -0.0190 mg/L       0.00202  10.63%
Ti 334.940†             -245.6     0.00192 mg/L      0.000074     0.00192 mg/L      0.000074   3.86%
Tl 190.801†               75.8     -0.0461 mg/L       0.00367     -0.0461 mg/L       0.00367   7.97%
V 290.880†               303.7    -0.00128 mg/L      0.001387    -0.00128 mg/L      0.001387 108.61%
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Zn 206.200†	39.7	-0.00007	mg/L	0.000157	-0.00007	mg/L	0.000157	213.68%
K 766.490†	14694.1	9.10	mg/L	0.084	9.10	mg/L	0.084	0.92%
Na 589.592†	500848.7	47.9	mg/L	0.82	47.9	mg/L	0.82	1.72%
Sr 407.771†	2134163.5	1.78	mg/L	0.036	1.78	mg/L	0.036	2.04%
Li 670.784†	2093.5	0.0274	mg/L	0.00066	0.0274	mg/L	0.00066	2.41%

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Sequence No.: 37 **Autosampler Location: 91**
Sample ID: L1202022112 **Date Collected: 2/9/2012 1:54:16 PM**
Analyst: KHR **Data Type: Reprocessed on 2/10/2012 11:13:56 AM**
Logged In Analyst (Original) : peicp2
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1202022112

Analyte	Back Pressure	Flow
All	144.0 kPa	0.50 L/min

Mean Data: L1202022112

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3547538.0						39557.94	1.12%
YRADIAL	276695.7						6070.26	2.19%
Ga 417.206	861941.5						14043.00	1.63%
GaRADIAL	45379.4						424.78	0.94%
Ag 328.068†	-235.7	-0.00430	mg/L	0.000214	-0.00430	mg/L	0.000214	4.98%
Al 396.153†	31940.1	10.7	mg/L	0.14	10.7	mg/L	0.14	1.29%
As 188.979†	18.7	0.0283	mg/L	0.00399	0.0283	mg/L	0.00399	14.10%
Ba 233.527†	4696.9	0.161	mg/L	0.0015	0.161	mg/L	0.0015	0.90%
Be 234.861†	1803.7	0.00066	mg/L	0.000191	0.00066	mg/L	0.000191	28.75%
B 249.677†	-1391.9	0.0753	mg/L	0.00245	0.0753	mg/L	0.00245	3.25%
Ca 227.546†	12756.5	174	mg/L	2.2	174	mg/L	2.2	1.28%
Cd 228.802†	-1.7	-0.00008	mg/L	0.000224	-0.00008	mg/L	0.000224	288.41%
Co 228.616†	4.2	-0.00136	mg/L	0.000349	-0.00136	mg/L	0.000349	25.69%
Cr 267.716†	631.7	0.00790	mg/L	0.001711	0.00790	mg/L	0.001711	21.65%
Cu 327.393†	-16.5	-0.00113	mg/L	0.001013	-0.00113	mg/L	0.001013	89.80%
Fe 239.562†	2115.6	29.0	mg/L	0.33	29.0	mg/L	0.33	1.13%
Mg 279.077†	4409.3	17.3	mg/L	0.31	17.3	mg/L	0.31	1.77%
Mn 257.610†	101803.5	0.422	mg/L	0.0022	0.422	mg/L	0.0022	0.52%
Mo 202.031†	-5.4	-0.00166	mg/L	0.000454	-0.00166	mg/L	0.000454	27.32%
Ni 231.604†	123.0	0.00575	mg/L	0.001140	0.00575	mg/L	0.001140	19.83%
Pb 220.353†	23.6	0.0156	mg/L	0.00369	0.0156	mg/L	0.00369	23.61%
Sb 206.836†	16.6	0.0166	mg/L	0.00207	0.0166	mg/L	0.00207	12.43%
Se 196.026†	-27.8	0.0192	mg/L	0.00946	0.0192	mg/L	0.00946	49.16%
Si 251.611†	507805.6	29.1	mg/L	0.28	29.1	mg/L	0.28	0.97%
Sn 189.927†	-34.6	-0.0193	mg/L	0.00114	-0.0193	mg/L	0.00114	5.92%
Ti 334.940†	43093.9	0.0894	mg/L	0.00252	0.0894	mg/L	0.00252	2.82%
Tl 190.801†	65.1	0.0103	mg/L	0.00355	0.0103	mg/L	0.00355	34.54%
V 290.880†	1464.7	0.0100	mg/L	0.00126	0.0100	mg/L	0.00126	12.58%
Zn 206.200†	316.8	0.0263	mg/L	0.00027	0.0263	mg/L	0.00027	1.03%
K 766.490†	6988.6	4.31	mg/L	0.069	4.31	mg/L	0.069	1.60%
Na 589.592†	340937.4	32.7	mg/L	0.66	32.7	mg/L	0.66	2.02%
Sr 407.771†	1156324.3	0.960	mg/L	0.0175	0.960	mg/L	0.0175	1.83%
Li 670.784†	1715.6	0.0221	mg/L	0.00019	0.0221	mg/L	0.00019	0.85%

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Sequence No.: 38 **Autosampler Location: 92**
Sample ID: L1202022113 **Date Collected: 2/9/2012 2:01:08 PM**
Analyst: KHR **Data Type: Reprocessed on 2/10/2012 11:13:58 AM**
Logged In Analyst (Original) : peicp2
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1202022113

Analyte	Back Pressure	Flow
All	144.0 kPa	0.50 L/min

Mean Data: L1202022113

Approved: February 10, 2012

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3614282.5						6535.30	0.18%
YRADIAL	280568.8						4708.13	1.68%
Ga 417.206	853401.4						5432.94	0.64%
GaRADIAL	46218.7						1192.20	2.58%
Ag 328.068†	-224.2	-0.00274	mg/L	0.000523	-0.00274	mg/L	0.000523	19.07%
Al 396.153†	-60.3	-0.0178	mg/L	0.00473	-0.0178	mg/L	0.00473	26.56%
As 188.979†	8.4	0.00994	mg/L	0.003685	0.00994	mg/L	0.003685	37.06%
Ba 233.527†	453.0	0.0122	mg/L	0.00003	0.0122	mg/L	0.00003	0.25%
Be 234.861†	206.2	0.00034	mg/L	0.000204	0.00034	mg/L	0.000204	60.16%
B 249.677†	738.1	0.0307	mg/L	0.00017	0.0307	mg/L	0.00017	0.55%
Ca 227.546†	3490.0	48.2	mg/L	0.20	48.2	mg/L	0.20	0.42%
Cd 228.802†	-4.9	-0.00056	mg/L	0.000214	-0.00056	mg/L	0.000214	38.04%
Co 228.616†	-5.2	-0.00145	mg/L	0.000418	-0.00145	mg/L	0.000418	28.89%
Cr 267.716†	-13.8	-0.00201	mg/L	0.000087	-0.00201	mg/L	0.000087	4.36%
Cu 327.393†	-150.4	-0.00281	mg/L	0.000677	-0.00281	mg/L	0.000677	24.05%
Fe 239.562†	95.0	1.30	mg/L	0.007	1.30	mg/L	0.007	0.55%
Mg 279.077†	825.1	3.25	mg/L	0.043	3.25	mg/L	0.043	1.33%
Mn 257.610†	6212.3	0.0237	mg/L	0.00033	0.0237	mg/L	0.00033	1.39%
Mo 202.031†	-3.6	-0.00286	mg/L	0.000243	-0.00286	mg/L	0.000243	8.50%
Ni 231.604†	1.5	-0.00226	mg/L	0.000176	-0.00226	mg/L	0.000176	7.78%
Pb 220.353†	-4.1	-0.00094	mg/L	0.002433	-0.00094	mg/L	0.002433	258.31%
Sb 206.836†	10.7	0.00917	mg/L	0.002129	0.00917	mg/L	0.002129	23.22%
Se 196.026†	-14.1	-0.00530	mg/L	0.004465	-0.00530	mg/L	0.004465	84.30%
Si 251.611†	217758.9	12.5	mg/L	0.08	12.5	mg/L	0.08	0.67%
Sn 189.927†	-10.0	-0.00852	mg/L	0.001781	-0.00852	mg/L	0.001781	20.89%
Ti 334.940†	-4.2	-0.00059	mg/L	0.000415	-0.00059	mg/L	0.000415	70.81%
Tl 190.801†	44.2	0.0335	mg/L	0.00453	0.0335	mg/L	0.00453	13.53%
V 290.880†	309.8	0.00123	mg/L	0.000379	0.00123	mg/L	0.000379	30.78%
Zn 206.200†	47.4	0.00104	mg/L	0.000326	0.00104	mg/L	0.000326	31.29%
K 766.490†	2673.6	1.64	mg/L	0.082	1.64	mg/L	0.082	4.97%
Na 589.592†	93628.5	8.99	mg/L	0.076	8.99	mg/L	0.076	0.84%
Sr 407.771†	281724.1	0.237	mg/L	0.0021	0.237	mg/L	0.0021	0.87%
Li 670.784†	428.4	0.00381	mg/L	0.000743	0.00381	mg/L	0.000743	19.51%

Sequence No.: 39
Sample ID: L1202022116
Analyst: KHR
Logged In Analyst (Original) : peicp2
Initial Sample Wt:
Dilution:

Autosampler Location: 93
Date Collected: 2/9/2012 2:08:02 PM
Data Type: Reprocessed on 2/10/2012 11:13:59 AM
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1202022116

Analyte	Back Pressure	Flow
All	145.0 kPa	0.50 L/min

Mean Data: L1202022116

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3636486.7						68069.14	1.87%
YRADIAL	278676.0						2145.45	0.77%
Ga 417.206	827711.5						13923.38	1.68%
GaRADIAL	45502.5						911.17	2.00%
Ag 328.068†	-349.1	-0.00379	mg/L	0.000158	-0.00379	mg/L	0.000158	4.17%
Al 396.153†	851.4	0.287	mg/L	0.0056	0.287	mg/L	0.0056	1.94%
As 188.979†	1.9	-0.00258	mg/L	0.001576	-0.00258	mg/L	0.001576	60.97%
Ba 233.527†	797.5	0.0243	mg/L	0.00051	0.0243	mg/L	0.00051	2.08%
Be 234.861†	366.8	0.00043	mg/L	0.000167	0.00043	mg/L	0.000167	38.64%
B 249.677†	3674.3	0.145	mg/L	0.0033	0.145	mg/L	0.0033	2.29%
Ca 227.546†	502.7	6.55	mg/L	0.222	6.55	mg/L	0.222	3.39%
Cd 228.802†	-5.2	-0.00061	mg/L	0.000185	-0.00061	mg/L	0.000185	30.10%
Co 228.616†	-3.0	-0.00127	mg/L	0.000108	-0.00127	mg/L	0.000108	8.46%
Cr 267.716†	-0.0	-0.00187	mg/L	0.000233	-0.00187	mg/L	0.000233	12.46%
Cu 327.393†	-31.1	-0.00169	mg/L	0.001055	-0.00169	mg/L	0.001055	62.58%
Fe 239.562†	274.6	3.76	mg/L	0.105	3.76	mg/L	0.105	2.80%
Mg 279.077†	371.9	1.47	mg/L	0.028	1.47	mg/L	0.028	1.87%
Mn 257.610†	12279.6	0.0490	mg/L	0.00132	0.0490	mg/L	0.00132	2.70%
Mo 202.031†	-6.9	-0.00322	mg/L	0.000789	-0.00322	mg/L	0.000789	24.46%

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Ni 231.604†	5.4	-0.00197	mg/L	0.000318	-0.00197	mg/L	0.000318	16.09%
Pb 220.353†	5.1	0.00070	mg/L	0.001083	0.00070	mg/L	0.001083	155.66%
Sb 206.836†	3.2	-0.00026	mg/L	0.000595	-0.00026	mg/L	0.000595	225.51%
Se 196.026†	-6.7	-0.00459	mg/L	0.001058	-0.00459	mg/L	0.001058	23.06%
Si 251.611†	36534.5	2.08	mg/L	0.049	2.08	mg/L	0.049	2.35%
Sn 189.927†	-9.5	-0.00829	mg/L	0.000382	-0.00829	mg/L	0.000382	4.61%
Ti 334.940†	1209.3	0.00150	mg/L	0.000309	0.00150	mg/L	0.000309	20.60%
Tl 190.801†	6.8	0.00270	mg/L	0.003913	0.00270	mg/L	0.003913	144.99%
V 290.880†	709.6	0.00537	mg/L	0.002175	0.00537	mg/L	0.002175	40.54%
Zn 206.200†	46.9	0.00095	mg/L	0.000524	0.00095	mg/L	0.000524	55.13%
K 766.490†	2811.5	1.72	mg/L	0.025	1.72	mg/L	0.025	1.42%
Na 589.592†	126778.7	12.2	mg/L	0.21	12.2	mg/L	0.21	1.71%
Sr 407.771†	37576.4	0.0324	mg/L	0.00037	0.0324	mg/L	0.00037	1.13%
Li 670.784†	-69.3	-0.00325	mg/L	0.001027	-0.00325	mg/L	0.001027	31.59%

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Sequence No.: 40 **Autosampler Location: 94**
Sample ID: L1202022117 **Date Collected: 2/9/2012 2:14:54 PM**
Analyst: KHR **Data Type: Reprocessed on 2/10/2012 11:14:00 AM**
Logged In Analyst (Original) : peicp2
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1202022117

Analyte	Back Pressure	Flow
All	144.0 kPa	0.50 L/min

Mean Data: L1202022117

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3509690.1						17309.85	0.49%
YRADIAL	274396.8						5110.15	1.86%
Ga 417.206	833835.1						7515.55	0.90%
GaRADIAL	44280.1						403.44	0.91%
Ag 328.068†	-305.8	-0.00359	mg/L	0.000202	-0.00359	mg/L	0.000202	5.62%
Al 396.153†	2352.9	0.790	mg/L	0.0158	0.790	mg/L	0.0158	2.00%
As 188.979†	23.1	0.0405	mg/L	0.00400	0.0405	mg/L	0.00400	9.87%
Ba 233.527†	1049.0	0.0332	mg/L	0.00039	0.0332	mg/L	0.00039	1.18%
Be 234.861†	660.6	0.00078	mg/L	0.000027	0.00078	mg/L	0.000027	3.50%
B 249.677†	354.2	0.0451	mg/L	0.00091	0.0451	mg/L	0.00091	2.01%
Ca 227.546†	2928.3	39.8	mg/L	0.35	39.8	mg/L	0.35	0.87%
Cd 228.802†	4.3	0.00031	mg/L	0.000152	0.00031	mg/L	0.000152	48.41%
Co 228.616†	84.2	0.00829	mg/L	0.000214	0.00829	mg/L	0.000214	2.58%
Cr 267.716†	708.8	0.0103	mg/L	0.00020	0.0103	mg/L	0.00020	1.92%
Cu 327.393†	2557.0	0.0221	mg/L	0.00053	0.0221	mg/L	0.00053	2.39%
Fe 239.562†	544.8	7.46	mg/L	0.065	7.46	mg/L	0.065	0.87%
Mg 279.077†	1791.8	7.03	mg/L	0.142	7.03	mg/L	0.142	2.02%
Mn 257.610†	31945.6	0.132	mg/L	0.0010	0.132	mg/L	0.0010	0.77%
Mo 202.031†	10.9	-0.00033	mg/L	0.000449	-0.00033	mg/L	0.000449	134.48%
Ni 231.604†	315.0	0.0185	mg/L	0.00008	0.0185	mg/L	0.00008	0.45%
Pb 220.353†	6.1	0.00256	mg/L	0.000371	0.00256	mg/L	0.000371	14.49%
Sb 206.836†	6.6	0.00397	mg/L	0.002653	0.00397	mg/L	0.002653	66.76%
Se 196.026†	-8.3	0.00399	mg/L	0.006557	0.00399	mg/L	0.006557	164.28%
Si 251.611†	395783.2	22.7	mg/L	0.10	22.7	mg/L	0.10	0.42%
Sn 189.927†	-12.2	-0.00946	mg/L	0.000569	-0.00946	mg/L	0.000569	6.01%
Ti 334.940†	25288.9	0.0514	mg/L	0.00051	0.0514	mg/L	0.00051	0.99%
Tl 190.801†	33.8	0.0243	mg/L	0.00420	0.0243	mg/L	0.00420	17.31%
V 290.880†	4165.2	0.0469	mg/L	0.00164	0.0469	mg/L	0.00164	3.50%
Zn 206.200†	350.9	0.0300	mg/L	0.00013	0.0300	mg/L	0.00013	0.42%
K 766.490†	95126.9	59.3	mg/L	0.41	59.3	mg/L	0.41	0.69%
Na 589.592†	917155.4	87.0	mg/L	0.85	87.0	mg/L	0.85	0.97%
Sr 407.771†	180382.8	0.151	mg/L	0.0017	0.151	mg/L	0.0017	1.14%
Li 670.784†	412.1	0.00358	mg/L	0.000958	0.00358	mg/L	0.000958	26.80%

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Sequence No.: 41 **Autosampler Location: 6**
Sample ID: CCV **Date Collected: 2/9/2012 2:21:49 PM**
Analyst: **Data Type: Reprocessed on 2/10/2012 11:14:01 AM**
Logged In Analyst (Original) : peicp2
Initial Sample Wt: **Initial Sample Vol:**

Approved: February 10, 2012

Dilution: Sample Prep Vol:

Nebulizer Parameters: CCV

Analyte	Back Pressure	Flow
All	145.0 kPa	0.50 L/min

Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3547332.1						37569.75	1.06%
YRADIAL	275106.7						6839.46	2.49%
Ga 417.206	820808.3						8350.78	1.02%
GaRADIAL	43967.6						82.14	0.19%
Ag 328.068†	49364.6	0.387	mg/L	0.0045	0.387	mg/L	0.0045	1.15%
QC value within limits for Ag 328.068 Recovery = 96.86%								
Al 396.153†	29923.5	10.0	mg/L	0.07	10.0	mg/L	0.07	0.70%
QC value within limits for Al 396.153 Recovery = 100.02%								
As 188.979†	186.0	0.375	mg/L	0.0116	0.375	mg/L	0.0116	3.08%
QC value within limits for As 188.979 Recovery = 93.78%								
Ba 233.527†	28567.6	1.00	mg/L	0.013	1.00	mg/L	0.013	1.32%
QC value within limits for Ba 233.527 Recovery = 100.23%								
Be 234.861†	12933.9	0.0479	mg/L	0.00057	0.0479	mg/L	0.00057	1.18%
QC value within limits for Be 234.861 Recovery = 95.81%								
B 249.677†	13911.6	0.496	mg/L	0.0043	0.496	mg/L	0.0043	0.86%
QC value within limits for B 249.677 Recovery = 99.14%								
Ca 227.546†	721.9	9.91	mg/L	0.087	9.91	mg/L	0.087	0.88%
QC value within limits for Ca 227.546 Recovery = 99.09%								
Cd 228.802†	595.3	0.0489	mg/L	0.00077	0.0489	mg/L	0.00077	1.58%
QC value within limits for Cd 228.802 Recovery = 97.71%								
Co 228.616†	1792.5	0.198	mg/L	0.0020	0.198	mg/L	0.0020	1.00%
QC value within limits for Co 228.616 Recovery = 98.82%								
Cr 267.716†	28867.4	0.499	mg/L	0.0056	0.499	mg/L	0.0056	1.12%
QC value within limits for Cr 267.716 Recovery = 99.81%								
Cu 327.393†	53333.5	0.488	mg/L	0.0065	0.488	mg/L	0.0065	1.34%
QC value within limits for Cu 327.393 Recovery = 97.51%								
Fe 239.562†	281.2	3.85	mg/L	0.094	3.85	mg/L	0.094	2.43%
QC value within limits for Fe 239.562 Recovery = 96.34%								
Mg 279.077†	2459.2	9.65	mg/L	0.275	9.65	mg/L	0.275	2.85%
QC value within limits for Mg 279.077 Recovery = 96.45%								
Mn 257.610†	120827.3	0.503	mg/L	0.0067	0.503	mg/L	0.0067	1.32%
QC value within limits for Mn 257.610 Recovery = 100.52%								
Mo 202.031†	6521.3	0.977	mg/L	0.0171	0.977	mg/L	0.0171	1.75%
QC value within limits for Mo 202.031 Recovery = 97.69%								
Ni 231.604†	7688.8	0.506	mg/L	0.0071	0.506	mg/L	0.0071	1.40%
QC value within limits for Ni 231.604 Recovery = 101.14%								
Pb 220.353†	1238.5	0.506	mg/L	0.0052	0.506	mg/L	0.0052	1.04%
QC value within limits for Pb 220.353 Recovery = 101.15%								
Sb 206.836†	905.7	1.15	mg/L	0.017	1.15	mg/L	0.017	1.52%
QC value within limits for Sb 206.836 Recovery = 95.45%								
Se 196.026†	230.3	0.390	mg/L	0.0037	0.390	mg/L	0.0037	0.94%
QC value within limits for Se 196.026 Recovery = 97.61%								
Si 251.611†	85564.0	4.88	mg/L	0.055	4.88	mg/L	0.055	1.12%
QC value within limits for Si 251.611 Recovery = 97.54%								
Sn 189.927†	2365.9	1.03	mg/L	0.016	1.03	mg/L	0.016	1.56%
QC value within limits for Sn 189.927 Recovery = 102.98%								
Ti 334.940†	491942.7	1.01	mg/L	0.002	1.01	mg/L	0.002	0.17%
QC value within limits for Ti 334.940 Recovery = 101.17%								
Tl 190.801†	401.0	0.513	mg/L	0.0069	0.513	mg/L	0.0069	1.35%
QC value within limits for Tl 190.801 Recovery = 102.59%								
V 290.880†	82815.3	1.00	mg/L	0.012	1.00	mg/L	0.012	1.23%
QC value within limits for V 290.880 Recovery = 100.18%								
Zn 206.200†	10279.2	0.982	mg/L	0.0160	0.982	mg/L	0.0160	1.63%
QC value within limits for Zn 206.200 Recovery = 98.17%								
K 766.490†	83749.9	52.2	mg/L	0.39	52.2	mg/L	0.39	0.74%
QC value within limits for K 766.490 Recovery = 104.40%								
Na 589.592†	549315.7	52.4	mg/L	0.35	52.4	mg/L	0.35	0.67%
QC value within limits for Na 589.592 Recovery = 104.87%								
Sr 407.771†	1226384.2	1.02	mg/L	0.016	1.02	mg/L	0.016	1.59%
QC value within limits for Sr 407.771 Recovery = 102.38%								
Li 670.784†	76760.8	1.09	mg/L	0.007	1.09	mg/L	0.007	0.60%

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QC value within limits for Li 670.784 Recovery = 108.60%
All analyte(s) passed QC.

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Sequence No.: 42 **Autosampler Location: 1**
Sample ID: CCB **Date Collected: 2/9/2012 2:28:45 PM**
Analyst: **Data Type: Reprocessed on 2/10/2012 11:14:02 AM**
Logged In Analyst (Original) : peicp2
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: CCB

Analyte	Back Pressure	Flow
All	144.0 kPa	0.50 L/min

Mean Data: CCB

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3682100.6						13062.21	0.35%
YRADIAL	272246.4						6789.47	2.49%
Ga 417.206	780982.5						6125.39	0.78%
GaRADIAL	43437.6						907.22	2.09%
Ag 328.068†	-419.9	-0.00417	mg/L	0.000388	-0.00417	mg/L	0.000388	9.31%
QC value less than the lower limit for Ag 328.068 Recovery = Not calculated								
Al 396.153†	-11.0	-0.00132	mg/L	0.017621	-0.00132	mg/L	0.017621	>999.9%
QC value within limits for Al 396.153 Recovery = Not calculated								
As 188.979†	-0.6	-0.00771	mg/L	0.002069	-0.00771	mg/L	0.002069	26.82%
QC value within limits for As 188.979 Recovery = Not calculated								
Ba 233.527†	-11.6	-0.00412	mg/L	0.000011	-0.00412	mg/L	0.000011	0.26%
QC value within limits for Ba 233.527 Recovery = Not calculated								
Be 234.861†	94.2	0.00018	mg/L	0.000034	0.00018	mg/L	0.000034	18.43%
QC value within limits for Be 234.861 Recovery = Not calculated								
B 249.677†	52.6	0.00064	mg/L	0.000544	0.00064	mg/L	0.000544	84.55%
QC value within limits for B 249.677 Recovery = Not calculated								
Ca 227.546†	-2.1	-0.0684	mg/L	0.04924	-0.0684	mg/L	0.04924	72.01%
QC value within limits for Ca 227.546 Recovery = Not calculated								
Cd 228.802†	-3.5	-0.00052	mg/L	0.000095	-0.00052	mg/L	0.000095	18.46%
QC value less than the lower limit for Cd 228.802 Recovery = Not calculated								
Co 228.616†	-5.0	-0.00138	mg/L	0.000309	-0.00138	mg/L	0.000309	22.31%
QC value within limits for Co 228.616 Recovery = Not calculated								
Cr 267.716†	-32.8	-0.00228	mg/L	0.000086	-0.00228	mg/L	0.000086	3.77%
QC value within limits for Cr 267.716 Recovery = Not calculated								
Cu 327.393†	-130.4	-0.00265	mg/L	0.000844	-0.00265	mg/L	0.000844	31.82%
QC value within limits for Cu 327.393 Recovery = Not calculated								
Fe 239.562†	1.4	0.0210	mg/L	0.01232	0.0210	mg/L	0.01232	58.74%
QC value within limits for Fe 239.562 Recovery = Not calculated								
Mg 279.077†	-3.6	0.00672	mg/L	0.008628	0.00672	mg/L	0.008628	128.40%
QC value within limits for Mg 279.077 Recovery = Not calculated								
Mn 257.610†	27.3	-0.00220	mg/L	0.000007	-0.00220	mg/L	0.000007	0.31%
QC value within limits for Mn 257.610 Recovery = Not calculated								
Mo 202.031†	-3.9	-0.00297	mg/L	0.000614	-0.00297	mg/L	0.000614	20.68%
QC value within limits for Mo 202.031 Recovery = Not calculated								
Ni 231.604†	9.2	-0.00172	mg/L	0.000311	-0.00172	mg/L	0.000311	18.12%
QC value within limits for Ni 231.604 Recovery = Not calculated								
Pb 220.353†	5.0	0.00047	mg/L	0.001231	0.00047	mg/L	0.001231	260.96%
QC value within limits for Pb 220.353 Recovery = Not calculated								
Sb 206.836†	2.3	-0.00146	mg/L	0.002810	-0.00146	mg/L	0.002810	192.46%
QC value within limits for Sb 206.836 Recovery = Not calculated								
Se 196.026†	-3.4	-0.00250	mg/L	0.003158	-0.00250	mg/L	0.003158	126.33%
QC value within limits for Se 196.026 Recovery = Not calculated								
Si 251.611†	239.5	-0.00647	mg/L	0.000774	-0.00647	mg/L	0.000774	11.97%
QC value within limits for Si 251.611 Recovery = Not calculated								
Sn 189.927†	2.0	-0.00328	mg/L	0.000168	-0.00328	mg/L	0.000168	5.11%
QC value within limits for Sn 189.927 Recovery = Not calculated								
Ti 334.940†	-149.8	-0.00137	mg/L	0.000120	-0.00137	mg/L	0.000120	8.79%
QC value within limits for Ti 334.940 Recovery = Not calculated								
Tl 190.801†	-3.0	-0.00704	mg/L	0.001941	-0.00704	mg/L	0.001941	27.57%
QC value within limits for Tl 190.801 Recovery = Not calculated								
V 290.880†	157.4	-0.00059	mg/L	0.001553	-0.00059	mg/L	0.001553	261.85%
QC value within limits for V 290.880 Recovery = Not calculated								

Approved: February 10, 2012

Zn 206.200†	3.6	-0.00312	mg/L	0.000117	-0.00312	mg/L	0.000117	3.75%
QC value within limits for Zn 206.200 Recovery = Not calculated								
K 766.490†	-44.9	-0.0445	mg/L	0.00850	-0.0445	mg/L	0.00850	19.10%
QC value within limits for K 766.490 Recovery = Not calculated								
Na 589.592†	34.4	-0.0295	mg/L	0.00778	-0.0295	mg/L	0.00778	26.39%
QC value within limits for Na 589.592 Recovery = Not calculated								
Sr 407.771†	-81.7	0.00185	mg/L	0.000080	0.00185	mg/L	0.000080	4.33%
QC value within limits for Sr 407.771 Recovery = Not calculated								
Li 670.784†	-62.8	-0.00316	mg/L	0.000113	-0.00316	mg/L	0.000113	3.59%
QC value within limits for Li 670.784 Recovery = Not calculated								

QC Failed. Continue with analysis.

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Sequence No.: 43 **Autosampler Location: 95**
Sample ID: LLCCV **Date Collected: 2/9/2012 2:35:33 PM**
Analyst: KHR **Data Type: Reprocessed on 2/10/2012 11:14:03 AM**
Logged In Analyst (Original) : peicp2
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: LLCCV

Analyte	Back Pressure	Flow
All	144.0 kPa	0.50 L/min

Mean Data: LLCCV

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3670778.1						28426.57	0.77%
YRADIAL	274539.9						1264.07	0.46%
Ga 417.206	778603.6						2954.66	0.38%
GaRADIAL	43734.4						699.32	1.60%
Ag 328.068†	353.3	0.00191	mg/L	0.000643	0.00191	mg/L	0.000643	33.67%
Al 396.153†	-59.9	-0.0177	mg/L	0.01761	-0.0177	mg/L	0.01761	99.66%
As 188.979†	-0.4	-0.00718	mg/L	0.008771	-0.00718	mg/L	0.008771	122.18%
Ba 233.527†	300.2	0.00685	mg/L	0.000108	0.00685	mg/L	0.000108	1.58%
Be 234.861†	597.2	0.00203	mg/L	0.000059	0.00203	mg/L	0.000059	2.89%
B 249.677†	7.3	-0.00126	mg/L	0.000369	-0.00126	mg/L	0.000369	29.21%
Ca 227.546†	-28.0	-0.0646	mg/L	0.07034	-0.0646	mg/L	0.07034	108.86%
Cd 228.802†	111.3	0.00876	mg/L	0.000294	0.00876	mg/L	0.000294	3.36%
Co 228.616†	178.9	0.0192	mg/L	0.00015	0.0192	mg/L	0.00015	0.81%
Cr 267.716†	1177.8	0.0187	mg/L	0.00004	0.0187	mg/L	0.00004	0.21%
Cu 327.393†	2047.9	0.0172	mg/L	0.00050	0.0172	mg/L	0.00050	2.88%
Fe 239.562†	2.1	0.0310	mg/L	0.00776	0.0310	mg/L	0.00776	25.04%
Mg 279.077†	-4.8	0.00200	mg/L	0.008815	0.00200	mg/L	0.008815	440.66%
Mn 257.610†	2649.1	0.00871	mg/L	0.000215	0.00871	mg/L	0.000215	2.47%
Mo 202.031†	-4.6	-0.00311	mg/L	0.000199	-0.00311	mg/L	0.000199	6.41%
Ni 231.604†	6238.5	0.410	mg/L	0.0102	0.410	mg/L	0.0102	2.49%
Pb 220.353†	8.1	0.00163	mg/L	0.001027	0.00163	mg/L	0.001027	62.82%
Sb 206.836†	-0.2	-0.00469	mg/L	0.000513	-0.00469	mg/L	0.000513	10.94%
Se 196.026†	-5.6	-0.00621	mg/L	0.002627	-0.00621	mg/L	0.002627	42.28%
Si 251.611†	143.3	-0.0120	mg/L	0.00043	-0.0120	mg/L	0.00043	3.55%
Sn 189.927†	-1.9	-0.00497	mg/L	0.001639	-0.00497	mg/L	0.001639	33.01%
Ti 334.940†	-242.8	-0.00157	mg/L	0.000081	-0.00157	mg/L	0.000081	5.13%
Tl 190.801†	-2.7	-0.00655	mg/L	0.006436	-0.00655	mg/L	0.006436	98.29%
V 290.880†	1131.9	0.0112	mg/L	0.00150	0.0112	mg/L	0.00150	13.36%
Zn 206.200†	216.9	0.0174	mg/L	0.00011	0.0174	mg/L	0.00011	0.61%
K 766.490†	30.8	0.00220	mg/L	0.024929	0.00220	mg/L	0.024929	>999.9%
Na 589.592†	5477.1	0.496	mg/L	0.0042	0.496	mg/L	0.0042	0.85%
Sr 407.771†	-236.0	0.00172	mg/L	0.000064	0.00172	mg/L	0.000064	3.73%
Li 670.784†	-56.5	-0.00307	mg/L	0.000458	-0.00307	mg/L	0.000458	14.94%

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Sequence No.: 44 **Autosampler Location: 96**
Sample ID: LRC **Date Collected: 2/9/2012 2:45:39 PM**
Analyst: KHR **Data Type: Reprocessed on 2/10/2012 11:14:04 AM**
Logged In Analyst (Original) : peicp2
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Approved: February 10, 2012

Nebulizer Parameters: LRC

Analyte	Back Pressure	Flow
All	145.0 kPa	0.50 L/min

Mean Data: LRC

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	3361112.2						57418.43	1.71%
YRADIAL	267415.1						7228.70	2.70%
Ga 417.206	795874.1						15036.13	1.89%
GaRADIAL	43189.6						625.97	1.45%
Ag 328.068†	370.5	0.00202	mg/L	0.000367	0.00202	mg/L	0.000367	18.14%
Al 396.153†	-118.7	-0.0373	mg/L	0.01032	-0.0373	mg/L	0.01032	27.64%
As 188.979†	10.8	0.00528	mg/L	0.002870	0.00528	mg/L	0.002870	54.38%
Ba 233.527†	20.7	-0.00297	mg/L	0.000090	-0.00297	mg/L	0.000090	3.02%
Be 234.861†	124.3	0.00023	mg/L	0.000028	0.00023	mg/L	0.000028	12.63%
B 249.677†	43.9	0.00192	mg/L	0.000263	0.00192	mg/L	0.000263	13.65%
Ca 227.546†	38658.2	535	mg/L	9.9	535	mg/L	9.9	1.85%
Cd 228.802†	-7.9	-0.00079	mg/L	0.000331	-0.00079	mg/L	0.000331	41.79%
Co 228.616†	-2.5	-0.00110	mg/L	0.000306	-0.00110	mg/L	0.000306	27.72%
Cr 267.716†	420.0	0.00557	mg/L	0.000290	0.00557	mg/L	0.000290	5.21%
Cu 327.393†	-1296.7	-0.0133	mg/L	0.00083	-0.0133	mg/L	0.00083	6.25%
Fe 239.562†	25.8	0.356	mg/L	0.0326	0.356	mg/L	0.0326	9.16%
Mg 279.077†	-13.5	-0.0319	mg/L	0.01440	-0.0319	mg/L	0.01440	45.13%
Mn 257.610†	39.6	-0.00210	mg/L	0.000018	-0.00210	mg/L	0.000018	0.88%
Mo 202.031†	-12.1	-0.00418	mg/L	0.000608	-0.00418	mg/L	0.000608	14.57%
Ni 231.604†	-11.0	-0.00311	mg/L	0.000347	-0.00311	mg/L	0.000347	11.13%
Pb 220.353†	-18.8	0.0165	mg/L	0.00212	0.0165	mg/L	0.00212	12.87%
Sb 206.836†	16.5	0.0165	mg/L	0.00203	0.0165	mg/L	0.00203	12.28%
Se 196.026†	-20.8	0.129	mg/L	0.0085	0.129	mg/L	0.0085	6.55%
Si 251.611†	49.9	-0.0173	mg/L	0.00038	-0.0173	mg/L	0.00038	2.20%
Sn 189.927†	-18.1	-0.0121	mg/L	0.00043	-0.0121	mg/L	0.00043	3.55%
Ti 334.940†	-2193.8	-0.00023	mg/L	0.000080	-0.00023	mg/L	0.000080	35.25%
Tl 190.801†	72.8	-0.125	mg/L	0.0060	-0.125	mg/L	0.0060	4.81%
V 290.880†	822.1	0.00739	mg/L	0.002566	0.00739	mg/L	0.002566	34.72%
Zn 206.200†	96.2	0.00576	mg/L	0.000357	0.00576	mg/L	0.000357	6.20%
K 766.490†	-58.0	-0.0527	mg/L	0.02297	-0.0527	mg/L	0.02297	43.60%
Na 589.592†	79.3	-0.0251	mg/L	0.00344	-0.0251	mg/L	0.00344	13.68%
Sr 407.771†	30364.0	0.0272	mg/L	0.00026	0.0272	mg/L	0.00026	0.96%
Li 670.784†	26.9	-0.00189	mg/L	0.000645	-0.00189	mg/L	0.000645	34.23%

Sequence No.: 45
Sample ID: CCV
Analyst:
Logged In Analyst (Original) : peicp2
Initial Sample Wt:
Dilution:

Autosampler Location: 6
Date Collected: 2/9/2012 2:52:29 PM
Data Type: Reprocessed on 2/10/2012 11:14:05 AM
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: CCV

Analyte	Back Pressure	Flow
All	144.0 kPa	0.50 L/min

Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	3576004.1						43368.59	1.21%
YRADIAL	275657.7						2022.73	0.73%
Ga 417.206	827469.7						9789.60	1.18%
GaRADIAL	44919.5						894.55	1.99%
Ag 328.068†	48626.9	0.382	mg/L	0.0077	0.382	mg/L	0.0077	2.01%
QC value within limits for Ag 328.068 Recovery = 95.41%								
Al 396.153†	29731.0	9.94	mg/L	0.043	9.94	mg/L	0.043	0.43%
QC value within limits for Al 396.153 Recovery = 99.38%								
As 188.979†	184.0	0.371	mg/L	0.0035	0.371	mg/L	0.0035	0.93%
QC value within limits for As 188.979 Recovery = 92.78%								
Ba 233.527†	28083.1	0.985	mg/L	0.0188	0.985	mg/L	0.0188	1.91%
QC value within limits for Ba 233.527 Recovery = 98.52%								
Be 234.861†	12654.4	0.0469	mg/L	0.00126	0.0469	mg/L	0.00126	2.70%

Approved: February 10, 2012

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   QC value within limits for Be 234.861  Recovery = 93.74%
B 249.677†            13620.0       0.485 mg/L        0.0098       0.485 mg/L        0.0098   2.03%
   QC value within limits for B 249.677  Recovery = 97.06%
Ca 227.546†             718.7        9.86 mg/L         0.092        9.86 mg/L         0.092   0.93%
   QC value within limits for Ca 227.546  Recovery = 98.64%
Cd 228.802†             586.1      0.0481 mg/L       0.00043      0.0481 mg/L       0.00043   0.89%
   QC value within limits for Cd 228.802  Recovery = 96.22%
Co 228.616†            1779.0       0.196 mg/L        0.0020       0.196 mg/L        0.0020   1.04%
   QC value within limits for Co 228.616  Recovery = 98.08%
Cr 267.716†           28443.2       0.492 mg/L        0.0082       0.492 mg/L        0.0082   1.67%
   QC value within limits for Cr 267.716  Recovery = 98.34%
Cu 327.393†           52393.4       0.479 mg/L        0.0105       0.479 mg/L        0.0105   2.19%
   QC value within limits for Cu 327.393  Recovery = 95.78%
Fe 239.562†             278.1        3.81 mg/L         0.080        3.81 mg/L         0.080   2.10%
   QC value within limits for Fe 239.562  Recovery = 95.26%
Mg 279.077†            2442.7        9.58 mg/L         0.106        9.58 mg/L         0.106   1.11%
   QC value within limits for Mg 279.077  Recovery = 95.81%
Mn 257.610†          118782.6       0.494 mg/L        0.0104       0.494 mg/L        0.0104   2.10%
   QC value within limits for Mn 257.610  Recovery = 98.81%
Mo 202.031†            6432.0       0.963 mg/L        0.0199       0.963 mg/L        0.0199   2.06%
   QC value within limits for Mo 202.031  Recovery = 96.35%
Ni 231.604†            7586.0       0.499 mg/L        0.0095       0.499 mg/L        0.0095   1.90%
   QC value within limits for Ni 231.604  Recovery = 99.78%
Pb 220.353†            1221.0       0.499 mg/L        0.0025       0.499 mg/L        0.0025   0.51%
   QC value within limits for Pb 220.353  Recovery = 99.72%
Sb 206.836†             901.9        1.14 mg/L         0.012        1.14 mg/L         0.012   1.04%
   QC value within limits for Sb 206.836  Recovery = 95.05%
Se 196.026†             230.3       0.390 mg/L        0.0039       0.390 mg/L        0.0039   1.01%
   QC value within limits for Se 196.026  Recovery = 97.62%
Si 251.611†           83736.9        4.77 mg/L         0.101        4.77 mg/L         0.101   2.12%
   QC value within limits for Si 251.611  Recovery = 95.44%
Sn 189.927†            2309.8        1.01 mg/L         0.012        1.01 mg/L         0.012   1.17%
   QC value within limits for Sn 189.927  Recovery = 100.53%
Ti 334.940†          484544.1       0.996 mg/L        0.0017       0.996 mg/L        0.0017   0.17%
   QC value within limits for Ti 334.940  Recovery = 99.65%
Tl 190.801†             399.0       0.510 mg/L        0.0043       0.510 mg/L        0.0043   0.85%
   QC value within limits for Tl 190.801  Recovery = 102.06%
V 290.880†            81256.8       0.983 mg/L        0.0192       0.983 mg/L        0.0192   1.96%
   QC value within limits for V 290.880  Recovery = 98.29%
Zn 206.200†           10080.4       0.963 mg/L        0.0199       0.963 mg/L        0.0199   2.07%
   QC value within limits for Zn 206.200  Recovery = 96.26%
K 766.490†            83033.9        51.8 mg/L          0.14        51.8 mg/L          0.14   0.27%
   QC value within limits for K 766.490  Recovery = 103.51%
Na 589.592†          535923.4        51.2 mg/L          1.06        51.2 mg/L          1.06   2.06%
   QC value within limits for Na 589.592  Recovery = 102.34%
Sr 407.771†         1218119.9        1.02 mg/L         0.010        1.02 mg/L         0.010   1.02%
   QC value within limits for Sr 407.771  Recovery = 101.69%
Li 670.784†           75960.5        1.07 mg/L         0.007        1.07 mg/L         0.007   0.63%
   QC value within limits for Li 670.784  Recovery = 107.46%
All analyte(s) passed QC.

==========================================================================================
Sequence No.: 46                                  Autosampler Location: 1
Sample ID: CCB                                    Date Collected: 2/9/2012 2:59:25 PM
Analyst:                                          Data Type: Reprocessed on 2/10/2012 11:14:06 AM
Logged In Analyst (Original) : peicp2
Initial Sample Wt:                                Initial Sample Vol:
Dilution:                                         Sample Prep Vol:

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Nebulizer Parameters: CCB
Analyte                 Back Pressure    Flow
All                    145.0 kPa         0.50 L/min

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Mean Data: CCB
                   Mean Corrected         Calib.                          Sample
Analyte               Intensity     Conc. Units      Std.Dev.     Conc. Units      Std.Dev.   RSD
Y 371.029            3571589.1                                                    41650.81   1.17%
YRADIAL               272532.8                                                     1391.09   0.51%
Ga 417.206            752461.1                                                    10188.66   1.35%
GaRADIAL               43249.4                                                      789.50   1.83%
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Approved: February 10, 2012

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Ag 328.068†             -432.1    -0.00426 mg/L      0.000309    -0.00426 mg/L      0.000309   7.26%
   QC value less than the lower limit for Ag 328.068  Recovery = Not calculated
Al 396.153†               7.5     0.00487 mg/L      0.007579     0.00487 mg/L      0.007579 155.53%
   QC value within limits for Al 396.153  Recovery = Not calculated
As 188.979†               2.4    -0.00148 mg/L      0.004933    -0.00148 mg/L      0.004933 332.74%
   QC value within limits for As 188.979  Recovery = Not calculated
Ba 233.527†               1.3    -0.00366 mg/L      0.000148    -0.00366 mg/L      0.000148   4.03%
   QC value within limits for Ba 233.527  Recovery = Not calculated
Be 234.861†              83.1     0.00014 mg/L      0.000034     0.00014 mg/L      0.000034  23.52%
   QC value within limits for Be 234.861  Recovery = Not calculated
B 249.677†               53.7     0.00066 mg/L      0.000180     0.00066 mg/L      0.000180  27.08%
   QC value within limits for B 249.677  Recovery = Not calculated
Ca 227.546†              -1.1     -0.0547 mg/L       0.05518     -0.0547 mg/L       0.05518 100.80%
   QC value within limits for Ca 227.546  Recovery = Not calculated
Cd 228.802†               0.2    -0.00020 mg/L      0.000238    -0.00020 mg/L      0.000238 120.27%
   QC value within limits for Cd 228.802  Recovery = Not calculated
Co 228.616†              -2.5    -0.00111 mg/L      0.000395    -0.00111 mg/L      0.000395  35.57%
   QC value within limits for Co 228.616  Recovery = Not calculated
Cr 267.716†             -38.0    -0.00236 mg/L      0.000149    -0.00236 mg/L      0.000149   6.30%
   QC value within limits for Cr 267.716  Recovery = Not calculated
Cu 327.393†             -310.8    -0.00430 mg/L      0.001025    -0.00430 mg/L      0.001025  23.86%
   QC value within limits for Cu 327.393  Recovery = Not calculated
Fe 239.562†               1.3      0.0202 mg/L       0.00923      0.0202 mg/L       0.00923  45.71%
   QC value within limits for Fe 239.562  Recovery = Not calculated
Mg 279.077†              -3.5     0.00737 mg/L      0.013190     0.00737 mg/L      0.013190 178.93%
   QC value within limits for Mg 279.077  Recovery = Not calculated
Mn 257.610†              33.3    -0.00217 mg/L      0.000018    -0.00217 mg/L      0.000018   0.84%
   QC value within limits for Mn 257.610  Recovery = Not calculated
Mo 202.031†              -6.4    -0.00334 mg/L      0.000012    -0.00334 mg/L      0.000012   0.37%
   QC value within limits for Mo 202.031  Recovery = Not calculated
Ni 231.604†              11.9    -0.00154 mg/L      0.000319    -0.00154 mg/L      0.000319  20.68%
   QC value within limits for Ni 231.604  Recovery = Not calculated
Pb 220.353†               5.9     0.00085 mg/L      0.002869     0.00085 mg/L      0.002869 335.62%
   QC value within limits for Pb 220.353  Recovery = Not calculated
Sb 206.836†               1.2    -0.00285 mg/L      0.001481    -0.00285 mg/L      0.001481  52.04%
   QC value within limits for Sb 206.836  Recovery = Not calculated
Se 196.026†              -4.5    -0.00427 mg/L      0.003035    -0.00427 mg/L      0.003035  71.08%
   QC value within limits for Se 196.026  Recovery = Not calculated
Si 251.611†              48.8     -0.0174 mg/L       0.00063     -0.0174 mg/L       0.00063   3.60%
   QC value within limits for Si 251.611  Recovery = Not calculated
Sn 189.927†              -1.8    -0.00493 mg/L      0.000919    -0.00493 mg/L      0.000919  18.63%
   QC value within limits for Sn 189.927  Recovery = Not calculated
Ti 334.940†             -193.6    -0.00146 mg/L      0.000105    -0.00146 mg/L      0.000105   7.17%
   QC value within limits for Ti 334.940  Recovery = Not calculated
Tl 190.801†              -0.8    -0.00416 mg/L      0.003012    -0.00416 mg/L      0.003012  72.45%
   QC value within limits for Tl 190.801  Recovery = Not calculated
V 290.880†               394.5     0.00228 mg/L      0.001315     0.00228 mg/L      0.001315  57.56%
   QC value within limits for V 290.880  Recovery = Not calculated
Zn 206.200†               4.1    -0.00307 mg/L      0.000127    -0.00307 mg/L      0.000127   4.14%
   QC value within limits for Zn 206.200  Recovery = Not calculated
K 766.490†                4.1     -0.0140 mg/L       0.00572     -0.0140 mg/L       0.00572  40.95%
   QC value within limits for K 766.490  Recovery = Not calculated
Na 589.592†              61.2     -0.0269 mg/L       0.00499     -0.0269 mg/L       0.00499  18.56%
   QC value within limits for Na 589.592  Recovery = Not calculated
Sr 407.771†             -30.2     0.00189 mg/L      0.000015     0.00189 mg/L      0.000015   0.78%
   QC value within limits for Sr 407.771  Recovery = Not calculated
Li 670.784†              18.2    -0.00201 mg/L      0.000907    -0.00201 mg/L      0.000907  45.16%
   QC value within limits for Li 670.784  Recovery = Not calculated
QC Failed.  Continue with analysis.

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Sequence No.: 47                                  Autosampler Location: 11
Sample ID: L1202022101PS WG389167-01              Date Collected: 2/9/2012 3:26:45 PM
Analyst: KHR                                      Data Type: Reprocessed on 2/10/2012 11:14:07 AM
Logged In Analyst (Original) : peicp2
Initial Sample Wt:                                Initial Sample Vol:
Dilution:                                         Sample Prep Vol:

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Nebulizer Parameters: L1202022101PS WG389167-01
Analyte                  Back Pressure    Flow
All                    144.0 kPa         0.50 L/min
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Approved: February 10, 2012

Mean Data: L1202022101PS WG389167-01

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	3642195.4						51964.00	1.43%
YRADIAL	282683.8						1271.34	0.45%
Ga 417.206	853454.4						15531.83	1.82%
GaRADIAL	45970.6						579.40	1.26%
Ag 328.068†	23229.3	0.182	mg/L	0.0042	0.182	mg/L	0.0042	2.29%
Al 396.153†	15137.5	5.06	mg/L	0.020	5.06	mg/L	0.020	0.39%
As 188.979†	91.3	0.181	mg/L	0.0028	0.181	mg/L	0.0028	1.56%
Ba 233.527†	14394.7	0.503	mg/L	0.0088	0.503	mg/L	0.0088	1.75%
Be 234.861†	6735.6	0.0236	mg/L	0.00067	0.0236	mg/L	0.00067	2.86%
B 249.677†	26592.0	0.966	mg/L	0.0218	0.966	mg/L	0.0218	2.26%
Ca 227.546†	1059.1	14.0	mg/L	0.16	14.0	mg/L	0.16	1.15%
Cd 228.802†	282.1	0.0231	mg/L	0.00054	0.0231	mg/L	0.00054	2.32%
Co 228.616†	869.1	0.0952	mg/L	0.00188	0.0952	mg/L	0.00188	1.98%
Cr 267.716†	13738.9	0.236	mg/L	0.0046	0.236	mg/L	0.0046	1.93%
Cu 327.393†	25284.0	0.230	mg/L	0.0063	0.230	mg/L	0.0063	2.75%
Fe 239.562†	585.4	8.02	mg/L	0.121	8.02	mg/L	0.121	1.51%
Mg 279.077†	1462.8	5.74	mg/L	0.049	5.74	mg/L	0.049	0.85%
Mn 257.610†	64474.8	0.267	mg/L	0.0050	0.267	mg/L	0.0050	1.87%
Mo 202.031†	3127.5	0.468	mg/L	0.0101	0.468	mg/L	0.0101	2.16%
Ni 231.604†	3674.2	0.240	mg/L	0.0040	0.240	mg/L	0.0040	1.68%
Pb 220.353†	595.1	0.242	mg/L	0.0026	0.242	mg/L	0.0026	1.05%
Sb 206.836†	436.0	0.549	mg/L	0.0102	0.549	mg/L	0.0102	1.85%
Se 196.026†	103.9	0.183	mg/L	0.0087	0.183	mg/L	0.0087	4.76%
Si 251.611†	227816.6	13.1	mg/L	0.10	13.1	mg/L	0.10	0.77%
Sn 189.927†	1335.6	0.580	mg/L	0.0084	0.580	mg/L	0.0084	1.45%
Ti 334.940†	236849.9	0.487	mg/L	0.0009	0.487	mg/L	0.0009	0.18%
Tl 190.801†	209.9	0.263	mg/L	0.0071	0.263	mg/L	0.0071	2.71%
V 290.880†	39390.5	0.474	mg/L	0.0095	0.474	mg/L	0.0095	2.00%
Zn 206.200†	4921.9	0.468	mg/L	0.0074	0.468	mg/L	0.0074	1.57%
K 766.490†	41961.8	26.1	mg/L	0.01	26.1	mg/L	0.01	0.05%
Na 589.592†	327583.4	31.4	mg/L	0.60	31.4	mg/L	0.60	1.90%
Sr 407.771†	669372.0	0.558	mg/L	0.0077	0.558	mg/L	0.0077	1.38%
Li 670.784†	38023.7	0.537	mg/L	0.0031	0.537	mg/L	0.0031	0.57%

Sequence No.: 48
Sample ID: CCV
Analyst:
Logged In Analyst (Original) : peicp2
Initial Sample Wt:
Dilution:

Autosampler Location: 6
Date Collected: 2/9/2012 3:33:38 PM
Data Type: Reprocessed on 2/10/2012 11:14:08 AM
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: CCV

Analyte	Back Pressure	Flow
All	144.0 kPa	0.50 L/min

Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	3556012.4						55312.13	1.56%
YRADIAL	276659.8						2527.76	0.91%
Ga 417.206	826705.1						14308.27	1.73%
GaRADIAL	44732.4						1220.39	2.73%
Ag 328.068†	48115.4	0.378	mg/L	0.0040	0.378	mg/L	0.0040	1.07%
QC value within limits for Ag 328.068 Recovery = 94.40%								
Al 396.153†	29559.8	9.88	mg/L	0.062	9.88	mg/L	0.062	0.63%
QC value within limits for Al 396.153 Recovery = 98.80%								
As 188.979†	180.5	0.364	mg/L	0.0105	0.364	mg/L	0.0105	2.89%
QC value within limits for As 188.979 Recovery = 90.95%								
Ba 233.527†	27827.5	0.976	mg/L	0.0106	0.976	mg/L	0.0106	1.09%
QC value within limits for Ba 233.527 Recovery = 97.62%								
Be 234.861†	12620.9	0.0467	mg/L	0.00054	0.0467	mg/L	0.00054	1.16%
QC value within limits for Be 234.861 Recovery = 93.49%								
B 249.677†	13570.7	0.484	mg/L	0.0027	0.484	mg/L	0.0027	0.56%
QC value within limits for B 249.677 Recovery = 96.71%								

Approved: February 10, 2012

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Ca 227.546†              711.8        9.77 mg/L         0.234        9.77 mg/L         0.234   2.40%
   QC value within limits for Ca 227.546  Recovery = 97.67%
Cd 228.802†              581.2      0.0477 mg/L       0.00113      0.0477 mg/L       0.00113   2.36%
   QC value within limits for Cd 228.802  Recovery = 95.38%
Co 228.616†             1763.9       0.194 mg/L        0.0038       0.194 mg/L        0.0038   1.97%
   QC value within limits for Co 228.616  Recovery = 97.23%
Cr 267.716†            28136.1       0.486 mg/L        0.0041       0.486 mg/L        0.0041   0.84%
   QC value within limits for Cr 267.716  Recovery = 97.27%
Cu 327.393†            51815.5       0.474 mg/L        0.0041       0.474 mg/L        0.0041   0.86%
   QC value within limits for Cu 327.393  Recovery = 94.72%
Fe 239.562†             276.2        3.78 mg/L         0.053        3.78 mg/L         0.053   1.40%
   QC value within limits for Fe 239.562  Recovery = 94.61%
Mg 279.077†             2412.6        9.46 mg/L         0.119        9.46 mg/L         0.119   1.25%
   QC value within limits for Mg 279.077  Recovery = 94.63%
Mn 257.610†           117968.8       0.491 mg/L        0.0039       0.491 mg/L        0.0039   0.80%
   QC value within limits for Mn 257.610  Recovery = 98.13%
Mo 202.031†             6405.9       0.960 mg/L        0.0103       0.960 mg/L        0.0103   1.08%
   QC value within limits for Mo 202.031  Recovery = 95.96%
Ni 231.604†             7484.9       0.492 mg/L        0.0061       0.492 mg/L        0.0061   1.24%
   QC value within limits for Ni 231.604  Recovery = 98.45%
Pb 220.353†             1218.3       0.498 mg/L        0.0116       0.498 mg/L        0.0116   2.34%
   QC value within limits for Pb 220.353  Recovery = 99.50%
Sb 206.836†              893.6        1.13 mg/L         0.027        1.13 mg/L         0.027   2.43%
   QC value within limits for Sb 206.836  Recovery = 94.18%
Se 196.026†              226.7       0.384 mg/L        0.0127       0.384 mg/L        0.0127   3.30%
   QC value within limits for Se 196.026  Recovery = 96.11%
Si 251.611†            82388.9        4.69 mg/L         0.045        4.69 mg/L         0.045   0.96%
   QC value within limits for Si 251.611  Recovery = 93.90%
Sn 189.927†             2286.0       0.995 mg/L        0.0193       0.995 mg/L        0.0193   1.94%
   QC value within limits for Sn 189.927  Recovery = 99.49%
Ti 334.940†           484088.3       0.996 mg/L        0.0023       0.996 mg/L        0.0023   0.23%
   QC value within limits for Ti 334.940  Recovery = 99.56%
Tl 190.801†              395.2       0.506 mg/L        0.0083       0.506 mg/L        0.0083   1.64%
   QC value within limits for Tl 190.801  Recovery = 101.11%
V 290.880†             80360.6       0.972 mg/L        0.0088       0.972 mg/L        0.0088   0.91%
   QC value within limits for V 290.880  Recovery = 97.21%
Zn 206.200†            10011.0       0.956 mg/L        0.0100       0.956 mg/L        0.0100   1.05%
   QC value within limits for Zn 206.200  Recovery = 95.60%
K 766.490†             82158.6        51.2 mg/L          0.36        51.2 mg/L          0.36   0.71%
   QC value within limits for K 766.490  Recovery = 102.42%
Na 589.592†           534387.7        51.0 mg/L          1.96        51.0 mg/L          1.96   3.85%
   QC value within limits for Na 589.592  Recovery = 102.05%
Sr 407.771†          1211866.6        1.01 mg/L         0.013        1.01 mg/L         0.013   1.28%
   QC value within limits for Sr 407.771  Recovery = 101.17%
Li 670.784†            75405.1        1.07 mg/L         0.001        1.07 mg/L         0.001   0.07%
   QC value within limits for Li 670.784  Recovery = 106.68%
All analyte(s) passed QC.

==========================================================================================
Sequence No.: 49                                    Autosampler Location: 1
Sample ID: CCB                                      Date Collected: 2/9/2012 3:40:33 PM
Analyst:                                            Data Type: Reprocessed on 2/10/2012 11:14:10 AM
Logged In Analyst (Original) : peicp2
Initial Sample Wt:                                  Initial Sample Vol:
Dilution:                                           Sample Prep Vol:

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Nebulizer Parameters: CCB
Analyte                  Back Pressure    Flow
All                     144.0 kPa        0.50 L/min

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Mean Data: CCB
                   Mean Corrected        Calib.                          Sample
Analyte               Intensity     Conc. Units      Std.Dev.      Conc. Units      Std.Dev.   RSD
Y 371.029           3611874.8                                                     19444.09   0.54%
YRADIAL              273438.4                                                      6981.29   2.55%
Ga 417.206           764475.6                                                      2580.87   0.34%
GaRADIAL              43608.7                                                       612.64   1.40%
Ag 328.068†            -368.0    -0.00376 mg/L      0.000736    -0.00376 mg/L      0.000736  19.57%
   QC value within limits for Ag 328.068  Recovery = Not calculated
Al 396.153†               4.4     0.00384 mg/L      0.009714     0.00384 mg/L      0.009714 252.75%
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Approved: February 10, 2012

