Microbac

Laboratory Report Number: L12010651

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:
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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 February 03 2012

David Vandenberg – Managing Director

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

Microbac

Lab Report #: L12010651
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 #
0014666	H	3.0		1ZE4F1930349725964

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

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Microbac

Lab Report #: L12010651
Lab Project #: 3005.011
Project Name: White Sands MR
Lab Contact: Stephanie Mossburg

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
MPL-16-0112-1	L12010651-01	01/24/2012 14:20	01/25/2012 10:34
MPL-16-0112-MS	L12010651-02	01/24/2012 14:20	01/25/2012 10:34
MPL-16-0112-MSD	L12010651-03	01/24/2012 14:20	01/25/2012 10:34

Certificate of Analysis

Sample #:	L12010651-01	**PrePrep Method:**	N/A	**Instrument:**	PE-ICP2
Client ID:	MPL-16-0112-1	**Prep Method:**	3005A	**Prep Date:**	01/26/2012 06:53
Matrix:	Water	**Analytical Method:**	6010B	**Cal Date:**	01/30/2012 12:30
Workgroup #:	WG388026	**Analyst:**	SLP	**Run Date:**	01/30/2012 15:48
Collect Date:	01/24/2012 14:20	**Dilution:**	1	**File ID:**	P2.013012.154834
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Beryllium, Total	7440-41-7		U	0.00200	0.00100
Calcium, Total	7440-70-2	55.1		0.200	0.100
Magnesium, Total	7439-95-4	8.31		0.500	0.250
Manganese, Total	7439-96-5		U	0.0100	0.00500
Potassium, Total	7440-09-7	2.93		1.00	0.500
Sodium, Total	7440-23-5	25.2		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		U	0.0200	0.0100

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

Sample #:	L12010651-01	**PrePrep Method:**	N/A	**Instrument:**	ELAN-ICP
Client ID:	MPL-16-0112-1	**Prep Method:**	3015	**Prep Date:**	01/26/2012 06:32
Matrix:	Water	**Analytical Method:**	6020	**Cal Date:**	01/28/2012 10:56
Workgroup #:	WG388019	**Analyst:**	EDL	**Run Date:**	01/28/2012 12:50
Collect Date:	01/24/2012 14:20	**Dilution:**	1	**File ID:**	EL.012812.125020
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Antimony, Total	7440-36-0		U	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00280		0.00100	0.000500
Barium, Total	7440-39-3	0.0653		0.00300	0.00150
Cadmium, Total	7440-43-9		U	0.000600	0.000300
Chromium, Total	7440-47-3	0.00227		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
Nickel, Total	7440-02-0	0.00218	J	0.00400	0.00200
Selenium, Total	7782-49-2	0.00998		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 #:	L12010651-01	**PrePrep Method:**	N/A	**Instrument:**	HYDRA
Client ID:	MPL-16-0112-1	**Prep Method:**	7470A	**Prep Date:**	01/27/2012 08:27
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	01/27/2012 14:02
Workgroup #:	WG388140	**Analyst:**	SLP	**Run Date:**	01/27/2012 14:25
Collect Date:	01/24/2012 14:20	**Dilution:**	1	**File ID:**	HY.012712.142556
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 #:	L12010651-01	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	MPL-16-0112-1	**Prep Method:**	300.0	**Prep Date:**	01/26/2012 15:17
Matrix:	Water	**Analytical Method:**	300.0	**Cal Date:**	09/14/2011 11:03
Workgroup #:	WG387948	**Analyst:**	JBK	**Run Date:**	01/26/2012 17:37
Collect Date:	01/24/2012 14:20	**Dilution:**	4	**File ID:**	I10126121737.11
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Chloride	16887-00-6	41.0		0.800	0.400
Sulfate	14808-79-8	64.7		4.00	2.00

Sample #:	L12010651-01	**PrePrep Method:**	N/A	**Instrument:**	ORION-4STAR
Client ID:	MPL-16-0112-1	**Prep Method:**	9040C	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	9040C	**Cal Date:**	
Workgroup #:	WG387893	**Analyst:**	DLP	**Run Date:**	01/25/2012 14:15
Collect Date:	01/24/2012 14:20	**Dilution:**	1	**File ID:**	OS12012612101001
Sample Tag:		**Units:**	UNITS		

Analyte	CAS #	Result	Qual	LOQ	LOD
Corrosivity pH	10-29-7	7.64		0.000	0.000

Sample #:	L12010651-01	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	MPL-16-0112-1	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	01/31/2012 08:52
Workgroup #:	WG388329	**Analyst:**	DIH	**Run Date:**	01/31/2012 08:56
Collect Date:	01/24/2012 14:20	**Dilution:**	1	**File ID:**	SC120131001.014
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 #:	L12010651-01	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	MPL-16-0112-1	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	01/31/2012 08:52
Workgroup #:	WG388329	**Analyst:**	DIH	**Run Date:**	01/31/2012 08:56
Collect Date:	01/24/2012 14:20	**Dilution:**	1	**File ID:**	SC120131001.014
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Alkalinity, Total (as CaCO3)		84.7		20.0	10.0

Sample #:	L12010651-01	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	MPL-16-0112-1	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	01/31/2012 08:52
Workgroup #:	WG388329	**Analyst:**	DIH	**Run Date:**	01/31/2012 08:56
Collect Date:	01/24/2012 14:20	**Dilution:**	1	**File ID:**	SC120131001.014
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Alkalinity, Bicarbonate (as CaCO3)		84.7		20.0	10.0

Sample #:	L12010651-01	**PrePrep Method:**	N/A	**Instrument:**	UV-120-1V
Client ID:	MPL-16-0112-1	**Prep Method:**	SM4500-CN-C,G	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-CN-C,G	**Cal Date:**	01/27/2012 11:10
Workgroup #:	WG388028	**Analyst:**	JBK	**Run Date:**	01/27/2012 11:50
Collect Date:	01/24/2012 14:20	**Dilution:**	1	**File ID:**	1V.1201271150-11
Sample Tag:	CN-A	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Cyanide, Amenable to Chlor.	57-12-5	0.0406		0.0100	0.00500

Sample #:	L12010651-01	**PrePrep Method:**	N/A	**Instrument:**	UV-120-1V
Client ID:	MPL-16-0112-1	**Prep Method:**	SM4500-CN-I	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-CN-I	**Cal Date:**	01/30/2012 15:15
Workgroup #:	WG388302	**Analyst:**	DLP	**Run Date:**	01/30/2012 18:00
Collect Date:	01/24/2012 14:20	**Dilution:**	1	**File ID:**	1V.1201301800-09
Sample Tag:	D01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Cyanide, Weak/Dissociable	57-12-5	0.0139		0.0100	0.00500

Certificate of Analysis

Sample #:	L12010651-01	**PrePrep Method:**	N/A	**Instrument:**	UV-120-1V
Client ID:	MPL-16-0112-1	**Prep Method:**	9014-9010C	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	9014-9010C	**Cal Date:**	01/27/2012 11:10
Workgroup #:	WG388027	**Analyst:**	JBK	**Run Date:**	01/27/2012 11:30
Collect Date:	01/24/2012 14:20	**Dilution:**	1	**File ID:**	1V.1201271130-05
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Cyanide	57-12-5	0.105		0.0100	0.00500

Sample #:	L12010651-01	**PrePrep Method:**	N/A	**Instrument:**	YSI-32
Client ID:	MPL-16-0112-1	**Prep Method:**	120.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	120.1	**Cal Date:**	
Workgroup #:	WG388141	**Analyst:**	DLP	**Run Date:**	01/27/2012 11:20
Collect Date:	01/24/2012 14:20	**Dilution:**	1	**File ID:**	32.1201271120-07
Sample Tag:		**Units:**	umhos/cm		

Analyte	CAS #	Result	Qual	LOQ	LOD
Conductivity		494		1.00	0.500

Sample #:	L12010651-01	**PrePrep Method:**	N/A	**Instrument:**	ORION-710A1
Client ID:	MPL-16-0112-1	**Prep Method:**	SM4500-F-C	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-F-C	**Cal Date:**	
Workgroup #:	WG388474	**Analyst:**	DIH	**Run Date:**	02/01/2012 10:45
Collect Date:	01/24/2012 14:20	**Dilution:**	1	**File ID:**	O112020113425401
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Fluoride	16984-48-8	0.237		0.100	0.0500

Sample #:	L12010651-01	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	MPL-16-0112-1	**Prep Method:**	350.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	350.1	**Cal Date:**	01/27/2012 11:48
Workgroup #:	WG388059	**Analyst:**	DIH	**Run Date:**	01/27/2012 12:08
Collect Date:	01/24/2012 14:20	**Dilution:**	1	**File ID:**	SC120127002.029
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Nitrogen, Ammonia	7664-41-7	0.107		0.100	0.0500

Certificate of Analysis

Sample #:	L12010651-01	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	MPL-16-0112-1	**Prep Method:**	353.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	353.2	**Cal Date:**	01/30/2012 09:15
Workgroup #:	WG388287	**Analyst:**	DIH	**Run Date:**	01/30/2012 14:40
Collect Date:	01/24/2012 14:20	**Dilution:**	4	**File ID:**	SC12013112371101
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Nitrate-Nitrite (as N)		4.43		0.200	0.100

Sample #:	L12010651-01	**PrePrep Method:**	N/A	**Instrument:**	UV-120-1V
Client ID:	MPL-16-0112-1	**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 #:	WG387929	**Analyst:**	HJR	**Run Date:**	01/25/2012 12:45
Collect Date:	01/24/2012 14:20	**Dilution:**	1	**File ID:**	1V.1201251245-08
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 #:	L12010651-01	**PrePrep Method:**	N/A	**Instrument:**	OVEN
Client ID:	MPL-16-0112-1	**Prep Method:**	160.1/SM2540C	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	160.1	**Cal Date:**	
Workgroup #:	WG388025	**Analyst:**	HJR	**Run Date:**	01/27/2012 13:33
Collect Date:	01/24/2012 14:20	**Dilution:**	1	**File ID:**	EN.1201271333-04
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Total Dissolved Solids		302		20.0	10.0

Sample #:	L12010651-01	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	MPL-16-0112-1	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	12/06/2011 09:40
Workgroup #:	WG388050	**Analyst:**	DIH	**Run Date:**	01/26/2012 22:06
Collect Date:	01/24/2012 14:20	**Dilution:**	1	**File ID:**	TC01262012.019
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Total Organic Carbon		1.06		1.00	0.500

Certificate of Analysis

Sample #:	L12010651-01	**PrePrep Method:**	N/A	**Instrument:**	OVEN
Client ID:	MPL-16-0112-1	**Prep Method:**	160.2/SM2540D	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	160.2	**Cal Date:**	
Workgroup #:	WG388022	**Analyst:**	HJR	**Run Date:**	01/26/2012 14:57
Collect Date:	01/24/2012 14:20	**Dilution:**	1	**File ID:**	EN.1201261457-16
Sample Tag:		**Units:**	mg/L		

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

Sample #:	L12010651-02	**PrePrep Method:**	N/A	**Instrument:**	PE-ICP2
Client ID:	MPL-16-0112-MS	**Prep Method:**	3005A	**Prep Date:**	01/26/2012 06:53
Matrix:	Water	**Analytical Method:**	6010B	**Cal Date:**	01/30/2012 12:30
Workgroup #:	WG388026	**Analyst:**	SLP	**Run Date:**	01/30/2012 15:55
Collect Date:	01/24/2012 14:20	**Dilution:**	1	**File ID:**	P2.013012.155524
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Beryllium, Total	7440-41-7	0.0239		0.00200	0.00100
Calcium, Total	7440-70-2	61.8		0.200	0.100
Magnesium, Total	7439-95-4	13.3		0.500	0.250
Manganese, Total	7439-96-5	0.246		0.0100	0.00500
Potassium, Total	7440-09-7	26.1		1.00	0.500
Sodium, Total	7440-23-5	49.8		0.500	0.250
Tin, Total	7440-31-5	0.552		0.500	0.250
Vanadium, Total	7440-62-2	0.498		0.0100	0.00500
Zinc, Total	7440-66-6	0.485		0.0200	0.0100

Sample #:	L12010651-02	**PrePrep Method:**	N/A	**Instrument:**	ELAN-ICP
Client ID:	MPL-16-0112-MS	**Prep Method:**	3015	**Prep Date:**	01/26/2012 06:32
Matrix:	Water	**Analytical Method:**	6020	**Cal Date:**	01/28/2012 10:56
Workgroup #:	WG388019	**Analyst:**	EDL	**Run Date:**	01/28/2012 12:58
Collect Date:	01/24/2012 14:20	**Dilution:**	1	**File ID:**	EL.012812.125807
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Antimony, Total	7440-36-0	0.0641		0.00100	0.000500
Arsenic, Total	7440-38-2	0.0627		0.00100	0.000500
Barium, Total	7440-39-3	0.125		0.00300	0.00150
Cadmium, Total	7440-43-9	0.0626		0.000600	0.000300
Chromium, Total	7440-47-3	0.0638		0.00200	0.00100
Cobalt, Total	7440-48-4	0.0625		0.00100	0.000500

Certificate of Analysis

Analyte	CAS #	Result	Qual	LOQ	LOD
Copper, Total	7440-50-8	0.0641		0.00200	0.00100
Lead, Total	7439-92-1	0.0646		0.00100	0.000500
Nickel, Total	7440-02-0	0.0642		0.00400	0.00200
Selenium, Total	7782-49-2	0.0639		0.00100	0.000500
Silver, Total	7440-22-4	0.0564		0.00100	0.000500
Thallium, Total	7440-28-0	0.0630		0.000200	0.000100

Sample #:	L12010651-02	**PrePrep Method:**	N/A	**Instrument:**	HYDRA
Client ID:	MPL-16-0112-MS	**Prep Method:**	7470A	**Prep Date:**	01/27/2012 08:27
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	01/27/2012 14:02
Workgroup #:	WG388140	**Analyst:**	SLP	**Run Date:**	01/27/2012 14:29
Collect Date:	01/24/2012 14:20	**Dilution:**	1	**File ID:**	HY.012712.142956
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Mercury	7439-97-6	0.00340		0.000222	0.000111

Sample #:	L12010651-02	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	MPL-16-0112-MS	**Prep Method:**	300.0	**Prep Date:**	01/26/2012 15:17
Matrix:	Water	**Analytical Method:**	300.0	**Cal Date:**	09/14/2011 11:03
Workgroup #:	WG387948	**Analyst:**	JBK	**Run Date:**	01/26/2012 18:11
Collect Date:	01/24/2012 14:20	**Dilution:**	4	**File ID:**	I10126121811.13
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Chloride	16887-00-6	47.9		0.800	0.400
Sulfate	14808-79-8	105		4.00	2.00

Sample #:	L12010651-02	**PrePrep Method:**	N/A	**Instrument:**	ORION-4STAR
Client ID:	MPL-16-0112-MS	**Prep Method:**	9040C	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	9040C	**Cal Date:**	
Workgroup #:	WG387893	**Analyst:**	DLP	**Run Date:**	01/25/2012 14:17
Collect Date:	01/24/2012 14:20	**Dilution:**	1	**File ID:**	OS12012612101401
Sample Tag:		**Units:**	UNITS		

Analyte	CAS #	Result	Qual	LOQ	LOD
Corrosivity pH	10-29-7	7.63		0.000	0.000

Certificate of Analysis

Sample #:	L12010651-02	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	MPL-16-0112-MS	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	01/31/2012 08:52
Workgroup #:	WG388329	**Analyst:**	DIH	**Run Date:**	01/31/2012 08:57
Collect Date:	01/24/2012 14:20	**Dilution:**	1	**File ID:**	SC120131001.016
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 #:	L12010651-02	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	MPL-16-0112-MS	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	01/31/2012 08:52
Workgroup #:	WG388329	**Analyst:**	DIH	**Run Date:**	01/31/2012 08:57
Collect Date:	01/24/2012 14:20	**Dilution:**	1	**File ID:**	SC120131001.016
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Alkalinity, Total (as CaCO3)		157		20.0	10.0

Sample #:	L12010651-02	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	MPL-16-0112-MS	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	01/31/2012 08:52
Workgroup #:	WG388329	**Analyst:**	DIH	**Run Date:**	01/31/2012 08:57
Collect Date:	01/24/2012 14:20	**Dilution:**	1	**File ID:**	SC120131001.016
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Alkalinity, Bicarbonate (as CaCO3)		157		20.0	10.0

Sample #:	L12010651-02	**PrePrep Method:**	N/A	**Instrument:**	UV-120-1V
Client ID:	MPL-16-0112-MS	**Prep Method:**	SM4500-CN-I	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-CN-I	**Cal Date:**	01/30/2012 15:00
Workgroup #:	WG388302	**Analyst:**	DLP	**Run Date:**	01/30/2012 18:00
Collect Date:	01/24/2012 14:20	**Dilution:**	1	**File ID:**	1V.1201301800-10
Sample Tag:	D01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Cyanide, Weak/Dissociable	57-12-5	0.221		0.0100	0.00500

Certificate of Analysis

Sample #:	L12010651-02	**PrePrep Method:**	N/A	**Instrument:**	UV-120-1V
Client ID:	MPL-16-0112-MS	**Prep Method:**	SM4500-CN-C,G	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-CN-C,G	**Cal Date:**	01/27/2012 11:10
Workgroup #:	WG388028	**Analyst:**	JBK	**Run Date:**	01/27/2012 11:50
Collect Date:	01/24/2012 14:20	**Dilution:**	1	**File ID:**	1V.1201271150-13
Sample Tag:	CN-A	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Cyanide, Amenable to Chlor.	57-12-5	0.0419		0.0100	0.00500

Sample #:	L12010651-02	**PrePrep Method:**	N/A	**Instrument:**	UV-120-1V
Client ID:	MPL-16-0112-MS	**Prep Method:**	9014-9010C	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	9014-9010C	**Cal Date:**	01/27/2012 11:10
Workgroup #:	WG388027	**Analyst:**	JBK	**Run Date:**	01/27/2012 11:30
Collect Date:	01/24/2012 14:20	**Dilution:**	1	**File ID:**	1V.1201271130-07
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Cyanide	57-12-5	0.307		0.0100	0.00500

Sample #:	L12010651-02	**PrePrep Method:**	N/A	**Instrument:**	YSI-32
Client ID:	MPL-16-0112-MS	**Prep Method:**	120.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	120.1	**Cal Date:**	
Workgroup #:	WG388141	**Analyst:**	DLP	**Run Date:**	01/27/2012 11:20
Collect Date:	01/24/2012 14:20	**Dilution:**	1	**File ID:**	32.1201271120-08
Sample Tag:		**Units:**	umhos/cm		

Analyte	CAS #	Result	Qual	LOQ	LOD
Conductivity		497		1.00	0.500

Sample #:	L12010651-02	**PrePrep Method:**	N/A	**Instrument:**	ORION-710A1
Client ID:	MPL-16-0112-MS	**Prep Method:**	SM4500-F-C	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-F-C	**Cal Date:**	
Workgroup #:	WG388474	**Analyst:**	DIH	**Run Date:**	02/01/2012 10:45
Collect Date:	01/24/2012 14:20	**Dilution:**	1	**File ID:**	O112020113425701
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Fluoride	16984-48-8	0.620		0.100	0.0500

Certificate of Analysis

Sample #:	L12010651-02	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	MPL-16-0112-MS	**Prep Method:**	350.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	350.1	**Cal Date:**	01/27/2012 11:48
Workgroup #:	WG388059	**Analyst:**	DIH	**Run Date:**	01/27/2012 12:11
Collect Date:	01/24/2012 14:20	**Dilution:**	1	**File ID:**	SC120127002.032
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Nitrogen, Ammonia	7664-41-7	1.03		0.100	0.0500

Sample #:	L12010651-02	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	MPL-16-0112-MS	**Prep Method:**	353.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	353.2	**Cal Date:**	01/30/2012 09:15
Workgroup #:	WG388287	**Analyst:**	DIH	**Run Date:**	01/30/2012 14:40
Collect Date:	01/24/2012 14:20	**Dilution:**	4	**File ID:**	SC12013112371601
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Nitrate-Nitrite (as N)		5.15		0.200	0.100

Sample #:	L12010651-02	**PrePrep Method:**	N/A	**Instrument:**	UV-120-1V
Client ID:	MPL-16-0112-MS	**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 #:	WG387929	**Analyst:**	HJR	**Run Date:**	01/25/2012 12:45
Collect Date:	01/24/2012 14:20	**Dilution:**	1	**File ID:**	1V.1201251245-10
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Orthophosphate	14265-44-2	0.404		0.0500	0.0250

Sample #:	L12010651-02	**PrePrep Method:**	N/A	**Instrument:**	OVEN
Client ID:	MPL-16-0112-MS	**Prep Method:**	160.1/SM2540C	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	160.1	**Cal Date:**	
Workgroup #:	WG388025	**Analyst:**	HJR	**Run Date:**	01/27/2012 13:33
Collect Date:	01/24/2012 14:20	**Dilution:**	1	**File ID:**	EN.1201271333-05
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Total Dissolved Solids		796		20.0	10.0

Certificate of Analysis

Sample #:	L12010651-02	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	MPL-16-0112-MS	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	12/06/2011 09:40
Workgroup #:	WG388050	**Analyst:**	DIH	**Run Date:**	01/26/2012 22:28
Collect Date:	01/24/2012 14:20	**Dilution:**	1	**File ID:**	TC01262012.020
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Total Organic Carbon		9.36		1.00	0.500

Sample #:	L12010651-02	**PrePrep Method:**	N/A	**Instrument:**	OVEN
Client ID:	MPL-16-0112-MS	**Prep Method:**	160.2/SM2540D	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	160.2	**Cal Date:**	
Workgroup #:	WG388022	**Analyst:**	HJR	**Run Date:**	01/26/2012 14:57
Collect Date:	01/24/2012 14:20	**Dilution:**	1	**File ID:**	EN.1201261457-17
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Total Suspended Solids		30.5		5.00	2.50

Sample #:	L12010651-03	**PrePrep Method:**	N/A	**Instrument:**	PE-ICP2
Client ID:	MPL-16-0112-MSD	**Prep Method:**	3005A	**Prep Date:**	01/26/2012 06:53
Matrix:	Water	**Analytical Method:**	6010B	**Cal Date:**	01/30/2012 12:30
Workgroup #:	WG388026	**Analyst:**	SLP	**Run Date:**	01/30/2012 16:02
Collect Date:	01/24/2012 14:20	**Dilution:**	1	**File ID:**	P2.013012.160218
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Beryllium, Total	7440-41-7	0.0245		0.00200	0.00100
Calcium, Total	7440-70-2	63.5		0.200	0.100
Magnesium, Total	7439-95-4	13.8		0.500	0.250
Manganese, Total	7439-96-5	0.254		0.0100	0.00500
Potassium, Total	7440-09-7	27.1		1.00	0.500
Sodium, Total	7440-23-5	51.4		0.500	0.250
Tin, Total	7440-31-5	0.560		0.500	0.250
Vanadium, Total	7440-62-2	0.514		0.0100	0.00500
Zinc, Total	7440-66-6	0.502		0.0200	0.0100

Certificate of Analysis

Sample #:	L12010651-03	**PrePrep Method:**	N/A	**Instrument:**	ELAN-ICP
Client ID:	MPL-16-0112-MSD	**Prep Method:**	3015	**Prep Date:**	01/26/2012 06:32
Matrix:	Water	**Analytical Method:**	6020	**Cal Date:**	01/28/2012 10:56
Workgroup #:	WG388019	**Analyst:**	EDL	**Run Date:**	01/28/2012 13:11
Collect Date:	01/24/2012 14:20	**Dilution:**	1	**File ID:**	EL.012812.131104
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Antimony, Total	7440-36-0	0.0647		0.00100	0.000500
Arsenic, Total	7440-38-2	0.0635		0.00100	0.000500
Barium, Total	7440-39-3	0.128		0.00300	0.00150
Cadmium, Total	7440-43-9	0.0613		0.000600	0.000300
Chromium, Total	7440-47-3	0.0649		0.00200	0.00100
Cobalt, Total	7440-48-4	0.0629		0.00100	0.000500
Copper, Total	7440-50-8	0.0649		0.00200	0.00100
Lead, Total	7439-92-1	0.0636		0.00100	0.000500
Nickel, Total	7440-02-0	0.0640		0.00400	0.00200
Selenium, Total	7782-49-2	0.0660		0.00100	0.000500
Silver, Total	7440-22-4	0.0597		0.00100	0.000500
Thallium, Total	7440-28-0	0.0618		0.000200	0.000100

Sample #:	L12010651-03	**PrePrep Method:**	N/A	**Instrument:**	HYDRA
Client ID:	MPL-16-0112-MSD	**Prep Method:**	7470A	**Prep Date:**	01/27/2012 08:27
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	01/27/2012 14:02
Workgroup #:	WG388140	**Analyst:**	SLP	**Run Date:**	01/27/2012 14:31
Collect Date:	01/24/2012 14:20	**Dilution:**	1	**File ID:**	HY.012712.143151
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Mercury	7439-97-6	0.00207		0.000222	0.000111

Sample #:	L12010651-03	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	MPL-16-0112-MSD	**Prep Method:**	300.0	**Prep Date:**	01/26/2012 15:17
Matrix:	Water	**Analytical Method:**	300.0	**Cal Date:**	09/14/2011 11:03
Workgroup #:	WG387948	**Analyst:**	JBK	**Run Date:**	01/26/2012 18:29
Collect Date:	01/24/2012 14:20	**Dilution:**	4	**File ID:**	I10126121829.14
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Chloride	16887-00-6	48.0		0.800	0.400
Sulfate	14808-79-8	105		4.00	2.00

Certificate of Analysis

Sample #:	L12010651-03	**PrePrep Method:**	N/A	**Instrument:**	ORION-4STAR
Client ID:	MPL-16-0112-MSD	**Prep Method:**	9040C	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	9040C	**Cal Date:**	
Workgroup #:	WG387893	**Analyst:**	DLP	**Run Date:**	01/25/2012 14:21
Collect Date:	01/24/2012 14:20	**Dilution:**	1	**File ID:**	OS12012612101801
Sample Tag:		**Units:**	UNITS		

Analyte	CAS #	Result	Qual	LOQ	LOD
Corrosivity pH	10-29-7	7.67		0.000	0.000

Sample #:	L12010651-03	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	MPL-16-0112-MSD	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	01/31/2012 08:52
Workgroup #:	WG388329	**Analyst:**	DIH	**Run Date:**	01/31/2012 08:58
Collect Date:	01/24/2012 14:20	**Dilution:**	1	**File ID:**	SC120131001.017
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 #:	L12010651-03	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	MPL-16-0112-MSD	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	01/31/2012 08:52
Workgroup #:	WG388329	**Analyst:**	DIH	**Run Date:**	01/31/2012 08:58
Collect Date:	01/24/2012 14:20	**Dilution:**	1	**File ID:**	SC120131001.017
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Alkalinity, Total (as CaCO3)		156		20.0	10.0

Sample #:	L12010651-03	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	MPL-16-0112-MSD	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	01/31/2012 08:52
Workgroup #:	WG388329	**Analyst:**	DIH	**Run Date:**	01/31/2012 08:58
Collect Date:	01/24/2012 14:20	**Dilution:**	1	**File ID:**	SC120131001.017
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Alkalinity, Bicarbonate (as CaCO3)		156		20.0	10.0

Certificate of Analysis

Sample #:	L12010651-03	**PrePrep Method:**	N/A	**Instrument:**	UV-120-1V
Client ID:	MPL-16-0112-MSD	**Prep Method:**	SM4500-CN-I	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-CN-I	**Cal Date:**	01/30/2012 15:00
Workgroup #:	WG388302	**Analyst:**	DLP	**Run Date:**	01/30/2012 18:00
Collect Date:	01/24/2012 14:20	**Dilution:**	1	**File ID:**	1V.1201301800-11
Sample Tag:	D01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Cyanide, Weak/Dissociable	57-12-5	0.218		0.0100	0.00500

Sample #:	L12010651-03	**PrePrep Method:**	N/A	**Instrument:**	UV-120-1V
Client ID:	MPL-16-0112-MSD	**Prep Method:**	SM4500-CN-C,G	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-CN-C,G	**Cal Date:**	01/27/2012 11:10
Workgroup #:	WG388028	**Analyst:**	JBK	**Run Date:**	01/27/2012 11:50
Collect Date:	01/24/2012 14:20	**Dilution:**	1	**File ID:**	1V.1201271150-14
Sample Tag:	CN-A	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Cyanide, Amenable to Chlor.	57-12-5	0.0394		0.0100	0.00500

Sample #:	L12010651-03	**PrePrep Method:**	N/A	**Instrument:**	UV-120-1V
Client ID:	MPL-16-0112-MSD	**Prep Method:**	9014-9010C	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	9014-9010C	**Cal Date:**	01/27/2012 11:10
Workgroup #:	WG388027	**Analyst:**	JBK	**Run Date:**	01/27/2012 11:30
Collect Date:	01/24/2012 14:20	**Dilution:**	1	**File ID:**	1V.1201271130-08
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Cyanide	57-12-5	0.307		0.0100	0.00500

Sample #:	L12010651-03	**PrePrep Method:**	N/A	**Instrument:**	YSI-32
Client ID:	MPL-16-0112-MSD	**Prep Method:**	120.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	120.1	**Cal Date:**	
Workgroup #:	WG388141	**Analyst:**	DLP	**Run Date:**	01/27/2012 11:20
Collect Date:	01/24/2012 14:20	**Dilution:**	1	**File ID:**	32.1201271120-09
Sample Tag:		**Units:**	umhos/cm		

Analyte	CAS #	Result	Qual	LOQ	LOD
Conductivity		497		1.00	0.500

Certificate of Analysis

Sample #:	L12010651-03	**PrePrep Method:**	N/A	**Instrument:**	ORION-710A1
Client ID:	MPL-16-0112-MSD	**Prep Method:**	SM4500-F-C	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-F-C	**Cal Date:**	
Workgroup #:	WG388474	**Analyst:**	DIH	**Run Date:**	02/01/2012 10:45
Collect Date:	01/24/2012 14:20	**Dilution:**	1	**File ID:**	O112020113430101
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Fluoride	16984-48-8	0.620		0.100	0.0500

Sample #:	L12010651-03	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	MPL-16-0112-MSD	**Prep Method:**	350.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	350.1	**Cal Date:**	01/27/2012 11:48
Workgroup #:	WG388059	**Analyst:**	DIH	**Run Date:**	01/27/2012 12:11
Collect Date:	01/24/2012 14:20	**Dilution:**	1	**File ID:**	SC120127002.033
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Nitrogen, Ammonia	7664-41-7	0.920		0.100	0.0500

Sample #:	L12010651-03	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	MPL-16-0112-MSD	**Prep Method:**	353.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	353.2	**Cal Date:**	01/30/2012 09:15
Workgroup #:	WG388287	**Analyst:**	DIH	**Run Date:**	01/30/2012 14:40
Collect Date:	01/24/2012 14:20	**Dilution:**	4	**File ID:**	SC12013112372401
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Nitrate-Nitrite (as N)		4.92		0.200	0.100

Sample #:	L12010651-03	**PrePrep Method:**	N/A	**Instrument:**	UV-120-1V
Client ID:	MPL-16-0112-MSD	**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 #:	WG387929	**Analyst:**	HJR	**Run Date:**	01/25/2012 12:45
Collect Date:	01/24/2012 14:20	**Dilution:**	1	**File ID:**	1V.1201251245-11
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Orthophosphate	14265-44-2	0.406		0.0500	0.0250

Certificate of Analysis

Sample #:	L12010651-03	**PrePrep Method:**	N/A	**Instrument:**	OVEN
Client ID:	MPL-16-0112-MSD	**Prep Method:**	160.1/SM2540C	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	160.1	**Cal Date:**	
Workgroup #:	WG388025	**Analyst:**	HJR	**Run Date:**	01/27/2012 13:33
Collect Date:	01/24/2012 14:20	**Dilution:**	1	**File ID:**	EN.1201271333-06
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Total Dissolved Solids		804		20.0	10.0

Sample #:	L12010651-03	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	MPL-16-0112-MSD	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	12/06/2011 09:40
Workgroup #:	WG388050	**Analyst:**	DIH	**Run Date:**	01/26/2012 22:50
Collect Date:	01/24/2012 14:20	**Dilution:**	1	**File ID:**	TC01262012.021
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Total Organic Carbon		10.3		1.00	0.500

Sample #:	L12010651-03	**PrePrep Method:**	N/A	**Instrument:**	OVEN
Client ID:	MPL-16-0112-MSD	**Prep Method:**	160.2/SM2540D	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	160.2	**Cal Date:**	
Workgroup #:	WG388022	**Analyst:**	HJR	**Run Date:**	01/26/2012 14:57
Collect Date:	01/24/2012 14:20	**Dilution:**	1	**File ID:**	EN.1201261457-18
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Total Suspended Solids		28.5		5.00	2.50

2.0 Full Sample Data Package 22
2.1 Metals Data 23
2.1.1 Metals I C P Data 24
2.1.1.1 Summary Data 25
2.1.1.2 QC Summary Data 29
2.1.1.3 Raw Data 65
2.1.2 Metals ICP-MS Data 157
2.1.2.1 Summary Data 158
2.1.2.2 QC Summary Data 163
2.1.2.3 Raw Data 190
2.1.3 Metals CVAA Data (Mercury) 532
2.1.3.1 Summary Data 533
2.1.3.2 QC Summary 537
2.1.3.3 Raw Data 558
2.2 General Chemistry Data 562
2.2.1 Method 9056 563
2.2.1.1 Summary Data 564
2.2.1.2 QC Summary Data 568
2.2.1.3 Sample Data 589
2.2.1.4 Standards Data 593
2.2.1.5 Raw QC Data 609
2.2.2 PH Data 613
2.2.2.1 Summary Data 614
2.2.2.2 QC Summary Data 617
2.2.2.3 Raw Data 620
2.2.3 Alkalinity Data 622
2.2.3.1 Summary Data 623
2.2.3.2 QC Summary Data 630
2.2.3.3 Raw Data 638
2.2.4 Cyanide Data 644
2.2.4.1 Summary Data 645
2.2.4.2 QC Summary Data 650
2.2.4.3 Raw Data 672
2.2.5 Conductivity Data 710
2.2.5.1 Summary Data 711
2.2.5.2 QC Summary Data 714
2.2.5.3 Raw Data 721
2.2.6 Fluoride Data 724
2.2.6.1 Summary Data 725
2.2.6.2 QC Summary Data 728
2.2.6.3 Raw Data 736
2.2.7 Ammonia Data 738
2.2.7.1 Summary Data 739
2.2.7.2 QC Summary Data 742
2.2.7.3 Raw Data 750
2.2.8 Nitrate Data 757
2.2.8.1 Summary Data 758
2.2.8.2 QC Summary Data 761
2.2.8.3 Raw Data 769
2.2.9 Orthophosphate Data 775
2.2.9.1 Summary Data 776
2.2.9.2 QC Summary Data 780

2.2.9.3 Raw Data 788
2.2.10 Total Dissolved Solids Data 796
2.2.10.1 Summary Data 797
2.2.10.2 QC Summary Data 800
2.2.10.3 Raw Data 808
2.2.11 Total Organic Carbon Data 811
2.2.11.1 Summary Data 812
2.2.11.2 QC Summary Data 815
2.2.11.3 Raw Data 823
2.2.12 Total Suspended Solids Data 866
2.2.12.1 Summary Data 867
2.2.12.2 QC Summary Data 871
2.2.12.3 Raw Data 879
3.0 Attachments 882

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: L12010651
Department: Metals
Analyst: Sheri Pfalzgraf

METHOD

Preparation: SW-846 3005

Preparation: SW-846 3005A

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: WG388026 - The closing continuing calibration blank that bracketed the batch post-digestion spike yielded a calcium result of -0.115 mg/L which exceeds the absolute value of the limit of detection. However, since the CCB did not bracket any client samples, no further action was taken.

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: WG388026 - All acceptance criteria were met.

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

Matrix Spikes: WG388026 - Sample 01 was chosen by the client for MS/MSD analysis. Samples 02(MS) and 03(MSD) yielded noncompliant recoveries for calcium.

Matrix Spikes: All acceptance criteria were met.

SAMPLES

Samples: All acceptance criteria were met.

Narrative ID: 41502
Approved By: Maren Beery
Maren Beery

Microbac

Lab Report #: L12010651
Lab Project #: 3005.011
Project Name: White Sands MR
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L12010651-01	**PrePrep Method:**	N/A	**Instrument:**	PE-ICP2
Client ID:	MPL-16-0112-1	**Prep Method:**	3005A	**Prep Date:**	01/26/2012 06:53
Matrix:	Water	**Analytical Method:**	6010B	**Cal Date:**	01/30/2012 12:30
Workgroup #:	WG388026	**Analyst:**	SLP	**Run Date:**	01/30/2012 15:48
Collect Date:	01/24/2012 14:20	**Dilution:**	1	**File ID:**	P2.013012.154834
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Beryllium, Total	7440-41-7		U	0.00200	0.00100
Calcium, Total	7440-70-2	55.1		0.200	0.100
Magnesium, Total	7439-95-4	8.31		0.500	0.250
Manganese, Total	7439-96-5		U	0.0100	0.00500
Potassium, Total	7440-09-7	2.93		1.00	0.500
Sodium, Total	7440-23-5	25.2		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		U	0.0200	0.0100

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

Certificate of Analysis

Sample #:	L12010651-02	**PrePrep Method:**	N/A	**Instrument:**	PE-ICP2
Client ID:	MPL-16-0112-MS	**Prep Method:**	3005A	**Prep Date:**	01/26/2012 06:53
Matrix:	Water	**Analytical Method:**	6010B	**Cal Date:**	01/30/2012 12:30
Workgroup #:	WG388026	**Analyst:**	SLP	**Run Date:**	01/30/2012 15:55
Collect Date:	01/24/2012 14:20	**Dilution:**	1	**File ID:**	P2.013012.155524
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Beryllium, Total	7440-41-7	0.0239		0.00200	0.00100
Calcium, Total	7440-70-2	61.8		0.200	0.100
Magnesium, Total	7439-95-4	13.3		0.500	0.250
Manganese, Total	7439-96-5	0.246		0.0100	0.00500
Potassium, Total	7440-09-7	26.1		1.00	0.500
Sodium, Total	7440-23-5	49.8		0.500	0.250
Tin, Total	7440-31-5	0.552		0.500	0.250
Vanadium, Total	7440-62-2	0.498		0.0100	0.00500
Zinc, Total	7440-66-6	0.485		0.0200	0.0100

Sample #:	L12010651-03	**PrePrep Method:**	N/A	**Instrument:**	PE-ICP2
Client ID:	MPL-16-0112-MSD	**Prep Method:**	3005A	**Prep Date:**	01/26/2012 06:53
Matrix:	Water	**Analytical Method:**	6010B	**Cal Date:**	01/30/2012 12:30
Workgroup #:	WG388026	**Analyst:**	SLP	**Run Date:**	01/30/2012 16:02
Collect Date:	01/24/2012 14:20	**Dilution:**	1	**File ID:**	P2.013012.160218
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Beryllium, Total	7440-41-7	0.0245		0.00200	0.00100
Calcium, Total	7440-70-2	63.5		0.200	0.100
Magnesium, Total	7439-95-4	13.8		0.500	0.250
Manganese, Total	7439-96-5	0.254		0.0100	0.00500
Potassium, Total	7440-09-7	27.1		1.00	0.500
Sodium, Total	7440-23-5	51.4		0.500	0.250
Tin, Total	7440-31-5	0.560		0.500	0.250
Vanadium, Total	7440-62-2	0.514		0.0100	0.00500
Zinc, Total	7440-66-6	0.502		0.0200	0.0100

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: WG387973
Analyst: REK
Spike Analyst: REK
Method: 3005A
Run Date: 01/26/2012 06:53
Hotblock Start Temp: 94.9 @ 06:40
Hotblock End Temp: 95.2 @ 10:40

SOP: ME401 Revison 14
Spike Solution: STD49450
Spike Witness: VC
HNO3 Lot #: COA15827
HCL Lot #: COA15847
Digestion Tubes Lot #: COA15882

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Spike Amount	Due Date
1	WG387973-02	BLANK	1	50 mL	50 mL		
2	WG387973-03	LCS	1	50 mL	50 mL	5 mL	
3	L12010640-01	SAMP	1	50 mL	50 mL		02/03/12
4	L12010640-02	SAMP	1	50 mL	50 mL		02/03/12
5	L12010640-03	SAMP	1	50 mL	50 mL		02/03/12
6	L12010640-04	SAMP	1	50 mL	50 mL		02/03/12
7	L12010640-05	SAMP	1	50 mL	50 mL		02/03/12
8	L12010643-01	SAMP	1	50 mL	50 mL		02/03/12
9	L12010643-02	SAMP	1	50 mL	50 mL		02/03/12
10	L12010643-03	SAMP	1	50 mL	50 mL		02/03/12
11	L12010643-04	SAMP	1	50 mL	50 mL		02/03/12
12	L12010643-05	SAMP	1	50 mL	50 mL		02/03/12
13	WG387973-01	REF	1	50 mL	50 mL		
14	L12010651-01	RS01	1	50 mL	50 mL		02/03/12
15	WG387973-04	MS	1	50 mL	50 mL	5 mL	
16	L12010651-02	MS01	1	50 mL	50 mL	5 mL	02/03/12
17	WG387973-05	MSD	1	50 mL	50 mL	5 mL	
18	L12010651-03	SD01	1	50 mL	50 mL	5 mL	02/03/12
19	L12010652-01	SAMP	1	50 mL	50 mL		02/03/12
20	L12010652-02	SAMP	1	50 mL	50 mL		02/03/12

Analyst: [signature]

Reviewer: [signature]

HB_DIG - Modified 09/30/2009
PDF ID: 2290184
Report generated: 01/26/2012 10:52

Microbac Laboratories Inc.

Instrument Run Log

Instrument: PE-ICP2 Dataset: 013012H3R.CSV
Analyst1: SLP Analyst2: N/A
Method: 6010 SOP: ME600E Rev: 11
Maintenance Log ID: 40454

Calibration Std: STD49553 ICV Std: STD49610 Post Spike: STD48461
ICSA: STD49326 ICSAB: STD49804 Int. Std: STD49805
CCV: STD49613 LLCCV: STD49420

Workgroups: 387954, 388125, 388026, 388259, 387681, 388173

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	P2.013012.120329	WG388291-01	Calibration Point		1		01/30/12 12:03
2	P2.013012.121021	WG388291-02	Calibration Point		1		01/30/12 12:10
3	P2.013012.121710	WG388291-03	Calibration Point		1		01/30/12 12:17
4	P2.013012.122359	WG388291-04	Calibration Point		1		01/30/12 12:23
5	P2.013012.123053	WG388291-05	Calibration Point		1		01/30/12 12:30
6	P2.013012.123749	WG388291-06	ICV 2nd Vendor		1		01/30/12 12:37
7	P2.013012.124932	WG388291-07	Initial Calibration Verification		1		01/30/12 12:49
8	P2.013012.125628	WG388291-08	Initial Calib Blank		1		01/30/12 12:56
9	P2.013012.130316	WG388291-09	Interference Check		1		01/30/12 13:03
10	P2.013012.131006	WG388291-10	Interference Check		1		01/30/12 13:10
11	P2.013012.131656	WG388291-11	CCV		1		01/30/12 13:16
12	P2.013012.132351	WG388291-12	CCB		1		01/30/12 13:23
13	P2.013012.133702	WG388291-13	Linear Range Check		1		01/30/12 13:37
14	P2.013012.134354	BLANK	BLANK		1		01/30/12 13:43
15	P2.013012.135043	BLANK	BLANK		1		01/30/12 13:50
16	P2.013012.135733	BLANK	BLANK		1		01/30/12 13:57
17	P2.013012.140424	WG388291-14	CCV		1		01/30/12 14:04
18	P2.013012.141119	WG388291-15	CCB		1		01/30/12 14:11
19	P2.013012.141807	WG387850-02	Method/Prep Blank	50/50	1		01/30/12 14:18
20	P2.013012.142457	WG387850-03	Laboratory Control S	50/50	1		01/30/12 14:24
21	P2.013012.143152	WG387850-01	Reference Sample		1	L12010613-01	01/30/12 14:31
22	P2.013012.143847	WG387954-04	Serial Dilution		5	L12010613-01	01/30/12 14:38
23	P2.013012.144538	WG387954-03	Post Digestion Spike		1	L12010613-01	01/30/12 14:45
24	P2.013012.145235	WG387850-04	Matrix Spike	50/50	1	L12010613-01	01/30/12 14:52
25	P2.013012.145927	WG387850-05	Matrix Spike Duplica	50/50	1	L12010613-01	01/30/12 14:59
26	P2.013012.150619	L12010616-01	LH18/24-SP650-6586-GRAB	50/50	2		01/30/12 15:06
27	P2.013012.151312	L12010686-03	MPL26-0112-1	50/50	1		01/30/12 15:13
28	P2.013012.152005	WG388291-16	CCV		1		01/30/12 15:20
29	P2.013012.152700	WG388291-17	CCB		1		01/30/12 15:27
30	P2.013012.153454	WG387973-02	Method/Prep Blank	50/50	1		01/30/12 15:34
31	P2.013012.154144	WG387973-03	Laboratory Control S	50/50	1		01/30/12 15:41
32	P2.013012.154834	WG387973-01	Reference Sample		1	L12010651-01	01/30/12 15:48
33	P2.013012.155524	WG387973-04	Matrix Spike	50/50	1	L12010651-01	01/30/12 15:55
34	P2.013012.160218	WG387973-05	Matrix Spike Duplica	50/50	1	L12010651-01	01/30/12 16:02

Page: 1 Approved: January 31, 2012

Marcia Berry

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: PE-ICP2 Dataset: 013012H3R.CSV
Analyst1: SLP Analyst2: N/A
Method: 6010 SOP: ME600E Rev: 11
Maintenance Log ID: 40454

Calibration Std: STD49553 ICV Std: STD49610 Post Spike: STD48461
ICSA: STD49326 ICSAB: STD49804 Int. Std: STD49805
CCV: STD49613 LLCCV: STD49420

Workgroups: 387954, 388125, 388026, 388259, 387681, 388173

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	P2.013012.160914	L12010652-01	MPL13-0112-1	50/50	1		01/30/12 16:09
36	P2.013012.161605	L12010652-02	MPL10-0112-1	50/50	1		01/30/12 16:16
37	P2.013012.162257	L12010640-01	70132-W0001		1		01/30/12 16:22
38	P2.013012.162948	L12010640-02	70133-W0001	50/50	1		01/30/12 16:29
39	P2.013012.163636	WG388026-02	Serial Dilution		5	L12010640-01	01/30/12 16:36
40	P2.013012.164324	WG388291-18	CCV		1		01/30/12 16:43
41	P2.013012.165020	WG388291-19	CCB		1		01/30/12 16:50
42	P2.013012.165459	WG388026-01	Post Digestion Spike		1	L12010640-01	01/30/12 16:54
43	P2.013012.170150	L12010640-03	70135-W0001		1		01/30/12 17:01
44	P2.013012.170840	L12010640-04	70251-W0001		1		01/30/12 17:08
45	P2.013012.171529	L12010640-05	70252-W0001		1		01/30/12 17:15
46	P2.013012.172219	L12010643-01	40005-W0001		1		01/30/12 17:22
47	P2.013012.172909	L12010643-02	9060-W0001		1		01/30/12 17:29
48	P2.013012.173559	L12010643-03	9060-W0002		1		01/30/12 17:35
49	P2.013012.174249	L12010643-04	9278-W0001		1		01/30/12 17:42
50	P2.013012.174940	L12010643-05	9283-W0001		1		01/30/12 17:49
51	P2.013012.175632	WG388217-02	Method/Prep Blank	50/50	1		01/30/12 17:56
52	P2.013012.180323	WG388291-20	CCV		1		01/30/12 18:03
53	P2.013012.181018	WG388291-21	CCB		1		01/30/12 18:10
54	P2.013012.181706	WG388217-03	Laboratory Control S	50/50	1		01/30/12 18:17
55	P2.013012.182355	WG388217-01	Reference Sample		1	L12010726-01	01/30/12 18:23
56	P2.013012.183047	WG388217-04	Matrix Spike	50/50	1	L12010726-01	01/30/12 18:30
57	P2.013012.183740	WG388217-05	Matrix Spike Duplica	50/50	1	L12010726-01	01/30/12 18:37
58	P2.013012.184434	L12010726-02	FB MICROBAC-1	50/50	1		01/30/12 18:44
59	P2.013012.185123	WG388259-02	Serial Dilution		5	L12010726-02	01/30/12 18:51
60	P2.013012.185812	WG388259-01	Post Digestion Spike		1	L12010726-02	01/30/12 18:58
61	P2.013012.190502	L12010740-01	TRENCH DISCHARGE		1		01/30/12 19:05
62	P2.013012.191155	L12010756-01	6171-W0004		1		01/30/12 19:11
63	P2.013012.191845	L12010756-02	9059-W0001		1		01/30/12 19:18
64	P2.013012.192535	WG388291-22	CCV		1		01/30/12 19:25
65	P2.013012.193228	WG388291-23	CCB		1		01/30/12 19:32
66	P2.013012.193916	L12010756-03	9059-W0002		1		01/30/12 19:39
67	P2.013012.194608	L12010756-04	9066-W0001		1		01/30/12 19:46
68	P2.013012.195259	L12010756-05	9066-W0002		1		01/30/12 19:52

Page: 2 Approved: January 31, 2012

Maren Berry

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Instrument Run Log

Instrument: PE-ICP2 Dataset: 013012H3R.CSV
Analyst1: SLP Analyst2: N/A
Method: 6010 SOP: ME600E Rev: 11
Maintenance Log ID: 40454

Calibration Std: STD49553 ICV Std: STD49610 Post Spike: STD48461
ICSA: STD49326 ICSAB: STD49804 Int. Std: STD49805
CCV: STD49613 LLCCV: STD49420

Workgroups: 387954, 388125, 388026, 388259, 387681, 388173

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	P2.013012.195948	L12010756-06	9168-W0001		1		01/30/12 19:59
70	P2.013012.200637	L12010756-07	9175-W0001		1		01/30/12 20:06
71	P2.013012.201326	L12010756-08	9188-W0001		1		01/30/12 20:13
72	P2.013012.202015	L12010756-09	9277-W0001		1		01/30/12 20:20
73	P2.013012.202704	L12010765-01	SP7 QT	50/50	1		01/30/12 20:27
74	P2.013012.203354	L12010765-02	SP7 HOT	50/50	1		01/30/12 20:33
75	P2.013012.204044	L12010765-03	SP21 QT	50/50	1		01/30/12 20:40
76	P2.013012.204734	WG388291-24	CCV		1		01/30/12 20:47
77	P2.013012.205426	WG388291-25	CCB		1		01/30/12 20:54
78	P2.013012.210114	L12010765-04	SP21 HC	50/50	1		01/30/12 21:01
79	P2.013012.210804	WG387653-02	Method/Prep Blank	50/50	1		01/30/12 21:08
80	P2.013012.211455	WG387653-03	Laboratory Control S	50/50	1		01/30/12 21:14
81	P2.013012.212146	WG387653-01	Reference Sample		1	L12010539-06	01/30/12 21:21
82	P2.013012.212838	WG387653-04	Matrix Spike	50/50	1	L12010539-06	01/30/12 21:28
83	P2.013012.213528	WG387653-05	Matrix Spike Duplica	50/50	1	L12010539-06	01/30/12 21:35
84	P2.013012.214218	L12010551-01	70130-W0001	50/50	1		01/30/12 21:42
85	P2.013012.214907	WG387681-04	Serial Dilution		5	L12010551-04	01/30/12 21:49
86	P2.013012.215556	WG387681-03	Post Digestion Spike		1	L12010551-04	01/30/12 21:55
87	P2.013012.220246	L12010551-03	70141-W0001	50/50	1		01/30/12 22:02
88	P2.013012.220935	WG388291-26	CCV		1		01/30/12 22:09
89	P2.013012.221627	WG388291-27	CCB		1		01/30/12 22:16
90	P2.013012.222351	L12010551-04	70143-W0001	50/50	1		01/30/12 22:23
91	P2.013012.223041	L12010551-05	70147-W0001	50/50	1		01/30/12 22:30
92	P2.013012.223731	L12010551-06	70264-W0001	50/50	1		01/30/12 22:37
93	P2.013012.224421	WG388081-02	Method/Prep Blank	50/50	1		01/30/12 22:44
94	P2.013012.225111	WG388081-03	Laboratory Control S	50/50	1		01/30/12 22:51
95	P2.013012.225803	WG388081-01	Reference Sample		1	L12010695-01	01/30/12 22:58
96	P2.013012.230454	WG388081-04	Duplicate	50/50	1	L12010695-01	01/30/12 23:04
97	P2.013012.231143	WG388081-05	Matrix Spike	50/50	1	L12010695-01	01/30/12 23:11
98	P2.013012.231833	L12010695-02	018	50/50	1		01/30/12 23:18
99	P2.013012.232523	WG388173-04	Serial Dilution		5	L12010695-02	01/30/12 23:25
100	P2.013012.233213	WG388291-28	CCV		1		01/30/12 23:32
101	P2.013012.233905	WG388291-29	CCB		1		01/30/12 23:39
102	P2.013012.234553	WG388173-03	Post Digestion Spike		1	L12010695-02	01/30/12 23:45

Page: 3 Approved: January 31, 2012

Maren Berry

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: PE-ICP2 Dataset: 013012H3R.CSV
Analyst1: SLP Analyst2: N/A
Method: 6010 SOP: ME600E Rev: 11
Maintenance Log ID: 40454

Calibration Std: STD49553 ICV Std: STD49610 Post Spike: STD48461
ICSA: STD49326 ICSAB: STD49804 Int. Std: STD49805
CCV: STD49613 LLCCV: STD49420

Workgroups: 387954, 388125, 388026, 388259, 387681, 388173

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
103	P2.013012.235244	L12010008-01	IDL1-ICP-PE2		1		01/30/12 23:52
104	P2.013012.235934	L12010008-02	IDL2-ICP-PE2		1		01/30/12 23:59
105	P2.013112.000624	L12010008-03	IDL3-ICP-PE2		1		01/31/12 00:06
106	P2.013112.001314	L12010008-04	IDL4-ICP-PE2		1		01/31/12 00:13
107	P2.013112.002004	L12010008-05	IDL5-ICP-PE2		1		01/31/12 00:20
108	P2.013112.002655	L12010008-06	IDL6-ICP-PE2		1		01/31/12 00:26
109	P2.013112.003347	L12010008-07	IDL7-ICP-PE2		1		01/31/12 00:33
110	P2.013112.004038	WG388291-30	CCV		1		01/31/12 00:40
111	P2.013112.004730	WG388291-31	CCB		1		01/31/12 00:47

Comments

Seq.	Rerun	Dil.	Reason	Analytes
6			ICV ran out of soln during analysis; reanalyzed.	

Page: 4 Approved: January 31, 2012

Maren Berry

Microbac Laboratories Inc.

Data Checklist

Date: 30-JAN-2012
Analyst: SLP
Analyst: NA
Method: 6010
Instrument: PE-ICP2
Curve Workgroup: 388291
Runlog ID: 44888
Analytical Workgroups: 387954, 388125, 388026, 388259, 388173

Calibration/Linearity	
ICV/CCV	X
ICV RSD <= 3% (EPA 200.7 only)	X
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	0613, 0616, 0686, 0651, 0652, 0695
Client Forms	X
Level X	
Level 3	0616
Level 4	0613, 0686, 0651, 0652
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	SLP
Secondary Reviewer	MMB
Comments	

Primary Reviewer:
31-JAN-2012

Secondary Reviewer:
31-JAN-2012

CHECKLIST1 - Modified 03/05/2008
Generated: JAN-31-2012 14:04:35

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6010B AAB#: WG388026

Login Number: L12010651

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
MPL-16-0112-1	01	01/24/12					01/26/12	1.7	180		01/30/12	6.1	180	
MPL-16-0112-MS	02	01/24/12					01/26/12	1.7	180		01/30/12	6.1	180	
MPL-16-0112-MSD	03	01/24/12					01/26/12	1.7	180		01/30/12	6.1	180	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 2292793
Report generated 01/31/2012 09:05

Microbac Laboratories Inc.

METHOD BLANK SUMMARY

Login Number: L12010651
Blank File ID: P2.013012.153454
Prep Date: 01/26/12 06:53
Analyzed Date: 01/30/12 15:34
Analyst: SLP

Work Group: WG388026
Blank Sample ID: WG387973-02
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	WG387973-03	P2.013012.154144	01/30/12 15:41	02
MPL-16-0112-1	L12010651-01	P2.013012.154834	01/30/12 15:48	02
MPL-16-0112-MS	L12010651-02	P2.013012.155524	01/30/12 15:55	02
MPL-16-0112-MSD	L12010651-03	P2.013012.160218	01/30/12 16:02	02

Report Name: BLANK_SUMMARY
PDF File ID: 2292794
Report generated 01/31/2012 09:05

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L12010651 Prep Date: 01/26/12 06:53 Sample ID: WG387973-02
Instrument ID: PE-ICP2 Run Date: 01/30/12 15:34 Prep Method: 3005A
File ID: P2.013012.153454 Analyst: SLP Method: 6010B
Workgroup (AAB#): WG388026 Matrix: Water Units: mg/L
Contract #: Cal ID: PE-ICP-30-JAN-12

Analytes	LOD	LOQ	Concentration	Dilution	Qualifier
Beryllium, Total	0.00100	0.00200	0.00100	1	U
Calcium, Total	0.100	0.200	0.100	1	U
Magnesium, Total	0.250	0.500	0.250	1	U
Manganese, 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: 2292795
31-JAN-2012 09:05

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L12010651 Run Date: 01/30/2012 Sample ID: WG387973-03
Instrument ID: PE-ICP2 Run Time: 15:41 Prep Method: 3005A
File ID: P2.013012.154144 Analyst: SLP Method: 6010B
Workgroup (AAB#): WG388026 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD49450 Cal ID: PE-ICP-30-JAN-12

Analytes	Expected	Found	% Rec	LCS Limits	Q
Beryllium, Total	0.0250	0.0244	97.5	80 - 120	
Calcium, Total	5.00	4.74	94.9	80 - 120	
Magnesium, Total	5.00	5.01	100	80 - 120	
Manganese, Total	0.250	0.249	99.5	80 - 120	
Potassium, Total	25.0	23.2	92.9	80 - 120	
Sodium, Total	25.0	24.1	96.5	80 - 120	
Tin, Total	0.500	0.529	106	80 - 120	
Vanadium, Total	0.500	0.494	98.8	80 - 120	
Zinc, Total	0.500	0.499	99.9	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 2292796
Report generated: 01/31/2012 09:05

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L12010651 Cal ID: PE-ICP2- 30-JAN-12 Worknum: WG388026

Instrument ID: PE-ICP2 Contract #: Prep Method: 3005A

Parent ID: L12010651-01 File ID: P2.013012.154834 Dil: 1 Method: 6010B

Sample ID: L12010651-02 MS File ID: P2.013012.155524 Dil: 1 Matrix: Water

Sample ID: L12010651-03 MSD File ID: P2.013012.160218 Dil: 1 Units: mg/L

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Beryllium, Total	U	0.0250	0.0239	95.8	0.0250	0.0245	97.8	2.14	80 - 120	20	
Calcium, Total	55.1	5.00	61.8	134	5.00	63.5	170	2.82	80 - 120	20	*
Magnesium, Total	8.31	5.00	13.3	99.3	5.00	13.8	110	3.77	80 - 120	20	
Manganese, Total	U	0.250	0.246	98.2	0.250	0.254	101	3.30	80 - 120	20	
Potassium, Total	2.93	25.0	26.1	92.6	25.0	27.1	96.5	3.67	80 - 120	20	
Sodium, Total	25.2	25.0	49.8	98.4	25.0	51.4	105	3.25	80 - 120	20	
Tin, Total	U	0.500	0.552	110	0.500	0.560	112	1.43	80 - 120	20	
Vanadium, Total	U	0.500	0.498	99.6	0.500	0.514	103	3.25	80 - 120	20	
Zinc, Total	U	0.500	0.485	97.1	0.500	0.502	100	3.45	80 - 120	20	

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

MS_MSD - Modified 03/06/2008
PDF File ID: 2292797
Report generated 01/31/2012 09:05

Microbac Laboratories Inc.
Serial Dilution Report

Login: L12010651 **Worknum:** WG388026
Instrument: PE-ICP2 **Method:** 6010B
Serial Dil: WG388026-02 **File ID:** P2.013012.163636 **Dil:** 5 **Units:** mg/L
Sample: L12010640-01 **File ID:** P2.013012.162257 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Beryllium	ND	U	ND	U		
Calcium	ND	U	ND	U		
Magnesium	ND	U	ND	U		
Manganese	ND	U	ND	U		
Potassium	ND	U	ND	U		
Sodium	ND	U	ND	U		
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: 2292791
01/31/2012 09:05

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L12010651 **Worknum:** WG388026
Instrument ID: PE-ICP2 **Method:** 6010B
Post Spike ID: WG388026-01 **File ID:** P2.013012.165459 **Dil:** 1 **Units:** mg/L
Sample ID: L12010640-01 **File ID:** P2.013012.162257 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
BERYLLIUM	0.0243		0	U	.025	97.2	75 - 125	
CALCIUM	4.86		0	U	5	97.1	75 - 125	
MAGNESIUM	4.99		0	U	5	99.7	75 - 125	
MANGANESE	0.256		0	U	.25	102.4	75 - 125	
POTASSIUM	24.3		0	U	25	97.1	75 - 125	
SODIUM	24.6		0	U	25	98.3	75 - 125	
TIN	0.521		0	U	.5	104.3	75 - 125	
VANADIUM	0.499		0	U	.5	99.9	75 - 125	
ZINC	0.510		0	U	.5	102.0	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: 2292792
Report generated: 01/31/2012 09:05

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L12010651	Workgroup (AAB#):	WG388026
Analytical Method:	6010B	Instrument ID:	PE-ICP2
ICAL Worknum:	WG388291	Initial Calibration Date:	30-JAN-2012 12:30

	WG388291-01		WG388291-02		WG388291-03		WG388291-04		WG388291-05			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
BERYLLIUM	0	-571	.0005	162	.001	300	.05	16000	.1	30600	.999734	
CALCIUM	0	-9.89	NA	NA	.2	17.7	10	683	20	1330	.999918	
MAGNESIUM	0	2.84	.1	4.93	.2	12.9	10	842	20	1590	.999579	
MANGANESE	0	196	.005	1250	.01	2400	.5	137000	1	256000	.999422	
POTASSIUM	0	-37.6	.5	461	1	888	50	49700	100	95700	1	
SODIUM	0	271	.5	2260	1	4370	50	231000	100	433000	1	
TIN	0	16.0	.01	22.3	.02	49.3	1	2690	1	5250	.999921	
VANADIUM	0	4790	.01	567	.02	1460	1	88900	2	170000	.999748	
ZINC	0	8.49	.01	126	.02	269	1	14500	2	27800	.999788	

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: 2292800
Report generated: 31-JAN-2012 09:05

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L12010651
Run Date: 01/30/2012
Sample ID: WG388291-08
Instrument ID: PE-ICP2
Run Time: 12:56
Method: 6010B
File ID: P2.013012.125628
Analyst: SLP
Units: mg/L
Workgroup (AAB#): WG388026
Cal ID: PE-ICP2 - 30-JAN-12
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
BERYLLIUM	.001	.002	.001	U
CALCIUM	.1	.2	.1	U
MAGNESIUM	.25	.5	.25	U
MANGANESE	.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: 2292802
Report generated 01/31/2012 09:05

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L12010651
Run Date: 01/30/2012
Sample ID: WG388291-12
Instrument ID: PE-ICP2
Run Time: 13:23
Method: 6010B
File ID: P2.013012.132351
Analyst: SLP
Units: mg/L
Workgroup (AAB#): WG388026
Cal ID: PE-ICP - 30-JAN-12
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Beryllium	0.00100	0.00200	0.00100	U
Calcium	0.100	0.200	0.100	U
Magnesium	0.250	0.500	0.250	U
Manganese	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: 2292805
Report generated 01/31/2012 09:05

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L12010651
Run Date: 01/30/2012
Sample ID: WG388291-15
Instrument ID: PE-ICP2
Run Time: 14:11
Method: 6010B
File ID: P2.013012.141119
Analyst: SLP
Units: mg/L
Workgroup (AAB#): WG388026
Cal ID: PE-ICP - 30-JAN-12
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Beryllium	0.00100	0.00200	0.00100	U
Calcium	0.100	0.200	0.100	U
Magnesium	0.250	0.500	0.250	U
Manganese	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: 2292805
Report generated 01/31/2012 09:05

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L12010651
Run Date: 01/30/2012
Sample ID: WG388291-17
Instrument ID: PE-ICP2
Run Time: 15:27
Method: 6010B
File ID: P2.013012.152700
Analyst: SLP
Units: mg/L
Workgroup (AAB#): WG388026
Cal ID: PE-ICP - 30-JAN-12
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Beryllium	0.00100	0.00200	0.00100	U
Calcium	0.100	0.200	0.100	U
Magnesium	0.250	0.500	0.250	U
Manganese	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: 2292805
Report generated 01/31/2012 09:05

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L12010651
Run Date: 01/30/2012
Sample ID: WG388291-19
Instrument ID: PE-ICP2
Run Time: 16:50
Method: 6010B
File ID: P2.013012.165020
Analyst: SLP
Units: mg/L
Workgroup (AAB#): WG388026
Cal ID: PE-ICP - 30-JAN-12
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Beryllium	0.00100	0.00200	0.00100	U
Calcium	0.100	0.200	0.100	U
Magnesium	0.250	0.500	0.250	U
Manganese	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: 2292805
Report generated 01/31/2012 09:05

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L12010651
Run Date: 01/30/2012
Sample ID: WG388291-21
Instrument ID: PE-ICP2
Run Time: 18:10
Method: 6010B
File ID: P2.013012.181018
Analyst: SLP
Units: mg/L
Workgroup (AAB#): WG388026
Cal ID: PE-ICP - 30-JAN-12
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Beryllium	0.00100	0.00200	0.00100	U
Calcium	0.100	0.200	-0.115	F
Magnesium	0.250	0.500	0.250	U
Manganese	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: 2292805
Report generated 01/31/2012 09:05

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L12010651 Run Date: 01/30/2012 Sample ID: WG388291-07
Instrument ID: PE-ICP2 Run Time: 12:49 Method: 6010B
File ID: P2.013012.124932 Analyst: SLP Units: mg/L
Workgroup (AAB#): WG388026 Cal ID: PE-ICP - 30-JAN-12
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Beryllium		.05	0.0502	100	90 - 110	
Calcium		10	9.72	97.2	90 - 110	
Magnesium		10	10.2	102	90 - 110	
Manganese		.5	0.523	105	90 - 110	
Potassium		50	48.6	97.2	90 - 110	
Sodium		50	48.6	97.2	90 - 110	
Tin		1	1.03	103	90 - 110	
Vanadium		1	1.00	100	90 - 110	
Zinc		1	1.02	102	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 2292801
Report generated 01/31/2012 09:05

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L12010651
Run Date: 01/30/2012
Sample ID: WG388291-11
Instrument ID: PE-ICP2
Run Time: 13:16
Method: 6010B
File ID: P2.013012.131656
Analyst: SLP
QC Key: DOD4
Workgroup (AAB#): WG388026
Cal ID: PE-ICP - 30-JAN-12
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Beryllium		0.0500	0.0515	mg/L	103	90 - 110		
Calcium		10.0	10.1	mg/L	101	90 - 110		
Magnesium		10.0	10.5	mg/L	105	90 - 110		
Manganese		0.500	0.525	mg/L	105	90 - 110		
Potassium		50.0	49.7	mg/L	99.4	90 - 110		
Sodium		50.0	50.3	mg/L	101	90 - 110		
Tin		1.00	1.04	mg/L	104	90 - 110		
Vanadium		1.00	1.02	mg/L	102	90 - 110		
Zinc		1.00	1.03	mg/L	103	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 2292804
Report generated 01/31/2012 09:05

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L12010651
Run Date: 01/30/2012
Sample ID: WG388291-14
Instrument ID: PE-ICP2
Run Time: 14:04
Method: 6010B
File ID: P2.013012.140424
Analyst: SLP
QC Key: DOD4
Workgroup (AAB#): WG388026
Cal ID: PE-ICP - 30-JAN-12
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Beryllium		0.0500	0.0506	mg/L	101	90 - 110		
Calcium		10.0	9.90	mg/L	99.0	90 - 110		
Magnesium		10.0	10.1	mg/L	101	90 - 110		
Manganese		0.500	0.517	mg/L	103	90 - 110		
Potassium		50.0	49.3	mg/L	98.6	90 - 110		
Sodium		50.0	50.1	mg/L	100	90 - 110		
Tin		1.00	1.02	mg/L	102	90 - 110		
Vanadium		1.00	1.01	mg/L	101	90 - 110		
Zinc		1.00	1.02	mg/L	102	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 2292804
Report generated 01/31/2012 09:05

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L12010651
Run Date: 01/30/2012
Sample ID: WG388291-16
Instrument ID: PE-ICP2
Run Time: 15:20
Method: 6010B
File ID: P2.013012.152005
Analyst: SLP
QC Key: DOD4
Workgroup (AAB#): WG388026
Cal ID: PE-ICP - 30-JAN-12
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Beryllium		0.0500	0.0497	mg/L	99.3	90 - 110		
Calcium		10.0	9.91	mg/L	99.1	90 - 110		
Magnesium		10.0	10.1	mg/L	101	90 - 110		
Manganese		0.500	0.514	mg/L	103	90 - 110		
Potassium		50.0	49.7	mg/L	99.4	90 - 110		
Sodium		50.0	50.3	mg/L	101	90 - 110		
Tin		1.00	1.03	mg/L	103	90 - 110		
Vanadium		1.00	1.01	mg/L	101	90 - 110		
Zinc		1.00	1.01	mg/L	101	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 2292804
Report generated 01/31/2012 09:05

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L12010651
Run Date: 01/30/2012
Sample ID: WG388291-18
Instrument ID: PE-ICP2
Run Time: 16:43
Method: 6010B
File ID: P2.013012.164324
Analyst: SLP
QC Key: DOD4
Workgroup (AAB#): WG388026
Cal ID: PE-ICP - 30-JAN-12
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Beryllium		0.0500	0.0492	mg/L	98.3	90 - 110		
Calcium		10.0	9.95	mg/L	99.5	90 - 110		
Magnesium		10.0	10.0	mg/L	100	90 - 110		
Manganese		0.500	0.512	mg/L	102	90 - 110		
Potassium		50.0	48.7	mg/L	97.4	90 - 110		
Sodium		50.0	49.9	mg/L	99.8	90 - 110		
Tin		1.00	1.04	mg/L	104	90 - 110		
Vanadium		1.00	1.01	mg/L	101	90 - 110		
Zinc		1.00	1.02	mg/L	102	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 2292804
Report generated 01/31/2012 09:05

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L12010651
Run Date: 01/30/2012
Sample ID: WG388291-20
Instrument ID: PE-ICP2
Run Time: 18:03
Method: 6010B
File ID: P2.013012.180323
Analyst: SLP
QC Key: DOD4
Workgroup (AAB#): WG388026
Cal ID: PE-ICP - 30-JAN-12
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Beryllium		0.0500	0.0474	mg/L	94.9	90 - 110		
Calcium		10.0	9.90	mg/L	99.0	90 - 110		
Magnesium		10.0	10.2	mg/L	102	90 - 110		
Manganese		0.500	0.496	mg/L	99.2	90 - 110		
Potassium		50.0	47.0	mg/L	93.9	90 - 110		
Sodium		50.0	50.8	mg/L	102	90 - 110		
Tin		1.00	1.02	mg/L	102	90 - 110		
Vanadium		1.00	0.978	mg/L	97.8	90 - 110		
Zinc		1.00	0.983	mg/L	98.3	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 2292804
Report generated 01/31/2012 09:05

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L12010651 **Workgroup (AAB#):** WG388026
Instrument ID: PE-ICP2 **Method:** 6010B
Sol. A : WG388291-09 **File ID:** P2.013012.130316 **Units:** mg/L
Sol. AB : WG388291-10 **File ID:** P2.013012.131006 **Matrix:** Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Beryllium	NS	-0.0000200	NS	0.250	0.248	99.2	
Calcium	250	248	99.2	250	259	104	
Magnesium	250	259	104	250	256	102	
Manganese	NS	-0.00190	NS	0.250	0.247	98.8	
Potassium	NS	0.0507	NS	5.00	5.23	105	
Sodium	NS	0.0988	NS	5.00	5.05	101	
Tin	NS	-0.0244	NS	NS	-0.0279	NS	
Vanadium	NS	-0.00160	NS	0.250	0.253	101	
Zinc	NS	-0.00542	NS	0.500	0.464	92.8	

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: 2292803
Report generated 01/31/2012 09:05

INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L12010651 **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: 2292799
Report generated: 01/31/2012 09:05

INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L12010651 **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: 2292799
Report generated: 01/31/2012 09:05

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L12010651 **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: 2292799
Report generated: 01/31/2012 09:05

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L12010651 **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
PDF File ID: 2292799
Report generated: 01/31/2012 09:05

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L12010651 **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
PDF File ID: 2292799
Report generated: 01/31/2012 09:05

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L12010651 **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: 2292799
Report generated: 01/31/2012 09:05

Microbac Laboratories Inc.
LINEAR RANGE (QUARTERLY)

Login Number: L12010651 **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: 2292798
Report generated: 01/31/2012 09:05

2.1.1.3 Raw Data

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Sequence No.: 1 Autosampler Location: 1
Sample ID: S0 Date Collected: 1/30/2012 12:03:29 PM
Analyst: Data Type: Reprocessed on 1/30/2012 1:36:23 PM
Logged In Analyst (Original) : peicp2
Initial Sample Wt: Initial Sample Vol:
Dilution: Sample Prep Vol:

Nebulizer Parameters: S0

Analyte	Back Pressure	Flow
All	147.0 kPa	0.50 L/min

Mean Data: S0

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Conc.	Calib Units
Y 371.029	3742957.8	25655.54	0.69%		
YRADIAL	144638.3	4656.69	3.22%		
Ga 417.206	761308.2	3233.95	0.42%		
GaRADIAL	24719.8	3467.02	14.03%		
Ag 328.068†	-901.0	35.02	3.89%	[0.00]	mg/L
Al 396.153†	-68.1	43.16	63.42%	[0.00]	mg/L
As 188.979†	0.0	0.75	>999.9%	[0.00]	mg/L
Ba 233.527†	11.8	2.77	23.54%	[0.00]	mg/L
Be 234.861†	-571.2	10.47	1.83%	[0.00]	mg/L
B 249.677†	241.7	8.27	3.42%	[0.00]	mg/L
Ca 227.546†	-9.9	2.98	30.16%	[0.00]	mg/L
Cd 228.802†	24.8	3.02	12.19%	[0.00]	mg/L
Co 228.616†	-21.3	1.90	8.91%	[0.00]	mg/L
Cr 267.716†	107.8	4.60	4.26%	[0.00]	mg/L
Cu 327.393†	-1329.4	15.71	1.18%	[0.00]	mg/L
Fe 239.562†	0.8	1.17	146.29%	[0.00]	mg/L
Mg 279.077†	2.8	2.36	82.95%	[0.00]	mg/L
Mn 257.610†	195.8	4.28	2.19%	[0.00]	mg/L
Mo 202.031†	-20.4	4.14	20.28%	[0.00]	mg/L
Ni 231.604†	18.9	2.58	13.68%	[0.00]	mg/L
Pb 220.353†	23.4	3.28	14.06%	[0.00]	mg/L
Sb 206.836†	14.3	2.22	15.52%	[0.00]	mg/L
Se 196.026†	9.7	1.41	14.50%	[0.00]	mg/L
Si 251.611†	303.1	3.59	1.19%	[0.00]	mg/L
Sn 189.927†	16.0	1.21	7.59%	[0.00]	mg/L
Ti 334.940†	428.5	76.91	17.95%	[0.00]	mg/L
Tl 190.801†	-21.7	2.60	11.96%	[0.00]	mg/L
V 290.880†	4786.1	64.59	1.35%	[0.00]	mg/L
Zn 206.200†	8.5	3.16	37.19%	[0.00]	mg/L
K 766.490†	-37.6	7.71	20.50%	[0.00]	mg/L
Na 589.592†	270.6	86.16	31.83%	[0.00]	mg/L
Sr 407.771†	-317.6	51.96	16.36%	[0.00]	mg/L
Li 670.784†	-206.7	7.76	3.75%	[0.00]	mg/L

==========

Sequence No.: 2 Autosampler Location: 2
Sample ID: S1 Date Collected: 1/30/2012 12:10:21 PM
Analyst: Data Type: Reprocessed on 1/30/2012 1:36:26 PM
Logged In Analyst (Original) : peicp2
Initial Sample Wt: Initial Sample Vol:
Dilution: Sample Prep Vol:

Nebulizer Parameters: S1

Analyte	Back Pressure	Flow
All	147.0 kPa	0.50 L/min

Mean Data: S1

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Conc.	Calib Units
Y 371.029	3844350.5	45352.71	1.18%		
YRADIAL	143879.3	6789.54	4.72%		
Ga 417.206	780423.7	9053.78	1.16%		

Approved: January 31, 2012

GaRADIAL	23866.8	3789.89	15.88%		
Ag 328.068†	516.8	85.60	16.57%	[0.0040]	mg/L
Al 396.153†	178.1	7.85	4.41%	[0.10]	mg/L
Ba 233.527†	287.2	17.74	6.18%	[0.010]	mg/L
Be 234.861†	162.3	22.60	13.92%	[0.0005]	mg/L
Cd 228.802†	4.3	4.02	93.90%	[0.00050]	mg/L
Co 228.616†	20.4	3.13	15.33%	[0.0020]	mg/L
Cr 267.716†	311.5	23.63	7.59%	[0.0050]	mg/L
Cu 327.393†	540.6	111.87	20.69%	[0.0050]	mg/L
Fe 239.562†	0.6	1.66	294.70%	[0.040]	mg/L
Mg 279.077†	4.9	2.07	41.94%	[0.10]	mg/L
Mn 257.610†	1251.4	76.36	6.10%	[0.0050]	mg/L
Mo 202.031†	62.7	1.17	1.87%	[0.010]	mg/L
Ni 231.604†	75.7	1.79	2.36%	[0.0050]	mg/L
Pb 220.353†	5.8	3.17	54.43%	[0.0050]	mg/L
Sb 206.836†	9.3	0.51	5.52%	[0.012]	mg/L
Si 251.611†	902.4	44.96	4.98%	[0.050]	mg/L
Sn 189.927†	22.3	5.10	22.82%	[0.010]	mg/L
Ti 334.940†	4143.1	240.02	5.79%	[0.010]	mg/L
V 290.880†	567.1	109.30	19.27%	[0.010]	mg/L
Zn 206.200†	126.3	10.07	7.97%	[0.010]	mg/L
K 766.490†	461.2	49.01	10.63%	[0.50]	mg/L
Na 589.592†	2256.5	166.17	7.36%	[0.50]	mg/L
Sr 407.771†	4988.7	384.63	7.71%	[0.010]	mg/L
Li 670.784†	514.8	35.59	6.91%	[0.010]	mg/L

Sequence No.: 3 **Autosampler Location: 3**
Sample ID: S2 **Date Collected: 1/30/2012 12:17:10 PM**
Analyst: **Data Type: Reprocessed on 1/30/2012 1:36:27 PM**
Logged In Analyst (Original) : peicp2
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: S2

Analyte	Back Pressure	Flow
All	147.0 kPa	0.50 L/min

Mean Data: S2

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Conc.	Calib Units
Y 371.029	3731106.7	40367.23	1.08%		
YRADIAL	145107.9	5059.47	3.49%		
Ga 417.206	759089.9	14427.67	1.90%		
GaRADIAL	24001.7	3639.77	15.16%		
Ag 328.068†	952.4	49.51	5.20%	[0.0080]	mg/L
Al 396.153†	328.8	32.53	9.89%	[0.20]	mg/L
As 188.979†	1.9	2.77	146.66%	[0.0080]	mg/L
Ba 233.527†	584.1	9.52	1.63%	[0.020]	mg/L
Be 234.861†	300.0	5.32	1.77%	[0.0010]	mg/L
B 249.677†	280.4	10.65	3.80%	[0.010]	mg/L
Ca 227.546†	17.7	1.27	7.19%	[0.20]	mg/L
Cd 228.802†	11.0	1.35	12.25%	[0.0010]	mg/L
Co 228.616†	38.2	3.63	9.53%	[0.0040]	mg/L
Cr 267.716†	619.0	20.57	3.32%	[0.010]	mg/L
Cu 327.393†	1003.6	79.07	7.88%	[0.010]	mg/L
Fe 239.562†	2.3	0.56	24.20%	[0.080]	mg/L
Mg 279.077†	12.9	1.66	12.84%	[0.20]	mg/L
Mn 257.610†	2399.7	57.71	2.40%	[0.010]	mg/L
Mo 202.031†	134.0	5.19	3.87%	[0.020]	mg/L
Ni 231.604†	160.4	8.32	5.18%	[0.010]	mg/L
Pb 220.353†	23.3	2.70	11.62%	[0.010]	mg/L
Sb 206.836†	20.3	1.55	7.65%	[0.024]	mg/L
Se 196.026†	2.5	4.03	160.44%	[0.0080]	mg/L
Si 251.611†	1790.5	29.73	1.66%	[0.10]	mg/L
Sn 189.927†	49.3	2.67	5.41%	[0.020]	mg/L
Ti 334.940†	8.549.7	124.70	1.46%	[0.020]	mg/L
Tl 190.801†	8.3	4.15	50.05%	[0.010]	mg/L
V 290.880†	1460.8	65.47	4.48%	[0.020]	mg/L
Zn 206.200†	268.8	4.32	1.61%	[0.020]	mg/L

Approved: January 31, 2012

K 766.490†	888.4	44.71	5.03%	[1.00]	mg/L
Na 589.592†	4367.8	28.76	0.66%	[1.00]	mg/L
Sr 407.771†	10166.9	1446.16	14.22%	[0.020]	mg/L
Li 670.784†	833.1	86.98	10.44%	[0.020]	mg/L

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Sequence No.: 4 **Autosampler Location: 4**
Sample ID: S3 **Date Collected: 1/30/2012 12:23:59 PM**
Analyst: **Data Type: Reprocessed on 1/30/2012 1:36:28 PM**
Logged In Analyst (Original) : peicp2
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: S3

Analyte	Back Pressure	Flow
All	148.0 kPa	0.50 L/min

Mean Data: S3

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Calib Conc.	Units
Y 371.029	3645354.3	6131.01	0.17%		
YRADIAL	138907.8	5776.39	4.16%		
Ga 417.206	796338.5	9957.42	1.25%		
GaRADIAL	23612.3	3640.61	15.42%		
Ag 328.068†	52005.4	226.71	0.44%	[0.40]	mg/L
Al 396.153†	17154.3	227.71	1.33%	[10.00]	mg/L
As 188.979†	223.6	2.97	1.33%	[0.40]	mg/L
Ba 233.527†	31883.1	368.62	1.16%	[1.00]	mg/L
Be 234.861†	16042.5	116.14	0.72%	[0.05]	mg/L
B 249.677†	14859.5	199.39	1.34%	[0.50]	mg/L
Ca 227.546†	683.2	18.22	2.67%	[10.00]	mg/L
Cd 228.802†	560.5	10.57	1.89%	[0.05]	mg/L
Co 228.616†	2066.7	11.11	0.54%	[0.20]	mg/L
Cr 267.716†	32997.2	244.65	0.74%	[0.50]	mg/L
Cu 327.393†	50874.1	320.57	0.63%	[0.50]	mg/L
Fe 239.562†	92.0	1.92	2.09%	[4.00]	mg/L
Mg 279.077†	842.1	5.43	0.64%	[10.00]	mg/L
Mn 257.610†	136727.0	1270.86	0.93%	[0.50]	mg/L
Mo 202.031†	7402.0	77.47	1.05%	[1.00]	mg/L
Ni 231.604†	8950.0	105.31	1.18%	[0.50]	mg/L
Pb 220.353†	1460.4	4.72	0.32%	[0.50]	mg/L
Sb 206.836†	1021.1	19.74	1.93%	[1.20]	mg/L
Se 196.026†	260.8	4.98	1.91%	[0.40]	mg/L
Si 251.611†	95276.0	254.59	0.27%	[5.00]	mg/L
Sn 189.927†	2691.1	18.27	0.68%	[1.00]	mg/L
Ti 334.940†	488128.4	919.72	0.19%	[1.00]	mg/L
Tl 190.801†	446.6	7.83	1.75%	[0.50]	mg/L
V 290.880†	88915.4	967.94	1.09%	[1.00]	mg/L
Zn 206.200†	14486.7	79.74	0.55%	[1.00]	mg/L
K 766.490†	49682.2	584.44	1.18%	[50.00]	mg/L
Na 589.592†	230554.8	5933.77	2.57%	[50.00]	mg/L
Sr 407.771†	555202.6	63348.65	11.41%	[1.00]	mg/L
Li 670.784†	37339.6	759.21	2.03%	[1.00]	mg/L

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Sequence No.: 5 **Autosampler Location: 5**
Sample ID: S4 **Date Collected: 1/30/2012 12:30:53 PM**
Analyst: **Data Type: Reprocessed on 1/30/2012 1:36:29 PM**
Logged In Analyst (Original) : peicp2
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: S4

Analyte	Back Pressure	Flow
All	148.0 kPa	0.50 L/min

Mean Data: S4

Mean Corrected	Calib

Approved: January 31, 2012

Analyte	Intensity	Std.Dev.	RSD	Conc.	Units
Y 371.029	3642609.0	5642.87	0.15%		
YRADIAL	144746.7	4079.16	2.82%		
Ga 417.206	799384.3	4512.27	0.56%		
GaRADIAL	24896.2	3577.28	14.37%		
Ag 328.068†	100117.6	2299.36	2.30%	[0.80]	mg/L
Al 396.153†	33114.1	115.01	0.35%	[20.00]	mg/L
As 188.979†	438.8	4.56	1.04%	[0.80]	mg/L
Ba 233.527†	60977.3	1841.81	3.02%	[2.00]	mg/L
Be 234.861†	30626.4	830.61	2.71%	[0.10]	mg/L
B 249.677†	28779.1	867.08	3.01%	[1.00]	mg/L
Ca 227.546†	1332.0	16.46	1.24%	[20.00]	mg/L
Cd 228.802†	1106.6	10.03	0.91%	[0.10]	mg/L
Co 228.616†	4041.4	22.47	0.56%	[0.40]	mg/L
Cr 267.716†	62986.1	1527.26	2.42%	[1.00]	mg/L
Cu 327.393†	97481.0	2412.67	2.48%	[1.00]	mg/L
Fe 239.562†	173.9	5.35	3.08%	[8.00]	mg/L
Mg 279.077†	1590.7	30.96	1.95%	[20.00]	mg/L
Mn 257.610†	255518.6	661.40	0.26%	[1.00]	mg/L
Mo 202.031†	14191.6	333.61	2.35%	[2.00]	mg/L
Ni 231.604†	17086.5	371.34	2.17%	[1.00]	mg/L
Pb 220.353†	2859.0	18.23	0.64%	[1.00]	mg/L
Sb 206.836†	1994.2	21.94	1.10%	[2.40]	mg/L
Se 196.026†	511.7	7.02	1.37%	[0.80]	mg/L
Si 251.611†	179454.7	899.68	0.50%	[10.00]	mg/L
Sn 189.927†	5248.5	32.85	0.63%	[2.00]	mg/L
Ti 334.940†	944863.8	2611.71	0.28%	[2.00]	mg/L
Tl 190.801†	858.6	6.40	0.75%	[1.00]	mg/L
V 290.880†	170124.8	232.22	0.14%	[2.00]	mg/L
Zn 206.200†	27799.6	692.34	2.49%	[2.00]	mg/L
K 766.490†	95735.8	393.55	0.41%	[100.00]	mg/L
Na 589.592†	432574.0	6928.27	1.60%	[100.00]	mg/L
Sr 407.771†	1060169.5	128541.14	12.12%	[2.00]	mg/L
Li 670.784†	70871.3	1884.15	2.66%	[2.00]	mg/L

Calibration Summary

Analyte	Stds.	Equation	Intercept	Slope	Curvature	Corr. Coef.	Reslope
Ag 328.068	4	Lin, Calc Int	232.3	125800	0.00000	0.999821	
Al 396.153	4	Lin, Calc Int	77.6	1663	0.00000	0.999848	
As 188.979	3	Wt. Lin	-2.6	558.6	0.00000	0.999922	
Ba 233.527	4	Lin, Calc Int	160.1	30670	0.00000	0.999752	
Be 234.861	4	Lin, Calc Int	91.7	308100	0.00000	0.999734	
B 249.677	3	Lin, Calc Int	82.2	28870	0.00000	0.999857	
Ca 227.546	3	Lin, Calc Int	5.1	66.64	0.00000	0.999918	
Cd 228.802	4	Lin, Calc Int	0.5	11090	0.00000	0.999978	
Co 228.616	4	Lin, Calc Int	5.1	10130	0.00000	0.999938	
Cr 267.716	4	Lin, Calc Int	182.9	63370	0.00000	0.999732	
Cu 327.393	4	Lin, Calc Int	291.4	97980	0.00000	0.999778	
Fe 239.562	4	Lin, Calc Int	0.7	21.88	0.00000	0.999600	
Mg 279.077	4	Lin, Calc Int	3.9	80.23	0.00000	0.999579	
Mn 257.610	4	Lin, Calc Int	1060.1	257800	0.00000	0.999422	
Mo 202.031	4	Lin, Calc Int	33.1	7137	0.00000	0.999778	
Ni 231.604	4	Lin, Calc Int	44.3	17200	0.00000	0.999730	
Pb 220.353	4	Lin, Calc Int	-0.5	2872	0.00000	0.999934	
Sb 206.836	4	Lin, Calc Int	2.9	833.4	0.00000	0.999931	
Se 196.026	3	Wt. Lin	-2.7	650.8	0.00000	0.999924	
Si 251.611	4	Lin, Calc Int	691.4	18080	0.00000	0.999553	
Sn 189.927	4	Lin, Calc Int	6.1	2634	0.00000	0.999921	
Ti 334.940	4	Lin, Calc Int	1491.7	474700	0.00000	0.999866	
Tl 190.801	3	Lin, Calc Int	3.0	861.9	0.00000	0.999783	
V 290.880	4	Lin, Calc Int	315.7	85640	0.00000	0.999748	
Zn 206.200	4	Lin, Calc Int	66.2	13980	0.00000	0.999788	
K 766.490	4	Non Lin, Calc Int	-65.0	1032	-0.73745	1.000000	
Na 589.592	4	Non Lin, Calc Int	-238.4	4903	-5.75001	1.000000	
Sr 407.771	4	Lin, Calc Int	2894.5	533400	0.00000	0.999734	
Li 670.784	4	Lin, Calc Int	326.3	35620	0.00000	0.999676	

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Sequence No.: 6 **Autosampler Location: 11**
Sample ID: ICV 2nd Vendor **Date Collected: 1/30/2012 12:37:49 PM**

Approved: January 31, 2012

Analyst: Data Type: Reprocessed on 1/30/2012 1:36:31 PM
Logged In Analyst (Original) : peicp2
Initial Sample Wt: Initial Sample Vol:
Dilution: 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	8250508.6						563466.32	6.83%
YRADIAL	141064.5						4037.50	2.86%
Ga 417.206	1472182.9						112130.27	7.62%
GaRADIAL	22610.6						3564.73	15.77%
Ag 328.068†	-210.4	-0.00376	mg/L	0.001247	-0.00376	mg/L	0.001247	33.13%
QC value less than the lower limit for Ag 328.068 Recovery = -0.94%								
Al 396.153†	17072.2	10.2	mg/L	0.18	10.2	mg/L	0.18	1.79%
QC value within limits for Al 396.153 Recovery = 102.20%								
As 188.979†	0.3	0.00395	mg/L	0.000536	0.00395	mg/L	0.000536	13.59%
QC value less than the lower limit for As 188.979 Recovery = 0.99%								
Ba 233.527†	2.6	-0.00511	mg/L	0.000285	-0.00511	mg/L	0.000285	5.58%
QC value less than the lower limit for Ba 233.527 Recovery = -0.51%								
Be 234.861†	198.6	-0.00041	mg/L	0.000158	-0.00041	mg/L	0.000158	38.31%
QC value less than the lower limit for Be 234.861 Recovery = -0.83%								
B 249.677†	231.9	0.0121	mg/L	0.00614	0.0121	mg/L	0.00614	50.79%
QC value less than the lower limit for B 249.677 Recovery = 2.42%								
Ca 227.546†	6.9	-0.370	mg/L	0.0118	-0.370	mg/L	0.0118	3.19%
QC value less than the lower limit for Ca 227.546 Recovery = -3.70%								
Cd 228.802†	-10.2	-0.00094	mg/L	0.000170	-0.00094	mg/L	0.000170	17.95%
QC value less than the lower limit for Cd 228.802 Recovery = -1.89%								
Co 228.616†	10.2	0.00040	mg/L	0.000057	0.00040	mg/L	0.000057	14.08%
QC value less than the lower limit for Co 228.616 Recovery = 0.20%								
Cr 267.716†	-67.0	-0.00409	mg/L	0.000172	-0.00409	mg/L	0.000172	4.21%
QC value less than the lower limit for Cr 267.716 Recovery = -0.82%								
Cu 327.393†	875.0	0.00604	mg/L	0.000568	0.00604	mg/L	0.000568	9.41%
QC value less than the lower limit for Cu 327.393 Recovery = 1.21%								
Fe 239.562†	86.7	3.93	mg/L	0.311	3.93	mg/L	0.311	7.91%
QC value within limits for Fe 239.562 Recovery = 98.29%								
Mg 279.077†	778.2	9.65	mg/L	0.785	9.65	mg/L	0.785	8.14%
QC value within limits for Mg 279.077 Recovery = 96.48%								
Mn 257.610†	-79.2	-0.00155	mg/L	0.000057	-0.00155	mg/L	0.000057	3.69%
QC value less than the lower limit for Mn 257.610 Recovery = -0.31%								
Mo 202.031†	12.0	-0.00278	mg/L	0.000529	-0.00278	mg/L	0.000529	19.04%
QC value less than the lower limit for Mo 202.031 Recovery = -0.28%								
Ni 231.604†	-9.2	-0.00312	mg/L	0.000170	-0.00312	mg/L	0.000170	5.46%
QC value less than the lower limit for Ni 231.604 Recovery = -0.62%								
Pb 220.353†	-11.0	-0.00343	mg/L	0.000423	-0.00343	mg/L	0.000423	12.34%
QC value less than the lower limit for Pb 220.353 Recovery = -0.69%								
Sb 206.836†	-5.5	-0.0101	mg/L	0.00132	-0.0101	mg/L	0.00132	13.17%
QC value less than the lower limit for Sb 206.836 Recovery = -0.84%								
Se 196.026†	-3.9	-0.00134	mg/L	0.003643	-0.00134	mg/L	0.003643	272.02%
QC value less than the lower limit for Se 196.026 Recovery = -0.33%								
Si 251.611†	-81.8	-0.0427	mg/L	0.00331	-0.0427	mg/L	0.00331	7.75%
QC value less than the lower limit for Si 251.611 Recovery = -0.85%								
Sn 189.927†	0.5	-0.00214	mg/L	0.001284	-0.00214	mg/L	0.001284	60.04%
QC value less than the lower limit for Sn 189.927 Recovery = -0.21%								
Ti 334.940†	231.9	-0.00265	mg/L	0.001203	-0.00265	mg/L	0.001203	45.34%
QC value less than the lower limit for Ti 334.940 Recovery = -0.27%								
Tl 190.801†	9.9	0.00791	mg/L	0.001743	0.00791	mg/L	0.001743	22.04%
QC value less than the lower limit for Tl 190.801 Recovery = 1.58%								
V 290.880†	-3003.8	-0.0382	mg/L	0.00171	-0.0382	mg/L	0.00171	4.46%
QC value less than the lower limit for V 290.880 Recovery = -3.82%								
Zn 206.200†	-5.9	-0.00526	mg/L	0.000257	-0.00526	mg/L	0.000257	4.87%
QC value less than the lower limit for Zn 206.200 Recovery = -0.53%								
K 766.490†	48878.4	49.1	mg/L	1.37	49.1	mg/L	1.37	2.79%
QC value within limits for K 766.490 Recovery = 98.23%								
Na 589.592†	229195.2	49.7	mg/L	0.30	49.7	mg/L	0.30	0.61%
QC value within limits for Na 589.592 Recovery = 99.38%								

Approved: January 31, 2012

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Sr 407.771†          532994.2       0.993 mg/L        0.1354       0.993 mg/L        0.1354  13.64%
   QC value within limits for Sr 407.771  Recovery = 99.30%
Li 670.784†           37357.4        1.04 mg/L         0.008        1.04 mg/L         0.008   0.73%
   QC value within limits for Li 670.784  Recovery = 103.96%
QC Failed.  Continue with analysis.
```

Sequence No.: 7 **Autosampler Location: 11**
Sample ID: ICV 2nd Vendor **Date Collected: 1/30/2012 12:49:32 PM**
Analyst: **Data Type: Reprocessed on 1/30/2012 1:36:33 PM**
Logged In Analyst (Original) : peicp2
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: ICV 2nd Vendor

Analyte	Back Pressure	Flow
All	148.0 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	3699780.4						41957.11	1.13%
YRADIAL	140551.2						5292.86	3.77%
Ga 417.206	817214.7						11876.49	1.45%
GaRADIAL	23312.0						4134.71	17.74%
Ag 328.068†	49629.4	0.394	mg/L	0.0079	0.394	mg/L	0.0079	2.00%
QC value within limits for Ag 328.068 Recovery = 98.51%								
Al 396.153†	16885.2	10.1	mg/L	0.07	10.1	mg/L	0.07	0.72%
QC value within limits for Al 396.153 Recovery = 100.94%								
As 188.979†	215.3	0.386	mg/L	0.0073	0.386	mg/L	0.0073	1.88%
QC value within limits for As 188.979 Recovery = 96.48%								
Ba 233.527†	31539.9	1.03	mg/L	0.014	1.03	mg/L	0.014	1.35%
QC value within limits for Ba 233.527 Recovery = 102.61%								
Be 234.861†	15325.0	0.0502	mg/L	0.00116	0.0502	mg/L	0.00116	2.30%
QC value within limits for Be 234.861 Recovery = 100.47%								
B 249.677†	14379.9	0.503	mg/L	0.0067	0.503	mg/L	0.0067	1.33%
QC value within limits for B 249.677 Recovery = 100.52%								
Ca 227.546†	658.1	9.72	mg/L	0.150	9.72	mg/L	0.150	1.55%
QC value within limits for Ca 227.546 Recovery = 97.20%								
Cd 228.802†	540.0	0.0495	mg/L	0.00086	0.0495	mg/L	0.00086	1.73%
QC value within limits for Cd 228.802 Recovery = 99.05%								
Co 228.616†	2025.1	0.197	mg/L	0.0018	0.197	mg/L	0.0018	0.93%
QC value within limits for Co 228.616 Recovery = 98.42%								
Cr 267.716†	32362.2	0.508	mg/L	0.0077	0.508	mg/L	0.0077	1.52%
QC value within limits for Cr 267.716 Recovery = 101.62%								
Cu 327.393†	49503.5	0.504	mg/L	0.0087	0.504	mg/L	0.0087	1.72%
QC value within limits for Cu 327.393 Recovery = 100.79%								
Fe 239.562†	92.7	4.20	mg/L	0.119	4.20	mg/L	0.119	2.84%
QC value greater than the upper limit for Fe 239.562 Recovery = 105.03%								
Mg 279.077†	824.3	10.2	mg/L	0.16	10.2	mg/L	0.16	1.55%
QC value within limits for Mg 279.077 Recovery = 102.28%								
Mn 257.610†	134899.6	0.523	mg/L	0.0095	0.523	mg/L	0.0095	1.82%
QC value within limits for Mn 257.610 Recovery = 104.59%								
Mo 202.031†	7106.2	0.992	mg/L	0.0135	0.992	mg/L	0.0135	1.36%
QC value within limits for Mo 202.031 Recovery = 99.16%								
Ni 231.604†	8876.6	0.514	mg/L	0.0054	0.514	mg/L	0.0054	1.06%
QC value within limits for Ni 231.604 Recovery = 102.70%								
Pb 220.353†	1437.6	0.506	mg/L	0.0074	0.506	mg/L	0.0074	1.47%
QC value within limits for Pb 220.353 Recovery = 101.18%								
Sb 206.836†	1000.1	1.20	mg/L	0.016	1.20	mg/L	0.016	1.30%
QC value within limits for Sb 206.836 Recovery = 100.10%								
Se 196.026†	249.9	0.392	mg/L	0.0053	0.392	mg/L	0.0053	1.35%
QC value within limits for Se 196.026 Recovery = 97.95%								
Si 251.611†	92238.0	5.05	mg/L	0.102	5.05	mg/L	0.102	2.03%
QC value within limits for Si 251.611 Recovery = 100.95%								
Sn 189.927†	2713.6	1.03	mg/L	0.007	1.03	mg/L	0.007	0.71%
QC value within limits for Sn 189.927 Recovery = 102.79%								
Ti 334.940†	478043.6	1.00	mg/L	0.002	1.00	mg/L	0.002	0.20%
QC value within limits for Ti 334.940 Recovery = 100.39%								
Tl 190.801†	439.9	0.515	mg/L	0.0144	0.515	mg/L	0.0144	2.79%

Approved: January 31, 2012

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   QC value within limits for Tl 190.801  Recovery = 103.06%
V 290.880†            86302.6        1.00 mg/L         0.016        1.00 mg/L         0.016   1.61%
   QC value within limits for V 290.880  Recovery = 100.39%
Zn 206.200†           14345.4        1.02 mg/L         0.014        1.02 mg/L         0.014   1.41%
   QC value within limits for Zn 206.200  Recovery = 102.39%
K 766.490†            48390.8        48.6 mg/L          0.55        48.6 mg/L          0.55   1.12%
   QC value within limits for K 766.490  Recovery = 97.22%
Na 589.592†          224516.9        48.6 mg/L          1.60        48.6 mg/L          1.60   3.28%
   QC value within limits for Na 589.592  Recovery = 97.22%
Sr 407.771†          535465.5       0.998 mg/L        0.1272       0.998 mg/L        0.1272  12.75%
   QC value within limits for Sr 407.771  Recovery = 99.76%
Li 670.784†           36605.4        1.02 mg/L         0.015        1.02 mg/L         0.015   1.47%
   QC value within limits for Li 670.784  Recovery = 101.85%
QC Failed.  Continue with analysis.

==========================================================================================
Sequence No.: 8                                    Autosampler Location: 1
Sample ID: ICB                                     Date Collected: 1/30/2012 12:56:28 PM
Analyst:                                           Data Type: Reprocessed on 1/30/2012 1:36:34 PM
Logged In Analyst (Original) : peicp2
Initial Sample Wt:                                 Initial Sample Vol:
Dilution:                                          Sample Prep Vol:

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Nebulizer Parameters: ICB
Analyte                 Back Pressure    Flow
All                     147.0 kPa        0.50 L/min

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Mean Data: ICB
                   Mean Corrected        Calib.                          Sample
Analyte               Intensity     Conc. Units     Std.Dev.     Conc. Units      Std.Dev.   RSD
Y 371.029            3732005.7                                                   41053.50   1.10%
YRADIAL               137943.6                                                    4731.83   3.43%
Ga 417.206            756899.6                                                   14367.60   1.90%
GaRADIAL               21809.5                                                    3415.55  15.66%
Ag 328.068†              -15.3    -0.00197 mg/L      0.001140    -0.00197 mg/L      0.001140  57.73%
   QC value within limits for Ag 328.068  Recovery = Not calculated
Al 396.153†               17.9     -0.0358 mg/L       0.00732     -0.0358 mg/L       0.00732  20.43%
   QC value within limits for Al 396.153  Recovery = Not calculated
As 188.979†               -0.6     0.00354 mg/L      0.002194     0.00354 mg/L      0.002194  62.06%
   QC value within limits for As 188.979  Recovery = Not calculated
Ba 233.527†                4.2    -0.00510 mg/L      0.000069    -0.00510 mg/L      0.000069   1.35%
   QC value less than the lower limit for Ba 233.527  Recovery = Not calculated
Be 234.861†                3.5    -0.00029 mg/L      0.000032    -0.00029 mg/L      0.000032  11.09%
   QC value within limits for Be 234.861  Recovery = Not calculated
B 249.677†               116.6     0.00116 mg/L      0.000289     0.00116 mg/L      0.000289  24.87%
   QC value within limits for B 249.677  Recovery = Not calculated
Ca 227.546†                1.3     -0.0582 mg/L       0.06408     -0.0582 mg/L       0.06408 110.11%
   QC value within limits for Ca 227.546  Recovery = Not calculated
Cd 228.802†               -0.7    -0.00010 mg/L      0.000315    -0.00010 mg/L      0.000315 301.67%
   QC value within limits for Cd 228.802  Recovery = Not calculated
Co 228.616†               -0.1    -0.00051 mg/L      0.000325    -0.00051 mg/L      0.000325  64.27%
   QC value within limits for Co 228.616  Recovery = Not calculated
Cr 267.716†               -0.5    -0.00289 mg/L      0.000066    -0.00289 mg/L      0.000066   2.28%
   QC value within limits for Cr 267.716  Recovery = Not calculated
Cu 327.393†               69.5    -0.00227 mg/L      0.001540    -0.00227 mg/L      0.001540  67.81%
   QC value within limits for Cu 327.393  Recovery = Not calculated
Fe 239.562†                0.4     -0.0154 mg/L       0.06797     -0.0154 mg/L       0.06797 441.53%
   QC value within limits for Fe 239.562  Recovery = Not calculated
Mg 279.077†               -2.5     -0.0799 mg/L       0.01653     -0.0799 mg/L       0.01653  20.69%
   QC value within limits for Mg 279.077  Recovery = Not calculated
Mn 257.610†               13.2    -0.00407 mg/L      0.000019    -0.00407 mg/L      0.000019   0.47%
   QC value within limits for Mn 257.610  Recovery = Not calculated
Mo 202.031†                1.1    -0.00449 mg/L      0.000560    -0.00449 mg/L      0.000560  12.48%
   QC value within limits for Mo 202.031  Recovery = Not calculated
Ni 231.604†               -3.1    -0.00276 mg/L      0.000608    -0.00276 mg/L      0.000608  22.04%
   QC value within limits for Ni 231.604  Recovery = Not calculated
Pb 220.353†               -2.5    -0.00074 mg/L      0.001080    -0.00074 mg/L      0.001080 146.51%
   QC value within limits for Pb 220.353  Recovery = Not calculated
Sb 206.836†                2.8    -0.00017 mg/L      0.000726    -0.00017 mg/L      0.000726 426.82%
   QC value within limits for Sb 206.836  Recovery = Not calculated
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Approved: January 31, 2012

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Se 196.026†              -2.1     0.00091 mg/L      0.004323     0.00091 mg/L      0.004323 473.57%
   QC value within limits for Se 196.026  Recovery = Not calculated
Si 251.611†              -0.7     -0.0382 mg/L       0.00018     -0.0382 mg/L       0.00018   0.47%
   QC value within limits for Si 251.611  Recovery = Not calculated
Sn 189.927†               3.4    -0.00102 mg/L      0.000868    -0.00102 mg/L      0.000868  85.47%
   QC value within limits for Sn 189.927  Recovery = Not calculated
Ti 334.940†             -29.7    -0.00320 mg/L      0.000132    -0.00320 mg/L      0.000132   4.11%
   QC value within limits for Ti 334.940  Recovery = Not calculated
Tl 190.801†              -0.5    -0.00415 mg/L      0.001835    -0.00415 mg/L      0.001835  44.20%
   QC value within limits for Tl 190.801  Recovery = Not calculated
V 290.880†              -61.8    -0.00441 mg/L      0.001173    -0.00441 mg/L      0.001173  26.60%
   QC value within limits for V 290.880  Recovery = Not calculated
Zn 206.200†              -4.3    -0.00505 mg/L      0.000357    -0.00505 mg/L      0.000357   7.06%
   QC value within limits for Zn 206.200  Recovery = Not calculated
K 766.490†               53.3       0.115 mg/L        0.0342       0.115 mg/L        0.0342  29.82%
   QC value within limits for K 766.490  Recovery = Not calculated
Na 589.592†             -21.6      0.0442 mg/L       0.02262      0.0442 mg/L       0.02262  51.14%
   QC value within limits for Na 589.592  Recovery = Not calculated
Sr 407.771†              -5.7    -0.00543 mg/L      0.000116    -0.00543 mg/L      0.000116   2.13%
   QC value within limits for Sr 407.771  Recovery = Not calculated
Li 670.784†             159.1    -0.00469 mg/L      0.000896    -0.00469 mg/L      0.000896  19.09%
   QC value within limits for Li 670.784  Recovery = Not calculated
QC Failed.  Continue with analysis.

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Sequence No.: 9                                    Autosampler Location: 12
Sample ID: ICSA                                    Date Collected: 1/30/2012 1:03:16 PM
Analyst:                                           Data Type: Reprocessed on 1/30/2012 1:36:35 PM
Logged In Analyst (Original) : peicp2
Initial Sample Wt:                                 Initial Sample Vol:
Dilution:                                          Sample Prep Vol:

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Nebulizer Parameters: ICSA
Analyte                  Back Pressure    Flow
All                    148.0 kPa         0.50 L/min

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Mean Data: ICSA
                   Mean Corrected         Calib.                          Sample
Analyte               Intensity     Conc. Units      Std.Dev.      Conc. Units      Std.Dev.   RSD
Y 371.029            3527266.8                                                    26132.88   0.74%
YRADIAL               135031.1                                                     4170.01   3.09%
Ga 417.206            800683.8                                                    10204.91   1.27%
GaRADIAL               22036.8                                                     3144.89  14.27%
Ag 328.068†              177.6     0.00000 mg/L      0.000708     0.00000 mg/L      0.000708 >999.9%
   QC value within limits for Ag 328.068  Recovery = Not calculated
Al 396.153†           424986.3         256 mg/L           2.0         256 mg/L           2.0   0.77%
   QC value within limits for Al 396.153  Recovery = 102.21%
As 188.979†               14.6    -0.00512 mg/L      0.005426    -0.00512 mg/L      0.005426 105.97%
   QC value within limits for As 188.979  Recovery = Not calculated
Ba 233.527†               70.8     0.00001 mg/L      0.000128     0.00001 mg/L      0.000128 >999.9%
   QC value within limits for Ba 233.527  Recovery = Not calculated
Be 234.861†             5965.1    -0.00002 mg/L      0.000461    -0.00002 mg/L      0.000461 >999.9%
   QC value within limits for Be 234.861  Recovery = Not calculated
B 249.677†             -6204.1     -0.0411 mg/L       0.01726     -0.0411 mg/L       0.01726  42.02%
   QC value within limits for B 249.677  Recovery = Not calculated
Ca 227.546†            17226.3         248 mg/L           3.4         248 mg/L           3.4   1.36%
   QC value within limits for Ca 227.546  Recovery = 99.37%
Cd 228.802†               -3.5    -0.00006 mg/L      0.000112    -0.00006 mg/L      0.000112 192.45%
   QC value within limits for Cd 228.802  Recovery = Not calculated
Co 228.616†                9.1    -0.00220 mg/L      0.000757    -0.00220 mg/L      0.000757  34.50%
   QC value within limits for Co 228.616  Recovery = Not calculated
Cr 267.716†              338.7    -0.00079 mg/L      0.000138    -0.00079 mg/L      0.000138  17.51%
   QC value within limits for Cr 267.716  Recovery = Not calculated
Cu 327.393†             -714.5    -0.00343 mg/L      0.000263    -0.00343 mg/L      0.000263   7.66%
   QC value within limits for Cu 327.393  Recovery = Not calculated
Fe 239.562†             2174.1        99.3 mg/L          3.91        99.3 mg/L          3.91   3.94%
   QC value within limits for Fe 239.562  Recovery = 99.32%
Mg 279.077†            20826.1         259 mg/L           7.2         259 mg/L           7.2   2.78%
   QC value within limits for Mg 279.077  Recovery = 103.79%
Mn 257.610†               61.8    -0.00190 mg/L      0.000218    -0.00190 mg/L      0.000218  11.45%
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Approved: January 31, 2012

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   QC value within limits for Mn 257.610  Recovery = Not calculated
Mo 202.031†              -11.0    -0.00127 mg/L      0.000756    -0.00127 mg/L      0.000756  59.34%
   QC value within limits for Mo 202.031  Recovery = Not calculated
Ni 231.604†              -41.4    -0.00506 mg/L      0.000187    -0.00506 mg/L      0.000187   3.70%
   QC value within limits for Ni 231.604  Recovery = Not calculated
Pb 220.353†              -49.1     0.00175 mg/L      0.002013     0.00175 mg/L      0.002013 115.26%
   QC value within limits for Pb 220.353  Recovery = Not calculated
Sb 206.836†               21.1      0.0218 mg/L       0.00057      0.0218 mg/L       0.00057   2.64%
   QC value within limits for Sb 206.836  Recovery = Not calculated
Se 196.026†              -62.5    -0.00005 mg/L      0.011482    -0.00005 mg/L      0.011482 >999.9%
   QC value within limits for Se 196.026  Recovery = Not calculated
Si 251.611†             1519.9      0.0459 mg/L       0.00179      0.0459 mg/L       0.00179   3.91%
   QC value within limits for Si 251.611  Recovery = Not calculated
Sn 189.927†              -58.1     -0.0244 mg/L       0.00378     -0.0244 mg/L       0.00378  15.49%
   QC value within limits for Sn 189.927  Recovery = Not calculated
Ti 334.940†            -1388.4    -0.00348 mg/L      0.000341    -0.00348 mg/L      0.000341   9.79%
   QC value within limits for Ti 334.940  Recovery = Not calculated
Tl 190.801†              106.6      0.0167 mg/L       0.00639      0.0167 mg/L       0.00639  38.18%
   QC value within limits for Tl 190.801  Recovery = Not calculated
V 290.880†             -1045.5    -0.00160 mg/L      0.000586    -0.00160 mg/L      0.000586  36.76%
   QC value within limits for V 290.880  Recovery = Not calculated
Zn 206.200†               17.8    -0.00542 mg/L      0.000423    -0.00542 mg/L      0.000423   7.80%
   QC value within limits for Zn 206.200  Recovery = Not calculated
K 766.490†               -12.6      0.0507 mg/L       0.01424      0.0507 mg/L       0.01424  28.09%
   QC value within limits for K 766.490  Recovery = Not calculated
Na 589.592†              245.9      0.0988 mg/L       0.00720      0.0988 mg/L       0.00720   7.29%
   QC value within limits for Na 589.592  Recovery = Not calculated
Sr 407.771†            15769.1     0.00149 mg/L      0.002441     0.00149 mg/L      0.002441 163.59%
   QC value within limits for Sr 407.771  Recovery = Not calculated
Li 670.784†              299.5    -0.00075 mg/L      0.000683    -0.00075 mg/L      0.000683  90.52%
   QC value within limits for Li 670.784  Recovery = Not calculated
All analyte(s) passed QC.

==========================================================================================================
Sequence No.: 10                                    Autosampler Location: 13
Sample ID: ICSAB                                    Date Collected: 1/30/2012 1:10:06 PM
Analyst:                                            Data Type: Reprocessed on 1/30/2012 1:36:36 PM
Logged In Analyst (Original) : peicp2
Initial Sample Wt:                                  Initial Sample Vol:
Dilution:                                           Sample Prep Vol:

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Nebulizer Parameters: ICSAB
Analyte                  Back Pressure    Flow
All                     147.0 kPa        0.50 L/min

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Mean Data: ICSAB
                     Mean Corrected         Calib.                          Sample
Analyte                 Intensity      Conc. Units      Std.Dev.      Conc. Units      Std.Dev.   RSD
Y 371.029             3494603.1                                                      41332.15   1.18%
YRADIAL                135524.0                                                       8393.91   6.19%
Ga 417.206             794703.3                                                      14243.59   1.79%
GaRADIAL                21571.3                                                       4224.54  19.58%
Ag 328.068†             63023.8       0.500 mg/L        0.0062       0.500 mg/L        0.0062   1.23%
   QC value within limits for Ag 328.068  Recovery = 100.01%
Al 396.153†            423335.9         255 mg/L           0.8         255 mg/L           0.8   0.31%
   Saturated within auto integration window (code 4)
   QC value within limits for Al 396.153  Recovery = 101.81%
As 188.979†              143.8       0.228 mg/L        0.0113       0.228 mg/L        0.0113   4.96%
   QC value within limits for As 188.979  Recovery = 91.10%
Ba 233.527†             7726.0       0.250 mg/L        0.0022       0.250 mg/L        0.0022   0.86%
   QC value within limits for Ba 233.527  Recovery = 100.05%
Be 234.861†             82296.9       0.248 mg/L        0.0031       0.248 mg/L        0.0031   1.23%
   QC value within limits for Be 234.861  Recovery = 99.27%
B 249.677†              -6647.7     -0.0768 mg/L       0.00946     -0.0768 mg/L       0.00946  12.32%
   QC value within limits for B 249.677  Recovery = Not calculated
Ca 227.546†             17898.8         259 mg/L           2.1         259 mg/L           2.1   0.83%
   QC value within limits for Ca 227.546  Recovery = 103.61%
Cd 228.802†              4957.5       0.448 mg/L        0.0076       0.448 mg/L        0.0076   1.70%
   QC value within limits for Cd 228.802  Recovery = 89.59%
Co 228.616†              2343.5       0.228 mg/L        0.0036       0.228 mg/L        0.0036   1.56%
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Approved: January 31, 2012

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   QC value within limits for Co 228.616  Recovery = 91.25%
Cr 267.716†            16034.4       0.247 mg/L        0.0002       0.247 mg/L        0.0002   0.08%
   QC value within limits for Cr 267.716  Recovery = 98.82%
Cu 327.393†            23059.8       0.239 mg/L        0.0024       0.239 mg/L        0.0024   0.99%
   QC value within limits for Cu 327.393  Recovery = 95.59%
Fe 239.562†             2132.0        97.4 mg/L          1.92        97.4 mg/L          1.92   1.97%
   QC value within limits for Fe 239.562  Recovery = 97.40%
Mg 279.077†            20555.1         256 mg/L           9.1         256 mg/L           9.1   3.53%
   QC value within limits for Mg 279.077  Recovery = 102.44%
Mn 257.610†            64065.6       0.247 mg/L        0.0021       0.247 mg/L        0.0021   0.87%
   QC value within limits for Mn 257.610  Recovery = 98.96%
Mo 202.031†              -23.0    -0.00298 mg/L      0.000222    -0.00298 mg/L      0.000222   7.44%
   QC value within limits for Mo 202.031  Recovery = Not calculated
Ni 231.604†             8027.1       0.464 mg/L        0.0056       0.464 mg/L        0.0056   1.21%
   QC value within limits for Ni 231.604  Recovery = 92.81%
Pb 220.353†             1334.8       0.484 mg/L        0.0042       0.484 mg/L        0.0042   0.86%
   QC value within limits for Pb 220.353  Recovery = 96.78%
Sb 206.836†              423.8       0.504 mg/L        0.0091       0.504 mg/L        0.0091   1.80%
   QC value within limits for Sb 206.836  Recovery = 100.73%
Se 196.026†               93.1       0.242 mg/L        0.0089       0.242 mg/L        0.0089   3.69%
   QC value within limits for Se 196.026  Recovery = 96.65%
Si 251.611†              187.3     -0.0278 mg/L       0.00185     -0.0278 mg/L       0.00185   6.66%
   QC value within limits for Si 251.611  Recovery = Not calculated
Sn 189.927†              -67.4     -0.0279 mg/L       0.00336     -0.0279 mg/L       0.00336  12.04%
   QC value within limits for Sn 189.927  Recovery = Not calculated
Ti 334.940†            -1369.5    -0.00342 mg/L      0.000195    -0.00342 mg/L      0.000195   5.70%
   QC value within limits for Ti 334.940  Recovery = Not calculated
Tl 190.801†              519.9       0.492 mg/L        0.0127       0.492 mg/L        0.0127   2.57%
   QC value within limits for Tl 190.801  Recovery = 98.43%
V 290.880†             20810.3       0.253 mg/L        0.0006       0.253 mg/L        0.0006   0.23%
   QC value within limits for V 290.880  Recovery = 101.37%
Zn 206.200†             6566.7       0.464 mg/L        0.0065       0.464 mg/L        0.0065   1.39%
   QC value within limits for Zn 206.200  Recovery = 92.89%
K 766.490†              5313.6        5.23 mg/L         0.303        5.23 mg/L         0.303   5.80%
   QC value within limits for K 766.490  Recovery = 104.55%
Na 589.592†            24366.4        5.05 mg/L         0.136        5.05 mg/L         0.136   2.68%
   QC value within limits for Na 589.592  Recovery = 100.96%
Sr 407.771†            15263.1     0.00098 mg/L      0.002475     0.00098 mg/L      0.002475 251.96%
   QC value within limits for Sr 407.771  Recovery = Not calculated
Li 670.784†              292.2    -0.00096 mg/L      0.000680    -0.00096 mg/L      0.000680  70.99%
   QC value within limits for Li 670.784  Recovery = Not calculated
All analyte(s) passed QC.

==========================================================================================
Sequence No.: 11                                    Autosampler Location: 6
Sample ID: CCV                                      Date Collected: 1/30/2012 1:16:56 PM
Analyst:                                            Data Type: Reprocessed on 1/30/2012 1:36:38 PM
Logged In Analyst (Original) : peicp2
Initial Sample Wt:                                  Initial Sample Vol:
Dilution:                                           Sample Prep Vol:

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Nebulizer Parameters: CCV
Analyte                  Back Pressure    Flow
All                      148.0 kPa        0.50 L/min

------------------------------------------------------------------------------------------
Mean Data: CCV
                   Mean Corrected        Calib.                          Sample
Analyte               Intensity     Conc. Units      Std.Dev.     Conc. Units      Std.Dev.   RSD
Y 371.029            3628298.8                                                    22214.23   0.61%
YRADIAL               139293.2                                                     6375.42   4.58%
Ga 417.206            802784.2                                                    11072.01   1.38%
GaRADIAL               23411.7                                                     4083.30  17.44%
Ag 328.068†            50619.8       0.402 mg/L        0.0038       0.402 mg/L        0.0038   0.95%
   QC value within limits for Ag 328.068  Recovery = 100.49%
Al 396.153†            17086.2        10.2 mg/L          0.07        10.2 mg/L          0.07   0.73%
   QC value within limits for Al 396.153  Recovery = 102.14%
As 188.979†              224.8       0.403 mg/L        0.0054       0.403 mg/L        0.0054   1.34%
   QC value within limits for As 188.979  Recovery = 100.69%
Ba 233.527†            31629.1        1.03 mg/L         0.011        1.03 mg/L         0.011   1.04%
   QC value within limits for Ba 233.527  Recovery = 102.91%
```

Approved: January 31, 2012

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Be 234.861†            15699.1      0.0515 mg/L       0.00036      0.0515 mg/L       0.00036   0.69%
   QC value within limits for Be 234.861  Recovery = 102.99%
B 249.677†             14491.8       0.506 mg/L        0.0038       0.506 mg/L        0.0038   0.74%
   QC value within limits for B 249.677  Recovery = 101.28%
Ca 227.546†              683.7        10.1 mg/L          0.13        10.1 mg/L          0.13   1.32%
   QC value within limits for Ca 227.546  Recovery = 101.01%
Cd 228.802†              561.9      0.0515 mg/L       0.00065      0.0515 mg/L       0.00065   1.27%
   QC value within limits for Cd 228.802  Recovery = 103.07%
Co 228.616†             2108.7       0.205 mg/L        0.0016       0.205 mg/L        0.0016   0.79%
   QC value within limits for Co 228.616  Recovery = 102.52%
Cr 267.716†            32534.9       0.511 mg/L        0.0033       0.511 mg/L        0.0033   0.65%
   QC value within limits for Cr 267.716  Recovery = 102.16%
Cu 327.393†            49537.5       0.504 mg/L        0.0051       0.504 mg/L        0.0051   1.01%
   QC value within limits for Cu 327.393  Recovery = 100.87%
Fe 239.562†               93.0        4.22 mg/L         0.089        4.22 mg/L         0.089   2.11%
   QC value within limits for Fe 239.562  Recovery = 105.39%
Mg 279.077†              845.0        10.5 mg/L          0.07        10.5 mg/L          0.07   0.69%
   QC value within limits for Mg 279.077  Recovery = 104.87%
Mn 257.610†           135367.2       0.525 mg/L        0.0016       0.525 mg/L        0.0016   0.30%
   QC value within limits for Mn 257.610  Recovery = 104.97%
Mo 202.031†             7330.3        1.02 mg/L         0.013        1.02 mg/L         0.013   1.24%
   QC value within limits for Mo 202.031  Recovery = 102.30%
Ni 231.604†             8912.5       0.516 mg/L        0.0013       0.516 mg/L        0.0013   0.24%
   QC value within limits for Ni 231.604  Recovery = 103.12%
Pb 220.353†             1484.0       0.522 mg/L        0.0061       0.522 mg/L        0.0061   1.17%
   QC value within limits for Pb 220.353  Recovery = 104.45%
Sb 206.836†             1026.5        1.23 mg/L         0.017        1.23 mg/L         0.017   1.35%
   QC value within limits for Sb 206.836  Recovery = 102.76%
Se 196.026†              259.2       0.406 mg/L        0.0058       0.406 mg/L        0.0058   1.44%
   QC value within limits for Se 196.026  Recovery = 101.56%
Si 251.611†            93175.3        5.10 mg/L         0.033        5.10 mg/L         0.033   0.65%
   QC value within limits for Si 251.611  Recovery = 101.98%
Sn 189.927†             2746.6        1.04 mg/L         0.005        1.04 mg/L         0.005   0.48%
   QC value within limits for Sn 189.927  Recovery = 104.05%
Ti 334.940†           489927.7        1.03 mg/L         0.004        1.03 mg/L         0.004   0.41%
   QC value within limits for Ti 334.940  Recovery = 102.90%
Tl 190.801†              448.6       0.526 mg/L        0.0032       0.526 mg/L        0.0032   0.60%
   QC value within limits for Tl 190.801  Recovery = 105.11%
V 290.880†             88046.7        1.02 mg/L         0.003        1.02 mg/L         0.003   0.34%
   QC value within limits for V 290.880  Recovery = 102.43%
Zn 206.200†            14380.3        1.03 mg/L         0.005        1.03 mg/L         0.005   0.47%
   QC value within limits for Zn 206.200  Recovery = 102.64%
K 766.490†             49446.9        49.7 mg/L          0.30        49.7 mg/L          0.30   0.61%
   QC value within limits for K 766.490  Recovery = 99.41%
Na 589.592†           231645.5        50.3 mg/L          1.12        50.3 mg/L          1.12   2.24%
   QC value within limits for Na 589.592  Recovery = 100.51%
Sr 407.771†           546054.5        1.02 mg/L         0.126        1.02 mg/L         0.126  12.39%
   QC value within limits for Sr 407.771  Recovery = 101.74%
Li 670.784†            37639.6        1.05 mg/L         0.025        1.05 mg/L         0.025   2.37%
   QC value within limits for Li 670.784  Recovery = 104.76%
All analyte(s) passed QC.

==========================================================================================
Sequence No.: 12                                    Autosampler Location: 1
Sample ID: CCB                                      Date Collected: 1/30/2012 1:23:51 PM
Analyst:                                            Data Type: Reprocessed on 1/30/2012 1:36:39 PM
Logged In Analyst (Original) : peicp2
Initial Sample Wt:                                  Initial Sample Vol:
Dilution:                                           Sample Prep Vol:

------------------------------------------------------------------------------------------
Nebulizer Parameters: CCB
Analyte                  Back Pressure    Flow
All                      147.0 kPa        0.50 L/min

------------------------------------------------------------------------------------------
Mean Data: CCB
                   Mean Corrected        Calib.                        Sample
Analyte               Intensity     Conc. Units     Std.Dev.     Conc. Units     Std.Dev.   RSD
Y 371.029            3755252.8                                                  50122.30   1.33%
YRADIAL               138252.3                                                   2951.27   2.13%
Ga 417.206            768881.5                                                  12020.03   1.56%
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Approved: January 31, 2012

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GaRADIAL              21443.9                                                    3059.23  14.27%
Ag 328.068†             -34.6    -0.00213 mg/L      0.001186    -0.00213 mg/L      0.001186  55.76%
   QC value within limits for Ag 328.068  Recovery = Not calculated
Al 396.153†              18.1     -0.0357 mg/L       0.00220     -0.0357 mg/L       0.00220   6.16%
   QC value within limits for Al 396.153  Recovery = Not calculated
As 188.979†               2.2     0.00860 mg/L      0.008141     0.00860 mg/L      0.008141  94.62%
   QC value within limits for As 188.979  Recovery = Not calculated
Ba 233.527†               3.0    -0.00513 mg/L      0.000134    -0.00513 mg/L      0.000134   2.60%
   QC value less than the lower limit for Ba 233.527  Recovery = Not calculated
Be 234.861†              20.5    -0.00023 mg/L      0.000100    -0.00023 mg/L      0.000100  43.21%
   QC value within limits for Be 234.861  Recovery = Not calculated
B 249.677†               73.6    -0.00045 mg/L      0.000729    -0.00045 mg/L      0.000729 161.07%
   QC value within limits for B 249.677  Recovery = Not calculated
Ca 227.546†               4.5    -0.00721 mg/L      0.035645    -0.00721 mg/L      0.035645 494.56%
   QC value within limits for Ca 227.546  Recovery = Not calculated
Cd 228.802†              -3.9    -0.00038 mg/L      0.000432    -0.00038 mg/L      0.000432 112.88%
   QC value within limits for Cd 228.802  Recovery = Not calculated
Co 228.616†               0.8    -0.00042 mg/L      0.000434    -0.00042 mg/L      0.000434 104.26%
   QC value within limits for Co 228.616  Recovery = Not calculated
Cr 267.716†               5.8    -0.00279 mg/L      0.000074    -0.00279 mg/L      0.000074   2.66%
   QC value within limits for Cr 267.716  Recovery = Not calculated
Cu 327.393†              92.8    -0.00204 mg/L      0.001180    -0.00204 mg/L      0.001180  57.96%
   QC value within limits for Cu 327.393  Recovery = Not calculated
Fe 239.562†              -0.2     -0.0430 mg/L       0.00599     -0.0430 mg/L       0.00599  13.92%
   QC value less than the lower limit for Fe 239.562  Recovery = Not calculated
Mg 279.077†              -1.8     -0.0715 mg/L       0.01610     -0.0715 mg/L       0.01610  22.52%
   QC value within limits for Mg 279.077  Recovery = Not calculated
Mn 257.610†              31.6    -0.00400 mg/L      0.000014    -0.00400 mg/L      0.000014   0.35%
   QC value within limits for Mn 257.610  Recovery = Not calculated
Mo 202.031†               1.0    -0.00450 mg/L      0.000480    -0.00450 mg/L      0.000480  10.67%
   QC value within limits for Mo 202.031  Recovery = Not calculated
Ni 231.604†               1.9    -0.00247 mg/L      0.000262    -0.00247 mg/L      0.000262  10.64%
   QC value within limits for Ni 231.604  Recovery = Not calculated
Pb 220.353†              -3.7    -0.00115 mg/L      0.001155    -0.00115 mg/L      0.001155 100.63%
   QC value within limits for Pb 220.353  Recovery = Not calculated
Sb 206.836†               1.8    -0.00128 mg/L      0.001908    -0.00128 mg/L      0.001908 149.31%
   QC value within limits for Sb 206.836  Recovery = Not calculated
Se 196.026†              -4.1    -0.00213 mg/L      0.002875    -0.00213 mg/L      0.002875 134.80%
   QC value within limits for Se 196.026  Recovery = Not calculated
Si 251.611†              -7.4     -0.0386 mg/L       0.00058     -0.0386 mg/L       0.00058   1.51%
   QC value within limits for Si 251.611  Recovery = Not calculated
Sn 189.927†               2.0    -0.00155 mg/L      0.000047    -0.00155 mg/L      0.000047   3.04%
   QC value within limits for Sn 189.927  Recovery = Not calculated
Ti 334.940†              68.7    -0.00300 mg/L      0.000040    -0.00300 mg/L      0.000040   1.34%
   QC value within limits for Ti 334.940  Recovery = Not calculated
Tl 190.801†              -1.8    -0.00563 mg/L      0.000486    -0.00563 mg/L      0.000486   8.63%
   QC value within limits for Tl 190.801  Recovery = Not calculated
V 290.880†               -2.4    -0.00372 mg/L      0.001652    -0.00372 mg/L      0.001652  44.46%
   QC value within limits for V 290.880  Recovery = Not calculated
Zn 206.200†              -1.5    -0.00486 mg/L      0.000149    -0.00486 mg/L      0.000149   3.08%
   QC value within limits for Zn 206.200  Recovery = Not calculated
K 766.490†               17.8      0.0802 mg/L       0.03267      0.0802 mg/L       0.03267  40.75%
   QC value within limits for K 766.490  Recovery = Not calculated
Na 589.592†             -24.2      0.0437 mg/L       0.02156      0.0437 mg/L       0.02156  49.35%
   QC value within limits for Na 589.592  Recovery = Not calculated
Sr 407.771†              48.1    -0.00533 mg/L      0.000052    -0.00533 mg/L      0.000052   0.98%
   QC value within limits for Sr 407.771  Recovery = Not calculated
Li 670.784†             163.0    -0.00459 mg/L      0.001667    -0.00459 mg/L      0.001667  36.34%
   QC value within limits for Li 670.784  Recovery = Not calculated
QC Failed.  Continue with analysis.
```

Approved: January 31, 2012

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Analysis Begun

Start Time: 1/30/2012 1:37:00 PM **Plasma On Time: 1/30/2012 8:38:03 AM**
Logged In Analyst: peicp2 **Technique: ICP Continuous**
Spectrometer Model: Optima 4300 DV, S/N 077N4011401 **Autosampler Model: Cetac**

Sample Information File: C:\pe\peicp2\Sample Information\MONDAY1.sif
Batch ID:
Results Data Set: 013012H3R
Results Library: C:\pe\peicp2\Results\Results.mdb

==========

Sequence No.: 1 **Autosampler Location: 14**
Sample ID: LRC CA,MG 500 **Date Collected: 1/30/2012 1:37:02 PM**
Analyst: SLP **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: LRC CA,MG 500

Analyte	Back Pressure	Flow
All	147.0 kPa	0.50 L/min

Mean Data: LRC CA,MG 500

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3451907.6						50072.86	1.45%
YRADIAL	132212.4						4822.37	3.65%
Ga 417.206	824264.5						25512.67	3.10%
GaRADIAL	21813.9						3593.99	16.48%
Ag 328.068†	890.1	0.00520	mg/L	0.000311	0.00520	mg/L	0.000311	5.98%
Al 396.153†	-75.6	-0.0920	mg/L	0.03939	-0.0920	mg/L	0.03939	42.81%
As 188.979†	13.1	0.0177	mg/L	0.00390	0.0177	mg/L	0.00390	21.99%
Ba 233.527†	37.6	-0.00403	mg/L	0.000037	-0.00403	mg/L	0.000037	0.92%
Be 234.861†	107.0	0.00002	mg/L	0.000056	0.00002	mg/L	0.000056	278.92%
B 249.677†	15.0	-0.00171	mg/L	0.000606	-0.00171	mg/L	0.000606	35.43%
Ca 227.546†	34829.0	523	mg/L	15.3	523	mg/L	15.3	2.93%
Cd 228.802†	-8.2	-0.00072	mg/L	0.000047	-0.00072	mg/L	0.000047	6.43%
Co 228.616†	9.8	0.00049	mg/L	0.000476	0.00049	mg/L	0.000476	97.58%
Cr 267.716†	724.8	0.00854	mg/L	0.000114	0.00854	mg/L	0.000114	1.33%
Cu 327.393†	-1043.4	-0.0136	mg/L	0.00069	-0.0136	mg/L	0.00069	5.08%
Fe 239.562†	3.2	0.0977	mg/L	0.14057	0.0977	mg/L	0.14057	143.87%
Mg 279.077†	41136.9	513	mg/L	1.0	513	mg/L	1.0	0.20%
Mn 257.610†	307.1	-0.0104	mg/L	0.00000	-0.0104	mg/L	0.00000	0.04%
Mo 202.031†	-7.0	-0.00561	mg/L	0.000825	-0.00561	mg/L	0.000825	14.69%
Ni 231.604†	-26.1	-0.00418	mg/L	0.000325	-0.00418	mg/L	0.000325	7.78%
Pb 220.353†	-25.2	0.0165	mg/L	0.00092	0.0165	mg/L	0.00092	5.61%
Sb 206.836†	17.0	0.0168	mg/L	0.00465	0.0168	mg/L	0.00465	27.62%
Se 196.026†	-27.2	0.119	mg/L	0.0052	0.119	mg/L	0.0052	4.34%
Si 251.611†	223.4	-0.0258	mg/L	0.00059	-0.0258	mg/L	0.00059	2.28%
Sn 189.927†	-11.8	-0.00679	mg/L	0.001379	-0.00679	mg/L	0.001379	20.31%
Ti 334.940†	-2844.9	-0.00391	mg/L	0.000188	-0.00391	mg/L	0.000188	4.80%
Tl 190.801†	126.7	-0.0657	mg/L	0.00835	-0.0657	mg/L	0.00835	12.72%
V 290.880†	-1072.4	0.0274	mg/L	0.00154	0.0274	mg/L	0.00154	5.62%
Zn 206.200†	142.7	0.00550	mg/L	0.000273	0.00550	mg/L	0.000273	4.97%
K 766.490†	38.3	0.100	mg/L	0.0375	0.100	mg/L	0.0375	37.45%
Na 589.592†	54.7	0.0598	mg/L	0.00874	0.0598	mg/L	0.00874	14.62%
Sr 407.771†	13134.3	0.0192	mg/L	0.00329	0.0192	mg/L	0.00329	17.16%
Li 670.784†	241.5	-0.00238	mg/L	0.001047	-0.00238	mg/L	0.001047	43.96%

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Sequence No.: 2 **Autosampler Location: 15**
Sample ID: BLANK **Date Collected: 1/30/2012 1:43:54 PM**
Analyst: SLP **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: BLANK

Approved: January 31, 2012

Analyte	Back Pressure	Flow
All	147.0 kPa	0.50 L/min

Mean Data: BLANK

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	3774022.1						51549.93	1.37%
YRADIAL	139137.0						5426.15	3.90%
Ga 417.206	762941.6						12992.44	1.70%
GaRADIAL	22146.1						3552.82	16.04%
Ag 328.068†	-131.9	-0.00290	mg/L	0.000291	-0.00290	mg/L	0.000291	10.04%
Al 396.153†	20.4	-0.0343	mg/L	0.00975	-0.0343	mg/L	0.00975	28.41%
As 188.979†	2.0	0.00822	mg/L	0.006921	0.00822	mg/L	0.006921	84.15%
Ba 233.527†	2.1	-0.00516	mg/L	0.000097	-0.00516	mg/L	0.000097	1.88%
Be 234.861†	15.7	-0.00025	mg/L	0.000016	-0.00025	mg/L	0.000016	6.54%
B 249.677†	-13.5	-0.00342	mg/L	0.000226	-0.00342	mg/L	0.000226	6.61%
Ca 227.546†	7.6	0.0385	mg/L	0.05937	0.0385	mg/L	0.05937	154.29%
Cd 228.802†	-3.9	-0.00038	mg/L	0.000223	-0.00038	mg/L	0.000223	58.35%
Co 228.616†	-0.3	-0.00052	mg/L	0.000357	-0.00052	mg/L	0.000357	68.04%
Cr 267.716†	11.2	-0.00271	mg/L	0.000161	-0.00271	mg/L	0.000161	5.94%
Cu 327.393†	5.2	-0.00293	mg/L	0.000482	-0.00293	mg/L	0.000482	16.45%
Fe 239.562†	-0.0	-0.0329	mg/L	0.04412	-0.0329	mg/L	0.04412	133.99%
Mg 279.077†	0.0	-0.0489	mg/L	0.02036	-0.0489	mg/L	0.02036	41.61%
Mn 257.610†	23.9	-0.00403	mg/L	0.000022	-0.00403	mg/L	0.000022	0.54%
Mo 202.031†	-1.3	-0.00482	mg/L	0.000497	-0.00482	mg/L	0.000497	10.31%
Ni 231.604†	5.1	-0.00228	mg/L	0.000180	-0.00228	mg/L	0.000180	7.90%
Pb 220.353†	-5.1	-0.00163	mg/L	0.000913	-0.00163	mg/L	0.000913	56.12%
Sb 206.836†	0.3	-0.00309	mg/L	0.002918	-0.00309	mg/L	0.002918	94.43%
Se 196.026†	-5.2	-0.00386	mg/L	0.005193	-0.00386	mg/L	0.005193	134.43%
Si 251.611†	-18.3	-0.0392	mg/L	0.00030	-0.0392	mg/L	0.00030	0.78%
Sn 189.927†	1.2	-0.00185	mg/L	0.001444	-0.00185	mg/L	0.001444	77.92%
Ti 334.940†	-49.0	-0.00324	mg/L	0.000042	-0.00324	mg/L	0.000042	1.31%
Tl 190.801†	0.6	-0.00281	mg/L	0.002987	-0.00281	mg/L	0.002987	106.41%
V 290.880†	8.7	-0.00359	mg/L	0.000892	-0.00359	mg/L	0.000892	24.88%
Zn 206.200†	-2.0	-0.00489	mg/L	0.000162	-0.00489	mg/L	0.000162	3.31%
K 766.490†	48.1	0.110	mg/L	0.0157	0.110	mg/L	0.0157	14.34%
Na 589.592†	-101.6	0.0279	mg/L	0.01450	0.0279	mg/L	0.01450	51.95%
Sr 407.771†	46.4	-0.00533	mg/L	0.000056	-0.00533	mg/L	0.000056	1.06%
Li 670.784†	134.6	-0.00538	mg/L	0.000964	-0.00538	mg/L	0.000964	17.91%

Sequence No.: 3 | **Autosampler Location: 16**
Sample ID: BLANK | **Date Collected: 1/30/2012 1:50:43 PM**
Analyst: SLP | **Data Type: Original**
Initial Sample Wt: | **Initial Sample Vol:**
Dilution: | **Sample Prep Vol:**

Nebulizer Parameters: BLANK

Analyte	Back Pressure	Flow
All	148.0 kPa	0.50 L/min

Mean Data: BLANK

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	3737954.8						3771.96	0.10%
YRADIAL	138322.2						2112.97	1.53%
Ga 417.206	766379.4						2447.32	0.32%
GaRADIAL	20863.7						3285.67	15.75%
Ag 328.068†	-113.8	-0.00276	mg/L	0.000337	-0.00276	mg/L	0.000337	12.22%
Al 396.153†	12.8	-0.0389	mg/L	0.00217	-0.0389	mg/L	0.00217	5.60%
As 188.979†	-1.1	0.00267	mg/L	0.007233	0.00267	mg/L	0.007233	270.81%
Ba 233.527†	-0.9	-0.00526	mg/L	0.000030	-0.00526	mg/L	0.000030	0.57%
Be 234.861†	28.5	-0.00020	mg/L	0.000021	-0.00020	mg/L	0.000021	10.34%
B 249.677†	-20.0	-0.00386	mg/L	0.000113	-0.00386	mg/L	0.000113	2.92%
Ca 227.546†	10.4	0.0856	mg/L	0.06453	0.0856	mg/L	0.06453	75.42%
Cd 228.802†	-1.1	-0.00014	mg/L	0.000283	-0.00014	mg/L	0.000283	202.10%
Co 228.616†	-1.9	-0.00068	mg/L	0.000206	-0.00068	mg/L	0.000206	30.13%
Cr 267.716†	11.4	-0.00270	mg/L	0.000172	-0.00270	mg/L	0.000172	6.37%
Cu 327.393†	-21.8	-0.00321	mg/L	0.000948	-0.00321	mg/L	0.000948	29.56%

Approved: January 31, 2012

Fe 239.562†	-1.0	-0.0792	mg/L	0.02292	-0.0792	mg/L	0.02292	28.93%
Mg 279.077†	-1.1	-0.0633	mg/L	0.01990	-0.0633	mg/L	0.01990	31.45%
Mn 257.610†	12.1	-0.00408	mg/L	0.000036	-0.00408	mg/L	0.000036	0.89%
Mo 202.031†	-2.4	-0.00497	mg/L	0.000321	-0.00497	mg/L	0.000321	6.46%
Ni 231.604†	5.4	-0.00226	mg/L	0.000480	-0.00226	mg/L	0.000480	21.24%
Pb 220.353†	-4.1	-0.00129	mg/L	0.000465	-0.00129	mg/L	0.000465	36.02%
Sb 206.836†	1.8	-0.00137	mg/L	0.004040	-0.00137	mg/L	0.004040	295.69%
Se 196.026†	-3.8	-0.00174	mg/L	0.003482	-0.00174	mg/L	0.003482	200.13%
Si 251.611†	-19.2	-0.0392	mg/L	0.00076	-0.0392	mg/L	0.00076	1.95%
Sn 189.927†	1.5	-0.00175	mg/L	0.000229	-0.00175	mg/L	0.000229	13.07%
Ti 334.940†	8.5	-0.00312	mg/L	0.000057	-0.00312	mg/L	0.000057	1.84%
Tl 190.801†	-4.8	-0.00910	mg/L	0.003783	-0.00910	mg/L	0.003783	41.58%
V 290.880†	22.9	-0.00342	mg/L	0.000633	-0.00342	mg/L	0.000633	18.54%
Zn 206.200†	-2.6	-0.00493	mg/L	0.000157	-0.00493	mg/L	0.000157	3.18%
K 766.490†	23.1	0.0854	mg/L	0.02474	0.0854	mg/L	0.02474	28.97%
Na 589.592†	-127.2	0.0227	mg/L	0.01490	0.0227	mg/L	0.01490	65.69%
Sr 407.771†	-8.3	-0.00542	mg/L	0.000094	-0.00542	mg/L	0.000094	1.73%
Li 670.784†	152.3	-0.00489	mg/L	0.002868	-0.00489	mg/L	0.002868	58.71%

Sequence No.: 4 **Autosampler Location: 17**
Sample ID: BLANK **Date Collected: 1/30/2012 1:57:33 PM**
Analyst: SLP **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: BLANK

Analyte	Back Pressure	Flow
All	147.0 kPa	0.50 L/min

Mean Data: BLANK

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3792434.6						58766.97	1.55%
YRADIAL	140962.4						5331.99	3.78%
Ga 417.206	778497.4						14965.11	1.92%
GaRADIAL	22385.0						3705.08	16.55%
Ag 328.068†	-152.9	-0.00307	mg/L	0.000467	-0.00307	mg/L	0.000467	15.23%
Al 396.153†	21.4	-0.0337	mg/L	0.00441	-0.0337	mg/L	0.00441	13.06%
As 188.979†	-1.4	0.00205	mg/L	0.002666	0.00205	mg/L	0.002666	129.74%
Ba 233.527†	-2.0	-0.00530	mg/L	0.000202	-0.00530	mg/L	0.000202	3.81%
Be 234.861†	37.5	-0.00018	mg/L	0.000042	-0.00018	mg/L	0.000042	22.76%
B 249.677†	-26.0	-0.00373	mg/L	0.000334	-0.00373	mg/L	0.000334	8.97%
Ca 227.546†	3.7	-0.0229	mg/L	0.11811	-0.0229	mg/L	0.11811	516.61%
Cd 228.802†	-4.1	-0.00041	mg/L	0.000410	-0.00041	mg/L	0.000410	99.40%
Co 228.616†	-2.8	-0.00077	mg/L	0.000394	-0.00077	mg/L	0.000394	51.43%
Cr 267.716†	-4.9	-0.00296	mg/L	0.000050	-0.00296	mg/L	0.000050	1.70%
Cu 327.393†	18.3	-0.00279	mg/L	0.000264	-0.00279	mg/L	0.000264	9.45%
Fe 239.562†	0.6	-0.00494	mg/L	0.020202	-0.00494	mg/L	0.020202	408.60%
Mg 279.077†	-1.0	-0.0610	mg/L	0.02064	-0.0610	mg/L	0.02064	33.84%
Mn 257.610†	5.0	-0.00410	mg/L	0.000008	-0.00410	mg/L	0.000008	0.19%
Mo 202.031†	-2.2	-0.00494	mg/L	0.000116	-0.00494	mg/L	0.000116	2.35%
Ni 231.604†	2.7	-0.00242	mg/L	0.000732	-0.00242	mg/L	0.000732	30.20%
Pb 220.353†	-6.8	-0.00222	mg/L	0.000390	-0.00222	mg/L	0.000390	17.58%
Sb 206.836†	1.9	-0.00115	mg/L	0.002103	-0.00115	mg/L	0.002103	183.01%
Se 196.026†	-2.6	0.00018	mg/L	0.001719	0.00018	mg/L	0.001719	961.75%
Si 251.611†	-36.7	-0.0402	mg/L	0.00045	-0.0402	mg/L	0.00045	1.13%
Sn 189.927†	-1.0	-0.00269	mg/L	0.000769	-0.00269	mg/L	0.000769	28.58%
Ti 334.940†	-57.5	-0.00326	mg/L	0.000106	-0.00326	mg/L	0.000106	3.25%
Tl 190.801†	1.1	-0.00231	mg/L	0.003436	-0.00231	mg/L	0.003436	148.75%
V 290.880†	-16.7	-0.00388	mg/L	0.001286	-0.00388	mg/L	0.001286	33.11%
Zn 206.200†	-7.3	-0.00527	mg/L	0.000370	-0.00527	mg/L	0.000370	7.01%
K 766.490†	14.4	0.0769	mg/L	0.08752	0.0769	mg/L	0.08752	113.76%
Na 589.592†	-174.0	0.0131	mg/L	0.00893	0.0131	mg/L	0.00893	67.95%
Sr 407.771†	8.1	-0.00541	mg/L	0.000093	-0.00541	mg/L	0.000093	1.71%
Li 670.784†	116.0	-0.00590	mg/L	0.001615	-0.00590	mg/L	0.001615	27.35%

Sequence No.: 5 **Autosampler Location: 6**
Sample ID: CCV **Date Collected: 1/30/2012 2:04:24 PM**

Approved: January 31, 2012

Analyst:
Initial Sample Wt:
Dilution:

Matrix Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: CCV

Analyte	Back Pressure	Flow
All	148.0 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	3702645.9						59120.31	1.60%
YRADIAL	141003.6						3895.96	2.76%
Ga 417.206	819940.2						16022.31	1.95%
GaRADIAL	22203.4						3435.58	15.47%
Ag 328.068†	49550.7	0.393	mg/L	0.0146	0.393	mg/L	0.0146	3.72%
QC value within limits for Ag 328.068 Recovery = 98.36%								
Al 396.153†	16833.2	10.1	mg/L	0.07	10.1	mg/L	0.07	0.67%
QC value within limits for Al 396.153 Recovery = 100.62%								
As 188.979†	216.7	0.388	mg/L	0.0128	0.388	mg/L	0.0128	3.30%
QC value within limits for As 188.979 Recovery = 97.07%								
Ba 233.527†	31527.2	1.03	mg/L	0.034	1.03	mg/L	0.034	3.27%
QC value within limits for Ba 233.527 Recovery = 102.57%								
Be 234.861†	15423.0	0.0506	mg/L	0.00193	0.0506	mg/L	0.00193	3.82%
QC value within limits for Be 234.861 Recovery = 101.25%								
B 249.677†	14249.7	0.497	mg/L	0.0207	0.497	mg/L	0.0207	4.16%
QC value within limits for B 249.677 Recovery = 99.38%								
Ca 227.546†	668.5	9.90	mg/L	0.218	9.90	mg/L	0.218	2.20%
QC value within limits for Ca 227.546 Recovery = 98.96%								
Cd 228.802†	543.3	0.0498	mg/L	0.00120	0.0498	mg/L	0.00120	2.41%
QC value within limits for Cd 228.802 Recovery = 99.66%								
Co 228.616†	2060.0	0.200	mg/L	0.0034	0.200	mg/L	0.0034	1.68%
QC value within limits for Co 228.616 Recovery = 100.13%								
Cr 267.716†	32088.4	0.504	mg/L	0.0175	0.504	mg/L	0.0175	3.47%
QC value within limits for Cr 267.716 Recovery = 100.75%								
Cu 327.393†	48339.8	0.492	mg/L	0.0192	0.492	mg/L	0.0192	3.91%
QC value within limits for Cu 327.393 Recovery = 98.42%								
Fe 239.562†	86.9	3.94	mg/L	0.134	3.94	mg/L	0.134	3.41%
QC value within limits for Fe 239.562 Recovery = 98.41%								
Mg 279.077†	811.9	10.1	mg/L	0.09	10.1	mg/L	0.09	0.90%
QC value within limits for Mg 279.077 Recovery = 100.74%								
Mn 257.610†	133403.0	0.517	mg/L	0.0199	0.517	mg/L	0.0199	3.86%
QC value within limits for Mn 257.610 Recovery = 103.43%								
Mo 202.031†	7205.7	1.01	mg/L	0.038	1.01	mg/L	0.038	3.78%
QC value within limits for Mo 202.031 Recovery = 100.55%								
Ni 231.604†	8790.9	0.509	mg/L	0.0186	0.509	mg/L	0.0186	3.66%
QC value within limits for Ni 231.604 Recovery = 101.71%								
Pb 220.353†	1452.6	0.511	mg/L	0.0120	0.511	mg/L	0.0120	2.35%
QC value within limits for Pb 220.353 Recovery = 102.25%								
Sb 206.836†	1002.1	1.20	mg/L	0.022	1.20	mg/L	0.022	1.83%
QC value within limits for Sb 206.836 Recovery = 100.31%								
Se 196.026†	254.9	0.399	mg/L	0.0135	0.399	mg/L	0.0135	3.39%
QC value within limits for Se 196.026 Recovery = 99.85%								
Si 251.611†	91666.7	5.02	mg/L	0.197	5.02	mg/L	0.197	3.93%
QC value within limits for Si 251.611 Recovery = 100.31%								
Sn 189.927†	2686.7	1.02	mg/L	0.017	1.02	mg/L	0.017	1.63%
QC value within limits for Sn 189.927 Recovery = 101.77%								
Ti 334.940†	487013.2	1.02	mg/L	0.003	1.02	mg/L	0.003	0.28%
QC value within limits for Ti 334.940 Recovery = 102.28%								
Tl 190.801†	437.2	0.512	mg/L	0.0081	0.512	mg/L	0.0081	1.58%
QC value within limits for Tl 190.801 Recovery = 102.46%								
V 290.880†	86650.6	1.01	mg/L	0.040	1.01	mg/L	0.040	4.01%
QC value within limits for V 290.880 Recovery = 100.80%								
Zn 206.200†	14247.9	1.02	mg/L	0.035	1.02	mg/L	0.035	3.41%
QC value within limits for Zn 206.200 Recovery = 101.69%								
K 766.490†	49061.4	49.3	mg/L	0.83	49.3	mg/L	0.83	1.69%
QC value within limits for K 766.490 Recovery = 98.61%								
Na 589.592†	231166.2	50.1	mg/L	0.93	50.1	mg/L	0.93	1.86%
QC value within limits for Na 589.592 Recovery = 100.29%								
Sr 407.771†	515487.5	0.960	mg/L	0.1373	0.960	mg/L	0.1373	14.30%

Approved: January 31, 2012