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   QC value within limits for Al 396.153  Recovery = Not calculated
As 188.979†                2.6    -0.00119 mg/L      0.003024    -0.00119 mg/L      0.003024 253.20%
   QC value within limits for As 188.979  Recovery = Not calculated
Ba 233.527†               -5.5    -0.00390 mg/L      0.000085    -0.00390 mg/L      0.000085   2.17%
   QC value within limits for Ba 233.527  Recovery = Not calculated
Be 234.861†               68.5     0.00009 mg/L      0.000021     0.00009 mg/L      0.000021  23.45%
   QC value within limits for Be 234.861  Recovery = Not calculated
B 249.677†               117.0     0.00286 mg/L      0.000284     0.00286 mg/L      0.000284   9.94%
   QC value within limits for B 249.677  Recovery = Not calculated
Ca 227.546†               -1.5     -0.0604 mg/L       0.02935     -0.0604 mg/L       0.02935  48.59%
   QC value within limits for Ca 227.546  Recovery = Not calculated
Cd 228.802†                1.3    -0.00010 mg/L      0.000099    -0.00010 mg/L      0.000099  95.48%
   QC value within limits for Cd 228.802  Recovery = Not calculated
Co 228.616†               -2.8    -0.00114 mg/L      0.000099    -0.00114 mg/L      0.000099   8.68%
   QC value within limits for Co 228.616  Recovery = Not calculated
Cr 267.716†              -44.9    -0.00248 mg/L      0.000051    -0.00248 mg/L      0.000051   2.05%
   QC value within limits for Cr 267.716  Recovery = Not calculated
Cu 327.393†             -240.7    -0.00366 mg/L      0.000094    -0.00366 mg/L      0.000094   2.56%
   QC value within limits for Cu 327.393  Recovery = Not calculated
Fe 239.562†                0.9      0.0142 mg/L       0.01141      0.0142 mg/L       0.01141  80.52%
   QC value within limits for Fe 239.562  Recovery = Not calculated
Mg 279.077†               -2.9     0.00961 mg/L      0.009739     0.00961 mg/L      0.009739 101.36%
   QC value within limits for Mg 279.077  Recovery = Not calculated
Mn 257.610†               22.2    -0.00222 mg/L      0.000023    -0.00222 mg/L      0.000023   1.03%
   QC value within limits for Mn 257.610  Recovery = Not calculated
Mo 202.031†               -4.4    -0.00304 mg/L      0.000343    -0.00304 mg/L      0.000343  11.27%
   QC value within limits for Mo 202.031  Recovery = Not calculated
Ni 231.604†                9.6    -0.00170 mg/L      0.000239    -0.00170 mg/L      0.000239  14.11%
   QC value within limits for Ni 231.604  Recovery = Not calculated
Pb 220.353†               -1.6    -0.00219 mg/L      0.000917    -0.00219 mg/L      0.000917  41.92%
   QC value within limits for Pb 220.353  Recovery = Not calculated
Sb 206.836†                2.4    -0.00125 mg/L      0.002092    -0.00125 mg/L      0.002092 167.08%
   QC value within limits for Sb 206.836  Recovery = Not calculated
Se 196.026†               -1.7     0.00038 mg/L      0.005644     0.00038 mg/L      0.005644 >999.9%
   QC value within limits for Se 196.026  Recovery = Not calculated
Si 251.611†                3.8     -0.0200 mg/L       0.00017     -0.0200 mg/L       0.00017   0.84%
   QC value within limits for Si 251.611  Recovery = Not calculated
Sn 189.927†               -0.5    -0.00436 mg/L      0.000831    -0.00436 mg/L      0.000831  19.08%
   QC value within limits for Sn 189.927  Recovery = Not calculated
Ti 334.940†             -144.9    -0.00136 mg/L      0.000163    -0.00136 mg/L      0.000163  11.99%
   QC value within limits for Ti 334.940  Recovery = Not calculated
Tl 190.801†               -0.7    -0.00414 mg/L      0.002536    -0.00414 mg/L      0.002536  61.33%
   QC value within limits for Tl 190.801  Recovery = Not calculated
V 290.880†               364.5     0.00192 mg/L      0.001342     0.00192 mg/L      0.001342  69.85%
   QC value within limits for V 290.880  Recovery = Not calculated
Zn 206.200†                2.3    -0.00325 mg/L      0.000250    -0.00325 mg/L      0.000250   7.70%
   QC value within limits for Zn 206.200  Recovery = Not calculated
K 766.490†                14.1    -0.00774 mg/L      0.020815    -0.00774 mg/L      0.020815 268.87%
   QC value within limits for K 766.490  Recovery = Not calculated
Na 589.592†               68.2     -0.0262 mg/L       0.00478     -0.0262 mg/L       0.00478  18.23%
   QC value within limits for Na 589.592  Recovery = Not calculated
Sr 407.771†              -82.0     0.00185 mg/L      0.000038     0.00185 mg/L      0.000038   2.03%
   QC value within limits for Sr 407.771  Recovery = Not calculated
Li 670.784†              -27.8    -0.00266 mg/L      0.000616    -0.00266 mg/L      0.000616  23.16%
   QC value within limits for Li 670.784  Recovery = Not calculated
All analyte(s) passed QC.
```

Approved: February 10, 2012

2.1.2 Metals ICP-MS Data

2.1.2.1 Summary Data

Login Number: L12020220
Department: Metals
Analyst: Ji Hu

METHOD

Preparation: SW-846 3015

Analysis: SW-846 6020

HOLDING TIMES

Sample Preparation: All holding times were met.

Sample Analysis: All holding times were met.

PREPARATION

Sample preparation proceeded normally.

CALIBRATION

Initial Calibration: All acceptance criteria were met.

Alternate Source Standards: All acceptance criteria were met.

Interference Check Standards: All acceptance criteria were met.

Continuing Calibration: All acceptance criteria were met.

Continuing Calibration Blank: All acceptance criteria were met.

Low Level Check: All acceptance criteria were met.

BATCH QA/QC

Method Blank: All acceptance criteria were met.

Laboratory Control Sample: All acceptance criteria were met.

Serial Dilution/Post Digestion Spikes: WG389145 - All acceptance criteria were met.

Matrix Spikes: All acceptance criteria were met.

SAMPLES

Samples: All acceptance criteria were met.

Narrative ID: 42024
Approved By: Sheri Pfalzgraf

Microbac

Lab Report #: L12020220
Lab Project #: 3005.011
Project Name: White Sands MR
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L12020220-01	**PrePrep Method:**	N/A	**Instrument:**	ELAN-ICP
Client ID:	MPL25-0212-1	**Prep Method:**	3015	**Prep Date:**	02/09/2012 06:42
Matrix:	Water	**Analytical Method:**	6020	**Cal Date:**	02/09/2012 09:14
Workgroup #:	WG389145	**Analyst:**	JYH	**Run Date:**	02/09/2012 13:31
Collect Date:	02/06/2012 15:05	**Dilution:**	1	**File ID:**	EL.020912.133137
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Antimony, Total	7440-36-0		U	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00155		0.00100	0.000500
Barium, Total	7440-39-3	0.0683		0.00300	0.00150
Cadmium, Total	7440-43-9		U	0.000600	0.000300
Chromium, Total	7440-47-3	0.00199	J	0.00200	0.00100
Cobalt, Total	7440-48-4		U	0.00100	0.000500
Copper, Total	7440-50-8		U	0.00200	0.00100
Lead, Total	7439-92-1		U	0.00100	0.000500
Manganese, Total	7439-96-5	0.00318		0.00200	0.00100
Nickel, Total	7440-02-0	0.00236	J	0.00400	0.00200
Selenium, Total	7782-49-2	0.00534		0.00100	0.000500
Silver, Total	7440-22-4		U	0.00100	0.000500
Thallium, Total	7440-28-0		U	0.000200	0.000100

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Certificate of Analysis

Sample #:	L12020220-02	**PrePrep Method:**	N/A	**Instrument:**	ELAN-ICP
Client ID:	SMW1-0212-1	**Prep Method:**	3015	**Prep Date:**	02/09/2012 06:42
Matrix:	Water	**Analytical Method:**	6020	**Cal Date:**	02/09/2012 09:14
Workgroup #:	WG389145	**Analyst:**	JYH	**Run Date:**	02/09/2012 13:39
Collect Date:	02/07/2012 09:50	**Dilution:**	1	**File ID:**	EL.020912.133924
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Antimony, Total	7440-36-0		U	0.00100	0.000500
Arsenic, Total	7440-38-2	0.000769	J	0.00100	0.000500
Barium, Total	7440-39-3	0.0759		0.00300	0.00150
Cadmium, Total	7440-43-9		U	0.000600	0.000300
Chromium, Total	7440-47-3		U	0.00200	0.00100
Cobalt, Total	7440-48-4		U	0.00100	0.000500
Copper, Total	7440-50-8		U	0.00200	0.00100
Lead, Total	7439-92-1		U	0.00100	0.000500
Manganese, Total	7439-96-5	0.00269		0.00200	0.00100
Nickel, Total	7440-02-0		U	0.00400	0.00200
Selenium, Total	7782-49-2	0.00267		0.00100	0.000500
Silver, Total	7440-22-4		U	0.00100	0.000500
Thallium, Total	7440-28-0		U	0.000200	0.000100

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Certificate of Analysis

Sample #:	L12020220-03	**PrePrep Method:**	N/A	**Instrument:**	ELAN-ICP
Client ID:	SMW4-0212-1	**Prep Method:**	3015	**Prep Date:**	02/09/2012 06:42
Matrix:	Water	**Analytical Method:**	6020	**Cal Date:**	02/09/2012 09:14
Workgroup #:	WG389145	**Analyst:**	JYH	**Run Date:**	02/09/2012 13:47
Collect Date:	02/07/2012 12:05	**Dilution:**	1	**File ID:**	EL.020912.134712
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Antimony, Total	7440-36-0		U	0.00100	0.000500
Arsenic, Total	7440-38-2	0.000783	J	0.00100	0.000500
Barium, Total	7440-39-3	0.0843		0.00300	0.00150
Cadmium, Total	7440-43-9		U	0.000600	0.000300
Chromium, Total	7440-47-3	0.0646		0.00200	0.00100
Cobalt, Total	7440-48-4		U	0.00100	0.000500
Copper, Total	7440-50-8	0.00189	J	0.00200	0.00100
Lead, Total	7439-92-1		U	0.00100	0.000500
Manganese, Total	7439-96-5	0.00696		0.00200	0.00100
Nickel, Total	7440-02-0	0.102		0.00400	0.00200
Selenium, Total	7782-49-2	0.00236		0.00100	0.000500
Silver, Total	7440-22-4		U	0.00100	0.000500
Thallium, Total	7440-28-0		U	0.000200	0.000100

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Certificate of Analysis

2.1.2.2 QC Summary Data

Example 6020 Calculations
Perkin Elmer ELAN 6100

1.0 Initial Calibration (ICAL) Parameters
The system performs linear regression from data consisting of a blank and three standards.

2.0 Calculating the concentration (C) of an element in water using data from prep log, run log, and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Final volume	100
Vi = Initial volume	40
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in (ug/L)	0.25

3.0 Calculating the concentration (C) of an element in soil using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Final volume	200
Vi = Initial volume	0.5
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in (ug/kg)	40

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

Where:	**Example:**
Cx = Concentration calculated as received (wet basis)	40
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (ug/kg)	50

50 ug/kg = 0.050 mg/kg

Perkin Elmer ELAN ICP/MS

STANDARDS KEY

QC Std 1 - ICV
QC Std 2 - ICB
QC Std 3 - LLICV
QC Std 4 - ICSA
QC Std 5 - ICSAB
QC Std 6 - CCV
QC Std 7 - CCB
QC Std 8 - LLCCV

Calibration Solutions

Analyte	Stock Conc. (mg/L)	S1 (mg/L)	S2 (mg/L)	S3 (mg/L)	S4 (mg/L)
Al	10	0	0.0004	0.05	0.1
Sb	10	0	0.0004	0.05	0.1
As	10	0	0.0004	0.05	0.1
Ba	10	0	0.0004	0.05	0.1
Be	10	0	0.0004	0.05	0.1
Ca	1000	0	0.04	5	10
Cd	10	0	0.0004	0.05	0.1
Cr	10	0	0.0004	0.05	0.1
Co	10	0	0.0004	0.05	0.1
Cu	10	0	0.0004	0.05	0.1
Fe	1000	0	0.04	5	10
Pb	10	0	0.0004	0.05	0.1
Mg	1000	0	0.04	5	10
Mn	10	0	0.0004	0.05	0.1
Ni	10	0	0.0004	0.05	0.1
K	1000	0	0.04	5	10
Se	10	0	0.0004	0.05	0.1
Ag	10	0	0.0004	0.05	0.1
Na	1000	0	0.04	5	10
Tl	10	0	0.0004	0.05	0.1
V	10	0	0.0004	0.05	0.1
U	1000	0	0.0004	0.05	0.1
Zn	10	0	0.0004	0.05	0.1

Microbac Laboratories Inc.
Microwave Digestion Log

Workgroup: WG389121
Analyst: VC
Spike Analyst: VC
Run Date: 02/09/2012 06:42
Method: 3015
Balance: BAL016
Instrument: MW-2

SOP: ME407 Revison 12
Spike Solution: STD49281
Spike Witness: REK
Digestion Tubes Lot #: COA15940
HNO3 Lot #: COA15925
MS WG# 377980 Lot #: COA15715

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Initial Vessel Wt	Final Vessel Wt	Spike Amount	Due Date
1	WG389121-02	BLANK	1	40 mL	100 mL	205.664 g	205.667 g		
2	WG389121-04	FLT_BLK	1	40 mL	100 mL	207.445 g	207.443 g		
3	WG389121-03	LCS	1	40 mL	100 mL	208.228 g	208.222 g	.25 mL	
4	L12020182-02	SAMP	2	40 mL	100 mL	206.912 g	206.903 g		02/09/12
5	L12020182-04	SAMP	2	40 mL	100 mL	207.863 g	207.855 g		02/09/12
6	WG389121-01	REF	2	40 mL	100 mL	207.276 g	207.271 g		
7	L12020205-02	SAMP	2	40 mL	100 mL	207.276 g	207.271 g		02/09/12
8	L12020215-01	SAMP	2	40 mL	100 mL	209.33 g	209.322 g		02/15/12
9	L12020217-01	SAMP	2	40 mL	100 mL	209.295 g	209.27 g		02/15/12
10	L12020217-02	SAMP	2	40 mL	100 mL	208.49 g	208.482 g		02/15/12
11	L12020218-01	SAMP	2	40 mL	100 mL	207.301 g	207.288 g		02/15/12
12	L12020218-02	SAMP	2	40 mL	100 mL	206.768 g	206.745 g		02/15/12
13	L12020220-01	SAMP	1	40 mL	100 mL	208.859 g	208.839 g		02/17/12
14	L12020220-02	SAMP	1	40 mL	100 mL	208.571 g	208.559 g		02/17/12
15	L12020220-03	SAMP	1	40 mL	100 mL	206.795 g	206.785 g		02/17/12
16	WG389121-07	DUP	1	40 mL	100 mL	208.071 g	208.061 g		
17	WG389121-05	MS	1	40 mL	100 mL	210.001 g	209.999 g	.25 mL	
18	WG389121-06	MSD	1	40 mL	100 mL	206.196 g	206.193 g	.25 mL	

L12020217-01	digestate filtered
L12020218-01	digestate filtered

Analyst: Vicki Collins

Reviewer: [illegible]

MW_DIG - Modified 09/30/2009
PDF ID: 2302795
Report generated: 02/09/2012 15:58

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ELAN-ICP
Dataset: 020912A.REP
Analyst1: JYH
Analyst2: N/A
Method: 6020
SOP: ME700
Rev: 7
Maintenance Log ID: 40575

Calibration Std: STD49937
ICV Std: STD49511
Post Spike: STD47984
ICSA: STD49577
ICSAB: STD49578
Int. Std: STD49729
CCV: STD49941
LLCCV: STD50014

Workgroups: 389145,388710

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	EL.020912.084405	Blank	Blank		1		02/09/12 08:44
2	EL.020912.085140	WG389191-01	Calibration Point		1		02/09/12 08:51
3	EL.020912.085917	WG389191-02	Calibration Point		1		02/09/12 08:59
4	EL.020912.090653	WG389191-03	Calibration Point		1		02/09/12 09:06
5	EL.020912.091430	WG389191-04	Calibration Point		1		02/09/12 09:14
6	EL.020912.092207	WG389191-05	Initial Calibration Verification		1		02/09/12 09:22
7	EL.020912.092943	WG389191-06	Initial Calib Blank		1		02/09/12 09:29
8	EL.020912.093721	WG389191-07	Low Level Initial Calibration V		1		02/09/12 09:37
9	EL.020912.094500	WG389191-08	Interference Check		1		02/09/12 09:45
10	EL.020912.095239	WG389191-09	Interference Check		1		02/09/12 09:52
11	EL.020912.100018	WG389191-10	CCV		1		02/09/12 10:00
12	EL.020912.100755	WG389191-11	QC Std 7		1		02/09/12 10:07
13	EL.020912.101555	WG389191-12	CCB		1		02/09/12 10:15
14	EL.020912.102330	WG389121-02	Method/Prep Blank	40/100	1		02/09/12 10:23
15	EL.020912.103116	WG389121-04	Filter Blank		1		02/09/12 10:31
16	EL.020912.103903	WG389121-03	Laboratory Control S	40/100	1		02/09/12 10:39
17	EL.020912.104650	WG389121-01	Reference Sample		1	L12020205-02	02/09/12 10:46
18	EL.020912.105437	WG389121-07	Duplicate	40/100	1	L12020205-02	02/09/12 10:54
19	EL.020912.110224	WG389121-05	Matrix Spike	40/100	1	L12020205-02	02/09/12 11:02
20	EL.020912.111012	WG389121-06	Matrix Spike Duplica	40/100	1	L12020205-02	02/09/12 11:10
21	EL.020912.111800	L12020182-04	5386-MW0018	40/100	1		02/09/12 11:18
22	EL.020912.112548	WG389145-01	Post Digestion Spike		1	L12020182-04	02/09/12 11:25
23	EL.020912.113337	WG389145-02	Serial Dilution		5	L12020182-04	02/09/12 11:33
24	EL.020912.114126	WG389191-13	CCV		1		02/09/12 11:41
25	EL.020912.114902	WG389191-14	CCB		1		02/09/12 11:49
26	EL.020912.115639	L12020182-02	5386-MW0017	40/100	1		02/09/12 11:56
27	EL.020912.120425	L12020016-04	MPL2-0112-1	40/100	1		02/09/12 12:04
28	EL.020912.121213	WG388710-01	Post Digestion Spike		1	L12020016-04	02/09/12 12:12
29	EL.020912.122002	WG388710-02	Serial Dilution		5	L12020016-04	02/09/12 12:20
30	EL.020912.122751	WG389191-15	CCV		1		02/09/12 12:27
31	EL.020912.123528	WG389191-16	CCB		1		02/09/12 12:35
32	EL.020912.124303	L12020215-01	2020481-01		5		02/09/12 12:43
33	EL.020912.125049	L12020217-01	2020479-01	40/100	5		02/09/12 12:50
34	EL.020912.125835	L12020217-02	2020479-02	40/100	5		02/09/12 12:58

Page: 1 Approved: February 09, 2012

Marcia Berry

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ELAN-ICP Dataset: 020912A.REP
Analyst1: JYH Analyst2: N/A
Method: 6020 SOP: ME700 Rev: 7
Maintenance Log ID: 40575

Calibration Std: STD49937 ICV Std: STD49511 Post Spike: STD47984
ICSA: STD49577 ICSAB: STD49578 Int. Std: STD49729
CCV: STD49941 LLCCV: STD50014

Workgroups: 389145,388710

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	EL.020912.130621	L12020218-01	2020480-01	40/100	5		02/09/12 13:06
36	EL.020912.131604	L12020016-04	MPL2-0112-1		1		02/09/12 13:16
37	EL.020912.132351	L12020218-02	2020480-02		5		02/09/12 13:23
38	EL.020912.133137	L12020220-01	MPL25-0212-1	40/100	1		02/09/12 13:31
39	EL.020912.133924	L12020220-02	SMW1-0212-1	40/100	1		02/09/12 13:39
40	EL.020912.134712	L12020220-03	SMW4-0212-1	40/100	1		02/09/12 13:47
41	EL.020912.135459	WG389191-19	CCV		1		02/09/12 13:54
42	EL.020912.140236	WG389191-20	CCB		1		02/09/12 14:02
43	EL.020912.145008	L12020215-01	2020481-01	40/100	1		02/09/12 14:50
44	EL.020912.145754	L12020218-02	2020480-02	40/100	1		02/09/12 14:57
45	EL.020912.150541	WG389191-21	CCV		1		02/09/12 15:05
46	EL.020912.151317	WG389191-22	CCB		1		02/09/12 15:13

Comments

Seq.	Rerun	Dil.	Reason	Analytes
12				
	Rerun for thllium.			

Page: 2 Approved: February 09, 2012

Maren Berry

Microbac Laboratories Inc.

Data Checklist

Date: 09-FEB-2012
Analyst: JYH
Analyst: NA
Method: 6020
Instrument: ELAN-ICP
Curve Workgroup: 389191
Runlog ID: 45057
Analytical Workgroups: 389145,388710

Calibration/Linearity	X
ICV/CCV	X
ICV RSD <= 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	X
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	205,182,215,217,218,220,016
Client Forms	X
Level X	
Level 3	
Level 4	205,182,220,016
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	JYH
Secondary Reviewer	MMB
Comments	

Primary Reviewer:

Secondary Reviewer:
09-FEB-2012

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-09-2012 16:33:24

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6020 AAB#: WG389145

Login Number: L12020220

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
MPL25-0212-1	01	02/06/12					02/09/12	2.7	180		02/09/12	2.9	180	
SMW1-0212-1	02	02/07/12					02/09/12	1.9	180		02/09/12	2.2	180	
SMW4-0212-1	03	02/07/12					02/09/12	1.8	180		02/09/12	2.1	180	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 2303683
Report generated 02/09/2012 14:42

Microbac Laboratories Inc.

METHOD BLANK SUMMARY

Login Number: L12020220
Blank File ID: EL.020912.102330
Prep Date: 02/09/12 06:42
Analyzed Date: 02/09/12 10:23
Analyst: JYH

Work Group: WG389145
Blank Sample ID: WG389121-02
Instrument ID: ELAN-ICP
Method: 6020

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
FLT_BLK	WG389121-04	EL.020912.103116	02/09/12 10:31	01
LCS	WG389121-03	EL.020912.103903	02/09/12 10:39	01
DUP	WG389121-07	EL.020912.105437	02/09/12 10:54	01
MPL25-0212-1	L12020220-01	EL.020912.133137	02/09/12 13:31	01
SMW1-0212-1	L12020220-02	EL.020912.133924	02/09/12 13:39	01
SMW4-0212-1	L12020220-03	EL.020912.134712	02/09/12 13:47	01

Report Name: BLANK_SUMMARY
PDF File ID: 2303684
Report generated 02/09/2012 15:25

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L12020220 Prep Date: 02/09/12 06:42 Sample ID: WG389121-02
Instrument ID: ELAN-ICP Run Date: 02/09/12 10:23 Prep Method: 3015
File ID: EL.020912.102330 Analyst: JYH Method: 6020
Workgroup (AAB#): WG389145 Matrix: Water Units: mg/L
Contract #: Cal ID: ELAN-I-09-FEB-12

Analytes	LOD	LOQ	Concentration	Dilution	Qualifier
Antimony, Total	0.000500	0.00100	0.000500	1	U
Arsenic, Total	0.000500	0.00100	0.000500	1	U
Barium, Total	0.00150	0.00300	0.00150	1	U
Cadmium, Total	0.000300	0.000600	0.000300	1	U
Chromium, Total	0.00100	0.00200	0.00100	1	U
Cobalt, Total	0.000500	0.00100	0.000500	1	U
Copper, Total	0.00100	0.00200	0.00100	1	U
Lead, Total	0.000500	0.00100	0.000500	1	U
Manganese, Total	0.00100	0.00200	0.00100	1	U
Nickel, Total	0.00200	0.00400	0.00200	1	U
Selenium, Total	0.000500	0.00100	0.000500	1	U
Silver, Total	0.000500	0.00100	0.000500	1	U
Thallium, Total	0.000100	0.000200	0.000100	1	U

LOD Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 2303685
09-FEB-2012 15:25

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L12020220 Run Date: 02/09/2012 Sample ID: WG389121-03
Instrument ID: ELAN-ICP Run Time: 10:39 Prep Method: 3015
File ID: EL.020912.103903 Analyst: JYH Method: 6020
Workgroup (AAB#): WG389145 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD49281 Cal ID: ELAN-I-09-FEB-12

Analytes	Expected	Found	% Rec	LCS Limits	Q
Antimony, Total	0.0625	0.0611	97.7	80 - 120	
Arsenic, Total	0.0625	0.0589	94.2	80 - 120	
Barium, Total	0.0625	0.0611	97.8	80 - 120	
Cadmium, Total	0.0625	0.0649	104	80 - 120	
Chromium, Total	0.0625	0.0585	93.6	80 - 120	
Cobalt, Total	0.0625	0.0599	95.8	80 - 120	
Copper, Total	0.0625	0.0619	99.1	80 - 120	
Lead, Total	0.0625	0.0594	95.1	80 - 120	
Manganese, Total	0.0625	0.0602	96.3	80 - 120	
Nickel, Total	0.0625	0.0619	99.1	80 - 120	
Selenium, Total	0.0625	0.0580	92.8	80 - 120	
Silver, Total	0.0625	0.0615	98.4	80 - 120	
Thallium, Total	0.0625	0.0606	96.9	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 2303686
Report generated: 02/09/2012 15:25

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L12020220 Cal ID: ELAN-ICP- Worknum: WG389145
Instrument ID: ELAN-ICP Contract #: Method: 6020
Parent ID: WG389121-01 File ID: EL.020912.104650 Dil: 1 Matrix: WATER
Sample ID: WG389121-05 MS File ID: EL.020912.110224 Dil: 1 Units: mg/L
Sample ID: WG389121-06 MSD File ID: EL.020912.111012 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Antimony, Dissolved	ND	0.0625	0.0643	103	0.0625	0.0623	99.7	3.10	80 - 120	20	
Arsenic, Dissolved	0.00112	0.0625	0.0609	95.6	0.0625	0.0602	94.5	1.20	80 - 120	20	
Barium, Dissolved	0.00401	0.0625	0.0666	100	0.0625	0.0668	100	0.224	80 - 120	20	
Cadmium, Dissolved	ND	0.0625	0.0652	104	0.0625	0.0624	99.8	4.40	80 - 120	20	
Chromium, Dissolved	ND	0.0625	0.0627	100	0.0625	0.0651	104	3.77	80 - 120	20	
Cobalt, Dissolved	ND	0.0625	0.0626	100	0.0625	0.0636	102	1.65	80 - 120	20	
Copper, Dissolved	0.00179	0.0625	0.0662	103	0.0625	0.0662	103	0.0310	80 - 120	20	
Lead, Dissolved	ND	0.0625	0.0649	104	0.0625	0.0656	105	1.05	80 - 120	20	
Manganese, Dissolved	0.00224	0.0625	0.0649	100	0.0625	0.0684	106	5.26	80 - 120	20	
Nickel, Dissolved	ND	0.0625	0.0633	101	0.0625	0.0637	102	0.496	80 - 120	20	
Selenium, Dissolved	ND	0.0625	0.0566	90.6	0.0625	0.0551	88.2	2.66	80 - 120	20	
Silver, Dissolved	ND	0.0625	0.0657	105	0.0625	0.0651	104	0.979	80 - 120	20	
Thallium, Dissolved	ND	0.0625	0.0637	102	0.0625	0.0657	105	3.09	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 2303687
Report generated 02/09/2012 15:25

Microbac Laboratories Inc.
Serial Dilution Report

Login: L12020220 **Worknum:** WG389145
Instrument: ELAN-ICP **Method:** 6020
Serial Dil: WG389145-02 **File ID:** EL.020912.113337 **Dil:** 5 **Units:** ug/L
Sample: L12020182-04 **File ID:** EL.020912.111800 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Antimony	11.9	X	13.4	X	13.00	
Arsenic	30.9		31.6		2.09	
Barium	5.50	X	5.82	F	5.77	
Cadmium	ND	U	ND	U		
Chromium	0.897	X	ND	U		
Cobalt	ND	U	ND	U		
Copper	ND	U	ND	U		
Lead	ND	U	ND	U		
Manganese	3.58	X	3.35	F	6.45	
Nickel	1.22	F	ND	U		
Selenium	4.04	X	4.47	X	10.80	
Silver	ND	U	ND	U		
Thallium	ND	U	ND	U		

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 100 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 100 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 2303681
02/09/2012 15:25

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L12020220 **Worknum:** WG389145
Instrument ID: ELAN-ICP **Method:** 6020
Post Spike ID: WG389145-01 **File ID:** EL.020912.112548 **Dil:** 1 **Units:** ug/L
Sample ID: L12020182-04 **File ID:** EL.020912.111800 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
ANTIMONY	62.4		11.9		50	100.9	75 - 125	
ARSENIC	77.8		30.9		50	93.7	75 - 125	
BARIUM	55.7		5.50		50	100.5	75 - 125	
CADMIUM	50.1		0	U	50	100.3	75 - 125	
CHROMIUM	50.0		0.897		50	98.3	75 - 125	
COBALT	49.1		0	U	50	98.2	75 - 125	
COPPER	49.4		0	U	50	98.8	75 - 125	
LEAD	50.4		0	U	50	100.8	75 - 125	
MANGANESE	52.7		3.58		50	98.3	75 - 125	
NICKEL	49.1		1.22	F	50	95.7	75 - 125	
SELENIUM	48.0		4.04		50	88.0	75 - 125	
SILVER	48.8		0	U	50	97.7	75 - 125	
THALLIUM	50.9		0	U	50	101.8	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 2303682
Report generated: 02/09/2012 15:25

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L12020220	Workgroup (AAB#):	WG389145
Analytical Method:	6020	Instrument ID:	ELAN-ICP
ICAL Worknum:	WG389191	Initial Calibration Date:	09-FEB-2012 09:14

	WG389191-01		WG389191-02		WG389191-03		WG389191-04			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ANTIMONY	0	24.3	.4	2020	50	254000	100	498000	.999984	
ARSENIC	0	-178	.4	330	50	68900	100	134000	1	
BARIUM	0	19.0	.4	831	50	99900	100	194000	.999998	
CADMIUM	0	-0.766	.4	686	50	77800	100	145000	.999488	
CHROMIUM	0	8810	.4	12800	50	471000	100	913000	.999989	
COBALT	0	76.7	.4	4540	50	532000	100	1030000	1	
COPPER	0	99.3	.4	941	50	102000	100	193000	.999949	
LEAD	0	1030	.4	10800	50	1190000	100	2290000	.999999	
MANGANESE	0	333	.4	6450	50	724000	100	1330000	.999588	
NICKEL	0	31.7	.4	969	50	108000	100	209000	.999998	
SELENIUM	0	3.55	.4	48.2	50	6090	100	11900	.999995	
SILVER	0	70.7	.4	3040	50	356000	100	674000	.999723	
THALLIUM	0	24.0	.4	2960	50	354000	100	685000	1	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 2303691
Report generated: 09-FEB-2012 14:42

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L12020220
Run Date: 02/09/2012
Sample ID: WG389191-06
Instrument ID: ELAN-ICP
Run Time: 09:29
Method: 6020
File ID: EL.020912.092943
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG389145
Cal ID: ELAN-ICP - 09-FEB-12
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
SILVER	.2	.4	.2	U
ARSENIC	.2	.4	.2	U
BARIUM	.6	1.2	.6	U
CADMIUM	.12	.24	.12	U
COBALT	.2	.4	.2	U
CHROMIUM	.4	.8	.4	U
COPPER	.4	.8	.4	U
MANGANESE	.4	.8	.4	U
NICKEL	.8	1.6	.8	U
LEAD	.2	.4	.2	U
ANTIMONY	.2	.4	.2	U
SELENIUM	.2	.4	.2	U
THALLIUM	.04	.08	.04	U

U = Result is less than 2 x MDL
F = Result is between MDL and 2 x MDL
* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 2303693
Report generated 02/09/2012 14:42

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L12020220
Run Date: 02/09/2012
Sample ID: WG389191-12
Instrument ID: ELAN-ICP
Run Time: 10:15
Method: 6020
File ID: EL.020912.101555
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG389145
Cal ID: ELAN-I - 09-FEB-12
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.400	0.200	U
Arsenic	0.200	0.400	0.200	U
Barium	0.600	1.20	0.600	U
Cadmium	0.120	0.240	0.120	U
Chromium	0.400	0.800	0.400	U
Cobalt	0.200	0.400	0.200	U
Copper	0.400	0.800	0.400	U
Lead	0.200	0.400	0.200	U
Manganese	0.400	0.800	0.400	U
Nickel	0.800	1.60	0.800	U
Selenium	0.200	0.400	0.200	U
Silver	0.200	0.400	0.200	U
Thallium	0.0400	0.0800	0.0400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 2303696
Report generated 02/09/2012 14:43

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L12020220
Run Date: 02/09/2012
Sample ID: WG389191-14
Instrument ID: ELAN-ICP
Run Time: 11:49
Method: 6020
File ID: EL.020912.114902
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG389145
Cal ID: ELAN-I - 09-FEB-12
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.400	0.200	U
Arsenic	0.200	0.400	0.200	U
Barium	0.600	1.20	0.600	U
Cadmium	0.120	0.240	0.120	U
Chromium	0.400	0.800	0.400	U
Cobalt	0.200	0.400	0.200	U
Copper	0.400	0.800	0.400	U
Lead	0.200	0.400	0.200	U
Manganese	0.400	0.800	0.400	U
Nickel	0.800	1.60	0.800	U
Selenium	0.200	0.400	0.200	U
Silver	0.200	0.400	0.200	U
Thallium	0.0400	0.0800	0.0400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 2303696
Report generated 02/09/2012 14:43

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L12020220
Run Date: 02/09/2012
Sample ID: WG389191-16
Instrument ID: ELAN-ICP
Run Time: 12:35
Method: 6020
File ID: EL.020912.123528
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG389145
Cal ID: ELAN-I - 09-FEB-12
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.400	0.200	U
Arsenic	0.200	0.400	0.200	U
Barium	0.600	1.20	0.600	U
Cadmium	0.120	0.240	0.120	U
Chromium	0.400	0.800	0.400	U
Cobalt	0.200	0.400	0.200	U
Copper	0.400	0.800	0.400	U
Lead	0.200	0.400	0.200	U
Manganese	0.400	0.800	0.400	U
Nickel	0.800	1.60	0.800	U
Selenium	0.200	0.400	0.200	U
Silver	0.200	0.400	0.200	U
Thallium	0.0400	0.0800	0.0400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 2303696
Report generated 02/09/2012 14:43

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L12020220
Run Date: 02/09/2012
Sample ID: WG389191-18
Instrument ID: ELAN-ICP
Run Time: 14:02
Method: 6020
File ID: EL.020912.140236
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG389145
Cal ID: ELAN-I - 09-FEB-12
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.400	0.200	U
Arsenic	0.200	0.400	0.200	U
Barium	0.600	1.20	0.600	U
Cadmium	0.120	0.240	0.120	U
Chromium	0.400	0.800	0.400	U
Cobalt	0.200	0.400	0.200	U
Copper	0.400	0.800	0.400	U
Lead	0.200	0.400	0.200	U
Manganese	0.400	0.800	0.400	U
Nickel	0.800	1.60	0.800	U
Selenium	0.200	0.400	0.200	U
Silver	0.200	0.400	0.200	U
Thallium	0.0400	0.0800	0.0400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 2303696
Report generated 02/09/2012 14:43

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)

(Alternate Source)

Login Number: L12020220 Run Date: 02/09/2012 Sample ID: WG389191-05

Instrument ID: ELAN-ICP Run Time: 09:22 Method: 6020

File ID: EL.020912.092207 Analyst: JYH Units: ug/L

Workgroup (AAB#): WG389145 Cal ID: ELAN-I - 09-FEB-12

QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Antimony		50	49.9	99.7	90 - 110	
Arsenic		50	50.0	100	90 - 110	
Barium		50	50.0	99.9	90 - 110	
Cadmium		50	52.4	105	90 - 110	
Chromium		50	50.6	101	90 - 110	
Cobalt		50	49.4	98.8	90 - 110	
Copper		50	51.0	102	90 - 110	
Lead		50	49.7	99.4	90 - 110	
Manganese		50	51.6	103	90 - 110	
Nickel		50	50.7	101	90 - 110	
Selenium		50	49.9	99.9	90 - 110	
Silver		50	51.5	103	90 - 110	
Thallium		50	50.9	102	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 2303692
Report generated 02/09/2012 14:42

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L12020220
Run Date: 02/09/2012
Sample ID: WG389191-10
Instrument ID: ELAN-ICP
Run Time: 10:00
Method: 6020
File ID: EL.020912.100018
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG389145
Cal ID: ELAN-I - 09-FEB-12
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		50.0	50.5	ug/L	101	90 - 110		
Arsenic		50.0	50.2	ug/L	100	90 - 110		
Barium		50.0	50.4	ug/L	101	90 - 110		
Cadmium		50.0	51.2	ug/L	102	90 - 110		
Chromium		50.0	49.5	ug/L	98.9	90 - 110		
Cobalt		50.0	50.0	ug/L	99.9	90 - 110		
Copper		50.0	49.3	ug/L	98.5	90 - 110		
Lead		50.0	50.2	ug/L	100	90 - 110		
Manganese		50.0	50.1	ug/L	100	90 - 110		
Nickel		50.0	48.8	ug/L	97.7	90 - 110		
Selenium		50.0	49.4	ug/L	98.8	90 - 110		
Silver		50.0	51.2	ug/L	102	90 - 110		
Thallium		50.0	50.5	ug/L	101	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 2303695
Report generated 02/09/2012 14:43

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L12020220
Run Date: 02/09/2012
Sample ID: WG389191-13
Instrument ID: ELAN-ICP
Run Time: 11:41
Method: 6020
File ID: EL.020912.114126
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG389145
Cal ID: ELAN-I - 09-FEB-12
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		50.0	49.7	ug/L	99.5	90 - 110		
Arsenic		50.0	48.1	ug/L	96.2	90 - 110		
Barium		50.0	49.6	ug/L	99.2	90 - 110		
Cadmium		50.0	51.8	ug/L	104	90 - 110		
Chromium		50.0	49.0	ug/L	98.0	90 - 110		
Cobalt		50.0	49.3	ug/L	98.5	90 - 110		
Copper		50.0	50.3	ug/L	101	90 - 110		
Lead		50.0	49.7	ug/L	99.4	90 - 110		
Manganese		50.0	49.4	ug/L	98.8	90 - 110		
Nickel		50.0	50.0	ug/L	100	90 - 110		
Selenium		50.0	48.1	ug/L	96.1	90 - 110		
Silver		50.0	50.4	ug/L	101	90 - 110		
Thallium		50.0	49.5	ug/L	98.9	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 2303695
Report generated 02/09/2012 14:43

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L12020220
Run Date: 02/09/2012
Sample ID: WG389191-15
Instrument ID: ELAN-ICP
Run Time: 12:27
Method: 6020
File ID: EL.020912.122751
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG389145
Cal ID: ELAN-I - 09-FEB-12
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		50.0	51.1	ug/L	102	90 - 110		
Arsenic		50.0	48.2	ug/L	96.3	90 - 110		
Barium		50.0	49.8	ug/L	99.6	90 - 110		
Cadmium		50.0	52.7	ug/L	105	90 - 110		
Chromium		50.0	48.4	ug/L	96.8	90 - 110		
Cobalt		50.0	47.7	ug/L	95.5	90 - 110		
Copper		50.0	48.6	ug/L	97.3	90 - 110		
Lead		50.0	50.4	ug/L	101	90 - 110		
Manganese		50.0	47.9	ug/L	95.9	90 - 110		
Nickel		50.0	48.7	ug/L	97.4	90 - 110		
Selenium		50.0	46.9	ug/L	93.9	90 - 110		
Silver		50.0	51.1	ug/L	102	90 - 110		
Thallium		50.0	49.8	ug/L	99.7	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 2303695
Report generated 02/09/2012 14:43

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L12020220 Run Date: 02/09/2012 Sample ID: WG389191-17
Instrument ID: ELAN-ICP Run Time: 13:54 Method: 6020
File ID: EL.020912.135459 Analyst: JYH QC Key: DOD4
Workgroup (AAB#): WG389145 Cal ID: ELAN-I - 09-FEB-12
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		50.0	50.9	ug/L	102	90 - 110		
Arsenic		50.0	48.0	ug/L	96.0	90 - 110		
Barium		50.0	49.5	ug/L	99.1	90 - 110		
Cadmium		50.0	51.1	ug/L	102	90 - 110		
Chromium		50.0	47.8	ug/L	95.6	90 - 110		
Cobalt		50.0	49.7	ug/L	99.4	90 - 110		
Copper		50.0	50.3	ug/L	101	90 - 110		
Lead		50.0	50.9	ug/L	102	90 - 110		
Manganese		50.0	50.0	ug/L	99.9	90 - 110		
Nickel		50.0	49.7	ug/L	99.4	90 - 110		
Selenium		50.0	50.3	ug/L	101	90 - 110		
Silver		50.0	52.8	ug/L	106	90 - 110		
Thallium		50.0	50.6	ug/L	101	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 2303695
Report generated 02/09/2012 14:43

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L12020220
Run Date: 02/09/2012
Sample ID: WG389191-07
Instrument ID: ELAN-ICP
Run Time: 09:37
Method: 6020
File ID: EL.020912.093721
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG389145
Cal ID: ELAN-I - 09-FEB-12
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Cadmium		0.200	0.174	ug/L	87.1	80 - 120		
Thallium		0.0800	0.0755	ug/L	94.4	80 - 120		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 2303783
Report generated 02/09/2012 15:25

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L12020220 **Workgroup (AAB#):** WG389145
Instrument ID: ELAN-ICP **Method:** 6020
Sol. A : WG389191-08 **File ID:** EL.020912.094500 **Units:** ug/L
Sol. AB : WG389191-09 **File ID:** EL.020912.095239 **Matrix:** Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Antimony	NS	0.103	NS	100	114	114	
Arsenic	NS	0.0200	NS	100	107	107	
Barium	NS	0.0485	NS	100	111	111	
Cadmium	NS	0.0947	NS	100	115	115	
Chromium	NS	0.117	NS	100	105	105	
Cobalt	NS	0.0195	NS	100	104	104	
Copper	NS	0.202	NS	100	110	110	
Lead	NS	0.0225	NS	100	110	110	
Manganese	NS	0.0699	NS	100	106	106	
Nickel	NS	0.525	NS	100	103	103	
Selenium	NS	-0.00180	NS	100	106	106	
Silver	NS	-0.00590	NS	100	113	113	
Thallium	NS	-0.00170	NS	100	109	109	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 2303694
Report generated 02/09/2012 14:43

Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L12020220 **Analytical Method:** 6020
Analytical Workgroup: WG389145 **Matrix:** 1
Instrument: ELAN-ICP **Analyst:** JYH
ICAL Date: 09-FEB-2012 08:51

			BISMUTH	GERMANIUM	INDIUM	TERBIUM
Sample	**Type**	**Run Date**	**% Rec**	**% Rec**	**% Rec**	**% Rec**
L12020220-01	SAMP	09-FEB-2012 13:31	107.091	104.468	94.327	95.529
L12020220-02	SAMP	09-FEB-2012 13:39	111.007	110.482	96.622	97.3
L12020220-03	SAMP	09-FEB-2012 13:47	114.995	118.611	101.509	104.66
WG389121-02	BLANK	09-FEB-2012 10:23	96.236	98.25	96.499	92.713
WG389121-03	LCS	09-FEB-2012 10:39	97.283	99.883	96.206	91.722
WG389121-04	FLT_BLK	09-FEB-2012 10:31	93.508	97.257	96.205	91.305
WG389145-01	PSPK	09-FEB-2012 11:25	96.226	104.148	98.716	96.171
WG389145-02	SERIAL	09-FEB-2012 11:33	102.072	107.95	97.52	97.577
WG389191-05	ICV	09-FEB-2012 09:22	97.763	98.901	98.565	98.84
WG389191-06	ICB	09-FEB-2012 09:29	97.896	99.1	98.272	96.752
WG389191-07	LLICV	09-FEB-2012 09:37	95.965	100.113	99.375	97.012
WG389191-08	ICS	09-FEB-2012 09:45	99.265	104.36	98.629	94.719
WG389191-09	ICS	09-FEB-2012 09:52	95.669	98.199	90.189	84.956
WG389191-10	CCV	09-FEB-2012 10:00	96.059	98.22	94.866	91.381
WG389191-12	CCB	09-FEB-2012 10:15	96.956	97.527	94.797	92.115
WG389191-13	CCV	09-FEB-2012 11:41	101.332	103.614	98.039	95.562
WG389191-14	CCB	09-FEB-2012 11:49	110.825	115.049	104.954	104.319
WG389191-15	CCV	09-FEB-2012 12:27	99.371	104.037	95.054	91.979
WG389191-16	CCB	09-FEB-2012 12:35	106.463	105.684	99.657	97.78
WG389191-19	CCV	09-FEB-2012 13:54	109.96	112.972	103.458	100.949
WG389191-20	CCB	09-FEB-2012 14:02	108.955	110.81	102.362	100.329

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
PDF File ID: 2303690
Report generated: 02/09/2012 15:25

Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L12020220 **Analytical Method:** 6020
Analytical Workgroup: WG389145 **Matrix:** 2
Instrument: ELAN-ICP **Analyst:** JYH
ICAL Date: 09-FEB-2012 08:51

			BISMUTH	GERMANIUM	INDIUM	TERBIUM
Sample	**Type**	**Run Date**	**% Rec**	**% Rec**	**% Rec**	**% Rec**
L12020182-04	SAMP	09-FEB-2012 11:18	107.827	117.384	113.318	112.402

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
PDF File ID: 2303690
Report generated: 02/09/2012 15:25

Microbac Laboratories Inc.
LINEAR RANGE (QUARTERLY)

Login Number: L12020220 **Date:** 12/29/2011
Insturment ID: ELAN-ICP **Method:** 6020

Analyte	Integration Time (Sec.)	Concentration (ug/L)
Antimony	1.00	100.0
Arsenic	1.00	100.0
Barium	1.00	100.0
Cadmium	1.00	100.0
Chromium	1.00	100.0
Cobalt	1.00	100.0
Copper	1.00	100.0
Lead	1.00	100.0
Manganese	1.00	100.0
Nickel	1.00	100.0
Selenium	1.00	100.0
Silver	1.00	100.0
Thallium	1.00	100.0
Uranium	1.00	100.0
Vanadium	1.00	100.0
Zinc	1.00	100.0

Comments:
All analytes passed acceptance criteria at the specified concentration.

LINEAR_RANGE - Modified 03/06/2008
PDF File ID: 2303688
Report generated: 02/09/2012 14:42

2.1.2.3 Raw Data

Instrument Tuning Report

File Name: 06302008.tun
File Path: C:\elandata\Tuning\06302008.tun

Sample Information

Sample Date/Time: Thursday, February 09, 2012 08:26:39

Analyte	Exact Mass	Meas. Mass	Mass DAC	Res. DAC	Meas. Pk. Width	Custom Res.
He	3.016	3.026	610	2060	0.653	
Li	7.016	6.979	1582	2060	0.667	
Co	58.933	58.978	14285	1970	0.689	
Ce	139.905	139.929	33994	2020	0.690	
Tl	204.975	205.027	49702	2263	0.703	

Relative Std. Dev.

Mass	Meas. Intens. RSD
2.000	2.980
3.000	1.754
4.000	22.433
5.000	25.390
6.000	3.455
7.000	4.453
8.000	21.610
9.000	4.597
58.000	3.559
59.000	1.610
60.000	6.471
139.000	0.565
140.000	1.731
141.000	4.861
204.000	3.964
205.000	1.300
206.000	1.617

Report Date/Time: Thursday, February 09, 2012 08:27:50
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Approved: February 09, 2012

Daily Performance Report

Sample ID: Sample
Sample Date/Time: Thursday, February 09, 2012 08:30:03
Sample Description:
Method File: C:\Elandata\Method\6020 DAILY.mth
Dataset File: C:\elandata\Dataset\020612\Sample.211
Tuning File: C:\elandata\Tuning\06302008.tun
Optimization File: C:\elandata\Optimize\default.dac
Dual Detector Mode: Dual

Acq. Dead Time(ns): 60
Current Dead Time (ns): 60

Summary

	Analyte	Mass	Meas. Intens. Mean	Net Intens. Mean	Net Intens. SD	Net Intens. RSD
	Mg	24.0	52465.7	52465.666	737.633	1.4
	Rh	102.9	381813.2	381813.238	4354.725	1.1
	In	114.9	766658.9	766658.882	6567.299	0.9
	Pb	208.0	219189.6	219189.573	1789.775	0.8
	U	238.1	24.4	24.400	2.966	12.2
⌈>	Ba	137.9	393975.4	393975.354	4383.733	1.1
⌊	Ba++	69.0	6580.5	0.017	0.000	1.1
⌈>	Ce	139.9	491247.0	491246.958	3997.151	0.8
⌊	CeO	155.9	14250.8	0.029	0.001	2.3
	Bkgd	220.0	7.3	7.300	1.037	14.2
	Ar2	79.9	5418465.4	5418465.370	41814.691	0.8

Current Optimization File Data

Current Value	Description
1.00	Nebulizer Gas Flow
7.50	Lens Voltage
1500.00	ICP RF Power
-1750.00	Analog Stage Voltage
1000.00	Pulse Stage Voltage
20.00	Discriminator Threshold
-10.00	AC Rod Offset

Current Autolens Data

Analyte	Mass	Num of Pts	DAC Value	Maximum Intensity
Be	9	37	6.8	2819.8
Co	59	37	7.0	89082.9
Rh	103	37	7.5	153239.8
Pb	208	37	10.0	124472.4

Sample ID: Sample
Report Date/Time: Thursday, February 09, 2012 08:32:11
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Approved: February 09, 2012

Method 6020 - Summary Report

Sample ID: Blank

Sample Date/Time: Thursday, February 09, 2012 08:44:05
Number of Replicates: 3
Aliquot Volume (mL):
Diluted To Volume (mL):
Autosampler Position: 1
Method File: C:\elandata\Method\6020a.mth
Sample Description:

User ID: JYH
Cumulative Autodilution Factor: 1
ELAN-ICP 200.8\6020 External Calibration

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Net Intens. Mean	Conc. Mean	Conc. SD	Conc. RSD	Sample Unit
	Li	6	9522.122					ug/L
	Be	9	5.333					ug/L
	Al	27	1933.562					ug/L
>	Sc	45	236783.580					ug/L
	Ti	49	110.012					ug/L
	V	51	2745.855					ug/L
	Cr	52	8903.510					ug/L
	Cr	53	726.771					ug/L
	Mn	55	342.677					ug/L
	Co	59	83.335					ug/L
	Ni	60	30.000					ug/L
	Cu	65	100.335					ug/L
	Zn	66	69.334					ug/L
>	Ge	72	526009.590					ug/L
	As	75	-238.081					ug/L
	Se	77	91.334					ug/L
	Se	82	-4.188					ug/L
	Rb	85	31.334					mg/L
	Y	89	353429.947					ug/L
	Rh	103	23.000					ug/L
	Mo	98	12.676					ug/L
	Ag	107	81.668					ug/L
	Cd	114	1.474					ug/L
>	In	115	509951.688					ug/L
	Sn	118	79.067					ug/L
	Sb	123	22.285					ug/L
	Ba	135	18.000					ug/L
	Ce	140	253.363					ug/L
>	Tb	159	680456.389					ug/L
	Ho	165	3.334					ug/L
	Tl	203	25.667					ug/L
	Tl	205	26.669					ug/L
	Pb	206	278.007					ug/L
	Pb	207	249.340					ug/L
	Pb	208	1090.038					ug/L
	U	238	12.333					ug/L
>	Bi	209	458275.478					ug/L

Sample ID: Blank
Report Date/Time: Thursday, February 09, 2012 08:46:17
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Na	23	21583.497	mg/L
Mg	24	143.349	mg/L
K	39	734760.015	mg/L
Ca	43	140.015	mg/L
Fe	54	48237.719	mg/L
Fe	57	7907.880	mg/L
Sc-1	45	236783.580	mg/L
Cl	35	38441.130	mg/L
Kr	83	60.001	mg/L
Br	81	9281.839	mg/L
P	31	13711.284	mg/L
S	34	274719.680	mg/L
Sr	88	86.676	mg/L

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
Li	6					
Be	9					
Al	27					
Sc	45					
Ti	49					
V	51					
Cr	52					
Cr	53					
Mn	55					
Co	59					
Ni	60					
Cu	65					
Zn	66					
Ge	72					
As	75					
Se	77					
Se	82					
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107					
Cd	114					
In	115					
Sn	118					
Sb	123					
Ba	135					
Ce	140					
Tb	159					
Ho	165					
Tl	203					
Tl	205					
Pb	206					
Pb	207					
Pb	208					
U	238					
Bi	209					

Sample ID: Blank
Report Date/Time: Thursday, February 09, 2012 08:46:17
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⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Blank
Report Date/Time: Thursday, February 09, 2012 08:46:17
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Approved: February 09, 2012

Method 6020 - Summary Report

Sample ID: Standard 1

Sample Date/Time: Thursday, February 09, 2012 08:51:40
Number of Replicates: 3
Aliquot Volume (mL):
Diluted To Volume (mL):
Autosampler Position: 1
Method File: C:\elandata\Method\6020a.mth
Sample Description:

User ID: JYH
Cumulative Autodilution Factor: 1
ELAN-ICP 200.8\6020 External Calibration

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Net Intens. Mean	Conc. Mean	Conc. SD	Conc. RSD	Sample Unit
	Li	6	11174.190	0.01				ug/L
	Be	9	4.000	-0.00				ug/L
	Al	27	2783.818	0.00				ug/L
>	Sc	45	236288.743	236288.74				ug/L
	Ti	49	66.674	-0.00				ug/L
	V	51	2746.618	0.00				ug/L
	Cr	52	8811.411	-0.00				ug/L
	Cr	53	863.465	0.00				ug/L
	Mn	55	333.010	-0.00				ug/L
	Co	59	76.668	-0.00				ug/L
	Ni	60	31.667	0.00				ug/L
	Cu	65	99.335	-0.00				ug/L
	Zn	66	76.668	0.00				ug/L
>	Ge	72	523175.964	523175.96				ug/L
	As	75	-177.813	0.00				ug/L
	Se	77	82.000	-0.00				ug/L
	Se	82	3.545	0.00				ug/L
	Rb	85	26.000	-0.00				mg/L
	Y	89	343886.232	-9543.72				ug/L
	Rh	103	15.000	-8.00				ug/L
	Mo	98	13.155	0.00				ug/L
	Ag	107	70.668	-0.00				ug/L
	Cd	114	-0.766	-0.00				ug/L
>	In	115	500135.214	500135.21				ug/L
	Sn	118	70.534	-0.00				ug/L
	Sb	123	24.322	0.00				ug/L
	Ba	135	19.000	0.00				ug/L
	Ce	140	176.686	-0.00				ug/L
>	Tb	159	677265.595	677265.59				ug/L
	Ho	165	6.667	0.00				ug/L
	Tl	203	24.000	-0.00				ug/L
	Tl	205	40.004	0.00				ug/L
	Pb	206	266.674	-0.00				ug/L
	Pb	207	234.339	-0.00				ug/L
	Pb	208	1034.035	-0.00				ug/L
	U	238	14.000	0.00				ug/L
>	Bi	209	448921.671	448921.67				ug/L

Sample ID: Standard 1
Report Date/Time: Thursday, February 09, 2012 08:53:52
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Na	23	20380.335	-0.00		mg/L
Mg	24	166.685	0.00		mg/L
K	39	744141.699	0.05		mg/L
Ca	43	186.687	0.00		mg/L
Fe	54	46731.532	-0.01		mg/L
Fe	57	8531.920	0.00		mg/L
Sc-1	45	236288.743	236288.74		mg/L
Cl	35	37640.846	-800.28		mg/L
Kr	83	52.334	-7.67		mg/L
Br	81	9215.096	-66.74		mg/L
P	31	13506.341	-204.94		mg/L
S	34	273349.620	-1370.06		mg/L
Sr	88	56.673	-30.00		mg/L

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
Li	6					
Be	9					
Al	27					
Sc	45					
Ti	49					
V	51					
Cr	52					
Cr	53					
Mn	55					
Co	59					
Ni	60					
Cu	65					
Zn	66					
Ge	72					
As	75					
Se	77					
Se	82					
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107					
Cd	114					
In	115					
Sn	118					
Sb	123					
Ba	135					
Ce	140					
Tb	159					
Ho	165					
Tl	203					
Tl	205					
Pb	206					
Pb	207					
Pb	208					
U	238					
Bi	209					

Sample ID: Standard 1
Report Date/Time: Thursday, February 09, 2012 08:53:52
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⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 1
Report Date/Time: Thursday, February 09, 2012 08:53:52
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Approved: February 09, 2012

Method 6020 - Summary Report

Sample ID: Standard 2

Sample Date/Time: Thursday, February 09, 2012 08:59:17
Number of Replicates: 3
Aliquot Volume (mL):
Diluted To Volume (mL):
Autosampler Position: 2
Method File: C:\elandata\Method\6020a.mth
Sample Description:

User ID: JYH
Cumulative Autodilution Factor: 1
ELAN-ICP 200.8\6020 External Calibration

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Net Intens. Mean	Conc. Mean	Conc. SD	Conc. RSD	Sample Unit
	Li	6	10756.958	0.00				ug/L
	Be	9	119.334	0.00				ug/L
	Al	27	5251.656	0.01				ug/L
>	Sc	45	262378.205	262378.21				ug/L
	Ti	49	626.753	0.00				ug/L
	V	51	7213.061	0.01				ug/L
	Cr	52	12801.620	0.01				ug/L
	Cr	53	1343.577	0.00				ug/L
	Mn	55	6449.894	0.01				ug/L
	Co	59	4539.281	0.01				ug/L
	Ni	60	968.733	0.00				ug/L
	Cu	65	941.396	0.00				ug/L
	Zn	66	585.360	0.00				ug/L
>	Ge	72	541576.511	541576.51				ug/L
	As	75	329.988	0.00				ug/L
	Se	77	122.001	0.00				ug/L
	Se	82	48.189	0.00				ug/L
	Rb	85	46.667	0.00				mg/L
	Y	89	359356.362	5926.41				ug/L
	Rh	103	15.334	-7.67				ug/L
	Mo	98	2854.568	0.01				ug/L
	Ag	107	3039.918	0.01				ug/L
	Cd	114	686.366	0.00				ug/L
>	In	115	514121.660	514121.66				ug/L
	Sn	118	2511.846	0.00				ug/L
	Sb	123	2016.050	0.00				ug/L
	Ba	135	831.050	0.00				ug/L
	Ce	140	150.016	-0.00				ug/L
>	Tb	159	681910.343	681910.34				ug/L
	Ho	165	16.668	0.00				ug/L
	Tl	203	2956.554	0.01				ug/L
	Tl	205	7093.729	0.02				ug/L
	Pb	206	2702.799	0.01				ug/L
	Pb	207	2384.365	0.00				ug/L
	Pb	208	10836.871	0.02				ug/L
	U	238	8544.465	0.02				ug/L
>	Bi	209	465846.581	465846.58				ug/L

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Na	23	235100.897	0.81		mg/L
Mg	24	144135.576	0.55		mg/L
K	39	1115059.692	1.16		mg/L
Ca	43	836.792	0.00		mg/L
Fe	54	78727.283	0.10		mg/L
Fe	57	21085.431	0.05		mg/L
Sc-1	45	262378.205	262378.21		mg/L
Cl	35	36308.282	-2132.85		mg/L
Kr	83	55.001	-5.00		mg/L
Br	81	9463.373	181.53		mg/L
P	31	13786.118	74.83		mg/L
S	34	267780.642	-6939.04		mg/L
Sr	88	133.348	46.67		mg/L

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
Li	6					
Be	9					
Al	27					
Sc	45					
Ti	49					
V	51					
Cr	52					
Cr	53					
Mn	55					
Co	59					
Ni	60					
Cu	65					
Zn	66					
Ge	72					
As	75					
Se	77					
Se	82					
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107					
Cd	114					
In	115					
Sn	118					
Sb	123					
Ba	135					
Ce	140					
Tb	159					
Ho	165					
Tl	203					
Tl	205					
Pb	206					
Pb	207					
Pb	208					
U	238					
Bi	209					

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⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 3

Sample Date/Time: Thursday, February 09, 2012 09:06:53
Number of Replicates: 3
Aliquot Volume (mL):
Diluted To Volume (mL):
Autosampler Position: 3
Method File: C:\elandata\Method\6020a.mth
Sample Description:

User ID: JYH
Cumulative Autodilution Factor: 1
ELAN-ICP 200.8\6020 External Calibration

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Net Intens. Mean	Conc. Mean	Conc. SD	Conc. RSD	Sample Unit
	Li	6	10556.690	0.00				ug/L
	Be	9	13957.692	0.06	50.0000	0.958	1.916	ug/L
	Al	27	307680.876	1.30	50.0000	2.876	5.753	ug/L
>	Sc	45	236104.658	236104.66				ug/L
	Ti	49	62798.703	0.12	100.0000	2.363	2.363	ug/L
	V	51	519598.353	0.98	50.0000	1.202	2.404	ug/L
	Cr	52	470678.480	0.88	50.0000	1.933	3.866	ug/L
	Cr	53	55680.964	0.10	50.0000	0.618	1.235	ug/L
	Mn	55	723843.874	1.37	50.0000	2.030	4.059	ug/L
	Co	59	532057.209	1.01	50.0000	1.250	2.500	ug/L
	Ni	60	108270.954	0.21	50.0000	1.678	3.357	ug/L
	Cu	65	101563.630	0.19	50.0000	1.186	2.373	ug/L
	Zn	66	57677.164	0.11	50.0000	0.319	0.638	ug/L
>	Ge	72	527025.365	527025.37				ug/L
	As	75	68878.620	0.13	50.0000	1.113	2.226	ug/L
	Se	77	4933.461	0.01	50.0000	1.795	3.589	ug/L
	Se	82	6092.210	0.01	50.0000	0.686	1.372	ug/L
	Rb	85	2593.430	0.00				mg/L
	Y	89	353392.742	-37.21				ug/L
	Rh	103	41.667	18.67				ug/L
	Mo	98	336408.903	0.66	100.0000	3.118	3.118	ug/L
	Ag	107	356127.926	0.70	50.0000	2.023	4.045	ug/L
	Cd	114	77806.418	0.15	50.0000	2.213	4.425	ug/L
>	In	115	506265.784	506265.78				ug/L
	Sn	118	282370.120	0.56	50.0000	0.503	1.006	ug/L
	Sb	123	253745.735	0.50	50.0000	0.937	1.875	ug/L
	Ba	135	99897.131	0.15	50.0000	1.050	2.099	ug/L
	Ce	140	313.371	0.00				ug/L
>	Tb	159	674955.219	674955.22				ug/L
	Ho	165	10.001	0.00				ug/L
	Tl	203	353885.357	0.77	50.0000	1.788	3.575	ug/L
	Tl	205	879635.309	1.92	50.0000	0.659	1.317	ug/L
	Pb	206	295129.253	0.65	50.0000	1.171	2.343	ug/L
	Pb	207	253255.567	0.55	50.0000	1.018	2.035	ug/L
	Pb	208	1187224.736	2.60	50.0000	0.644	1.288	ug/L
	U	238	1013465.777	2.22	50.0000	0.998	1.996	ug/L
>	Bi	209	457192.726	457192.73				ug/L

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Na	23	26375608.553	111.72	5.0000	0.136	2.714	mg/L
Mg	24	16610426.403	70.39	5.0000	0.201	4.027	mg/L
K	39	39343322.072	163.79	5.0000	0.251	5.030	mg/L
Ca	43	82400.811	0.35	5.0000	0.050	0.998	mg/L
Fe	54	3329935.046	13.94	5.0000	0.401	8.023	mg/L
Fe	57	1466324.914	6.19	5.0000	0.260	5.209	mg/L
Sc-1	45	236104.658	236104.66				mg/L
Cl	35	33685.975	-4755.15				mg/L
Kr	83	51.667	-8.33				mg/L
Br	81	8803.317	-478.52				mg/L
P	31	14033.928	322.64				mg/L
S	34	259032.782	-15686.90				mg/L
Sr	88	5502.367	5415.69				mg/L

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
Li	6					
Be	9					
Al	27					
Sc	45					
Ti	49					
V	51					
Cr	52					
Cr	53					
Mn	55					
Co	59					
Ni	60					
Cu	65					
Zn	66					
Ge	72					
As	75					
Se	77					
Se	82					
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107					
Cd	114					
In	115					
Sn	118					
Sb	123					
Ba	135					
Ce	140					
Tb	159					
Ho	165					
Tl	203					
Tl	205					
Pb	206					
Pb	207					
Pb	208					
U	238					
Bi	209					

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⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 3
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Method 6020 - Summary Report

Sample ID: Standard 4

Sample Date/Time: Thursday, February 09, 2012 09:14:30
Number of Replicates: 3
Aliquot Volume (mL):
Diluted To Volume (mL):
Autosampler Position: 4
Method File: C:\elandata\Method\6020a.mth
Sample Description:

User ID: JYH
Cumulative Autodilution Factor: 1
ELAN-ICP 200.8\6020 External Calibration

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Net Intens. Mean	Conc. Mean	Conc. SD	Conc. RSD	Sample Unit
	Li	6	10807.032	0.01				ug/L
	Be	9	26633.172	0.11	98.5810	4.088	4.147	ug/L
	Al	27	551440.292	2.37	95.6449	3.723	3.893	ug/L
>	Sc	45	231834.438	231834.44				ug/L
	Ti	49	120071.077	0.23	198.6754	7.001	3.524	ug/L
	V	51	1024804.720	2.00	100.9764	1.736	1.719	ug/L
	Cr	52	913064.227	1.77	100.4721	1.141	1.136	ug/L
	Cr	53	108749.975	0.21	100.7304	3.335	3.311	ug/L
	Mn	55	1326255.547	2.59	97.1517	5.655	5.821	ug/L
	Co	59	1031480.273	2.02	99.9719	3.208	3.209	ug/L
	Ni	60	209152.003	0.41	99.8064	1.590	1.593	ug/L
	Cu	65	192998.533	0.38	98.9972	2.354	2.378	ug/L
	Zn	66	108698.615	0.21	98.6108	1.071	1.086	ug/L
>	Ge	72	511103.084	511103.08				ug/L
	As	75	133621.311	0.26	99.9328	2.987	2.989	ug/L
	Se	77	9727.678	0.02	101.2380	3.765	3.719	ug/L
	Se	82	11889.226	0.02	100.3135	3.661	3.650	ug/L
	Rb	85	4764.743	0.01				mg/L
	Y	89	340098.191	-13331.76				ug/L
	Rh	103	78.001	55.00				ug/L
	Mo	98	651836.189	1.30	197.6808	4.482	2.268	ug/L
	Ag	107	674038.363	1.34	97.6643	1.055	1.080	ug/L
	Cd	114	144624.002	0.29	96.8253	2.918	3.014	ug/L
>	In	115	501935.760	501935.76				ug/L
	Sn	118	556274.655	1.11	99.6867	0.328	0.329	ug/L
	Sb	123	497655.592	0.99	99.4441	1.598	1.606	ug/L
	Ba	135	194247.354	0.29	99.7917	0.910	0.911	ug/L
	Ce	140	356.711	0.00				ug/L
>	Tb	159	659112.421	659112.42				ug/L
	Ho	165	6.667	0.00				ug/L
	Tl	203	685153.170	1.55	99.9870	3.360	3.360	ug/L
	Tl	205	1703210.308	3.85	100.0003	3.225	3.225	ug/L
	Pb	206	568371.306	1.28	99.7440	2.584	2.591	ug/L
	Pb	207	497889.852	1.12	100.7621	0.699	0.694	ug/L
	Pb	208	2291453.470	5.17	99.8539	1.380	1.382	ug/L
	U	238	1913729.467	4.32	98.7519	4.285	4.339	ug/L
>	Bi	209	442697.242	442697.24				ug/L

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Na	23	50074215.508	216.10	9.8316	0.853	8.672	mg/L
Mg	24	31533184.691	136.10	9.8312	0.343	3.491	mg/L
K	39	75445748.370	322.53	9.9205	0.230	2.323	mg/L
Ca	43	155017.478	0.67	9.7909	0.268	2.739	mg/L
Fe	54	6251588.964	26.78	9.7970	0.273	2.785	mg/L
Fe	57	2513014.316	10.83	9.3354	0.773	8.278	mg/L
Sc-1	45	231834.438	231834.44				mg/L
Cl	35	35750.530	-2690.60				mg/L
Kr	83	51.334	-8.67				mg/L
Br	81	8927.453	-354.39				mg/L
P	31	14659.868	948.58				mg/L
S	34	273285.928	-1433.75				mg/L
Sr	88	10554.404	10467.73				mg/L

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
Li	6					
Be	9					
Al	27					
Sc	45					
Ti	49					
V	51					
Cr	52					
Cr	53					
Mn	55					
Co	59					
Ni	60					
Cu	65					
Zn	66					
Ge	72					
As	75					
Se	77					
Se	82					
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107					
Cd	114					
In	115					
Sn	118					
Sb	123					
Ba	135					
Ce	140					
Tb	159					
Ho	165					
Tl	203					
Tl	205					
Pb	206					
Pb	207					
Pb	208					
U	238					
Bi	209					

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⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Corr. Coef.	Fe	57	Correlation Coefficient not > 0.998

Sample ID: Standard 4
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Method 6020 - Summary Report

Sample ID: QC Std 1

Sample Date/Time: Thursday, February 09, 2012 09:22:07
Number of Replicates: 3
Aliquot Volume (mL):
Diluted To Volume (mL):
Autosampler Position: 11
Method File: C:\elandata\Method\6020a.mth
Sample Description:

User ID: JYH
Cumulative Autodilution Factor: 1
ELAN-ICP 200.8\6020 External Calibration

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Net Intens. Mean	Conc. Mean	Conc. SD	Conc. RSD	Sample Unit
	Li	6	10740.262	0.00				ug/L
	Be	9	13561.028	0.06	48.0395	1.301	2.709	ug/L
	Al	27	283198.846	1.16	46.8094	1.058	2.260	ug/L
>	Sc	45	242136.654	242136.65				ug/L
	Ti	49	61546.060	0.12	100.0421	5.672	5.669	ug/L
	V	51	528813.256	1.01	51.1066	2.998	5.866	ug/L
	Cr	52	471544.281	0.89	50.5580	2.139	4.231	ug/L
	Cr	53	55660.818	0.11	50.3111	1.800	3.578	ug/L
	Mn	55	716166.945	1.38	51.5895	2.377	4.607	ug/L
	Co	59	517994.077	1.00	49.3822	2.704	5.475	ug/L
	Ni	60	108179.055	0.21	50.7374	1.555	3.064	ug/L
	Cu	65	101105.068	0.19	50.9768	2.738	5.371	ug/L
	Zn	66	58524.047	0.11	52.1470	1.428	2.739	ug/L
>	Ge	72	520231.312	520231.31				ug/L
	As	75	67931.209	0.13	50.0273	1.598	3.194	ug/L
	Se	77	5117.571	0.01	51.9659	1.994	3.837	ug/L
	Se	82	6021.447	0.01	49.9478	1.768	3.540	ug/L
	Rb	85	2481.728	0.00				mg/L
	Y	89	343767.025	-9662.92				ug/L
	Rh	103	37.667	14.67				ug/L
	Mo	98	334732.053	0.67	101.3925	2.677	2.641	ug/L
	Ag	107	355967.049	0.71	51.5012	0.990	1.923	ug/L
	Cd	114	78300.638	0.16	52.3532	3.567	6.813	ug/L
>	In	115	502636.278	502636.28				ug/L
	Sn	118	276889.194	0.55	49.5417	0.982	1.982	ug/L
	Sb	123	249731.427	0.50	49.8510	1.632	3.275	ug/L
	Ba	135	99228.344	0.15	49.9523	0.339	0.678	ug/L
	Ce	140	196.689	-0.00				ug/L
>	Tb	159	672565.706	672565.71				ug/L
	Ho	165	13.335	0.00				ug/L
	Tl	203	352847.276	0.79	50.8554	1.150	2.261	ug/L
	Tl	205	856059.365	1.91	49.6474	0.794	1.599	ug/L
	Pb	206	282115.773	0.63	48.8825	0.761	1.558	ug/L
	Pb	207	252051.660	0.56	50.3858	1.407	2.793	ug/L
	Pb	208	1154548.907	2.57	49.6819	0.309	0.621	ug/L
	U	238	1029026.948	2.30	52.4422	0.334	0.637	ug/L
>	Bi	209	448022.972	448022.97				ug/L

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Na	23	25490521.018	105.30	4.7925	0.243	5.078	mg/L
Mg	24	15654701.664	64.72	4.6756	0.238	5.095	mg/L
K	39	39821320.298	161.44	4.9679	0.124	2.489	mg/L
Ca	43	81064.102	0.33	4.8957	0.125	2.548	mg/L
Fe	54	3287620.955	13.39	4.9012	0.290	5.920	mg/L
Fe	57	1400763.150	5.76	4.9604	0.237	4.784	mg/L
Sc-1	45	242136.654	242136.65				mg/L
Cl	35	36710.694	-1730.44				mg/L
Kr	83	57.001	-3.00				mg/L
Br	81	9332.557	50.72				mg/L
P	31	13533.029	-178.25				mg/L
S	34	296682.436	21962.76				mg/L
Sr	88	5505.706	5419.03				mg/L

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
Li	6					
Be	9	96.079				
Al	27	93.619				
Sc	45					
Ti	49	100.042				
V	51	102.213				
Cr	52	101.116				
Cr	53					
Mn	55	103.179				
Co	59	98.764				
Ni	60	101.475				
Cu	65	101.954				
Zn	66	104.294				
Ge	72		98.901			
As	75	100.055				
Se	77					
Se	82	99.896				
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107	103.002				
Cd	114	104.706				
In	115		98.565			
Sn	118					
Sb	123	99.702				
Ba	135	99.905				
Ce	140					
Tb	159		98.840			
Ho	165					
Tl	203	101.711				
Tl	205					
Pb	206					
Pb	207					
Pb	208	99.364				
U	238	104.884				
Bi	209		97.763			

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⌈	Na	23	95.851
|	Mg	24	93.512
|	K	39	99.358
|	Ca	43	97.915
|	Fe	54	98.024
|	Fe	57	99.209
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 1
Report Date/Time: Thursday, February 09, 2012 09:24:19
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Method 6020 - Summary Report

Sample ID: QC Std 2

Sample Date/Time: Thursday, February 09, 2012 09:29:43
Number of Replicates: 3
Aliquot Volume (mL):
Diluted To Volume (mL):
Autosampler Position: 1
Method File: C:\elandata\Method\6020a.mth
Sample Description:

User ID: JYH
Cumulative Autodilution Factor: 1
ELAN-ICP 200.8\6020 External Calibration

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Net Intens. Mean	Conc. Mean	Conc. SD	Conc. RSD	Sample Unit
	Li	6	10239.669	0.00				ug/L
	Be	9	6.000	0.00	0.0325	0.008	23.676	ug/L
	Al	27	2166.959	0.00	-0.0451	0.095	210.038	ug/L
>	Sc	45	239631.129	239631.13				ug/L
	Ti	49	126.680	0.00	0.0255	0.084	331.138	ug/L
	V	51	2776.124	0.00	-0.0035	0.015	415.200	ug/L
	Cr	52	8960.905	0.00	0.0338	0.008	24.438	ug/L
	Cr	53	840.128	0.00	-0.0178	0.150	840.957	ug/L
	Mn	55	473.018	0.00	-0.0123	0.007	55.225	ug/L
	Co	59	171.670	0.00	0.0009	0.004	450.665	ug/L
	Ni	60	39.667	0.00	-0.0181	0.003	16.497	ug/L
	Cu	65	124.336	0.00	0.0065	0.006	87.991	ug/L
	Zn	66	87.335	0.00	-0.0240	0.017	72.874	ug/L
>	Ge	72	521273.857	521273.86				ug/L
	As	75	-203.599	0.00	0.0176	0.052	294.749	ug/L
	Se	77	94.001	0.00	0.1600	0.121	75.828	ug/L
	Se	82	-7.536	-0.00	-0.0478	0.110	229.282	ug/L
	Rb	85	32.667	0.00				mg/L
	Y	89	347534.756	-5895.19				ug/L
	Rh	103	16.000	-7.00				ug/L
	Mo	98	150.345	0.00	0.0004	0.006	1462.076	ug/L
	Ag	107	165.337	0.00	-0.0062	0.004	61.819	ug/L
	Cd	114	15.598	0.00	-0.0385	0.006	16.253	ug/L
>	In	115	501139.157	501139.16				ug/L
	Sn	118	234.537	0.00	0.0025	0.002	66.310	ug/L
	Sb	123	723.076	0.00	0.1514	0.013	8.692	ug/L
	Ba	135	42.667	0.00	0.0095	0.003	34.025	ug/L
	Ce	140	103.344	-0.00				ug/L
>	Tb	159	658351.979	658351.98				ug/L
	Ho	165	23.336	0.00				ug/L
	Tl	203	101.002	0.00	0.0044	0.005	113.344	ug/L
	Tl	205	270.032	0.00	0.0201	0.005	26.926	ug/L
	Pb	206	332.677	0.00	0.0066	0.004	64.687	ug/L
	Pb	207	271.340	0.00	-0.0047	0.002	34.028	ug/L
	Pb	208	1260.050	0.00	0.0052	0.004	77.291	ug/L
	U	238	194.338	0.00	-0.0091	0.003	36.573	ug/L
>	Bi	209	448635.374	448635.37				ug/L

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Na	23	25150.743	0.01	0.0039	0.000	11.701	mg/L
Mg	24	2687.402	0.01	0.0010	0.000	26.390	mg/L
K	39	749607.931	0.03	0.0052	0.002	33.793	mg/L
Ca	43	203.356	0.00	0.0056	0.001	14.991	mg/L
Fe	54	50912.362	0.01	0.0075	0.006	74.948	mg/L
Fe	57	10771.385	0.01	0.0092	0.003	30.507	mg/L
Sc-1	45	239631.129	239631.13				mg/L
Cl	35	33912.252	-4528.88				mg/L
Kr	83	61.668	1.67				mg/L
Br	81	9052.251	-229.59				mg/L
P	31	13833.613	122.33				mg/L
S	34	262487.246	-12232.43				mg/L
Sr	88	73.341	-13.33				mg/L

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
Li	6					
Be	9					
Al	27					
Sc	45					
Ti	49					
V	51					
Cr	52					
Cr	53					
Mn	55					
Co	59					
Ni	60					
Cu	65					
Zn	66					
Ge	72		99.100			
As	75					
Se	77					
Se	82					
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107					
Cd	114					
In	115		98.272			
Sn	118					
Sb	123					
Ba	135					
Ce	140					
Tb	159		96.752			
Ho	165					
Tl	203					
Tl	205					
Pb	206					
Pb	207					
Pb	208					
U	238					
Bi	209		97.896			

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⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 2
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Method 6020 - Summary Report

Sample ID: QC Std 3

Sample Date/Time: Thursday, February 09, 2012 09:37:21
Number of Replicates: 3
Aliquot Volume (mL):
Diluted To Volume (mL):
Autosampler Position: 9
Method File: C:\elandata\Method\6020a.mth
Sample Description:

User ID: JYH
Cumulative Autodilution Factor: 1
ELAN-ICP 200.8\6020 External Calibration

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Net Intens. Mean	Conc. Mean	Conc. SD	Conc. RSD	Sample Unit
	Li	6	10189.561	0.00				ug/L
	Be	9	8.667	0.00	0.0408	0.021	50.760	ug/L
	Al	27	2283.654	0.00	-0.0282	0.076	269.105	ug/L
>	Sc	45	241068.240	241068.24				ug/L
	Ti	49	90.010	-0.00	-0.0360	0.057	158.173	ug/L
	V	51	6864.051	0.01	0.3856	0.042	11.019	ug/L
	Cr	52	16154.152	0.01	0.7989	0.024	3.001	ug/L
	Cr	53	1753.695	0.00	0.8022	0.155	19.302	ug/L
	Mn	55	7712.313	0.01	0.5025	0.004	0.868	ug/L
	Co	59	4402.540	0.01	0.3988	0.004	0.912	ug/L
	Ni	60	3618.822	0.01	1.6413	0.065	3.991	ug/L
	Cu	65	1770.540	0.00	0.8256	0.039	4.693	ug/L
	Zn	66	7597.872	0.01	6.5976	0.149	2.261	ug/L
>	Ge	72	526605.294	526605.29				ug/L
	As	75	385.757	0.00	0.4470	0.065	14.480	ug/L
	Se	77	111.334	0.00	0.3305	0.186	56.248	ug/L
	Se	82	51.502	0.00	0.4383	0.175	39.904	ug/L
	Rb	85	26.667	-0.00				mg/L
	Y	89	352943.531	-486.42				ug/L
	Rh	103	8.000	-15.00				ug/L
	Mo	98	73.307	0.00	-0.0233	0.003	14.459	ug/L
	Ag	107	2979.563	0.01	0.3979	0.020	5.059	ug/L
	Cd	114	336.282	0.00	0.1742	0.022	12.595	ug/L
>	In	115	506765.672	506765.67				ug/L
	Sn	118	145.335	0.00	-0.0138	0.003	18.246	ug/L
	Sb	123	2359.141	0.00	0.4739	0.022	4.742	ug/L
	Ba	135	1555.827	0.00	0.7857	0.018	2.271	ug/L
	Ce	140	93.343	-0.00				ug/L
>	Tb	159	660125.755	660125.75				ug/L
	Ho	165	3.334	0.00				ug/L
	Tl	203	583.360	0.00	0.0755	0.003	3.731	ug/L
	Tl	205	1590.311	0.00	0.0984	0.008	7.847	ug/L
	Pb	206	1415.468	0.00	0.1992	0.016	8.163	ug/L
	Pb	207	1232.770	0.00	0.1924	0.008	4.303	ug/L
	Pb	208	5804.534	0.01	0.2057	0.007	3.586	ug/L
	U	238	8325.240	0.02	0.4134	0.009	2.107	ug/L
>	Bi	209	439785.556	439785.56				ug/L

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Na	23	19357.750	-0.01	0.0028	0.000	13.391	mg/L
Mg	24	9045.863	0.04	0.0029	0.001	18.236	mg/L
K	39	710151.546	-0.14	-0.0000	0.007	34190.747	mg/L
Ca	43	290.034	0.00	0.0109	0.003	24.624	mg/L
Fe	54	46785.613	-0.01	0.0010	0.006	600.572	mg/L
Fe	57	9689.934	0.01	0.0052	0.003	64.421	mg/L
Sc-1	45	241068.240	241068.24				mg/L
Cl	35	32204.798	-6236.33				mg/L
Kr	83	57.334	-2.67				mg/L
Br	81	8739.917	-541.92				mg/L
P	31	14463.897	752.61				mg/L
S	34	253960.917	-20758.76				mg/L
Sr	88	116.679	30.00				mg/L

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
Li	6					
Be	9					
Al	27					
Sc	45					
Ti	49					
V	51	96.405				
Cr	52	99.864				
Cr	53					
Mn	55	100.493				
Co	59	99.710				
Ni	60	102.580				
Cu	65	103.204				
Zn	66	105.561				
Ge	72		100.113			
As	75	111.761				
Se	77					
Se	82	109.578				
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107	99.477				
Cd	114	87.111				
In	115		99.375			
Sn	118					
Sb	123	118.475				
Ba	135	104.764				
Ce	140					
Tb	159		97.012			
Ho	165					
Tl	203	94.352				
Tl	205					
Pb	206					
Pb	207					
Pb	208	102.851				
U	238	103.361				
Bi	209		95.965			

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⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 3
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Method 6020 - Summary Report

Sample ID: QC Std 4

Sample Date/Time: Thursday, February 09, 2012 09:45:00
Number of Replicates: 3
Aliquot Volume (mL):
Diluted To Volume (mL):
Autosampler Position: 6
Method File: C:\elandata\Method\6020a.mth
Sample Description:

User ID: JYH
Cumulative Autodilution Factor: 1
ELAN-ICP 200.8\6020 External Calibration

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Net Intens. Mean	Conc. Mean	Conc. SD	Conc. RSD	Sample Unit
	Li	6	11057.344	0.01				ug/L
	Be	9	11.333	0.00	0.0527	0.013	24.005	ug/L
	Al	27	27420177.521	117.20	4729.4002	318.002	6.724	ug/L
>	Sc	45	234198.279	234198.28				ug/L
	Ti	49	64898.540	0.12	99.8621	4.445	4.451	ug/L
	V	51	2293.422	-0.00	-0.0615	0.034	55.094	ug/L
	Cr	52	10241.392	0.00	0.1169	0.012	10.121	ug/L
	Cr	53	2910.799	0.00	1.7450	0.055	3.136	ug/L
	Mn	55	1702.195	0.00	0.0699	0.021	30.101	ug/L
	Co	59	387.013	0.00	0.0195	0.002	11.116	ug/L
	Ni	60	1262.442	0.00	0.5245	0.029	5.528	ug/L
	Cu	65	539.690	0.00	0.2018	0.006	3.015	ug/L
	Zn	66	778.711	0.00	0.5566	0.028	5.099	ug/L
>	Ge	72	548946.053	548946.05				ug/L
	As	75	-211.692	0.00	0.0200	0.012	61.149	ug/L
	Se	77	237.337	0.00	1.5113	0.236	15.592	ug/L
	Se	82	-2.209	0.00	-0.0018	0.125	7114.952	ug/L
	Rb	85	2569.088	0.00				mg/L
	Y	89	350047.356	-3382.59				ug/L
	Rh	103	28.334	5.33				ug/L
	Mo	98	353195.930	0.70	106.9067	3.646	3.410	ug/L
	Ag	107	167.670	0.00	-0.0059	0.002	33.241	ug/L
	Cd	114	215.506	0.00	0.0947	0.042	44.074	ug/L
>	In	115	502958.775	502958.78				ug/L
	Sn	118	513.883	0.00	0.0523	0.002	4.601	ug/L
	Sb	123	480.844	0.00	0.1026	0.003	2.533	ug/L
	Ba	135	116.335	0.00	0.0485	0.003	6.445	ug/L
	Ce	140	1000.161	0.00				ug/L
>	Tb	159	644520.267	644520.27				ug/L
	Ho	165	3.334	-0.00				ug/L
	Tl	203	59.667	0.00	-0.0017	0.001	78.420	ug/L
	Tl	205	143.349	0.00	0.0126	0.004	31.467	ug/L
	Pb	206	412.348	0.00	0.0194	0.003	16.577	ug/L
	Pb	207	367.012	0.00	0.0134	0.001	6.803	ug/L
	Pb	208	1687.418	0.00	0.0225	0.001	3.252	ug/L
	U	238	93.668	0.00	-0.0143	0.001	6.841	ug/L
>	Bi	209	454905.634	454905.63				ug/L

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Na	23	66679699.899	284.94	12.9627	0.580	4.475	mg/L
Mg	24	16770399.704	71.68	5.1782	0.214	4.140	mg/L
K	39	40160326.132	168.52	5.1853	0.261	5.032	mg/L
Ca	43	244851.078	1.05	15.3135	1.073	7.008	mg/L
Fe	54	8573271.364	36.44	13.3287	0.628	4.712	mg/L
Fe	57	3307639.520	14.11	12.1623	0.726	5.966	mg/L
Sc-1	45	234198.279	234198.28				mg/L
Cl	35	2307184.152	2268743.02				mg/L
Kr	83	62.334	2.33				mg/L
Br	81	9775.063	493.22				mg/L
P	31	1909032.422	1895321.14				mg/L
S	34	483893.315	209173.64				mg/L
Sr	88	720.103	633.43				mg/L

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
Li	6					
Be	9					
Al	27					
Sc	45					
Ti	49					
V	51					
Cr	52					
Cr	53					
Mn	55					
Co	59					
Ni	60					
Cu	65					
Zn	66					
Ge	72		104.360			
As	75					
Se	77					
Se	82					
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107					
Cd	114					
In	115		98.629			
Sn	118					
Sb	123					
Ba	135					
Ce	140					
Tb	159		94.719			
Ho	165					
Tl	203					
Tl	205					
Pb	206					
Pb	207					
Pb	208					
U	238					
Bi	209		99.265			

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⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 4
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Method 6020 - Summary Report

Sample ID: QC Std 5

Sample Date/Time: Thursday, February 09, 2012 09:52:39
Number of Replicates: 3
Aliquot Volume (mL):
Diluted To Volume (mL):
Autosampler Position: 7
Method File: C:\elandata\Method\6020a.mth
Sample Description:

User ID: JYH
Cumulative Autodilution Factor: 1
ELAN-ICP 200.8\6020 External Calibration

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Net Intens. Mean	Conc. Mean	Conc. SD	Conc. RSD	Sample Unit
	Li	6	12743.136	0.02				ug/L
	Be	9	34797.218	0.16	136.4158	5.004	3.668	ug/L
	Al	27	25523843.878	116.75	4711.1808	292.948	6.218	ug/L
>	Sc	45	218682.303	218682.30				ug/L
	Ti	49	68298.884	0.13	111.7171	1.104	0.988	ug/L
	V	51	1056478.274	2.04	102.9938	1.760	1.709	ug/L
	Cr	52	965246.802	1.85	105.1375	0.934	0.888	ug/L
	Cr	53	204784.427	0.40	188.4355	11.432	6.067	ug/L
	Mn	55	1466533.448	2.84	106.3495	0.502	0.472	ug/L
	Co	59	1080869.273	2.09	103.6729	2.742	2.645	ug/L
	Ni	60	217136.264	0.42	102.5368	1.025	0.999	ug/L
	Cu	65	216120.460	0.42	109.7054	0.187	0.170	ug/L
	Zn	66	125725.379	0.24	112.8803	1.697	1.503	ug/L
>	Ge	72	516534.510	516534.51				ug/L
	As	75	145170.721	0.28	107.4082	2.426	2.259	ug/L
	Se	77	16113.569	0.03	166.4168	3.165	1.902	ug/L
	Se	82	12664.200	0.02	105.6970	2.584	2.445	ug/L
	Rb	85	2591.429	0.00				mg/L
	Y	89	317094.814	-36335.13				ug/L
	Rh	103	71.334	48.33				ug/L
	Mo	98	351798.109	0.77	116.4622	3.978	3.416	ug/L
	Ag	107	712527.984	1.55	112.6968	1.820	1.615	ug/L
	Cd	114	157593.535	0.34	115.1362	4.477	3.889	ug/L
>	In	115	459920.303	459920.30				ug/L
	Sn	118	817.107	0.00	0.1203	0.006	4.587	ug/L
	Sb	123	524293.960	1.14	114.3897	4.645	4.061	ug/L
	Ba	135	189082.272	0.33	110.7320	2.287	2.065	ug/L
	Ce	140	956.817	0.00				ug/L
>	Tb	159	578090.457	578090.46				ug/L
	Ho	165	36.670	0.00				ug/L
	Tl	203	737799.976	1.68	108.7417	3.860	3.550	ug/L
	Tl	205	1817033.795	4.15	107.7049	2.620	2.433	ug/L
	Pb	206	612695.207	1.40	108.5635	2.127	1.959	ug/L
	Pb	207	528546.442	1.21	108.0532	2.304	2.132	ug/L
	Pb	208	2490488.002	5.68	109.5984	1.761	1.607	ug/L
	U	238	2160854.071	4.93	112.6099	3.804	3.378	ug/L
>	Bi	209	438427.973	438427.97				ug/L

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Na	23	65702998.039	300.32	13.6623	0.775	5.673	mg/L
Mg	24	15901164.894	72.72	5.2532	0.175	3.332	mg/L
K	39	37144869.238	166.77	5.1317	0.099	1.921	mg/L
Ca	43	235207.689	1.08	15.7426	0.457	2.903	mg/L
Fe	54	8452384.995	38.44	14.0613	0.387	2.750	mg/L
Fe	57	3268477.233	14.91	12.8526	0.302	2.346	mg/L
Sc-1	45	218682.303	218682.30				mg/L
Cl	35	97205494.346	97167053.22				mg/L
Kr	83	76.334	16.33				mg/L
Br	81	26603.081	17321.24				mg/L
P	31	1844294.773	1830583.49				mg/L
S	34	401575.970	126856.29				mg/L
Sr	88	990.158	903.48				mg/L

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
Li	6					
Be	9					
Al	27					
Sc	45					
Ti	49					
V	51	102.994				
Cr	52	105.138				
Cr	53					
Mn	55	106.350				
Co	59	103.673				
Ni	60	102.537				
Cu	65	109.705				
Zn	66	112.880				
Ge	72		98.199			
As	75	107.408				
Se	77					
Se	82	105.697				
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107	112.697				
Cd	114	115.136				
In	115		90.189			
Sn	118					
Sb	123	114.390				
Ba	135	110.732				
Ce	140					
Tb	159		84.956			
Ho	165					
Tl	203	108.742				
Tl	205					
Pb	206					
Pb	207					
Pb	208	109.598				
U	238	112.610				
Bi	209		95.669			

Sample ID: QC Std 5
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⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 5
Report Date/Time: Thursday, February 09, 2012 09:54:53
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Method 6020 - Summary Report

Sample ID: QC Std 6

Sample Date/Time: Thursday, February 09, 2012 10:00:18
Number of Replicates: 3
Aliquot Volume (mL):
Diluted To Volume (mL):
Autosampler Position: 5
Method File: C:\elandata\Method\6020a.mth
Sample Description:

User ID: JYH
Cumulative Autodilution Factor: 1
ELAN-ICP 200.8\6020 External Calibration

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Net Intens. Mean	Conc. Mean	Conc. SD	Conc. RSD	Sample Unit
	Li	6	10056.077	0.00				ug/L
	Be	9	13834.160	0.06	51.6814	1.396	2.702	ug/L
	Al	27	292861.024	1.27	51.1328	2.319	4.536	ug/L
>	Sc	45	229734.010	229734.01				ug/L
	Ti	49	59141.931	0.11	96.6900	3.218	3.328	ug/L
	V	51	505769.003	0.97	49.1475	0.660	1.344	ug/L
	Cr	52	458665.056	0.87	49.4515	0.531	1.073	ug/L
	Cr	53	67751.219	0.13	61.8367	3.033	4.905	ug/L
	Mn	55	690874.690	1.34	50.0679	0.315	0.628	ug/L
	Co	59	521175.614	1.01	49.9629	1.380	2.761	ug/L
	Ni	60	103480.030	0.20	48.8430	0.488	0.998	ug/L
	Cu	65	97076.395	0.19	49.2541	1.733	3.519	ug/L
	Zn	66	56266.019	0.11	50.4434	0.477	0.945	ug/L
>	Ge	72	516644.767	516644.77				ug/L
	As	75	67677.680	0.13	50.1628	0.615	1.226	ug/L
	Se	77	5306.357	0.01	54.2713	1.943	3.579	ug/L
	Se	82	5917.385	0.01	49.3908	0.771	1.560	ug/L
	Rb	85	2400.703	0.00				mg/L
	Y	89	335312.575	-18117.37				ug/L
	Rh	103	27.334	4.33				ug/L
	Mo	98	320365.616	0.66	100.8791	3.311	3.282	ug/L
	Ag	107	340075.023	0.70	51.1668	1.930	3.772	ug/L
	Cd	114	73726.289	0.15	51.2187	1.202	2.346	ug/L
>	In	115	483768.585	483768.59				ug/L
	Sn	118	268422.912	0.56	49.9422	1.880	3.764	ug/L
	Sb	123	243678.163	0.50	50.5484	1.051	2.079	ug/L
	Ba	135	92467.500	0.15	50.3560	0.682	1.354	ug/L
	Ce	140	146.683	-0.00				ug/L
>	Tb	159	621807.737	621807.74				ug/L
	Ho	165	16.668	0.00				ug/L
	Tl	203	344196.327	0.78	50.4823	0.727	1.439	ug/L
	Tl	205	843292.123	1.92	49.7686	1.533	3.081	ug/L
	Pb	206	284165.136	0.64	50.1087	1.363	2.720	ug/L
	Pb	207	243777.903	0.55	49.5881	1.412	2.847	ug/L
	Pb	208	1145890.679	2.60	50.1811	0.787	1.568	ug/L
	U	238	1009389.228	2.29	52.3482	0.774	1.479	ug/L
>	Bi	209	440213.025	440213.02				ug/L

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Na	23	25456359.744	110.63	5.0351	0.085	1.679	mg/L
Mg	24	15439444.372	67.27	4.8597	0.223	4.589	mg/L
K	39	36632970.428	156.72	4.8226	0.294	6.092	mg/L
Ca	43	74694.927	0.32	4.7555	0.063	1.317	mg/L
Fe	54	3171455.657	13.66	4.9982	0.427	8.540	mg/L
Fe	57	1395510.255	6.06	5.2207	0.311	5.951	mg/L
Sc-1	45	229734.010	229734.01				mg/L
Cl	35	264296.700	225855.57				mg/L
Kr	83	55.334	-4.67				mg/L
Br	81	9255.809	-26.03				mg/L
P	31	12084.868	-1626.42				mg/L
S	34	255713.424	-19006.26				mg/L
Sr	88	5492.368	5405.69				mg/L

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
Li	6					
Be	9					
Al	27					
Sc	45					
Ti	49					
V	51	98.295				
Cr	52	98.903				
Cr	53					
Mn	55	100.136				
Co	59	99.926				
Ni	60	97.686				
Cu	65	98.508				
Zn	66	100.887				
Ge	72		98.220			
As	75	100.326				
Se	77					
Se	82	98.782				
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107	102.334				
Cd	114	102.437				
In	115		94.866			
Sn	118					
Sb	123	101.097				
Ba	135	100.712				
Ce	140					
Tb	159		91.381			
Ho	165					
Tl	203	100.965				
Tl	205					
Pb	206					
Pb	207					
Pb	208	100.362				
U	238	104.696				
Bi	209		96.059			

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⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Approved: February 09, 2012

Method 6020 - Summary Report

Sample ID: QC Std 7

Sample Date/Time: Thursday, February 09, 2012 10:07:55
Number of Replicates: 3
Aliquot Volume (mL):
Diluted To Volume (mL):
Autosampler Position: 1
Method File: C:\elandata\Method\6020a.mth
Sample Description:

User ID: JYH
Cumulative Autodilution Factor: 1
ELAN-ICP 200.8\6020 External Calibration

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Net Intens. Mean	Conc. Mean	Conc. SD	Conc. RSD	Sample Unit
	Li	6	10289.687	0.00				ug/L
	Be	9	8.667	0.00	0.0429	0.016	37.243	ug/L
	Al	27	6419.171	0.02	0.6942	0.166	23.964	ug/L
>	Sc	45	234593.031	234593.03				ug/L
	Ti	49	173.353	0.00	0.0991	0.096	96.904	ug/L
	V	51	2509.505	-0.00	-0.0319	0.018	56.400	ug/L
	Cr	52	9158.458	0.00	0.0447	0.005	12.045	ug/L
	Cr	53	7714.346	0.01	6.2013	0.258	4.158	ug/L
	Mn	55	455.017	0.00	-0.0138	0.009	62.631	ug/L
	Co	59	162.004	0.00	-0.0001	0.009	9978.971	ug/L
	Ni	60	46.001	0.00	-0.0152	0.009	57.370	ug/L
	Cu	65	121.336	0.00	0.0048	0.027	552.838	ug/L
	Zn	66	80.335	0.00	-0.0309	0.009	29.424	ug/L
>	Ge	72	526815.498	526815.50				ug/L
	As	75	-142.111	0.00	0.0643	0.026	40.645	ug/L
	Se	77	165.335	0.00	0.8775	0.111	12.606	ug/L
	Se	82	5.539	0.00	0.0621	0.083	133.865	ug/L
	Rb	85	34.334	0.00				mg/L
	Y	89	345822.531	-7607.42				ug/L
	Rh	103	9.333	-13.67				ug/L
	Mo	98	150.939	0.00	0.0018	0.006	336.548	ug/L
	Ag	107	200.338	0.00	-0.0002	0.008	3405.376	ug/L
	Cd	114	17.005	0.00	-0.0372	0.006	17.366	ug/L
>	In	115	487433.318	487433.32				ug/L
	Sn	118	205.469	0.00	-0.0017	0.003	199.034	ug/L
	Sb	123	586.810	0.00	0.1274	0.009	6.810	ug/L
	Ba	135	45.334	0.00	0.0117	0.011	95.833	ug/L
	Ce	140	53.339	-0.00				ug/L
>	Tb	159	637345.430	637345.43				ug/L
	Ho	165	13.335	0.00				ug/L
	Tl	203	557.692	0.00	0.0707	0.020	27.994	ug/L
	Tl	205	1400.263	0.00	0.0861	0.020	23.688	ug/L
	Pb	206	319.009	0.00	0.0047	0.009	191.179	ug/L
	Pb	207	277.007	0.00	-0.0031	0.005	151.550	ug/L
	Pb	208	1298.387	0.00	0.0072	0.007	99.728	ug/L
	U	238	197.339	0.00	-0.0089	0.008	87.320	ug/L
>	Bi	209	444767.646	444767.65				ug/L

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Na	23	30546.099	0.04	0.0051	0.002	39.943	mg/L
Mg	24	2627.607	0.01	0.0010	0.001	80.277	mg/L
K	39	722673.153	-0.02	0.0038	0.004	104.632	mg/L
Ca	43	223.359	0.00	0.0071	0.002	23.036	mg/L
Fe	54	49655.510	0.01	0.0072	0.003	47.848	mg/L
Fe	57	10340.782	0.01	0.0085	0.003	29.710	mg/L
Sc-1	45	234593.031	234593.03				mg/L
Cl	35	92783.025	54341.90				mg/L
Kr	83	53.001	-7.00				mg/L
Br	81	9805.766	523.93				mg/L
P	31	13442.175	-269.11				mg/L
S	34	274346.448	-373.23				mg/L
Sr	88	73.341	-13.33				mg/L

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
Li	6					
Be	9					
Al	27					
Sc	45					
Ti	49					
V	51					
Cr	52					
Cr	53					
Mn	55					
Co	59					
Ni	60					
Cu	65					
Zn	66					
Ge	72		100.153			
As	75					
Se	77					
Se	82					
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107					
Cd	114					
In	115		95.584			
Sn	118					
Sb	123					
Ba	135					
Ce	140					
Tb	159		93.664			
Ho	165					
Tl	203					
Tl	205					
Pb	206					
Pb	207					
Pb	208					
U	238					
Bi	209		97.052			

Sample ID: QC Std 7
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⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Tl	203	CCB IS OUT OF LIMITS (+/-1/2RL)

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: QC Std 7

Sample Date/Time: Thursday, February 09, 2012 10:15:55
Number of Replicates: 3
Aliquot Volume (mL):
Diluted To Volume (mL):
Autosampler Position: 1
Method File: C:\elandata\Method\6020a.mth
Sample Description:

User ID: JYH
Cumulative Autodilution Factor: 1
ELAN-ICP 200.8\6020 External Calibration

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Net Intens. Mean	Conc. Mean	Conc. SD	Conc. RSD	Sample Unit
	Li	6	10706.933	0.01				ug/L
	Be	9	6.000	0.00	0.0330	0.008	24.304	ug/L
	Al	27	4317.786	0.01	0.3364	0.036	10.606	ug/L
>	Sc	45	233364.295	233364.30				ug/L
	Ti	49	116.679	0.00	0.0127	0.080	633.140	ug/L
	V	51	2198.016	-0.00	-0.0564	0.036	64.490	ug/L
	Cr	52	8702.295	0.00	0.0208	0.001	2.751	ug/L
	Cr	53	5295.556	0.01	4.1442	0.542	13.075	ug/L
	Mn	55	353.011	0.00	-0.0205	0.002	9.647	ug/L
	Co	59	98.668	0.00	-0.0060	0.001	13.601	ug/L
	Ni	60	38.667	0.00	-0.0183	0.003	13.870	ug/L
	Cu	65	98.335	0.00	-0.0058	0.002	35.615	ug/L
	Zn	66	72.334	0.00	-0.0364	0.006	15.686	ug/L
>	Ge	72	512999.007	512999.01				ug/L
	As	75	-137.564	0.00	0.0649	0.038	58.003	ug/L
	Se	77	144.001	0.00	0.7014	0.393	56.087	ug/L
	Se	82	8.878	0.00	0.0900	0.150	166.988	ug/L
	Rb	85	29.667	-0.00				mg/L
	Y	89	349036.152	-4393.80				ug/L
	Rh	103	9.333	-13.67				ug/L
	Mo	98	53.489	0.00	-0.0284	0.001	4.203	ug/L
	Ag	107	102.002	0.00	-0.0148	0.001	7.978	ug/L
	Cd	114	6.354	0.00	-0.0445	0.004	8.483	ug/L
>	In	115	483416.629	483416.63				ug/L
	Sn	118	108.401	0.00	-0.0194	0.002	9.409	ug/L
	Sb	123	196.832	0.00	0.0475	0.002	4.229	ug/L
	Ba	135	19.000	0.00	-0.0023	0.002	105.572	ug/L
	Ce	140	40.004	-0.00				ug/L
>	Tb	159	626801.823	626801.82				ug/L
	Ho	165	16.668	0.00				ug/L
	Tl	203	190.337	0.00	0.0175	0.002	10.061	ug/L
	Tl	205	443.390	0.00	0.0304	0.006	18.475	ug/L
	Pb	206	252.673	-0.00	-0.0068	0.001	13.027	ug/L
	Pb	207	241.006	-0.00	-0.0103	0.002	20.729	ug/L
	Pb	208	1075.705	0.00	-0.0023	0.001	46.419	ug/L
	U	238	54.001	0.00	-0.0162	0.001	6.139	ug/L
>	Bi	209	444324.905	444324.90				ug/L

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Na	23	21419.680	0.00	0.0033	0.000	2.782	mg/L
Mg	24	1853.890	0.01	0.0007	0.001	79.040	mg/L
K	39	674361.051	-0.21	-0.0019	0.005	252.760	mg/L
Ca	43	196.689	0.00	0.0056	0.002	32.569	mg/L
Fe	54	47498.963	0.00	0.0044	0.005	124.640	mg/L
Fe	57	9786.731	0.01	0.0066	0.001	10.648	mg/L
Sc-1	45	233364.295	233364.30				mg/L
Cl	35	52435.859	13994.73				mg/L
Kr	83	52.334	-7.67				mg/L
Br	81	8797.978	-483.86				mg/L
P	31	13241.227	-470.06				mg/L
S	34	243894.906	-30824.77				mg/L
Sr	88	93.343	6.67				mg/L

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
Li	6					
Be	9					
Al	27					
Sc	45					
Ti	49					
V	51					
Cr	52					
Cr	53					
Mn	55					
Co	59					
Ni	60					
Cu	65					
Zn	66					
Ge	72		97.527			
As	75					
Se	77					
Se	82					
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107					
Cd	114					
In	115		94.797			
Sn	118					
Sb	123					
Ba	135					
Ce	140					
Tb	159		92.115			
Ho	165					
Tl	203					
Tl	205					
Pb	206					
Pb	207					
Pb	208					
U	238					
Bi	209		96.956			

Sample ID: QC Std 7
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⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: PBW 73 WG389121-02

Sample Date/Time: Thursday, February 09, 2012 10:23:30
Number of Replicates: 3
Aliquot Volume (mL):
Diluted To Volume (mL):
Autosampler Position: 12
Method File: C:\elandata\Method\6020a.mth
Sample Description: 1

User ID: JYH
Cumulative Autodilution Factor: 1
ELAN-ICP 200.8\6020 External Calibration

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Net Intens. Mean	Conc. Mean	Conc. SD	Conc. RSD	Sample Unit
	Li	6	10757.015	0.01				ug/L
	Be	9	5.333	0.00	0.0304	0.005	17.415	ug/L
	Al	27	3434.049	0.01	0.1740	0.067	38.563	ug/L
>	Sc	45	236708.568	236708.57				ug/L
	Ti	49	123.347	0.00	0.0213	0.031	143.358	ug/L
	V	51	2485.032	-0.00	-0.0296	0.025	83.513	ug/L
	Cr	52	9027.979	0.00	0.0501	0.036	72.191	ug/L
	Cr	53	3907.978	0.01	2.8285	0.394	13.914	ug/L
	Mn	55	400.347	0.00	-0.0173	0.001	7.749	ug/L
	Co	59	87.001	0.00	-0.0071	0.000	2.760	ug/L
	Ni	60	70.668	0.00	-0.0033	0.002	47.468	ug/L
	Cu	65	111.002	0.00	0.0003	0.005	1484.954	ug/L
	Zn	66	1296.781	0.00	1.0630	0.016	1.547	ug/L
>	Ge	72	516803.191	516803.19				ug/L
	As	75	-157.700	0.00	0.0509	0.014	28.117	ug/L
	Se	77	132.668	0.00	0.5671	0.174	30.622	ug/L
	Se	82	5.849	0.00	0.0626	0.091	145.532	ug/L
	Rb	85	31.667	0.00				mg/L
	Y	89	337826.534	-15603.41				ug/L
	Rh	103	9.333	-13.67				ug/L
	Mo	98	77.978	0.00	-0.0212	0.002	8.804	ug/L
	Ag	107	104.002	0.00	-0.0148	0.003	21.111	ug/L
	Cd	114	1.193	-0.00	-0.0482	0.003	6.420	ug/L
>	In	115	492099.212	492099.21				ug/L
	Sn	118	137.068	0.00	-0.0146	0.002	15.744	ug/L
	Sb	123	138.662	0.00	0.0349	0.001	4.149	ug/L
	Ba	135	28.334	0.00	0.0027	0.004	157.362	ug/L
	Ce	140	16.668	-0.00				ug/L
>	Tb	159	630869.887	630869.89				ug/L
	Ho	165	23.336	0.00				ug/L
	Tl	203	184.671	0.00	0.0168	0.001	7.511	ug/L
	Tl	205	516.735	0.00	0.0348	0.005	15.734	ug/L
	Pb	206	270.674	0.00	-0.0033	0.004	110.838	ug/L
	Pb	207	249.006	0.00	-0.0083	0.002	29.117	ug/L
	Pb	208	1072.037	0.00	-0.0021	0.002	84.039	ug/L
	U	238	39.334	0.00	-0.0170	0.001	3.843	ug/L
>	Bi	209	441024.499	441024.50				ug/L

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Na	23	23204.853	0.01	0.0036	0.001	15.652	mg/L
Mg	24	786.787	0.00	0.0004	0.000	27.437	mg/L
K	39	713952.526	-0.08	0.0020	0.005	262.518	mg/L
Ca	43	246.695	0.00	0.0085	0.002	21.501	mg/L
Fe	54	47415.940	-0.00	0.0032	0.004	137.262	mg/L
Fe	57	9646.548	0.01	0.0057	0.003	54.075	mg/L
Sc-1	45	236708.568	236708.57				mg/L
Cl	35	46856.073	8414.94				mg/L
Kr	83	55.667	-4.33				mg/L
Br	81	9179.057	-102.78				mg/L
P	31	12873.955	-837.33				mg/L
S	34	266442.134	-8277.55				mg/L
Sr	88	86.676	0.00				mg/L

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
Li	6					
Be	9					
Al	27					
Sc	45					
Ti	49					
V	51					
Cr	52					
Cr	53					
Mn	55					
Co	59					
Ni	60					
Cu	65					
Zn	66					
Ge	72		98.250			
As	75					
Se	77					
Se	82					
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107					
Cd	114					
In	115		96.499			
Sn	118					
Sb	123					
Ba	135					
Ce	140					
Tb	159		92.713			
Ho	165					
Tl	203					
Tl	205					
Pb	206					
Pb	207					
Pb	208					
U	238					
Bi	209		96.236			

Sample ID: PBW 73 WG389121-02
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⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: PBW 73 WG389121-02
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Method 6020 - Summary Report

Sample ID: F BLANK WG389121-04

Sample Date/Time: Thursday, February 09, 2012 10:31:16
Number of Replicates: 3
Aliquot Volume (mL):
Diluted To Volume (mL):
Autosampler Position: 13
Method File: C:\elandata\Method\6020a.mth
Sample Description: 1

User ID: JYH
Cumulative Autodilution Factor: 1
ELAN-ICP 200.8\6020 External Calibration

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Net Intens. Mean	Conc. Mean	Conc. SD	Conc. RSD	Sample Unit
	Li	6	11207.542	0.01				ug/L
	Be	9	8.667	0.00	0.0439	0.012	28.123	ug/L
	Al	27	2817.151	0.00	0.0908	0.065	71.813	ug/L
>	Sc	45	225735.313	225735.31				ug/L
	Ti	49	106.678	-0.00	-0.0039	0.008	195.584	ug/L
	V	51	2318.307	-0.00	-0.0428	0.050	117.805	ug/L
	Cr	52	8413.663	-0.00	-0.0079	0.031	400.112	ug/L
	Cr	53	3174.258	0.00	2.1758	0.238	10.961	ug/L
	Mn	55	800.046	0.00	0.0123	0.000	2.466	ug/L
	Co	59	111.002	0.00	-0.0047	0.001	17.008	ug/L
	Ni	60	61.001	0.00	-0.0075	0.002	24.911	ug/L
	Cu	65	130.336	0.00	0.0107	0.003	27.747	ug/L
	Zn	66	1622.508	0.00	1.3706	0.031	2.233	ug/L
>	Ge	72	511578.768	511578.77				ug/L
	As	75	-205.548	0.00	0.0130	0.043	329.395	ug/L
	Se	77	111.334	0.00	0.3598	0.045	12.613	ug/L
	Se	82	1.183	0.00	0.0225	0.148	654.634	ug/L
	Rb	85	36.000	0.00				mg/L
	Y	89	335971.648	-17458.30				ug/L
	Rh	103	9.667	-13.33				ug/L
	Mo	98	67.786	0.00	-0.0243	0.001	3.296	ug/L
	Ag	107	84.335	0.00	-0.0176	0.001	8.234	ug/L
	Cd	114	2.358	0.00	-0.0473	0.003	7.105	ug/L
>	In	115	490601.079	490601.08				ug/L
	Sn	118	189.335	0.00	-0.0049	0.001	26.100	ug/L
	Sb	123	89.493	0.00	0.0250	0.001	5.704	ug/L
	Ba	135	21.334	0.00	-0.0009	0.001	86.716	ug/L
	Ce	140	26.669	-0.00				ug/L
>	Tb	159	621288.712	621288.71				ug/L
	Ho	165	16.668	0.00				ug/L
	Tl	203	84.668	0.00	0.0026	0.001	29.228	ug/L
	Tl	205	176.686	0.00	0.0151	0.003	23.044	ug/L
	Pb	206	269.007	0.00	-0.0022	0.006	252.554	ug/L
	Pb	207	233.672	0.00	-0.0101	0.002	22.812	ug/L
	Pb	208	1091.373	0.00	0.0001	0.001	1000.596	ug/L
	U	238	33.667	0.00	-0.0172	0.000	2.064	ug/L
>	Bi	209	428525.180	428525.18				ug/L

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Na	23	29538.843	0.04	0.0051	0.000	7.379	mg/L
Mg	24	1183.544	0.00	0.0006	0.000	28.274	mg/L
K	39	664491.551	-0.16	-0.0004	0.003	601.365	mg/L
Ca	43	263.364	0.00	0.0103	0.004	36.700	mg/L
Fe	54	44118.140	-0.01	0.0013	0.005	393.499	mg/L
Fe	57	9376.226	0.01	0.0062	0.002	33.869	mg/L
Sc-1	45	225735.313	225735.31				mg/L
Cl	35	37974.336	-466.79				mg/L
Kr	83	55.667	-4.33				mg/L
Br	81	8691.199	-590.64				mg/L
P	31	11881.242	-1830.04				mg/L
S	34	228546.897	-46172.78				mg/L
Sr	88	153.350	66.67				mg/L

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
Li	6					
Be	9					
Al	27					
Sc	45					
Ti	49					
V	51					
Cr	52					
Cr	53					
Mn	55					
Co	59					
Ni	60					
Cu	65					
Zn	66					
Ge	72		97.257			
As	75					
Se	77					
Se	82					
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107					
Cd	114					
In	115		96.205			
Sn	118					
Sb	123					
Ba	135					
Ce	140					
Tb	159		91.305			
Ho	165					
Tl	203					
Tl	205					
Pb	206					
Pb	207					
Pb	208					
U	238					
Bi	209		93.508			

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⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: F BLANK WG389121-04
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Method 6020 - Summary Report

Sample ID: LCSW 73 WG389121-03

Sample Date/Time: Thursday, February 09, 2012 10:39:03
Number of Replicates: 3
Aliquot Volume (mL):
Diluted To Volume (mL):
Autosampler Position: 14
Method File: C:\elandata\Method\6020a.mth
Sample Description: 1

User ID: JYH
Cumulative Autodilution Factor: 1
ELAN-ICP 200.8\6020 External Calibration

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Net Intens. Mean	Conc. Mean	Conc. SD	Conc. RSD	Sample Unit
	Li	6	11524.701	0.01				ug/L
	Be	9	7185.098	0.03	25.5171	0.476	1.864	ug/L
	Al	27	143293.299	0.58	23.5188	1.434	6.096	ug/L
>	Sc	45	241537.443	241537.44				ug/L
	Ti	49	116.679	0.00	0.0079	0.036	459.533	ug/L
	V	51	253726.273	0.48	24.1126	0.511	2.120	ug/L
	Cr	52	225295.691	0.41	23.3979	0.331	1.413	ug/L
	Cr	53	28534.992	0.05	25.1421	1.208	4.807	ug/L
	Mn	55	338385.168	0.64	24.0872	0.330	1.369	ug/L
	Co	59	254061.221	0.48	23.9549	0.890	3.715	ug/L
	Ni	60	53395.735	0.10	24.7681	0.651	2.627	ug/L
	Cu	65	49723.204	0.09	24.7659	0.608	2.453	ug/L
	Zn	66	29598.777	0.06	26.0480	0.184	0.707	ug/L
>	Ge	72	525394.676	525394.68				ug/L
	As	75	32196.996	0.06	23.5508	0.553	2.349	ug/L
	Se	77	2341.662	0.00	23.0883	0.265	1.149	ug/L
	Se	82	2825.059	0.01	23.1931	0.119	0.513	ug/L
	Rb	85	38.667	0.00				mg/L
	Y	89	342462.903	-10967.04				ug/L
	Rh	103	16.667	-6.33				ug/L
	Mo	98	69.014	0.00	-0.0239	0.002	6.289	ug/L
	Ag	107	166141.293	0.34	24.6117	0.314	1.277	ug/L
	Cd	114	37927.172	0.08	25.9510	0.959	3.695	ug/L
>	In	115	490606.045	490606.05				ug/L
	Sn	118	121.601	0.00	-0.0173	0.001	5.852	ug/L
	Sb	123	119390.213	0.24	24.4283	0.981	4.017	ug/L
	Ba	135	45071.370	0.07	24.4420	0.482	1.970	ug/L
	Ce	140	50.005	-0.00				ug/L
>	Tb	159	624129.772	624129.77				ug/L
	Ho	165	16.668	0.00				ug/L
	Tl	203	167324.866	0.38	24.2316	0.406	1.676	ug/L
	Tl	205	401641.140	0.90	23.4103	0.266	1.134	ug/L
	Pb	206	135924.362	0.30	23.6396	0.249	1.053	ug/L
	Pb	207	117038.482	0.26	23.4742	0.253	1.076	ug/L
	Pb	208	550306.919	1.23	23.7736	0.496	2.088	ug/L
	U	238	489932.768	1.10	25.0790	0.261	1.040	ug/L
>	Bi	209	445823.887	445823.89				ug/L

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Na	23	20149.716	-0.01	0.0029	0.000	3.502	mg/L
Mg	24	496.731	0.00	0.0003	0.000	3.194	mg/L
K	39	698273.758	-0.21	-0.0020	0.004	206.831	mg/L
Ca	43	213.357	0.00	0.0061	0.002	30.830	mg/L
Fe	54	45755.171	-0.01	-0.0009	0.003	352.514	mg/L
Fe	57	9346.187	0.01	0.0038	0.001	39.107	mg/L
Sc-1	45	241537.443	241537.44				mg/L
Cl	35	36825.197	-1615.93				mg/L
Kr	83	53.667	-6.33				mg/L
Br	81	9272.494	-9.34				mg/L
P	31	13600.437	-110.85				mg/L
S	34	258570.077	-16149.60				mg/L
Sr	88	113.345	26.67				mg/L

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
Li	6					
Be	9					
Al	27					
Sc	45					
Ti	49					
V	51					
Cr	52					
Cr	53					
Mn	55					
Co	59					
Ni	60					
Cu	65					
Zn	66					
Ge	72		99.883			
As	75					
Se	77					
Se	82					
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107					
Cd	114					
In	115		96.206			
Sn	118					
Sb	123					
Ba	135					
Ce	140					
Tb	159		91.722			
Ho	165					
Tl	203					
Tl	205					
Pb	206					
Pb	207					
Pb	208					
U	238					
Bi	209		97.283			

Sample ID: LCSW 73 WG389121-03
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⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSW 73 WG389121-03
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Approved: February 09, 2012

Method 6020 - Summary Report

Sample ID: L1202020502 WG389121-01

Sample Date/Time: Thursday, February 09, 2012 10:46:50
Number of Replicates: 3
Aliquot Volume (mL):
Diluted To Volume (mL):
Autosampler Position: 15
Method File: C:\elandata\Method\6020a.mth
Sample Description: 1

User ID: JYH
Cumulative Autodilution Factor: 1
ELAN-ICP 200.8\6020 External Calibration

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Net Intens. Mean	Conc. Mean	Conc. SD	Conc. RSD	Sample Unit
	Li	6	12726.393	0.01				ug/L
	Be	9	8.667	0.00	0.0411	0.004	9.577	ug/L
	Al	27	61108.227	0.24	9.6394	1.142	11.843	ug/L
>	Sc	45	245514.543	245514.54				ug/L
	Ti	49	363.378	0.00	0.3990	0.161	40.262	ug/L
	V	51	9101.612	0.01	0.5914	0.024	4.071	ug/L
	Cr	52	10856.845	0.00	0.2162	0.014	6.598	ug/L
	Cr	53	2670.697	0.00	1.6085	0.155	9.607	ug/L
	Mn	55	13352.826	0.02	0.8941	0.013	1.407	ug/L
	Co	59	294.008	0.00	0.0119	0.001	9.434	ug/L
	Ni	60	678.368	0.00	0.2742	0.032	11.738	ug/L
	Cu	65	1569.497	0.00	0.7178	0.020	2.807	ug/L
	Zn	66	2346.354	0.00	1.9456	0.067	3.455	ug/L
>	Ge	72	532067.060	532067.06				ug/L
	As	75	394.502	0.00	0.4497	0.049	10.971	ug/L
	Se	77	114.001	0.00	0.3452	0.271	78.445	ug/L
	Se	82	17.606	0.00	0.1579	0.006	3.972	ug/L
	Rb	85	3680.183	0.01				mg/L
	Y	89	359354.146	5924.20				ug/L
	Rh	103	20.334	-2.67				ug/L
	Mo	98	4474.292	0.01	1.2959	0.049	3.786	ug/L
	Ag	107	108.668	0.00	-0.0146	0.001	7.041	ug/L
	Cd	114	1.843	0.00	-0.0477	0.003	5.833	ug/L
>	In	115	508100.774	508100.77				ug/L
	Sn	118	4002.961	0.01	0.6695	0.019	2.900	ug/L
	Sb	123	865.338	0.00	0.1774	0.017	9.646	ug/L
	Ba	135	3199.313	0.00	1.6034	0.010	0.649	ug/L
	Ce	140	4251.510	0.01				ug/L
>	Tb	159	670431.136	670431.14				ug/L
	Ho	165	23.336	0.00				ug/L
	Tl	203	102.002	0.00	0.0043	0.003	77.686	ug/L
	Tl	205	286.700	0.00	0.0208	0.004	17.895	ug/L
	Pb	206	382.013	0.00	0.0145	0.002	16.695	ug/L
	Pb	207	329.676	0.00	0.0063	0.003	54.612	ug/L
	Pb	208	1543.072	0.00	0.0167	0.002	10.620	ug/L
	U	238	1074.414	0.00	0.0351	0.004	11.833	ug/L
>	Bi	209	453192.496	453192.50				ug/L

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Na	23	8397292.254	34.11	1.5547	0.056	3.587	mg/L
Mg	24	834387.166	3.40	0.2457	0.004	1.652	mg/L
K	39	3146874.624	9.72	0.3031	0.006	2.134	mg/L
Ca	43	30251.266	0.12	1.7966	0.073	4.065	mg/L
Fe	54	97119.549	0.19	0.0744	0.001	1.289	mg/L
Fe	57	13552.372	0.02	0.0180	0.001	5.685	mg/L
Sc-1	45	245514.543	245514.54				mg/L
Cl	35	49719.232	11278.10				mg/L
Kr	83	45.334	-14.67				mg/L
Br	81	10672.165	1390.33				mg/L
P	31	28781.255	15069.97				mg/L
S	34	304509.665	29789.98				mg/L
Sr	88	227424.858	227338.18				mg/L

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
Li	6					
Be	9					
Al	27					
Sc	45					
Ti	49					
V	51					
Cr	52					
Cr	53					
Mn	55					
Co	59					
Ni	60					
Cu	65					
Zn	66					
Ge	72		101.152			
As	75					
Se	77					
Se	82					
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107					
Cd	114					
In	115		99.637			
Sn	118					
Sb	123					
Ba	135					
Ce	140					
Tb	159		98.527			
Ho	165					
Tl	203					
Tl	205					
Pb	206					
Pb	207					
Pb	208					
U	238					
Bi	209		98.891			

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⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1202020502 WG389121-01
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Method 6020 - Summary Report

Sample ID: L1202020502DP WG389121-07

Sample Date/Time: Thursday, February 09, 2012 10:54:37
Number of Replicates: 3
Aliquot Volume (mL):
Diluted To Volume (mL):
Autosampler Position: 16
Method File: C:\elandata\Method\6020a.mth
Sample Description: 1

User ID: JYH
Cumulative Autodilution Factor: 1
ELAN-ICP 200.8\6020 External Calibration

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Net Intens. Mean	Conc. Mean	Conc. SD	Conc. RSD	Sample Unit
	Li	6	12726.377	0.01				ug/L
	Be	9	4.667	-0.00	0.0268	0.014	52.589	ug/L
	Al	27	282701.410	1.13	45.6621	0.934	2.046	ug/L
>	Sc	45	247644.725	247644.73				ug/L
	Ti	49	420.054	0.00	0.4477	0.267	59.534	ug/L
	V	51	10549.538	0.01	0.6686	0.017	2.570	ug/L
	Cr	52	11292.760	0.00	0.1907	0.004	2.192	ug/L
	Cr	53	2213.849	0.00	1.0811	0.069	6.372	ug/L
	Mn	55	27038.426	0.05	1.7447	0.077	4.433	ug/L
	Co	59	512.021	0.00	0.0293	0.002	7.878	ug/L
	Ni	60	774.377	0.00	0.2973	0.022	7.346	ug/L
	Cu	65	1730.864	0.00	0.7466	0.048	6.385	ug/L
	Zn	66	3207.650	0.01	2.5298	0.089	3.511	ug/L
>	Ge	72	565919.550	565919.55				ug/L
	As	75	472.598	0.00	0.4858	0.010	2.152	ug/L
	Se	77	131.334	0.00	0.4389	0.219	49.969	ug/L
	Se	82	19.595	0.00	0.1648	0.048	29.387	ug/L
	Rb	85	4183.425	0.01				mg/L
	Y	89	367870.163	14440.22				ug/L
	Rh	103	19.334	-3.67				ug/L
	Mo	98	4700.715	0.01	1.3149	0.019	1.443	ug/L
	Ag	107	98.002	0.00	-0.0166	0.001	4.406	ug/L
	Cd	114	26.077	0.00	-0.0323	0.005	15.407	ug/L
>	In	115	526219.851	526219.85				ug/L
	Sn	118	4026.706	0.01	0.6490	0.007	1.047	ug/L
	Sb	123	688.735	0.00	0.1380	0.004	2.709	ug/L
	Ba	135	3934.635	0.01	1.9523	0.032	1.652	ug/L
	Ce	140	7053.705	0.01				ug/L
>	Tb	159	678263.365	678263.36				ug/L
	Ho	165	50.005	0.00				ug/L
	Tl	203	107.668	0.00	0.0047	0.002	48.593	ug/L
	Tl	205	226.692	0.00	0.0170	0.002	11.358	ug/L
	Pb	206	1878.897	0.00	0.2616	0.012	4.677	ug/L
	Pb	207	1656.848	0.00	0.2590	0.018	6.771	ug/L
	Pb	208	7694.158	0.01	0.2689	0.010	3.744	ug/L
	U	238	1201.099	0.00	0.0398	0.003	6.537	ug/L
>	Bi	209	467022.129	467022.13				ug/L

Sample ID: L1202020502DP WG389121-07
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Na	23	9308777.137	37.52	1.7096	0.050	2.902	mg/L
Mg	24	1020632.402	4.12	0.2979	0.004	1.373	mg/L
K	39	3323210.628	10.31	0.3215	0.011	3.532	mg/L
Ca	43	32754.204	0.13	1.9318	0.105	5.433	mg/L
Fe	54	150872.448	0.41	0.1526	0.003	1.710	mg/L
Fe	57	32643.754	0.10	0.0841	0.003	4.117	mg/L
Sc-1	45	247644.725	247644.73				mg/L
Cl	35	61685.549	23244.42				mg/L
Kr	83	46.667	-13.33				mg/L
Br	81	12321.776	3039.94				mg/L
P	31	33117.520	19406.24				mg/L
S	34	314679.562	39959.88				mg/L
Sr	88	240934.436	240847.76				mg/L

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
Li	6					
Be	9					
Al	27					
Sc	45					
Ti	49					
V	51					
Cr	52					
Cr	53					
Mn	55					
Co	59					
Ni	60					
Cu	65					
Zn	66					
Ge	72		107.587			
As	75					
Se	77					
Se	82					
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107					
Cd	114					
In	115		103.190			
Sn	118					
Sb	123					
Ba	135					
Ce	140					
Tb	159		99.678			
Ho	165					
Tl	203					
Tl	205					
Pb	206					
Pb	207					
Pb	208					
U	238					
Bi	209		101.909			

Sample ID: L1202020502DP WG389121-07
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⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1202020502DP WG389121-07
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Approved: February 09, 2012

Method 6020 - Summary Report

Sample ID: L1202020502S WG389121-05

Sample Date/Time: Thursday, February 09, 2012 11:02:24
Number of Replicates: 3
Aliquot Volume (mL):
Diluted To Volume (mL):
Autosampler Position: 17
Method File: C:\elandata\Method\6020a.mth
Sample Description: 1

User ID: JYH
Cumulative Autodilution Factor: 1
ELAN-ICP 200.8\6020 External Calibration

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Net Intens. Mean	Conc. Mean	Conc. SD	Conc. RSD	Sample Unit
	Li	6	12025.369	0.01				ug/L
	Be	9	7698.222	0.03	26.8397	0.173	0.644	ug/L
	Al	27	219539.515	0.88	35.6056	0.576	1.617	ug/L
>	Sc	45	245944.111	245944.11				ug/L
	Ti	49	353.376	0.00	0.3702	0.080	21.663	ug/L
	V	51	282897.606	0.52	26.0478	0.510	1.957	ug/L
	Cr	52	248671.110	0.44	25.0734	0.554	2.211	ug/L
	Cr	53	31111.074	0.06	26.5722	0.153	0.575	ug/L
	Mn	55	376723.624	0.69	25.9680	0.779	3.000	ug/L
	Co	59	274254.525	0.51	25.0329	0.638	2.547	ug/L
	Ni	60	56421.962	0.10	25.3371	0.684	2.699	ug/L
	Cu	65	54905.845	0.10	26.4892	0.546	2.063	ug/L
	Zn	66	30665.994	0.06	26.1279	0.740	2.834	ug/L
>	Ge	72	542687.200	542687.20				ug/L
	As	75	34397.461	0.06	24.3610	1.218	4.999	ug/L
	Se	77	2455.695	0.00	23.4506	0.430	1.834	ug/L
	Se	82	2848.440	0.01	22.6440	1.202	5.310	ug/L
	Rb	85	3722.202	0.01				mg/L
	Y	89	354783.840	1353.89				ug/L
	Rh	103	36.334	13.33				ug/L
	Mo	98	4578.501	0.01	1.3600	0.053	3.879	ug/L
	Ag	107	179396.365	0.36	26.2816	0.353	1.343	ug/L
	Cd	114	38544.910	0.08	26.0753	0.493	1.890	ug/L
>	In	115	496035.259	496035.26				ug/L
	Sn	118	3926.391	0.01	0.6726	0.003	0.437	ug/L
	Sb	123	127131.109	0.26	25.7107	0.958	3.726	ug/L
	Ba	135	51326.457	0.08	26.6411	0.414	1.554	ug/L
	Ce	140	3978.016	0.01				ug/L
>	Tb	159	652090.130	652090.13				ug/L
	Ho	165	13.335	0.00				ug/L
	Tl	203	178502.469	0.39	25.4836	0.456	1.790	ug/L
	Tl	205	440827.711	0.97	25.3298	0.094	0.373	ug/L
	Pb	206	148969.621	0.33	25.5533	0.393	1.537	ug/L
	Pb	207	130692.972	0.29	25.8640	1.075	4.157	ug/L
	Pb	208	609239.187	1.35	25.9565	0.449	1.730	ug/L
	U	238	546137.287	1.21	27.5729	0.394	1.428	ug/L
>	Bi	209	452181.229	452181.23				ug/L

Sample ID: L1202020502S WG389121-05
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Na	23	9002951.249	36.52	1.6643	0.032	1.898	mg/L
Mg	24	885999.982	3.60	0.2604	0.003	1.113	mg/L
K	39	3201565.800	9.92	0.3092	0.004	1.185	mg/L
Ca	43	31398.868	0.13	1.8624	0.026	1.396	mg/L
Fe	54	95494.593	0.18	0.0718	0.004	6.147	mg/L
Fe	57	13001.498	0.02	0.0160	0.004	25.950	mg/L
Sc-1	45	245944.111	245944.11				mg/L
Cl	35	51913.217	13472.09				mg/L
Kr	83	49.001	-11.00				mg/L
Br	81	11888.500	2606.66				mg/L
P	31	31722.363	18011.08				mg/L
S	34	314023.003	39303.32				mg/L
Sr	88	224736.253	224649.58				mg/L

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
Li	6					
Be	9					
Al	27					
Sc	45					
Ti	49					
V	51					
Cr	52					
Cr	53					
Mn	55					
Co	59					
Ni	60					
Cu	65					
Zn	66					
Ge	72		103.171			
As	75					
Se	77					
Se	82					
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107					
Cd	114					
In	115		97.271			
Sn	118					
Sb	123					
Ba	135					
Ce	140					
Tb	159		95.831			
Ho	165					
Tl	203					
Tl	205					
Pb	206					
Pb	207					
Pb	208					
U	238					
Bi	209		98.670			

Sample ID: L1202020502S WG389121-05
Report Date/Time: Thursday, February 09, 2012 11:04:37
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⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1202020502S WG389121-05
Report Date/Time: Thursday, February 09, 2012 11:04:37
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Approved: February 09, 2012

Method 6020 - Summary Report

Sample ID: L1202020502SD WG389121-06

Sample Date/Time: Thursday, February 09, 2012 11:10:12
Number of Replicates: 3
Aliquot Volume (mL):
Diluted To Volume (mL):
Autosampler Position: 18
Method File: C:\elandata\Method\6020a.mth
Sample Description: 1

User ID: JYH
Cumulative Autodilution Factor: 1
ELAN-ICP 200.8\6020 External Calibration

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Net Intens. Mean	Conc. Mean	Conc. SD	Conc. RSD	Sample Unit
	Li	6	13327.335	0.01				ug/L
	Be	9	7988.495	0.03	25.8314	1.558	6.030	ug/L
	Al	27	313929.083	1.17	47.3166	2.585	5.464	ug/L
>	Sc	45	265656.736	265656.74				ug/L
	Ti	49	396.716	0.00	0.3935	0.122	30.925	ug/L
	V	51	311165.139	0.53	26.5863	0.333	1.253	ug/L
	Cr	52	277919.720	0.46	26.0359	0.578	2.221	ug/L
	Cr	53	33701.443	0.06	26.7065	0.712	2.665	ug/L
	Mn	55	427721.327	0.73	27.3697	1.579	5.768	ug/L
	Co	59	300373.980	0.51	25.4491	1.114	4.377	ug/L
	Ni	60	61089.427	0.10	25.4630	1.035	4.067	ug/L
	Cu	65	59163.305	0.10	26.4974	1.309	4.940	ug/L
	Zn	66	34564.565	0.06	27.3298	0.260	0.953	ug/L
>	Ge	72	584902.791	584902.79				ug/L
	As	75	36615.855	0.06	24.0695	1.097	4.558	ug/L
	Se	77	2683.766	0.00	23.8158	1.781	7.479	ug/L
	Se	82	2987.188	0.01	22.0496	1.434	6.505	ug/L
	Rb	85	4109.721	0.01				mg/L
	Y	89	380106.068	26676.12				ug/L
	Rh	103	39.000	16.00				ug/L
	Mo	98	4983.549	0.01	1.3729	0.015	1.085	ug/L
	Ag	107	191619.037	0.36	26.0256	0.426	1.639	ug/L
	Cd	114	39791.476	0.07	24.9532	0.354	1.419	ug/L
>	In	115	535099.196	535099.20				ug/L
	Sn	118	4096.207	0.01	0.6493	0.014	2.231	ug/L
	Sb	123	132937.262	0.25	24.9266	0.477	1.915	ug/L
	Ba	135	55206.480	0.08	26.7009	0.905	3.390	ug/L
	Ce	140	5685.847	0.01				ug/L
>	Tb	159	700373.060	700373.06				ug/L
	Ho	165	43.338	0.00				ug/L
	Tl	203	197057.732	0.41	26.2844	1.901	7.234	ug/L
	Tl	205	479923.926	0.99	25.7989	2.946	11.417	ug/L
	Pb	206	161216.249	0.33	25.8191	1.429	5.533	ug/L
	Pb	207	141649.242	0.29	26.1625	1.383	5.284	ug/L
	Pb	208	659501.830	1.36	26.2302	1.355	5.164	ug/L
	U	238	595378.260	1.23	28.0572	1.299	4.630	ug/L
>	Bi	209	485000.622	485000.62				ug/L

Sample ID: L1202020502SD WG389121-06
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Na	23	9117517.678	34.28	1.5624	0.092	5.864	mg/L
Mg	24	952843.622	3.59	0.2596	0.013	5.143	mg/L
K	39	3166129.096	8.82	0.2755	0.008	2.828	mg/L
Ca	43	31676.594	0.12	1.7420	0.100	5.745	mg/L
Fe	54	140407.677	0.33	0.1233	0.011	9.017	mg/L
Fe	57	26033.280	0.06	0.0551	0.007	13.419	mg/L
Sc-1	45	265656.736	265656.74				mg/L
Cl	35	54044.869	15603.74				mg/L
Kr	83	45.334	-14.67				mg/L
Br	81	12461.313	3179.47				mg/L
P	31	33968.692	20257.41				mg/L
S	34	302797.300	28077.62				mg/L
Sr	88	240910.667	240823.99				mg/L

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
Li	6					
Be	9					
Al	27					
Sc	45					
Ti	49					
V	51					
Cr	52					
Cr	53					
Mn	55					
Co	59					
Ni	60					
Cu	65					
Zn	66					
Ge	72		111.196			
As	75					
Se	77					
Se	82					
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107					
Cd	114					
In	115		104.931			
Sn	118					
Sb	123					
Ba	135					
Ce	140					
Tb	159		102.927			
Ho	165					
Tl	203					
Tl	205					
Pb	206					
Pb	207					
Pb	208					
U	238					
Bi	209		105.832			

Sample ID: L1202020502SD WG389121-06
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⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1202020502SD WG389121-06
Report Date/Time: Thursday, February 09, 2012 11:12:25
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Approved: February 09, 2012

Method 6020 - Summary Report

Sample ID: L1202018204

Sample Date/Time: Thursday, February 09, 2012 11:18:00
Number of Replicates: 3
Aliquot Volume (mL):
Diluted To Volume (mL):
Autosampler Position: 19
Method File: C:\elandata\Method\6020a.mth
Sample Description: 1

User ID: JYH
Cumulative Autodilution Factor: 1
ELAN-ICP 200.8\6020 External Calibration

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Net Intens. Mean	Conc. Mean	Conc. SD	Conc. RSD	Sample Unit
	Li	6	13778.072	0.00				ug/L
	Be	9	6.000	-0.00	0.0275	0.006	21.012	ug/L
	Al	27	357416.176	1.15	46.1470	2.201	4.769	ug/L
>	Sc	45	309841.682	309841.68				ug/L
	Ti	49	1170.204	0.00	1.4254	0.482	33.825	ug/L
	V	51	24026.977	0.03	1.6971	0.225	13.283	ug/L
	Cr	52	19971.456	0.02	0.8974	0.129	14.424	ug/L
	Cr	53	5055.457	0.01	3.1079	1.022	32.877	ug/L
	Mn	55	59716.286	0.10	3.5805	0.124	3.468	ug/L
	Co	59	1197.431	0.00	0.0809	0.009	11.095	ug/L
	Ni	60	3176.638	0.01	1.2199	0.072	5.866	ug/L
	Cu	65	539.023	0.00	0.1731	0.009	5.204	ug/L
	Zn	66	1569.164	0.00	1.0784	0.033	3.039	ug/L
>	Ge	72	617450.314	617450.31				ug/L
	As	75	49735.370	0.08	30.9451	1.421	4.593	ug/L
	Se	77	510.683	0.00	3.6393	0.729	20.027	ug/L
	Se	82	575.649	0.00	4.0387	0.183	4.541	ug/L
	Rb	85	27797.251	0.04				mg/L
	Y	89	415269.611	61839.66				ug/L
	Rh	103	161.337	138.34				ug/L
	Mo	98	52621.586	0.09	13.8197	0.202	1.464	ug/L
	Ag	107	245.006	0.00	0.0007	0.002	342.477	ug/L
	Cd	114	29.195	0.00	-0.0320	0.006	19.107	ug/L
>	In	115	577869.046	577869.05				ug/L
	Sn	118	2277.778	0.00	0.3151	0.004	1.206	ug/L
	Sb	123	68542.288	0.12	11.9024	0.054	0.455	ug/L
	Ba	135	12444.410	0.02	5.4980	0.106	1.931	ug/L
	Ce	140	1530.296	0.00				ug/L
>	Tb	159	764849.909	764849.91				ug/L
	Ho	165	20.002	0.00				ug/L
	Tl	203	224.339	0.00	0.0190	0.006	34.065	ug/L
	Tl	205	573.413	0.00	0.0344	0.012	34.446	ug/L
	Pb	206	478.352	0.00	0.0241	0.011	45.528	ug/L
	Pb	207	392.680	0.00	0.0122	0.003	28.447	ug/L
	Pb	208	1853.100	0.00	0.0233	0.004	18.352	ug/L
	U	238	114117.633	0.23	5.2569	0.112	2.121	ug/L
>	Bi	209	494143.063	494143.06				ug/L

Sample ID: L1202018204
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⌈	Na	23	S	S	S	S	S	mg/L
|	Mg	24	4194724.820	13.53	0.9775	0.030	3.034	mg/L
|	K	39	12370269.915	36.84	1.1370	0.029	2.522	mg/L
|	Ca	43	73910.528	0.24	3.4899	0.205	5.868	mg/L
|	Fe	54	138341.138	0.24	0.0931	0.013	13.525	mg/L
|	Fe	57	24829.717	0.05	0.0397	0.010	23.984	mg/L
⌊>	Sc-1	45	309841.682	309841.68				mg/L
	Cl	35	1593919.581	1555478.45				mg/L
	Kr	83	43.667	-16.33				mg/L
	Br	81	112434.868	103153.03				mg/L
	P	31	50596.821	36885.54				mg/L
	S	34	485867.662	211147.98				mg/L
	Sr	88	2391407.251	2391320.57				mg/L

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
⌈	Li	6					
|	Be	9					
|	Al	27					
⌊>	Sc	45					
⌈	Ti	49					
|	V	51					
|	Cr	52					
|	Cr	53					
|	Mn	55					
|	Co	59					
|	Ni	60					
|	Cu	65					
|	Zn	66					
|>	Ge	72		117.384			
|	As	75					
|	Se	77					
|	Se	82					
⌊	Rb	85					
	Y	89					
	Rh	103					
⌈	Mo	98					
|	Ag	107					
|	Cd	114					
|>	In	115		113.318			
|	Sn	118					
⌊	Sb	123					
⌈	Ba	135					
|	Ce	140					
⌊>	Tb	159		112.402			
⌈	Ho	165					
|	Tl	203					
|	Tl	205					
|	Pb	206					
|	Pb	207					
|	Pb	208					
|	U	238					
⌊>	Bi	209		107.827			

Sample ID: L1202018204
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⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1202018204
Report Date/Time: Thursday, February 09, 2012 11:20:13
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Method 6020 - Summary Report

Sample ID: L1202018204PS WG389145-01

Sample Date/Time: Thursday, February 09, 2012 11:25:48
Number of Replicates: 3
Aliquot Volume (mL):
Diluted To Volume (mL):
Autosampler Position: 20
Method File: C:\elandata\Method\6020a.mth
Sample Description: 1

User ID: JYH
Cumulative Autodilution Factor: 1
ELAN-ICP 200.8\6020 External Calibration

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Net Intens. Mean	Conc. Mean	Conc. SD	Conc. RSD	Sample Unit
	Li	6	13177.241	0.01				ug/L
	Be	9	16016.066	0.06	54.7782	3.807	6.950	ug/L
	Al	27	809335.135	3.24	130.7044	29.916	22.888	ug/L
>	Sc	45	251365.504	251365.50				ug/L
	Ti	49	1133.529	0.00	1.5675	0.568	36.238	ug/L
	V	51	578648.375	1.05	53.0652	1.952	3.679	ug/L
	Cr	52	491703.975	0.88	50.0270	2.581	5.159	ug/L
	Cr	53	59400.544	0.11	50.9684	2.827	5.546	ug/L
	Mn	55	771192.585	1.41	52.7339	3.924	7.442	ug/L
	Co	59	543029.161	0.99	49.1169	1.449	2.951	ug/L
	Ni	60	110219.999	0.20	49.0520	1.143	2.331	ug/L
	Cu	65	103243.288	0.19	49.3802	1.072	2.170	ug/L
	Zn	66	58486.802	0.11	49.4594	0.974	1.969	ug/L
>	Ge	72	547829.280	547829.28				ug/L
	As	75	111437.327	0.20	77.7887	0.542	0.696	ug/L
	Se	77	5205.625	0.01	50.1352	0.328	0.655	ug/L
	Se	82	6102.260	0.01	48.0420	1.644	3.422	ug/L
	Rb	85	23425.122	0.04				mg/L
	Y	89	356213.528	2783.58				ug/L
	Rh	103	140.336	117.34				ug/L
	Mo	98	45814.683	0.09	13.8347	0.791	5.716	ug/L
	Ag	107	337514.600	0.67	48.8418	3.730	7.637	ug/L
	Cd	114	75095.758	0.15	50.1393	1.277	2.546	ug/L
>	In	115	503403.014	503403.01				ug/L
	Sn	118	2062.122	0.00	0.3291	0.005	1.444	ug/L
	Sb	123	312689.010	0.62	62.3657	2.975	4.770	ug/L
	Ba	135	107751.018	0.16	55.7479	1.199	2.150	ug/L
	Ce	140	2220.677	0.00				ug/L
>	Tb	159	654398.582	654398.58				ug/L
	Ho	165	26.669	0.00				ug/L
	Tl	203	347707.404	0.79	50.9195	1.721	3.380	ug/L
	Tl	205	859861.861	1.95	50.6679	1.574	3.106	ug/L
	Pb	206	280541.211	0.64	49.3925	2.642	5.349	ug/L
	Pb	207	245310.440	0.56	49.8182	2.262	4.540	ug/L
	Pb	208	1152905.638	2.61	50.4090	1.728	3.428	ug/L
	U	238	1262095.545	2.86	65.3489	0.962	1.472	ug/L
>	Bi	209	440980.777	440980.78				ug/L

Sample ID: L1202018204PS WG389145-01
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⌈	Na	23	S	S	S	S	S	mg/L
|	Mg	24	3742924.553	14.95	1.0804	0.116	10.774	mg/L
|	K	39	10740155.065	39.72	1.2256	0.060	4.919	mg/L
|	Ca	43	57208.123	0.23	3.3346	0.180	5.411	mg/L
|	Fe	54	117401.172	0.27	0.1020	0.032	31.177	mg/L
|	Fe	57	21349.456	0.05	0.0440	0.007	16.545	mg/L
⌊>	Sc-1	45	251365.504	251365.50				mg/L
	Cl	35	1406830.092	1368388.96				mg/L
	Kr	83	46.334	-13.67				mg/L
	Br	81	97476.478	88194.64				mg/L
	P	31	46770.071	33058.79				mg/L
	S	34	388977.835	114258.15				mg/L
	Sr	88	1980089.879	1980003.20				mg/L

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
⌈	Li	6					
|	Be	9					
|	Al	27					
⌊>	Sc	45					
⌈	Ti	49					
|	V	51					
|	Cr	52					
|	Cr	53					
|	Mn	55					
|	Co	59					
|	Ni	60					
|	Cu	65					
|	Zn	66					
|>	Ge	72		104.148			
|	As	75					
|	Se	77					
|	Se	82					
⌊	Rb	85					
	Y	89					
	Rh	103					
⌈	Mo	98					
|	Ag	107					
|	Cd	114					
|>	In	115		98.716			
|	Sn	118					
⌊	Sb	123					
⌈	Ba	135					
|	Ce	140					
⌊>	Tb	159		96.171			
⌈	Ho	165					
|	Tl	203					
|	Tl	205					
|	Pb	206					
|	Pb	207					
|	Pb	208					
|	U	238					
⌊>	Bi	209		96.226			

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⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1202018204PS WG389145-01
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Method 6020 - Summary Report

Sample ID: L1202018204SDL WG389145-02

Sample Date/Time: Thursday, February 09, 2012 11:33:37
Number of Replicates: 3
Aliquot Volume (mL):
Diluted To Volume (mL):
Autosampler Position: 21
Method File: C:\elandata\Method\6020a.mth
Sample Description: 5

User ID: JYH
Cumulative Autodilution Factor: 1
ELAN-ICP 200.8\6020 External Calibration

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Net Intens. Mean	Conc. Mean	Conc. SD	Conc. RSD	Sample Unit
	Li	6	14011.817	0.02				ug/L
	Be	9	13.333	0.00	0.0587	0.006	9.632	ug/L
	Al	27	80997.282	0.34	13.7264	8.626	62.840	ug/L
>	Sc	45	241013.576	241013.58				ug/L
	Ti	49	210.024	0.00	0.1399	0.183	130.771	ug/L
	V	51	5949.675	0.01	0.2558	0.014	5.543	ug/L
	Cr	52	9976.093	0.00	0.0550	0.022	40.844	ug/L
	Cr	53	2030.451	0.00	0.9280	0.155	16.741	ug/L
	Mn	55	10856.207	0.02	0.6699	0.017	2.516	ug/L
	Co	59	370.679	0.00	0.0170	0.002	14.416	ug/L
	Ni	60	785.378	0.00	0.3013	0.028	9.130	ug/L
	Cu	65	171.337	0.00	0.0233	0.005	21.177	ug/L
	Zn	66	952.397	0.00	0.6769	0.027	4.045	ug/L
>	Ge	72	567825.309	567825.31				ug/L
	As	75	9154.827	0.02	6.3181	0.164	2.596	ug/L
	Se	77	185.335	0.00	0.9630	0.403	41.867	ug/L
	Se	82	116.542	0.00	0.8949	0.145	16.160	ug/L
	Rb	85	4880.816	0.01				mg/L
	Y	89	375788.600	22358.65				ug/L
	Rh	103	30.334	7.33				ug/L
	Mo	98	9261.569	0.02	2.7887	0.089	3.198	ug/L
	Ag	107	233.673	0.00	0.0042	0.015	357.328	ug/L
	Cd	114	73.609	0.00	0.0003	0.014	5172.661	ug/L
>	In	115	497305.148	497305.15				ug/L
	Sn	118	435.878	0.00	0.0393	0.003	7.881	ug/L
	Sb	123	13304.069	0.03	2.6897	0.071	2.650	ug/L
	Ba	135	2300.675	0.00	1.1630	0.052	4.506	ug/L
	Ce	140	233.360	-0.00				ug/L
>	Tb	159	663968.140	663968.14				ug/L
	Ho	165	30.003	0.00				ug/L
	Tl	203	138.336	0.00	0.0091	0.004	43.430	ug/L
	Tl	205	313.371	0.00	0.0220	0.005	22.398	ug/L
	Pb	206	376.346	0.00	0.0116	0.003	22.675	ug/L
	Pb	207	308.009	0.00	0.0000	0.007	18051.080	ug/L
	Pb	208	1489.402	0.00	0.0124	0.001	11.909	ug/L
	U	238	20201.783	0.04	0.9666	0.042	4.363	ug/L
>	Bi	209	467769.395	467769.39				ug/L

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⌈	Na	23	100151536.586	417.03	18.9705	0.826	4.357	mg/L
|	Mg	24	724677.467	3.02	0.2183	0.010	4.606	mg/L
|	K	39	2684740.812	8.10	0.2535	0.021	8.321	mg/L
|	Ca	43	12457.267	0.05	0.7534	0.036	4.794	mg/L
|	Fe	54	38807.777	-0.04	-0.0112	0.003	22.400	mg/L
|	Fe	57	12083.318	0.02	0.0139	0.003	24.793	mg/L
⌊>	Sc-1	45	241013.576	241013.58				mg/L
	Cl	35	306221.608	267780.48				mg/L
	Kr	83	53.001	-7.00				mg/L
	Br	81	29903.690	20621.85				mg/L
	P	31	14390.499	679.22				mg/L
	S	34	304809.274	30089.59				mg/L
	Sr	88	458412.656	458325.98				mg/L

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
⌈	Li	6					
|	Be	9					
|	Al	27					
⌊>	Sc	45					
⌈	Ti	49					
|	V	51					
|	Cr	52					
|	Cr	53					
|	Mn	55					
|	Co	59					
|	Ni	60					
|	Cu	65					
|	Zn	66					
|>	Ge	72		107.950			
|	As	75					
|	Se	77					
|	Se	82					
⌊	Rb	85					
	Y	89					
	Rh	103					
⌈	Mo	98					
|	Ag	107					
|	Cd	114					
|>	In	115		97.520			
|	Sn	118					
⌊	Sb	123					
⌈	Ba	135					
|	Ce	140					
⌊>	Tb	159		97.577			
⌈	Ho	165					
|	Tl	203					
|	Tl	205					
|	Pb	206					
|	Pb	207					
|	Pb	208					
|	U	238					
⌊>	Bi	209		102.072			

Sample ID: L1202018204SDL WG389145-02
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⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1202018204SDL WG389145-02
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Approved: February 09, 2012

Method 6020 - Summary Report

Sample ID: QC Std 6

Sample Date/Time: Thursday, February 09, 2012 11:41:26
Number of Replicates: 3
Aliquot Volume (mL):
Diluted To Volume (mL):
Autosampler Position: 5
Method File: C:\elandata\Method\6020a.mth
Sample Description:

User ID: JYH
Cumulative Autodilution Factor: 1
ELAN-ICP 200.8\6020 External Calibration

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Net Intens. Mean	Conc. Mean	Conc. SD	Conc. RSD	Sample Unit
	Li	6	13460.968	0.02				ug/L
	Be	9	16420.191	0.07	58.9214	4.467	7.581	ug/L
	Al	27	303086.441	1.26	50.8463	6.826	13.425	ug/L
>	Sc	45	239273.058	239273.06				ug/L
	Ti	49	62698.056	0.11	97.2295	4.958	5.099	ug/L
	V	51	547136.128	1.00	50.4311	1.469	2.914	ug/L
	Cr	52	479610.541	0.86	49.0241	1.013	2.066	ug/L
	Cr	53	57194.843	0.10	49.2798	1.098	2.229	ug/L
	Mn	55	719067.765	1.32	49.4052	0.941	1.905	ug/L
	Co	59	541855.112	0.99	49.2560	0.273	0.555	ug/L
	Ni	60	111791.053	0.21	50.0131	1.181	2.361	ug/L
	Cu	65	104586.805	0.19	50.3030	1.786	3.551	ug/L
	Zn	66	60362.451	0.11	51.3264	1.558	3.036	ug/L
>	Ge	72	545019.719	545019.72				ug/L
	As	75	68496.166	0.13	48.1199	0.368	0.764	ug/L
	Se	77	5046.864	0.01	48.8267	2.151	4.406	ug/L
	Se	82	6075.165	0.01	48.0713	0.472	0.983	ug/L
	Rb	85	2483.729	0.00				mg/L
	Y	89	344513.072	-8916.87				ug/L
	Rh	103	32.667	9.67				ug/L
	Mo	98	341835.621	0.68	104.1174	4.528	4.349	ug/L
	Ag	107	346469.050	0.69	50.4046	1.624	3.221	ug/L
	Cd	114	77115.814	0.15	51.7714	3.567	6.890	ug/L
>	In	115	499952.086	499952.09				ug/L
	Sn	118	274776.959	0.55	49.4377	1.761	3.563	ug/L
	Sb	123	247732.804	0.50	49.7267	1.994	4.010	ug/L
	Ba	135	95215.229	0.15	49.6034	1.484	2.991	ug/L
	Ce	140	100.011	-0.00				ug/L
>	Tb	159	650260.936	650260.94				ug/L
	Ho	165	16.668	0.00				ug/L
	Tl	203	355810.813	0.77	49.4734	0.821	1.660	ug/L
	Tl	205	897182.673	1.93	50.2054	2.664	5.306	ug/L
	Pb	206	295378.523	0.64	49.3737	1.344	2.723	ug/L
	Pb	207	256362.785	0.55	49.4275	0.649	1.314	ug/L
	Pb	208	1197780.458	2.58	49.7228	0.539	1.084	ug/L
	U	238	1115394.153	2.40	54.8451	1.252	2.283	ug/L
>	Bi	209	464381.372	464381.37				ug/L

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Na	23	26825916.246	112.19	5.1059	0.318	6.226	mg/L
Mg	24	16967090.197	71.05	5.1324	0.409	7.967	mg/L
K	39	39631477.031	162.65	5.0050	0.165	3.296	mg/L
Ca	43	79439.670	0.33	4.8492	0.198	4.085	mg/L
Fe	54	3238419.999	13.35	4.8876	0.342	7.001	mg/L
Fe	57	1473333.678	6.13	5.2796	0.130	2.462	mg/L
Sc-1	45	239273.058	239273.06				mg/L
Cl	35	31876.243	-6564.89				mg/L
Kr	83	55.667	-4.33				mg/L
Br	81	10365.781	1083.94				mg/L
P	31	14948.929	1237.64				mg/L
S	34	262080.525	-12639.15				mg/L
Sr	88	5525.723	5439.05				mg/L

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
Li	6					
Be	9					
Al	27					
Sc	45					
Ti	49					
V	51	100.862				
Cr	52	98.048				
Cr	53					
Mn	55	98.810				
Co	59	98.512				
Ni	60	100.026				
Cu	65	100.606				
Zn	66	102.653				
Ge	72		103.614			
As	75	96.240				
Se	77					
Se	82	96.143				
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107	100.809				
Cd	114	103.543				
In	115		98.039			
Sn	118					
Sb	123	99.453				
Ba	135	99.207				
Ce	140					
Tb	159		95.562			
Ho	165					
Tl	203	98.947				
Tl	205					
Pb	206					
Pb	207					
Pb	208	99.446				
U	238	109.690				
Bi	209		101.332			

Sample ID: QC Std 6
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⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Thursday, February 09, 2012 11:43:39
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Approved: February 09, 2012

Method 6020 - Summary Report

Sample ID: QC Std 7

Sample Date/Time: Thursday, February 09, 2012 11:49:02
Number of Replicates: 3
Aliquot Volume (mL):
Diluted To Volume (mL):
Autosampler Position: 1
Method File: C:\elandata\Method\6020a.mth
Sample Description:

User ID: JYH
Cumulative Autodilution Factor: 1
ELAN-ICP 200.8\6020 External Calibration

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Net Intens. Mean	Conc. Mean	Conc. SD	Conc. RSD	Sample Unit
	Li	6	13527.689	0.01				ug/L
	Be	9	5.333	-0.00	0.0277	0.007	26.954	ug/L
	Al	27	2717.110	0.00	-0.0082	0.028	337.919	ug/L
>	Sc	45	272703.288	272703.29				ug/L
	Ti	49	70.007	-0.00	-0.0802	0.074	92.165	ug/L
	V	51	3036.078	-0.00	-0.0197	0.019	98.774	ug/L
	Cr	52	9796.532	-0.00	-0.0235	0.009	36.785	ug/L
	Cr	53	1213.543	0.00	0.1731	0.085	48.955	ug/L
	Mn	55	434.682	0.00	-0.0193	0.004	19.938	ug/L
	Co	59	171.670	0.00	-0.0014	0.004	273.429	ug/L
	Ni	60	48.667	0.00	-0.0169	0.006	36.190	ug/L
	Cu	65	110.669	-0.00	-0.0080	0.005	64.672	ug/L
	Zn	66	85.335	0.00	-0.0364	0.004	9.725	ug/L
>	Ge	72	605168.402	605168.40				ug/L
	As	75	-176.243	0.00	0.0557	0.044	78.615	ug/L
	Se	77	119.334	0.00	0.2515	0.066	26.338	ug/L
	Se	82	8.273	0.00	0.0756	0.055	72.160	ug/L
	Rb	85	28.667	-0.00				mg/L
	Y	89	405335.410	51905.46				ug/L
	Rh	103	11.667	-11.33				ug/L
	Mo	98	136.788	0.00	-0.0064	0.002	27.001	ug/L
	Ag	107	170.337	0.00	-0.0070	0.005	70.639	ug/L
	Cd	114	11.727	0.00	-0.0416	0.003	7.114	ug/L
>	In	115	535216.501	535216.50				ug/L
	Sn	118	198.136	0.00	-0.0063	0.001	14.892	ug/L
	Sb	123	691.406	0.00	0.1364	0.015	10.657	ug/L
	Ba	135	51.001	0.00	0.0118	0.005	40.113	ug/L
	Ce	140	13.335	-0.00				ug/L
>	Tb	159	709842.429	709842.43				ug/L
	Ho	165	3.334	-0.00				ug/L
	Tl	203	122.002	0.00	0.0053	0.003	63.403	ug/L
	Tl	205	253.363	0.00	0.0174	0.003	18.495	ug/L
	Pb	206	354.678	0.00	0.0033	0.003	92.610	ug/L
	Pb	207	331.010	0.00	-0.0005	0.004	906.777	ug/L
	Pb	208	1449.730	0.00	0.0060	0.000	7.226	ug/L
	U	238	215.672	0.00	-0.0093	0.002	25.647	ug/L
>	Bi	209	507883.719	507883.72				ug/L

Sample ID: QC Std 7
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Na	23	54364.575	0.11	0.0083	0.003	30.267	mg/L
Mg	24	2360.604	0.01	0.0008	0.000	34.473	mg/L
K	39	712728.567	-0.48	-0.0104	0.005	45.647	mg/L
Ca	43	180.020	0.00	0.0028	0.001	40.556	mg/L
Fe	54	53001.918	-0.01	0.0010	0.005	479.992	mg/L
Fe	57	10624.591	0.01	0.0043	0.007	160.009	mg/L
Sc-1	45	272703.288	272703.29				mg/L
Cl	35	32245.621	-6195.51				mg/L
Kr	83	45.334	-14.67				mg/L
Br	81	11612.085	2330.25				mg/L
P	31	15059.600	1348.32				mg/L
S	34	286235.734	11516.05				mg/L
Sr	88	156.684	70.01				mg/L

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
Li	6					
Be	9					
Al	27					
Sc	45					
Ti	49					
V	51					
Cr	52					
Cr	53					
Mn	55					
Co	59					
Ni	60					
Cu	65					
Zn	66					
Ge	72		115.049			
As	75					
Se	77					
Se	82					
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107					
Cd	114					
In	115		104.954			
Sn	118					
Sb	123					
Ba	135					
Ce	140					
Tb	159		104.319			
Ho	165					
Tl	203					
Tl	205					
Pb	206					
Pb	207					
Pb	208					
U	238					
Bi	209		110.825			

Sample ID: QC Std 7
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⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Thursday, February 09, 2012 11:51:14
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Method 6020 - Summary Report

Sample ID: L1202018202

Sample Date/Time: Thursday, February 09, 2012 11:56:39
Number of Replicates: 3
Aliquot Volume (mL):
Diluted To Volume (mL):
Autosampler Position: 22
Method File: C:\elandata\Method\6020a.mth
Sample Description: 1

User ID: JYH
Cumulative Autodilution Factor: 1
ELAN-ICP 200.8\6020 External Calibration

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Net Intens. Mean	Conc. Mean	Conc. SD	Conc. RSD	Sample Unit
	Li	6	12926.693	0.01				ug/L
	Be	9	8.667	0.00	0.0394	0.017	42.645	ug/L
	Al	27	55753.880	0.20	8.1600	1.355	16.610	ug/L
>	Sc	45	264011.070	264011.07				ug/L
	Ti	49	186.688	0.00	0.0897	0.110	123.018	ug/L
	V	51	10327.611	0.01	0.6166	0.035	5.727	ug/L
	Cr	52	12287.512	0.00	0.2474	0.052	21.206	ug/L
	Cr	53	1450.272	0.00	0.3925	0.093	23.766	ug/L
	Mn	55	17913.790	0.03	1.0982	0.073	6.608	ug/L
	Co	59	273.007	0.00	0.0076	0.001	15.025	ug/L
	Ni	60	822.382	0.00	0.3055	0.012	3.950	ug/L
	Cu	65	1405.133	0.00	0.5723	0.034	5.894	ug/L
	Zn	66	1516.820	0.00	1.0988	0.048	4.368	ug/L
>	Ge	72	586766.112	586766.11				ug/L
	As	75	507.674	0.00	0.4974	0.042	8.352	ug/L
	Se	77	115.334	0.00	0.2483	0.182	73.106	ug/L
	Se	82	22.284	0.00	0.1791	0.034	19.213	ug/L
	Rb	85	3677.182	0.01				mg/L
	Y	89	382997.514	29567.57				ug/L
	Rh	103	17.667	-5.33				ug/L
	Mo	98	4858.365	0.01	1.3485	0.092	6.815	ug/L
	Ag	107	100.668	0.00	-0.0164	0.002	13.643	ug/L
	Cd	114	15.825	0.00	-0.0387	0.010	27.048	ug/L
>	In	115	531860.338	531860.34				ug/L
	Sn	118	8584.419	0.02	1.4147	0.060	4.217	ug/L
	Sb	123	845.965	0.00	0.1663	0.005	3.159	ug/L
	Ba	135	1740.533	0.00	0.8155	0.014	1.760	ug/L
	Ce	140	2220.518	0.00				ug/L
>	Tb	159	711970.959	711970.96				ug/L
	Ho	165	23.336	0.00				ug/L
	Tl	203	52.667	0.00	-0.0032	0.001	38.444	ug/L
	Tl	205	110.012	0.00	0.0103	0.001	14.290	ug/L
	Pb	206	366.345	0.00	0.0075	0.002	29.481	ug/L
	Pb	207	349.344	0.00	0.0054	0.002	38.156	ug/L
	Pb	208	1528.404	0.00	0.0115	0.000	1.913	ug/L
	U	238	791.045	0.00	0.0182	0.002	11.907	ug/L
>	Bi	209	486755.972	486755.97				ug/L

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Na	23	7585913.488	28.76	1.3113	0.134	10.209	mg/L
Mg	24	851651.885	3.23	0.2339	0.021	9.161	mg/L
K	39	3110563.921	8.71	0.2721	0.021	7.588	mg/L
Ca	43	29026.754	0.11	1.6062	0.099	6.163	mg/L
Fe	54	115646.526	0.23	0.0901	0.013	14.919	mg/L
Fe	57	15359.136	0.02	0.0205	0.003	12.737	mg/L
Sc-1	45	264011.070	264011.07				mg/L
Cl	35	48701.238	10260.11				mg/L
Kr	83	44.001	-16.00				mg/L
Br	81	13774.052	4492.21				mg/L
P	31	35556.743	21845.46				mg/L
S	34	297286.020	22566.34				mg/L
Sr	88	221788.307	221701.63				mg/L

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
Li	6					
Be	9					
Al	27					
Sc	45					
Ti	49					
V	51					
Cr	52					
Cr	53					
Mn	55					
Co	59					
Ni	60					
Cu	65					
Zn	66					
Ge	72		111.550			
As	75					
Se	77					
Se	82					
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107					
Cd	114					
In	115		104.296			
Sn	118					
Sb	123					
Ba	135					
Ce	140					
Tb	159		104.631			
Ho	165					
Tl	203					
Tl	205					
Pb	206					
Pb	207					
Pb	208					
U	238					
Bi	209		106.215			

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⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1202001604

Sample Date/Time: Thursday, February 09, 2012 12:04:25
Number of Replicates: 3
Aliquot Volume (mL):
Diluted To Volume (mL):
Autosampler Position: 20
Method File: C:\elandata\Method\6020a.mth
Sample Description: 1

User ID: JYH
Cumulative Autodilution Factor: 1
ELAN-ICP 200.8\6020 External Calibration

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Net Intens. Mean	Conc. Mean	Conc. SD	Conc. RSD	Sample Unit
	Li	6	14529.334	0.01				ug/L
	Be	9	6.667	0.00	0.0305	0.009	28.184	ug/L
	Al	27	64986.140	0.22	8.6598	0.586	6.772	ug/L
>	Sc	45	289428.546	289428.55				ug/L
	Ti	49	583.412	0.00	0.6717	0.107	15.931	ug/L
	V	51	18288.064	0.03	1.3209	0.013	1.022	ug/L
	Cr	52	19585.190	0.02	0.9766	0.050	5.140	ug/L
	Cr	53	2967.492	0.00	1.6585	0.084	5.041	ug/L
	Mn	55	5599.270	0.01	0.3158	0.008	2.667	ug/L
	Co	59	842.384	0.00	0.0566	0.001	1.822	ug/L
	Ni	60	3257.338	0.01	1.3355	0.116	8.655	ug/L
	Cu	65	820.382	0.00	0.3153	0.011	3.489	ug/L
	Zn	66	8222.804	0.01	6.4852	0.140	2.154	ug/L
>	Ge	72	579499.705	579499.71				ug/L
	As	75	6700.669	0.01	4.5801	0.209	4.571	ug/L
	Se	77	188.002	0.00	0.9337	0.141	15.091	ug/L
	Se	82	2489.252	0.00	18.5356	0.846	4.563	ug/L
	Rb	85	11818.162	0.02				mg/L
	Y	89	378053.125	24623.18				ug/L
	Rh	103	144.003	121.00				ug/L
	Mo	98	2767.090	0.01	0.7782	0.005	0.692	ug/L
	Ag	107	108.335	0.00	-0.0147	0.001	8.258	ug/L
	Cd	114	16.573	0.00	-0.0381	0.003	8.932	ug/L
>	In	115	511618.787	511618.79				ug/L
	Sn	118	366.941	0.00	0.0249	0.004	15.042	ug/L
	Sb	123	408.800	0.00	0.0868	0.004	4.754	ug/L
	Ba	135	54124.451	0.08	26.7990	0.272	1.013	ug/L
	Ce	140	616.751	0.00				ug/L
>	Tb	159	683573.853	683573.85				ug/L
	Ho	165	13.335	0.00				ug/L
	Tl	203	94.668	0.00	0.0026	0.000	17.382	ug/L
	Tl	205	236.694	0.00	0.0173	0.003	14.756	ug/L
	Pb	206	400.347	0.00	0.0141	0.001	5.476	ug/L
	Pb	207	349.011	0.00	0.0065	0.003	41.785	ug/L
	Pb	208	1587.408	0.00	0.0150	0.001	5.051	ug/L
	U	238	5260.046	0.01	0.2323	0.007	2.815	ug/L
>	Bi	209	478286.414	478286.41				ug/L

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Na	23	68830307.331	238.28	10.8407	1.073	9.893	mg/L
Mg	24	15725441.657	54.38	3.9281	0.135	3.434	mg/L
K	39	8967234.007	27.91	0.8625	0.041	4.806	mg/L
Ca	43	426623.460	1.47	21.5960	0.828	3.835	mg/L
Fe	54	167416.864	0.38	0.1414	0.005	3.470	mg/L
Fe	57	61224.101	0.18	0.1529	0.013	8.250	mg/L
Sc-1	45	289428.546	289428.55				mg/L
Cl	35	524925.485	486484.36				mg/L
Kr	83	57.001	-3.00				mg/L
Br	81	1262539.109	1253257.27				mg/L
P	31	68532.149	54820.87				mg/L
S	34	714882.373	440162.69				mg/L
Sr	88	2576350.710	2576264.03				mg/L

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
Li	6					
Be	9					
Al	27					
Sc	45					
Ti	49					
V	51					
Cr	52					
Cr	53					
Mn	55					
Co	59					
Ni	60					
Cu	65					
Zn	66					
Ge	72		110.169			
As	75					
Se	77					
Se	82					
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107					
Cd	114					
In	115		100.327			
Sn	118					
Sb	123					
Ba	135					
Ce	140					
Tb	159		100.458			
Ho	165					
Tl	203					
Tl	205					
Pb	206					
Pb	207					
Pb	208					
U	238					
Bi	209		104.367			

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⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1202001604
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Method 6020 - Summary Report

Sample ID: L1202001604PS WG388710-01

Sample Date/Time: Thursday, February 09, 2012 12:12:13
Number of Replicates: 3
Aliquot Volume (mL):
Diluted To Volume (mL):
Autosampler Position: 21
Method File: C:\elandata\Method\6020a.mth
Sample Description: 1

User ID: JYH
Cumulative Autodilution Factor: 1
ELAN-ICP 200.8\6020 External Calibration

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Net Intens. Mean	Conc. Mean	Conc. SD	Conc. RSD	Sample Unit
	Li	6	14145.350	0.01				ug/L
	Be	9	17513.052	0.06	54.8166	1.982	3.616	ug/L
	Al	27	345457.581	1.25	50.5054	3.378	6.688	ug/L
>	Sc	45	274087.222	274087.22				ug/L
	Ti	49	666.760	0.00	0.8212	0.096	11.668	ug/L
	V	51	551491.861	0.98	49.2911	2.745	5.568	ug/L
	Cr	52	486076.852	0.85	48.1438	1.934	4.017	ug/L
	Cr	53	59178.763	0.10	49.4242	1.156	2.339	ug/L
	Mn	55	721366.583	1.28	48.0583	2.303	4.792	ug/L
	Co	59	522972.666	0.93	46.0392	0.138	0.299	ug/L
	Ni	60	109356.967	0.19	47.4599	2.580	5.436	ug/L
	Cu	65	101731.753	0.18	47.4045	1.269	2.677	ug/L
	Zn	66	62847.325	0.11	51.7733	2.073	4.003	ug/L
>	Ge	72	562769.081	562769.08				ug/L
	As	75	70588.172	0.13	48.0888	1.894	3.939	ug/L
	Se	77	4565.917	0.01	42.7390	1.650	3.860	ug/L
	Se	82	7473.723	0.01	57.3409	2.622	4.572	ug/L
	Rb	85	10932.949	0.02				mg/L
	Y	89	368177.984	14748.04				ug/L
	Rh	103	145.669	122.67				ug/L
	Mo	98	2797.662	0.01	0.8199	0.013	1.542	ug/L
	Ag	107	325139.744	0.66	47.9949	1.511	3.147	ug/L
	Cd	114	75590.212	0.15	51.6010	2.918	5.656	ug/L
>	In	115	492329.133	492329.13				ug/L
	Sn	118	374.008	0.00	0.0287	0.003	8.741	ug/L
	Sb	123	239113.385	0.49	48.7297	1.034	2.123	ug/L
	Ba	135	144716.188	0.22	74.0726	2.207	2.979	ug/L
	Ce	140	686.764	0.00				ug/L
>	Tb	159	661752.434	661752.43				ug/L
	Ho	165	3.334	-0.00				ug/L
	Tl	203	355999.122	0.74	47.5448	0.156	0.328	ug/L
	Tl	205	881660.959	1.82	47.3731	2.007	4.237	ug/L
	Pb	206	298032.674	0.62	47.8484	0.477	0.998	ug/L
	Pb	207	270333.585	0.56	50.0748	1.700	3.396	ug/L
	Pb	208	1252249.562	2.59	49.9421	1.194	2.390	ug/L
	U	238	1216442.520	2.52	57.4507	0.259	0.451	ug/L
>	Bi	209	483457.413	483457.41				ug/L

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Na	23	63272889.280	231.11	10.5142	0.799	7.595	mg/L
Mg	24	14178102.288	51.77	3.7398	0.163	4.359	mg/L
K	39	8272272.048	27.10	0.8377	0.040	4.771	mg/L
Ca	43	401552.042	1.47	21.4733	1.459	6.795	mg/L
Fe	54	160411.360	0.38	0.1436	0.006	4.514	mg/L
Fe	57	55944.127	0.17	0.1464	0.019	13.146	mg/L
Sc-1	45	274087.222	274087.22				mg/L
Cl	35	479744.450	441303.32				mg/L
Kr	83	47.334	-12.67				mg/L
Br	81	1162263.233	1152981.39				mg/L
P	31	56011.095	42299.81				mg/L
S	34	614572.973	339853.29				mg/L
Sr	88	2353775.672	2353689.00				mg/L

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
Li	6					
Be	9					
Al	27					
Sc	45					
Ti	49					
V	51					
Cr	52					
Cr	53					
Mn	55					
Co	59					
Ni	60					
Cu	65					
Zn	66					
Ge	72		106.988			
As	75					
Se	77					
Se	82					
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107					
Cd	114					
In	115		96.544			
Sn	118					
Sb	123					
Ba	135					
Ce	140					
Tb	159		97.251			
Ho	165					
Tl	203					
Tl	205					
Pb	206					
Pb	207					
Pb	208					
U	238					
Bi	209		105.495			

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⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1202001604PS WG388710-01
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Method 6020 - Summary Report

Sample ID: L1202001604SDL WG388710-02

Sample Date/Time: Thursday, February 09, 2012 12:20:02
Number of Replicates: 3
Aliquot Volume (mL):
Diluted To Volume (mL):
Autosampler Position: 22
Method File: C:\elandata\Method\6020a.mth
Sample Description: 5

User ID: JYH
Cumulative Autodilution Factor: 1
ELAN-ICP 200.8\6020 External Calibration

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Net Intens. Mean	Conc. Mean	Conc. SD	Conc. RSD	Sample Unit
	Li	6	15047.054	0.02				ug/L
	Be	9	12.000	0.00	0.0520	0.011	21.848	ug/L
	Al	27	14846.623	0.05	1.9885	0.153	7.718	ug/L
>	Sc	45	249397.869	249397.87				ug/L
	Ti	49	170.019	0.00	0.0665	0.052	77.915	ug/L
	V	51	5155.582	0.00	0.1741	0.010	5.472	ug/L
	Cr	52	10287.783	0.00	0.0600	0.017	28.149	ug/L
	Cr	53	1383.587	0.00	0.3476	0.109	31.222	ug/L
	Mn	55	1516.153	0.00	0.0512	0.002	3.179	ug/L
	Co	59	266.340	0.00	0.0072	0.000	2.930	ug/L
	Ni	60	570.359	0.00	0.2022	0.020	9.854	ug/L
	Cu	65	371.345	0.00	0.1110	0.014	12.850	ug/L
	Zn	66	4017.008	0.01	3.0979	0.065	2.103	ug/L
>	Ge	72	582773.899	582773.90				ug/L
	As	75	829.540	0.00	0.7105	0.105	14.728	ug/L
	Se	77	89.334	-0.00	0.0158	0.092	583.464	ug/L
	Se	82	369.921	0.00	2.7526	0.364	13.221	ug/L
	Rb	85	1902.570	0.00				mg/L
	Y	89	359468.185	6038.24				ug/L
	Rh	103	27.334	4.33				ug/L
	Mo	98	560.887	0.00	0.1200	0.006	5.236	ug/L
	Ag	107	138.669	0.00	-0.0106	0.003	31.185	ug/L
	Cd	114	15.092	0.00	-0.0392	0.005	13.228	ug/L
>	In	115	516393.018	516393.02				ug/L
	Sn	118	139.334	0.00	-0.0153	0.001	3.848	ug/L
	Sb	123	487.723	0.00	0.1015	0.007	6.472	ug/L
	Ba	135	8730.996	0.01	4.2956	0.244	5.675	ug/L
	Ce	140	150.017	-0.00				ug/L
>	Tb	159	686825.428	686825.43				ug/L
	Ho	165	13.335	0.00				ug/L
	Tl	203	104.335	0.00	0.0035	0.002	71.738	ug/L
	Tl	205	213.358	0.00	0.0156	0.003	18.978	ug/L
	Pb	206	366.012	0.00	0.0068	0.002	25.169	ug/L
	Pb	207	320.676	0.00	-0.0006	0.002	349.303	ug/L
	Pb	208	1483.067	0.00	0.0091	0.003	32.158	ug/L
	U	238	959.398	0.00	0.0255	0.003	12.037	ug/L
>	Bi	209	492601.674	492601.67				ug/L

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Na	23	10627552.712	42.56	1.9388	0.104	5.365	mg/L
Mg	24	2523370.013	10.12	0.7313	0.041	5.646	mg/L
K	39	1956593.359	4.75	0.1503	0.007	4.757	mg/L
Ca	43	68530.858	0.27	4.0202	0.150	3.726	mg/L
Fe	54	69968.705	0.08	0.0325	0.007	22.597	mg/L
Fe	57	18198.486	0.04	0.0335	0.009	25.860	mg/L
Sc-1	45	249397.869	249397.87				mg/L
Cl	35	109697.056	71255.93				mg/L
Kr	83	49.001	-11.00				mg/L
Br	81	188607.429	179325.59				mg/L
P	31	23701.106	9989.82				mg/L
S	34	352359.537	77639.86				mg/L
Sr	88	443207.656	443120.98				mg/L

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
Li	6					
Be	9					
Al	27					
Sc	45					
Ti	49					
V	51					
Cr	52					
Cr	53					
Mn	55					
Co	59					
Ni	60					
Cu	65					
Zn	66					
Ge	72		110.791			
As	75					
Se	77					
Se	82					
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107					
Cd	114					
In	115		101.263			
Sn	118					
Sb	123					
Ba	135					
Ce	140					
Tb	159		100.936			
Ho	165					
Tl	203					
Tl	205					
Pb	206					
Pb	207					
Pb	208					
U	238					
Bi	209		107.490			

Sample ID: L1202001604SDL WG388710-02
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⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1202001604SDL WG388710-02
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Method 6020 - Summary Report

Sample ID: QC Std 6

Sample Date/Time: Thursday, February 09, 2012 12:27:51
Number of Replicates: 3
Aliquot Volume (mL):
Diluted To Volume (mL):
Autosampler Position: 5
Method File: C:\elandata\Method\6020a.mth
Sample Description:

User ID: JYH
Cumulative Autodilution Factor: 1
ELAN-ICP 200.8\6020 External Calibration

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Net Intens. Mean	Conc. Mean	Conc. SD	Conc. RSD	Sample Unit
	Li	6	12576.166	0.01				ug/L
	Be	9	16944.551	0.07	62.9277	3.426	5.445	ug/L
	Al	27	278151.538	1.20	48.2013	4.252	8.821	ug/L
>	Sc	45	231113.631	231113.63				ug/L
	Ti	49	60904.606	0.11	94.0679	4.631	4.923	ug/L
	V	51	537853.139	0.98	49.3781	1.928	3.904	ug/L
	Cr	52	475454.580	0.85	48.4024	1.677	3.465	ug/L
	Cr	53	54996.484	0.10	47.2136	2.647	5.607	ug/L
	Mn	55	700506.118	1.28	47.9252	0.354	0.739	ug/L
	Co	59	527403.385	0.96	47.7491	2.122	4.445	ug/L
	Ni	60	109327.370	0.20	48.7173	1.427	2.928	ug/L
	Cu	65	101534.038	0.19	48.6254	1.152	2.368	ug/L
	Zn	66	59224.311	0.11	50.1453	0.858	1.710	ug/L
>	Ge	72	547245.103	547245.10				ug/L
	As	75	68839.028	0.13	48.1714	1.693	3.515	ug/L
	Se	77	5228.307	0.01	50.4108	0.932	1.849	ug/L
	Se	82	5955.140	0.01	46.9393	0.970	2.067	ug/L
	Rb	85	2417.375	0.00				mg/L
	Y	89	342948.544	-10481.40				ug/L
	Rh	103	30.000	7.00				ug/L
	Mo	98	332516.793	0.69	104.3750	4.618	4.425	ug/L
	Ag	107	340706.584	0.70	51.1081	1.761	3.446	ug/L
	Cd	114	75994.348	0.16	52.6775	3.172	6.022	ug/L
>	In	115	484731.718	484731.72				ug/L
	Sn	118	266248.514	0.55	49.3952	1.363	2.760	ug/L
	Sb	123	246722.171	0.51	51.0538	0.340	0.667	ug/L
	Ba	135	92068.095	0.15	49.8205	1.525	3.061	ug/L
	Ce	140	100.011	-0.00				ug/L
>	Tb	159	625880.076	625880.08				ug/L
	Ho	165	23.336	0.00				ug/L
	Tl	203	351478.855	0.77	49.8326	0.373	0.749	ug/L
	Tl	205	869258.494	1.91	49.5930	0.095	0.191	ug/L
	Pb	206	286926.676	0.63	48.9105	0.974	1.991	ug/L
	Pb	207	254563.392	0.56	50.0581	1.166	2.330	ug/L
	Pb	208	1190332.712	2.61	50.3925	0.244	0.484	ug/L
	U	238	1116579.199	2.45	55.9900	1.825	3.260	ug/L
>	Bi	209	455391.745	455391.74				ug/L

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Na	23	25299528.444	109.55	4.9856	0.334	6.692	mg/L
Mg	24	15799341.435	68.47	4.9461	0.374	7.567	mg/L
K	39	36994011.642	157.11	4.8347	0.188	3.890	mg/L
Ca	43	76628.595	0.33	4.8490	0.117	2.415	mg/L
Fe	54	3221423.632	13.76	5.0344	0.322	6.397	mg/L
Fe	57	1401457.805	6.04	5.2035	0.260	5.004	mg/L
Sc-1	45	231113.631	231113.63				mg/L
Cl	35	32759.616	-5681.51				mg/L
Kr	83	47.667	-12.33				mg/L
Br	81	15203.874	5922.03				mg/L
P	31	14683.644	972.36				mg/L
S	34	302509.975	27790.29				mg/L
Sr	88	5448.994	5362.32				mg/L

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
Li	6					
Be	9					
Al	27					
Sc	45					
Ti	49					
V	51	98.756				
Cr	52	96.805				
Cr	53					
Mn	55	95.850				
Co	59	95.498				
Ni	60	97.435				
Cu	65	97.251				
Zn	66	100.291				
Ge	72		104.037			
As	75	96.343				
Se	77					
Se	82	93.879				
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107	102.216				
Cd	114	105.355				
In	115		95.054			
Sn	118					
Sb	123	102.108				
Ba	135	99.641				
Ce	140					
Tb	159		91.979			
Ho	165					
Tl	203	99.665				
Tl	205					
Pb	206					
Pb	207					
Pb	208	100.785				
U	238	111.980				
Bi	209		99.371			

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⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	U	238	CCV IS OUT OF LIMITS (+/-10% OR %RSD>20)

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7

Sample Date/Time: Thursday, February 09, 2012 12:35:28
Number of Replicates: 3
Aliquot Volume (mL):
Diluted To Volume (mL):
Autosampler Position: 1
Method File: C:\elandata\Method\6020a.mth
Sample Description:

User ID: JYH
Cumulative Autodilution Factor: 1
ELAN-ICP 200.8\6020 External Calibration

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Net Intens. Mean	Conc. Mean	Conc. SD	Conc. RSD	Sample Unit
	Li	6	14028.638	0.01				ug/L
	Be	9	10.667	0.00	0.0466	0.028	60.516	ug/L
	Al	27	2617.091	0.00	0.0016	0.092	5602.144	ug/L
>	Sc	45	255613.688	255613.69				ug/L
	Ti	49	96.677	-0.00	-0.0331	0.024	72.323	ug/L
	V	51	2645.660	-0.00	-0.0321	0.018	56.330	ug/L
	Cr	52	8716.310	-0.00	-0.0519	0.015	29.270	ug/L
	Cr	53	900.139	0.00	-0.0132	0.067	507.845	ug/L
	Mn	55	426.349	0.00	-0.0175	0.005	27.663	ug/L
	Co	59	170.004	0.00	-0.0003	0.005	1738.494	ug/L
	Ni	60	49.334	0.00	-0.0149	0.004	29.164	ug/L
	Cu	65	116.335	0.00	-0.0012	0.005	435.803	ug/L
	Zn	66	84.668	0.00	-0.0311	0.007	22.345	ug/L
>	Ge	72	555908.352	555908.35				ug/L
	As	75	-202.436	0.00	0.0282	0.010	36.160	ug/L
	Se	77	88.667	-0.00	0.0481	0.142	294.154	ug/L
	Se	82	8.904	0.00	0.0839	0.071	84.277	ug/L
	Rb	85	29.000	-0.00				mg/L
	Y	89	356775.731	3345.78				ug/L
	Rh	103	11.333	-11.67				ug/L
	Mo	98	144.866	0.00	-0.0019	0.005	256.427	ug/L
	Ag	107	181.337	0.00	-0.0041	0.006	135.816	ug/L
	Cd	114	11.492	0.00	-0.0414	0.007	16.696	ug/L
>	In	115	508204.235	508204.24				ug/L
	Sn	118	204.003	0.00	-0.0034	0.004	121.388	ug/L
	Sb	123	657.818	0.00	0.1367	0.016	12.046	ug/L
	Ba	135	43.334	0.00	0.0095	0.003	36.364	ug/L
	Ce	140	26.669	-0.00				ug/L
>	Tb	159	665349.967	665349.97				ug/L
	Ho	165	6.667	0.00				ug/L
	Tl	203	108.668	0.00	0.0042	0.003	60.955	ug/L
	Tl	205	206.690	0.00	0.0154	0.004	26.163	ug/L
	Pb	206	351.344	0.00	0.0049	0.005	95.641	ug/L
	Pb	207	304.342	0.00	-0.0031	0.004	123.112	ug/L
	Pb	208	1348.389	0.00	0.0043	0.002	44.474	ug/L
	U	238	221.005	0.00	-0.0087	0.003	35.464	ug/L
>	Bi	209	487895.959	487895.96				ug/L

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Na	23	37777.643	0.06	0.0059	0.001	23.730	mg/L
Mg	24	2837.477	0.01	0.0010	0.000	31.728	mg/L
K	39	690049.389	-0.40	-0.0079	0.004	49.122	mg/L
Ca	43	196.689	0.00	0.0044	0.001	30.607	mg/L
Fe	54	50023.660	-0.01	0.0013	0.002	166.437	mg/L
Fe	57	9322.819	0.00	0.0019	0.003	132.381	mg/L
Sc-1	45	255613.688	255613.69				mg/L
Cl	35	29485.465	-8955.66				mg/L
Kr	83	49.334	-10.67				mg/L
Br	81	11973.273	2691.43				mg/L
P	31	15540.489	1829.21				mg/L
S	34	276419.363	1699.68				mg/L
Sr	88	166.685	80.01				mg/L

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
Li	6					
Be	9					
Al	27					
Sc	45					
Ti	49					
V	51					
Cr	52					
Cr	53					
Mn	55					
Co	59					
Ni	60					
Cu	65					
Zn	66					
Ge	72		105.684			
As	75					
Se	77					
Se	82					
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107					
Cd	114					
In	115		99.657			
Sn	118					
Sb	123					
Ba	135					
Ce	140					
Tb	159		97.780			
Ho	165					
Tl	203					
Tl	205					
Pb	206					
Pb	207					
Pb	208					
U	238					
Bi	209		106.463			

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⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Thursday, February 09, 2012 12:37:40
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Method 6020 - Summary Report

Sample ID: L1202021501

Sample Date/Time: Thursday, February 09, 2012 12:43:03
Number of Replicates: 3
Aliquot Volume (mL):
Diluted To Volume (mL):
Autosampler Position: 23
Method File: C:\elandata\Method\6020a.mth
Sample Description: 5

User ID: JYH
Cumulative Autodilution Factor: 1
ELAN-ICP 200.8\6020 External Calibration

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Net Intens. Mean	Conc. Mean	Conc. SD	Conc. RSD	Sample Unit
	Li	6	13661.223	0.02				ug/L
	Be	9	6.667	0.00	0.0349	0.008	21.722	ug/L
	Al	27	10389.813	0.04	1.3699	0.141	10.307	ug/L
>	Sc	45	235861.898	235861.90				ug/L
	Ti	49	163.351	0.00	0.0647	0.039	59.579	ug/L
	V	51	2891.050	-0.00	-0.0138	0.010	72.357	ug/L
	Cr	52	9284.598	-0.00	-0.0081	0.029	352.690	ug/L
	Cr	53	966.819	0.00	0.0320	0.019	59.502	ug/L
	Mn	55	1356810.880	2.40	90.0540	1.544	1.715	ug/L
	Co	59	360.011	0.00	0.0161	0.003	20.369	ug/L
	Ni	60	726.706	0.00	0.2775	0.024	8.555	ug/L
	Cu	65	418.681	0.00	0.1386	0.009	6.760	ug/L
	Zn	66	3465.755	0.01	2.7491	0.081	2.932	ug/L
>	Ge	72	564341.205	564341.20				ug/L
	As	75	-1.392	0.00	0.1661	0.021	12.827	ug/L
	Se	77	104.667	0.00	0.1885	0.091	48.435	ug/L
	Se	82	11.258	0.00	0.1013	0.035	34.263	ug/L
	Rb	85	813.048	0.00				mg/L
	Y	89	362803.379	9373.43				ug/L
	Rh	103	20.334	-2.67				ug/L
	Mo	98	670.974	0.00	0.1594	0.006	3.938	ug/L
	Ag	107	102.002	0.00	-0.0153	0.003	20.493	ug/L
	Cd	114	42.638	0.00	-0.0202	0.006	30.943	ug/L
>	In	115	499052.249	499052.25				ug/L
	Sn	118	1066.735	0.00	0.1527	0.015	9.749	ug/L
	Sb	123	255.293	0.00	0.0580	0.002	2.833	ug/L
	Ba	135	12101.570	0.02	6.5085	0.165	2.540	ug/L
	Ce	140	223.359	-0.00				ug/L
>	Tb	159	628516.000	628516.00				ug/L
	Ho	165	16.668	0.00				ug/L
	Tl	203	71.668	0.00	-0.0003	0.001	285.925	ug/L
	Tl	205	156.684	0.00	0.0131	0.001	10.237	ug/L
	Pb	206	443.016	0.00	0.0226	0.001	6.586	ug/L
	Pb	207	393.347	0.00	0.0164	0.005	29.058	ug/L
	Pb	208	1817.097	0.00	0.0259	0.002	7.721	ug/L
	U	238	349.678	0.00	-0.0019	0.003	135.268	ug/L
>	Bi	209	467824.473	467824.47				ug/L

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Na	23	20580614.374	87.33	3.9750	0.270	6.800	mg/L
Mg	24	3655650.802	15.54	1.1225	0.095	8.465	mg/L
K	39	2290381.682	6.62	0.2080	0.015	7.047	mg/L
Ca	43	96607.706	0.41	5.9924	0.316	5.267	mg/L
Fe	54	40223.472	-0.03	-0.0078	0.004	56.997	mg/L
Fe	57	18251.790	0.04	0.0372	0.004	9.663	mg/L
Sc-1	45	235861.898	235861.90				mg/L
Cl	35	207469.610	169028.48				mg/L
Kr	83	47.001	-13.00				mg/L
Br	81	16989.308	7707.47				mg/L
P	31	11744.279	-1967.00				mg/L
S	34	378763.856	104044.18				mg/L
Sr	88	292367.453	292280.78				mg/L

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
Li	6					
Be	9					
Al	27					
Sc	45					
Ti	49					
V	51					
Cr	52					
Cr	53					
Mn	55					
Co	59					
Ni	60					
Cu	65					
Zn	66					
Ge	72		107.287			
As	75					
Se	77					
Se	82					
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107					
Cd	114					
In	115		97.863			
Sn	118					
Sb	123					
Ba	135					
Ce	140					
Tb	159		92.367			
Ho	165					
Tl	203					
Tl	205					
Pb	206					
Pb	207					
Pb	208					
U	238					
Bi	209		102.084			

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⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1202021501
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Method 6020 - Summary Report

Sample ID: L1202021701

Sample Date/Time: Thursday, February 09, 2012 12:50:49
Number of Replicates: 3
Aliquot Volume (mL):
Diluted To Volume (mL):
Autosampler Position: 24
Method File: C:\elandata\Method\6020a.mth
Sample Description: 5

User ID: JYH
Cumulative Autodilution Factor: 1
ELAN-ICP 200.8\6020 External Calibration

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Net Intens. Mean	Conc. Mean	Conc. SD	Conc. RSD	Sample Unit
	Li	6	13277.240	0.02				ug/L
	Be	9	6.667	0.00	0.0349	0.022	62.656	ug/L
	Al	27	288767.105	1.24	49.8705	6.934	13.904	ug/L
>	Sc	45	233335.645	233335.64				ug/L
	Ti	49	663.426	0.00	0.8545	0.027	3.160	ug/L
	V	51	3954.161	0.00	0.0953	0.009	9.282	ug/L
	Cr	52	12144.633	0.01	0.3308	0.074	22.273	ug/L
	Cr	53	1460.275	0.00	0.4987	0.077	15.464	ug/L
	Mn	55	807998.082	1.49	55.8561	3.079	5.513	ug/L
	Co	59	791.712	0.00	0.0570	0.006	10.655	ug/L
	Ni	60	1432.804	0.00	0.6089	0.041	6.712	ug/L
	Cu	65	30295.942	0.06	14.6135	0.660	4.519	ug/L
	Zn	66	25188.953	0.05	21.4700	0.840	3.911	ug/L
>	Ge	72	542442.336	542442.34				ug/L
	As	75	34.575	0.00	0.1909	0.059	30.791	ug/L
	Se	77	92.667	-0.00	0.1114	0.108	96.946	ug/L
	Se	82	23.221	0.00	0.1993	0.117	58.626	ug/L
	Rb	85	6738.124	0.01				mg/L
	Y	89	339010.444	-14419.50				ug/L
	Rh	103	21.000	-2.00				ug/L
	Mo	98	623.376	0.00	0.1550	0.002	1.556	ug/L
	Ag	107	247.340	0.00	0.0079	0.006	78.554	ug/L
	Cd	114	37.714	0.00	-0.0221	0.009	42.276	ug/L
>	In	115	473909.745	473909.75				ug/L
	Sn	118	1497.468	0.00	0.2448	0.011	4.446	ug/L
	Sb	123	509.846	0.00	0.1147	0.009	7.885	ug/L
	Ba	135	18726.878	0.03	10.0489	0.244	2.428	ug/L
	Ce	140	1783.703	0.00				ug/L
>	Tb	159	630338.585	630338.58				ug/L
	Ho	165	53.339	0.00				ug/L
	Tl	203	46.667	0.00	-0.0038	0.001	27.662	ug/L
	Tl	205	120.013	0.00	0.0110	0.001	13.037	ug/L
	Pb	206	6261.414	0.01	0.9768	0.019	1.975	ug/L
	Pb	207	5233.696	0.01	0.9322	0.027	2.874	ug/L
	Pb	208	24925.393	0.05	0.9671	0.016	1.650	ug/L
	U	238	710.037	0.00	0.0153	0.001	5.331	ug/L
>	Bi	209	473358.561	473358.56				ug/L

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Na	23	33141093.450	142.67	6.4921	0.639	9.838	mg/L
Mg	24	4166972.600	17.95	1.2969	0.142	10.935	mg/L
K	39	7590896.806	29.57	0.9135	0.086	9.430	mg/L
Ca	43	99851.334	0.43	6.2888	0.557	8.850	mg/L
Fe	54	116235.570	0.30	0.1127	0.016	14.308	mg/L
Fe	57	49152.768	0.18	0.1528	0.016	10.244	mg/L
Sc-1	45	233335.645	233335.64				mg/L
Cl	35	298161.107	259719.98				mg/L
Kr	83	51.334	-8.67				mg/L
Br	81	12901.314	3619.48				mg/L
P	31	271466.342	257755.06				mg/L
S	34	347232.369	72512.69				mg/L
Sr	88	290081.208	289994.53				mg/L

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
Li	6					
Be	9					
Al	27					
Sc	45					
Ti	49					
V	51					
Cr	52					
Cr	53					
Mn	55					
Co	59					
Ni	60					
Cu	65					
Zn	66					
Ge	72		103.124			
As	75					
Se	77					
Se	82					
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107					
Cd	114					
In	115		92.932			
Sn	118					
Sb	123					
Ba	135					
Ce	140					
Tb	159		92.635			
Ho	165					
Tl	203					
Tl	205					
Pb	206					
Pb	207					
Pb	208					
U	238					
Bi	209		103.291			

Sample ID: L1202021701
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⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1202021702

Sample Date/Time: Thursday, February 09, 2012 12:58:35
Number of Replicates: 3
Aliquot Volume (mL):
Diluted To Volume (mL):
Autosampler Position: 25
Method File: C:\elandata\Method\6020a.mth
Sample Description: 5

User ID: JYH
Cumulative Autodilution Factor: 1
ELAN-ICP 200.8\6020 External Calibration

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Net Intens. Mean	Conc. Mean	Conc. SD	Conc. RSD	Sample Unit
	Li	6	13861.601	0.02				ug/L
	Be	9	9.333	0.00	0.0428	0.032	75.376	ug/L
	Al	27	11641.495	0.04	1.4761	0.163	11.067	ug/L
>	Sc	45	248981.993	248981.99				ug/L
	Ti	49	213.358	0.00	0.1513	0.079	52.503	ug/L
	V	51	3291.959	0.00	0.0341	0.023	68.271	ug/L
	Cr	52	10107.567	0.00	0.1157	0.044	37.811	ug/L
	Cr	53	1203.541	0.00	0.2734	0.132	48.185	ug/L
	Mn	55	42077.057	0.08	2.8614	0.293	10.233	ug/L
	Co	59	314.676	0.00	0.0133	0.002	18.091	ug/L
	Ni	60	1037.075	0.00	0.4307	0.065	15.059	ug/L
	Cu	65	3772.229	0.01	1.7692	0.178	10.052	ug/L
	Zn	66	9307.977	0.02	7.8643	0.640	8.143	ug/L
>	Ge	72	542522.671	542522.67				ug/L
	As	75	-7.352	0.00	0.1619	0.002	1.233	ug/L
	Se	77	108.001	0.00	0.2620	0.072	27.296	ug/L
	Se	82	33.285	0.00	0.2798	0.016	5.635	ug/L
	Rb	85	6523.299	0.01				mg/L
	Y	89	342527.005	-10902.94				ug/L
	Rh	103	25.000	2.00				ug/L
	Mo	98	598.959	0.00	0.1451	0.017	11.660	ug/L
	Ag	107	91.335	0.00	-0.0163	0.002	11.230	ug/L
	Cd	114	10.922	0.00	-0.0412	0.003	7.634	ug/L
>	In	115	478952.528	478952.53				ug/L
	Sn	118	1477.865	0.00	0.2377	0.020	8.278	ug/L
	Sb	123	252.834	0.00	0.0597	0.005	8.432	ug/L
	Ba	135	6719.465	0.01	3.6638	0.307	8.372	ug/L
	Ce	140	76.675	-0.00				ug/L
>	Tb	159	618027.062	618027.06				ug/L
	Ho	165	20.002	0.00				ug/L
	Tl	203	43.334	0.00	-0.0041	0.000	6.840	ug/L
	Tl	205	100.011	0.00	0.0101	0.004	35.520	ug/L
	Pb	206	2367.029	0.00	0.3519	0.044	12.552	ug/L
	Pb	207	1903.905	0.00	0.3152	0.049	15.604	ug/L
	Pb	208	8984.984	0.02	0.3308	0.036	10.974	ug/L
	U	238	67.334	0.00	-0.0156	0.001	5.252	ug/L
>	Bi	209	456866.149	456866.15				ug/L

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⌈	Na	23	35993559.770	144.58	6.5788	0.839	12.759	mg/L
|	Mg	24	3760732.024	15.11	1.0918	0.108	9.922	mg/L
|	K	39	7142243.773	25.61	0.7917	0.079	10.019	mg/L
|	Ca	43	91344.896	0.37	5.3700	0.695	12.936	mg/L
|	Fe	54	36134.752	-0.06	-0.0172	0.004	23.353	mg/L
|	Fe	57	15389.168	0.03	0.0237	0.006	25.931	mg/L
⌊>	Sc-1	45	248981.993	248981.99				mg/L
	Cl	35	274776.776	236335.65				mg/L
	Kr	83	44.001	-16.00				mg/L
	Br	81	18025.511	8743.67				mg/L
	P	31	84020.053	70308.77				mg/L
	S	34	392980.708	118261.03				mg/L
	Sr	88	263130.199	263043.52				mg/L

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
⌈	Li	6					
|	Be	9					
|	Al	27					
⌊>	Sc	45					
⌈	Ti	49					
|	V	51					
|	Cr	52					
|	Cr	53					
|	Mn	55					
|	Co	59					
|	Ni	60					
|	Cu	65					
|	Zn	66					
|>	Ge	72		103.139			
|	As	75					
|	Se	77					
|	Se	82					
⌊	Rb	85					
	Y	89					
	Rh	103					
⌈	Mo	98					
|	Ag	107					
|	Cd	114					
|>	In	115		93.921			
|	Sn	118					
⌊	Sb	123					
⌈	Ba	135					
|	Ce	140					
⌊>	Tb	159		90.825			
⌈	Ho	165					
|	Tl	203					
|	Tl	205					
|	Pb	206					
|	Pb	207					
|	Pb	208					
|	U	238					
⌊>	Bi	209		99.692			

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⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1202021702
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Method 6020 - Summary Report

Sample ID: L1202021801

Sample Date/Time: Thursday, February 09, 2012 13:06:21
Number of Replicates: 3
Aliquot Volume (mL):
Diluted To Volume (mL):
Autosampler Position: 26
Method File: C:\elandata\Method\6020a.mth
Sample Description: 5

User ID: JYH
Cumulative Autodilution Factor: 1
ELAN-ICP 200.8\6020 External Calibration

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Net Intens. Mean	Conc. Mean	Conc. SD	Conc. RSD	Sample Unit
	Li	6	14312.321	0.02				ug/L
	Be	9	6.000	0.00	0.0336	0.020	59.803	ug/L
	Al	27	146041.241	0.64	25.9148	2.596	10.018	ug/L
>	Sc	45	224055.973	224055.97				ug/L
	Ti	49	433.388	0.00	0.4878	0.131	26.880	ug/L
	V	51	5227.903	0.00	0.2083	0.018	8.570	ug/L
	Cr	52	10880.208	0.00	0.1830	0.017	9.358	ug/L
	Cr	53	1246.885	0.00	0.2986	0.059	19.848	ug/L
	Mn	55	452541.596	0.82	30.8543	2.859	9.265	ug/L
	Co	59	1169.761	0.00	0.0901	0.012	12.993	ug/L
	Ni	60	1276.444	0.00	0.5308	0.056	10.513	ug/L
	Cu	65	6192.381	0.01	2.9045	0.349	12.015	ug/L
	Zn	66	23782.935	0.04	20.0093	1.623	8.112	ug/L
>	Ge	72	548994.388	548994.39				ug/L
	As	75	-31.968	0.00	0.1447	0.028	19.275	ug/L
	Se	77	115.334	0.00	0.3210	0.138	43.000	ug/L
	Se	82	43.328	0.00	0.3555	0.043	11.962	ug/L
	Rb	85	4207.443	0.01				mg/L
	Y	89	336323.071	-17106.88				ug/L
	Rh	103	16.000	-7.00				ug/L
	Mo	98	735.163	0.00	0.1866	0.015	7.857	ug/L
	Ag	107	251.673	0.00	0.0078	0.004	48.436	ug/L
	Cd	114	12.225	0.00	-0.0404	0.004	10.472	ug/L
>	In	115	482891.980	482891.98				ug/L
	Sn	118	1008.595	0.00	0.1484	0.018	11.818	ug/L
	Sb	123	161.957	0.00	0.0403	0.003	8.132	ug/L
	Ba	135	11193.653	0.02	6.0061	0.505	8.411	ug/L
	Ce	140	1430.267	0.00				ug/L
>	Tb	159	630095.194	630095.19				ug/L
	Ho	165	40.004	0.00				ug/L
	Tl	203	43.001	0.00	-0.0042	0.000	7.540	ug/L
	Tl	205	93.343	0.00	0.0096	0.002	22.427	ug/L
	Pb	206	1588.835	0.00	0.2149	0.026	12.153	ug/L
	Pb	207	1365.126	0.00	0.2046	0.023	11.390	ug/L
	Pb	208	6413.051	0.01	0.2175	0.025	11.310	ug/L
	U	238	850.385	0.00	0.0228	0.001	6.476	ug/L
>	Bi	209	464239.483	464239.48				ug/L

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Na	23	31442346.496	140.32	6.3854	0.802	12.557	mg/L
Mg	24	4407655.139	19.68	1.4221	0.163	11.458	mg/L
K	39	4798203.824	18.33	0.5679	0.060	10.603	mg/L
Ca	43	104182.728	0.46	6.8063	0.543	7.984	mg/L
Fe	54	127653.954	0.37	0.1383	0.019	13.574	mg/L
Fe	57	55232.028	0.21	0.1831	0.020	10.840	mg/L
Sc-1	45	224055.973	224055.97				mg/L
Cl	35	244359.126	205918.00				mg/L
Kr	83	39.000	-21.00				mg/L
Br	81	15365.500	6083.66				mg/L
P	31	79986.914	66275.63				mg/L
S	34	372660.476	97940.80				mg/L
Sr	88	281241.327	281154.65				mg/L

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
Li	6					
Be	9					
Al	27					
Sc	45					
Ti	49					
V	51					
Cr	52					
Cr	53					
Mn	55					
Co	59					
Ni	60					
Cu	65					
Zn	66					
Ge	72		104.370			
As	75					
Se	77					
Se	82					
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107					
Cd	114					
In	115		94.694			
Sn	118					
Sb	123					
Ba	135					
Ce	140					
Tb	159		92.599			
Ho	165					
Tl	203					
Tl	205					
Pb	206					
Pb	207					
Pb	208					
U	238					
Bi	209		101.301			

Sample ID: L1202021801
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⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1202021801
Report Date/Time: Thursday, February 09, 2012 13:08:33
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Method 6020 - Summary Report

Sample ID: L1202001604

Sample Date/Time: Thursday, February 09, 2012 13:16:04
Number of Replicates: 3
Aliquot Volume (mL):
Diluted To Volume (mL):
Autosampler Position: 26
Method File: C:\elandata\Method\6020a.mth
Sample Description: 1

User ID: JYH
Cumulative Autodilution Factor: 1
ELAN-ICP 200.8\6020 External Calibration

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Net Intens. Mean	Conc. Mean	Conc. SD	Conc. RSD	Sample Unit
	Li	6	17100.962	0.02				ug/L
	Be	9	6.667	-0.00	0.0298	0.008	27.011	ug/L
	Al	27	63272.646	0.20	8.1803	0.509	6.221	ug/L
>	Sc	45	297893.582	297893.58				ug/L
	Ti	49	793.451	0.00	0.9092	0.088	9.642	ug/L
	V	51	18909.781	0.03	1.2792	0.036	2.825	ug/L
	Cr	52	19798.044	0.02	0.8834	0.036	4.054	ug/L
	Cr	53	2627.344	0.00	1.2520	0.086	6.888	ug/L
	Mn	55	5397.139	0.01	0.2821	0.012	4.353	ug/L
	Co	59	876.388	0.00	0.0550	0.003	5.474	ug/L
	Ni	60	3569.471	0.01	1.3765	0.093	6.764	ug/L
	Cu	65	621.363	0.00	0.2087	0.012	5.640	ug/L
	Zn	66	3419.403	0.01	2.4769	0.034	1.379	ug/L
>	Ge	72	615569.852	615569.85				ug/L
	As	75	6784.819	0.01	4.3688	0.304	6.951	ug/L
	Se	77	191.336	0.00	0.8622	0.153	17.740	ug/L
	Se	82	2523.315	0.00	17.6682	1.228	6.948	ug/L
	Rb	85	11846.877	0.02				mg/L
	Y	89	386534.606	33104.66				ug/L
	Rh	103	135.669	112.67				ug/L
	Mo	98	2603.739	0.00	0.7013	0.014	1.985	ug/L
	Ag	107	99.335	0.00	-0.0165	0.001	6.655	ug/L
	Cd	114	17.175	0.00	-0.0380	0.004	10.569	ug/L
>	In	115	530969.587	530969.59				ug/L
	Sn	118	248.270	0.00	0.0025	0.002	79.356	ug/L
	Sb	123	300.461	0.00	0.0635	0.003	5.460	ug/L
	Ba	135	53095.623	0.08	25.5539	0.314	1.231	ug/L
	Ce	140	636.755	0.00				ug/L
>	Tb	159	703158.102	703158.10				ug/L
	Ho	165	6.667	0.00				ug/L
	Tl	203	75.001	0.00	-0.0008	0.001	99.379	ug/L
	Tl	205	186.687	0.00	0.0138	0.002	10.988	ug/L
	Pb	206	401.680	0.00	0.0094	0.004	40.655	ug/L
	Pb	207	336.344	0.00	-0.0006	0.004	642.274	ug/L
	Pb	208	1543.738	0.00	0.0086	0.003	38.109	ug/L
	U	238	5416.816	0.01	0.2202	0.012	5.494	ug/L
>	Bi	209	517483.476	517483.48				ug/L

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Na	23	69255770.462	232.83	10.5926	0.649	6.124	mg/L
Mg	24	15997354.629	53.77	3.8842	0.139	3.590	mg/L
K	39	9061308.126	27.33	0.8448	0.041	4.842	mg/L
Ca	43	437437.022	1.47	21.5112	0.699	3.248	mg/L
Fe	54	172798.601	0.38	0.1420	0.005	3.350	mg/L
Fe	57	62000.488	0.17	0.1497	0.008	5.135	mg/L
Sc-1	45	297893.582	297893.58				mg/L
Cl	35	506829.193	468388.06				mg/L
Kr	83	51.001	-9.00				mg/L
Br	81	1245684.368	1236402.53				mg/L
P	31	64341.921	50630.64				mg/L
S	34	714528.362	439808.68				mg/L
Sr	88	2548654.648	2548567.97				mg/L

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
Li	6					
Be	9					
Al	27					
Sc	45					
Ti	49					
V	51					
Cr	52					
Cr	53					
Mn	55					
Co	59					
Ni	60					
Cu	65					
Zn	66					
Ge	72		117.026			
As	75					
Se	77					
Se	82					
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107					
Cd	114					
In	115		104.122			
Sn	118					
Sb	123					
Ba	135					
Ce	140					
Tb	159		103.336			
Ho	165					
Tl	203					
Tl	205					
Pb	206					
Pb	207					
Pb	208					
U	238					
Bi	209		112.920			

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⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1202001604
Report Date/Time: Thursday, February 09, 2012 13:18:16
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Method 6020 - Summary Report

Sample ID: L1202021802

Sample Date/Time: Thursday, February 09, 2012 13:23:51
Number of Replicates: 3
Aliquot Volume (mL):
Diluted To Volume (mL):
Autosampler Position: 27
Method File: C:\elandata\Method\6020a.mth
Sample Description: 5

User ID: JYH
Cumulative Autodilution Factor: 1
ELAN-ICP 200.8\6020 External Calibration

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Net Intens. Mean	Conc. Mean	Conc. SD	Conc. RSD	Sample Unit
	Li	6	13293.950	0.02				ug/L
	Be	9	5.333	0.00	0.0306	0.004	14.522	ug/L
	Al	27	18553.985	0.07	2.8348	0.409	14.424	ug/L
>	Sc	45	232431.085	232431.08				ug/L
	Ti	49	733.468	0.00	0.9876	1.357	137.360	ug/L
	V	51	3229.312	0.00	0.0356	0.009	25.179	ug/L
	Cr	52	8990.604	0.00	0.0225	0.024	106.097	ug/L
	Cr	53	1186.870	0.00	0.2860	0.113	39.492	ug/L
	Mn	55	478034.770	0.90	33.8232	1.831	5.414	ug/L
	Co	59	723.039	0.00	0.0522	0.002	3.924	ug/L
	Ni	60	1001.737	0.00	0.4254	0.018	4.322	ug/L
	Cu	65	1437.472	0.00	0.6569	0.038	5.780	ug/L
	Zn	66	12935.163	0.02	11.2438	0.189	1.684	ug/L
>	Ge	72	529274.247	529274.25				ug/L
	As	75	-34.408	0.00	0.1422	0.006	4.462	ug/L
	Se	77	116.001	0.00	0.3690	0.087	23.667	ug/L
	Se	82	43.882	0.00	0.3723	0.080	21.502	ug/L
	Rb	85	4489.587	0.01				mg/L
	Y	89	325513.237	-27916.71				ug/L
	Rh	103	21.667	-1.33				ug/L
	Mo	98	897.176	0.00	0.2482	0.004	1.678	ug/L
	Ag	107	120.335	0.00	-0.0114	0.002	16.940	ug/L
	Cd	114	9.862	0.00	-0.0417	0.005	12.442	ug/L
>	In	115	465408.317	465408.32				ug/L
	Sn	118	240.270	0.00	0.0069	0.004	59.586	ug/L
	Sb	123	126.706	0.00	0.0340	0.001	2.442	ug/L
	Ba	135	6742.128	0.01	3.7832	0.090	2.374	ug/L
	Ce	140	166.685	-0.00				ug/L
>	Tb	159	601570.487	601570.49				ug/L
	Ho	165	13.335	0.00				ug/L
	Tl	203	43.334	0.00	-0.0040	0.001	17.804	ug/L
	Tl	205	103.344	0.00	0.0104	0.001	10.913	ug/L
	Pb	206	476.685	0.00	0.0315	0.006	18.978	ug/L
	Pb	207	406.681	0.00	0.0222	0.003	13.402	ug/L
	Pb	208	1857.766	0.00	0.0308	0.003	8.314	ug/L
	U	238	726.039	0.00	0.0179	0.001	7.947	ug/L
>	Bi	209	449115.924	449115.92				ug/L

Sample ID: L1202021802
Report Date/Time: Thursday, February 09, 2012 13:26:03
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Na	23	32293272.758	140.06	6.3735	0.903	14.164	mg/L
Mg	24	3843939.696	16.65	1.2027	0.129	10.705	mg/L
K	39	5447982.662	20.48	0.6342	0.074	11.657	mg/L
Ca	43	94108.088	0.41	5.9457	0.420	7.066	mg/L
Fe	54	35663.734	-0.05	-0.0139	0.004	30.773	mg/L
Fe	57	16504.668	0.04	0.0321	0.008	25.468	mg/L
Sc-1	45	232431.085	232431.08				mg/L
Cl	35	254086.075	215644.95				mg/L
Kr	83	52.001	-8.00				mg/L
Br	81	27505.355	18223.52				mg/L
P	31	43662.103	29950.82				mg/L
S	34	345992.491	71272.81				mg/L
Sr	88	264787.178	264700.50				mg/L

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
Li	6					
Be	9					
Al	27					
Sc	45					
Ti	49					
V	51					
Cr	52					
Cr	53					
Mn	55					
Co	59					
Ni	60					
Cu	65					
Zn	66					
Ge	72		100.621			
As	75					
Se	77					
Se	82					
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107					
Cd	114					
In	115		91.265			
Sn	118					
Sb	123					
Ba	135					
Ce	140					
Tb	159		88.407			
Ho	165					
Tl	203					
Tl	205					
Pb	206					
Pb	207					
Pb	208					
U	238					
Bi	209		98.001			

Sample ID: L1202021802
Report Date/Time: Thursday, February 09, 2012 13:26:03
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⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1202021802
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Method 6020 - Summary Report

Sample ID: L1202022001

Sample Date/Time: Thursday, February 09, 2012 13:31:37
Number of Replicates: 3
Aliquot Volume (mL):
Diluted To Volume (mL):
Autosampler Position: 28
Method File: C:\elandata\Method\6020a.mth
Sample Description: 1

User ID: JYH
Cumulative Autodilution Factor: 1
ELAN-ICP 200.8\6020 External Calibration

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Net Intens. Mean	Conc. Mean	Conc. SD	Conc. RSD	Sample Unit
	Li	6	15815.024	0.02				ug/L
	Be	9	2.667	-0.00	0.0191	0.003	13.529	ug/L
	Al	27	232078.038	0.86	34.5859	10.260	29.664	ug/L
>	Sc	45	272260.665	272260.67				ug/L
	Ti	49	1303.570	0.00	1.8209	0.490	26.915	ug/L
	V	51	23737.469	0.04	1.9116	0.162	8.494	ug/L
	Cr	52	16815.466	0.01	0.7959	0.074	9.318	ug/L
	Cr	53	2293.881	0.00	1.2071	0.218	18.086	ug/L
	Mn	55	19314.221	0.03	1.2714	0.028	2.238	ug/L
	Co	59	698.703	0.00	0.0475	0.004	8.542	ug/L
	Ni	60	2202.980	0.00	0.9428	0.053	5.624	ug/L
	Cu	65	681.701	0.00	0.2694	0.015	5.729	ug/L
	Zn	66	6598.344	0.01	5.4752	0.156	2.852	ug/L
>	Ge	72	549511.547	549511.55				ug/L
	As	75	652.045	0.00	0.6201	0.021	3.410	ug/L
	Se	77	192.669	0.00	1.0770	0.154	14.284	ug/L
	Se	82	270.658	0.00	2.1371	0.066	3.088	ug/L
	Rb	85	9960.720	0.02				mg/L
	Y	89	356702.588	3272.64				ug/L
	Rh	103	117.669	94.67				ug/L
	Mo	98	5106.629	0.01	1.5713	0.018	1.115	ug/L
	Ag	107	192.004	0.00	-0.0011	0.004	313.280	ug/L
	Cd	114	10.186	0.00	-0.0418	0.004	8.776	ug/L
>	In	115	481022.514	481022.51				ug/L
	Sn	118	391.476	0.00	0.0336	0.002	7.021	ug/L
	Sb	123	150.497	0.00	0.0381	0.002	5.630	ug/L
	Ba	135	52419.218	0.08	27.3069	0.831	3.042	ug/L
	Ce	140	3467.736	0.00				ug/L
>	Tb	159	650033.780	650033.78				ug/L
	Ho	165	80.008	0.00				ug/L
	Tl	203	57.334	0.00	-0.0026	0.000	15.189	ug/L
	Tl	205	183.354	0.00	0.0141	0.004	28.833	ug/L
	Pb	206	762.043	0.00	0.0696	0.004	6.088	ug/L
	Pb	207	628.363	0.00	0.0560	0.008	13.944	ug/L
	Pb	208	3052.922	0.00	0.0710	0.004	5.350	ug/L
	U	238	6540.965	0.01	0.2856	0.011	3.689	ug/L
>	Bi	209	490769.879	490769.88				ug/L

Sample ID: L1202022001
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⌈	Na	23	59543099.350	220.08	10.0130	1.115	11.136	mg/L
|	Mg	24	13556041.048	50.13	3.6214	0.382	10.540	mg/L
|	K	39	7337436.975	24.00	0.7422	0.063	8.528	mg/L
|	Ca	43	320491.181	1.18	17.2872	0.871	5.040	mg/L
|	Fe	54	115164.298	0.22	0.0858	0.019	21.961	mg/L
|	Fe	57	42033.466	0.12	0.1047	0.018	17.221	mg/L
⌊>	Sc-1	45	272260.665	272260.67				mg/L
	Cl	35	435205.875	396764.74				mg/L
	Kr	83	40.334	-19.67				mg/L
	Br	81	101494.379	92212.54				mg/L
	P	31	29711.988	16000.70				mg/L
	S	34	521822.486	247102.81				mg/L
	Sr	88	1835083.297	1834996.62				mg/L

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
⌈	Li	6					
|	Be	9					
|	Al	27					
⌊>	Sc	45					
⌈	Ti	49					
|	V	51					
|	Cr	52					
|	Cr	53					
|	Mn	55					
|	Co	59					
|	Ni	60					
|	Cu	65					
|	Zn	66					
|>	Ge	72		104.468			
|	As	75					
|	Se	77					
|	Se	82					
⌊	Rb	85					
	Y	89					
	Rh	103					
⌈	Mo	98					
|	Ag	107					
|	Cd	114					
|>	In	115		94.327			
|	Sn	118					
⌊	Sb	123					
⌈	Ba	135					
|	Ce	140					
⌊>	Tb	159		95.529			
⌈	Ho	165					
|	Tl	203					
|	Tl	205					
|	Pb	206					
|	Pb	207					
|	Pb	208					
|	U	238					
⌊>	Bi	209		107.091			

Sample ID: L1202022001
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⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1202022001
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Approved: February 09, 2012

Method 6020 - Summary Report

Sample ID: L1202022002

Sample Date/Time: Thursday, February 09, 2012 13:39:24
Number of Replicates: 3
Aliquot Volume (mL):
Diluted To Volume (mL):
Autosampler Position: 29
Method File: C:\elandata\Method\6020a.mth
Sample Description: 1

User ID: JYH
Cumulative Autodilution Factor: 1
ELAN-ICP 200.8\6020 External Calibration

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Net Intens. Mean	Conc. Mean	Conc. SD	Conc. RSD	Sample Unit
	Li	6	15314.087	0.02				ug/L
	Be	9	11.333	0.00	0.0475	0.017	35.880	ug/L
	Al	27	242009.910	0.89	35.8205	0.636	1.777	ug/L
>	Sc	45	269449.041	269449.04				ug/L
	Ti	49	1376.918	0.00	1.8247	0.099	5.418	ug/L
	V	51	19312.615	0.03	1.4054	0.051	3.659	ug/L
	Cr	52	13228.634	0.01	0.3501	0.054	15.336	ug/L
	Cr	53	1446.938	0.00	0.4027	0.127	31.447	ug/L
	Mn	55	17420.405	0.03	1.0771	0.069	6.388	ug/L
	Co	59	586.027	0.00	0.0345	0.005	13.503	ug/L
	Ni	60	1771.876	0.00	0.7074	0.126	17.873	ug/L
	Cu	65	534.689	0.00	0.1853	0.006	3.325	ug/L
	Zn	66	9698.070	0.02	7.6442	0.055	0.720	ug/L
>	Ge	72	581145.043	581145.04				ug/L
	As	75	214.005	0.00	0.3076	0.037	11.975	ug/L
	Se	77	168.002	0.00	0.7440	0.244	32.815	ug/L
	Se	82	141.641	0.00	1.0660	0.091	8.529	ug/L
	Rb	85	2306.009	0.00				mg/L
	Y	89	356693.207	3263.26				ug/L
	Rh	103	89.668	66.67				ug/L
	Mo	98	8350.725	0.02	2.5365	0.073	2.887	ug/L
	Ag	107	184.337	0.00	-0.0029	0.001	35.522	ug/L
	Cd	114	8.739	0.00	-0.0429	0.002	5.334	ug/L
>	In	115	492724.495	492724.49				ug/L
	Sn	118	1669.501	0.00	0.2653	0.015	5.544	ug/L
	Sb	123	102.619	0.00	0.0276	0.001	3.528	ug/L
	Ba	135	59315.842	0.09	30.3437	1.694	5.583	ug/L
	Ce	140	2437.267	0.00				ug/L
>	Tb	159	662082.907	662082.91				ug/L
	Ho	165	46.671	0.00				ug/L
	Tl	203	39.000	0.00	-0.0052	0.002	32.277	ug/L
	Tl	205	90.010	0.00	0.0090	0.002	23.023	ug/L
	Pb	206	722.705	0.00	0.0594	0.008	13.757	ug/L
	Pb	207	583.360	0.00	0.0438	0.010	23.278	ug/L
	Pb	208	2802.214	0.00	0.0573	0.002	2.727	ug/L
	U	238	2180.307	0.00	0.0789	0.004	5.656	ug/L
>	Bi	209	508718.841	508718.84				ug/L

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Na	23	56690633.030	210.88	9.5942	0.654	6.821	mg/L
Mg	24	11442365.329	42.58	3.0759	0.231	7.508	mg/L
K	39	6703946.308	21.82	0.6752	0.037	5.461	mg/L
Ca	43	210631.136	0.78	11.4535	0.562	4.910	mg/L
Fe	54	124628.548	0.26	0.0989	0.002	2.210	mg/L
Fe	57	34361.144	0.09	0.0802	0.003	3.174	mg/L
Sc-1	45	269449.041	269449.04				mg/L
Cl	35	176700.455	138259.33				mg/L
Kr	83	41.667	-18.33				mg/L
Br	81	43551.076	34269.24				mg/L
P	31	35636.149	21924.87				mg/L
S	34	587034.691	312315.01				mg/L
Sr	88	1496908.083	1496821.41				mg/L

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
Li	6					
Be	9					
Al	27					
Sc	45					
Ti	49					
V	51					
Cr	52					
Cr	53					
Mn	55					
Co	59					
Ni	60					
Cu	65					
Zn	66					
Ge	72		110.482			
As	75					
Se	77					
Se	82					
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107					
Cd	114					
In	115		96.622			
Sn	118					
Sb	123					
Ba	135					
Ce	140					
Tb	159		97.300			
Ho	165					
Tl	203					
Tl	205					
Pb	206					
Pb	207					
Pb	208					
U	238					
Bi	209		111.007			

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⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1202022002
Report Date/Time: Thursday, February 09, 2012 13:41:37
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Approved: February 09, 2012

Method 6020 - Summary Report

Sample ID: L1202022003

Sample Date/Time: Thursday, February 09, 2012 13:47:12
Number of Replicates: 3
Aliquot Volume (mL):
Diluted To Volume (mL):
Autosampler Position: 30
Method File: C:\elandata\Method\6020a.mth
Sample Description: 1

User ID: JYH
Cumulative Autodilution Factor: 1
ELAN-ICP 200.8\6020 External Calibration

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Net Intens. Mean	Conc. Mean	Conc. SD	Conc. RSD	Sample Unit
	Li	6	17702.159	0.02				ug/L
	Be	9	6.667	0.00	0.0306	0.003	9.982	ug/L
	Al	27	177327.246	0.60	24.2374	1.562	6.443	ug/L
>	Sc	45	290585.442	290585.44				ug/L
	Ti	49	1070.176	0.00	1.2716	0.152	11.981	ug/L
	V	51	14364.404	0.02	0.8901	0.355	39.889	ug/L
	Cr	52	294193.009	0.45	25.8250	0.476	1.842	ug/L
	Cr	53	34682.208	0.05	25.7421	0.936	3.638	ug/L
	Mn	55	47102.465	0.07	2.7827	0.146	5.251	ug/L
	Co	59	2623.106	0.00	0.1929	0.004	1.876	ug/L
	Ni	60	103965.843	0.17	40.6264	1.164	2.865	ug/L
	Cu	65	1927.909	0.00	0.7545	0.034	4.488	ug/L
	Zn	66	9051.337	0.01	6.6324	0.051	0.775	ug/L
>	Ge	72	623903.497	623903.50				ug/L
	As	75	238.992	0.00	0.3132	0.018	5.880	ug/L
	Se	77	197.336	0.00	0.8898	0.248	27.826	ug/L
	Se	82	134.336	0.00	0.9434	0.059	6.296	ug/L
	Rb	85	2165.303	0.00				mg/L
	Y	89	386011.676	32581.73				ug/L
	Rh	103	102.002	79.00				ug/L
	Mo	98	8380.343	0.02	2.4195	0.043	1.790	ug/L
	Ag	107	140.669	0.00	-0.0104	0.001	9.279	ug/L
	Cd	114	12.242	0.00	-0.0410	0.010	24.625	ug/L
>	In	115	517648.608	517648.61				ug/L
	Sn	118	706.163	0.00	0.0831	0.001	0.867	ug/L
	Sb	123	155.080	0.00	0.0367	0.001	1.981	ug/L
	Ba	135	70875.406	0.10	33.7091	1.457	4.322	ug/L
	Ce	140	2527.305	0.00				ug/L
>	Tb	159	712167.317	712167.32				ug/L
	Ho	165	26.669	0.00				ug/L
	Tl	203	43.667	0.00	-0.0048	0.000	10.216	ug/L
	Tl	205	80.008	0.00	0.0084	0.001	10.473	ug/L
	Pb	206	758.042	0.00	0.0606	0.009	15.390	ug/L
	Pb	207	600.028	0.00	0.0431	0.003	7.571	ug/L
	Pb	208	2919.565	0.00	0.0578	0.002	3.553	ug/L
	U	238	2695.463	0.01	0.0978	0.000	0.382	ug/L
>	Bi	209	526992.692	526992.69				ug/L

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Na	23	59401795.902	204.96	9.3251	0.603	6.469	mg/L
Mg	24	12229470.223	42.20	3.0484	0.191	6.258	mg/L
K	39	7267305.143	21.97	0.6799	0.037	5.409	mg/L
Ca	43	262240.971	0.91	13.2537	0.893	6.738	mg/L
Fe	54	281260.392	0.77	0.2850	0.025	8.891	mg/L
Fe	57	100658.070	0.31	0.2699	0.017	6.414	mg/L
Sc-1	45	290585.442	290585.44				mg/L
Cl	35	221973.698	183532.57				mg/L
Kr	83	38.334	-21.67				mg/L
Br	81	40985.903	31704.06				mg/L
P	31	36887.184	23175.90				mg/L
S	34	566127.003	291407.32				mg/L
Sr	88	1687058.894	1686972.22				mg/L

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
Li	6					
Be	9					
Al	27					
Sc	45					
Ti	49					
V	51					
Cr	52					
Cr	53					
Mn	55					
Co	59					
Ni	60					
Cu	65					
Zn	66					
Ge	72		118.611			
As	75					
Se	77					
Se	82					
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107					
Cd	114					
In	115		101.509			
Sn	118					
Sb	123					
Ba	135					
Ce	140					
Tb	159		104.660			
Ho	165					
Tl	203					
Tl	205					
Pb	206					
Pb	207					
Pb	208					
U	238					
Bi	209		114.995			

Sample ID: L1202022003
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⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1202022003
Report Date/Time: Thursday, February 09, 2012 13:49:24
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Method 6020 - Summary Report

Sample ID: QC Std 6

Sample Date/Time: Thursday, February 09, 2012 13:54:59
Number of Replicates: 3
Aliquot Volume (mL):
Diluted To Volume (mL):
Autosampler Position: 5
Method File: C:\elandata\Method\6020a.mth
Sample Description:

User ID: JYH
Cumulative Autodilution Factor: 1
ELAN-ICP 200.8\6020 External Calibration

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Net Intens. Mean	Conc. Mean	Conc. SD	Conc. RSD	Sample Unit
	Li	6	14278.900	0.01				ug/L
	Be	9	18769.786	0.07	59.8795	1.897	3.168	ug/L
	Al	27	321952.826	1.19	47.9192	0.254	0.530	ug/L
>	Sc	45	268835.676	268835.68				ug/L
	Ti	49	73089.769	0.12	103.9120	1.904	1.832	ug/L
	V	51	602884.021	1.01	50.9497	1.946	3.819	ug/L
	Cr	52	510105.890	0.84	47.7846	1.152	2.412	ug/L
	Cr	53	59189.262	0.10	46.7350	2.768	5.923	ug/L
	Mn	55	792783.708	1.33	49.9598	3.088	6.181	ug/L
	Co	59	596345.234	1.00	49.7178	1.270	2.554	ug/L
	Ni	60	121135.455	0.20	49.6988	1.660	3.341	ug/L
	Cu	65	114160.624	0.19	50.3323	2.120	4.212	ug/L
	Zn	66	67119.972	0.11	52.3271	1.054	2.015	ug/L
>	Ge	72	594242.951	594242.95				ug/L
	As	75	74513.543	0.13	48.0154	0.523	1.089	ug/L
	Se	77	5773.334	0.01	51.2832	1.826	3.561	ug/L
	Se	82	6931.575	0.01	50.2960	1.197	2.380	ug/L
	Rb	85	2712.469	0.00				mg/L
	Y	89	375056.721	21626.77				ug/L
	Rh	103	36.667	13.67				ug/L
	Mo	98	365932.074	0.69	105.5713	2.181	2.066	ug/L
	Ag	107	383230.281	0.73	52.8020	2.073	3.927	ug/L
	Cd	114	80247.370	0.15	51.1013	3.652	7.146	ug/L
>	In	115	527587.815	527587.82				ug/L
	Sn	118	299436.754	0.57	51.0352	0.987	1.934	ug/L
	Sb	123	267899.365	0.51	50.9379	1.439	2.826	ug/L
	Ba	135	100478.331	0.15	49.5445	1.229	2.480	ug/L
	Ce	140	113.345	-0.00				ug/L
>	Tb	159	686911.010	686911.01				ug/L
	Ho	165	23.336	0.00				ug/L
	Tl	203	394170.259	0.78	50.5895	3.883	7.676	ug/L
	Tl	205	973835.874	1.94	50.2931	3.818	7.592	ug/L
	Pb	206	327639.310	0.65	50.5351	3.039	6.013	ug/L
	Pb	207	290656.377	0.58	51.6916	3.020	5.842	ug/L
	Pb	208	1330497.962	2.64	50.9353	1.714	3.366	ug/L
	U	238	1229999.197	2.44	55.7521	1.693	3.037	ug/L
>	Bi	209	503917.792	503917.79				ug/L

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Na	23	29122485.483	108.27	4.9278	0.128	2.590	mg/L
Mg	24	18867419.192	70.18	5.0699	0.167	3.287	mg/L
K	39	41768908.814	152.32	4.6874	0.108	2.307	mg/L
Ca	43	89510.848	0.33	4.8678	0.125	2.566	mg/L
Fe	54	3532238.100	12.94	4.7365	0.142	2.998	mg/L
Fe	57	1593150.452	5.90	5.0838	0.365	7.177	mg/L
Sc-1	45	268835.676	268835.68				mg/L
Cl	35	32269.034	-6172.10				mg/L
Kr	83	48.001	-12.00				mg/L
Br	81	14279.585	4997.75				mg/L
P	31	18014.451	4303.17				mg/L
S	34	318454.400	43734.72				mg/L
Sr	88	6006.099	5919.42				mg/L

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
Li	6					
Be	9					
Al	27					
Sc	45					
Ti	49					
V	51	101.899				
Cr	52	95.569				
Cr	53					
Mn	55	99.920				
Co	59	99.436				
Ni	60	99.398				
Cu	65	100.665				
Zn	66	104.654				
Ge	72		112.972			
As	75	96.031				
Se	77					
Se	82	100.592				
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107	105.604				
Cd	114	102.203				
In	115		103.458			
Sn	118					
Sb	123	101.876				
Ba	135	99.089				
Ce	140					
Tb	159		100.949			
Ho	165					
Tl	203	101.179				
Tl	205					
Pb	206					
Pb	207					
Pb	208	101.871				
U	238	111.504				
Bi	209		109.960			

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⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	U	238	CCV IS OUT OF LIMITS (+/-10% OR %RSD>20)

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7

Sample Date/Time: Thursday, February 09, 2012 14:02:36
Number of Replicates: 3
Aliquot Volume (mL):
Diluted To Volume (mL):
Autosampler Position: 1
Method File: C:\elandata\Method\6020a.mth
Sample Description:

User ID: JYH
Cumulative Autodilution Factor: 1
ELAN-ICP 200.8\6020 External Calibration

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Net Intens. Mean	Conc. Mean	Conc. SD	Conc. RSD	Sample Unit
	Li	6	14879.942	0.02				ug/L
	Be	9	7.333	0.00	0.0346	0.008	24.051	ug/L
	Al	27	2717.110	0.00	-0.0005	0.027	5451.377	ug/L
>	Sc	45	267121.536	267121.54				ug/L
	Ti	49	80.008	-0.00	-0.0640	0.064	99.661	ug/L
	V	51	2719.490	-0.00	-0.0369	0.014	36.995	ug/L
	Cr	52	9148.110	-0.00	-0.0511	0.008	14.698	ug/L
	Cr	53	596.748	-0.00	-0.2970	0.053	17.785	ug/L
	Mn	55	500.353	0.00	-0.0141	0.001	10.410	ug/L
	Co	59	196.671	0.00	0.0012	0.001	56.719	ug/L
	Ni	60	49.667	0.00	-0.0159	0.001	3.160	ug/L
	Cu	65	134.002	0.00	0.0042	0.002	38.629	ug/L
	Zn	66	91.001	0.00	-0.0294	0.007	23.212	ug/L
>	Ge	72	582871.422	582871.42				ug/L
	As	75	-181.263	0.00	0.0486	0.039	80.158	ug/L
	Se	77	94.667	-0.00	0.0641	0.136	211.812	ug/L
	Se	82	14.310	0.00	0.1215	0.086	71.104	ug/L
	Rb	85	31.667	-0.00				mg/L
	Y	89	375850.992	22421.04				ug/L
	Rh	103	9.333	-13.67				ug/L
	Mo	98	131.121	0.00	-0.0070	0.005	65.418	ug/L
	Ag	107	158.670	0.00	-0.0080	0.002	25.394	ug/L
	Cd	114	10.978	0.00	-0.0418	0.003	7.509	ug/L
>	In	115	521996.767	521996.77				ug/L
	Sn	118	213.069	0.00	-0.0029	0.002	74.987	ug/L
	Sb	123	523.598	0.00	0.1071	0.011	10.365	ug/L
	Ba	135	62.668	0.00	0.0186	0.009	45.973	ug/L
	Ce	140	23.336	-0.00				ug/L
>	Tb	159	682693.753	682693.75				ug/L
	Ho	165	6.667	0.00				ug/L
	Tl	203	89.001	0.00	0.0013	0.002	146.018	ug/L
	Tl	205	213.358	0.00	0.0155	0.005	28.989	ug/L
	Pb	206	366.012	0.00	0.0060	0.001	21.715	ug/L
	Pb	207	287.341	0.00	-0.0073	0.003	38.186	ug/L
	Pb	208	1405.061	0.00	0.0053	0.002	28.558	ug/L
	U	238	256.673	0.00	-0.0072	0.002	26.581	ug/L
>	Bi	209	499312.763	499312.76				ug/L

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Na	23	37762.717	0.05	0.0056	0.001	12.976	mg/L
Mg	24	3807.945	0.01	0.0012	0.000	21.478	mg/L
K	39	708865.160	-0.44	-0.0092	0.005	55.419	mg/L
Ca	43	196.689	0.00	0.0039	0.001	26.498	mg/L
Fe	54	52607.859	-0.01	0.0018	0.002	97.189	mg/L
Fe	57	11088.509	0.01	0.0062	0.003	47.003	mg/L
Sc-1	45	267121.536	267121.54				mg/L
Cl	35	30009.321	-8431.81				mg/L
Kr	83	41.001	-19.00				mg/L
Br	81	12804.525	3522.69				mg/L
P	31	16484.998	2773.71				mg/L
S	34	295275.127	20555.45				mg/L
Sr	88	170.019	83.34				mg/L

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
Li	6					
Be	9					
Al	27					
Sc	45					
Ti	49					
V	51					
Cr	52					
Cr	53					
Mn	55					
Co	59					
Ni	60					
Cu	65					
Zn	66					
Ge	72		110.810			
As	75					
Se	77					
Se	82					
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107					
Cd	114					
In	115		102.362			
Sn	118					
Sb	123					
Ba	135					
Ce	140					
Tb	159		100.329			
Ho	165					
Tl	203					
Tl	205					
Pb	206					
Pb	207					
Pb	208					
U	238					
Bi	209		108.955			

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⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Thursday, February 09, 2012 14:04:48
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Method 6020 - Summary Report

Sample ID: L1202021501

Sample Date/Time: Thursday, February 09, 2012 14:50:08
Number of Replicates: 3
Aliquot Volume (mL):
Diluted To Volume (mL):
Autosampler Position: 23
Method File: C:\elandata\Method\6020a.mth
Sample Description: 1

User ID: JYH
Cumulative Autodilution Factor: 1
ELAN-ICP 200.8\6020 External Calibration

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Net Intens. Mean	Conc. Mean	Conc. SD	Conc. RSD	Sample Unit
	Li	6	18721.135	0.02				ug/L
	Be	9	6.667	-0.00	0.0302	0.008	27.247	ug/L
	Al	27	32011.393	0.10	4.0136	0.377	9.389	ug/L
>	Sc	45	292885.704	292885.70				ug/L
	Ti	49	726.772	0.00	0.7976	0.151	18.983	ug/L
	V	51	4254.744	0.00	0.0689	0.038	55.717	ug/L
	Cr	52	15985.824	0.01	0.5008	0.044	8.757	ug/L
	Cr	53	2183.841	0.00	0.8724	0.234	26.822	ug/L
	Mn	55	7143072.022	11.36	425.6364	4.697	1.104	ug/L
	Co	59	1446.473	0.00	0.0985	0.004	4.535	ug/L
	Ni	60	3560.132	0.01	1.3444	0.084	6.262	ug/L
	Cu	65	2145.631	0.00	0.8389	0.027	3.197	ug/L
	Zn	66	5233.029	0.01	3.7616	0.151	4.021	ug/L
>	Ge	72	628842.367	628842.37				ug/L
	As	75	790.949	0.00	0.6471	0.053	8.128	ug/L
	Se	77	206.003	0.00	0.9502	0.076	8.003	ug/L
	Se	82	91.932	0.00	0.6456	0.037	5.712	ug/L
	Rb	85	4381.863	0.01				mg/L
	Y	89	385342.518	31912.57				ug/L
	Rh	103	90.335	67.33				ug/L
	Mo	98	3818.511	0.01	1.0237	0.029	2.841	ug/L
	Ag	107	134.336	0.00	-0.0122	0.000	2.389	ug/L
	Cd	114	188.911	0.00	0.0679	0.018	26.663	ug/L
>	In	115	544005.736	544005.74				ug/L
	Sn	118	518.816	0.00	0.0462	0.004	9.159	ug/L
	Sb	123	207.121	0.00	0.0448	0.005	10.948	ug/L
	Ba	135	69860.875	0.10	32.6499	1.652	5.060	ug/L
	Ce	140	1050.172	0.00				ug/L
>	Tb	159	724770.705	724770.71				ug/L
	Ho	165	50.005	0.00				ug/L
	Tl	203	66.668	0.00	-0.0019	0.000	22.409	ug/L
	Tl	205	133.348	0.00	0.0111	0.001	11.092	ug/L
	Pb	206	1087.082	0.00	0.1115	0.009	8.320	ug/L
	Pb	207	970.733	0.00	0.1085	0.012	11.017	ug/L
	Pb	208	4427.509	0.01	0.1153	0.005	4.207	ug/L
	U	238	1755.536	0.00	0.0581	0.003	5.411	ug/L
>	Bi	209	520285.616	520285.62				ug/L

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Na	23	136503789.725	467.11	21.2481	1.340	6.307	mg/L
Mg	24	23191744.187	79.32	5.7299	0.316	5.523	mg/L
K	39	10292376.031	32.10	0.9914	0.066	6.651	mg/L
Ca	43	594905.810	2.04	29.8395	2.785	9.333	mg/L
Fe	54	148965.149	0.31	0.1163	0.016	13.487	mg/L
Fe	57	58726.728	0.17	0.1443	0.027	18.874	mg/L
Sc-1	45	292885.704	292885.70				mg/L
Cl	35	1038742.703	1000301.57				mg/L
Kr	83	46.334	-13.67				mg/L
Br	81	46340.135	37058.30				mg/L
P	31	41785.596	28074.31				mg/L
S	34	786524.045	511804.36				mg/L
Sr	88	1696242.820	1696156.14				mg/L

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
Li	6					
Be	9					
Al	27					
Sc	45					
Ti	49					
V	51					
Cr	52					
Cr	53					
Mn	55					
Co	59					
Ni	60					
Cu	65					
Zn	66					
Ge	72		119.550			
As	75					
Se	77					
Se	82					
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107					
Cd	114					
In	115		106.678			
Sn	118					
Sb	123					
Ba	135					
Ce	140					
Tb	159		106.512			
Ho	165					
Tl	203					
Tl	205					
Pb	206					
Pb	207					
Pb	208					
U	238					
Bi	209		113.531			

Sample ID: L1202021501
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⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1202021501
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Method 6020 - Summary Report

Sample ID: L1202021802

Sample Date/Time: Thursday, February 09, 2012 14:57:54
Number of Replicates: 3
Aliquot Volume (mL):
Diluted To Volume (mL):
Autosampler Position: 24
Method File: C:\elandata\Method\6020a.mth
Sample Description: 1

User ID: JYH
Cumulative Autodilution Factor: 1
ELAN-ICP 200.8\6020 External Calibration

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Net Intens. Mean	Conc. Mean	Conc. SD	Conc. RSD	Sample Unit
	Li	6	17535.119	0.02				ug/L
	Be	9	7.333	0.00	0.0328	0.009	26.364	ug/L
	Al	27	105033.353	0.36	14.4104	1.574	10.924	ug/L
>	Sc	45	285254.084	285254.08				ug/L
	Ti	49	1363.590	0.00	1.6362	0.571	34.895	ug/L
	V	51	7492.148	0.01	0.3287	0.089	26.934	ug/L
	Cr	52	17506.256	0.01	0.6319	0.053	8.366	ug/L
	Cr	53	3224.285	0.00	1.6487	0.200	12.121	ug/L
	Mn	55	2915872.414	4.63	173.3221	10.073	5.812	ug/L
	Co	59	4517.271	0.01	0.3399	0.028	8.096	ug/L
	Ni	60	6175.031	0.01	2.3559	0.294	12.464	ug/L
	Cu	65	8547.135	0.01	3.5014	0.200	5.718	ug/L
	Zn	66	59855.456	0.09	43.9542	1.251	2.846	ug/L
>	Ge	72	631023.355	631023.36				ug/L
	As	75	300.410	0.00	0.3490	0.023	6.604	ug/L
	Se	77	254.671	0.00	1.3632	0.334	24.496	ug/L
	Se	82	151.923	0.00	1.0535	0.066	6.223	ug/L
	Rb	85	28772.560	0.05				mg/L
	Y	89	385428.850	31998.90				ug/L
	Rh	103	99.002	76.00				ug/L
	Mo	98	5927.994	0.01	1.6259	0.019	1.182	ug/L
	Ag	107	358.678	0.00	0.0182	0.006	32.101	ug/L
	Cd	114	33.988	0.00	-0.0279	0.016	55.788	ug/L
>	In	115	540044.724	540044.72				ug/L
	Sn	118	1387.982	0.00	0.1916	0.007	3.479	ug/L
	Sb	123	535.724	0.00	0.1062	0.003	2.760	ug/L
	Ba	135	41738.350	0.06	19.5906	0.602	3.075	ug/L
	Ce	140	780.116	0.00				ug/L
>	Tb	159	721551.220	721551.22				ug/L
	Ho	165	30.003	0.00				ug/L
	Tl	203	61.001	0.00	-0.0026	0.001	44.077	ug/L
	Tl	205	166.685	0.00	0.0128	0.001	11.722	ug/L
	Pb	206	1451.474	0.00	0.1669	0.013	8.057	ug/L
	Pb	207	1259.441	0.00	0.1593	0.017	10.731	ug/L
	Pb	208	6088.634	0.01	0.1780	0.012	6.591	ug/L
	U	238	4752.069	0.01	0.1907	0.005	2.836	ug/L
>	Bi	209	517872.971	517872.97				ug/L

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Na	23	237090106.153	830.33	37.7680	1.394	3.691	mg/L
Mg	24	27092045.629	94.81	6.8491	0.508	7.415	mg/L
K	39	32610666.207	111.30	3.4263	0.175	5.102	mg/L
Ca	43	632037.487	2.21	32.4198	0.650	2.004	mg/L
Fe	54	153538.865	0.33	0.1266	0.003	2.666	mg/L
Fe	57	74065.382	0.23	0.1944	0.010	5.270	mg/L
Sc-1	45	285254.084	285254.08				mg/L
Cl	35	1469652.167	1431211.04				mg/L
Kr	83	47.667	-12.33				mg/L
Br	81	69089.361	59807.52				mg/L
P	31	253708.522	239997.24				mg/L
S	34	962902.613	688182.93				mg/L
Sr	88	1707452.437	1707365.76				mg/L

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
Li	6					
Be	9					
Al	27					
Sc	45					
Ti	49					
V	51					
Cr	52					
Cr	53					
Mn	55					
Co	59					
Ni	60					
Cu	65					
Zn	66					
Ge	72		119.964			
As	75					
Se	77					
Se	82					
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107					
Cd	114					
In	115		105.901			
Sn	118					
Sb	123					
Ba	135					
Ce	140					
Tb	159		106.039			
Ho	165					
Tl	203					
Tl	205					
Pb	206					
Pb	207					
Pb	208					
U	238					
Bi	209		113.005			

Sample ID: L1202021802
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⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1202021802
Report Date/Time: Thursday, February 09, 2012 15:00:06
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Method 6020 - Summary Report

Sample ID: QC Std 6

Sample Date/Time: Thursday, February 09, 2012 15:05:41
Number of Replicates: 3
Aliquot Volume (mL):
Diluted To Volume (mL):
Autosampler Position: 5
Method File: C:\elandata\Method\6020a.mth
Sample Description:

User ID: JYH
Cumulative Autodilution Factor: 1
ELAN-ICP 200.8\6020 External Calibration

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Net Intens. Mean	Conc. Mean	Conc. SD	Conc. RSD	Sample Unit
	Li	6	15581.322	0.02				ug/L
	Be	9	18471.116	0.07	58.3816	1.582	2.709	ug/L
	Al	27	325836.546	1.19	48.0813	2.622	5.454	ug/L
>	Sc	45	271330.857	271330.86				ug/L
	Ti	49	70447.072	0.12	101.5042	4.491	4.425	ug/L
	V	51	591769.515	1.00	50.6775	2.173	4.287	ug/L
	Cr	52	512995.536	0.86	48.7085	1.105	2.269	ug/L
	Cr	53	59373.662	0.10	47.5089	1.590	3.348	ug/L
	Mn	55	804981.088	1.37	51.4004	1.893	3.682	ug/L
	Co	59	590720.525	1.01	49.9096	1.673	3.351	ug/L
	Ni	60	124487.158	0.21	51.7526	0.602	1.163	ug/L
	Cu	65	115126.982	0.20	51.4601	2.136	4.150	ug/L
	Zn	66	66785.938	0.11	52.7717	1.676	3.177	ug/L
>	Ge	72	586509.172	586509.17				ug/L
	As	75	76746.450	0.13	50.1084	0.899	1.795	ug/L
	Se	77	5910.096	0.01	53.2362	2.195	4.122	ug/L
	Se	82	6940.256	0.01	51.0308	1.937	3.795	ug/L
	Rb	85	2643.113	0.00				mg/L
	Y	89	380906.161	27476.21				ug/L
	Rh	103	28.000	5.00				ug/L
	Mo	98	372641.430	0.70	106.7219	0.923	0.865	ug/L
	Ag	107	389143.924	0.73	53.2651	2.414	4.532	ug/L
	Cd	114	85772.804	0.16	54.1716	4.848	8.949	ug/L
>	In	115	531414.517	531414.52				ug/L
	Sn	118	301398.285	0.57	51.0050	1.113	2.181	ug/L
	Sb	123	268130.290	0.50	50.6280	2.218	4.382	ug/L
	Ba	135	103083.728	0.15	51.0146	0.504	0.988	ug/L
	Ce	140	123.347	-0.00				ug/L
>	Tb	159	684115.049	684115.05				ug/L
	Ho	165	6.667	0.00				ug/L
	Tl	203	387152.686	0.78	50.1516	1.968	3.923	ug/L
	Tl	205	960902.880	1.93	50.0852	1.325	2.646	ug/L
	Pb	206	325168.678	0.65	50.6395	1.858	3.670	ug/L
	Pb	207	277407.135	0.56	49.8223	1.197	2.402	ug/L
	Pb	208	1296606.900	2.60	50.1448	0.530	1.057	ug/L
	U	238	1217102.560	2.44	55.7416	0.851	1.527	ug/L
>	Bi	209	498502.418	498502.42				ug/L

Sample ID: QC Std 6
Report Date/Time: Thursday, February 09, 2012 15:07:54
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Na	23	29065032.432	107.11	4.8746	0.273	5.592	mg/L
Mg	24	18287953.813	67.42	4.8706	0.132	2.708	mg/L
K	39	41538384.847	149.98	4.6155	0.039	0.843	mg/L
Ca	43	91617.047	0.34	4.9361	0.086	1.740	mg/L
Fe	54	3643949.881	13.23	4.8422	0.128	2.642	mg/L
Fe	57	1558532.629	5.71	4.9226	0.109	2.221	mg/L
Sc-1	45	271330.857	271330.86				mg/L
Cl	35	36402.004	-2039.13				mg/L
Kr	83	47.334	-12.67				mg/L
Br	81	13072.263	3790.42				mg/L
P	31	17038.453	3327.17				mg/L
S	34	355722.034	81002.35				mg/L
Sr	88	5952.726	5866.05				mg/L

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
Li	6					
Be	9					
Al	27					
Sc	45					
Ti	49					
V	51	101.355				
Cr	52	97.417				
Cr	53					
Mn	55	102.801				
Co	59	99.819				
Ni	60	103.505				
Cu	65	102.920				
Zn	66	105.543				
Ge	72		111.502			
As	75	100.217				
Se	77					
Se	82	102.062				
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107	106.530				
Cd	114	108.343				
In	115		104.209			
Sn	118					
Sb	123	101.256				
Ba	135	102.029				
Ce	140					
Tb	159		100.538			
Ho	165					
Tl	203	100.303				
Tl	205					
Pb	206					
Pb	207					
Pb	208	100.290				
U	238	111.483				
Bi	209		108.778			

Sample ID: QC Std 6
Report Date/Time: Thursday, February 09, 2012 15:07:54
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⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	U	238	CCV IS OUT OF LIMITS (+/-10% OR %RSD>20)

Sample ID: QC Std 6
Report Date/Time: Thursday, February 09, 2012 15:07:54
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Approved: February 09, 2012

Method 6020 - Summary Report

Sample ID: QC Std 7

Sample Date/Time: Thursday, February 09, 2012 15:13:17
Number of Replicates: 3
Aliquot Volume (mL):
Diluted To Volume (mL):
Autosampler Position: 1
Method File: C:\elandata\Method\6020a.mth
Sample Description:

User ID: JYH
Cumulative Autodilution Factor: 1
ELAN-ICP 200.8\6020 External Calibration

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Net Intens. Mean	Conc. Mean	Conc. SD	Conc. RSD	Sample Unit
	Li	6	13644.583	0.02				ug/L
	Be	9	5.333	-0.00	0.0301	0.021	68.230	ug/L
	Al	27	2717.113	0.00	0.0546	0.055	100.094	ug/L
>	Sc	45	235447.019	235447.02				ug/L
	Ti	49	90.010	-0.00	-0.0508	0.038	74.191	ug/L
	V	51	2862.983	-0.00	-0.0265	0.017	63.631	ug/L
	Cr	52	9343.332	-0.00	-0.0393	0.053	134.891	ug/L
	Cr	53	713.436	-0.00	-0.2063	0.102	49.638	ug/L
	Mn	55	551.357	0.00	-0.0111	0.004	31.967	ug/L
	Co	59	111.002	0.00	-0.0061	0.000	6.198	ug/L
	Ni	60	37.334	0.00	-0.0212	0.001	5.853	ug/L
	Cu	65	117.335	0.00	-0.0038	0.002	45.056	ug/L
	Zn	66	79.335	0.00	-0.0392	0.001	2.078	ug/L
>	Ge	72	588108.754	588108.75				ug/L
	As	75	-223.095	0.00	0.0223	0.018	80.270	ug/L
	Se	77	83.334	-0.00	-0.0439	0.140	319.755	ug/L
	Se	82	0.878	0.00	0.0212	0.084	397.172	ug/L
	Rb	85	30.000	-0.00				mg/L
	Y	89	374337.127	20907.18				ug/L
	Rh	103	10.000	-13.00				ug/L
	Mo	98	126.418	0.00	-0.0078	0.003	40.094	ug/L
	Ag	107	115.669	0.00	-0.0137	0.001	5.730	ug/L
	Cd	114	6.917	0.00	-0.0444	0.004	8.039	ug/L
>	In	115	512604.698	512604.70				ug/L
	Sn	118	197.602	0.00	-0.0049	0.002	50.776	ug/L
	Sb	123	583.728	0.00	0.1211	0.013	10.967	ug/L
	Ba	135	54.667	0.00	0.0156	0.008	54.211	ug/L
	Ce	140	13.335	-0.00				ug/L
>	Tb	159	664182.756	664182.76				ug/L
	Ho	165	23.336	0.00				ug/L
	Tl	203	49.334	0.00	-0.0038	0.001	21.185	ug/L
	Tl	205	126.680	0.00	0.0110	0.001	5.279	ug/L
	Pb	206	324.676	0.00	-0.0004	0.007	1668.507	ug/L
	Pb	207	272.341	0.00	-0.0100	0.005	46.840	ug/L
	Pb	208	1282.719	0.00	0.0005	0.002	331.450	ug/L
	U	238	150.003	0.00	-0.0121	0.002	12.610	ug/L
>	Bi	209	499106.544	499106.54				ug/L

Sample ID: QC Std 7
Report Date/Time: Thursday, February 09, 2012 15:15:29
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Approved: February 09, 2012

Na	23	38027.495	0.07	0.0065	0.001	11.909	mg/L
Mg	24	2467.287	0.01	0.0009	0.000	15.446	mg/L
K	39	707846.066	-0.10	0.0015	0.003	189.196	mg/L
Ca	43	213.358	0.00	0.0064	0.005	77.703	mg/L
Fe	54	52313.709	0.02	0.0110	0.003	23.698	mg/L
Fe	57	9810.120	0.01	0.0064	0.004	60.988	mg/L
Sc-1	45	235447.019	235447.02				mg/L
Cl	35	29342.247	-9098.88				mg/L
Kr	83	52.334	-7.67				mg/L
Br	81	11142.819	1860.98				mg/L
P	31	17126.482	3415.20				mg/L
S	34	299587.231	24867.55				mg/L
Sr	88	116.679	30.00				mg/L

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
Li	6					
Be	9					
Al	27					
Sc	45					
Ti	49					
V	51					
Cr	52					
Cr	53					
Mn	55					
Co	59					
Ni	60					
Cu	65					
Zn	66					
Ge	72		111.806			
As	75					
Se	77					
Se	82					
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107					
Cd	114					
In	115		100.520			
Sn	118					
Sb	123					
Ba	135					
Ce	140					
Tb	159		97.608			
Ho	165					
Tl	203					
Tl	205					
Pb	206					
Pb	207					
Pb	208					
U	238					
Bi	209		108.910			

Sample ID: QC Std 7
Report Date/Time: Thursday, February 09, 2012 15:15:29
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⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Thursday, February 09, 2012 15:15:29
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Approved: February 09, 2012

2.1.3 Metals CVAA Data (Mercury)

2.1.3.1 Summary Data

Login Number: L12020220
Department: Metals - AA
Analyst: Pierce Morris

METHOD

Preparation: SW-846 7470

Analysis: SW-846 7470

HOLDING TIMES

Sample Preparation: All holding times were met.

Sample Analysis: All holding times were met.

PREPARATION

Sample preparation proceeded normally.

CALIBRATION

Initial Calibration: All acceptance criteria were met.

Alternate Source Standards: All acceptance criteria were met.

Interference Check Standards: All acceptance criteria were met.

Continuing Calibration Verification: All acceptance criteria were met.

Continuing Calibration Blank: WG389240 - The CCB yielded a result for mercury of .000125 mg/L on 10-FEB-2012 at 13:22 which exceeded the LOD. However all client samples analyzed with the CCB yielded results that were less then the reporting limit. The mercury results were reported with the permission of the customer service representative.

BATCH QA/QC

Method Blank: All acceptance criteria were met.

Laboratory Control Sample: All acceptance criteria were met.

Serial Dilution/Post Digestion Spikes: WG38240 - All acceptance criteria were met.

Matrix Spikes: All acceptance criteria were met.

SAMPLES

Samples: All acceptance criteria were met.

Narrative ID: 42062
Approved By: Sheri Pfalzgraf

Microbac

Lab Report #: L12020220
Lab Project #: 3005.011
Project Name: White Sands MR
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L12020220-01	**PrePrep Method:**	N/A	**Instrument:**	HYDRA
Client ID:	MPL25-0212-1	**Prep Method:**	7470A	**Prep Date:**	02/09/2012 09:11
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	02/10/2012 12:44
Workgroup #:	WG389240	**Analyst:**	PDM	**Run Date:**	02/10/2012 13:05
Collect Date:	02/06/2012 15:05	**Dilution:**	1	**File ID:**	HY.021012.130554
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Mercury	7439-97-6	0.000120	J	0.000200	0.000100

J	Estimated value ; the analyte concentration was less than the LOQ.

Certificate of Analysis

Sample #:	L12020220-02	**PrePrep Method:**	N/A	**Instrument:**	HYDRA
Client ID:	SMW1-0212-1	**Prep Method:**	7470A	**Prep Date:**	02/09/2012 09:11
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	02/10/2012 12:44
Workgroup #:	WG389240	**Analyst:**	PDM	**Run Date:**	02/10/2012 13:13
Collect Date:	02/07/2012 09:50	**Dilution:**	1	**File ID:**	HY.021012.131329
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Mercury	7439-97-6		U	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Certificate of Analysis

Sample #:	L12020220-03	**PrePrep Method:**	N/A	**Instrument:**	HYDRA
Client ID:	SMW4-0212-1	**Prep Method:**	7470A	**Prep Date:**	02/09/2012 09:11
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	02/10/2012 12:44
Workgroup #:	WG389240	**Analyst:**	PDM	**Run Date:**	02/10/2012 13:15
Collect Date:	02/07/2012 12:05	**Dilution:**	1	**File ID:**	HY.021012.131526
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Mercury	7439-97-6		U	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Certificate of Analysis

2.1.3.2 QC Summary

Example Cold Vapor Mercury Calculations
Hydra AA Mercury Analyzer

1.0 Initial Calibration (ICAL) Parameters
The system performs linear regression from data consisting of a blank and five standards.

2.0 Calculating the concentration (C) of an element in water using data from run log and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Diluted to Volume (mL)	40
Vi = Aliquot Volume (mL)	40
D = Manual dilution factor, if required (10X = 10)	1
Cx = Concentration of element in ppb (ug/L)	0.1

3.0 Calculating the concentration (C) of an element in soil using data from prep log and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Ws} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Diluted to volume (mL)	40
Ws = Aliquot weight (g)	0.6
D = Manual dilution factor	1
Cx = Concentration of element in ug/kg	6.67

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

1 Cx = Concentration calculated as received (wet basis)	6.67
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (ug/kg)	8.33

8.33 ug/kg = 0.00833 mg/kg

Microbac Laboratories Inc.
Metals Digest Log

Workgroup: WG389155
Analyst: VC
Spike Analyst: VC
Method: 7470A
Run Date: 02/09/2012 09:11
Hotblock Start Temp: 95 @ 08:50
Hotblock End Temp: 95.3 @ 10:50

SOP: ME404 Revison 13
Spike Solution: STD49998
Spike Witness: REK
Digestion Tubes Lot #: COA15940
HNO3 Lot #: COA15925
H2SO4 Lot #: COA15776
KMnO4 1:1 Lot #: RGT16964
K2S2O8 1:1 Lot #: RGT16987
Mercury QA/ICV Spike Lot STD49998
HG H2O STDS 10PPM Lot #: STD50006

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Spike Amount	Due Date
1	WG389155-02	BLANK	1	40 mL	40 mL		
2	WG389138-01	FBLK	17	4 mL	40 mL		
3	WG389155-03	LCS	1	40 mL	40 mL	4 mL	
4	L12020169-01	SAMP	17	4 mL	40 mL		02/13/12
5	L12020220-01	SAMP	1	40 mL	40 mL		02/17/12
6	L12020220-02	SAMP	1	40 mL	40 mL		02/17/12
7	WG389155-01	REF	1	40 mL	40 mL		
8	L12020220-03	SAMP	1	40 mL	40 mL		02/17/12
9	WG389155-04	MS	1	36 mL	40 mL	4 mL	
10	WG389155-05	MSD	1	36 mL	40 mL	4 mL	

Analyst: Vicki Collins

Reviewer:

HB_DIG - Modified 09/30/2009
PDF ID: 2303084
Report generated: 02/09/2012 10:52

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HYDRA
Dataset: 021012E.PRN
Analyst1: PDM
Analyst2: N/A
Method: 7470
SOP: ME404
Rev: 13
Maintenance Log ID: 40590

Calibration Std: STD50006
ICV Std: STD49998
Post Spike: STD50006
ICSA: N/A
ICSAB: N/A
Int. Std:
CCV:
LLCCV:

Workgroups: 389240

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	HY.021012.123555	WG389332-01	Calibration Point		1		02/10/12 12:35
2	HY.021012.123738	WG389332-02	Calibration Point		1		02/10/12 12:37
3	HY.021012.123920	WG389332-03	Calibration Point		1		02/10/12 12:39
4	HY.021012.124128	WG389332-04	Calibration Point		1		02/10/12 12:41
5	HY.021012.124313	WG389332-05	Calibration Point		1		02/10/12 12:43
6	HY.021012.124456	WG389332-06	Calibration Point		1		02/10/12 12:44
7	HY.021012.124641	WG389332-07	Initial Calibration Verification		1		02/10/12 12:46
8	HY.021012.124832	WG389332-08	Initial Calib Blank		1		02/10/12 12:48
9	HY.021012.125017	WG389332-09	CCV		1		02/10/12 12:50
10	HY.021012.125209	WG389332-10	CCB		1		02/10/12 12:52
11	HY.021012.125625	WG389155-02	Method/Prep Blank	40/40	1		02/10/12 12:56
12	HY.021012.125818	WG389155-03	Laboratory Control S	40/40	1		02/10/12 12:58
13	HY.021012.130002	WG389138-01	Fluid Blank		1		02/10/12 13:00
14	HY.021012.130214	L12020169-01	DOM WATER SLUDGE	4/40	1		02/10/12 13:02
15	HY.021012.130407	WG389240-01	Post Digestion Spike		1	L12020169-01	02/10/12 13:04
16	HY.021012.130554	L12020220-01	MPL25-0212-1	40/40	1		02/10/12 13:05
17	HY.021012.130736	WG389240-02	Post Digestion Spike		1	L12020220-01	02/10/12 13:07
18	HY.021012.130932	WG389332-11	CCV		1		02/10/12 13:09
19	HY.021012.131115	WG389332-12	CCB		1		02/10/12 13:11
20	HY.021012.131329	L12020220-02	SMW1-0212-1	40/40	1		02/10/12 13:13
21	HY.021012.131526	WG389155-01	Reference Sample	40/40	1	L12020220-03	02/10/12 13:15
22	HY.021012.131719	WG389155-04	Matrix Spike	36/40	1	L12020220-03	02/10/12 13:17
23	HY.021012.131902	WG389155-05	Matrix Spike Duplica	36/40	1	L12020220-03	02/10/12 13:19
24	HY.021012.132049	WG389332-13	CCV		1		02/10/12 13:20
25	HY.021012.132252	WG389332-14	CCB		1		02/10/12 13:22

Page: 1 Approved: February 10, 2012

Maren Berry

Microbac Laboratories Inc.

Data Checklist

Date: 09-FEB-2012
Analyst: PDM
Analyst: NA
Method: 7470
Instrument: HYDRA
Curve Workgroup: 389332
Runlog ID: 45081
Analytical Workgroups: 389240

Calibration/Linearity	X
ICV/CCV	X
ICV RSD <= 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	0220
Client Forms	X
Level X	
Level 3	
Level 4	0220
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	PDM
Secondary Reviewer	MMB
Comments	

Primary Reviewer: 10-FEB-2012 Pierce Morris

Secondary Reviewer: 10-FEB-2012 Maren Berry

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-10-2012 19:14:18

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 7470A

AAB#: WG389240

Login Number: L12020220

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
MPL25-0212-1	01	02/06/12					02/09/12	2.8	28		02/10/12	3.9	28	
SMW1-0212-1	02	02/07/12					02/09/12	2	28		02/10/12	3.1	28	
SMW4-0212-1	03	02/07/12					02/09/12	1.9	28		02/10/12	3	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 2304538
Report generated 02/10/2012 14:05

Microbac Laboratories Inc.

METHOD BLANK SUMMARY

Login Number: L12020220
Blank File ID: HY.021012.125625
Prep Date: 02/09/12 09:11
Analyzed Date: 02/10/12 12:56
Analyst: PDM

Work Group: WG389240
Blank Sample ID: WG389155-02
Instrument ID: HYDRA
Method: 7470A

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG389155-03	HY.021012.125818	02/10/12 12:58	01
MPL25-0212-1	L12020220-01	HY.021012.130554	02/10/12 13:05	01
SMW1-0212-1	L12020220-02	HY.021012.131329	02/10/12 13:13	01
SMW4-0212-1	L12020220-03	HY.021012.131526	02/10/12 13:15	01

Report Name: BLANK_SUMMARY
PDF File ID: 2304539
Report generated 02/10/2012 14:05

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L12020220 Prep Date: 02/09/12 09:11 Sample ID: WG389155-02
Instrument ID: HYDRA Run Date: 02/10/12 12:56 Prep Method: 7470A
File ID: HY.021012.125625 Analyst: PDM Method: 7470A
Workgroup (AAB#): WG389240 Matrix: Water Units: mg/L
Contract #: Cal ID: HYDRA-10-FEB-12

Analytes	LOD	LOQ	Concentration	Dilution	Qualifier
Mercury	0.000100	0.000200	0.000100	1	U

LOD Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 2304540
10-FEB-2012 14:05

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L12020220 Run Date: 02/10/2012 Sample ID: WG389155-03
Instrument ID: HYDRA Run Time: 12:58 Prep Method: 7470A
File ID: HY.021012.125818 Analyst: PDM Method: 7470A
Workgroup (AAB#): WG389240 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD49998 Cal ID: HYDRA-10-FEB-12

Analytes	Expected	Found	% Rec	LCS Limits	Q
Mercury	0.00400	0.00418	105	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 2304541
Report generated: 02/10/2012 14:05

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L12020220 Cal ID: HYDRA- Worknum: WG389240
Instrument ID: HYDRA Contract #: Method: 7470A
Parent ID: WG389155-01 File ID: HY.021012.131526 Dil: 1 Matrix: WATER
Sample ID: WG389155-04 MS File ID: HY.021012.131719 Dil: 1 Units: mg/L
Sample ID: WG389155-05 MSD File ID: HY.021012.131902 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Mercury	ND	0.00444	0.00458	103	0.00444	0.00443	99.7	3.21	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 2304542
Report generated 02/10/2012 14:05

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L12020220 **Worknum:** WG389240
Instrument ID: HYDRA **Method:** 7470A
Post Spike ID: WG389240-02 **File ID:** HY.021012.130736 **Dil:** 1 **Units:** ug/L
Sample ID: L12020220-01 **File ID:** HY.021012.130554 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
MERCURY	1.05		0.120	F	1	94.2	85 - 115	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 2304537
Report generated: 02/10/2012 14:05

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L12020220
Analytical Method: 7470A
ICAL Worknum: WG389332

Workgroup (AAB#): WG389240
Instrument ID: HYDRA
Initial Calibration Date: 02/10/2012 12:44

Analyte	WG389332-01		WG389332-02		WG389332-03		WG389332-04		WG389332-05		WG389332-06	
	STD	INT	STD	INT	STD	INT	STD	INT	STD	INT	STD	INT
Mercury	0	128	0.200	702	1.00	2622	2.00	5572	5.00	13992	10.0	28746

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
* = Out of Compliance; R < 0.995

INT_CAL_HG_FU - Modified 03/06/2008
PDF File ID: 2304543
Report generated 02/10/2012 14:05

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L12020220
Analytical Method: 7470A
ICAL Worknum: WG389332

Workgroup (AAB#): WG389240
Instrument ID: HYDRA
Initial Calibration Date: 02/10/2012 12:44

Analyte	R	Q
Mercury	1.000	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
* = Out of Compliance; R < 0.995

INT_CAL_HG_FU - Modified 03/06/2008
PDF File ID: 2304543
Report generated 02/10/2012 14:05

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L12020220
Instrument ID: HYDRA
File ID: HY.021012.124832
Workgroup (AAB#): WG389240
Matrix: WATER

Run Date: 02/10/2012
Run Time: 12:48
Analyst: PDM
Cal ID: HYDRA - 10-FEB-12

Sample ID: WG389332-08
Method: 7470A
Units: ug/L

Analytes	MDL	RDL	Concentration	Qualifier
MERCURY	.1	.2	.1	U

U = Result is less than 2 x MDL
F = Result is between MDL and 2 x MDL
* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 2304545
Report generated 02/10/2012 14:05

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L12020220 Run Date: 02/10/2012 Sample ID: WG389332-10
Instrument ID: HYDRA Run Time: 12:52 Method: 7470A
File ID: HY.021012.125209 Analyst: PDM Units: ug/L
Workgroup (AAB#): WG389240 Cal ID: HYDRA - 10-FEB-12
Matrix: WATER QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.200	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 2304547
Report generated 02/10/2012 14:05

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L12020220 Run Date: 02/10/2012 Sample ID: WG389332-12

Instrument ID: HYDRA Run Time: 13:11 Method: 7470A

File ID: HY.021012.131115 Analyst: PDM Units: ug/L

Workgroup (AAB#): WG389240 Cal ID: HYDRA - 10-FEB-12

Matrix: WATER QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.200	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 2304547
Report generated 02/10/2012 14:05

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L12020220 Run Date: 02/10/2012 Sample ID: WG389332-14

Instrument ID: HYDRA Run Time: 13:22 Method: 7470A

File ID: HY.021012.132252 Analyst: PDM Units: ug/L

Workgroup (AAB#): WG389240 Cal ID: HYDRA - 10-FEB-12

Matrix: WATER QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.200	0.125	F

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 2304547
Report generated 02/10/2012 14:05

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L12020220 Run Date: 02/10/2012 Sample ID: WG389332-07
Instrument ID: HYDRA Run Time: 12:46 Method: 7470A
File ID: HY.021012.124641 Analyst: PDM Units: ug/L
Workgroup (AAB#): WG389240 Cal ID: HYDRA - 10-FEB-12
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Mercury		2	1.98	99.0	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 2304544
Report generated 02/10/2012 14:05

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L12020220
Run Date: 02/10/2012
Sample ID: WG389332-09
Instrument ID: HYDRA
Run Time: 12:50
Method: 7470A
File ID: HY.021012.125017
Analyst: PDM
QC Key: DOD4
Workgroup (AAB#): WG389240
Cal ID: HYDRA - 10-FEB-12
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00202	mg/L	101	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 2304546
Report generated 02/10/2012 14:05

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L12020220
Run Date: 02/10/2012
Sample ID: WG389332-11
Instrument ID: HYDRA
Run Time: 13:09
Method: 7470A
File ID: HY.021012.130932
Analyst: PDM
QC Key: DOD4
Workgroup (AAB#): WG389240
Cal ID: HYDRA - 10-FEB-12
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00190	mg/L	95.0	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 2304546
Report generated 02/10/2012 14:05

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L12020220
Run Date: 02/10/2012
Sample ID: WG389332-13
Instrument ID: HYDRA
Run Time: 13:20
Method: 7470A
File ID: HY.021012.132049
Analyst: PDM
QC Key: DOD4
Workgroup (AAB#): WG389240
Cal ID: HYDRA - 10-FEB-12
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00198	mg/L	99.0	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 2304546
Report generated 02/10/2012 14:05

2.1.3.3 Raw Data