```
   QC value within limits for Sr 407.771  Recovery = 96.02%
Li 670.784†          38064.8        1.06 mg/L        0.029        1.06 mg/L        0.029   2.70%
   QC value within limits for Li 670.784  Recovery = 105.95%
All analyte(s) passed QC.
```

Sequence No.: 6 **Autosampler Location: 1**
Sample ID: CCB **Date Collected: 1/30/2012 2:11:19 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: CCB

Analyte	Back Pressure	Flow
All	147.0 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	3740835.9						76524.17	2.05%
YRADIAL	132694.2						7218.92	5.44%
Ga 417.206	766224.6						14627.18	1.91%
GaRADIAL	20363.2						3755.91	18.44%
Ag 328.068†	-176.0	-0.00325	mg/L	0.000097	-0.00325	mg/L	0.000097	2.99%
QC value within limits for Ag 328.068 Recovery = Not calculated								
Al 396.153†	20.4	-0.0343	mg/L	0.00116	-0.0343	mg/L	0.00116	3.37%
QC value within limits for Al 396.153 Recovery = Not calculated								
As 188.979†	-0.6	0.00350	mg/L	0.005257	0.00350	mg/L	0.005257	150.01%
QC value within limits for As 188.979 Recovery = Not calculated								
Ba 233.527†	0.0	-0.00523	mg/L	0.000110	-0.00523	mg/L	0.000110	2.11%
QC value less than the lower limit for Ba 233.527 Recovery = Not calculated								
Be 234.861†	26.1	-0.00022	mg/L	0.000013	-0.00022	mg/L	0.000013	5.94%
QC value within limits for Be 234.861 Recovery = Not calculated								
B 249.677†	61.2	-0.00072	mg/L	0.000310	-0.00072	mg/L	0.000310	43.07%
QC value within limits for B 249.677 Recovery = Not calculated								
Ca 227.546†	1.8	-0.0514	mg/L	0.07802	-0.0514	mg/L	0.07802	151.73%
QC value within limits for Ca 227.546 Recovery = Not calculated								
Cd 228.802†	-4.5	-0.00044	mg/L	0.000390	-0.00044	mg/L	0.000390	88.11%
QC value within limits for Cd 228.802 Recovery = Not calculated								
Co 228.616†	-0.5	-0.00055	mg/L	0.000435	-0.00055	mg/L	0.000435	79.41%
QC value within limits for Co 228.616 Recovery = Not calculated								
Cr 267.716†	10.7	-0.00272	mg/L	0.000134	-0.00272	mg/L	0.000134	4.95%
QC value within limits for Cr 267.716 Recovery = Not calculated								
Cu 327.393†	15.1	-0.00283	mg/L	0.000754	-0.00283	mg/L	0.000754	26.70%
QC value within limits for Cu 327.393 Recovery = Not calculated								
Fe 239.562†	0.5	-0.00805	mg/L	0.023619	-0.00805	mg/L	0.023619	293.23%
QC value within limits for Fe 239.562 Recovery = Not calculated								
Mg 279.077†	-1.2	-0.0641	mg/L	0.01088	-0.0641	mg/L	0.01088	16.98%
QC value within limits for Mg 279.077 Recovery = Not calculated								
Mn 257.610†	26.4	-0.00402	mg/L	0.000029	-0.00402	mg/L	0.000029	0.73%
QC value within limits for Mn 257.610 Recovery = Not calculated								
Mo 202.031†	0.4	-0.00458	mg/L	0.000980	-0.00458	mg/L	0.000980	21.41%
QC value within limits for Mo 202.031 Recovery = Not calculated								
Ni 231.604†	-5.0	-0.00287	mg/L	0.000198	-0.00287	mg/L	0.000198	6.90%
QC value within limits for Ni 231.604 Recovery = Not calculated								
Pb 220.353†	-1.4	-0.00035	mg/L	0.001213	-0.00035	mg/L	0.001213	351.50%
QC value within limits for Pb 220.353 Recovery = Not calculated								
Sb 206.836†	0.7	-0.00269	mg/L	0.003904	-0.00269	mg/L	0.003904	144.95%
QC value within limits for Sb 206.836 Recovery = Not calculated								
Se 196.026†	-2.5	0.00028	mg/L	0.002672	0.00028	mg/L	0.002672	971.75%
QC value within limits for Se 196.026 Recovery = Not calculated								
Si 251.611†	-16.7	-0.0391	mg/L	0.00066	-0.0391	mg/L	0.00066	1.69%
QC value within limits for Si 251.611 Recovery = Not calculated								
Sn 189.927†	0.9	-0.00198	mg/L	0.000537	-0.00198	mg/L	0.000537	27.09%
QC value within limits for Sn 189.927 Recovery = Not calculated								
Ti 334.940†	2.3	-0.00314	mg/L	0.000046	-0.00314	mg/L	0.000046	1.47%
QC value within limits for Ti 334.940 Recovery = Not calculated								
Tl 190.801†	0.2	-0.00332	mg/L	0.005075	-0.00332	mg/L	0.005075	152.73%
QC value within limits for Tl 190.801 Recovery = Not calculated								
V 290.880†	16.5	-0.00350	mg/L	0.001357	-0.00350	mg/L	0.001357	38.80%

Approved: January 31, 2012

QC value within limits for V 290.880 Recovery = Not calculated

Zn 206.200†	-2.3	-0.00491 mg/L	0.000179	-0.00491 mg/L	0.000179	3.65%

QC value within limits for Zn 206.200 Recovery = Not calculated

K 766.490†	3.2	0.0661 mg/L	0.03633	0.0661 mg/L	0.03633	54.98%

QC value within limits for K 766.490 Recovery = Not calculated

Na 589.592†	146.8	0.0786 mg/L	0.02929	0.0786 mg/L	0.02929	37.28%

QC value within limits for Na 589.592 Recovery = Not calculated

Sr 407.771†	-3.5	-0.00543 mg/L	0.000052	-0.00543 mg/L	0.000052	0.96%

QC value within limits for Sr 407.771 Recovery = Not calculated

Li 670.784†	146.2	-0.00506 mg/L	0.000800	-0.00506 mg/L	0.000800	15.82%

QC value within limits for Li 670.784 Recovery = Not calculated

QC Failed. Continue with analysis.

Sequence No.: 7 **Autosampler Location: 18**
Sample ID: PBW 46 WG387850-02 **Date Collected: 1/30/2012 2:18:07 PM**
Analyst: SLP **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: PBW 46 WG387850-02

Analyte	Back Pressure	Flow
All	148.0 kPa	0.50 L/min

Mean Data: PBW 46 WG387850-02

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3800186.2						63815.43	1.68%
YRADIAL	140916.5						3513.69	2.49%
Ga 417.206	794202.9						10530.82	1.33%
GaRADIAL	21427.0						3491.74	16.30%
Ag 328.068†	-190.5	-0.00336	mg/L	0.000671	-0.00336	mg/L	0.000671	19.95%
Al 396.153†	20.1	-0.0345	mg/L	0.00577	-0.0345	mg/L	0.00577	16.73%
As 188.979†	2.2	0.00852	mg/L	0.003251	0.00852	mg/L	0.003251	38.16%
Ba 233.527†	4.8	-0.00507	mg/L	0.000136	-0.00507	mg/L	0.000136	2.69%
Be 234.861†	44.4	-0.00015	mg/L	0.000062	-0.00015	mg/L	0.000062	41.38%
B 249.677†	-12.2	-0.00352	mg/L	0.000457	-0.00352	mg/L	0.000457	13.01%
Ca 227.546†	5.6	0.0119	mg/L	0.03581	0.0119	mg/L	0.03581	301.92%
Cd 228.802†	-4.5	-0.00043	mg/L	0.000296	-0.00043	mg/L	0.000296	68.59%
Co 228.616†	1.0	-0.00040	mg/L	0.000347	-0.00040	mg/L	0.000347	87.24%
Cr 267.716†	3.6	-0.00283	mg/L	0.000085	-0.00283	mg/L	0.000085	3.02%
Cu 327.393†	-48.4	-0.00348	mg/L	0.000872	-0.00348	mg/L	0.000872	25.07%
Fe 239.562†	-0.7	-0.0631	mg/L	0.03554	-0.0631	mg/L	0.03554	56.31%
Mg 279.077†	-2.9	-0.0850	mg/L	0.00584	-0.0850	mg/L	0.00584	6.87%
Mn 257.610†	63.0	-0.00388	mg/L	0.000034	-0.00388	mg/L	0.000034	0.88%
Mo 202.031†	-1.9	-0.00490	mg/L	0.000508	-0.00490	mg/L	0.000508	10.35%
Ni 231.604†	0.5	-0.00255	mg/L	0.000611	-0.00255	mg/L	0.000611	23.97%
Pb 220.353†	-5.6	-0.00180	mg/L	0.001025	-0.00180	mg/L	0.001025	57.02%
Sb 206.836†	-0.6	-0.00423	mg/L	0.000774	-0.00423	mg/L	0.000774	18.29%
Se 196.026†	-5.9	-0.00491	mg/L	0.002045	-0.00491	mg/L	0.002045	41.62%
Si 251.611†	88.5	-0.0333	mg/L	0.00092	-0.0333	mg/L	0.00092	2.77%
Sn 189.927†	-2.4	-0.00323	mg/L	0.000861	-0.00323	mg/L	0.000861	26.67%
Ti 334.940†	-77.0	-0.00330	mg/L	0.000059	-0.00330	mg/L	0.000059	1.80%
Tl 190.801†	3.1	0.00005	mg/L	0.005093	0.00005	mg/L	0.005093	>999.9%
V 290.880†	94.5	-0.00258	mg/L	0.000667	-0.00258	mg/L	0.000667	25.79%
Zn 206.200†	17.0	-0.00353	mg/L	0.000273	-0.00353	mg/L	0.000273	7.73%
K 766.490†	59.0	0.120	mg/L	0.0348	0.120	mg/L	0.0348	29.00%
Na 589.592†	-96.1	0.0290	mg/L	0.01474	0.0290	mg/L	0.01474	50.79%
Sr 407.771†	28.1	-0.00536	mg/L	0.000048	-0.00536	mg/L	0.000048	0.89%
Li 670.784†	165.6	-0.00451	mg/L	0.002029	-0.00451	mg/L	0.002029	44.94%

Sequence No.: 8 **Autosampler Location: 19**
Sample ID: LCSW 46 WG387850-03 **Date Collected: 1/30/2012 2:24:57 PM**
Analyst: SLP **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: LCSW 46 WG387850-03

Approved: January 31, 2012

Analyte	Back Pressure	Flow
All	147.0 kPa	0.50 L/min

Mean Data: LCSW 46 WG387850-03

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3716389.6						27641.16	0.74%
YRADIAL	139864.9						8548.34	6.11%
Ga 417.206	834922.4						9495.13	1.14%
GaRADIAL	23626.3						3542.88	15.00%
Ag 328.068†	24973.8	0.197	mg/L	0.0017	0.197	mg/L	0.0017	0.84%
Al 396.153†	8545.1	5.08	mg/L	0.047	5.08	mg/L	0.047	0.92%
As 188.979†	104.4	0.189	mg/L	0.0032	0.189	mg/L	0.0032	1.71%
Ba 233.527†	15960.1	0.517	mg/L	0.0115	0.517	mg/L	0.0115	2.23%
Be 234.861†	7630.6	0.0249	mg/L	0.00034	0.0249	mg/L	0.00034	1.37%
B 249.677†	28946.6	1.00	mg/L	0.019	1.00	mg/L	0.019	1.85%
Ca 227.546†	338.9	4.98	mg/L	0.076	4.98	mg/L	0.076	1.53%
Cd 228.802†	266.9	0.0245	mg/L	0.00041	0.0245	mg/L	0.00041	1.66%
Co 228.616†	1037.1	0.101	mg/L	0.0009	0.101	mg/L	0.0009	0.90%
Cr 267.716†	16149.9	0.252	mg/L	0.0040	0.252	mg/L	0.0040	1.59%
Cu 327.393†	24340.7	0.246	mg/L	0.0036	0.246	mg/L	0.0036	1.46%
Fe 239.562†	45.3	2.04	mg/L	0.009	2.04	mg/L	0.009	0.45%
Mg 279.077†	433.1	5.35	mg/L	0.167	5.35	mg/L	0.167	3.13%
Mn 257.610†	66430.0	0.256	mg/L	0.0042	0.256	mg/L	0.0042	1.64%
Mo 202.031†	3630.9	0.504	mg/L	0.0114	0.504	mg/L	0.0114	2.26%
Ni 231.604†	4496.5	0.259	mg/L	0.0024	0.259	mg/L	0.0024	0.91%
Pb 220.353†	733.2	0.258	mg/L	0.0010	0.258	mg/L	0.0010	0.38%
Sb 206.836†	494.9	0.593	mg/L	0.0044	0.593	mg/L	0.0044	0.75%
Se 196.026†	127.5	0.202	mg/L	0.0081	0.202	mg/L	0.0081	4.02%
Si 251.611†	47263.0	2.57	mg/L	0.038	2.57	mg/L	0.038	1.49%
Sn 189.927†	1448.7	0.548	mg/L	0.0021	0.548	mg/L	0.0021	0.38%
Ti 334.940†	243313.9	0.509	mg/L	0.0021	0.509	mg/L	0.0021	0.41%
Tl 190.801†	225.9	0.263	mg/L	0.0033	0.263	mg/L	0.0033	1.26%
V 290.880†	43681.1	0.506	mg/L	0.0071	0.506	mg/L	0.0071	1.41%
Zn 206.200†	7251.3	0.515	mg/L	0.0065	0.515	mg/L	0.0065	1.27%
K 766.490†	24941.1	24.6	mg/L	0.23	24.6	mg/L	0.23	0.93%
Na 589.592†	120015.3	25.3	mg/L	0.56	25.3	mg/L	0.56	2.21%
Sr 407.771†	277734.9	0.515	mg/L	0.0659	0.515	mg/L	0.0659	12.80%
Li 670.784†	19606.5	0.541	mg/L	0.0147	0.541	mg/L	0.0147	2.71%

Sequence No.: 9 **Autosampler Location: 20**
Sample ID: L1201061301 WG387850-01 **Date Collected: 1/30/2012 2:31:52 PM**
Analyst: SLP **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1201061301 WG387850-01

Analyte	Back Pressure	Flow
All	148.0 kPa	0.50 L/min

Mean Data: L1201061301 WG387850-01

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3752285.3						28561.70	0.76%
YRADIAL	141278.7						7583.33	5.37%
Ga 417.206	873159.0						2582.93	0.30%
GaRADIAL	22007.6						4296.60	19.52%
Ag 328.068†	104.3	-0.00115	mg/L	0.000572	-0.00115	mg/L	0.000572	49.91%
Al 396.153†	50.2	-0.0164	mg/L	0.00194	-0.0164	mg/L	0.00194	11.84%
Saturated within auto integration window (code 4)								
As 188.979†	11.7	0.0238	mg/L	0.01015	0.0238	mg/L	0.01015	42.66%
Ba 233.527†	2298.2	0.0697	mg/L	0.00077	0.0697	mg/L	0.00077	1.11%
Be 234.861†	119.3	0.00005	mg/L	0.000057	0.00005	mg/L	0.000057	108.88%
B 249.677†	918.3	0.0297	mg/L	0.00071	0.0297	mg/L	0.00071	2.37%
Ca 227.546†	6172.7	92.5	mg/L	0.48	92.5	mg/L	0.48	0.51%
Cd 228.802†	-6.2	-0.00056	mg/L	0.000081	-0.00056	mg/L	0.000081	14.63%
Co 228.616†	-3.9	-0.00090	mg/L	0.000191	-0.00090	mg/L	0.000191	21.15%
Cr 267.716†	174.5	-0.00014	mg/L	0.000274	-0.00014	mg/L	0.000274	196.90%

Approved: January 31, 2012

Cu 327.393†	-221.7	-0.00523	mg/L	0.000768	-0.00523	mg/L	0.000768	14.68%
Fe 239.562†	4.1	0.152	mg/L	0.0855	0.152	mg/L	0.0855	56.17%
Mg 279.077†	1330.9	16.5	mg/L	0.49	16.5	mg/L	0.49	2.98%
Mn 257.610†	153.9	-0.00296	mg/L	0.000045	-0.00296	mg/L	0.000045	1.52%
Mo 202.031†	0.8	-0.00452	mg/L	0.001380	-0.00452	mg/L	0.001380	30.53%
Ni 231.604†	-4.0	-0.00286	mg/L	0.000392	-0.00286	mg/L	0.000392	13.69%
Pb 220.353†	-15.3	-0.00075	mg/L	0.000465	-0.00075	mg/L	0.000465	62.15%
Sb 206.836†	14.4	0.0138	mg/L	0.00359	0.0138	mg/L	0.00359	26.11%
Se 196.026†	-20.8	0.00001	mg/L	0.007037	0.00001	mg/L	0.007037	>999.9%
Si 251.611†	333296.8	18.4	mg/L	0.13	18.4	mg/L	0.13	0.69%
Sn 189.927†	2.0	-0.00157	mg/L	0.000571	-0.00157	mg/L	0.000571	36.38%
Ti 334.940†	-412.2	-0.00309	mg/L	0.000113	-0.00309	mg/L	0.000113	3.65%
Tl 190.801†	78.0	0.0500	mg/L	0.00161	0.0500	mg/L	0.00161	3.23%
V 290.880†	-109.9	-0.00358	mg/L	0.000430	-0.00358	mg/L	0.000430	12.00%
Zn 206.200†	139.1	0.00521	mg/L	0.000384	0.00521	mg/L	0.000384	7.36%
K 766.490†	2956.6	2.90	mg/L	0.083	2.90	mg/L	0.083	2.85%
Na 589.592†	161293.2	34.3	mg/L	1.71	34.3	mg/L	1.71	4.99%
Sr 407.771†	331023.5	0.615	mg/L	0.0875	0.615	mg/L	0.0875	14.22%
Li 670.784†	685.3	0.0101	mg/L	0.00173	0.0101	mg/L	0.00173	17.20%

Sequence No.: 10 **Autosampler Location: 21**
Sample ID: L1201061301DL WG387954-04 **Date Collected: 1/30/2012 2:38:47 PM**
Analyst: SLP **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1201061301DL WG387954-04

Analyte	Back Pressure	Flow
All	147.0 kPa	0.50 L/min

Mean Data: L1201061301DL WG387954-04

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3670941.5						18542.41	0.51%
YRADIAL	136850.4						8310.74	6.07%
Ga 417.206	809719.0						7419.45	0.92%
GaRADIAL	22653.3						4129.10	18.23%
Ag 328.068†	-110.4	-0.00276	mg/L	0.000303	-0.00276	mg/L	0.000303	11.01%
Al 396.153†	39.4	-0.0229	mg/L	0.00340	-0.0229	mg/L	0.00340	14.87%
As 188.979†	4.0	0.0114	mg/L	0.00113	0.0114	mg/L	0.00113	9.89%
Ba 233.527†	477.2	0.0103	mg/L	0.00013	0.0103	mg/L	0.00013	1.25%
Be 234.861†	73.2	-0.00006	mg/L	0.000029	-0.00006	mg/L	0.000029	47.38%
B 249.677†	183.4	0.00336	mg/L	0.000311	0.00336	mg/L	0.000311	9.23%
Ca 227.546†	1279.8	19.1	mg/L	0.19	19.1	mg/L	0.19	1.00%
Cd 228.802†	-6.0	-0.00056	mg/L	0.000367	-0.00056	mg/L	0.000367	65.12%
Co 228.616†	-5.9	-0.00108	mg/L	0.000403	-0.00108	mg/L	0.000403	37.22%
Cr 267.716†	45.7	-0.00216	mg/L	0.000038	-0.00216	mg/L	0.000038	1.76%
Cu 327.393†	4.6	-0.00293	mg/L	0.000169	-0.00293	mg/L	0.000169	5.74%
Fe 239.562†	-0.1	-0.0390	mg/L	0.09760	-0.0390	mg/L	0.09760	250.32%
Mg 279.077†	283.4	3.48	mg/L	0.128	3.48	mg/L	0.128	3.67%
Mn 257.610†	45.1	-0.00383	mg/L	0.000024	-0.00383	mg/L	0.000024	0.62%
Mo 202.031†	-5.1	-0.00535	mg/L	0.000485	-0.00535	mg/L	0.000485	9.07%
Ni 231.604†	8.3	-0.00211	mg/L	0.000087	-0.00211	mg/L	0.000087	4.12%
Pb 220.353†	-3.8	-0.00025	mg/L	0.002601	-0.00025	mg/L	0.002601	>999.9%
Sb 206.836†	5.8	0.00344	mg/L	0.003548	0.00344	mg/L	0.003548	103.02%
Se 196.026†	-10.4	-0.00606	mg/L	0.001342	-0.00606	mg/L	0.001342	22.17%
Si 251.611†	70927.5	3.88	mg/L	0.033	3.88	mg/L	0.033	0.85%
Sn 189.927†	-1.3	-0.00281	mg/L	0.000825	-0.00281	mg/L	0.000825	29.34%
Ti 334.940†	-85.3	-0.00313	mg/L	0.000155	-0.00313	mg/L	0.000155	4.96%
Tl 190.801†	26.5	0.0195	mg/L	0.00604	0.0195	mg/L	0.00604	30.88%
V 290.880†	-35.7	-0.00380	mg/L	0.001005	-0.00380	mg/L	0.001005	26.41%
Zn 206.200†	39.4	-0.00193	mg/L	0.000117	-0.00193	mg/L	0.000117	6.08%
K 766.490†	604.5	0.642	mg/L	0.0793	0.642	mg/L	0.0793	12.34%
Na 589.592†	32778.9	6.79	mg/L	0.113	6.79	mg/L	0.113	1.67%
Sr 407.771†	71159.5	0.128	mg/L	0.0168	0.128	mg/L	0.0168	13.11%
Li 670.784†	228.3	-0.00275	mg/L	0.001995	-0.00275	mg/L	0.001995	72.52%

Sequence No.: 11 **Autosampler Location: 22**

Approved: January 31, 2012

Sample ID: L1201061301PS WG387954-03 **Date Collected: 1/30/2012 2:45:38 PM**
Analyst: SLP **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1201061301PS WG387954-03

Analyte	Back Pressure	Flow
All	148.0 kPa	0.50 L/min

Mean Data: L1201061301PS WG387954-03

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3691237.8						54161.74	1.47%
YRADIAL	135767.0						7776.95	5.73%
Ga 417.206	854889.1						10691.99	1.25%
GaRADIAL	21197.6						3968.41	18.72%
Ag 328.068†	24257.1	0.192	mg/L	0.0015	0.192	mg/L	0.0015	0.80%
Al 396.153†	8328.7	4.95	mg/L	0.065	4.95	mg/L	0.065	1.31%
As 188.979†	115.6	0.208	mg/L	0.0071	0.208	mg/L	0.0071	3.41%
Ba 233.527†	17881.8	0.579	mg/L	0.0071	0.579	mg/L	0.0071	1.23%
Be 234.861†	7585.0	0.0247	mg/L	0.00027	0.0247	mg/L	0.00027	1.09%
B 249.677†	30219.8	1.05	mg/L	0.006	1.05	mg/L	0.006	0.57%
Ca 227.546†	5970.8	89.5	mg/L	0.90	89.5	mg/L	0.90	1.00%
Cd 228.802†	250.0	0.0230	mg/L	0.00002	0.0230	mg/L	0.00002	0.08%
Co 228.616†	984.5	0.0954	mg/L	0.00118	0.0954	mg/L	0.00118	1.24%
Cr 267.716†	16231.5	0.253	mg/L	0.0033	0.253	mg/L	0.0033	1.32%
Cu 327.393†	22837.1	0.231	mg/L	0.0024	0.231	mg/L	0.0024	1.03%
Fe 239.562†	48.5	2.18	mg/L	0.020	2.18	mg/L	0.020	0.94%
Mg 279.077†	1663.0	20.7	mg/L	0.59	20.7	mg/L	0.59	2.87%
Mn 257.610†	65744.5	0.253	mg/L	0.0029	0.253	mg/L	0.0029	1.14%
Mo 202.031†	3659.1	0.508	mg/L	0.0068	0.508	mg/L	0.0068	1.34%
Ni 231.604†	4276.9	0.246	mg/L	0.0031	0.246	mg/L	0.0031	1.25%
Pb 220.353†	701.0	0.251	mg/L	0.0046	0.251	mg/L	0.0046	1.82%
Sb 206.836†	491.2	0.588	mg/L	0.0020	0.588	mg/L	0.0020	0.34%
Se 196.026†	108.4	0.198	mg/L	0.0073	0.198	mg/L	0.0073	3.69%
Si 251.611†	349258.2	19.3	mg/L	0.12	19.3	mg/L	0.12	0.63%
Sn 189.927†	1390.4	0.526	mg/L	0.0051	0.526	mg/L	0.0051	0.97%
Ti 334.940†	242610.6	0.509	mg/L	0.0027	0.509	mg/L	0.0027	0.53%
Tl 190.801†	287.1	0.300	mg/L	0.0047	0.300	mg/L	0.0047	1.57%
V 290.880†	43829.0	0.509	mg/L	0.0060	0.509	mg/L	0.0060	1.17%
Zn 206.200†	7223.5	0.513	mg/L	0.0081	0.513	mg/L	0.0081	1.57%
K 766.490†	27106.7	26.8	mg/L	0.43	26.8	mg/L	0.43	1.61%
Na 589.592†	260618.9	57.0	mg/L	0.57	57.0	mg/L	0.57	1.00%
Sr 407.771†	546484.7	1.02	mg/L	0.149	1.02	mg/L	0.149	14.65%
Li 670.784†	19808.4	0.547	mg/L	0.0145	0.547	mg/L	0.0145	2.66%

Sequence No.: 12 **Autosampler Location: 23**
Sample ID: L1201061301S WG387850-04 **Date Collected: 1/30/2012 2:52:35 PM**
Analyst: SLP **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1201061301S WG387850-04

Analyte	Back Pressure	Flow
All	148.0 kPa	0.50 L/min

Mean Data: L1201061301S WG387850-04

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3620767.8						36657.47	1.01%
YRADIAL	137795.8						6059.85	4.40%
Ga 417.206	843008.3						11292.97	1.34%
GaRADIAL	20909.6						3558.27	17.02%
Ag 328.068†	25120.2	0.198	mg/L	0.0033	0.198	mg/L	0.0033	1.65%
Al 396.153†	8594.8	5.11	mg/L	0.051	5.11	mg/L	0.051	1.00%
As 188.979†	118.5	0.212	mg/L	0.0042	0.212	mg/L	0.0042	1.96%
Ba 233.527†	18742.9	0.607	mg/L	0.0106	0.607	mg/L	0.0106	1.75%

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Be 234.861†	7798.5	0.0255 mg/L	0.00054	0.0255 mg/L	0.00054	2.11%
B 249.677†	31283.5	1.08 mg/L	0.019	1.08 mg/L	0.019	1.71%
Ca 227.546†	6952.5	104 mg/L	1.5	104 mg/L	1.5	1.43%
Cd 228.802†	256.9	0.0236 mg/L	0.00003	0.0236 mg/L	0.00003	0.13%
Co 228.616†	1015.4	0.0984 mg/L	0.00064	0.0984 mg/L	0.00064	0.65%
Cr 267.716†	16898.7	0.264 mg/L	0.0031	0.264 mg/L	0.0031	1.16%
Cu 327.393†	23602.8	0.239 mg/L	0.0046	0.239 mg/L	0.0046	1.94%
Fe 239.562†	47.2	2.12 mg/L	0.025	2.12 mg/L	0.025	1.17%
Mg 279.077†	1806.1	22.5 mg/L	0.46	22.5 mg/L	0.46	2.07%
Mn 257.610†	68171.7	0.263 mg/L	0.0028	0.263 mg/L	0.0028	1.07%
Mo 202.031†	3786.7	0.526 mg/L	0.0055	0.526 mg/L	0.0055	1.05%
Ni 231.604†	4383.6	0.252 mg/L	0.0026	0.252 mg/L	0.0026	1.03%
Pb 220.353†	722.9	0.259 mg/L	0.0020	0.259 mg/L	0.0020	0.77%
Sb 206.836†	502.0	0.601 mg/L	0.0103	0.601 mg/L	0.0103	1.70%
Se 196.026†	104.0	0.196 mg/L	0.0103	0.196 mg/L	0.0103	5.26%
Si 251.611†	395192.6	21.8 mg/L	0.11	21.8 mg/L	0.11	0.50%
Sn 189.927†	1500.2	0.567 mg/L	0.0089	0.567 mg/L	0.0089	1.57%
Ti 334.940†	249723.2	0.524 mg/L	0.0013	0.524 mg/L	0.0013	0.24%
Tl 190.801†	293.2	0.301 mg/L	0.0044	0.301 mg/L	0.0044	1.45%
V 290.880†	45620.4	0.530 mg/L	0.0060	0.530 mg/L	0.0060	1.13%
Zn 206.200†	7395.0	0.526 mg/L	0.0085	0.526 mg/L	0.0085	1.62%
K 766.490†	28279.8	28.0 mg/L	0.44	28.0 mg/L	0.44	1.56%
Na 589.592†	293001.5	64.7 mg/L	1.70	64.7 mg/L	1.70	2.63%
Sr 407.771†	600821.2	1.12 mg/L	0.170	1.12 mg/L	0.170	15.16%
Li 670.784†	20621.3	0.570 mg/L	0.0171	0.570 mg/L	0.0171	3.00%

Sequence No.: 13 **Autosampler Location: 24**
Sample ID: L1201061301SD WG387850-05 **Date Collected: 1/30/2012 2:59:27 PM**
Analyst: SLP **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1201061301SD WG387850-05

Analyte	Back Pressure	Flow
All	148.0 kPa	0.50 L/min

Mean Data: L1201061301SD WG387850-05

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3678792.3						32151.65	0.87%
YRADIAL	136515.6						5518.03	4.04%
Ga 417.206	854899.3						6036.54	0.71%
GaRADIAL	21804.3						4295.32	19.70%
Ag 328.068†	24096.9	0.190	mg/L	0.0011	0.190	mg/L	0.0011	0.57%
Al 396.153†	8403.2	5.00	mg/L	0.014	5.00	mg/L	0.014	0.28%
As 188.979†	117.1	0.210	mg/L	0.0051	0.210	mg/L	0.0051	2.45%
Ba 233.527†	17941.0	0.581	mg/L	0.0063	0.581	mg/L	0.0063	1.08%
Be 234.861†	7506.4	0.0245	mg/L	0.00041	0.0245	mg/L	0.00041	1.69%
B 249.677†	30019.7	1.04	mg/L	0.014	1.04	mg/L	0.014	1.36%
Ca 227.546†	6539.7	98.0	mg/L	1.11	98.0	mg/L	1.11	1.13%
Cd 228.802†	252.2	0.0232	mg/L	0.00037	0.0232	mg/L	0.00037	1.59%
Co 228.616†	992.2	0.0961	mg/L	0.00106	0.0961	mg/L	0.00106	1.10%
Cr 267.716†	16142.1	0.252	mg/L	0.0029	0.252	mg/L	0.0029	1.15%
Cu 327.393†	22570.3	0.228	mg/L	0.0023	0.228	mg/L	0.0023	1.03%
Fe 239.562†	48.8	2.20	mg/L	0.027	2.20	mg/L	0.027	1.24%
Mg 279.077†	1757.2	21.9	mg/L	0.43	21.9	mg/L	0.43	1.96%
Mn 257.610†	65487.3	0.252	mg/L	0.0026	0.252	mg/L	0.0026	1.05%
Mo 202.031†	3693.3	0.513	mg/L	0.0059	0.513	mg/L	0.0059	1.14%
Ni 231.604†	4272.4	0.246	mg/L	0.0032	0.246	mg/L	0.0032	1.29%
Pb 220.353†	703.2	0.252	mg/L	0.0017	0.252	mg/L	0.0017	0.68%
Sb 206.836†	492.7	0.590	mg/L	0.0077	0.590	mg/L	0.0077	1.31%
Se 196.026†	104.7	0.195	mg/L	0.0047	0.195	mg/L	0.0047	2.41%
Si 251.611†	375765.4	20.7	mg/L	0.02	20.7	mg/L	0.02	0.09%
Sn 189.927†	1485.3	0.562	mg/L	0.0045	0.562	mg/L	0.0045	0.80%
Ti 334.940†	243519.4	0.511	mg/L	0.0017	0.511	mg/L	0.0017	0.34%
Tl 190.801†	290.0	0.300	mg/L	0.0061	0.300	mg/L	0.0061	2.02%
V 290.880†	43540.6	0.506	mg/L	0.0067	0.506	mg/L	0.0067	1.33%
Zn 206.200†	7075.4	0.503	mg/L	0.0070	0.503	mg/L	0.0070	1.39%
K 766.490†	27535.8	27.2	mg/L	0.44	27.2	mg/L	0.44	1.62%

Approved: January 31, 2012

Na 589.592†	271500.3	59.6 mg/L	3.66	59.6 mg/L	3.66	6.13%
Sr 407.771†	577293.0	1.08 mg/L	0.149	1.08 mg/L	0.149	13.88%
Li 670.784†	20072.5	0.554 mg/L	0.0149	0.554 mg/L	0.0149	2.68%

Sequence No.: 14 **Autosampler Location: 25**
Sample ID: L1201061601 0.5 **Date Collected: 1/30/2012 3:06:19 PM**
Analyst: SLP **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1201061601 0.5

Analyte	Back Pressure	Flow
All	148.0 kPa	0.50 L/min

Mean Data: L1201061601 0.5

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3682714.9						51238.62	1.39%
YRADIAL	135526.0						8729.53	6.44%
Ga 417.206	849998.9						12282.27	1.44%
GaRADIAL	20589.0						3709.99	18.02%
Ag 328.068†	-122.9	-0.00291	mg/L	0.000479	-0.00291	mg/L	0.000479	16.44%
Al 396.153†	37.0	-0.0243	mg/L	0.00759	-0.0243	mg/L	0.00759	31.17%
As 188.979†	3.1	0.00997	mg/L	0.003052	0.00997	mg/L	0.003052	30.61%
Ba 233.527†	3561.9	0.111	mg/L	0.0002	0.111	mg/L	0.0002	0.19%
Be 234.861†	119.3	0.00005	mg/L	0.000013	0.00005	mg/L	0.000013	28.07%
B 249.677†	1010.5	0.0331	mg/L	0.00153	0.0331	mg/L	0.00153	4.61%
Ca 227.546†	731.0	10.9	mg/L	0.15	10.9	mg/L	0.15	1.42%
Cd 228.802†	-7.0	-0.00066	mg/L	0.000091	-0.00066	mg/L	0.000091	13.87%
Co 228.616†	-4.6	-0.00099	mg/L	0.000382	-0.00099	mg/L	0.000382	38.53%
Cr 267.716†	121.4	-0.00099	mg/L	0.000095	-0.00099	mg/L	0.000095	9.59%
Cu 327.393†	16.5	-0.00280	mg/L	0.000380	-0.00280	mg/L	0.000380	13.58%
Fe 239.562†	5.1	0.200	mg/L	0.0575	0.200	mg/L	0.0575	28.76%
Mg 279.077†	1332.5	16.6	mg/L	0.70	16.6	mg/L	0.70	4.21%
Mn 257.610†	5872.3	0.0207	mg/L	0.00034	0.0207	mg/L	0.00034	1.63%
Mo 202.031†	0.2	-0.00460	mg/L	0.000547	-0.00460	mg/L	0.000547	11.90%
Ni 231.604†	16.2	-0.00164	mg/L	0.000496	-0.00164	mg/L	0.000496	30.16%
Pb 220.353†	-2.4	-0.00016	mg/L	0.001124	-0.00016	mg/L	0.001124	687.82%
Sb 206.836†	1.2	-0.00207	mg/L	0.001543	-0.00207	mg/L	0.001543	74.52%
Se 196.026†	-7.8	-0.00447	mg/L	0.002195	-0.00447	mg/L	0.002195	49.13%
Si 251.611†	98304.9	5.40	mg/L	0.096	5.40	mg/L	0.096	1.78%
Sn 189.927†	-5.7	-0.00448	mg/L	0.000396	-0.00448	mg/L	0.000396	8.83%
Ti 334.940†	-22.4	-0.00308	mg/L	0.000160	-0.00308	mg/L	0.000160	5.19%
Tl 190.801†	14.1	0.00851	mg/L	0.003805	0.00851	mg/L	0.003805	44.72%
V 290.880†	-378.1	-0.00671	mg/L	0.000482	-0.00671	mg/L	0.000482	7.18%
Zn 206.200†	54.7	-0.00083	mg/L	0.000208	-0.00083	mg/L	0.000208	24.92%
K 766.490†	1219.6	1.03	mg/L	0.049	1.03	mg/L	0.049	4.77%
Na 589.592†	782040.4	213	mg/L	5.0	213	mg/L	5.0	2.33%
Sr 407.771†	200364.3	0.370	mg/L	0.0573	0.370	mg/L	0.0573	15.49%
Li 670.784†	747.5	0.0118	mg/L	0.00272	0.0118	mg/L	0.00272	23.04%

Sequence No.: 15 **Autosampler Location: 26**
Sample ID: L1201068603 **Date Collected: 1/30/2012 3:13:12 PM**
Analyst: SLP **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1201068603

Analyte	Back Pressure	Flow
All	148.0 kPa	0.50 L/min

Mean Data: L1201068603

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3667322.9						71273.11	1.94%
YRADIAL	135228.3						8117.16	6.00%

Approved: January 31, 2012

Ga 417.206	872340.8				24190.76	2.77%
GaRADIAL	21191.8				3752.05	17.71%
Ag 328.068†	312.0	0.00036 mg/L	0.000554	0.00036 mg/L	0.000554	153.54%
Al 396.153†	229.7	0.0915 mg/L	0.00359	0.0915 mg/L	0.00359	3.92%
As 188.979†	13.2	0.0242 mg/L	0.00302	0.0242 mg/L	0.00302	12.48%
Ba 233.527†	1891.1	0.0564 mg/L	0.00096	0.0564 mg/L	0.00096	1.70%
Be 234.861†	146.3	0.00015 mg/L	0.000041	0.00015 mg/L	0.000041	28.24%
B 249.677†	517.6	0.0156 mg/L	0.00055	0.0156 mg/L	0.00055	3.55%
Ca 227.546†	13687.1	205 mg/L	5.1	205 mg/L	5.1	2.47%
Cd 228.802†	-5.5	-0.00048 mg/L	0.000460	-0.00048 mg/L	0.000460	95.44%
Co 228.616†	-1.7	-0.00070 mg/L	0.000234	-0.00070 mg/L	0.000234	33.67%
Cr 267.716†	240.4	0.00090 mg/L	0.000141	0.00090 mg/L	0.000141	15.79%
Cu 327.393†	-402.6	-0.00707 mg/L	0.001023	-0.00707 mg/L	0.001023	14.46%
Fe 239.562†	3.5	0.128 mg/L	0.0070	0.128 mg/L	0.0070	5.48%
Mg 279.077†	3835.4	47.8 mg/L	1.49	47.8 mg/L	1.49	3.12%
Mn 257.610†	1704.8	0.00317 mg/L	0.000070	0.00317 mg/L	0.000070	2.20%
Mo 202.031†	-1.0	-0.00477 mg/L	0.000953	-0.00477 mg/L	0.000953	20.00%
Ni 231.604†	1.1	-0.00258 mg/L	0.000212	-0.00258 mg/L	0.000212	8.21%
Pb 220.353†	-16.7	0.00419 mg/L	0.000316	0.00419 mg/L	0.000316	7.52%
Sb 206.836†	15.9	0.0156 mg/L	0.00254	0.0156 mg/L	0.00254	16.31%
Se 196.026†	-25.9	0.0259 mg/L	0.00336	0.0259 mg/L	0.00336	12.96%
Si 251.611†	372677.5	20.6 mg/L	0.21	20.6 mg/L	0.21	1.01%
Sn 189.927†	-1.0	-0.00269 mg/L	0.000999	-0.00269 mg/L	0.000999	37.14%
Ti 334.940†	3019.1	0.00527 mg/L	0.000291	0.00527 mg/L	0.000291	5.52%
Tl 190.801†	97.5	0.0276 mg/L	0.00460	0.0276 mg/L	0.00460	16.68%
V 290.880†	-550.0	-0.00606 mg/L	0.001179	-0.00606 mg/L	0.001179	19.43%
Zn 206.200†	103.9	0.00270 mg/L	0.000611	0.00270 mg/L	0.000611	22.65%
K 766.490†	3780.3	3.69 mg/L	0.093	3.69 mg/L	0.093	2.53%
Na 589.592†	228413.3	49.5 mg/L	0.90	49.5 mg/L	0.90	1.82%
Sr 407.771†	688718.7	1.29 mg/L	0.189	1.29 mg/L	0.189	14.72%
Li 670.784†	795.5	0.0132 mg/L	0.00113	0.0132 mg/L	0.00113	8.57%

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Sequence No.: 16 **Autosampler Location: 6**
Sample ID: CCV **Date Collected: 1/30/2012 3:20:05 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: CCV

Analyte	Back Pressure	Flow
All	148.0 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	3699188.0						37575.10	1.02%
YRADIAL	138636.2						5601.87	4.04%
Ga 417.206	824298.3						9318.86	1.13%
GaRADIAL	20729.1						4314.63	20.81%
Ag 328.068†	49242.4	0.391	mg/L	0.0089	0.391	mg/L	0.0089	2.28%
QC value within limits for Ag 328.068 Recovery = 97.75%								
Al 396.153†	16751.9	10.0	mg/L	0.09	10.0	mg/L	0.09	0.91%
QC value within limits for Al 396.153 Recovery = 100.13%								
As 188.979†	216.3	0.388	mg/L	0.0065	0.388	mg/L	0.0065	1.67%
QC value within limits for As 188.979 Recovery = 96.90%								
Ba 233.527†	31664.1	1.03	mg/L	0.027	1.03	mg/L	0.027	2.60%
QC value within limits for Ba 233.527 Recovery = 103.02%								
Be 234.861†	15127.7	0.0497	mg/L	0.00124	0.0497	mg/L	0.00124	2.49%
QC value within limits for Be 234.861 Recovery = 99.35%								
B 249.677†	14274.5	0.498	mg/L	0.0173	0.498	mg/L	0.0173	3.48%
QC value within limits for B 249.677 Recovery = 99.54%								
Ca 227.546†	669.0	9.91	mg/L	0.158	9.91	mg/L	0.158	1.59%
QC value within limits for Ca 227.546 Recovery = 99.05%								
Cd 228.802†	537.4	0.0493	mg/L	0.00051	0.0493	mg/L	0.00051	1.03%
QC value within limits for Cd 228.802 Recovery = 98.59%								
Co 228.616†	2065.6	0.201	mg/L	0.0014	0.201	mg/L	0.0014	0.69%
QC value within limits for Co 228.616 Recovery = 100.40%								
Cr 267.716†	31929.3	0.501	mg/L	0.0102	0.501	mg/L	0.0102	2.04%
QC value within limits for Cr 267.716 Recovery = 100.25%								

Approved: January 31, 2012

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Cu 327.393†            47920.1       0.488 mg/L        0.0124       0.488 mg/L        0.0124   2.54%
   QC value within limits for Cu 327.393  Recovery = 97.56%
Fe 239.562†              86.2        3.91 mg/L         0.022        3.91 mg/L         0.022   0.55%
   QC value within limits for Fe 239.562  Recovery = 97.65%
Mg 279.077†             810.3        10.1 mg/L          0.15        10.1 mg/L          0.15   1.54%
   QC value within limits for Mg 279.077  Recovery = 100.54%
Mn 257.610†          132626.6       0.514 mg/L        0.0123       0.514 mg/L        0.0123   2.39%
   QC value within limits for Mn 257.610  Recovery = 102.83%
Mo 202.031†            7205.6        1.01 mg/L         0.016        1.01 mg/L         0.016   1.57%
   QC value within limits for Mo 202.031  Recovery = 100.55%
Ni 231.604†            8754.9       0.506 mg/L        0.0104       0.506 mg/L        0.0104   2.06%
   QC value within limits for Ni 231.604  Recovery = 101.29%
Pb 220.353†            1466.3       0.516 mg/L        0.0025       0.516 mg/L        0.0025   0.49%
   QC value within limits for Pb 220.353  Recovery = 103.20%
Sb 206.836†             993.0        1.19 mg/L         0.011        1.19 mg/L         0.011   0.95%
   QC value within limits for Sb 206.836  Recovery = 99.40%
Se 196.026†             256.0       0.401 mg/L        0.0091       0.401 mg/L        0.0091   2.28%
   QC value within limits for Se 196.026  Recovery = 100.28%
Si 251.611†           91256.8        4.99 mg/L         0.128        4.99 mg/L         0.128   2.57%
   QC value within limits for Si 251.611  Recovery = 99.86%
Sn 189.927†            2719.9        1.03 mg/L         0.007        1.03 mg/L         0.007   0.68%
   QC value within limits for Sn 189.927  Recovery = 103.03%
Ti 334.940†          487249.0        1.02 mg/L         0.001        1.02 mg/L         0.001   0.15%
   QC value within limits for Ti 334.940  Recovery = 102.33%
Tl 190.801†             440.1       0.516 mg/L        0.0029       0.516 mg/L        0.0029   0.57%
   QC value within limits for Tl 190.801  Recovery = 103.14%
V 290.880†            86652.4        1.01 mg/L         0.025        1.01 mg/L         0.025   2.52%
   QC value within limits for V 290.880  Recovery = 100.80%
Zn 206.200†           14144.6        1.01 mg/L         0.020        1.01 mg/L         0.020   2.02%
   QC value within limits for Zn 206.200  Recovery = 100.95%
K 766.490†            49441.1        49.7 mg/L          1.09        49.7 mg/L          1.09   2.20%
   QC value within limits for K 766.490  Recovery = 99.40%
Na 589.592†          232001.7        50.3 mg/L          2.26        50.3 mg/L          2.26   4.49%
   QC value within limits for Na 589.592  Recovery = 100.68%
Sr 407.771†          487931.9       0.909 mg/L        0.1359       0.909 mg/L        0.1359  14.96%
   Saturated within auto integration window (code 4)
   QC value within limits for Sr 407.771  Recovery = 90.85%
Li 670.784†           38870.2        1.08 mg/L         0.024        1.08 mg/L         0.024   2.22%
   QC value within limits for Li 670.784  Recovery = 108.21%
All analyte(s) passed QC.

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Sequence No.: 17                                  Autosampler Location: 1
Sample ID: CCB                                    Date Collected: 1/30/2012 3:27:00 PM
Analyst:                                          Data Type: Original
Initial Sample Wt:                                Initial Sample Vol:
Dilution:                                         Sample Prep Vol:

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Nebulizer Parameters: CCB
Analyte                  Back Pressure    Flow
All                      147.0 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            3727935.1                                                    24976.98   0.67%
YRADIAL               132646.7                                                     5095.39   3.84%
Ga 417.206            766722.3                                                    11196.98   1.46%
GaRADIAL               19087.2                                                     3580.45  18.76%
Ag 328.068†             -290.9    -0.00416 mg/L      0.000492    -0.00416 mg/L      0.000492  11.81%
   QC value less than the lower limit for Ag 328.068  Recovery = Not calculated
Al 396.153†               15.7     -0.0371 mg/L       0.00598     -0.0371 mg/L       0.00598  16.10%
   QC value within limits for Al 396.153  Recovery = Not calculated
As 188.979†               -0.4     0.00383 mg/L      0.004975     0.00383 mg/L      0.004975 130.03%
   QC value within limits for As 188.979  Recovery = Not calculated
Ba 233.527†               -3.6    -0.00535 mg/L      0.000167    -0.00535 mg/L      0.000167   3.12%
   QC value less than the lower limit for Ba 233.527  Recovery = Not calculated
Be 234.861†               57.0    -0.00011 mg/L      0.000046    -0.00011 mg/L      0.000046  41.20%
   QC value within limits for Be 234.861  Recovery = Not calculated
B 249.677†                81.7    -0.00020 mg/L      0.000815    -0.00020 mg/L      0.000815 410.61%
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Approved: January 31, 2012

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   QC value within limits for B 249.677  Recovery = Not calculated
Ca 227.546†                4.5    -0.00596 mg/L      0.052257    -0.00596 mg/L      0.052257 876.49%
   QC value within limits for Ca 227.546  Recovery = Not calculated
Cd 228.802†               -4.1    -0.00040 mg/L      0.000251    -0.00040 mg/L      0.000251  62.34%
   QC value within limits for Cd 228.802  Recovery = Not calculated
Co 228.616†               -3.1    -0.00080 mg/L      0.000235    -0.00080 mg/L      0.000235  29.53%
   QC value within limits for Co 228.616  Recovery = Not calculated
Cr 267.716†               14.2    -0.00266 mg/L      0.000003    -0.00266 mg/L      0.000003   0.13%
   QC value within limits for Cr 267.716  Recovery = Not calculated
Cu 327.393†              -56.3    -0.00356 mg/L      0.001157    -0.00356 mg/L      0.001157  32.53%
   QC value within limits for Cu 327.393  Recovery = Not calculated
Fe 239.562†               -0.4     -0.0495 mg/L       0.01720     -0.0495 mg/L       0.01720  34.72%
   QC value less than the lower limit for Fe 239.562  Recovery = Not calculated
Mg 279.077†               -1.5     -0.0673 mg/L       0.03273     -0.0673 mg/L       0.03273  48.60%
   QC value within limits for Mg 279.077  Recovery = Not calculated
Mn 257.610†                8.4    -0.00409 mg/L      0.000025    -0.00409 mg/L      0.000025   0.62%
   QC value within limits for Mn 257.610  Recovery = Not calculated
Mo 202.031†               -1.7    -0.00487 mg/L      0.000118    -0.00487 mg/L      0.000118   2.43%
   QC value within limits for Mo 202.031  Recovery = Not calculated
Ni 231.604†                5.1    -0.00228 mg/L      0.000088    -0.00228 mg/L      0.000088   3.87%
   QC value within limits for Ni 231.604  Recovery = Not calculated
Pb 220.353†               -0.3     0.00003 mg/L      0.000270     0.00003 mg/L      0.000270 >999.9%
   QC value within limits for Pb 220.353  Recovery = Not calculated
Sb 206.836†               -0.2    -0.00376 mg/L      0.003124    -0.00376 mg/L      0.003124  83.18%
   QC value within limits for Sb 206.836  Recovery = Not calculated
Se 196.026†               -6.2    -0.00539 mg/L      0.002368    -0.00539 mg/L      0.002368  43.92%
   QC value within limits for Se 196.026  Recovery = Not calculated
Si 251.611†                2.0     -0.0381 mg/L       0.00098     -0.0381 mg/L       0.00098   2.57%
   QC value within limits for Si 251.611  Recovery = Not calculated
Sn 189.927†               -0.5    -0.00249 mg/L      0.001268    -0.00249 mg/L      0.001268  50.89%
   QC value within limits for Sn 189.927  Recovery = Not calculated
Ti 334.940†             -118.7    -0.00339 mg/L      0.000175    -0.00339 mg/L      0.000175   5.17%
   QC value within limits for Ti 334.940  Recovery = Not calculated
Tl 190.801†               -3.2    -0.00723 mg/L      0.002531    -0.00723 mg/L      0.002531  35.03%
   QC value within limits for Tl 190.801  Recovery = Not calculated
V 290.880†                61.5    -0.00297 mg/L      0.001795    -0.00297 mg/L      0.001795  60.48%
   QC value within limits for V 290.880  Recovery = Not calculated
Zn 206.200†               -3.6    -0.00501 mg/L      0.000235    -0.00501 mg/L      0.000235   4.69%
   QC value within limits for Zn 206.200  Recovery = Not calculated
K 766.490†                51.1       0.113 mg/L        0.0446       0.113 mg/L        0.0446  39.63%
   QC value within limits for K 766.490  Recovery = Not calculated
Na 589.592†              -12.9      0.0460 mg/L       0.01306      0.0460 mg/L       0.01306  28.39%
   QC value within limits for Na 589.592  Recovery = Not calculated
Sr 407.771†               19.3    -0.00538 mg/L      0.000039    -0.00538 mg/L      0.000039   0.73%
   QC value within limits for Sr 407.771  Recovery = Not calculated
Li 670.784†              130.0    -0.00551 mg/L      0.000738    -0.00551 mg/L      0.000738  13.39%
   QC value within limits for Li 670.784  Recovery = Not calculated
QC Failed.  Continue with analysis.
```

Approved: January 31, 2012

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Analysis Begun

Start Time: 1/30/2012 3:34:52 PM **Plasma On Time: 1/30/2012 8:38:03 AM**
Logged In Analyst: peicp2 **Technique: ICP Continuous**
Spectrometer Model: Optima 4300 DV, S/N 077N4011401 **Autosampler Model: Cetac**

Sample Information File: C:\pe\peicp2\Sample Information\MONDAY2.sif
Batch ID:
Results Data Set: 013012H3R
Results Library: C:\pe\peicp2\Results\Results.mdb

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Sequence No.: 1 **Autosampler Location: 27**
Sample ID: PBW E3 WG387973-02 **Date Collected: 1/30/2012 3:34:54 PM**
Analyst: SLP **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: PBW E3 WG387973-02

Analyte	Back Pressure	Flow
All	148.0 kPa	0.50 L/min

Mean Data: PBW E3 WG387973-02

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3883098.5						11163.14	0.29%
YRADIAL	137344.0						5365.79	3.91%
Ga 417.206	820639.4						4861.55	0.59%
GaRADIAL	19383.9						3549.56	18.31%
Ag 328.068†	-133.4	-0.00291	mg/L	0.000938	-0.00291	mg/L	0.000938	32.21%
Al 396.153†	19.1	-0.0351	mg/L	0.00929	-0.0351	mg/L	0.00929	26.49%
As 188.979†	0.1	0.00486	mg/L	0.001674	0.00486	mg/L	0.001674	34.40%
Ba 233.527†	-4.8	-0.00539	mg/L	0.000147	-0.00539	mg/L	0.000147	2.73%
Be 234.861†	82.9	-0.00003	mg/L	0.000019	-0.00003	mg/L	0.000019	71.18%
B 249.677†	-12.0	-0.00349	mg/L	0.000237	-0.00349	mg/L	0.000237	6.78%
Ca 227.546†	1.5	-0.0507	mg/L	0.03010	-0.0507	mg/L	0.03010	59.30%
Cd 228.802†	-5.5	-0.00053	mg/L	0.000210	-0.00053	mg/L	0.000210	39.80%
Co 228.616†	-1.3	-0.00062	mg/L	0.000193	-0.00062	mg/L	0.000193	31.07%
Cr 267.716†	8.8	-0.00274	mg/L	0.000161	-0.00274	mg/L	0.000161	5.86%
Cu 327.393†	-64.2	-0.00364	mg/L	0.000644	-0.00364	mg/L	0.000644	17.70%
Fe 239.562†	-0.6	-0.0589	mg/L	0.05738	-0.0589	mg/L	0.05738	97.38%
Mg 279.077†	-1.3	-0.0658	mg/L	0.00937	-0.0658	mg/L	0.00937	14.23%
Mn 257.610†	-6.7	-0.00415	mg/L	0.000018	-0.00415	mg/L	0.000018	0.43%
Mo 202.031†	-6.5	-0.00554	mg/L	0.000785	-0.00554	mg/L	0.000785	14.16%
Ni 231.604†	5.4	-0.00227	mg/L	0.000167	-0.00227	mg/L	0.000167	7.37%
Pb 220.353†	-2.7	-0.00081	mg/L	0.001749	-0.00081	mg/L	0.001749	215.04%
Sb 206.836†	-1.2	-0.00495	mg/L	0.003638	-0.00495	mg/L	0.003638	73.55%
Se 196.026†	-5.5	-0.00442	mg/L	0.001291	-0.00442	mg/L	0.001291	29.23%
Si 251.611†	90.2	-0.0332	mg/L	0.00073	-0.0332	mg/L	0.00073	2.21%
Sn 189.927†	-7.6	-0.00521	mg/L	0.000698	-0.00521	mg/L	0.000698	13.38%
Ti 334.940†	-30.7	-0.00321	mg/L	0.000137	-0.00321	mg/L	0.000137	4.27%
Tl 190.801†	2.8	-0.00033	mg/L	0.002858	-0.00033	mg/L	0.002858	876.63%
V 290.880†	11.1	-0.00356	mg/L	0.000925	-0.00356	mg/L	0.000925	26.02%
Zn 206.200†	13.8	-0.00376	mg/L	0.000194	-0.00376	mg/L	0.000194	5.14%
K 766.490†	-50.7	0.0138	mg/L	0.05204	0.0138	mg/L	0.05204	376.41%
Na 589.592†	-12.1	0.0462	mg/L	0.00325	0.0462	mg/L	0.00325	7.03%
Sr 407.771†	-14.3	-0.00544	mg/L	0.000092	-0.00544	mg/L	0.000092	1.70%
Li 670.784†	146.2	-0.00506	mg/L	0.002549	-0.00506	mg/L	0.002549	50.40%

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Sequence No.: 2 **Autosampler Location: 28**
Sample ID: LCSW E3 WG387973-03 **Date Collected: 1/30/2012 3:41:44 PM**
Analyst: SLP **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: LCSW E3 WG387973-03

Approved: January 31, 2012

Analyte	Back Pressure	Flow
All	147.0 kPa	0.50 L/min

Mean Data: LCSW E3 WG387973-03

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3762970.0						37787.36	1.00%
YRADIAL	134677.8						5144.06	3.82%
Ga 417.206	843908.2						16392.65	1.94%
GaRADIAL	19711.8						3715.09	18.85%
Ag 328.068†	24317.5	0.192	mg/L	0.0033	0.192	mg/L	0.0033	1.74%
Al 396.153†	8233.2	4.90	mg/L	0.027	4.90	mg/L	0.027	0.54%
As 188.979†	103.7	0.188	mg/L	0.0070	0.188	mg/L	0.0070	3.72%
Ba 233.527†	15619.0	0.505	mg/L	0.0054	0.505	mg/L	0.0054	1.08%
Be 234.861†	7468.9	0.0244	mg/L	0.00040	0.0244	mg/L	0.00040	1.63%
B 249.677†	28406.4	0.984	mg/L	0.0182	0.984	mg/L	0.0182	1.85%
Ca 227.546†	322.7	4.74	mg/L	0.148	4.74	mg/L	0.148	3.12%
Cd 228.802†	254.9	0.0234	mg/L	0.00077	0.0234	mg/L	0.00077	3.28%
Co 228.616†	1002.5	0.0972	mg/L	0.00095	0.0972	mg/L	0.00095	0.98%
Cr 267.716†	15835.1	0.247	mg/L	0.0028	0.247	mg/L	0.0028	1.15%
Cu 327.393†	23567.6	0.238	mg/L	0.0048	0.238	mg/L	0.0048	2.00%
Fe 239.562†	42.4	1.90	mg/L	0.046	1.90	mg/L	0.046	2.44%
Mg 279.077†	405.4	5.01	mg/L	0.054	5.01	mg/L	0.054	1.08%
Mn 257.610†	64690.8	0.249	mg/L	0.0035	0.249	mg/L	0.0035	1.39%
Mo 202.031†	3523.3	0.489	mg/L	0.0047	0.489	mg/L	0.0047	0.96%
Ni 231.604†	4403.0	0.253	mg/L	0.0012	0.253	mg/L	0.0012	0.46%
Pb 220.353†	710.6	0.250	mg/L	0.0016	0.250	mg/L	0.0016	0.62%
Sb 206.836†	477.6	0.572	mg/L	0.0092	0.572	mg/L	0.0092	1.60%
Se 196.026†	120.2	0.191	mg/L	0.0061	0.191	mg/L	0.0061	3.21%
Si 251.611†	45937.0	2.49	mg/L	0.049	2.49	mg/L	0.049	1.95%
Sn 189.927†	1398.7	0.529	mg/L	0.0053	0.529	mg/L	0.0053	1.00%
Ti 334.940†	234193.3	0.490	mg/L	0.0011	0.490	mg/L	0.0011	0.23%
Tl 190.801†	214.5	0.249	mg/L	0.0041	0.249	mg/L	0.0041	1.64%
V 290.880†	42608.8	0.494	mg/L	0.0059	0.494	mg/L	0.0059	1.20%
Zn 206.200†	7029.8	0.499	mg/L	0.0066	0.499	mg/L	0.0066	1.32%
K 766.490†	23524.7	23.2	mg/L	0.73	23.2	mg/L	0.73	3.15%
Na 589.592†	114700.0	24.1	mg/L	0.46	24.1	mg/L	0.46	1.89%
Sr 407.771†	231045.4	0.427	mg/L	0.0675	0.427	mg/L	0.0675	15.79%
Li 670.784†	19402.4	0.536	mg/L	0.0082	0.536	mg/L	0.0082	1.53%

Sequence No.: 3 **Autosampler Location: 29**
Sample ID: L1201065101 WG387973-01 **Date Collected: 1/30/2012 3:48:34 PM**
Analyst: SLP **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1201065101 WG387973-01

Analyte	Back Pressure	Flow
All	148.0 kPa	0.50 L/min

Mean Data: L1201065101 WG387973-01

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3844626.5						13132.91	0.34%
YRADIAL	139107.5						7083.57	5.09%
Ga 417.206	885262.0						8813.71	1.00%
GaRADIAL	19918.2						3958.94	19.88%
Ag 328.068†	-36.0	-0.00220	mg/L	0.000455	-0.00220	mg/L	0.000455	20.64%
Al 396.153†	45.3	-0.0194	mg/L	0.00983	-0.0194	mg/L	0.00983	50.75%
As 188.979†	9.4	0.0204	mg/L	0.00134	0.0204	mg/L	0.00134	6.57%
Ba 233.527†	2143.8	0.0647	mg/L	0.00021	0.0647	mg/L	0.00021	0.32%
Be 234.861†	133.7	0.00013	mg/L	0.000034	0.00013	mg/L	0.000034	25.68%
B 249.677†	660.7	0.0200	mg/L	0.00074	0.0200	mg/L	0.00074	3.67%
Ca 227.546†	3674.3	55.1	mg/L	0.28	55.1	mg/L	0.28	0.51%
Cd 228.802†	-5.5	-0.00050	mg/L	0.000242	-0.00050	mg/L	0.000242	48.17%
Co 228.616†	-7.6	-0.00127	mg/L	0.000331	-0.00127	mg/L	0.000331	26.17%
Cr 267.716†	141.7	-0.00065	mg/L	0.000221	-0.00065	mg/L	0.000221	34.02%
Cu 327.393†	-172.7	-0.00474	mg/L	0.000921	-0.00474	mg/L	0.000921	19.44%

Approved: January 31, 2012

Fe 239.562†	0.6	-0.00584	mg/L	0.055293	-0.00584	mg/L	0.055293	946.91%
Mg 279.077†	670.3	8.31	mg/L	0.254	8.31	mg/L	0.254	3.06%
Mn 257.610†	115.5	-0.00326	mg/L	0.000076	-0.00326	mg/L	0.000076	2.34%
Mo 202.031†	8.6	-0.00343	mg/L	0.000221	-0.00343	mg/L	0.000221	6.45%
Ni 231.604†	-2.3	-0.00275	mg/L	0.000460	-0.00275	mg/L	0.000460	16.75%
Pb 220.353†	-6.3	0.00060	mg/L	0.000925	0.00060	mg/L	0.000925	154.36%
Sb 206.836†	7.5	0.00547	mg/L	0.002538	0.00547	mg/L	0.002538	46.39%
Se 196.026†	-19.9	-0.00990	mg/L	0.008766	-0.00990	mg/L	0.008766	88.56%
Si 251.611†	382514.5	21.1	mg/L	0.11	21.1	mg/L	0.11	0.50%
Sn 189.927†	-1.7	-0.00297	mg/L	0.001200	-0.00297	mg/L	0.001200	40.40%
Ti 334.940†	-352.9	-0.00334	mg/L	0.000137	-0.00334	mg/L	0.000137	4.11%
Tl 190.801†	57.5	0.0412	mg/L	0.00110	0.0412	mg/L	0.00110	2.68%
V 290.880†	202.8	-0.00062	mg/L	0.001297	-0.00062	mg/L	0.001297	210.10%
Zn 206.200†	53.7	-0.00090	mg/L	0.000156	-0.00090	mg/L	0.000156	17.30%
K 766.490†	2982.0	2.93	mg/L	0.094	2.93	mg/L	0.094	3.19%
Na 589.592†	119600.3	25.2	mg/L	0.48	25.2	mg/L	0.48	1.91%
Sr 407.771†	187078.8	0.345	mg/L	0.0538	0.345	mg/L	0.0538	15.59%
Li 670.784†	613.0	0.00805	mg/L	0.001642	0.00805	mg/L	0.001642	20.40%

Sequence No.: 4 **Autosampler Location: 30**
Sample ID: L1201065102S WG387973-04 **Date Collected: 1/30/2012 3:55:24 PM**
Analyst: SLP **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1201065102S WG387973-04

Analyte	Back Pressure	Flow
All	148.0 kPa	0.50 L/min

Mean Data: L1201065102S WG387973-04

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	3665647.7						66461.88	1.81%
YRADIAL	134927.8						3486.31	2.58%
Ga 417.206	848765.9						15329.43	1.81%
GaRADIAL	19330.0						4047.80	20.94%
Ag 328.068†	23545.1	0.186	mg/L	0.0024	0.186	mg/L	0.0024	1.29%
Al 396.153†	8007.9	4.76	mg/L	0.067	4.76	mg/L	0.067	1.40%
As 188.979†	114.5	0.206	mg/L	0.0084	0.206	mg/L	0.0084	4.09%
Ba 233.527†	17649.8	0.572	mg/L	0.0043	0.572	mg/L	0.0043	0.75%
Be 234.861†	7328.6	0.0239	mg/L	0.00032	0.0239	mg/L	0.00032	1.34%
B 249.677†	29064.4	1.01	mg/L	0.005	1.01	mg/L	0.005	0.52%
Ca 227.546†	4123.1	61.8	mg/L	1.15	61.8	mg/L	1.15	1.86%
Cd 228.802†	247.3	0.0227	mg/L	0.00048	0.0227	mg/L	0.00048	2.10%
Co 228.616†	983.6	0.0953	mg/L	0.00222	0.0953	mg/L	0.00222	2.33%
Cr 267.716†	15775.4	0.246	mg/L	0.0021	0.246	mg/L	0.0021	0.87%
Cu 327.393†	22371.5	0.226	mg/L	0.0028	0.226	mg/L	0.0028	1.23%
Fe 239.562†	41.5	1.86	mg/L	0.035	1.86	mg/L	0.035	1.90%
Mg 279.077†	1068.5	13.3	mg/L	0.10	13.3	mg/L	0.10	0.72%
Mn 257.610†	63761.8	0.246	mg/L	0.0026	0.246	mg/L	0.0026	1.04%
Mo 202.031†	3619.7	0.503	mg/L	0.0090	0.503	mg/L	0.0090	1.79%
Ni 231.604†	4252.9	0.245	mg/L	0.0045	0.245	mg/L	0.0045	1.83%
Pb 220.353†	701.9	0.250	mg/L	0.0045	0.250	mg/L	0.0045	1.80%
Sb 206.836†	483.0	0.579	mg/L	0.0130	0.579	mg/L	0.0130	2.25%
Se 196.026†	106.4	0.186	mg/L	0.0041	0.186	mg/L	0.0041	2.22%
Si 251.611†	430181.8	23.7	mg/L	0.05	23.7	mg/L	0.05	0.22%
Sn 189.927†	1460.0	0.552	mg/L	0.0121	0.552	mg/L	0.0121	2.19%
Ti 334.940†	237513.9	0.498	mg/L	0.0012	0.498	mg/L	0.0012	0.23%
Tl 190.801†	270.9	0.292	mg/L	0.0023	0.292	mg/L	0.0023	0.80%
V 290.880†	42890.7	0.498	mg/L	0.0037	0.498	mg/L	0.0037	0.74%
Zn 206.200†	6834.4	0.485	mg/L	0.0038	0.485	mg/L	0.0038	0.79%
K 766.490†	26397.4	26.1	mg/L	0.95	26.1	mg/L	0.95	3.63%
Na 589.592†	229601.2	49.8	mg/L	1.98	49.8	mg/L	1.98	3.98%
Sr 407.771†	403543.8	0.751	mg/L	0.1312	0.751	mg/L	0.1312	17.47%
Li 670.784†	19850.5	0.548	mg/L	0.0118	0.548	mg/L	0.0118	2.16%

Sequence No.: 5 **Autosampler Location: 31**
Sample ID: L1201065103SD WG387973-05 **Date Collected: 1/30/2012 4:02:18 PM**

Approved: January 31, 2012

Analyst: SLP **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1201065103SD WG387973-05

Analyte	Back Pressure	Flow
All	147.0 kPa	0.50 L/min

Mean Data: L1201065103SD WG387973-05

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3635175.6						19655.48	0.54%
YRADIAL	132897.9						6732.67	5.07%
Ga 417.206	844578.1						11048.66	1.31%
GaRADIAL	19753.8						3877.33	19.63%
Ag 328.068†	24116.9	0.191	mg/L	0.0028	0.191	mg/L	0.0028	1.45%
Al 396.153†	8197.4	4.88	mg/L	0.065	4.88	mg/L	0.065	1.33%
As 188.979†	111.9	0.202	mg/L	0.0052	0.202	mg/L	0.0052	2.58%
Ba 233.527†	18245.3	0.591	mg/L	0.0054	0.591	mg/L	0.0054	0.91%
Be 234.861†	7489.6	0.0245	mg/L	0.00009	0.0245	mg/L	0.00009	0.38%
B 249.677†	30026.8	1.04	mg/L	0.017	1.04	mg/L	0.017	1.64%
Ca 227.546†	4241.3	63.5	mg/L	0.97	63.5	mg/L	0.97	1.53%
Cd 228.802†	250.8	0.0230	mg/L	0.00059	0.0230	mg/L	0.00059	2.57%
Co 228.616†	1000.2	0.0969	mg/L	0.00103	0.0969	mg/L	0.00103	1.07%
Cr 267.716†	16250.7	0.254	mg/L	0.0036	0.254	mg/L	0.0036	1.40%
Cu 327.393†	23044.7	0.233	mg/L	0.0045	0.233	mg/L	0.0045	1.94%
Fe 239.562†	44.1	1.98	mg/L	0.096	1.98	mg/L	0.096	4.86%
Mg 279.077†	1109.4	13.8	mg/L	0.44	13.8	mg/L	0.44	3.20%
Mn 257.610†	65862.2	0.254	mg/L	0.0028	0.254	mg/L	0.0028	1.09%
Mo 202.031†	3700.6	0.514	mg/L	0.0048	0.514	mg/L	0.0048	0.94%
Ni 231.604†	4339.6	0.250	mg/L	0.0021	0.250	mg/L	0.0021	0.84%
Pb 220.353†	712.8	0.254	mg/L	0.0016	0.254	mg/L	0.0016	0.63%
Sb 206.836†	491.4	0.589	mg/L	0.0078	0.589	mg/L	0.0078	1.32%
Se 196.026†	107.7	0.189	mg/L	0.0073	0.189	mg/L	0.0073	3.85%
Si 251.611†	440279.5	24.3	mg/L	0.21	24.3	mg/L	0.21	0.88%
Sn 189.927†	1480.9	0.560	mg/L	0.0050	0.560	mg/L	0.0050	0.89%
Ti 334.940†	241574.0	0.506	mg/L	0.0010	0.506	mg/L	0.0010	0.20%
Tl 190.801†	274.0	0.295	mg/L	0.0051	0.295	mg/L	0.0051	1.74%
V 290.880†	44296.9	0.514	mg/L	0.0049	0.514	mg/L	0.0049	0.95%
Zn 206.200†	7072.1	0.502	mg/L	0.0055	0.502	mg/L	0.0055	1.10%
K 766.490†	27368.4	27.1	mg/L	0.74	27.1	mg/L	0.74	2.74%
Na 589.592†	236717.0	51.4	mg/L	0.93	51.4	mg/L	0.93	1.81%
Sr 407.771†	430480.1	0.801	mg/L	0.1293	0.801	mg/L	0.1293	16.14%
Li 670.784†	20192.4	0.558	mg/L	0.0174	0.558	mg/L	0.0174	3.13%

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Sequence No.: 6 **Autosampler Location: 32**
Sample ID: L1201065201 **Date Collected: 1/30/2012 4:09:14 PM**
Analyst: SLP **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1201065201

Analyte	Back Pressure	Flow
All	148.0 kPa	0.50 L/min

Mean Data: L1201065201

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3771349.3						42694.19	1.13%
YRADIAL	136008.2						3754.08	2.76%
Ga 417.206	863069.4						5401.06	0.63%
GaRADIAL	19252.4						3594.69	18.67%
Ag 328.068†	-149.8	-0.00310	mg/L	0.000742	-0.00310	mg/L	0.000742	23.93%
Al 396.153†	501.3	0.255	mg/L	0.0059	0.255	mg/L	0.0059	2.31%
Saturated within auto integration window (code 4)								
As 188.979†	7.5	0.0171	mg/L	0.00515	0.0171	mg/L	0.00515	30.18%
Ba 233.527†	3105.7	0.0960	mg/L	0.00141	0.0960	mg/L	0.00141	1.47%

Approved: January 31, 2012

Be 234.861†	142.5	0.00012	mg/L	0.000054	0.00012	mg/L	0.000054	43.93%
B 249.677†	740.0	0.0235	mg/L	0.00085	0.0235	mg/L	0.00085	3.61%
Ca 227.546†	3040.5	45.5	mg/L	0.26	45.5	mg/L	0.26	0.57%
Cd 228.802†	-8.1	-0.00074	mg/L	0.000319	-0.00074	mg/L	0.000319	42.96%
Co 228.616†	-3.9	-0.00093	mg/L	0.000245	-0.00093	mg/L	0.000245	26.38%
Cr 267.716†	237.2	0.00085	mg/L	0.000087	0.00085	mg/L	0.000087	10.27%
Cu 327.393†	-94.0	-0.00391	mg/L	0.000646	-0.00391	mg/L	0.000646	16.51%
Fe 239.562†	5.2	0.203	mg/L	0.0535	0.203	mg/L	0.0535	26.36%
Mg 279.077†	544.9	6.74	mg/L	0.054	6.74	mg/L	0.054	0.80%
Mn 257.610†	1078.2	0.00045	mg/L	0.000052	0.00045	mg/L	0.000052	11.44%
Mo 202.031†	17.7	-0.00214	mg/L	0.000314	-0.00214	mg/L	0.000314	14.62%
Ni 231.604†	14.4	-0.00178	mg/L	0.000117	-0.00178	mg/L	0.000117	6.58%
Pb 220.353†	-4.4	0.00083	mg/L	0.001533	0.00083	mg/L	0.001533	184.67%
Sb 206.836†	10.0	0.00857	mg/L	0.001473	0.00857	mg/L	0.001473	17.20%
Se 196.026†	-13.8	-0.00336	mg/L	0.008061	-0.00336	mg/L	0.008061	240.20%
Si 251.611†	322088.7	17.8	mg/L	0.16	17.8	mg/L	0.16	0.90%
Sn 189.927†	-5.1	-0.00427	mg/L	0.001189	-0.00427	mg/L	0.001189	27.87%
Ti 334.940†	2574.0	0.00274	mg/L	0.000149	0.00274	mg/L	0.000149	5.46%
Tl 190.801†	50.1	0.0364	mg/L	0.00239	0.0364	mg/L	0.00239	6.57%
V 290.880†	346.9	0.00091	mg/L	0.000704	0.00091	mg/L	0.000704	76.91%
Zn 206.200†	103.9	0.00270	mg/L	0.000058	0.00270	mg/L	0.000058	2.16%
K 766.490†	2181.0	2.16	mg/L	0.025	2.16	mg/L	0.025	1.15%
Na 589.592†	100858.5	21.1	mg/L	0.66	21.1	mg/L	0.66	3.10%
Sr 407.771†	174749.7	0.322	mg/L	0.0513	0.322	mg/L	0.0513	15.91%
Li 670.784†	497.2	0.00480	mg/L	0.001066	0.00480	mg/L	0.001066	22.23%

Sequence No.: 7 **Autosampler Location: 33**
Sample ID: L1201065202 **Date Collected: 1/30/2012 4:16:05 PM**
Analyst: SLP **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1201065202

Analyte	Back Pressure	Flow
All	147.0 kPa	0.50 L/min

Mean Data: L1201065202

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	3741645.3						64992.80	1.74%
YRADIAL	134861.5						6561.36	4.87%
Ga 417.206	864912.8						14867.38	1.72%
GaRADIAL	19286.2						3923.09	20.34%
Ag 328.068†	-17.3	-0.00206	mg/L	0.000069	-0.00206	mg/L	0.000069	3.33%
Al 396.153†	35.7	-0.0251	mg/L	0.00307	-0.0251	mg/L	0.00307	12.24%
As 188.979†	11.4	0.0239	mg/L	0.00391	0.0239	mg/L	0.00391	16.39%
Ba 233.527†	3824.2	0.119	mg/L	0.0024	0.119	mg/L	0.0024	1.98%
Be 234.861†	130.3	0.00010	mg/L	0.000034	0.00010	mg/L	0.000034	33.89%
B 249.677†	534.3	0.0162	mg/L	0.00057	0.0162	mg/L	0.00057	3.50%
Ca 227.546†	3934.8	59.0	mg/L	1.05	59.0	mg/L	1.05	1.79%
Cd 228.802†	-5.6	-0.00050	mg/L	0.000074	-0.00050	mg/L	0.000074	14.96%
Co 228.616†	-4.4	-0.00097	mg/L	0.000416	-0.00097	mg/L	0.000416	42.72%
Cr 267.716†	155.2	-0.00044	mg/L	0.000096	-0.00044	mg/L	0.000096	21.66%
Cu 327.393†	-188.9	-0.00490	mg/L	0.000796	-0.00490	mg/L	0.000796	16.25%
Fe 239.562†	3.0	0.103	mg/L	0.0315	0.103	mg/L	0.0315	30.65%
Mg 279.077†	882.5	11.0	mg/L	0.28	11.0	mg/L	0.28	2.55%
Mn 257.610†	165.5	-0.00306	mg/L	0.000061	-0.00306	mg/L	0.000061	2.00%
Mo 202.031†	7.7	-0.00355	mg/L	0.000582	-0.00355	mg/L	0.000582	16.37%
Ni 231.604†	-4.6	-0.00288	mg/L	0.000239	-0.00288	mg/L	0.000239	8.30%
Pb 220.353†	-6.4	0.00076	mg/L	0.001840	0.00076	mg/L	0.001840	241.12%
Sb 206.836†	9.3	0.00766	mg/L	0.001080	0.00766	mg/L	0.001080	14.09%
Se 196.026†	-21.4	-0.0110	mg/L	0.00715	-0.0110	mg/L	0.00715	64.85%
Si 251.611†	342020.7	18.9	mg/L	0.06	18.9	mg/L	0.06	0.34%
Sn 189.927†	-3.0	-0.00344	mg/L	0.002614	-0.00344	mg/L	0.002614	75.96%
Ti 334.940†	-225.2	-0.00303	mg/L	0.000228	-0.00303	mg/L	0.000228	7.54%
Tl 190.801†	58.6	0.0409	mg/L	0.00114	0.0409	mg/L	0.00114	2.78%
V 290.880†	7.5	-0.00268	mg/L	0.001568	-0.00268	mg/L	0.001568	58.43%
Zn 206.200†	156.3	0.00644	mg/L	0.000352	0.00644	mg/L	0.000352	5.47%
K 766.490†	2349.8	2.32	mg/L	0.081	2.32	mg/L	0.081	3.48%