```
HYDRA 245.1/7470A/7471A        Folder:   021012E                      Page    1
                               Protocol: standard
                              ***POST-RUN REPORT***
Line   Conc.  Units     SD/RSD      1       2       3       4       5
--------------------------------------------------------------------------------

*** Standard: 1 Rep: 1              Seq:  1       12:30:47 10 Feb 12   HG

Hg    .000    ppb      5819
                                                                        =
*** Standard: 2 Rep: 1              Seq:  2       12:32:39 10 Feb 12   HG

Hg    .200    ppb      708
                                                                        =
*** Standard: 1 Rep: 1              Seq:  3       12:35:55 10 Feb 12   HG

Hg    .000    ppb      128
                                                                        =
*** Standard: 2 Rep: 1              Seq:  4       12:37:38 10 Feb 12   HG

Hg    .200    ppb      702
                                                                        =
*** Standard: 3 Rep: 1              Seq:  5       12:39:20 10 Feb 12   HG

Hg    1.00    ppb      2622
                                                                        =
*** Standard: 4 Rep: 1              Seq:  6       12:41:28 10 Feb 12   HG

Hg    2.00    ppb      5572
                                                                        =
*** Standard: 5 Rep: 1              Seq:  7       12:43:13 10 Feb 12   HG

Hg    5.00    ppb      13992
                                                                        =
*** Standard: 6 Rep: 1              Seq:  8       12:44:56 10 Feb 12   HG

Hg    10.0    ppb      28746
                                                                        =
*** Check Standard: 2  Ck2ICV       Seq:  9       12:46:41 10 Feb 12   HG
Line  Flag  %Rcv.   Found    True  Units      SD/RSD
Hg          99.1     1.98    2.00   ppb        .000
                                                                        =
*** Check Standard: 3  Ck3ICB       Seq:  10      12:48:32 10 Feb 12   HG
Line  Flag  %Rcv.   Found    True  Units      SD/RSD
Hg          17.8     .036    .200   ppb        .000
                                                                        =
*** Check Standard: 4  Ck4CCV       Seq:  11      12:50:17 10 Feb 12   HG
Line  Flag  %Rcv.   Found    True  Units      SD/RSD
Hg          101.     2.02    2.00   ppb        .000
                                                                        =
*** Check Standard: 5  Ck5CCB       Seq:  12      12:52:09 10 Feb 12   HG
Line  Flag  %Rcv.   Found    True  Units      SD/RSD
Hg          20.3     .041    .200   ppb        .000
                                                                        =
```

Approved: February 10, 2012
Pierce Morris

```
Line   Conc.  Units     SD/RSD      1       2       3       4       5
--------------------------------------------------------------------------------

*** Sample ID: WG38915502 021012E    Seq:  13     12:56:25 10 Feb 12   HG
                          PBW 70
Hg    .064    ppb       .000      .064
                                                                                =
================================================================================
*** Sample ID: WG38915503 021012E    Seq:  14     12:58:18 10 Feb 12   HG
                          LCSW 70
Hg    4.18    ppb       .000      4.18
                                                                                =
================================================================================
*** Sample ID: WG38913801 021012E    Seq:  15     13:00:02 10 Feb 12   HG
                          FBLK
Hg    .000    ppb       .000      .000
                                                                                =
================================================================================
*** Sample ID: 1202016901 021012E    Seq:  16     13:02:14 10 Feb 12   HG

Hg    .036    ppb       .000      .036
                                                                                =
================================================================================
*** Sample ID: WG38924001 021012E    Seq:  17     13:04:07 10 Feb 12   HG
                          1202016901PS.9
Hg    .973    ppb       .000      .973
                                                                                =
================================================================================
*** Sample ID: 1202022001 021012E    Seq:  18     13:05:54 10 Feb 12   HG

Hg    .120    ppb       .000      .120
                                                                                =
================================================================================
*** Sample ID: WG38924002 021012E    Seq:  19     13:07:36 10 Feb 12   HG
                          1202022001PS.9
Hg    1.05    ppb       .000      1.05
                                                                                =
*** Check Standard: 4  Ck4CCV       Seq:  20     13:09:32 10 Feb 12   HG
Line  Flag  %Rcv.   Found    True  Units      SD/RSD
Hg          94.9     1.90    2.00   ppb        .000
                                                                                =
*** Check Standard: 5  Ck5CCB       Seq:  21     13:11:15 10 Feb 12   HG
Line  Flag  %Rcv.   Found    True  Units      SD/RSD
Hg          1.77     .004    .200   ppb        .000
                                                                                =
*** Sample ID: 1202022002 021012E    Seq:  22     13:13:29 10 Feb 12   HG

Hg    .053    ppb       .000      .053
                                                                                =
================================================================================
```

Approved: February 10, 2012
Pierce Morris

Protocol: standard

POST-RUN REPORT

```
Line   Conc.  Units     SD/RSD      1       2       3       4       5
--------------------------------------------------------------------------------

*** Sample ID: 1202022003 021012E    Seq:  23     13:15:26 10 Feb 12   HG
                          WG38915501
Hg    .013    ppb       .000      .013
                                                                                =
================================================================================
*** Sample ID: WG38915504 021012E    Seq:  24     13:17:19 10 Feb 12   HG
                          1202022003S
Hg    4.12    ppb       .000      4.12
                                                                                =
================================================================================
*** Sample ID: WG38915505 021012E    Seq:  25     13:19:02 10 Feb 12   HG
                          1202022003SD
Hg    3.99    ppb       .000      3.99
                                                                                =
*** Check Standard: 4  Ck4CCV       Seq:  26      13:20:49 10 Feb 12   HG
Line  Flag  %Rcv.   Found    True  Units      SD/RSD
Hg          99.1     1.98    2.00   ppb        .000
                                                                                =
*** Check Standard: 5  Ck5CCB       Seq:  27      13:22:52 10 Feb 12   HG
Line  Flag  %Rcv.   Found    True  Units      SD/RSD
Hg          62.3     .125    .200   ppb        .000
                                                                                =
```

Approved: February 10, 2012

Pierce Morris

2.2 General Chemistry Data

2.2.1 Method 9056

2.2.1.1 Summary Data

Login Number: L12020220
Department: General Chromatography
Analyst: Jeremy Kinney

METHOD

Analysis SW-846 9056/300.0

HOLDING TIMES

Sample Preparation: All holding times were met.

Sample Analysis: All holding times were met.

PREPARATION

Sample preparation proceeded normally.

CALIBRATION

Initial Calibration: All acceptance criteria were met.

Alternate Source Standards: All acceptance criteria were met.

Continuing Calibration and Tune: All acceptance criteria were met.

BATCH QA/QC

Method Blank: All acceptance criteria were met.

Laboratory Control Sample: All acceptance criteria were met.

Matrix Spikes: The client did not specify an MS/MSD for this sample delivery group.

SAMPLES

Samples: All acceptance criteria were met.

Surrogates: Not applicable

Manual Integration Reason Codes

Reason #1: Data System Fails to Select Correct Peak In some cases the chromatography system selects and integrates the 'wrong peak'. In this case the analyst must correct the selection and force the system to integrate the proper peak. Other times the system may miss the peak completely.

Reason #2: Data System Splits the Peak Incorrectly or Integrates a False Peak as a Rider Peak This phenomena is common at low concentrations where the signal:noise ratio is low. A single compound (peak) is incorrectly split into multiple peaks or integrated as a main peak with one or more rider peaks resulting in low area counts for the target compound.

Reason #3: Improperly Integrated Isomers and/or coeluting compounds. This system often fails to distinguish coeluting compounds and or isomers. The integration areas and concentrations are wrong, and they must be corrected by manual integration. Prime examples are benzo(k)fluoranthene and benzo(b)fluoranthene which are often unresolved and integrated improperly when both are present at low concentrations in standards or samples.

Reason #4: System Establishes Incorrect Baseline There are numerous situations in chromatography where the system establishes the baseline incorrectly. Some baseline errors will be obvious to the analyst and should be corrected via manual procedures.

Reason #5: Miscellaneous Other situations involving integration errors may require in-depth review and technical judgment. These cases should be brought to the attention of the laboratory management. If the form of manual integration is not clearly covered by these four cases, then review and approval by the Laboratory Director or the QA/QC Supervisor will be required.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Microbac Laboratories Inc., both technically and for completeness, except for the conditions noted above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

Narrative ID: 42352
Approved By: Mike Cochran

Certificate of Analysis

Sample #:	L12020220-01	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	MPL25-0212-1	**Prep Method:**	300.0	**Prep Date:**	02/15/2012 18:06
Matrix:	Water	**Analytical Method:**	300.0	**Cal Date:**	02/10/2012 10:32
Workgroup #:	WG389618	**Analyst:**	JBK	**Run Date:**	02/15/2012 20:25
Collect Date:	02/06/2012 15:05	**Dilution:**	1	**File ID:**	I10215122025.42
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Fluoride	16984-48-8	0.215		0.200	0.100
Sulfate	14808-79-8	57.2		1.00	0.500

Sample #:	L12020220-01	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	MPL25-0212-1	**Prep Method:**	300.0	**Prep Date:**	02/15/2012 18:06
Matrix:	Water	**Analytical Method:**	300.0	**Cal Date:**	02/10/2012 10:32
Workgroup #:	WG389618	**Analyst:**	JBK	**Run Date:**	02/16/2012 11:56
Collect Date:	02/06/2012 15:05	**Dilution:**	5	**File ID:**	I10216121156.73
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Chloride	16887-00-6	52.9		1.00	0.500

Sample #:	L12020220-02	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	SMW1-0212-1	**Prep Method:**	300.0	**Prep Date:**	02/15/2012 18:06
Matrix:	Water	**Analytical Method:**	300.0	**Cal Date:**	02/10/2012 10:32
Workgroup #:	WG389618	**Analyst:**	JBK	**Run Date:**	02/15/2012 20:43
Collect Date:	02/07/2012 09:50	**Dilution:**	1	**File ID:**	I10215122043.43
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Chloride	16887-00-6	19.0		0.200	0.100
Fluoride	16984-48-8	0.280		0.200	0.100
Sulfate	14808-79-8	61.9		1.00	0.500

Sample #:	L12020220-03	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	SMW4-0212-1	**Prep Method:**	300.0	**Prep Date:**	02/15/2012 18:06
Matrix:	Water	**Analytical Method:**	300.0	**Cal Date:**	02/10/2012 10:32
Workgroup #:	WG389618	**Analyst:**	JBK	**Run Date:**	02/15/2012 21:00
Collect Date:	02/07/2012 12:05	**Dilution:**	1	**File ID:**	I10215122100.44
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Fluoride	16984-48-8	0.333		0.200	0.100
Sulfate	14808-79-8	56.2		1.00	0.500

Certificate of Analysis

Sample #:	L12020220-03	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	SMW4-0212-1	**Prep Method:**	300.0	**Prep Date:**	02/15/2012 18:06
Matrix:	Water	**Analytical Method:**	300.0	**Cal Date:**	02/10/2012 10:32
Workgroup #:	WG389618	**Analyst:**	JBK	**Run Date:**	02/16/2012 12:13
Collect Date:	02/07/2012 12:05	**Dilution:**	2	**File ID:**	I10216121213.74
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Chloride	16887-00-6	22.0		0.400	0.200

2.2.1.2 QC Summary Data

Example Calculations - Ion Chromatography

A. Methods 9056/300.0 (Quadratic with Offset)

1. Retrieve Curve Data from the ICAL Curve

c2 = the value of curve constant
c1= the curve slope
c0 = the curve offset

2. Obtain the area, y , from the instrument raw data

3. Calculate the concentration of the analyte, f(y), where:

$$f(y) = \frac{1}{2 * c_2} * \left(- c_1 \pm \sqrt{c_1^2 - 4 * c_2 * (c_0 - y)}\right)$$

Example Calculation:

Value of constant, c2, (curve):	0.0003
Value of curve constant, c1, (slope):	0.0869
Value of curve constant, c0, (offset):	-0.0103
Area of target analyte, y, (uS*min):	2.993
Calculated concentration, f(y), (mg/L):	31.1998864
or:	-40.1161215 *
Dilution factor (D):	1.00
Concentration of analyte in sample (mg/L):	31.200

* There are two possible solutions, but only one is valid.

B. Method 314.0 - Perchlorate (Linear)

Retrieve Curve Data from Linear Plot

c1 = the curve slope

Obtain the area, y , from the quantitation report

Calculate the concentration of the analyte, f(y), where:

f (y) = y / c1

Example Calculation:

Value of c1, slope:	0.0034
Area of target analyte, y:	0.083
Calculated concentration:	24.4117647
Dilution Factor:	1
Concentration in sample:	24.4117647

Microbac Laboratories Inc.

Instrument Run Log

Instrument: IC1 Dataset: 021012 ICAL IC1.SEQ
Analyst1: JBK Analyst2: NA
Method: SOP: Rev:

Maintenance Log ID: Syringe Filter Lot#:

Column 1 ID: Column 2 ID: NA
Workgroups:

Internal STD: NA Surrogate STD: NA Calibration STD
CCV STD: LCS STD: MS/MSD STD:

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	I10210120831.01	COLUMN RINSE	1	1		02/10/12 08:31
2	I10210120848.02	COLUMN RINSE	1	1		02/10/12 08:48
3	I10210120905.03	WG389189-01 STD\#6	1	1		02/10/12 09:05
4	I10210120923.04	WG389189-02 STD\#5	1	1		02/10/12 09:23
5	I10210120940.05	WG389189-03 STD\#4	1	1		02/10/12 09:40
6	I10210120958.06	WG389189-04 STD\#3	1	1		02/10/12 09:58
7	I10210121015.07	WG389189-05 STD\#2	1	1		02/10/12 10:15
8	I10210121032.08	WG389189-06 STD\#1	1	1		02/10/12 10:32
9	I10210121050.09	WG389189-07 ALT STD	1	1		02/10/12 10:50
10	I10210121107.10	LCR Test Level \#6	1	1		02/10/12 11:07
11	I10210121125.11	LCR Test Level \#2	1	1		02/10/12 11:25
12	I10210121142.12	LCR Test Level \#0	1	1		02/10/12 11:42
13	I10210121234.13	END	1	1		02/10/12 12:34

Comments

Seq.	Rerun	Dil.	Reason	Analytes

Page: 1 Approved: 17-FEB-12

Microbac Laboratories Inc.

Instrument Run Log

Instrument: IC1 Dataset: 021512 IC1.SEQ
Analyst1: JBK Analyst2: NA
Method: 9056/300 SOP: IC1 Rev: 12

Maintenance Log ID: 40671 Syringe Filter Lot#: 00124728

Column 1 ID: AG14A-4MM Column 2 ID: AS14A-4MM
Workgroups: WG389617 WG389618
Internal STD: NA Surrogate STD: NA Calibration STD NA
CCV STD: STD48131 LCS STD: STD48131 MS/MSD STD: STD48131

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	I10215120831.01	ELUENT	1	1		02/15/12 08:31
2	I10215120849.02	DI WATER	1	1		02/15/12 08:49
3	I10215120906.03	WG389976-01 ANION CCV	1	1		02/15/12 09:06
4	I10215120924.04	WG389976-02 ANION CCB	1	1		02/15/12 09:24
5	I10215120941.05	WG389617-01 ANION BLANK	1	1		02/15/12 09:41
6	I10215120959.06	WG389617-02 ANION LCS	1	1		02/15/12 09:59
7	I10215121016.07	L12020393-01 (NO3)	1	1		02/15/12 10:16
8	I10215121033.08	L12020394-01 (NO3)	1	1		02/15/12 10:33
9	I10215121051.09	L12020314-02 (CL,SO4)	1	1		02/15/12 10:51
10	I10215121108.10	L12020314-03 (CL,SO4)	1	1		02/15/12 11:08
11	I10215121126.11	L12020314-04 (CL,SO4)	1	1		02/15/12 11:26
12	I10215121143.12	L12020314-05 (CL,SO4)	1	1		02/15/12 11:43
13	I10215121200.13	L12020314-06 (CL,SO4)	1	1		02/15/12 12:00
14	I10215121218.14	L12020314-08 (CL,SO4)	1	1		02/15/12 12:18
15	I10215121235.15	WG389976-03 ANION CCV	1	1		02/15/12 12:35
16	I10215121253.16	WG389976-04 ANION CCB	1	1		02/15/12 12:53
17	I10215121310.17	L12020314-09 (CL,SO4)	1	1		02/15/12 13:10
85	I10215121327.18	L12020314-10 RS (CL,SO4)	1	1		02/15/12 13:27
19	I10215121345.19	WG389617-04 DUP 314-10	1	1		02/15/12 13:45
86	I10215121402.20	L12020314-11 MS	1	1		02/15/12 14:02
87	I10215121420.21	L12020314-12 SD	1	1		02/15/12 14:20
22	I10215121437.22	L12020314-13 (CL,SO4)	1	1		02/15/12 14:37
23	I10215121454.23	L12020314-14 (CL,SO4)	1	1		02/15/12 14:54
24	I10215121512.24	L12020314-16 (CL,SO4)	1	1		02/15/12 15:12
25	I10215121529.25	L12020314-17 (CL,SO4)	1	1		02/15/12 15:29
26	I10215121547.26	L12020314-18 (CL,SO4)	1	1		02/15/12 15:47
27	I10215121604.27	WG389976-05 ANION CCV	1	1		02/15/12 16:04
28	I10215121621.28	WG389976-06 ANION CCB	1	1		02/15/12 16:21
29	I10215121639.29	L12020314-19 (CL,SO4)	1	1		02/15/12 16:39
30	I10215121656.30	L12020314-20 (CL,SO4)	1	1		02/15/12 16:56
31	I10215121714.31	L12020314-21 (CL,SO4)	1	1		02/15/12 17:14
32	I10215121731.32	L12020314-23 (CL,SO4)	1	1		02/15/12 17:31
33	I10215121749.33	L12020314-24 (CL,SO4)	1	1		02/15/12 17:49

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: IC1 Dataset: 021512 IC1.SEQ
Analyst1: JBK Analyst2: NA
Method: 9056/300 SOP: IC1 Rev: 12

Maintenance Log ID: 40671 Syringe Filter Lot#: 00124728

Column 1 ID: AG14A-4MM Column 2 ID: AS14A-4MM
Workgroups: WG389617 WG389618
Internal STD: NA Surrogate STD: NA NA
CCV STD: STD48131 LCS STD: STD48131 STD48131

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	I10215121806.34	WG389618-01 ANION BLANK	1	1		02/15/12 18:06
35	I10215121823.35	WG389618-02 ANION LCS	1	1		02/15/12 18:23
36	I10215121841.36	L12020314-25 (CL,SO4)	1	1		02/15/12 18:41
37	I10215121858.37	L12020314-26 (CL,SO4)	1	1		02/15/12 18:58
38	I10215121916.38	L12020314-27 (CL,SO4)	1	1		02/15/12 19:16
39	I10215121933.39	WG389976-07 ANION CCV	1	1		02/15/12 19:33
40	I10215121950.40	WG389976-08 ANION CCB	1	1		02/15/12 19:50
41	I10215122008.41	L12020314-28 (CL,SO4)	1	1		02/15/12 20:08
42	I10215122025.42	L12020220-01 (F,CL,SO4)	1	1		02/15/12 20:25
43	I10215122043.43	L12020220-02 (F,CL,SO4)	1	1		02/15/12 20:43
44	I10215122100.44	L12020220-03 (F,CL,SO4)	1	1		02/15/12 21:00
45	I10215122117.45	L12020399-01 (F,CL,SO4)	1	1		02/15/12 21:17
46	I10215122135.46	L12020399-03 (F,CL,SO4)	1	1		02/15/12 21:35
47	I10215122152.47	L12020399-05 (F,CL,SO4)	1	1		02/15/12 21:52
48	I10215122210.48	L12020399-07 (F,CL,SO4)	1	1		02/15/12 22:10
49	I10215122227.49	L12020399-09 (F,CL,SO4)	1	1		02/15/12 22:27
50	I10215122244.50	DI WATER	1	1		02/15/12 22:44
51	I10215122302.51	WG389976-09 ANION CCV	1	1		02/15/12 23:02
52	I10215122319.52	WG389976-10 ANION CCB	1	1		02/15/12 23:19
88	I10215122337.53	L12020399-11 REF (F,CL,SO4)	1	1		02/15/12 23:37
54	I10215122354.54	WG389618-04 DUP 399-11	1	1		02/15/12 23:54
55	I10216120012.55	WG389618-05 MS 399-11	1	1		02/16/12 00:12
56	I10216120029.56	WG389618-06 MSD 399-11	1	1		02/16/12 00:29
57	I10216120046.57	WG389976-11 ANION CCV	1	1		02/16/12 00:46
58	I10216120104.58	WG389976-12 ANION CCB	1	1		02/16/12 01:04
59	I10216120752.59	WG389976-13 ANION CCV	1	1		02/16/12 07:52
60	I10216120810.60	WG389976-14 ANION CCB	1	1		02/16/12 08:10
61	I10216120827.61	L12020314-04 1/10	1	10		02/16/12 08:27
62	I10216120844.62	L12020314-05 1/2	1	10		02/16/12 08:44
63	I10216120902.63	L12020314-09 1/20	1	20		02/16/12 09:02
89	I10216120919.64	L12020314-10 1/4	1	4		02/16/12 09:19
65	I10216120937.65	L12020314-19 1/2	1	2		02/16/12 09:37
66	I10216120954.66	L12020314-20 1/10	1	10		02/16/12 09:54
67	I10216121011.67	L12020314-21 1/10	1	10		02/16/12 10:11
68	I10216121029.68	L12020314-24 1/10	1	10		02/16/12 10:29
69	I10216121046.69	L12020314-25 1/5	1	5		02/16/12 10:46

Page: 2 Approved: 20-FEB-12

Microbac Laboratories Inc.

Instrument Run Log

Instrument: IC1 Dataset: 021512 IC1.SEQ
Analyst1: JBK Analyst2: NA
Method: 9056/300 SOP: IC1 Rev: 12

Maintenance Log ID: 40671 Syringe Filter Lot#: 00124728

Column 1 ID: AG14A-4MM Column 2 ID: AS14A-4MM
Workgroups: WG389617 WG389618
Internal STD: NA Surrogate STD: NA NA
CCV STD: STD48131 LCS STD: STD48131 STD48131

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
70	I10216121104.70	L12020314-26 1/5	1	5		02/16/12 11:04
71	I10216121121.71	WG389976-15 ANION CCV	1	1		02/16/12 11:21
72	I10216121138.72	WG389976-16 ANION CCB	1	1		02/16/12 11:38
73	I10216121156.73	L12020220-01 1/5	1	5		02/16/12 11:56
74	I10216121213.74	L12020220-03 1/2	1	2		02/16/12 12:13
75	I10216121231.75	L12020399-01 1/5	1	5		02/16/12 12:31
76	I10216121248.76	L12020399-03 1/5	1	5		02/16/12 12:48
77	I10216121306.77	L12020399-05 1/5	1	5		02/16/12 13:06
78	I10216121323.78	L12020399-07 1/5	1	5		02/16/12 13:23
79	I10216121340.79	L12020399-09 1/5	1	5		02/16/12 13:40
90	I10216121358.80	L12020399-11 1/5	1	5		02/16/12 13:58
81	I10216121415.81	L12020314-16 1/2	1	2		02/16/12 14:15
82	I10216121433.82	WG389976-17 ANION CCV	1	1		02/16/12 14:33
83	I10216121450.83	WG389976-18 ANION CCB	1	1		02/16/12 14:50
84	I10216121507.84	END	1	1		02/16/12 15:07

Comments

Seq.	Rerun	Dil.	Reason	Analytes

Page: 3 Approved: 20-FEB-12

Microbac Laboratories Inc.

Data Checklist

Date: 10-FEB-2012
Analyst: JBK
Analyst: NA
Method: 300/9056
Instrument: IC1
Curve Workgroup: NA
Runlog ID: 45180
Analytical Workgroups: WG389189 ICAL

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	NA
Endrin/DDT breakdown (8081/MS)	NA
Pentachlorophenol/benzidine tailing (MS)	NA
Eluent check (IC)/system pressure (HPLC)	X
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (MS)	NA
Continuing calibration blank (CCB) (IC)	X
Special standards	NA
Blanks	X
TCL hits	X
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	NA
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual Integrations	X
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	X
Check for completeness	X
Primary Reviewer	JBK
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	MDC

Primary Reviewer:
16-FEB-2012

Secondary Reviewer:
17-FEB-2012

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-17-2012 07:57:54

Microbac Laboratories Inc.

Data Checklist

Date: 15-FEB-2012
Analyst: JBK
Analyst: NA
Method: 300/9056
Instrument: IC1
Curve Workgroup: NA
Runlog ID: 45212
Analytical Workgroups: WG389617 (02-314, 393, 394) WG389618 (02-220, 399)

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	NA
Endrin/DDT breakdown (8081/MS)	NA
Pentachlorophenol/benzidine tailing (MS)	NA
Eluent check (IC)/system pressure (HPLC)	X
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (MS)	NA
Continuing calibration blank (CCB) (IC)	X
Special standards	NA
Blanks	X
TCL hits	X
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	NA
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual Integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	X
Check for completeness	X
Primary Reviewer	JBK
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	MDC

Primary Reviewer:
17-FEB-2012

Secondary Reviewer:
20-FEB-2012

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-20-2012 13:20:39

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 300.0 AAB#: WG389618

Login Number: L12020220

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
MPL25-0212-1	01	02/06/12					02/15/12	9.1	28		02/15/12	.1	28	
MPL25-0212-1	01	02/06/12					02/15/12	9.1	28		02/16/12	.7	28	
SMW1-0212-1	02	02/07/12					02/15/12	8.3	28		02/15/12	.1	28	
SMW4-0212-1	03	02/07/12					02/15/12	8.3	28		02/15/12	.1	28	
SMW4-0212-1	03	02/07/12					02/15/12	8.3	28		02/16/12	.8	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 2311283
Report generated 02/17/2012 14:20

Microbac Laboratories Inc.

METHOD BLANK SUMMARY

Login Number: L12020220
Blank File ID: I10215121806.34
Prep Date: 02/15/12 18:06
Analyzed Date: 02/15/12 18:06
Analyst: JBK

Work Group: WG389618
Blank Sample ID: WG389618-01
Instrument ID: IC1
Method: 300.0

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG389618-02	I10215121823.35	02/15/12 18:23	01
MPL25-0212-1	L12020220-01	I10215122025.42	02/15/12 20:25	01
SMW1-0212-1	L12020220-02	I10215122043.43	02/15/12 20:43	01
SMW4-0212-1	L12020220-03	I10215122100.44	02/15/12 21:00	01
DUP	WG389618-04	I10215122354.54	02/15/12 23:54	01
MPL25-0212-1	L12020220-01	I10216121156.73	02/16/12 11:56	DL01
SMW4-0212-1	L12020220-03	I10216121213.74	02/16/12 12:13	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 2311284
Report generated 02/17/2012 14:20

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L12020220 Prep Date: 02/15/12 18:06 Sample ID: WG389618-01
Instrument ID: IC1 Run Date: 02/15/12 18:06 Prep Method: 300.0
File ID: I10215121806.34 Analyst: JBK Method: 300.0
Workgroup (AAB#): WG389618 Matrix: Water Units: mg/L
Contract #: Cal ID: IC1-10-FEB-12

Analytes	LOD	LOQ	Concentration	Dilution	Qualifier
Chloride	0.100	0.200	0.100	1	U
Fluoride	0.100	0.200	0.100	1	U
Sulfate	0.500	1.00	0.500	1	U

LOD Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 2311285
17-FEB-2012 14:20

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L12020220 Run Date: 02/15/2012 Sample ID: WG389618-02
Instrument ID: IC1 Run Time: 18:23 Prep Method: 300.0
File ID: I10215121823.35 Analyst: JBK Method: 300.0
Workgroup (AAB#): WG389618 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD48131 Cal ID: IC1-10-FEB-12

Analytes	Expected	Found	% Rec	LCS Limits	Q
Chloride	8.00	8.15	102	90 - 110	
Fluoride	8.00	8.19	102	90 - 110	
Sulfate	40.0	39.9	99.7	90 - 110	

LCS - Modified 03/06/2008
PDF File ID: 2311286
Report generated: 02/17/2012 14:20

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L12020220 Cal ID: IC1 - Worknum: WG389618
Instrument ID: IC1 Contract #: Method: 300.0
Parent ID: WG389618-03 File ID: I10215122337.53 Dil: 1 Matrix: WATER
Sample ID: WG389618-05 MS File ID: I10216120012.55 Dil: 1 Units: mg/L
Sample ID: WG389618-06 MSD File ID: I10216120029.56 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Chloride	65.8	8.00	69.4	44.8	8.00	68.9	38.2	0.769	90 - 110	20	*
Fluoride	4.60	8.00	13.2	107	8.00	13.1	106	0.975	90 - 110	20	
Sulfate	211	40.0	249	95.7	40.0	249	93.8	0.301	90 - 110	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 2312903
Report generated 02/20/2012 14:36

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L12020220
Analytical Method: 300.0
ICAL Workgroup: WG389189

Instrument ID: IC1
Initial Calibration Date: 10-FEB-12 10:32
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Chloride		6.623	4.24	0.99900	
Fluoride		5.802	11.4	0.99800	
Sulfate		8.363	6.25	0.99800	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 2311287
Report generated 02/17/2012 14:20

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L12020220

Analytical Method: 300.0

Instrument ID: IC1

Initial Calibration Date: 10-FEB-12 10:32

Column ID: F

Analyte	WG389189-01			WG389189-02			WG389189-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Chloride	24.0	3.77300000	6.361	12.0	1.76200000	6.810	4.00	0.592000000	6.757
Fluoride	24.0	4.82900000	4.970	12.0	2.19600000	5.464	4.00	0.702000000	5.698
Sulfate	120	15.7890000	7.600	60.0	7.30300000	8.216	20.0	2.23600000	8.945

INT_CAL - Modified 03/06/2008
PDF File ID: 2311287
Report generated 02/17/2012 14:20

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L12020220

Analytical Method: 300.0

Instrument ID: IC1

Initial Calibration Date: 10-FEB-12 10:32

Column ID: F

Analyte	WG389189-05			WG389189-06		
	CONC	RESP	RF	CONC	RESP	RF
Chloride	1.00	0.159000000	6.289	0.200	0.0290000000	6.897
Fluoride	1.00	0.161000000	6.211	0.200	0.0300000000	6.667
Sulfate	5.00	0.578000000	8.651	1.00	0.119000000	8.403

INT_CAL - Modified 03/06/2008
PDF File ID: 2311287
Report generated 02/17/2012 14:20

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L12020220 Run Date: 02/10/2012 Sample ID: WG389189-07
Instrument ID: IC1 Run Time: 10:50 Method: 300.0
File ID: I10210121050.09 Analyst: JBK QC Key: DOD4
ICal Workgroup: WG389189 Cal ID: IC1 - 10-FEB-12

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloride		8.00	7.80	mg/L	6.77	2.50	10	
Fluoride		8.00	7.91	mg/L	5.32	1.10	10	
Sulfate		40.0	39.2	mg/L	8.19	2.00	10	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 2311288
Report generated 02/17/2012 14:20

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L12020220
Run Date: 02/15/2012
Sample ID: WG389976-06
Instrument ID: IC1
Run Time: 16:21
Method: 300.0
File ID: I10215121621.28
Analyst: JBK
Units: mg/L
Workgroup (AAB#): WG389618
Cal ID: IC1 - 10-FEB-12
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Chloride	0.100	0.200	0.100	U
Fluoride	0.100	0.200	0.100	U
Sulfate	0.500	1.00	0.500	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 2311290
Report generated 02/17/2012 14:20

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L12020220
Run Date: 02/15/2012
Sample ID: WG389976-08
Instrument ID: IC1
Run Time: 19:50
Method: 300.0
File ID: I10215121950.40
Analyst: JBK
Units: mg/L
Workgroup (AAB#): WG389618
Cal ID: IC1 - 10-FEB-12
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Chloride	0.100	0.200	0.100	U
Fluoride	0.100	0.200	0.100	U
Sulfate	0.500	1.00	0.500	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 2311290
Report generated 02/17/2012 14:20

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L12020220
Run Date: 02/15/2012
Sample ID: WG389976-10
Instrument ID: IC1
Run Time: 23:19
Method: 300.0
File ID: I10215122319.52
Analyst: JBK
Units: mg/L
Workgroup (AAB#): WG389618
Cal ID: IC1 - 10-FEB-12
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Chloride	0.100	0.200	0.100	U
Fluoride	0.100	0.200	0.100	U
Sulfate	0.500	1.00	0.500	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 2311290
Report generated 02/17/2012 14:20

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L12020220 Run Date: 02/16/2012 Sample ID: WG389976-12

Instrument ID: IC1 Run Time: 01:04 Method: 300.0

File ID: I10216120104.58 Analyst: JBK Units: mg/L

Workgroup (AAB#): WG389618 Cal ID: IC1 - 10-FEB-12

Matrix: WATER QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Chloride	0.100	0.200	0.100	U
Fluoride	0.100	0.200	0.113	F
Sulfate	0.500	1.00	0.500	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 2311290
Report generated 02/17/2012 14:20

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L12020220
Run Date: 02/16/2012
Sample ID: WG389976-16
Instrument ID: IC1
Run Time: 11:38
Method: 300.0
File ID: I10216121138.72
Analyst: JBK
Units: mg/L
Workgroup (AAB#): WG389618
Cal ID: IC1 - 10-FEB-12
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Chloride	0.100	0.200	0.100	U
Fluoride	0.100	0.200	0.100	U
Sulfate	0.500	1.00	0.500	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 2311290
Report generated 02/17/2012 14:20

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L12020220
Run Date: 02/16/2012
Sample ID: WG389976-18
Instrument ID: IC1
Run Time: 14:50
Method: 300.0
File ID: I10216121450.83
Analyst: JBK
Units: mg/L
Workgroup (AAB#): WG389618
Cal ID: IC1 - 10-FEB-12
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Chloride	0.100	0.200	0.100	U
Fluoride	0.100	0.200	0.100	U
Sulfate	0.500	1.00	0.500	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 2311290
Report generated 02/17/2012 14:20

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L12020220
Run Date: 02/15/2012
Sample ID: WG389976-05
Instrument ID: IC1
Run Time: 16:04
Method: 300.0
File ID: I10215121604.27
Analyst: JBK
QC Key: DOD4
Workgroup (AAB#): WG389618
Cal ID: IC1 - 10-FEB-12
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloride		8.00	8.06	mg/L	6.55	0.788	10	
Fluoride		8.00	8.47	mg/L	4.97	5.88	10	
Sulfate		40.0	39.6	mg/L	8.10	0.888	10	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 2311289
Report generated 02/17/2012 14:20

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L12020220
Run Date: 02/15/2012
Sample ID: WG389976-07
Instrument ID: IC1
Run Time: 19:33
Method: 300.0
File ID: I10215121933.39
Analyst: JBK
QC Key: DOD4
Workgroup (AAB#): WG389618
Cal ID: IC1 - 10-FEB-12
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloride		8.00	8.15	mg/L	6.48	1.93	10	
Fluoride		8.00	8.50	mg/L	4.95	6.24	10	
Sulfate		40.0	39.5	mg/L	8.13	1.16	10	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 2311289
Report generated 02/17/2012 14:20

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L12020220
Run Date: 02/15/2012
Sample ID: WG389976-09
Instrument ID: IC1
Run Time: 23:02
Method: 300.0
File ID: I10215122302.51
Analyst: JBK
QC Key: DOD4
Workgroup (AAB#): WG389618
Cal ID: IC1 - 10-FEB-12
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloride		8.00	8.03	mg/L	6.58	0.313	10	
Fluoride		8.00	8.06	mg/L	5.23	0.725	10	
Sulfate		40.0	37.8	mg/L	8.51	5.63	10	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 2311289
Report generated 02/17/2012 14:20

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L12020220
Run Date: 02/16/2012
Sample ID: WG389976-11
Instrument ID: IC1
Run Time: 00:46
Method: 300.0
File ID: I10216120046.57
Analyst: JBK
QC Key: DOD4
Workgroup (AAB#): WG389618
Cal ID: IC1 - 10-FEB-12
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloride		8.00	8.02	mg/L	6.58	0.263	10	
Fluoride		8.00	8.40	mg/L	5.01	4.95	10	
Sulfate		40.0	38.2	mg/L	8.41	4.47	10	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 2311289
Report generated 02/17/2012 14:20

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L12020220
Run Date: 02/16/2012
Sample ID: WG389976-15
Instrument ID: IC1
Run Time: 11:21
Method: 300.0
File ID: I10216121121.71
Analyst: JBK
QC Key: DOD4
Workgroup (AAB#): WG389618
Cal ID: IC1 - 10-FEB-12
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloride		8.00	8.18	mg/L	6.45	2.30	10	
Fluoride		8.00	8.57	mg/L	4.91	7.15	10	
Sulfate		40.0	40.2	mg/L	7.98	0.590	10	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 2311289
Report generated 02/17/2012 14:20

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L12020220
Run Date: 02/16/2012
Sample ID: WG389976-17
Instrument ID: IC1
Run Time: 14:33
Method: 300.0
File ID: I10216121433.82
Analyst: JBK
QC Key: DOD4
Workgroup (AAB#): WG389618
Cal ID: IC1 - 10-FEB-12
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloride		8.00	8.18	mg/L	6.46	2.24	10	
Fluoride		8.00	8.56	mg/L	4.92	6.98	10	
Sulfate		40.0	40.6	mg/L	7.92	1.43	10	

* Exceeds %D Criteria

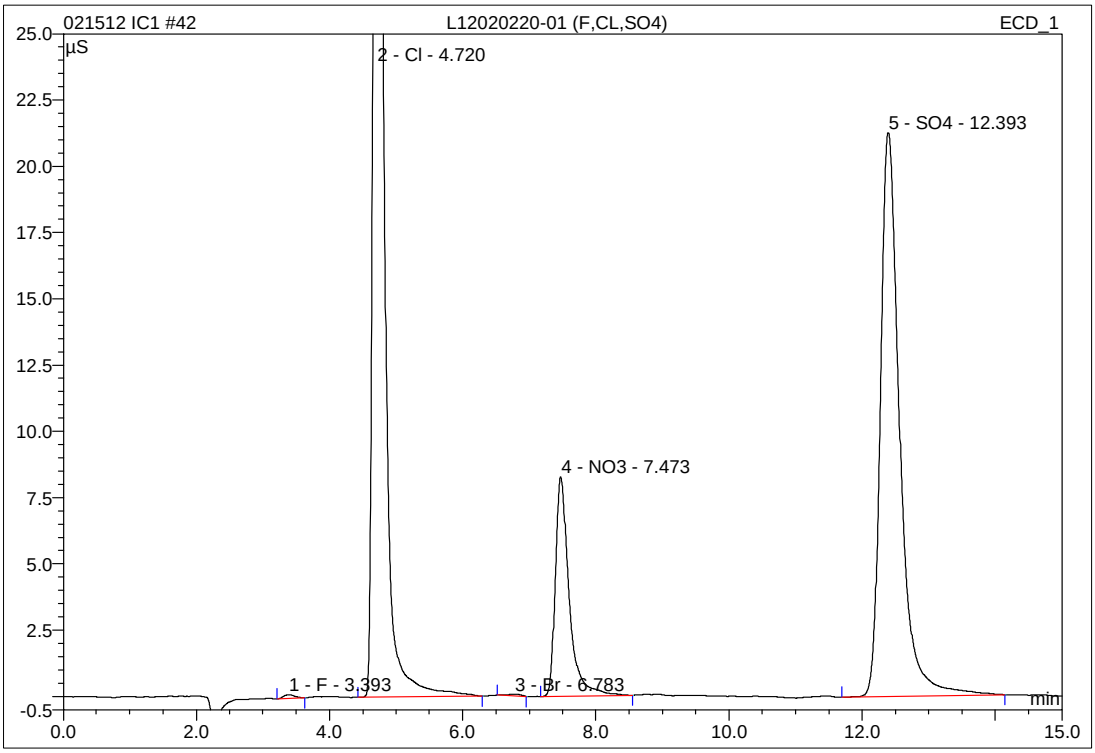
CCV - Modified 03/05/2008
PDF File ID: 2311289
Report generated 02/17/2012 14:20

2.2.1.3 Sample Data

42 L12020220-01 (F,CL,SO4)

1,1 JBK

Sample Name:	**L12020220-01 (F,CL,SO4)**	*Injection Volume:*	**20.0**
Vial Number:	**16**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**2/15/2012 20:25**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.39	F	0.136	0.026	0.14	0.215	BMB
2	4.72	Cl	58.316	9.628	51.24	63.459	BMB
3	6.78	Br	0.070	0.016	0.09	0.159	BMB
4	7.47	NO3	8.276	1.989	10.58	5.214	BMB
5	12.39	SO4	21.271	7.129	37.94	57.153	BMB
Total:			88.069	18.788	100.00	126.202	

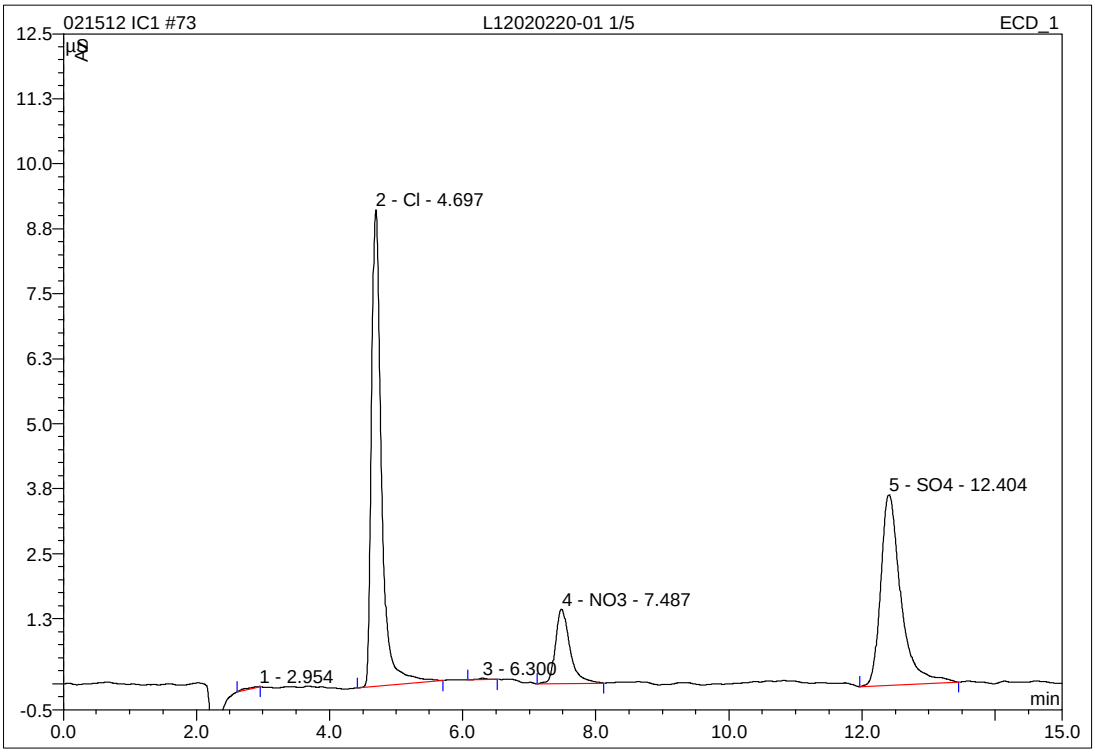
IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

73 L12020220-01 1/5

1,5 JBK (ANNEX CL>ICAL)

Sample Name:	**L12020220-01 1/5**	*Injection Volume:*	**20.0**
Vial Number:	**22**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**2/16/2012 11:56**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.95	n.a.	0.002	0.006	0.18	n.a.	BMB
2	4.70	Cl	9.170	1.603	49.20	10.579	BMB
3	6.30	n.a.	0.029	0.005	0.16	n.a.	BMB
4	7.49	NO3	1.429	0.360	11.05	0.971	BMB
5	12.40	SO4	3.665	1.284	39.41	10.478	BMB
Total:			14.295	3.258	100.00	22.028	

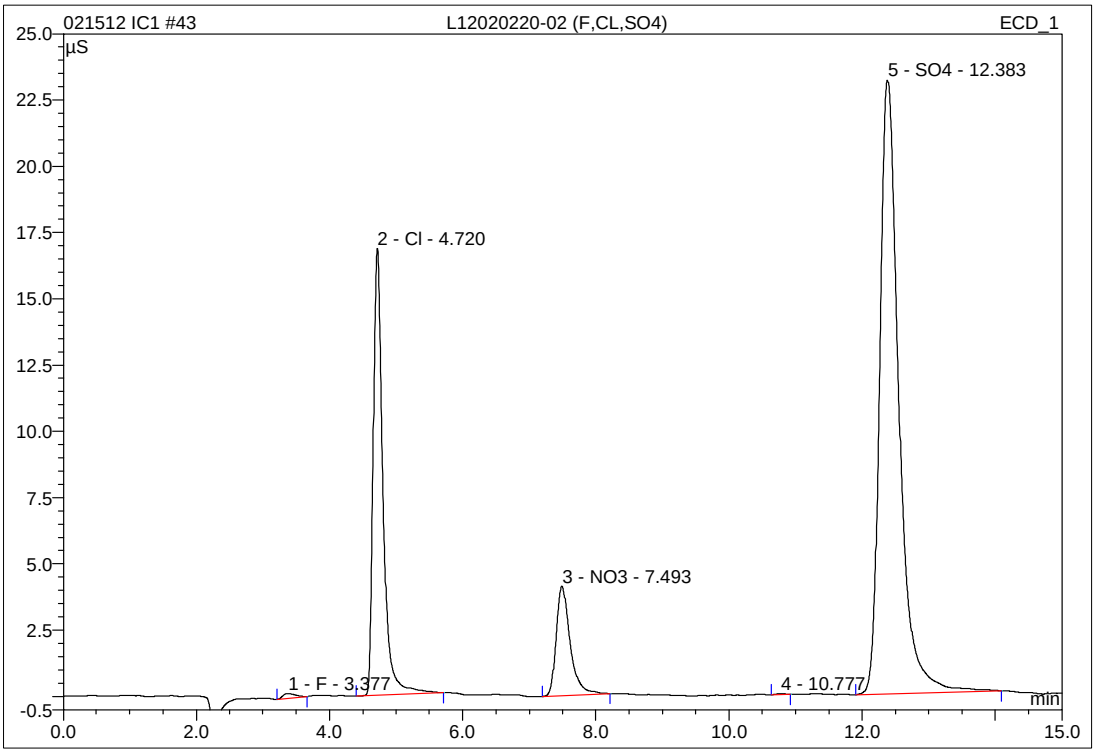
IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

43 L12020220-02 (F,CL,SO4)

1,1 JBK

Sample Name:	**L12020220-02 (F,CL,SO4)**	*Injection Volume:*	**20.0**
Vial Number:	**17**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**2/15/2012 20:43**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.38	F	0.183	0.038	0.33	0.280	BMB
2	4.72	Cl	16.868	2.878	24.72	18.979	BMB
3	7.49	NO3	4.134	1.001	8.60	2.642	BMB
4	10.78	n.a.	0.040	0.006	0.05	n.a.	BMB
5	12.38	SO4	23.147	7.718	66.30	61.858	BMB
Total:			44.372	11.642	100.00	83.758	

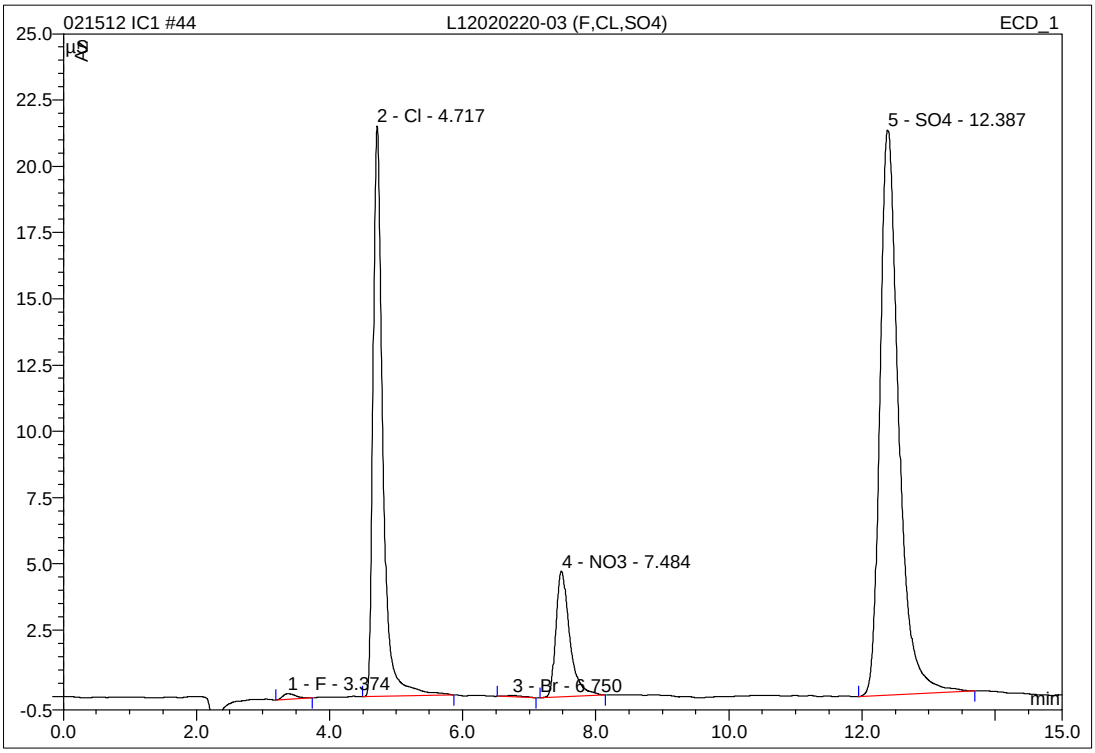
IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

44 L12020220-03 (F,CL,SO4)

1,1 JBK

Sample Name:	**L12020220-03 (F,CL,SO4)**	*Injection Volume:*	**20.0**
Vial Number:	**17**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**2/15/2012 21:00**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.37	F	0.210	0.049	0.41	0.333	BMB
2	4.72	Cl	21.514	3.671	30.88	24.207	BMB
3	6.75	Br	0.052	0.017	0.14	0.168	BMB
4	7.48	NO3	4.753	1.147	9.64	3.021	BMB
5	12.39	SO4	21.320	7.007	58.93	56.178	BMB
Total:			47.849	11.890	100.00	83.906	

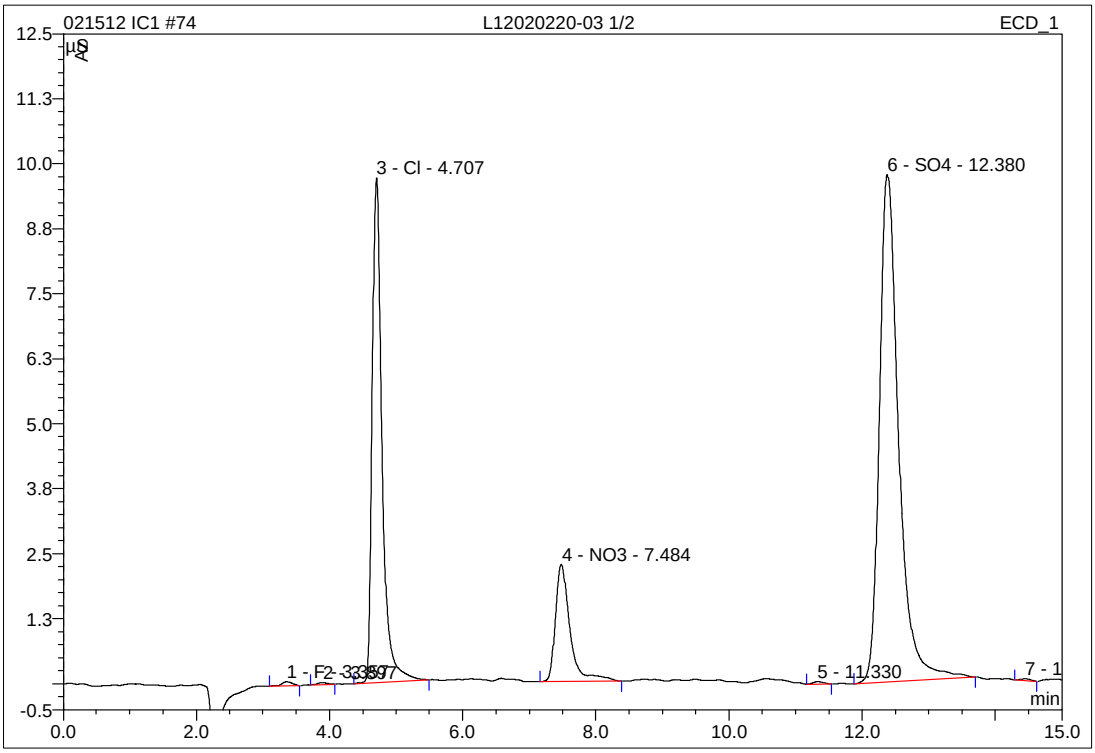
IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

74 L12020220-03 1/2

1,2 JBK (ANNEX CL>ICAL)

Sample Name:	**L12020220-03 1/2**	*Injection Volume:*	**20.0**
Vial Number:	**22**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**2/16/2012 12:13**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.36	F	0.078	0.014	0.26	0.155	BMB
2	3.90	n.a.	0.036	0.006	0.11	n.a.	BMB
3	4.71	Cl	9.709	1.664	29.96	10.980	BMB
4	7.48	NO3	2.251	0.572	10.29	1.522	BMB
5	11.33	n.a.	0.048	0.008	0.15	n.a.	BMB
6	12.38	SO4	9.761	3.285	59.13	26.456	BMB
7	14.45	n.a.	0.034	0.006	0.10	n.a.	BMB
Total:			21.917	5.555	100.00	39.112	

IC/Integration

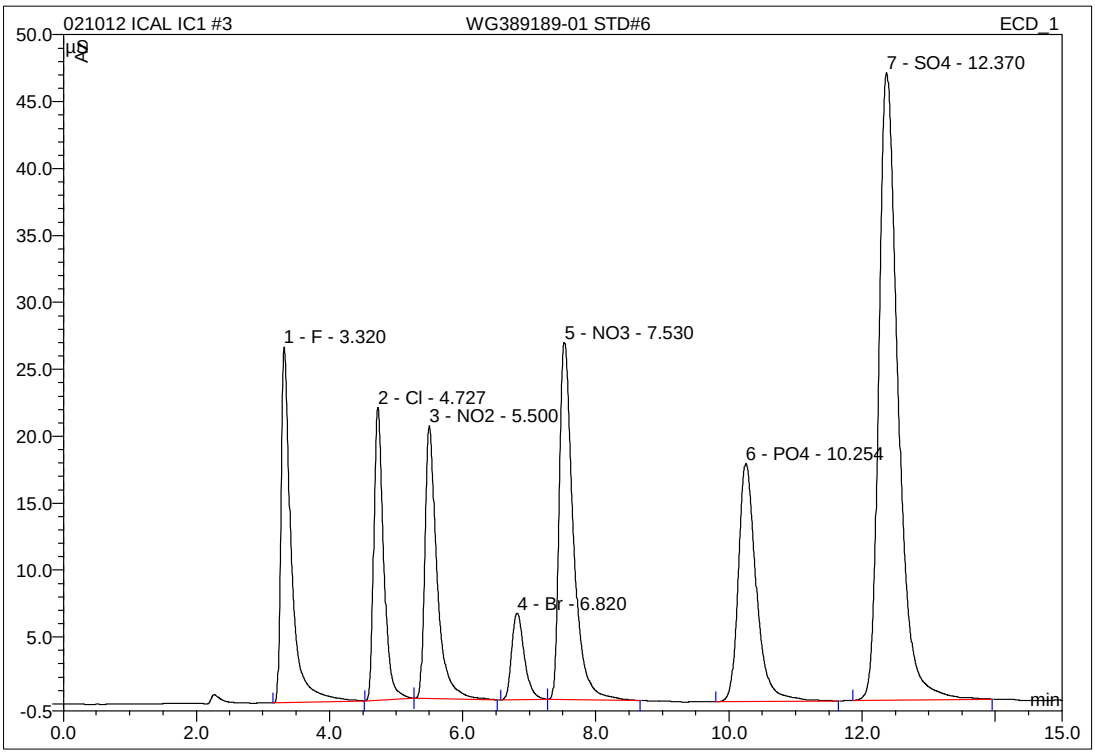
Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

2.2.1.4 Standards Data

3 WG389189-01 STD#6

1,1 JBK STD48131

Sample Name:	**WG389189-01 STD#6**	*Injection Volume:*	**20.0**
Vial Number:	**11**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**2/10/2012 9:05**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.32	F	26.576	4.829	11.44	25.240	BMB
2	4.73	Cl	21.858	3.773	8.94	24.880	BMb
3	5.50	NO2	20.381	4.315	10.22	14.814	bMB
4	6.82	Br	6.465	1.424	3.37	24.332	BMb
5	7.53	NO3	26.684	6.533	15.47	17.057	bMB
6	10.25	PO4	17.782	5.560	13.17	40.846	BMB
7	12.37	SO4	46.877	15.789	37.39	126.313	BMB
Total:			166.623	42.223	100.00	273.482	

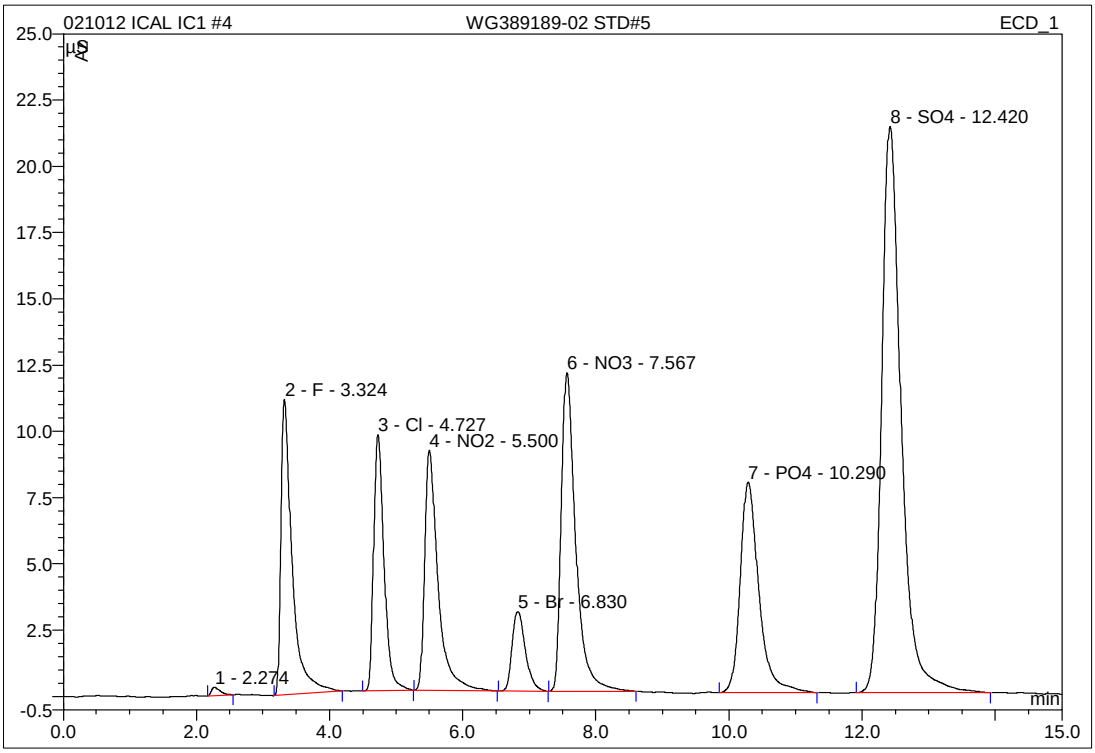
IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

4 WG389189-02 STD#5

1,1 JBK STD48131

Sample Name:	**WG389189-02 STD#5**	*Injection Volume:*	**20.0**
Vial Number:	**12**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**2/10/2012 9:23**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.27	n.a.	0.316	0.048	0.24	n.a.	BMB
2	3.32	F	11.154	2.196	11.13	11.524	BMB
3	4.73	Cl	9.661	1.762	8.92	11.622	BMB
4	5.50	NO2	9.066	2.112	10.70	7.282	BMB
5	6.83	Br	2.996	0.699	3.54	11.889	BMB
6	7.57	NO3	12.020	3.036	15.38	7.943	BMB
7	10.29	PO4	7.950	2.586	13.10	19.130	BMB
8	12.42	SO4	21.372	7.303	36.99	58.542	BMB
Total:			74.534	19.742	100.00	127.933	

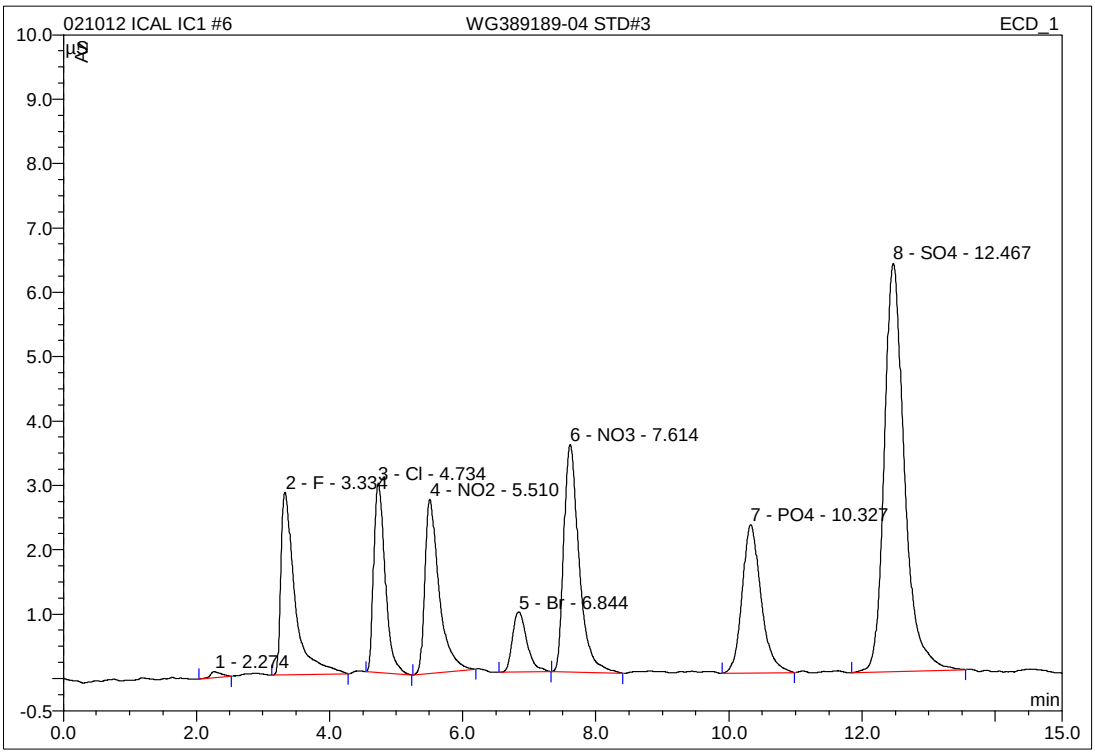
IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

6 WG389189-04 STD#3

1,1 JBK STD48131

Sample Name:	**WG389189-04 STD#3**	*Injection Volume:*	**20.0**
Vial Number:	**14**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**2/10/2012 9:58**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.27	n.a.	0.093	0.018	0.29	n.a.	BMB
2	3.33	F	2.840	0.702	11.40	3.739	BMB
3	4.73	Cl	2.943	0.592	9.61	3.914	BMB
4	5.51	NO2	2.705	0.674	10.94	2.362	BMB
5	6.84	Br	0.935	0.235	3.81	3.905	BMB
6	7.61	NO3	3.533	0.944	15.33	2.492	BMB
7	10.33	PO4	2.306	0.758	12.31	5.789	BMB
8	12.47	SO4	6.339	2.236	36.31	18.083	BMB
Total:			21.693	6.159	100.00	40.284	

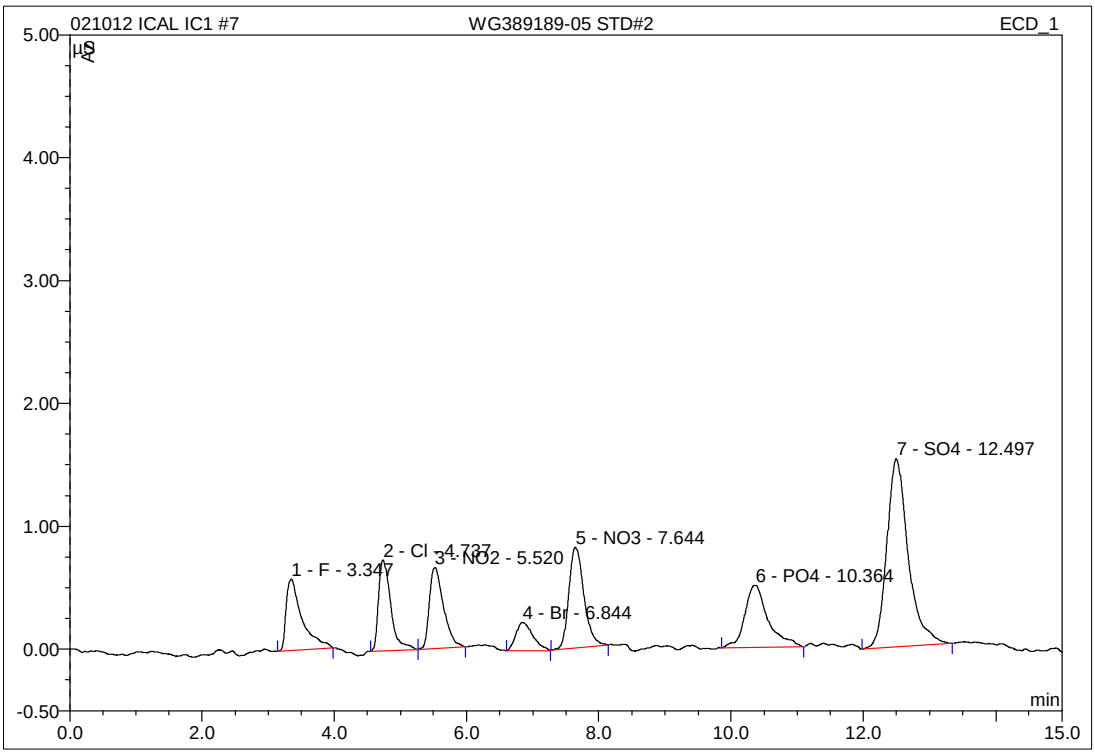
IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

7 WG389189-05 STD#2

1,1 JBK STD48131

Sample Name:	**WG389189-05 STD#2**	*Injection Volume:*	**20.0**
Vial Number:	**15**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**2/10/2012 10:15**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.35	F	0.579	0.161	10.37	0.919	BMB
2	4.74	Cl	0.740	0.159	10.26	1.063	BMB
3	5.52	NO2	0.660	0.162	10.44	0.614	BMB
4	6.84	Br	0.228	0.068	4.36	1.040	BMB
5	7.64	NO3	0.823	0.218	14.05	0.601	BMB
6	10.36	PO4	0.505	0.206	13.28	1.758	BMB
7	12.50	SO4	1.533	0.578	37.23	4.843	BMB
Total:			5.068	1.553	100.00	10.838	

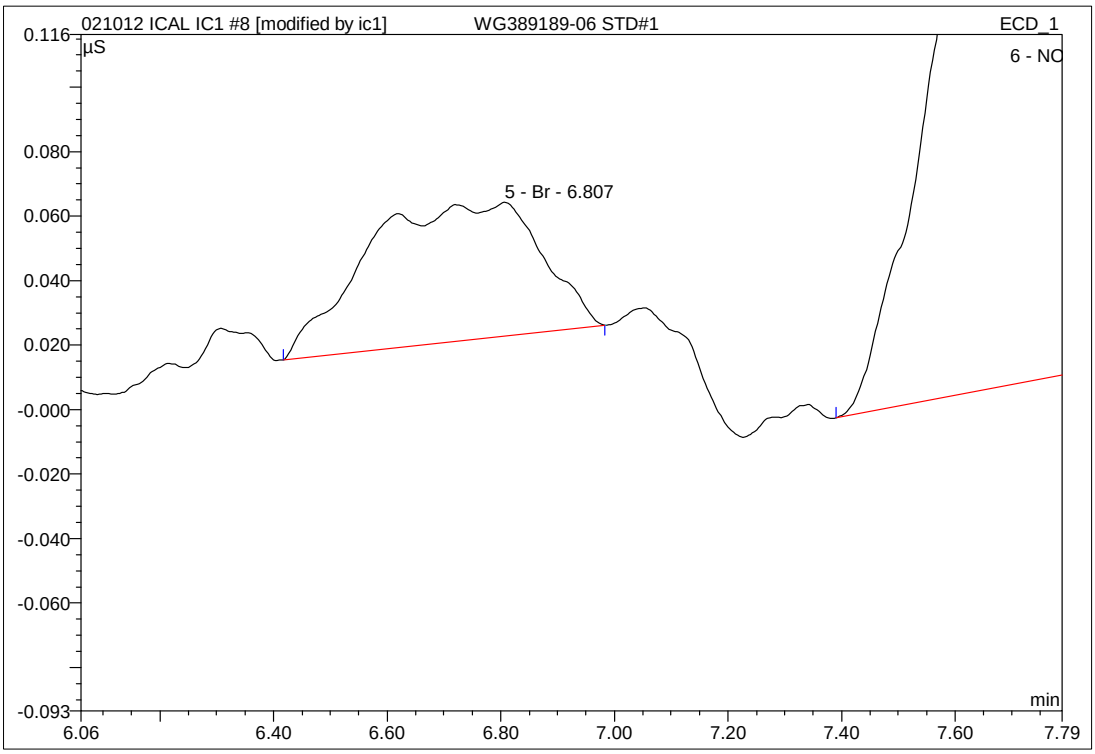
IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

8 WG389189-06 STD#1

1,1 JBK STD48131

Sample Name:	**WG389189-06 STD#1**	*Injection Volume:*	**20.0**
Vial Number:	**15**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**2/10/2012 10:32**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.37	F	0.121	0.030	10.29	0.238	BMB
2	3.84	n.a.	0.034	0.005	1.81	n.a.	BMB
3	4.74	Cl	0.155	0.029	9.73	0.203	BMB
4	5.50	NO2	0.110	0.020	6.64	0.126	BMB
5	6.81	Br	0.041	0.015	5.11	0.136	BMB*
6	7.70	NO3	0.173	0.052	17.45	0.167	BMB
7	8.47	n.a.	0.027	0.007	2.39	n.a.	BMB
8	10.36	PO4	0.055	0.013	4.42	0.348	BMB
9	11.68	n.a.	0.040	0.006	2.01	n.a.	BMB
10	12.55	SO4	0.265	0.119	40.14	1.173	BMB
Total:			1.022	0.296	100.00	2.391	

Chromeleon (c) Dionex 1996-2001
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IC/Integration

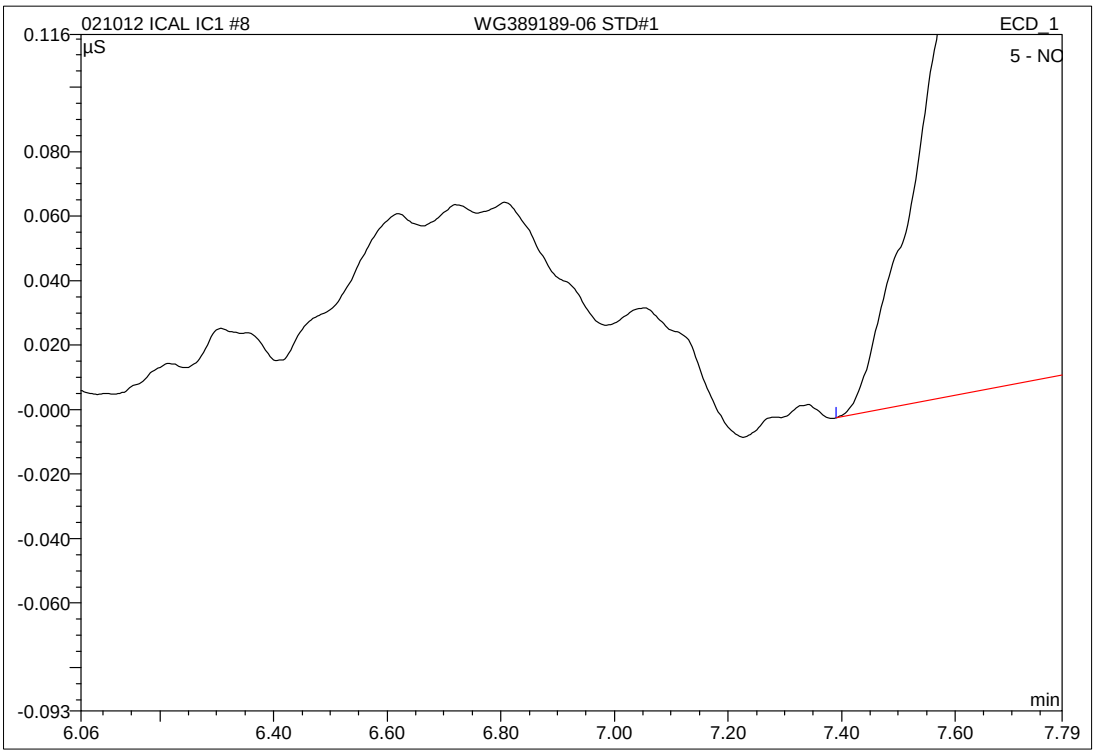
Analyst: 02/16/2012 15:21
Supervisor: 02/17/2012 08:04

#1 - Data system fails to select correct peak

8 WG389189-06 STD#1

1,1 JBK STD48131

Sample Name:	**WG389189-06 STD#1**	*Injection Volume:*	**20.0**
Vial Number:	**15**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**2/10/2012 10:32**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.37	F	0.121	0.030	10.84	0.238	BMB
2	3.84	n.a.	0.034	0.005	1.91	n.a.	BMB
3	4.74	Cl	0.155	0.029	10.26	0.203	BMB
4	5.50	NO2	0.110	0.020	7.00	0.126	BMB
5	7.70	NO3	0.173	0.052	18.39	0.167	BMB
6	8.47	n.a.	0.027	0.007	2.52	n.a.	BMB
7	10.36	PO4	0.055	0.013	4.66	0.348	BMB
8	11.68	n.a.	0.040	0.006	2.12	n.a.	BMB
9	12.55	SO4	0.265	0.119	42.30	1.173	BMB
Total:			0.981	0.281	100.00	2.254	

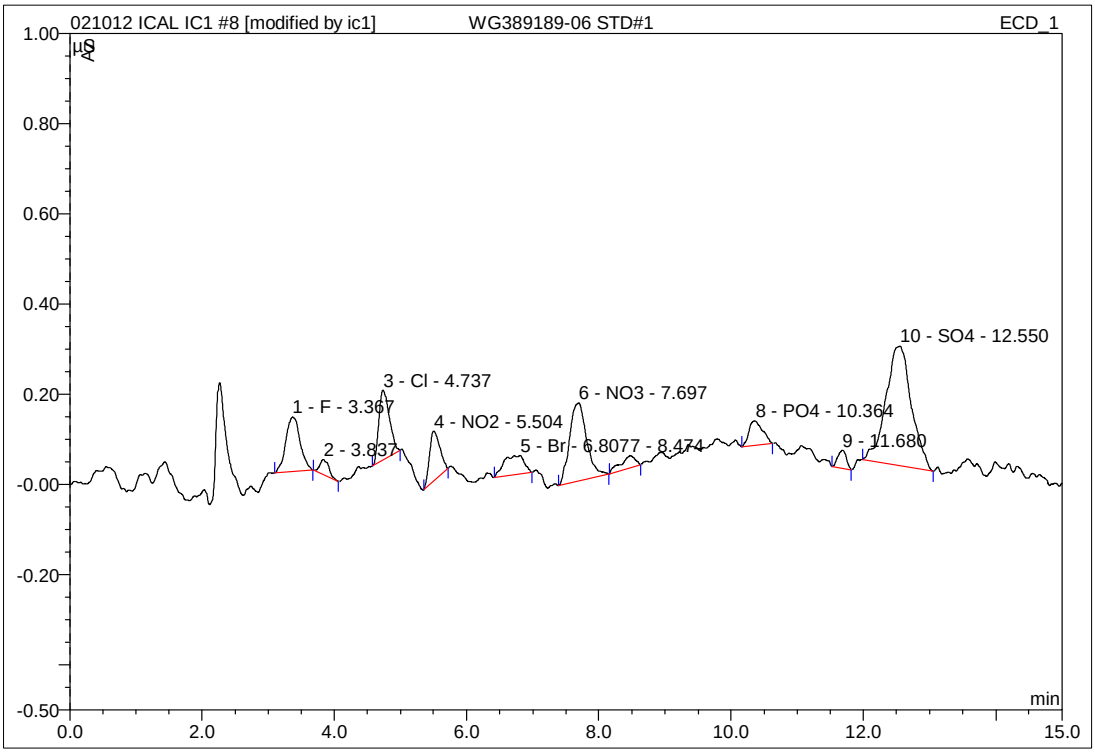
IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

8 WG389189-06 STD#1

1,1 JBK STD48131

Sample Name:	**WG389189-06 STD#1**	*Injection Volume:*	**20.0**
Vial Number:	**15**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**2/10/2012 10:32**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.37	F	0.121	0.030	10.29	0.238	BMB
2	3.84	n.a.	0.034	0.005	1.81	n.a.	BMB
3	4.74	Cl	0.155	0.029	9.73	0.203	BMB
4	5.50	NO2	0.110	0.020	6.64	0.126	BMB
5	6.81	Br	0.041	0.015	5.11	0.136	BMB*
6	7.70	NO3	0.173	0.052	17.45	0.167	BMB
7	8.47	n.a.	0.027	0.007	2.39	n.a.	BMB
8	10.36	PO4	0.055	0.013	4.42	0.348	BMB
9	11.68	n.a.	0.040	0.006	2.01	n.a.	BMB
10	12.55	SO4	0.265	0.119	40.14	1.173	BMB
Total:			1.022	0.296	100.00	2.391	

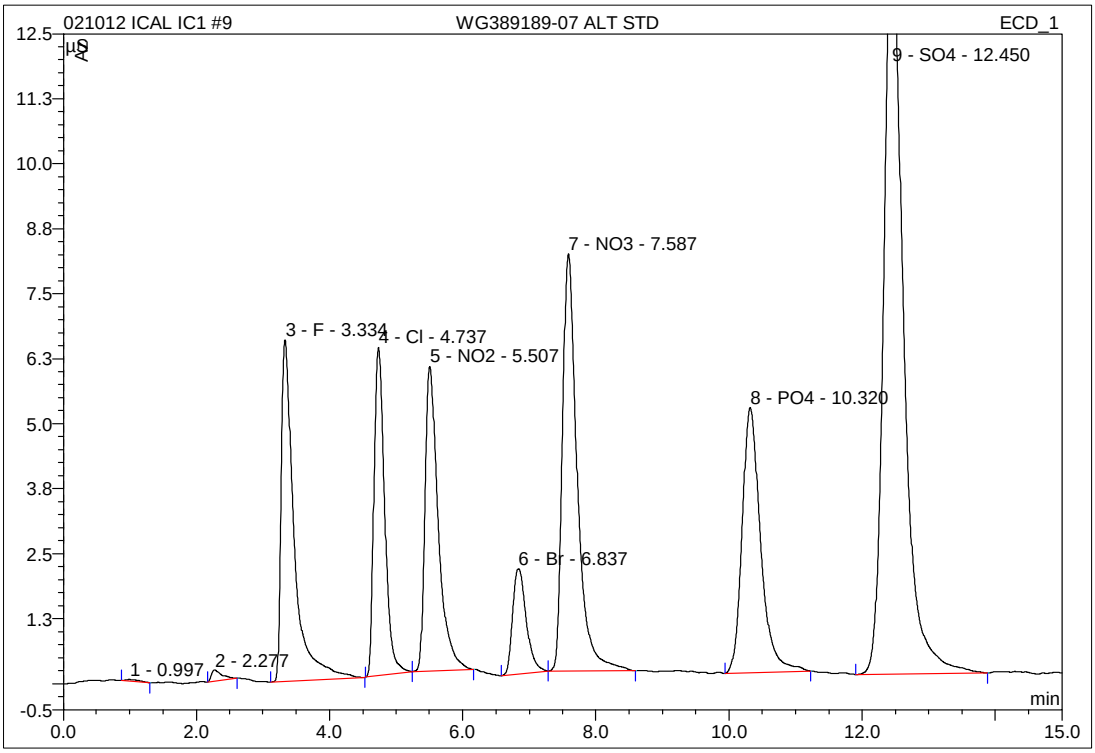
IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

9 WG389189-07 ALT STD

1,1 JBK STD48132

Sample Name:	**WG389189-07 ALT STD**	*Injection Volume:*	**20.0**
Vial Number:	**17**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**2/10/2012 10:50**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	1.00	n.a.	0.031	0.008	0.06	n.a.	BMB
2	2.28	n.a.	0.213	0.038	0.29	n.a.	BMB
3	3.33	F	6.570	1.503	11.43	7.914	BMB
4	4.74	Cl	6.309	1.181	8.98	7.797	BMb
5	5.51	NO2	5.857	1.356	10.31	4.695	bMB
6	6.84	Br	2.020	0.478	3.63	8.089	BMb
7	7.59	NO3	8.027	2.067	15.71	5.417	bMB
8	10.32	PO4	5.096	1.640	12.47	12.223	BMB
9	12.45	SO4	14.148	4.883	37.12	39.219	BMB
Total:			48.273	13.153	100.00	85.353	

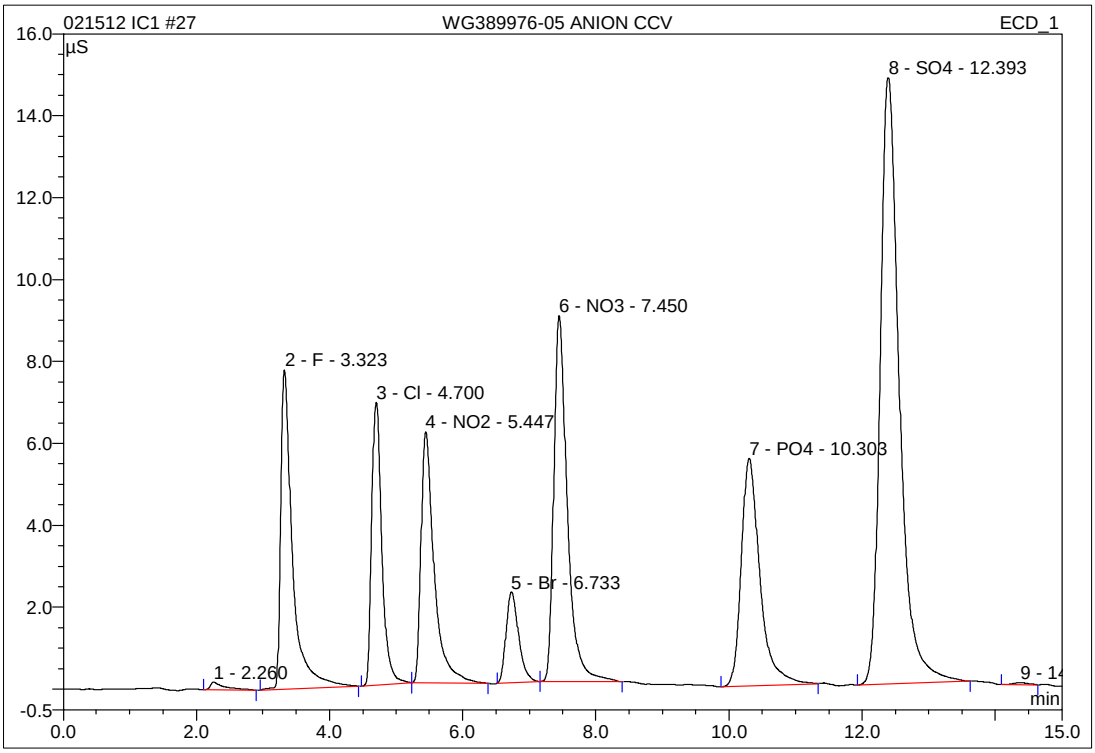
IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

27 WG389976-05 ANION CCV

1,1 JBK STD48131

Sample Name:	**WG389976-05 ANION CCV**	*Injection Volume:*	**20.0**
Vial Number:	**11**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**2/15/2012 16:04**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.26	n.a.	0.187	0.048	0.35	n.a.	BMB
2	3.32	F	7.794	1.610	11.82	8.470	BMB
3	4.70	Cl	6.906	1.222	8.96	8.063	BMb
4	5.45	NO2	6.122	1.406	10.32	4.868	bMB
5	6.73	Br	2.211	0.484	3.55	8.187	BMb
6	7.45	NO3	8.936	2.103	15.43	5.511	bMB
7	10.30	PO4	5.559	1.803	13.23	13.414	BMB
8	12.39	SO4	14.798	4.936	36.23	39.645	BMB
9	14.37	n.a.	0.055	0.014	0.10	n.a.	BMB
Total:			52.568	13.626	100.00	88.158	

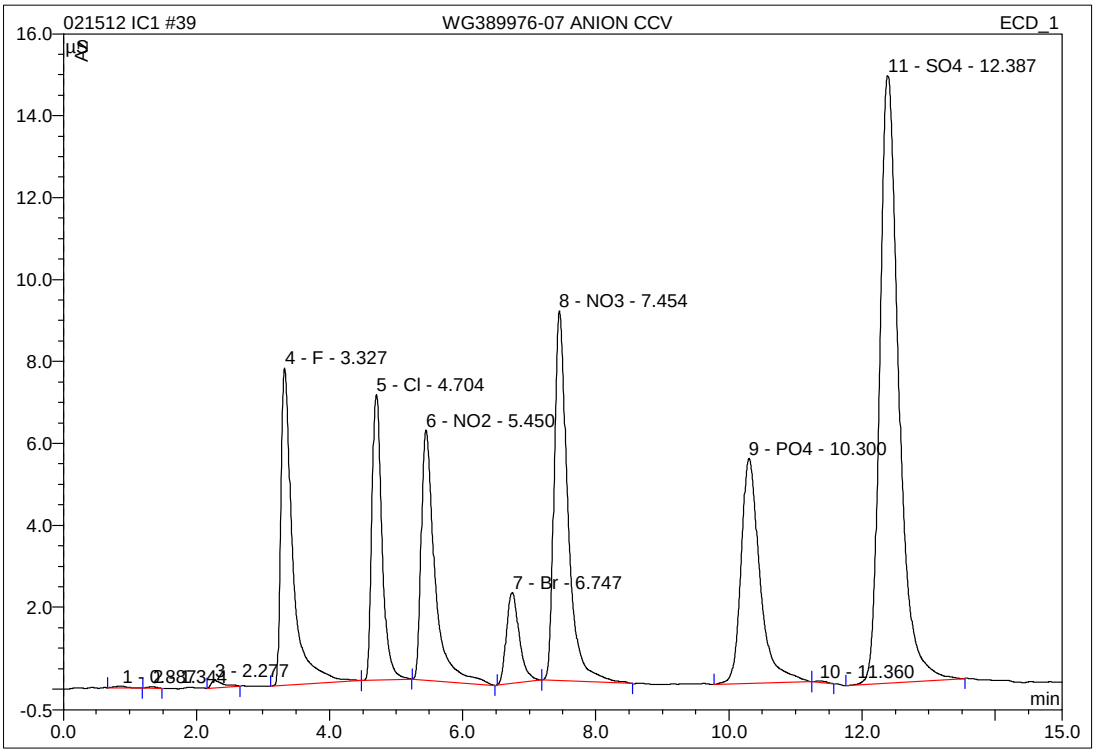
IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

39 WG389976-07 ANION CCV

1,1 JBK STD48131

Sample Name:	**WG389976-07 ANION CCV**	*Injection Volume:*	**20.0**
Vial Number:	**14**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**2/15/2012 19:33**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	0.89	n.a.	0.041	0.009	0.07	n.a.	BMB
2	1.34	n.a.	0.036	0.006	0.04	n.a.	BMB
3	2.28	n.a.	0.174	0.037	0.27	n.a.	BMB
4	3.33	F	7.735	1.616	11.75	8.499	BMB
5	4.70	Cl	6.960	1.235	8.99	8.154	bMB
6	5.45	NO2	6.101	1.461	10.63	5.054	BMB
7	6.75	Br	2.213	0.496	3.61	8.392	BMb
8	7.45	NO3	9.027	2.151	15.64	5.637	bMB
9	10.30	PO4	5.500	1.809	13.16	13.458	BMb
10	11.36	n.a.	0.037	0.007	0.05	n.a.	bMB
11	12.39	SO4	14.831	4.923	35.81	39.537	BMB

IC/Integration

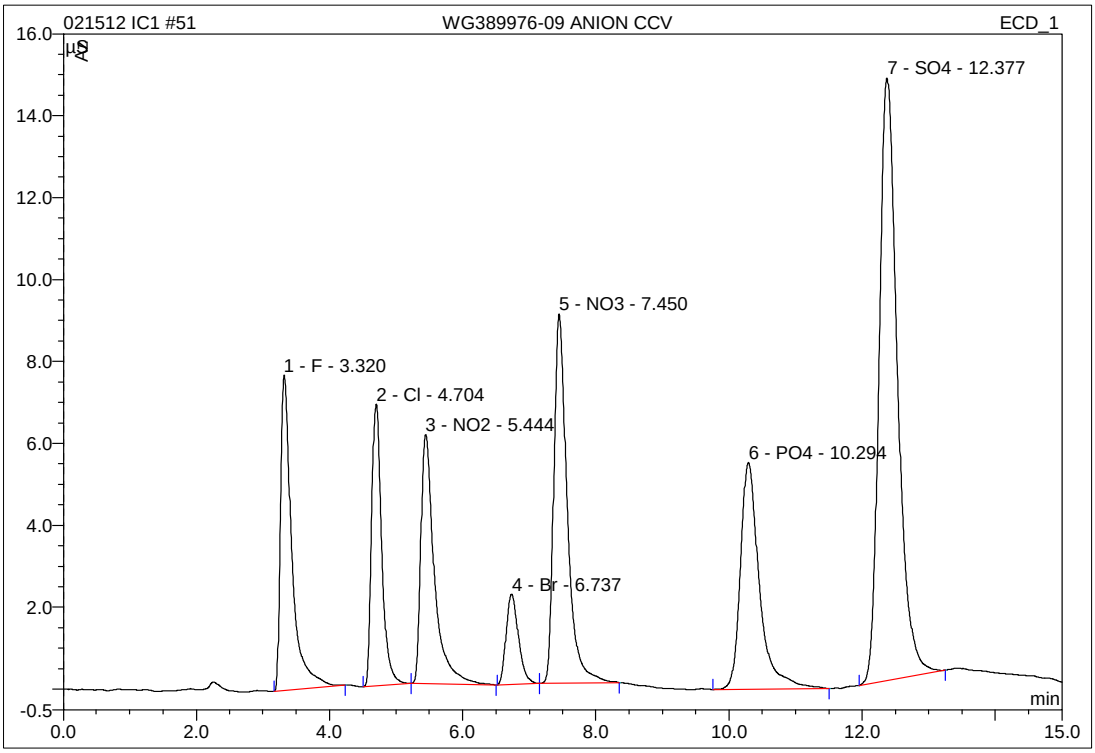
Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

Total:		52.655	13.748	100.00	88.731

51 WG389976-09 ANION CCV

1,1 JBK STD48131

Sample Name:	**WG389976-09 ANION CCV**	*Injection Volume:*	**20.0**
Vial Number:	**16**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**2/15/2012 23:02**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.32	F	7.698	1.531	11.50	8.058	BMB
2	4.70	Cl	6.878	1.216	9.13	8.025	BMb
3	5.44	NO2	6.086	1.447	10.87	5.007	bMB
4	6.74	Br	2.210	0.477	3.58	8.066	BMB
5	7.45	NO3	9.013	2.109	15.83	5.527	BMB
6	10.29	PO4	5.532	1.838	13.81	13.674	BMB
7	12.38	SO4	14.711	4.699	35.29	37.750	BMB
Total:			52.128	13.317	100.00	86.106	

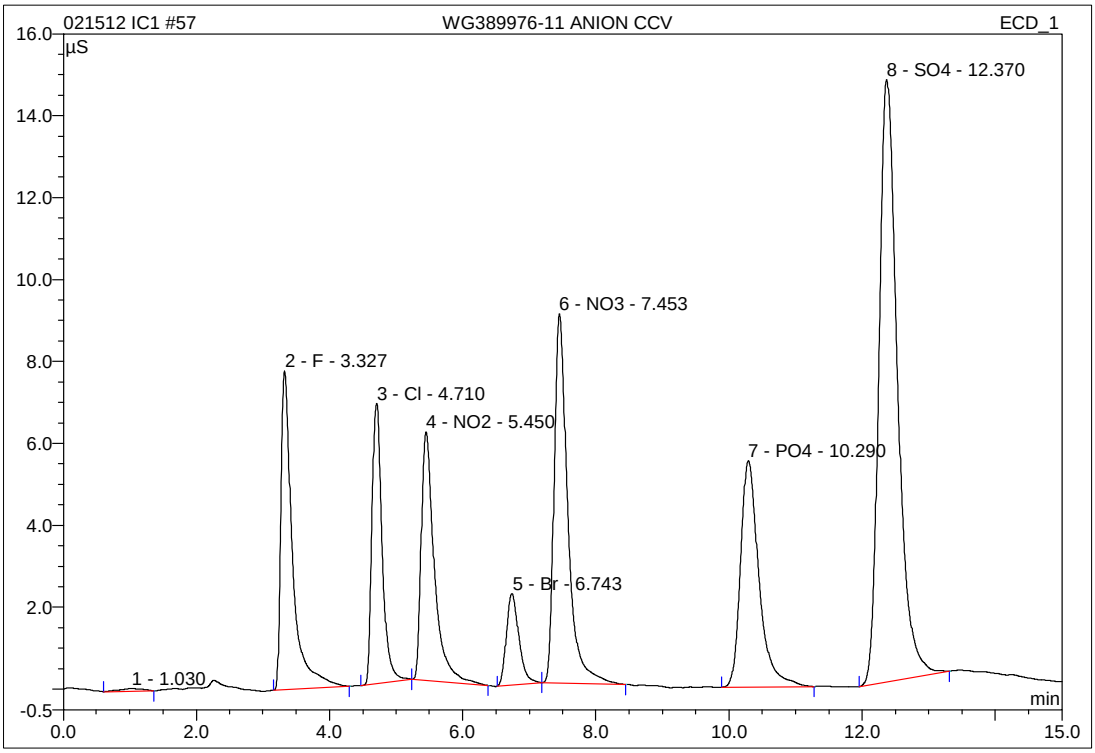
IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

57 WG389976-11 ANION CCV

1,1 JBK STD48131

Sample Name:	**WG389976-11 ANION CCV**	*Injection Volume:*	**20.0**
Vial Number:	**18**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**2/16/2012 0:46**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	1.03	n.a.	0.066	0.027	0.20	n.a.	BMB
2	3.33	F	7.777	1.596	11.92	8.396	BMB
3	4.71	Cl	6.845	1.215	9.08	8.021	BMb
4	5.45	NO2	6.064	1.393	10.40	4.821	bMB
5	6.74	Br	2.231	0.488	3.64	8.254	BMb
6	7.45	NO3	9.013	2.137	15.96	5.602	bMB
7	10.29	PO4	5.524	1.776	13.26	13.218	BMB
8	12.37	SO4	14.705	4.757	35.53	38.212	BMB
Total:			52.224	13.389	100.00	86.523	

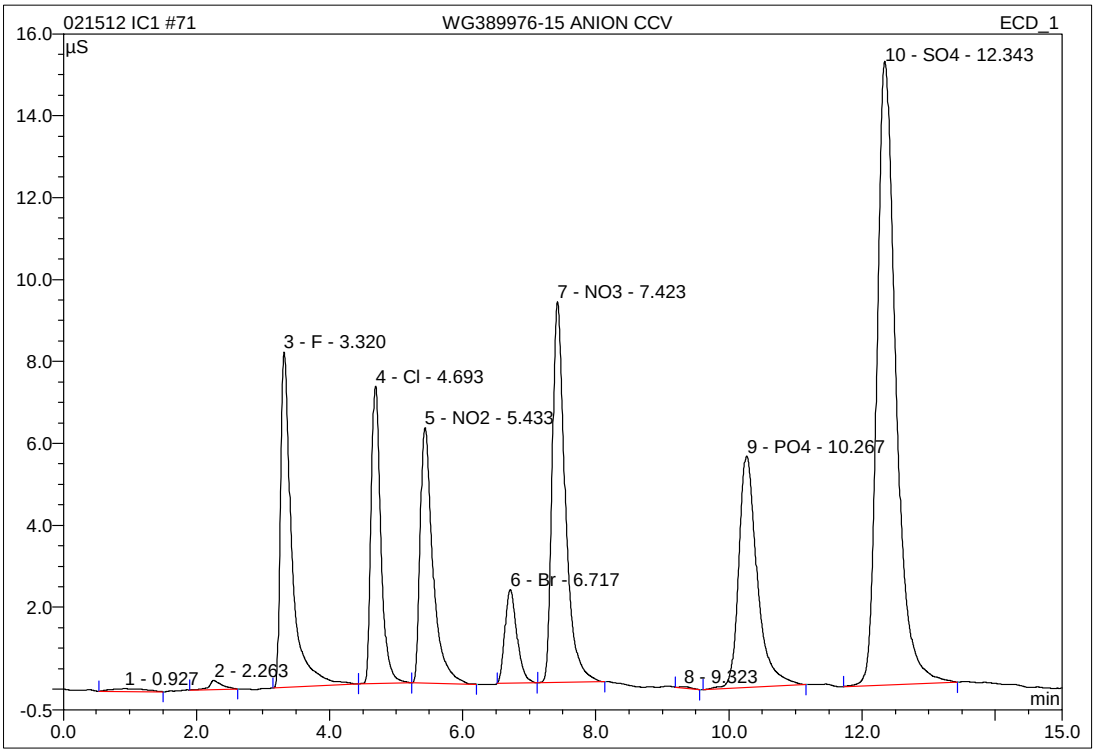
IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

71 WG389976-15 ANION CCV

1,1 JBK

Sample Name:	**WG389976-15 ANION CCV**	*Injection Volume:*	**20.0**
Vial Number:	**21**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**2/16/2012 11:21**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	0.93	n.a.	0.070	0.040	0.29	n.a.	BMB
2	2.26	n.a.	0.218	0.047	0.34	n.a.	BMB
3	3.32	F	8.186	1.630	11.83	8.572	BMB
4	4.69	Cl	7.258	1.240	9.00	8.184	bMB
5	5.43	NO2	6.243	1.386	10.06	4.798	BMB
6	6.72	Br	2.286	0.480	3.48	8.116	BMB
7	7.42	NO3	9.294	2.114	15.35	5.540	BMB
8	9.32	n.a.	0.034	0.007	0.05	n.a.	BMB
9	10.27	PO4	5.646	1.821	13.22	13.544	BMB
10	12.34	SO4	15.225	5.010	36.38	40.236	BMB
Total:			54.461	13.774	100.00	88.990	

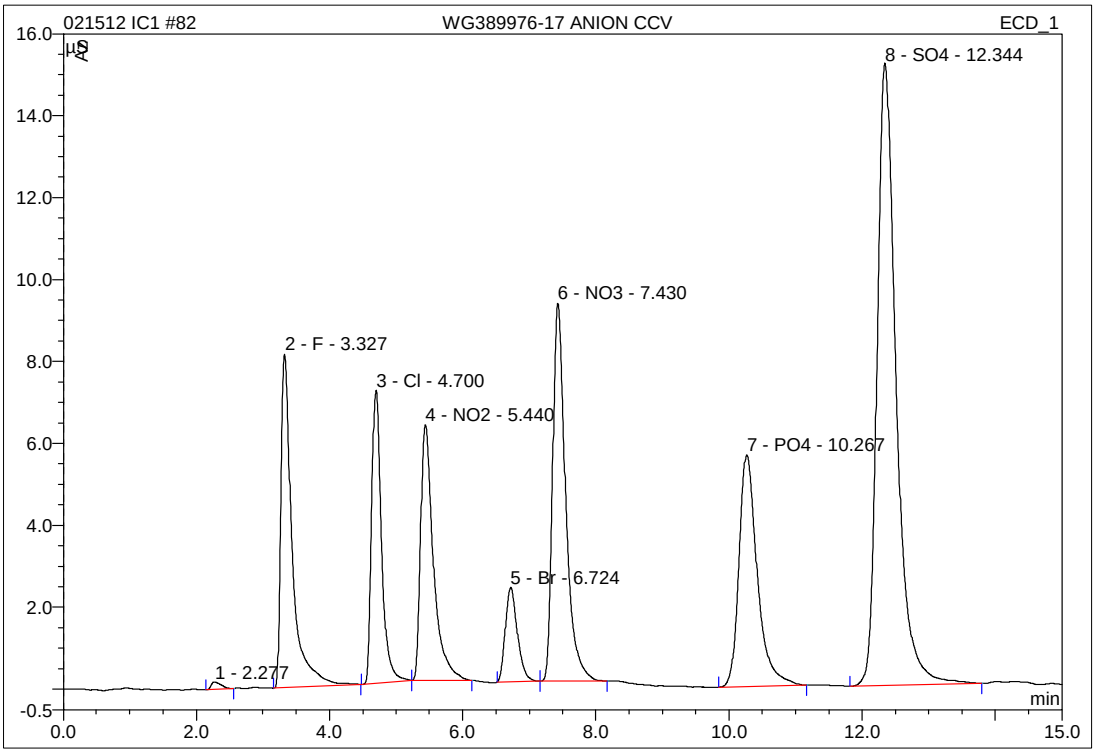
IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

82 WG389976-17 ANION CCV

1,1 JBK STD48131

Sample Name:	**WG389976-17 ANION CCV**	*Injection Volume:*	**20.0**
Vial Number:	**22**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**2/16/2012 14:33**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.28	n.a.	0.184	0.031	0.23	n.a.	BMB
2	3.33	F	8.135	1.627	11.86	8.558	BMB
3	4.70	Cl	7.155	1.239	9.03	8.179	BMB
4	5.44	NO2	6.245	1.395	10.17	4.830	BMB
5	6.72	Br	2.298	0.483	3.52	8.174	BMB
6	7.43	NO3	9.220	2.092	15.24	5.484	BMB
7	10.27	PO4	5.651	1.804	13.15	13.424	BMB
8	12.34	SO4	15.196	5.052	36.81	40.570	BMB
Total:			54.083	13.724	100.00	89.219	

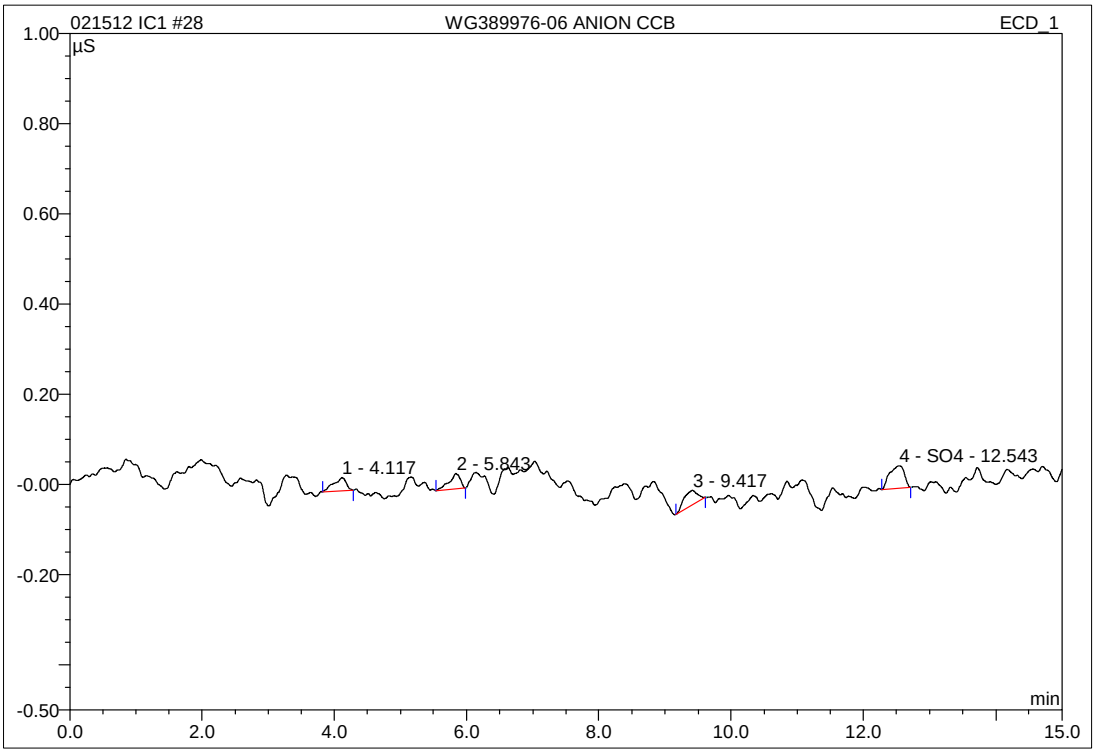
IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

28 WG389976-06 ANION CCB

1,1 JBK

Sample Name:	**WG389976-06 ANION CCB**	*Injection Volume:*	**20.0**
Vial Number:	**12**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**2/15/2012 16:21**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	4.12	n.a.	0.029	0.006	19.32	n.a.	BMB
2	5.84	n.a.	0.034	0.006	19.16	n.a.	BMB
3	9.42	n.a.	0.032	0.008	23.36	n.a.	BMB
4	12.54	SO4	0.050	0.013	38.17	0.327	BMB
Total:			0.145	0.034	100.00	0.327	

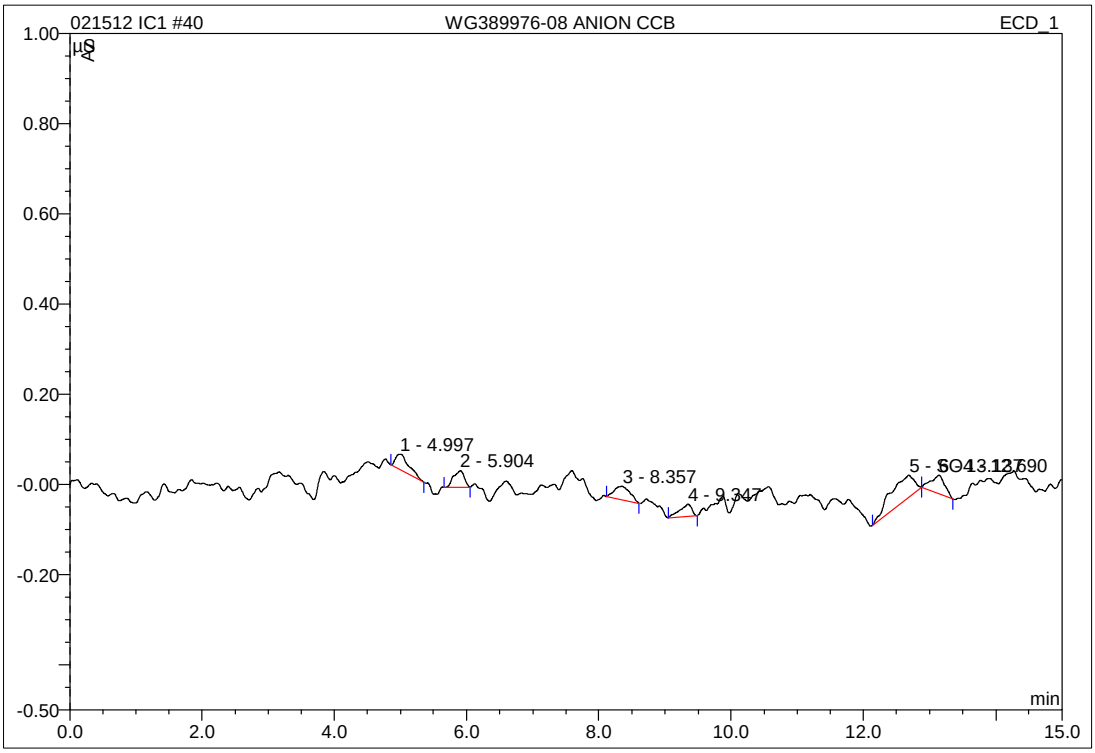
IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

40 WG389976-08 ANION CCB

1,1 JBK

Sample Name:	**WG389976-08 ANION CCB**	*Injection Volume:*	**20.0**
Vial Number:	**14**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**2/15/2012 19:50**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	5.00	n.a.	0.035	0.008	13.44	n.a.	BMB
2	5.90	n.a.	0.037	0.007	11.20	n.a.	BMB
3	8.36	n.a.	0.030	0.008	13.47	n.a.	BMB
4	9.35	n.a.	0.027	0.006	9.11	n.a.	BMB
5	12.69	SO4	0.049	0.023	37.07	0.409	BMb
6	13.14	n.a.	0.041	0.010	15.71	n.a.	bMB
Total:			0.219	0.062	100.00	0.409	

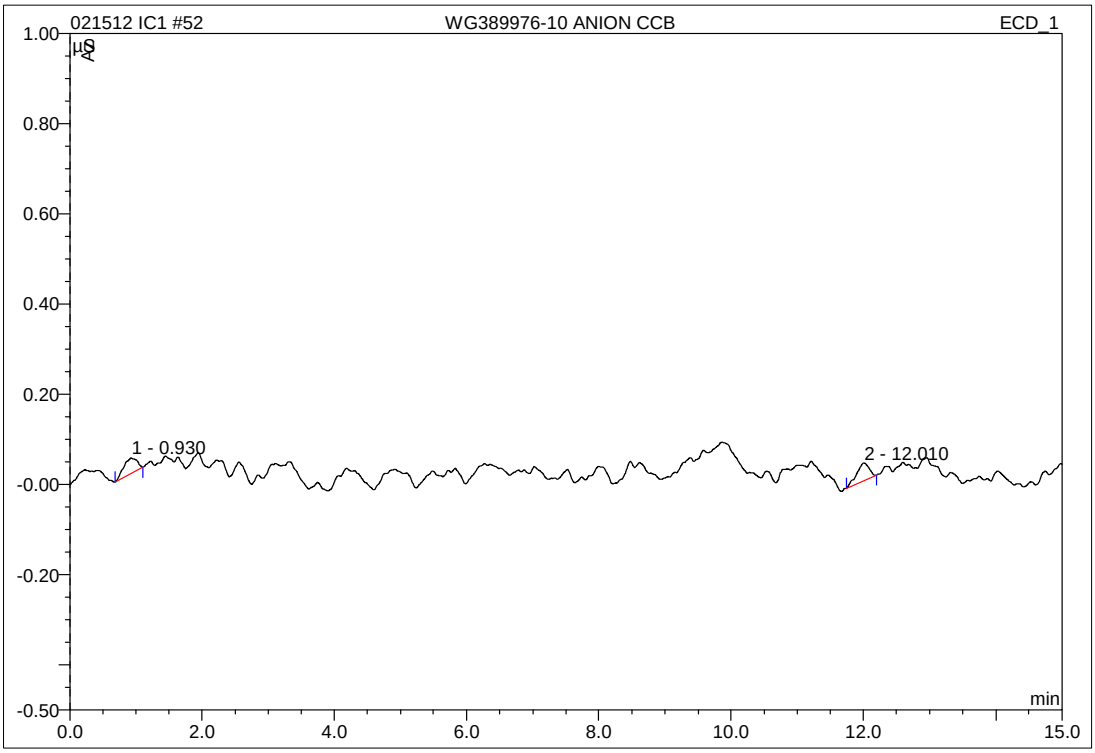
IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

52 WG389976-10 ANION CCB

1,1 JBK

Sample Name:	**WG389976-10 ANION CCB**	*Injection Volume:*	**20.0**
Vial Number:	**16**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**2/15/2012 23:19**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	0.93	n.a.	0.034	0.008	48.42	n.a.	BMB
2	12.01	n.a.	0.039	0.009	51.58	n.a.	BMB
Total:			0.073	0.017	100.00	0.000	

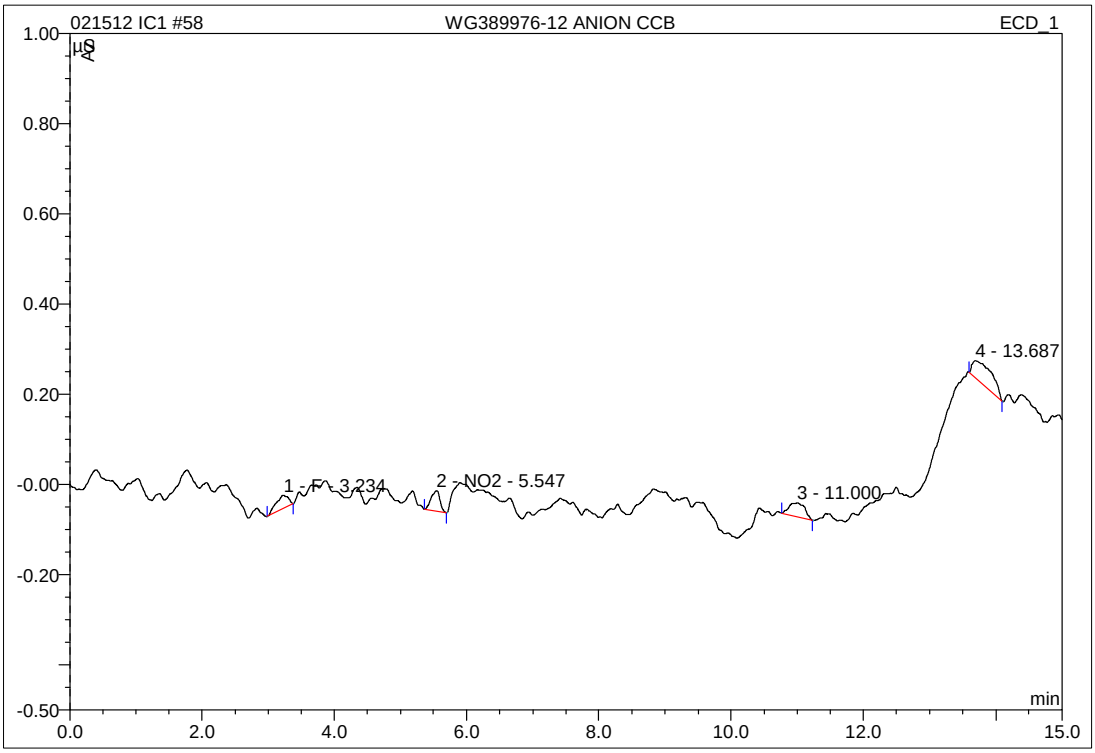
IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

58 WG389976-12 ANION CCB

1,1 JBK

Sample Name:	**WG389976-12 ANION CCB**	*Injection Volume:*	**20.0**
Vial Number:	**18**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**2/16/2012 1:04**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.00**	*Sample Amount:*	**1.0000**

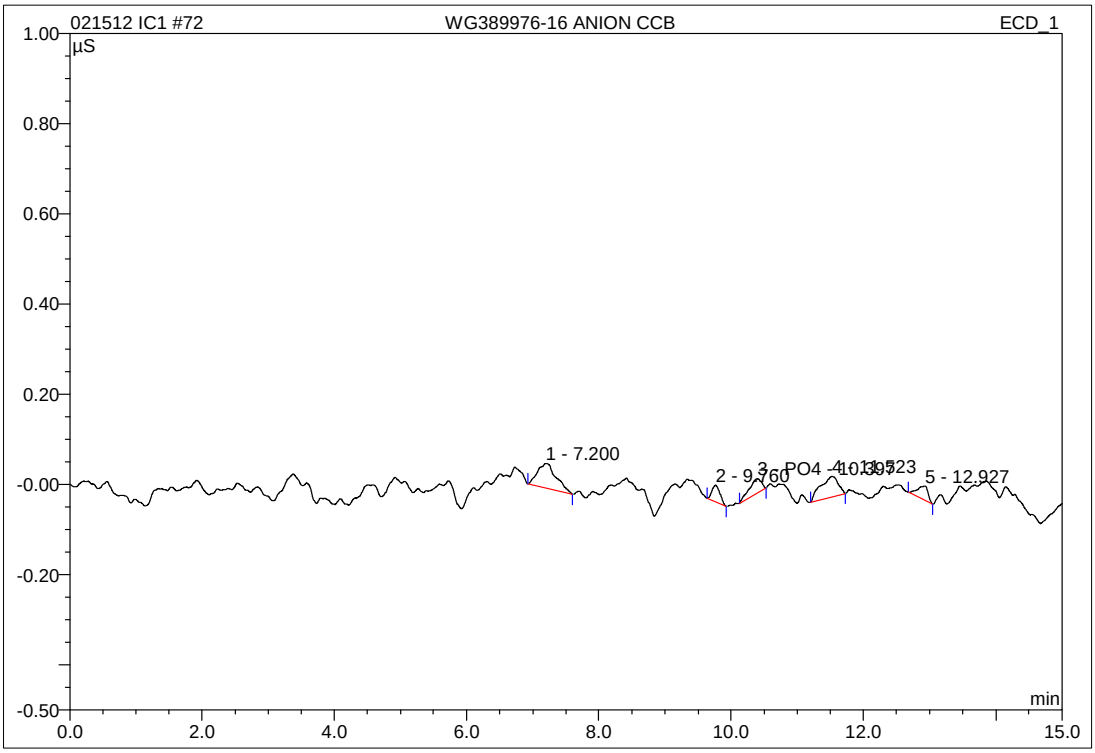


No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.23	F	0.029	0.006	16.91	0.113	BMB
2	5.55	NO2	0.046	0.007	18.46	0.083	BMB
3	11.00	n.a.	0.031	0.008	21.98	n.a.	BMB
4	13.69	n.a.	0.037	0.016	42.65	n.a.	BMB
Total:			0.143	0.038	100.00	0.196	

72 WG389976-16 ANION CCB

1,1 JBK

Sample Name:	**WG389976-16 ANION CCB**	*Injection Volume:*	**20.0**
Vial Number:	**21**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**2/16/2012 11:38**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	7.20	n.a.	0.055	0.018	36.17	n.a.	BMB
2	9.76	n.a.	0.036	0.005	10.39	n.a.	BMB
3	10.40	PO4	0.032	0.007	13.96	0.303	BMB
4	11.52	n.a.	0.045	0.014	28.38	n.a.	BMB
5	12.93	n.a.	0.032	0.006	11.11	n.a.	BMB
Total:			0.200	0.050	100.00	0.303	

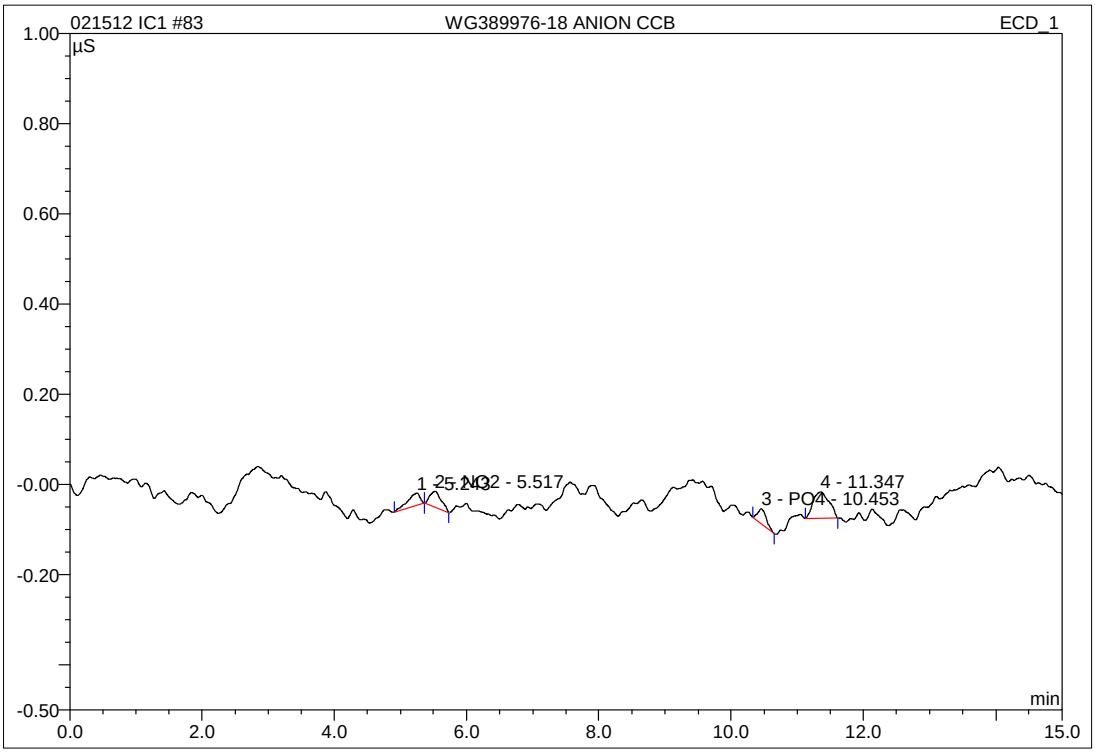
IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

83 WG389976-18 ANION CCB

1,1 JBK

Sample Name:	**WG389976-18 ANION CCB**	*Injection Volume:*	**20.0**
Vial Number:	**23**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**2/16/2012 14:50**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	5.24	n.a.	0.028	0.006	17.60	n.a.	BMb
2	5.52	NO2	0.035	0.007	20.27	0.083	bMB
3	10.45	PO4	0.033	0.005	14.86	0.289	BMB
4	11.35	n.a.	0.058	0.016	47.27	n.a.	BMB
Total:			0.154	0.035	100.00	0.372	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

RETENTION TIME WINDOWS

Lab Name: Microbac Laboratories, Inc.

Instrument ID: IC1

IC Column: AG14A-SC/AS14A-SC

	STANDARD #1	STANDARD #2	STANDARD #3
Date Run	9/28/2011	9/28/2011	9/29/2011
File #	WG377440-01	WG377440-07	WG377498-01
Time	13:32	23:58	13:53

COMPOUND	STD #1 RT	STD #2 RT	STD #3 RT	RT WIN
F	3.457	3.467	3.447	0.030
Cl	4.910	4.910	4.880	0.052
NO2-N	5.734	5.730	5.690	0.073
Br	7.110	7.097	7.047	0.100
NO3-N	7.870	7.857	7.800	0.112
PO4-P	10.834	10.843	10.754	0.147
SO4	13.124	13.137	13.007	0.215

Instrument ID: IC2

IC Column: AG14A-SC/AS14A-SC

	STANDARD #1	STANDARD #2	STANDARD #3
Date Run	8/3/2010	8/3/2010	8/4/2010
File #	WG338645-02	WG338692-07	WG338870-02
Time	12:15	22:42	12:00

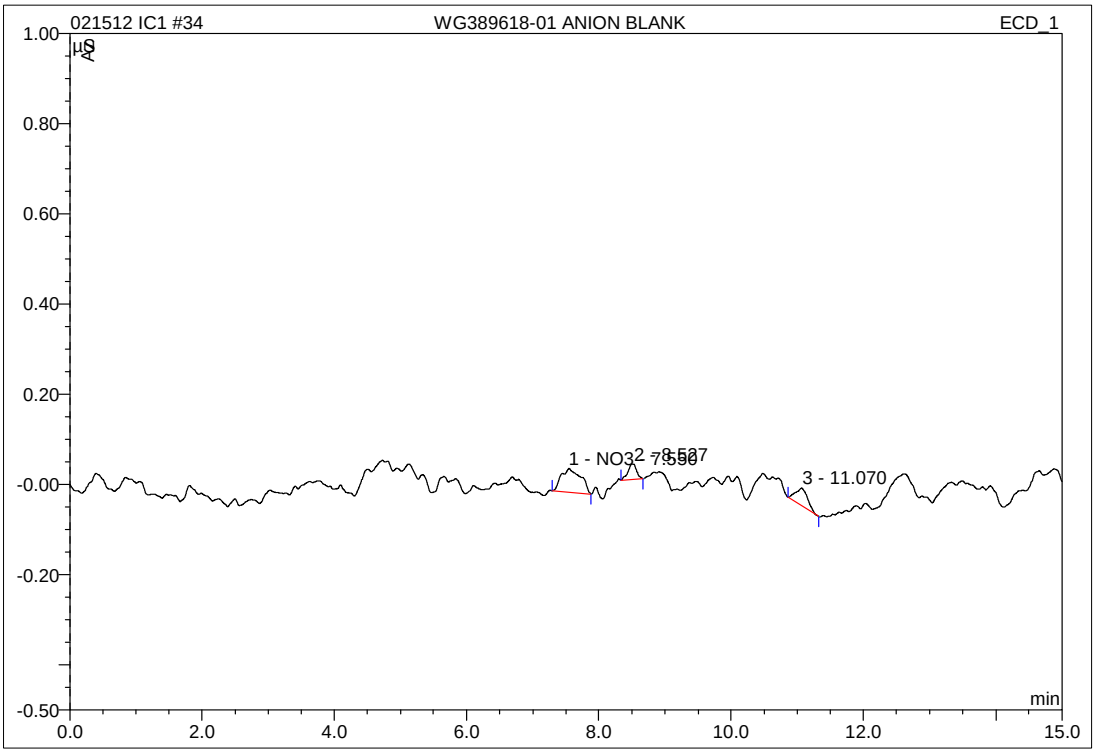
COMPOUND	STD #1 RT	STD #2 RT	STD #3 RT	RT WIN
F	3.387	3.377	3.367	0.030
Cl	4.867	4.864	4.837	0.050
NO2-N	5.724	5.717	5.684	0.064
Br	7.174	7.160	7.117	0.089
NO3-N	8.020	8.007	7.954	0.105
PO4-P	10.640	10.607	10.580	0.090
SO4	12.580	12.574	12.507	0.122

2.2.1.5 Raw QC Data

34 WG389618-01 ANION BLANK

1,1 JBK

Sample Name:	**WG389618-01 ANION BLANK**	*Injection Volume:*	**20.0**
Vial Number:	**14**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**2/15/2012 18:06**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	7.55	NO3	0.052	0.018	57.33	0.079	BMB
2	8.53	n.a.	0.034	0.005	16.35	n.a.	BMB
3	11.07	n.a.	0.040	0.008	26.32	n.a.	BMB
Total:			0.126	0.031	100.00	0.079	

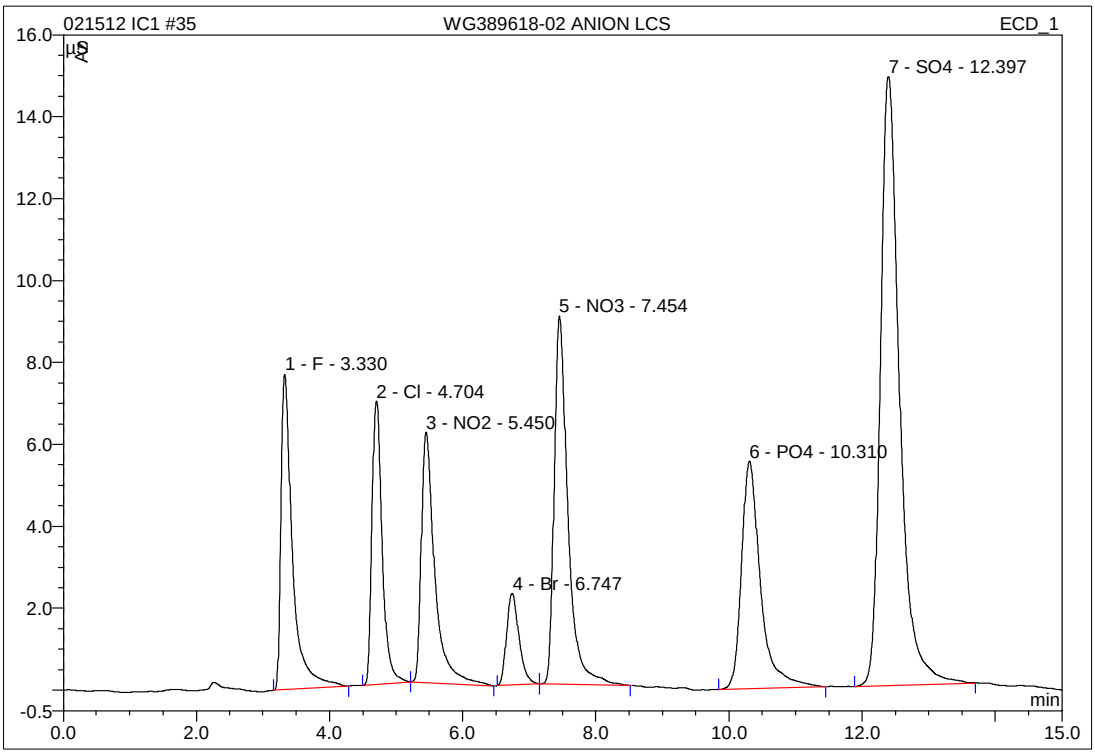
IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

35 WG389618-02 ANION LCS

1,1 JBK

Sample Name:	**WG389618-02 ANION LCS**	*Injection Volume:*	**20.0**
Vial Number:	**14**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**2/15/2012 18:23**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.33	F	7.695	1.557	11.39	8.192	BMB
2	4.70	Cl	6.916	1.234	9.03	8.148	BMb
3	5.45	NO2	6.112	1.438	10.52	4.977	bMB
4	6.75	Br	2.239	0.484	3.54	8.196	BMB
5	7.45	NO3	8.988	2.143	15.68	5.617	bMB
6	10.31	PO4	5.560	1.844	13.49	13.715	BMB
7	12.40	SO4	14.864	4.964	36.33	39.866	BMB
Total:			52.374	13.665	100.00	88.710	

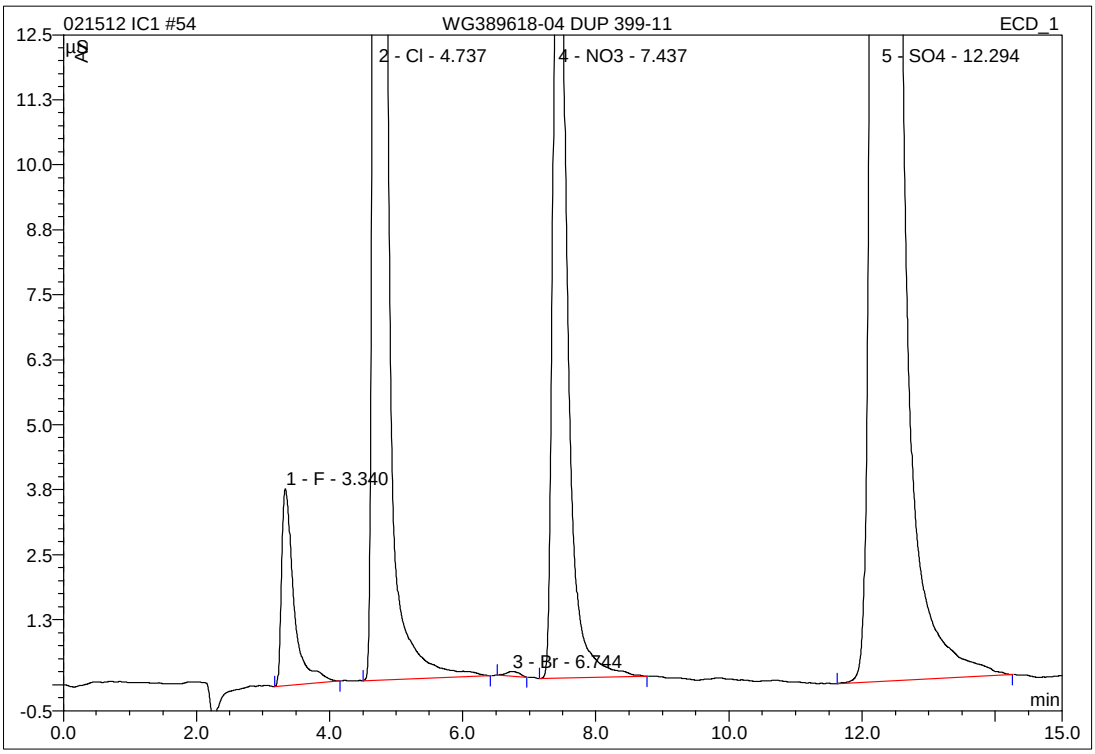
IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

54 WG389618-04 DUP 399-11

1,1 JBK

Sample Name:	**WG389618-04 DUP 399-11**	*Injection Volume:*	**20.0**
Vial Number:	**18**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**2/15/2012 23:54**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.00**	*Sample Amount:*	**1.0000**

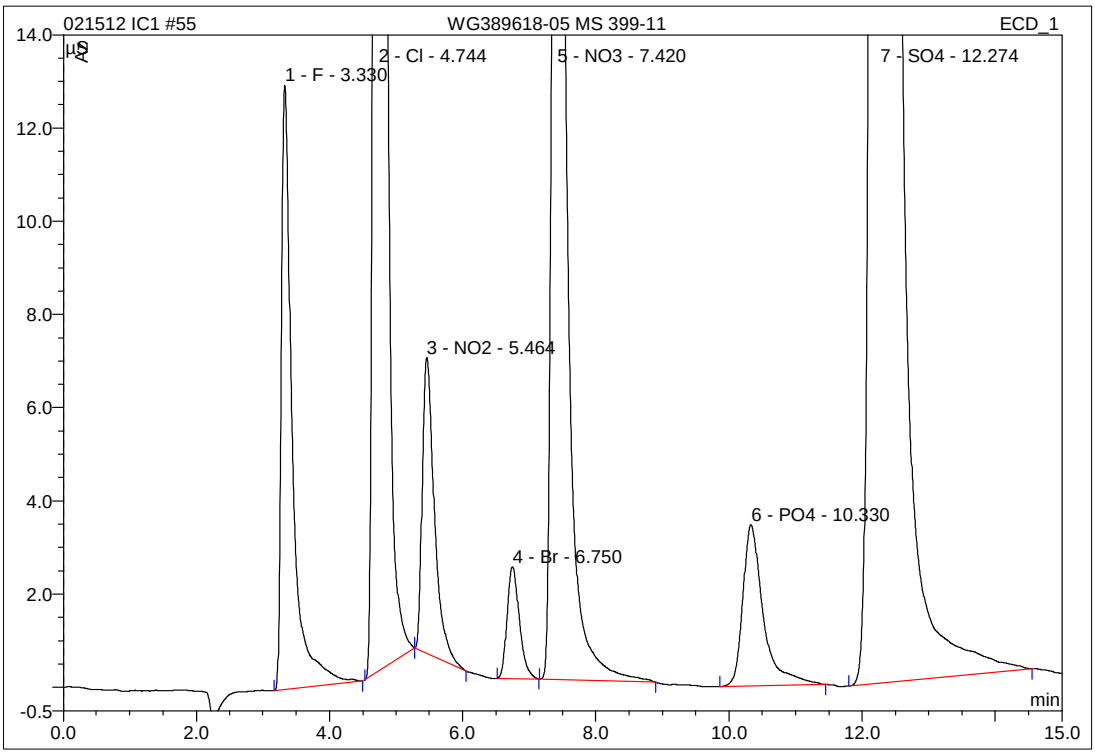


No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.34	F	3.784	0.818	1.98	4.344	BMB
2	4.74	Cl	58.064	10.037	24.27	66.153	BMB
3	6.74	Br	0.088	0.021	0.05	0.230	BMB
4	7.44	NO3	18.378	4.221	10.21	11.033	BMB
5	12.29	SO4	77.548	26.260	63.50	209.931	BMB
Total:			157.862	41.357	100.00	291.691	

55 WG389618-05 MS 399-11

1,1 JBK

Sample Name:	**WG389618-05 MS 399-11**	*Injection Volume:*	**20.0**
Vial Number:	**18**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**2/16/2012 0:12**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.33	F	12.960	2.516	4.65	13.189	BMB
2	4.74	Cl	62.626	10.534	19.48	69.429	BMb
3	5.46	NO2	6.351	1.349	2.50	4.673	bMB
4	6.75	Br	2.395	0.515	0.95	8.723	BMB
5	7.42	NO3	29.484	6.700	12.39	17.493	BMB
6	10.33	PO4	3.462	1.240	2.29	9.305	BMB
7	12.27	SO4	91.050	31.207	57.73	249.435	BMB
Total:			208.328	54.061	100.00	372.246	

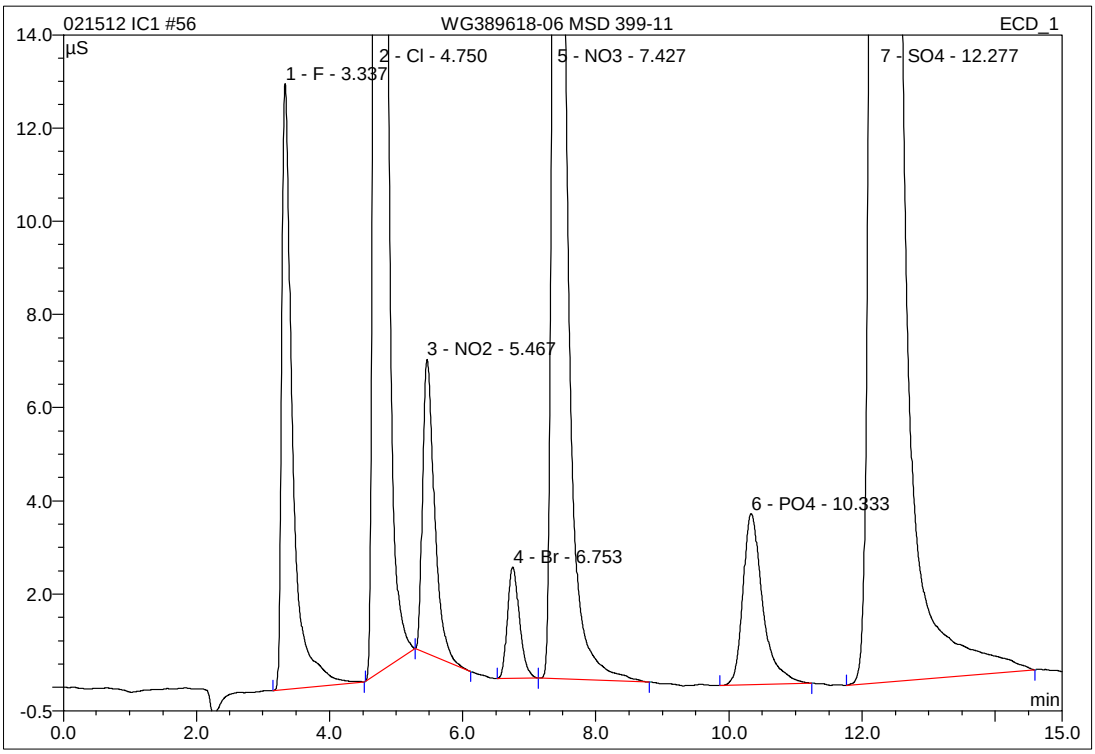
IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

56 WG389618-06 MSD 399-11

1,1 JBK

Sample Name:	**WG389618-06 MSD 399-11**	*Injection Volume:*	**20.0**
Vial Number:	**18**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**2/16/2012 0:29**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.34	F	12.990	2.491	4.64	13.061	BMB
2	4.75	Cl	62.085	10.453	19.46	68.897	BMb
3	5.47	NO2	6.311	1.319	2.46	4.569	bMB
4	6.75	Br	2.384	0.502	0.94	8.507	BMb
5	7.43	NO3	29.053	6.561	12.21	17.129	bMB
6	10.33	PO4	3.675	1.273	2.37	9.544	BMB
7	12.28	SO4	90.156	31.113	57.93	248.686	BMB
Total:			206.654	53.712	100.00	370.391	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

2.2.2 PH Data

2.2.2.1 Summary Data

Login Number: L12020220
Department: Conventionals
Analyst: Holly Reed

METHOD

Analysis SW846 9040C,9045D/EPA 150.1/SM4500-H B (pH)

HOLDING TIMES

Sample Analysis: All holding times were met.

PREPARATION

Sample preparation proceeded normally.

BATCH QA/QC

Method Blank: All acceptance criteria were met.

Laboratory Control Sample: All acceptance criteria were met.

Matrix Spikes: All acceptance criteria were met.

Duplicates: All acceptance criteria were met.

SAMPLES

Samples: All acceptance criteria were met.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Microbac Laboratories Inc., both technically and for completeness, except for the conditions noted above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

Narrative ID: 42330
Approved By: Deanna Hesson

Microbac

Lab Report #: L12020220
Lab Project #: 3005.011
Project Name: White Sands MR
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L12020220-01	**PrePrep Method:**	N/A	**Instrument:**	ORION-4STAR
Client ID:	MPL25-0212-1	**Prep Method:**	9040C	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	9040C	**Cal Date:**	
Workgroup #:	WG389103	**Analyst:**	HJR	**Run Date:**	02/08/2012 14:35
Collect Date:	02/06/2012 15:05	**Dilution:**	1	**File ID:**	OS12021013593001
Sample Tag:		**Units:**	UNITS		

Analyte	CAS #	Result	Qual	LOQ	LOD
Corrosivity pH	10-29-7	7.75		0.000	0.000

Sample #:	L12020220-02	**PrePrep Method:**	N/A	**Instrument:**	ORION-4STAR
Client ID:	SMW1-0212-1	**Prep Method:**	9040C	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	9040C	**Cal Date:**	
Workgroup #:	WG389103	**Analyst:**	HJR	**Run Date:**	02/08/2012 14:38
Collect Date:	02/07/2012 09:50	**Dilution:**	1	**File ID:**	OS12021013593401
Sample Tag:		**Units:**	UNITS		

Analyte	CAS #	Result	Qual	LOQ	LOD
Corrosivity pH	10-29-7	7.06		0.000	0.000

Sample #:	L12020220-03	**PrePrep Method:**	N/A	**Instrument:**	ORION-4STAR
Client ID:	SMW4-0212-1	**Prep Method:**	9040C	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	9040C	**Cal Date:**	
Workgroup #:	WG389103	**Analyst:**	HJR	**Run Date:**	02/08/2012 14:40
Collect Date:	02/07/2012 12:05	**Dilution:**	1	**File ID:**	OS12021013593801
Sample Tag:		**Units:**	UNITS		

Analyte	CAS #	Result	Qual	LOQ	LOD
Corrosivity pH	10-29-7	7.43		0.000	0.000

2.2.2.2 QC Summary Data

Example pH Calculations
(Direct Readout Parameter)

Readout from instrument = result in S.U.

where:

Readout = direct readout from the instrument

Microbac Laboratories Inc.

Data Checklist

Date: 08-FEB-2012
Analyst: HJR
Analyst: NA
Method: PH
Instrument: ORION 4-STAR
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG389103

Calibration/Linearity	2/8/12
Second Source Check	
ICV/CCV (std)	
ICB/CCB	
Blank	
LCS/LCS Dup	X
MS/MSD	
Duplicate	X
Upload Results	X
Client Forms	X
QC Violation Sheet	
Case Narratives	X
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	HJR
Secondary Reviewer	DIH
Comments	

Primary Reviewer:
10-FEB-2012

Secondary Reviewer:
10-FEB-2012

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-10-2012 14:39:18

2.2.2.3 Raw Data

WG389 103

pH

Sample	Calibration Buffers	Time of Calibration	A Water Misc. Liquid	B 50% Slurry Of Solid	C 50% Water Org. Liq. Mix	Time Analyzed
LCS 6 Std 49,324	7,4,10	1430	5.99			1435
02-0208-01	7,4,10			7.31		1435
02-0220-01	7,4,10		7.75			1435
-02	7,4,10		7.06			1438
-03	7,4,10		7.43			1440
DUP 02-0220-01	7,4,10	1430	7.77			1435
LCS 9 Std 49325			8.98			

B,C) SW846 9045D

A) SM 4500-H(+)-B

A) EPA 150.1

A) SW846 9040C

SOP K1501 Rev 13

Circle Instrument

Orion 4-Star

Orion 710A #1

Orion 710A #2

Bante 922

Analyst: [signature] Date: 2/8/12

DCN#89879

2.2.3 Alkalinity Data

2.2.3.1 Summary Data

Login Number: L12020220
Department: Conventionals
Analyst: Deanna Hesson

METHOD

Analysis EPA 310.2 (Alkalinity)

HOLDING TIMES

Sample Analysis: All holding times were met.

PREPARATION

Sample preparation proceeded normally.

BATCH QA/QC

Method Blank: All acceptance criteria were met.

Laboratory Control Sample: All acceptance criteria were met.

Matrix Spikes: All acceptance criteria were met.

Duplicates: All acceptance criteria were met.

SAMPLES

Samples: All acceptance criteria were met.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Microbac Laboratories Inc., both technically and for completeness, except for the conditions noted above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

Narrative ID: 42328
Approved By: Deanna Hesson

Certificate of Analysis

Sample #:	L12020220-01	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	MPL25-0212-1	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	02/09/2012 11:13
Workgroup #:	WG389142	**Analyst:**	DIH	**Run Date:**	02/09/2012 11:17
Collect Date:	02/06/2012 15:05	**Dilution:**	1	**File ID:**	SC120209003.015
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Alkalinity, Bicarbonate (as CaCO3)		83.8		20.0	10.0

Sample #:	L12020220-01	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	MPL25-0212-1	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	02/09/2012 11:13
Workgroup #:	WG389142	**Analyst:**	DIH	**Run Date:**	02/09/2012 11:17
Collect Date:	02/06/2012 15:05	**Dilution:**	1	**File ID:**	SC120209003.015
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Alkalinity, Total (as CaCO3)		83.8		20.0	10.0

Sample #:	L12020220-01	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	MPL25-0212-1	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	02/09/2012 11:13
Workgroup #:	WG389142	**Analyst:**	DIH	**Run Date:**	02/09/2012 11:17
Collect Date:	02/06/2012 15:05	**Dilution:**	1	**File ID:**	SC120209003.015
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Alkalinity, Carbonate (as CaCO3)			U	20.0	10.0

U	Analyte was not detected. The concentration is below the reported LOD.

Certificate of Analysis

Sample #:	L12020220-02	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	SMW1-0212-1	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	02/09/2012 11:13
Workgroup #:	WG389142	**Analyst:**	DIH	**Run Date:**	02/09/2012 11:18
Collect Date:	02/07/2012 09:50	**Dilution:**	1	**File ID:**	SC120209003.016
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Alkalinity, Total (as CaCO3)		70.6		20.0	10.0

Sample #:	L12020220-02	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	SMW1-0212-1	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	02/09/2012 11:13
Workgroup #:	WG389142	**Analyst:**	DIH	**Run Date:**	02/09/2012 11:18
Collect Date:	02/07/2012 09:50	**Dilution:**	1	**File ID:**	SC120209003.016
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Alkalinity, Bicarbonate (as CaCO3)		70.6		20.0	10.0

Sample #:	L12020220-02	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	SMW1-0212-1	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	02/09/2012 11:13
Workgroup #:	WG389142	**Analyst:**	DIH	**Run Date:**	02/09/2012 11:18
Collect Date:	02/07/2012 09:50	**Dilution:**	1	**File ID:**	SC120209003.016
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Alkalinity, Carbonate (as CaCO3)			U	20.0	10.0

U	Analyte was not detected. The concentration is below the reported LOD.

Certificate of Analysis

Sample #:	L12020220-03	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	SMW4-0212-1	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	02/09/2012 11:13
Workgroup #:	WG389142	**Analyst:**	DIH	**Run Date:**	02/09/2012 11:19
Collect Date:	02/07/2012 12:05	**Dilution:**	1	**File ID:**	SC120209003.017
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Alkalinity, Carbonate (as CaCO3)			U	20.0	10.0

U	Analyte was not detected. The concentration is below the reported LOD.

Certificate of Analysis

Sample #:	L12020220-03	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	SMW4-0212-1	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	02/09/2012 11:13
Workgroup #:	WG389142	**Analyst:**	DIH	**Run Date:**	02/09/2012 11:19
Collect Date:	02/07/2012 12:05	**Dilution:**	1	**File ID:**	SC120209003.017
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Alkalinity, Total (as CaCO3)		80.8		20.0	10.0

Sample #:	L12020220-03	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	SMW4-0212-1	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	02/09/2012 11:13
Workgroup #:	WG389142	**Analyst:**	DIH	**Run Date:**	02/09/2012 11:19
Collect Date:	02/07/2012 12:05	**Dilution:**	1	**File ID:**	SC120209003.017
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Alkalinity, Bicarbonate (as CaCO3)		80.8		20.0	10.0

2.2.3.2 QC Summary Data

Example Calculations for Visible Spectrophotometric Methods

Linear Calibration Model

Step 1 - Retrieve Curve Data from ICAL

m = slope of the linear equation
b = intercept from the linear equation
y = instrument response as absorbance or OD
x = concentration of analyte (mg/L)
y = mx + b

Step 2: Calculate the instrument concentration, x

Where:

x = (y - b)/m

Step 3: Solve for analyte concentration in sample, Cx

Cx = (x) (D)

Example Calculation (LCS):

Value of m from plot:	7.809	
Value of b from plot:	0.0004135	
Absorbance of unknown from quantitation report (y):	0.31	
Calculated concentration (x):	0.03964483	
Dilution factor (D):	1.00	
Concentration of analyte in sample, Cy:	0.0396	mg/L

SmartChem Autoanalyzer - Quadratic Calibration for Chloride and Sulfate

Step 1 - Retrieve Curve Data from Smartchem ICAL

A, B, C = constants from the ICAL quadratic regression

x = instrument response as absorbance or OD

y = concentration of analyte (mg/L)

Step 2: Calculate the instrument concentration, y

Where:

y = Ax^2 + Bx + C

Step 3: Solve for analyte concentration in sample, Cy

Cy = (y) (D)

Example Calculation (LCS):

Value of A from plot:	101.2796	
Value of B from plot:	318.9056	
Value of C from plot:	-2.2712	
Absorbance of unknown from quantitation report (x):	0.1583	
Calculated concentration (y):	50.7495108	
Dilution factor (D):	1.00	
Concentration of analyte in sample, Cy:	50.75	mg/L

Microbac Laboratories Inc.

Data Checklist

Date: 09-FEB-2012
Analyst: DIH
Analyst: NA
Method: ALK
Instrument: SC
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG389135 WG389142 WG389173

Calibration/Linearity	2/9/2012
Second Source Check	X
ICV/CCV (std)	X
ICB/CCB	X
Blank	X
LCS/LCS Dup	X
MS/MSD	X
Duplicate	X
Upload Results	X
Client Forms	X
QC Violation Sheet	X
Case Narratives	X
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	DIH
Secondary Reviewer	DIH
Comments	

Primary Reviewer:
13-FEB-2012

Secondary Reviewer:
17-FEB-2012

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-17-2012 12:58:37

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 310.2 AAB#: WG389142

Login Number: L12020220

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
MPL25-0212-1	01	02/06/12							14		02/09/12	2.8	14	
SMW1-0212-1	02	02/07/12							14		02/09/12	2.1	14	
SMW4-0212-1	03	02/07/12							14		02/09/12	2	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 2310048
Report generated 02/16/2012 22:27

Microbac Laboratories Inc.

METHOD BLANK SUMMARY

Login Number: L12020220
Blank File ID: SC120209003.038
Prep Date: 02/09/12 11:31
Analyzed Date: 02/09/12 11:31
Analyst: DIH

Work Group: WG389142
Blank Sample ID: WG389142-01
Instrument ID: SMARTCHEM
Method: 310.2

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG389142-02	SC120209003.011	02/09/12 11:15	01
LCS2	WG389142-03	SC120209003.012	02/09/12 11:16	01
MPL25-0212-1	L12020220-01	SC120209003.015	02/09/12 11:17	01
MPL25-0212-1	L12020220-01	SC120209003.015	02/09/12 11:17	01
MPL25-0212-1	L12020220-01	SC120209003.015	02/09/12 11:17	01
SMW1-0212-1	L12020220-02	SC120209003.016	02/09/12 11:18	01
SMW1-0212-1	L12020220-02	SC120209003.016	02/09/12 11:18	01
SMW1-0212-1	L12020220-02	SC120209003.016	02/09/12 11:18	01
SMW4-0212-1	L12020220-03	SC120209003.017	02/09/12 11:19	01
SMW4-0212-1	L12020220-03	SC120209003.017	02/09/12 11:19	01
SMW4-0212-1	L12020220-03	SC120209003.017	02/09/12 11:19	01
DUP	WG389142-05	SC120209003.037	02/09/12 11:31	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 2310049
Report generated 02/16/2012 22:27

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L12020220 Prep Date: 02/09/12 11:31 Sample ID: WG389142-01
Instrument ID: SMARTCHEM Run Date: 02/09/12 11:31 Prep Method: 310.2
File ID: SC120209003.038 Analyst: DIH Method: 310.2
Workgroup (AAB#): WG389142 Matrix: Water Units: mg/L
Contract #: Cal ID: SMARTC-09-FEB-12

Analytes	LOD	LOQ	Concentration	Dilution	Qualifier
Alkalinity, Total (as CaCO3)	10.0	20.0	10.0	1	U

LOD Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 2310050
16-FEB-2012 22:27

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L12020220 Analyst: DIH Prep Method: 310.2
Instrument ID: SMARTCHEM Matrix: Water Method: 310.2
Workgroup (AAB#): WG389142 Units: mg/L
QC Key: DOD4 Lot #: STD49971

Sample ID: WG389142-02 LCS File ID: SC120209003.011 Run Date: 02/09/2012 11:15
Sample ID: WG389142-03 LCS2 File ID: SC120209003.012 Run Date: 02/09/2012 11:16

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Alkalinity, Total (as CaCO3)	200	186	92.8	200	190	94.8	2.14	85 - 115	20	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 2310051
Report generated: 02/16/2012 22:27

2.2.3.3 Raw Data

WORKGROUP: WG389135 A

389142 B
389173 C

SMARTCHEM RUN LOG

Daily Check

- [x] Lamp On
- [x] Probe Rinse Full
- [x] DI Water > ½ Full
- [x] Wash Solution > ½ Full
- [ ] NO3 Reagent bottle connected / purged
- [ ] NO3 pH adj to pH 5-9
- [x] WBL Run
- [x] Reagents Full
- [x] Dilution H_2O Full
- [x] Waste Container Check

Syringe filter lot # _____

1) Workgroup A
Plan # 20120209002
2) Workgroup B
Plan # 20120209003
3) Workgroup C
Plan # 20120209004

Analyte		1	2	3
		ALK		
		Dilution		
SC Prepared Curve				
Position	Run A			
1-1	ICV 250			
1-2	BLK			
1-3	LCS 200			
1-4	LCSDUP			
1-5	02-203-02			
1-6	03			
1-7	04			
1-8	05			
1-9	06			
1-10	07			
1-11	09			
1-12	10			
1-13	11			
1-14	12			
1-15	13			
1-16	14			
1-17	16			
1-18	17			
1-19	18	1/4 ~~1/2~~	jm 2/9/12	
1-20	19			
1-21	20			
1-22	29			
2-1	30			
2-2	MS 31		* samples	
2-3	MS 32		* both yellow when spiked	

Position	Analyte	1	2	3
	Run B			
2-4 1	ICV 250			
2-5 2	BLK			
2-6 3	LCS 200			
2-7 4	LCSDUP			
2-8 5	02-203-34			
2-9 6	35			
2-10 7	02-220-01			+BC
2-11 8	02			↓
2-12 9	03			↓
2-13 10	02-221-01			
2-14 11	02	1/5		
2-15 12	03			
2-16 13	04	1/4		
2-17 14	05			
2-18 15	06	1/3		
2-19 16	07			
2-20 17	08	1/2		
2-21 18	09			
2-22 19	10	1/3		
2-23 20	11	1/3		
2-24 21	12	1/3		
2-25 22	13			
2-26 1	16			
3-1 2	17	1/25		color
3-2 3	DUP 17	1/25		↓
4	BLK			
5				

NOTES:
* Run NO2 std on NO3 runs
* LCS/LCS Dup all parameters
*MS(10% sample): NO3, TKN, NH3

2-4 02-203-33
2-5 DUP 30
-6
-7

DCN#89884

SMARTCHEM RUN LOG

Position	Analyte (Run C)	1	2	3
3-3 1	ICV250			
3-4 2	BLK			
3-5 3	LCS200			
3-6 4	LCSDUP			
3-7 5	02-230-02			
3-8 6	03			
3-9 7	04			
3-10 8	05			
3-11 9	06			
3-12 10	07			
3-13 11	09			
3-14 12	10			
3-15 13	11			

Position	Analyte	1	2	3
3-16 14	02-230-12			
3-17 15	13			
3-18 16	15			
3-19 17	16			
3-20 18	17			
3-21 19	18			
3-22 20	19			
3-23 21	21			
3-24 22	22			
3-25 1	23			
3-26 2	24			
3-27 3	DUP 24			
3-28 4	RR BLK			

- [ ] Chloride — EPA 325.2/SM 4500-Cl⁻E
- [ ] Sulfate — EPA 375.4/SM 426C(15th)
- [x] Alkalinity — EPA 310.2
- [ ] Nitrate-Nitrite — EPA 353.2/SM 4500-NO3 F