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Na 589.592†	131868.3	27.9	mg/L	0.75	27.9	mg/L	0.75	2.70%
Sr 407.771†	196714.7	0.363	mg/L	0.0560	0.363	mg/L	0.0560	15.42%
Li 670.784†	448.8	0.00344	mg/L	0.001077	0.00344	mg/L	0.001077	31.31%

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Sequence No.: 8 **Autosampler Location: 34**
Sample ID: L1201064001 **Date Collected: 1/30/2012 4:22:57 PM**
Analyst: SLP **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1201064001

Analyte	Back Pressure	Flow
All	147.0 kPa	0.50 L/min

Mean Data: L1201064001

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3786666.3						56516.43	1.49%
YRADIAL	136731.2						7160.90	5.24%
Ga 417.206	799931.4						12335.51	1.54%
GaRADIAL	19044.8						4075.28	21.40%
Ag 328.068†	-275.9	-0.00404	mg/L	0.000763	-0.00404	mg/L	0.000763	18.87%
Al 396.153†	22.2	-0.0332	mg/L	0.00893	-0.0332	mg/L	0.00893	26.88%
As 188.979†	-1.3	0.00228	mg/L	0.001353	0.00228	mg/L	0.001353	59.37%
Ba 233.527†	-2.8	-0.00532	mg/L	0.000131	-0.00532	mg/L	0.000131	2.47%
Be 234.861†	74.3	-0.00005	mg/L	0.000081	-0.00005	mg/L	0.000081	156.66%
B 249.677†	37.3	-0.00185	mg/L	0.000451	-0.00185	mg/L	0.000451	24.41%
Ca 227.546†	2.2	-0.0381	mg/L	0.03719	-0.0381	mg/L	0.03719	97.68%
Cd 228.802†	-6.8	-0.00065	mg/L	0.000140	-0.00065	mg/L	0.000140	21.44%
Co 228.616†	-6.8	-0.00116	mg/L	0.000085	-0.00116	mg/L	0.000085	7.32%
Cr 267.716†	69.7	-0.00178	mg/L	0.000133	-0.00178	mg/L	0.000133	7.49%
Cu 327.393†	48.4	-0.00249	mg/L	0.000733	-0.00249	mg/L	0.000733	29.45%
Fe 239.562†	-0.9	-0.0732	mg/L	0.05929	-0.0732	mg/L	0.05929	80.98%
Mg 279.077†	-3.0	-0.0863	mg/L	0.01358	-0.0863	mg/L	0.01358	15.73%
Mn 257.610†	109.3	-0.00370	mg/L	0.000043	-0.00370	mg/L	0.000043	1.17%
Mo 202.031†	-8.7	-0.00586	mg/L	0.000484	-0.00586	mg/L	0.000484	8.26%
Ni 231.604†	9.7	-0.00201	mg/L	0.000196	-0.00201	mg/L	0.000196	9.72%
Pb 220.353†	1.3	0.00058	mg/L	0.000524	0.00058	mg/L	0.000524	90.34%
Sb 206.836†	0.7	-0.00266	mg/L	0.000564	-0.00266	mg/L	0.000564	21.20%
Se 196.026†	-4.5	-0.00289	mg/L	0.002927	-0.00289	mg/L	0.002927	101.43%
Si 251.611†	118.7	-0.0316	mg/L	0.00077	-0.0316	mg/L	0.00077	2.43%
Sn 189.927†	-5.1	-0.00427	mg/L	0.000498	-0.00427	mg/L	0.000498	11.67%
Ti 334.940†	-114.9	-0.00338	mg/L	0.000119	-0.00338	mg/L	0.000119	3.50%
Tl 190.801†	-6.0	-0.0104	mg/L	0.00077	-0.0104	mg/L	0.00077	7.38%
V 290.880†	67.6	-0.00290	mg/L	0.001218	-0.00290	mg/L	0.001218	42.06%
Zn 206.200†	22.0	-0.00317	mg/L	0.000310	-0.00317	mg/L	0.000310	9.76%
K 766.490†	-32.4	0.0316	mg/L	0.08692	0.0316	mg/L	0.08692	275.24%
Na 589.592†	-23.9	0.0438	mg/L	0.01703	0.0438	mg/L	0.01703	38.92%
Sr 407.771†	7.9	-0.00540	mg/L	0.000083	-0.00540	mg/L	0.000083	1.55%
Li 670.784†	122.1	-0.00573	mg/L	0.002430	-0.00573	mg/L	0.002430	42.38%

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Sequence No.: 9 **Autosampler Location: 35**
Sample ID: L1201064002 **Date Collected: 1/30/2012 4:29:48 PM**
Analyst: SLP **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1201064002

Analyte	Back Pressure	Flow
All	147.0 kPa	0.50 L/min

Mean Data: L1201064002

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3729826.3						26784.13	0.72%
YRADIAL	133034.6						5571.83	4.19%

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Ga 417.206	784337.7				6380.34	0.81%
GaRADIAL	17272.2				3734.41	21.62%
Ag 328.068†	-306.7	-0.00429 mg/L	0.000354	-0.00429 mg/L	0.000354	8.25%
Al 396.153†	7.6	-0.0420 mg/L	0.00717	-0.0420 mg/L	0.00717	17.06%
As 188.979†	-0.5	0.00380 mg/L	0.003271	0.00380 mg/L	0.003271	86.17%
Ba 233.527†	-8.7	-0.00552 mg/L	0.000046	-0.00552 mg/L	0.000046	0.83%
Be 234.861†	69.9	-0.00007 mg/L	0.000022	-0.00007 mg/L	0.000022	30.66%
B 249.677†	43.2	-0.00149 mg/L	0.000226	-0.00149 mg/L	0.000226	15.20%
Ca 227.546†	2.6	-0.0354 mg/L	0.04640	-0.0354 mg/L	0.04640	131.24%
Cd 228.802†	-4.1	-0.00041 mg/L	0.000061	-0.00041 mg/L	0.000061	15.05%
Co 228.616†	-5.8	-0.00106 mg/L	0.000351	-0.00106 mg/L	0.000351	33.09%
Cr 267.716†	118.9	-0.00101 mg/L	0.000026	-0.00101 mg/L	0.000026	2.62%
Cu 327.393†	-18.3	-0.00317 mg/L	0.000964	-0.00317 mg/L	0.000964	30.43%
Fe 239.562†	-0.2	-0.0405 mg/L	0.04719	-0.0405 mg/L	0.04719	116.52%
Mg 279.077†	-2.2	-0.0769 mg/L	0.00866	-0.0769 mg/L	0.00866	11.27%
Mn 257.610†	40.9	-0.00396 mg/L	0.000023	-0.00396 mg/L	0.000023	0.59%
Mo 202.031†	-8.4	-0.00581 mg/L	0.000599	-0.00581 mg/L	0.000599	10.30%
Ni 231.604†	21.6	-0.00132 mg/L	0.000181	-0.00132 mg/L	0.000181	13.70%
Pb 220.353†	-1.8	-0.00047 mg/L	0.001227	-0.00047 mg/L	0.001227	258.87%
Sb 206.836†	1.2	-0.00210 mg/L	0.000179	-0.00210 mg/L	0.000179	8.49%
Se 196.026†	-2.2	0.00080 mg/L	0.007384	0.00080 mg/L	0.007384	927.49%
Si 251.611†	110.2	-0.0321 mg/L	0.00030	-0.0321 mg/L	0.00030	0.95%
Sn 189.927†	-2.8	-0.00339 mg/L	0.000061	-0.00339 mg/L	0.000061	1.80%
Ti 334.940†	-133.7	-0.00342 mg/L	0.000241	-0.00342 mg/L	0.000241	7.04%
Tl 190.801†	-5.9	-0.0104 mg/L	0.00415	-0.0104 mg/L	0.00415	39.95%
V 290.880†	89.9	-0.00264 mg/L	0.002416	-0.00264 mg/L	0.002416	91.61%
Zn 206.200†	11.8	-0.00390 mg/L	0.000246	-0.00390 mg/L	0.000246	6.30%
K 766.490†	-37.8	0.0263 mg/L	0.05997	0.0263 mg/L	0.05997	227.59%
Na 589.592†	12.4	0.0512 mg/L	0.03473	0.0512 mg/L	0.03473	67.90%
Sr 407.771†	24.5	-0.00537 mg/L	0.000034	-0.00537 mg/L	0.000034	0.63%
Li 670.784†	109.0	-0.00610 mg/L	0.001764	-0.00610 mg/L	0.001764	28.91%

Sequence No.: 10 **Autosampler Location: 36**
Sample ID: L1201064002DL WG388026-02 **Date Collected: 1/30/2012 4:36:36 PM**
Analyst: SLP **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1201064002DL WG388026-02

Analyte	Back Pressure	Flow
All	147.0 kPa	0.50 L/min

Mean Data: L1201064002DL WG388026-02

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3748464.8						61383.62	1.64%
YRADIAL	131542.4						7055.25	5.36%
Ga 417.206	779900.9						21997.09	2.82%
GaRADIAL	17557.9						3864.30	22.01%
Ag 328.068†	-289.8	-0.00415	mg/L	0.000195	-0.00415	mg/L	0.000195	4.69%
Al 396.153†	4.6	-0.0438	mg/L	0.01298	-0.0438	mg/L	0.01298	29.62%
As 188.979†	-0.7	0.00337	mg/L	0.004280	0.00337	mg/L	0.004280	126.91%
Ba 233.527†	-9.2	-0.00553	mg/L	0.000135	-0.00553	mg/L	0.000135	2.44%
Be 234.861†	74.5	-0.00005	mg/L	0.000061	-0.00005	mg/L	0.000061	115.04%
B 249.677†	-19.8	-0.00375	mg/L	0.000222	-0.00375	mg/L	0.000222	5.93%
Ca 227.546†	0.6	-0.0642	mg/L	0.05297	-0.0642	mg/L	0.05297	82.54%
Cd 228.802†	-5.6	-0.00055	mg/L	0.000082	-0.00055	mg/L	0.000082	14.91%
Co 228.616†	-3.6	-0.00084	mg/L	0.000654	-0.00084	mg/L	0.000654	77.54%
Cr 267.716†	46.2	-0.00215	mg/L	0.000016	-0.00215	mg/L	0.000016	0.73%
Cu 327.393†	-97.3	-0.00398	mg/L	0.000754	-0.00398	mg/L	0.000754	18.96%
Fe 239.562†	-0.6	-0.0585	mg/L	0.04250	-0.0585	mg/L	0.04250	72.67%
Mg 279.077†	-2.0	-0.0743	mg/L	0.01727	-0.0743	mg/L	0.01727	23.25%
Mn 257.610†	29.5	-0.00401	mg/L	0.000020	-0.00401	mg/L	0.000020	0.49%
Mo 202.031†	-3.0	-0.00507	mg/L	0.000215	-0.00507	mg/L	0.000215	4.24%
Ni 231.604†	7.5	-0.00214	mg/L	0.000509	-0.00214	mg/L	0.000509	23.81%
Pb 220.353†	4.4	0.00166	mg/L	0.000996	0.00166	mg/L	0.000996	60.03%
Sb 206.836†	4.1	0.00138	mg/L	0.002090	0.00138	mg/L	0.002090	151.03%
Se 196.026†	-3.8	-0.00180	mg/L	0.005430	-0.00180	mg/L	0.005430	301.09%
Si 251.611†	31.7	-0.0364	mg/L	0.00051	-0.0364	mg/L	0.00051	1.40%

Approved: January 31, 2012

Sn 189.927†	-3.2	-0.00352 mg/L	0.001456	-0.00352 mg/L	0.001456	41.39%
Ti 334.940†	-152.1	-0.00346 mg/L	0.000109	-0.00346 mg/L	0.000109	3.13%
Tl 190.801†	-1.1	-0.00483 mg/L	0.003110	-0.00483 mg/L	0.003110	64.40%
V 290.880†	58.6	-0.00300 mg/L	0.001074	-0.00300 mg/L	0.001074	35.77%
Zn 206.200†	7.0	-0.00424 mg/L	0.000182	-0.00424 mg/L	0.000182	4.30%
K 766.490†	-74.3	-0.00905 mg/L	0.037976	-0.00905 mg/L	0.037976	419.66%
Na 589.592†	-70.3	0.0343 mg/L	0.01556	0.0343 mg/L	0.01556	45.39%
Sr 407.771†	-56.4	-0.00552 mg/L	0.000029	-0.00552 mg/L	0.000029	0.52%
Li 670.784†	98.5	-0.00640 mg/L	0.002960	-0.00640 mg/L	0.002960	46.27%

Sequence No.: 11 **Autosampler Location: 6**
Sample ID: CCV **Date Collected: 1/30/2012 4:43:24 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: CCV

Analyte	Back Pressure	Flow
All	147.0 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	3722480.8						20769.98	0.56%
YRADIAL	132917.1						5099.46	3.84%
Ga 417.206	839074.9						2694.32	0.32%
GaRADIAL	17523.6						3497.70	19.96%
Ag 328.068†	48195.5	0.383	mg/L	0.0032	0.383	mg/L	0.0032	0.82%
QC value within limits for Ag 328.068 Recovery = 95.68%								
Al 396.153†	16479.4	9.85	mg/L	0.149	9.85	mg/L	0.149	1.51%
QC value within limits for Al 396.153 Recovery = 98.49%								
As 188.979†	215.3	0.386	mg/L	0.0049	0.386	mg/L	0.0049	1.27%
QC value within limits for As 188.979 Recovery = 96.44%								
Ba 233.527†	31924.5	1.04	mg/L	0.017	1.04	mg/L	0.017	1.63%
QC value within limits for Ba 233.527 Recovery = 103.86%								
Be 234.861†	14962.2	0.0492	mg/L	0.00091	0.0492	mg/L	0.00091	1.84%
QC value within limits for Be 234.861 Recovery = 98.34%								
B 249.677†	14026.6	0.488	mg/L	0.0079	0.488	mg/L	0.0079	1.62%
QC value within limits for B 249.677 Recovery = 97.69%								
Ca 227.546†	670.3	9.95	mg/L	0.047	9.95	mg/L	0.047	0.48%
QC value within limits for Ca 227.546 Recovery = 99.45%								
Cd 228.802†	532.6	0.0489	mg/L	0.00028	0.0489	mg/L	0.00028	0.57%
QC value within limits for Cd 228.802 Recovery = 97.72%								
Co 228.616†	2068.4	0.201	mg/L	0.0006	0.201	mg/L	0.0006	0.30%
QC value within limits for Co 228.616 Recovery = 100.53%								
Cr 267.716†	31881.8	0.501	mg/L	0.0088	0.501	mg/L	0.0088	1.75%
QC value within limits for Cr 267.716 Recovery = 100.10%								
Cu 327.393†	46787.9	0.476	mg/L	0.0044	0.476	mg/L	0.0044	0.92%
QC value within limits for Cu 327.393 Recovery = 95.25%								
Fe 239.562†	82.1	3.72	mg/L	0.081	3.72	mg/L	0.081	2.17%
QC value within limits for Fe 239.562 Recovery = 92.94%								
Mg 279.077†	807.8	10.0	mg/L	0.21	10.0	mg/L	0.21	2.06%
QC value within limits for Mg 279.077 Recovery = 100.22%								
Mn 257.610†	132170.7	0.512	mg/L	0.0063	0.512	mg/L	0.0063	1.24%
QC value within limits for Mn 257.610 Recovery = 102.46%								
Mo 202.031†	7210.8	1.01	mg/L	0.012	1.01	mg/L	0.012	1.20%
QC value within limits for Mo 202.031 Recovery = 100.62%								
Ni 231.604†	8776.9	0.508	mg/L	0.0069	0.508	mg/L	0.0069	1.36%
QC value within limits for Ni 231.604 Recovery = 101.54%								
Pb 220.353†	1460.6	0.514	mg/L	0.0033	0.514	mg/L	0.0033	0.65%
QC value within limits for Pb 220.353 Recovery = 102.80%								
Sb 206.836†	985.7	1.18	mg/L	0.008	1.18	mg/L	0.008	0.64%
QC value within limits for Sb 206.836 Recovery = 98.67%								
Se 196.026†	256.6	0.402	mg/L	0.0022	0.402	mg/L	0.0022	0.56%
QC value within limits for Se 196.026 Recovery = 100.48%								
Si 251.611†	90247.4	4.94	mg/L	0.060	4.94	mg/L	0.060	1.22%
QC value within limits for Si 251.611 Recovery = 98.74%								
Sn 189.927†	2737.6	1.04	mg/L	0.007	1.04	mg/L	0.007	0.63%
QC value within limits for Sn 189.927 Recovery = 103.71%								

Approved: January 31, 2012

```
Ti 334.940†          490462.6        1.03 mg/L         0.002        1.03 mg/L         0.002   0.19%
   QC value within limits for Ti 334.940  Recovery = 103.01%
Tl 190.801†             440.9       0.517 mg/L        0.0022       0.517 mg/L        0.0022   0.43%
   QC value within limits for Tl 190.801  Recovery = 103.33%
V 290.880†            86469.7        1.01 mg/L         0.014        1.01 mg/L         0.014   1.37%
   QC value within limits for V 290.880  Recovery = 100.59%
Zn 206.200†           14223.2        1.02 mg/L         0.016        1.02 mg/L         0.016   1.56%
   QC value within limits for Zn 206.200  Recovery = 101.51%
K 766.490†            48489.2        48.7 mg/L          2.27        48.7 mg/L          2.27   4.66%
   QC value within limits for K 766.490  Recovery = 97.42%
Na 589.592†          230064.3        49.9 mg/L          1.05        49.9 mg/L          1.05   2.11%
   QC value within limits for Na 589.592  Recovery = 99.78%
Sr 407.771†          427602.9       0.795 mg/L        0.1359       0.795 mg/L        0.1359  17.08%
   QC value less than the lower limit for Sr 407.771  Recovery = 79.55%
Li 670.784†           39440.0        1.10 mg/L         0.020        1.10 mg/L         0.020   1.80%
   QC value within limits for Li 670.784  Recovery = 109.81%
QC Failed.  Continue with analysis.

==========================================================================================
Sequence No.: 12                                    Autosampler Location: 1
Sample ID: CCB                                      Date Collected: 1/30/2012 4:50:20 PM
Analyst:                                            Data Type: Original
Initial Sample Wt:                                  Initial Sample Vol:
Dilution:                                           Sample Prep Vol:

------------------------------------------------------------------------------------------
Nebulizer Parameters: CCB
Analyte                 Back Pressure    Flow
All                     146.0 kPa        0.50 L/min

------------------------------------------------------------------------------------------
Mean Data: CCB
                   Mean Corrected        Calib.                          Sample
Analyte               Intensity     Conc. Units     Std.Dev.     Conc. Units      Std.Dev.   RSD
Y 371.029           3757827.5                                                   34637.12   0.92%
YRADIAL              129916.1                                                    3555.63   2.74%
Ga 417.206           782520.2                                                   14817.78   1.89%
GaRADIAL              16667.1                                                    3519.26  21.11%
Ag 328.068†            -351.4    -0.00464 mg/L     0.000234    -0.00464 mg/L     0.000234   5.05%
   QC value less than the lower limit for Ag 328.068  Recovery = Not calculated
Al 396.153†              7.0     -0.0423 mg/L      0.00474     -0.0423 mg/L      0.00474  11.20%
   QC value within limits for Al 396.153  Recovery = Not calculated
As 188.979†             -1.4     0.00208 mg/L     0.002817     0.00208 mg/L     0.002817 135.42%
   QC value within limits for As 188.979  Recovery = Not calculated
Ba 233.527†             -6.7    -0.00545 mg/L     0.000111    -0.00545 mg/L     0.000111   2.04%
   QC value less than the lower limit for Ba 233.527  Recovery = Not calculated
Be 234.861†             84.9    -0.00003 mg/L     0.000059    -0.00003 mg/L     0.000059 225.85%
   QC value within limits for Be 234.861  Recovery = Not calculated
B 249.677†              52.0    -0.00111 mg/L     0.001041    -0.00111 mg/L     0.001041  93.90%
   QC value within limits for B 249.677  Recovery = Not calculated
Ca 227.546†              4.9    -0.00268 mg/L     0.062965    -0.00268 mg/L     0.062965 >999.9%
   QC value within limits for Ca 227.546  Recovery = Not calculated
Cd 228.802†             -6.0    -0.00058 mg/L     0.000358    -0.00058 mg/L     0.000358  61.51%
   QC value less than the lower limit for Cd 228.802  Recovery = Not calculated
Co 228.616†             -5.0    -0.00099 mg/L     0.000430    -0.00099 mg/L     0.000430  43.54%
   QC value within limits for Co 228.616  Recovery = Not calculated
Cr 267.716†             26.9    -0.00246 mg/L     0.000091    -0.00246 mg/L     0.000091   3.69%
   QC value within limits for Cr 267.716  Recovery = Not calculated
Cu 327.393†           -142.5    -0.00444 mg/L     0.000430    -0.00444 mg/L     0.000430   9.69%
   QC value within limits for Cu 327.393  Recovery = Not calculated
Fe 239.562†              0.1     -0.0264 mg/L      0.10705     -0.0264 mg/L      0.10705 405.12%
   QC value within limits for Fe 239.562  Recovery = Not calculated
Mg 279.077†             -2.3     -0.0781 mg/L      0.04000     -0.0781 mg/L      0.04000  51.25%
   QC value within limits for Mg 279.077  Recovery = Not calculated
Mn 257.610†              0.9    -0.00412 mg/L     0.000008    -0.00412 mg/L     0.000008   0.21%
   QC value within limits for Mn 257.610  Recovery = Not calculated
Mo 202.031†             -6.5    -0.00555 mg/L     0.000456    -0.00555 mg/L     0.000456   8.23%
   QC value within limits for Mo 202.031  Recovery = Not calculated
Ni 231.604†              3.8    -0.00235 mg/L     0.000522    -0.00235 mg/L     0.000522  22.20%
   QC value within limits for Ni 231.604  Recovery = Not calculated
Pb 220.353†              1.4     0.00062 mg/L     0.000603     0.00062 mg/L     0.000603  96.80%
   QC value within limits for Pb 220.353  Recovery = Not calculated
```