- [ ] Ammonia — EPA 350.1/SM 4500-NH3 B
- [ ] TKN — EPA 351.2
- [ ] Phos — EPA 365.4

Analyte	ALK		Reagents
SOP & Revision	K3102R14		Rot 17038
Curve Stock (SC made)	std47063		
Curve ID (user made)			
ICV	std49970		
CCV	std49969		
LCS	std49971		
MS	std 47064 Dilution 0.2/5(2500)=100		

Comments: 02-220 all pH < 8.3

Analyst: Deanna Hosson Date: 2/9/12

Run 1 last CCB = 22 (>20), Blank ~~test~~ at 2 intervals before CCV was <20

DCN#89884

MICROBAC (OVD)

SMARTCHEM REPORT (VER3.0.53)

NH3, TKN, NO3NO2 (MG/L N)

ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WALK - ALKALINITY EPA 310.2

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
DIL-1	RBL	0.0	0.4686	0.00		11:07:58 AM
DIL-1	RBL	0.0	0.4675	0.00		11:08:17 AM
DIL-1	RBL	0.0	0.4815	0.00		11:09:11 AM
DIL-1	Std-1	0.0	0.0105	0.00	INV	11:09:29 AM
SR5-1	Std-2	10.0	-0.0037	0.00		11:10:23 AM
SR5-2	Std-3	20.0	-0.0062	0.00		11:10:41 AM
SR5-3	Std-4	50.0	-0.0376	0.00		11:11:35 AM
SR5-4	Std-5	100.0	-0.0994	0.00		11:11:53 AM
SR5-5	Std-6	200.0	-0.2259	0.00		11:12:47 AM
SR5-6	Std-7	250.0	-0.2886	0.00		11:13:05 AM
SR5-7	Std-8	300.0	-0.3365	0.00		11:13:59 AM
1	ICV 250	236.0	-0.2653	0.00		11:14:17 AM
2	WG389142-01 BLK	-22.3 X	0.0400	0.00	INV,><,LL	11:15:11 AM
3	WG389142-02 LCS	185.5	-0.2049	0.00		11:15:29 AM
4	WG389142-03 LCSDUP	189.6	-0.2097	0.00		11:16:23 AM
5	L12020203-34	10.0	0.0024	0.00	INV	11:16:41 AM
6	L12020203-35	86.1	-0.0869	0.00		11:17:35 AM
7	L12020220-01	83.8	-0.0842	0.00		11:17:53 AM
8	L12020220-02	70.6	-0.0687	0.00		11:18:47 AM
9	L12020220-03	80.8	-0.0807	0.00		11:19:05 AM
10	L12020221-01	37.2	-0.0295	0.00		11:19:59 AM
ST-2	CCV (150 mg/L)	154.7	-0.1682	103.16		11:20:17 AM
ST-3	CCB (0 mg/L)	-10.6	0.0265	0.00	INV,><,LL	11:21:11 AM
11	L12020221-02 (5)	81.5 X	-0.0815	0.00		11:21:29 AM
12	L12020221-03	140.9	-0.1518	0.00		11:22:23 AM
13	L12020221-04 (4)	103.5	-0.1075	0.00		11:22:41 AM
14	L12020221-05	115.0	-0.1211	0.00		11:23:35 AM
15	L12020221-06 (3)	44.0 X	-0.0374	0.00		11:23:53 AM
16	L12020221-07	17.8	-0.0068	0.00		11:24:47 AM
17	L12020221-08 (2)	73.8 X	-0.0725	0.00		11:25:05 AM
18	L12020221-09	107.5	-0.1122	0.00		11:25:59 AM
19	L12020221-10 (3)	139.5	-0.1501	0.00		11:26:17 AM

Report Date :02/09/2012 **Run Date :2/9/2012** **Operator : WESTCO** **Plan # :20120209003**

Plan Description : ALK-C-DIH/2/9/2012

MICROBAC (OVD)

SMARTCHEM REPORT (VER3.0.53)

NH3, TKN, NO3NO2 (MG/L N)

ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WALK - ALKALINITY EPA 310.2

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
20	L12020221-11 (3)	265.5	-0.3008	0.00		11:27:11 AM
ST-2	CCV (150 mg/L)	163.0	-0.1780	108.65		11:27:29 AM
ST-3	CCB (0 mg/L)	-3.3	0.0179	0.00	INV,><,LL	11:28:23 AM
21	L12020221-12 (3)	135.1	-0.1449	0.00		11:28:41 AM
22	L12020221-13	134.1	-0.1437	0.00		11:29:35 AM
23	L12020221-16	35.9	-0.0279	0.00		11:29:53 AM
24	L12020221-17 (25)	24.4	-0.0145	0.00		11:30:47 AM
25	WG389142-05 (25) DUP	27.7	-0.0184	0.00		11:31:05 AM
26	ID 26 Blank	-5.6	0.0205	0.00	INV,><,LL	11:31:59 AM
27	ID 27	-1.6 X	0.0159	0.00	INV,><,LL	11:32:17 AM
ST-2	CCV (150 mg/L)	173.4	-0.1904	115.59		11:33:11 AM
ST-3	CCB (0 mg/L)	15.6	-0.0042	0.00		11:33:29 AM

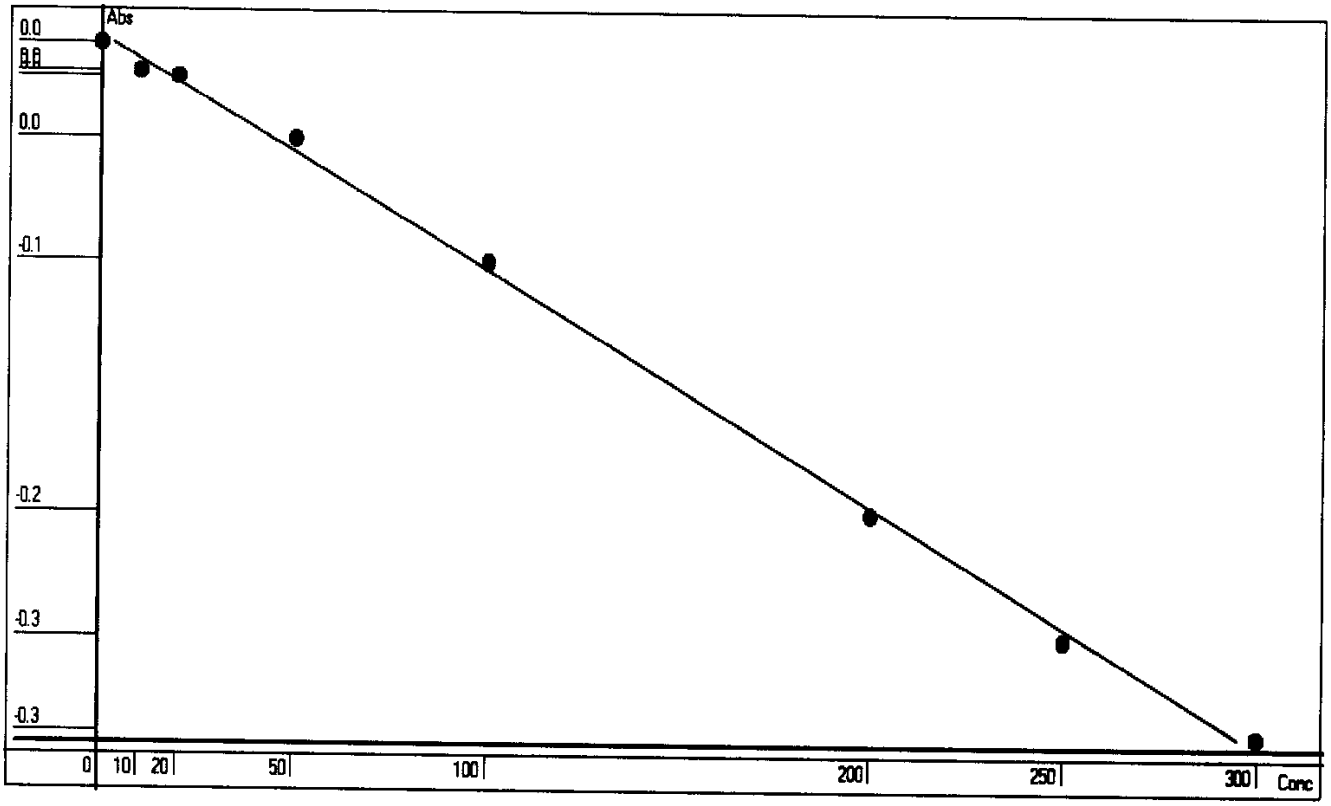
Report Date :02/09/2012 **Run Date :2/9/2012** **Operator : WESTCO** **Plan # :20120209003**

Plan Description : ALK-C-DIH/2/9/2012

Calibrant Report - WALK -

Calib Lot #:010104 Exp Date:6/21/2020 User:MICROBAC

Plan # : 20120209003 Description : [ALK-C-DIH/2/9/2012]



Point	OD	Conc	Recalc Conc	% Error
1	0.0105	0	3.0474	304.74
2	-0.0037	10	15.2093	52.09
3	-0.0062	20	17.3486	-13.26
4	-0.0376	50	44.1704	-11.66
5	-0.0994	100	96.7011	-3.30
6	-0.2259	200	203.1580	1.58
7	-0.2886	250	255.3910	2.16
8	-0.3365	300	295.0567	-1.65

Conc= -44.9027*Abso^2 -856.1636*Abso +12.0421 R^2=0.9984

RBL
0.4681
0

Report Date 2/9/2012 Run Date 2/9/2012

2.2.4 Cyanide Data

2.2.4.1 Summary Data

Login Number: L12020220
Department: Conventionals
Analyst: Dorothy Payne

METHOD

Analysis SW846 9014/9010C/SM4500-CN-C,E-20th (Cyanide)

HOLDING TIMES

Sample Analysis: All holding times were met.

PREPARATION

Sample preparation proceeded normally.

BATCH QA/QC

Method Blank: All acceptance criteria were met.

Laboratory Control Sample: Cyanide-Ammenable is the difference between the total cyanide and the treated cyanide. The LCS is analyzed to show that all of the cyanide is ammenable (the treated portion is ND). The LCS forms cannot calculate cyanide ammenable. The LCS is acceptable.

Matrix Spikes: All acceptance criteria were met.

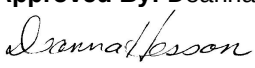
Duplicates: All acceptance criteria were met.

SAMPLES

Samples: All acceptance criteria were met.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Microbac Laboratories Inc., both technically and for completeness, except for the conditions noted above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

Narrative ID: 42249
Approved By: Deanna Hesson



Microbac

Lab Report #: L12020220
Lab Project #: 3005.011
Project Name: White Sands MR
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L12020220-01	**PrePrep Method:**	N/A	**Instrument:**	UV-120-1V
Client ID:	MPL25-0212-1	**Prep Method:**	9014-9010C	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	9014-9010C	**Cal Date:**	02/14/2012 10:45
Workgroup #:	WG389320	**Analyst:**	DLP	**Run Date:**	02/14/2012 12:00
Collect Date:	02/06/2012 15:05	**Dilution:**	1	**File ID:**	1V.1202141200-16
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Cyanide	57-12-5	0.00707	J	0.0100	0.00500

J	Estimated value ; the analyte concentration was less than the LOQ.

Certificate of Analysis

Sample #:	L12020220-01	**PrePrep Method:**	N/A	**Instrument:**	UV-120-1V
Client ID:	MPL25-0212-1	**Prep Method:**	SM4500-CN-C,G	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-CN-C,G	**Cal Date:**	02/14/2012 10:45
Workgroup #:	WG389446	**Analyst:**	DLP	**Run Date:**	02/14/2012 13:40
Collect Date:	02/06/2012 15:05	**Dilution:**	1	**File ID:**	1V.1202141340-08
Sample Tag:	D02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Cyanide, Amenable to Chlor.	57-12-5	0.00574	J	0.0100	0.00500

J	Estimated value ; the analyte concentration was less than the LOQ.

Certificate of Analysis

Sample #:	L12020220-01	**PrePrep Method:**	N/A	**Instrument:**	UV-120-1V
Client ID:	MPL25-0212-1	**Prep Method:**	SM4500-CN-I	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-CN-I	**Cal Date:**	02/14/2012 10:45
Workgroup #:	WG389443	**Analyst:**	DLP	**Run Date:**	02/14/2012 13:45
Collect Date:	02/06/2012 15:05	**Dilution:**	1	**File ID:**	1V.1202141345-09
Sample Tag:	D01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Cyanide, Weak/Dissociable	57-12-5		U	0.0100	0.00500

U	Analyte was not detected. The concentration is below the reported LOD.

Certificate of Analysis

Sample #:	L12020220-02	**PrePrep Method:**	N/A	**Instrument:**	UV-120-1V
Client ID:	SMW1-0212-1	**Prep Method:**	9014-9010C	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	9014-9010C	**Cal Date:**	02/14/2012 10:45
Workgroup #:	WG389320	**Analyst:**	DLP	**Run Date:**	02/14/2012 12:00
Collect Date:	02/07/2012 09:50	**Dilution:**	1	**File ID:**	1V.1202141200-17
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Cyanide	57-12-5	0.0121		0.0100	0.00500

Sample #:	L12020220-02	**PrePrep Method:**	N/A	**Instrument:**	UV-120-1V
Client ID:	SMW1-0212-1	**Prep Method:**	SM4500-CN-C,G	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-CN-C,G	**Cal Date:**	02/14/2012 10:45
Workgroup #:	WG389446	**Analyst:**	DLP	**Run Date:**	02/14/2012 13:40
Collect Date:	02/07/2012 09:50	**Dilution:**	1	**File ID:**	1V.1202141340-09
Sample Tag:	D02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Cyanide, Amenable to Chlor.	57-12-5	0.0110		0.0100	0.00500

Sample #:	L12020220-02	**PrePrep Method:**	N/A	**Instrument:**	UV-120-1V
Client ID:	SMW1-0212-1	**Prep Method:**	SM4500-CN-I	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-CN-I	**Cal Date:**	02/14/2012 10:45
Workgroup #:	WG389443	**Analyst:**	DLP	**Run Date:**	02/14/2012 13:45
Collect Date:	02/07/2012 09:50	**Dilution:**	1	**File ID:**	1V.1202141345-10
Sample Tag:	D01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Cyanide, Weak/Dissociable	57-12-5		U	0.0100	0.00500

U	Analyte was not detected. The concentration is below the reported LOD.

Certificate of Analysis

Sample #:	L12020220-03	**PrePrep Method:**	N/A	**Instrument:**	UV-120-1V
Client ID:	SMW4-0212-1	**Prep Method:**	9014-9010C	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	9014-9010C	**Cal Date:**	02/14/2012 10:45
Workgroup #:	WG389320	**Analyst:**	DLP	**Run Date:**	02/14/2012 12:00
Collect Date:	02/07/2012 12:05	**Dilution:**	1	**File ID:**	1V.1202141200-18
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Cyanide	57-12-5		U	0.0100	0.00500

U	Analyte was not detected. The concentration is below the reported LOD.

Certificate of Analysis

Sample #:	L12020220-03	**PrePrep Method:**	N/A	**Instrument:**	UV-120-1V
Client ID:	SMW4-0212-1	**Prep Method:**	SM4500-CN-C,G	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-CN-C,G	**Cal Date:**	02/14/2012 10:45
Workgroup #:	WG389446	**Analyst:**	DLP	**Run Date:**	02/14/2012 13:40
Collect Date:	02/07/2012 12:05	**Dilution:**	1	**File ID:**	1V.1202141340-10
Sample Tag:	D02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Cyanide, Amenable to Chlor.	57-12-5		U	0.0100	0.00500

U	Analyte was not detected. The concentration is below the reported LOD.

Certificate of Analysis

Sample #:	L12020220-03	**PrePrep Method:**	N/A	**Instrument:**	UV-120-1V
Client ID:	SMW4-0212-1	**Prep Method:**	SM4500-CN-I	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-CN-I	**Cal Date:**	02/14/2012 10:45
Workgroup #:	WG389443	**Analyst:**	DLP	**Run Date:**	02/14/2012 13:45
Collect Date:	02/07/2012 12:05	**Dilution:**	1	**File ID:**	1V.1202141345-11
Sample Tag:	D01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Cyanide, Weak/Dissociable	57-12-5		U	0.0100	0.00500

U	Analyte was not detected. The concentration is below the reported LOD.

Certificate of Analysis

2.2.4.2 QC Summary Data

Example Calculations for Visible Spectrophotometric Methods

Linear Calibration Model

Step 1 - Retrieve Curve Data from ICAL

m = slope of the linear equation
b = intercept from the linear equation
y = instrument response as absorbance or OD
x = concentration of analyte (mg/L)
y = mx + b

Step 2: Calculate the instrument concentration, x

Where:

x = (y - b)/m

Step 3: Solve for analyte concentration in sample, Cx

Cx = (x) (D)

Example Calculation (LCS):

Value of m from plot:	7.809	
Value of b from plot:	0.0004135	
Absorbance of unknown from quantitation report (y):	0.31	
Calculated concentration (x):	0.03964483	
Dilution factor (D):	1.00	
Concentration of analyte in sample, Cy:	0.0396	mg/L

SmartChem Autoanalyzer - Quadratic Calibration for Chloride and Sulfate

Step 1 - Retrieve Curve Data from Smartchem ICAL

A, B, C = constants from the ICAL quadratic regression

x = instrument response as absorbance or OD

y = concentration of analyte (mg/L)

Step 2: Calculate the instrument concentration, y

Where:

y = Ax^2 + Bx + C

Step 3: Solve for analyte concentration in sample, Cy

Cy = (y) (D)

Example Calculation (LCS):

Value of A from plot:	101.2796	
Value of B from plot:	318.9056	
Value of C from plot:	-2.2712	
Absorbance of unknown from quantitation report (x):	0.1583	
Calculated concentration (y):	50.7495108	
Dilution factor (D):	1.00	
Concentration of analyte in sample, Cy:	50.75	mg/L

Microbac Laboratories Inc.

Data Checklist

Date: 14-FEB-2012
Analyst: DLP
Analyst: JBK
Method: CN
Instrument: UV-120-1V
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG389320

Calibration/Linearity	02-14-12
Second Source Check	
ICV/CCV (std)	X
ICB/CCB	
Blank	X
LCS/LCS Dup	X
MS/MSD	X
Duplicate	X
Upload Results	X
Client Forms	
QC Violation Sheet	
Case Narratives	
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	
Primary Reviewer	DLP
Secondary Reviewer	DIH
Comments	

Primary Reviewer:
14-FEB-2012

Secondary Reviewer:
15-FEB-2012

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-15-2012 11:25:10

Microbac Laboratories Inc.

Data Checklist

Date: 14-FEB-2012
Analyst: DLP
Analyst: NA
Method: CN-WD
Instrument: UV-120-1V
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG389443

Calibration/Linearity	02-14-12
Second Source Check	
ICV/CCV (std)	X
ICB/CCB	
Blank	X
LCS/LCS Dup	X
MS/MSD	X
Duplicate	X
Upload Results	X
Client Forms	
QC Violation Sheet	
Case Narratives	
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	
Primary Reviewer	DLP
Secondary Reviewer	DIH
Comments	

Primary Reviewer:
14-FEB-2012

Secondary Reviewer:
15-FEB-2012

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-15-2012 11:25:08

Microbac Laboratories Inc.

Data Checklist

Date: 14-FEB-2012
Analyst: DLP
Analyst: NA
Method: CN-A
Instrument: UV-120-1V
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG389446

Calibration/Linearity	02-14-12
Second Source Check	
ICV/CCV (std)	X
ICB/CCB	
Blank	X
LCS/LCS Dup	X
MS/MSD	X
Duplicate	X
Upload Results	X
Client Forms	
QC Violation Sheet	
Case Narratives	
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	
Primary Reviewer	DLP
Secondary Reviewer	DIH
Comments	

Primary Reviewer:
14-FEB-2012

Secondary Reviewer:
15-FEB-2012

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-15-2012 11:24:21

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 9014-9010C

AAB#: WG389320

Login Number: L12020220

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
MPL25-0212-1	01	02/06/12							14		02/14/12	7.9	14	
SMW1-0212-1	02	02/07/12							14		02/14/12	7.1	14	
SMW4-0212-1	03	02/07/12							14		02/14/12	7	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 2307568
Report generated 02/15/2012 09:42

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: SM4500-CN-C,G

AAB#: WG389446

Login Number: L12020220

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
MPL25-0212-1	01	02/06/12							14		02/14/12	7.9	14	
SMW1-0212-1	02	02/07/12							14		02/14/12	7.2	14	
SMW4-0212-1	03	02/07/12							14		02/14/12	7.1	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 2307542
Report generated 02/15/2012 09:41

Microbac Laboratories Inc.

METHOD BLANK SUMMARY

Login Number: L12020220
Blank File ID: 1V.1202141200-03
Prep Date: 02/14/12 12:00
Analyzed Date: 02/14/12 12:00
Analyst: DLP

Work Group: WG389320
Blank Sample ID: WG389320-01
Instrument ID: UV-120-1V
Method: 9014-9010C

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG389320-02	1V.1202141200-04	02/14/12 12:00	
LCS	WG389320-03	1V.1202141200-05	02/14/12 12:00	
DUP	WG389320-05	1V.1202141200-09	02/14/12 12:00	
MPL25-0212-1	L12020220-01	1V.1202141200-16	02/14/12 12:00	
SMW1-0212-1	L12020220-02	1V.1202141200-17	02/14/12 12:00	
SMW4-0212-1	L12020220-03	1V.1202141200-18	02/14/12 12:00	

Report Name: BLANK_SUMMARY
PDF File ID: 2307569
Report generated 02/15/2012 09:42

Microbac Laboratories Inc.

METHOD BLANK SUMMARY

Login Number: L12020220
Blank File ID: 1V.1202141340-03
Prep Date: 02/14/12 13:40
Analyzed Date: 02/14/12 13:40
Analyst: DLP

Work Group: WG389446
Blank Sample ID: WG389446-01
Instrument ID: UV-120-1V
Method: SM4500-CN-C,G

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG389446-02	1V.1202141340-04	02/14/12 13:40	
LCS	WG389446-03	1V.1202141340-05	02/14/12 13:40	
MPL25-0212-1	L12020220-01	1V.1202141340-08	02/14/12 13:40	D02
SMW1-0212-1	L12020220-02	1V.1202141340-09	02/14/12 13:40	D02
SMW4-0212-1	L12020220-03	1V.1202141340-10	02/14/12 13:40	D02
DUP	WG389446-06	1V.1202141340-13	02/14/12 13:40	

Report Name: BLANK_SUMMARY
PDF File ID: 2307543
Report generated 02/15/2012 09:41

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L12020220 Prep Date: 02/14/12 12:00 Sample ID: WG389320-01
Instrument ID: UV-120-1V Run Date: 02/14/12 12:00 Prep Method: 9014-9010C
File ID: 1V.1202141200-03 Analyst: DLP Method: 9014-9010C
Workgroup (AAB#): WG389320 Matrix: Water Units: mg/L
Contract #: Cal ID: UV-120 - 14-FEB-12

Analytes	LOD	LOQ	Concentration	Dilution	Qualifier
Cyanide	0.00500	0.0100	0.00500	1	U

LOD Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 2307570
15-FEB-2012 09:42

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L12020220 Prep Date: 02/14/12 13:40 Sample ID: WG389446-01
Instrument ID: UV-120-1V Run Date: 02/14/12 13:40 Prep Method: SM4500-CN-C,G
File ID: 1V.1202141340-03 Analyst: DLP Method: SM4500-CN-C,G
Workgroup (AAB#): WG389446 Matrix: Water Units: mg/L
Contract #: Cal ID: UV-120-14-FEB-12

Analytes	LOD	LOQ	Concentration	Dilution	Qualifier
Cyanide, Amenable to Chlor.	0.00500	0.0100	0.00500	1	U

LOD Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 2307544
15-FEB-2012 09:41

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L12020220 Run Date: 02/14/2012 Sample ID: WG389320-02
Instrument ID: UV-120-1V Run Time: 12:00 Prep Method: 9014-9010C
File ID: 1V.1202141200-04 Analyst: DLP Method: 9014-9010C
Workgroup (AAB#): WG389320 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD48862 Cal ID: UV-120-14-FEB-12

Analytes	Expected	Found	% Rec	LCS Limits	Q
Cyanide	0.200	0.219	109	90 - 110	

LCS - Modified 03/06/2008
PDF File ID: 2307571
Report generated: 02/15/2012 09:42

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L12020220 Run Date: 02/14/2012 Sample ID: WG389320-03
Instrument ID: UV-120-1V Run Time: 12:00 Prep Method: 9014-9010C
File ID: 1V.1202141200-05 Analyst: DLP Method: 9014-9010C
Workgroup (AAB#): WG389320 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD48862 Cal ID: UV-120-14-FEB-12

Analytes	Expected	Found	% Rec	LCS Limits	Q
Cyanide	0.0400	0.0406	101	90 - 110	

LCS - Modified 03/06/2008
PDF File ID: 2307571
Report generated: 02/15/2012 09:42

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L12020220 Run Date: 02/14/2012 Sample ID: WG389446-02
Instrument ID: UV-120-1V Run Time: 13:40 Prep Method: SM4500-CN-C,G
File ID: 1V.1202141340-04 Analyst: DLP Method: SM4500-CN-C,G
Workgroup (AAB#): WG389446 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD48862 Cal ID: UV-120-14-FEB-12

Analytes	Expected	Found	% Rec	LCS Limits	Q
Cyanide, Amenable to Chlor.	0.200	0.000942	0.471	90 - 110	*

LCS - Modified 03/06/2008
PDF File ID: 2307545
Report generated: 02/15/2012 09:41

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L12020220 Run Date: 02/14/2012 Sample ID: WG389446-03
Instrument ID: UV-120-1V Run Time: 13:40 Prep Method: SM4500-CN-C,G
File ID: 1V.1202141340-05 Analyst: DLP Method: SM4500-CN-C,G
Workgroup (AAB#): WG389446 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD48862 Cal ID: UV-120-14-FEB-12

Analytes	Expected	Found	% Rec	LCS Limits	Q
Cyanide, Amenable to Chlor.	0.0400	0.00120	3.01	90 - 110	*

LCS - Modified 03/06/2008
PDF File ID: 2307545
Report generated: 02/15/2012 09:41

2.2.4.3 Raw Data

Curves

WG 389516

Parameter: CN LOW

Spectrophotometer: UV 120-1V

Calibration (Curve) standard stock: STD 48861

Concentration: 990 mg/L

Recipe for preparation of curve standards found in:
SOP: 3354 Revision: 14 Page: 15

Second Source Stock: STD 48862 (concentration: 1000 mg/L

Daily Preparation: 5(1000)/250 = 20
10(20)/1000 = 2

concentration = 1(2)/50 = 0.04

Calibration Standards (mg/L)	Volume (mL)	Cell Size (cm)	Wavelength (nm)	Absorbance
STD 5 (0.0495)	50	5 cm	578	0.387
STD 6 (0.0396)				0.293
STD 7 (0.0297)				0.220
STD 8 (0.0198)				0.144
STD 9 (0.0099)				0.074
STD 10 (0.0049 5				0.037
STD 11 (0.000)				0.000
2nd Source (0.04)	50	5 cm	578	0.311

Analyst: [signature] Date/Time: 02-14-12/1045

DCN#89937

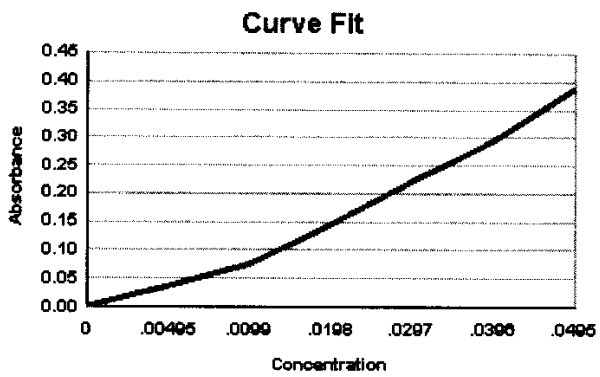
Microbac Laboratories Inc.
INITIAL CALIBRATION

Workgroup: WG389516
Analytical Method: 300
Instrument ID: UV-120-1V

Analyst: DLP
Initial Calibration Date: 02/14/2012

Analyte: CYANIDE
Number of Points: 7
Slope: 7.67401
Y-Intercept: -0.00322526
Coef. Of Correlation (R^2): 0.998121
Coef. Of Correlation (R): 0.999060

Concentration X	Absorbance Y	X^2	X * Y	Y-Fitted (mX^2+B)
0.00	0.00	0.00	0.00	-0.00322526
0.00495	0.0370	0.0000245	0.000183	0.0347611
0.00990	0.0740	0.0000980	0.000733	0.0727474
0.0198	0.144	0.000392	0.00285	0.148720
0.0297	0.220	0.000882	0.00653	0.224693
0.0396	0.293	0.00157	0.0116	0.300666
0.0495	0.387	0.00245	0.0192	0.376638



WG_ICAL_CAL_WET - Modified 03/06/2008
Report generated 02/14/2012 11:39

[redacted]

Microbac Laboratories Inc.
ALTERNATE SOURCE REPORT

Workgroup #: WG389516
File ID: 1V.1202141045-08
CCV ID: WG389516-08
Units: mg/L
Analyte: CYANIDE

Instrument ID: UV-120-1V
Run Date: 02/14/2012
Run Time: 10:45
Analyst: DLP
Cal ID: UV-120 - 14-FEB-12 10:45:07

Analyte	Expected	Found	RF	%D	Q
Cyanide	.04	0.0409	7.78	2.3	

* Exceeds %D Limit

CCC Calibrtion Check Compounds
SPCC System Performance Check Compounds

WET_WG_SSCV - Modified 03/06/2008
Report generated 02/14/2012 11:39

[redacted]

WG 389515

Curves

Parameter: CN High

Spectrophotometer: WV 120-1V

Calibration (Curve) standard stock: STD 48861

Concentration: 990 mg/L

Recipe for preparation of curve standards found in:
SOP: 3354 Revision: 14 Page: 15

Second Source Stock: STD48862 (concentration: 1000 mg/L

Daily Preparation: 50(1000)/250 = 20
10(20)/100 = 2
concentration = 5(2)/50 = 0.2

Calibration Standards (mg/L)	Volume (mL)	Cell Size (cm)	Wavelength (nm)	Absorbance
STD 1 (0.396)	50	1cm	578 AL 02-14	~~0.469~~ ~~0.503~~ 0.515 AL 02-14-12
STD 2 (0.292)			AL 2-14-12	~~0.459~~ 0.388
STD 3 (0.198)				0.288
STD 4 (0.099)				0.160
STD 6 (0.0396)				0.060
STD 8 (0.0198)				0.030
STD 11 (0.000)				0.001
			AL	02-14-12
2nd Source (0.2)	50	1cm	578	~~0.304~~ 0.297

Analyst: Quentin Pierce Date/Time: 02-14-12 / 1040

DCN#89936

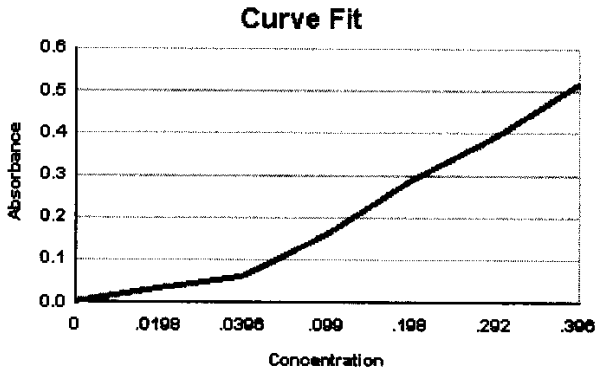
Microbac Laboratories Inc.
INITIAL CALIBRATION

Workgroup: WG389515
Analytical Method: 300
Instrument ID: UV-120-1V

Analyst: DLP
Initial Calibration Date: 02/14/2012

Analyte: CYANIDE
Number of Points: 7
Slope: 1.29662
Y-Intercept: 0.0125438
Coef. Of Correlation (R^2): 0.995417
Coef. Of Correlation (R): 0.997706

Concentration X	Absorbance Y	X^2	X * Y	Y-Fitted (mX^2+B)
0.00	0.00100	0.00	0.00	0.0125438
0.0198	0.0300	0.000392	0.000594	0.0382169
0.0396	0.0600	0.00157	0.00238	0.0638901
0.0990	0.160	0.00980	0.0158	0.140910
0.198	0.288	0.0392	0.0570	0.269275
0.292	0.388	0.0853	0.113	0.391158
0.396	0.515	0.157	0.204	0.526007



WG_ICAL_CAL_WET - Modified 03/06/2008
Report generated 02/14/2012 11:33

[redacted]

Microbac Laboratories Inc.
ALTERNATE SOURCE REPORT

Workgroup #: WG389515
File ID: 1V.1202141040-08
CCV ID: WG389515-08
Units: mg/L
Analyte: CYANIDE

Instrument ID: UV-120-1V
Run Date: 02/14/2012
Run Time: 10:40
Analyst: DLP
Cal ID: UV-120 - 14-FEB-12 10:40:07

Analyte	Expected	Found	RF	%D	Q
Cyanide	.2	0.219	1.49	9.5	

* Exceeds %D Limit

CCC Calibrtion Check Compounds
SPCC System Performance Check Compounds

WET_WG_SSCV - Modified 03/06/2008
Report generated 02/14/2012 11:36

[redacted]*

WORKGROUP: WG389446

CYANIDE

☐ Total method 9010B/9014 A
SM4500 CN C,E
EPA 335.2
☐ WD method SM4500 CN I

Matrix: (Liquid) Soil
(mg/L) (mg/Kg)

SOP #: K3354 Revision 14

CCV(Cal STDs): 488661 TRUE VALUE: 99.0
Daily dilution: 5(99.0)/250 = 19.80
10(19.80)/100 = 1.98
5(1.98)/50 = 0.198
10(1.98)/100 = 0.198
5(0.198)/50 = 0.0198

LCS STOCK: 488662 TRUE VALUE: 100.0
Daily dilution: 5(100)/250 = 20
10(20)/100 = 2
5(2)/50 = 0.2
10(2)/50 = 0.04

curve reference: 389515 389516
Spec: UV-120-1V 02-14-D

SPIKE: (daily dilution) 5(20)/50 = 0.20
(same stock as LCS)

Sample	Volume mL/grams	pH>12	Sulfide Presence	Dilution	Cell Size (cm)	Absorbance λ = 578 nm
02-14-12 0.198						
CCV (high): ~~0.2~~ ppm	50				1cm	0.286
CCV (low): 0.0198 ppm	50				5cm	0.140
Blank	50	✓	NO		5cm	0.002
LCS: 0.2 ppm	50	✓	NO		5cm	0.004
LCS: 0.04 ppm	50	✓	NO		5cm	0.006
* 02-091-01	50	✓	NO		5cm	0.006
02-146-01	50	✓	NO		5cm	0.009
02-220-01	50	✓	NO		5cm	0.007
-02	50	✓	NO		5cm	0.006
03	50	✓	NO		5cm	0.004
STD 0.2	50	✓	NO		1cm	0.287
STD 0.02	50	✓	NO		5cm	0.139
Duplicate 02-220-03	50	✓	NO		5cm	0.004
MS: (ppm) 02-091-01	50	✓	NO		5cm	0.003
MSD: (ppm)						
CCV high: (ppm) 0.198	50				1cm	0.287
CCV (low): (ppm) 0.0198	50				5cm	0.141

ANALYST: Christy Pappe

DATE/TIME: (on) 02-14-12/0850
(off) 02-14-12/1020
(color) 02-14-12/1340

* Sample has been frozen.

DCN#89930

Microbac Laboratories Inc.
SAMPLE REPORT

Workgroup: WG389446 treated
Analyte: CYANIDE

Analyst: DLP
Date: 02/14/2012

Sample ID	I Vol	F Vol	Response	Slope	Y Intercept	Anal. Conc.	Rep. Conc.	Dil	Units
WG389446-01	50	50	0.00200	7.674	-0.003225	0.00068090	0.00068090	1	mg/L
WG389446-02	50	50	0.00400	7.674	-0.003225	0.00094152	0.00094152	1	mg/L
WG389446-03	50	50	0.00600	7.674	-0.003225	0.0012021	0.0012021	1	mg/L
L12020091-01	50	50	0.00600	7.674	-0.003225	0.0012021	ND	1	mg/L
WG389446-05	50	50	0.00600	7.674	-0.003225	0.0012021	0.0012021	1	mg/L
L12020146-01	50	50	0.00900	7.674	-0.003225	0.0015931	0.25489	1	mg/L
L12020220-01	50	50	0.00700	7.674	-0.003225	0.0013325	0.0057400	1	mg/L
L12020220-02	50	50	0.00600	7.674	-0.003225	0.0012021	0.010950	1	mg/L
L12020220-03	50	50	0.00400	7.674	-0.003225	0.00094152	0.0023000	1	mg/L
WG389446-04	50	50	0.00400	7.674	-0.003225	0.00094152	0.00094152	1	mg/L
WG389446-06	50	50	0.00400	7.674	-0.003225	0.00094152	0.00094152	1	mg/L
WG389446-07	50	50	0.00300	7.674	-0.003225	0.00081121	0.00081121	1	mg/L

UV_SAMPLE_REPORT - Modified 03/06/2008

Report generated 02/15/2012 09:36

[redacted]

Cyanide, Amenable to Chlorination (mg/L)
CN (Total) - CN (Treated) = CN-A

SAMPLE	2/10/2012 CN (Total)	2/14/2012 CN (Treated)	CN-A
L12020091	0.0007021	0.0012021	-0.0005
L12020146-01	0.25648	0.0015931	0.254887
L12020220-01	0.0070661	0.0013325	0.005734
L12020220-02	0.012148	0.0012021	0.010946
L12020220-03	0.0039387	0.00094152	0.002997
			0
			0
			0
			0
			0
			0
			0
			0
			0
			0
			0
			0
			0
			0

Cyanide, Amenable to Chlorination (CN-A) is the difference between the total cyanide and the treated cyanide. The LCS is analyzed to verify that all of the cyanide in the spike solution is amenable (the treated portion is ND)

Microbac Laboratories Inc.
DISTILLED STANDARD REPORT

Workgroup #: WG389584
File ID: 1V.1202141340-11
CCV ID: WG389584-03
Units: mg/L

Instrument ID: UV-120-1V
Run Date: 02/14/2012
Run Time: 13:40
Analyst: DLP
Cal ID: UV-120 - 14-FEB-12

Analyte	Expected	Found	RF	%D	Q
Cyanide	.198	0.212	1.45	7.1	

* Exceeds %D Limit

CCC Calibrtion Check Compounds
SPCC System Performance Check Compounds

WG_CCV_LCS - Modified 03/06/2008
Report generated 02/15/2012 11:13

[redacted]

Microbac Laboratories Inc.
DISTILLED STANDARD REPORT

Workgroup #: WG389584
File ID: 1V.1202141340-12
CCV ID: WG389584-04
Units: mg/L

Instrument ID: UV-120-1V
Run Date: 02/14/2012
Run Time: 13:40
Analyst: DLP
Cal ID: UV-120 - 14-FEB-12

Analyte	Expected	Found	RF	%D	Q
Cyanide	.0198	0.0185	7.02	6.6	

* Exceeds %D Limit

CCC Calibrtion Check Compounds
SPCC System Performance Check Compounds

WG_CCV_LCS - Modified 03/06/2008
Report generated 02/15/2012 11:13

[redacted]

Microbac Laboratories Inc.
CONTINUING CALIBRATION REPORT

Workgroup #: WG389584
File ID: 1V.1202141340-01
CCV ID: WG389584-01
Units: mg/L
Analyte: CYANIDE

Instrument ID: UV-120-1V
Run Date: 02/14/2012
Run Time: 13:40
Analyst: DLP
Cal ID: UV-120 - 14-FEB-12

Analyte	Expected	Found	RF	%D	Q
Cyanide	.198	0.211	1.44	6.6	

* Exceeds %D Limit

CCC Calibrtion Check Compounds
SPCC System Performance Check Compounds

WET_WG_CCV - Modified 03/06/2008

Report generated 02/14/2012 16:45

[redacted]

Microbac Laboratories Inc.
CONTINUING CALIBRATION REPORT

Workgroup #: WG389584
File ID: 1V.1202141340-02
CCV ID: WG389584-02
Units: mg/L
Analyte: CYANIDE

Instrument ID: UV-120-1V
Run Date: 02/14/2012
Run Time: 13:40
Analyst: DLP
Cal ID: UV-120 - 14-FEB-12

Analyte	Expected	Found	RF	%D	Q
Cyanide	.0198	0.0187	7.07	5.6	

* Exceeds %D Limit

CCC Calibrtion Check Compounds
SPCC System Performance Check Compounds

WET_WG_CCV - Modified 03/06/2008

Report generated 02/14/2012 16:45

[redacted]

Microbac Laboratories Inc.
CONTINUING CALIBRATION REPORT

Workgroup #: WG389584
File ID: 1V.1202141340-15
CCV ID: WG389584-05
Units: mg/L
Analyte: CYANIDE

Instrument ID: UV-120-1V
Run Date: 02/14/2012
Run Time: 13:40
Analyst: DLP
Cal ID: UV-120 - 14-FEB-12

Analyte	Expected	Found	RF	%D	Q
Cyanide	.198	0.212	1.45	7.1	

* Exceeds %D Limit

CCC Calibrtion Check Compounds
SPCC System Performance Check Compounds

WET_WG_CCV - Modified 03/06/2008

Report generated 02/14/2012 16:45

[redacted]

Microbac Laboratories Inc.
CONTINUING CALIBRATION REPORT

Workgroup #: WG389584
File ID: 1V.1202141340-16
CCV ID: WG389584-06
Units: mg/L
Analyte: CYANIDE

Instrument ID: UV-120-1V
Run Date: 02/14/2012
Run Time: 13:40
Analyst: DLP
Cal ID: UV-120 - 14-FEB-12

Analyte	Expected	Found	RF	%D	Q
Cyanide	.0198	0.0188	7.12	5.1	

* Exceeds %D Limit

CCC Calibrtion Check Compounds
SPCC System Performance Check Compounds

WET_WG_CCV - Modified 03/06/2008

Report generated 02/14/2012 16:45

[redacted]

WORKGROUP: WG389443

CYANIDE

☐ Total method 9010B/9014
SM4500 CN C,E
EPA 335.2
☒ WD method SM4500 CN I

Matrix: (Liquid) (mg/L) Soil (mg/Kg)

SOP #: K3354 Revision 14

CCV(Cal STDs): 478861 TRUE VALUE: 990
Daily dilution: 5(990)/250 = 19.80
10(19.80)/100 = 1.98 DLP 02-14-12
5(1.98)/100 = 0.198
10(0.198)/100 = ~~0.0198~~ 0.198
5(0.198)/100 = 0.0198

LCS STOCK: 478862 TRUE VALUE: 1000
Daily dilution: 5(1000)/250 = 20
10(20)/100 = 2
5(2)/100 = 0.2
5(2)/100 = 0.04

curve reference: 389615 389516 2-14-12
Spec: UV-120-1V

SPIKE: (daily dilution) 5(2)/100 = 0.2
(same stock as LCS)

Sample	Volume mL/grams	pH>12	Sulfide Presence	Dilution	Cell Size (cm)	Absorbance λ = 578 nm
CCV (high): ~~0.20~~ ppm DLP 02-14-12	50				1cm	0.286
CCV (low): ~~0.02~~ 0.0198 ppm	50				5cm	0.140
Blank	50	✓	NO		5cm	0.004 DLP 02-14-12
LCS: 0.2 ppm	50	✓			1cm	~~0.308~~ 0.297
LCS: 0.04 ppm	50	✓			5cm	0.315
02-194-02	50	✓			5cm	0.114
02-195-02	50	✓			5cm	0.136
-04	50	✓			5cm	0.077
02-220-01	50	✓			5cm	0.022
02	50	✓			5cm	0.021
-03	50	✓			5cm	0.016
STD 0.2	50	✓			1cm	0.287
STD 0.02	50	✓			5cm	0.139
Duplicate: 02-194-02	50	✓	NO		5cm	0.115
MS: (02-194-02 ppm)	50	✓	NO		1cm	0.320
MSD: (ppm)						
CCV high: (0.2 ppm)	50				1cm	0.287
CCV (low): (0.02 ppm)	50				5cm	0.141

ANALYST: Quentin Rupe

DATE/TIME: (on) 02-13-12/0915
(off) 02-13-12/1045
(color) 02-14-12/1245

DCN#89929

Microbac Laboratories Inc.
SAMPLE REPORT

Workgroup: WG389443 **Analyst:** DLP
Analyte: CYANIDE **Date:** 02/14/2012

Sample ID	I Vol	F Vol	Response	Slope	Y Intercept	Anal. Conc.	Rep. Conc.	Dil	Units
WG389443-01	50	50	0.00400	7.674	-0.003225	0.00094152	0.00094152	1	mg/L
WG389443-02	50	50	0.297	1.297	0.01254	0.21938	0.21938	1	mg/L
WG389443-03	50	50	0.315	7.674	-0.003225	0.041468	0.041468	1	mg/L
L12020194-02	50	50	0.114	7.674	-0.003225	0.015276	0.015276	1	mg/L
WG389443-04	50	50	0.114	7.674	-0.003225	0.015276	0.015276	1	mg/L
L12020195-02	50	50	0.136	7.674	-0.003225	0.018142	18.142	1	ug/L
L12020195-04	50	50	0.0770	7.674	-0.003225	0.010454	10.454	1	ug/L
L12020220-01	50	50	0.0220	7.674	-0.003225	0.0032871	ND	1	mg/L
L12020220-02	50	50	0.0210	7.674	-0.003225	0.0031568	ND	1	mg/L
L12020220-03	50	50	0.0160	7.674	-0.003225	0.0025052	ND	1	mg/L
WG389443-05	50	50	0.115	7.674	-0.003225	0.015406	0.015406	1	mg/L
WG389443-06	50	50	0.320	1.297	0.01254	0.23712	0.23712	1	mg/L

UV_SAMPLE_REPORT - Modified 03/06/2008

Report generated 02/14/2012 16:41

[redacted]

Microbac Laboratories Inc.
DISTILLED STANDARD REPORT

Workgroup #: WG389583
File ID: 1V.1202141345-12
CCV ID: WG389583-03
Units: mg/L

Instrument ID: UV-120-1V
Run Date: 02/14/2012
Run Time: 13:45
Analyst: DLP
Cal ID: UV-120 - 14-FEB-12

Analyte	Expected	Found	RF	%D	Q
Cyanide	.198	0.212	1.45	7.1	

* Exceeds %D Limit

CCC Calibrtion Check Compounds
SPCC System Performance Check Compounds

WG_CCV_LCS - Modified 03/06/2008
Report generated 02/14/2012 16:39

[redacted]

Microbac Laboratories Inc.
DISTILLED STANDARD REPORT

Workgroup #: WG389583
File ID: 1V.1202141345-13
CCV ID: WG389583-04
Units: mg/L

Instrument ID: UV-120-1V
Run Date: 02/14/2012
Run Time: 13:45
Analyst: DLP
Cal ID: UV-120 - 14-FEB-12

Analyte	Expected	Found	RF	%D	Q
Cyanide	.0198	0.0185	7.02	6.6	

* Exceeds %D Limit

CCC Calibrtion Check Compounds
SPCC System Performance Check Compounds

WG_CCV_LCS - Modified 03/06/2008
Report generated 02/14/2012 16:39

[redacted]

Microbac Laboratories Inc.
CONTINUING CALIBRATION REPORT

Workgroup #: WG389583
File ID: 1V.1202141345-01
CCV ID: WG389583-01
Units: mg/L
Analyte: CYANIDE

Instrument ID: UV-120-1V
Run Date: 02/14/2012
Run Time: 13:45
Analyst: DLP
Cal ID: UV-120 - 14-FEB-12

Analyte	Expected	Found	RF	%D	Q
Cyanide	.198	0.211	1.44	6.6	

* Exceeds %D Limit

CCC Calibrtion Check Compounds
SPCC System Performance Check Compounds

WET_WG_CCV - Modified 03/06/2008

Report generated 02/14/2012 16:34

[redacted]

Microbac Laboratories Inc.
CONTINUING CALIBRATION REPORT

Workgroup #: WG389583
File ID: 1V.1202141345-02
CCV ID: WG389583-02
Units: mg/L
Analyte: CYANIDE

Instrument ID: UV-120-1V
Run Date: 02/14/2012
Run Time: 13:45
Analyst: DLP
Cal ID: UV-120 - 14-FEB-12

Analyte	Expected	Found	RF	%D	Q
Cyanide	.0198	0.0187	7.07	5.6	

* Exceeds %D Limit

CCC Calibrtion Check Compounds
SPCC System Performance Check Compounds

WET_WG_CCV - Modified 03/06/2008

Report generated 02/14/2012 16:34

[redacted]

Microbac Laboratories Inc.
CONTINUING CALIBRATION REPORT

Workgroup #: WG389583
File ID: 1V.1202141345-15
CCV ID: WG389583-05
Units: mg/L
Analyte: CYANIDE

Instrument ID: UV-120-1V
Run Date: 02/14/2012
Run Time: 13:45
Analyst: DLP
Cal ID: UV-120 - 14-FEB-12

Analyte	Expected	Found	RF	%D	Q
Cyanide	.198	0.212	1.45	7.1	

* Exceeds %D Limit

CCC Calibrtion Check Compounds
SPCC System Performance Check Compounds

WET_WG_CCV - Modified 03/06/2008

Report generated 02/14/2012 16:34

[redacted]

Microbac Laboratories Inc.
CONTINUING CALIBRATION REPORT

Workgroup #: WG389583
File ID: 1V.1202141345-16
CCV ID: WG389583-06
Units: mg/L
Analyte: CYANIDE

Instrument ID: UV-120-1V
Run Date: 02/14/2012
Run Time: 13:45
Analyst: DLP
Cal ID: UV-120 - 14-FEB-12

Analyte	Expected	Found	RF	%D	Q
Cyanide	.0198	0.0188	7.12	5.1	

* Exceeds %D Limit

CCC Calibrtion Check Compounds
SPCC System Performance Check Compounds

WET_WG_CCV - Modified 03/06/2008

Report generated 02/14/2012 16:34

[redacted]

WORKGROUP: WG389320

CYANIDE

☑ Total method 9010B/9014
SM4500 CN C,E
EPA 335.2
☐ WD method SM4500 CN I

Matrix: Liquid (mg/L) Soil (mg/Kg)

SOP #: K3354 Revision 14

CCV(Cal STDs): 48886 TRUE VALUE: 990
Daily dilution: 5(990)/250=19.8
10(19.8)/100=1.98 5/50(1.98)=0.198
10(1.98)/100=0.198 5/50(0.198)=0.0198

LCS STOCK: 48862 TRUE VALUE: 1000
Daily dilution: 5(1000)/250=20
10(20)/100=2
5(2)/50=0.2
1(2)/50=0.04

curve reference: 389515 389516
Spec: UV-120-1V 02-14-12

SPIKE: (daily dilution) 1(2)/50=0.04
(same stock as LCS)

Sample	Volume mL/grams	pH>12	Sulfide Presence	Dilution	Cell Size (cm)	Absorbance λ = 578 nm
CCV (high): 0.198 ppm	50	✓	X none		1cm	0.286 02-14-12
CCV (low): 0.0198 ppm		✓	X		5cm	~~0.286~~ 0.140
Blank		✓	X		1cm	0.001
LCS: 0.2 ppm		✓	X	02-14-12	1cm	0.296
LCS: 0.04 ppm		✓	X		5cm	0.308 02-14-12
STD (0.0198)		✓	X		5cm	~~0.139~~ 0.289
STD (0.198)		✓	X		1cm	~~0.289~~ 0.139
02-22402		✓	X		5cm	0.014 02-14-12
DUP		✓	X		5cm	0.014
MS(0.04)		✓	X		5cm	0.297
02-268-01		✓	X		5cm	0.026
02-243-06		✓	X		5cm	0.060
02-186-01		✓	X		5cm	0.155
02-211-01		✓	X		5cm	0.155 02-14-12
-02		✓	X		5cm	~~0.051~~ 0.048
02-220-01		✓	X		5cm	0.051
-07		✓	X		5cm	0.090
-03		✓	X		5cm	0.027
02-294-02		✓	X		5cm	0.029
02-195-02		✓	X		5cm	0.095
-04		✓	X		5cm	0.124
Duplicate:						
MS: (ppm)						
MSD: (ppm)						
CCV high: (0.198 ppm)	50				1cm	0.286
CCV (low): (0.0198 ppm)	50				5cm	~~0.287~~ 0.140 02-14-12

ANALYST: Quantity Pauper

DATE/TIME: (on) 2/10/12/1345
(off) 1500
(color) 02-14-12/1200

DCN#89915

Microbac Laboratories Inc.
SAMPLE REPORT

Workgroup: WG389320
Analyte: CYANIDE

Analyst: DLP
Date: 02/14/2012

Sample ID	I Vol	F Vol	Response	Slope	Y Intercept	Anal. Conc.	Rep. Conc.	Dil	Units
WG389320-01	50	50	0.00100	7.674	-0.003225	0.00055059	0.00055059	1	mg/L
WG389320-02	50	50	0.296	1.297	0.01254	0.21861	0.21861	1	mg/L
WG389320-03	50	50	0.308	7.674	-0.003225	0.040556	0.040556	1	mg/L
L12020224-02	50	50	0.0140	7.674	-0.003225	0.0022446	ND	1	mg/L
WG389320-04	50	50	0.0140	7.674	-0.003225	0.0022446	0.0022446	1	mg/L
WG389320-05	50	50	0.0140	7.674	-0.003225	0.0022446	0.0022446	1	mg/L
WG389320-06	50	50	0.297	7.674	-0.003225	0.039122	0.039122	1	mg/L
L12020268-01	50	50	0.0260	7.674	-0.003225	0.0038083	ND	1	ug/L
L12020243-06	50	50	0.0600	7.674	-0.003225	0.0082389	0.0082389 F	1	mg/L
L12020186-01	50	50	0.155	7.674	-0.003225	0.020618	0.020618	1	mg/L
L12020211-01	50	50	0.155	7.674	-0.003225	0.020618	0.020618	1	mg/L
L12020211-02	50	50	0.0480	7.674	-0.003225	0.0066752	0.0066752 F	1	mg/L
L12020220-01	50	50	0.0510	7.674	-0.003225	0.0070661	0.0070661 F	1	mg/L
L12020220-02	50	50	0.0900	7.674	-0.003225	0.012148	0.012148	1	mg/L
L12020220-03	50	50	0.0270	7.674	-0.003225	0.0039387	ND	1	mg/L
L12020294-02	50	50	0.0290	7.674	-0.003225	0.0041993	ND	1	mg/L
L12020195-02	50	50	0.0950	7.674	-0.003225	0.012800	12.800	1	ug/L
L12020195-04	50	50	0.124	7.674	-0.003225	0.016579	16.579	1	ug/L

UV_SAMPLE_REPORT - Modified 03/06/2008

Report generated 02/14/2012 16:14

[redacted]

Microbac Laboratories Inc.
DISTILLED STANDARD REPORT

Workgroup #: WG389582
File ID: 1V.1202141200-06
CCV ID: WG389582-03
Units: mg/L

Instrument ID: UV-120-1V
Run Date: 02/14/2012
Run Time: 12:00
Analyst: DLP
Cal ID: UV-120 - 14-FEB-12

Analyte	Expected	Found	RF	%D	Q
Cyanide	.198	0.213	1.46	7.6	

* Exceeds %D Limit

CCC Calibrtion Check Compounds
SPCC System Performance Check Compounds

WG_CCV_LCS - Modified 03/06/2008
Report generated 02/14/2012 16:17

[redacted]

Microbac Laboratories Inc.
DISTILLED STANDARD REPORT

Workgroup #: WG389582
File ID: 1V.1202141200-07
CCV ID: WG389582-04
Units: mg/L

Instrument ID: UV-120-1V
Run Date: 02/14/2012
Run Time: 12:00
Analyst: DLP
Cal ID: UV-120 - 14-FEB-12

Analyte	Expected	Found	RF	%D	Q
Cyanide	.0198	0.0185	7.02	6.6	

* Exceeds %D Limit

CCC Calibrtion Check Compounds
SPCC System Performance Check Compounds

WG_CCV_LCS - Modified 03/06/2008
Report generated 02/14/2012 16:17

[redacted]

Microbac Laboratories Inc.
CONTINUING CALIBRATION REPORT

Workgroup #: WG389582
File ID: 1V.1202141200-22
CCV ID: WG389582-05
Units: mg/L
Analyte: CYANIDE

Instrument ID: UV-120-1V
Run Date: 02/14/2012
Run Time: 12:00
Analyst: DLP
Cal ID: UV-120 - 14-FEB-12

Analyte	Expected	Found	RF	%D	Q
Cyanide	.198	0.211	1.44	6.6	

* Exceeds %D Limit

CCC Calibrtion Check Compounds
SPCC System Performance Check Compounds

WET_WG_CCV - Modified 03/06/2008

Report generated 02/14/2012 16:08

[redacted]

Microbac Laboratories Inc.
CONTINUING CALIBRATION REPORT

Workgroup #: WG389582
File ID: 1V.1202141200-23
CCV ID: WG389582-06
Units: mg/L
Analyte: CYANIDE

Instrument ID: UV-120-1V
Run Date: 02/14/2012
Run Time: 12:00
Analyst: DLP
Cal ID: UV-120 - 14-FEB-12

Analyte	Expected	Found	RF	%D	Q
Cyanide	.0198	0.0187	7.07	5.6	

* Exceeds %D Limit

CCC Calibrtion Check Compounds
SPCC System Performance Check Compounds

WET_WG_CCV - Modified 03/06/2008

Report generated 02/14/2012 16:08

[redacted]

Microbac Laboratories Inc.
CONTINUING CALIBRATION REPORT

Workgroup #: WG389582
File ID: 1V.1202141200-02
CCV ID: WG389582-02
Units: mg/L
Analyte: CYANIDE

Instrument ID: UV-120-1V
Run Date: 02/14/2012
Run Time: 12:00
Analyst: DLP
Cal ID: UV-120 - 14-FEB-12

Analyte	Expected	Found	RF	%D	Q
Cyanide	.0198	0.0187	7.07	5.6	

* Exceeds %D Limit

CCC Calibrtion Check Compounds
SPCC System Performance Check Compounds

WET_WG_CCV - Modified 03/06/2008

Report generated 02/14/2012 16:08

[redacted]

Microbac Laboratories Inc.
CONTINUING CALIBRATION REPORT

Workgroup #: WG389582
File ID: 1V.1202141200-01
CCV ID: WG389582-01
Units: mg/L
Analyte: CYANIDE

Instrument ID: UV-120-1V
Run Date: 02/14/2012
Run Time: 12:00
Analyst: DLP
Cal ID: UV-120 - 14-FEB-12

Analyte	Expected	Found	RF	%D	Q
Cyanide	.198	0.211	1.44	6.6	

* Exceeds %D Limit

CCC Calibrtion Check Compounds
SPCC System Performance Check Compounds

WET_WG_CCV - Modified 03/06/2008

Report generated 02/14/2012 16:08

[redacted]

2.2.5 Conductivity Data

2.2.5.1 Summary Data

Login Number: L12020220
Department: Conventionals
Analyst: Dorothy Payne

METHOD

Analysis EPA 120.1/SM2510 B (Conductivity)

HOLDING TIMES

Sample Analysis: All holding times were met.

PREPARATION

Sample preparation proceeded normally.

BATCH QA/QC

Method Blank: All acceptance criteria were met.

Laboratory Control Sample: All acceptance criteria were met.

Duplicates: All acceptance criteria were met.

Matrix Spikes: All acceptance criteria were met.

SAMPLES

Samples: All acceptance criteria were met.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Microbac Laboratories Inc., both technically and for completeness, except for the conditions noted above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

Narrative ID: 42329
Approved By: Deanna Hesson

Microbac

Lab Report #: L12020220
Lab Project #: 3005.011
Project Name: White Sands MR
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L12020220-01	**PrePrep Method:**	N/A	**Instrument:**	YSI-32
Client ID:	MPL25-0212-1	**Prep Method:**	120.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	120.1	**Cal Date:**	
Workgroup #:	WG389827	**Analyst:**	DLP	**Run Date:**	02/16/2012 13:45
Collect Date:	02/06/2012 15:05	**Dilution:**	1	**File ID:**	32.1202161345-03
Sample Tag:		**Units:**	umhos/cm		

Analyte	CAS #	Result	Qual	LOQ	LOD
Conductivity		483		1.00	0.500

Sample #:	L12020220-02	**PrePrep Method:**	N/A	**Instrument:**	YSI-32
Client ID:	SMW1-0212-1	**Prep Method:**	120.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	120.1	**Cal Date:**	
Workgroup #:	WG389827	**Analyst:**	DLP	**Run Date:**	02/16/2012 13:45
Collect Date:	02/07/2012 09:50	**Dilution:**	1	**File ID:**	32.1202161345-04
Sample Tag:		**Units:**	umhos/cm		

Analyte	CAS #	Result	Qual	LOQ	LOD
Conductivity		358		1.00	0.500

Sample #:	L12020220-03	**PrePrep Method:**	N/A	**Instrument:**	YSI-32
Client ID:	SMW4-0212-1	**Prep Method:**	120.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	120.1	**Cal Date:**	
Workgroup #:	WG389827	**Analyst:**	DLP	**Run Date:**	02/16/2012 13:45
Collect Date:	02/07/2012 12:05	**Dilution:**	1	**File ID:**	32.1202161345-05
Sample Tag:		**Units:**	umhos/cm		

Analyte	CAS #	Result	Qual	LOQ	LOD
Conductivity		380		1.00	0.500

2.2.5.2 QC Summary Data

(Readout)/(dilution) = mg/L

where:

Readout = direct readout from the instrument
dilution = dilution in decimal form (ex. 1/5 dilution = 0.2)

Microbac Laboratories Inc.

Data Checklist

Date: 16-FEB-2012
Analyst: DLP
Analyst: NA
Method: COND
Instrument: YSI-32
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG389827

Calibration/Linearity	01-13-12
Second Source Check	
ICV/CCV (std)	
ICB/CCB	
Blank	X
LCS/LCS Dup	X
MS/MSD	
Duplicate	X
Upload Results	X
Client Forms	
QC Violation Sheet	
Case Narratives	
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	
Primary Reviewer	DLP
Secondary Reviewer	DIH
Comments	

Primary Reviewer:
17-FEB-2012

Secondary Reviewer:
17-FEB-2012

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-17-2012 13:03:51

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 120.1 AAB#: WG389827

Login Number: L12020220

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
MPL25-0212-1	01	02/06/12							28		02/16/12	9.9	28	
SMW1-0212-1	02	02/07/12							28		02/16/12	9.2	28	
SMW4-0212-1	03	02/07/12							28		02/16/12	9.1	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 2311021
Report generated 02/17/2012 12:30

Microbac Laboratories Inc.

METHOD BLANK SUMMARY

Login Number: L12020220
Blank File ID: 32.1202161345-01
Prep Date: 02/16/12 13:45
Analyzed Date: 02/16/12 13:45
Analyst: DLP

Work Group: WG389827
Blank Sample ID: WG389827-01
Instrument ID: YSI-32
Method: 120.1

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG389827-02	32.1202161345-02	02/16/12 13:45	
MPL25-0212-1	L12020220-01	32.1202161345-03	02/16/12 13:45	
SMW1-0212-1	L12020220-02	32.1202161345-04	02/16/12 13:45	
SMW4-0212-1	L12020220-03	32.1202161345-05	02/16/12 13:45	
DUP	WG389827-05	32.1202161345-06	02/16/12 13:45	
LCS2	WG389827-03	32.1202161345-07	02/16/12 13:45	

Report Name: BLANK_SUMMARY
PDF File ID: 2311022
Report generated 02/17/2012 12:30

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L12020220 Prep Date: 02/16/12 13:45 Sample ID: WG389827-01
Instrument ID: YSI-32 Run Date: 02/16/12 13:45 Prep Method: 120.1
File ID: 32.1202161345-01 Analyst: DLP Method: 120.1
Workgroup (AAB#): WG389827 Matrix: Water Units: umhos/cm
Contract #: Cal ID: YSI-32 -

Analytes	LOD	LOQ	Concentration	Dilution	Qualifier
Conductivity	0.500	1.00	0.500	1	U

LOD Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 2311023
17-FEB-2012 12:30

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L12020220 Analyst: DLP Prep Method: 120.1
Instrument ID: YSI-32 Matrix: Water Method: 120.1
Workgroup (AAB#): WG389827 Units: umhos/cm
QC Key: DOD4 Lot #: STD49788

Sample ID: WG389827-02 LCS File ID: 32.1202161345-02 Run Date: 02/16/2012 13:45
Sample ID: WG389827-03 LCS2 File ID: 32.1202161345-07 Run Date: 02/16/2012 13:45

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Conductivity	1410	1430	101	1410	1430	101	0.0760	90 - 110	10	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 2311024
Report generated: 02/17/2012 12:30

2.2.5.3 Raw Data

CONDUCTIVITY

☐EPA 120.1/SM2510B SOP K1201 Revision#: 13

LCS: SJD 49788
Daily Dilution: 10(0.1mS)/100 = 1412

☑Cell Constants Determined 1-13-12
☐Cells Clean

SAMPLE	DILUTION	CELL	MULTIPLIER	Direct Instrument READING
BLANK		0.1	uS	3.32
LCS: (1412)		1.0	mS	1.317
02-220-01		1.0	mS	0.444
-02		1.0	mS	0.329
03		1.0	mS	0.349
DUP: 02-220-03		1.0	mS	0.352
DUP:				
LCS: 1412		1.0	mS	1.316

Analyst: Crystal Payne Date/Time: 02-16-12/1345

*LCS/CCV required at end of run
* Duplicate required on 10% of samples

DCN#89966

Microbac Laboratories Inc.

TITRAMETRIC REPORT

Workgroup (AAB#): WG389827

Product: 120.1\

Analyte: Conductivity

Analyst: DLP

Run Date: 02/16/2012 13:45

SAMPLE NUMBER	Cell	Multiplier	Reading	Dil	Analytical	Reported	Units
WG389827-01	.1008	1	3.32	1	0.3347	0.3347	umhos/cm
WG389827-02	1.0874	1000	1.317	1	1432	1432	umhos/cm
L12020220-01	1.0874	1000	.444	1	482.8	482.8	umhos/cm
L12020220-02	1.0874	1000	.329	1	357.8	357.8	umhos/cm
L12020220-03	1.0874	1000	.349	1	379.5	379.5	umhos/cm
WG389827-04	1.0874	1000	.349	1	379.5	379.5	umhos/cm
WG389827-05	1.0874	1000	.352	1	382.8	382.8	umhos/cm
WG389827-03	1.0874	1000	1.316	1	1431	1431	umhos/cm

COND_REPORT - Modified 03/05/2008
Report generated 02/17/2012 12:04

[redacted]

2.2.6 Ammonia Data

2.2.6.1 Summary Data

Login Number: L12020220
Department: Conventionals
Analyst: Jeremy Kinney

METHOD

Analysis EPA 350.1/SM4500-NH3 B(NH3)

HOLDING TIMES

Sample Analysis: All holding times were met.

PREPARATION

Sample preparation proceeded normally.

BATCH QA/QC

Method Blank: All acceptance criteria were met.

Laboratory Control Sample: All acceptance criteria were met.

Duplicates: All acceptance criteria were met.

Matrix Spikes: All acceptance criteria were met.

SAMPLES

Samples: All acceptance criteria were met.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Microbac Laboratories Inc., both technically and for completeness, except for the conditions noted above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

Narrative ID: 42331
Approved By: Deanna Hesson

Microbac

Lab Report #: L12020220
Lab Project #: 3005.011
Project Name: White Sands MR
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L12020220-01	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	MPL25-0212-1	**Prep Method:**	350.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	350.1	**Cal Date:**	02/14/2012 11:13
Workgroup #:	WG389495	**Analyst:**	JBK	**Run Date:**	02/14/2012 11:36
Collect Date:	02/06/2012 15:05	**Dilution:**	1	**File ID:**	SC120214002.033
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Nitrogen, Ammonia	7664-41-7	0.0664	J	0.100	0.0500

J	Estimated value ; the analyte concentration was less than the LOQ.

Certificate of Analysis

Sample #:	L12020220-02	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	SMW1-0212-1	**Prep Method:**	350.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	350.1	**Cal Date:**	02/14/2012 11:13
Workgroup #:	WG389495	**Analyst:**	JBK	**Run Date:**	02/14/2012 11:37
Collect Date:	02/07/2012 09:50	**Dilution:**	1	**File ID:**	SC120214002.034
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Nitrogen, Ammonia	7664-41-7	0.139		0.100	0.0500

Sample #:	L12020220-03	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	SMW4-0212-1	**Prep Method:**	350.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	350.1	**Cal Date:**	02/14/2012 11:13
Workgroup #:	WG389495	**Analyst:**	JBK	**Run Date:**	02/14/2012 11:38
Collect Date:	02/07/2012 12:05	**Dilution:**	1	**File ID:**	SC120214002.035
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Nitrogen, Ammonia	7664-41-7		U	0.100	0.0500

U	Analyte was not detected. The concentration is below the reported LOD.

Certificate of Analysis

2.2.6.2 QC Summary Data

Example Calculations for Visible Spectrophotometric Methods

Linear Calibration Model

Step 1 - Retrieve Curve Data from ICAL

m = slope of the linear equation
b = intercept from the linear equation
y = instrument response as absorbance or OD
x = concentration of analyte (mg/L)
y = mx + b

Step 2: Calculate the instrument concentration, x

Where:

x = (y - b)/m

Step 3: Solve for analyte concentration in sample, Cx

Cx = (x) (D)

Example Calculation (LCS):

Value of m from plot:	7.809	
Value of b from plot:	0.0004135	
Absorbance of unknown from quantitation report (y):	0.31	
Calculated concentration (x):	0.03964483	
Dilution factor (D):	1.00	
Concentration of analyte in sample, Cy:	0.0396	mg/L

SmartChem Autoanalyzer - Quadratic Calibration for Chloride and Sulfate

Step 1 - Retrieve Curve Data from Smartchem ICAL

A, B, C = constants from the ICAL quadratic regression

x = instrument response as absorbance or OD

y = concentration of analyte (mg/L)

Step 2: Calculate the instrument concentration, y

Where:

y = Ax^2 + Bx + C

Step 3: Solve for analyte concentration in sample, Cy

Cy = (y) (D)

Example Calculation (LCS):

Value of A from plot:	101.2796	
Value of B from plot:	318.9056	
Value of C from plot:	-2.2712	
Absorbance of unknown from quantitation report (x):	0.1583	
Calculated concentration (y):	50.7495108	
Dilution factor (D):	1.00	
Concentration of analyte in sample, Cy:	50.75	mg/L

Microbac Laboratories Inc.

Data Checklist

Date: 14-FEB-2012
Analyst: JBK
Analyst: TMM
Method: NH3
Instrument: SC
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG389496 WG389495

Calibration/Linearity	02/14/2012
Second Source Check	X
ICV/CCV (std)	X
ICB/CCB	X
Blank	X
LCS/LCS Dup	X
MS/MSD	X
Duplicate	X
Upload Results	X
Client Forms	X
QC Violation Sheet	X
Case Narratives	X
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	JBK
Secondary Reviewer	DIH
Comments	

Primary Reviewer:
16-FEB-2012

Secondary Reviewer:
17-FEB-2012

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-17-2012 13:08:33

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 350.1 AAB#: WG389495

Login Number: L12020220

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
MPL25-0212-1	01	02/06/12							28		02/14/12	7.9	28	
SMW1-0212-1	02	02/07/12							28		02/14/12	7.1	28	
SMW4-0212-1	03	02/07/12							28		02/14/12	7	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 2309727
Report generated 02/16/2012 15:44

Microbac Laboratories Inc.

METHOD BLANK SUMMARY

Login Number: L12020220
Blank File ID: SC120214002.009
Prep Date: 02/14/12 11:14
Analyzed Date: 02/14/12 11:14
Analyst: JBK

Work Group: WG389495
Blank Sample ID: WG389495-01
Instrument ID: SMARTCHEM
Method: 350.1

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG389495-02	SC120214002.010	02/14/12 11:16	01
MPL25-0212-1	L12020220-01	SC120214002.033	02/14/12 11:36	01
SMW1-0212-1	L12020220-02	SC120214002.034	02/14/12 11:37	01
SMW4-0212-1	L12020220-03	SC120214002.035	02/14/12 11:38	01
DUP	WG389495-04	SC120214002.039	02/14/12 11:41	01

Report Name: BLANK_SUMMARY
PDF File ID: 2309728
Report generated 02/16/2012 15:44

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L12020220 Prep Date: 02/14/12 11:14 Sample ID: WG389495-01
Instrument ID: SMARTCHEM Run Date: 02/14/12 11:14 Prep Method: 350.1
File ID: SC120214002.009 Analyst: JBK Method: 350.1
Workgroup (AAB#): WG389495 Matrix: Water Units: mg/L
Contract #: Cal ID: SMARTC-14-FEB-12

Analytes	LOD	LOQ	Concentration	Dilution	Qualifier
Nitrogen, Ammonia	0.0500	0.100	0.0500	1	U

LOD Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 2309729
16-FEB-2012 15:44

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L12020220 Run Date: 02/14/2012 Sample ID: WG389495-02
Instrument ID: SMARTCHEM Run Time: 11:16 Prep Method: 350.1
File ID: SC120214002.010 Analyst: JBK Method: 350.1
Workgroup (AAB#): WG389495 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD49779 Cal ID: SMARTC-14-FEB-12

Analytes	Expected	Found	% Rec	LCS Limits	Q
Nitrogen, Ammonia	2.00	1.89	94.3	90 - 110	

LCS - Modified 03/06/2008
PDF File ID: 2309730
Report generated: 02/16/2012 15:44

2.2.6.3 Raw Data

WORKGROUP: WG389495
389496

SMARTCHEM RUN LOG

Daily Check

- [x] Lamp On
- [x] Probe Rinse Full
- [x] DI Water > ½ Full
- [x] Wash Solution > ½ Full
- [ ] NO3 Reagent bottle connected / purged
- [ ] NO3 pH adj to pH 5-9

Syringe filter lot # _____

- [x] WBL Run
- [x] Reagents Full
- [x] Dilution H_2O Full
- [ ] Waste Container Check

1) **Workgroup** 389495
Plan # 20120214001
2) **Workgroup** _____
Plan # _____
3) **Workgroup** 389496
Plan # 20120214002

Analyte		1	2	3
NH3		Dilution		
SC Prepared Curve				
Position			PR WG #1	
1-1	ICV 1.5			
1-2	Blank			
1-3	LCS 2			
1-4	02-242-02	~~Conc~~	~~1/5~~ 1/20	
1-5	-03	~~TCK 2/M~~	~~1/5~~ 1/20	
1-6	02-243-01			
1-7	-02	1/50	x 1/2 =	1/100
1-8	-03	10/50		
1-9	-04	10/50		
1-10	-07			
1-11	-08			
1-12	02-246-01			
1-13	02-179-01			
1-14	MS -02			
1-15	SD-03			
1-16	-04			
1-17	-05			
1-18	MS -04			
1-19	SD-07			
1-20	02-186-01			
1-21	02-194-01			
1-22	02-220-01			
2-1	-02			
2-2	-03			
2-3	02-246-01			

Position	Analyte	1	2	3
2-4	02-214-02			
2-5	-03			
2-6	Dup 194-01			
2-7	Blank			
2-8	LCS 2			
2-9	02-179-08			
2-10	MS -09			
2-11	SD-10			
2-12	-11			
2-13	-12			
2-14	-13			
2-15	-14			
2-16	02-221-01			
2-17	-02			
2-18	-03			
2-19	-04			
2-20	-05			
2-21	-06			
2-22	-07			
2-23	-08			
2-24	-09			
2-25	-10			
2-26	-11			
3-1	-12			
3-2	-13			

NOTES:
* Run NO2 std on NO3 runs
* LCS/LCS Dup all parameters
*MS(10% sample): NO3, TKN, NH3

DCN#89933

SMARTCHEM RUN LOG

Position	Analyte	1	2	3
3-3	02-22-14			
3-4	DUP ↓			
3-5	-17			
3-6	MS ↓			
3-7	IRRLCS #1			
3-8				
3-9				
3-10				
3-11				
3-12				
3-13				
3-14				
3-15				

Position	Analyte	1	2	3
3-16				
3-17				
3-18				
3-19				
3-20				
3-21				
3-22				
3-23				
3-24				
3-25				
3-26				
3-27				
3-28				

- [ ] Chloride — EPA 325.2/SM 4500-Cl⁻ E
- [ ] Sulfate — EPA 375.4/SM 426C(15th)
- [ ] Alkalinity — EPA 310.2
- [ ] Nitrate-Nitrite — EPA 353.2/SM 4500-NO3 F
- [x] Ammonia — EPA 350.1/SM 4500-NH3 B
- [ ] TKN — EPA 351.2
- [ ] Phos — EPA 365.4

Analyte	NH3		Reagents
SOP & Revision	K3501 R.17		RGT 16724
Curve Stock (SC made)	~~STD 49724~~ STD49625		RGT 16833
Curve ID (user made)	97K/2/14		RGT 16835
ICV	~~STD 49628~~ STD49784		
CCV	STD 49630		
LCS	See		
MS	Dilution log		

Comments: _____

Analyst: _____ Date: 2/14/12

DCN#89933

Set 1

AMMONIA DISTILLATION LOG

SOP K3501 Revision # 17

LCS: Std 49779
10(100)/100=10

SPIKE: Std 49779
10(100)/100=10

WATER (mg/L)

DAILY DIL. 10(10)/50=2.0

DAILY DIL. 5(10)/50=1.0

SOIL (mg/Kg)

☑ easy-dist method

☐ macro method

RGT 17053
RGT 16894

SAMPLE	VOLUME DISTILLED (mL)	CHLORINE PRESENT?	pH ADJUSTED 9.5 ± 0.2	COMMENTS
BLANK	50	ND	yes	
LCS(2.0)	50	ND	yes	
02-242- 02	50	ND	yes	Elanco - City Lift DAPW 2710
" 03	50	ND	yes	Elanco- City Lift DAPW 2714
02-243-01	50	yes	yes	Valley - P Final - Eff - Grab
" 02	1	ND	yes	Valley - DAF 1
" 03	10	ND	yes	Valley - P002 - Wastewater
" 04	10	ND	yes	Valley P wastewater spray
" 07	50	ND	yes	AGY - Final Eff - Comp
" 08	50	no	yes	AGY - Holding tank
02-266-01	50	ND	yes	
02-179-01 Reg	50	no	yes	
" 02 ms (1.0)	50	no	yes	
" 03 msd (1.0)	50	ND	yes	
" 04	50	ND	yes	
" 05 Reg	50	no	yes	
" 06 ms (1.0)	50	no	yes	
" 07 msd (1.0)	50	no	yes	
02-186-01	50	yes	yes	
02-194-01	50	ND	yes	
02-220-01	50	ND	yes	
" 02	50	ND	yes	
DUP 02-194-01	50	ND	yes	
~~MS~~ 02-220-03	50	ND	yes	
02-246-01	50	ND	yes	

Analyst: Tammy Morris Date/Time: 2/13/12 @800

*MS required on 10% of samples (EPA 350.1)
*MS/MS required on each set of 20 samples (SM4500)

02-246-02	50	ND	yes	
" 03	50	ND	yes	

SH2

AMMONIA DISTILLATION LOG

SOP K3501 Revision # 17

LCS: Std 49779
10(100)/100 = 10
DAILY DIL. 10(10)/50 = 2.0

SPIKE: Std 49779
10(100)/100 = 10
DAILY DIL. 5(10)/50 = 1.0

WATER (mg/L)
SOIL (mg/Kg)

☑ easy-dist method ☐ macro method

RGT 17053
RGT 16894

SAMPLE	VOLUME DISTILLED (mL)	CHLORINE PRESENT?	pH ADJUSTED 9.5 ± 0.2	COMMENTS
BLANK	50	NO	yes	
LCS(2.0)	50	NO	yes	
02-179-08 Ry	50	NO	yes	
" 09 ms(1.0)	50	NO	yes	
" 10 msd(1.0)	50	NO	yes	
" 11	50	NO	yes	
" 12	50	NO	yes	
" 13	50	NO	yes	
" 14	50	NO	yes	
02-221-01	50	NO	yes	
" 02	50	NO	yes	
" 03	50	yes	yes	
" 04	50	NO	yes	
" 05	50	NO	yes	
" 06	50	NO	yes	
" 07	50	NO	yes	
" 08	50	NO	yes	
" 09	50	NO	yes	
" 10	50	NO	yes	
" 11	50	NO	yes	
" 12	50	NO	yes	
" 13	50	NO	yes	
DUP 02-221-16	50	NO	yes	
~~MS~~ 02-221-16	50	NO	yes	
02-221-17	50	NO	yes	

Analyst: Jammy Moore Date/Time: 2/13/12 @ 1445

*MS required on 10% of samples (EPA 350.1)
*MS/MS required on each set of 20 samples (SM4500)

02-221-17 ms (1.0)	50	NO.	yes	

MICROBAC (OVD)

SMARTCHEM REPORT (VER3.0.53)

NH3, TKN, NO3NO2 (MG/L N)

ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WNH3 - EPA 350.1/SM4500-NH3 AMMONIA

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
DIL-1	RBL	0.000	0.1256	0.00	R	8:41:06 AM
DIL-1	RBL	0.000	0.1236	0.00	R	8:41:24 AM
DIL-1	RBL	0.000	0.1226	0.00	R	8:42:54 AM
DIL-1	Std-1	0.000	0.0003	0.00		8:43:12 AM
SR5-1	Std-2	0.030	0.0080	0.00		8:44:42 AM
SR5-2	Std-3	0.094	0.0187	0.00		8:45:00 AM
SR5-3	Std-4	0.600	0.1113	0.00		8:46:30 AM
SR5-4	Std-5	1.050	0.2006	0.00		8:46:48 AM
SR5-5	Std-6	2.100	0.4116	0.00		8:48:18 AM
ST-1	Std-7	3.000	0.5847	0.00		8:48:36 AM
1	ICV 1.5	1.431	0.2784	0.00		8:50:06 AM
2	WG389495-01 BLANK	-0.003	-0.0014	0.00	INV,><,LL	8:50:24 AM
3	WG389495-02 LCS2	1.600	0.3113	0.00		8:51:54 AM
4	L12020242-02	19.523	3.8090	0.00	EPL,><,LH	8:52:12 AM
5	L12020242-03	19.551	3.8145	0.00	EPL,><,LH	8:53:42 AM
6	L12020243-01	6.545	1.2763	0.00	><,LH	8:54:00 AM
7	L12020243-02 (50)	6.899	1.3455	0.00	><,LH	8:55:30 AM
8	L12020243-03 (5)	1.288	0.2505	0.00		8:55:48 AM
9	L12020243-04 (5)	1.612	0.3136	0.00		8:57:18 AM
10	L12020243-07	2.737	0.5332	0.00		8:57:36 AM
ST-2	CCV (1.5 mg/L)	1.449	0.2819	96.61		8:59:06 AM
ST-3	CCB (0 mg/L)	0.027	0.0043	0.00		8:59:24 AM
11	L12020243-08	2.203	0.4291	0.00		9:00:54 AM
12	L12020266-01	0.080	0.0147	0.00		9:01:12 AM
13	L12020179-01	0.057	0.0102	0.00		9:02:42 AM
14	L12020179-02 MS	0.960	0.1865	0.00		9:03:00 AM
15	L12020179-03 SD	0.880	0.1709	0.00		9:04:31 AM
16	L12020179-04	0.996	0.1934	0.00		9:04:48 AM
17	L12020179-05	0.095	0.0177	0.00		9:06:19 AM
18	L12020179-06 MS	0.926	0.1799	0.00		9:06:37 AM
19	L12020179-07 SD	0.984	0.1912	0.00		9:08:07 AM
20	L12020186-01	0.171	0.0324	0.00		9:08:24 AM
ST-2	CCV (1.5 mg/L)	1.400	0.2724	93.36		9:09:55 AM
ST-3	CCB (0 mg/L)	0.002	-0.0005	0.00	INV,><	9:10:13 AM
21	L12020194-0	0.079	0.0145	0.00		9:11:43 AM
22	L12020220-01	0.070	0.0127	0.00		9:12:01 AM

Report Date :02/14/2012 **Run Date :02/14/2012** **Operator : WESTCO** **Plan # :20120214001**

Plan Description : NH3-A-JBK/02/14/2012

MICROBAC (OVD)

SMARTCHEM REPORT (VER3.0.53)

NH3, TKN, NO3NO2 (MG/L N)

ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WNH3 - EPA 350.1/SM4500-NH3 AMMONIA

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
23	L12020220-02	0.135	0.0255	0.00		9:13:31 AM
24	L12020220-03	0.019	0.0028	0.00		9:13:49 AM
25	L12020246-01	0.046	0.0080	0.00		9:15:19 AM
26	L12020246-02	0.047	0.0083	0.00		9:15:37 AM
27	L12020246-03	0.130	0.0245	0.00		9:17:07 AM
28	WG389495-04 DUP	0.088	0.0163	0.00		9:17:25 AM
29	WG389496-01 BLANK	-0.007	-0.0022	0.00	INV,><,LL	9:18:55 AM
30	WG389496-02 LCS2	1.801	0.3505	0.00		9:19:13 AM
ST-2	CCV (1.5 mg/L)	1.453	0.2826	96.84		9:20:43 AM
ST-3	CCB (0 mg/L)	-0.012	-0.0032	0.00	INV,><,LL	9:21:01 AM
31	L12020179-08	0.060	0.0108	0.00		9:22:31 AM
32	L12020179-09 MS	0.947	0.1840	0.00		9:22:49 AM
33	L12020179-10 SD	1.063	0.2065	0.00		9:24:19 AM
34	L12020179-11	0.607	0.1176	0.00		9:24:37 AM
35	L12020179-12	0.458	0.0884	0.00		9:26:07 AM
36	L12020179-13	0.060	0.0109	0.00		9:26:25 AM
37	L12020179-14	2.211	0.4305	0.00		9:27:55 AM
38	L12020221-01	0.073	0.0133	0.00		9:28:13 AM
39	L12020221-02	0.168	0.0318	0.00		9:29:43 AM
40	L12020221-03	0.155	0.0293	0.00		9:30:01 AM
ST-2	CCV (1.5 mg/L)	1.466	0.2852	97.73		9:31:31 AM
ST-3	CCB (0 mg/L)	0.018	0.0027	0.00		9:31:49 AM
41	L12020221-04	0.254	0.0487	0.00		9:33:19 AM
42	L12020221-05	0.103	0.0192	0.00		9:33:37 AM
43	L12020221-06	0.138	0.0260	0.00		9:35:07 AM
44	L12020221-07	0.114	0.0213	0.00		9:35:25 AM
45	L12020221-08	0.129	0.0243	0.00		9:36:55 AM
46	L12020221-09	0.119	0.0223	0.00		9:37:13 AM
47	L12020221-10	1.219	0.2370	0.00		9:38:43 AM
48	L12020221-11	2.362	0.4600	0.00		9:39:01 AM
49	L12020221-12	0.726	0.1408	0.00		9:40:31 AM
50	L12020221-13	0.184	0.0351	0.00		9:40:49 AM
ST-2	CCV (1.5 mg/L)	1.482	0.2883	98.79		9:42:19 AM
ST-3	CCB (0 mg/L)	0.009	0.0009	0.00		9:42:37 AM
51	L12020221-16	0.208	0.0396	0.00		9:44:07 AM
52	WG389496-05 DUP	0.220	0.0420	0.00		9:44:25 AM

Report Date :02/14/2012 **Run Date :02/14/2012** **Operator : WESTCO** **Plan # :20120214001**

Plan Description : NH3-A-JBK/02/14/2012

MICROBAC (OVD)

SMARTCHEM REPORT (VER3.0.53)

NH3, TKN, NO3NO2 (MG/L N)

ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WNH3 - EPA 350.1/SM4500-NH3 AMMONIA

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
53	L12020221-17	4.120	0.8032	0.00	><,LH	9:45:56 AM
54	WG389496-06 MS	5.339	1.0411	0.00	><,LH	9:46:14 AM
55	ID 55	1.763	0.3432	0.00		9:47:44 AM
ST-2	CCV (1.5 mg/L)	1.485	0.2889	99.00		9:48:02 AM
4-[1/2]	L12020242-02	8.331	0.8120	0.00	><,LH	10:00:12 AM
5-[1/2]	L12020242-03	6.826	0.6652	0.00	><,LH	10:02:00 AM
6-[1/2]	L12020243-01	6.687	0.6516	0.00	><,LH	10:03:48 AM
7-[1/2]	L12020243-02 (50)	6.922	0.6745	0.00	><,LH	10:05:36 AM
53-[1/2]	L12020221-17	4.257	0.4145	0.00	LH	10:07:24 AM
ST-2	CCV (1.5 mg/L)	1.491	0.2901	99.41		10:07:24 AM
54-[1/2]	WG389496-06 MS	5.294	0.5157	0.00	LH	10:09:30 AM
ST-2	CCV (1.5 mg/L)	1.545	0.3007	103.03		10:09:30 AM
ST-3	CCB (0 mg/L)	0.025	0.0039	0.00		10:11:00 AM
4-[1/5]	L12020242-02	8.381	0.3262	0.00	LH	10:23:10 AM
5-[1/5]	L12020242-03	7.000	0.2723	0.00	LH	10:24:58 AM
6-[1/5]	L12020243-01	6.748	0.2625	0.00	LH	10:26:47 AM
7-[1/5]	L12020243-02 (50)	7.020	0.2731	0.00	LH	10:28:35 AM
ST-2	CCV (1.5 mg/L)	1.513	0.2944	100.88		10:28:35 AM
ST-3	CCB (0 mg/L)	-0.001	-0.0011	0.00	INV,><,LL	10:30:05 AM

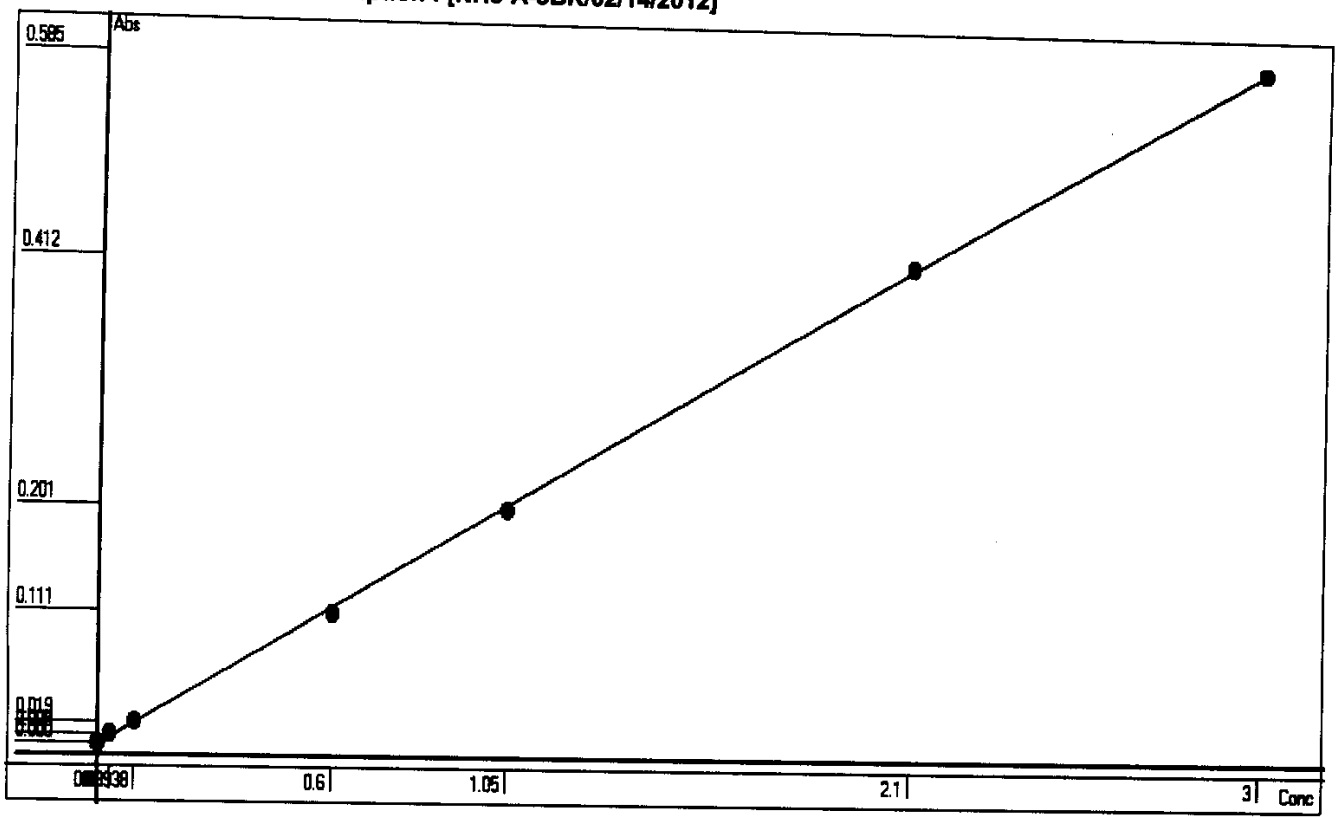
Report Date :02/14/2012 **Run Date :02/14/2012** **Operator : WESTCO** **Plan # :20120214001**

Plan Description : NH3-A-JBK/02/14/2012

Calibrant Report - WNH3 -

Calib Lot #:010104 Exp Date:6/17/2020 User:Westco Scientific

Plan # : 20120214001 Description : [NH3-A-JBK/02/14/2012]



Point	OD	Conc	Recalc Conc	% Error
1	0.0003	0	0.0061	0.61
2	0.0080	0.03	0.0456	52.00
3	0.0187	0.0938	0.1004	7.04
4	0.1113	0.6	0.5749	-4.18
5	0.2006	1.05	1.0325	-1.67
6	0.4116	2.1	2.1138	0.66
7	0.5847	3	3.0008	0.03

Conc= +5.1243*Abso +0.0046 R^2=0.9998

RBL
0.1231
0

Report Date 2/14/2012 Run Date 2/14/2012

MICROBAC (OVD)

SMARTCHEM REPORT (VER3.0.53)

NH3, TKN, NO3NO2 (MG/L N)

ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WNH3 - EPA 350.1/SM4500-NH3 AMMONIA

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
DIL-1	RBL	0.000	0.1277	0.00	R	11:05:32 AM
DIL-1	RBL	0.000	0.1217	0.00	R	11:05:50 AM
DIL-1	RBL	0.000	0.1203	0.00	R	11:07:20 AM
DIL-1	Std-1	0.000	0.0003	0.00		11:07:38 AM
SR5-1	Std-2	0.030	0.0061	0.00		11:09:09 AM
SR5-2	Std-3	0.094	0.0192	0.00		11:09:26 AM
SR5-3	Std-4	0.600	0.1177	0.00		11:10:57 AM
SR5-4	Std-5	1.050	0.2071	0.00		11:11:15 AM
SR5-5	Std-6	2.100	0.4134	0.00		11:12:45 AM
ST-1	Std-7	3.000	0.6092	0.00		11:13:03 AM
1	ICV 1.5	1.449	0.2902	0.00		11:14:33 AM
2	WG389495-01 BLANK	-0.002	-0.0021	0.00	INV,><,LL	11:14:51 AM
3	WG389495-02 LCS2	1.887	0.3784	0.00		11:16:21 AM
4	L12020242-02 (20)	1.904	0.3818	0.00		11:16:39 AM
5	L12020242-03 (20)	1.578	0.3162	0.00		11:18:09 AM
6	L12020243-01	6.516 X	1.3109	0.00	><,LH	11:18:27 AM
7	L12020243-02 (100)	3.039 X	0.6106	0.00	><,LH	11:19:57 AM
8	L12020243-03 (5)	1.247	0.2496	0.00		11:20:15 AM
9	L12020243-04 (5)	1.615	0.3237	0.00		11:21:45 AM
10	L12020243-07	2.740	0.5503	0.00		11:22:03 AM
ST-2	CCV (1.5 mg/L)	1.460	0.2924	97.32		11:23:33 AM
ST-3	CCB (0 mg/L)	0.009	0.0002	0.00	><	11:23:51 AM
11	L12020243-08	2.212	0.4439	0.00		11:25:21 AM
12	L12020266-01	0.134	0.0254	0.00		11:25:39 AM
13	L12020179-01	0.070	0.0124	0.00		11:27:09 AM
14	L12020179-02 MS	0.976	0.1950	0.00		11:27:27 AM
15	L12020179-03 SD	0.896	0.1789	0.00		11:28:57 AM
16	L12020179-04	1.007	0.2012	0.00		11:29:15 AM
17	L12020179-05	0.104	0.0192	0.00		11:30:45 AM
18	L12020179-06 MS	0.935	0.1866	0.00		11:31:03 AM
19	L12020179-07 SD	0.968	0.1934	0.00		11:32:33 AM
20	L12020186-01	0.173	0.0331	0.00		11:32:51 AM

Report Date :02/14/2012 **Run Date :2/14/2012** **Operator : WESTCO** **Plan # :20120214002**

Plan Description : NH3-B-JBK/02/14/2012

MICROBAC (OVD)

SMARTCHEM REPORT (VER3.0.53)

NH3, TKN, NO3NO2 (MG/L N)

ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WNH3 - EPA 350.1/SM4500-NH3 AMMONIA

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
ST-2	CCV (1.5 mg/L)	1.488	0.2980	99.17		11:34:21 AM
ST-3	CCB (0 mg/L)	0.034	0.0052	0.00		11:34:39 AM
21	L12020194-01	0.091	0.0166	0.00		11:36:09 AM
22	L12020220-01	0.066	0.0117	0.00		11:36:27 AM
23	L12020220-02	0.139	0.0264	0.00		11:37:57 AM
24	L12020220-03	0.039	0.0062	0.00		11:38:15 AM
25	L12020246-01	0.053	0.0089	0.00		11:39:45 AM
26	L12020246-02	0.066	0.0116	0.00		11:40:03 AM
27	L12020246-03	0.110	0.0204	0.00		11:41:33 AM
28	WG389495-04 DUP	0.089	0.0163	0.00		11:41:51 AM
29	ID 29	1.946	0.3903	0.00		11:43:21 AM
30	ID 30	1.912	0.3835	0.00		11:43:39 AM
ST-2	CCV (1.5 mg/L)	1.510	0.3025	100.66		11:45:09 AM
ST-3	CCB (0 mg/L)	0.035	0.0053	0.00		11:45:27 AM
6-[1/2]	L12020243-01	6.638 X	0.6669	0.00	><,LH	11:57:38 AM
7-[1/2]	L12020243-02 (100)	3.187	0.3193	0.00	LH	11:59:26 AM
ST-2	CCV (1.5 mg/L)	1.580	0.3166	105.33		11:59:26 AM
ST-3	CCB (0 mg/L)	0.049	0.0081	0.00		12:00:56 PM
6-[1/5]	L12020243-01	6.738	0.2698	0.00	LH	12:13:06 PM
ST-2	CCV (1.5 mg/L)	1.547	0.3100	103.15		12:13:06 PM
ST-3	CCB (0 mg/L)	0.040	0.0063	0.00		12:14:36 PM

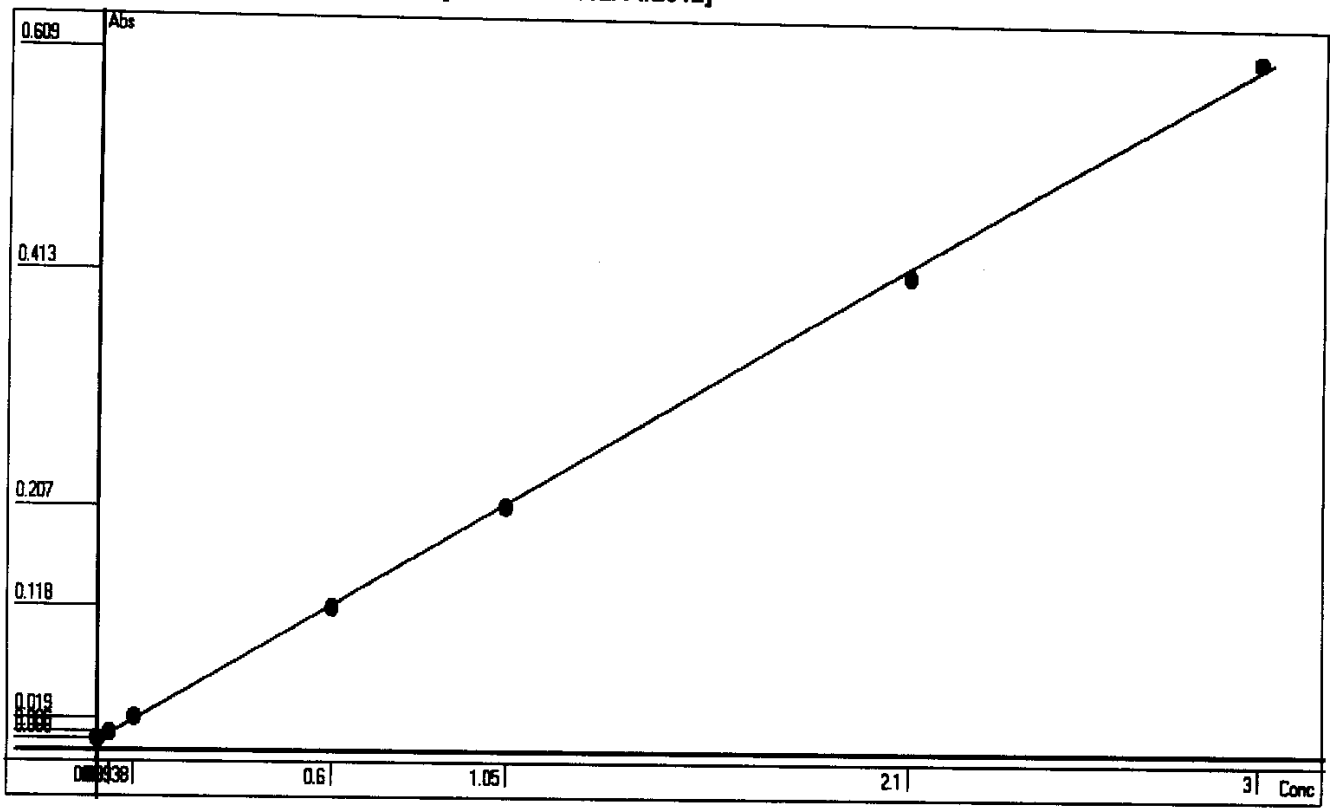
Report Date :02/14/2012 **Run Date :2/14/2012** **Operator : WESTCO** **Plan # :20120214002**

Plan Description : NH3-B-JBK/02/14/2012

Calibrant Report - WNH3 -

Calib Lot #:010104 Exp Date:6/17/2020 User:Westco Scientific

Plan # : 20120214002 Description : [NH3-B-JBK/02/14/2012]



Point	OD	Conc	Recalc Conc	% Error
1	0.0003	0	0.0098	0.98
2	0.0061	0.03	0.0386	28.67
3	0.0192	0.0938	0.1036	10.45
4	0.1177	0.6	0.5926	-1.23
5	0.2071	1.05	1.0364	-1.30
6	0.4134	2.1	2.0605	-1.88
7	0.6092	3	3.0325	1.08

Conc= +4.9642*Abso +0.0083 R^2=0.9996

RBL
0.121
0

Report Date 2/14/2012 Run Date 2/14/2012

2.2.7 Nitrate Data

2.2.7.1 Summary Data

Login Number: L12020220
Department: Conventionals
Analyst: Jeremy Kinney

METHOD

Analysis EPA 353.2/SM4500-NO3 F (Nitrate)

HOLDING TIMES

Sample Analysis: Nitrate is reported as the difference of nitrate-nitrite (28 day hold) and nitrite (48 hour hold). Both analysis were analyzed within the appropriate hold time. The nitrate hold time is within compliance.

PREPARATION

Sample preparation proceeded normally.

BATCH QA/QC

Method Blank: All acceptance criteria were met.

Laboratory Control Sample: All acceptance criteria were met.

Matrix Spikes: All acceptance criteria were met.

Duplicates: All acceptance criteria were met.

SAMPLES

Samples: All acceptance criteria were met.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Microbac Laboratories Inc., both technically and for completeness, except for the conditions noted above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

Narrative ID: 42332
Approved By: Deanna Hesson

Microbac

Lab Report #: L12020220
Lab Project #: 3005.011
Project Name: White Sands MR
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L12020220-01	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	MPL25-0212-1	**Prep Method:**	353.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	353.2	**Cal Date:**	02/14/2012 11:13
Workgroup #:	WG389640	**Analyst:**	JBK	**Run Date:**	02/15/2012 11:13
Collect Date:	02/06/2012 15:05	**Dilution:**	8	**File ID:**	SC12021615495801
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Nitrate-Nitrite (as N)		8.57		0.400	0.200

Sample #:	L12020220-02	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	SMW1-0212-1	**Prep Method:**	353.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	353.2	**Cal Date:**	02/14/2012 11:13
Workgroup #:	WG389640	**Analyst:**	JBK	**Run Date:**	02/15/2012 11:13
Collect Date:	02/07/2012 09:50	**Dilution:**	4	**File ID:**	SC12021615500501
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Nitrate-Nitrite (as N)		5.12		0.200	0.100

Sample #:	L12020220-03	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	SMW4-0212-1	**Prep Method:**	353.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	353.2	**Cal Date:**	02/14/2012 11:13
Workgroup #:	WG389640	**Analyst:**	JBK	**Run Date:**	02/15/2012 11:13
Collect Date:	02/07/2012 12:05	**Dilution:**	4	**File ID:**	SC12021615501401
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Nitrate-Nitrite (as N)		2.82		0.200	0.100

2.2.7.2 QC Summary Data

Example Calculations for Visible Spectrophotometric Methods

Linear Calibration Model

Step 1 - Retrieve Curve Data from ICAL

m = slope of the linear equation
b = intercept from the linear equation
y = instrument response as absorbance or OD
x = concentration of analyte (mg/L)
y = mx + b

Step 2: Calculate the instrument concentration, x

Where:

x = (y - b)/m

Step 3: Solve for analyte concentration in sample, Cx

Cx = (x) (D)

Example Calculation (LCS):

Value of m from plot:	7.809	
Value of b from plot:	0.0004135	
Absorbance of unknown from quantitation report (y):	0.31	
Calculated concentration (x):	0.03964483	
Dilution factor (D):	1.00	
Concentration of analyte in sample, Cy:	0.0396	mg/L

SmartChem Autoanalyzer - Quadratic Calibration for Chloride and Sulfate

Step 1 - Retrieve Curve Data from Smartchem ICAL

A, B, C = constants from the ICAL quadratic regression

x = instrument response as absorbance or OD

y = concentration of analyte (mg/L)

Step 2: Calculate the instrument concentration, y

Where:

y = Ax^2 + Bx + C

Step 3: Solve for analyte concentration in sample, Cy

Cy = (y) (D)

Example Calculation (LCS):

Value of A from plot:	101.2796	
Value of B from plot:	318.9056	
Value of C from plot:	-2.2712	
Absorbance of unknown from quantitation report (x):	0.1583	
Calculated concentration (y):	50.7495108	
Dilution factor (D):	1.00	
Concentration of analyte in sample, Cy:	50.75	mg/L

Microbac Laboratories Inc.

Data Checklist

Date: 15-FEB-2012
Analyst: JBK
Analyst: NA
Method: NO3
Instrument: SC
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG389640

Calibration/Linearity	02/15/2012
Second Source Check	X
ICV/CCV (std)	X
ICB/CCB	X
Blank	X
LCS/LCS Dup	X
MS/MSD	X
Duplicate	X
Upload Results	X
Client Forms	X
QC Violation Sheet	X
Case Narratives	
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	JBK
Secondary Reviewer	DIH
Comments	

Primary Reviewer:
16-FEB-2012

Secondary Reviewer:
17-FEB-2012

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-17-2012 13:08:32

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 353.2 AAB#: WG389640

Login Number: L12020220

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
MPL25-0212-1	01	02/06/12							28		02/15/12	8.8	28	
SMW1-0212-1	02	02/07/12							28		02/15/12	8.1	28	
SMW4-0212-1	03	02/07/12							28		02/15/12	8	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 2309854
Report generated 02/16/2012 16:11

Microbac Laboratories Inc.

METHOD BLANK SUMMARY

Login Number: L12020220
Blank File ID: SC12021615482301
Prep Date: 02/15/12 11:13
Analyzed Date: 02/15/12 11:13
Analyst: JBK

Work Group: WG389640
Blank Sample ID: WG389640-01
Instrument ID: SMARTCHEM
Method: 353.2

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
DUP	WG389640-05	SC12021615485801	02/15/12 11:13	
SMW1-0212-1	L12020220-02	SC12021615500501	02/15/12 11:13	
LCS2	WG389640-03	SC12021615483401	02/15/12 11:13	
LCS	WG389640-02	SC12021615482901	02/15/12 11:13	
SMW4-0212-1	L12020220-03	SC12021615501401	02/15/12 11:13	
MPL25-0212-1	L12020220-01	SC12021615495801	02/15/12 11:13	

Report Name: BLANK_SUMMARY
PDF File ID: 2309855
Report generated 02/16/2012 16:11

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L12020220 Prep Date: 02/15/12 11:13 Sample ID: WG389640-01
Instrument ID: SMARTCHEM Run Date: 02/15/12 11:13 Prep Method: 353.2
File ID: SC12021615482301 Analyst: JBK Method: 353.2
Workgroup (AAB#): WG389640 Matrix: Water Units: mg/L
Contract #: Cal ID: SMARTC-14-FEB-12

Analytes	LOD	LOQ	Concentration	Dilution	Qualifier
Nitrate-Nitrite (as N)	0.0250	0.0500	0.0250	1	U

LOD Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 2309856
16-FEB-2012 16:11

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L12020220 Analyst: JBK Prep Method: 353.2
Instrument ID: SMARTCHEM Matrix: Water Method: 353.2
Workgroup (AAB#): WG389640 Units: mg/L
QC Key: DOD4 Lot #: STD49945

Sample ID: WG389640-02 LCS File ID: SC12021615482901 Run Date: 02/15/2012 11:13
Sample ID: WG389640-03 LCS2 File ID: SC12021615483401 Run Date: 02/15/2012 11:13

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Nitrate-Nitrite (as N)	1.00	0.969	96.9	1.00	0.974	97.4	0.515	90 - 110	15	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 2309857
Report generated: 02/16/2012 16:11

2.2.7.3 Raw Data

SMARTCHEM RUN LOG

Daily Check

- [x] Lamp On
- [x] Probe Rinse Full
- [x] DI Water > ½ Full
- [x] Wash Solution > ½ Full
- [x] NO3 Reagent bottle connected / purged
- [x] NO3 pH adj to pH 5-9
- [x] WBL Run
- [x] Reagents Full
- [x] Dilution H_2O Full
- [x] Waste Container Check

Syringe filter lot # 137580

1) **Workgroup** _____
Plan # 10120215001
2) **Workgroup** _____
Plan # _____
3) **Workgroup** _____
Plan # _____

Analyte		1	2	3
NO3		Dilution		
SC Prepared Curve				
Position				
1-1	ICV 1.5			
1-2	Blank			
1-3	LCS 1			
1-4	LCS Dup			
1-5	NO2 1			
1-6	02-281-01	1/75		
1-7	02-299-02	1/4		
1-8	02-402-01			
1-9	02-220-01			
1-10	-02			
1-11	-03			
1-12	02-246-01	1/5 wrong sx?	color?	
1-13	-02	↓		↓
1-14	-03			
1-15	02-399-01			
1-16	-03	auto 1/2		
1-17	-05	1/2		
1-18	-07	1/2		
1-19	-09	1/2		
1-20	-11	1/2		
1-21	Dup	↓		
1-22	ms			
2-1	ms 399-09	1/2		
2-2				
2-3	RR 246-01	1/5		

Position	Analyte	1	2	3
2-4				
2-5				
2-6				
2-7				
2-8				
2-9				
2-10				
2-11				
2-12				
2-13				
2-14				
2-15				
2-16				
2-17				
2-18				
2-19				
2-20				
2-21				
2-22				
2-23				
2-24				
2-25				
2-26				
3-1				
3-2				

NOTES:
* Run NO2 std on NO3 runs
* LCS/LCS Dup all parameters
*MS(10% sample): NO3, TKN, NH3

DCN#89950

SMARTCHEM RUN LOG

Analyte		1	2	3
Position				
3-3				
3-4				
3-5				
3-6				
3-7				
3-8				
3-9				
3-10				
3-11				
3-12				
3-13				
3-14				
3-15				

Analyte		1	2	3
Position				
3-16				
3-17				
3-18				
3-19				
3-20				
3-21				
3-22				
3-23				
3-24				
3-25				
3-26				
3-27				
3-28				

- ☐ Chloride — EPA 325.2/SM 4500-Cl⁻ E
- ☐ Sulfate — EPA 375.4/SM 426C(15th)
- ☐ Alkalinity — EPA 310.2
- ☐ Nitrate-Nitrite — EPA 353.2/SM 4500-NO3 F
- ☐ Ammonia — EPA 350.1/SM 4500-NH3 B
- ☐ TKN — EPA 351.2
- ☐ Phos — EPA 365.4

Analyte	NO3		Reagents
SOP & Revision	K3532R.17		RGT1662R
Curve Stock (SC made)	STD49809		RGT1701
Curve ID (user made) NO2:	STD49488		
ICV	STD49811		
CCV	STD49810		
LCS	STD49945		
MS	STD48249		
	Dilution 02/20/25 = 0.5		

Comments: _____

Analyst: _____ Date: 2/15/12

DCN#89950

MICROBAC (OVD)

SMARTCHEM REPORT (VER3.0.53)

NH3, TKN, NO3NO2 (MG/L N)

ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WNO3 - EPA 353.2 Nitrate-Nitrite

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag		Analysis Time
DIL-1	RBL	0.000	0.0153	0.00			11:13:09 AM
DIL-1	RBL	0.000	0.0148	0.00			11:14:21 AM
DIL-1	RBL	0.000	0.0124	0.00			11:15:33 AM
DIL-1	RBL	0.000	0.0119	0.00			11:16:45 AM
DIL-1	Std-1	0.000	-0.0013	0.00	INV		11:17:57 AM
SR5-1	Std-2	0.040	0.0144	0.00			11:19:09 AM
SR5-2	Std-3	0.100	0.0369	0.00			11:20:21 AM
SR5-3	Std-4	0.500	0.1786	0.00			11:21:33 AM
SR5-4	Std-5	1.000	0.3637	0.00			11:22:45 AM
ST-1	Std-6	2.000	0.7284	0.00			11:23:57 AM
1	ICV 1.5	1.489	0.5417	0.00			11:25:10 AM
2	WG389640-01 BLANK	0.007	0.0017	0.00			11:26:22 AM
3	WG389640-02 LCS1	0.969	0.3520	0.00			11:27:34 AM
4	WG389640-02 LCSDUP	0.974	0.3540	0.00			11:28:46 AM
5	NO2 1	0.932	0.3388	0.00			11:29:58 AM
6	L12020281-01 (75)	0.944	0.3432	0.00		0.0157	11:31:10 AM
7	L12020299-02 (4)	1.600	0.5820	0.00		0.1677	11:32:22 AM
8	L12020402-01	4.669 X	1.7009	0.00	><,LH	0.633 X	11:33:34 AM
9	L12020220-01	7.914 X	2.8836	0.00	><,LH		11:34:46 AM
10	L12020220-02	4.783 X	1.7424	0.00	><,LH		11:35:58 AM
ST-2	CCV (1 mg/L)	0.905	0.3288	90.49			11:37:10 AM
ST-3	CCB (0 mg/L)	-0.003	-0.0020	0.00	INV,><,LL		11:38:22 AM
11	L12020220-03	2.614 X	0.9518	0.00	><,LH		11:39:34 AM
12	L12020246-01 (5)	2.975 X	1.0832	0.00	><,LH		11:40:46 AM
13	L12020246-02 (5)	0.010	0.0027	0.00			11:41:58 AM
14	L12020246-03 (5)	0.015	0.0045	0.00			11:43:10 AM
15	L12020399-01	0.008	0.0018	0.00			11:44:22 AM
16	L12020399-03	10.882 X	3.9653	0.00	EPL,><,LH		11:45:34 AM
17	L12020399-05	9.374 X	3.4157	0.00	EPL,><,LH		11:46:46 AM
18	L12020399-07	8.945 X	3.2594	0.00	><,LH		11:47:58 AM
19	L12020399-09	9.290 X	3.3851	0.00	><,LH		11:49:10 AM
20	L12020399-11	9.007 X	3.2820	0.00	EPL,><,LH		11:50:22 AM

Report Date :02/15/2012 **Run Date :2/15/2012** **Operator : WESTCO** **Plan # :20120215001**

Plan Description : NO3-A-JBK/02/15/2012

MICROBAC (OVD)

SMARTCHEM REPORT (VER3.0.53)

NH3, TKN, NO3NO2 (MG/L N)

ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WNO3 - EPA 353.2 Nitrate-Nitrite

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag		Analysis Time
ST-2	CCV (1 mg/L)	0.964	0.3503	96.38			11:51:34 AM
ST-3	CCB (0 mg/L)	-0.003	-0.0019	0.00	INV,><,LL		11:52:46 AM
21	DUP 399-11	8.732	3.1815	0.00	EPL,><,LH		11:53:58 AM
22	MS 399-11	9.298	3.3880	0.00	EPL,><,LH		11:55:10 AM
23	MS 399-09	9.005	3.2810	0.00	EPL,><,LH		11:56:22 AM
24	ID 24	0.010	0.0025	0.00			11:57:34 AM
25	ID 25 02-241601 (5)	0.010	0.0026	0.00			11:58:46 AM
ST-2	CCV (1 mg/L)	0.984	0.3577	98.41			11:59:58 AM
ST-3	CCB (0 mg/L)	0.010	0.0026	0.00			12:01:10 PM
8-[1/4]	L12020402-01	4.828	0.4389	0.00	LH	0.033	12:10:21 PM
9-[1/4]	L12020220-01	9.090	0.8273	0.00	><,LH		12:12:26 PM
10-[1/4]	L12020220-02	5.119	0.4654	0.00	LH		12:14:33 PM
11-[1/4]	L12020220-03	2.818	0.2558	0.00	LH		12:16:39 PM
12-[1/4]	L12020246-01 (5)	3.242	0.2944	0.00	LH		12:18:45 PM
ST-2	CCV (1 mg/L)	0.966	0.3510	96.58			12:19:38 PM
ST-3	CCB (0 mg/L)	0.004	0.0006	0.00			12:20:51 PM
16-[1/4]	L12020399-03 (2)	11.578	1.0540	0.00	><,LH		12:23:15 PM
17-[1/4]	L12020399-05 (2)	11.455	1.0428	0.00	><,LH		12:25:21 PM
18-[1/4]	L12020399-07 (2)	5.058	0.4599	0.00	LH		12:27:27 PM
19-[1/4]	L12020399-09 (2)	5.472	0.4976	0.00	LH		12:29:33 PM
20-[1/4]	L12020399-11 (2)	5.851	0.5321	0.00	LH		12:31:39 PM
21-[1/4]	DUP 399-11 (2)	5.103	0.4640	0.00	LH		12:33:45 PM
22-[1/4]	MS 399-11 (2)	5.183	0.4713	0.00	LH		12:35:51 PM
23-[1/4]	MS 399-09 (2)	5.735	0.5216	0.00	LH		12:37:57 PM
ST-2	CCV (1 mg/L)	1.017	0.3697	101.71			12:38:51 PM
ST-3	CCB (0 mg/L)	0.007	0.0017	0.00			12:40:03 PM
9-[1/8]	L12020220-01	8.569	0.3894	0.00	LH		12:49:13 PM
16-[1/8]	L12020399-03 (2)	11.668	0.5306	0.00	LH		12:51:19 PM
17-[1/8]	L12020399-05 (2)	11.346	0.5159	0.00	LH		12:53:25 PM
ST-2	CCV (1 mg/L)	0.981	0.3566	98.11			12:54:19 PM
ST-3	CCB (0 mg/L)	0.011	0.0029	0.00			12:55:31 PM

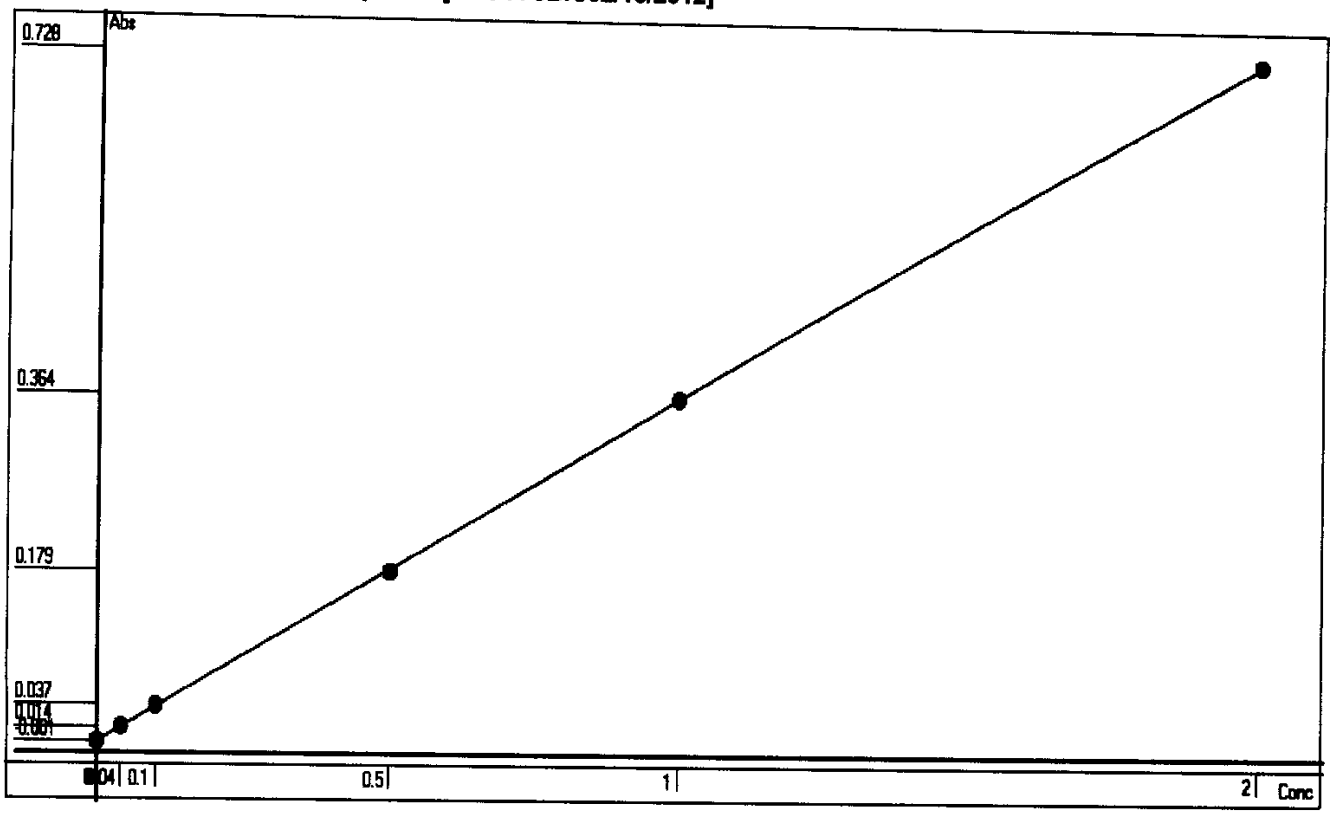
Report Date :02/15/2012 **Run Date :2/15/2012** **Operator : WESTCO** **Plan # :20120215001**

Plan Description : NO3-A-JBK/02/15/2012

Calibrant Report - WNO3 -

Calib Lot #:010104 Exp Date:6/17/2020 User:MICROBAC

Plan # : 20120215001 Description : [NO3-A-JBK/02/15/2012]



Point	OD	Conc	Recalc Conc	% Error
1	-0.0013	0	-0.0009	-0.09
2	0.0144	0.04	0.0422	5.50
3	0.0369	0.1	0.1039	3.90
4	0.1786	0.5	0.4927	-1.46
5	0.3637	1	1.0006	0.06
6	0.7284	2	2.0012	0.06

Conc= +2.7437*Abso +0.0027 R^2=1.0000

RBL
0.0136
0

Report Date 2/15/2012 Run Date 2/15/2012

2.2.8 Orthophosphate Data

2.2.8.1 Summary Data

Login Number: L12020220
Department: Conventionals
Analyst: Holly Reed

METHOD

Analysis EPA 365.2/SM4500-P E (Orthophosphate)

HOLDING TIMES

Sample Analysis: All holding times were met.

PREPARATION

Sample preparation proceeded normally.

BATCH QA/QC

Method Blank: All acceptance criteria were met.

Laboratory Control Sample: All acceptance criteria were met.

Matrix Spikes: All acceptance criteria were met.

Duplicates: All acceptance criteria were met.

SAMPLES

Samples: All acceptance criteria were met.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Microbac Laboratories Inc., both technically and for completeness, except for the conditions noted above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

Narrative ID: 42334
Approved By: Deanna Hesson

Microbac

Lab Report #: L12020220
Lab Project #: 3005.011
Project Name: White Sands MR
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L12020220-01	**PrePrep Method:**	N/A	**Instrument:**	UV-120-1V
Client ID:	MPL25-0212-1	**Prep Method:**	SM4500-P-E-20th	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-P-E-20th	**Cal Date:**	12/21/2011 14:35
Workgroup #:	WG389101	**Analyst:**	HJR	**Run Date:**	02/08/2012 14:30
Collect Date:	02/06/2012 15:05	**Dilution:**	1	**File ID:**	1V.1202081430-05
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Orthophosphate	14265-44-2		U	0.0500	0.0250

U	Analyte was not detected. The concentration is below the reported LOD.

Certificate of Analysis

Sample #:	L12020220-02	**PrePrep Method:**	N/A	**Instrument:**	UV-120-1V
Client ID:	SMW1-0212-1	**Prep Method:**	SM4500-P-E-20th	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-P-E-20th	**Cal Date:**	12/21/2011 14:35
Workgroup #:	WG389101	**Analyst:**	HJR	**Run Date:**	02/08/2012 14:30
Collect Date:	02/07/2012 09:50	**Dilution:**	1	**File ID:**	1V.1202081430-06
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Orthophosphate	14265-44-2	0.0517		0.0500	0.0250

Sample #:	L12020220-03	**PrePrep Method:**	N/A	**Instrument:**	UV-120-1V
Client ID:	SMW4-0212-1	**Prep Method:**	SM4500-P-E-20th	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-P-E-20th	**Cal Date:**	12/21/2011 14:35
Workgroup #:	WG389101	**Analyst:**	HJR	**Run Date:**	02/08/2012 14:30
Collect Date:	02/07/2012 12:05	**Dilution:**	1	**File ID:**	1V.1202081430-07
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Orthophosphate	14265-44-2		U	0.0500	0.0250

U	Analyte was not detected. The concentration is below the reported LOD.

Certificate of Analysis

2.2.8.2 QC Summary Data

Example Calculations for Visible Spectrophotometric Methods

Linear Calibration Model

Step 1 - Retrieve Curve Data from ICAL

m = slope of the linear equation
b = intercept from the linear equation
y = instrument response as absorbance or OD
x = concentration of analyte (mg/L)
y = mx + b

Step 2: Calculate the instrument concentration, x

Where:

x = (y - b)/m

Step 3: Solve for analyte concentration in sample, Cx

Cx = (x) (D)

Example Calculation (LCS):

Value of m from plot:	7.809	
Value of b from plot:	0.0004135	
Absorbance of unknown from quantitation report (y):	0.31	
Calculated concentration (x):	0.03964483	
Dilution factor (D):	1.00	
Concentration of analyte in sample, Cy:	0.0396	mg/L

SmartChem Autoanalyzer - Quadratic Calibration for Chloride and Sulfate

Step 1 - Retrieve Curve Data from Smartchem ICAL

A, B, C = constants from the ICAL quadratic regression

x = instrument response as absorbance or OD

y = concentration of analyte (mg/L)

Step 2: Calculate the instrument concentration, y

Where:

y = Ax^2 + Bx + C

Step 3: Solve for analyte concentration in sample, Cy

Cy = (y) (D)

Example Calculation (LCS):

Value of A from plot:	101.2796	
Value of B from plot:	318.9056	
Value of C from plot:	-2.2712	
Absorbance of unknown from quantitation report (x):	0.1583	
Calculated concentration (y):	50.7495108	
Dilution factor (D):	1.00	
Concentration of analyte in sample, Cy:	50.75	mg/L

Microbac Laboratories Inc.

Data Checklist

Date: 08-FEB-2012
Analyst: HJR
Analyst: NA
Method: PO4
Instrument: UV-120-1V
Curve Workgroup: WG385747
Runlog ID:
Analytical Workgroups: WG389101

Calibration/Linearity	12/21/11
Second Source Check	
ICV/CCV (std)	X
ICB/CCB	
Blank	X
LCS/LCS Dup	X
MS/MSD	X
Duplicate	X
Upload Results	X
Client Forms	X
QC Violation Sheet	
Case Narratives	X
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	HJR
Secondary Reviewer	DIH
Comments	

Primary Reviewer:
16-FEB-2012

Secondary Reviewer:
17-FEB-2012

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-17-2012 13:05:38

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: SM4500-P-E-20th AAB#: WG389101

Login Number: L12020220

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
MPL25-0212-1	01	02/06/12							2		02/08/12	2	2	
SMW1-0212-1	02	02/07/12							2		02/08/12	1.2	2	
SMW4-0212-1	03	02/07/12							2		02/08/12	1.1	2	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 2310631
Report generated 02/17/2012 10:36

Microbac Laboratories Inc.

METHOD BLANK SUMMARY

Login Number: L12020220
Blank File ID: 1V.1202081430-02
Prep Date: 02/08/12 14:30
Analyzed Date: 02/08/12 14:30
Analyst: HJR

Work Group: WG389101
Blank Sample ID: WG389101-01
Instrument ID: UV-120-1V
Method: SM4500-P-E-20th

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG389101-02	1V.1202081430-03	02/08/12 14:30	
LCS2	WG389101-03	1V.1202081430-04	02/08/12 14:30	
MPL25-0212-1	L12020220-01	1V.1202081430-05	02/08/12 14:30	
SMW1-0212-1	L12020220-02	1V.1202081430-06	02/08/12 14:30	
SMW4-0212-1	L12020220-03	1V.1202081430-07	02/08/12 14:30	
DUP	WG389101-05	1V.1202081430-08	02/08/12 14:30	

Report Name: BLANK_SUMMARY
PDF File ID: 2310633
Report generated 02/17/2012 10:36

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L12020220 Prep Date: 02/08/12 14:30 Sample ID: WG389101-01
Instrument ID: UV-120-1V Run Date: 02/08/12 14:30 Prep Method: SM4500-P-E-20th
File ID: 1V.1202081430-02 Analyst: HJR Method: SM4500-P-E-20th
Workgroup (AAB#): WG389101 Matrix: Water Units: mg/L
Contract #: Cal ID: UV-120 - 08-FEB-12

Analytes	LOD	LOQ	Concentration	Dilution	Qualifier
Orthophosphate	0.0250	0.0500	0.0250	1	U

LOD Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 2310635
17-FEB-2012 10:36

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L12020220 Analyst: HJR Prep Method: SM4500-P-E-20th
Instrument ID: UV-120-1V Matrix: Water Method: SM4500-P-E-20th
Workgroup (AAB#): WG389101 Units: mg/L
QC Key: DOD4 Lot #: STD49894

Sample ID: WG389101-02 LCS File ID: 1V.1202081430-03 Run Date: 02/08/2012 14:30
Sample ID: WG389101-03 LCS2 File ID: 1V.1202081430-04 Run Date: 02/08/2012 14:30

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Orthophosphate	1.00	1.00	100	1.00	1.00	100	0.307	90 - 110	20	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 2310636
Report generated: 02/17/2012 10:36

2.2.8.3 Raw Data

W G385 747

Curves

Parameter: PO4

Spectrophotometer: UV-120-IV

Calibration (Curve) standard stock: Std 47333

Concentration: 1000 mg/L

Recipe for preparation of curve standards found in:

SOP: ~~SCL3653~~ 12/2/11 Revision: 13 Page: 9

Second Source Stock: Std 49228 (concentration: 10 mg/L)

Daily Preparation: 5(10)/50

concentration = 1.0 mg/L

Calibration Standards (mg/L)	Volume (mL)	Cell Size (cm)	Wavelength (nm)	Absorbance
1.0	50	1cm	880	0.643
0.7	50	1cm	880	0.475
0.5	50	1cm	880	0.321
0.2	50	1cm	880	0.133
0.1	50	1cm	880	0.068
0.05	50	1cm	880	0.033
0.00	50	1cm	880	0.001
Second Source (1.0)	50	1cm	880	0.647

Analyst: Holly Ferd Date/Time: 12/21/11 1435

DCN#89407

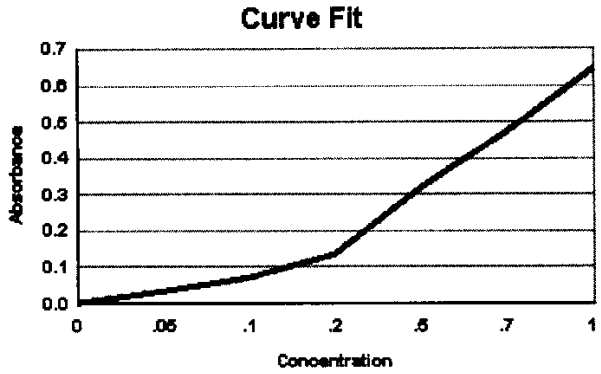
Microbac Laboratories Inc.
INITIAL CALIBRATION

Workgroup: WG385747
Analytical Method: 300
Instrument ID: UV-120-1V

Analyst: HJR
Initial Calibration Date: 12/21/2011

Analyte: ORTHOPHOSPHATE
Number of Points: 7
Slope: 0.649901
Y-Intercept: 0.00239330
Coef. Of Correlation (R^2): 0.998781
Coef. Of Correlation (R): 0.999390

Concentration X	Absorbance Y	X^2	X * Y	Y-Fitted (mX^2+B)
0.00	0.00100	0.00	0.00	0.00239330
0.0500	0.0330	0.00250	0.00165	0.0348883
0.100	0.0680	0.0100	0.00680	0.0673834
0.200	0.133	0.0400	0.0266	0.132373
0.500	0.321	0.250	0.161	0.327344
0.700	0.475	0.490	0.333	0.457324
1.00	0.643	1.00	0.643	0.652294



WG_ICAL_CAL_WET - Modified 03/06/2008
Report generated 12/27/2011 10:18

[redacted]

Microbac Laboratories Inc.
ALTERNATE SOURCE REPORT

Workgroup #: WG385747
File ID: 1V.1112211435-08
CCV ID: WG385747-08
Units: mg/L
Analyte: ORTHOPHOSPHATE

Instrument ID: UV-120-1V
Run Date: 12/21/2011
Run Time: 14:35
Analyst: HJR
Cal ID: UV-120 - 21-DEC-11 14:35:07

Analyte	Expected	Found	RF	%D	Q
Orthophosphate	1	0.992	0.647	0.8	

* Exceeds %D Limit

CCC Calibrtion Check Compounds
SPCC System Performance Check Compounds

WET_WG_SSCV - Modified 03/06/2008
Report generated 12/27/2011 10:19

[redacted]

ORTHOPHOSPHATE

EPA 365.2/SM4500-P E
SOP K3653 Rev 13

Color Reagent Chemicals
RGT 16865
RGT 16566
RGT 17633
COA 15323

CCV: Std 49893
Daily Dilution: 5(5)/50
Daily Dilution: 0.5

LCS: Std 49894
Daily Dilution: 5(10)/50
Daily Dilution: 1.0

Spike: Std 49894
Daily Dilution: 2(10)/50
Daily Dilution: 0.4

Spectrophotometer: UV-120-1V Curve ID: ~~WG 385~~ 747 12/21/11

SAMPLE	VOLUME	pH 7 ± 0.2	DILUTION	ABSORBANCE @ 880 nm
CCV: 0.5 mg/L	50	✓		0.329
BLANK	50	✓		0.002
LCS: 1.0 ppm	50	✓		0.652
LCSDUP: 1.0 ppm	50	✓		0.654
02-0220-01	50	✓		0.010
-02	50	✓		0.036
-03	50	✓		0.015
	50			
	50			
	50			
	50			
	50			
	50			
	50			
	50			
	50			
	50			
	50			
	50			
	50			
	50			
DUP: ~~02-0220-01~~	50	✓		0.010
MS: (0.4) ~~02-0220-01~~	50	✓		0.266
MSD: ( )	50			
CCV: (0.5)	50	✓		0.328

ANALYST: [signature] DATE / TIME: 2/8/12 ~~1420~~ 1430

DCN#89882

Microbac Laboratories Inc.
SAMPLE REPORT

Workgroup: WG389101 **Analyst:** HJR
Analyte: ORTHOPHOSPHATE **Date:** 02/08/2012

Sample ID	I Vol	F Vol	Response	Slope	Y Intercept	Anal. Conc.	Rep. Conc.	Dil	Units
WG389101-01	50	50	0.00200	0.6499	0.002393	-0.00060517	-0.00060517	1	mg/L
WG389101-02	50	50	0.652	0.6499	0.002393	0.99955	0.99955	1	mg/L
WG389101-03	50	50	0.654	0.6499	0.002393	1.0026	1.0026	1	mg/L
L12020220-01	50	50	0.0100	0.6499	0.002393	0.011704	ND	1	mg/L
WG389101-04	50	50	0.0100	0.6499	0.002393	0.011704	0.011704	1	mg/L
L12020220-02	50	50	0.0360	0.6499	0.002393	0.051711	0.051711	1	mg/L
L12020220-03	50	50	0.0150	0.6499	0.002393	0.019398	ND	1	mg/L
WG389101-05	50	50	0.0100	0.6499	0.002393	0.011704	0.011704	1	mg/L
WG389101-06	50	50	0.266	0.6499	0.002393	0.40561	0.40561	1	mg/L

UV_SAMPLE_REPORT - Modified 03/06/2008

Report generated 02/16/2012 10:27

[redacted]

Microbac Laboratories Inc.
CONTINUING CALIBRATION REPORT

Workgroup #: WG389768
File ID: 1V.1202081430-01
CCV ID: WG389768-01
Units: mg/L
Analyte: ORTHOPHOSPHATE

Instrument ID: UV-120-1V
Run Date: 02/08/2012
Run Time: 14:30
Analyst: HJR
Cal ID: UV-120 - 08-FEB-12

Analyte	Expected	Found	RF	%D	Q
Orthophosphate	.5	0.503	0.658	0.6	

* Exceeds %D Limit

CCC Calibrtion Check Compounds
SPCC System Performance Check Compounds

WET_WG_CCV - Modified 03/06/2008

Report generated 02/16/2012 10:26

[redacted]

Microbac Laboratories Inc.
CONTINUING CALIBRATION REPORT

Workgroup #: WG389768
File ID: 1V.1202081430-10
CCV ID: WG389768-02
Units: mg/L
Analyte: ORTHOPHOSPHATE

Instrument ID: UV-120-1V
Run Date: 02/08/2012
Run Time: 14:30
Analyst: HJR
Cal ID: UV-120 - 08-FEB-12

Analyte	Expected	Found	RF	%D	Q
Orthophosphate	.5	0.501	0.656	0.2	

* Exceeds %D Limit

CCC Calibrtion Check Compounds
SPCC System Performance Check Compounds

WET_WG_CCV - Modified 03/06/2008

Report generated 02/16/2012 10:26

[redacted]

2.2.9 Total Dissolved Solids Data

2.2.9.1 Summary Data

Login Number: L12020220
Department: Conventionals
Analyst: Holly Reed

METHOD

Analysis EPA 160.1/SM2540 C(Total Dissolved Solids)

HOLDING TIMES

Sample Analysis: All holding times were met.

PREPARATION

Sample preparation proceeded normally.

BATCH QA/QC

Method Blank: All acceptance criteria were met.

Laboratory Control Sample: All acceptance criteria were met.

Duplicates: All acceptance criteria were met.

Matrix Spikes: All acceptance criteria were met.

SAMPLES

Samples: All acceptance criteria were met.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Microbac Laboratories Inc., both technically and for completeness, except for the conditions noted above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

Narrative ID: 42337
Approved By: Deanna Hesson

Microbac

Lab Report #: L12020220
Lab Project #: 3005.011
Project Name: White Sands MR
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L12020220-01	**PrePrep Method:**	N/A	**Instrument:**	OVEN
Client ID:	MPL25-0212-1	**Prep Method:**	160.1/SM2540C	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	160.1	**Cal Date:**	
Workgroup #:	WG389178	**Analyst:**	HJR	**Run Date:**	02/09/2012 11:10
Collect Date:	02/06/2012 15:05	**Dilution:**	1	**File ID:**	EN.1202091110-04
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Total Dissolved Solids		282		20.0	10.0

Sample #:	L12020220-02	**PrePrep Method:**	N/A	**Instrument:**	OVEN
Client ID:	SMW1-0212-1	**Prep Method:**	160.1/SM2540C	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	160.1	**Cal Date:**	
Workgroup #:	WG389178	**Analyst:**	HJR	**Run Date:**	02/09/2012 11:10
Collect Date:	02/07/2012 09:50	**Dilution:**	1	**File ID:**	EN.1202091110-06
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Total Dissolved Solids		214		20.0	10.0

Sample #:	L12020220-03	**PrePrep Method:**	N/A	**Instrument:**	OVEN
Client ID:	SMW4-0212-1	**Prep Method:**	160.1/SM2540C	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	160.1	**Cal Date:**	
Workgroup #:	WG389178	**Analyst:**	HJR	**Run Date:**	02/09/2012 11:10
Collect Date:	02/07/2012 12:05	**Dilution:**	1	**File ID:**	EN.1202091110-05
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Total Dissolved Solids		236		20.0	10.0

2.2.9.2 QC Summary Data

$$[(WT2 - WT1) * 1000000]/volume = mg/L$$

where:

WT1 = weight (grams) of empty container.
WT2 = weight (grams) of dried sample and container.
1000000 = factor to get to mg/L.
volume = mL of sample used.

Microbac Laboratories Inc.

Data Checklist

Date: 09-FEB-2012
Analyst: HJR
Analyst: NA
Method: TDS
Instrument: OVEN
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG389178

Calibration/Linearity	2/9/12
Second Source Check	
ICV/CCV (std)	
ICB/CCB	
Blank	X
LCS/LCS Dup	X
MS/MSD	
Duplicate	X
Upload Results	X
Client Forms	X
QC Violation Sheet	
Case Narratives	X
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	HJR
Secondary Reviewer	DIH
Comments	

Primary Reviewer:
14-FEB-2012

Secondary Reviewer:
15-FEB-2012

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-15-2012 09:15:43

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 160.1 AAB#: WG389178

Login Number: L12020220

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
MPL25-0212-1	01	02/06/12							7		02/09/12	2.8	7	
SMW1-0212-1	02	02/07/12							7		02/09/12	2.1	7	
SMW4-0212-1	03	02/07/12							7		02/09/12	2	7	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 2307479
Report generated 02/15/2012 09:13

Microbac Laboratories Inc.

METHOD BLANK SUMMARY

Login Number: L12020220
Blank File ID: EN.1202091110-01
Prep Date: 02/09/12 11:10
Analyzed Date: 02/09/12 11:10
Analyst: HJR

Work Group: WG389178
Blank Sample ID: WG389178-01
Instrument ID: OVEN
Method: 160.1

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG389178-02	EN.1202091110-02	02/09/12 11:10	
LCS2	WG389178-03	EN.1202091110-03	02/09/12 11:10	
MPL25-0212-1	L12020220-01	EN.1202091110-04	02/09/12 11:10	
SMW4-0212-1	L12020220-03	EN.1202091110-05	02/09/12 11:10	
SMW1-0212-1	L12020220-02	EN.1202091110-06	02/09/12 11:10	
DUP	WG389178-05	EN.1202091110-12	02/09/12 11:10	

Report Name: BLANK_SUMMARY
PDF File ID: 2307480
Report generated 02/15/2012 09:13

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L12020220 Prep Date: 02/09/12 11:10 Sample ID: WG389178-01
Instrument ID: OVEN Run Date: 02/09/12 11:10 Prep Method: 160.1/SM2540C
File ID: EN.1202091110-01 Analyst: HJR Method: 160.1
Workgroup (AAB#): WG389178 Matrix: Water Units: mg/L
Contract #: Cal ID: OVEN-

Analytes	LOD	LOQ	Concentration	Dilution	Qualifier
Total Dissolved Solids	5.00	10.0	5.00	1	U

LOD Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 2307481
15-FEB-2012 09:13

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L12020220 Analyst: HJR Prep Method: 160.1/SM2540C
Instrument ID: OVEN Matrix: Water Method: 160.1
Workgroup (AAB#): WG389178 Units: mg/L
QC Key: DOD4 Lot #: STD48299

Sample ID: WG389178-02 LCS File ID: EN.1202091110-02 Run Date: 02/09/2012 11:10
Sample ID: WG389178-03 LCS2 File ID: EN.1202091110-03 Run Date: 02/09/2012 11:10

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Total Dissolved Solids	500	506	101	500	502	100	0.794	80 - 120	10	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 2307482
Report generated: 02/15/2012 09:13

2.2.9.3 Raw Data

TOTAL DISSOLVED SOLIDS

SOP K1601 Revision #: 12
☑ EPA 160.1/ SM2540C

Oven: ☐ TDS1 ☐ MISC1

Balance: AND GR-202 / Other

LCS: Std 48299

Daily Dilution: 5 (~~50 250~~) 50 = 500

Matrix Spike: _____

Daily Dilution: _____

SAMPLE	#	VOLUME (mL)	INITIAL WEIGHT WT1 (g)	DRY WEIGHT WT2A (g)	DRY WEIGHT WT2B (g)	DRY WEIGHT WT2C (g)
TDS BLANK		100				
LCS: _____mg/L		50				
LCSDUP: _____mg/L		50				
02-0220-01		50				
-03		50				
-02		50				
02-0236-01		1				
02-0227-01		25				
TDS 02-0225-01		10				
-03		10				
02-0235-01		1				
DUP: ~~02-0225-03~~		10				
DUP: _____						

ANALYST: Holly Zeed

DATE/TIME: (on) 2/9/12

DATE/TIME: (off)

DATE/TIME: (off)

DATE/TIME: (off)

* Duplicate required on 10% of samples

DCN#89891

Microbac Laboratories Inc.
GRAVIMETRIC REPORT

Workgroup (AAB#): WG389178
Analyst: HJR
Analyte: TOTAL DISSOLVED SOLIDS
Balance: BAL004
Instrument: OVEN

Method: 160.1/SM2540C
SOP: K1601 Revison 12
Spike Solution: STD48299
Daily Dilution: 5(5000)/50=500

SAMPLE NUMBER	#	INITIAL VOL	INITIAL WT	DRY WT A	DRY WT B	DRY WT C	Anal. Conc	Rep. Conc.	Units
WG389178-01	P1	100	78.8484	78.8485	78.8484		0	0	mg/L
WG389178-02	10	50	54.0672	54.0925	54.0925		506.0	506.0	mg/L
WG389178-03	C11	50	68.831	68.856	68.8561		502.0	502.0	mg/L
L12020220-01	F6	50	56.2312	56.2454	56.2453		282.0	282.0	mg/L
L12020220-03	16	50	53.8644	53.876	53.8762		236.0	236.0	mg/L
L12020220-02	A	50	51.4154	51.4262	51.4261		214.0	214.0	mg/L
L12020236-01	23	1	49.8518	50.3477	50.3478		496000	496000	mg/L
L12020227-01	1	25	55.37	55.5052	55.5051		5404	5404	mg/L
L12020225-01	12	10	21.8863	22.0213	22.0214		13510	13510	mg/L
L12020225-03	77	10	20.4648	20.5658	20.566		10120	10120	mg/L
WG389178-04	77	10	20.4648	20.5658	20.566		10120	10120	mg/L
L12020235-01	C12	1	69.4291	69.9608	69.9605		531400	531400	mg/L
WG389178-05	11	10	20.2392	20.3405	20.3406		10140	10140	mg/L

Analyst: HJR

*Duplicate required on 10% of samples

Date/Time (on) : 02/09/2012 11:10
Date/Time (off): 02/10/2012 15:23
Date/Time (off): 02/13/2012 10:35
Date/Time (off):

CONT_GRAV_REPORT - Modified 02/18/2011
PDF ID: 2303181
Report generated: 02/14/2012 10:44

2.2.10 Total Organic Carbon Data

2.2.10.1 Summary Data

Login Number: L12020220
Department: Conventionals
Analyst: Deanna Hesson

METHOD

Analysis Water: EPA 415.1/SM5310C/SW846 9060 (Total Organic Carbon)
Soil: Lloyd-Khan Methodology

HOLDING TIMES

Sample Analysis: All holding times were met.

PREPARATION

Sample preparation proceeded normally.

BATCH QA/QC

Method Blank: All acceptance criteria were met.

Laboratory Control Sample: All acceptance criteria were met.

Duplicates: All acceptance criteria were met.

Matrix Spikes: All acceptance criteria were met.

SAMPLES

Samples: All acceptance criteria were met.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Microbac Laboratories Inc., both technically and for completeness, except for the conditions noted above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

Narrative ID: 42335
Approved By: Deanna Hesson

Microbac

Lab Report #: L12020220
Lab Project #: 3005.011
Project Name: White Sands MR
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L12020220-01	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	MPL25-0212-1	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	12/06/2011 09:40
Workgroup #:	WG389146	**Analyst:**	DIH	**Run Date:**	02/09/2012 22:35
Collect Date:	02/06/2012 15:05	**Dilution:**	1	**File ID:**	TC02092012.041
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Total Organic Carbon		1.23		1.00	0.500

Sample #:	L12020220-02	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	SMW1-0212-1	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	12/06/2011 09:40
Workgroup #:	WG389146	**Analyst:**	DIH	**Run Date:**	02/09/2012 22:47
Collect Date:	02/07/2012 09:50	**Dilution:**	1	**File ID:**	TC02092012.042
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Total Organic Carbon		0.940	J	1.00	0.500

J	Estimated value ; the analyte concentration was less than the LOQ.

Certificate of Analysis

Sample #:	L12020220-03	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	SMW4-0212-1	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	12/06/2011 09:40
Workgroup #:	WG389146	**Analyst:**	DIH	**Run Date:**	02/09/2012 22:59
Collect Date:	02/07/2012 12:05	**Dilution:**	1	**File ID:**	TC02092012.043
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Total Organic Carbon		0.955	J	1.00	0.500

J	Estimated value ; the analyte concentration was less than the LOQ.

Certificate of Analysis

2.2.10.2 QC Summary Data

Total Organic Carbon Example Calculations
(Direct Readout Parameter)

(Readout)/(dilution) = mg/L

where:

Readout = direct readout from the instrument
dilution = dilution in decimal form (ex. 1/5 dilution = 0.2)

Microbac Laboratories Inc.

Data Checklist

Date: 09-FEB-2012
Analyst: DIH
Analyst: NA
Method: TOC
Instrument: TOC
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG389144 WG389146 WG389147

Calibration/Linearity	12/6/2011
Second Source Check	X
ICV/CCV (std)	X
ICB/CCB	X
Blank	X
LCS/LCS Dup	X
MS/MSD	X
Duplicate	X
Upload Results	X
Client Forms	X
QC Violation Sheet	X
Case Narratives	X
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	DIH
Secondary Reviewer	DIH
Comments	

Primary Reviewer:
13-FEB-2012

Secondary Reviewer:
17-FEB-2012

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-17-2012 12:54:34

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 415.1 AAB#: WG389146

Login Number: L12020220

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
MPL25-0212-1	01	02/06/12							28		02/09/12	3.3	28	
SMW1-0212-1	02	02/07/12							28		02/09/12	2.5	28	
SMW4-0212-1	03	02/07/12							28		02/09/12	2.5	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 2310009
Report generated 02/16/2012 22:10

Microbac Laboratories Inc.

METHOD BLANK SUMMARY

Login Number: L12020220
Blank File ID: TC02092012.033
Prep Date: 02/09/12 20:56
Analyzed Date: 02/09/12 20:56
Analyst: DIH

Work Group: WG389146
Blank Sample ID: WG389146-01
Instrument ID: TOC-VWP
Method: 415.1

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG389146-02	TC02092012.034	02/09/12 21:09	01
LCS2	WG389146-03	TC02092012.035	02/09/12 21:22	01
MPL25-0212-1	L12020220-01	TC02092012.041	02/09/12 22:35	01
SMW1-0212-1	L12020220-02	TC02092012.042	02/09/12 22:47	01
SMW4-0212-1	L12020220-03	TC02092012.043	02/09/12 22:59	01
DUP	WG389146-05	TC02092012.060	02/10/12 02:41	01

Report Name: BLANK_SUMMARY
PDF File ID: 2310010
Report generated 02/16/2012 22:10

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L12020220 Prep Date: 02/09/12 20:56 Sample ID: WG389146-01
Instrument ID: TOC-VWP Run Date: 02/09/12 20:56 Prep Method: 415.1
File ID: TC02092012.033 Analyst: DIH Method: 415.1
Workgroup (AAB#): WG389146 Matrix: Water Units: mg/L
Contract #: Cal ID: TOC-VW-06-DEC-11

Analytes	LOD	LOQ	Concentration	Dilution	Qualifier
Total Organic Carbon	0.500	1.00	0.500	1	U

LOD Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 2310011
16-FEB-2012 22:10

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L12020220 Analyst: DIH Prep Method: 415.1
Instrument ID: TOC-VWP Matrix: Water Method: 415.1
Workgroup (AAB#): WG389146 Units: mg/L
QC Key: DOD4 Lot #: STD49306

Sample ID: WG389146-02 LCS File ID: TC02092012.034 Run Date: 02/09/2012 21:09
Sample ID: WG389146-03 LCS2 File ID: TC02092012.035 Run Date: 02/09/2012 21:22

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Total Organic Carbon	25.0	26.7	107	25.0	26.6	106	0.601	85 - 115	15	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 2310012
Report generated: 02/16/2012 22:10

2.2.10.3 Raw Data

WG384145

TC/TIC CURVES

Total Organic Carbon

MAKE DAILY

CCV (TOC): _____ (5/200)(1000) = 25mg/L

LCS (TOC): _____ (5/200)(1000) = 25mg/L

CCV (TIC): _____ (5/200)(1000) = 25mg/L

See Below

MS (TOC): _____

Calibration Curve Date: _____

Reagent: RGT 16590 RGT 16642

☑ SM5310-C : Matrix 2 WG_____

☐ EPA 415.1/9060A(mod): Matrix 1 WG_____ WG_____

SOP: K 4151 Rev. 13

Instrument: Shimadza TOC-VWP/ASI

DAILY CHECK

☑ drain reservoir filled
☑ ASI water bottle full
☑ dilution water bottle full
☑ 3rd bottle full
☑ sufficient gas
☑ sufficient persulfate
☑ sufficient acid
☑ waste container

Position	Sample ID	Dilution	Position	Sample ID	Dilution	Position	Sample ID	Dilution
1	TC Curve		26	TC Curve		51		
2	TIC Curve		27	STD 47222		52		
3	TC ICV		28			53	See SOP for	
4	TIC ICV		29	TIC Curve		54	Curve points	
5			30	STD 47189		55		
6			31			56		
7			32			57		
8			33			58		
9			34			59		
10			35			60		
11			36			61		
12			37	TC ICV		62		
13			38	STD 47544		63	5/200(1000)	
14			39			64	= 25 mg/L	
15			40	TIC ICV		65		
16			41	STD 47190		66		
17			42			67		
18			43			68		
19	All points analyzed		44			69		
20	in duplicate		45			70		
21			46			71		
22			47			72		
23			48			73		
24			49			74		
25			50			75		

Analyst: _____ Date/Time: 12/04/2011

DCN#89227

C:\TOC3201\Data\CURVES-12-06-2011.t32

	Analyst	Sample Name	Result	Status	Date / Time	Vial
1	TC	TC CURVE		Complet	12/06/2011 09:46:27 AM	0, 1, 2, 3, 4, 5
2	IC	TIC CURVE		Complet	12/06/2011 05:00:56 PM	0, 6, 7, 8, 9, 10
3	TC	TC ICV	✓ 93.08% TC:23.27mg/L	Complet	12/06/2011 05:13:38 PM	11
4	IC	TIC ICV	✓ 104.84% IC:26.21mg/L	Complet	12/06/2011 05:25:50 PM	12

12/07/2011 08:14:31 AM 1/1

Instr.Information

System TOCVW ASI
Detector Wet Chemical

Cal. Curve

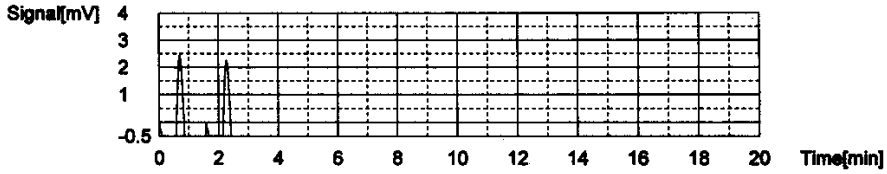
Sample Name: TC CURVE
Sample ID: Untitled
Cal. Curve: TCCURVE-12-06-2011.2011_12_06_08_40_57.cal
Status Completed

Type	Anal.
Standard	TC

Conc: 0.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	6.123	500uL	1	*******		12/06/2011 08:44:40 AM
2	5.308	500uL	1	*******		12/06/2011 08:48:33 AM

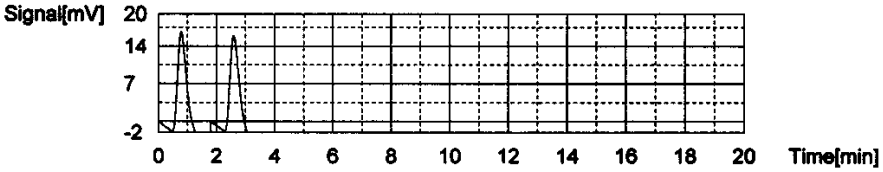
Acid Add. 0.000%
Mean Area 5.716



Conc: 1.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	39.77	500uL	1	*******		12/06/2011 08:54:04 AM
2	39.18	500uL	1	*******		12/06/2011 08:58:10 AM

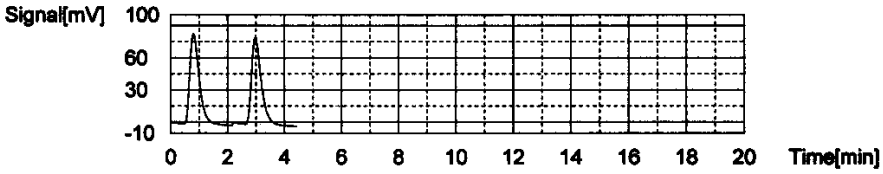
Acid Add. 0.000%
Mean Area 39.48



Conc: 5.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	191.7	500uL	1	*******		12/06/2011 09:04:17 AM
2	189.4	500uL	1	*******		12/06/2011 09:08:49 AM

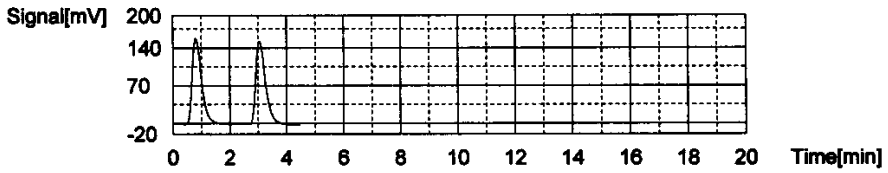
Acid Add. 0.000%
Mean Area 190.6



Conc: 10.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	367.0	500uL	1	*******		12/06/2011 09:15:00 AM
2	367.7	500uL	1	*******		12/06/2011 09:20:26 AM

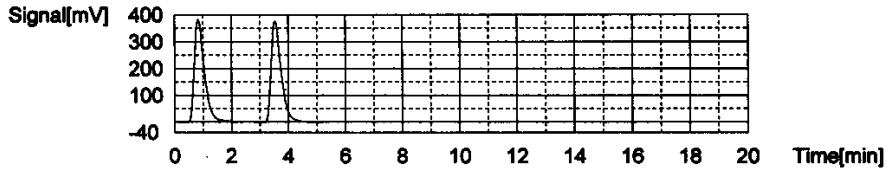
Acid Add. 0.000%
Mean Area 367.4



Conc: 25.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	938.7	500uL	1	*******		12/06/2011 09:27:05 AM
2	928.1	500uL	1	*******		12/06/2011 09:31:51 AM

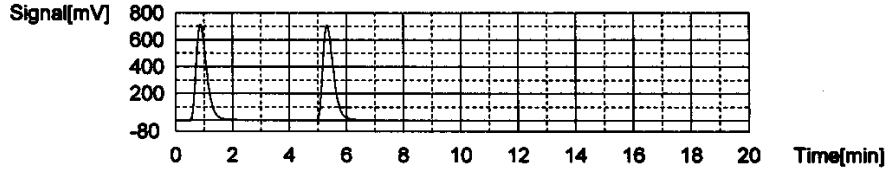
Acid Add. 0.000%
Mean Area 933.4



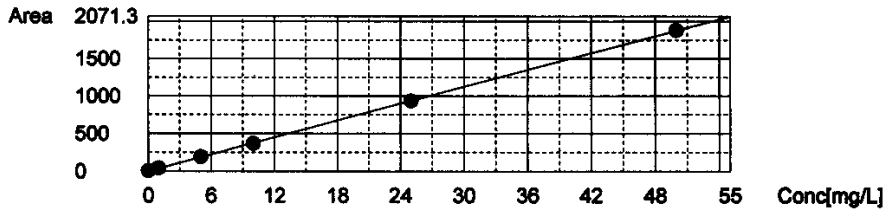
Conc: 50.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	1902	500uL	1	*******		12/06/2011 09:40:15 AM
2	1864	500uL	1	*******		12/06/2011 09:46:27 AM

Acid Add. 0.000%
Mean Area 1883



Slope: 37.57
Intercept 0.09333
r^2 0.999936 ✓
Zero Shift No



Cal. Curve

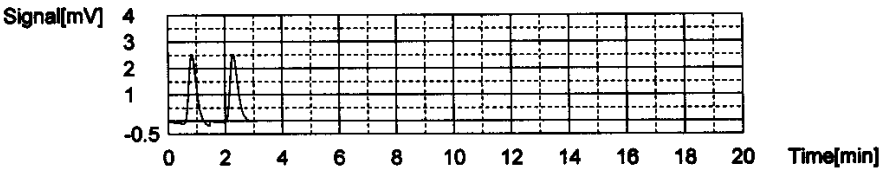
Sample Name: TIC CURVE
Sample ID: Untitled
Cal. Curve: TICCURVE-12-06-2011B.2011_12_06_15_47_44.cal
Status Completed

Type	Anal.
Standard	IC

Conc: 0.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	5.003	500uL	1	*******		12/06/2011 03:51:39 PM
2	4.762	500uL	1	*******		12/06/2011 03:55:32 PM

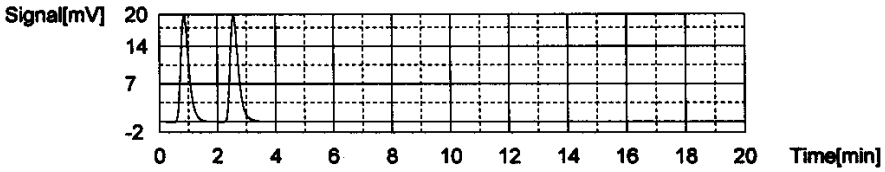
Acid Add. 10.00%
Mean Area 4.883



Conc: 1.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	38.88	500uL	1	*******		12/06/2011 04:02:55 PM
2	38.91	500uL	1	*******		12/06/2011 04:07:20 PM

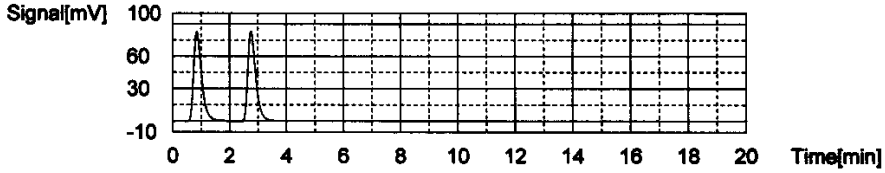
Acid Add. 10.00%
Mean Area 38.90



Conc: 5.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	160.3	500uL	1	*******		12/06/2011 04:15:09 PM
2	162.3	500uL	1	*******		12/06/2011 04:19:53 PM

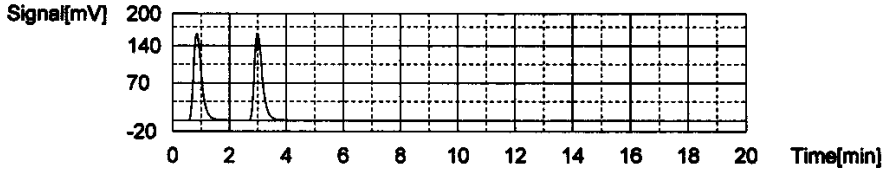
Acid Add. 10.00%
Mean Area 161.3



Conc: 10.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	317.9	500uL	1	*******		12/06/2011 04:28:01 PM
2	319.9	500uL	1	*******		12/06/2011 04:33:00 PM

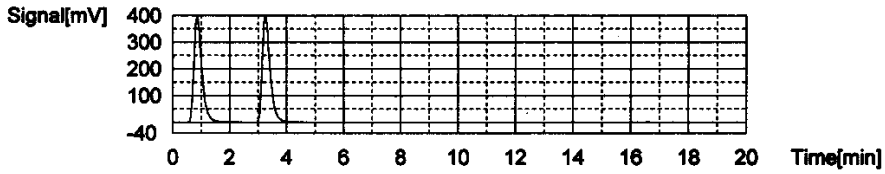
Acid Add. 10.00%
Mean Area 318.9



Conc: 25.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	765.1	500uL	1	*******		12/06/2011 04:41:31 PM
2	765.8	500uL	1	*******		12/06/2011 04:46:44 PM

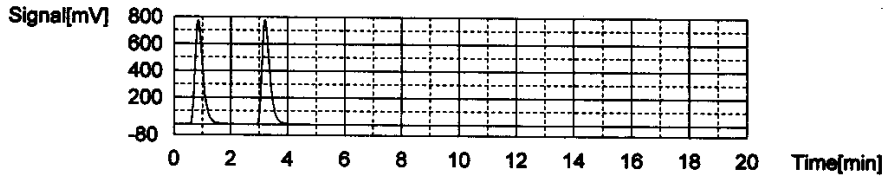
Acid Add. 10.00%
Mean Area 765.5



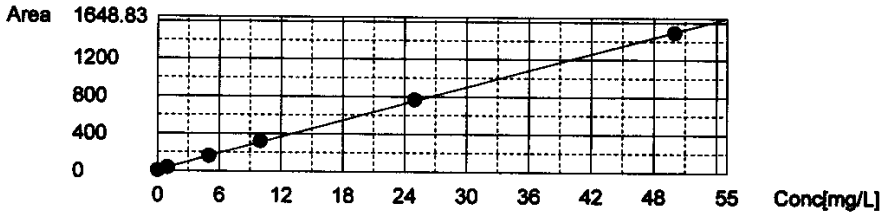
Conc: 50.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	1490	500uL	1	*******		12/06/2011 04:55:30 PM
2	1495	500uL	1	*******		12/06/2011 05:00:56 PM

Acid Add. 10.00%
Mean Area 1493



Slope: 29.72
Intercept 12.89
r^2 0.999826 ✓
Zero Shift No



Sample

Sample Name: TC ICV
Sample ID: Untitled
Origin: TCCURVE-12-06-2011.cal
Status Completed
Chk. Result

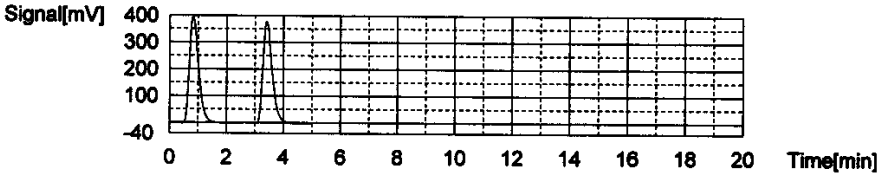
Type	Anal.	Dil.	Result
Unknown	TC	1.000	TC:23.27mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	889.3	23.67mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	12/06/2011 05:08:57 PM
2	859.5	22.87mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	12/06/2011 05:13:38 PM

Mean Area 874.4
Mean Conc. 23.27mg/L



Sample

Sample Name: TIC ICV
Sample ID: Untitled
Origin: TICCURVE-12-06-2011B.cal
Status Completed
Chk. Result

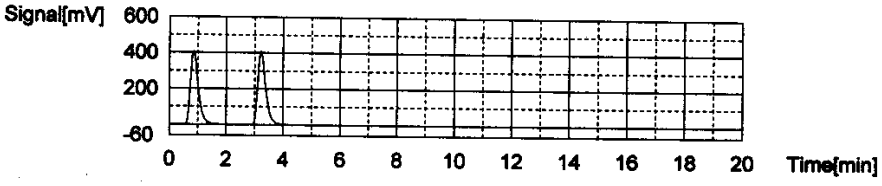
Type	Anal.	Dil.	Result
Unknown	IC	1.000	IC:26.21mg/L

1. Det

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	788.9	26.11mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	12/06/2011 05:20:43 PM
2	794.9	26.31mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	12/06/2011 05:25:50 PM

Mean Area 791.9
Mean Conc. 26.21mg/L



WORKGROUP: WG389144

Total Organic Carbon

389146
389147

MAKE DAILY

CCV (TOC): std 47222 (5/200)(1000) = 25mg/L

LCS (TOC): std 49306 (5/200)(1000) = 25mg/L

CCV (TIC): std 47189 (5/200)(1000) = 25mg/L

MS (TOC): 0.4/40 (1000) = 10

Calibration Curve Date: 12/6/12

Reagent: RGT 16963 / RGT 16590

☐ SM5310-C : Matrix 2 WG_____

☑ EPA 415.1/9060A(mod): Matrix 1 WG_____ SOP: K 4151 Rev. 14

WG_____ Instrument: Shimadza TOC-VWP/ASI

DAILY CHECK

☑ drain reservoir filled
☑ ASI water bottle full
☑ dilution water bottle full

☑ 3rd bottle full
☑ sufficient gas
☑ sufficient persulfate

☑ sufficient acid
☑ waste container

Position	Sample ID	Dilution
1	TIC 25	
2	CCV 25	
~~3~~ 0	BLK	
4	LCS 25	
5	LCSDUP	
6	02-166-20	1/10
7	23	1/2
8	24	1/10
9	25	1/5
10	27	1/10
11	28	1/10
12	02-179-11	
13	13	
14	CCV	
~~15~~ 0	CCB	
16	02-203-10	
17	11	
18	12	
19	13	
20	14	
21	16	
22	17	
23	18	
24	19	
25	20	

Position	Sample ID	Dilution
26	CCV	
~~27~~ 0	CCB	
28	02-203-29	
29	30	
30	MS 31	
31	MSd 32	
32	DUP 30	
~~33~~ 0	BLK	
34	LCS 25	
~~35~~ 4	LCSDUP	
36	02-203-33	
37	34	
38	CCV	
~~39~~ 0	CCB	
40	02-203-35	
41	02-220-01	
42	02	
43	03	
44	02-221-01	
45	02	
46	03	
47	04	
48	05	
49	06	
~~50~~ 4	CCV	

Position	Sample ID	Dilution
~~51~~ 0	CCB	
52	02-221-07	
53	08	1/5
54	09	
55	10	1/3
56	11	1/5
57	12	1/5
58	13	
59	16	
60	DUP	
61	MS	
~~62~~ 14	CCV	
~~63~~ 0	CCB/BLK	
~~64~~ 5	LCS	
~~65~~ 34	LCSDUP	
66	02-221-17	1/25
67	02-222-01	
68	02	
~~69~~ 3	03	
~~70~~ 15	04	
~~71~~ 27	05	
~~72~~ 33	06	
~~73~~ 39	07	
~~74~~ 2	CCV	
~~75~~ 0	CCB	

Analyst: Joanne Dason Date/Time: 2/9/12

pg 1

DCN#89886

WORKGROUP: WG389144

389146
389147

Total Organic Carbon

MAKE DAILY

CCV (TOC): _____ (5/200)(1000) = 25mg/L

LCS (TOC): _____ (5/200)(1000) = 25mg/L

CCV (TIC): _____ (5/200)(1000) = 25mg/L

MS (TOC): _____

Calibration Curve Date: _____

Reagent: _____

☐ SM5310-C : Matrix 2 WG_____

☐ EPA 415.1/9060A(mod): Matrix 1 WG_____ SOP: K _____ Rev. _____

WG_____ Instrument: Shimadza TOC-VWP/ASI

DAILY CHECK

☐ drain reservoir filled
☐ ASI water bottle full
☐ dilution water bottle full
☐ 3rd bottle full
☐ sufficient gas
☐ sufficient persulfate
☐ sufficient acid
☐ waste container

Position	Sample ID	Dilution
~~1~~51	02-222-08	
~~2~~63	09	
~~3~~62	10	
~~4~~50	11	
~~5~~35	12	
~~6~~64	DUP	
~~7~~65	MS	
~~8~~38	CCV	
~~9~~0	CCB	
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		
25		

Position	Sample ID	Dilution
26		
27		
28		
29		
30		
31		
32		
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Position	Sample ID	Dilution
51		
52		
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Analyst: Deanna Hobson Date/Time: 2/9/12

DCN#89886

pg 2

	Analysi	Sample Name	Result	Status	Date / Time	Vial
1	TOC	TIC 25	TOC:2.418mg/L TC:26.58mg/L IC:24.16mg/L	Complet	02/09/2012 02:06:10 PM	1
2	TOC	CCV 25	!!Error!! TOC:24.20mg/L TC:23.99mg/L IC:-0.2090mg/	Complet	02/09/2012 02:18:14 PM	2
3	TOC	WG389144-01 BLK	!!Error!! TOC:0.4269mg/L TC:0.2480mg/L IC:-0.1789m	Complet	02/09/2012 02:27:15 PM	0
4	TOC	WG389144-02 LCS	!!Error!! TOC:26.72mg/L TC:26.44mg/L IC:-0.2756mg/	Complet	02/09/2012 02:40:15 PM	4
5	TOC	WG389144-03 LCSDUP	!!Error!! TOC:26.43mg/L TC:26.16mg/L IC:-0.2709mg/	Complet	02/09/2012 02:52:38 PM	5
6	TOC	L12020166-20 (10)	TOC:2.796mg/L TC:14.05mg/L IC:11.26mg/L	Complet	02/09/2012 03:05:27 PM	6
7	TOC	L12020166-23 (2)	TOC:4.184mg/L TC:23.88mg/L IC:19.69mg/L	Complet	02/09/2012 03:19:03 PM	7
8	TOC	L12020166-24 (10)	TOC:8.134mg/L TC:25.79mg/L IC:17.66mg/L	Complet	02/09/2012 03:32:27 PM	8
9	TOC	L12020166-25 (5)	TOC:16.11mg/L TC:37.39mg/L IC:21.29mg/L	Complet	02/09/2012 03:46:34 PM	9
10	TOC	L12020166-27 (10)	TOC:4.710mg/L TC:21.80mg/L IC:17.09mg/L	Complet	02/09/2012 04:00:11 PM	10
11	TOC	L12020166-28 (10)	TOC:3.614mg/L TC:18.55mg/L IC:14.93mg/L	Complet	02/09/2012 04:13:15 PM	11
12	TOC	L12020179-11	TOC:15.20mg/L TC:46.31mg/L IC:31.11mg/L	Complet	02/09/2012 04:28:10 PM	12
13	TOC	L12020179-13	TOC:4.391mg/L TC:16.50mg/L IC:12.11mg/L	Complet	02/09/2012 04:40:51 PM	13
14	TOC	CCV	!!Error!! TOC:24.41mg/L TC:24.25mg/L IC:-0.1636mg/	Complet	02/09/2012 04:53:19 PM	14
15	TOC	CCB	!!Error!! TOC:0.3991mg/L TC:0.2215mg/L IC:-0.1776m	Complet	02/09/2012 05:02:19 PM	0
16	TOC	L12020203-10	TOC:15.87mg/L TC:50.70mg/L IC:34.83mg/L	Complet	02/09/2012 05:17:29 PM	16
17	TOC	L12020203-11	TOC:1.522mg/L TC:8.110mg/L IC:6.588mg/L	Complet	02/09/2012 05:29:59 PM	17
18	TOC	L12020203-12	TOC:2.305mg/L TC:26.28mg/L IC:23.98mg/L	Complet	02/09/2012 05:43:33 PM	18
19	TOC	L12020203-13	TOC:2.772mg/L TC:26.85mg/L IC:24.08mg/L	Complet	02/09/2012 05:57:19 PM	19
20	TOC	L12020203-14	TOC:3.517mg/L TC:30.37mg/L IC:26.85mg/L	Complet	02/09/2012 06:10:50 PM	20
21	TOC	L12020203-16	TOC:1.480mg/L TC:8.943mg/L IC:7.463mg/L	Complet	02/09/2012 06:23:27 PM	21
22	TOC		TOC:37.30mg/L TC:73.41mg/L IC:36.11mg/L	Complet	02/09/2012 06:39:43 PM	22
23	TOC	L12020203-18	TOC:2.685mg/L TC:3.112mg/L IC:0.4264mg/L	Complet	02/09/2012 06:51:39 PM	23
24	TOC	L12020203-19	TOC:14.63mg/L TC:46.39mg/L IC:31.76mg/L	Complet	02/09/2012 07:05:47 PM	24
25	TOC	L12020203-20	TOC:3.808mg/L TC:26.43mg/L IC:22.62mg/L	Complet	02/09/2012 07:19:15 PM	25
26	TOC	CCV	!!Error!! TOC:24.60mg/L TC:24.47mg/L IC:-0.1295mg/	Complet	02/09/2012 07:31:56 PM	26
27	TOC	CCB	!!Error!! TOC:0.3857mg/L TC:0.2212mg/L IC:-0.1645m	Complet	02/09/2012 07:40:56 PM	0
28	TOC	L12020203-29	TOC:8.780mg/L TC:36.22mg/L IC:27.44mg/L	Complet	02/09/2012 07:54:53 PM	28
29	TOC	L12020203-30	TOC:13.46mg/L TC:48.52mg/L IC:35.06mg/L	Complet	02/09/2012 08:09:27 PM	29
30	TOC	L12020203-31 MS	TOC:22.89mg/L TC:41.15mg/L IC:18.26mg/L	Complet	02/09/2012 08:23:38 PM	30
31	TOC	L12020203-32 MSD	TOC:22.56mg/L TC:39.79mg/L IC:17.23mg/L	Complet	02/09/2012 08:37:42 PM	31
32	TOC	WG389144-05 DUP	TOC:12.97mg/L TC:43.17mg/L IC:30.19mg/L	Complet	02/09/2012 08:51:50 PM	32
33	TOC	WG389146-01 BLK	!!Error!! TOC:0.3686mg/L TC:0.2951mg/L IC:-0.07354	Complet	02/09/2012 09:00:56 PM	0
34	TOC	WG389146-02 LCS	!!Error!! TOC:26.72mg/L TC:26.54mg/L IC:-0.1804mg/	Complet	02/09/2012 09:13:46 PM	34
35	TOC	WG389146-03 LCSDUP	!!Error!! TOC:26.56mg/L TC:26.34mg/L IC:-0.2212mg/	Complet	02/09/2012 09:26:30 PM	4
36	TOC	L12020203-33	TOC:11.68mg/L TC:29.99mg/L IC:18.31mg/L	Complet	02/09/2012 09:40:01 PM	36
37	TOC	L12020203-34	TOC:3.556mg/L TC:19.67mg/L IC:16.11mg/L	Complet	02/09/2012 09:52:54 PM	37
38	TOC	CCV	!!Error!! TOC:24.71mg/L TC:24.55mg/L IC:-0.1600mg/	Complet	02/09/2012 10:05:33 PM	38
39	TOC	CCB	!!Error!! TOC:0.3863mg/L TC:0.2168mg/L IC:-0.1694m	Complet	02/09/2012 10:14:33 PM	0
40	TOC	L12020203-35	TOC:11.63mg/L TC:40.19mg/L IC:28.56mg/L	Complet	02/09/2012 10:28:25 PM	40
41	TOC	L12020220-01	TOC:1.234mg/L TC:5.366mg/L IC:4.132mg/L	Complet	02/09/2012 10:40:37 PM	41
42	TOC	L12020220-02	TOC:0.9397mg/L TC:4.480mg/L IC:3.540mg/L	Complet	02/09/2012 10:52:46 PM	42
43	TOC	L12020220-03	TOC:0.9546mg/L TC:4.525mg/L IC:3.570mg/L	Complet	02/09/2012 11:04:55 PM	43
44	TOC	L12020221-01	TOC:2.107mg/L TC:7.346mg/L IC:5.239mg/L	Complet	02/09/2012 11:17:21 PM	44
45	TOC	L12020221-02	TOC:8.425mg/L TC:45.91mg/L IC:37.49mg/L	Complet	02/09/2012 11:31:55 PM	45
46	TOC	L12020221-03	TOC:2.641mg/L TC:11.34mg/L IC:8.695mg/L	Complet	02/09/2012 11:44:26 PM	46
47	TOC	L12020221-04	TOC:10.33mg/L TC:39.87mg/L IC:29.54mg/L	Complet	02/09/2012 11:58:39 PM	47
48	TOC	L12020221-05	TOC:1.739mg/L TC:7.328mg/L IC:5.589mg/L	Complet	02/10/2012 12:11:12 AM	48
49	TOC		TOC:109.9mg/L TC:134.2mg/L IC:24.25mg/L	Complet	02/10/2012 12:27:49 AM	49
50	TOC	CCV	!!Error!! TOC:24.44mg/L TC:24.33mg/L IC:-0.1118mg/	Complet	02/10/2012 12:40:52 AM	26
51	TOC	CCB	!!Error!! TOC:0.3971mg/L TC:0.2426mg/L IC:-0.1544m	Complet	02/10/2012 12:50:00 AM	0
52	TOC	L12020221-07	TOC:1.806mg/L TC:10.10mg/L IC:8.298mg/L	Complet	02/10/2012 01:02:41 AM	52
53	TOC		TOC:6.855mg/L TC:9.031mg/L IC:2.176mg/L	Complet	02/10/2012 01:15:20 AM	53
54	TOC	L12020221-09	TOC:1.976mg/L TC:8.265mg/L IC:6.289mg/L	Complet	02/10/2012 01:27:47 AM	54
55	TOC	L12020221-10 (3)	TOC:13.38mg/L TC:21.73mg/L IC:8.355mg/L	Complet	02/10/2012 01:40:51 AM	55
56	TOC		TOC:38.39mg/L TC:60.95mg/L IC:22.56mg/L	Complet	02/10/2012 01:56:10 AM	56
57	TOC	L12020221-12 (5)	TOC:6.960mg/L TC:12.15mg/L IC:5.185mg/L	Complet	02/10/2012 02:08:57 AM	57
58	TOC	L12020221-13	TOC:2.138mg/L TC:6.771mg/L IC:4.634mg/L	Complet	02/10/2012 02:21:17 AM	58
59	TOC	L12020221-16	TOC:3.896mg/L TC:11.20mg/L IC:7.302mg/L	Complet	02/10/2012 02:34:03 AM	59
60	TOC	WG389146-05 DUP	TOC:3.910mg/L TC:9.321mg/L IC:5.411mg/L	Complet	02/10/2012 02:46:40 AM	60
61	TOC	WG389146-06 MS	TOC:15.10mg/L TC:20.90mg/L IC:5.804mg/L	Complet	02/10/2012 02:59:25 AM	61
62	TOC	CCV	!!Error!! TOC:24.39mg/L TC:24.20mg/L IC:-0.1836mg/	Complet	02/10/2012 03:11:45 AM	14
63	TOC	WG389147-01 BLK	!!Error!! TOC:0.3736mg/L TC:0.2075mg/L IC:-0.1661m	Complet	02/10/2012 03:20:48 AM	0
64	TOC	WG389147-02 LCS	!!Error!! TOC:26.48mg/L TC:26.26mg/L IC:-0.2166mg/	Complet	02/10/2012 03:33:28 AM	5
65	TOC	WG389147-03 LCSDUP	!!Error!! TOC:26.63mg/L TC:26.42mg/L IC:-0.2109mg/	Complet	02/10/2012 03:45:58 AM	34
66	TOC	L12020221-17 (25)	TOC:12.96mg/L TC:13.28mg/L IC:0.3188mg/L	Complet	02/10/2012 03:58:55 AM	66
67	TOC	L12020222-01	TOC:8.756mg/L TC:11.00mg/L IC:2.242mg/L	Complet	02/10/2012 04:11:50 AM	67

	Analys	Sample Name	Result	Status	Date / Time	Vial
68	TOC	L12020222-02	TOC:9.000mg/L TC:11.49mg/L IC:2.493mg/L	Complet	02/10/2012 04:24:39 AM	68
69	TOC	L12020222-03	TOC:8.895mg/L TC:11.57mg/L IC:2.676mg/L	Complet	02/10/2012 04:37:58 AM	3
70	TOC	L12020222-04	TOC:8.720mg/L TC:11.72mg/L IC:3.002mg/L	Complet	02/10/2012 04:51:02 AM	15
71	TOC	L12020222-05	TOC:8.750mg/L TC:11.82mg/L IC:3.066mg/L	Complet	02/10/2012 05:04:06 AM	27
72	TOC	L12020222-06	TOC:9.116mg/L TC:12.56mg/L IC:3.439mg/L	Complet	02/10/2012 05:17:10 AM	33
73	TOC	L12020222-07	TOC:1.589mg/L TC:4.049mg/L IC:2.460mg/L	Complet	02/10/2012 05:29:32 AM	39
74	TOC	CCV	!!Error!! TOC:24.63mg/L TC:24.44mg/L IC:-0.1942mg	Complet	02/10/2012 05:42:15 AM	2
75	TOC	CCB	!!Error!! TOC:0.3707mg/L TC:0.1983mg/L IC:-0.1724m	Complet	02/10/2012 05:51:18 AM	0
76	TOC	L12020222-08	TOC:1.475mg/L TC:3.468mg/L IC:1.993mg/L	Complet	02/10/2012 06:03:26 AM	51
77	TOC	L12020222-09	TOC:1.529mg/L TC:3.202mg/L IC:1.673mg/L	Complet	02/10/2012 06:15:44 AM	63
78	TOC	L12020222-10	TOC:1.499mg/L TC:2.896mg/L IC:1.397mg/L	Complet	02/10/2012 06:27:56 AM	62
79	TOC	L12020222-11	TOC:1.900mg/L TC:3.231mg/L IC:1.331mg/L	Complet	02/10/2012 06:40:02 AM	50
80	TOC	L12020222-12	TOC:2.935mg/L TC:3.641mg/L IC:0.7060mg/L	Complet	02/10/2012 06:52:02 AM	35
81	TOC	WG389147-05 DUP	TOC:2.989mg/L TC:3.561mg/L IC:0.5721mg/L	Complet	02/10/2012 07:04:06 AM	64
82	TOC	WG389147-06 MS	TOC:13.57mg/L TC:14.60mg/L IC:1.031mg/L	Complet	02/10/2012 07:16:30 AM	65
83	TOC	CCV	!!Error!! TOC:24.74mg/L TC:24.54mg/L IC:-0.2005mg	Complet	02/10/2012 07:29:08 AM	38
84	TOC	CCB	!!Error!! TOC:0.3700mg/L TC:0.2010mg/L IC:-0.1691m	Complet	02/10/2012 07:38:12 AM	0

Instr.Information

System TOCVW ASI
Detector Wet Chemical

Sample

Sample Name: TIC 25
Sample ID:
Origin: TOC-12-06-2011.met
Status Completed
Chk. Result

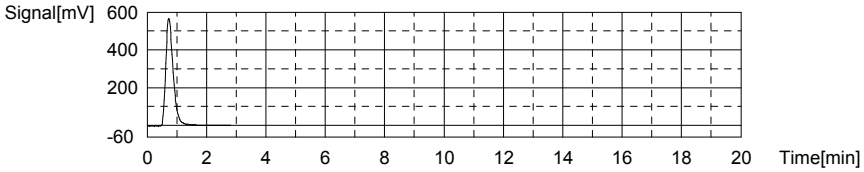
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.418mg/L TC:26.58mg/L IC:24.16mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	998.6	26.58mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	02/09/2012 02:00:46 PM

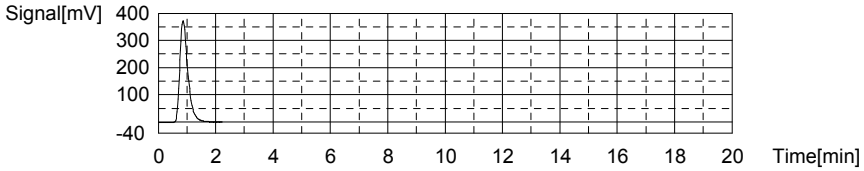
Mean Area 998.6
Mean Conc. 26.58mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	730.9	24.16mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	02/09/2012 02:06:10 PM

Mean Area 730.9
Mean Conc. 24.16mg/L



Sample

Sample Name: CCV 25
Sample ID:
Origin: TOC-12-06-2011.met
Status Completed
Chk. Result

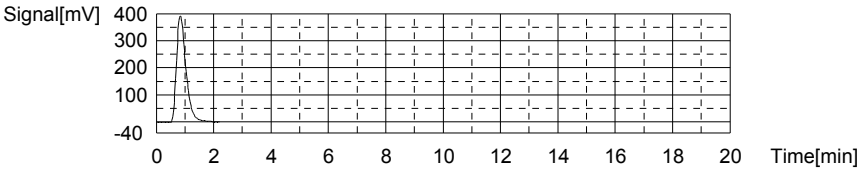
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:24.20mg/L TC:23.99mg/L IC:-0.2090mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	901.5	23.99mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	02/09/2012 02:13:49 PM

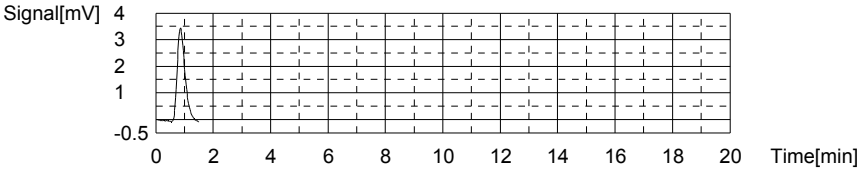
Mean Area 901.5
Mean Conc. 23.99mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	6.675	-0.2090mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	02/09/2012 02:18:14 PM

Mean Area 6.675
Mean Conc. -0.2090mg/L



Sample

Sample Name: WG389144-01 BLK
Sample ID:
Origin: TOC-12-06-2011.met
Status Completed
Chk. Result

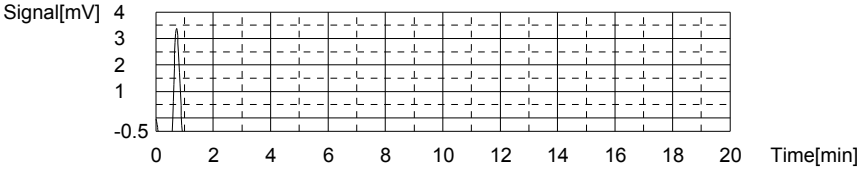
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.4269mg/L TC:0.2480mg/L IC:-0.1789mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.410	0.2480mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	02/09/2012 02:23:20 PM

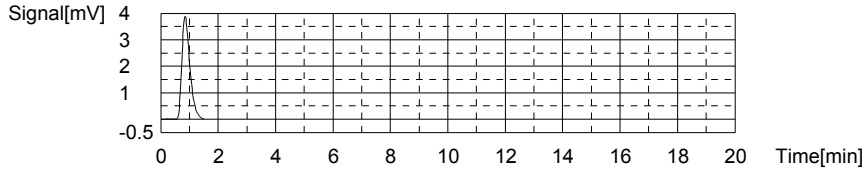
Mean Area 9.410
Mean Conc. 0.2480mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.568	-0.1789mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	02/09/2012 02:27:15 PM

Mean Area 7.568
Mean Conc. -0.1789mg/L



Sample

Sample Name: WG389144-02 LCS
Sample ID:
Origin: TOC-12-06-2011.met
Status Completed
Chk. Result

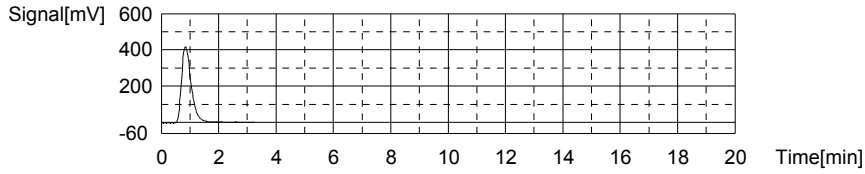
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:26.72mg/L TC:26.44mg/L IC:-0.2756mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	993.6	26.44mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	02/09/2012 02:35:57 PM

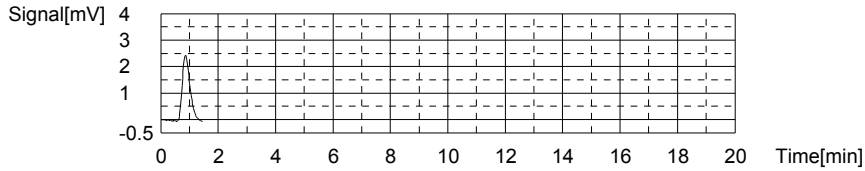
Mean Area 993.6
Mean Conc. 26.44mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	4.695	-0.2756mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	02/09/2012 02:40:15 PM

Mean Area 4.695
Mean Conc. -0.2756mg/L



Sample

Sample Name: WG389144-03 LCSDUP
Sample ID:
Origin: TOC-12-06-2011.met
Status Completed
Chk. Result

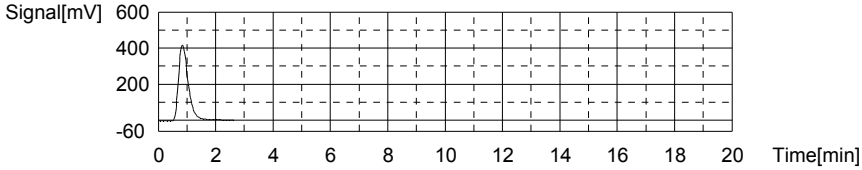
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:26.43mg/L TC:26.16mg/L IC:-0.2709mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	983.0	26.16mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	02/09/2012 02:48:19 PM

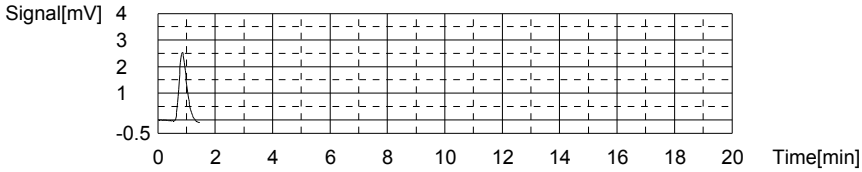
Mean Area 983.0
Mean Conc. 26.16mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	4.833	-0.2709mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	02/09/2012 02:52:38 PM

Mean Area 4.833
Mean Conc. -0.2709mg/L



Sample

Sample Name: L12020166-20 (10)
Sample ID:
Origin: TOC-12-06-2011.met
Status Completed
Chk. Result

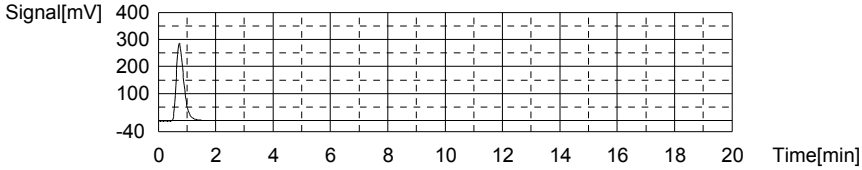
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.796mg/L TC:14.05mg/L IC:11.26mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	528.0	14.05mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	02/09/2012 03:00:21 PM

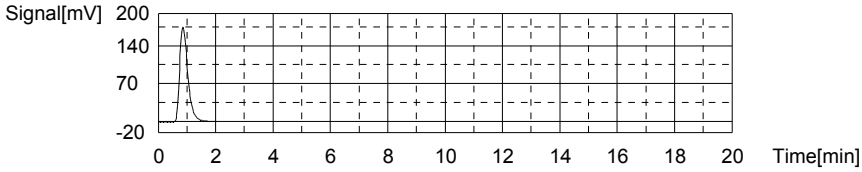
Mean Area 528.0
Mean Conc. 14.05mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	347.4	11.26mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	02/09/2012 03:05:27 PM

Mean Area 347.4
Mean Conc. 11.26mg/L



Sample

Sample Name: L12020166-23 (2)
Sample ID:
Origin: TOC-12-06-2011.met
Status Completed
Chk. Result

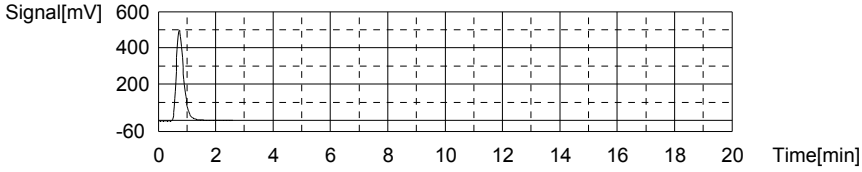
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:4.184mg/L TC:23.88mg/L IC:19.69mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	897.2	23.88mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	02/09/2012 03:13:29 PM

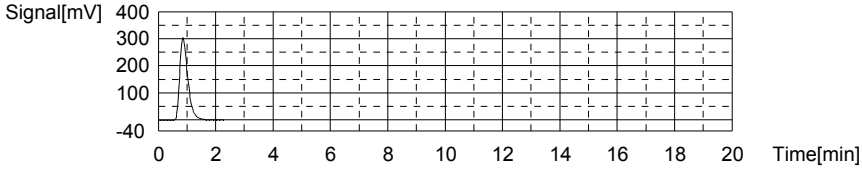
Mean Area 897.2
Mean Conc. 23.88mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	598.2	19.69mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	02/09/2012 03:19:03 PM

Mean Area 598.2
Mean Conc. 19.69mg/L



Sample

Sample Name: L12020166-24 (10)
Sample ID:
Origin: TOC-12-06-2011.met
Status Completed
Chk. Result

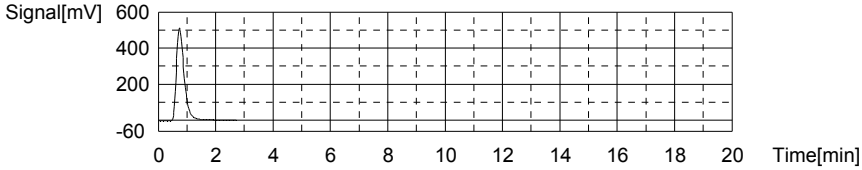
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:8.134mg/L TC:25.79mg/L IC:17.66mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	969.1	25.79mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	02/09/2012 03:27:13 PM

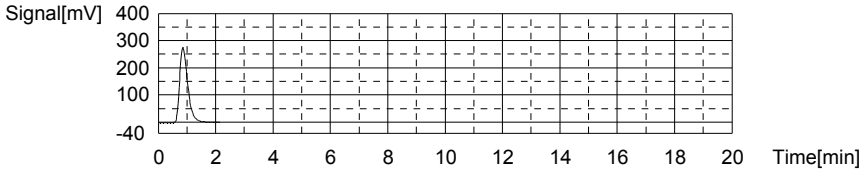
Mean Area 969.1
Mean Conc. 25.79mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	537.7	17.66mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	02/09/2012 03:32:27 PM

Mean Area 537.7
Mean Conc. 17.66mg/L



Sample

Sample Name: L12020166-25 (5)
Sample ID:
Origin: TOC-12-06-2011.met
Status Completed
Chk. Result

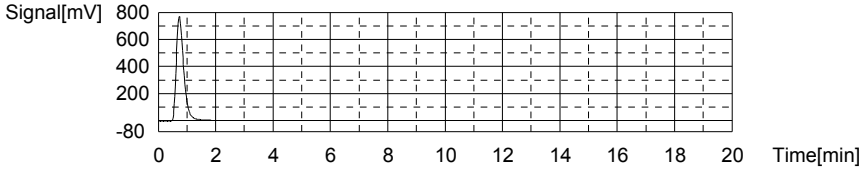
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:16.11mg/L TC:37.39mg/L IC:21.29mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1405	37.39mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	02/09/2012 03:41:11 PM

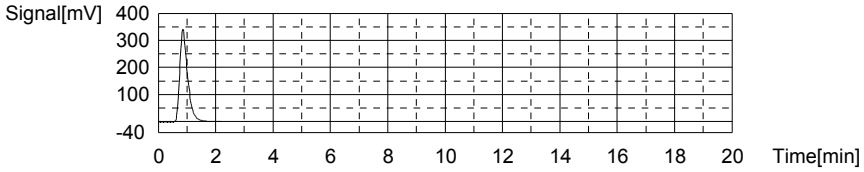
Mean Area 1405
Mean Conc. 37.39mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	645.5	21.29mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	02/09/2012 03:46:34 PM

Mean Area 645.5
Mean Conc. 21.29mg/L



Sample

Sample Name: L12020166-27 (10)
Sample ID:
Origin: TOC-12-06-2011.met
Status Completed
Chk. Result

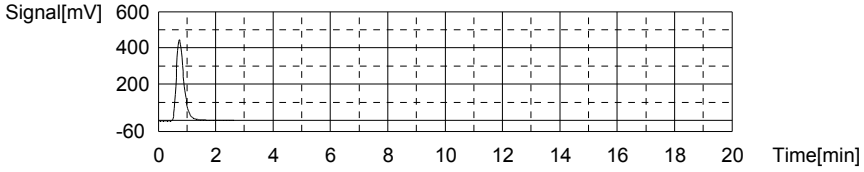
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:4.710mg/L TC:21.80mg/L IC:17.09mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	819.1	21.80mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	02/09/2012 03:54:39 PM

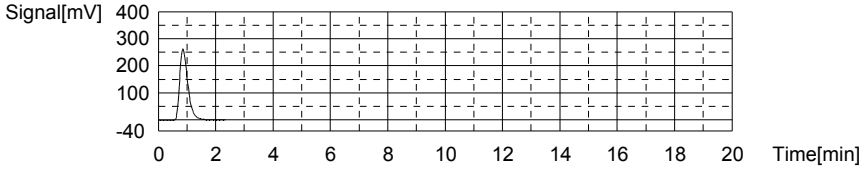
Mean Area 819.1
Mean Conc. 21.80mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	520.8	17.09mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	02/09/2012 04:00:11 PM

Mean Area 520.8
Mean Conc. 17.09mg/L



Sample

Sample Name: L12020166-28 (10)
Sample ID:
Origin: TOC-12-06-2011.met
Status Completed
Chk. Result

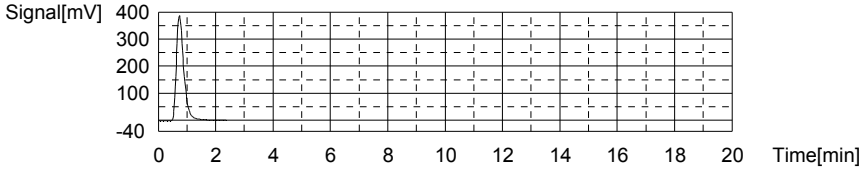
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.614mg/L TC:18.55mg/L IC:14.93mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	696.9	18.55mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	02/09/2012 04:08:00 PM

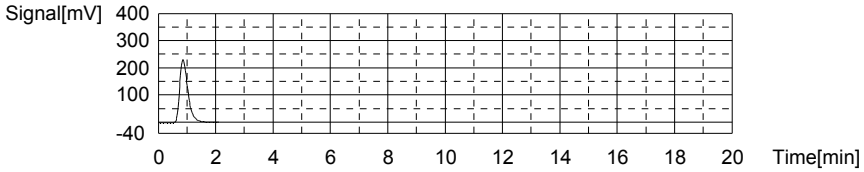
Mean Area 696.9