Approved: January 31, 2012

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Sb 206.836†                0.0    -0.00345 mg/L      0.001461    -0.00345 mg/L      0.001461  42.28%
   QC value within limits for Sb 206.836  Recovery = Not calculated
Se 196.026†               -2.1     0.00093 mg/L      0.010094     0.00093 mg/L      0.010094 >999.9%
   QC value within limits for Se 196.026  Recovery = Not calculated
Si 251.611†              -20.8     -0.0393 mg/L       0.00049     -0.0393 mg/L       0.00049   1.23%
   QC value within limits for Si 251.611  Recovery = Not calculated
Sn 189.927†               -2.0    -0.00308 mg/L      0.001301    -0.00308 mg/L      0.001301  42.22%
   QC value within limits for Sn 189.927  Recovery = Not calculated
Ti 334.940†             -191.9    -0.00355 mg/L      0.000255    -0.00355 mg/L      0.000255   7.18%
   QC value within limits for Ti 334.940  Recovery = Not calculated
Tl 190.801†               -1.3    -0.00507 mg/L      0.004582    -0.00507 mg/L      0.004582  90.41%
   QC value within limits for Tl 190.801  Recovery = Not calculated
V 290.880†                12.4    -0.00354 mg/L      0.000921    -0.00354 mg/L      0.000921  26.01%
   QC value within limits for V 290.880  Recovery = Not calculated
Zn 206.200†               -1.4    -0.00485 mg/L      0.000139    -0.00485 mg/L      0.000139   2.87%
   QC value within limits for Zn 206.200  Recovery = Not calculated
K 766.490†                 5.5      0.0683 mg/L       0.03919      0.0683 mg/L       0.03919  57.38%
   QC value within limits for K 766.490  Recovery = Not calculated
Na 589.592†             -177.9      0.0123 mg/L       0.00891      0.0123 mg/L       0.00891  72.24%
   QC value within limits for Na 589.592  Recovery = Not calculated
Sr 407.771†              -14.6    -0.00545 mg/L      0.000065    -0.00545 mg/L      0.000065   1.19%
   QC value within limits for Sr 407.771  Recovery = Not calculated
Li 670.784†              257.1    -0.00194 mg/L      0.000329    -0.00194 mg/L      0.000329  16.93%
   QC value within limits for Li 670.784  Recovery = Not calculated
QC Failed.  Continue with analysis.
User canceled analysis.
```

Approved: January 31, 2012

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Analysis Begun

Start Time: 1/30/2012 4:54:56 PM **Plasma On Time: 1/30/2012 8:38:03 AM**
Logged In Analyst: peicp2 **Technique: ICP Continuous**
Spectrometer Model: Optima 4300 DV, S/N 077N4011401 **Autosampler Model: Cetac**

Sample Information File: C:\pe\peicp2\Sample Information\MONDAY2.sif
Batch ID:
Results Data Set: 013012H3R
Results Library: C:\pe\peicp2\Results\Results.mdb

==========

Sequence No.: 1 **Autosampler Location: 37**
Sample ID: L1201064002PS WG388026-01 **Date Collected: 1/30/2012 4:54:59 PM**
Analyst: SLP **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1201064002PS WG388026-01

Analyte	Back Pressure	Flow
All	147.0 kPa	0.50 L/min

Mean Data: L1201064002PS WG388026-01

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3755764.8						95214.12	2.54%
YRADIAL	135339.4						8994.66	6.65%
Ga 417.206	850781.7						22293.85	2.62%
GaRADIAL	18993.4						4054.92	21.35%
Ag 328.068†	24079.3	0.190	mg/L	0.0078	0.190	mg/L	0.0078	4.11%
Al 396.153†	8421.4	5.01	mg/L	0.009	5.01	mg/L	0.009	0.18%
As 188.979†	103.0	0.187	mg/L	0.0028	0.187	mg/L	0.0028	1.48%
Ba 233.527†	15975.7	0.517	mg/L	0.0168	0.517	mg/L	0.0168	3.25%
Be 234.861†	7437.4	0.0243	mg/L	0.00093	0.0243	mg/L	0.00093	3.81%
B 249.677†	28436.9	0.985	mg/L	0.0460	0.985	mg/L	0.0460	4.67%
Ca 227.546†	329.3	4.86	mg/L	0.171	4.86	mg/L	0.171	3.51%
Cd 228.802†	255.6	0.0234	mg/L	0.00065	0.0234	mg/L	0.00065	2.76%
Co 228.616†	1023.9	0.0993	mg/L	0.00271	0.0993	mg/L	0.00271	2.73%
Cr 267.716†	16041.0	0.250	mg/L	0.0090	0.250	mg/L	0.0090	3.60%
Cu 327.393†	23412.0	0.237	mg/L	0.0109	0.237	mg/L	0.0109	4.59%
Fe 239.562†	40.2	1.80	mg/L	0.107	1.80	mg/L	0.107	5.92%
Mg 279.077†	403.9	4.99	mg/L	0.283	4.99	mg/L	0.283	5.68%
Mn 257.610†	66524.8	0.256	mg/L	0.0088	0.256	mg/L	0.0088	3.45%
Mo 202.031†	3634.9	0.505	mg/L	0.0142	0.505	mg/L	0.0142	2.82%
Ni 231.604†	4508.5	0.260	mg/L	0.0082	0.260	mg/L	0.0082	3.15%
Pb 220.353†	726.9	0.256	mg/L	0.0063	0.256	mg/L	0.0063	2.45%
Sb 206.836†	482.7	0.578	mg/L	0.0186	0.578	mg/L	0.0186	3.22%
Se 196.026†	123.7	0.196	mg/L	0.0123	0.196	mg/L	0.0123	6.27%
Si 251.611†	45953.7	2.50	mg/L	0.110	2.50	mg/L	0.110	4.40%
Sn 189.927†	1379.0	0.521	mg/L	0.0148	0.521	mg/L	0.0148	2.85%
Ti 334.940†	241164.0	0.505	mg/L	0.0013	0.505	mg/L	0.0013	0.25%
Tl 190.801†	227.1	0.264	mg/L	0.0060	0.264	mg/L	0.0060	2.28%
V 290.880†	43083.9	0.499	mg/L	0.0202	0.499	mg/L	0.0202	4.05%
Zn 206.200†	7177.2	0.510	mg/L	0.0186	0.510	mg/L	0.0186	3.65%
K 766.490†	24557.9	24.3	mg/L	0.52	24.3	mg/L	0.52	2.16%
Na 589.592†	116815.5	24.6	mg/L	0.66	24.6	mg/L	0.66	2.69%
Sr 407.771†	227054.6	0.420	mg/L	0.0628	0.420	mg/L	0.0628	14.96%
Li 670.784†	20329.7	0.562	mg/L	0.0125	0.562	mg/L	0.0125	2.23%

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Sequence No.: 2 **Autosampler Location: 38**
Sample ID: L1201064003 **Date Collected: 1/30/2012 5:01:50 PM**
Analyst: SLP **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1201064003

Approved: January 31, 2012

Analyte	Back Pressure	Flow
All	147.0 kPa	0.50 L/min

Mean Data: L1201064003

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3854621.3						54031.95	1.40%
YRADIAL	132506.5						673.99	0.51%
Ga 417.206	813183.8						15049.99	1.85%
GaRADIAL	16087.7						3040.77	18.90%
Ag 328.068†	-410.8	-0.00512	mg/L	0.000931	-0.00512	mg/L	0.000931	18.20%
Al 396.153†	16.1	-0.0369	mg/L	0.00361	-0.0369	mg/L	0.00361	9.78%
As 188.979†	1.6	0.00750	mg/L	0.002985	0.00750	mg/L	0.002985	39.81%
Ba 233.527†	-6.6	-0.00545	mg/L	0.000163	-0.00545	mg/L	0.000163	2.99%
Be 234.861†	106.1	0.00004	mg/L	0.000038	0.00004	mg/L	0.000038	88.93%
B 249.677†	159.2	0.00259	mg/L	0.000829	0.00259	mg/L	0.000829	32.04%
Ca 227.546†	4.5	-0.00743	mg/L	0.061134	-0.00743	mg/L	0.061134	822.83%
Cd 228.802†	-6.9	-0.00065	mg/L	0.000229	-0.00065	mg/L	0.000229	34.91%
Co 228.616†	-3.9	-0.00088	mg/L	0.000293	-0.00088	mg/L	0.000293	33.33%
Cr 267.716†	108.4	-0.00117	mg/L	0.000198	-0.00117	mg/L	0.000198	16.84%
Cu 327.393†	-8.7	-0.00307	mg/L	0.000533	-0.00307	mg/L	0.000533	17.37%
Fe 239.562†	0.1	-0.0282	mg/L	0.09435	-0.0282	mg/L	0.09435	334.49%
Mg 279.077†	-1.2	-0.0643	mg/L	0.01342	-0.0643	mg/L	0.01342	20.86%
Mn 257.610†	98.7	-0.00374	mg/L	0.000025	-0.00374	mg/L	0.000025	0.67%
Mo 202.031†	-6.4	-0.00553	mg/L	0.000401	-0.00553	mg/L	0.000401	7.25%
Ni 231.604†	22.4	-0.00127	mg/L	0.000243	-0.00127	mg/L	0.000243	19.09%
Pb 220.353†	0.2	0.00022	mg/L	0.001690	0.00022	mg/L	0.001690	770.05%
Sb 206.836†	3.3	0.00041	mg/L	0.000370	0.00041	mg/L	0.000370	90.50%
Se 196.026†	-6.1	-0.00528	mg/L	0.005241	-0.00528	mg/L	0.005241	99.20%
Si 251.611†	85.7	-0.0334	mg/L	0.00089	-0.0334	mg/L	0.00089	2.67%
Sn 189.927†	-2.2	-0.00314	mg/L	0.001322	-0.00314	mg/L	0.001322	42.04%
Ti 334.940†	-100.1	-0.00335	mg/L	0.000185	-0.00335	mg/L	0.000185	5.51%
Tl 190.801†	-2.8	-0.00680	mg/L	0.002294	-0.00680	mg/L	0.002294	33.76%
V 290.880†	25.7	-0.00339	mg/L	0.001480	-0.00339	mg/L	0.001480	43.68%
Zn 206.200†	13.7	-0.00376	mg/L	0.000104	-0.00376	mg/L	0.000104	2.75%
K 766.490†	-16.4	0.0471	mg/L	0.03157	0.0471	mg/L	0.03157	67.02%
Na 589.592†	-63.8	0.0356	mg/L	0.01313	0.0356	mg/L	0.01313	36.86%
Sr 407.771†	-2.8	-0.00543	mg/L	0.000071	-0.00543	mg/L	0.000071	1.31%
Li 670.784†	189.8	-0.00383	mg/L	0.000661	-0.00383	mg/L	0.000661	17.23%

Sequence No.: 3 — **Autosampler Location: 39**
Sample ID: L1201064004 — **Date Collected: 1/30/2012 5:08:40 PM**
Analyst: SLP — **Data Type: Original**
Initial Sample Wt: — **Initial Sample Vol:**
Dilution: — **Sample Prep Vol:**

Nebulizer Parameters: L1201064004

Analyte	Back Pressure	Flow
All	147.0 kPa	0.50 L/min

Mean Data: L1201064004

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3815799.6						53489.30	1.40%
YRADIAL	132297.1						4709.90	3.56%
Ga 417.206	813257.6						10802.44	1.33%
GaRADIAL	17121.2						3449.24	20.15%
Ag 328.068†	-383.2	-0.00490	mg/L	0.000323	-0.00490	mg/L	0.000323	6.60%
Al 396.153†	27.2	-0.0302	mg/L	0.00494	-0.0302	mg/L	0.00494	16.35%
As 188.979†	0.8	0.00599	mg/L	0.005642	0.00599	mg/L	0.005642	94.27%
Ba 233.527†	-5.9	-0.00542	mg/L	0.000084	-0.00542	mg/L	0.000084	1.54%
Be 234.861†	100.5	0.00003	mg/L	0.000024	0.00003	mg/L	0.000024	80.48%
B 249.677†	63.8	-0.00085	mg/L	0.000456	-0.00085	mg/L	0.000456	53.64%
Ca 227.546†	1.4	-0.0520	mg/L	0.05127	-0.0520	mg/L	0.05127	98.66%
Cd 228.802†	-7.5	-0.00071	mg/L	0.000111	-0.00071	mg/L	0.000111	15.64%
Co 228.616†	-4.5	-0.00094	mg/L	0.000176	-0.00094	mg/L	0.000176	18.69%
Cr 267.716†	44.9	-0.00217	mg/L	0.000177	-0.00217	mg/L	0.000177	8.13%
Cu 327.393†	17.6	-0.00280	mg/L	0.000635	-0.00280	mg/L	0.000635	22.64%

Approved: January 31, 2012

Fe 239.562†	-0.5	-0.0557	mg/L	0.01562	-0.0557	mg/L	0.01562 28.04%
Mg 279.077†	-0.4	-0.0536	mg/L	0.02294	-0.0536	mg/L	0.02294 42.80%
Mn 257.610†	45.3	-0.00395	mg/L	0.000021	-0.00395	mg/L	0.000021 0.54%
Mo 202.031†	-8.1	-0.00577	mg/L	0.000234	-0.00577	mg/L	0.000234 4.05%
Ni 231.604†	13.3	-0.00180	mg/L	0.000315	-0.00180	mg/L	0.000315 17.50%
Pb 220.353†	-3.2	-0.00098	mg/L	0.001956	-0.00098	mg/L	0.001956 199.72%
Sb 206.836†	1.7	-0.00139	mg/L	0.002591	-0.00139	mg/L	0.002591 186.23%
Se 196.026†	-5.8	-0.00484	mg/L	0.001552	-0.00484	mg/L	0.001552 32.09%
Si 251.611†	211.7	-0.0264	mg/L	0.00104	-0.0264	mg/L	0.00104 3.93%
Sn 189.927†	-4.9	-0.00419	mg/L	0.001552	-0.00419	mg/L	0.001552 37.00%
Ti 334.940†	-189.7	-0.00354	mg/L	0.000151	-0.00354	mg/L	0.000151 4.26%
Tl 190.801†	-3.8	-0.00798	mg/L	0.005520	-0.00798	mg/L	0.005520 69.21%
V 290.880†	88.8	-0.00265	mg/L	0.001008	-0.00265	mg/L	0.001008 38.07%
Zn 206.200†	6.6	-0.00428	mg/L	0.000152	-0.00428	mg/L	0.000152 3.55%
K 766.490†	-36.2	0.0279	mg/L	0.06107	0.0279	mg/L	0.06107 219.20%
Na 589.592†	-83.0	0.0317	mg/L	0.01285	0.0317	mg/L	0.01285 40.54%
Sr 407.771†	4.9	-0.00541	mg/L	0.000072	-0.00541	mg/L	0.000072 1.33%
Li 670.784†	144.3	-0.00511	mg/L	0.002021	-0.00511	mg/L	0.002021 39.54%

Sequence No.: 4 **Autosampler Location: 40**
Sample ID: L1201064005 **Date Collected: 1/30/2012 5:15:29 PM**
Analyst: SLP **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1201064005

Analyte	Back Pressure	Flow
All	147.0 kPa	0.50 L/min

Mean Data: L1201064005

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3790862.1						79621.03	2.10%
YRADIAL	130522.0						8794.00	6.74%
Ga 417.206	806950.3						31747.87	3.93%
GaRADIAL	15674.7						3799.69	24.24%
Ag 328.068†	-368.9	-0.00478	mg/L	0.000354	-0.00478	mg/L	0.000354	7.40%
Al 396.153†	11.1	-0.0399	mg/L	0.00743	-0.0399	mg/L	0.00743	18.62%
As 188.979†	-1.1	0.00275	mg/L	0.002283	0.00275	mg/L	0.002283	82.95%
Ba 233.527†	-7.9	-0.00549	mg/L	0.000035	-0.00549	mg/L	0.000035	0.64%
Be 234.861†	100.4	0.00003	mg/L	0.000062	0.00003	mg/L	0.000062	230.70%
B 249.677†	31.1	-0.00190	mg/L	0.000406	-0.00190	mg/L	0.000406	21.32%
Ca 227.546†	0.7	-0.0628	mg/L	0.03662	-0.0628	mg/L	0.03662	58.31%
Cd 228.802†	-9.7	-0.00091	mg/L	0.000102	-0.00091	mg/L	0.000102	11.20%
Co 228.616†	-5.5	-0.00103	mg/L	0.000322	-0.00103	mg/L	0.000322	31.15%
Cr 267.716†	58.0	-0.00197	mg/L	0.000063	-0.00197	mg/L	0.000063	3.22%
Cu 327.393†	-80.1	-0.00380	mg/L	0.001221	-0.00380	mg/L	0.001221	32.13%
Fe 239.562†	-0.2	-0.0422	mg/L	0.03588	-0.0422	mg/L	0.03588	84.97%
Mg 279.077†	-1.2	-0.0646	mg/L	0.02492	-0.0646	mg/L	0.02492	38.59%
Mn 257.610†	39.7	-0.00397	mg/L	0.000026	-0.00397	mg/L	0.000026	0.65%
Mo 202.031†	-8.0	-0.00575	mg/L	0.000296	-0.00575	mg/L	0.000296	5.15%
Ni 231.604†	10.8	-0.00195	mg/L	0.000225	-0.00195	mg/L	0.000225	11.57%
Pb 220.353†	0.3	0.00026	mg/L	0.000470	0.00026	mg/L	0.000470	182.52%
Sb 206.836†	1.3	-0.00187	mg/L	0.001139	-0.00187	mg/L	0.001139	60.77%
Se 196.026†	-4.3	-0.00250	mg/L	0.003459	-0.00250	mg/L	0.003459	138.57%
Si 251.611†	142.2	-0.0303	mg/L	0.00154	-0.0303	mg/L	0.00154	5.10%
Sn 189.927†	-2.9	-0.00341	mg/L	0.000954	-0.00341	mg/L	0.000954	27.97%
Ti 334.940†	-190.5	-0.00354	mg/L	0.000022	-0.00354	mg/L	0.000022	0.63%
Tl 190.801†	-2.4	-0.00635	mg/L	0.003167	-0.00635	mg/L	0.003167	49.90%
V 290.880†	19.5	-0.00346	mg/L	0.000747	-0.00346	mg/L	0.000747	21.60%
Zn 206.200†	18.2	-0.00344	mg/L	0.000167	-0.00344	mg/L	0.000167	4.85%
K 766.490†	-45.7	0.0187	mg/L	0.01707	0.0187	mg/L	0.01707	91.17%
Na 589.592†	-130.0	0.0221	mg/L	0.02241	0.0221	mg/L	0.02241	101.34%
Sr 407.771†	18.7	-0.00538	mg/L	0.000124	-0.00538	mg/L	0.000124	2.31%
Li 670.784†	167.1	-0.00447	mg/L	0.001765	-0.00447	mg/L	0.001765	39.48%

Sequence No.: 5 **Autosampler Location: 41**
Sample ID: L1201064301 **Date Collected: 1/30/2012 5:22:19 PM**

Approved: January 31, 2012

Analyst: SLP **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1201064301

Analyte	Back Pressure	Flow
All	147.0 kPa	0.50 L/min

Mean Data: L1201064301

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3791355.6						89525.73	2.36%
YRADIAL	127768.9						5941.95	4.65%
Ga 417.206	808543.0						22752.75	2.81%
GaRADIAL	15556.7						3727.96	23.96%
Ag 328.068†	-337.0	-0.00453	mg/L	0.000341	-0.00453	mg/L	0.000341	7.52%
Al 396.153†	5.7	-0.0431	mg/L	0.00955	-0.0431	mg/L	0.00955	22.13%
As 188.979†	0.9	0.00632	mg/L	0.001037	0.00632	mg/L	0.001037	16.40%
Ba 233.527†	-11.4	-0.00560	mg/L	0.000121	-0.00560	mg/L	0.000121	2.16%
Be 234.861†	110.3	0.00006	mg/L	0.000090	0.00006	mg/L	0.000090	161.82%
B 249.677†	14.6	-0.00241	mg/L	0.000842	-0.00241	mg/L	0.000842	34.89%
Ca 227.546†	-3.9	-0.133	mg/L	0.0089	-0.133	mg/L	0.0089	6.65%
Cd 228.802†	-5.6	-0.00053	mg/L	0.000020	-0.00053	mg/L	0.000020	3.82%
Co 228.616†	-4.9	-0.00097	mg/L	0.000306	-0.00097	mg/L	0.000306	31.42%
Cr 267.716†	45.4	-0.00217	mg/L	0.000194	-0.00217	mg/L	0.000194	8.95%
Cu 327.393†	-35.1	-0.00334	mg/L	0.000612	-0.00334	mg/L	0.000612	18.34%
Fe 239.562†	0.1	-0.0278	mg/L	0.06109	-0.0278	mg/L	0.06109	219.97%
Mg 279.077†	-2.5	-0.0806	mg/L	0.00971	-0.0806	mg/L	0.00971	12.04%
Mn 257.610†	13.2	-0.00407	mg/L	0.000041	-0.00407	mg/L	0.000041	1.02%
Mo 202.031†	-9.4	-0.00596	mg/L	0.000143	-0.00596	mg/L	0.000143	2.40%
Ni 231.604†	13.7	-0.00178	mg/L	0.000253	-0.00178	mg/L	0.000253	14.16%
Pb 220.353†	5.6	0.00207	mg/L	0.001275	0.00207	mg/L	0.001275	61.60%
Sb 206.836†	0.8	-0.00258	mg/L	0.000591	-0.00258	mg/L	0.000591	22.86%
Se 196.026†	-1.8	0.00137	mg/L	0.006463	0.00137	mg/L	0.006463	472.19%
Si 251.611†	61.3	-0.0348	mg/L	0.00060	-0.0348	mg/L	0.00060	1.71%
Sn 189.927†	-8.1	-0.00538	mg/L	0.002152	-0.00538	mg/L	0.002152	39.97%
Ti 334.940†	-107.7	-0.00337	mg/L	0.000039	-0.00337	mg/L	0.000039	1.15%
Tl 190.801†	1.3	-0.00195	mg/L	0.001493	-0.00195	mg/L	0.001493	76.68%
V 290.880†	37.3	-0.00325	mg/L	0.000940	-0.00325	mg/L	0.000940	28.89%
Zn 206.200†	8.5	-0.00414	mg/L	0.000103	-0.00414	mg/L	0.000103	2.49%
K 766.490†	-59.8	0.00499	mg/L	0.047640	0.00499	mg/L	0.047640	954.00%
Na 589.592†	-76.4	0.0330	mg/L	0.00788	0.0330	mg/L	0.00788	23.83%
Sr 407.771†	-32.0	-0.00548	mg/L	0.000095	-0.00548	mg/L	0.000095	1.73%
Li 670.784†	170.0	-0.00439	mg/L	0.004545	-0.00439	mg/L	0.004545	103.55%

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Sequence No.: 6 **Autosampler Location: 42**
Sample ID: L1201064302 **Date Collected: 1/30/2012 5:29:09 PM**
Analyst: SLP **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1201064302

Analyte	Back Pressure	Flow
All	147.0 kPa	0.50 L/min

Mean Data: L1201064302

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3833845.6						34523.57	0.90%
YRADIAL	127681.3						3120.87	2.44%
Ga 417.206	813850.4						8584.27	1.05%
GaRADIAL	15156.0						3228.57	21.30%
Ag 328.068†	-413.7	-0.00514	mg/L	0.000512	-0.00514	mg/L	0.000512	9.96%
Al 396.153†	19.4	-0.0349	mg/L	0.00111	-0.0349	mg/L	0.00111	3.19%
As 188.979†	1.8	0.00792	mg/L	0.003470	0.00792	mg/L	0.003470	43.80%
Ba 233.527†	-10.5	-0.00558	mg/L	0.000083	-0.00558	mg/L	0.000083	1.49%
Be 234.861†	116.9	0.00009	mg/L	0.000028	0.00009	mg/L	0.000028	32.03%

Approved: January 31, 2012

B 249.677†	8.1	-0.00292	mg/L	0.000195	-0.00292	mg/L	0.000195	6.66%
Ca 227.546†	0.3	-0.0647	mg/L	0.03906	-0.0647	mg/L	0.03906	60.39%
Cd 228.802†	-6.1	-0.00058	mg/L	0.000237	-0.00058	mg/L	0.000237	40.79%
Co 228.616†	-5.4	-0.00103	mg/L	0.000552	-0.00103	mg/L	0.000552	53.84%
Cr 267.716†	79.6	-0.00163	mg/L	0.000047	-0.00163	mg/L	0.000047	2.87%
Cu 327.393†	-43.0	-0.00342	mg/L	0.000467	-0.00342	mg/L	0.000467	13.63%
Fe 239.562†	-1.2	-0.0870	mg/L	0.02666	-0.0870	mg/L	0.02666	30.63%
Mg 279.077†	-2.6	-0.0812	mg/L	0.05069	-0.0812	mg/L	0.05069	62.41%
Mn 257.610†	75.2	-0.00383	mg/L	0.000023	-0.00383	mg/L	0.000023	0.61%
Mo 202.031†	-10.2	-0.00606	mg/L	0.000618	-0.00606	mg/L	0.000618	10.19%
Ni 231.604†	13.6	-0.00178	mg/L	0.000205	-0.00178	mg/L	0.000205	11.51%
Pb 220.353†	2.1	0.00088	mg/L	0.002589	0.00088	mg/L	0.002589	295.03%
Sb 206.836†	0.3	-0.00310	mg/L	0.001959	-0.00310	mg/L	0.001959	63.11%
Se 196.026†	-6.1	-0.00524	mg/L	0.001990	-0.00524	mg/L	0.001990	38.00%
Si 251.611†	239.7	-0.0249	mg/L	0.00095	-0.0249	mg/L	0.00095	3.83%
Sn 189.927†	-6.4	-0.00475	mg/L	0.000945	-0.00475	mg/L	0.000945	19.87%
Ti 334.940†	-122.4	-0.00340	mg/L	0.000084	-0.00340	mg/L	0.000084	2.48%
Tl 190.801†	-4.1	-0.00827	mg/L	0.002522	-0.00827	mg/L	0.002522	30.51%
V 290.880†	36.9	-0.00325	mg/L	0.002198	-0.00325	mg/L	0.002198	67.54%
Zn 206.200†	20.3	-0.00329	mg/L	0.000095	-0.00329	mg/L	0.000095	2.88%
K 766.490†	-41.7	0.0226	mg/L	0.03708	0.0226	mg/L	0.03708	164.05%
Na 589.592†	-64.6	0.0354	mg/L	0.01887	0.0354	mg/L	0.01887	53.22%
Sr 407.771†	-9.4	-0.00542	mg/L	0.000148	-0.00542	mg/L	0.000148	2.73%
Li 670.784†	121.7	-0.00575	mg/L	0.000683	-0.00575	mg/L	0.000683	11.89%

Sequence No.: 7 **Autosampler Location: 43**
Sample ID: L1201064303 **Date Collected: 1/30/2012 5:35:59 PM**
Analyst: SLP **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1201064303

Analyte	Back Pressure	Flow
All	148.0 kPa	0.50 L/min

Mean Data: L1201064303

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3750408.5						63917.31	1.70%
YRADIAL	130103.2						1135.49	0.87%
Ga 417.206	791487.1						9869.63	1.25%
GaRADIAL	16322.0						3301.54	20.23%
Ag 328.068†	-509.9	-0.00590	mg/L	0.000910	-0.00590	mg/L	0.000910	15.43%
Al 396.153†	20.3	-0.0343	mg/L	0.00636	-0.0343	mg/L	0.00636	18.52%
As 188.979†	0.4	0.00538	mg/L	0.004903	0.00538	mg/L	0.004903	91.05%
Ba 233.527†	-11.5	-0.00561	mg/L	0.000156	-0.00561	mg/L	0.000156	2.79%
Be 234.861†	108.7	0.00006	mg/L	0.000025	0.00006	mg/L	0.000025	38.81%
B 249.677†	4.1	-0.00309	mg/L	0.000658	-0.00309	mg/L	0.000658	21.31%
Ca 227.546†	1.6	-0.0446	mg/L	0.06332	-0.0446	mg/L	0.06332	141.86%
Cd 228.802†	-6.3	-0.00060	mg/L	0.000142	-0.00060	mg/L	0.000142	23.47%
Co 228.616†	-4.8	-0.00096	mg/L	0.000502	-0.00096	mg/L	0.000502	52.17%
Cr 267.716†	66.9	-0.00182	mg/L	0.000161	-0.00182	mg/L	0.000161	8.82%
Cu 327.393†	-67.5	-0.00367	mg/L	0.000880	-0.00367	mg/L	0.000880	23.96%
Fe 239.562†	-1.3	-0.0928	mg/L	0.05823	-0.0928	mg/L	0.05823	62.77%
Mg 279.077†	-2.2	-0.0760	mg/L	0.00292	-0.0760	mg/L	0.00292	3.85%
Mn 257.610†	65.4	-0.00387	mg/L	0.000035	-0.00387	mg/L	0.000035	0.92%
Mo 202.031†	-8.8	-0.00587	mg/L	0.000409	-0.00587	mg/L	0.000409	6.96%
Ni 231.604†	10.9	-0.00194	mg/L	0.000054	-0.00194	mg/L	0.000054	2.76%
Pb 220.353†	4.9	0.00185	mg/L	0.000632	0.00185	mg/L	0.000632	34.18%
Sb 206.836†	0.1	-0.00342	mg/L	0.000125	-0.00342	mg/L	0.000125	3.65%
Se 196.026†	-4.0	-0.00206	mg/L	0.003325	-0.00206	mg/L	0.003325	161.12%
Si 251.611†	172.1	-0.0286	mg/L	0.00031	-0.0286	mg/L	0.00031	1.09%
Sn 189.927†	-4.0	-0.00382	mg/L	0.000846	-0.00382	mg/L	0.000846	22.15%
Ti 334.940†	-168.4	-0.00350	mg/L	0.000205	-0.00350	mg/L	0.000205	5.87%
Tl 190.801†	-1.7	-0.00551	mg/L	0.005986	-0.00551	mg/L	0.005986	108.73%
V 290.880†	190.6	-0.00146	mg/L	0.001220	-0.00146	mg/L	0.001220	83.67%
Zn 206.200†	13.1	-0.00381	mg/L	0.000094	-0.00381	mg/L	0.000094	2.47%
K 766.490†	1.8	0.0648	mg/L	0.01508	0.0648	mg/L	0.01508	23.29%
Na 589.592†	-96.7	0.0289	mg/L	0.03041	0.0289	mg/L	0.03041	105.26%

Approved: January 31, 2012

Sr 407.771†	-18.9	-0.00544	mg/L	0.000100	-0.00544	mg/L	0.000100 1.84%
Li 670.784†	171.9	-0.00434	mg/L	0.001243	-0.00434	mg/L	0.001243 28.67%

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Sequence No.: 8 **Autosampler Location: 44**
Sample ID: L1201064304 **Date Collected: 1/30/2012 5:42:49 PM**
Analyst: SLP **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1201064304

Analyte	Back Pressure	Flow
All	148.0 kPa	0.50 L/min

Mean Data: L1201064304

Analyte	Mean Corrected Intensity	Conc.	Calib. Units	Std.Dev.	Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	3919375.9						40823.71	1.04%
YRADIAL	132083.7						3321.77	2.51%
Ga 417.206	826550.4						10246.31	1.24%
GaRADIAL	15336.0						3463.04	22.58%
Ag 328.068†	-426.1	-0.00524	mg/L	0.000673	-0.00524	mg/L	0.000673	12.85%
Al 396.153†	7.8	-0.0418	mg/L	0.00751	-0.0418	mg/L	0.00751	17.94%
As 188.979†	2.2	0.00865	mg/L	0.006105	0.00865	mg/L	0.006105	70.55%
Ba 233.527†	-7.5	-0.00548	mg/L	0.000049	-0.00548	mg/L	0.000049	0.90%
Be 234.861†	127.3	0.00012	mg/L	0.000035	0.00012	mg/L	0.000035	28.48%
B 249.677†	0.1	-0.00319	mg/L	0.000170	-0.00319	mg/L	0.000170	5.33%
Ca 227.546†	-0.3	-0.0736	mg/L	0.02394	-0.0736	mg/L	0.02394	32.54%
Cd 228.802†	-5.8	-0.00055	mg/L	0.000072	-0.00055	mg/L	0.000072	13.05%
Co 228.616†	-4.3	-0.00092	mg/L	0.000335	-0.00092	mg/L	0.000335	36.46%
Cr 267.716†	63.5	-0.00188	mg/L	0.000089	-0.00188	mg/L	0.000089	4.71%
Cu 327.393†	-86.1	-0.00386	mg/L	0.001074	-0.00386	mg/L	0.001074	27.79%
Fe 239.562†	-1.2	-0.0863	mg/L	0.03037	-0.0863	mg/L	0.03037	35.20%
Mg 279.077†	-3.1	-0.0875	mg/L	0.00892	-0.0875	mg/L	0.00892	10.20%
Mn 257.610†	33.5	-0.00400	mg/L	0.000016	-0.00400	mg/L	0.000016	0.40%
Mo 202.031†	-13.2	-0.00649	mg/L	0.000531	-0.00649	mg/L	0.000531	8.20%
Ni 231.604†	8.8	-0.00206	mg/L	0.000409	-0.00206	mg/L	0.000409	19.82%
Pb 220.353†	0.3	0.00024	mg/L	0.001409	0.00024	mg/L	0.001409	581.23%
Sb 206.836†	1.6	-0.00156	mg/L	0.002251	-0.00156	mg/L	0.002251	143.86%
Se 196.026†	-3.0	-0.00058	mg/L	0.005405	-0.00058	mg/L	0.005405	928.81%
Si 251.611†	93.9	-0.0329	mg/L	0.00050	-0.0329	mg/L	0.00050	1.51%
Sn 189.927†	-5.2	-0.00431	mg/L	0.002169	-0.00431	mg/L	0.002169	50.35%
Ti 334.940†	-181.2	-0.00352	mg/L	0.000078	-0.00352	mg/L	0.000078	2.20%
Tl 190.801†	-0.8	-0.00444	mg/L	0.004024	-0.00444	mg/L	0.004024	90.60%
V 290.880†	2.6	-0.00366	mg/L	0.000357	-0.00366	mg/L	0.000357	9.78%
Zn 206.200†	9.8	-0.00404	mg/L	0.000106	-0.00404	mg/L	0.000106	2.62%
K 766.490†	-55.8	0.00892	mg/L	0.061931	0.00892	mg/L	0.061931	694.16%
Na 589.592†	-192.1	0.00944	mg/L	0.006230	0.00944	mg/L	0.006230	66.01%
Sr 407.771†	-9.5	-0.00543	mg/L	0.000095	-0.00543	mg/L	0.000095	1.75%
Li 670.784†	144.9	-0.00509	mg/L	0.001345	-0.00509	mg/L	0.001345	26.41%

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Sequence No.: 9 **Autosampler Location: 45**
Sample ID: L1201064305 **Date Collected: 1/30/2012 5:49:40 PM**
Analyst: SLP **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1201064305

Analyte	Back Pressure	Flow
All	148.0 kPa	0.50 L/min

Mean Data: L1201064305

Analyte	Mean Corrected Intensity	Conc.	Calib. Units	Std.Dev.	Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	3797407.8						37376.36	0.98%
YRADIAL	130026.5						6215.58	4.78%
Ga 417.206	803596.5						8577.16	1.07%

Approved: January 31, 2012

GaRADIAL	14454.7					3600.85	24.91%
Ag 328.068†	-498.0	-0.00581	mg/L	0.000806	-0.00581 mg/L	0.000806	13.87%
Al 396.153†	22.2	-0.0332	mg/L	0.00536	-0.0332 mg/L	0.00536	16.13%
As 188.979†	-0.8	0.00319	mg/L	0.003060	0.00319 mg/L	0.003060	95.91%
Ba 233.527†	-7.4	-0.00547	mg/L	0.000101	-0.00547 mg/L	0.000101	1.84%
Be 234.861†	122.4	0.00010	mg/L	0.000068	0.00010 mg/L	0.000068	67.92%
B 249.677†	35.4	-0.00180	mg/L	0.000173	-0.00180 mg/L	0.000173	9.59%
Ca 227.546†	2.3	-0.0374	mg/L	0.06155	-0.0374 mg/L	0.06155	164.61%
Cd 228.802†	-8.5	-0.00081	mg/L	0.000328	-0.00081 mg/L	0.000328	40.51%
Co 228.616†	-7.6	-0.00124	mg/L	0.000444	-0.00124 mg/L	0.000444	35.70%
Cr 267.716†	67.4	-0.00182	mg/L	0.000108	-0.00182 mg/L	0.000108	5.95%
Cu 327.393†	11.1	-0.00287	mg/L	0.000999	-0.00287 mg/L	0.000999	34.80%
Fe 239.562†	-0.4	-0.0503	mg/L	0.01800	-0.0503 mg/L	0.01800	35.78%
Mg 279.077†	-1.9	-0.0727	mg/L	0.02902	-0.0727 mg/L	0.02902	39.94%
Mn 257.610†	148.9	-0.00355	mg/L	0.000017	-0.00355 mg/L	0.000017	0.48%
Mo 202.031†	-8.4	-0.00581	mg/L	0.000093	-0.00581 mg/L	0.000093	1.59%
Ni 231.604†	21.0	-0.00135	mg/L	0.000168	-0.00135 mg/L	0.000168	12.42%
Pb 220.353†	2.4	0.00097	mg/L	0.000805	0.00097 mg/L	0.000805	82.98%
Sb 206.836†	1.5	-0.00169	mg/L	0.001028	-0.00169 mg/L	0.001028	60.91%
Se 196.026†	-5.4	-0.00417	mg/L	0.004633	-0.00417 mg/L	0.004633	111.19%
Si 251.611†	147.2	-0.0300	mg/L	0.00051	-0.0300 mg/L	0.00051	1.70%
Sn 189.927†	-3.4	-0.00361	mg/L	0.001030	-0.00361 mg/L	0.001030	28.55%
Ti 334.940†	-112.6	-0.00338	mg/L	0.000156	-0.00338 mg/L	0.000156	4.62%
Tl 190.801†	-2.8	-0.00673	mg/L	0.002532	-0.00673 mg/L	0.002532	37.62%
V 290.880†	108.5	-0.00242	mg/L	0.001961	-0.00242 mg/L	0.001961	81.06%
Zn 206.200†	26.3	-0.00287	mg/L	0.000066	-0.00287 mg/L	0.000066	2.32%
K 766.490†	-52.6	0.0120	mg/L	0.04141	0.0120 mg/L	0.04141	346.49%
Na 589.592†	-50.3	0.0384	mg/L	0.01662	0.0384 mg/L	0.01662	43.33%
Sr 407.771†	47.8	-0.00533	mg/L	0.000116	-0.00533 mg/L	0.000116	2.17%
Li 670.784†	191.3	-0.00379	mg/L	0.001216	-0.00379 mg/L	0.001216	32.09%

Sequence No.: 10 **Autosampler Location: 46**
Sample ID: PBW 7P WG388217-02 **Date Collected: 1/30/2012 5:56:32 PM**
Analyst: SLP **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: PBW 7P WG388217-02

Analyte	Back Pressure	Flow
All	148.0 kPa	0.50 L/min

Mean Data: PBW 7P WG388217-02

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3840034.1						29723.11	0.77%
YRADIAL	126908.8						6116.36	4.82%
Ga 417.206	812425.5						11366.45	1.40%
GaRADIAL	14279.6						3644.24	25.52%
Ag 328.068†	-440.4	-0.00535	mg/L	0.000312	-0.00535	mg/L	0.000312	5.83%
Al 396.153†	7.0	-0.0424	mg/L	0.01179	-0.0424	mg/L	0.01179	27.83%
As 188.979†	-0.8	0.00312	mg/L	0.001356	0.00312	mg/L	0.001356	43.48%
Ba 233.527†	-5.9	-0.00543	mg/L	0.000123	-0.00543	mg/L	0.000123	2.27%
Be 234.861†	121.8	0.00010	mg/L	0.000033	0.00010	mg/L	0.000033	33.23%
B 249.677†	-51.0	-0.00478	mg/L	0.000377	-0.00478	mg/L	0.000377	7.88%
Ca 227.546†	-2.4	-0.110	mg/L	0.0838	-0.110	mg/L	0.0838	76.37%
Cd 228.802†	-10.4	-0.00097	mg/L	0.000218	-0.00097	mg/L	0.000218	22.43%
Co 228.616†	-6.1	-0.00109	mg/L	0.000522	-0.00109	mg/L	0.000522	47.70%
Cr 267.716†	28.7	-0.00243	mg/L	0.000029	-0.00243	mg/L	0.000029	1.18%
Cu 327.393†	-205.1	-0.00508	mg/L	0.000498	-0.00508	mg/L	0.000498	9.81%
Fe 239.562†	-0.4	-0.0499	mg/L	0.03859	-0.0499	mg/L	0.03859	77.38%
Mg 279.077†	-1.5	-0.0683	mg/L	0.01272	-0.0683	mg/L	0.01272	18.61%
Mn 257.610†	0.8	-0.00412	mg/L	0.000020	-0.00412	mg/L	0.000020	0.50%
Mo 202.031†	-7.1	-0.00564	mg/L	0.000445	-0.00564	mg/L	0.000445	7.90%
Ni 231.604†	2.8	-0.00241	mg/L	0.000170	-0.00241	mg/L	0.000170	7.03%
Pb 220.353†	0.8	0.00041	mg/L	0.000999	0.00041	mg/L	0.000999	242.87%
Sb 206.836†	1.8	-0.00131	mg/L	0.001276	-0.00131	mg/L	0.001276	97.13%
Se 196.026†	-4.4	-0.00268	mg/L	0.002093	-0.00268	mg/L	0.002093	78.12%
Si 251.611†	119.5	-0.0315	mg/L	0.00168	-0.0315	mg/L	0.00168	5.32%
Sn 189.927†	-6.7	-0.00486	mg/L	0.001726	-0.00486	mg/L	0.001726	35.49%

Approved: January 31, 2012

Ti 334.940†	-210.2	-0.00359 mg/L	0.000106	-0.00359 mg/L	0.000106	2.96%
Tl 190.801†	-2.2	-0.00606 mg/L	0.004932	-0.00606 mg/L	0.004932	81.34%
V 290.880†	53.3	-0.00306 mg/L	0.000931	-0.00306 mg/L	0.000931	30.39%
Zn 206.200†	40.2	-0.00187 mg/L	0.000162	-0.00187 mg/L	0.000162	8.65%
K 766.490†	-29.0	0.0349 mg/L	0.06815	0.0349 mg/L	0.06815	195.30%
Na 589.592†	-134.9	0.0211 mg/L	0.01719	0.0211 mg/L	0.01719	81.45%
Sr 407.771†	9.7	-0.00540 mg/L	0.000096	-0.00540 mg/L	0.000096	1.77%
Li 670.784†	93.6	-0.00653 mg/L	0.000501	-0.00653 mg/L	0.000501	7.66%

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Sequence No.: 11 **Autosampler Location: 6**
Sample ID: CCV **Date Collected: 1/30/2012 6:03:23 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: CCV

Analyte	Back Pressure	Flow
All	148.0 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	3723813.5						73912.52	1.98%
YRADIAL	125455.6						2980.24	2.38%
Ga 417.206	833477.3						22534.23	2.70%
GaRADIAL	14216.8						3541.58	24.91%
Ag 328.068†	47514.6	0.377	mg/L	0.0096	0.377	mg/L	0.0096	2.54%
QC value within limits for Ag 328.068 Recovery = 94.32%								
Al 396.153†	16215.6	9.69	mg/L	0.145	9.69	mg/L	0.145	1.50%
QC value within limits for Al 396.153 Recovery = 96.91%								
As 188.979†	212.9	0.382	mg/L	0.0082	0.382	mg/L	0.0082	2.15%
QC value within limits for As 188.979 Recovery = 95.41%								
Ba 233.527†	31205.4	1.02	mg/L	0.021	1.02	mg/L	0.021	2.04%
QC value within limits for Ba 233.527 Recovery = 101.51%								
Be 234.861†	14442.8	0.0474	mg/L	0.00098	0.0474	mg/L	0.00098	2.06%
QC value within limits for Be 234.861 Recovery = 94.88%								
B 249.677†	13728.5	0.478	mg/L	0.0144	0.478	mg/L	0.0144	3.01%
QC value within limits for B 249.677 Recovery = 95.64%								
Ca 227.546†	668.0	9.90	mg/L	0.249	9.90	mg/L	0.249	2.51%
QC value within limits for Ca 227.546 Recovery = 99.03%								
Cd 228.802†	520.6	0.0478	mg/L	0.00154	0.0478	mg/L	0.00154	3.22%
QC value within limits for Cd 228.802 Recovery = 95.53%								
Co 228.616†	2037.6	0.198	mg/L	0.0044	0.198	mg/L	0.0044	2.23%
QC value within limits for Co 228.616 Recovery = 99.02%								
Cr 267.716†	31123.5	0.489	mg/L	0.0115	0.489	mg/L	0.0115	2.35%
QC value within limits for Cr 267.716 Recovery = 97.71%								
Cu 327.393†	46025.9	0.468	mg/L	0.0122	0.468	mg/L	0.0122	2.60%
QC value within limits for Cu 327.393 Recovery = 93.68%								
Fe 239.562†	81.8	3.70	mg/L	0.108	3.70	mg/L	0.108	2.93%
QC value within limits for Fe 239.562 Recovery = 92.61%								
Mg 279.077†	821.1	10.2	mg/L	0.18	10.2	mg/L	0.18	1.75%
QC value within limits for Mg 279.077 Recovery = 101.88%								
Mn 257.610†	128037.7	0.496	mg/L	0.0117	0.496	mg/L	0.0117	2.36%
QC value within limits for Mn 257.610 Recovery = 99.23%								
Mo 202.031†	6988.9	0.975	mg/L	0.0232	0.975	mg/L	0.0232	2.38%
QC value within limits for Mo 202.031 Recovery = 97.51%								
Ni 231.604†	8554.1	0.495	mg/L	0.0111	0.495	mg/L	0.0111	2.25%
QC value within limits for Ni 231.604 Recovery = 98.95%								
Pb 220.353†	1436.5	0.505	mg/L	0.0109	0.505	mg/L	0.0109	2.16%
QC value within limits for Pb 220.353 Recovery = 101.10%								
Sb 206.836†	979.9	1.18	mg/L	0.031	1.18	mg/L	0.031	2.67%
QC value within limits for Sb 206.836 Recovery = 98.08%								
Se 196.026†	255.5	0.400	mg/L	0.0146	0.400	mg/L	0.0146	3.65%
QC value within limits for Se 196.026 Recovery = 100.07%								
Si 251.611†	88186.8	4.82	mg/L	0.119	4.82	mg/L	0.119	2.46%
QC value within limits for Si 251.611 Recovery = 96.48%								
Sn 189.927†	2690.3	1.02	mg/L	0.019	1.02	mg/L	0.019	1.82%
QC value within limits for Sn 189.927 Recovery = 101.91%								
Ti 334.940†	487786.4	1.02	mg/L	0.002	1.02	mg/L	0.002	0.15%

Approved: January 31, 2012

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   QC value within limits for Ti 334.940  Recovery = 102.45%
Tl 190.801†            432.9       0.507 mg/L        0.0098       0.507 mg/L        0.0098   1.93%
   QC value within limits for Tl 190.801  Recovery = 101.48%
V 290.880†           84102.9       0.978 mg/L        0.0235       0.978 mg/L        0.0235   2.40%
   QC value within limits for V 290.880  Recovery = 97.83%
Zn 206.200†          13775.8       0.983 mg/L        0.0238       0.983 mg/L        0.0238   2.42%
   QC value within limits for Zn 206.200  Recovery = 98.31%
K 766.490†           46800.0        47.0 mg/L         2.73        47.0 mg/L          2.73   5.81%
   QC value within limits for K 766.490  Recovery = 93.91%
Na 589.592†         233966.7        50.8 mg/L         3.46        50.8 mg/L          3.46   6.82%
   QC value within limits for Na 589.592  Recovery = 101.60%
Sr 407.771†         368897.8       0.685 mg/L        0.1410       0.685 mg/L        0.1410  20.57%
   QC value less than the lower limit for Sr 407.771  Recovery = 68.54%
Li 670.784†          40613.1        1.13 mg/L         0.030        1.13 mg/L         0.030   2.70%
   QC value greater than the upper limit for Li 670.784  Recovery = 113.10%
QC Failed.  Continue with analysis.

==========================================================================================
Sequence No.: 12                                    Autosampler Location: 1
Sample ID: CCB                                      Date Collected: 1/30/2012 6:10:18 PM
Analyst:                                            Data Type: Original
Initial Sample Wt:                                  Initial Sample Vol:
Dilution:                                           Sample Prep Vol:

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Nebulizer Parameters: CCB
Analyte                  Back Pressure    Flow
All                     148.0 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            3782702.6                                                   49360.33   1.30%
YRADIAL               128512.9                                                    5450.75   4.24%
Ga 417.206            790988.9                                                   10483.96   1.33%
GaRADIAL               13317.0                                                    3449.75  25.90%
Ag 328.068†             -481.5    -0.00568 mg/L      0.000353    -0.00568 mg/L      0.000353   6.22%
   QC value less than the lower limit for Ag 328.068  Recovery = Not calculated
Al 396.153†               -1.7     -0.0476 mg/L       0.01317     -0.0476 mg/L       0.01317  27.66%
   QC value within limits for Al 396.153  Recovery = Not calculated
As 188.979†                1.5     0.00741 mg/L      0.002784     0.00741 mg/L      0.002784  37.57%
   QC value within limits for As 188.979  Recovery = Not calculated
Ba 233.527†               -5.5    -0.00541 mg/L      0.000125    -0.00541 mg/L      0.000125   2.31%
   QC value less than the lower limit for Ba 233.527  Recovery = Not calculated
Be 234.861†              115.4     0.00007 mg/L      0.000047     0.00007 mg/L      0.000047  64.65%
   QC value within limits for Be 234.861  Recovery = Not calculated
B 249.677†                23.4    -0.00207 mg/L      0.000447    -0.00207 mg/L      0.000447  21.55%
   QC value within limits for B 249.677  Recovery = Not calculated
Ca 227.546†               -2.6      -0.115 mg/L        0.0706      -0.115 mg/L        0.0706  61.25%
   QC value less than the lower limit for Ca 227.546  Recovery = Not calculated
Cd 228.802†               -8.1    -0.00076 mg/L      0.000337    -0.00076 mg/L      0.000337  44.38%
   QC value less than the lower limit for Cd 228.802  Recovery = Not calculated
Co 228.616†               -5.7    -0.00106 mg/L      0.000108    -0.00106 mg/L      0.000108  10.22%
   QC value within limits for Co 228.616  Recovery = Not calculated
Cr 267.716†               25.8    -0.00248 mg/L      0.000087    -0.00248 mg/L      0.000087   3.50%
   QC value within limits for Cr 267.716  Recovery = Not calculated
Cu 327.393†             -256.0    -0.00559 mg/L      0.000565    -0.00559 mg/L      0.000565  10.11%
   QC value less than the lower limit for Cu 327.393  Recovery = Not calculated
Fe 239.562†                0.2     -0.0233 mg/L       0.03714     -0.0233 mg/L       0.03714 159.22%
   QC value within limits for Fe 239.562  Recovery = Not calculated
Mg 279.077†               -0.8     -0.0589 mg/L       0.02542     -0.0589 mg/L       0.02542  43.15%
   QC value within limits for Mg 279.077  Recovery = Not calculated
Mn 257.610†               -3.1    -0.00413 mg/L      0.000012    -0.00413 mg/L      0.000012   0.28%
   QC value within limits for Mn 257.610  Recovery = Not calculated
Mo 202.031†               -5.1    -0.00535 mg/L      0.000391    -0.00535 mg/L      0.000391   7.31%
   QC value within limits for Mo 202.031  Recovery = Not calculated
Ni 231.604†                7.2    -0.00216 mg/L      0.000433    -0.00216 mg/L      0.000433  20.09%
   QC value within limits for Ni 231.604  Recovery = Not calculated
Pb 220.353†                1.7     0.00073 mg/L      0.002757     0.00073 mg/L      0.002757 377.14%
   QC value within limits for Pb 220.353  Recovery = Not calculated
Sb 206.836†                1.8    -0.00128 mg/L      0.001445    -0.00128 mg/L      0.001445 112.82%
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Approved: January 31, 2012

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   QC value within limits for Sb 206.836  Recovery = Not calculated
Se 196.026†              -6.3    -0.00565 mg/L      0.007006    -0.00565 mg/L      0.007006 124.00%
   QC value within limits for Se 196.026  Recovery = Not calculated
Si 251.611†             -40.4     -0.0404 mg/L       0.00122     -0.0404 mg/L       0.00122   3.02%
   QC value within limits for Si 251.611  Recovery = Not calculated
Sn 189.927†              -3.0    -0.00345 mg/L      0.001990    -0.00345 mg/L      0.001990  57.64%
   QC value within limits for Sn 189.927  Recovery = Not calculated
Ti 334.940†            -153.1    -0.00347 mg/L      0.000207    -0.00347 mg/L      0.000207   5.97%
   QC value within limits for Ti 334.940  Recovery = Not calculated
Tl 190.801†              -3.5    -0.00757 mg/L      0.002509    -0.00757 mg/L      0.002509  33.14%
   QC value within limits for Tl 190.801  Recovery = Not calculated
V 290.880†               97.7    -0.00255 mg/L      0.000389    -0.00255 mg/L      0.000389  15.26%
   QC value within limits for V 290.880  Recovery = Not calculated
Zn 206.200†              -5.2    -0.00512 mg/L      0.000270    -0.00512 mg/L      0.000270   5.27%
   QC value within limits for Zn 206.200  Recovery = Not calculated
K 766.490†               51.4       0.113 mg/L        0.1176       0.113 mg/L        0.1176 104.27%
   QC value within limits for K 766.490  Recovery = Not calculated
Na 589.592†            -109.4      0.0263 mg/L       0.02204      0.0263 mg/L       0.02204  83.74%
   QC value within limits for Na 589.592  Recovery = Not calculated
Sr 407.771†              39.7    -0.00535 mg/L      0.000090    -0.00535 mg/L      0.000090   1.68%
   QC value within limits for Sr 407.771  Recovery = Not calculated
Li 670.784†             125.2    -0.00565 mg/L      0.001006    -0.00565 mg/L      0.001006  17.82%
   QC value within limits for Li 670.784  Recovery = Not calculated
QC Failed.  Continue with analysis.

==========================================================================================
Sequence No.: 13                                    Autosampler Location: 47
Sample ID: LCSW 7P WG388217-03                      Date Collected: 1/30/2012 6:17:06 PM
Analyst: SLP                                        Data Type: Original
Initial Sample Wt:                                  Initial Sample Vol:
Dilution:                                           Sample Prep Vol:

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Nebulizer Parameters: LCSW 7P WG388217-03
Analyte                 Back Pressure    Flow
All                    148.0 kPa         0.50 L/min

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Mean Data: LCSW 7P WG388217-03
                   Mean Corrected          Calib.                          Sample
Analyte               Intensity      Conc. Units      Std.Dev.      Conc. Units      Std.Dev.   RSD
Y 371.029            3707417.5                                                     94802.86   2.56%
YRADIAL               126570.8                                                      2202.40   1.74%
Ga 417.206            831118.7                                                     26434.50   3.18%
GaRADIAL               13647.1                                                      3231.60  23.68%
Ag 328.068†            24135.2       0.191 mg/L        0.0073       0.191 mg/L        0.0073   3.85%
Al 396.153†             8234.9        4.90 mg/L         0.033        4.90 mg/L         0.033   0.67%
As 188.979†             103.0       0.187 mg/L        0.0087       0.187 mg/L        0.0087   4.65%
Ba 233.527†            15985.0       0.517 mg/L        0.0168       0.517 mg/L        0.0168   3.24%
Be 234.861†             7391.6      0.0242 mg/L       0.00089      0.0242 mg/L       0.00089   3.67%
B 249.677†             28565.6       0.989 mg/L        0.0365       0.989 mg/L        0.0365   3.69%
Ca 227.546†              327.3        4.83 mg/L         0.108        4.83 mg/L         0.108   2.24%
Cd 228.802†              254.4      0.0233 mg/L       0.00078      0.0233 mg/L       0.00078   3.35%
Co 228.616†             1014.3      0.0984 mg/L       0.00256      0.0984 mg/L       0.00256   2.60%
Cr 267.716†            15953.4       0.249 mg/L        0.0067       0.249 mg/L        0.0067   2.69%
Cu 327.393†            23330.2       0.236 mg/L        0.0083       0.236 mg/L        0.0083   3.53%
Fe 239.562†               39.4        1.77 mg/L         0.021        1.77 mg/L         0.021   1.18%
Mg 279.077†              407.1        5.03 mg/L         0.037        5.03 mg/L         0.037   0.73%
Mn 257.610†            64663.2       0.249 mg/L        0.0074       0.249 mg/L        0.0074   2.98%
Mo 202.031†             3574.1       0.496 mg/L        0.0159       0.496 mg/L        0.0159   3.20%
Ni 231.604†             4453.9       0.256 mg/L        0.0057       0.256 mg/L        0.0057   2.23%
Pb 220.353†              718.2       0.253 mg/L        0.0083       0.253 mg/L        0.0083   3.29%
Sb 206.836†              482.1       0.577 mg/L        0.0204       0.577 mg/L        0.0204   3.54%
Se 196.026†              125.2       0.198 mg/L        0.0083       0.198 mg/L        0.0083   4.17%
Si 251.611†            46055.3        2.50 mg/L         0.100        2.50 mg/L         0.100   4.00%
Sn 189.927†             1414.2       0.535 mg/L        0.0176       0.535 mg/L        0.0176   3.29%
Ti 334.940†           236748.1       0.496 mg/L        0.0013       0.496 mg/L        0.0013   0.26%
Tl 190.801†              217.6       0.253 mg/L        0.0080       0.253 mg/L        0.0080   3.18%
V 290.880†             43022.4       0.499 mg/L        0.0183       0.499 mg/L        0.0183   3.67%
Zn 206.200†             7084.3       0.503 mg/L        0.0142       0.503 mg/L        0.0142   2.83%
K 766.490†             22623.6        22.3 mg/L          1.35        22.3 mg/L          1.35   6.05%
Na 589.592†           119641.6        25.2 mg/L          1.65        25.2 mg/L          1.65   6.54%
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Approved: January 31, 2012

Sr 407.771†	175654.9	0.324 mg/L	0.0656	0.324 mg/L	0.0656	20.28%
Li 670.784†	20708.9	0.572 mg/L	0.0163	0.572 mg/L	0.0163	2.84%

Sequence No.: 14 **Autosampler Location: 48**
Sample ID: L1201072601 WG388217-01 **Date Collected: 1/30/2012 6:23:55 PM**
Analyst: SLP **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1201072601 WG388217-01

Analyte	Back Pressure	Flow
All	149.0 kPa	0.50 L/min

Mean Data: L1201072601 WG388217-01

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3693480.8						37937.12	1.03%
YRADIAL	125728.7						7159.63	5.69%
Ga 417.206	867150.2						9056.16	1.04%
GaRADIAL	13168.4						3505.98	26.62%
Ag 328.068†	-280.8	-0.00410	mg/L	0.000056	-0.00410	mg/L	0.000056	1.38%
Al 396.153†	237.3	0.0961	mg/L	0.00922	0.0961	mg/L	0.00922	9.59%
As 188.979†	7.2	0.0173	mg/L	0.00607	0.0173	mg/L	0.00607	34.97%
Ba 233.527†	1213.9	0.0344	mg/L	0.00041	0.0344	mg/L	0.00041	1.19%
Be 234.861†	164.0	0.00022	mg/L	0.000016	0.00022	mg/L	0.000016	7.34%
B 249.677†	172717.0	5.98	mg/L	0.045	5.98	mg/L	0.045	0.75%
Ca 227.546†	586.4	8.72	mg/L	0.046	8.72	mg/L	0.046	0.52%
Cd 228.802†	-6.8	-0.00063	mg/L	0.000184	-0.00063	mg/L	0.000184	29.37%
Co 228.616†	-6.9	-0.00119	mg/L	0.000176	-0.00119	mg/L	0.000176	14.71%
Cr 267.716†	102.9	-0.00127	mg/L	0.000169	-0.00127	mg/L	0.000169	13.33%
Cu 327.393†	-20.3	-0.00319	mg/L	0.000359	-0.00319	mg/L	0.000359	11.25%
Fe 239.562†	1.8	0.0500	mg/L	0.00666	0.0500	mg/L	0.00666	13.32%
Mg 279.077†	346.9	4.28	mg/L	0.238	4.28	mg/L	0.238	5.57%
Mn 257.610†	4568.8	0.0182	mg/L	0.00021	0.0182	mg/L	0.00021	1.13%
Mo 202.031†	13.6	-0.00272	mg/L	0.000448	-0.00272	mg/L	0.000448	16.47%
Ni 231.604†	14.1	-0.00176	mg/L	0.000201	-0.00176	mg/L	0.000201	11.40%
Pb 220.353†	-2.7	-0.00038	mg/L	0.000686	-0.00038	mg/L	0.000686	178.55%
Sb 206.836†	4.1	0.00145	mg/L	0.002188	0.00145	mg/L	0.002188	151.34%
Se 196.026†	-6.1	-0.00261	mg/L	0.004845	-0.00261	mg/L	0.004845	185.83%
Si 251.611†	88989.7	4.88	mg/L	0.066	4.88	mg/L	0.066	1.35%
Sn 189.927†	-3.8	-0.00377	mg/L	0.000629	-0.00377	mg/L	0.000629	16.68%
Ti 334.940†	1203.8	-0.00052	mg/L	0.000715	-0.00052	mg/L	0.000715	137.79%
Tl 190.801†	9.0	0.00344	mg/L	0.003820	0.00344	mg/L	0.003820	110.90%
V 290.880†	750.6	0.00543	mg/L	0.001367	0.00543	mg/L	0.001367	25.15%
Zn 206.200†	31.2	-0.00251	mg/L	0.000233	-0.00251	mg/L	0.000233	9.26%
K 766.490†	2387.2	1.95	mg/L	0.088	1.95	mg/L	0.088	4.50%
Na 589.592†	2322925.8	426	mg/L	0.0	426	mg/L	0.0	0.00%
Sr 407.771†	78842.9	0.142	mg/L	0.0305	0.142	mg/L	0.0305	21.40%
Li 670.784†	3746.8	0.0960	mg/L	0.00110	0.0960	mg/L	0.00110	1.15%

Sequence No.: 15 **Autosampler Location: 49**
Sample ID: L1201072601S WG388217-04 **Date Collected: 1/30/2012 6:30:47 PM**
Analyst: SLP **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1201072601S WG388217-04

Analyte	Back Pressure	Flow
All	149.0 kPa	0.50 L/min

Mean Data: L1201072601S WG388217-04

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3581698.2						71733.19	2.00%
YRADIAL	123100.3						5689.90	4.62%
Ga 417.206	839724.9						20544.11	2.45%

Approved: January 31, 2012

GaRADIAL	14057.2					3540.56	25.19%
Ag 328.068†	23928.5	0.189	mg/L	0.0035	0.189 mg/L	0.0035	1.83%
Al 396.153†	8619.1	5.13	mg/L	0.012	5.13 mg/L	0.012	0.23%
As 188.979†	109.3	0.198	mg/L	0.0047	0.198 mg/L	0.0047	2.38%
Ba 233.527†	17485.5	0.566	mg/L	0.0134	0.566 mg/L	0.0134	2.36%
Be 234.861†	7367.1	0.0241	mg/L	0.00062	0.0241 mg/L	0.00062	2.56%
B 249.677†	207453.2	7.19	mg/L	0.012	7.19 mg/L	0.012	0.16%
Ca 227.546†	945.0	14.1	mg/L	0.22	14.1 mg/L	0.22	1.59%
Cd 228.802†	250.0	0.0229	mg/L	0.00067	0.0229 mg/L	0.00067	2.90%
Co 228.616†	1015.5	0.0984	mg/L	0.00125	0.0984 mg/L	0.00125	1.27%
Cr 267.716†	16143.0	0.252	mg/L	0.0050	0.252 mg/L	0.0050	1.99%
Cu 327.393†	23876.0	0.242	mg/L	0.0067	0.242 mg/L	0.0067	2.79%
Fe 239.562†	45.0	2.02	mg/L	0.039	2.02 mg/L	0.039	1.92%
Mg 279.077†	775.8	9.62	mg/L	0.296	9.62 mg/L	0.296	3.08%
Mn 257.610†	70401.8	0.275	mg/L	0.0059	0.275 mg/L	0.0059	2.16%
Mo 202.031†	3681.1	0.511	mg/L	0.0077	0.511 mg/L	0.0077	1.50%
Ni 231.604†	4450.6	0.256	mg/L	0.0031	0.256 mg/L	0.0031	1.21%
Pb 220.353†	709.9	0.250	mg/L	0.0038	0.250 mg/L	0.0038	1.51%
Sb 206.836†	479.8	0.575	mg/L	0.0086	0.575 mg/L	0.0086	1.50%
Se 196.026†	120.3	0.193	mg/L	0.0034	0.193 mg/L	0.0034	1.75%
Si 251.611†	136978.7	7.53	mg/L	0.049	7.53 mg/L	0.049	0.65%
Sn 189.927†	1427.3	0.540	mg/L	0.0073	0.540 mg/L	0.0073	1.36%
Ti 334.940†	247756.3	0.519	mg/L	0.0006	0.519 mg/L	0.0006	0.11%
Tl 190.801†	212.2	0.243	mg/L	0.0047	0.243 mg/L	0.0047	1.94%
V 290.880†	44929.7	0.521	mg/L	0.0119	0.521 mg/L	0.0119	2.28%
Zn 206.200†	7354.1	0.523	mg/L	0.0096	0.523 mg/L	0.0096	1.83%
K 766.490†	27397.0	26.7	mg/L	0.61	26.7 mg/L	0.61	2.28%
Na 589.592†	2433193.8	426	mg/L	0.0	426 mg/L	0.0	0.00%
Sr 407.771†	276631.8	0.513	mg/L	0.1021	0.513 mg/L	0.1021	19.92%
Li 670.784†	25417.7	0.704	mg/L	0.0336	0.704 mg/L	0.0336	4.77%

Sequence No.: 16 **Autosampler Location: 50**
Sample ID: L1201072601SD WG388217-05 **Date Collected: 1/30/2012 6:37:40 PM**
Analyst: SLP **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1201072601SD WG388217-05

Analyte	Back Pressure	Flow
All	149.0 kPa	0.50 L/min

Mean Data: L1201072601SD WG388217-05

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3579182.5						37190.54	1.04%
YRADIAL	124198.9						5725.28	4.61%
Ga 417.206	838929.8						10959.53	1.31%
GaRADIAL	13724.6						3518.53	25.64%
Ag 328.068†	23464.3	0.185	mg/L	0.0044	0.185	mg/L	0.0044	2.35%
Al 396.153†	8479.0	5.05	mg/L	0.027	5.05	mg/L	0.027	0.53%
As 188.979†	108.6	0.197	mg/L	0.0023	0.197	mg/L	0.0023	1.18%
Ba 233.527†	17155.4	0.556	mg/L	0.0086	0.556	mg/L	0.0086	1.56%
Be 234.861†	7233.2	0.0236	mg/L	0.00047	0.0236	mg/L	0.00047	1.98%
B 249.677†	200526.5	6.95	mg/L	0.036	6.95	mg/L	0.036	0.52%
Ca 227.546†	925.4	13.8	mg/L	0.20	13.8	mg/L	0.20	1.46%
Cd 228.802†	243.4	0.0224	mg/L	0.00048	0.0224	mg/L	0.00048	2.14%
Co 228.616†	1007.8	0.0977	mg/L	0.00193	0.0977	mg/L	0.00193	1.98%
Cr 267.716†	15698.3	0.245	mg/L	0.0036	0.245	mg/L	0.0036	1.48%
Cu 327.393†	23341.4	0.236	mg/L	0.0064	0.236	mg/L	0.0064	2.71%
Fe 239.562†	44.2	1.99	mg/L	0.033	1.99	mg/L	0.033	1.69%
Mg 279.077†	746.3	9.25	mg/L	0.417	9.25	mg/L	0.417	4.51%
Mn 257.610†	68961.9	0.270	mg/L	0.0045	0.270	mg/L	0.0045	1.67%
Mo 202.031†	3632.1	0.505	mg/L	0.0062	0.505	mg/L	0.0062	1.22%
Ni 231.604†	4403.3	0.253	mg/L	0.0026	0.253	mg/L	0.0026	1.01%
Pb 220.353†	706.4	0.249	mg/L	0.0045	0.249	mg/L	0.0045	1.79%
Sb 206.836†	469.2	0.562	mg/L	0.0090	0.562	mg/L	0.0090	1.60%
Se 196.026†	120.4	0.194	mg/L	0.0050	0.194	mg/L	0.0050	2.57%
Si 251.611†	133231.3	7.32	mg/L	0.038	7.32	mg/L	0.038	0.52%
Sn 189.927†	1407.5	0.532	mg/L	0.0061	0.532	mg/L	0.0061	1.14%

Approved: January 31, 2012

Ti 334.940†	240382.1	0.503	mg/L	0.0010	0.503	mg/L	0.0010	0.21%
Tl 190.801†	213.8	0.245	mg/L	0.0036	0.245	mg/L	0.0036	1.46%
V 290.880†	43847.7	0.509	mg/L	0.0099	0.509	mg/L	0.0099	1.94%
Zn 206.200†	7258.4	0.516	mg/L	0.0059	0.516	mg/L	0.0059	1.15%
K 766.490†	26693.3	26.0	mg/L	0.96	26.0	mg/L	0.96	3.71%
Na 589.592†	2365051.8	426	mg/L	0.0	426	mg/L	0.0	0.00%
Sr 407.771†	261500.3	0.484	mg/L	0.0945	0.484	mg/L	0.0945	19.50%
Li 670.784†	24745.3	0.686	mg/L	0.0279	0.686	mg/L	0.0279	4.07%

Sequence No.: 17 **Autosampler Location: 51**
Sample ID: L1201072602 **Date Collected: 1/30/2012 6:44:34 PM**
Analyst: SLP **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1201072602

Analyte	Back Pressure	Flow
All	148.0 kPa	0.50 L/min

Mean Data: L1201072602

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3762391.7						30431.61	0.81%
YRADIAL	126753.6						3973.16	3.13%
Ga 417.206	797601.2						6364.73	0.80%
GaRADIAL	13018.0						3369.56	25.88%
Ag 328.068†	-404.9	-0.00507	mg/L	0.001521	-0.00507	mg/L	0.001521	30.01%
Al 396.153†	4.7	-0.0437	mg/L	0.00637	-0.0437	mg/L	0.00637	14.58%
As 188.979†	-1.2	0.00241	mg/L	0.006839	0.00241	mg/L	0.006839	284.34%
Ba 233.527†	-7.7	-0.00548	mg/L	0.000109	-0.00548	mg/L	0.000109	1.98%
Be 234.861†	105.4	0.00004	mg/L	0.000004	0.00004	mg/L	0.000004	9.47%
B 249.677†	1846.2	0.0610	mg/L	0.00282	0.0610	mg/L	0.00282	4.63%
Ca 227.546†	0.4	-0.0690	mg/L	0.04583	-0.0690	mg/L	0.04583	66.45%
Cd 228.802†	-8.2	-0.00078	mg/L	0.000197	-0.00078	mg/L	0.000197	25.32%
Co 228.616†	-6.5	-0.00113	mg/L	0.000085	-0.00113	mg/L	0.000085	7.54%
Cr 267.716†	38.4	-0.00228	mg/L	0.000255	-0.00228	mg/L	0.000255	11.19%
Cu 327.393†	-167.2	-0.00469	mg/L	0.000692	-0.00469	mg/L	0.000692	14.76%
Fe 239.562†	-0.1	-0.0372	mg/L	0.05665	-0.0372	mg/L	0.05665	152.20%
Mg 279.077†	-0.4	-0.0538	mg/L	0.02267	-0.0538	mg/L	0.02267	42.16%
Mn 257.610†	7.9	-0.00408	mg/L	0.000016	-0.00408	mg/L	0.000016	0.40%
Mo 202.031†	-8.6	-0.00584	mg/L	0.000273	-0.00584	mg/L	0.000273	4.67%
Ni 231.604†	3.7	-0.00236	mg/L	0.000293	-0.00236	mg/L	0.000293	12.41%
Pb 220.353†	-0.0	0.00013	mg/L	0.001178	0.00013	mg/L	0.001178	933.10%
Sb 206.836†	1.0	-0.00226	mg/L	0.001394	-0.00226	mg/L	0.001394	61.82%
Se 196.026†	-7.5	-0.00741	mg/L	0.008335	-0.00741	mg/L	0.008335	112.43%
Si 251.611†	134.9	-0.0307	mg/L	0.00033	-0.0307	mg/L	0.00033	1.07%
Sn 189.927†	-5.1	-0.00424	mg/L	0.002168	-0.00424	mg/L	0.002168	51.18%
Ti 334.940†	-135.8	-0.00343	mg/L	0.000040	-0.00343	mg/L	0.000040	1.17%
Tl 190.801†	-4.9	-0.00915	mg/L	0.003210	-0.00915	mg/L	0.003210	35.08%
V 290.880†	173.1	-0.00166	mg/L	0.001746	-0.00166	mg/L	0.001746	104.95%
Zn 206.200†	8.8	-0.00412	mg/L	0.000077	-0.00412	mg/L	0.000077	1.87%
K 766.490†	1.8	0.0645	mg/L	0.00590	0.0645	mg/L	0.00590	9.14%
Na 589.592†	642.1	0.180	mg/L	0.0401	0.180	mg/L	0.0401	22.33%
Sr 407.771†	42.7	-0.00534	mg/L	0.000098	-0.00534	mg/L	0.000098	1.83%
Li 670.784†	229.5	-0.00272	mg/L	0.001402	-0.00272	mg/L	0.001402	51.54%

Sequence No.: 18 **Autosampler Location: 52**
Sample ID: L1201072602DL WG388259-02 **Date Collected: 1/30/2012 6:51:23 PM**
Analyst: SLP **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1201072602DL WG388259-02

Analyte	Back Pressure	Flow
All	148.0 kPa	0.50 L/min

Approved: January 31, 2012

Mean Data: L1201072602DL WG388259-02

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3820075.9						55101.27	1.44%
YRADIAL	129608.6						4018.59	3.10%
Ga 417.206	802314.0						17254.07	2.15%
GaRADIAL	13697.6						3325.31	24.28%
Ag 328.068†	-433.8	-0.00530	mg/L	0.000590	-0.00530	mg/L	0.000590	11.13%
Al 396.153†	-1.8	-0.0477	mg/L	0.00456	-0.0477	mg/L	0.00456	9.57%
As 188.979†	1.8	0.00786	mg/L	0.002941	0.00786	mg/L	0.002941	37.43%
Ba 233.527†	-8.8	-0.00552	mg/L	0.000023	-0.00552	mg/L	0.000023	0.41%
Be 234.861†	101.7	0.00002	mg/L	0.000049	0.00002	mg/L	0.000049	216.29%
B 249.677†	652.0	0.0198	mg/L	0.00078	0.0198	mg/L	0.00078	3.96%
Ca 227.546†	4.6	-0.00960	mg/L	0.074803	-0.00960	mg/L	0.074803	779.57%
Cd 228.802†	-5.9	-0.00056	mg/L	0.000114	-0.00056	mg/L	0.000114	20.40%
Co 228.616†	-3.5	-0.00084	mg/L	0.000193	-0.00084	mg/L	0.000193	22.91%
Cr 267.716†	23.9	-0.00251	mg/L	0.000119	-0.00251	mg/L	0.000119	4.75%
Cu 327.393†	-233.1	-0.00536	mg/L	0.000807	-0.00536	mg/L	0.000807	15.06%
Fe 239.562†	0.7	0.00095	mg/L	0.065368	0.00095	mg/L	0.065368	>999.9%
Mg 279.077†	-1.9	-0.0725	mg/L	0.02957	-0.0725	mg/L	0.02957	40.77%
Mn 257.610†	20.0	-0.00404	mg/L	0.000006	-0.00404	mg/L	0.000006	0.14%
Mo 202.031†	-8.1	-0.00577	mg/L	0.000637	-0.00577	mg/L	0.000637	11.04%
Ni 231.604†	2.7	-0.00242	mg/L	0.000415	-0.00242	mg/L	0.000415	17.15%
Pb 220.353†	5.1	0.00190	mg/L	0.001230	0.00190	mg/L	0.001230	64.64%
Sb 206.836†	1.6	-0.00160	mg/L	0.003022	-0.00160	mg/L	0.003022	189.21%
Se 196.026†	-3.3	-0.00091	mg/L	0.004524	-0.00091	mg/L	0.004524	497.70%
Si 251.611†	8.0	-0.0377	mg/L	0.00069	-0.0377	mg/L	0.00069	1.83%
Sn 189.927†	-5.6	-0.00446	mg/L	0.000644	-0.00446	mg/L	0.000644	14.43%
Ti 334.940†	-169.9	-0.00350	mg/L	0.000128	-0.00350	mg/L	0.000128	3.66%
Tl 190.801†	1.1	-0.00230	mg/L	0.002792	-0.00230	mg/L	0.002792	121.52%
V 290.880†	140.7	-0.00205	mg/L	0.000917	-0.00205	mg/L	0.000917	44.76%
Zn 206.200†	1.1	-0.00467	mg/L	0.000399	-0.00467	mg/L	0.000399	8.53%
K 766.490†	27.3	0.0894	mg/L	0.01827	0.0894	mg/L	0.01827	20.44%
Na 589.592†	121.2	0.0733	mg/L	0.01000	0.0733	mg/L	0.01000	13.64%
Sr 407.771†	27.0	-0.00538	mg/L	0.000148	-0.00538	mg/L	0.000148	2.74%
Li 670.784†	183.6	-0.00401	mg/L	0.001938	-0.00401	mg/L	0.001938	48.39%

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Sequence No.: 19 **Autosampler Location: 53**
Sample ID: L1201072602PS WG388259-01 **Date Collected: 1/30/2012 6:58:12 PM**
Analyst: SLP **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1201072602PS WG388259-01

Analyte	Back Pressure	Flow
All	149.0 kPa	0.50 L/min

Mean Data: L1201072602PS WG388259-01

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3673498.5						12301.40	0.33%
YRADIAL	124062.4						5108.99	4.12%
Ga 417.206	830039.8						4255.86	0.51%
GaRADIAL	12644.8						3321.73	26.27%
Ag 328.068†	24704.9	0.195	mg/L	0.0045	0.195	mg/L	0.0045	2.30%
Al 396.153†	8282.6	4.93	mg/L	0.059	4.93	mg/L	0.059	1.20%
As 188.979†	110.6	0.200	mg/L	0.0056	0.200	mg/L	0.0056	2.80%
Ba 233.527†	16343.1	0.529	mg/L	0.0133	0.529	mg/L	0.0133	2.52%
Be 234.861†	7489.8	0.0245	mg/L	0.00053	0.0245	mg/L	0.00053	2.18%
B 249.677†	29662.8	1.03	mg/L	0.024	1.03	mg/L	0.024	2.30%
Ca 227.546†	331.9	4.89	mg/L	0.030	4.89	mg/L	0.030	0.62%
Cd 228.802†	258.2	0.0237	mg/L	0.00017	0.0237	mg/L	0.00017	0.73%
Co 228.616†	1041.5	0.101	mg/L	0.0004	0.101	mg/L	0.0004	0.41%
Cr 267.716†	16427.4	0.257	mg/L	0.0066	0.257	mg/L	0.0066	2.58%
Cu 327.393†	23999.9	0.243	mg/L	0.0046	0.243	mg/L	0.0046	1.88%
Fe 239.562†	41.1	1.85	mg/L	0.109	1.85	mg/L	0.109	5.90%
Mg 279.077†	424.9	5.25	mg/L	0.192	5.25	mg/L	0.192	3.65%
Mn 257.610†	68185.9	0.262	mg/L	0.0080	0.262	mg/L	0.0080	3.04%
Mo 202.031†	3664.6	0.509	mg/L	0.0138	0.509	mg/L	0.0138	2.70%

Approved: January 31, 2012

Ni 231.604†	4552.7	0.262 mg/L	0.0061	0.262 mg/L	0.0061	2.32%
Pb 220.353†	739.9	0.260 mg/L	0.0007	0.260 mg/L	0.0007	0.27%
Sb 206.836†	489.0	0.586 mg/L	0.0068	0.586 mg/L	0.0068	1.16%
Se 196.026†	124.9	0.198 mg/L	0.0097	0.198 mg/L	0.0097	4.88%
Si 251.611†	46930.6	2.55 mg/L	0.063	2.55 mg/L	0.063	2.46%
Sn 189.927†	1388.3	0.525 mg/L	0.0040	0.525 mg/L	0.0040	0.76%
Ti 334.940†	242416.0	0.508 mg/L	0.0017	0.508 mg/L	0.0017	0.34%
Tl 190.801†	224.9	0.262 mg/L	0.0038	0.262 mg/L	0.0038	1.45%
V 290.880†	44322.3	0.514 mg/L	0.0140	0.514 mg/L	0.0140	2.73%
Zn 206.200†	7335.5	0.521 mg/L	0.0138	0.521 mg/L	0.0138	2.66%
K 766.490†	22502.8	22.2 mg/L	1.63	22.2 mg/L	1.63	7.32%
Na 589.592†	123131.8	26.0 mg/L	1.59	26.0 mg/L	1.59	6.11%
Sr 407.771†	170470.2	0.314 mg/L	0.0677	0.314 mg/L	0.0677	21.57%
Li 670.784†	21197.3	0.586 mg/L	0.0092	0.586 mg/L	0.0092	1.56%

Sequence No.: 20 **Autosampler Location: 54**
Sample ID: L1201074001 **Date Collected: 1/30/2012 7:05:02 PM**
Analyst: SLP **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1201074001

Analyte	Back Pressure	Flow
All	149.0 kPa	0.50 L/min

Mean Data: L1201074001

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3677957.3						45602.64	1.24%
YRADIAL	125020.9						8673.35	6.94%
Ga 417.206	866746.9						11242.00	1.30%
GaRADIAL	13996.1						3534.14	25.25%
Ag 328.068†	-60.4	-0.00240	mg/L	0.000739	-0.00240	mg/L	0.000739	30.85%
Al 396.153†	577.3	0.301	mg/L	0.0178	0.301	mg/L	0.0178	5.92%
As 188.979†	13.1	0.0263	mg/L	0.00329	0.0263	mg/L	0.00329	12.49%
Ba 233.527†	1016.2	0.0279	mg/L	0.00031	0.0279	mg/L	0.00031	1.10%
Be 234.861†	174.3	0.00022	mg/L	0.000038	0.00022	mg/L	0.000038	17.29%
B 249.677†	25388.4	0.877	mg/L	0.0116	0.877	mg/L	0.0116	1.32%
Ca 227.546†	5670.5	85.0	mg/L	0.70	85.0	mg/L	0.70	0.83%
Cd 228.802†	-9.8	-0.00088	mg/L	0.000076	-0.00088	mg/L	0.000076	8.70%
Co 228.616†	-6.4	-0.00117	mg/L	0.000189	-0.00117	mg/L	0.000189	16.20%
Cr 267.716†	61.2	-0.00193	mg/L	0.000039	-0.00193	mg/L	0.000039	2.01%
Cu 327.393†	-200.7	-0.00499	mg/L	0.000555	-0.00499	mg/L	0.000555	11.11%
Fe 239.562†	5.5	0.220	mg/L	0.0895	0.220	mg/L	0.0895	40.63%
Mg 279.077†	1664.1	20.7	mg/L	1.21	20.7	mg/L	1.21	5.84%
Mn 257.610†	1559.9	0.00376	mg/L	0.000071	0.00376	mg/L	0.000071	1.90%
Mo 202.031†	-2.0	-0.00491	mg/L	0.000520	-0.00491	mg/L	0.000520	10.60%
Ni 231.604†	7.1	-0.00221	mg/L	0.000829	-0.00221	mg/L	0.000829	37.47%
Pb 220.353†	-10.0	0.00075	mg/L	0.002107	0.00075	mg/L	0.002107	281.76%
Sb 206.836†	12.7	0.0118	mg/L	0.00129	0.0118	mg/L	0.00129	10.94%
Se 196.026†	-19.8	-0.00069	mg/L	0.006517	-0.00069	mg/L	0.006517	939.88%
Si 251.611†	97693.9	5.36	mg/L	0.084	5.36	mg/L	0.084	1.56%
Sn 189.927†	-5.3	-0.00435	mg/L	0.000074	-0.00435	mg/L	0.000074	1.69%
Ti 334.940†	4672.9	0.00755	mg/L	0.000999	0.00755	mg/L	0.000999	13.22%
Tl 190.801†	65.9	0.0391	mg/L	0.00313	0.0391	mg/L	0.00313	8.02%
V 290.880†	-348.9	-0.00602	mg/L	0.002746	-0.00602	mg/L	0.002746	45.59%
Zn 206.200†	2558.9	0.178	mg/L	0.0020	0.178	mg/L	0.0020	1.15%
K 766.490†	2860.1	2.65	mg/L	0.163	2.65	mg/L	0.163	6.17%
Na 589.592†	726529.9	191	mg/L	7.6	191	mg/L	7.6	3.97%
Sr 407.771†	155934.7	0.287	mg/L	0.0592	0.287	mg/L	0.0592	20.62%
Li 670.784†	1314.5	0.0277	mg/L	0.00219	0.0277	mg/L	0.00219	7.89%

Sequence No.: 21 **Autosampler Location: 55**
Sample ID: L1201075601 **Date Collected: 1/30/2012 7:11:55 PM**
Analyst: SLP **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Approved: January 31, 2012

Nebulizer Parameters: L1201075601

Analyte	Back Pressure	Flow
All	148.0 kPa	0.50 L/min

Mean Data: L1201075601

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3782106.5						51440.07	1.36%
YRADIAL	126437.9						5062.92	4.00%
Ga 417.206	801748.4						20425.91	2.55%
GaRADIAL	12911.3						3147.91	24.38%
Ag 328.068†	-383.2	-0.00490	mg/L	0.000652	-0.00490	mg/L	0.000652	13.31%
Al 396.153†	9.9	-0.0406	mg/L	0.01114	-0.0406	mg/L	0.01114	27.44%
As 188.979†	-0.6	0.00353	mg/L	0.001814	0.00353	mg/L	0.001814	51.38%
Ba 233.527†	-7.8	-0.00548	mg/L	0.000231	-0.00548	mg/L	0.000231	4.21%
Be 234.861†	98.5	0.00002	mg/L	0.000085	0.00002	mg/L	0.000085	420.93%
B 249.677†	337.7	0.00874	mg/L	0.002271	0.00874	mg/L	0.002271	25.98%
Ca 227.546†	1.3	-0.0542	mg/L	0.05271	-0.0542	mg/L	0.05271	97.30%
Cd 228.802†	-8.2	-0.00077	mg/L	0.000112	-0.00077	mg/L	0.000112	14.53%
Co 228.616†	-9.7	-0.00145	mg/L	0.000146	-0.00145	mg/L	0.000146	10.07%
Cr 267.716†	49.3	-0.00211	mg/L	0.000016	-0.00211	mg/L	0.000016	0.74%
Cu 327.393†	-19.4	-0.00318	mg/L	0.000675	-0.00318	mg/L	0.000675	21.23%
Fe 239.562†	-0.1	-0.0381	mg/L	0.02495	-0.0381	mg/L	0.02495	65.42%
Mg 279.077†	-1.8	-0.0713	mg/L	0.02235	-0.0713	mg/L	0.02235	31.35%
Mn 257.610†	168.8	-0.00347	mg/L	0.000049	-0.00347	mg/L	0.000049	1.42%
Mo 202.031†	-7.7	-0.00572	mg/L	0.000719	-0.00572	mg/L	0.000719	12.58%
Ni 231.604†	9.8	-0.00201	mg/L	0.000262	-0.00201	mg/L	0.000262	13.06%
Pb 220.353†	2.9	0.00113	mg/L	0.002032	0.00113	mg/L	0.002032	179.57%
Sb 206.836†	2.5	-0.00051	mg/L	0.001972	-0.00051	mg/L	0.001972	385.44%
Se 196.026†	-4.9	-0.00345	mg/L	0.000115	-0.00345	mg/L	0.000115	3.33%
Si 251.611†	118.6	-0.0316	mg/L	0.00138	-0.0316	mg/L	0.00138	4.37%
Sn 189.927†	-3.6	-0.00367	mg/L	0.000662	-0.00367	mg/L	0.000662	18.04%
Ti 334.940†	-55.5	-0.00326	mg/L	0.000157	-0.00326	mg/L	0.000157	4.81%
Tl 190.801†	-2.5	-0.00641	mg/L	0.002363	-0.00641	mg/L	0.002363	36.84%
V 290.880†	116.6	-0.00233	mg/L	0.002307	-0.00233	mg/L	0.002307	99.24%
Zn 206.200†	10.6	-0.00398	mg/L	0.000148	-0.00398	mg/L	0.000148	3.71%
K 766.490†	-31.0	0.0328	mg/L	0.04269	0.0328	mg/L	0.04269	130.12%
Na 589.592†	313.5	0.113	mg/L	0.0278	0.113	mg/L	0.0278	24.65%
Sr 407.771†	86.3	-0.00526	mg/L	0.000120	-0.00526	mg/L	0.000120	2.29%
Li 670.784†	110.9	-0.00605	mg/L	0.002460	-0.00605	mg/L	0.002460	40.68%

Sequence No.: 22 **Autosampler Location: 56**
Sample ID: L1201075602 **Date Collected: 1/30/2012 7:18:45 PM**
Analyst: SLP **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1201075602

Analyte	Back Pressure	Flow
All	148.0 kPa	0.50 L/min

Mean Data: L1201075602

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3713640.3						57647.23	1.55%
YRADIAL	123224.1						5443.21	4.42%
Ga 417.206	788948.5						18349.66	2.33%
GaRADIAL	12528.5						3291.44	26.27%
Ag 328.068†	-405.2	-0.00507	mg/L	0.000920	-0.00507	mg/L	0.000920	18.15%
Al 396.153†	-3.3	-0.0485	mg/L	0.01476	-0.0485	mg/L	0.01476	30.40%
As 188.979†	-0.7	0.00346	mg/L	0.003107	0.00346	mg/L	0.003107	89.86%
Ba 233.527†	-6.4	-0.00544	mg/L	0.000050	-0.00544	mg/L	0.000050	0.91%
Be 234.861†	79.9	-0.00004	mg/L	0.000025	-0.00004	mg/L	0.000025	71.18%
B 249.677†	225.6	0.00471	mg/L	0.000649	0.00471	mg/L	0.000649	13.78%
Ca 227.546†	3.6	-0.0181	mg/L	0.02356	-0.0181	mg/L	0.02356	130.17%
Cd 228.802†	-5.3	-0.00051	mg/L	0.000112	-0.00051	mg/L	0.000112	21.81%
Co 228.616†	-5.0	-0.00099	mg/L	0.000282	-0.00099	mg/L	0.000282	28.54%

Approved: January 31, 2012

Cr 267.716†	30.7	-0.00240	mg/L	0.000135	-0.00240	mg/L	0.000135	5.64%
Cu 327.393†	-16.4	-0.00315	mg/L	0.001089	-0.00315	mg/L	0.001089	34.55%
Fe 239.562†	-0.8	-0.0691	mg/L	0.05496	-0.0691	mg/L	0.05496	79.56%
Mg 279.077†	-1.6	-0.0685	mg/L	0.02183	-0.0685	mg/L	0.02183	31.85%
Mn 257.610†	8.6	-0.00409	mg/L	0.000015	-0.00409	mg/L	0.000015	0.37%
Mo 202.031†	-11.7	-0.00628	mg/L	0.000294	-0.00628	mg/L	0.000294	4.68%
Ni 231.604†	11.8	-0.00188	mg/L	0.000388	-0.00188	mg/L	0.000388	20.59%
Pb 220.353†	3.0	0.00118	mg/L	0.000595	0.00118	mg/L	0.000595	50.24%
Sb 206.836†	0.5	-0.00284	mg/L	0.000660	-0.00284	mg/L	0.000660	23.21%
Se 196.026†	0.2	0.00437	mg/L	0.003200	0.00437	mg/L	0.003200	73.15%
Si 251.611†	81.7	-0.0336	mg/L	0.00071	-0.0336	mg/L	0.00071	2.12%
Sn 189.927†	-4.6	-0.00408	mg/L	0.001904	-0.00408	mg/L	0.001904	46.69%
Ti 334.940†	-157.1	-0.00347	mg/L	0.000143	-0.00347	mg/L	0.000143	4.12%
Tl 190.801†	-6.1	-0.0106	mg/L	0.00212	-0.0106	mg/L	0.00212	20.01%
V 290.880†	249.2	-0.00077	mg/L	0.001771	-0.00077	mg/L	0.001771	228.61%
Zn 206.200†	12.4	-0.00386	mg/L	0.000106	-0.00386	mg/L	0.000106	2.76%
K 766.490†	-13.1	0.0503	mg/L	0.06490	0.0503	mg/L	0.06490	129.11%
Na 589.592†	134.0	0.0760	mg/L	0.01188	0.0760	mg/L	0.01188	15.64%
Sr 407.771†	66.3	-0.00529	mg/L	0.000087	-0.00529	mg/L	0.000087	1.65%
Li 670.784†	108.0	-0.00613	mg/L	0.001234	-0.00613	mg/L	0.001234	20.13%

Sequence No.: 23 **Autosampler Location: 6**
Sample ID: CCV **Date Collected: 1/30/2012 7:25:35 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: CCV

Analyte	Back Pressure	Flow
All	149.0 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	3655128.5						20970.68	0.57%
YRADIAL	123751.3						6674.45	5.39%
Ga 417.206	822404.6						5553.01	0.68%
GaRADIAL	12616.8						3381.89	26.80%
Ag 328.068†	50159.1	0.398	mg/L	0.0015	0.398	mg/L	0.0015	0.37%
QC value within limits for Ag 328.068 Recovery = 99.60%								
Al 396.153†	16391.4	9.80	mg/L	0.157	9.80	mg/L	0.157	1.60%
QC value within limits for Al 396.153 Recovery = 97.96%								
As 188.979†	213.9	0.383	mg/L	0.0074	0.383	mg/L	0.0074	1.93%
QC value within limits for As 188.979 Recovery = 95.79%								
Ba 233.527†	32727.1	1.06	mg/L	0.011	1.06	mg/L	0.011	1.02%
QC value within limits for Ba 233.527 Recovery = 106.49%								
Be 234.861†	15290.1	0.0503	mg/L	0.00012	0.0503	mg/L	0.00012	0.23%
QC value within limits for Be 234.861 Recovery = 100.56%								
B 249.677†	14711.7	0.512	mg/L	0.0052	0.512	mg/L	0.0052	1.01%
QC value within limits for B 249.677 Recovery = 102.45%								
Ca 227.546†	675.1	10.0	mg/L	0.04	10.0	mg/L	0.04	0.38%
QC value within limits for Ca 227.546 Recovery = 100.27%								
Cd 228.802†	531.6	0.0488	mg/L	0.00019	0.0488	mg/L	0.00019	0.39%
QC value within limits for Cd 228.802 Recovery = 97.52%								
Co 228.616†	2055.5	0.200	mg/L	0.0006	0.200	mg/L	0.0006	0.28%
QC value within limits for Co 228.616 Recovery = 99.91%								
Cr 267.716†	32831.2	0.516	mg/L	0.0020	0.516	mg/L	0.0020	0.39%
QC value within limits for Cr 267.716 Recovery = 103.10%								
Cu 327.393†	49076.1	0.500	mg/L	0.0026	0.500	mg/L	0.0026	0.52%
QC value within limits for Cu 327.393 Recovery = 99.92%								
Fe 239.562†	81.9	3.71	mg/L	0.196	3.71	mg/L	0.196	5.28%
QC value within limits for Fe 239.562 Recovery = 92.78%								
Mg 279.077†	824.4	10.2	mg/L	0.49	10.2	mg/L	0.49	4.82%
QC value within limits for Mg 279.077 Recovery = 102.29%								
Mn 257.610†	135780.0	0.526	mg/L	0.0033	0.526	mg/L	0.0033	0.63%
QC value within limits for Mn 257.610 Recovery = 105.23%								
Mo 202.031†	7388.6	1.03	mg/L	0.012	1.03	mg/L	0.012	1.16%
QC value within limits for Mo 202.031 Recovery = 103.12%								
Ni 231.604†	8994.2	0.520	mg/L	0.0022	0.520	mg/L	0.0022	0.43%

Approved: January 31, 2012

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   QC value within limits for Ni 231.604  Recovery = 104.07%
Pb 220.353†            1447.4       0.510 mg/L       0.0053       0.510 mg/L        0.0053   1.03%
   QC value within limits for Pb 220.353  Recovery = 101.91%
Sb 206.836†             986.0        1.18 mg/L        0.010        1.18 mg/L         0.010   0.86%
   QC value within limits for Sb 206.836  Recovery = 98.71%
Se 196.026†             255.2       0.400 mg/L       0.0037       0.400 mg/L        0.0037   0.92%
   QC value within limits for Se 196.026  Recovery = 99.97%
Si 251.611†           93160.0        5.10 mg/L        0.040        5.10 mg/L         0.040   0.78%
   QC value within limits for Si 251.611  Recovery = 101.96%
Sn 189.927†            2704.0        1.02 mg/L        0.003        1.02 mg/L         0.003   0.29%
   QC value within limits for Sn 189.927  Recovery = 102.43%
Ti 334.940†          482394.2        1.01 mg/L        0.002        1.01 mg/L         0.002   0.21%
   QC value within limits for Ti 334.940  Recovery = 101.31%
Tl 190.801†             438.4       0.514 mg/L       0.0036       0.514 mg/L        0.0036   0.71%
   QC value within limits for Tl 190.801  Recovery = 102.72%
V 290.880†            89494.4        1.04 mg/L        0.010        1.04 mg/L         0.010   0.93%
   QC value within limits for V 290.880  Recovery = 104.12%
Zn 206.200†           14377.3        1.03 mg/L        0.006        1.03 mg/L         0.006   0.59%
   QC value within limits for Zn 206.200  Recovery = 102.62%
K 766.490†            44651.6        44.7 mg/L         3.13        44.7 mg/L          3.13   7.01%
   QC value less than the lower limit for K 766.490  Recovery = 89.45%
Na 589.592†          238206.1        51.8 mg/L         3.55        51.8 mg/L          3.55   6.85%
   QC value within limits for Na 589.592  Recovery = 103.57%
Sr 407.771†          331112.0       0.615 mg/L       0.1249       0.615 mg/L        0.1249  20.33%
   Saturated within auto integration window (code 4)
   QC value less than the lower limit for Sr 407.771  Recovery = 61.45%
Li 670.784†           40832.5        1.14 mg/L        0.024        1.14 mg/L         0.024   2.14%
   QC value greater than the upper limit for Li 670.784  Recovery = 113.72%
QC Failed.  Continue with analysis.

==========================================================================================
Sequence No.: 24                                    Autosampler Location: 1
Sample ID: CCB                                      Date Collected: 1/30/2012 7:32:28 PM
Analyst:                                            Data Type: Original
Initial Sample Wt:                                  Initial Sample Vol:
Dilution:                                           Sample Prep Vol:

------------------------------------------------------------------------------------------
Nebulizer Parameters: CCB
Analyte                 Back Pressure    Flow
All                     149.0 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            3763474.0                                                     8444.52   0.22%
YRADIAL               121990.5                                                     8109.03   6.65%
Ga 417.206            787899.3                                                     3563.97   0.45%
GaRADIAL               11080.2                                                     3318.63  29.95%
Ag 328.068†             -366.7    -0.00477 mg/L      0.000156    -0.00477 mg/L      0.000156   3.27%
   QC value less than the lower limit for Ag 328.068  Recovery = Not calculated
Al 396.153†                1.4     -0.0458 mg/L       0.00814     -0.0458 mg/L       0.00814  17.80%
   QC value within limits for Al 396.153  Recovery = Not calculated
As 188.979†                0.4     0.00536 mg/L      0.001726     0.00536 mg/L      0.001726  32.17%
   QC value within limits for As 188.979  Recovery = Not calculated
Ba 233.527†               -6.2    -0.00544 mg/L      0.000092    -0.00544 mg/L      0.000092   1.70%
   QC value less than the lower limit for Ba 233.527  Recovery = Not calculated
Be 234.861†               96.2     0.00002 mg/L      0.000052     0.00002 mg/L      0.000052 269.40%
   QC value within limits for Be 234.861  Recovery = Not calculated
B 249.677†               151.2     0.00213 mg/L      0.000751     0.00213 mg/L      0.000751  35.24%
   QC value within limits for B 249.677  Recovery = Not calculated
Ca 227.546†                4.7    -0.00160 mg/L      0.048406    -0.00160 mg/L      0.048406 >999.9%
   QC value within limits for Ca 227.546  Recovery = Not calculated
Cd 228.802†               -5.0    -0.00049 mg/L      0.000351    -0.00049 mg/L      0.000351  71.99%
   QC value within limits for Cd 228.802  Recovery = Not calculated
Co 228.616†               -4.8    -0.00097 mg/L      0.000317    -0.00097 mg/L      0.000317  32.76%
   QC value within limits for Co 228.616  Recovery = Not calculated
Cr 267.716†               31.0    -0.00239 mg/L      0.000105    -0.00239 mg/L      0.000105   4.40%
   QC value within limits for Cr 267.716  Recovery = Not calculated
Cu 327.393†             -170.4    -0.00472 mg/L      0.000824    -0.00472 mg/L      0.000824  17.45%
   QC value within limits for Cu 327.393  Recovery = Not calculated
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Approved: January 31, 2012

Fe 239.562†	-0.8	-0.0693 mg/L	0.01581	-0.0693 mg/L	0.01581	22.82%
QC value less than the lower limit for Fe 239.562 Recovery = Not calculated						
Mg 279.077†	-1.1	-0.0623 mg/L	0.04199	-0.0623 mg/L	0.04199	67.42%
QC value within limits for Mg 279.077 Recovery = Not calculated						
Mn 257.610†	5.9	-0.00410 mg/L	0.000027	-0.00410 mg/L	0.000027	0.66%
QC value within limits for Mn 257.610 Recovery = Not calculated						
Mo 202.031†	-3.8	-0.00518 mg/L	0.000537	-0.00518 mg/L	0.000537	10.38%
QC value within limits for Mo 202.031 Recovery = Not calculated						
Ni 231.604†	6.4	-0.00221 mg/L	0.000269	-0.00221 mg/L	0.000269	12.19%
QC value within limits for Ni 231.604 Recovery = Not calculated						
Pb 220.353†	2.9	0.00114 mg/L	0.001269	0.00114 mg/L	0.001269	111.14%
QC value within limits for Pb 220.353 Recovery = Not calculated						
Sb 206.836†	1.1	-0.00216 mg/L	0.002069	-0.00216 mg/L	0.002069	95.69%
QC value within limits for Sb 206.836 Recovery = Not calculated						
Se 196.026†	-6.8	-0.00635 mg/L	0.002621	-0.00635 mg/L	0.002621	41.28%
QC value within limits for Se 196.026 Recovery = Not calculated						
Si 251.611†	-28.1	-0.0397 mg/L	0.00036	-0.0397 mg/L	0.00036	0.92%
QC value within limits for Si 251.611 Recovery = Not calculated						
Sn 189.927†	-2.6	-0.00329 mg/L	0.000459	-0.00329 mg/L	0.000459	13.97%
QC value within limits for Sn 189.927 Recovery = Not calculated						
Ti 334.940†	-83.0	-0.00332 mg/L	0.000060	-0.00332 mg/L	0.000060	1.80%
QC value within limits for Ti 334.940 Recovery = Not calculated						
Tl 190.801†	1.1	-0.00227 mg/L	0.002656	-0.00227 mg/L	0.002656	116.80%
QC value within limits for Tl 190.801 Recovery = Not calculated						
V 290.880†	24.6	-0.00340 mg/L	0.000830	-0.00340 mg/L	0.000830	24.44%
QC value within limits for V 290.880 Recovery = Not calculated						
Zn 206.200†	-1.9	-0.00488 mg/L	0.000142	-0.00488 mg/L	0.000142	2.91%
QC value within limits for Zn 206.200 Recovery = Not calculated						
K 766.490†	-67.9	-0.00292 mg/L	0.065820	-0.00292 mg/L	0.065820	>999.9%
QC value within limits for K 766.490 Recovery = Not calculated						
Na 589.592†	122.2	0.0736 mg/L	0.03979	0.0736 mg/L	0.03979	54.09%
QC value within limits for Na 589.592 Recovery = Not calculated						
Sr 407.771†	72.7	-0.00527 mg/L	0.000061	-0.00527 mg/L	0.000061	1.16%
QC value within limits for Sr 407.771 Recovery = Not calculated						
Li 670.784†	166.4	-0.00449 mg/L	0.002324	-0.00449 mg/L	0.002324	51.75%
QC value within limits for Li 670.784 Recovery = Not calculated						

QC Failed. Continue with analysis.

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Sequence No.: 25 **Autosampler Location: 57**
Sample ID: L1201075603 **Date Collected: 1/30/2012 7:39:16 PM**
Analyst: SLP **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1201075603

Analyte	Back Pressure	Flow
All	148.0 kPa	0.50 L/min

Mean Data: L1201075603

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3843856.6						40793.58	1.06%
YRADIAL	124419.0						5797.95	4.66%
Ga 417.206	819617.4						11908.34	1.45%
GaRADIAL	12057.3						3291.60	27.30%
Ag 328.068†	-313.8	-0.00435	mg/L	0.000344	-0.00435	mg/L	0.000344	7.91%
Al 396.153†	0.8	-0.0461	mg/L	0.00577	-0.0461	mg/L	0.00577	12.51%
As 188.979†	1.0	0.00649	mg/L	0.002966	0.00649	mg/L	0.002966	45.72%
Ba 233.527†	-3.8	-0.00536	mg/L	0.000106	-0.00536	mg/L	0.000106	1.99%
Be 234.861†	98.2	0.00002	mg/L	0.000052	0.00002	mg/L	0.000052	240.16%
B 249.677†	123.2	0.00127	mg/L	0.000670	0.00127	mg/L	0.000670	52.95%
Ca 227.546†	5.1	0.00361	mg/L	0.044893	0.00361	mg/L	0.044893	>999.9%
Cd 228.802†	-5.1	-0.00049	mg/L	0.000023	-0.00049	mg/L	0.000023	4.60%
Co 228.616†	-2.4	-0.00073	mg/L	0.000354	-0.00073	mg/L	0.000354	48.63%
Cr 267.716†	66.6	-0.00183	mg/L	0.000126	-0.00183	mg/L	0.000126	6.88%
Cu 327.393†	103.2	-0.00193	mg/L	0.000719	-0.00193	mg/L	0.000719	37.27%
Fe 239.562†	-0.3	-0.0466	mg/L	0.03054	-0.0466	mg/L	0.03054	65.57%
Mg 279.077†	-1.7	-0.0705	mg/L	0.01447	-0.0705	mg/L	0.01447	20.53%
Mn 257.610†	24.0	-0.00403	mg/L	0.000022	-0.00403	mg/L	0.000022	0.55%

Approved: January 31, 2012

Mo 202.031†	-4.3	-0.00524 mg/L	0.000575	-0.00524 mg/L	0.000575	10.97%
Ni 231.604†	17.8	-0.00154 mg/L	0.000099	-0.00154 mg/L	0.000099	6.42%
Pb 220.353†	5.7	0.00212 mg/L	0.000896	0.00212 mg/L	0.000896	42.34%
Sb 206.836†	0.4	-0.00305 mg/L	0.002938	-0.00305 mg/L	0.002938	96.23%
Se 196.026†	-4.5	-0.00283 mg/L	0.002423	-0.00283 mg/L	0.002423	85.56%
Si 251.611†	131.3	-0.0309 mg/L	0.00146	-0.0309 mg/L	0.00146	4.72%
Sn 189.927†	-3.7	-0.00372 mg/L	0.001265	-0.00372 mg/L	0.001265	34.00%
Ti 334.940†	22.4	-0.00309 mg/L	0.000158	-0.00309 mg/L	0.000158	5.11%
Tl 190.801†	-1.9	-0.00575 mg/L	0.001209	-0.00575 mg/L	0.001209	21.03%
V 290.880†	13.5	-0.00353 mg/L	0.000289	-0.00353 mg/L	0.000289	8.20%
Zn 206.200†	16.5	-0.00357 mg/L	0.000280	-0.00357 mg/L	0.000280	7.85%
K 766.490†	68.7	0.130 mg/L	0.0543	0.130 mg/L	0.0543	41.89%
Na 589.592†	112.9	0.0717 mg/L	0.04801	0.0717 mg/L	0.04801	67.00%
Sr 407.771†	81.9	-0.00526 mg/L	0.000086	-0.00526 mg/L	0.000086	1.64%
Li 670.784†	179.5	-0.00412 mg/L	0.002099	-0.00412 mg/L	0.002099	50.92%

Sequence No.: 26 **Autosampler Location: 58**
Sample ID: L1201075604 **Date Collected: 1/30/2012 7:46:08 PM**
Analyst: SLP **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1201075604

Analyte	Back Pressure	Flow
All	148.0 kPa	0.50 L/min

Mean Data: L1201075604

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3804653.8						54257.90	1.43%
YRADIAL	123872.7						3349.05	2.70%
Ga 417.206	803092.4						12718.37	1.58%
GaRADIAL	11893.8						3074.90	25.85%
Ag 328.068†	-368.5	-0.00478	mg/L	0.001254	-0.00478	mg/L	0.001254	26.23%
Al 396.153†	6.4	-0.0427	mg/L	0.01066	-0.0427	mg/L	0.01066	24.96%
As 188.979†	-1.3	0.00236	mg/L	0.005655	0.00236	mg/L	0.005655	239.51%
Ba 233.527†	0.9	-0.00520	mg/L	0.000001	-0.00520	mg/L	0.000001	0.02%
Be 234.861†	84.9	-0.00003	mg/L	0.000011	-0.00003	mg/L	0.000011	43.50%
B 249.677†	126.6	0.00147	mg/L	0.000141	0.00147	mg/L	0.000141	9.64%
Ca 227.546†	6.4	0.0203	mg/L	0.05651	0.0203	mg/L	0.05651	278.26%
Cd 228.802†	-7.7	-0.00074	mg/L	0.000127	-0.00074	mg/L	0.000127	17.14%
Co 228.616†	-5.2	-0.00101	mg/L	0.000340	-0.00101	mg/L	0.000340	33.80%
Cr 267.716†	76.5	-0.00168	mg/L	0.000077	-0.00168	mg/L	0.000077	4.59%
Cu 327.393†	-44.6	-0.00344	mg/L	0.001106	-0.00344	mg/L	0.001106	32.18%
Fe 239.562†	0.1	-0.0288	mg/L	0.03426	-0.0288	mg/L	0.03426	118.79%
Mg 279.077†	-1.7	-0.0705	mg/L	0.00476	-0.0705	mg/L	0.00476	6.76%
Mn 257.610†	35.7	-0.00398	mg/L	0.000025	-0.00398	mg/L	0.000025	0.63%
Mo 202.031†	-6.1	-0.00549	mg/L	0.000325	-0.00549	mg/L	0.000325	5.91%
Ni 231.604†	13.9	-0.00177	mg/L	0.000373	-0.00177	mg/L	0.000373	21.09%
Pb 220.353†	3.8	0.00146	mg/L	0.002610	0.00146	mg/L	0.002610	179.11%
Sb 206.836†	2.3	-0.00076	mg/L	0.001549	-0.00076	mg/L	0.001549	203.29%
Se 196.026†	0.6	0.00508	mg/L	0.004185	0.00508	mg/L	0.004185	82.44%
Si 251.611†	154.1	-0.0296	mg/L	0.00018	-0.0296	mg/L	0.00018	0.62%
Sn 189.927†	-5.4	-0.00435	mg/L	0.000831	-0.00435	mg/L	0.000831	19.09%
Ti 334.940†	-100.2	-0.00335	mg/L	0.000022	-0.00335	mg/L	0.000022	0.66%
Tl 190.801†	-3.3	-0.00736	mg/L	0.002673	-0.00736	mg/L	0.002673	36.30%
V 290.880†	69.6	-0.00287	mg/L	0.001316	-0.00287	mg/L	0.001316	45.80%
Zn 206.200†	17.7	-0.00348	mg/L	0.000082	-0.00348	mg/L	0.000082	2.37%
K 766.490†	38.8	0.101	mg/L	0.0700	0.101	mg/L	0.0700	69.64%
Na 589.592†	51.9	0.0592	mg/L	0.02573	0.0592	mg/L	0.02573	43.47%
Sr 407.771†	39.8	-0.00535	mg/L	0.000074	-0.00535	mg/L	0.000074	1.38%
Li 670.784†	134.8	-0.00538	mg/L	0.001930	-0.00538	mg/L	0.001930	35.88%

Sequence No.: 27 **Autosampler Location: 59**
Sample ID: L1201075605 **Date Collected: 1/30/2012 7:52:59 PM**
Analyst: SLP **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Approved: January 31, 2012

Nebulizer Parameters: L1201075605

Analyte	Back Pressure	Flow
All	148.0 kPa	0.50 L/min

Mean Data: L1201075605

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3693534.3						40209.10	1.09%
YRADIAL	123292.9						3647.25	2.96%
Ga 417.206	783947.9						12160.04	1.55%
GaRADIAL	11704.1						3054.78	26.10%
Ag 328.068†	-337.6	-0.00453	mg/L	0.000184	-0.00453	mg/L	0.000184	4.06%
Al 396.153†	1.4	-0.0457	mg/L	0.00938	-0.0457	mg/L	0.00938	20.52%
As 188.979†	-0.3	0.00415	mg/L	0.005292	0.00415	mg/L	0.005292	127.37%
Ba 233.527†	-5.4	-0.00541	mg/L	0.000168	-0.00541	mg/L	0.000168	3.10%
Be 234.861†	80.7	-0.00003	mg/L	0.000018	-0.00003	mg/L	0.000018	52.57%
B 249.677†	111.7	0.00083	mg/L	0.000472	0.00083	mg/L	0.000472	56.62%
Ca 227.546†	1.6	-0.0496	mg/L	0.08560	-0.0496	mg/L	0.08560	172.48%
Cd 228.802†	-5.0	-0.00049	mg/L	0.000146	-0.00049	mg/L	0.000146	29.84%
Co 228.616†	-4.7	-0.00095	mg/L	0.000421	-0.00095	mg/L	0.000421	44.13%
Cr 267.716†	47.3	-0.00214	mg/L	0.000060	-0.00214	mg/L	0.000060	2.81%
Cu 327.393†	-23.3	-0.00322	mg/L	0.000376	-0.00322	mg/L	0.000376	11.68%
Fe 239.562†	-0.4	-0.0532	mg/L	0.01378	-0.0532	mg/L	0.01378	25.88%
Mg 279.077†	-1.4	-0.0665	mg/L	0.03346	-0.0665	mg/L	0.03346	50.35%
Mn 257.610†	14.7	-0.00407	mg/L	0.000016	-0.00407	mg/L	0.000016	0.40%
Mo 202.031†	-7.2	-0.00564	mg/L	0.000689	-0.00564	mg/L	0.000689	12.20%
Ni 231.604†	12.2	-0.00186	mg/L	0.000356	-0.00186	mg/L	0.000356	19.10%
Pb 220.353†	-2.3	-0.00067	mg/L	0.001707	-0.00067	mg/L	0.001707	255.97%
Sb 206.836†	-0.2	-0.00371	mg/L	0.002679	-0.00371	mg/L	0.002679	72.15%
Se 196.026†	-4.5	-0.00280	mg/L	0.004076	-0.00280	mg/L	0.004076	145.44%
Si 251.611†	161.5	-0.0292	mg/L	0.00082	-0.0292	mg/L	0.00082	2.82%
Sn 189.927†	-2.1	-0.00311	mg/L	0.000573	-0.00311	mg/L	0.000573	18.45%
Ti 334.940†	-80.4	-0.00331	mg/L	0.000263	-0.00331	mg/L	0.000263	7.94%
Tl 190.801†	-4.8	-0.00908	mg/L	0.006708	-0.00908	mg/L	0.006708	73.88%
V 290.880†	144.3	-0.00200	mg/L	0.000618	-0.00200	mg/L	0.000618	30.92%
Zn 206.200†	11.8	-0.00390	mg/L	0.000395	-0.00390	mg/L	0.000395	10.13%
K 766.490†	43.9	0.106	mg/L	0.0396	0.106	mg/L	0.0396	37.50%
Na 589.592†	-111.3	0.0259	mg/L	0.02027	0.0259	mg/L	0.02027	78.17%
Sr 407.771†	94.7	-0.00524	mg/L	0.000040	-0.00524	mg/L	0.000040	0.77%
Li 670.784†	125.4	-0.00564	mg/L	0.001407	-0.00564	mg/L	0.001407	24.93%

Sequence No.: 28
Autosampler Location: 60
Sample ID: L1201075606
Date Collected: 1/30/2012 7:59:48 PM
Analyst: SLP
Data Type: Original
Initial Sample Wt:
Initial Sample Vol:
Dilution:
Sample Prep Vol:

Nebulizer Parameters: L1201075606

Analyte	Back Pressure	Flow
All	148.0 kPa	0.50 L/min

Mean Data: L1201075606

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3748958.0						74020.90	1.97%
YRADIAL	124793.7						8385.26	6.72%
Ga 417.206	785890.7						21676.26	2.76%
GaRADIAL	12407.1						3499.55	28.21%
Ag 328.068†	-324.5	-0.00443	mg/L	0.000302	-0.00443	mg/L	0.000302	6.82%
Al 396.153†	4.2	-0.0440	mg/L	0.00822	-0.0440	mg/L	0.00822	18.67%
As 188.979†	-0.6	0.00348	mg/L	0.004481	0.00348	mg/L	0.004481	128.94%
Ba 233.527†	-1.8	-0.00529	mg/L	0.000198	-0.00529	mg/L	0.000198	3.75%
Be 234.861†	69.2	-0.00008	mg/L	0.000082	-0.00008	mg/L	0.000082	107.48%
B 249.677†	101.7	0.00061	mg/L	0.000961	0.00061	mg/L	0.000961	157.20%
Ca 227.546†	7.1	0.0308	mg/L	0.05560	0.0308	mg/L	0.05560	180.22%
Cd 228.802†	-6.1	-0.00059	mg/L	0.000082	-0.00059	mg/L	0.000082	13.91%

Approved: January 31, 2012

Co 228.616†	-6.0	-0.00109	mg/L	0.000691	-0.00109	mg/L	0.000691	63.54%
Cr 267.716†	46.4	-0.00215	mg/L	0.000175	-0.00215	mg/L	0.000175	8.13%
Cu 327.393†	-60.9	-0.00360	mg/L	0.000381	-0.00360	mg/L	0.000381	10.58%
Fe 239.562†	0.1	-0.0274	mg/L	0.06431	-0.0274	mg/L	0.06431	234.39%
Mg 279.077†	-3.3	-0.0901	mg/L	0.02790	-0.0901	mg/L	0.02790	30.96%
Mn 257.610†	229.0	-0.00323	mg/L	0.000035	-0.00323	mg/L	0.000035	1.09%
Mo 202.031†	-5.0	-0.00533	mg/L	0.000406	-0.00533	mg/L	0.000406	7.62%
Ni 231.604†	12.8	-0.00183	mg/L	0.000131	-0.00183	mg/L	0.000131	7.16%
Pb 220.353†	0.9	0.00047	mg/L	0.001993	0.00047	mg/L	0.001993	421.99%
Sb 206.836†	0.1	-0.00332	mg/L	0.002887	-0.00332	mg/L	0.002887	86.90%
Se 196.026†	-5.1	-0.00375	mg/L	0.007805	-0.00375	mg/L	0.007805	208.05%
Si 251.611†	276.9	-0.0228	mg/L	0.00099	-0.0228	mg/L	0.00099	4.35%
Sn 189.927†	-2.1	-0.00312	mg/L	0.000805	-0.00312	mg/L	0.000805	25.79%
Ti 334.940†	-25.6	-0.00320	mg/L	0.000039	-0.00320	mg/L	0.000039	1.21%
Tl 190.801†	-0.5	-0.00408	mg/L	0.003434	-0.00408	mg/L	0.003434	84.09%
V 290.880†	128.3	-0.00219	mg/L	0.000821	-0.00219	mg/L	0.000821	37.46%
Zn 206.200†	24.2	-0.00301	mg/L	0.000184	-0.00301	mg/L	0.000184	6.11%
K 766.490†	25.1	0.0873	mg/L	0.08837	0.0873	mg/L	0.08837	101.19%
Na 589.592†	-32.9	0.0419	mg/L	0.01372	0.0419	mg/L	0.01372	32.75%
Sr 407.771†	79.0	-0.00527	mg/L	0.000063	-0.00527	mg/L	0.000063	1.20%
Li 670.784†	99.8	-0.00636	mg/L	0.002229	-0.00636	mg/L	0.002229	35.04%

Sequence No.: 29 **Autosampler Location: 61**
Sample ID: L1201075607 **Date Collected: 1/30/2012 8:06:37 PM**
Analyst: SLP **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1201075607

Analyte	Back Pressure	Flow
All	148.0 kPa	0.50 L/min

Mean Data: L1201075607

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3816022.5						43025.84	1.13%
YRADIAL	121453.9						5332.82	4.39%
Ga 417.206	810804.8						15458.44	1.91%
GaRADIAL	10940.1						3148.05	28.78%
Ag 328.068†	-281.9	-0.00409	mg/L	0.000483	-0.00409	mg/L	0.000483	11.79%
Al 396.153†	-5.4	-0.0498	mg/L	0.01027	-0.0498	mg/L	0.01027	20.62%
As 188.979†	1.2	0.00677	mg/L	0.003615	0.00677	mg/L	0.003615	53.36%
Ba 233.527†	-5.0	-0.00540	mg/L	0.000031	-0.00540	mg/L	0.000031	0.57%
Be 234.861†	87.6	0.00001	mg/L	0.000033	0.00001	mg/L	0.000033	501.81%
B 249.677†	64.7	-0.00123	mg/L	0.000492	-0.00123	mg/L	0.000492	40.00%
Ca 227.546†	3.8	-0.00640	mg/L	0.038211	-0.00640	mg/L	0.038211	596.70%
Cd 228.802†	-5.5	-0.00053	mg/L	0.000120	-0.00053	mg/L	0.000120	22.71%
Co 228.616†	-2.0	-0.00069	mg/L	0.000223	-0.00069	mg/L	0.000223	32.28%
Cr 267.716†	123.4	-0.00093	mg/L	0.000182	-0.00093	mg/L	0.000182	19.45%
Cu 327.393†	29.9	-0.00269	mg/L	0.001132	-0.00269	mg/L	0.001132	42.16%
Fe 239.562†	-2.5	-0.148	mg/L	0.0481	-0.148	mg/L	0.0481	32.50%
Mg 279.077†	-1.3	-0.0657	mg/L	0.00715	-0.0657	mg/L	0.00715	10.88%
Mn 257.610†	33.7	-0.00400	mg/L	0.000010	-0.00400	mg/L	0.000010	0.26%
Mo 202.031†	-4.3	-0.00524	mg/L	0.000084	-0.00524	mg/L	0.000084	1.61%
Ni 231.604†	22.1	-0.00129	mg/L	0.000153	-0.00129	mg/L	0.000153	11.85%
Pb 220.353†	5.1	0.00193	mg/L	0.001795	0.00193	mg/L	0.001795	93.06%
Sb 206.836†	0.3	-0.00308	mg/L	0.001072	-0.00308	mg/L	0.001072	34.80%
Se 196.026†	-3.2	-0.00082	mg/L	0.010121	-0.00082	mg/L	0.010121	>999.9%
Si 251.611†	102.9	-0.0325	mg/L	0.00070	-0.0325	mg/L	0.00070	2.17%
Sn 189.927†	-0.7	-0.00257	mg/L	0.001091	-0.00257	mg/L	0.001091	42.43%
Ti 334.940†	-101.7	-0.00336	mg/L	0.000219	-0.00336	mg/L	0.000219	6.53%
Tl 190.801†	-2.5	-0.00646	mg/L	0.001848	-0.00646	mg/L	0.001848	28.60%
V 290.880†	-59.1	-0.00437	mg/L	0.000513	-0.00437	mg/L	0.000513	11.75%
Zn 206.200†	8.4	-0.00414	mg/L	0.000060	-0.00414	mg/L	0.000060	1.44%
K 766.490†	-45.1	0.0193	mg/L	0.12119	0.0193	mg/L	0.12119	628.70%
Na 589.592†	-41.2	0.0402	mg/L	0.03577	0.0402	mg/L	0.03577	88.93%
Sr 407.771†	83.2	-0.00524	mg/L	0.000111	-0.00524	mg/L	0.000111	2.12%
Li 670.784†	136.1	-0.00534	mg/L	0.002479	-0.00534	mg/L	0.002479	46.42%

Approved: January 31, 2012

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Sequence No.: 30 **Autosampler Location: 62**
Sample ID: L1201075608 **Date Collected: 1/30/2012 8:13:26 PM**
Analyst: SLP **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1201075608

Analyte	Back Pressure	Flow
All	148.0 kPa	0.50 L/min

Mean Data: L1201075608

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	3792169.7						66629.45	1.76%
YRADIAL	122184.2						7451.56	6.10%
Ga 417.206	798075.7						14014.98	1.76%
GaRADIAL	11300.8						3243.18	28.70%
Ag 328.068†	-305.8	-0.00428	mg/L	0.000986	-0.00428	mg/L	0.000986	23.03%
Al 396.153†	-5.4	-0.0498	mg/L	0.01638	-0.0498	mg/L	0.01638	32.90%
As 188.979†	1.4	0.00713	mg/L	0.002645	0.00713	mg/L	0.002645	37.09%
Ba 233.527†	-2.3	-0.00531	mg/L	0.000057	-0.00531	mg/L	0.000057	1.07%
Be 234.861†	64.7	-0.00008	mg/L	0.000050	-0.00008	mg/L	0.000050	59.11%
B 249.677†	49.9	-0.00136	mg/L	0.000529	-0.00136	mg/L	0.000529	38.78%
Ca 227.546†	5.6	0.0125	mg/L	0.07958	0.0125	mg/L	0.07958	637.63%
Cd 228.802†	-6.0	-0.00058	mg/L	0.000118	-0.00058	mg/L	0.000118	20.56%
Co 228.616†	-5.9	-0.00107	mg/L	0.000253	-0.00107	mg/L	0.000253	23.58%
Cr 267.716†	60.7	-0.00193	mg/L	0.000177	-0.00193	mg/L	0.000177	9.19%
Cu 327.393†	9.7	-0.00289	mg/L	0.001414	-0.00289	mg/L	0.001414	49.01%
Fe 239.562†	-0.8	-0.0675	mg/L	0.01981	-0.0675	mg/L	0.01981	29.35%
Mg 279.077†	-3.2	-0.0886	mg/L	0.01707	-0.0886	mg/L	0.01707	19.26%
Mn 257.610†	19.8	-0.00405	mg/L	0.000015	-0.00405	mg/L	0.000015	0.38%
Mo 202.031†	-9.7	-0.00599	mg/L	0.000175	-0.00599	mg/L	0.000175	2.91%
Ni 231.604†	13.6	-0.00178	mg/L	0.000305	-0.00178	mg/L	0.000305	17.11%
Pb 220.353†	3.7	0.00143	mg/L	0.001228	0.00143	mg/L	0.001228	86.09%
Sb 206.836†	-0.1	-0.00366	mg/L	0.002088	-0.00366	mg/L	0.002088	56.99%
Se 196.026†	-2.4	0.00038	mg/L	0.003501	0.00038	mg/L	0.003501	924.97%
Si 251.611†	155.6	-0.0295	mg/L	0.00036	-0.0295	mg/L	0.00036	1.21%
Sn 189.927†	-5.3	-0.00435	mg/L	0.001678	-0.00435	mg/L	0.001678	38.62%
Ti 334.940†	-119.4	-0.00339	mg/L	0.000042	-0.00339	mg/L	0.000042	1.25%
Tl 190.801†	-4.5	-0.00881	mg/L	0.003217	-0.00881	mg/L	0.003217	36.53%
V 290.880†	4.8	-0.00363	mg/L	0.001013	-0.00363	mg/L	0.001013	27.91%
Zn 206.200†	8.1	-0.00417	mg/L	0.000063	-0.00417	mg/L	0.000063	1.52%
K 766.490†	-78.9	-0.0135	mg/L	0.08108	-0.0135	mg/L	0.08108	599.25%
Na 589.592†	-68.4	0.0347	mg/L	0.00721	0.0347	mg/L	0.00721	20.80%
Sr 407.771†	77.5	-0.00527	mg/L	0.000052	-0.00527	mg/L	0.000052	0.99%
Li 670.784†	71.6	-0.00715	mg/L	0.004158	-0.00715	mg/L	0.004158	58.14%

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Sequence No.: 31 **Autosampler Location: 63**
Sample ID: L1201075609 **Date Collected: 1/30/2012 8:20:15 PM**
Analyst: SLP **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1201075609

Analyte	Back Pressure	Flow
All	148.0 kPa	0.50 L/min

Mean Data: L1201075609

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	3808039.9						38676.87	1.02%
YRADIAL	124268.1						2064.68	1.66%
Ga 417.206	802681.9						12066.33	1.50%
GaRADIAL	10946.7						2846.47	26.00%
Ag 328.068†	-213.7	-0.00355	mg/L	0.000918	-0.00355	mg/L	0.000918	25.87%
Al 396.153†	-4.9	-0.0495	mg/L	0.00808	-0.0495	mg/L	0.00808	16.30%

Approved: January 31, 2012

As 188.979†	-1.0	0.00278 mg/L	0.002668	0.00278 mg/L	0.002668	96.08%
Ba 233.527†	-4.6	-0.00538 mg/L	0.000067	-0.00538 mg/L	0.000067	1.25%
Be 234.861†	74.3	-0.00005 mg/L	0.000022	-0.00005 mg/L	0.000022	40.80%
B 249.677†	50.3	-0.00131 mg/L	0.000453	-0.00131 mg/L	0.000453	34.64%
Ca 227.546†	2.5	-0.0340 mg/L	0.08712	-0.0340 mg/L	0.08712	256.11%
Cd 228.802†	-3.0	-0.00031 mg/L	0.000047	-0.00031 mg/L	0.000047	15.22%
Co 228.616†	-5.8	-0.00107 mg/L	0.000293	-0.00107 mg/L	0.000293	27.49%
Cr 267.716†	171.4	-0.00018 mg/L	0.000294	-0.00018 mg/L	0.000294	163.42%
Cu 327.393†	-27.4	-0.00326 mg/L	0.000408	-0.00326 mg/L	0.000408	12.51%
Fe 239.562†	-0.5	-0.0563 mg/L	0.04439	-0.0563 mg/L	0.04439	78.80%
Mg 279.077†	-1.5	-0.0681 mg/L	0.02701	-0.0681 mg/L	0.02701	39.64%
Mn 257.610†	48.2	-0.00393 mg/L	0.000021	-0.00393 mg/L	0.000021	0.54%
Mo 202.031†	-6.0	-0.00547 mg/L	0.000503	-0.00547 mg/L	0.000503	9.19%
Ni 231.604†	27.4	-0.00098 mg/L	0.000173	-0.00098 mg/L	0.000173	17.60%
Pb 220.353†	-1.3	-0.00033 mg/L	0.001325	-0.00033 mg/L	0.001325	406.21%
Sb 206.836†	1.3	-0.00199 mg/L	0.001887	-0.00199 mg/L	0.001887	94.87%
Se 196.026†	-4.2	-0.00229 mg/L	0.003910	-0.00229 mg/L	0.003910	170.53%
Si 251.611†	108.8	-0.0321 mg/L	0.00066	-0.0321 mg/L	0.00066	2.06%
Sn 189.927†	-2.7	-0.00335 mg/L	0.000457	-0.00335 mg/L	0.000457	13.66%
Ti 334.940†	-109.1	-0.00337 mg/L	0.000210	-0.00337 mg/L	0.000210	6.22%
Tl 190.801†	-3.0	-0.00702 mg/L	0.005936	-0.00702 mg/L	0.005936	84.56%
V 290.880†	44.4	-0.00317 mg/L	0.000477	-0.00317 mg/L	0.000477	15.06%
Zn 206.200†	8.2	-0.00416 mg/L	0.000232	-0.00416 mg/L	0.000232	5.59%
K 766.490†	16.1	0.0786 mg/L	0.10305	0.0786 mg/L	0.10305	131.10%
Na 589.592†	25.0	0.0537 mg/L	0.01495	0.0537 mg/L	0.01495	27.83%
Sr 407.771†	77.0	-0.00527 mg/L	0.000023	-0.00527 mg/L	0.000023	0.43%
Li 670.784†	227.8	-0.00277 mg/L	0.001300	-0.00277 mg/L	0.001300	47.01%

Sequence No.: 32 **Autosampler Location: 64**
Sample ID: L1201076501 **Date Collected: 1/30/2012 8:27:04 PM**
Analyst: SLP **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1201076501

Analyte	Back Pressure	Flow
All	148.0 kPa	0.50 L/min

Mean Data: L1201076501

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3752344.4						27061.77	0.72%
YRADIAL	121804.8						3792.71	3.11%
Ga 417.206	867126.0						9341.58	1.08%
GaRADIAL	11197.4						3065.60	27.38%
Ag 328.068†	-41.7	-0.00240	mg/L	0.000292	-0.00240	mg/L	0.000292	12.13%
Al 396.153†	22.2	-0.0333	mg/L	0.00888	-0.0333	mg/L	0.00888	26.68%
As 188.979†	6.9	0.0160	mg/L	0.00620	0.0160	mg/L	0.00620	38.83%
Ba 233.527†	1624.7	0.0477	mg/L	0.00044	0.0477	mg/L	0.00044	0.91%
Be 234.861†	136.6	0.00030	mg/L	0.000041	0.00030	mg/L	0.000041	13.57%
B 249.677†	2117.6	0.0712	mg/L	0.00221	0.0712	mg/L	0.00221	3.11%
Ca 227.546†	3456.7	51.8	mg/L	0.55	51.8	mg/L	0.55	1.07%
Cd 228.802†	-8.4	-0.00077	mg/L	0.000331	-0.00077	mg/L	0.000331	42.92%
Co 228.616†	-0.7	-0.00058	mg/L	0.000522	-0.00058	mg/L	0.000522	90.16%
Cr 267.716†	78.1	-0.00227	mg/L	0.000077	-0.00227	mg/L	0.000077	3.40%
Cu 327.393†	11958.3	0.119	mg/L	0.0031	0.119	mg/L	0.0031	2.57%
Fe 239.562†	3.7	0.135	mg/L	0.0117	0.135	mg/L	0.0117	8.69%
Mg 279.077†	951.0	11.8	mg/L	0.42	11.8	mg/L	0.42	3.54%
Mn 257.610†	366642.8	1.42	mg/L	0.010	1.42	mg/L	0.010	0.72%
Mo 202.031†	4.6	-0.00369	mg/L	0.000007	-0.00369	mg/L	0.000007	0.20%
Ni 231.604†	64.8	0.00116	mg/L	0.000086	0.00116	mg/L	0.000086	7.46%
Pb 220.353†	3.4	0.00359	mg/L	0.001514	0.00359	mg/L	0.001514	42.20%
Sb 206.836†	10.2	0.00874	mg/L	0.002337	0.00874	mg/L	0.002337	26.73%
Se 196.026†	-15.2	-0.00422	mg/L	0.001919	-0.00422	mg/L	0.001919	45.45%
Si 251.611†	79120.8	4.34	mg/L	0.105	4.34	mg/L	0.105	2.42%
Sn 189.927†	-7.3	-0.00507	mg/L	0.001789	-0.00507	mg/L	0.001789	35.28%
Ti 334.940†	-179.2	-0.00300	mg/L	0.000267	-0.00300	mg/L	0.000267	8.90%
Tl 190.801†	54.1	0.0406	mg/L	0.00670	0.0406	mg/L	0.00670	16.50%
V 290.880†	-304.6	-0.00625	mg/L	0.000183	-0.00625	mg/L	0.000183	2.93%

Approved: January 31, 2012

Zn 206.200†	1281.1	0.0869 mg/L	0.00037	0.0869 mg/L	0.00037	0.42%
K 766.490†	2880.1	2.83 mg/L	0.319	2.83 mg/L	0.319	11.27%
Na 589.592†	129117.5	27.3 mg/L	1.96	27.3 mg/L	1.96	7.20%
Sr 407.771†	58809.2	0.105 mg/L	0.0252	0.105 mg/L	0.0252	24.07%
Li 670.784†	236.9	-0.00251 mg/L	0.002099	-0.00251 mg/L	0.002099	83.58%

Sequence No.: 33 **Autosampler Location: 65**
Sample ID: L1201076502 **Date Collected: 1/30/2012 8:33:54 PM**
Analyst: SLP **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1201076502

Analyte	Back Pressure	Flow
All	148.0 kPa	0.50 L/min

Mean Data: L1201076502

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3703862.4						32205.13	0.87%
YRADIAL	123399.7						6534.44	5.30%
Ga 417.206	850046.6						5400.58	0.64%
GaRADIAL	11247.9						3203.53	28.48%
Ag 328.068†	-78.0	-0.00256	mg/L	0.000649	-0.00256	mg/L	0.000649	25.36%
Al 396.153†	20.8	-0.0340	mg/L	0.00844	-0.0340	mg/L	0.00844	24.80%
As 188.979†	7.6	0.0174	mg/L	0.00294	0.0174	mg/L	0.00294	16.88%
Ba 233.527†	954.4	0.0259	mg/L	0.00030	0.0259	mg/L	0.00030	1.15%
Be 234.861†	118.0	0.00015	mg/L	0.000014	0.00015	mg/L	0.000014	9.42%
B 249.677†	1880.0	0.0622	mg/L	0.00221	0.0622	mg/L	0.00221	3.55%
Ca 227.546†	2921.1	43.8	mg/L	0.26	43.8	mg/L	0.26	0.60%
Cd 228.802†	-8.3	-0.00076	mg/L	0.000116	-0.00076	mg/L	0.000116	15.23%
Co 228.616†	-8.0	-0.00129	mg/L	0.000265	-0.00129	mg/L	0.000265	20.59%
Cr 267.716†	42.1	-0.00243	mg/L	0.000167	-0.00243	mg/L	0.000167	6.86%
Cu 327.393†	1191.9	0.00918	mg/L	0.000801	0.00918	mg/L	0.000801	8.72%
Fe 239.562†	0.1	-0.0283	mg/L	0.11290	-0.0283	mg/L	0.11290	399.05%
Mg 279.077†	777.6	9.64	mg/L	0.488	9.64	mg/L	0.488	5.06%
Mn 257.610†	125585.5	0.483	mg/L	0.0042	0.483	mg/L	0.0042	0.86%
Mo 202.031†	-1.6	-0.00477	mg/L	0.000469	-0.00477	mg/L	0.000469	9.84%
Ni 231.604†	7.3	-0.00219	mg/L	0.000391	-0.00219	mg/L	0.000391	17.88%
Pb 220.353†	-5.1	0.00042	mg/L	0.000606	0.00042	mg/L	0.000606	145.04%
Sb 206.836†	6.9	0.00481	mg/L	0.002667	0.00481	mg/L	0.002667	55.43%
Se 196.026†	-13.0	-0.00289	mg/L	0.006635	-0.00289	mg/L	0.006635	229.19%
Si 251.611†	69183.7	3.79	mg/L	0.018	3.79	mg/L	0.018	0.47%
Sn 189.927†	-2.3	-0.00319	mg/L	0.000319	-0.00319	mg/L	0.000319	10.00%
Ti 334.940†	-222.1	-0.00317	mg/L	0.000103	-0.00317	mg/L	0.000103	3.25%
Tl 190.801†	51.0	0.0388	mg/L	0.00618	0.0388	mg/L	0.00618	15.90%
V 290.880†	-235.1	-0.00561	mg/L	0.001969	-0.00561	mg/L	0.001969	35.09%
Zn 206.200†	198.6	0.00946	mg/L	0.000408	0.00946	mg/L	0.000408	4.31%
K 766.490†	2451.8	2.42	mg/L	0.217	2.42	mg/L	0.217	8.96%
Na 589.592†	108898.0	22.9	mg/L	1.66	22.9	mg/L	1.66	7.27%
Sr 407.771†	48518.1	0.0855	mg/L	0.01990	0.0855	mg/L	0.01990	23.26%
Li 670.784†	133.5	-0.00541	mg/L	0.005562	-0.00541	mg/L	0.005562	102.73%

Sequence No.: 34 **Autosampler Location: 66**
Sample ID: L1201076503 **Date Collected: 1/30/2012 8:40:44 PM**
Analyst: SLP **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1201076503

Analyte	Back Pressure	Flow
All	148.0 kPa	0.50 L/min

Mean Data: L1201076503

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

Approved: January 31, 2012

Y 371.029	3754227.8				30729.05	0.82%
YRADIAL	121314.0				7346.10	6.06%
Ga 417.206	808880.5				5392.96	0.67%
GaRADIAL	9863.4				3162.23	32.06%
Ag 328.068†	-288.9	-0.00417 mg/L	0.000417	-0.00417 mg/L	0.000417	10.01%
Al 396.153†	-1.7	-0.0476 mg/L	0.01536	-0.0476 mg/L	0.01536	32.27%
As 188.979†	-0.5	0.00375 mg/L	0.003449	0.00375 mg/L	0.003449	91.89%
Ba 233.527†	9.8	-0.00491 mg/L	0.000094	-0.00491 mg/L	0.000094	1.92%
Be 234.861†	79.7	-0.00005 mg/L	0.000044	-0.00005 mg/L	0.000044	93.79%
B 249.677†	83.0	0.00006 mg/L	0.000469	0.00006 mg/L	0.000469	778.73%
Ca 227.546†	16.3	0.168 mg/L	0.0753	0.168 mg/L	0.0753	44.71%
Cd 228.802†	-3.7	-0.00037 mg/L	0.000283	-0.00037 mg/L	0.000283	76.19%
Co 228.616†	-2.9	-0.00079 mg/L	0.000182	-0.00079 mg/L	0.000182	23.19%
Cr 267.716†	45.7	-0.00217 mg/L	0.000155	-0.00217 mg/L	0.000155	7.15%
Cu 327.393†	26921.0	0.272 mg/L	0.0106	0.272 mg/L	0.0106	3.90%
Fe 239.562†	0.6	-0.00577 mg/L	0.076626	-0.00577 mg/L	0.076626	>999.9%
Mg 279.077†	1.4	-0.0315 mg/L	0.00117	-0.0315 mg/L	0.00117	3.72%
Mn 257.610†	2026.2	0.00376 mg/L	0.000309	0.00376 mg/L	0.000309	8.20%
Mo 202.031†	-9.3	-0.00594 mg/L	0.000586	-0.00594 mg/L	0.000586	9.87%
Ni 231.604†	18.5	-0.00150 mg/L	0.000350	-0.00150 mg/L	0.000350	23.32%
Pb 220.353†	6.0	0.00203 mg/L	0.001382	0.00203 mg/L	0.001382	68.19%
Sb 206.836†	-0.4	-0.00394 mg/L	0.003467	-0.00394 mg/L	0.003467	87.94%
Se 196.026†	-2.8	-0.00016 mg/L	0.002295	-0.00016 mg/L	0.002295	>999.9%
Si 251.611†	1839.6	0.0636 mg/L	0.00865	0.0636 mg/L	0.00865	13.61%
Sn 189.927†	-5.2	-0.00430 mg/L	0.000679	-0.00430 mg/L	0.000679	15.78%
Ti 334.940†	555.9	-0.00197 mg/L	0.001837	-0.00197 mg/L	0.001837	93.31%
Tl 190.801†	-1.9	-0.00577 mg/L	0.003698	-0.00577 mg/L	0.003698	64.11%
V 290.880†	156.8	-0.00186 mg/L	0.003243	-0.00186 mg/L	0.003243	174.80%
Zn 206.200†	193.5	0.00915 mg/L	0.000110	0.00915 mg/L	0.000110	1.21%
K 766.490†	109.0	0.168 mg/L	0.0842	0.168 mg/L	0.0842	50.28%
Na 589.592†	5446.1	1.16 mg/L	0.105	1.16 mg/L	0.105	9.08%
Sr 407.771†	128.8	-0.00518 mg/L	0.000049	-0.00518 mg/L	0.000049	0.95%
Li 670.784†	152.6	-0.00488 mg/L	0.001991	-0.00488 mg/L	0.001991	40.82%

Sequence No.: 35 **Autosampler Location: 6**
Sample ID: CCV **Date Collected: 1/30/2012 8:47:34 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: CCV

Analyte	Back Pressure	Flow
All	149.0 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	3707006.6						40751.19	1.10%
YRADIAL	119973.7						6100.88	5.09%
Ga 417.206	834365.4						8494.45	1.02%
GaRADIAL	10693.0						3012.47	28.17%
Ag 328.068†	49599.5	0.394	mg/L	0.0064	0.394	mg/L	0.0064	1.63%
QC value within limits for Ag 328.068 Recovery = 98.48%								
Al 396.153†	16649.8	9.95	mg/L	0.108	9.95	mg/L	0.108	1.09%
QC value within limits for Al 396.153 Recovery = 99.52%								
As 188.979†	211.3	0.379	mg/L	0.0046	0.379	mg/L	0.0046	1.22%
QC value within limits for As 188.979 Recovery = 94.66%								
Ba 233.527†	32003.9	1.04	mg/L	0.024	1.04	mg/L	0.024	2.29%
QC value within limits for Ba 233.527 Recovery = 104.13%								
Be 234.861†	15221.6	0.0500	mg/L	0.00100	0.0500	mg/L	0.00100	2.01%
QC value within limits for Be 234.861 Recovery = 100.08%								
B 249.677†	14394.6	0.501	mg/L	0.0104	0.501	mg/L	0.0104	2.08%
QC value within limits for B 249.677 Recovery = 100.18%								
Ca 227.546†	661.0	9.81	mg/L	0.078	9.81	mg/L	0.078	0.79%
QC value within limits for Ca 227.546 Recovery = 98.11%								
Cd 228.802†	528.7	0.0485	mg/L	0.00050	0.0485	mg/L	0.00050	1.03%
QC value within limits for Cd 228.802 Recovery = 96.98%								
Co 228.616†	2040.7	0.198	mg/L	0.0023	0.198	mg/L	0.0023	1.15%
QC value within limits for Co 228.616 Recovery = 99.17%								

Approved: January 31, 2012

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Cr 267.716†            32387.3       0.509 mg/L        0.0095       0.509 mg/L        0.0095   1.88%
   QC value within limits for Cr 267.716  Recovery = 101.70%
Cu 327.393†            48637.9       0.495 mg/L        0.0071       0.495 mg/L        0.0071   1.43%
   QC value within limits for Cu 327.393  Recovery = 99.02%
Fe 239.562†               81.2        3.68 mg/L         0.211        3.68 mg/L         0.211   5.73%
   QC value within limits for Fe 239.562  Recovery = 91.97%
Mg 279.077†              845.9        10.5 mg/L          0.55        10.5 mg/L          0.55   5.19%
   QC value within limits for Mg 279.077  Recovery = 104.98%
Mn 257.610†           134336.3       0.520 mg/L        0.0091       0.520 mg/L        0.0091   1.75%
   QC value within limits for Mn 257.610  Recovery = 104.10%
Mo 202.031†             7286.5        1.02 mg/L         0.021        1.02 mg/L         0.021   2.09%
   QC value within limits for Mo 202.031  Recovery = 101.68%
Ni 231.604†             8815.4       0.510 mg/L        0.0103       0.510 mg/L        0.0103   2.02%
   QC value within limits for Ni 231.604  Recovery = 101.99%
Pb 220.353†             1435.2       0.505 mg/L        0.0042       0.505 mg/L        0.0042   0.83%
   QC value within limits for Pb 220.353  Recovery = 101.05%
Sb 206.836†              976.3        1.17 mg/L         0.007        1.17 mg/L         0.007   0.59%
   QC value within limits for Sb 206.836  Recovery = 97.73%
Se 196.026†              249.3       0.391 mg/L        0.0043       0.391 mg/L        0.0043   1.09%
   QC value within limits for Se 196.026  Recovery = 97.67%
Si 251.611†            91799.8        5.02 mg/L         0.108        5.02 mg/L         0.108   2.16%
   QC value within limits for Si 251.611  Recovery = 100.46%
Sn 189.927†             2668.7        1.01 mg/L         0.009        1.01 mg/L         0.009   0.85%
   QC value within limits for Sn 189.927  Recovery = 101.09%
Ti 334.940†           488043.3        1.02 mg/L         0.001        1.02 mg/L         0.001   0.11%
   QC value within limits for Ti 334.940  Recovery = 102.50%
Tl 190.801†              434.5       0.509 mg/L        0.0098       0.509 mg/L        0.0098   1.93%
   QC value within limits for Tl 190.801  Recovery = 101.85%
V 290.880†             87995.8        1.02 mg/L         0.019        1.02 mg/L         0.019   1.89%
   QC value within limits for V 290.880  Recovery = 102.37%
Zn 206.200†            14169.3        1.01 mg/L         0.019        1.01 mg/L         0.019   1.87%
   QC value within limits for Zn 206.200  Recovery = 101.13%
K 766.490†             43040.1        43.1 mg/L          3.68        43.1 mg/L          3.68   8.55%
   QC value less than the lower limit for K 766.490  Recovery = 86.12%
Na 589.592†           246265.0        53.7 mg/L          3.74        53.7 mg/L          3.74   6.97%
   QC value within limits for Na 589.592  Recovery = 107.32%
Sr 407.771†           295542.2       0.548 mg/L        0.1235       0.548 mg/L        0.1235  22.54%
   Saturated within auto integration window (code 4)
   QC value less than the lower limit for Sr 407.771  Recovery = 54.79%
Li 670.784†            41158.6        1.15 mg/L         0.022        1.15 mg/L         0.022   1.90%
   QC value greater than the upper limit for Li 670.784  Recovery = 114.63%
QC Failed.  Continue with analysis.

==========================================================================================
Sequence No.: 36                                  Autosampler Location: 1
Sample ID: CCB                                    Date Collected: 1/30/2012 8:54:26 PM
Analyst:                                          Data Type: Original
Initial Sample Wt:                                Initial Sample Vol:
Dilution:                                         Sample Prep Vol:

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Nebulizer Parameters: CCB
Analyte                 Back Pressure    Flow
All                     149.0 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            3861038.1                                                   80962.77   2.10%
YRADIAL               120759.6                                                    5636.30   4.67%
Ga 417.206            799836.0                                                   22655.40   2.83%
GaRADIAL                9809.4                                                    2815.61  28.70%
Ag 328.068†              -222.7    -0.00362 mg/L     0.000576    -0.00362 mg/L   0.000576  15.91%
   QC value within limits for Ag 328.068  Recovery = Not calculated
Al 396.153†              -10.6     -0.0529 mg/L      0.01360     -0.0529 mg/L    0.01360  25.69%
   QC value within limits for Al 396.153  Recovery = Not calculated
As 188.979†               -0.1     0.00451 mg/L      0.003266     0.00451 mg/L   0.003266  72.38%
   QC value within limits for As 188.979  Recovery = Not calculated
Ba 233.527†               -0.6    -0.00525 mg/L      0.000041    -0.00525 mg/L   0.000041   0.78%
   QC value less than the lower limit for Ba 233.527  Recovery = Not calculated
Be 234.861†               79.5    -0.00004 mg/L      0.000059    -0.00004 mg/L   0.000059 151.51%
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Approved: January 31, 2012

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   QC value within limits for Be 234.861  Recovery = Not calculated
B 249.677†              59.8    -0.00091 mg/L      0.000730    -0.00091 mg/L      0.000730  80.37%
   QC value within limits for B 249.677  Recovery = Not calculated
Ca 227.546†              5.5     0.00885 mg/L      0.072465     0.00885 mg/L      0.072465 819.01%
   QC value within limits for Ca 227.546  Recovery = Not calculated
Cd 228.802†             -6.9    -0.00066 mg/L      0.000313    -0.00066 mg/L      0.000313  47.24%
   QC value less than the lower limit for Cd 228.802  Recovery = Not calculated
Co 228.616†             -1.4    -0.00063 mg/L      0.000637    -0.00063 mg/L      0.000637 100.95%
   QC value within limits for Co 228.616  Recovery = Not calculated
Cr 267.716†             12.6    -0.00269 mg/L      0.000069    -0.00269 mg/L      0.000069   2.56%
   QC value within limits for Cr 267.716  Recovery = Not calculated
Cu 327.393†            -83.0    -0.00383 mg/L      0.000751    -0.00383 mg/L      0.000751  19.61%
   QC value within limits for Cu 327.393  Recovery = Not calculated
Fe 239.562†             -0.3     -0.0441 mg/L       0.04031     -0.0441 mg/L       0.04031  91.38%
   QC value less than the lower limit for Fe 239.562  Recovery = Not calculated
Mg 279.077†              0.5     -0.0433 mg/L       0.03355     -0.0433 mg/L       0.03355  77.41%
   QC value within limits for Mg 279.077  Recovery = Not calculated
Mn 257.610†              2.6    -0.00411 mg/L      0.000018    -0.00411 mg/L      0.000018   0.45%
   QC value within limits for Mn 257.610  Recovery = Not calculated
Mo 202.031†             -0.0    -0.00464 mg/L      0.000288    -0.00464 mg/L      0.000288   6.21%
   QC value within limits for Mo 202.031  Recovery = Not calculated
Ni 231.604†              0.9    -0.00253 mg/L      0.000133    -0.00253 mg/L      0.000133   5.27%
   QC value within limits for Ni 231.604  Recovery = Not calculated
Pb 220.353†              2.5     0.00102 mg/L      0.000598     0.00102 mg/L      0.000598  58.82%
   QC value within limits for Pb 220.353  Recovery = Not calculated
Sb 206.836†              1.1    -0.00216 mg/L      0.002239    -0.00216 mg/L      0.002239 103.59%
   QC value within limits for Sb 206.836  Recovery = Not calculated
Se 196.026†             -4.2    -0.00239 mg/L      0.004351    -0.00239 mg/L      0.004351 182.32%
   QC value within limits for Se 196.026  Recovery = Not calculated
Si 251.611†            -14.7     -0.0390 mg/L       0.00068     -0.0390 mg/L       0.00068   1.74%
   QC value within limits for Si 251.611  Recovery = Not calculated
Sn 189.927†             -2.6    -0.00332 mg/L      0.001357    -0.00332 mg/L      0.001357  40.93%
   QC value within limits for Sn 189.927  Recovery = Not calculated
Ti 334.940†             -4.0    -0.00315 mg/L      0.000054    -0.00315 mg/L      0.000054   1.70%
   QC value within limits for Ti 334.940  Recovery = Not calculated
Tl 190.801†             -0.7    -0.00438 mg/L      0.000733    -0.00438 mg/L      0.000733  16.75%
   QC value within limits for Tl 190.801  Recovery = Not calculated
V 290.880†               6.4    -0.00361 mg/L      0.000691    -0.00361 mg/L      0.000691  19.14%
   QC value within limits for V 290.880  Recovery = Not calculated
Zn 206.200†             -1.9    -0.00489 mg/L      0.000262    -0.00489 mg/L      0.000262   5.36%
   QC value within limits for Zn 206.200  Recovery = Not calculated
K 766.490†               4.4      0.0672 mg/L       0.10834      0.0672 mg/L       0.10834 161.16%
   QC value within limits for K 766.490  Recovery = Not calculated
Na 589.592†             85.5      0.0661 mg/L       0.03135      0.0661 mg/L       0.03135  47.46%
   QC value within limits for Na 589.592  Recovery = Not calculated
Sr 407.771†            100.5    -0.00523 mg/L      0.000075    -0.00523 mg/L      0.000075   1.43%
   QC value within limits for Sr 407.771  Recovery = Not calculated
Li 670.784†            181.7    -0.00406 mg/L      0.002855    -0.00406 mg/L      0.002855  70.33%
   QC value within limits for Li 670.784  Recovery = Not calculated
QC Failed.  Continue with analysis.

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Sequence No.: 37                                  Autosampler Location: 67
Sample ID: L1201076504                            Date Collected: 1/30/2012 9:01:14 PM
Analyst: SLP                                      Data Type: Original
Initial Sample Wt:                                Initial Sample Vol:
Dilution:                                         Sample Prep Vol:

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Nebulizer Parameters: L1201076504
Analyte                 Back Pressure    Flow
All                    148.0 kPa         0.50 L/min

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Mean Data: L1201076504
                   Mean Corrected         Calib.                          Sample
Analyte               Intensity     Conc. Units      Std.Dev.      Conc. Units      Std.Dev.   RSD
Y 371.029            3805144.2                                                    45788.42   1.20%
YRADIAL               120664.6                                                     6565.88   5.44%
Ga 417.206            814209.9                                                     8576.87   1.05%
GaRADIAL                9909.7                                                     3055.30  30.83%
Ag 328.068†             -197.0    -0.00342 mg/L      0.000553    -0.00342 mg/L      0.000553  16.18%
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Approved: January 31, 2012

Al 396.153†	7.0	-0.0424	mg/L	0.01192	-0.0424	mg/L	0.01192 28.11%
As 188.979†	0.8	0.00607	mg/L	0.006320	0.00607	mg/L	0.006320 104.04%
Ba 233.527†	9.3	-0.00492	mg/L	0.000133	-0.00492	mg/L	0.000133 2.70%
Be 234.861†	97.3	-0.00004	mg/L	0.000060	-0.00004	mg/L	0.000060 139.13%
B 249.677†	289.9	0.00857	mg/L	0.000630	0.00857	mg/L	0.000630 7.35%
Ca 227.546†	34.1	0.408	mg/L	0.0425	0.408	mg/L	0.0425 10.43%
Cd 228.802†	-6.9	-0.00065	mg/L	0.000301	-0.00065	mg/L	0.000301 46.11%
Co 228.616†	-2.5	-0.00075	mg/L	0.000319	-0.00075	mg/L	0.000319 42.48%
Cr 267.716†	190.1	0.00010	mg/L	0.000078	0.00010	mg/L	0.000078 78.84%
Cu 327.393†	197.5	-0.00094	mg/L	0.000758	-0.00094	mg/L	0.000758 80.27%
Fe 239.562†	6.9	0.282	mg/L	0.0744	0.282	mg/L	0.0744 26.34%
Mg 279.077†	4.4	0.00604	mg/L	0.004891	0.00604	mg/L	0.004891 80.97%
Mn 257.610†	2995.5	0.00752	mg/L	0.000324	0.00752	mg/L	0.000324 4.31%
Mo 202.031†	-5.3	-0.00537	mg/L	0.000262	-0.00537	mg/L	0.000262 4.89%
Ni 231.604†	58.6	0.00083	mg/L	0.000310	0.00083	mg/L	0.000310 37.20%
Pb 220.353†	1.6	0.00069	mg/L	0.001374	0.00069	mg/L	0.001374 197.98%
Sb 206.836†	0.4	-0.00304	mg/L	0.002809	-0.00304	mg/L	0.002809 92.37%
Se 196.026†	-2.9	-0.00013	mg/L	0.001403	-0.00013	mg/L	0.001403 >999.9%
Si 251.611†	2214.3	0.0843	mg/L	0.00184	0.0843	mg/L	0.00184 2.18%
Sn 189.927†	-4.4	-0.00401	mg/L	0.000387	-0.00401	mg/L	0.000387 9.66%
Ti 334.940†	-59.9	-0.00326	mg/L	0.000119	-0.00326	mg/L	0.000119 3.65%
Tl 190.801†	-1.1	-0.00492	mg/L	0.004758	-0.00492	mg/L	0.004758 96.75%
V 290.880†	97.3	-0.00257	mg/L	0.002336	-0.00257	mg/L	0.002336 90.91%
Zn 206.200†	90.2	0.00171	mg/L	0.000189	0.00171	mg/L	0.000189 11.04%
K 766.490†	27.8	0.0891	mg/L	0.08662	0.0891	mg/L	0.08662 97.21%
Na 589.592†	3734.6	0.811	mg/L	0.1110	0.811	mg/L	0.1110 13.69%
Sr 407.771†	423.2	-0.00470	mg/L	0.000106	-0.00470	mg/L	0.000106 2.25%
Li 670.784†	135.5	-0.00536	mg/L	0.005416	-0.00536	mg/L	0.005416 101.08%

Sequence No.: 38 **Autosampler Location: 68**
Sample ID: PBW 74 WG387653-02 **Date Collected: 1/30/2012 9:08:04 PM**
Analyst: SLP **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: PBW 74 WG387653-02

Analyte	Back Pressure	Flow
All	148.0 kPa	0.50 L/min

Mean Data: PBW 74 WG387653-02

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3809199.1						63790.11	1.67%
YRADIAL	121776.7						9382.93	7.71%
Ga 417.206	806862.1						21290.95	2.64%
GaRADIAL	10110.6						3214.28	31.79%
Ag 328.068†	-200.1	-0.00344	mg/L	0.000952	-0.00344	mg/L	0.000952	27.65%
Al 396.153†	2.2	-0.0452	mg/L	0.00623	-0.0452	mg/L	0.00623	13.77%
As 188.979†	0.6	0.00567	mg/L	0.004612	0.00567	mg/L	0.004612	81.39%
Ba 233.527†	5.6	-0.00505	mg/L	0.000016	-0.00505	mg/L	0.000016	0.32%
Be 234.861†	68.3	-0.00007	mg/L	0.000075	-0.00007	mg/L	0.000075	110.98%
B 249.677†	-5.0	-0.00338	mg/L	0.000299	-0.00338	mg/L	0.000299	8.87%
Ca 227.546†	4.0	-0.0104	mg/L	0.03882	-0.0104	mg/L	0.03882	373.43%
Cd 228.802†	-5.0	-0.00049	mg/L	0.000136	-0.00049	mg/L	0.000136	27.84%
Co 228.616†	-1.9	-0.00067	mg/L	0.000246	-0.00067	mg/L	0.000246	36.44%
Cr 267.716†	17.0	-0.00261	mg/L	0.000129	-0.00261	mg/L	0.000129	4.93%
Cu 327.393†	-127.5	-0.00429	mg/L	0.000833	-0.00429	mg/L	0.000833	19.43%
Fe 239.562†	-1.2	-0.0887	mg/L	0.01763	-0.0887	mg/L	0.01763	19.86%
Mg 279.077†	-1.6	-0.0690	mg/L	0.02516	-0.0690	mg/L	0.02516	36.45%
Mn 257.610†	-19.7	-0.00420	mg/L	0.000034	-0.00420	mg/L	0.000034	0.81%
Mo 202.031†	-4.2	-0.00523	mg/L	0.000468	-0.00523	mg/L	0.000468	8.96%
Ni 231.604†	2.2	-0.00245	mg/L	0.000159	-0.00245	mg/L	0.000159	6.51%
Pb 220.353†	-3.7	-0.00114	mg/L	0.002022	-0.00114	mg/L	0.002022	177.10%
Sb 206.836†	1.0	-0.00233	mg/L	0.003315	-0.00233	mg/L	0.003315	142.37%
Se 196.026†	-3.4	-0.00110	mg/L	0.004274	-0.00110	mg/L	0.004274	388.28%
Si 251.611†	144.5	-0.0302	mg/L	0.00107	-0.0302	mg/L	0.00107	3.54%
Sn 189.927†	-5.1	-0.00425	mg/L	0.000492	-0.00425	mg/L	0.000492	11.59%
Ti 334.940†	-118.6	-0.00339	mg/L	0.000227	-0.00339	mg/L	0.000227	6.68%
Tl 190.801†	-2.5	-0.00641	mg/L	0.001962	-0.00641	mg/L	0.001962	30.61%

Approved: January 31, 2012

V 290.880†	1.7	-0.00366 mg/L	0.001145	-0.00366 mg/L	0.001145	31.24%
Zn 206.200†	17.0	-0.00353 mg/L	0.000072	-0.00353 mg/L	0.000072	2.04%
K 766.490†	-50.2	0.0143 mg/L	0.05183	0.0143 mg/L	0.05183	361.78%
Na 589.592†	27.7	0.0543 mg/L	0.04881	0.0543 mg/L	0.04881	89.94%
Sr 407.771†	103.4	-0.00521 mg/L	0.000048	-0.00521 mg/L	0.000048	0.91%
Li 670.784†	185.1	-0.00397 mg/L	0.002527	-0.00397 mg/L	0.002527	63.71%

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Sequence No.: 39 **Autosampler Location: 69**
Sample ID: LCSW 74 WG387653-03 **Date Collected: 1/30/2012 9:14:55 PM**
Analyst: SLP **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: LCSW 74 WG387653-03

Analyte	Back Pressure	Flow
All	148.0 kPa	0.50 L/min

Mean Data: LCSW 74 WG387653-03

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3684668.0						62670.44	1.70%
YRADIAL	119060.4						5166.17	4.34%
Ga 417.206	832980.2						17840.75	2.14%
GaRADIAL	8863.3						2712.32	30.60%
Ag 328.068†	24931.6	0.197	mg/L	0.0060	0.197	mg/L	0.0060	3.06%
Al 396.153†	8041.5	4.78	mg/L	0.096	4.78	mg/L	0.096	2.01%
As 188.979†	108.8	0.197	mg/L	0.0043	0.197	mg/L	0.0043	2.19%
Ba 233.527†	16078.4	0.521	mg/L	0.0133	0.521	mg/L	0.0133	2.55%
Be 234.861†	7578.8	0.0248	mg/L	0.00064	0.0248	mg/L	0.00064	2.58%
B 249.677†	29209.2	1.01	mg/L	0.029	1.01	mg/L	0.029	2.89%
Ca 227.546†	335.0	4.94	mg/L	0.153	4.94	mg/L	0.153	3.10%
Cd 228.802†	260.4	0.0239	mg/L	0.00071	0.0239	mg/L	0.00071	2.96%
Co 228.616†	1038.3	0.101	mg/L	0.0019	0.101	mg/L	0.0019	1.93%
Cr 267.716†	16265.4	0.254	mg/L	0.0068	0.254	mg/L	0.0068	2.68%
Cu 327.393†	24247.9	0.245	mg/L	0.0085	0.245	mg/L	0.0085	3.45%
Fe 239.562†	40.4	1.81	mg/L	0.041	1.81	mg/L	0.041	2.27%
Mg 279.077†	433.2	5.35	mg/L	0.333	5.35	mg/L	0.333	6.23%
Mn 257.610†	66598.9	0.256	mg/L	0.0073	0.256	mg/L	0.0073	2.83%
Mo 202.031†	3640.8	0.506	mg/L	0.0151	0.506	mg/L	0.0151	2.98%
Ni 231.604†	4503.2	0.259	mg/L	0.0078	0.259	mg/L	0.0078	3.01%
Pb 220.353†	733.3	0.258	mg/L	0.0048	0.258	mg/L	0.0048	1.85%
Sb 206.836†	489.0	0.586	mg/L	0.0107	0.586	mg/L	0.0107	1.82%
Se 196.026†	125.0	0.198	mg/L	0.0017	0.198	mg/L	0.0017	0.87%
Si 251.611†	47480.2	2.58	mg/L	0.081	2.58	mg/L	0.081	3.14%
Sn 189.927†	1859.0	0.703	mg/L	0.0117	0.703	mg/L	0.0117	1.66%
Ti 334.940†	239842.7	0.502	mg/L	0.0009	0.502	mg/L	0.0009	0.19%
Tl 190.801†	224.7	0.261	mg/L	0.0072	0.261	mg/L	0.0072	2.77%
V 290.880†	44096.5	0.511	mg/L	0.0125	0.511	mg/L	0.0125	2.45%
Zn 206.200†	7219.7	0.513	mg/L	0.0138	0.513	mg/L	0.0138	2.69%
K 766.490†	19502.5	19.2	mg/L	2.33	19.2	mg/L	2.33	12.11%
Na 589.592†	127375.8	26.9	mg/L	2.35	26.9	mg/L	2.35	8.75%
Sr 407.771†	123295.3	0.225	mg/L	0.0556	0.225	mg/L	0.0556	24.66%
Saturated within auto integration window (code 4)								
Li 670.784†	20819.1	0.575	mg/L	0.0112	0.575	mg/L	0.0112	1.95%

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Sequence No.: 40 **Autosampler Location: 70**
Sample ID: L1201053906 WG387653-01 **Date Collected: 1/30/2012 9:21:46 PM**
Analyst: SLP **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1201053906 WG387653-01

Analyte	Back Pressure	Flow
All	148.0 kPa	0.50 L/min

Mean Data: L1201053906 WG387653-01

Approved: January 31, 2012

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3670986.5						9669.52	0.26%
YRADIAL	117550.7						3752.22	3.19%
Ga 417.206	859806.1						8184.18	0.95%
GaRADIAL	9495.0						2899.66	30.54%
Ag 328.068†	109.7	-0.00112	mg/L	0.000768	-0.00112	mg/L	0.000768	68.84%
Al 396.153†	-16.0	-0.0563	mg/L	0.01536	-0.0563	mg/L	0.01536	27.31%
As 188.979†	15.4	0.0298	mg/L	0.00286	0.0298	mg/L	0.00286	9.59%
Ba 233.527†	8513.5	0.272	mg/L	0.0016	0.272	mg/L	0.0016	0.58%
Be 234.861†	112.7	0.00015	mg/L	0.000017	0.00015	mg/L	0.000017	11.10%
B 249.677†	7909.5	0.271	mg/L	0.0069	0.271	mg/L	0.0069	2.54%
Ca 227.546†	7816.5	117	mg/L	0.8	117	mg/L	0.8	0.64%
Cd 228.802†	-5.0	-0.00043	mg/L	0.000041	-0.00043	mg/L	0.000041	9.41%
Co 228.616†	-1.3	-0.00072	mg/L	0.000255	-0.00072	mg/L	0.000255	35.57%
Cr 267.716†	56.2	-0.00231	mg/L	0.000041	-0.00231	mg/L	0.000041	1.76%
Cu 327.393†	1879.7	0.0162	mg/L	0.00090	0.0162	mg/L	0.00090	5.54%
Fe 239.562†	0.8	0.00221	mg/L	0.056403	0.00221	mg/L	0.056403	>999.9%
Mg 279.077†	930.6	11.6	mg/L	0.43	11.6	mg/L	0.43	3.74%
Mn 257.610†	184050.6	0.710	mg/L	0.0028	0.710	mg/L	0.0028	0.39%
Mo 202.031†	4.3	-0.00388	mg/L	0.000282	-0.00388	mg/L	0.000282	7.28%
Ni 231.604†	27.3	-0.00105	mg/L	0.000105	-0.00105	mg/L	0.000105	10.02%
Pb 220.353†	-2.6	0.00477	mg/L	0.001468	0.00477	mg/L	0.001468	30.77%
Sb 206.836†	12.9	0.0120	mg/L	0.00374	0.0120	mg/L	0.00374	31.10%
Se 196.026†	-23.2	0.00336	mg/L	0.003666	0.00336	mg/L	0.003666	109.04%
Si 251.611†	192820.6	10.6	mg/L	0.09	10.6	mg/L	0.09	0.86%
Sn 189.927†	-2.0	-0.00307	mg/L	0.000425	-0.00307	mg/L	0.000425	13.82%
Ti 334.940†	-657.4	-0.00335	mg/L	0.000222	-0.00335	mg/L	0.000222	6.61%
Tl 190.801†	77.9	0.0411	mg/L	0.00798	0.0411	mg/L	0.00798	19.44%
V 290.880†	70.4	-0.00190	mg/L	0.000613	-0.00190	mg/L	0.000613	32.30%
Zn 206.200†	789.3	0.0517	mg/L	0.00010	0.0517	mg/L	0.00010	0.20%
K 766.490†	1401.7	1.37	mg/L	0.062	1.37	mg/L	0.062	4.51%
Na 589.592†	234572.3	51.0	mg/L	4.86	51.0	mg/L	4.86	9.54%
Sr 407.771†	117791.5	0.215	mg/L	0.0569	0.215	mg/L	0.0569	26.41%
Saturated within auto integration window (code 4)								
Li 670.784†	749.3	0.0119	mg/L	0.00191	0.0119	mg/L	0.00191	16.10%

Sequence No.: 41 **Autosampler Location: 71**
Sample ID: L1201053906S WG387653-04 **Date Collected: 1/30/2012 9:28:38 PM**
Analyst: SLP **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1201053906S WG387653-04

Analyte	Back Pressure	Flow
All	149.0 kPa	0.50 L/min

Mean Data: L1201053906S WG387653-04

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3688278.3						31783.76	0.86%
YRADIAL	119232.6						7674.46	6.44%
Ga 417.206	865305.5						13074.79	1.51%
GaRADIAL	9782.8						2990.69	30.57%
Ag 328.068†	23901.5	0.189	mg/L	0.0050	0.189	mg/L	0.0050	2.64%
Al 396.153†	8115.1	4.83	mg/L	0.096	4.83	mg/L	0.096	1.99%
As 188.979†	114.6	0.205	mg/L	0.0022	0.205	mg/L	0.0022	1.08%
Ba 233.527†	23926.7	0.776	mg/L	0.0127	0.776	mg/L	0.0127	1.64%
Be 234.861†	7424.1	0.0244	mg/L	0.00088	0.0244	mg/L	0.00088	3.60%
B 249.677†	36279.3	1.26	mg/L	0.040	1.26	mg/L	0.040	3.18%
Ca 227.546†	7945.3	119	mg/L	2.8	119	mg/L	2.8	2.36%
Cd 228.802†	243.0	0.0223	mg/L	0.00044	0.0223	mg/L	0.00044	1.96%
Co 228.616†	985.3	0.0954	mg/L	0.00122	0.0954	mg/L	0.00122	1.28%
Cr 267.716†	15883.7	0.248	mg/L	0.0061	0.248	mg/L	0.0061	2.44%
Cu 327.393†	24701.8	0.250	mg/L	0.0084	0.250	mg/L	0.0084	3.37%
Fe 239.562†	40.0	1.79	mg/L	0.061	1.79	mg/L	0.061	3.41%
Mg 279.077†	1352.0	16.8	mg/L	1.20	16.8	mg/L	1.20	7.15%
Mn 257.610†	248608.7	0.963	mg/L	0.0027	0.963	mg/L	0.0027	0.28%
Mo 202.031†	3651.5	0.507	mg/L	0.0037	0.507	mg/L	0.0037	0.73%

Approved: January 31, 2012

Ni 231.604†	4279.0	0.246 mg/L	0.0018	0.246 mg/L	0.0018	0.75%
Pb 220.353†	703.6	0.253 mg/L	0.0013	0.253 mg/L	0.0013	0.50%
Sb 206.836†	484.3	0.580 mg/L	0.0056	0.580 mg/L	0.0056	0.97%
Se 196.026†	98.9	0.192 mg/L	0.0089	0.192 mg/L	0.0089	4.63%
Si 251.611†	240116.2	13.2 mg/L	0.12	13.2 mg/L	0.12	0.88%
Sn 189.927†	1420.3	0.537 mg/L	0.0060	0.537 mg/L	0.0060	1.12%
Ti 334.940†	241989.8	0.508 mg/L	0.0019	0.508 mg/L	0.0019	0.37%
Tl 190.801†	290.8	0.294 mg/L	0.0025	0.294 mg/L	0.0025	0.85%
V 290.880†	43436.5	0.504 mg/L	0.0117	0.504 mg/L	0.0117	2.32%
Zn 206.200†	7532.4	0.535 mg/L	0.0078	0.535 mg/L	0.0078	1.46%
K 766.490†	22061.2	21.7 mg/L	1.98	21.7 mg/L	1.98	9.12%
Na 589.592†	364460.6	82.4 mg/L	6.23	82.4 mg/L	6.23	7.56%
Sr 407.771†	256928.6	0.476 mg/L	0.1126	0.476 mg/L	0.1126	23.67%
Saturated within auto integration window (code 4)						
Li 670.784†	21884.5	0.605 mg/L	0.0196	0.605 mg/L	0.0196	3.24%

Sequence No.: 42 **Autosampler Location: 72**
Sample ID: L1201053906SD WG387653-05 **Date Collected: 1/30/2012 9:35:28 PM**
Analyst: SLP **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1201053906SD WG387653-05

Analyte	Back Pressure	Flow
All	148.0 kPa	0.50 L/min

Mean Data: L1201053906SD WG387653-05

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3610403.2						32705.48	0.91%
YRADIAL	115306.1						4910.57	4.26%
Ga 417.206	841961.7						7394.27	0.88%
GaRADIAL	9384.2						2725.81	29.05%
Ag 328.068†	23972.6	0.189	mg/L	0.0054	0.189	mg/L	0.0054	2.83%
Al 396.153†	8057.4	4.79	mg/L	0.117	4.79	mg/L	0.117	2.45%
As 188.979†	115.8	0.207	mg/L	0.0040	0.207	mg/L	0.0040	1.92%
Ba 233.527†	23888.9	0.775	mg/L	0.0239	0.775	mg/L	0.0239	3.08%
Be 234.861†	7433.5	0.0244	mg/L	0.00094	0.0244	mg/L	0.00094	3.87%
B 249.677†	36530.7	1.26	mg/L	0.048	1.26	mg/L	0.048	3.83%
Ca 227.546†	8008.7	120	mg/L	4.6	120	mg/L	4.6	3.83%
Cd 228.802†	249.6	0.0229	mg/L	0.00049	0.0229	mg/L	0.00049	2.16%
Co 228.616†	991.6	0.0960	mg/L	0.00174	0.0960	mg/L	0.00174	1.81%
Cr 267.716†	15818.8	0.247	mg/L	0.0087	0.247	mg/L	0.0087	3.53%
Cu 327.393†	24835.0	0.251	mg/L	0.0090	0.251	mg/L	0.0090	3.56%
Fe 239.562†	38.5	1.73	mg/L	0.083	1.73	mg/L	0.083	4.82%
Mg 279.077†	1360.0	16.9	mg/L	0.83	16.9	mg/L	0.83	4.90%
Mn 257.610†	248668.6	0.963	mg/L	0.0024	0.963	mg/L	0.0024	0.25%
Mo 202.031†	3661.0	0.509	mg/L	0.0070	0.509	mg/L	0.0070	1.39%
Ni 231.604†	4286.8	0.247	mg/L	0.0023	0.247	mg/L	0.0023	0.95%
Pb 220.353†	702.0	0.253	mg/L	0.0028	0.253	mg/L	0.0028	1.12%
Sb 206.836†	487.8	0.584	mg/L	0.0093	0.584	mg/L	0.0093	1.60%
Se 196.026†	107.6	0.205	mg/L	0.0051	0.205	mg/L	0.0051	2.47%
Si 251.611†	240623.3	13.3	mg/L	0.04	13.3	mg/L	0.04	0.29%
Sn 189.927†	1441.2	0.545	mg/L	0.0049	0.545	mg/L	0.0049	0.91%
Ti 334.940†	239415.4	0.502	mg/L	0.0012	0.502	mg/L	0.0012	0.25%
Tl 190.801†	289.7	0.292	mg/L	0.0020	0.292	mg/L	0.0020	0.69%
V 290.880†	43289.9	0.503	mg/L	0.0175	0.503	mg/L	0.0175	3.48%
Zn 206.200†	7493.8	0.533	mg/L	0.0160	0.533	mg/L	0.0160	3.01%
K 766.490†	21824.7	21.5	mg/L	1.85	21.5	mg/L	1.85	8.64%
Na 589.592†	366776.9	83.0	mg/L	7.59	83.0	mg/L	7.59	9.14%
Sr 407.771†	253058.2	0.469	mg/L	0.1124	0.469	mg/L	0.1124	23.98%
Saturated within auto integration window (code 4)								
Li 670.784†	21597.0	0.597	mg/L	0.0225	0.597	mg/L	0.0225	3.77%

Sequence No.: 43 **Autosampler Location: 73**
Sample ID: L1201055101 **Date Collected: 1/30/2012 9:42:18 PM**
Analyst: SLP **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**

Approved: January 31, 2012

Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1201055101

Analyte	Back Pressure	Flow
All	148.0 kPa	0.50 L/min

Mean Data: L1201055101

Analyte	Mean Corrected Intensity	Conc.	Calib. Units	Std.Dev.	Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	3770288.2						41117.63	1.09%
YRADIAL	118171.0						6410.32	5.42%
Ga 417.206	795679.7						16557.64	2.08%
GaRADIAL	8635.7						2728.26	31.59%
Ag 328.068†	-158.5	-0.00311	mg/L	0.001289	-0.00311	mg/L	0.001289	41.44%
Al 396.153†	-14.3	-0.0552	mg/L	0.01854	-0.0552	mg/L	0.01854	33.60%
As 188.979†	-0.3	0.00416	mg/L	0.003474	0.00416	mg/L	0.003474	83.45%
Ba 233.527†	3.5	-0.00512	mg/L	0.000111	-0.00512	mg/L	0.000111	2.17%
Be 234.861†	50.6	-0.00012	mg/L	0.000064	-0.00012	mg/L	0.000064	52.43%
B 249.677†	259.7	0.00574	mg/L	0.001132	0.00574	mg/L	0.001132	19.73%
Ca 227.546†	7.2	0.0396	mg/L	0.05235	0.0396	mg/L	0.05235	132.10%
Cd 228.802†	-4.7	-0.00046	mg/L	0.000185	-0.00046	mg/L	0.000185	40.42%
Co 228.616†	-3.9	-0.00088	mg/L	0.000028	-0.00088	mg/L	0.000028	3.18%
Cr 267.716†	25.0	-0.00249	mg/L	0.000013	-0.00249	mg/L	0.000013	0.54%
Cu 327.393†	94.6	-0.00202	mg/L	0.000417	-0.00202	mg/L	0.000417	20.61%
Fe 239.562†	-1.5	-0.103	mg/L	0.0619	-0.103	mg/L	0.0619	59.85%
Mg 279.077†	-3.2	-0.0892	mg/L	0.03125	-0.0892	mg/L	0.03125	35.02%
Mn 257.610†	46.1	-0.00395	mg/L	0.000039	-0.00395	mg/L	0.000039	0.98%
Mo 202.031†	-0.9	-0.00476	mg/L	0.000912	-0.00476	mg/L	0.000912	19.16%
Ni 231.604†	9.1	-0.00205	mg/L	0.000321	-0.00205	mg/L	0.000321	15.69%
Pb 220.353†	1.4	0.00064	mg/L	0.001083	0.00064	mg/L	0.001083	168.02%
Sb 206.836†	-0.9	-0.00454	mg/L	0.001419	-0.00454	mg/L	0.001419	31.22%
Se 196.026†	-2.2	0.00067	mg/L	0.003519	0.00067	mg/L	0.003519	523.35%
Si 251.611†	223.1	-0.0258	mg/L	0.00056	-0.0258	mg/L	0.00056	2.15%
Sn 189.927†	-2.6	-0.00332	mg/L	0.001292	-0.00332	mg/L	0.001292	38.96%
Ti 334.940†	23.5	-0.00309	mg/L	0.000133	-0.00309	mg/L	0.000133	4.30%
Tl 190.801†	-0.7	-0.00433	mg/L	0.002660	-0.00433	mg/L	0.002660	61.47%
V 290.880†	92.8	-0.00260	mg/L	0.001472	-0.00260	mg/L	0.001472	56.60%
Zn 206.200†	16.7	-0.00355	mg/L	0.000257	-0.00355	mg/L	0.000257	7.23%
K 766.490†	-34.7	0.0293	mg/L	0.04569	0.0293	mg/L	0.04569	156.18%
Na 589.592†	182.5	0.0858	mg/L	0.02265	0.0858	mg/L	0.02265	26.38%
Sr 407.771†	106.7	-0.00520	mg/L	0.000073	-0.00520	mg/L	0.000073	1.41%
Li 670.784†	148.9	-0.00498	mg/L	0.007458	-0.00498	mg/L	0.007458	149.75%

Sequence No.: 44 **Autosampler Location: 74**
Sample ID: L1201055101DL WG387681-04 **Date Collected: 1/30/2012 9:49:07 PM**
Analyst: SLP **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1201055101DL WG387681-04

Analyte	Back Pressure	Flow
All	148.0 kPa	0.50 L/min

Mean Data: L1201055101DL WG387681-04

Analyte	Mean Corrected Intensity	Conc.	Calib. Units	Std.Dev.	Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	3744763.7						26050.45	0.70%
YRADIAL	115885.8						4593.51	3.96%
Ga 417.206	784862.0						11101.51	1.41%
GaRADIAL	8478.6						2635.71	31.09%
Ag 328.068†	-235.4	-0.00372	mg/L	0.000149	-0.00372	mg/L	0.000149	4.00%
Al 396.153†	-19.3	-0.0582	mg/L	0.01006	-0.0582	mg/L	0.01006	17.28%
As 188.979†	-0.1	0.00451	mg/L	0.007325	0.00451	mg/L	0.007325	162.57%
Ba 233.527†	-4.4	-0.00537	mg/L	0.000068	-0.00537	mg/L	0.000068	1.26%
Be 234.861†	56.8	-0.00012	mg/L	0.000023	-0.00012	mg/L	0.000023	19.44%
B 249.677†	78.0	-0.00021	mg/L	0.000199	-0.00021	mg/L	0.000199	96.05%
Ca 227.546†	3.6	-0.0221	mg/L	0.10128	-0.0221	mg/L	0.10128	458.37%

Approved: January 31, 2012

Cd 228.802†	-3.3	-0.00034 mg/L	0.000068	-0.00034 mg/L	0.000068	20.16%
Co 228.616†	-0.7	-0.00056 mg/L	0.000312	-0.00056 mg/L	0.000312	55.70%
Cr 267.716†	13.6	-0.00267 mg/L	0.000090	-0.00267 mg/L	0.000090	3.37%
Cu 327.393†	-20.2	-0.00319 mg/L	0.000631	-0.00319 mg/L	0.000631	19.79%
Fe 239.562†	0.1	-0.0283 mg/L	0.02079	-0.0283 mg/L	0.02079	73.38%
Mg 279.077†	-1.9	-0.0730 mg/L	0.01856	-0.0730 mg/L	0.01856	25.43%
Mn 257.610†	11.2	-0.00408 mg/L	0.000022	-0.00408 mg/L	0.000022	0.54%
Mo 202.031†	-4.3	-0.00523 mg/L	0.000196	-0.00523 mg/L	0.000196	3.74%
Ni 231.604†	2.7	-0.00242 mg/L	0.000526	-0.00242 mg/L	0.000526	21.72%
Pb 220.353†	-2.5	-0.00073 mg/L	0.001264	-0.00073 mg/L	0.001264	172.68%
Sb 206.836†	1.8	-0.00127 mg/L	0.003994	-0.00127 mg/L	0.003994	315.74%
Se 196.026†	-2.4	0.00046 mg/L	0.005006	0.00046 mg/L	0.005006	>999.9%
Si 251.611†	29.7	-0.0365 mg/L	0.00073	-0.0365 mg/L	0.00073	2.01%
Sn 189.927†	-2.1	-0.00311 mg/L	0.001118	-0.00311 mg/L	0.001118	36.01%
Ti 334.940†	-108.8	-0.00337 mg/L	0.000224	-0.00337 mg/L	0.000224	6.65%
Tl 190.801†	-1.1	-0.00479 mg/L	0.004612	-0.00479 mg/L	0.004612	96.21%
V 290.880†	24.1	-0.00341 mg/L	0.000639	-0.00341 mg/L	0.000639	18.76%
Zn 206.200†	4.0	-0.00446 mg/L	0.000328	-0.00446 mg/L	0.000328	7.34%
K 766.490†	-4.7	0.0584 mg/L	0.07347	0.0584 mg/L	0.07347	125.85%
Na 589.592†	40.1	0.0568 mg/L	0.01839	0.0568 mg/L	0.01839	32.38%
Sr 407.771†	106.4	-0.00522 mg/L	0.000035	-0.00522 mg/L	0.000035	0.68%
Li 670.784†	215.5	-0.00311 mg/L	0.000636	-0.00311 mg/L	0.000636	20.43%

Sequence No.: 45 **Autosampler Location: 75**
Sample ID: L1201055101PS WG387681-03 **Date Collected: 1/30/2012 9:55:56 PM**
Analyst: SLP **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1201055101PS WG387681-03

Analyte	Back Pressure	Flow
All	148.0 kPa	0.50 L/min

Mean Data: L1201055101PS WG387681-03

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	3767268.3						32612.57	0.87%
YRADIAL	115812.8						4669.81	4.03%
Ga 417.206	846516.3						5690.29	0.67%
GaRADIAL	9067.3						2606.91	28.75%
Ag 328.068†	24572.6	0.194	mg/L	0.0052	0.194	mg/L	0.0052	2.68%
Al 396.153†	8015.0	4.77	mg/L	0.113	4.77	mg/L	0.113	2.38%
As 188.979†	106.8	0.194	mg/L	0.0007	0.194	mg/L	0.0007	0.39%
Ba 233.527†	15732.6	0.509	mg/L	0.0124	0.509	mg/L	0.0124	2.44%
Be 234.861†	7581.0	0.0248	mg/L	0.00073	0.0248	mg/L	0.00073	2.95%
B 249.677†	28773.3	0.996	mg/L	0.0370	0.996	mg/L	0.0370	3.72%
Ca 227.546†	334.9	4.94	mg/L	0.033	4.94	mg/L	0.033	0.67%
Cd 228.802†	261.8	0.0240	mg/L	0.00043	0.0240	mg/L	0.00043	1.78%
Co 228.616†	1025.5	0.0995	mg/L	0.00131	0.0995	mg/L	0.00131	1.32%
Cr 267.716†	16114.6	0.252	mg/L	0.0065	0.252	mg/L	0.0065	2.58%
Cu 327.393†	24121.4	0.244	mg/L	0.0075	0.244	mg/L	0.0075	3.09%
Fe 239.562†	39.5	1.77	mg/L	0.055	1.77	mg/L	0.055	3.08%
Mg 279.077†	447.4	5.53	mg/L	0.260	5.53	mg/L	0.260	4.70%
Mn 257.610†	65509.7	0.252	mg/L	0.0063	0.252	mg/L	0.0063	2.52%
Mo 202.031†	3554.3	0.494	mg/L	0.0126	0.494	mg/L	0.0126	2.55%
Ni 231.604†	4418.5	0.254	mg/L	0.0068	0.254	mg/L	0.0068	2.69%
Pb 220.353†	725.2	0.255	mg/L	0.0047	0.255	mg/L	0.0047	1.85%
Sb 206.836†	487.9	0.584	mg/L	0.0090	0.584	mg/L	0.0090	1.55%
Se 196.026†	124.2	0.197	mg/L	0.0069	0.197	mg/L	0.0069	3.53%
Si 251.611†	46373.7	2.52	mg/L	0.071	2.52	mg/L	0.071	2.84%
Sn 189.927†	-7.9	-0.00532	mg/L	0.000587	-0.00532	mg/L	0.000587	11.03%
Ti 334.940†	241332.9	0.505	mg/L	0.0019	0.505	mg/L	0.0019	0.37%
Tl 190.801†	221.7	0.258	mg/L	0.0039	0.258	mg/L	0.0039	1.50%
V 290.880†	43088.7	0.499	mg/L	0.0142	0.499	mg/L	0.0142	2.85%
Zn 206.200†	7153.8	0.508	mg/L	0.0085	0.508	mg/L	0.0085	1.67%
K 766.490†	19932.6	19.6	mg/L	1.87	19.6	mg/L	1.87	9.50%
Na 589.592†	127971.6	27.0	mg/L	1.66	27.0	mg/L	1.66	6.16%
Sr 407.771†	131187.6	0.240	mg/L	0.0584	0.240	mg/L	0.0584	24.32%
Li 670.784†	20695.8	0.572	mg/L	0.0090	0.572	mg/L	0.0090	1.58%

Approved: January 31, 2012

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Sequence No.: 46 **Autosampler Location: 76**
Sample ID: L1201055103 **Date Collected: 1/30/2012 10:02:46 PM**
Analyst: SLP **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1201055103

Analyte	Back Pressure	Flow
All	148.0 kPa	0.50 L/min

Mean Data: L1201055103

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3819568.8						29126.50	0.76%
YRADIAL	118799.6						4099.73	3.45%
Ga 417.206	808719.2						9667.98	1.20%
GaRADIAL	8382.1						2691.65	32.11%
Ag 328.068†	-158.2	-0.00311	mg/L	0.000661	-0.00311	mg/L	0.000661	21.24%
Al 396.153†	-18.6	-0.0578	mg/L	0.01950	-0.0578	mg/L	0.01950	33.74%
As 188.979†	1.2	0.00684	mg/L	0.001825	0.00684	mg/L	0.001825	26.69%
Ba 233.527†	3.6	-0.00512	mg/L	0.000072	-0.00512	mg/L	0.000072	1.40%
Be 234.861†	59.1	-0.00011	mg/L	0.000030	-0.00011	mg/L	0.000030	27.81%
B 249.677†	164.7	0.00276	mg/L	0.000748	0.00276	mg/L	0.000748	27.10%
Ca 227.546†	2.4	-0.0388	mg/L	0.05866	-0.0388	mg/L	0.05866	151.31%
Cd 228.802†	-5.6	-0.00054	mg/L	0.000097	-0.00054	mg/L	0.000097	17.97%
Co 228.616†	-1.4	-0.00063	mg/L	0.000436	-0.00063	mg/L	0.000436	68.87%
Cr 267.716†	30.4	-0.00241	mg/L	0.000182	-0.00241	mg/L	0.000182	7.59%
Cu 327.393†	-29.0	-0.00328	mg/L	0.000984	-0.00328	mg/L	0.000984	30.01%
Fe 239.562†	-0.1	-0.0367	mg/L	0.04599	-0.0367	mg/L	0.04599	125.22%
Mg 279.077†	-0.8	-0.0593	mg/L	0.04191	-0.0593	mg/L	0.04191	70.73%
Mn 257.610†	47.9	-0.00393	mg/L	0.000019	-0.00393	mg/L	0.000019	0.48%
Mo 202.031†	-3.3	-0.00509	mg/L	0.000276	-0.00509	mg/L	0.000276	5.42%
Ni 231.604†	5.4	-0.00226	mg/L	0.000335	-0.00226	mg/L	0.000335	14.80%
Pb 220.353†	1.0	0.00048	mg/L	0.000479	0.00048	mg/L	0.000479	99.13%
Sb 206.836†	0.1	-0.00336	mg/L	0.000329	-0.00336	mg/L	0.000329	9.80%
Se 196.026†	-5.5	-0.00431	mg/L	0.003830	-0.00431	mg/L	0.003830	88.79%
Si 251.611†	320.7	-0.0204	mg/L	0.00025	-0.0204	mg/L	0.00025	1.22%
Sn 189.927†	-5.4	-0.00436	mg/L	0.000818	-0.00436	mg/L	0.000818	18.77%
Ti 334.940†	-61.2	-0.00327	mg/L	0.000061	-0.00327	mg/L	0.000061	1.85%
Tl 190.801†	-1.1	-0.00475	mg/L	0.004712	-0.00475	mg/L	0.004712	99.20%
V 290.880†	-45.0	-0.00421	mg/L	0.001035	-0.00421	mg/L	0.001035	24.56%
Zn 206.200†	16.2	-0.00359	mg/L	0.000170	-0.00359	mg/L	0.000170	4.73%
K 766.490†	14.4	0.0768	mg/L	0.10856	0.0768	mg/L	0.10856	141.29%
Na 589.592†	195.6	0.0885	mg/L	0.04537	0.0885	mg/L	0.04537	51.25%
Sr 407.771†	154.8	-0.00513	mg/L	0.000076	-0.00513	mg/L	0.000076	1.47%
Li 670.784†	170.7	-0.00437	mg/L	0.004798	-0.00437	mg/L	0.004798	109.79%

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Sequence No.: 47 **Autosampler Location: 6**
Sample ID: CCV **Date Collected: 1/30/2012 10:09:35 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: CCV

Analyte	Back Pressure	Flow
All	148.0 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	3719769.6						91461.57	2.46%
YRADIAL	112899.6						5360.89	4.75%
Ga 417.206	837764.6						28460.45	3.40%
GaRADIAL	8094.2						2580.83	31.89%
Ag 328.068†	48735.3	0.387	mg/L	0.0209	0.387	mg/L	0.0209	5.41%

Approved: January 31, 2012

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   QC value within limits for Ag 328.068  Recovery = 96.76%
Al 396.153†            16296.8        9.74 mg/L        0.221        9.74 mg/L         0.221   2.27%
   QC value within limits for Al 396.153  Recovery = 97.40%
As 188.979†              212.0       0.380 mg/L       0.0132       0.380 mg/L        0.0132   3.47%
   QC value within limits for As 188.979  Recovery = 94.97%
Ba 233.527†            31057.6        1.01 mg/L        0.040        1.01 mg/L         0.040   3.95%
   QC value within limits for Ba 233.527  Recovery = 101.03%
Be 234.861†            14936.0      0.0491 mg/L      0.00254      0.0491 mg/L       0.00254   5.18%
   QC value within limits for Be 234.861  Recovery = 98.14%
B 249.677†             14055.2       0.490 mg/L       0.0281       0.490 mg/L        0.0281   5.75%
   QC value within limits for B 249.677  Recovery = 97.93%
Ca 227.546†              662.4        9.82 mg/L        0.315        9.82 mg/L         0.315   3.21%
   QC value within limits for Ca 227.546  Recovery = 98.21%
Cd 228.802†              531.8      0.0488 mg/L      0.00187      0.0488 mg/L       0.00187   3.84%
   QC value within limits for Cd 228.802  Recovery = 97.56%
Co 228.616†             2038.3       0.198 mg/L       0.0049       0.198 mg/L        0.0049   2.46%
   QC value within limits for Co 228.616  Recovery = 99.06%
Cr 267.716†            31719.8       0.498 mg/L       0.0215       0.498 mg/L        0.0215   4.32%
   QC value within limits for Cr 267.716  Recovery = 99.59%
Cu 327.393†            47600.8       0.485 mg/L       0.0273       0.485 mg/L        0.0273   5.63%
   QC value within limits for Cu 327.393  Recovery = 96.90%
Fe 239.562†               82.7        3.74 mg/L        0.113        3.74 mg/L         0.113   3.03%
   QC value within limits for Fe 239.562  Recovery = 93.59%
Mg 279.077†              887.9        11.0 mg/L         0.61        11.0 mg/L          0.61   5.50%
   QC value greater than the upper limit for Mg 279.077  Recovery = 110.21%
Mn 257.610†           131431.1       0.509 mg/L       0.0236       0.509 mg/L        0.0236   4.64%
   QC value within limits for Mn 257.610  Recovery = 101.83%
Mo 202.031†             7152.0       0.998 mg/L       0.0461       0.998 mg/L        0.0461   4.62%
   QC value within limits for Mo 202.031  Recovery = 99.80%
Ni 231.604†             8710.6       0.504 mg/L       0.0228       0.504 mg/L        0.0228   4.52%
   QC value within limits for Ni 231.604  Recovery = 100.77%
Pb 220.353†             1439.4       0.507 mg/L       0.0120       0.507 mg/L        0.0120   2.36%
   QC value within limits for Pb 220.353  Recovery = 101.32%
Sb 206.836†              972.8        1.17 mg/L        0.034        1.17 mg/L         0.034   2.89%
   QC value within limits for Sb 206.836  Recovery = 97.38%
Se 196.026†              250.9       0.393 mg/L       0.0109       0.393 mg/L        0.0109   2.78%
   QC value within limits for Se 196.026  Recovery = 98.30%
Si 251.611†            89485.1        4.90 mg/L        0.273        4.90 mg/L         0.273   5.57%
   QC value within limits for Si 251.611  Recovery = 97.90%
Sn 189.927†             2662.3        1.01 mg/L        0.023        1.01 mg/L         0.023   2.28%
   QC value within limits for Sn 189.927  Recovery = 100.85%
Ti 334.940†           488715.2        1.03 mg/L        0.004        1.03 mg/L         0.004   0.36%
   QC value within limits for Ti 334.940  Recovery = 102.64%
Tl 190.801†              434.2       0.509 mg/L       0.0154       0.509 mg/L        0.0154   3.02%
   QC value within limits for Tl 190.801  Recovery = 101.79%
V 290.880†             85812.5       0.998 mg/L       0.0450       0.998 mg/L        0.0450   4.51%
   QC value within limits for V 290.880  Recovery = 99.83%
Zn 206.200†            13901.5       0.992 mg/L       0.0433       0.992 mg/L        0.0433   4.37%
   QC value within limits for Zn 206.200  Recovery = 99.21%
K 766.490†             40096.6        40.0 mg/L         3.64        40.0 mg/L          3.64   9.09%
   QC value less than the lower limit for K 766.490  Recovery = 80.05%
Na 589.592†           260255.2        57.0 mg/L         5.43        57.0 mg/L          5.43   9.54%
   QC value greater than the upper limit for Na 589.592  Recovery = 113.91%
Sr 407.771†           242742.5       0.449 mg/L       0.1194       0.449 mg/L        0.1194  26.60%
   Saturated within auto integration window (code 4)
   QC value less than the lower limit for Sr 407.771  Recovery = 44.88%
Li 670.784†            42481.7        1.18 mg/L        0.042        1.18 mg/L         0.042   3.53%
   QC value greater than the upper limit for Li 670.784  Recovery = 118.35%
QC Failed.  Continue with analysis.

==========================================================================================
Sequence No.: 48                                  Autosampler Location: 1
Sample ID: CCB                                    Date Collected: 1/30/2012 10:16:27 PM
Analyst:                                          Data Type: Original
Initial Sample Wt:                                Initial Sample Vol:
Dilution:                                         Sample Prep Vol:

------------------------------------------------------------------------------------------
Nebulizer Parameters: CCB
Analyte                 Back Pressure    Flow
All                     148.0 kPa        0.50 L/min
```

Approved: January 31, 2012

Mean Data: CCB

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3767136.4						24461.49	0.65%
YRADIAL	121169.2						1552.75	1.28%
Ga 417.206	783116.2						11836.13	1.51%
GaRADIAL	11225.5						1356.99	12.09%
Ag 328.068†	-215.9	-0.00357	mg/L	0.000419	-0.00357	mg/L	0.000419	11.76%
QC value within limits for Ag 328.068 Recovery = Not calculated								
Al 396.153†	1.3	-0.0458	mg/L	0.00316	-0.0458	mg/L	0.00316	6.90%
QC value within limits for Al 396.153 Recovery = Not calculated								
As 188.979†	1.9	0.00810	mg/L	0.003087	0.00810	mg/L	0.003087	38.11%
QC value within limits for As 188.979 Recovery = Not calculated								
Ba 233.527†	0.9	-0.00520	mg/L	0.000032	-0.00520	mg/L	0.000032	0.62%
QC value less than the lower limit for Ba 233.527 Recovery = Not calculated								
Be 234.861†	58.8	-0.00011	mg/L	0.000021	-0.00011	mg/L	0.000021	19.88%
QC value within limits for Be 234.861 Recovery = Not calculated								
B 249.677†	76.8	-0.00031	mg/L	0.000213	-0.00031	mg/L	0.000213	69.54%
QC value within limits for B 249.677 Recovery = Not calculated								
Ca 227.546†	4.0	-0.0147	mg/L	0.05324	-0.0147	mg/L	0.05324	361.75%
QC value within limits for Ca 227.546 Recovery = Not calculated								
Cd 228.802†	-3.3	-0.00033	mg/L	0.000074	-0.00033	mg/L	0.000074	22.55%
QC value within limits for Cd 228.802 Recovery = Not calculated								
Co 228.616†	-0.5	-0.00055	mg/L	0.000127	-0.00055	mg/L	0.000127	23.18%
QC value within limits for Co 228.616 Recovery = Not calculated								
Cr 267.716†	12.7	-0.00268	mg/L	0.000179	-0.00268	mg/L	0.000179	6.68%
QC value within limits for Cr 267.716 Recovery = Not calculated								
Cu 327.393†	-84.6	-0.00385	mg/L	0.000817	-0.00385	mg/L	0.000817	21.24%
QC value within limits for Cu 327.393 Recovery = Not calculated								
Fe 239.562†	-0.1	-0.0381	mg/L	0.03525	-0.0381	mg/L	0.03525	92.51%
QC value less than the lower limit for Fe 239.562 Recovery = Not calculated								
Mg 279.077†	-1.7	-0.0700	mg/L	0.03314	-0.0700	mg/L	0.03314	47.37%
QC value within limits for Mg 279.077 Recovery = Not calculated								
Mn 257.610†	8.2	-0.00409	mg/L	0.000049	-0.00409	mg/L	0.000049	1.20%
QC value within limits for Mn 257.610 Recovery = Not calculated								
Mo 202.031†	-2.4	-0.00497	mg/L	0.000212	-0.00497	mg/L	0.000212	4.27%
QC value within limits for Mo 202.031 Recovery = Not calculated								
Ni 231.604†	3.5	-0.00237	mg/L	0.000346	-0.00237	mg/L	0.000346	14.58%
QC value within limits for Ni 231.604 Recovery = Not calculated								
Pb 220.353†	1.9	0.00080	mg/L	0.000923	0.00080	mg/L	0.000923	114.93%
QC value within limits for Pb 220.353 Recovery = Not calculated								
Sb 206.836†	1.6	-0.00154	mg/L	0.004130	-0.00154	mg/L	0.004130	267.73%
QC value within limits for Sb 206.836 Recovery = Not calculated								
Se 196.026†	-2.9	-0.00039	mg/L	0.004818	-0.00039	mg/L	0.004818	>999.9%
QC value within limits for Se 196.026 Recovery = Not calculated								
Si 251.611†	-1.0	-0.0382	mg/L	0.00050	-0.0382	mg/L	0.00050	1.32%
QC value within limits for Si 251.611 Recovery = Not calculated								
Sn 189.927†	-2.1	-0.00310	mg/L	0.000703	-0.00310	mg/L	0.000703	22.68%
QC value within limits for Sn 189.927 Recovery = Not calculated								
Ti 334.940†	-22.3	-0.00319	mg/L	0.000130	-0.00319	mg/L	0.000130	4.09%
QC value within limits for Ti 334.940 Recovery = Not calculated								
Tl 190.801†	-0.9	-0.00452	mg/L	0.000682	-0.00452	mg/L	0.000682	15.08%
QC value within limits for Tl 190.801 Recovery = Not calculated								
V 290.880†	125.3	-0.00223	mg/L	0.001039	-0.00223	mg/L	0.001039	46.67%
QC value within limits for V 290.880 Recovery = Not calculated								
Zn 206.200†	-2.1	-0.00490	mg/L	0.000206	-0.00490	mg/L	0.000206	4.20%
QC value within limits for Zn 206.200 Recovery = Not calculated								
K 766.490†	13.1	0.0756	mg/L	0.06561	0.0756	mg/L	0.06561	86.73%
QC value within limits for K 766.490 Recovery = Not calculated								
Na 589.592†	-26.2	0.0433	mg/L	0.00998	0.0433	mg/L	0.00998	23.06%
QC value within limits for Na 589.592 Recovery = Not calculated								
Sr 407.771†	141.6	-0.00515	mg/L	0.000008	-0.00515	mg/L	0.000008	0.15%
QC value within limits for Sr 407.771 Recovery = Not calculated								
Li 670.784†	219.4	-0.00300	mg/L	0.000687	-0.00300	mg/L	0.000687	22.87%
QC value within limits for Li 670.784 Recovery = Not calculated								

QC Failed. Continue with analysis.