Mean Conc. 18.55mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	456.7	14.93mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	02/09/2012 04:13:15 PM

Mean Area 456.7
Mean Conc. 14.93mg/L



Sample

Sample Name: L12020179-11
Sample ID:
Origin: TOC-12-06-2011.met
Status Completed
Chk. Result

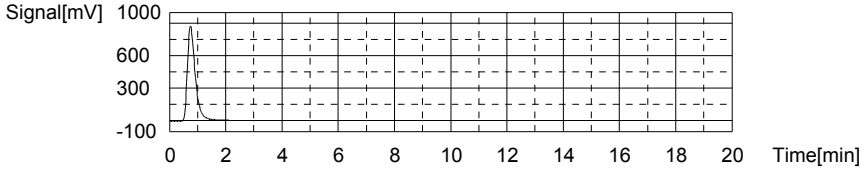
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:15.20mg/L TC:46.31mg/L IC:31.11mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1740	46.31mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	02/09/2012 04:22:37 PM

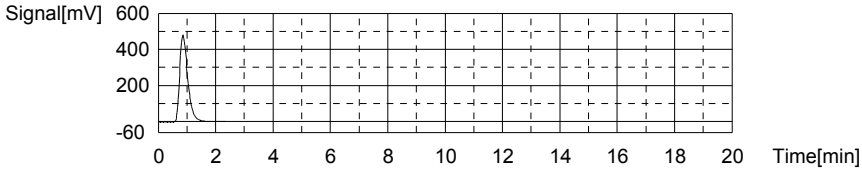
Mean Area 1740
Mean Conc. 46.31mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	937.4	31.11mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	02/09/2012 04:28:10 PM

Mean Area 937.4
Mean Conc. 31.11mg/L



Sample

Sample Name: L12020179-13
Sample ID:
Origin: TOC-12-06-2011.met
Status Completed
Chk. Result

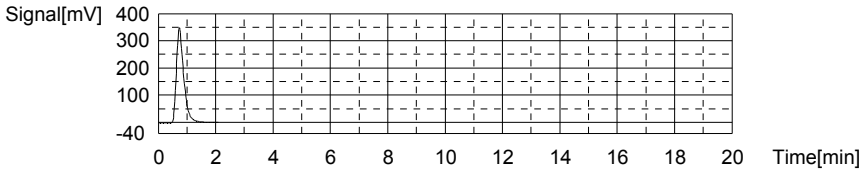
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:4.391mg/L TC:16.50mg/L IC:12.11mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	619.9	16.50mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	02/09/2012 04:35:42 PM

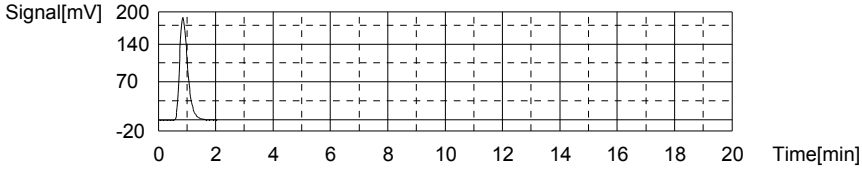
Mean Area 619.9
Mean Conc. 16.50mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	372.7	12.11mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	02/09/2012 04:40:51 PM

Mean Area 372.7
Mean Conc. 12.11mg/L



Sample

Sample Name: CCV
Sample ID:
Origin: TOC-12-06-2011.met
Status Completed
Chk. Result

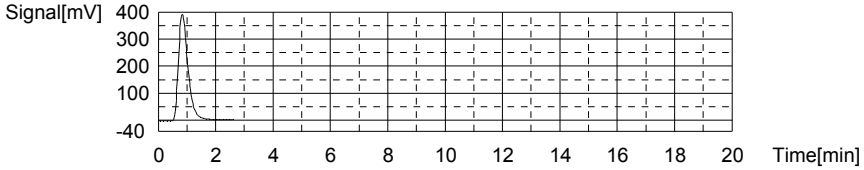
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:24.41mg/L TC:24.25mg/L IC:-0.1636mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	911.0	24.25mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	02/09/2012 04:48:54 PM

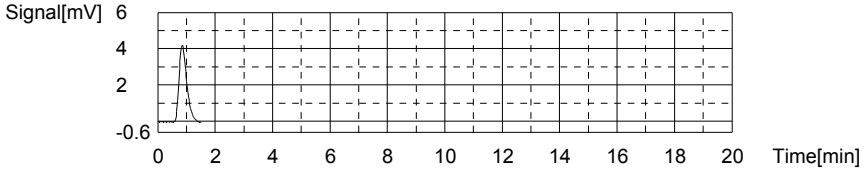
Mean Area 911.0
Mean Conc. 24.25mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.022	-0.1636mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	02/09/2012 04:53:19 PM

Mean Area 8.022
Mean Conc. -0.1636mg/L



Sample

Sample Name: CCB
Sample ID:
Origin: TOC-12-06-2011.met
Status Completed
Chk. Result

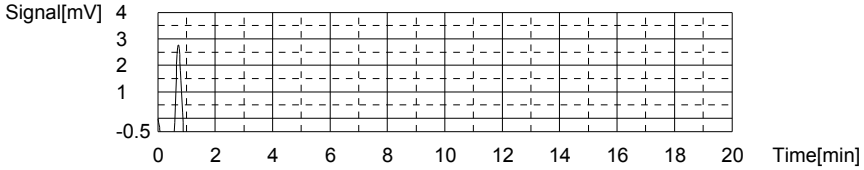
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.3991mg/L TC:0.2215mg/L IC:-0.1776mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.415	0.2215mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	02/09/2012 04:58:22 PM

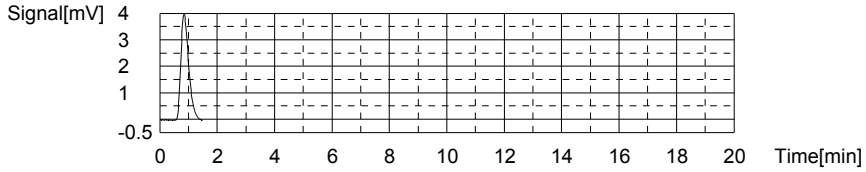
Mean Area 8.415
Mean Conc. 0.2215mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.606	-0.1776mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	02/09/2012 05:02:19 PM

Mean Area 7.606
Mean Conc. -0.1776mg/L



Sample

Sample Name: L12020203-10
Sample ID:
Origin: TOC-12-06-2011.met
Status Completed
Chk. Result

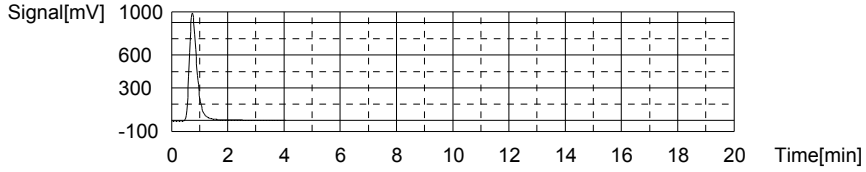
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:15.87mg/L TC:50.70mg/L IC:34.83mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1905	50.70mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	02/09/2012 05:11:49 PM

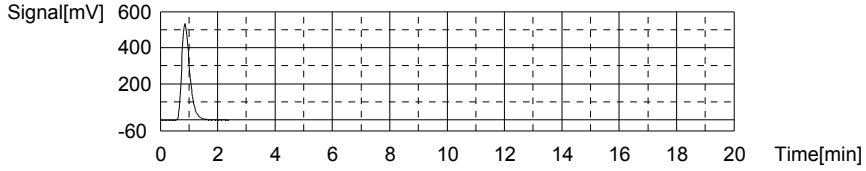
Mean Area 1905
Mean Conc. 50.70mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1048	34.83mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	02/09/2012 05:17:29 PM

Mean Area 1048
Mean Conc. 34.83mg/L



Sample

Sample Name: L12020203-11
Sample ID:
Origin: TOC-12-06-2011.met
Status Completed
Chk. Result

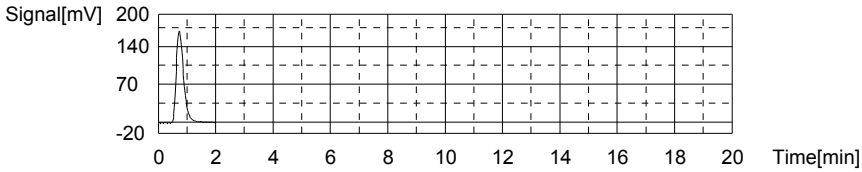
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.522mg/L TC:8.110mg/L IC:6.588mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	304.8	8.110mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	02/09/2012 05:24:54 PM

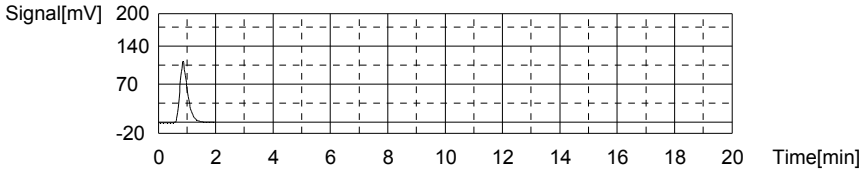
Mean Area 304.8
Mean Conc. 8.110mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	208.7	6.588mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	02/09/2012 05:29:59 PM

Mean Area 208.7
Mean Conc. 6.588mg/L



Sample

Sample Name: L12020203-12
Sample ID:
Origin: TOC-12-06-2011.met
Status Completed
Chk. Result

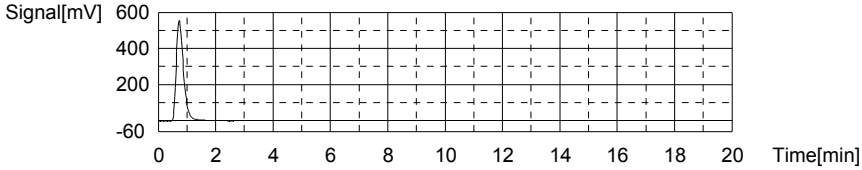
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.305mg/L TC:26.28mg/L IC:23.98mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	987.5	26.28mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	02/09/2012 05:38:02 PM

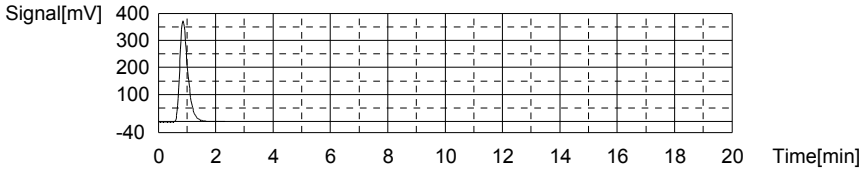
Mean Area 987.5
Mean Conc. 26.28mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	725.5	23.98mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	02/09/2012 05:43:33 PM

Mean Area 725.5
Mean Conc. 23.98mg/L



Sample

Sample Name: L12020203-13
Sample ID:
Origin: TOC-12-06-2011.met
Status Completed
Chk. Result

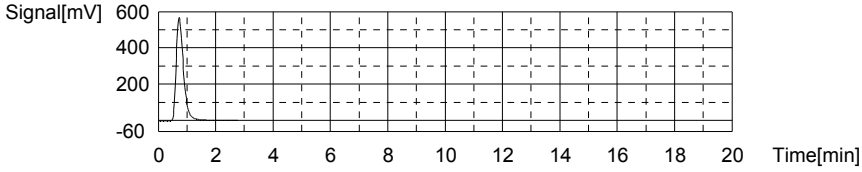
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.772mg/L TC:26.85mg/L IC:24.08mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1009	26.85mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	02/09/2012 05:51:46 PM

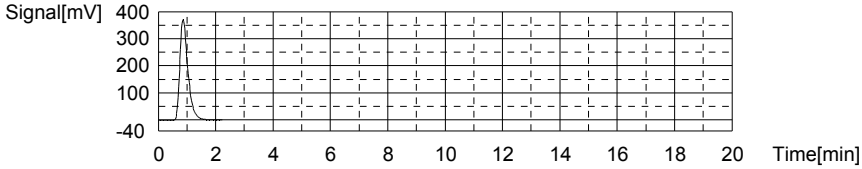
Mean Area 1009
Mean Conc. 26.85mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	728.6	24.08mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	02/09/2012 05:57:19 PM

Mean Area 728.6
Mean Conc. 24.08mg/L



Sample

Sample Name: L12020203-14
Sample ID:
Origin: TOC-12-06-2011.met
Status Completed
Chk. Result

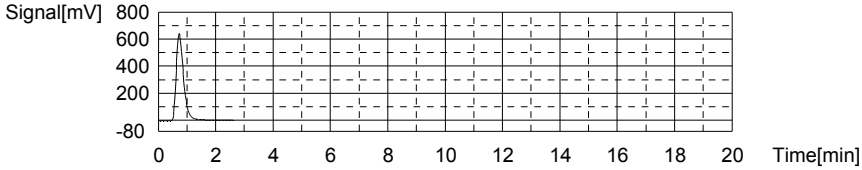
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.517mg/L TC:30.37mg/L IC:26.85mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1141	30.37mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	02/09/2012 06:05:21 PM

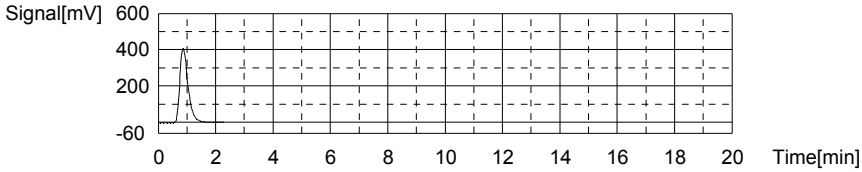
Mean Area 1141
Mean Conc. 30.37mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	810.9	26.85mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	02/09/2012 06:10:50 PM

Mean Area 810.9
Mean Conc. 26.85mg/L



Sample

Sample Name: L12020203-16
Sample ID:
Origin: TOC-12-06-2011.met
Status Completed
Chk. Result

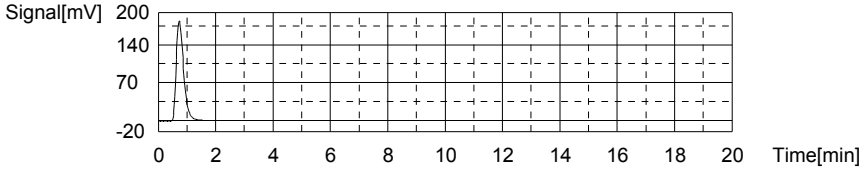
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.480mg/L TC:8.943mg/L IC:7.463mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	336.1	8.943mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	02/09/2012 06:18:20 PM

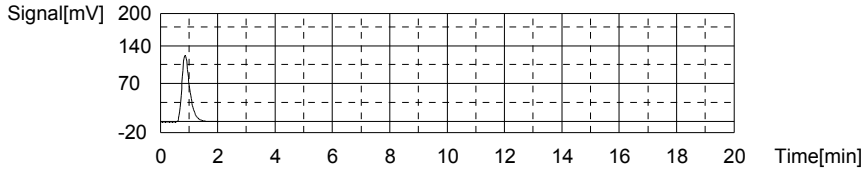
Mean Area 336.1
Mean Conc. 8.943mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	234.7	7.463mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	02/09/2012 06:23:27 PM

Mean Area 234.7
Mean Conc. 7.463mg/L



Sample

Sample Name:
Sample ID:
Origin: TOC-12-06-2011.met
Status Completed
Chk. Result

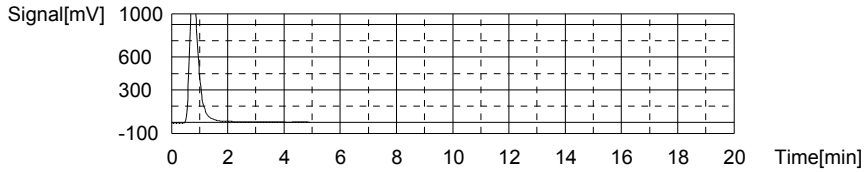
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:37.30mg/L TC:73.41mg/L IC:36.11mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2758	73.41mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	02/09/2012 06:33:48 PM

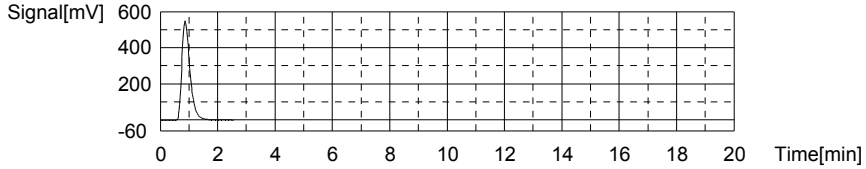
Mean Area 2758
Mean Conc. 73.41mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1086	36.11mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	02/09/2012 06:39:43 PM

Mean Area 1086
Mean Conc. 36.11mg/L



Sample

Sample Name: L12020203-18
Sample ID:
Origin: TOC-12-06-2011.met
Status Completed
Chk. Result

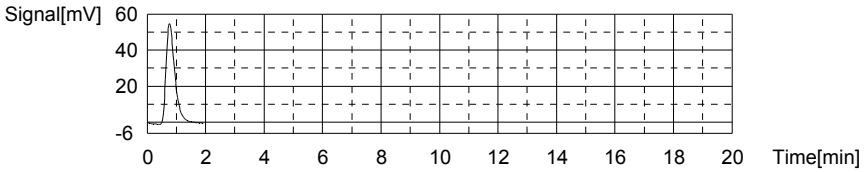
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.685mg/L TC:3.112mg/L IC:0.4264mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	117.0	3.112mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	02/09/2012 06:47:05 PM

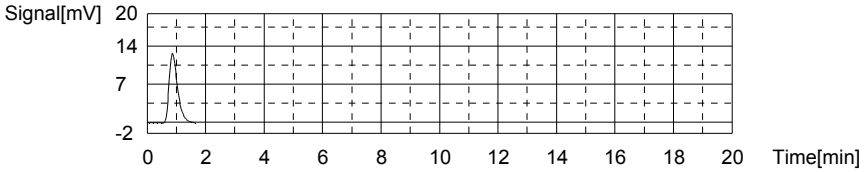
Mean Area 117.0
Mean Conc. 3.112mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	25.56	0.4264mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	02/09/2012 06:51:39 PM

Mean Area 25.56
Mean Conc. 0.4264mg/L



Sample

Sample Name: L12020203-19
Sample ID:
Origin: TOC-12-06-2011.met
Status Completed
Chk. Result

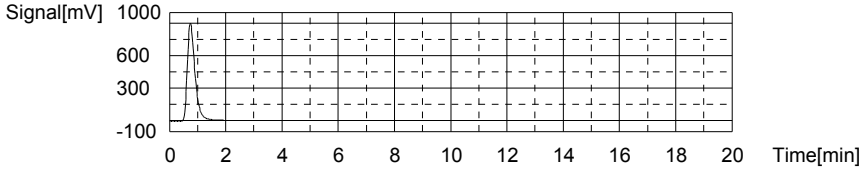
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:14.63mg/L TC:46.39mg/L IC:31.76mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1743	46.39mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	02/09/2012 07:00:08 PM

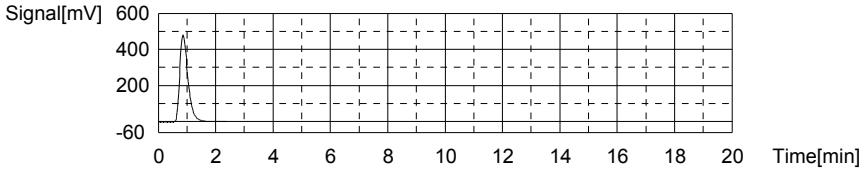
Mean Area 1743
Mean Conc. 46.39mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	956.7	31.76mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	02/09/2012 07:05:47 PM

Mean Area 956.7
Mean Conc. 31.76mg/L



Sample

Sample Name: L12020203-20
Sample ID:
Origin: TOC-12-06-2011.met
Status Completed
Chk. Result

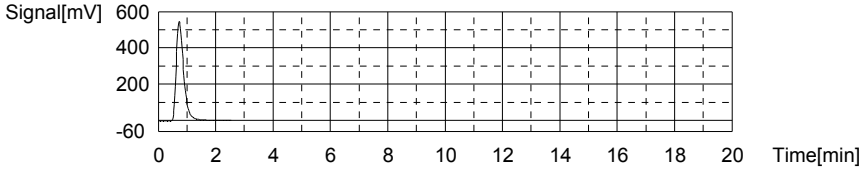
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.808mg/L TC:26.43mg/L IC:22.62mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	992.9	26.43mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	02/09/2012 07:13:45 PM

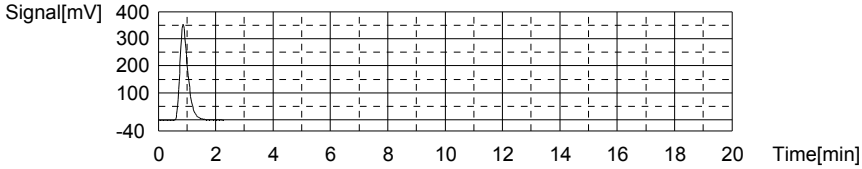
Mean Area 992.9
Mean Conc. 26.43mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	685.1	22.62mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	02/09/2012 07:19:15 PM

Mean Area 685.1
Mean Conc. 22.62mg/L



Sample

Sample Name: CCV
Sample ID:
Origin: TOC-12-06-2011.met
Status Completed
Chk. Result

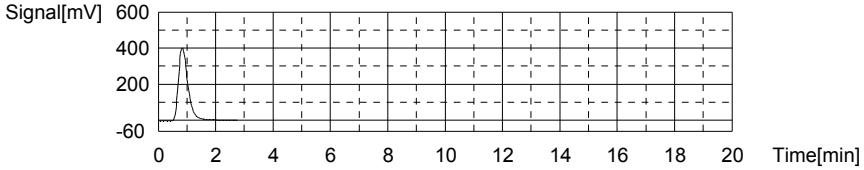
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:24.60mg/L TC:24.47mg/L IC:-0.1295mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	919.4	24.47mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	02/09/2012 07:27:27 PM

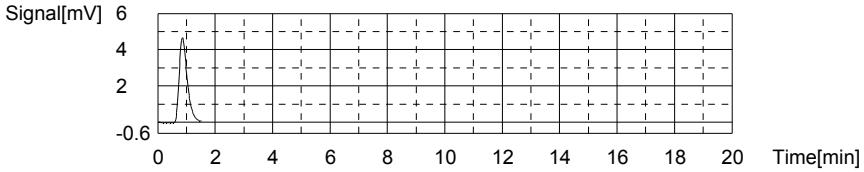
Mean Area 919.4
Mean Conc. 24.47mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.036	-0.1295mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	02/09/2012 07:31:56 PM

Mean Area 9.036
Mean Conc. -0.1295mg/L



Sample

Sample Name: CCB
Sample ID:
Origin: TOC-12-06-2011.met
Status Completed
Chk. Result

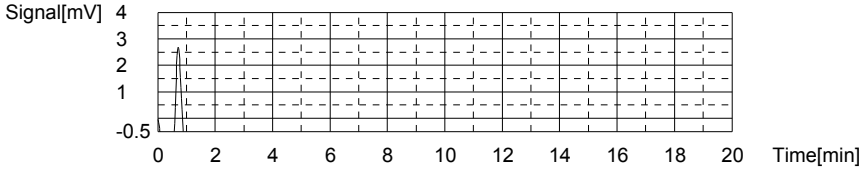
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.3857mg/L TC:0.2212mg/L IC:-0.1645mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.403	0.2212mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	02/09/2012 07:36:58 PM

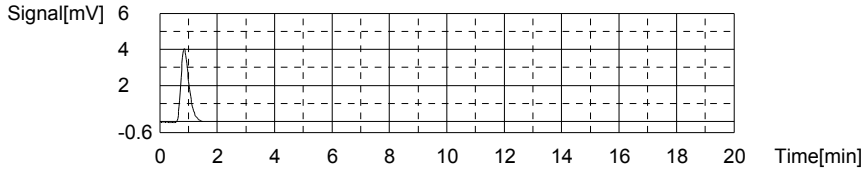
Mean Area 8.403
Mean Conc. 0.2212mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.996	-0.1645mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	02/09/2012 07:40:56 PM

Mean Area 7.996
Mean Conc. -0.1645mg/L



Sample

Sample Name: L12020203-29
Sample ID:
Origin: TOC-12-06-2011.met
Status Completed
Chk. Result

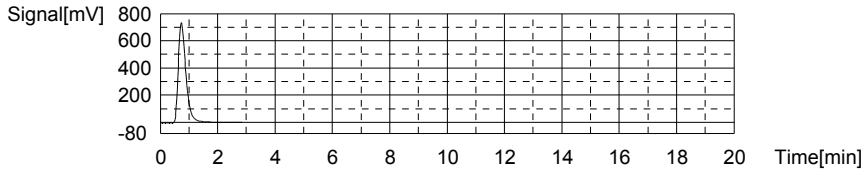
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:8.780mg/L TC:36.22mg/L IC:27.44mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1361	36.22mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	02/09/2012 07:49:15 PM

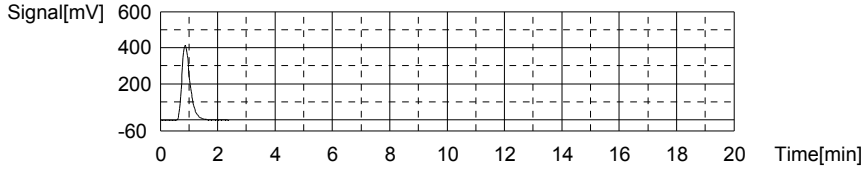
Mean Area 1361
Mean Conc. 36.22mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	828.5	27.44mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	02/09/2012 07:54:53 PM

Mean Area 828.5
Mean Conc. 27.44mg/L



Sample

Sample Name: L12020203-30
Sample ID:
Origin: TOC-12-06-2011.met
Status Completed
Chk. Result

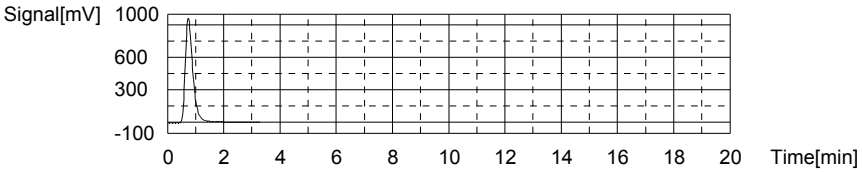
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:13.46mg/L TC:48.52mg/L IC:35.06mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1823	48.52mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	02/09/2012 08:03:38 PM

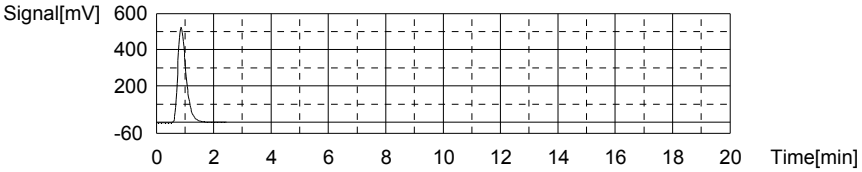
Mean Area 1823
Mean Conc. 48.52mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1055	35.06mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	02/09/2012 08:09:27 PM

Mean Area 1055
Mean Conc. 35.06mg/L



Sample

Sample Name: L12020203-31 MS
Sample ID:
Origin: TOC-12-06-2011.met
Status Completed
Chk. Result

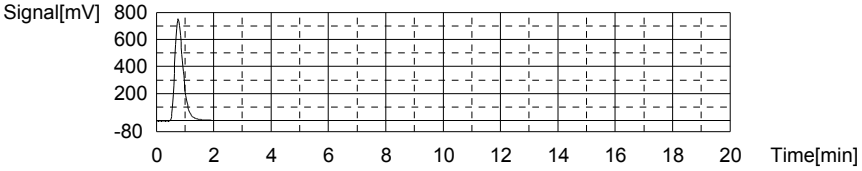
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:22.89mg/L TC:41.15mg/L IC:18.26mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1546	41.15mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	02/09/2012 08:18:11 PM

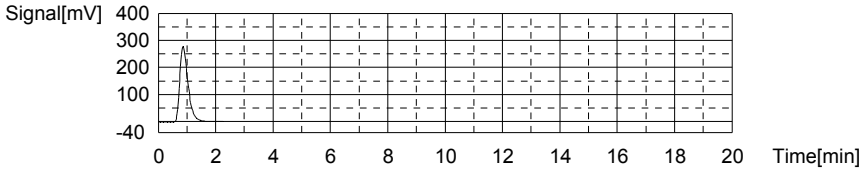
Mean Area 1546
Mean Conc. 41.15mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	555.5	18.26mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	02/09/2012 08:23:38 PM

Mean Area 555.5
Mean Conc. 18.26mg/L



Sample

Sample Name: L12020203-32 MSD
Sample ID:
Origin: TOC-12-06-2011.met
Status Completed
Chk. Result

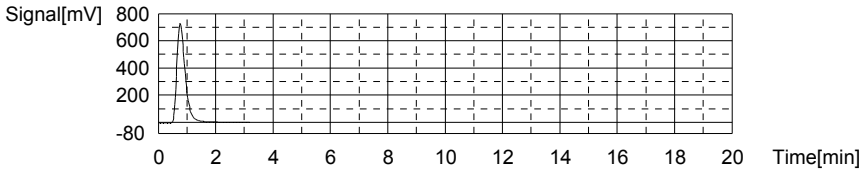
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:22.56mg/L TC:39.79mg/L IC:17.23mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1495	39.79mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	02/09/2012 08:32:17 PM

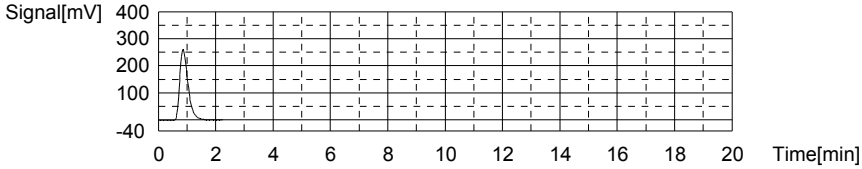
Mean Area 1495
Mean Conc. 39.79mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	524.9	17.23mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	02/09/2012 08:37:42 PM

Mean Area 524.9
Mean Conc. 17.23mg/L



Sample

Sample Name: WG389144-05 DUP
Sample ID:
Origin: TOC-12-06-2011.met
Status Completed
Chk. Result

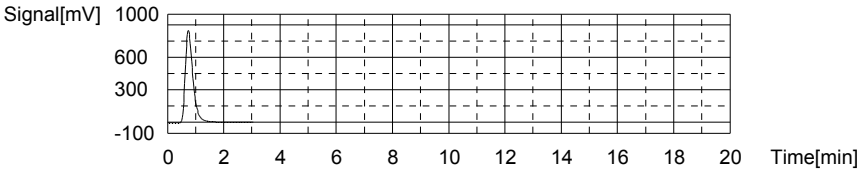
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:12.97mg/L TC:43.17mg/L IC:30.19mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1622	43.17mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	02/09/2012 08:46:11 PM

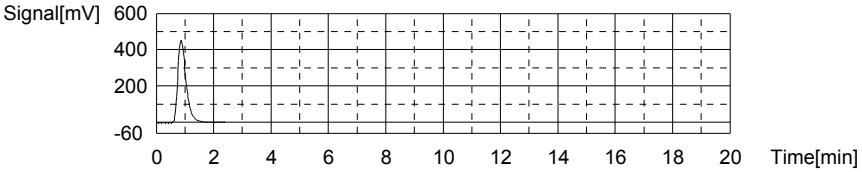
Mean Area 1622
Mean Conc. 43.17mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	910.3	30.19mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	02/09/2012 08:51:50 PM

Mean Area 910.3
Mean Conc. 30.19mg/L



Sample

Sample Name: WG389146-01 BLK
Sample ID:
Origin: TOC-12-06-2011.met
Status Completed
Chk. Result

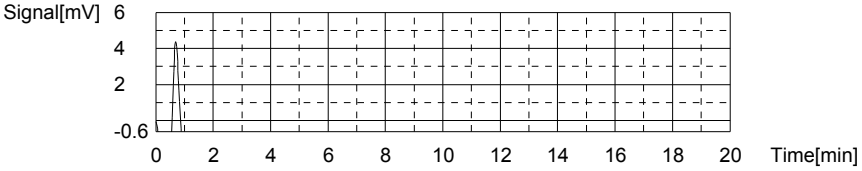
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.3686mg/L TC:0.2951mg/L IC:-0.07354mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	11.18	0.2951mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	02/09/2012 08:56:51 PM

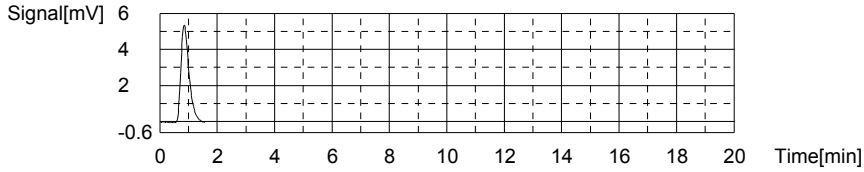
Mean Area 11.18
Mean Conc. 0.2951mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.70	-0.07354mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	02/09/2012 09:00:56 PM

Mean Area 10.70
Mean Conc. -0.07354mg/L



Sample

Sample Name: WG389146-02 LCS
Sample ID:
Origin: TOC-12-06-2011.met
Status Completed
Chk. Result

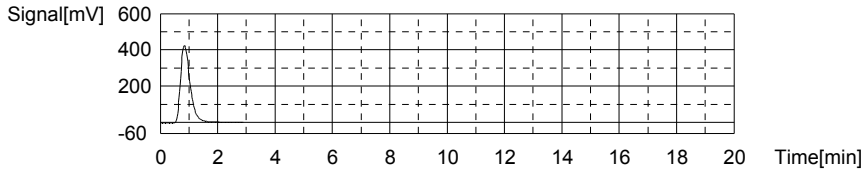
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:26.72mg/L TC:26.54mg/L IC:-0.1804mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	997.1	26.54mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	02/09/2012 09:09:17 PM

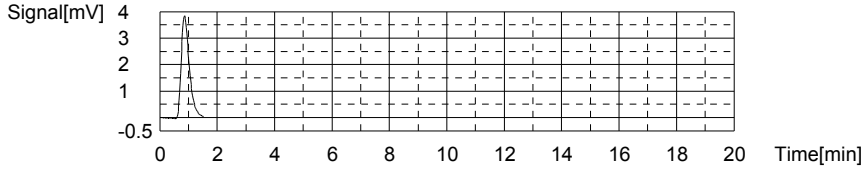
Mean Area 997.1
Mean Conc. 26.54mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.524	-0.1804mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	02/09/2012 09:13:46 PM

Mean Area 7.524
Mean Conc. -0.1804mg/L



Sample

Sample Name: WG389146-03 LCSDUP
Sample ID:
Origin: TOC-12-06-2011.met
Status Completed
Chk. Result

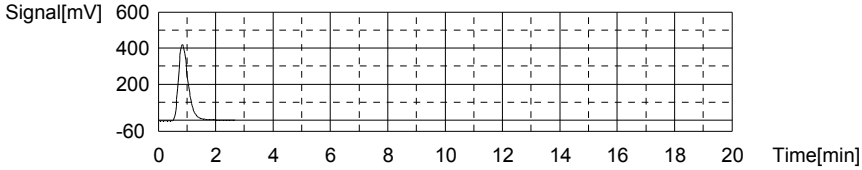
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:26.56mg/L TC:26.34mg/L IC:-0.2212mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	989.6	26.34mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	02/09/2012 09:22:06 PM

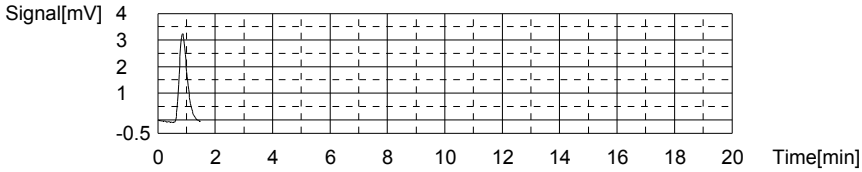
Mean Area 989.6
Mean Conc. 26.34mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	6.311	-0.2212mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	02/09/2012 09:26:30 PM

Mean Area 6.311
Mean Conc. -0.2212mg/L



Sample

Sample Name: L12020203-33
Sample ID:
Origin: TOC-12-06-2011.met
Status Completed
Chk. Result

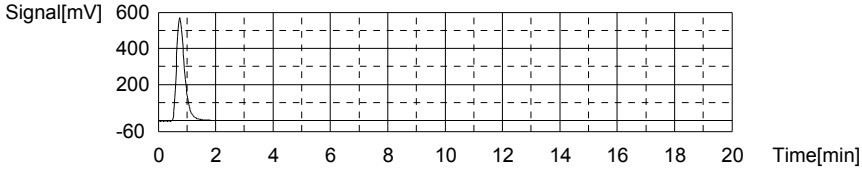
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:11.68mg/L TC:29.99mg/L IC:18.31mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1127	29.99mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	02/09/2012 09:34:40 PM

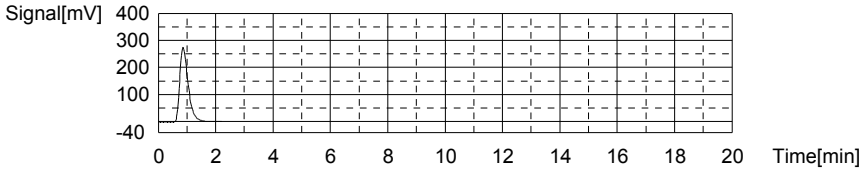
Mean Area 1127
Mean Conc. 29.99mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	557.2	18.31mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	02/09/2012 09:40:01 PM

Mean Area 557.2
Mean Conc. 18.31mg/L



Sample

Sample Name: L12020203-34
Sample ID:
Origin: TOC-12-06-2011.met
Status Completed
Chk. Result

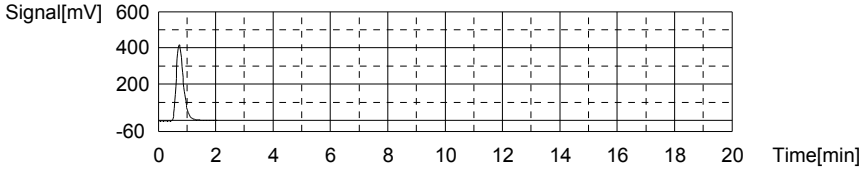
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.556mg/L TC:19.67mg/L IC:16.11mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	739.1	19.67mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	02/09/2012 09:47:32 PM

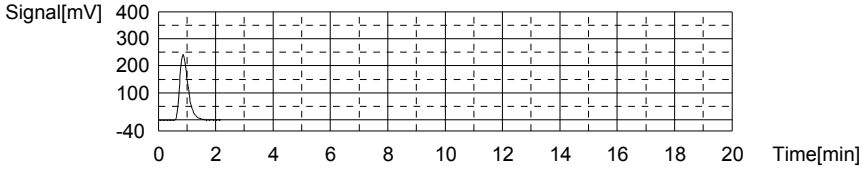
Mean Area 739.1
Mean Conc. 19.67mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	491.8	16.11mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	02/09/2012 09:52:54 PM

Mean Area 491.8
Mean Conc. 16.11mg/L



Sample

Sample Name: CCV
Sample ID:
Origin: TOC-12-06-2011.met
Status Completed
Chk. Result

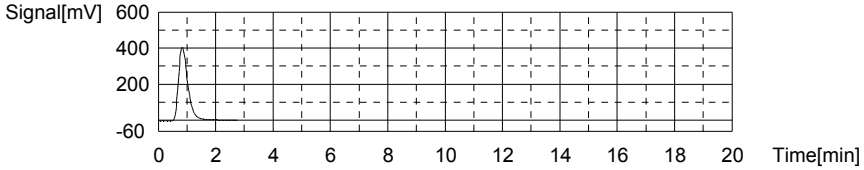
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:24.71mg/L TC:24.55mg/L IC:-0.1600mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	922.5	24.55mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	02/09/2012 10:01:07 PM

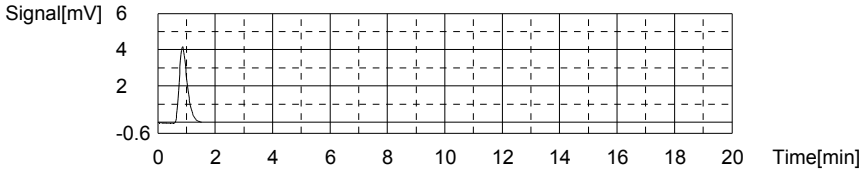
Mean Area 922.5
Mean Conc. 24.55mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.130	-0.1600mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	02/09/2012 10:05:33 PM

Mean Area 8.130
Mean Conc. -0.1600mg/L



Sample

Sample Name: CCB
Sample ID:
Origin: TOC-12-06-2011.met
Status Completed
Chk. Result

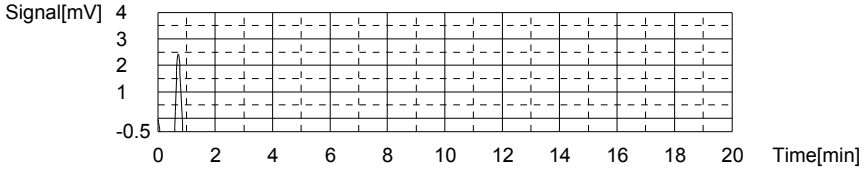
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.3863mg/L TC:0.2168mg/L IC:-0.1694mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.240	0.2168mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	02/09/2012 10:10:34 PM

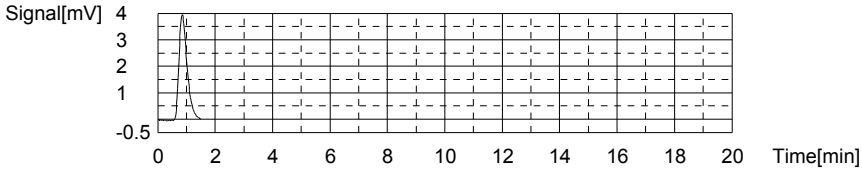
Mean Area 8.240
Mean Conc. 0.2168mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.850	-0.1694mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	02/09/2012 10:14:33 PM

Mean Area 7.850
Mean Conc. -0.1694mg/L



Sample

Sample Name: L12020203-35
Sample ID:
Origin: TOC-12-06-2011.met
Status Completed
Chk. Result

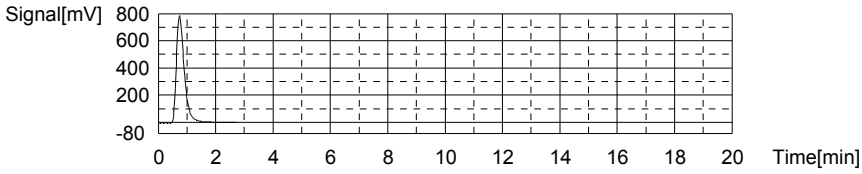
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:11.63mg/L TC:40.19mg/L IC:28.56mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1510	40.19mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	02/09/2012 10:22:43 PM

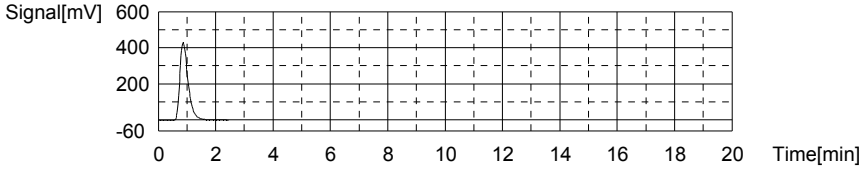
Mean Area 1510
Mean Conc. 40.19mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	861.7	28.56mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	02/09/2012 10:28:25 PM

Mean Area 861.7
Mean Conc. 28.56mg/L



Sample

Sample Name: L12020220-01
Sample ID:
Origin: TOC-12-06-2011.met
Status Completed
Chk. Result

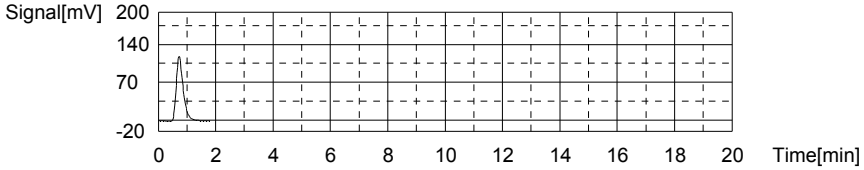
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.234mg/L TC:5.366mg/L IC:4.132mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	201.7	5.366mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	02/09/2012 10:35:41 PM

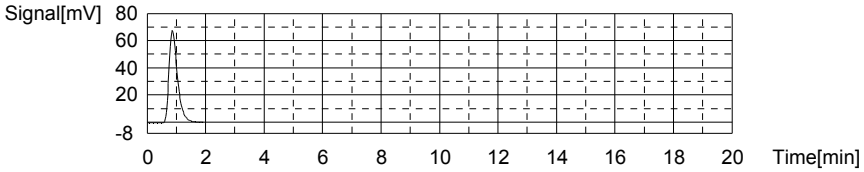
Mean Area 201.7
Mean Conc. 5.366mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	135.7	4.132mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	02/09/2012 10:40:37 PM

Mean Area 135.7
Mean Conc. 4.132mg/L



Sample

Sample Name: L12020220-02
Sample ID:
Origin: TOC-12-06-2011.met
Status Completed
Chk. Result

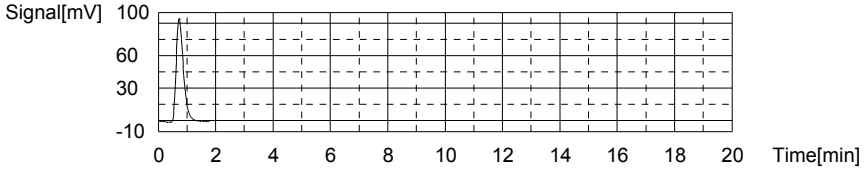
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.9397mg/L TC:4.480mg/L IC:3.540mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	168.4	4.480mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	02/09/2012 10:47:51 PM

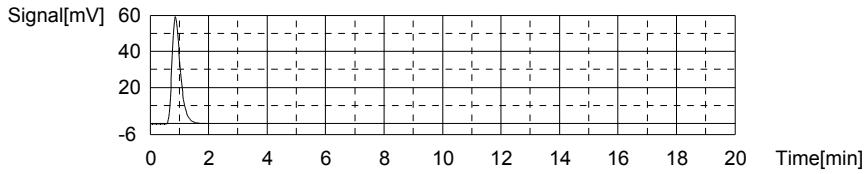
Mean Area 168.4
Mean Conc. 4.480mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	118.1	3.540mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	02/09/2012 10:52:46 PM

Mean Area 118.1
Mean Conc. 3.540mg/L



Sample

Sample Name: L12020220-03
Sample ID:
Origin: TOC-12-06-2011.met
Status Completed
Chk. Result

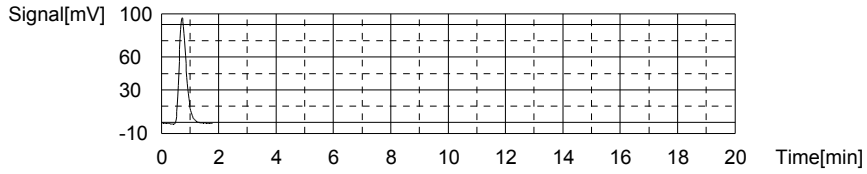
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.9546mg/L TC:4.525mg/L IC:3.570mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	170.1	4.525mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	02/09/2012 10:59:59 PM

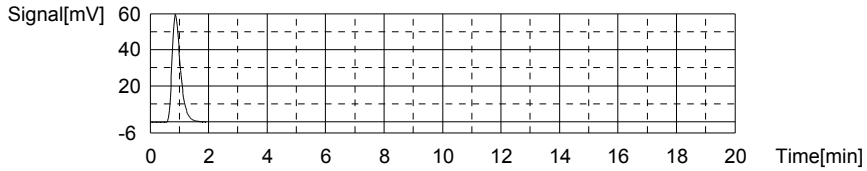
Mean Area 170.1
Mean Conc. 4.525mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	119.0	3.570mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	02/09/2012 11:04:55 PM

Mean Area 119.0
Mean Conc. 3.570mg/L



Sample

Sample Name: L12020221-01
Sample ID:
Origin: TOC-12-06-2011.met
Status Completed
Chk. Result

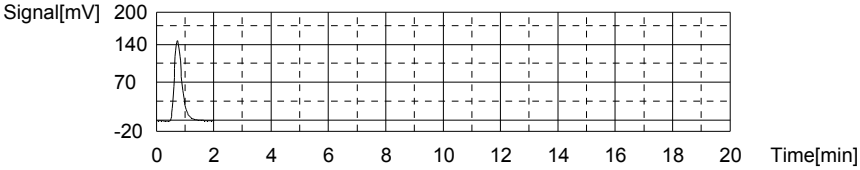
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.107mg/L TC:7.346mg/L IC:5.239mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	276.1	7.346mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	02/09/2012 11:12:23 PM

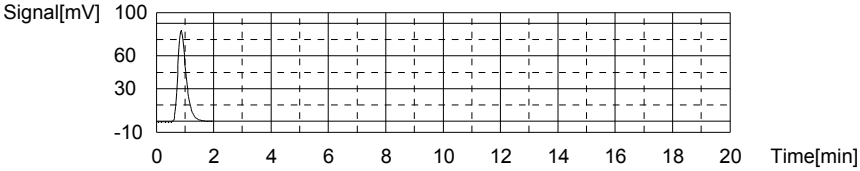
Mean Area 276.1
Mean Conc. 7.346mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	168.6	5.239mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	02/09/2012 11:17:21 PM

Mean Area 168.6
Mean Conc. 5.239mg/L



Sample

Sample Name: L12020221-02
Sample ID:
Origin: TOC-12-06-2011.met
Status Completed
Chk. Result

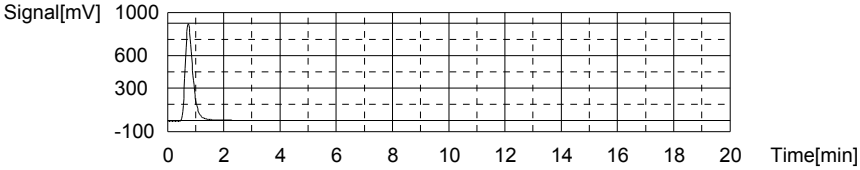
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:8.425mg/L TC:45.91mg/L IC:37.49mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1725	45.91mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	02/09/2012 11:26:08 PM

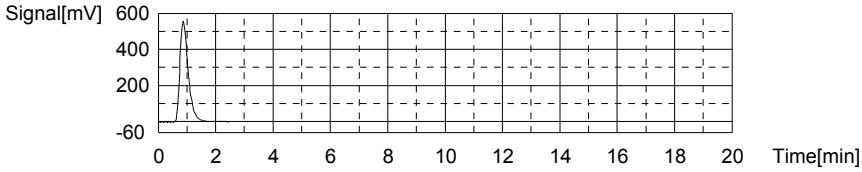
Mean Area 1725
Mean Conc. 45.91mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1127	37.49mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	02/09/2012 11:31:55 PM

Mean Area 1127
Mean Conc. 37.49mg/L



Sample

Sample Name: L12020221-03
Sample ID:
Origin: TOC-12-06-2011.met
Status Completed
Chk. Result

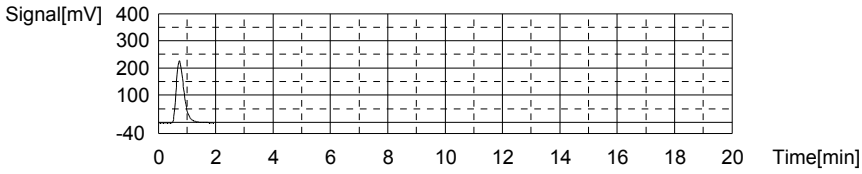
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.641mg/L TC:11.34mg/L IC:8.695mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	426.0	11.34mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	02/09/2012 11:39:16 PM

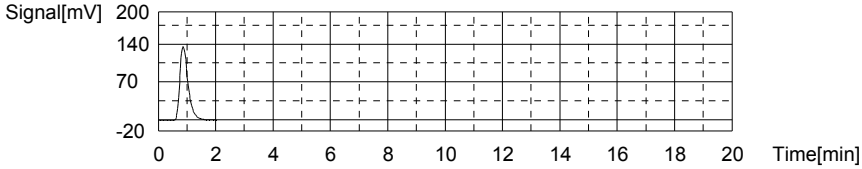
Mean Area 426.0
Mean Conc. 11.34mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	271.3	8.695mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	02/09/2012 11:44:26 PM

Mean Area 271.3
Mean Conc. 8.695mg/L



Sample

Sample Name: L12020221-04
Sample ID:
Origin: TOC-12-06-2011.met
Status Completed
Chk. Result

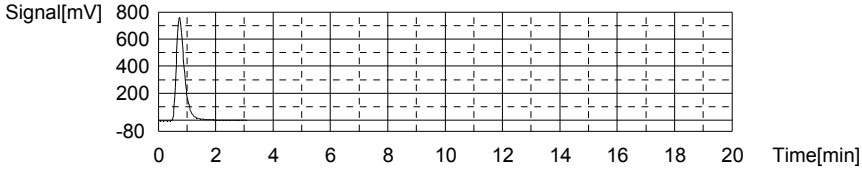
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:10.33mg/L TC:39.87mg/L IC:29.54mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1498	39.87mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	02/09/2012 11:52:58 PM

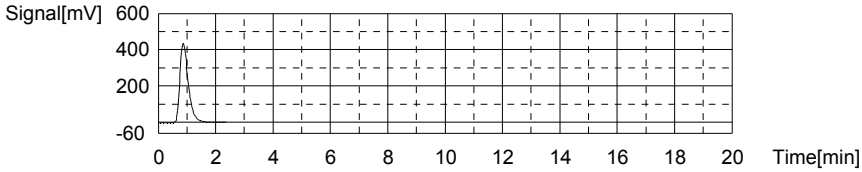
Mean Area 1498
Mean Conc. 39.87mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	890.9	29.54mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	02/09/2012 11:58:39 PM

Mean Area 890.9
Mean Conc. 29.54mg/L



Sample

Sample Name: L12020221-05
Sample ID:
Origin: TOC-12-06-2011.met
Status Completed
Chk. Result

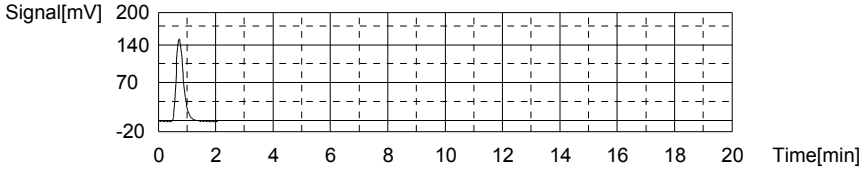
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.739mg/L TC:7.328mg/L IC:5.589mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	275.4	7.328mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	02/10/2012 12:06:11 AM

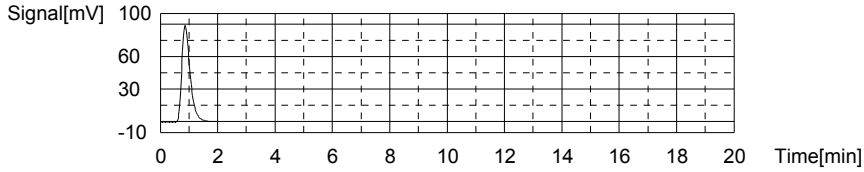
Mean Area 275.4
Mean Conc. 7.328mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	179.0	5.589mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	02/10/2012 12:11:12 AM

Mean Area 179.0
Mean Conc. 5.589mg/L



Sample

Sample Name:
Sample ID:
Origin: TOC-12-06-2011.met
Status Completed
Chk. Result

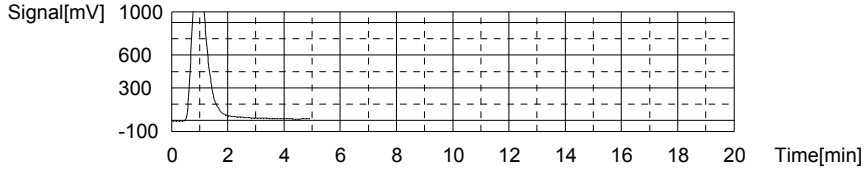
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:109.9mg/L TC:134.2mg/L IC:24.25mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	5042	134.2mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	02/10/2012 12:21:35 AM

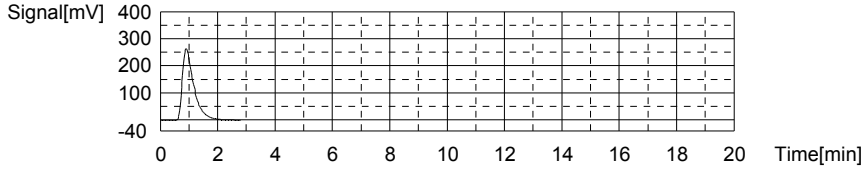
Mean Area 5042
Mean Conc. 134.2mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	733.7	24.25mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	02/10/2012 12:27:49 AM

Mean Area 733.7
Mean Conc. 24.25mg/L



Sample

Sample Name: CCV
Sample ID:
Origin: TOC-12-06-2011.met
Status Completed
Chk. Result

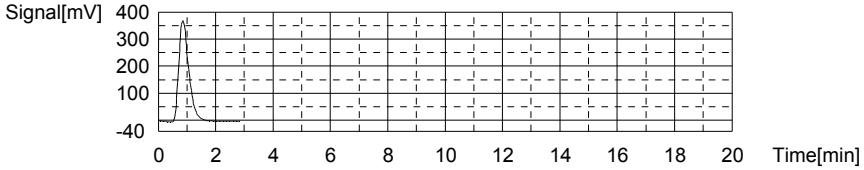
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:24.44mg/L TC:24.33mg/L IC:-0.1118mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	914.1	24.33mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	02/10/2012 12:36:20 AM

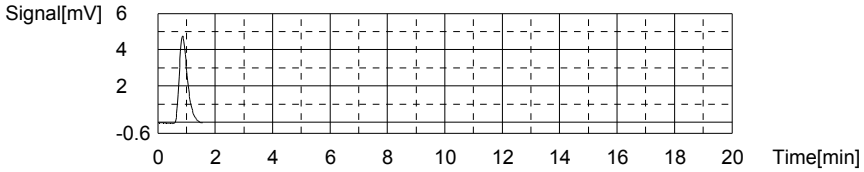
Mean Area 914.1
Mean Conc. 24.33mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.562	-0.1118mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	02/10/2012 12:40:52 AM

Mean Area 9.562
Mean Conc. -0.1118mg/L



Sample

Sample Name: CCB
Sample ID:
Origin: TOC-12-06-2011.met
Status Completed
Chk. Result

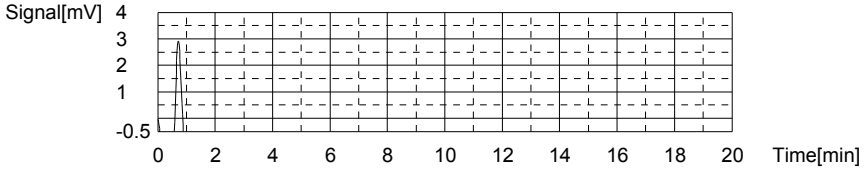
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.3971mg/L TC:0.2426mg/L IC:-0.1544mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.209	0.2426mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	02/10/2012 12:45:56 AM

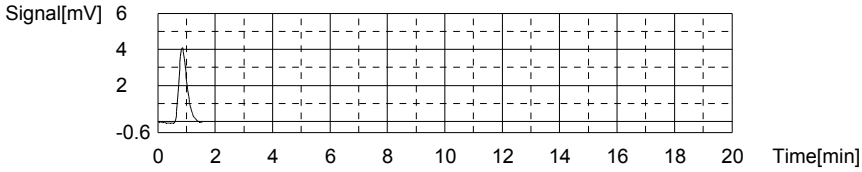
Mean Area 9.209
Mean Conc. 0.2426mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.296	-0.1544mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	02/10/2012 12:50:00 AM

Mean Area 8.296
Mean Conc. -0.1544mg/L



Sample

Sample Name: L12020221-07
Sample ID:
Origin: TOC-12-06-2011.met
Status Completed
Chk. Result

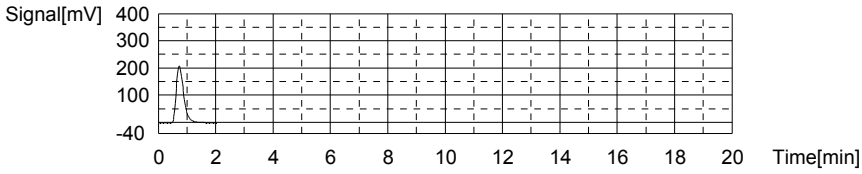
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.806mg/L TC:10.10mg/L IC:8.298mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	379.7	10.10mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	02/10/2012 12:57:34 AM

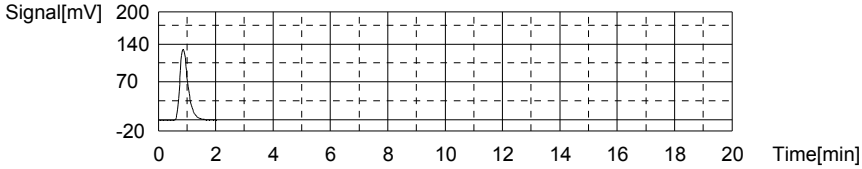
Mean Area 379.7
Mean Conc. 10.10mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	259.5	8.298mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	02/10/2012 01:02:41 AM

Mean Area 259.5
Mean Conc. 8.298mg/L



Sample

Sample Name:
Sample ID:
Origin: TOC-12-06-2011.met
Status Completed
Chk. Result

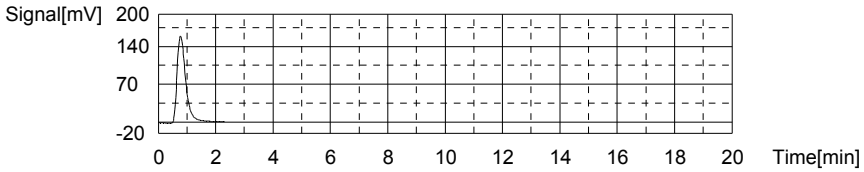
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:6.855mg/L TC:9.031mg/L IC:2.176mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	339.4	9.031mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	02/10/2012 01:10:28 AM

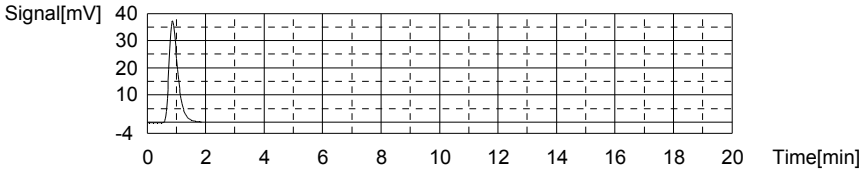
Mean Area 339.4
Mean Conc. 9.031mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	77.57	2.176mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	02/10/2012 01:15:20 AM

Mean Area 77.57
Mean Conc. 2.176mg/L



Sample

Sample Name: L12020221-09
Sample ID:
Origin: TOC-12-06-2011.met
Status Completed
Chk. Result

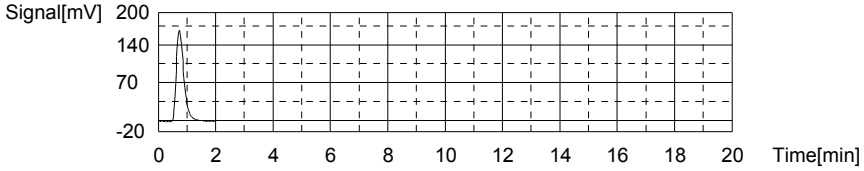
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.976mg/L TC:8.265mg/L IC:6.289mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	310.6	8.265mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	02/10/2012 01:22:48 AM

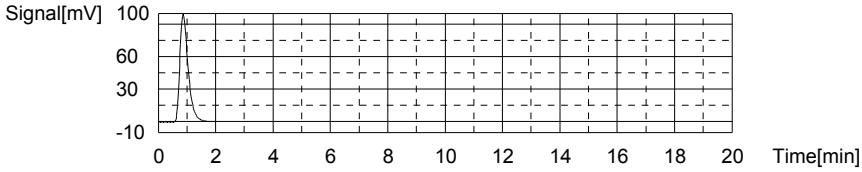
Mean Area 310.6
Mean Conc. 8.265mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	199.8	6.289mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	02/10/2012 01:27:47 AM

Mean Area 199.8
Mean Conc. 6.289mg/L



Sample

Sample Name: L12020221-10 (3)
Sample ID:
Origin: TOC-12-06-2011.met
Status Completed
Chk. Result

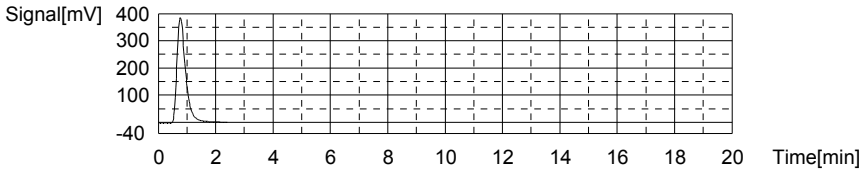
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:13.38mg/L TC:21.73mg/L IC:8.355mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	816.6	21.73mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	02/10/2012 01:35:40 AM

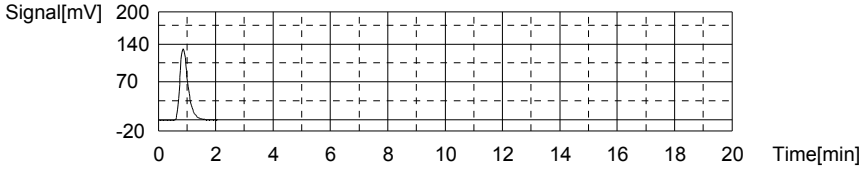
Mean Area 816.6
Mean Conc. 21.73mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	261.2	8.355mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	02/10/2012 01:40:51 AM

Mean Area 261.2
Mean Conc. 8.355mg/L



Sample

Sample Name:
Sample ID:
Origin: TOC-12-06-2011.met
Status Completed
Chk. Result

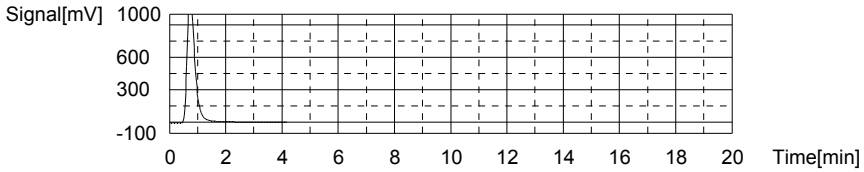
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:38.39mg/L TC:60.95mg/L IC:22.56mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2290	60.95mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	02/10/2012 01:50:30 AM

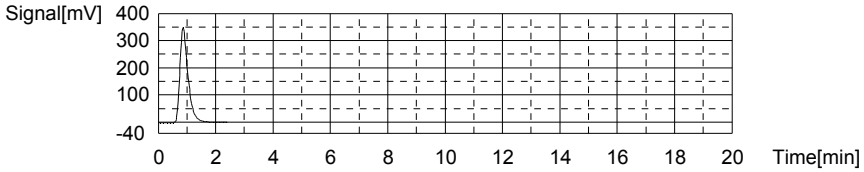
Mean Area 2290
Mean Conc. 60.95mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	683.5	22.56mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	02/10/2012 01:56:10 AM

Mean Area 683.5
Mean Conc. 22.56mg/L



Sample

Sample Name: L12020221-12 (5)
Sample ID:
Origin: TOC-12-06-2011.met
Status Completed
Chk. Result

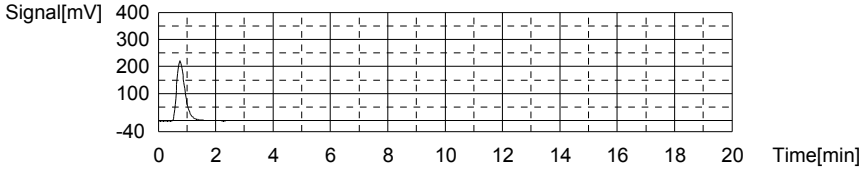
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:6.960mg/L TC:12.15mg/L IC:5.185mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	456.4	12.15mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	02/10/2012 02:03:59 AM

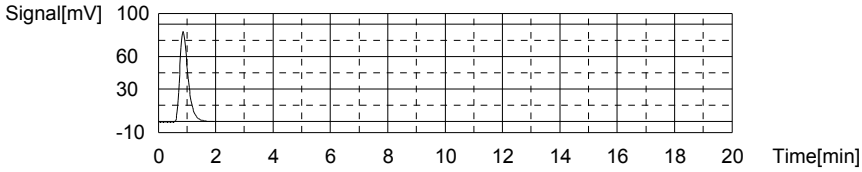
Mean Area 456.4
Mean Conc. 12.15mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	167.0	5.185mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	02/10/2012 02:08:57 AM

Mean Area 167.0
Mean Conc. 5.185mg/L



Sample

Sample Name: L12020221-13
Sample ID:
Origin: TOC-12-06-2011.met
Status Completed
Chk. Result

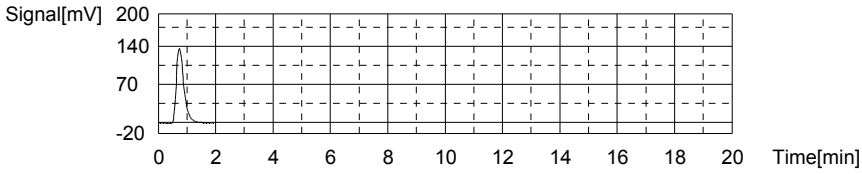
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.138mg/L TC:6.771mg/L IC:4.634mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	254.5	6.771mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	02/10/2012 02:16:20 AM

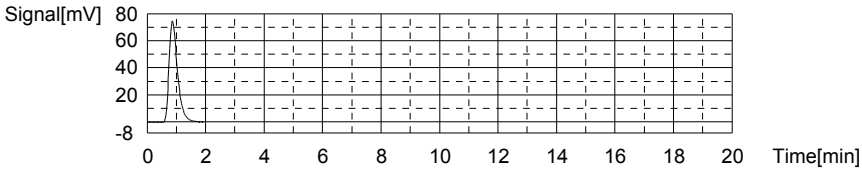
Mean Area 254.5
Mean Conc. 6.771mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	150.6	4.634mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	02/10/2012 02:21:17 AM

Mean Area 150.6
Mean Conc. 4.634mg/L



Sample

Sample Name: L12020221-16
Sample ID:
Origin: TOC-12-06-2011.met
Status Completed
Chk. Result

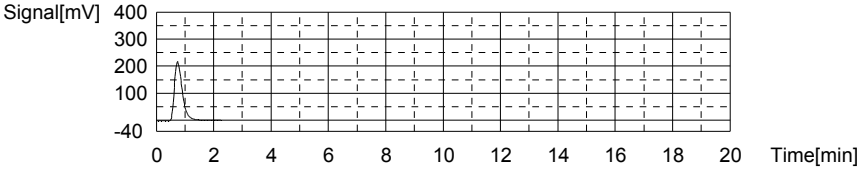
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.896mg/L TC:11.20mg/L IC:7.302mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	420.8	11.20mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	02/10/2012 02:29:01 AM

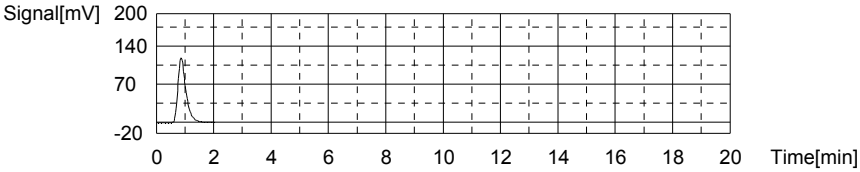
Mean Area 420.8
Mean Conc. 11.20mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	229.9	7.302mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	02/10/2012 02:34:03 AM

Mean Area 229.9
Mean Conc. 7.302mg/L



Sample

Sample Name: WG389146-05 DUP
Sample ID:
Origin: TOC-12-06-2011.met
Status Completed
Chk. Result

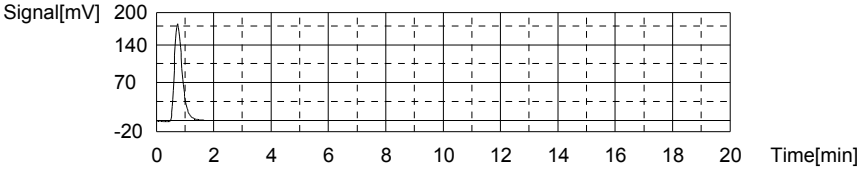
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.910mg/L TC:9.321mg/L IC:5.411mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	350.3	9.321mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	02/10/2012 02:41:41 AM

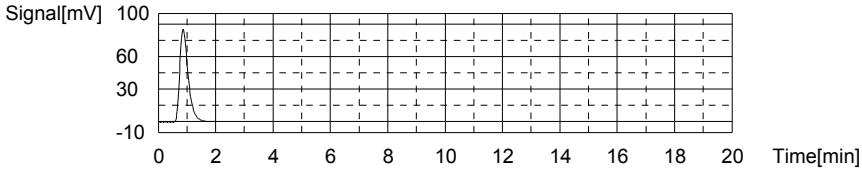
Mean Area 350.3
Mean Conc. 9.321mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	173.7	5.411mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	02/10/2012 02:46:40 AM

Mean Area 173.7
Mean Conc. 5.411mg/L



Sample

Sample Name: WG389146-06 MS
Sample ID:
Origin: TOC-12-06-2011.met
Status Completed
Chk. Result

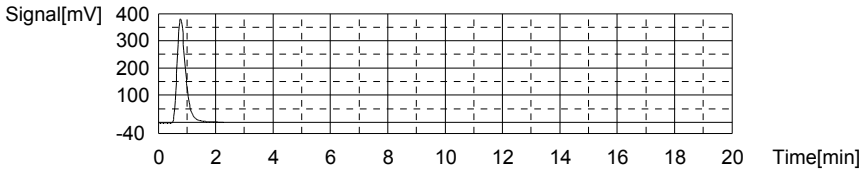
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:15.10mg/L TC:20.90mg/L IC:5.804mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	785.4	20.90mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	02/10/2012 02:54:25 AM

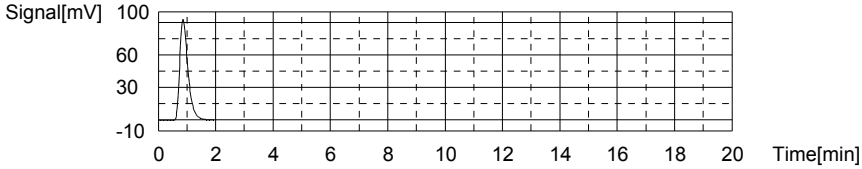
Mean Area 785.4
Mean Conc. 20.90mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	185.4	5.804mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	02/10/2012 02:59:25 AM

Mean Area 185.4
Mean Conc. 5.804mg/L



Sample

Sample Name: CCV
Sample ID:
Origin: TOC-12-06-2011.met
Status Completed
Chk. Result

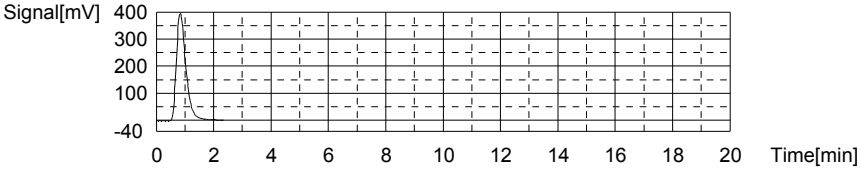
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:24.39mg/L TC:24.20mg/L IC:-0.1836mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	909.4	24.20mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	02/10/2012 03:07:21 AM

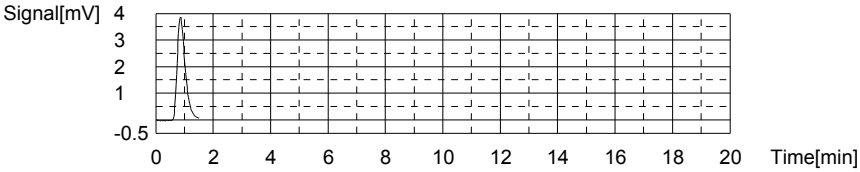
Mean Area 909.4
Mean Conc. 24.20mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.429	-0.1836mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	02/10/2012 03:11:45 AM

Mean Area 7.429
Mean Conc. -0.1836mg/L



Sample

Sample Name: WG389147-01 BLK
Sample ID:
Origin: TOC-12-06-2011.met
Status Completed
Chk. Result

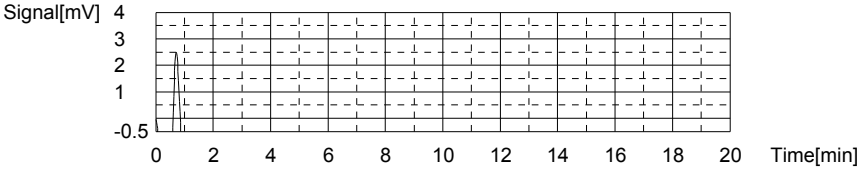
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.3736mg/L TC:0.2075mg/L IC:-0.1661mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.890	0.2075mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	02/10/2012 03:16:47 AM

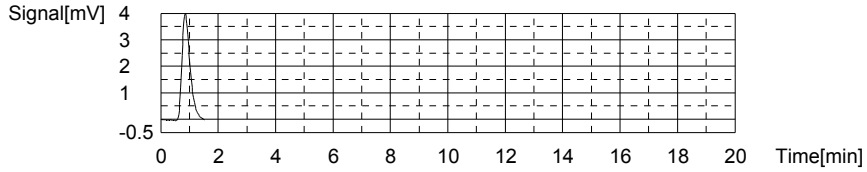
Mean Area 7.890
Mean Conc. 0.2075mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.949	-0.1661mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	02/10/2012 03:20:48 AM

Mean Area 7.949
Mean Conc. -0.1661mg/L



Sample

Sample Name: WG389147-02 LCS
Sample ID:
Origin: TOC-12-06-2011.met
Status Completed
Chk. Result

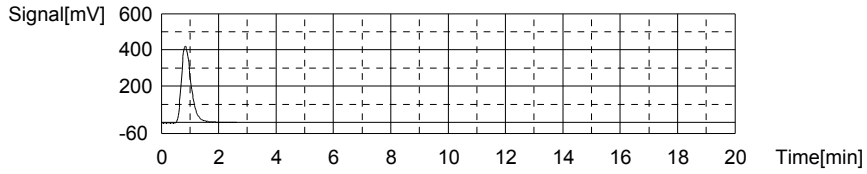
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:26.48mg/L TC:26.26mg/L IC:-0.2166mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	986.7	26.26mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	02/10/2012 03:29:03 AM

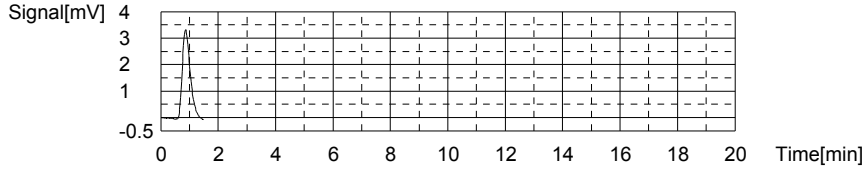
Mean Area 986.7
Mean Conc. 26.26mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	6.447	-0.2166mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	02/10/2012 03:33:28 AM

Mean Area 6.447
Mean Conc. -0.2166mg/L



Sample

Sample Name: WG389147-03 LCSDUP
Sample ID:
Origin: TOC-12-06-2011.met
Status Completed
Chk. Result

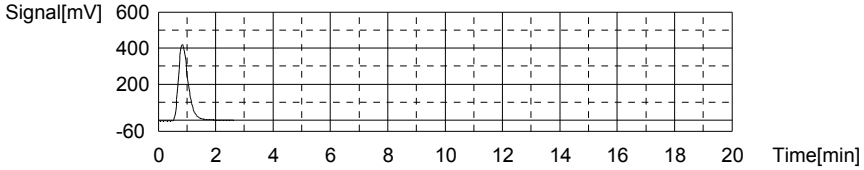
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:26.63mg/L TC:26.42mg/L IC:-0.2109mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	992.8	26.42mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	02/10/2012 03:41:34 AM

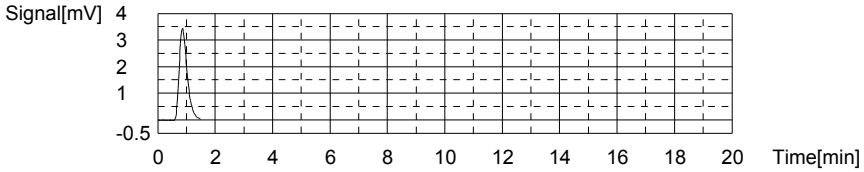
Mean Area 992.8
Mean Conc. 26.42mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	6.619	-0.2109mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	02/10/2012 03:45:58 AM

Mean Area 6.619
Mean Conc. -0.2109mg/L



Sample

Sample Name: L12020221-17 (25)
Sample ID:
Origin: TOC-12-06-2011.met
Status Completed
Chk. Result

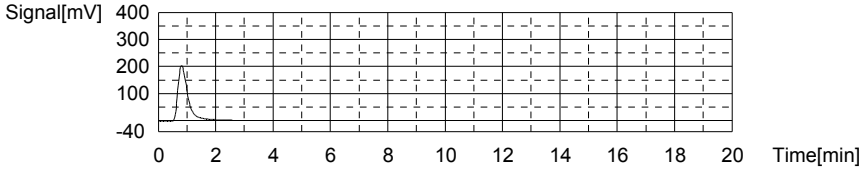
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:12.96mg/L TC:13.28mg/L IC:0.3188mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	499.1	13.28mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	02/10/2012 03:54:21 AM

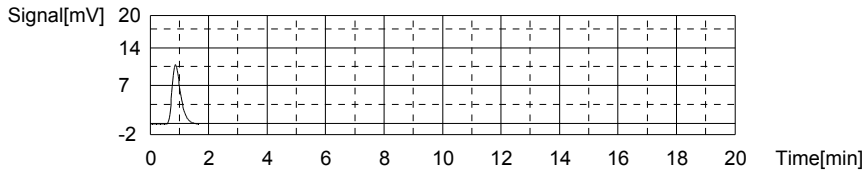
Mean Area 499.1
Mean Conc. 13.28mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	22.36	0.3188mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	02/10/2012 03:58:55 AM

Mean Area 22.36
Mean Conc. 0.3188mg/L



Sample

Sample Name: L12020222-01
Sample ID:
Origin: TOC-12-06-2011.met
Status Completed
Chk. Result

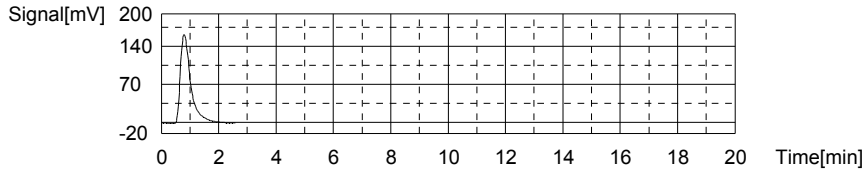
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:8.756mg/L TC:11.00mg/L IC:2.242mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	413.3	11.00mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	02/10/2012 04:06:59 AM

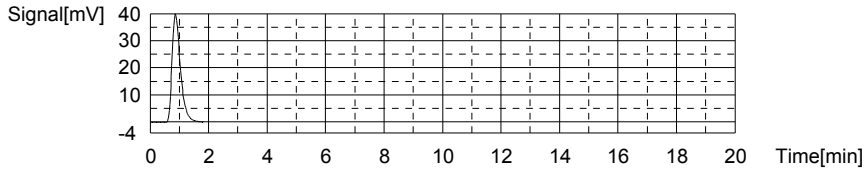
Mean Area 413.3
Mean Conc. 11.00mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	79.51	2.242mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	02/10/2012 04:11:50 AM

Mean Area 79.51
Mean Conc. 2.242mg/L



Sample

Sample Name: L12020222-02
Sample ID:
Origin: TOC-12-06-2011.met
Status Completed
Chk. Result

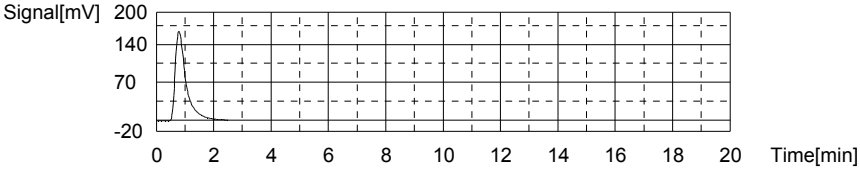
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:9.000mg/L TC:11.49mg/L IC:2.493mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	431.9	11.49mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	02/10/2012 04:19:50 AM

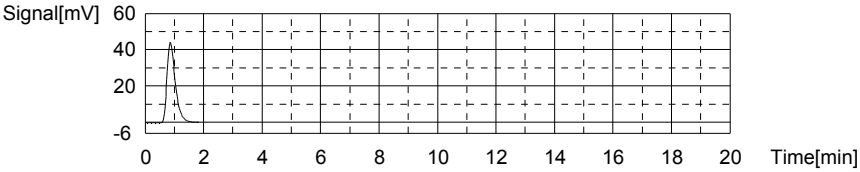
Mean Area 431.9
Mean Conc. 11.49mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	86.98	2.493mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	02/10/2012 04:24:39 AM

Mean Area 86.98
Mean Conc. 2.493mg/L



Sample

Sample Name: L12020222-03
Sample ID:
Origin: TOC-12-06-2011.met
Status Completed
Chk. Result

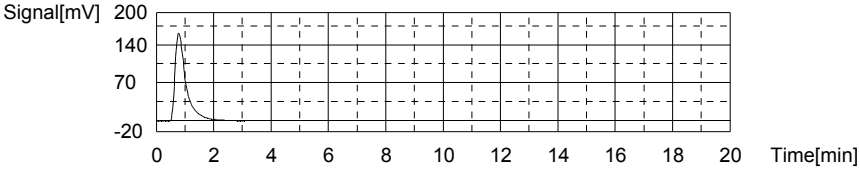
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:8.895mg/L TC:11.57mg/L IC:2.676mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	434.8	11.57mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	02/10/2012 04:33:12 AM

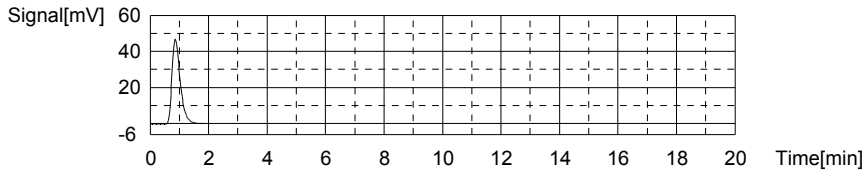
Mean Area 434.8
Mean Conc. 11.57mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	92.41	2.676mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	02/10/2012 04:37:58 AM

Mean Area 92.41
Mean Conc. 2.676mg/L



Sample

Sample Name: L12020222-04
Sample ID:
Origin: TOC-12-06-2011.met
Status Completed
Chk. Result

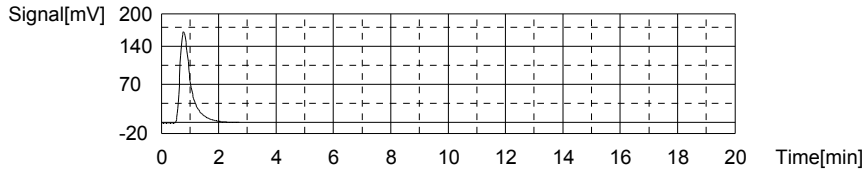
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:8.720mg/L TC:11.72mg/L IC:3.002mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	440.5	11.72mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	02/10/2012 04:46:14 AM

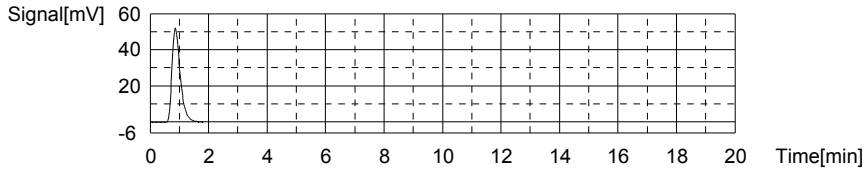
Mean Area 440.5
Mean Conc. 11.72mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	102.1	3.002mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	02/10/2012 04:51:02 AM

Mean Area 102.1
Mean Conc. 3.002mg/L



Sample

Sample Name: L12020222-05
Sample ID:
Origin: TOC-12-06-2011.met
Status Completed
Chk. Result

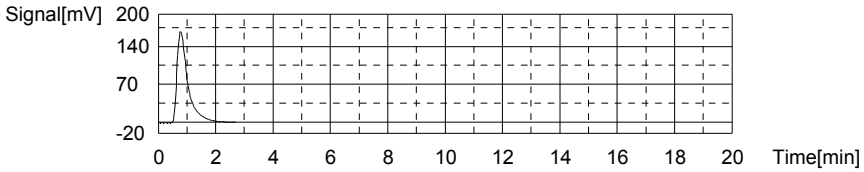
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:8.750mg/L TC:11.82mg/L IC:3.066mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	444.0	11.82mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	02/10/2012 04:59:17 AM

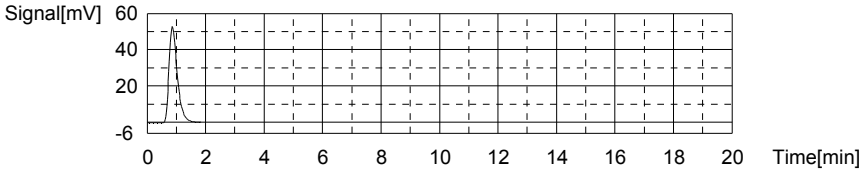
Mean Area 444.0
Mean Conc. 11.82mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	104.0	3.066mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	02/10/2012 05:04:06 AM

Mean Area 104.0
Mean Conc. 3.066mg/L



Sample

Sample Name: L12020222-06
Sample ID:
Origin: TOC-12-06-2011.met
Status Completed
Chk. Result

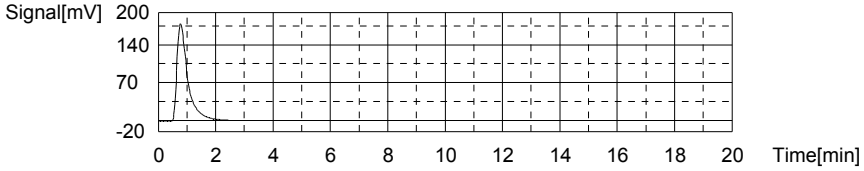
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:9.116mg/L TC:12.56mg/L IC:3.439mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	471.8	12.56mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	02/10/2012 05:12:16 AM

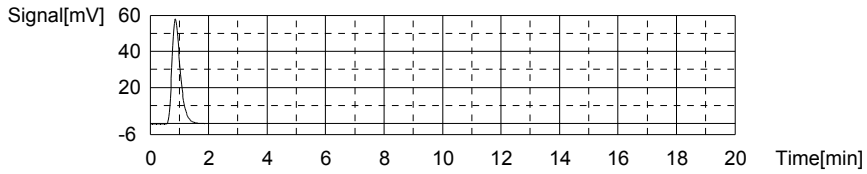
Mean Area 471.8
Mean Conc. 12.56mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	115.1	3.439mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	02/10/2012 05:17:10 AM

Mean Area 115.1
Mean Conc. 3.439mg/L



Sample

Sample Name: L12020222-07
Sample ID:
Origin: TOC-12-06-2011.met
Status Completed
Chk. Result

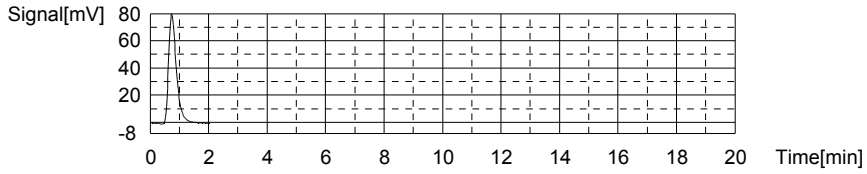
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.589mg/L TC:4.049mg/L IC:2.460mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	152.2	4.049mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	02/10/2012 05:24:44 AM

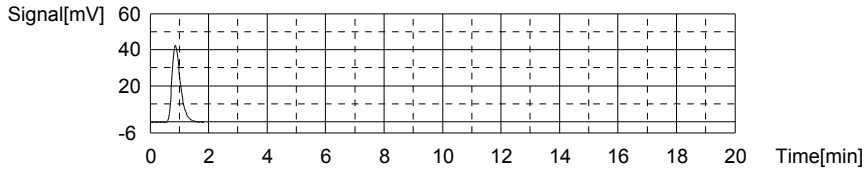
Mean Area 152.2
Mean Conc. 4.049mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	86.00	2.460mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	02/10/2012 05:29:32 AM

Mean Area 86.00
Mean Conc. 2.460mg/L



Sample

Sample Name: CCV
Sample ID:
Origin: TOC-12-06-2011.met
Status Completed
Chk. Result

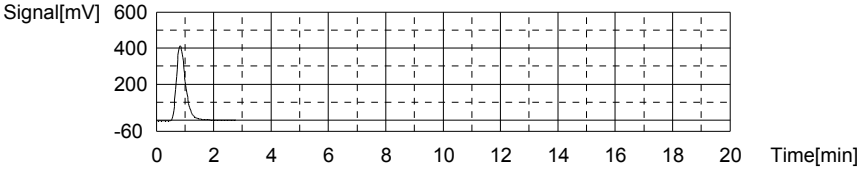
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:24.63mg/L TC:24.44mg/L IC:-0.1942mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	918.2	24.44mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	02/10/2012 05:37:52 AM

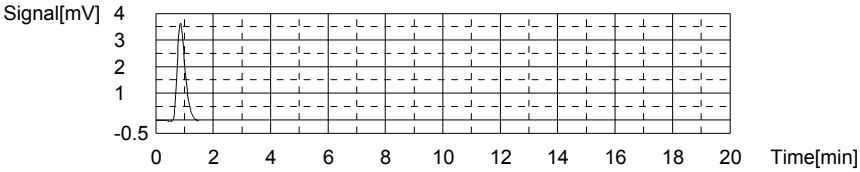
Mean Area 918.2
Mean Conc. 24.44mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.114	-0.1942mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	02/10/2012 05:42:15 AM

Mean Area 7.114
Mean Conc. -0.1942mg/L



Sample

Sample Name: CCB
Sample ID:
Origin: TOC-12-06-2011.met
Status Completed
Chk. Result

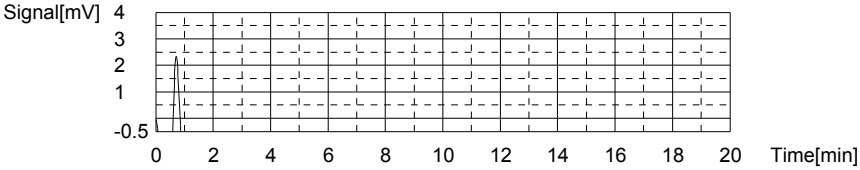
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.3707mg/L TC:0.1983mg/L IC:-0.1724mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.543	0.1983mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	02/10/2012 05:47:18 AM

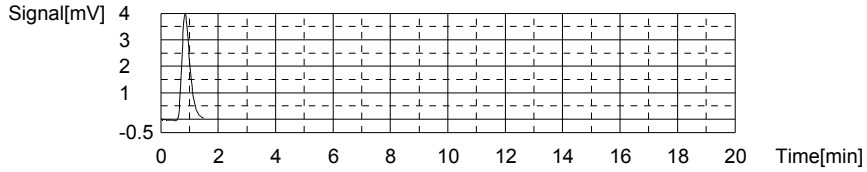
Mean Area 7.543
Mean Conc. 0.1983mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.761	-0.1724mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	02/10/2012 05:51:18 AM

Mean Area 7.761
Mean Conc. -0.1724mg/L



Sample

Sample Name: L12020222-08
Sample ID:
Origin: TOC-12-06-2011.met
Status Completed
Chk. Result

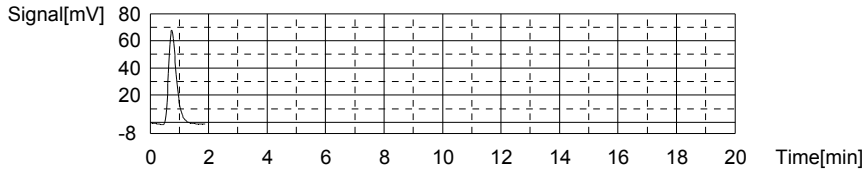
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.475mg/L TC:3.468mg/L IC:1.993mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	130.4	3.468mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	02/10/2012 05:58:40 AM

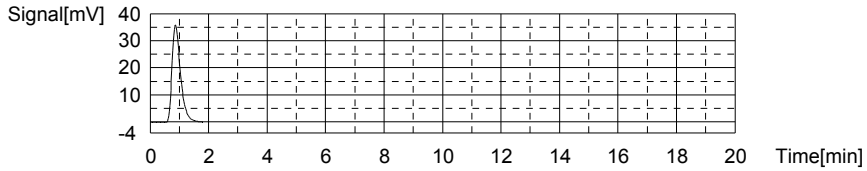
Mean Area 130.4
Mean Conc. 3.468mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	72.13	1.993mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	02/10/2012 06:03:26 AM

Mean Area 72.13
Mean Conc. 1.993mg/L



Sample

Sample Name: L12020222-09
Sample ID:
Origin: TOC-12-06-2011.met
Status Completed
Chk. Result

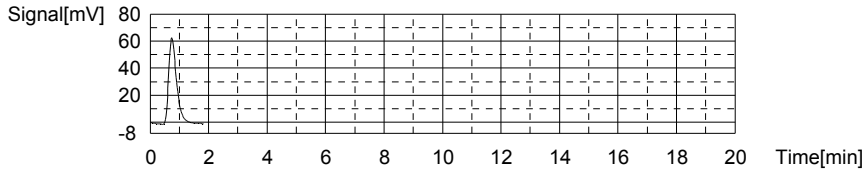
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.529mg/L TC:3.202mg/L IC:1.673mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	120.4	3.202mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	02/10/2012 06:10:59 AM

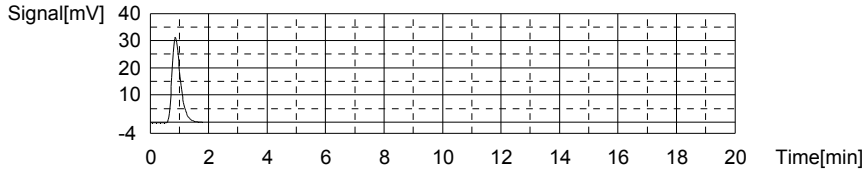
Mean Area 120.4
Mean Conc. 3.202mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	62.61	1.673mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	02/10/2012 06:15:44 AM

Mean Area 62.61
Mean Conc. 1.673mg/L



Sample

Sample Name: L12020222-10
Sample ID:
Origin: TOC-12-06-2011.met
Status Completed
Chk. Result

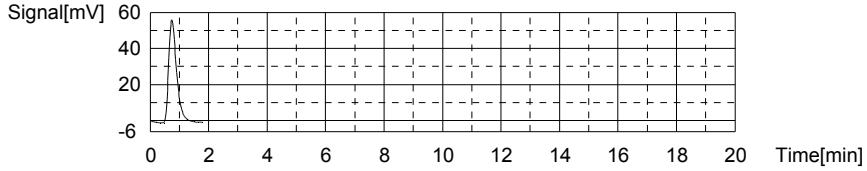
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.499mg/L TC:2.896mg/L IC:1.397mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	108.9	2.896mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	02/10/2012 06:23:15 AM

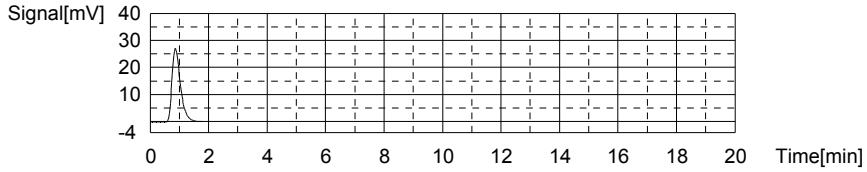
Mean Area 108.9
Mean Conc. 2.896mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	54.41	1.397mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	02/10/2012 06:27:56 AM

Mean Area 54.41
Mean Conc. 1.397mg/L



Sample

Sample Name: L12020222-11
Sample ID:
Origin: TOC-12-06-2011.met
Status Completed
Chk. Result

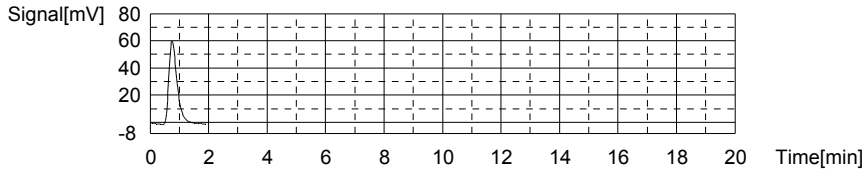
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.900mg/L TC:3.231mg/L IC:1.331mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	121.5	3.231mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	02/10/2012 06:35:19 AM

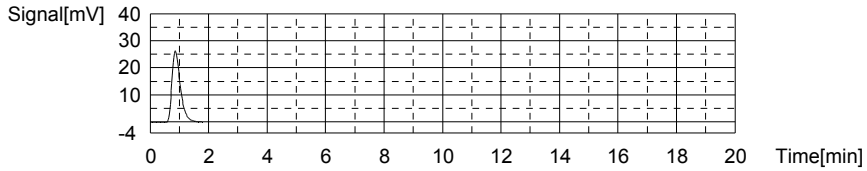
Mean Area 121.5
Mean Conc. 3.231mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	52.45	1.331mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	02/10/2012 06:40:02 AM

Mean Area 52.45
Mean Conc. 1.331mg/L



Sample

Sample Name: L12020222-12
Sample ID:
Origin: TOC-12-06-2011.met
Status Completed
Chk. Result

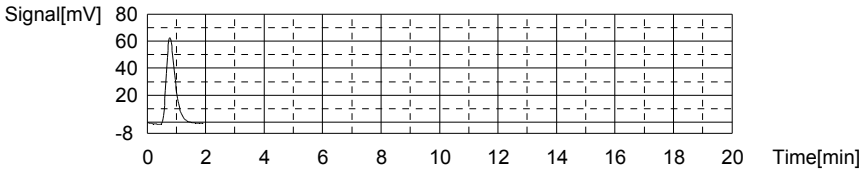
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.935mg/L TC:3.641mg/L IC:0.7060mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	136.9	3.641mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	02/10/2012 06:47:26 AM

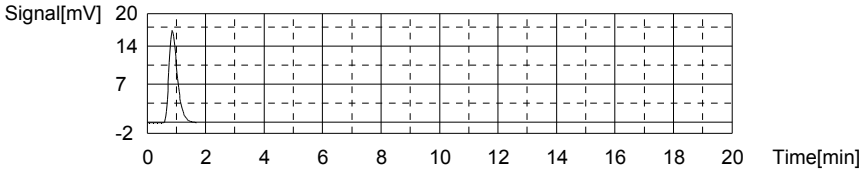
Mean Area 136.9
Mean Conc. 3.641mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	33.87	0.7060mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	02/10/2012 06:52:02 AM

Mean Area 33.87
Mean Conc. 0.7060mg/L



Sample

Sample Name: WG389147-05 DUP
Sample ID:
Origin: TOC-12-06-2011.met
Status Completed
Chk. Result

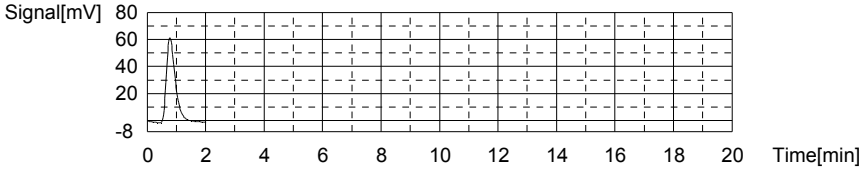
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.989mg/L TC:3.561mg/L IC:0.5721mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	133.9	3.561mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	02/10/2012 06:59:31 AM

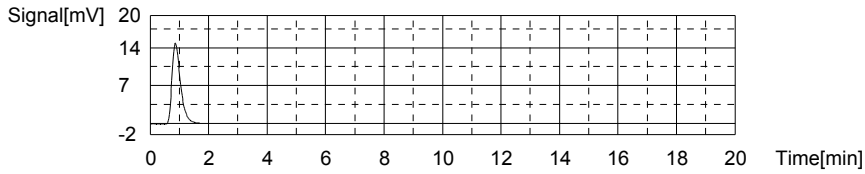
Mean Area 133.9
Mean Conc. 3.561mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	29.89	0.5721mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	02/10/2012 07:04:06 AM

Mean Area 29.89
Mean Conc. 0.5721mg/L



Sample

Sample Name: WG389147-06 MS
Sample ID:
Origin: TOC-12-06-2011.met
Status Completed
Chk. Result

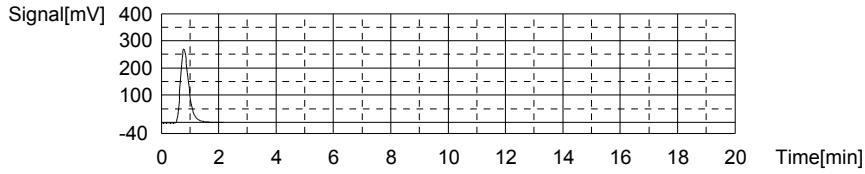
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:13.57mg/L TC:14.60mg/L IC:1.031mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	548.5	14.60mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	02/10/2012 07:11:46 AM

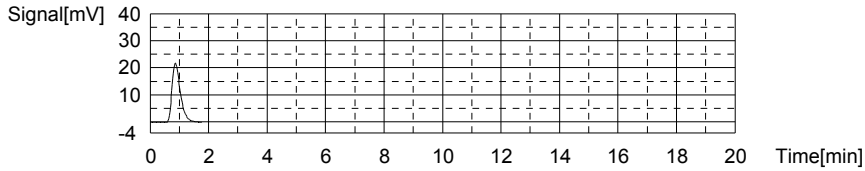
Mean Area 548.5
Mean Conc. 14.60mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	43.54	1.031mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	02/10/2012 07:16:30 AM

Mean Area 43.54
Mean Conc. 1.031mg/L



Sample

Sample Name: CCV
Sample ID:
Origin: TOC-12-06-2011.met
Status Completed
Chk. Result

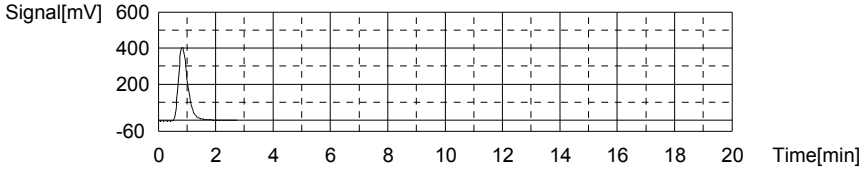
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:24.74mg/L TC:24.54mg/L IC:-0.2005mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	921.9	24.54mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	02/10/2012 07:24:43 AM

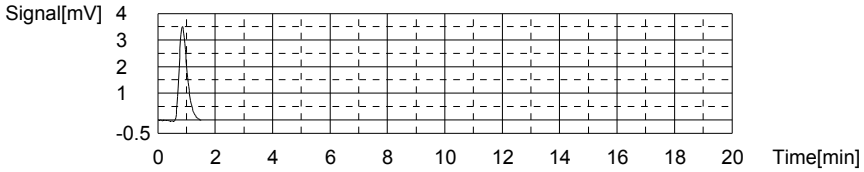
Mean Area 921.9
Mean Conc. 24.54mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	6.926	-0.2005mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	02/10/2012 07:29:08 AM

Mean Area 6.926
Mean Conc. -0.2005mg/L



Sample

Sample Name: CCB
Sample ID:
Origin: TOC-12-06-2011.met
Status Completed
Chk. Result

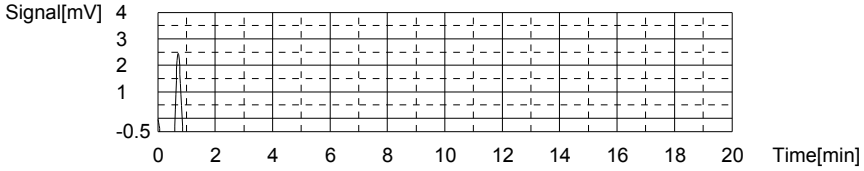
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.3700mg/L TC:0.2010mg/L IC:-0.1691mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.644	0.2010mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	02/10/2012 07:34:14 AM

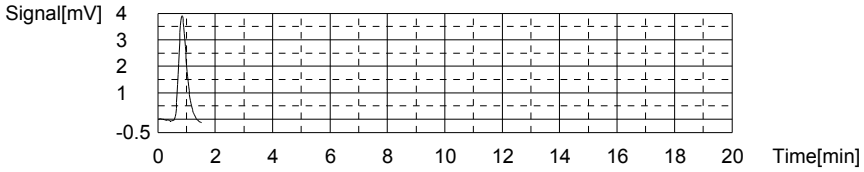
Mean Area 7.644
Mean Conc. 0.2010mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.861	-0.1691mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	02/10/2012 07:38:12 AM

Mean Area	7.861
Mean Conc.	-0.1691mg/L



2.2.11 Total Suspended Solids Data

2.2.11.1 Summary Data

Login Number: L12020220
Department: Conventionals
Analyst: Holly Reed

METHOD

Analysis EPA 160.2/SM2540 D (Total Suspended Solids)

HOLDING TIMES

Sample Analysis: All holding times were met.

PREPARATION

Sample preparation proceeded normally.

BATCH QA/QC

Method Blank: All acceptance criteria were met.

Laboratory Control Sample: All acceptance criteria were met.

Duplicates: All acceptance criteria were met.

Matrix Spikes: All acceptance criteria were met.

SAMPLES

Samples: All acceptance criteria were met.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Microbac Laboratories Inc., both technically and for completeness, except for the conditions noted above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

Narrative ID: 42336
Approved By: Deanna Hesson

Microbac

Lab Report #: L12020220
Lab Project #: 3005.011
Project Name: White Sands MR
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L12020220-01	**PrePrep Method:**	N/A	**Instrument:**	OVEN
Client ID:	MPL25-0212-1	**Prep Method:**	160.2/SM2540D	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	160.2	**Cal Date:**	
Workgroup #:	WG389078	**Analyst:**	HJR	**Run Date:**	02/08/2012 13:29
Collect Date:	02/06/2012 15:05	**Dilution:**	1	**File ID:**	EN.1202081329-17
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Total Suspended Solids			U	5.00	2.50

U	Analyte was not detected. The concentration is below the reported LOD.

Certificate of Analysis

Sample #:	L12020220-02	**PrePrep Method:**	N/A	**Instrument:**	OVEN
Client ID:	SMW1-0212-1	**Prep Method:**	160.2/SM2540D	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	160.2	**Cal Date:**	
Workgroup #:	WG389078	**Analyst:**	HJR	**Run Date:**	02/08/2012 13:29
Collect Date:	02/07/2012 09:50	**Dilution:**	1	**File ID:**	EN.1202081329-18
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Total Suspended Solids			U	5.00	2.50

U	Analyte was not detected. The concentration is below the reported LOD.

Certificate of Analysis

Sample #:	L12020220-03	**PrePrep Method:**	N/A	**Instrument:**	OVEN
Client ID:	SMW4-0212-1	**Prep Method:**	160.2/SM2540D	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	160.2	**Cal Date:**	
Workgroup #:	WG389078	**Analyst:**	HJR	**Run Date:**	02/08/2012 13:29
Collect Date:	02/07/2012 12:05	**Dilution:**	1	**File ID:**	EN.1202081329-19
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Total Suspended Solids			U	5.00	2.50

U	Analyte was not detected. The concentration is below the reported LOD.

Certificate of Analysis

2.2.11.2 QC Summary Data

$$[(WT2 - WT1) * 1000000]/volume = mg/L$$

where:

WT1 = weight (grams) of empty container.
WT2 = weight (grams) of dried sample and container.
1000000 = factor to get to mg/L.
volume = mL of sample used.

Microbac Laboratories Inc.

Data Checklist

Date: 08-FEB-2012
Analyst: HJR
Analyst: NA
Method: TSS
Instrument: OVEN
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG389078

Calibration/Linearity	2/8/12
Second Source Check	
ICV/CCV (std)	
ICB/CCB	
Blank	X
LCS/LCS Dup	X
MS/MSD	
Duplicate	X
Upload Results	X
Client Forms	X
QC Violation Sheet	
Case Narratives	X
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	HJR
Secondary Reviewer	DIH
Comments	

Primary Reviewer:
14-FEB-2012

Secondary Reviewer:
14-FEB-2012

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-14-2012 16:42:07

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 160.2 AAB#: WG389078

Login Number: L12020220

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
MPL25-0212-1	01	02/06/12							7		02/08/12	1.9	7	
SMW1-0212-1	02	02/07/12							7		02/08/12	1.2	7	
SMW4-0212-1	03	02/07/12							7		02/08/12	1.1	7	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 2306906
Report generated 02/14/2012 16:04

Microbac Laboratories Inc.

METHOD BLANK SUMMARY

Login Number: L12020220
Blank File ID: EN.1202081329-01
Prep Date: 02/08/12 13:29
Analyzed Date: 02/08/12 13:29
Analyst: HJR

Work Group: WG389078
Blank Sample ID: WG389078-01
Instrument ID: OVEN
Method: 160.2

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG389078-02	EN.1202081329-02	02/08/12 13:29	
LCS2	WG389078-03	EN.1202081329-03	02/08/12 13:29	
MPL25-0212-1	L12020220-01	EN.1202081329-17	02/08/12 13:29	
SMW1-0212-1	L12020220-02	EN.1202081329-18	02/08/12 13:29	
SMW4-0212-1	L12020220-03	EN.1202081329-19	02/08/12 13:29	
DUP	WG389078-05	EN.1202081329-20	02/08/12 13:29	
DUP	WG389078-07	EN.1202081329-21	02/08/12 13:29	

Report Name: BLANK_SUMMARY
PDF File ID: 2306907
Report generated 02/14/2012 16:04

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L12020220 Prep Date: 02/08/12 13:29 Sample ID: WG389078-01
Instrument ID: OVEN Run Date: 02/08/12 13:29 Prep Method: 160.2/SM2540D
File ID: EN.1202081329-01 Analyst: HJR Method: 160.2
Workgroup (AAB#): WG389078 Matrix: Water Units: mg/L
Contract #: Cal ID: OVEN-

Analytes	LOD	LOQ	Concentration	Dilution	Qualifier
Total Suspended Solids	2.50	5.00	2.50	1	U

LOD Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 2306908
14-FEB-2012 16:04

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L12020220 Analyst: HJR Prep Method: 160.2/SM2540D
Instrument ID: OVEN Matrix: Water Method: 160.2
Workgroup (AAB#): WG389078 Units: mg/L
QC Key: DOD4 Lot #: STD49939

Sample ID: WG389078-02 LCS File ID: EN.1202081329-02 Run Date: 02/08/2012 13:29
Sample ID: WG389078-03 LCS2 File ID: EN.1202081329-03 Run Date: 02/08/2012 13:29

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Total Suspended Solids	50.0	50.0	100	50.0	53.0	106	5.83	75 - 125	10	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 2306909
Report generated: 02/14/2012 16:04

2.2.11.3 Raw Data

WORKGROUP: WG389078

TOTAL SUSPENDED SOLIDS

LCS: STL49939

Oven: ☒ TSS1 ☐ Other

MS: _____ mL LCS & _____ mL sample

Balance: AND GR-202 / Other

Method: EPA 160.2 / SM2540D SOP #: K1602 Revision #: 13

SAMPLE	#	VOLUME (mL)	INITIAL WEIGHT WT1 (g)	DRY WEIGHT WT2A (g)	DRY WEIGHT WT2B (g)	DRY WEIGHT WT2C (g)
BLANK	Blk	200				
LCS: _____mg/L	LCS	100				
LCSDUP: _____mg/L	LCS2	100				
* 02-0095-01	1	200				
* 02-0198-01	2	200				
02-0146-01	3	200				
02-0176-01	4	200				
02-0180-01	5	50				
-02	6	50				
-04	7	50				
-05	8	50				
-07	9	200				
02-0186-01	10	200				
02-0193-01	11	200				
02-0194-01	12	200				
02-0195-01	13	50				
02-0220-01	14	200				
-02	15	200				
-03	16	200				
02-0226-04	17	10				
-05	18	10				
-06	19	10				
-07	20	10				
DUP: 02-0180-02	Dp1	50				
DUP: 02-0220-03	Dp2	200				

ANALYST: Kelly Reed

DATE/TIME: (on) 2/8/12

DATE/TIME: (off)

DATE/TIME: (off)

DATE/TIME: (off)

* Duplicate required on 10% of samples

* Samples were frozen then thawed completly and ran.

DCN#89881

Microbac Laboratories Inc.
GRAVIMETRIC REPORT

Workgroup (AAB#): WG389078
Analyst: HJR
Analyte: TOTAL SUSPENDED SOLIDS
Balance: BAL004
Instrument: OVEN

Method: 160.2/SM2540D
SOP: K1602 Revison 13
Spike Solution: STD49939
Daily Dilution:

SAMPLE NUMBER	#	INITIAL VOL	INITIAL WT	DRY WT A	DRY WT B	DRY WT C	Anal. Conc	Rep. Conc.	Units
WG389078-01	BLK	200	0.097	0.097	0.0968		-1.000	-1.000	mg/L
WG389078-02	LCS	100	0.099	0.1042	0.104		50.00	50.00	mg/L
WG389078-03	LCS2	100	0.0992	0.1046	0.1045		53.00	53.00	mg/L
L12020095-01	1	200	0.0985	0.104	0.1038		26.50	26.50	mg/L
L12020108-01	2	200	0.1002	0.1026	0.1025		11.50	11.50	mg/L
L12020146-01	3	200	0.0987	0.0995	0.0994		3.500	3.500	mg/L
L12020176-01	4	200	0.1007	0.1014	0.1012		2.500	ND	mg/L
L12020180-01	5	50	0.0965	0.1052	0.105		170.0	170.0	mg/L
L12020180-02	6	50	0.099	0.1062	0.106		140.0	140.0	mg/L
WG389078-04	6	50	0.099	0.1062	0.106		140.0	140.0	mg/L
L12020180-04	7	50	0.1003	0.1123	0.1125		244.0	244.0	mg/L
L12020180-05	8	50	0.098	0.1058	0.106		160.0	160.0	mg/L
L12020180-07	9	200	0.0951	0.0973	0.097		9.500	9.500	mg/L
L12020186-01	10	200	0.0978	0.0993	0.099		6.000	6.000	mg/L
L12020193-01	11	200	0.0983	0.0987	0.0988		2.500	ND	mg/L
L12020194-01	12	200	0.0964	0.0965	0.0966		1.000	ND	mg/L
L12020195-01	13	50	0.0997	0.1037	0.1036		78.00	78.00	mg/L
L12020220-01	14	200	0.1005	0.1011	0.101		2.500	ND	mg/L
L12020220-02	15	200	0.0976	0.0981	0.0981		2.500	ND	mg/L
L12020220-03	16	200	0.0981	0.0985	0.0985		2.000	ND	mg/L
WG389078-06	16	200	0.0981	0.0985	0.0985		2.000	2.000	mg/L
WG389078-05	DUP1	50	0.0977	0.1045	0.1046		138.0	138.0	mg/L
WG389078-07	DUP2	200	0.0977	0.0982	0.0981		2.000	2.000	mg/L
L12020226-04	17	10	0.0996	0.1216	0.1218		2220	2220	mg/L
L12020226-05	18	10	0.099	0.1365	0.1366		3760	3760	mg/L
L12020226-06	19	10	0.098	0.138	0.1382		4020	4020	mg/L
L12020226-07	20	10	0.0998	0.1193	0.1195		1970	1970	mg/L

L12020095-01	sample was frozen, then thawed and ran
L12020108-01	sample was frozen, then thawed and ran

Analyst: [signature]

*Duplicate required on 10% of samples

Date/Time (on) : 02/08/2012 13:29
Date/Time (off): 02/09/2012 15:20
Date/Time (off): 02/10/2012 16:15
Date/Time (off):

CONT_GRAV_REPORT - Modified 02/18/2011
PDF ID: 2302653
Report generated: 02/10/2012 16:17

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
March 14, 2012

ADC - ANTHONY D. CANTER	AJF - AMANDA J. FICKIESEN	ALB - ANNIE L. BROWN
ALV - AMY L. VALENTINE	AML - TONY M. LONG	AZH - AFTER HOURS
BLG - BRENDA L. GREENWALT	BRG - BRENDA R. GREGORY	CAA - CASSIE A. AUGENSTEIN
CAF - CHERYL A. FLOWERS	CEB - CHAD E. BARNES	CLC - CHRYS L. CRAWFORD
CLS - CARA L. STRICKLER	CLW - CHARISSA L. WINTERS	CPD - CHAD P. DAVIS
CS - CODY M. STRAHLER	CSH - CHRIS S. HILL	DDE - DEBRA D. ELLIOTT
DEV - DAVID E. VANDENBERG	DGB - DOUGLAS G. BUTCHER	DIH - DEANNA I. HESSON
DLB - DAVID L. BUMGARNER	DLP - DOROTHY L. PAYNE	DLR - DIANNA L. RAUCH
DSM - DAVID S. MOSSOR	ECL - ERIC C. LAWSON	EDL - ERIN D. LONG
ERP - ERIN R. PORTER	FJB - FRANCES J. BOLDEN	HAV - HEMA VILASAGAR
HJR - HOLLY J. REED	JAL - JOHN A. LENT	JBK - JEREMY B. KINNEY
JDH - JUSTIN D. HESSON	JKS - JANE K. SCHAAD	JLL - JOHN L. LENT
JWR - JOHN W. RICHARDS	JWS - JACK W. SHEAVES	JYH - JI Y. HU
KEB - KATIE E. BARNES	KHR - KIM H. RHODES	KRA - KATHY R. ALBERTSON
LKN - LINDA K. NEDEFF	LSB - LESLIE S. BUCINA	MDA - MIKE D. ALBERTSON
MDC - MIKE D. COCHRAN	MES - MARY E. SCHILLING	MMB - MAREN M. BEERY
MRT - MICHELLE R. TAYLOR	MSW - MATT S. WILSON	PDM - PIERCE D. MORRIS
PWD - PAUL W. DENT	RAH - ROY A. HALSTEAD	REK - BOB E. KYER
RLB - BOB BUCHANAN	RLK - ROBIN L. KLINGER	RWC - RODNEY W. CAMPBELL
SJP - SUZANNE J. PAUGH	SLM - STEPHANIE L. MOSSBURG	SLP - SHERI L. PFALZGRAF
TIP - TAE I. PARRISH	TMB - TIFFANY M. BAILEY	TMM - TAMMY M. MORRIS
VC - VICKI COLLIER	WJB - WILL J. BEASLEY	WTD - WADE T. DELONG
XXX - UNAVAILABLE OR SUBCONTRACT		

Microbac Laboratories Inc.
List of Valid Qualifiers
March 14, 2012

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Result is greater than the associated numerical value.
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
FL	Free Liquid
H1	Sample analysis performed past holding time.
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL).
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
TIC	Library Search Compound
TNTC	Too numerous to count
U	Analyte was not detected. The concentration is below the reported LOD.
UJ	Undetected; the analyte was analyzed for, but not detected.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

*****Special Notes for Organic Analytes**

Qualkey: DOD

1. Acrolein and acrylonitrile by method 624 are semi-quantitative screens only.
2. 1,2-Diphenylhydrazine is unstable and is reported as azobenzene.
3. N-nitrosodiphenylamine cannot be separated from diphenylamine.
4. 3-Methylphenol and 4-Methylphenol are unresolvable compounds.
5. m-Xylene and p-Xylene are unresolvable compounds.
6. The reporting limits for Appendix II/IX compounds by method 8270 are based on EPA estimated PQLs referenced in 40 CFR Part 264, Appendix IX. They are not always achievable for every compound and are matrix dependent.

COC No. A 28508

158 Starlite Drive
Marietta, OH 45750

Microbac

CHAIN-OF-CUSTODY RECORD

Phone: 740-373-4071
Fax: 740-373-4835

Company Name: Zia / SHAW

Project Contact: Mark Lyon

Contact Phone #: 505-262-8920

Turn Around Requirements: Normal

Location: WSMR

Project ID: STP

Sampler (print): Bradley T. Davis

Signature: Brad T. Davis

Program: ☐ CWA ☐ RCRA ☐ DOD ☐ AFCEE ☐ Other _____

Sample I.D. No.	Comp	Grab	Date	Time	Matrix*	NUMBER OF CONTAINERS	Hold	Anions	Cond pH PO4	Alkalinity	Total, Free, Amenable CN	Metals	NH3 TOC NO3NO2	TSS TDS								TOTAL # (LAB USE)	ADDITIONAL REQUIREMENTS
MPL25-0212-1		X	2-6-12	1505	W	7		X	X	X	X	X	X	X									
SMW1-0212-1		X	2-7-12	0950	W	7		X	X	X	X	X	X	X									
SMW4-0212-1		X	2-7-12	1205	W	7		X	X	X	X	X	X	X									

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time	Received by: (Signature)
Brad T. Davis	2-7-12	1700				
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Remarks:		

Microbac OVD
Received: 02/08/2012 11:10
By: ERIN PORTER 221000022205
Erin Porter

*Water (W), Soil (S), Solid Waste (SD), Unknown (X)

Page _____ of _____

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L12020220
Account: 3005
Project: 3005.011
Samples: 3
Due Date: 17-FEB-2012

Samplenum	Container ID	Products
L12020220-01	935270	300

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	08-FEB-2012 12:45	RLK		
2	ANALYZ	W1	SEM	15-FEB-2012 14:12	JBK	RLK	
3	STORE	SEM	A1	29-FEB-2012 11:12	RLK	JBK	

Samplenum	Container ID	Products
L12020220-01	935271	ALK ALK-B ALK-C

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	08-FEB-2012 12:45	RLK		
2	ANALYZ	W1	WET	09-FEB-2012 07:29	DIH	AZH	
3	STORE	WET	A1	10-FEB-2012 10:36	RLK	DIH	

Samplenum	Container ID	Products
L12020220-01	935272	COND COR-PH PO4

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	08-FEB-2012 12:45	RLK		
2	ANALYZ	W1	WET	08-FEB-2012 13:00	HJR	RLK	
3	STORE	WET	A1	20-FEB-2012 08:38	JKS	DLP	

Samplenum	Container ID	Products
L12020220-01	935273	TDS TSS

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	08-FEB-2012 12:45	RLK		

Samplenum	Container ID	Products
L12020220-01	935274	NH3 NO3NO2 TOC

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	08-FEB-2012 12:45	RLK		<2
2	ANALYZ	W1	WET	09-FEB-2012 11:12	DIH	JKS	
3	STORE	WET	A1	07-MAR-2012 08:39	RLK	JBK	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L12020220
Account: 3005
Project: 3005.011
Samples: 3
Due Date: 17-FEB-2012

Samplenum	Container ID	Products
L12020220-01	935275	AG-MS AL AS-MS B BA-MS BE-AX CA CD-MS CO-MS CF

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	08-FEB-2012 12:45	RLK		
2	ANALYZ	W1	DIG	08-FEB-2012 13:47	ERP	JKS	
3	STORE	DIG	A1	09-FEB-2012 12:32	JKS	VC	

Samplenum	Container ID	Products
L12020220-01	935276	CN CN-A CN-WD

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	08-FEB-2012 12:45	RLK		
2	ANALYZ	W1	WET	10-FEB-2012 12:56	JBK	RLK	
3	STORE	WET	A1	15-FEB-2012 08:09	JKS	DLP	

Samplenum	Container ID	Products
L12020220-02	935277	300

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	08-FEB-2012 12:45	RLK		
2	ANALYZ	W1	SEM	15-FEB-2012 14:12	JBK	RLK	
3	STORE	SEM	A1	29-FEB-2012 11:12	RLK	JBK	

Samplenum	Container ID	Products
L12020220-02	935278	ALK ALK-B ALK-C

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	08-FEB-2012 12:45	RLK		
2	ANALYZ	W1	WET	09-FEB-2012 07:29	DIH	AZH	
3	STORE	WET	A1	10-FEB-2012 10:36	RLK	DIH	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L12020220
Account: 3005
Project: 3005.011
Samples: 3
Due Date: 17-FEB-2012

Samplenum	Container ID	Products
L12020220-02	935279	PO4 COND COR-PH

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	08-FEB-2012 12:45	RLK		
2	ANALYZ	W1	WET	08-FEB-2012 13:00	HJR	RLK	
3	STORE	WET	A1	20-FEB-2012 08:38	JKS	DLP	

Samplenum	Container ID	Products
L12020220-02	935280	TDS TSS

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	WET	08-FEB-2012 12:45	RLK		
2	STORE	WET	A1	10-FEB-2012 10:44	JKS	HJR	

Samplenum	Container ID	Products
L12020220-02	935281	NH3 NO3NO2 TOC

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	08-FEB-2012 12:45	RLK		<2
2	ANALYZ	W1	WET	09-FEB-2012 11:12	DIH	JKS	
3	STORE	WET	A1	07-MAR-2012 08:39	RLK	JBK	

Samplenum	Container ID	Products
L12020220-02	935282	FE HG K MG MN-MS MO-AX NA NI-MS PB-MS SB-MS SE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	08-FEB-2012 12:45	RLK		
2	ANALYZ	W1	DIG	08-FEB-2012 13:47	ERP	JKS	
3	STORE	DIG	A1	09-FEB-2012 12:32	JKS	VC	

Samplenum	Container ID	Products
L12020220-02	935283	CN CN-A CN-WD

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	08-FEB-2012 12:45	RLK		
2	ANALYZ	W1	WET	10-FEB-2012 12:56	JBK	RLK	
3	STORE	WET	A1	15-FEB-2012 08:09	JKS	DLP	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L12020220
Account: 3005
Project: 3005.011
Samples: 3
Due Date: 17-FEB-2012

Samplenum	Container ID	Products
L12020220-03	935284	300

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	08-FEB-2012 12:45	RLK		
2	ANALYZ	W1	SEM	15-FEB-2012 14:12	JBK	RLK	
3	STORE	SEM	A1	29-FEB-2012 11:12	RLK	JBK	

Samplenum	Container ID	Products
L12020220-03	935285	ALK ALK-B ALK-C

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	08-FEB-2012 12:45	RLK		
2	ANALYZ	W1	WET	09-FEB-2012 07:29	DIH	AZH	
3	STORE	WET	A1	10-FEB-2012 10:36	RLK	DIH	

Samplenum	Container ID	Products
L12020220-03	935286	COND COR-PH PO4

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	08-FEB-2012 12:45	RLK		
2	ANALYZ	W1	WET	08-FEB-2012 13:00	HJR	RLK	
3	STORE	WET	A1	20-FEB-2012 08:38	JKS	DLP	

Samplenum	Container ID	Products
L12020220-03	935287	TDS TSS

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	WET	08-FEB-2012 12:45	RLK		
2	STORE	WET	A1	10-FEB-2012 10:44	JKS	HJR	

Samplenum	Container ID	Products
L12020220-03	935288	NH3 NO3NO2 TOC

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	08-FEB-2012 12:45	RLK		<2
2	ANALYZ	W1	WET	09-FEB-2012 11:12	DIH	JKS	
3	STORE	WET	A1	07-MAR-2012 08:39	RLK	JBK	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Internal Chain of Custody Report

Login: L12020220
Account: 3005
Project: 3005.011
Samples: 3
Due Date: 17-FEB-2012

Samplenum	Container ID	Products
L12020220-03	935289	AG-MS AL AS-MS B BA-MS BE-AX CA CD-MS CO-MS CF

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	08-FEB-2012 12:45	RLK		
2	ANALYZ	W1	DIG	08-FEB-2012 13:47	ERP	JKS	
3	STORE	DIG	A1	09-FEB-2012 12:32	JKS	VC	

Samplenum	Container ID	Products
L12020220-03	935290	CN CN-A CN-WD

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	08-FEB-2012 12:45	RLK		
2	ANALYZ	W1	WET	10-FEB-2012 12:56	JBK	RLK	
3	STORE	WET	A1	15-FEB-2012 08:09	JKS	DLP	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login