Sequence No.: 49 **Autosampler Location: 77**
Sample ID: L1201055104 **Date Collected: 1/30/2012 10:23:51 PM**
Analyst: SLP **Data Type: Original**

Approved: January 31, 2012

Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1201055104

Analyte	Back Pressure	Flow
All	148.0 kPa	0.50 L/min

Mean Data: L1201055104

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3763205.6						10055.91	0.27%
YRADIAL	114637.9						5055.68	4.41%
Ga 417.206	794837.6						10523.21	1.32%
GaRADIAL	7776.0						2645.63	34.02%
Ag 328.068†	-114.2	-0.00276	mg/L	0.000347	-0.00276	mg/L	0.000347	12.57%
Al 396.153†	-21.1	-0.0593	mg/L	0.01978	-0.0593	mg/L	0.01978	33.39%
As 188.979†	-1.0	0.00280	mg/L	0.001887	0.00280	mg/L	0.001887	67.47%
Ba 233.527†	2.0	-0.00516	mg/L	0.000083	-0.00516	mg/L	0.000083	1.61%
Be 234.861†	57.6	-0.00013	mg/L	0.000068	-0.00013	mg/L	0.000068	54.39%
B 249.677†	61.6	-0.00049	mg/L	0.000404	-0.00049	mg/L	0.000404	82.49%
Ca 227.546†	6.8	0.0201	mg/L	0.06583	0.0201	mg/L	0.06583	326.90%
Cd 228.802†	-3.8	-0.00038	mg/L	0.000139	-0.00038	mg/L	0.000139	36.70%
Co 228.616†	-1.8	-0.00068	mg/L	0.000258	-0.00068	mg/L	0.000258	38.12%
Cr 267.716†	67.3	-0.00183	mg/L	0.000183	-0.00183	mg/L	0.000183	10.01%
Cu 327.393†	150.6	-0.00144	mg/L	0.000954	-0.00144	mg/L	0.000954	66.25%
Fe 239.562†	1.4	0.0328	mg/L	0.03736	0.0328	mg/L	0.03736	113.78%
Mg 279.077†	-0.5	-0.0559	mg/L	0.02371	-0.0559	mg/L	0.02371	42.44%
Mn 257.610†	75.4	-0.00383	mg/L	0.000008	-0.00383	mg/L	0.000008	0.22%
Mo 202.031†	-5.2	-0.00536	mg/L	0.000158	-0.00536	mg/L	0.000158	2.95%
Ni 231.604†	6.8	-0.00218	mg/L	0.000256	-0.00218	mg/L	0.000256	11.74%
Pb 220.353†	-5.6	-0.00180	mg/L	0.000816	-0.00180	mg/L	0.000816	45.47%
Sb 206.836†	0.9	-0.00238	mg/L	0.001030	-0.00238	mg/L	0.001030	43.27%
Se 196.026†	-0.3	0.00364	mg/L	0.006672	0.00364	mg/L	0.006672	183.06%
Si 251.611†	198.8	-0.0272	mg/L	0.00059	-0.0272	mg/L	0.00059	2.18%
Sn 189.927†	-1.5	-0.00290	mg/L	0.001634	-0.00290	mg/L	0.001634	56.35%
Ti 334.940†	-5.3	-0.00315	mg/L	0.000008	-0.00315	mg/L	0.000008	0.26%
Tl 190.801†	-0.2	-0.00381	mg/L	0.003170	-0.00381	mg/L	0.003170	83.10%
V 290.880†	51.7	-0.00309	mg/L	0.001604	-0.00309	mg/L	0.001604	51.94%
Zn 206.200†	16.0	-0.00360	mg/L	0.000191	-0.00360	mg/L	0.000191	5.29%
K 766.490†	18.9	0.0812	mg/L	0.05119	0.0812	mg/L	0.05119	63.01%
Na 589.592†	14.3	0.0515	mg/L	0.01608	0.0515	mg/L	0.01608	31.19%
Sr 407.771†	140.2	-0.00517	mg/L	0.000078	-0.00517	mg/L	0.000078	1.50%
Li 670.784†	49.6	-0.00777	mg/L	0.000569	-0.00777	mg/L	0.000569	7.32%

Sequence No.: 50 **Autosampler Location: 78**
Sample ID: L1201055105 **Date Collected: 1/30/2012 10:30:41 PM**
Analyst: SLP **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1201055105

Analyte	Back Pressure	Flow
All	148.0 kPa	0.50 L/min

Mean Data: L1201055105

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3771111.1						107502.07	2.85%
YRADIAL	116185.2						5635.92	4.85%
Ga 417.206	798399.3						28766.54	3.60%
GaRADIAL	8340.2						2672.59	32.04%
Ag 328.068†	-159.2	-0.00311	mg/L	0.001391	-0.00311	mg/L	0.001391	44.65%
Al 396.153†	-21.6	-0.0596	mg/L	0.01563	-0.0596	mg/L	0.01563	26.22%
As 188.979†	0.6	0.00563	mg/L	0.002206	0.00563	mg/L	0.002206	39.20%
Ba 233.527†	8.7	-0.00494	mg/L	0.000126	-0.00494	mg/L	0.000126	2.55%
Be 234.861†	49.9	-0.00014	mg/L	0.000074	-0.00014	mg/L	0.000074	54.79%
B 249.677†	78.4	-0.00027	mg/L	0.000530	-0.00027	mg/L	0.000530	199.37%

Approved: January 31, 2012

Ca 227.546†	8.9	0.0591	mg/L	0.01504	0.0591	mg/L	0.01504 25.47%
Cd 228.802†	-3.3	-0.00034	mg/L	0.000131	-0.00034	mg/L	0.000131 38.87%
Co 228.616†	-1.5	-0.00064	mg/L	0.000517	-0.00064	mg/L	0.000517 80.40%
Cr 267.716†	44.6	-0.00218	mg/L	0.000106	-0.00218	mg/L	0.000106 4.88%
Cu 327.393†	33.8	-0.00264	mg/L	0.000936	-0.00264	mg/L	0.000936 35.51%
Fe 239.562†	-0.3	-0.0445	mg/L	0.05722	-0.0445	mg/L	0.05722 128.52%
Mg 279.077†	-1.4	-0.0662	mg/L	0.01531	-0.0662	mg/L	0.01531 23.12%
Mn 257.610†	18.5	-0.00405	mg/L	0.000014	-0.00405	mg/L	0.000014 0.34%
Mo 202.031†	-2.7	-0.00501	mg/L	0.000175	-0.00501	mg/L	0.000175 3.49%
Ni 231.604†	8.5	-0.00208	mg/L	0.000315	-0.00208	mg/L	0.000315 15.12%
Pb 220.353†	-1.0	-0.00020	mg/L	0.002545	-0.00020	mg/L	0.002545 >999.9%
Sb 206.836†	1.0	-0.00232	mg/L	0.001215	-0.00232	mg/L	0.001215 52.47%
Se 196.026†	-3.3	-0.00089	mg/L	0.006968	-0.00089	mg/L	0.006968 783.40%
Si 251.611†	168.1	-0.0289	mg/L	0.00118	-0.0289	mg/L	0.00118 4.10%
Sn 189.927†	-3.0	-0.00345	mg/L	0.000263	-0.00345	mg/L	0.000263 7.62%
Ti 334.940†	-69.1	-0.00329	mg/L	0.000112	-0.00329	mg/L	0.000112 3.42%
Tl 190.801†	-1.0	-0.00477	mg/L	0.002372	-0.00477	mg/L	0.002372 49.74%
V 290.880†	121.7	-0.00227	mg/L	0.002004	-0.00227	mg/L	0.002004 88.44%
Zn 206.200†	22.1	-0.00317	mg/L	0.000132	-0.00317	mg/L	0.000132 4.17%
K 766.490†	-57.5	0.00723	mg/L	0.005049	0.00723	mg/L	0.005049 69.88%
Na 589.592†	149.5	0.0791	mg/L	0.04063	0.0791	mg/L	0.04063 51.35%
Sr 407.771†	147.3	-0.00514	mg/L	0.000053	-0.00514	mg/L	0.000053 1.04%
Li 670.784†	181.3	-0.00407	mg/L	0.002711	-0.00407	mg/L	0.002711 66.56%

Sequence No.: 51 **Autosampler Location: 79**
Sample ID: L1201055106 **Date Collected: 1/30/2012 10:37:31 PM**
Analyst: SLP **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1201055106

Analyte	Back Pressure	Flow
All	148.0 kPa	0.50 L/min

Mean Data: L1201055106

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3813880.3						54754.93	1.44%
YRADIAL	117804.9						8640.35	7.33%
Ga 417.206	808950.2						14757.15	1.82%
GaRADIAL	7482.8						2747.35	36.72%
Ag 328.068†	-188.8	-0.00335	mg/L	0.000421	-0.00335	mg/L	0.000421	12.56%
Al 396.153†	-24.7	-0.0615	mg/L	0.01395	-0.0615	mg/L	0.01395	22.70%
As 188.979†	-1.0	0.00279	mg/L	0.004226	0.00279	mg/L	0.004226	151.36%
Ba 233.527†	7.3	-0.00499	mg/L	0.000089	-0.00499	mg/L	0.000089	1.79%
Be 234.861†	58.1	-0.00009	mg/L	0.000059	-0.00009	mg/L	0.000059	62.75%
B 249.677†	68.6	-0.00096	mg/L	0.000502	-0.00096	mg/L	0.000502	52.47%
Ca 227.546†	3.5	-0.0147	mg/L	0.04674	-0.0147	mg/L	0.04674	317.59%
Cd 228.802†	-4.3	-0.00042	mg/L	0.000310	-0.00042	mg/L	0.000310	73.02%
Co 228.616†	2.9	-0.00020	mg/L	0.000382	-0.00020	mg/L	0.000382	186.79%
Cr 267.716†	56.5	-0.00199	mg/L	0.000279	-0.00199	mg/L	0.000279	14.03%
Cu 327.393†	63.4	-0.00234	mg/L	0.000524	-0.00234	mg/L	0.000524	22.38%
Fe 239.562†	-1.9	-0.120	mg/L	0.0206	-0.120	mg/L	0.0206	17.12%
Mg 279.077†	-2.1	-0.0752	mg/L	0.04272	-0.0752	mg/L	0.04272	56.82%
Mn 257.610†	47.2	-0.00394	mg/L	0.000009	-0.00394	mg/L	0.000009	0.22%
Mo 202.031†	-2.9	-0.00505	mg/L	0.000453	-0.00505	mg/L	0.000453	8.96%
Ni 231.604†	8.5	-0.00208	mg/L	0.000128	-0.00208	mg/L	0.000128	6.14%
Pb 220.353†	1.5	0.00068	mg/L	0.001910	0.00068	mg/L	0.001910	281.46%
Sb 206.836†	-1.0	-0.00471	mg/L	0.001244	-0.00471	mg/L	0.001244	26.42%
Se 196.026†	-3.8	-0.00167	mg/L	0.009031	-0.00167	mg/L	0.009031	540.21%
Si 251.611†	291.7	-0.0220	mg/L	0.00063	-0.0220	mg/L	0.00063	2.85%
Sn 189.927†	-5.6	-0.00445	mg/L	0.000328	-0.00445	mg/L	0.000328	7.38%
Ti 334.940†	-69.3	-0.00329	mg/L	0.000134	-0.00329	mg/L	0.000134	4.09%
Tl 190.801†	-0.1	-0.00364	mg/L	0.006003	-0.00364	mg/L	0.006003	165.11%
V 290.880†	116.7	-0.00232	mg/L	0.000763	-0.00232	mg/L	0.000763	32.89%
Zn 206.200†	19.6	-0.00334	mg/L	0.000126	-0.00334	mg/L	0.000126	3.78%
K 766.490†	-56.6	0.00807	mg/L	0.203717	0.00807	mg/L	0.203717	>999.9%
Na 589.592†	127.2	0.0746	mg/L	0.03692	0.0746	mg/L	0.03692	49.50%
Sr 407.771†	134.8	-0.00515	mg/L	0.000051	-0.00515	mg/L	0.000051	0.99%

Approved: January 31, 2012

Saturated within auto integration window (code 4)

Li 670.784†	210.1	-0.00326	mg/L	0.001614	-0.00326	mg/L	0.001614 49.49%

Sequence No.: 52 **Autosampler Location: 80**
Sample ID: PBW 76 WG388081-02 **Date Collected: 1/30/2012 10:44:21 PM**
Analyst: SLP **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: PBW 76 WG388081-02

Analyte	Back Pressure	Flow
All	148.0 kPa	0.50 L/min

Mean Data: PBW 76 WG388081-02

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3803277.6						56968.43	1.50%
YRADIAL	117350.1						6019.22	5.13%
Ga 417.206	798788.7						16575.40	2.08%
GaRADIAL	7934.7						2540.02	32.01%
Ag 328.068†	-154.3	-0.00308	mg/L	0.000778	-0.00308	mg/L	0.000778	25.27%
Al 396.153†	-26.5	-0.0625	mg/L	0.01310	-0.0625	mg/L	0.01310	20.96%
As 188.979†	1.1	0.00667	mg/L	0.001974	0.00667	mg/L	0.001974	29.62%
Ba 233.527†	-3.6	-0.00535	mg/L	0.000079	-0.00535	mg/L	0.000079	1.48%
Be 234.861†	65.0	-0.00008	mg/L	0.000068	-0.00008	mg/L	0.000068	83.21%
B 249.677†	-8.0	-0.00336	mg/L	0.000560	-0.00336	mg/L	0.000560	16.68%
Ca 227.546†	4.1	-0.0110	mg/L	0.03076	-0.0110	mg/L	0.03076	279.80%
Cd 228.802†	-5.1	-0.00049	mg/L	0.000148	-0.00049	mg/L	0.000148	29.88%
Co 228.616†	-3.7	-0.00085	mg/L	0.000565	-0.00085	mg/L	0.000565	66.14%
Cr 267.716†	11.1	-0.00271	mg/L	0.000125	-0.00271	mg/L	0.000125	4.63%
Cu 327.393†	34.4	-0.00263	mg/L	0.000665	-0.00263	mg/L	0.000665	25.23%
Fe 239.562†	-0.8	-0.0673	mg/L	0.05439	-0.0673	mg/L	0.05439	80.78%
Mg 279.077†	-2.7	-0.0825	mg/L	0.03394	-0.0825	mg/L	0.03394	41.14%
Mn 257.610†	-4.3	-0.00414	mg/L	0.000012	-0.00414	mg/L	0.000012	0.29%
Mo 202.031†	-3.5	-0.00513	mg/L	0.000381	-0.00513	mg/L	0.000381	7.42%
Ni 231.604†	0.1	-0.00257	mg/L	0.000028	-0.00257	mg/L	0.000028	1.10%
Pb 220.353†	-1.2	-0.00027	mg/L	0.001551	-0.00027	mg/L	0.001551	571.11%
Sb 206.836†	-0.6	-0.00417	mg/L	0.001552	-0.00417	mg/L	0.001552	37.26%
Se 196.026†	-3.1	-0.00068	mg/L	0.004058	-0.00068	mg/L	0.004058	598.50%
Si 251.611†	50.6	-0.0354	mg/L	0.00024	-0.0354	mg/L	0.00024	0.68%
Sn 189.927†	-4.1	-0.00387	mg/L	0.001003	-0.00387	mg/L	0.001003	25.89%
Ti 334.940†	-101.5	-0.00336	mg/L	0.000158	-0.00336	mg/L	0.000158	4.71%
Tl 190.801†	-0.5	-0.00412	mg/L	0.003317	-0.00412	mg/L	0.003317	80.60%
V 290.880†	-74.7	-0.00456	mg/L	0.001307	-0.00456	mg/L	0.001307	28.68%
Zn 206.200†	12.7	-0.00384	mg/L	0.000186	-0.00384	mg/L	0.000186	4.84%
K 766.490†	-41.4	0.0229	mg/L	0.08941	0.0229	mg/L	0.08941	390.84%
Na 589.592†	-153.9	0.0172	mg/L	0.03599	0.0172	mg/L	0.03599	208.81%
Sr 407.771†	131.6	-0.00516	mg/L	0.000079	-0.00516	mg/L	0.000079	1.53%
Li 670.784†	279.9	-0.00130	mg/L	0.008011	-0.00130	mg/L	0.008011	614.05%

Sequence No.: 53 **Autosampler Location: 81**
Sample ID: LCSW 76 WG388081-03 **Date Collected: 1/30/2012 10:51:11 PM**
Analyst: SLP **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: LCSW 76 WG388081-03

Analyte	Back Pressure	Flow
All	148.0 kPa	0.50 L/min

Mean Data: LCSW 76 WG388081-03

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3740075.2						92246.49	2.47%
YRADIAL	110055.6						4722.24	4.29%
Ga 417.206	840109.9						14399.29	1.71%

Approved: January 31, 2012

GaRADIAL	7014.0					2294.17	32.71%
Ag 328.068†	24415.9	0.193	mg/L	0.0054	0.193 mg/L	0.0054	2.79%
Al 396.153†	7902.1	4.70	mg/L	0.133	4.70 mg/L	0.133	2.82%
As 188.979†	103.8	0.188	mg/L	0.0067	0.188 mg/L	0.0067	3.54%
Ba 233.527†	15657.1	0.507	mg/L	0.0156	0.507 mg/L	0.0156	3.09%
Be 234.861†	7500.0	0.0245	mg/L	0.00056	0.0245 mg/L	0.00056	2.28%
B 249.677†	28608.9	0.991	mg/L	0.0343	0.991 mg/L	0.0343	3.46%
Ca 227.546†	332.5	4.89	mg/L	0.094	4.89 mg/L	0.094	1.91%
Cd 228.802†	262.8	0.0241	mg/L	0.00041	0.0241 mg/L	0.00041	1.69%
Co 228.616†	1021.7	0.0991	mg/L	0.00253	0.0991 mg/L	0.00253	2.55%
Cr 267.716†	15932.4	0.249	mg/L	0.0094	0.249 mg/L	0.0094	3.77%
Cu 327.393†	23682.8	0.240	mg/L	0.0077	0.240 mg/L	0.0077	3.23%
Fe 239.562†	41.5	1.86	mg/L	0.129	1.86 mg/L	0.129	6.92%
Mg 279.077†	468.5	5.79	mg/L	0.351	5.79 mg/L	0.351	6.07%
Mn 257.610†	65299.4	0.251	mg/L	0.0093	0.251 mg/L	0.0093	3.69%
Mo 202.031†	3567.0	0.495	mg/L	0.0223	0.495 mg/L	0.0223	4.50%
Ni 231.604†	4358.8	0.251	mg/L	0.0122	0.251 mg/L	0.0122	4.85%
Pb 220.353†	722.5	0.254	mg/L	0.0067	0.254 mg/L	0.0067	2.64%
Sb 206.836†	486.9	0.583	mg/L	0.0107	0.583 mg/L	0.0107	1.83%
Se 196.026†	121.4	0.192	mg/L	0.0053	0.192 mg/L	0.0053	2.77%
Si 251.611†	45922.9	2.49	mg/L	0.084	2.49 mg/L	0.084	3.38%
Sn 189.927†	-7.3	-0.00511	mg/L	0.000516	-0.00511 mg/L	0.000516	10.09%
Ti 334.940†	241125.6	0.505	mg/L	0.0011	0.505 mg/L	0.0011	0.22%
Tl 190.801†	221.2	0.257	mg/L	0.0059	0.257 mg/L	0.0059	2.30%
V 290.880†	42841.8	0.497	mg/L	0.0211	0.497 mg/L	0.0211	4.24%
Zn 206.200†	7089.4	0.504	mg/L	0.0165	0.504 mg/L	0.0165	3.28%
K 766.490†	18418.5	18.1	mg/L	1.80	18.1 mg/L	1.80	9.95%
Na 589.592†	132681.8	28.0	mg/L	2.68	28.0 mg/L	2.68	9.57%
Sr 407.771†	107261.0	0.195	mg/L	0.0543	0.195 mg/L	0.0543	27.80%
Saturated within auto integration window (code 4)							
Li 670.784†	20981.0	0.580	mg/L	0.0242	0.580 mg/L	0.0242	4.17%

Sequence No.: 54 **Autosampler Location: 82**
Sample ID: L1201069501 WG388081-01 **Date Collected: 1/30/2012 10:58:03 PM**
Analyst: SLP **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1201069501 WG388081-01

Analyte	Back Pressure	Flow
All	149.0 kPa	0.50 L/min

Mean Data: L1201069501 WG388081-01

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3442653.1						46952.51	1.36%
YRADIAL	110401.2						6156.81	5.58%
Ga 417.206	831243.7						16729.87	2.01%
GaRADIAL	8040.1						2596.87	32.30%
Ag 328.068†	501.1	0.00203	mg/L	0.000614	0.00203	mg/L	0.000614	30.30%
Al 396.153†	116.1	0.0232	mg/L	0.01964	0.0232	mg/L	0.01964	84.55%
As 188.979†	16.0	0.0267	mg/L	0.00355	0.0267	mg/L	0.00355	13.29%
Ba 233.527†	361.9	0.00653	mg/L	0.000378	0.00653	mg/L	0.000378	5.79%
Be 234.861†	127.4	0.00016	mg/L	0.000066	0.00016	mg/L	0.000066	41.23%
B 249.677†	286.3	0.00705	mg/L	0.001267	0.00705	mg/L	0.001267	17.97%
Ca 227.546†	21883.1	328	mg/L	4.9	328	mg/L	4.9	1.50%
Cd 228.802†	-6.6	-0.00057	mg/L	0.000171	-0.00057	mg/L	0.000171	30.16%
Co 228.616†	59.3	0.00536	mg/L	0.000586	0.00536	mg/L	0.000586	10.94%
Cr 267.716†	200.2	0.00008	mg/L	0.000138	0.00008	mg/L	0.000138	166.20%
Cu 327.393†	-740.8	-0.0106	mg/L	0.00049	-0.0106	mg/L	0.00049	4.64%
Fe 239.562†	0.9	-0.00183	mg/L	0.124999	-0.00183	mg/L	0.124999	>999.9%
Mg 279.077†	25049.3	312	mg/L	22.3	312	mg/L	22.3	7.13%
Mn 257.610†	108406.7	0.415	mg/L	0.0054	0.415	mg/L	0.0054	1.29%
Mo 202.031†	-7.1	-0.00555	mg/L	0.000589	-0.00555	mg/L	0.000589	10.62%
Ni 231.604†	212.4	0.00970	mg/L	0.000327	0.00970	mg/L	0.000327	3.37%
Pb 220.353†	-23.9	0.00755	mg/L	0.002044	0.00755	mg/L	0.002044	27.07%
Sb 206.836†	21.0	0.0217	mg/L	0.00250	0.0217	mg/L	0.00250	11.55%
Se 196.026†	-29.3	0.0574	mg/L	0.00636	0.0574	mg/L	0.00636	11.08%
Si 251.611†	26893.2	1.45	mg/L	0.021	1.45	mg/L	0.021	1.45%

Approved: January 31, 2012

Sn 189.927†	6.4	0.00012 mg/L	0.001811	0.00012 mg/L	0.001811	>999.9%
Ti 334.940†	-1753.3	-0.00355 mg/L	0.000182	-0.00355 mg/L	0.000182	5.13%
Tl 190.801†	111.5	-0.00492 mg/L	0.001264	-0.00492 mg/L	0.001264	25.70%
V 290.880†	-1268.3	0.00803 mg/L	0.000830	0.00803 mg/L	0.000830	10.33%
Zn 206.200†	373.8	0.0220 mg/L	0.00046	0.0220 mg/L	0.00046	2.11%
K 766.490†	3311.3	3.00 mg/L	0.206	3.00 mg/L	0.206	6.87%
Na 589.592†	913486.6	280 mg/L	44.4	280 mg/L	44.4	15.90%
Saturated within auto integration window (code 4)						
Sr 407.771†	74699.0	0.135 mg/L	0.0368	0.135 mg/L	0.0368	27.30%
Li 670.784†	2798.1	0.0694 mg/L	0.00103	0.0694 mg/L	0.00103	1.48%

Sequence No.: 55 **Autosampler Location: 83**
Sample ID: L1201069501S WG388081-04 **Date Collected: 1/30/2012 11:04:54 PM**
Analyst: SLP **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1201069501S WG388081-04

Analyte	Back Pressure	Flow
All	150.0 kPa	0.50 L/min

Mean Data: L1201069501S WG388081-04

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	3555067.2						23216.57	0.65%
YRADIAL	109762.2						3421.41	3.12%
Ga 417.206	860997.1						2482.61	0.29%
GaRADIAL	7065.4						2233.22	31.61%
Ag 328.068†	560.7	0.00250	mg/L	0.000515	0.00250	mg/L	0.000515	20.60%
Al 396.153†	100.6	0.0139	mg/L	0.00999	0.0139	mg/L	0.00999	71.88%
As 188.979†	17.3	0.0291	mg/L	0.00896	0.0291	mg/L	0.00896	30.77%
Ba 233.527†	355.2	0.00631	mg/L	0.000108	0.00631	mg/L	0.000108	1.72%
Be 234.861†	150.1	0.00023	mg/L	0.000024	0.00023	mg/L	0.000024	10.41%
B 249.677†	180.9	0.00358	mg/L	0.000514	0.00358	mg/L	0.000514	14.36%
Ca 227.546†	21377.7	321	mg/L	4.5	321	mg/L	4.5	1.39%
Cd 228.802†	-7.2	-0.00062	mg/L	0.000219	-0.00062	mg/L	0.000219	35.53%
Co 228.616†	59.9	0.00542	mg/L	0.000304	0.00542	mg/L	0.000304	5.61%
Cr 267.716†	209.6	0.00023	mg/L	0.000445	0.00023	mg/L	0.000445	191.30%
Cu 327.393†	-684.2	-0.00998	mg/L	0.000427	-0.00998	mg/L	0.000427	4.28%
Fe 239.562†	1.7	0.0342	mg/L	0.04123	0.0342	mg/L	0.04123	120.59%
Mg 279.077†	25892.5	323	mg/L	18.0	323	mg/L	18.0	5.58%
Mn 257.610†	106189.6	0.406	mg/L	0.0063	0.406	mg/L	0.0063	1.55%
Mo 202.031†	-5.9	-0.00538	mg/L	0.000679	-0.00538	mg/L	0.000679	12.62%
Ni 231.604†	202.6	0.00913	mg/L	0.000841	0.00913	mg/L	0.000841	9.21%
Pb 220.353†	-24.8	0.00687	mg/L	0.000377	0.00687	mg/L	0.000377	5.50%
Sb 206.836†	16.4	0.0162	mg/L	0.00523	0.0162	mg/L	0.00523	32.28%
Se 196.026†	-27.6	0.0578	mg/L	0.00469	0.0578	mg/L	0.00469	8.11%
Si 251.611†	26221.1	1.41	mg/L	0.019	1.41	mg/L	0.019	1.36%
Sn 189.927†	2.3	-0.00145	mg/L	0.000342	-0.00145	mg/L	0.000342	23.60%
Ti 334.940†	-1578.5	-0.00326	mg/L	0.000132	-0.00326	mg/L	0.000132	4.05%
Tl 190.801†	110.2	-0.00340	mg/L	0.009522	-0.00340	mg/L	0.009522	280.40%
V 290.880†	-1368.6	0.00775	mg/L	0.002609	0.00775	mg/L	0.002609	33.66%
Zn 206.200†	349.4	0.0203	mg/L	0.00022	0.0203	mg/L	0.00022	1.06%
K 766.490†	3328.9	2.97	mg/L	0.220	2.97	mg/L	0.220	7.40%
Na 589.592†	963288.4	325	mg/L	89.8	325	mg/L	89.8	27.63%
Saturated within auto integration window (code 4)								
Sr 407.771†	68647.4	0.123	mg/L	0.0356	0.123	mg/L	0.0356	28.86%
Li 670.784†	2719.4	0.0672	mg/L	0.00389	0.0672	mg/L	0.00389	5.79%

Sequence No.: 56 **Autosampler Location: 84**
Sample ID: L1201069501SD WG388081-05 **Date Collected: 1/30/2012 11:11:43 PM**
Analyst: SLP **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1201069501SD WG388081-05

Analyte	Back Pressure	Flow

Approved: January 31, 2012

All 149.0 kPa 0.50 L/min

Mean Data: L1201069501SD WG388081-05

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3469405.8						82583.57	2.38%
YRADIAL	107896.2						5572.95	5.17%
Ga 417.206	832966.4						21717.72	2.61%
GaRADIAL	6922.7						2392.76	34.56%
Ag 328.068†	23614.8	0.187	mg/L	0.0050	0.187	mg/L	0.0050	2.70%
Al 396.153†	7772.5	4.62	mg/L	0.315	4.62	mg/L	0.315	6.81%
As 188.979†	115.9	0.204	mg/L	0.0059	0.204	mg/L	0.0059	2.92%
Ba 233.527†	15367.5	0.497	mg/L	0.0101	0.497	mg/L	0.0101	2.02%
Be 234.861†	7125.6	0.0233	mg/L	0.00076	0.0233	mg/L	0.00076	3.26%
B 249.677†	27839.4	0.965	mg/L	0.0251	0.965	mg/L	0.0251	2.60%
Ca 227.546†	22175.8	333	mg/L	7.9	333	mg/L	7.9	2.38%
Cd 228.802†	240.0	0.0221	mg/L	0.00065	0.0221	mg/L	0.00065	2.94%
Co 228.616†	1020.8	0.0990	mg/L	0.00215	0.0990	mg/L	0.00215	2.18%
Cr 267.716†	15494.6	0.242	mg/L	0.0054	0.242	mg/L	0.0054	2.22%
Cu 327.393†	22261.2	0.225	mg/L	0.0077	0.225	mg/L	0.0077	3.44%
Fe 239.562†	45.3	2.03	mg/L	0.212	2.03	mg/L	0.212	10.43%
Mg 279.077†	26481.8	330	mg/L	21.2	330	mg/L	21.2	6.41%
Mn 257.610†	170293.8	0.657	mg/L	0.0044	0.657	mg/L	0.0044	0.67%
Mo 202.031†	3595.1	0.499	mg/L	0.0108	0.499	mg/L	0.0108	2.17%
Ni 231.604†	4361.8	0.251	mg/L	0.0055	0.251	mg/L	0.0055	2.19%
Pb 220.353†	664.2	0.250	mg/L	0.0061	0.250	mg/L	0.0061	2.44%
Sb 206.836†	479.1	0.574	mg/L	0.0153	0.574	mg/L	0.0153	2.67%
Se 196.026†	91.8	0.245	mg/L	0.0107	0.245	mg/L	0.0107	4.37%
Si 251.611†	71056.6	3.88	mg/L	0.109	3.88	mg/L	0.109	2.80%
Sn 189.927†	-6.6	-0.00481	mg/L	0.000821	-0.00481	mg/L	0.000821	17.08%
Ti 334.940†	237525.2	0.501	mg/L	0.0017	0.501	mg/L	0.0017	0.33%
Tl 190.801†	298.3	0.216	mg/L	0.0115	0.216	mg/L	0.0115	5.31%
V 290.880†	41761.5	0.511	mg/L	0.0152	0.511	mg/L	0.0152	2.96%
Zn 206.200†	6797.5	0.483	mg/L	0.0126	0.483	mg/L	0.0126	2.62%
K 766.490†	23424.0	22.8	mg/L	1.71	22.8	mg/L	1.71	7.50%
Na 589.592†	1106884.7	398	mg/L	48.7	398	mg/L	48.7	12.22%
Saturated within auto integration window (code 4)								
Sr 407.771†	172042.1	0.317	mg/L	0.0941	0.317	mg/L	0.0941	29.72%
Li 670.784†	25739.1	0.713	mg/L	0.0392	0.713	mg/L	0.0392	5.49%

Sequence No.: 57 **Autosampler Location: 85**
Sample ID: L1201069502 **Date Collected: 1/30/2012 11:18:33 PM**
Analyst: SLP **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1201069502

Analyte	Back Pressure	Flow
All	149.0 kPa	0.50 L/min

Mean Data: L1201069502

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3510399.5						15286.08	0.44%
YRADIAL	112088.9						4335.83	3.87%
Ga 417.206	853023.6						9921.38	1.16%
GaRADIAL	7519.8						2467.73	32.82%
Ag 328.068†	591.0	0.00280	mg/L	0.000665	0.00280	mg/L	0.000665	23.78%
Al 396.153†	-44.8	-0.0735	mg/L	0.01066	-0.0735	mg/L	0.01066	14.50%
As 188.979†	14.2	0.0237	mg/L	0.00164	0.0237	mg/L	0.00164	6.92%
Ba 233.527†	641.3	0.0156	mg/L	0.00017	0.0156	mg/L	0.00017	1.10%
Be 234.861†	121.3	0.00009	mg/L	0.000062	0.00009	mg/L	0.000062	71.33%
B 249.677†	271.0	0.00669	mg/L	0.000857	0.00669	mg/L	0.000857	12.81%
Ca 227.546†	21607.5	324	mg/L	4.6	324	mg/L	4.6	1.43%
Cd 228.802†	-6.7	-0.00059	mg/L	0.000194	-0.00059	mg/L	0.000194	32.96%
Co 228.616†	-0.1	-0.00050	mg/L	0.000500	-0.00050	mg/L	0.000500	99.57%
Cr 267.716†	204.3	0.00032	mg/L	0.000041	0.00032	mg/L	0.000041	12.73%
Cu 327.393†	-694.4	-0.0101	mg/L	0.00065	-0.0101	mg/L	0.00065	6.44%

Approved: January 31, 2012

Fe 239.562†	1.0	0.00441	mg/L	0.038243	0.00441	mg/L	0.038243	866.34%
Mg 279.077†	25496.4	318	mg/L	20.3	318	mg/L	20.3	6.40%
Mn 257.610†	5785.5	0.0168	mg/L	0.00088	0.0168	mg/L	0.00088	5.28%
Mo 202.031†	-11.3	-0.00622	mg/L	0.001133	-0.00622	mg/L	0.001133	18.21%
Ni 231.604†	-11.0	-0.00330	mg/L	0.000153	-0.00330	mg/L	0.000153	4.65%
Pb 220.353†	-19.2	0.00901	mg/L	0.002230	0.00901	mg/L	0.002230	24.76%
Sb 206.836†	17.1	0.0170	mg/L	0.00345	0.0170	mg/L	0.00345	20.27%
Se 196.026†	-29.1	0.0566	mg/L	0.01043	0.0566	mg/L	0.01043	18.41%
Si 251.611†	29982.9	1.62	mg/L	0.025	1.62	mg/L	0.025	1.57%
Sn 189.927†	-1.0	-0.00269	mg/L	0.001277	-0.00269	mg/L	0.001277	47.44%
Ti 334.940†	-1719.6	-0.00352	mg/L	0.000227	-0.00352	mg/L	0.000227	6.44%
Tl 190.801†	112.1	-0.00322	mg/L	0.013861	-0.00322	mg/L	0.013861	430.78%
V 290.880†	-1208.4	0.00921	mg/L	0.001037	0.00921	mg/L	0.001037	11.26%
Zn 206.200†	50.8	-0.00111	mg/L	0.000329	-0.00111	mg/L	0.000329	29.78%
K 766.490†	3336.3	2.99	mg/L	0.385	2.99	mg/L	0.385	12.88%
Na 589.592†	942834.2	315	mg/L	97.1	315	mg/L	97.1	30.82%
Saturated within auto integration window (code 4)								
Sr 407.771†	70632.8	0.127	mg/L	0.0363	0.127	mg/L	0.0363	28.60%
Li 670.784†	2813.1	0.0698	mg/L	0.00325	0.0698	mg/L	0.00325	4.66%

Sequence No.: 58 **Autosampler Location: 86**
Sample ID: L1201069502DL WG388173-04 **Date Collected: 1/30/2012 11:25:23 PM**
Analyst: SLP **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1201069502DL WG388173-04

Analyte	Back Pressure	Flow
All	149.0 kPa	0.50 L/min

Mean Data: L1201069502DL WG388173-04

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3702746.4						117933.01	3.19%
YRADIAL	111375.3						6067.51	5.45%
Ga 417.206	852517.2						30863.72	3.62%
GaRADIAL	6951.9						2265.21	32.58%
Ag 328.068†	-9.5	-0.00195	mg/L	0.000141	-0.00195	mg/L	0.000141	7.24%
Al 396.153†	-34.6	-0.0674	mg/L	0.02027	-0.0674	mg/L	0.02027	30.09%
As 188.979†	11.2	0.0233	mg/L	0.00790	0.0233	mg/L	0.00790	33.86%
Ba 233.527†	131.3	-0.00098	mg/L	0.000243	-0.00098	mg/L	0.000243	24.79%
Be 234.861†	112.3	0.00006	mg/L	0.000062	0.00006	mg/L	0.000062	103.98%
B 249.677†	53.2	-0.00094	mg/L	0.000591	-0.00094	mg/L	0.000591	62.98%
Ca 227.546†	4383.4	65.7	mg/L	2.42	65.7	mg/L	2.42	3.69%
Cd 228.802†	-7.3	-0.00065	mg/L	0.000163	-0.00065	mg/L	0.000163	25.08%
Co 228.616†	0.7	-0.00042	mg/L	0.000364	-0.00042	mg/L	0.000364	86.76%
Cr 267.716†	56.8	-0.00200	mg/L	0.000232	-0.00200	mg/L	0.000232	11.58%
Cu 327.393†	-107.2	-0.00408	mg/L	0.000956	-0.00408	mg/L	0.000956	23.42%
Fe 239.562†	0.6	-0.00634	mg/L	0.100691	-0.00634	mg/L	0.100691	>999.9%
Mg 279.077†	5214.4	64.9	mg/L	4.48	64.9	mg/L	4.48	6.90%
Mn 257.610†	1275.1	0.00028	mg/L	0.000123	0.00028	mg/L	0.000123	43.45%
Mo 202.031†	-6.3	-0.00552	mg/L	0.000598	-0.00552	mg/L	0.000598	10.82%
Ni 231.604†	-7.8	-0.00308	mg/L	0.000279	-0.00308	mg/L	0.000279	9.04%
Pb 220.353†	-13.4	-0.00139	mg/L	0.001185	-0.00139	mg/L	0.001185	85.31%
Sb 206.836†	9.9	0.00835	mg/L	0.002433	0.00835	mg/L	0.002433	29.13%
Se 196.026†	-19.1	-0.00551	mg/L	0.001322	-0.00551	mg/L	0.001322	24.02%
Si 251.611†	6460.3	0.319	mg/L	0.0077	0.319	mg/L	0.0077	2.43%
Sn 189.927†	3.1	-0.00112	mg/L	0.001173	-0.00112	mg/L	0.001173	104.36%
Ti 334.940†	-505.9	-0.00355	mg/L	0.000096	-0.00355	mg/L	0.000096	2.71%
Tl 190.801†	69.8	0.0512	mg/L	0.00227	0.0512	mg/L	0.00227	4.44%
V 290.880†	-1110.9	-0.0111	mg/L	0.00138	-0.0111	mg/L	0.00138	12.40%
Zn 206.200†	28.4	-0.00271	mg/L	0.000178	-0.00271	mg/L	0.000178	6.57%
K 766.490†	537.6	0.544	mg/L	0.1431	0.544	mg/L	0.1431	26.30%
Na 589.592†	187609.3	40.2	mg/L	2.78	40.2	mg/L	2.78	6.92%
Sr 407.771†	13733.1	0.0203	mg/L	0.00682	0.0203	mg/L	0.00682	33.58%
Li 670.784†	618.8	0.00821	mg/L	0.001436	0.00821	mg/L	0.001436	17.49%

Sequence No.: 59 **Autosampler Location: 6**

Approved: January 31, 2012

Sample ID: CCV
Analyst:
Initial Sample Wt:
Dilution:

Date Collected: 1/30/2012 11:32:13 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: CCV

Analyte	Back Pressure	Flow
All	148.0 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	3715379.0						93191.84	2.51%
YRADIAL	111914.7						3793.51	3.39%
Ga 417.206	826665.4						25429.60	3.08%
GaRADIAL	7291.7						2279.02	31.25%
Ag 328.068†	48486.0	0.385	mg/L	0.0111	0.385	mg/L	0.0111	2.89%
QC value within limits for Ag 328.068 Recovery = 96.26%								
Al 396.153†	15309.3	9.15	mg/L	0.204	9.15	mg/L	0.204	2.23%
QC value within limits for Al 396.153 Recovery = 91.46%								
As 188.979†	211.5	0.379	mg/L	0.0158	0.379	mg/L	0.0158	4.16%
QC value within limits for As 188.979 Recovery = 94.79%								
Ba 233.527†	30640.8	0.997	mg/L	0.0223	0.997	mg/L	0.0223	2.24%
QC value within limits for Ba 233.527 Recovery = 99.67%								
Be 234.861†	14906.1	0.0489	mg/L	0.00154	0.0489	mg/L	0.00154	3.14%
QC value within limits for Be 234.861 Recovery = 97.89%								
B 249.677†	13882.8	0.484	mg/L	0.0127	0.484	mg/L	0.0127	2.62%
QC value within limits for B 249.677 Recovery = 96.84%								
Ca 227.546†	660.7	9.79	mg/L	0.325	9.79	mg/L	0.325	3.32%
QC value within limits for Ca 227.546 Recovery = 97.92%								
Cd 228.802†	533.2	0.0489	mg/L	0.00142	0.0489	mg/L	0.00142	2.90%
QC value within limits for Cd 228.802 Recovery = 97.80%								
Co 228.616†	2013.6	0.196	mg/L	0.0043	0.196	mg/L	0.0043	2.20%
QC value within limits for Co 228.616 Recovery = 97.87%								
Cr 267.716†	31184.9	0.490	mg/L	0.0108	0.490	mg/L	0.0108	2.22%
QC value within limits for Cr 267.716 Recovery = 97.90%								
Cu 327.393†	47229.8	0.481	mg/L	0.0150	0.481	mg/L	0.0150	3.11%
QC value within limits for Cu 327.393 Recovery = 96.14%								
Fe 239.562†	82.1	3.72	mg/L	0.081	3.72	mg/L	0.081	2.18%
QC value within limits for Fe 239.562 Recovery = 92.91%								
Mg 279.077†	885.9	11.0	mg/L	0.46	11.0	mg/L	0.46	4.15%
QC value within limits for Mg 279.077 Recovery = 109.96%								
Mn 257.610†	129377.0	0.501	mg/L	0.0114	0.501	mg/L	0.0114	2.28%
QC value within limits for Mn 257.610 Recovery = 100.21%								
Mo 202.031†	6998.4	0.976	mg/L	0.0158	0.976	mg/L	0.0158	1.62%
QC value within limits for Mo 202.031 Recovery = 97.65%								
Ni 231.604†	8545.2	0.494	mg/L	0.0123	0.494	mg/L	0.0123	2.49%
QC value within limits for Ni 231.604 Recovery = 98.85%								
Pb 220.353†	1413.5	0.497	mg/L	0.0124	0.497	mg/L	0.0124	2.50%
QC value within limits for Pb 220.353 Recovery = 99.49%								
Sb 206.836†	973.8	1.17	mg/L	0.032	1.17	mg/L	0.032	2.75%
QC value within limits for Sb 206.836 Recovery = 97.47%								
Se 196.026†	248.4	0.389	mg/L	0.0075	0.389	mg/L	0.0075	1.93%
QC value within limits for Se 196.026 Recovery = 97.33%								
Si 251.611†	88872.8	4.86	mg/L	0.134	4.86	mg/L	0.134	2.75%
QC value within limits for Si 251.611 Recovery = 97.23%								
Sn 189.927†	2636.5	0.999	mg/L	0.0233	0.999	mg/L	0.0233	2.34%
QC value within limits for Sn 189.927 Recovery = 99.87%								
Ti 334.940†	472692.5	0.993	mg/L	0.0025	0.993	mg/L	0.0025	0.25%
QC value within limits for Ti 334.940 Recovery = 99.27%								
Tl 190.801†	433.9	0.508	mg/L	0.0131	0.508	mg/L	0.0131	2.57%
QC value within limits for Tl 190.801 Recovery = 101.63%								
V 290.880†	84411.1	0.982	mg/L	0.0231	0.982	mg/L	0.0231	2.35%
QC value within limits for V 290.880 Recovery = 98.19%								
Zn 206.200†	13689.3	0.977	mg/L	0.0214	0.977	mg/L	0.0214	2.19%
QC value within limits for Zn 206.200 Recovery = 97.69%								
K 766.490†	37291.5	37.1	mg/L	3.68	37.1	mg/L	3.68	9.92%
QC value less than the lower limit for K 766.490 Recovery = 74.29%								
Na 589.592†	255376.1	55.8	mg/L	5.38	55.8	mg/L	5.38	9.65%
QC value greater than the upper limit for Na 589.592 Recovery = 111.62%								

Approved: January 31, 2012

```
Sr 407.771†          212966.7       0.393 mg/L        0.1073       0.393 mg/L        0.1073  27.29%
   QC value less than the lower limit for Sr 407.771  Recovery = 39.30%
Li 670.784†           41205.9        1.15 mg/L         0.036        1.15 mg/L         0.036   3.12%
   QC value greater than the upper limit for Li 670.784  Recovery = 114.77%
QC Failed.  Continue with analysis.
```

Sequence No.: 60 **Autosampler Location: 1**
Sample ID: CCB **Date Collected: 1/30/2012 11:39:05 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: CCB

Analyte	Back Pressure	Flow
All	148.0 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	3769890.4						34701.00	0.92%
YRADIAL	111005.7						2661.05	2.40%
Ga 417.206	775433.5						4605.56	0.59%
GaRADIAL	6246.6						2068.54	33.11%
Ag 328.068†	-183.5	-0.00331	mg/L	0.000526	-0.00331	mg/L	0.000526	15.90%
QC value within limits for Ag 328.068 Recovery = Not calculated								
Al 396.153†	-31.9	-0.0658	mg/L	0.00952	-0.0658	mg/L	0.00952	14.47%
QC value within limits for Al 396.153 Recovery = Not calculated								
As 188.979†	2.8	0.00967	mg/L	0.006852	0.00967	mg/L	0.006852	70.85%
QC value within limits for As 188.979 Recovery = Not calculated								
Ba 233.527†	1.6	-0.00518	mg/L	0.000058	-0.00518	mg/L	0.000058	1.13%
QC value less than the lower limit for Ba 233.527 Recovery = Not calculated								
Be 234.861†	48.9	-0.00013	mg/L	0.000023	-0.00013	mg/L	0.000023	16.94%
QC value within limits for Be 234.861 Recovery = Not calculated								
B 249.677†	70.9	-0.00062	mg/L	0.000481	-0.00062	mg/L	0.000481	77.08%
QC value within limits for B 249.677 Recovery = Not calculated								
Ca 227.546†	4.0	-0.0123	mg/L	0.02709	-0.0123	mg/L	0.02709	219.95%
QC value within limits for Ca 227.546 Recovery = Not calculated								
Cd 228.802†	-2.1	-0.00021	mg/L	0.000051	-0.00021	mg/L	0.000051	23.99%
QC value within limits for Cd 228.802 Recovery = Not calculated								
Co 228.616†	1.1	-0.00039	mg/L	0.000326	-0.00039	mg/L	0.000326	84.23%
QC value within limits for Co 228.616 Recovery = Not calculated								
Cr 267.716†	24.6	-0.00250	mg/L	0.000061	-0.00250	mg/L	0.000061	2.43%
QC value within limits for Cr 267.716 Recovery = Not calculated								
Cu 327.393†	-49.4	-0.00349	mg/L	0.000220	-0.00349	mg/L	0.000220	6.30%
QC value within limits for Cu 327.393 Recovery = Not calculated								
Fe 239.562†	-0.7	-0.0659	mg/L	0.05829	-0.0659	mg/L	0.05829	88.42%
QC value less than the lower limit for Fe 239.562 Recovery = Not calculated								
Mg 279.077†	0.6	-0.0412	mg/L	0.02427	-0.0412	mg/L	0.02427	58.87%
QC value within limits for Mg 279.077 Recovery = Not calculated								
Mn 257.610†	21.8	-0.00404	mg/L	0.000025	-0.00404	mg/L	0.000025	0.61%
QC value within limits for Mn 257.610 Recovery = Not calculated								
Mo 202.031†	-4.5	-0.00527	mg/L	0.000832	-0.00527	mg/L	0.000832	15.78%
QC value within limits for Mo 202.031 Recovery = Not calculated								
Ni 231.604†	5.4	-0.00226	mg/L	0.000095	-0.00226	mg/L	0.000095	4.21%
QC value within limits for Ni 231.604 Recovery = Not calculated								
Pb 220.353†	-2.7	-0.00081	mg/L	0.003011	-0.00081	mg/L	0.003011	369.94%
QC value within limits for Pb 220.353 Recovery = Not calculated								
Sb 206.836†	0.6	-0.00280	mg/L	0.001314	-0.00280	mg/L	0.001314	46.84%
QC value within limits for Sb 206.836 Recovery = Not calculated								
Se 196.026†	-0.3	0.00360	mg/L	0.004339	0.00360	mg/L	0.004339	120.38%
QC value within limits for Se 196.026 Recovery = Not calculated								
Si 251.611†	0.4	-0.0381	mg/L	0.00059	-0.0381	mg/L	0.00059	1.55%
QC value within limits for Si 251.611 Recovery = Not calculated								
Sn 189.927†	1.3	-0.00184	mg/L	0.000464	-0.00184	mg/L	0.000464	25.23%
QC value within limits for Sn 189.927 Recovery = Not calculated								
Ti 334.940†	56.4	-0.00302	mg/L	0.000053	-0.00302	mg/L	0.000053	1.74%
QC value within limits for Ti 334.940 Recovery = Not calculated								
Tl 190.801†	-2.9	-0.00687	mg/L	0.007474	-0.00687	mg/L	0.007474	108.73%
QC value within limits for Tl 190.801 Recovery = Not calculated								

Approved: January 31, 2012

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V 290.880†                1.3    -0.00367 mg/L      0.000819    -0.00367 mg/L      0.000819  22.34%
   QC value within limits for V 290.880  Recovery = Not calculated
Zn 206.200†              -2.3    -0.00491 mg/L      0.000118    -0.00491 mg/L      0.000118   2.40%
   QC value within limits for Zn 206.200  Recovery = Not calculated
K 766.490†               -0.8      0.0620 mg/L       0.03161      0.0620 mg/L       0.03161  50.95%
   Saturated within auto integration window (code 4)
   QC value within limits for K 766.490  Recovery = Not calculated
Na 589.592†             503.4       0.151 mg/L        0.0842       0.151 mg/L        0.0842  55.66%
   QC value within limits for Na 589.592  Recovery = Not calculated
Sr 407.771†             174.2    -0.00509 mg/L      0.000069    -0.00509 mg/L      0.000069   1.35%
   Saturated within auto integration window (code 4)
   QC value within limits for Sr 407.771  Recovery = Not calculated
Li 670.784†             199.9    -0.00355 mg/L      0.009552    -0.00355 mg/L      0.009552 269.18%
   QC value within limits for Li 670.784  Recovery = Not calculated
QC Failed.  Continue with analysis.
```

Sequence No.: 61 **Autosampler Location: 87**
Sample ID: L1201069502PS WG388173-03 **Date Collected: 1/30/2012 11:45:53 PM**
Analyst: SLP **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1201069502PS WG388173-03

Analyte	Back Pressure	Flow
All	150.0 kPa	0.50 L/min

Mean Data: L1201069502PS WG388173-03

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3539247.8						33418.32	0.94%
YRADIAL	108387.4						4981.33	4.60%
Ga 417.206	853915.9						8886.25	1.04%
GaRADIAL	6669.4						2340.12	35.09%
Ag 328.068†	23064.5	0.182	mg/L	0.0031	0.182	mg/L	0.0031	1.70%
Al 396.153†	7585.8	4.51	mg/L	0.091	4.51	mg/L	0.091	2.01%
As 188.979†	114.3	0.201	mg/L	0.0028	0.201	mg/L	0.0028	1.40%
Ba 233.527†	15387.9	0.498	mg/L	0.0053	0.498	mg/L	0.0053	1.06%
Be 234.861†	6949.7	0.0227	mg/L	0.00029	0.0227	mg/L	0.00029	1.29%
B 249.677†	27148.9	0.941	mg/L	0.0153	0.941	mg/L	0.0153	1.63%
Ca 227.546†	19266.6	289	mg/L	4.9	289	mg/L	4.9	1.71%
Cd 228.802†	238.0	0.0219	mg/L	0.00071	0.0219	mg/L	0.00071	3.22%
Co 228.616†	951.6	0.0922	mg/L	0.00120	0.0922	mg/L	0.00120	1.31%
Cr 267.716†	15257.1	0.238	mg/L	0.0041	0.238	mg/L	0.0041	1.73%
Cu 327.393†	21824.4	0.221	mg/L	0.0059	0.221	mg/L	0.0059	2.66%
Fe 239.562†	43.6	1.95	mg/L	0.124	1.95	mg/L	0.124	6.37%
Mg 279.077†	23658.2	295	mg/L	19.3	295	mg/L	19.3	6.55%
Mn 257.610†	68706.7	0.263	mg/L	0.0041	0.263	mg/L	0.0041	1.56%
Mo 202.031†	3560.5	0.495	mg/L	0.0060	0.495	mg/L	0.0060	1.22%
Ni 231.604†	4090.8	0.235	mg/L	0.0024	0.235	mg/L	0.0024	1.02%
Pb 220.353†	659.4	0.246	mg/L	0.0057	0.246	mg/L	0.0057	2.31%
Sb 206.836†	469.2	0.562	mg/L	0.0094	0.562	mg/L	0.0094	1.68%
Se 196.026†	93.1	0.234	mg/L	0.0044	0.234	mg/L	0.0044	1.86%
Si 251.611†	70030.6	3.83	mg/L	0.061	3.83	mg/L	0.061	1.59%
Sn 189.927†	1329.1	0.502	mg/L	0.0034	0.502	mg/L	0.0034	0.69%
Ti 334.940†	236834.4	0.499	mg/L	0.0006	0.499	mg/L	0.0006	0.12%
Tl 190.801†	303.1	0.239	mg/L	0.0072	0.239	mg/L	0.0072	3.03%
V 290.880†	40787.0	0.497	mg/L	0.0111	0.497	mg/L	0.0111	2.23%
Zn 206.200†	6469.3	0.459	mg/L	0.0065	0.459	mg/L	0.0065	1.41%
K 766.490†	22824.0	22.2	mg/L	1.20	22.2	mg/L	1.20	5.39%
Na 589.592†	1005426.1	337	mg/L	81.4	337	mg/L	81.4	24.14%
Saturated within auto integration window (code 4)								
Sr 407.771†	158039.1	0.290	mg/L	0.0851	0.290	mg/L	0.0851	29.31%
Li 670.784†	25263.1	0.700	mg/L	0.0568	0.700	mg/L	0.0568	8.11%

Sequence No.: 62 **Autosampler Location: 88**
Sample ID: L1201000801 **Date Collected: 1/30/2012 11:52:44 PM**
Analyst: SLP **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**

Approved: January 31, 2012

Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1201000801

Analyte	Back Pressure	Flow
All	148.0 kPa	0.50 L/min

Mean Data: L1201000801

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3870053.3						60856.10	1.57%
YRADIAL	111478.4						5200.78	4.67%
Ga 417.206	799370.1						15309.20	1.92%
GaRADIAL	6763.3						2261.96	33.44%
Ag 328.068†	-134.8	-0.00293	mg/L	0.000350	-0.00293	mg/L	0.000350	11.95%
Al 396.153†	-47.2	-0.0750	mg/L	0.01194	-0.0750	mg/L	0.01194	15.92%
As 188.979†	-0.5	0.00372	mg/L	0.007942	0.00372	mg/L	0.007942	213.24%
Ba 233.527†	2.8	-0.00515	mg/L	0.000168	-0.00515	mg/L	0.000168	3.27%
Be 234.861†	57.7	-0.00011	mg/L	0.000072	-0.00011	mg/L	0.000072	68.06%
B 249.677†	141.7	0.00185	mg/L	0.000778	0.00185	mg/L	0.000778	42.01%
Ca 227.546†	4.9	0.00182	mg/L	0.059001	0.00182	mg/L	0.059001	>999.9%
Cd 228.802†	-6.3	-0.00061	mg/L	0.000229	-0.00061	mg/L	0.000229	37.65%
Co 228.616†	-2.4	-0.00073	mg/L	0.000209	-0.00073	mg/L	0.000209	28.61%
Cr 267.716†	6.8	-0.00278	mg/L	0.000196	-0.00278	mg/L	0.000196	7.07%
Cu 327.393†	34.0	-0.00264	mg/L	0.001520	-0.00264	mg/L	0.001520	57.62%
Fe 239.562†	-0.7	-0.0662	mg/L	0.06336	-0.0662	mg/L	0.06336	95.76%
Mg 279.077†	1.2	-0.0336	mg/L	0.01368	-0.0336	mg/L	0.01368	40.74%
Mn 257.610†	-1.9	-0.00413	mg/L	0.000028	-0.00413	mg/L	0.000028	0.67%
Mo 202.031†	-4.0	-0.00520	mg/L	0.000250	-0.00520	mg/L	0.000250	4.80%
Ni 231.604†	4.8	-0.00230	mg/L	0.000479	-0.00230	mg/L	0.000479	20.84%
Pb 220.353†	-2.9	-0.00088	mg/L	0.000642	-0.00088	mg/L	0.000642	72.95%
Sb 206.836†	0.1	-0.00331	mg/L	0.001801	-0.00331	mg/L	0.001801	54.43%
Se 196.026†	-5.7	-0.00456	mg/L	0.003229	-0.00456	mg/L	0.003229	70.79%
Si 251.611†	1.7	-0.0381	mg/L	0.00188	-0.0381	mg/L	0.00188	4.95%
Sn 189.927†	0.0	-0.00231	mg/L	0.001203	-0.00231	mg/L	0.001203	52.15%
Ti 334.940†	-58.2	-0.00326	mg/L	0.000124	-0.00326	mg/L	0.000124	3.79%
Tl 190.801†	1.9	-0.00130	mg/L	0.004125	-0.00130	mg/L	0.004125	317.53%
V 290.880†	-116.0	-0.00504	mg/L	0.001446	-0.00504	mg/L	0.001446	28.71%
Zn 206.200†	-3.9	-0.00503	mg/L	0.000276	-0.00503	mg/L	0.000276	5.49%
K 766.490†	83.1	0.143	mg/L	0.1741	0.143	mg/L	0.1741	121.36%
Na 589.592†	334.0	0.117	mg/L	0.0653	0.117	mg/L	0.0653	55.96%
Sr 407.771†	136.9	-0.00516	mg/L	0.000058	-0.00516	mg/L	0.000058	1.13%
Saturated within auto integration window (code 4)								
Li 670.784†	185.5	-0.00395	mg/L	0.002295	-0.00395	mg/L	0.002295	58.05%

Sequence No.: 63 **Autosampler Location: 89**
Sample ID: L1201000802 **Date Collected: 1/30/2012 11:59:34 PM**
Analyst: SLP **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1201000802

Analyte	Back Pressure	Flow
All	148.0 kPa	0.50 L/min

Mean Data: L1201000802

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3860064.0						612.62	0.02%
YRADIAL	112179.6						6031.09	5.38%
Ga 417.206	793954.4						2231.45	0.28%
GaRADIAL	5745.0						2197.40	38.25%
Ag 328.068†	-138.6	-0.00295	mg/L	0.000464	-0.00295	mg/L	0.000464	15.69%
Al 396.153†	-66.1	-0.0863	mg/L	0.02498	-0.0863	mg/L	0.02498	28.95%
As 188.979†	0.9	0.00625	mg/L	0.000917	0.00625	mg/L	0.000917	14.67%
Ba 233.527†	0.1	-0.00523	mg/L	0.000184	-0.00523	mg/L	0.000184	3.53%
Be 234.861†	58.0	-0.00010	mg/L	0.000027	-0.00010	mg/L	0.000027	26.30%
B 249.677†	32.8	-0.00197	mg/L	0.000366	-0.00197	mg/L	0.000366	18.56%

Approved: January 31, 2012

Ca 227.546†	2.3	-0.0362	mg/L	0.04348	-0.0362	mg/L	0.04348 120.14%
Cd 228.802†	-6.5	-0.00062	mg/L	0.000187	-0.00062	mg/L	0.000187 30.04%
Co 228.616†	-0.6	-0.00055	mg/L	0.000058	-0.00055	mg/L	0.000058 10.43%
Cr 267.716†	-8.4	-0.00302	mg/L	0.000085	-0.00302	mg/L	0.000085 2.81%
Cu 327.393†	-9.3	-0.00308	mg/L	0.000628	-0.00308	mg/L	0.000628 20.36%
Fe 239.562†	-1.0	-0.0791	mg/L	0.02644	-0.0791	mg/L	0.02644 33.44%
Mg 279.077†	1.4	-0.0312	mg/L	0.02400	-0.0312	mg/L	0.02400 76.98%
Mn 257.610†	-18.9	-0.00419	mg/L	0.000016	-0.00419	mg/L	0.000016 0.38%
Mo 202.031†	-3.6	-0.00515	mg/L	0.000598	-0.00515	mg/L	0.000598 11.61%
Ni 231.604†	-1.4	-0.00266	mg/L	0.000330	-0.00266	mg/L	0.000330 12.40%
Pb 220.353†	-0.1	0.00011	mg/L	0.001297	0.00011	mg/L	0.001297 >999.9%
Sb 206.836†	-0.5	-0.00403	mg/L	0.004387	-0.00403	mg/L	0.004387 108.86%
Se 196.026†	-3.6	-0.00142	mg/L	0.004623	-0.00142	mg/L	0.004623 324.64%
Si 251.611†	-30.8	-0.0399	mg/L	0.00044	-0.0399	mg/L	0.00044 1.09%
Sn 189.927†	-2.0	-0.00306	mg/L	0.001503	-0.00306	mg/L	0.001503 49.09%
Ti 334.940†	-119.1	-0.00339	mg/L	0.000184	-0.00339	mg/L	0.000184 5.43%
Tl 190.801†	-2.1	-0.00599	mg/L	0.003305	-0.00599	mg/L	0.003305 55.19%
V 290.880†	-65.6	-0.00445	mg/L	0.000787	-0.00445	mg/L	0.000787 17.70%
Zn 206.200†	-3.1	-0.00497	mg/L	0.000378	-0.00497	mg/L	0.000378 7.60%
K 766.490†	-23.6	0.0400	mg/L	0.05719	0.0400	mg/L	0.05719 143.04%
Saturated within auto integration window (code 4)							
Na 589.592†	380.4	0.126	mg/L	0.0355	0.126	mg/L	0.0355 28.16%
Sr 407.771†	142.8	-0.00514	mg/L	0.000059	-0.00514	mg/L	0.000059 1.14%
Saturated within auto integration window (code 4)							
Li 670.784†	435.6	0.00307	mg/L	0.006622	0.00307	mg/L	0.006622 215.95%

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Sequence No.: 64 **Autosampler Location: 90**
Sample ID: L1201000803 **Date Collected: 1/31/2012 12:06:24 AM**
Analyst: SLP **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1201000803

Analyte	Back Pressure	Flow
All	148.0 kPa	0.50 L/min

Mean Data: L1201000803

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3846010.2						18654.89	0.49%
YRADIAL	108682.0						4335.68	3.99%
Ga 417.206	794117.2						2649.69	0.33%
GaRADIAL	5995.6						2075.47	34.62%
Ag 328.068†	-173.0	-0.00323	mg/L	0.000753	-0.00323	mg/L	0.000753	23.34%
Al 396.153†	-50.9	-0.0772	mg/L	0.02322	-0.0772	mg/L	0.02322	30.09%
As 188.979†	3.6	0.0110	mg/L	0.00266	0.0110	mg/L	0.00266	24.17%
Ba 233.527†	-1.7	-0.00529	mg/L	0.000034	-0.00529	mg/L	0.000034	0.65%
Be 234.861†	58.0	-0.00010	mg/L	0.000048	-0.00010	mg/L	0.000048	50.91%
B 249.677†	10.0	-0.00296	mg/L	0.000079	-0.00296	mg/L	0.000079	2.68%
Ca 227.546†	3.2	-0.0189	mg/L	0.03118	-0.0189	mg/L	0.03118	164.57%
Cd 228.802†	-5.8	-0.00054	mg/L	0.000031	-0.00054	mg/L	0.000031	5.69%
Co 228.616†	-0.5	-0.00054	mg/L	0.000482	-0.00054	mg/L	0.000482	88.62%
Cr 267.716†	8.9	-0.00274	mg/L	0.000096	-0.00274	mg/L	0.000096	3.52%
Cu 327.393†	-54.9	-0.00355	mg/L	0.000703	-0.00355	mg/L	0.000703	19.82%
Fe 239.562†	-1.9	-0.120	mg/L	0.0200	-0.120	mg/L	0.0200	16.74%
Mg 279.077†	0.8	-0.0387	mg/L	0.02410	-0.0387	mg/L	0.02410	62.31%
Mn 257.610†	-16.7	-0.00419	mg/L	0.000020	-0.00419	mg/L	0.000020	0.47%
Mo 202.031†	-4.9	-0.00533	mg/L	0.000335	-0.00533	mg/L	0.000335	6.28%
Ni 231.604†	0.7	-0.00254	mg/L	0.000250	-0.00254	mg/L	0.000250	9.88%
Pb 220.353†	-6.2	-0.00203	mg/L	0.000945	-0.00203	mg/L	0.000945	46.60%
Sb 206.836†	-0.2	-0.00366	mg/L	0.000291	-0.00366	mg/L	0.000291	7.96%
Se 196.026†	-5.4	-0.00421	mg/L	0.003118	-0.00421	mg/L	0.003118	74.12%
Si 251.611†	-29.5	-0.0398	mg/L	0.00040	-0.0398	mg/L	0.00040	1.01%
Sn 189.927†	-2.1	-0.00312	mg/L	0.000280	-0.00312	mg/L	0.000280	8.95%
Ti 334.940†	-93.6	-0.00334	mg/L	0.000042	-0.00334	mg/L	0.000042	1.25%
Tl 190.801†	-1.5	-0.00526	mg/L	0.002227	-0.00526	mg/L	0.002227	42.31%
V 290.880†	-85.3	-0.00468	mg/L	0.001368	-0.00468	mg/L	0.001368	29.25%
Zn 206.200†	-2.9	-0.00496	mg/L	0.000170	-0.00496	mg/L	0.000170	3.43%
K 766.490†	-9.3	0.0539	mg/L	0.02470	0.0539	mg/L	0.02470	45.86%

Approved: January 31, 2012

Saturated within auto integration window (code 4)							
Na 589.592†	257.5	0.101 mg/L	0.0232	0.101 mg/L	0.0232	22.94%	
Sr 407.771†	127.3	-0.00516 mg/L	0.000057	-0.00516 mg/L	0.000057	1.11%	
Saturated within auto integration window (code 4)							
Li 670.784†	139.6	-0.00524 mg/L	0.002879	-0.00524 mg/L	0.002879	54.90%	

Sequence No.: 65 **Autosampler Location: 91**
Sample ID: L1201000804 **Date Collected: 1/31/2012 12:13:14 AM**
Analyst: SLP **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1201000804

Analyte	Back Pressure	Flow
All	148.0 kPa	0.50 L/min

Mean Data: L1201000804

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3882485.8						27480.27	0.71%
YRADIAL	110466.9						7470.09	6.76%
Ga 417.206	800586.7						6150.52	0.77%
GaRADIAL	6168.8						2317.34	37.57%
Ag 328.068†	-236.5	-0.00373	mg/L	0.000988	-0.00373	mg/L	0.000988	26.47%
Al 396.153†	-48.4	-0.0757	mg/L	0.01578	-0.0757	mg/L	0.01578	20.84%
As 188.979†	-0.2	0.00422	mg/L	0.003896	0.00422	mg/L	0.003896	92.27%
Ba 233.527†	0.1	-0.00523	mg/L	0.000278	-0.00523	mg/L	0.000278	5.32%
Be 234.861†	58.7	-0.00010	mg/L	0.000049	-0.00010	mg/L	0.000049	48.64%
B 249.677†	-9.1	-0.00340	mg/L	0.000279	-0.00340	mg/L	0.000279	8.21%
Ca 227.546†	3.7	-0.0155	mg/L	0.04529	-0.0155	mg/L	0.04529	291.33%
Cd 228.802†	-3.3	-0.00034	mg/L	0.000061	-0.00034	mg/L	0.000061	18.31%
Co 228.616†	1.2	-0.00038	mg/L	0.000377	-0.00038	mg/L	0.000377	100.08%
Cr 267.716†	4.3	-0.00282	mg/L	0.000076	-0.00282	mg/L	0.000076	2.69%
Cu 327.393†	-67.1	-0.00367	mg/L	0.000680	-0.00367	mg/L	0.000680	18.54%
Fe 239.562†	-0.8	-0.0714	mg/L	0.05596	-0.0714	mg/L	0.05596	78.41%
Mg 279.077†	-1.3	-0.0647	mg/L	0.01763	-0.0647	mg/L	0.01763	27.26%
Mn 257.610†	-29.2	-0.00424	mg/L	0.000018	-0.00424	mg/L	0.000018	0.43%
Mo 202.031†	-2.9	-0.00505	mg/L	0.000499	-0.00505	mg/L	0.000499	9.89%
Ni 231.604†	0.1	-0.00257	mg/L	0.000436	-0.00257	mg/L	0.000436	16.96%
Pb 220.353†	-1.6	-0.00040	mg/L	0.000503	-0.00040	mg/L	0.000503	125.70%
Sb 206.836†	1.2	-0.00205	mg/L	0.001258	-0.00205	mg/L	0.001258	61.29%
Se 196.026†	-6.5	-0.00590	mg/L	0.006977	-0.00590	mg/L	0.006977	118.30%
Si 251.611†	-44.0	-0.0406	mg/L	0.00029	-0.0406	mg/L	0.00029	0.71%
Sn 189.927†	-4.6	-0.00405	mg/L	0.001570	-0.00405	mg/L	0.001570	38.74%
Ti 334.940†	-68.0	-0.00329	mg/L	0.000071	-0.00329	mg/L	0.000071	2.15%
Tl 190.801†	-1.7	-0.00554	mg/L	0.003872	-0.00554	mg/L	0.003872	69.89%
V 290.880†	-59.8	-0.00438	mg/L	0.001233	-0.00438	mg/L	0.001233	28.12%
Zn 206.200†	-4.7	-0.00508	mg/L	0.000263	-0.00508	mg/L	0.000263	5.17%
K 766.490†	-27.6	0.0362	mg/L	0.03929	0.0362	mg/L	0.03929	108.66%
Saturated within auto integration window (code 4)								
Na 589.592†	116.4	0.0724	mg/L	0.04810	0.0724	mg/L	0.04810	66.47%
Sr 407.771†	126.7	-0.00517	mg/L	0.000053	-0.00517	mg/L	0.000053	1.03%
Saturated within auto integration window (code 4)								
Li 670.784†	141.3	-0.00520	mg/L	0.000596	-0.00520	mg/L	0.000596	11.47%

Sequence No.: 66 **Autosampler Location: 92**
Sample ID: L1201000805 **Date Collected: 1/31/2012 12:20:04 AM**
Analyst: SLP **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1201000805

Analyte	Back Pressure	Flow
All	148.0 kPa	0.50 L/min

Mean Data: L1201000805

Approved: January 31, 2012

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3825791.3						48813.41	1.28%
YRADIAL	108627.4						7164.25	6.60%
Ga 417.206	788745.1						14230.78	1.80%
GaRADIAL	5757.7						2185.04	37.95%
Ag 328.068†	-154.0	-0.00308	mg/L	0.000196	-0.00308	mg/L	0.000196	6.35%
Al 396.153†	-66.8	-0.0867	mg/L	0.02847	-0.0867	mg/L	0.02847	32.83%
As 188.979†	1.0	0.00650	mg/L	0.005729	0.00650	mg/L	0.005729	88.08%
Ba 233.527†	-1.3	-0.00528	mg/L	0.000111	-0.00528	mg/L	0.000111	2.10%
Be 234.861†	63.3	-0.00010	mg/L	0.000037	-0.00010	mg/L	0.000037	38.86%
B 249.677†	-19.6	-0.00356	mg/L	0.000305	-0.00356	mg/L	0.000305	8.58%
Ca 227.546†	3.5	-0.0235	mg/L	0.08712	-0.0235	mg/L	0.08712	370.97%
Cd 228.802†	-5.0	-0.00048	mg/L	0.000171	-0.00048	mg/L	0.000171	35.35%
Co 228.616†	-1.7	-0.00066	mg/L	0.000341	-0.00066	mg/L	0.000341	51.49%
Cr 267.716†	-4.8	-0.00296	mg/L	0.000189	-0.00296	mg/L	0.000189	6.39%
Cu 327.393†	-63.6	-0.00363	mg/L	0.000303	-0.00363	mg/L	0.000303	8.35%
Fe 239.562†	0.1	-0.0298	mg/L	0.07272	-0.0298	mg/L	0.07272	243.88%
Mg 279.077†	-0.6	-0.0568	mg/L	0.03580	-0.0568	mg/L	0.03580	62.98%
Mn 257.610†	-31.5	-0.00424	mg/L	0.000034	-0.00424	mg/L	0.000034	0.81%
Mo 202.031†	-4.5	-0.00527	mg/L	0.000383	-0.00527	mg/L	0.000383	7.27%
Ni 231.604†	3.6	-0.00237	mg/L	0.000377	-0.00237	mg/L	0.000377	15.91%
Pb 220.353†	-3.5	-0.00107	mg/L	0.001949	-0.00107	mg/L	0.001949	181.97%
Sb 206.836†	-0.7	-0.00436	mg/L	0.001084	-0.00436	mg/L	0.001084	24.85%
Se 196.026†	-2.9	-0.00028	mg/L	0.004458	-0.00028	mg/L	0.004458	>999.9%
Si 251.611†	-38.9	-0.0403	mg/L	0.00036	-0.0403	mg/L	0.00036	0.88%
Sn 189.927†	-5.5	-0.00441	mg/L	0.000609	-0.00441	mg/L	0.000609	13.81%
Ti 334.940†	-129.4	-0.00341	mg/L	0.000130	-0.00341	mg/L	0.000130	3.81%
Tl 190.801†	1.6	-0.00163	mg/L	0.004973	-0.00163	mg/L	0.004973	305.77%
V 290.880†	-85.9	-0.00469	mg/L	0.000399	-0.00469	mg/L	0.000399	8.52%
Zn 206.200†	-5.7	-0.00516	mg/L	0.000047	-0.00516	mg/L	0.000047	0.91%
K 766.490†	-36.9	0.0271	mg/L	0.04864	0.0271	mg/L	0.04864	179.33%
Saturated within auto integration window (code 4)								
Na 589.592†	157.6	0.0808	mg/L	0.02194	0.0808	mg/L	0.02194	27.16%
Sr 407.771†	131.2	-0.00517	mg/L	0.000082	-0.00517	mg/L	0.000082	1.59%
Saturated within auto integration window (code 4)								
Li 670.784†	124.3	-0.00567	mg/L	0.005707	-0.00567	mg/L	0.005707	100.63%

Sequence No.: 67 **Autosampler Location: 93**
Sample ID: L1201000806 **Date Collected: 1/31/2012 12:26:55 AM**
Analyst: SLP **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1201000806

Analyte	Back Pressure	Flow
All	148.0 kPa	0.50 L/min

Mean Data: L1201000806

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3843563.9						8847.72	0.23%
YRADIAL	109415.7						7177.00	6.56%
Ga 417.206	793065.9						3108.87	0.39%
GaRADIAL	5704.7						2229.88	39.09%
Ag 328.068†	-230.2	-0.00368	mg/L	0.000271	-0.00368	mg/L	0.000271	7.36%
Al 396.153†	-65.2	-0.0858	mg/L	0.02216	-0.0858	mg/L	0.02216	25.83%
As 188.979†	0.0	0.00464	mg/L	0.003006	0.00464	mg/L	0.003006	64.80%
Ba 233.527†	6.6	-0.00502	mg/L	0.000089	-0.00502	mg/L	0.000089	1.77%
Be 234.861†	52.2	-0.00014	mg/L	0.000037	-0.00014	mg/L	0.000037	27.71%
B 249.677†	-30.4	-0.00384	mg/L	0.000532	-0.00384	mg/L	0.000532	13.83%
Ca 227.546†	5.7	0.00710	mg/L	0.002652	0.00710	mg/L	0.002652	37.35%
Cd 228.802†	-3.5	-0.00035	mg/L	0.000073	-0.00035	mg/L	0.000073	20.82%
Co 228.616†	-3.5	-0.00084	mg/L	0.000036	-0.00084	mg/L	0.000036	4.23%
Cr 267.716†	10.3	-0.00272	mg/L	0.000125	-0.00272	mg/L	0.000125	4.60%
Cu 327.393†	-43.9	-0.00343	mg/L	0.000321	-0.00343	mg/L	0.000321	9.36%
Fe 239.562†	0.5	-0.0103	mg/L	0.12569	-0.0103	mg/L	0.12569	>999.9%
Mg 279.077†	0.2	-0.0467	mg/L	0.03382	-0.0467	mg/L	0.03382	72.37%
Mn 257.610†	-22.2	-0.00420	mg/L	0.000023	-0.00420	mg/L	0.000023	0.56%

Approved: January 31, 2012

Mo 202.031†	-4.7	-0.00530	mg/L	0.000532	-0.00530	mg/L	0.000532	10.04%
Ni 231.604†	-0.0	-0.00257	mg/L	0.000264	-0.00257	mg/L	0.000264	10.26%
Pb 220.353†	0.5	0.00030	mg/L	0.002048	0.00030	mg/L	0.002048	688.08%
Sb 206.836†	0.4	-0.00302	mg/L	0.001544	-0.00302	mg/L	0.001544	51.08%
Se 196.026†	-2.0	0.00101	mg/L	0.006275	0.00101	mg/L	0.006275	621.84%
Si 251.611†	-36.8	-0.0402	mg/L	0.00016	-0.0402	mg/L	0.00016	0.40%
Sn 189.927†	-2.9	-0.00343	mg/L	0.000798	-0.00343	mg/L	0.000798	23.30%
Ti 334.940†	-84.4	-0.00332	mg/L	0.000120	-0.00332	mg/L	0.000120	3.63%
Tl 190.801†	-2.4	-0.00636	mg/L	0.001495	-0.00636	mg/L	0.001495	23.50%
V 290.880†	-54.3	-0.00432	mg/L	0.002428	-0.00432	mg/L	0.002428	56.17%
Zn 206.200†	-4.1	-0.00504	mg/L	0.000115	-0.00504	mg/L	0.000115	2.28%
K 766.490†	-46.6	0.0178	mg/L	0.06375	0.0178	mg/L	0.06375	358.42%
Saturated within auto integration window (code 4)								
Na 589.592†	213.3	0.0921	mg/L	0.05962	0.0921	mg/L	0.05962	64.70%
Sr 407.771†	132.0	-0.00518	mg/L	0.000067	-0.00518	mg/L	0.000067	1.29%
Saturated within auto integration window (code 4)								
Li 670.784†	437.3	0.00311	mg/L	0.002277	0.00311	mg/L	0.002277	73.09%

Sequence No.: 68 **Autosampler Location: 94**
Sample ID: L1201000807 **Date Collected: 1/31/2012 12:33:47 AM**
Analyst: SLP **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1201000807

Analyte	Back Pressure	Flow
All	148.0 kPa	0.50 L/min

Mean Data: L1201000807

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3771103.1						69956.24	1.86%
YRADIAL	108278.7						6289.50	5.81%
Ga 417.206	774599.9						13728.91	1.77%
GaRADIAL	5616.2						2085.02	37.13%
Ag 328.068†	-265.4	-0.00396	mg/L	0.000809	-0.00396	mg/L	0.000809	20.42%
Al 396.153†	-58.6	-0.0818	mg/L	0.01032	-0.0818	mg/L	0.01032	12.61%
As 188.979†	0.4	0.00539	mg/L	0.003456	0.00539	mg/L	0.003456	64.08%
Ba 233.527†	-3.9	-0.00536	mg/L	0.000099	-0.00536	mg/L	0.000099	1.84%
Be 234.861†	48.5	-0.00013	mg/L	0.000034	-0.00013	mg/L	0.000034	25.13%
B 249.677†	-20.9	-0.00385	mg/L	0.000459	-0.00385	mg/L	0.000459	11.92%
Ca 227.546†	2.1	-0.0383	mg/L	0.06385	-0.0383	mg/L	0.06385	166.62%
Cd 228.802†	-4.4	-0.00043	mg/L	0.000084	-0.00043	mg/L	0.000084	19.54%
Co 228.616†	-2.3	-0.00071	mg/L	0.000136	-0.00071	mg/L	0.000136	19.01%
Cr 267.716†	8.1	-0.00276	mg/L	0.000220	-0.00276	mg/L	0.000220	7.99%
Cu 327.393†	-9.7	-0.00308	mg/L	0.001079	-0.00308	mg/L	0.001079	34.98%
Fe 239.562†	-1.1	-0.0819	mg/L	0.08043	-0.0819	mg/L	0.08043	98.22%
Mg 279.077†	0.3	-0.0459	mg/L	0.01158	-0.0459	mg/L	0.01158	25.26%
Mn 257.610†	-38.1	-0.00427	mg/L	0.000007	-0.00427	mg/L	0.000007	0.16%
Mo 202.031†	-8.0	-0.00576	mg/L	0.000689	-0.00576	mg/L	0.000689	11.97%
Ni 231.604†	5.6	-0.00225	mg/L	0.000146	-0.00225	mg/L	0.000146	6.48%
Pb 220.353†	-4.7	-0.00150	mg/L	0.001723	-0.00150	mg/L	0.001723	114.52%
Sb 206.836†	1.5	-0.00174	mg/L	0.001173	-0.00174	mg/L	0.001173	67.28%
Se 196.026†	-7.1	-0.00682	mg/L	0.003814	-0.00682	mg/L	0.003814	55.96%
Si 251.611†	-32.0	-0.0399	mg/L	0.00004	-0.0399	mg/L	0.00004	0.10%
Sn 189.927†	-3.9	-0.00381	mg/L	0.000553	-0.00381	mg/L	0.000553	14.50%
Ti 334.940†	-182.8	-0.00353	mg/L	0.000073	-0.00353	mg/L	0.000073	2.06%
Tl 190.801†	-1.9	-0.00576	mg/L	0.002309	-0.00576	mg/L	0.002309	40.10%
V 290.880†	-3.0	-0.00372	mg/L	0.001374	-0.00372	mg/L	0.001374	36.97%
Zn 206.200†	-5.7	-0.00515	mg/L	0.000030	-0.00515	mg/L	0.000030	0.57%
K 766.490†	-47.7	0.0167	mg/L	0.02830	0.0167	mg/L	0.02830	169.36%
Saturated within auto integration window (code 4)								
Na 589.592†	92.1	0.0674	mg/L	0.04198	0.0674	mg/L	0.04198	62.27%
Sr 407.771†	132.7	-0.00516	mg/L	0.000068	-0.00516	mg/L	0.000068	1.31%
Saturated within auto integration window (code 4)								
Li 670.784†	121.8	-0.00574	mg/L	0.001238	-0.00574	mg/L	0.001238	21.55%

Sequence No.: 69 **Autosampler Location: 6**

Approved: January 31, 2012

Sample ID: CCV
Analyst:
Initial Sample Wt:
Dilution:

Date Collected: 1/31/2012 12:40:38 AM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: CCV

Analyte	Back Pressure	Flow
All	148.0 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	3787083.2						21995.05	0.58%
YRADIAL	109671.0						3918.00	3.57%
Ga 417.206	844552.6						9333.23	1.11%
GaRADIAL	5799.1						2079.52	35.86%
Ag 328.068†	47981.0	0.381	mg/L	0.0065	0.381	mg/L	0.0065	1.69%
QC value within limits for Ag 328.068 Recovery = 95.26%								
Al 396.153†	14830.8	8.86	mg/L	0.320	8.86	mg/L	0.320	3.62%
QC value less than the lower limit for Al 396.153 Recovery = 88.58%								
As 188.979†	208.3	0.374	mg/L	0.0113	0.374	mg/L	0.0113	3.03%
QC value within limits for As 188.979 Recovery = 93.40%								
Ba 233.527†	30499.0	0.992	mg/L	0.0191	0.992	mg/L	0.0191	1.92%
QC value within limits for Ba 233.527 Recovery = 99.21%								
Be 234.861†	14760.5	0.0484	mg/L	0.00097	0.0484	mg/L	0.00097	1.99%
QC value within limits for Be 234.861 Recovery = 96.89%								
B 249.677†	13720.7	0.479	mg/L	0.0117	0.479	mg/L	0.0117	2.45%
QC value within limits for B 249.677 Recovery = 95.88%								
Ca 227.546†	642.2	9.50	mg/L	0.058	9.50	mg/L	0.058	0.61%
QC value within limits for Ca 227.546 Recovery = 95.03%								
Cd 228.802†	524.0	0.0481	mg/L	0.00027	0.0481	mg/L	0.00027	0.57%
QC value within limits for Cd 228.802 Recovery = 96.10%								
Co 228.616†	1990.3	0.193	mg/L	0.0004	0.193	mg/L	0.0004	0.20%
QC value within limits for Co 228.616 Recovery = 96.72%								
Cr 267.716†	31035.1	0.487	mg/L	0.0090	0.487	mg/L	0.0090	1.86%
QC value within limits for Cr 267.716 Recovery = 97.43%								
Cu 327.393†	46583.2	0.474	mg/L	0.0068	0.474	mg/L	0.0068	1.44%
QC value within limits for Cu 327.393 Recovery = 94.82%								
Fe 239.562†	84.1	3.81	mg/L	0.181	3.81	mg/L	0.181	4.76%
QC value within limits for Fe 239.562 Recovery = 95.26%								
Mg 279.077†	918.3	11.4	mg/L	0.65	11.4	mg/L	0.65	5.66%
QC value greater than the upper limit for Mg 279.077 Recovery = 113.99%								
Mn 257.610†	128682.9	0.498	mg/L	0.0089	0.498	mg/L	0.0089	1.79%
QC value within limits for Mn 257.610 Recovery = 99.67%								
Mo 202.031†	6960.5	0.971	mg/L	0.0116	0.971	mg/L	0.0116	1.20%
QC value within limits for Mo 202.031 Recovery = 97.12%								
Ni 231.604†	8489.0	0.491	mg/L	0.0078	0.491	mg/L	0.0078	1.60%
QC value within limits for Ni 231.604 Recovery = 98.19%								
Pb 220.353†	1403.7	0.494	mg/L	0.0007	0.494	mg/L	0.0007	0.15%
QC value within limits for Pb 220.353 Recovery = 98.79%								
Sb 206.836†	962.3	1.16	mg/L	0.010	1.16	mg/L	0.010	0.89%
QC value within limits for Sb 206.836 Recovery = 96.32%								
Se 196.026†	246.3	0.386	mg/L	0.0027	0.386	mg/L	0.0027	0.70%
QC value within limits for Se 196.026 Recovery = 96.55%								
Si 251.611†	87926.4	4.81	mg/L	0.090	4.81	mg/L	0.090	1.87%
QC value within limits for Si 251.611 Recovery = 96.19%								
Sn 189.927†	2593.5	0.982	mg/L	0.0030	0.982	mg/L	0.0030	0.31%
QC value within limits for Sn 189.927 Recovery = 98.24%								
Ti 334.940†	475439.9	0.998	mg/L	0.0020	0.998	mg/L	0.0020	0.20%
QC value within limits for Ti 334.940 Recovery = 99.84%								
Tl 190.801†	426.2	0.499	mg/L	0.0024	0.499	mg/L	0.0024	0.48%
QC value within limits for Tl 190.801 Recovery = 99.89%								
V 290.880†	83780.7	0.975	mg/L	0.0186	0.975	mg/L	0.0186	1.91%
QC value within limits for V 290.880 Recovery = 97.46%								
Zn 206.200†	13658.0	0.975	mg/L	0.0177	0.975	mg/L	0.0177	1.81%
QC value within limits for Zn 206.200 Recovery = 97.46%								
K 766.490†	35513.1	35.3	mg/L	2.23	35.3	mg/L	2.23	6.31%
QC value less than the lower limit for K 766.490 Recovery = 70.64%								
Na 589.592†	273956.4	60.2	mg/L	8.60	60.2	mg/L	8.60	14.28%
QC value greater than the upper limit for Na 589.592 Recovery = 120.47%								

Approved: January 31, 2012

```
Sr 407.771†          175143.7       0.322 mg/L        0.1016       0.322 mg/L        0.1016  31.55%
   QC value less than the lower limit for Sr 407.771  Recovery = 32.21%
Li 670.784†           43225.1        1.20 mg/L         0.092        1.20 mg/L         0.092   7.60%
   QC value greater than the upper limit for Li 670.784  Recovery = 120.44%
QC Failed.  Continue with analysis.
```

Sequence No.: 70 **Autosampler Location: 1**
Sample ID: CCB **Date Collected: 1/31/2012 12:47:30 AM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: CCB

Analyte	Back Pressure	Flow
All	148.0 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	3734499.5						34110.77	0.91%
YRADIAL	109919.8						4194.35	3.82%
Ga 417.206	769444.0						6996.80	0.91%
GaRADIAL	5333.5						1992.30	37.35%
Ag 328.068†	-194.1	-0.00339	mg/L	0.000267	-0.00339	mg/L	0.000267	7.86%
QC value within limits for Ag 328.068 Recovery = Not calculated								
Al 396.153†	-68.9	-0.0880	mg/L	0.01679	-0.0880	mg/L	0.01679	19.08%
QC value within limits for Al 396.153 Recovery = Not calculated								
As 188.979†	-1.4	0.00220	mg/L	0.003004	0.00220	mg/L	0.003004	136.78%
QC value within limits for As 188.979 Recovery = Not calculated								
Ba 233.527†	0.2	-0.00522	mg/L	0.000105	-0.00522	mg/L	0.000105	2.00%
QC value less than the lower limit for Ba 233.527 Recovery = Not calculated								
Be 234.861†	36.8	-0.00018	mg/L	0.000040	-0.00018	mg/L	0.000040	22.20%
QC value within limits for Be 234.861 Recovery = Not calculated								
B 249.677†	64.3	-0.00063	mg/L	0.000850	-0.00063	mg/L	0.000850	134.09%
QC value within limits for B 249.677 Recovery = Not calculated								
Ca 227.546†	0.4	-0.0696	mg/L	0.03384	-0.0696	mg/L	0.03384	48.62%
QC value within limits for Ca 227.546 Recovery = Not calculated								
Cd 228.802†	-4.3	-0.00043	mg/L	0.000208	-0.00043	mg/L	0.000208	48.52%
QC value within limits for Cd 228.802 Recovery = Not calculated								
Co 228.616†	-1.6	-0.00065	mg/L	0.000275	-0.00065	mg/L	0.000275	42.20%
QC value within limits for Co 228.616 Recovery = Not calculated								
Cr 267.716†	10.3	-0.00272	mg/L	0.000125	-0.00272	mg/L	0.000125	4.60%
QC value within limits for Cr 267.716 Recovery = Not calculated								
Cu 327.393†	-107.3	-0.00408	mg/L	0.000823	-0.00408	mg/L	0.000823	20.19%
QC value within limits for Cu 327.393 Recovery = Not calculated								
Fe 239.562†	0.1	-0.0260	mg/L	0.08074	-0.0260	mg/L	0.08074	310.59%
QC value within limits for Fe 239.562 Recovery = Not calculated								
Mg 279.077†	-1.9	-0.0725	mg/L	0.01591	-0.0725	mg/L	0.01591	21.95%
QC value within limits for Mg 279.077 Recovery = Not calculated								
Mn 257.610†	-5.4	-0.00414	mg/L	0.000017	-0.00414	mg/L	0.000017	0.42%
QC value within limits for Mn 257.610 Recovery = Not calculated								
Mo 202.031†	-1.5	-0.00485	mg/L	0.000126	-0.00485	mg/L	0.000126	2.60%
QC value within limits for Mo 202.031 Recovery = Not calculated								
Ni 231.604†	6.2	-0.00222	mg/L	0.000339	-0.00222	mg/L	0.000339	15.27%
QC value within limits for Ni 231.604 Recovery = Not calculated								
Pb 220.353†	-3.0	-0.00092	mg/L	0.001439	-0.00092	mg/L	0.001439	156.35%
QC value within limits for Pb 220.353 Recovery = Not calculated								
Sb 206.836†	0.2	-0.00326	mg/L	0.003425	-0.00326	mg/L	0.003425	105.07%
QC value within limits for Sb 206.836 Recovery = Not calculated								
Se 196.026†	-1.8	0.00131	mg/L	0.008031	0.00131	mg/L	0.008031	613.00%
QC value within limits for Se 196.026 Recovery = Not calculated								
Si 251.611†	-15.3	-0.0390	mg/L	0.00049	-0.0390	mg/L	0.00049	1.26%
QC value within limits for Si 251.611 Recovery = Not calculated								
Sn 189.927†	0.3	-0.00219	mg/L	0.000765	-0.00219	mg/L	0.000765	34.99%
QC value within limits for Sn 189.927 Recovery = Not calculated								
Ti 334.940†	41.6	-0.00305	mg/L	0.000143	-0.00305	mg/L	0.000143	4.67%
QC value within limits for Ti 334.940 Recovery = Not calculated								
Tl 190.801†	-0.4	-0.00395	mg/L	0.003662	-0.00395	mg/L	0.003662	92.83%
QC value within limits for Tl 190.801 Recovery = Not calculated								

Approved: January 31, 2012

```
V 290.880†                60.2    -0.00298 mg/L      0.001726    -0.00298 mg/L      0.001726  57.83%
   QC value within limits for V 290.880  Recovery = Not calculated
Zn 206.200†               -6.3    -0.00520 mg/L      0.000148    -0.00520 mg/L      0.000148   2.84%
   QC value within limits for Zn 206.200  Recovery = Not calculated
K 766.490†                10.1      0.0727 mg/L       0.03394      0.0727 mg/L       0.03394  46.70%
   Saturated within auto integration window (code 4)
   QC value within limits for K 766.490  Recovery = Not calculated
Na 589.592†               472.4       0.145 mg/L        0.0302       0.145 mg/L        0.0302  20.81%
   QC value within limits for Na 589.592  Recovery = Not calculated
Sr 407.771†              180.1    -0.00508 mg/L      0.000037    -0.00508 mg/L      0.000037   0.74%
   Saturated within auto integration window (code 4)
   QC value within limits for Sr 407.771  Recovery = Not calculated
Li 670.784†              336.7     0.00029 mg/L      0.010638     0.00029 mg/L      0.010638 >999.9%
   QC value within limits for Li 670.784  Recovery = Not calculated
QC Failed.  Continue with analysis.
```

Approved: January 31, 2012

2.1.2 Metals ICP-MS Data

2.1.2.1 Summary Data

Login Number: L12010651
Department: Metals
Analyst: Erin Long

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: WG388019 - All acceptance criteria were met.

Matrix Spikes: WG388019 - Sample 01 was chosen by the client for MS/MSD analysis. Samples 02(MS) and 03(MSD) met all acceptance criteria.

SAMPLES

Samples: All acceptance criteria were met.

Narrative ID: 41438
Approved By: Maren Beery
Maren Beery

Microbac

Lab Report #: L12010651
Lab Project #: 3005.011
Project Name: White Sands MR
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L12010651-01	**PrePrep Method:**	N/A	**Instrument:**	ELAN-ICP
Client ID:	MPL-16-0112-1	**Prep Method:**	3015	**Prep Date:**	01/26/2012 06:32
Matrix:	Water	**Analytical Method:**	6020	**Cal Date:**	01/28/2012 10:56
Workgroup #:	WG388019	**Analyst:**	EDL	**Run Date:**	01/28/2012 12:50
Collect Date:	01/24/2012 14:20	**Dilution:**	1	**File ID:**	EL.012812.125020
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Antimony, Total	7440-36-0		U	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00280		0.00100	0.000500
Barium, Total	7440-39-3	0.0653		0.00300	0.00150
Cadmium, Total	7440-43-9		U	0.000600	0.000300
Chromium, Total	7440-47-3	0.00227		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
Nickel, Total	7440-02-0	0.00218	J	0.00400	0.00200
Selenium, Total	7782-49-2	0.00998		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 #:	L12010651-02	**PrePrep Method:**	N/A	**Instrument:**	ELAN-ICP
Client ID:	MPL-16-0112-MS	**Prep Method:**	3015	**Prep Date:**	01/26/2012 06:32
Matrix:	Water	**Analytical Method:**	6020	**Cal Date:**	01/28/2012 10:56
Workgroup #:	WG388019	**Analyst:**	EDL	**Run Date:**	01/28/2012 12:58
Collect Date:	01/24/2012 14:20	**Dilution:**	1	**File ID:**	EL.012812.125807
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Antimony, Total	7440-36-0	0.0641		0.00100	0.000500
Arsenic, Total	7440-38-2	0.0627		0.00100	0.000500
Barium, Total	7440-39-3	0.125		0.00300	0.00150
Cadmium, Total	7440-43-9	0.0626		0.000600	0.000300
Chromium, Total	7440-47-3	0.0638		0.00200	0.00100
Cobalt, Total	7440-48-4	0.0625		0.00100	0.000500
Copper, Total	7440-50-8	0.0641		0.00200	0.00100
Lead, Total	7439-92-1	0.0646		0.00100	0.000500
Nickel, Total	7440-02-0	0.0642		0.00400	0.00200
Selenium, Total	7782-49-2	0.0639		0.00100	0.000500
Silver, Total	7440-22-4	0.0564		0.00100	0.000500
Thallium, Total	7440-28-0	0.0630		0.000200	0.000100

Sample #:	L12010651-03	**PrePrep Method:**	N/A	**Instrument:**	ELAN-ICP
Client ID:	MPL-16-0112-MSD	**Prep Method:**	3015	**Prep Date:**	01/26/2012 06:32
Matrix:	Water	**Analytical Method:**	6020	**Cal Date:**	01/28/2012 10:56
Workgroup #:	WG388019	**Analyst:**	EDL	**Run Date:**	01/28/2012 13:11
Collect Date:	01/24/2012 14:20	**Dilution:**	1	**File ID:**	EL.012812.131104
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Antimony, Total	7440-36-0	0.0647		0.00100	0.000500
Arsenic, Total	7440-38-2	0.0635		0.00100	0.000500
Barium, Total	7440-39-3	0.128		0.00300	0.00150
Cadmium, Total	7440-43-9	0.0613		0.000600	0.000300
Chromium, Total	7440-47-3	0.0649		0.00200	0.00100
Cobalt, Total	7440-48-4	0.0629		0.00100	0.000500
Copper, Total	7440-50-8	0.0649		0.00200	0.00100
Lead, Total	7439-92-1	0.0636		0.00100	0.000500
Nickel, Total	7440-02-0	0.0640		0.00400	0.00200
Selenium, Total	7782-49-2	0.0660		0.00100	0.000500
Silver, Total	7440-22-4	0.0597		0.00100	0.000500

Certificate of Analysis

Analyte	CAS #	Result	Qual	LOQ	LOD
Thallium, Total	7440-28-0	0.0618		0.000200	0.000100

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: WG387967
Analyst: VC
Spike Analyst: VC
Run Date: 01/26/2012 06:32
Method: 3015
Balance: BAL016
Instrument: MW-2

SOP: ME407 Revison 12
Spike Solution: STD47574
Spike Witness: REK
HNO3 Lot #: COA15827
Digestion Tubes Lot #: COA15882
MS FILTERS- WG375661 Lot COA15665

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Initial Vessel Wt	Final Vessel Wt	Spike Amount	Due Date
1	WG387967-04	BLANK	1	40 mL	100 mL	208.173 g	208.164 g		
2	WG387942-01	FBLK	18	40 mL	100 mL	208.837 g	208.829 g		
3	WG387967-05	LCS	1	40 mL	100 mL	208.738 g	208.727 g	.25 mL	
4	WG387967-01	REF	2	40 mL	100 mL	207.111 g	207.105 g		
5	L12010605-01	SAMP	2	40 mL	100 mL	207.111 g	207.105 g		02/03/12
6	L12010605-02	SAMP	2	40 mL	100 mL	206.766 g	206.738 g		02/03/12
7	L12010613-01	SAMP	1	40 mL	100 mL	209.048 g	209.041 g		02/03/12
8	L12010616-01	SAMP	1	40 mL	100 mL	209.933 g	209.923 g		02/03/12
9	L12010616-02	SAMP	1	40 mL	100 mL	206.991 g	206.977 g		02/03/12
10	WG387967-02	REF	1	40 mL	100 mL	207.691 g	207.684 g		
11	L12010651-01	RS01	1	40 mL	100 mL	207.691 g	207.684 g		02/03/12
12	WG387967-08	MS	1	40 mL	100 mL	208.583 g	208.575 g	.25 mL	
13	L12010651-02	MS01	1	40 mL	100 mL	208.583 g	208.575 g	.25 mL	02/03/12
14	WG387967-09	MSD	1	40 mL	100 mL	206.322 g	206.31 g	.25 mL	
15	L12010651-03	SD01	1	40 mL	100 mL	206.322 g	206.31 g	.25 mL	02/03/12
16	L12010652-01	SAMP	1	40 mL	100 mL	206.976 g	206.968 g		02/03/12
17	L12010652-02	SAMP	1	40 mL	100 mL	207.599 g	207.593 g		02/03/12
18	L12010653-02	SAMP	18	40 mL	100 mL	206.651 g	206.643 g		01/30/12
19	WG387967-03	REF	2	40 mL	100 mL	206.43 g	206.425 g		
20	L12010675-01	SAMP	2	40 mL	100 mL	206.43 g	206.425 g		01/27/12
21	WG387967-06	MS	1	40 mL	100 mL	209.375 g	209.364 g	.25 mL	
22	WG387967-07	MSD	1	40 mL	100 mL	206.518 g	206.51 g	.25 mL	
23	WG387967-10	DUP	1	40 mL	100 mL	206.864 g	206.851 g		

Analyst: Vicki Collins

Reviewer:

MW_DIG - Modified 09/30/2009
PDF ID: 2289879
Report generated: 01/30/2012 12:44

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ELAN-ICP Dataset: 012812A.REP
Analyst1: EDL Analyst2: N/A
Method: 6020 SOP: ME700 Rev: 7
Maintenance Log ID: 40439

Calibration Std: STD49730 ICV Std: STD49511 Post Spike: STD47984
ICSA: STD49577 ICSAB: STD49578 Int. Std: STD49729
CCV: STD49677 LLCCV: STD49510

Workgroups: 388019, 388129, 387531, 387809, 384033

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	EL.012812.102553	Blank	Blank		1		01/28/12 10:25
2	EL.012812.103339	WG388229-01	Calibration Point		1		01/28/12 10:33
3	EL.012812.104125	WG388229-02	Calibration Point		1		01/28/12 10:41
4	EL.012812.104912	WG388229-03	Calibration Point		1		01/28/12 10:49
5	EL.012812.105659	WG388229-04	Calibration Point		1		01/28/12 10:56
6	EL.012812.110445	WG388229-05	Initial Calibration Verification		1		01/28/12 11:04
7	EL.012812.111221	WG388229-06	Initial Calib Blank		1		01/28/12 11:12
8	EL.012812.111959	WG388229-07	Low Level Initial Calibration V		1		01/28/12 11:19
9	EL.012812.113445	WG388229-08	Low Level Initial Calibration V		1		01/28/12 11:34
10	EL.012812.114224	WG388229-09	Interference Check		1		01/28/12 11:42
11	EL.012812.115002	WG388229-10	Interference Check		1		01/28/12 11:50
12	EL.012812.115741	WG388229-11	CCV		1		01/28/12 11:57
13	EL.012812.120518	WG388229-12	CCB		1		01/28/12 12:05
14	EL.012812.121253	WG388229-13	CCB		1		01/28/12 12:12
15	EL.012812.122701	WG387967-04	Method/Prep Blank	40/100	1		01/28/12 12:27
16	EL.012812.123447	WG387967-05	Laboratory Control S	40/100	1		01/28/12 12:34
17	EL.012812.124233	L12010613-01	MPL28-0112-1	40/100	1		01/28/12 12:42
18	EL.012812.125020	L12010651-01	MPL-16-0112-1		1	WG387967-02	01/28/12 12:50
19	EL.012812.125807	WG387967-08	Matrix Spike	40/100	1	L12010651-01	01/28/12 12:58
20	EL.012812.131104	WG387967-09	Matrix Spike Duplica	40/100	1	L12010651-01	01/28/12 13:11
21	EL.012812.131851	L12010652-01	MPL13-0112-1	40/100	1		01/28/12 13:18
22	EL.012812.132639	L12010652-02	MPL10-0112-1	40/100	1		01/28/12 13:26
23	EL.012812.133428	WG388019-04	Post Digestion Spike		1	L12010652-02	01/28/12 13:34
24	EL.012812.134216	WG388019-05	Serial Dilution		5	L12010652-02	01/28/12 13:42
25	EL.012812.135005	WG388229-14	CCV		1		01/28/12 13:50
26	EL.012812.135741	WG388229-15	CCB		1		01/28/12 13:57
27	EL.012812.140518	WG388092-02	Method/Prep Blank	.5/200	1		01/28/12 14:05
28	EL.012812.141306	WG388092-03	Laboratory Control S	.5/200	1		01/28/12 14:13
29	EL.012812.142051	L12010715-01	1109-112-C-001	.52/200	5		01/28/12 14:20
30	EL.012812.142837	L12010715-02	1109-112-C-002	.5/200	5		01/28/12 14:28
31	EL.012812.143623	L12010715-03	1109-112-C-003	.516/200	5		01/28/12 14:36
32	EL.012812.144410	L12010715-04	1109-112-C-004	.526/200	5		01/28/12 14:44
33	EL.012812.145157	L12010715-05	1109-112-C-005	.523/200	5		01/28/12 14:51
34	EL.012812.145944	L12010715-06	1109-112-C-006	.52/200	5		01/28/12 14:59

Page: 1 Approved: January 30, 2012

Maren Berry

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ELAN-ICP Dataset: 012812A.REP
Analyst1: EDL Analyst2: N/A
Method: 6020 SOP: ME700 Rev: 7
Maintenance Log ID: 40439

Calibration Std: STD49730 ICV Std: STD49511 Post Spike: STD47984
ICSA: STD49577 ICSAB: STD49578 Int. Std: STD49729
CCV: STD49677 LLCCV: STD49510

Workgroups: 388019, 388129, 387531, 387809, 384033

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	EL.012812.150731	WG388129-01	Post Digestion Spike		5	L12010715-06	01/28/12 15:07
36	EL.012812.151519	WG388129-02	Serial Dilution		25	L12010715-06	01/28/12 15:15
37	EL.012812.152307	WG388229-16	CCV		1		01/28/12 15:23
38	EL.012812.153044	WG388229-17	CCB		1		01/28/12 15:30
39	EL.012812.153820	L12010715-07	1109-112-C-007	.502/200	5		01/28/12 15:38
40	EL.012812.154609	L12010715-08	1109-112-C-008	.523/200	5		01/28/12 15:46
41	EL.012812.155357	L12010715-09	1109-112-C-009	.515/200	5		01/28/12 15:53
42	EL.012812.160144	L12010715-10	1109-112-C-010	.512/200	5		01/28/12 16:01
43	EL.012812.160930	L12010715-11	1109-112-C-011	.516/200	5		01/28/12 16:09
44	EL.012812.161716	L12010715-12	1109-112-C-012	.504/200	5		01/28/12 16:17
45	EL.012812.162502	L12010715-13	1109-112-C-013	.532/200	5		01/28/12 16:25
46	EL.012812.163249	L12010715-14	1109-112-C-014	.505/200	5		01/28/12 16:32
47	EL.012812.164035	L12010715-15	1109-112-C-015	.524/200	5		01/28/12 16:40
48	EL.012812.164823	L12010715-16	1109-112-C-016	.514/200	5		01/28/12 16:48
49	EL.012812.165610	WG388229-18	CCV		1		01/28/12 16:56
50	EL.012812.170347	WG388229-19	CCB		1		01/28/12 17:03
51	EL.012812.171124	WG388092-01	Reference Sample		5	L12010715-17	01/28/12 17:11
52	EL.012812.171911	WG388092-04	Matrix Spike	.543/200	5	L12010715-17	01/28/12 17:19
53	EL.012812.172659	WG388092-05	Matrix Spike Duplica	.543/200	5	L12010715-17	01/28/12 17:26
54	EL.012812.173447	WG388229-20	CCV		1		01/28/12 17:34
55	EL.012812.174224	WG388229-21	CCB		1		01/28/12 17:42
56	EL.012812.175001	WG387506-02	Method/Prep Blank	40/100	1		01/28/12 17:50
57	EL.012812.175750	WG387506-03	Laboratory Control S	40/100	1		01/28/12 17:57
58	EL.012812.180537	L12010479-01	MP05-0112-1	40/100	1		01/28/12 18:05
59	EL.012812.181323	L12010503-02	LF014CP0740112	40/100	5		01/28/12 18:13
60	EL.012812.182109	L12010503-03	LF012CP1020112	40/100	5		01/28/12 18:21
61	EL.012812.182855	L12010503-04	WP022CP1150112	40/100	5		01/28/12 18:28
62	EL.012812.183642	L12010503-05	SS002CP0270112	40/100	5		01/28/12 18:36
63	EL.012812.184428	WG387531-03	Post Digestion Spike		5	L12010503-05	01/28/12 18:44
64	EL.012812.185216	WG387531-04	Serial Dilution		25	L12010503-05	01/28/12 18:52
65	EL.012812.190003	WG388229-22	CCV		1		01/28/12 19:00
66	EL.012812.190740	WG388229-23	CCB		1		01/28/12 19:07
67	EL.012812.191516	WG387506-01	Reference Sample		5	L12010503-06	01/28/12 19:15
68	EL.012812.192304	WG387506-04	Matrix Spike	40/100	5	L12010503-06	01/28/12 19:23

Page: 2 Approved: January 30, 2012

Marcia Berry

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ELAN-ICP Dataset: 012812A.REP
Analyst1: EDL Analyst2: N/A
Method: 6020 SOP: ME700 Rev: 7
Maintenance Log ID: 40439

Calibration Std: STD49730 ICV Std: STD49511 Post Spike: STD47984
ICSA: STD49577 ICSAB: STD49578 Int. Std: STD49729
CCV: STD49677 LLCCV: STD49510

Workgroups: 388019, 388129, 387531, 387809, 384033

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	EL.012812.193052	WG387506-05	Matrix Spike Duplica	40/100	5	L12010503-06	01/28/12 19:30
70	EL.012812.193840	WG388229-24	CCV		1		01/28/12 19:38
71	EL.012812.194617	WG388229-25	CCB		1		01/28/12 19:46
72	EL.012812.195355	WG388229-26	Low Level Continuing Calibra		1		01/28/12 19:53
73	EL.012812.200134	WG387787-02	Method/Prep Blank	40/100	1		01/28/12 20:01
74	EL.012812.200922	WG387787-03	Laboratory Control S	40/100	1		01/28/12 20:09
75	EL.012812.201710	WG387787-01	Reference Sample		1	L12010536-01	01/28/12 20:17
76	EL.012812.202456	WG387787-04	Matrix Spike	40/100	1	L12010536-01	01/28/12 20:24
77	EL.012812.203243	WG387787-05	Matrix Spike Duplica	40/100	1	L12010536-01	01/28/12 20:32
78	EL.012812.204029	L12010536-02	MPL07-0112-1	40/100	1		01/28/12 20:40
79	EL.012812.204815	L12010536-03	MPL07-0112-2	40/100	1		01/28/12 20:48
80	EL.012812.205602	L12010539-02	DUP-01-120119	40/100	1		01/28/12 20:56
81	EL.012812.210349	WG387809-03	Post Digestion Spike		1	L12010539-02	01/28/12 21:03
82	EL.012812.211137	WG387809-04	Serial Dilution		5	L12010539-02	01/28/12 21:11
83	EL.012812.211924	WG388229-27	CCV		1		01/28/12 21:19
84	EL.012812.212701	WG388229-28	CCB		1		01/28/12 21:27
85	EL.012812.213438	L12010539-03	ST006CP1660112	40/100	1		01/28/12 21:34
86	EL.012812.214226	L12010539-04	ST008CP2300112	40/100	1		01/28/12 21:42
87	EL.012812.215014	L12010539-05	SS040CP2800112	40/100	1		01/28/12 21:50
88	EL.012812.215803	L12010539-06	SS038CP0030112	40/100	5		01/28/12 21:58
89	EL.012812.220550	L12010576-01	MPL18-0112-1	40/100	1		01/28/12 22:05
90	EL.012812.221337	L12010576-02	T40-0112-1	40/100	1		01/28/12 22:13
91	EL.012812.222124	L12010576-03	MPL17-0112-1	40/100	1		01/28/12 22:21
92	EL.012812.222911	WG388229-29	CCV		1		01/28/12 22:29
93	EL.012812.223648	WG388229-30	CCB		1		01/28/12 22:36
94	EL.012812.224426	WG388229-31	Low Level Continuing Calibra		1		01/28/12 22:44
95	EL.012812.225204	WG382898-02	Method/Prep Blank	40/100	1		01/28/12 22:52
96	EL.012812.225951	WG382898-03	Laboratory Control S	40/100	1		01/28/12 22:59
97	EL.012812.230738	WG382898-01	Reference Sample		1	L11110727-01	01/28/12 23:07
98	EL.012812.231525	WG382898-04	Matrix Spike	40/100	1	L11110727-01	01/28/12 23:15
99	EL.012812.232312	WG382898-05	Matrix Spike Duplica	40/100	1	L11110727-01	01/28/12 23:23
100	EL.012812.233100	L11110787-02	W6	40/100	1		01/28/12 23:31
101	EL.012812.233848	L11110787-03	W6B	40/100	5		01/28/12 23:38
102	EL.012812.234636	L11110787-04	W51	40/100	5		01/28/12 23:46

Page: 3 Approved: January 30, 2012

Maren Berry

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ELAN-ICP Dataset: 012812A.REP
Analyst1: EDL Analyst2: N/A
Method: 6020 SOP: ME700 Rev: 7
Maintenance Log ID: 40439

Calibration Std: STD49730 ICV Std: STD49511 Post Spike: STD47984
ICSA: STD49577 ICSAB: STD49578 Int. Std: STD49729
CCV: STD49677 LLCCV: STD49510

Workgroups: 388019, 388129, 387531, 387809, 384033

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
103	EL.012812.235425	WG384033-03	Post Digestion Spike		5	L11110787-04	01/28/12 23:54
104	EL.012912.000213	WG384033-04	Serial Dilution		25	L11110787-04	01/29/12 00:02
105	EL.012912.001000	WG388229-32	CCV		1		01/29/12 00:10
106	EL.012912.001737	WG388229-33	CCB		1		01/29/12 00:17
107	EL.012912.002513	L11110787-06	W7A	40/100	1		01/29/12 00:25
108	EL.012912.003300	L11110787-07	W7B	40/100	5		01/29/12 00:33
109	EL.012912.004047	L11110787-09	W5	40/100	1		01/29/12 00:40
110	EL.012912.004835	L11110787-11	W17	40/100	1		01/29/12 00:48
111	EL.012912.005622	L11110787-13	W27	40/100	5		01/29/12 00:56
112	EL.012912.010409	WG388229-34	CCV		1		01/29/12 01:04
113	EL.012912.011146	WG388229-35	CCB		1		01/29/12 01:11

Comments

Seq.	Rerun	Dil.	Reason	Analytes
8			Data not used due to LLICV failure for Tl.	
13			Data not used due to CCB failure for Tl.	

Page: 4 Approved: January 30, 2012

Maren Berry

Microbac

Microbac Laboratories Inc.

Data Checklist

Date: 28-JAN-2012
Analyst: EDL
Analyst: NA
Method: 6020
Instrument: ELAN-ICP
Curve Workgroup: 388229
Runlog ID: 44872
Analytical Workgroups: 388019, 388129, 387531, 387809, 384033

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	613, 651, 652, 715, 479, 503, 536
Case Narrative (Continued)	539, 576, 787
Client Forms	X
Level X	
Level 3	503, 539
Level 4	613, 651, 652, 715, 479, 536, 576
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	EDL
Secondary Reviewer	MMB
Comments	

Primary Reviewer:
30-JAN-2012
Erin D. Long

Secondary Reviewer:
30-JAN-2012
Maren Berry

CHECKLIST1 - Modified 03/05/2008
Generated: JAN-30-2012 14:35:24

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6020 AAB#: WG388019

Login Number: L12010651

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
MPL-16-0112-1	01	01/24/12					01/26/12	1.7	180		01/28/12	3.9	180	
MPL-16-0112-MS	02	01/24/12					01/26/12	1.7	180		01/28/12	3.9	180	
MPL-16-0112-MSD	03	01/24/12					01/26/12	1.7	180		01/28/12	4	180	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 2292510
Report generated 01/30/2012 14:46

Microbac Laboratories Inc.

METHOD BLANK SUMMARY

Login Number: L12010651
Blank File ID: EL.012812.122701
Prep Date: 01/26/12 06:32
Analyzed Date: 01/28/12 12:27
Analyst: EDL

Work Group: WG388019
Blank Sample ID: WG387967-04
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
LCS	WG387967-05	EL.012712.104730	01/27/12 10:47	01
DUP	WG387967-10	EL.012712.112627	01/27/12 11:26	DL01
LCS	WG387967-05	EL.012812.123447	01/28/12 12:34	02
MPL-16-0112-1	L12010651-01	EL.012812.125020	01/28/12 12:50	02
MPL-16-0112-MS	L12010651-02	EL.012812.125807	01/28/12 12:58	02
MPL-16-0112-MSD	L12010651-03	EL.012812.131104	01/28/12 13:11	02

Report Name: BLANK_SUMMARY
PDF File ID: 2292511
Report generated 01/30/2012 14:47

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L12010651 Prep Date: 01/26/12 06:32 Sample ID: WG387967-04
Instrument ID: ELAN-ICP Run Date: 01/28/12 12:27 Prep Method: 3015
File ID: EL.012812.122701 Analyst: EDL Method: 6020
Workgroup (AAB#): WG388019 Matrix: Water Units: mg/L
Contract #: Cal ID: ELAN-I-28-JAN-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
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: 2292512
30-JAN-2012 14:47

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L12010651 Run Date: 01/28/2012 Sample ID: WG387967-05
Instrument ID: ELAN-ICP Run Time: 12:34 Prep Method: 3015
File ID: EL.012812.123447 Analyst: EDL Method: 6020
Workgroup (AAB#): WG388019 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD47574 Cal ID: ELAN-I-28-JAN-12

Analytes	Expected	Found	% Rec	LCS Limits	Q
Antimony, Total	0.0625	0.0621	99.4	80 - 120	
Arsenic, Total	0.0625	0.0595	95.2	80 - 120	
Barium, Total	0.0625	0.0637	102	80 - 120	
Cadmium, Total	0.0625	0.0616	98.6	80 - 120	
Chromium, Total	0.0625	0.0651	104	80 - 120	
Cobalt, Total	0.0625	0.0649	104	80 - 120	
Copper, Total	0.0625	0.0663	106	80 - 120	
Lead, Total	0.0625	0.0650	104	80 - 120	
Nickel, Total	0.0625	0.0645	103	80 - 120	
Selenium, Total	0.0625	0.0550	88.1	80 - 120	
Silver, Total	0.0625	0.0656	105	80 - 120	
Thallium, Total	0.0625	0.0640	102	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 2292513
Report generated: 01/30/2012 14:47

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L12010651 Cal ID: ELAN-ICP- 28-JAN-12 Worknum: WG388019

Instrument ID: ELAN-ICP Contract #: Prep Method: 3015

Parent ID: L12010651-01 File ID: EL.012812.125020 Dil: 1 Method: 6020

Sample ID: L12010651-02 MS File ID: EL.012812.125807 Dil: 1 Matrix: Water

Sample ID: L12010651-03 MSD File ID: EL.012812.131104 Dil: 1 Units: mg/L

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Antimony, Total	U	0.0625	0.0641	103	0.0625	0.0647	104	0.934	80 - 120	20	
Arsenic, Total	0.00280	0.0625	0.0627	95.9	0.0625	0.0635	97.2	1.32	80 - 120	20	
Barium, Total	0.0653	0.0625	0.125	95	0.0625	0.128	99.7	2.34	80 - 120	20	
Cadmium, Total	U	0.0625	0.0626	100	0.0625	0.0613	98.1	2.06	80 - 120	20	
Chromium, Total	0.00227	0.0625	0.0638	98.5	0.0625	0.0649	100	1.67	80 - 120	20	
Cobalt, Total	U	0.0625	0.0625	100	0.0625	0.0629	101	0.521	80 - 120	20	
Copper, Total	U	0.0625	0.0641	103	0.0625	0.0649	104	1.19	80 - 120	20	
Lead, Total	U	0.0625	0.0646	103	0.0625	0.0636	102	1.58	80 - 120	20	
Nickel, Total	0.00218	0.0625	0.0642	99.2	0.0625	0.0640	99	0.235	80 - 120	20	
Selenium, Total	0.00998	0.0625	0.0639	86.3	0.0625	0.0660	89.6	3.12	80 - 120	20	
Silver, Total	U	0.0625	0.0564	90.2	0.0625	0.0597	95.5	5.72	80 - 120	20	
Thallium, Total	U	0.0625	0.0630	101	0.0625	0.0618	98.9	1.90	80 - 120	20	

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

MS_MSD - Modified 03/06/2008
PDF File ID: 2292514
Report generated 01/30/2012 14:47

Microbac Laboratories Inc.
Serial Dilution Report

Login: L12010651 **Worknum:** WG388019
Instrument: ELAN-ICP **Method:** 6020
Serial Dil: WG388019-05 **File ID:** EL.012812.134216 **Dil:** 5 **Units:** ug/L
Sample: L12010652-02 **File ID:** EL.012812.132639 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Antimony	ND	U	ND	U		
Arsenic	2.87	X	3.48	X	21.50	
Barium	47.8	X	59.4	X	24.40	
Cadmium	ND	U	ND	U		
Chromium	0.926	X	ND	U		
Cobalt	ND	U	ND	U		
Copper	ND	U	ND	U		
Lead	ND	U	ND	U		
Nickel	ND	U	ND	U		
Selenium	11.2	X	13.7	X	22.90	
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: 2292508
01/30/2012 14:46

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L12010651 **Worknum:** WG388019
Instrument ID: ELAN-ICP **Method:** 6020
Post Spike ID: WG388019-04 **File ID:** EL.012812.133428 **Dil:** 1 **Units:** ug/L
Sample ID: L12010652-02 **File ID:** EL.012812.132639 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
ANTIMONY	44.9		0	U	50	89.9	75 - 125	
ARSENIC	47.0		2.87		50	88.3	75 - 125	
BARIUM	93.9		47.8		50	92.3	75 - 125	
CADMIUM	44.1		0	U	50	88.3	75 - 125	
CHROMIUM	47.1		0.926		50	92.3	75 - 125	
COBALT	46.0		0	U	50	92.0	75 - 125	
COPPER	46.7		0	U	50	93.3	75 - 125	
LEAD	47.7		0	U	50	95.5	75 - 125	
NICKEL	46.5		0	U	50	93.1	75 - 125	
SELENIUM	53.6		11.2		50	84.8	75 - 125	
SILVER	45.6		0	U	50	91.1	75 - 125	
THALLIUM	46.8		0	U	50	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: 2292509
Report generated: 01/30/2012 14:46

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L12010651	Workgroup (AAB#):	WG388019
Analytical Method:	6020	Instrument ID:	ELAN-ICP
ICAL Worknum:	WG388229	Initial Calibration Date:	28-JAN-2012 10:56

	WG388229-01		WG388229-02		WG388229-03		WG388229-04			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ANTIMONY	0	17.1	.4	1450	50	194000	100	369000	.999941	
ARSENIC	0	-108	.4	269	50	52400	100	98600	.99999	
BARIUM	0	24.0	.4	590	50	75500	100	142000	.999979	
CADMIUM	0	3.73	.4	444	50	58800	100	111000	.99998	
CHROMIUM	0	6570	.4	8870	50	352000	100	654000	.999981	
COBALT	0	72.7	.4	3340	50	417000	100	794000	.999998	
COPPER	0	95.3	.4	866	50	82800	100	156000	.999998	
LEAD	0	796	.4	8970	50	1050000	100	2010000	1	
NICKEL	0	91.3	.4	740	50	86700	100	162000	.999981	
SELENIUM	0	9.24	.4	37.6	50	4820	100	9150	1	
SILVER	0	69.3	.4	2070	50	263000	100	490000	1	
THALLIUM	0	19.3	.4	2400	50	309000	100	592000	.999999	

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: 2292518
Report generated: 30-JAN-2012 08:44

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L12010651
Instrument ID: ELAN-ICP
File ID: EL.012812.111221
Workgroup (AAB#): WG388019
Matrix: WATER

Run Date: 01/28/2012
Run Time: 11:12
Analyst: EDL
Cal ID: ELAN-ICP - 28-JAN-12

Sample ID: WG388229-06
Method: 6020
Units: ug/L

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
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: 2292520
Report generated 01/30/2012 08:44

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L12010651
Run Date: 01/28/2012
Sample ID: WG388229-13
Instrument ID: ELAN-ICP
Run Time: 12:12
Method: 6020
File ID: EL.012812.121253
Analyst: EDL
Units: ug/L
Workgroup (AAB#): WG388019
Cal ID: ELAN-I - 28-JAN-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
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: 2292523
Report generated 01/30/2012 08:45

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L12010651
Run Date: 01/28/2012
Sample ID: WG388229-15
Instrument ID: ELAN-ICP
Run Time: 13:57
Method: 6020
File ID: EL.012812.135741
Analyst: EDL
Units: ug/L
Workgroup (AAB#): WG388019
Cal ID: ELAN-I - 28-JAN-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
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: 2292523
Report generated 01/30/2012 08:45

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L12010651 Run Date: 01/28/2012 Sample ID: WG388229-05
Instrument ID: ELAN-ICP Run Time: 11:04 Method: 6020
File ID: EL.012812.110445 Analyst: EDL Units: ug/L
Workgroup (AAB#): WG388019 Cal ID: ELAN-I - 28-JAN-12
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Antimony		50	49.3	98.7	90 - 110	
Arsenic		50	51.1	102	90 - 110	
Barium		50	49.7	99.3	90 - 110	
Cadmium		50	49.8	99.5	90 - 110	
Chromium		50	51.1	102	90 - 110	
Cobalt		50	51.2	102	90 - 110	
Copper		50	51.1	102	90 - 110	
Lead		50	50.1	100	90 - 110	
Nickel		50	51.3	103	90 - 110	
Selenium		50	50.9	102	90 - 110	
Silver		50	50.2	100	90 - 110	
Thallium		50	49.1	98.3	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 2292519
Report generated 01/30/2012 08:44

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L12010651
Run Date: 01/28/2012
Sample ID: WG388229-11
Instrument ID: ELAN-ICP
Run Time: 11:57
Method: 6020
File ID: EL.012812.115741
Analyst: EDL
QC Key: DOD4
Workgroup (AAB#): WG388019
Cal ID: ELAN-I - 28-JAN-12
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		50.0	50.4	ug/L	101	90 - 110		
Arsenic		50.0	49.3	ug/L	98.6	90 - 110		
Barium		50.0	48.8	ug/L	97.7	90 - 110		
Cadmium		50.0	50.2	ug/L	100	90 - 110		
Chromium		50.0	49.7	ug/L	99.3	90 - 110		
Cobalt		50.0	50.3	ug/L	101	90 - 110		
Copper		50.0	51.2	ug/L	102	90 - 110		
Lead		50.0	49.8	ug/L	99.5	90 - 110		
Nickel		50.0	50.3	ug/L	101	90 - 110		
Selenium		50.0	49.2	ug/L	98.3	90 - 110		
Silver		50.0	50.2	ug/L	100	90 - 110		
Thallium		50.0	50.1	ug/L	100	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 2292522
Report generated 01/30/2012 08:44

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L12010651
Run Date: 01/28/2012
Sample ID: WG388229-14
Instrument ID: ELAN-ICP
Run Time: 13:50
Method: 6020
File ID: EL.012812.135005
Analyst: EDL
QC Key: DOD4
Workgroup (AAB#): WG388019
Cal ID: ELAN-I - 28-JAN-12
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		50.0	50.8	ug/L	102	90 - 110		
Arsenic		50.0	48.1	ug/L	96.2	90 - 110		
Barium		50.0	50.5	ug/L	101	90 - 110		
Cadmium		50.0	50.5	ug/L	101	90 - 110		
Chromium		50.0	47.7	ug/L	95.4	90 - 110		
Cobalt		50.0	48.5	ug/L	97.0	90 - 110		
Copper		50.0	50.0	ug/L	99.9	90 - 110		
Lead		50.0	49.0	ug/L	97.9	90 - 110		
Nickel		50.0	48.9	ug/L	97.8	90 - 110		
Selenium		50.0	48.6	ug/L	97.2	90 - 110		
Silver		50.0	49.4	ug/L	98.8	90 - 110		
Thallium		50.0	49.1	ug/L	98.3	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 2292522
Report generated 01/30/2012 08:44

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L12010651
Run Date: 01/28/2012
Sample ID: WG388229-08
Instrument ID: ELAN-ICP
Run Time: 11:34
Method: 6020
File ID: EL.012812.113445
Analyst: EDL
QC Key: DOD4
Workgroup (AAB#): WG388019
Cal ID: ELAN-I - 28-JAN-12
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Cadmium		0.200	0.227	ug/L	114	80 - 120		
Thallium		0.0800	0.0917	ug/L	115	80 - 120		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 2292524
Report generated 01/31/2012 16:13

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L12010651 **Workgroup (AAB#):** WG388019
Instrument ID: ELAN-ICP **Method:** 6020
Sol. A : WG388229-09 **File ID:** EL.012812.114224 **Units:** ug/L
Sol. AB : WG388229-10 **File ID:** EL.012812.115002 **Matrix:** Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Antimony	NS	0.0626	NS	100	102	102	
Arsenic	NS	-0.0261	NS	100	99.3	99.3	
Barium	NS	0.0192	NS	100	97.9	97.9	
Cadmium	NS	0.105	NS	100	101	101	
Chromium	NS	0.0668	NS	100	96.6	96.6	
Cobalt	NS	0.00710	NS	100	97.0	97.0	
Copper	NS	0.0685	NS	100	100	100	
Lead	NS	0.0138	NS	100	97.9	97.9	
Nickel	NS	0.283	NS	100	98.1	98.1	
Selenium	NS	-0.0420	NS	100	98.8	98.8	
Silver	NS	0.0113	NS	100	100	100	
Thallium	NS	0.00970	NS	100	96.3	96.3	

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: 2292521
Report generated 01/30/2012 08:44

Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L12010651 **Analytical Method:** 6020
Analytical Workgroup: WG388019 **Matrix:** 1
Instrument: ELAN-ICP **Analyst:** EDL
ICAL Date: 28-JAN-2012 10:33

			BISMUTH	GERMANIUM	INDIUM	TERBIUM
Sample	Type	Run Date	% Rec	% Rec	% Rec	% Rec
L12010651-01	SAMP	28-JAN-2012 12:50	93.978	85.813	85.251	90.98
L12010651-02	SAMP	28-JAN-2012 12:58	92.239	84.594	82.3	89.13
L12010651-03	SAMP	28-JAN-2012 13:11	79.742	72.573	71.847	76.77
L12010652-02	SAMP	28-JAN-2012 13:26	95.734	89.19	87.864	93.914
WG387967-04	BLANK	28-JAN-2012 12:27	92.203	91.655	90.189	93.083
WG387967-05	LCS	28-JAN-2012 12:34	95.726	96.194	94.211	97.783
WG388019-04	PSPK	28-JAN-2012 13:34	103.836	95.329	94.84	101.176
WG388019-05	SERIAL	28-JAN-2012 13:42	100.764	93.931	93.977	95.755
WG388229-05	ICV	28-JAN-2012 11:04	89.951	91.117	92.831	93.23
WG388229-06	ICB	28-JAN-2012 11:12	90.95	90.985	92.835	92.464
WG388229-08	LLICV	28-JAN-2012 11:34	92.739	92.438	90.553	92.092
WG388229-09	ICS	28-JAN-2012 11:42	87.534	83.362	84.583	85.251
WG388229-10	ICS	28-JAN-2012 11:50	86.97	79.288	78.114	80.935
WG388229-11	CCV	28-JAN-2012 11:57	89.293	89.318	88.179	89.731
WG388229-13	CCB	28-JAN-2012 12:12	91.091	90.107	89.543	90.057
WG388229-14	CCV	28-JAN-2012 13:50	96.262	93.594	90.515	93.456
WG388229-15	CCB	28-JAN-2012 13:57	98.496	93.569	92.449	96.381
WG388229-26	LLCCV	28-JAN-2012 19:53	89.393	87.97	84.659	86.935

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: 2292517
Report generated: 01/30/2012 08:49

Microbac Laboratories Inc.
LINEAR RANGE (QUARTERLY)

Login Number: L12010651 **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: 2292516
Report generated: 01/30/2012 08:43

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: Saturday, January 28, 2012 09:33:00

Analyte	Exact Mass	Meas. Mass	Mass DAC	Res. DAC	Meas. Pk. Width	Custom Res.
He	3.016	3.028	613	2060	0.647	
Li	7.016	6.979	1584	2060	0.644	
Co	58.933	58.929	14277	1970	0.724	
Ce	139.905	139.829	33979	2020	0.711	
Tl	204.975	204.977	49690	2263	0.706	

Relative Std. Dev.

Mass	Meas. Intens. RSD
2.000	2.893
3.000	2.135
4.000	36.948
5.000	25.487
6.000	5.232
7.000	3.519
8.000	34.716
9.000	3.126
58.000	2.712
59.000	2.211
60.000	7.092
139.000	2.636
140.000	1.782
141.000	7.849
204.000	4.309
205.000	1.528
206.000	1.993

Report Date/Time: Saturday, January 28, 2012 09:34:11
Page 1

Approved: January 30, 2012
Erin D. Long

Daily Performance Report

Sample ID: Sample
Sample Date/Time: Saturday, January 28, 2012 09:36:47
Sample Description:
Method File: C:\Elandata\Method\6020 DAILY.mth
Dataset File: C:\elandata\Dataset\Default\Sample.468
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	48822.8	48822.810	408.213	0.8
	Rh	102.9	265088.9	265088.904	1387.402	0.5
	In	114.9	463209.8	463209.754	3916.204	0.8
	Pb	208.0	172849.3	172849.306	1417.736	0.8
	U	238.1	109.2	109.201	1.037	0.9
⌈>	Ba	137.9	270291.4	270291.392	1207.676	0.4
⌊	Ba++	69.0	4050.0	0.015	0.000	2.0
⌈>	Ce	139.9	334663.0	334662.954	3242.232	1.0
⌊	CeO	155.9	7870.7	0.024	0.000	0.5
	Bkgd	220.0	8.9	8.900	1.597	17.9
	Ar2	79.9	4725578.8	4725578.789	37228.463	0.8

Current Optimization File Data

Current Value	Description
1.01	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: Saturday, January 28, 2012 09:38:55
Page 1

Approved: January 30, 2012
Erin D. Long

Method 6020 - Summary Report

Sample ID: Blank

Sample Date/Time: Saturday, January 28, 2012 10:25:53
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: EDL
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	10039.387					ug/L
	Be	9	8.000					ug/L
	Al	27	2283.655					ug/L
>	Sc	45	136170.209					ug/L
	Ti	49	60.006					ug/L
	V	51	2089.543					ug/L
	Cr	52	6339.809					ug/L
	Cr	53	813.455					ug/L
	Mn	55	533.689					ug/L
	Co	59	65.001					ug/L
	Ni	60	96.002					ug/L
	Cu	65	92.001					ug/L
	Zn	66	753.042					ug/L
>	Ge	72	312021.874					ug/L
	As	75	-99.110					ug/L
	Se	77	67.334					ug/L
	Se	82	6.873					ug/L
	Rb	85	31.000					mg/L
	Y	89	202390.583					ug/L
	Rh	103	29.000					ug/L
	Mo	98	8.201					ug/L
	Ag	107	62.668					ug/L
	Cd	114	2.798					ug/L
>	In	115	275833.946					ug/L
	Sn	118	618.156					ug/L
	Sb	123	12.702					ug/L
	Ba	135	22.000					ug/L
	Ce	140	183.354					ug/L
>	Tb	159	392087.526					ug/L
	Ho	165	13.335					ug/L
	Tl	203	21.000					ug/L
	Tl	205	40.004					ug/L
	Pb	206	184.671					ug/L
	Pb	207	151.670					ug/L
	Pb	208	737.020					ug/L
	U	238	13.667					ug/L
>	Bi	209	319080.089					ug/L

Sample ID: Blank
Report Date/Time: Saturday, January 28, 2012 10:28:05
Page 1

Approved: January 30, 2012
Erin D. Long

⌈	Na	23	140525.602	mg/L
|	Mg	24	346.709	mg/L
|	K	39	479507.314	mg/L
|	Ca	43	180.020	mg/L
|	Fe	54	32535.172	mg/L
|	Fe	57	6533.213	mg/L
⌊>	Sc-1	45	136170.209	mg/L
	Cl	35	36924.302	mg/L
	Kr	83	53.001	mg/L
	Br	81	5076.215	mg/L
	P	31	7594.794	mg/L
	S	34	175600.455	mg/L
	Sr	88	53.339	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: Saturday, January 28, 2012 10:28:05
Page 2

Approved: January 30, 2012

⌈	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: Saturday, January 28, 2012 10:28:05
Page 3

Approved: January 30, 2012

Method 6020 - Summary Report

Sample ID: Standard 1

Sample Date/Time: Saturday, January 28, 2012 10:33:39
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: EDL

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	9205.112	-0.01				ug/L
	Be	9	4.667	-0.00				ug/L
	Al	27	2100.287	-0.00				ug/L
>	Sc	45	139050.633	139050.63				ug/L
	Ti	49	66.674	0.00				ug/L
	V	51	2035.519	-0.00				ug/L
	Cr	52	6565.652	0.00				ug/L
	Cr	53	963.485	0.00				ug/L
	Mn	55	542.690	0.00				ug/L
	Co	59	72.668	0.00				ug/L
	Ni	60	91.335	-0.00				ug/L
	Cu	65	95.335	0.00				ug/L
	Zn	66	744.041	-0.00				ug/L
>	Ge	72	314649.966	314649.97				ug/L
	As	75	-108.323	-0.00				ug/L
	Se	77	62.667	-0.00				ug/L
	Se	82	9.235	0.00				ug/L
	Rb	85	32.000	0.00				mg/L
	Y	89	205626.351	3235.77				ug/L
	Rh	103	23.334	-5.67				ug/L
	Mo	98	11.196	0.00				ug/L
	Ag	107	69.334	0.00				ug/L
	Cd	114	3.732	0.00				ug/L
>	In	115	275976.017	275976.02				ug/L
	Sn	118	624.023	0.00				ug/L
	Sb	123	17.075	0.00				ug/L
	Ba	135	24.000	0.00				ug/L
	Ce	140	180.020	-0.00				ug/L
>	Tb	159	399028.223	399028.22				ug/L
	Ho	165	16.668	0.00				ug/L
	Tl	203	19.334	-0.00				ug/L
	Tl	205	53.339	0.00				ug/L
	Pb	206	200.671	0.00				ug/L
	Pb	207	176.004	0.00				ug/L
	Pb	208	796.356	0.00				ug/L
	U	238	18.667	0.00				ug/L
>	Bi	209	313275.567	313275.57				ug/L

Sample ID: Standard 1
Report Date/Time: Saturday, January 28, 2012 10:35:51
Page 1

Approved: January 30, 2012
Erin D. Long

Na	23	141240.042	-0.02		mg/L
Mg	24	373.379	0.00		mg/L
K	39	495293.295	0.04		mg/L
Ca	43	200.023	0.00		mg/L
Fe	54	30795.357	-0.02		mg/L
Fe	57	7267.232	0.00		mg/L
Sc-1	45	139050.633	139050.63		mg/L
Cl	35	39995.751	3071.45		mg/L
Kr	83	49.667	-3.33		mg/L
Br	81	5230.308	154.09		mg/L
P	31	8495.028	900.23		mg/L
S	34	192959.917	17359.46		mg/L
Sr	88	60.006	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					
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: Saturday, January 28, 2012 10:35:51
Page 2

Approved: January 30, 2012

⌈	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: Saturday, January 28, 2012 10:35:51
Page 3

Approved: January 30, 2012

Method 6020 - Summary Report

Sample ID: Standard 2

Sample Date/Time: Saturday, January 28, 2012 10:41:25
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: EDL

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	8204.046	-0.01				ug/L
	Be	9	117.334	0.00				ug/L
	Al	27	4467.877	0.02				ug/L
>	Sc	45	132090.361	132090.36				ug/L
	Ti	49	350.042	0.00				ug/L
	V	51	5008.976	0.01				ug/L
	Cr	52	8866.136	0.01				ug/L
	Cr	53	1146.861	0.00				ug/L
	Mn	55	4623.996	0.01				ug/L
	Co	59	3339.036	0.01				ug/L
	Ni	60	740.040	0.00				ug/L
	Cu	65	866.054	0.00				ug/L
	Zn	66	950.730	0.00				ug/L
>	Ge	72	301939.740	301939.74				ug/L
	As	75	269.439	0.00				ug/L
	Se	77	77.334	0.00				ug/L
	Se	82	37.563	0.00				ug/L
	Rb	85	39.000	0.00				mg/L
	Y	89	196397.610	-5992.97				ug/L
	Rh	103	18.334	-10.67				ug/L
	Mo	98	1943.630	0.01				ug/L
	Ag	107	2070.278	0.01				ug/L
	Cd	114	443.993	0.00				ug/L
>	In	115	271362.370	271362.37				ug/L
	Sn	118	1590.552	0.00				ug/L
	Sb	123	1454.927	0.01				ug/L
	Ba	135	590.027	0.00				ug/L
	Ce	140	130.014	-0.00				ug/L
>	Tb	159	374170.910	374170.91				ug/L
	Ho	165	10.001	-0.00				ug/L
	Tl	203	2402.370	0.01				ug/L
	Tl	205	5795.928	0.02				ug/L
	Pb	206	2145.631	0.01				ug/L
	Pb	207	1991.258	0.01				ug/L
	Pb	208	8973.340	0.03				ug/L
	U	238	10426.294	0.03				ug/L
>	Bi	209	304635.929	304635.93				ug/L

Sample ID: Standard 2
Report Date/Time: Saturday, January 28, 2012 10:43:37
Page 1

Approved: January 30, 2012
Erin D. Long

⌈	Na	23	193738.857	0.44	mg/L
|	Mg	24	102959.049	0.78	mg/L
|	K	39	719719.544	1.94	mg/L
|	Ca	43	670.094	0.00	mg/L
|	Fe	54	51602.459	0.15	mg/L
|	Fe	57	15966.893	0.07	mg/L
⌊>	Sc-1	45	132090.361	132090.36	mg/L
	Cl	35	35690.944	-1233.36	mg/L
	Kr	83	50.334	-2.67	mg/L
	Br	81	5086.219	10.00	mg/L
	P	31	7265.844	-328.95	mg/L
	S	34	171146.953	-4453.50	mg/L
	Sr	88	130.014	76.68	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 2
Report Date/Time: Saturday, January 28, 2012 10:43:37
Page 2

Approved: January 30, 2012

⌈	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 2
Report Date/Time: Saturday, January 28, 2012 10:43:37
Page 3

Approved: January 30, 2012

Method 6020 - Summary Report

Sample ID: Standard 3

Sample Date/Time: Saturday, January 28, 2012 10:49:12
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: EDL
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	9038.237	-0.01				ug/L
	Be	9	13481.566	0.10	50.0000	0.748	1.495	ug/L
	Al	27	220804.749	1.56	50.0000	0.818	1.636	ug/L
>	Sc	45	140373.271	140373.27				ug/L
	Ti	49	45712.933	0.14	100.0000	1.690	1.690	ug/L
	V	51	395807.605	1.25	50.0000	1.185	2.370	ug/L
	Cr	52	352470.475	1.10	50.0000	0.775	1.550	ug/L
	Cr	53	43273.055	0.13	50.0000	1.044	2.088	ug/L
	Mn	55	549833.684	1.74	50.0000	1.088	2.175	ug/L
	Co	59	417285.018	1.32	50.0000	0.874	1.748	ug/L
	Ni	60	86746.357	0.27	50.0000	0.471	0.942	ug/L
	Cu	65	82848.982	0.26	50.0000	1.017	2.035	ug/L
	Zn	66	49857.533	0.16	50.0000	0.725	1.450	ug/L
>	Ge	72	315499.019	315499.02				ug/L
	As	75	52431.478	0.17	50.0000	1.241	2.481	ug/L
	Se	77	4020.303	0.01	50.0000	1.960	3.920	ug/L
	Se	82	4818.684	0.02	50.0000	3.180	6.360	ug/L
	Rb	85	1926.909	0.01				mg/L
	Y	89	207984.886	5594.30				ug/L
	Rh	103	36.000	7.00				ug/L
	Mo	98	255044.934	0.90	100.0000	1.321	1.321	ug/L
	Ag	107	263317.515	0.93	50.0000	0.567	1.133	ug/L
	Cd	114	58847.356	0.21	50.0000	1.682	3.364	ug/L
>	In	115	283190.913	283190.91				ug/L
	Sn	118	204394.410	0.72	50.0000	0.454	0.907	ug/L
	Sb	123	193857.882	0.68	50.0000	0.397	0.793	ug/L
	Ba	135	75505.621	0.19	50.0000	0.473	0.946	ug/L
	Ce	140	220.025	0.00				ug/L
>	Tb	159	396291.886	396291.89				ug/L
	Ho	165	13.335	0.00				ug/L
	Tl	203	309149.775	0.99	50.0000	0.531	1.061	ug/L
	Tl	205	764984.636	2.46	50.0000	0.734	1.467	ug/L
	Pb	206	251045.964	0.81	50.0000	0.591	1.182	ug/L
	Pb	207	236517.142	0.76	50.0000	0.158	0.316	ug/L
	Pb	208	1053663.612	3.39	50.0000	0.143	0.286	ug/L
	U	238	1384268.119	4.45	50.0000	0.836	1.672	ug/L
>	Bi	209	311001.795	311001.80				ug/L

Sample ID: Standard 3
Report Date/Time: Saturday, January 28, 2012 10:51:24
Page 1

Approved: January 30, 2012
Erin D. Long

Na	23	19468286.437	137.72	5.0000	0.115	2.292	mg/L
Mg	24	12346149.217	87.98	5.0000	0.076	1.529	mg/L
K	39	29051104.950	203.45	5.0000	0.106	2.119	mg/L
Ca	43	59709.184	0.42	5.0000	0.115	2.297	mg/L
Fe	54	2517030.317	17.71	5.0000	0.252	5.034	mg/L
Fe	57	1121591.925	7.95	5.0000	0.221	4.416	mg/L
Sc-1	45	140373.271	140373.27				mg/L
Cl	35	39735.186	2810.88				mg/L
Kr	83	52.667	-0.33				mg/L
Br	81	5538.518	462.30				mg/L
P	31	9038.232	1443.44				mg/L
S	34	200200.650	24600.19				mg/L
Sr	88	4184.803	4131.46				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 3
Report Date/Time: Saturday, January 28, 2012 10:51:24
Page 2

Approved: January 30, 2012
Erin D. Long

⌈	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
Report Date/Time: Saturday, January 28, 2012 10:51:24
Page 3

Approved: January 30, 2012

Method 6020 - Summary Report

Sample ID: Standard 4

Sample Date/Time: Saturday, January 28, 2012 10:56:59
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: EDL

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	9021.572	-0.00				ug/L
	Be	9	25674.837	0.20	101.0077	6.181	6.120	ug/L
	Al	27	402386.953	3.05	99.0966	4.299	4.339	ug/L
>	Sc	45	131294.843	131294.84				ug/L
	Ti	49	86485.541	0.29	199.7729	5.616	2.811	ug/L
	V	51	761312.152	2.54	100.8714	0.946	0.938	ug/L
	Cr	52	654016.157	2.17	99.3930	1.147	1.154	ug/L
	Cr	53	77876.629	0.26	97.8858	1.301	1.329	ug/L
	Mn	55	1041917.955	3.48	100.0065	0.311	0.311	ug/L
	Co	59	794101.358	2.66	100.2170	2.973	2.967	ug/L
	Ni	60	162348.223	0.54	99.3856	1.097	1.104	ug/L
	Cu	65	156183.453	0.52	99.7896	0.434	0.435	ug/L
	Zn	66	93423.063	0.31	99.7180	0.464	0.465	ug/L
>	Ge	72	299027.232	299027.23				ug/L
	As	75	98648.996	0.33	99.5578	0.871	0.875	ug/L
	Se	77	7368.592	0.02	98.6018	2.058	2.087	ug/L
	Se	82	9150.377	0.03	100.0789	0.402	0.402	ug/L
	Rb	85	3555.128	0.01				mg/L
	Y	89	193268.773	-9121.81				ug/L
	Rh	103	42.001	13.00				ug/L
	Mo	98	482623.384	1.83	201.5015	5.528	2.743	ug/L
	Ag	107	489880.133	1.86	99.9118	2.588	2.590	ug/L
	Cd	114	111120.034	0.42	100.6211	3.785	3.762	ug/L
>	In	115	263965.902	263965.90				ug/L
	Sn	118	392188.136	1.48	101.4362	0.758	0.748	ug/L
	Sb	123	369281.409	1.40	101.0748	2.846	2.816	ug/L
	Ba	135	141914.994	0.38	99.3504	0.725	0.730	ug/L
	Ce	140	273.365	0.00				ug/L
>	Tb	159	377382.402	377382.40				ug/L
	Ho	165	10.001	-0.00				ug/L
	Tl	203	591854.698	1.99	100.1029	1.313	1.312	ug/L
	Tl	205	1448216.946	4.88	99.5449	2.494	2.506	ug/L
	Pb	206	477419.836	1.61	99.7899	0.813	0.815	ug/L
	Pb	207	452029.680	1.52	100.0318	1.561	1.560	ug/L
	Pb	208	2009780.947	6.76	99.9381	0.446	0.446	ug/L
	U	238	2487100.668	8.37	96.9343	0.762	0.786	ug/L
>	Bi	209	297075.509	297075.51				ug/L

Sample ID: Standard 4
Report Date/Time: Saturday, January 28, 2012 10:59:12
Page 1

Approved: January 30, 2012
Erin D. Long

Na	23	37127092.929	282.12	10.1070	0.566	5.605	mg/L
Mg	24	23021775.554	175.67	9.9939	0.518	5.180	mg/L
K	39	54586719.400	413.04	10.0783	0.574	5.694	mg/L
Ca	43	115905.347	0.88	10.2014	0.491	4.817	mg/L
Fe	54	4686690.814	35.54	10.0186	0.716	7.142	mg/L
Fe	57	1950262.285	14.84	9.6589	0.593	6.137	mg/L
Sc-1	45	131294.843	131294.84				mg/L
Cl	35	35445.899	-1478.40				mg/L
Kr	83	53.001	0.00				mg/L
Br	81	4862.085	-214.13				mg/L
P	31	7976.516	381.72				mg/L
S	34	171134.833	-4465.62				mg/L
Sr	88	8134.792	8081.45				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 4
Report Date/Time: Saturday, January 28, 2012 10:59:12
Page 2

Approved: January 30, 2012
Erin D. Long

⌈	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 4
Report Date/Time: Saturday, January 28, 2012 10:59:12
Page 3

Approved: January 30, 2012

Method 6020 - Summary Report

Sample ID: QC Std 1

Sample Date/Time: Saturday, January 28, 2012 11:04:45
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: EDL

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	9171.714	-0.00				ug/L
	Be	9	12460.645	0.09	48.4886	0.236	0.487	ug/L
	Al	27	255460.642	1.91	62.0570	2.957	4.765	ug/L
>	Sc	45	132393.782	132393.78				ug/L
	Ti	49	42623.042	0.15	103.5652	2.380	2.298	ug/L
	V	51	357856.030	1.25	49.7361	0.760	1.528	ug/L
	Cr	52	322643.441	1.11	51.1115	0.604	1.182	ug/L
	Cr	53	38800.671	0.13	50.7949	0.676	1.331	ug/L
	Mn	55	504882.279	1.77	50.9520	0.845	1.658	ug/L
	Co	59	386100.704	1.36	51.2329	0.691	1.350	ug/L
	Ni	60	79647.287	0.28	51.2607	0.788	1.536	ug/L
	Cu	65	76150.794	0.27	51.1034	0.264	0.516	ug/L
	Zn	66	45203.404	0.16	50.4480	0.727	1.441	ug/L
>	Ge	72	284304.361	284304.36				ug/L
	As	75	48048.403	0.17	51.0639	1.239	2.427	ug/L
	Se	77	3653.467	0.01	51.1268	0.665	1.300	ug/L
	Se	82	4425.822	0.02	50.9123	1.179	2.317	ug/L
	Rb	85	1495.816	0.01				mg/L
	Y	89	191311.684	-11078.90				ug/L
	Rh	103	18.667	-10.33				ug/L
	Mo	98	247476.448	0.97	106.5256	3.094	2.905	ug/L
	Ag	107	238932.212	0.93	50.2319	1.361	2.710	ug/L
	Cd	114	53300.540	0.21	49.7680	2.139	4.298	ug/L
>	In	115	256059.625	256059.63				ug/L
	Sn	118	222444.697	0.87	59.3236	1.358	2.289	ug/L
	Sb	123	174807.610	0.68	49.3295	0.564	1.144	ug/L
	Ba	135	68705.774	0.19	49.6588	0.858	1.728	ug/L
	Ce	140	270.032	0.00				ug/L
>	Tb	159	365543.517	365543.52				ug/L
	Ho	165	6.667	-0.00				ug/L
	Tl	203	280598.569	0.98	49.1268	0.244	0.496	ug/L
	Tl	205	699075.720	2.44	49.7401	0.273	0.548	ug/L
	Pb	206	240605.755	0.84	52.0427	0.766	1.471	ug/L
	Pb	207	210760.651	0.73	48.2648	0.539	1.117	ug/L
	Pb	208	974362.322	3.39	50.1400	0.789	1.575	ug/L
	U	238	1259297.704	4.39	50.8144	1.103	2.171	ug/L
>	Bi	209	287015.567	287015.57				ug/L

Sample ID: QC Std 1
Report Date/Time: Saturday, January 28, 2012 11:06:58
Page 1

Approved: January 30, 2012
Erin D. Long

Na	23	17641167.824	132.22	4.7497	0.254	5.341	mg/L
Mg	24	11165966.760	84.36	4.7971	0.145	3.015	mg/L
K	39	27718812.022	205.83	5.0187	0.135	2.695	mg/L
Ca	43	56443.016	0.42	4.9070	0.090	1.826	mg/L
Fe	54	2315595.196	17.25	4.8613	0.041	0.841	mg/L
Fe	57	1046798.760	7.86	5.1132	0.094	1.846	mg/L
Sc-1	45	132393.782	132393.78				mg/L
Cl	35	37658.230	733.93				mg/L
Kr	83	48.667	-4.33				mg/L
Br	81	5010.840	-65.38				mg/L
P	31	8796.641	1201.85				mg/L
S	34	179944.135	4343.68				mg/L
Sr	88	1320.237	1266.90				mg/L

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
Li	6					
Be	9	96.977				
Al	27	124.114				
Sc	45					
Ti	49	103.565				
V	51	99.472				
Cr	52	102.223				
Cr	53					
Mn	55	101.904				
Co	59	102.466				
Ni	60	102.521				
Cu	65	102.207				
Zn	66	100.896				
Ge	72		91.117			
As	75	102.128				
Se	77					
Se	82	101.825				
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107	100.464				
Cd	114	99.536				
In	115		92.831			
Sn	118					
Sb	123	98.659				
Ba	135	99.318				
Ce	140					
Tb	159		93.230			
Ho	165					
Tl	203	98.254				
Tl	205					
Pb	206					
Pb	207					
Pb	208	100.280				
U	238	101.629				
Bi	209		89.951			

Sample ID: QC Std 1
Report Date/Time: Saturday, January 28, 2012 11:06:58
Page 2

Approved: January 30, 2012
Erin D. Long

⌈	Na	23	94.995
|	Mg	24	95.942
|	K	39	100.374
|	Ca	43	98.139
|	Fe	54	97.227
|	Fe	57	102.265
⌊>	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: Saturday, January 28, 2012 11:06:58
Page 3

Approved: January 30, 2012

Method 6020 - Summary Report

Sample ID: QC Std 2

Sample Date/Time: Saturday, January 28, 2012 11:12:21
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: EDL

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	8354.186	-0.01				ug/L
	Be	9	8.000	0.00	-0.0255	0.014	55.244	ug/L
	Al	27	1883.551	-0.00	-0.2320	0.074	31.694	ug/L
>	Sc	45	128807.383	128807.38				ug/L
	Ti	49	66.674	0.00	0.1614	0.062	38.126	ug/L
	V	51	1815.589	-0.00	-0.0049	0.012	238.291	ug/L
	Cr	52	5944.847	0.00	0.0135	0.024	179.423	ug/L
	Cr	53	846.796	0.00	0.0908	0.269	296.125	ug/L
	Mn	55	575.359	0.00	0.0184	0.003	13.762	ug/L
	Co	59	94.668	0.00	-0.0047	0.001	23.194	ug/L
	Ni	60	89.001	0.00	0.0085	0.011	126.253	ug/L
	Cu	65	115.669	0.00	-0.0709	0.011	15.433	ug/L
	Zn	66	696.369	0.00	0.1765	0.038	21.405	ug/L
>	Ge	72	283894.584	283894.58				ug/L
	As	75	-130.609	-0.00	-0.0075	0.042	556.507	ug/L
	Se	77	56.667	-0.00	0.1725	0.199	115.310	ug/L
	Se	82	4.244	-0.00	0.0422	0.054	127.767	ug/L
	Rb	85	30.667	0.00				mg/L
	Y	89	194609.087	-7781.50				ug/L
	Rh	103	10.000	-19.00				ug/L
	Mo	98	63.864	0.00	0.0382	0.004	9.221	ug/L
	Ag	107	86.335	0.00	0.0075	0.004	57.250	ug/L
	Cd	114	3.285	0.00	0.0121	0.007	57.590	ug/L
>	In	115	256071.255	256071.25				ug/L
	Sn	118	704.830	0.00	0.1877	0.004	1.986	ug/L
	Sb	123	250.706	0.00	0.0835	0.003	4.037	ug/L
	Ba	135	30.334	0.00	0.0055	0.002	30.821	ug/L
	Ce	140	80.008	-0.00				ug/L
>	Tb	159	362540.380	362540.38				ug/L
	Ho	165	20.002	0.00				ug/L
	Tl	203	57.667	0.00	0.0137	0.003	22.442	ug/L
	Tl	205	130.014	0.00	0.0207	0.003	14.816	ug/L
	Pb	206	211.005	0.00	0.0076	0.006	82.534	ug/L
	Pb	207	208.338	0.00	0.0173	0.003	17.466	ug/L
	Pb	208	864.026	0.00	0.0087	0.003	37.785	ug/L
	U	238	156.336	0.00	0.0099	0.001	8.645	ug/L
>	Bi	209	290203.141	290203.14				ug/L

Sample ID: QC Std 2
Report Date/Time: Saturday, January 28, 2012 11:14:33
Page 1

Approved: January 30, 2012
Erin D. Long

Na	23	126861.541	-0.05	0.0228	0.001	6.497	mg/L
Mg	24	1643.664	0.01	-0.0037	0.000	3.274	mg/L
K	39	485630.362	0.26	-0.0009	0.006	696.185	mg/L
Ca	43	200.022	0.00	-0.0010	0.002	216.149	mg/L
Fe	54	31937.177	0.01	-0.0001	0.007	6263.004	mg/L
Fe	57	6800.125	0.00	-0.0044	0.001	15.511	mg/L
Sc-1	45	128807.383	128807.38				mg/L
Cl	35	32859.993	-4064.31				mg/L
Kr	83	48.667	-4.33				mg/L
Br	81	4864.755	-211.46				mg/L
P	31	7020.292	-574.50				mg/L
S	34	154463.884	-21136.57				mg/L
Sr	88	86.676	33.34				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		90.985			
As	75					
Se	77					
Se	82					
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107					
Cd	114					
In	115		92.835			
Sn	118					
Sb	123					
Ba	135					
Ce	140					
Tb	159		92.464			
Ho	165					
Tl	203					
Tl	205					
Pb	206					
Pb	207					
Pb	208					
U	238					
Bi	209		90.950			

Sample ID: QC Std 2
Report Date/Time: Saturday, January 28, 2012 11:14:33
Page 2

Approved: January 30, 2012
Erin D. Long

⌈	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
Report Date/Time: Saturday, January 28, 2012 11:14:33
Page 3

Approved: January 30, 2012

Method 6020 - Summary Report

Sample ID: QC Std 3

Sample Date/Time: Saturday, January 28, 2012 11:19:59
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: EDL

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	8838.019	-0.01				ug/L
	Be	9	7.333	-0.00	-0.0291	0.016	53.593	ug/L
	Al	27	3300.668	0.01	0.0871	0.156	179.265	ug/L
>	Sc	45	135492.790	135492.79				ug/L
	Ti	49	43.338	-0.00	0.1007	0.072	71.041	ug/L
	V	51	4965.514	0.01	0.4054	0.023	5.603	ug/L
	Cr	52	11719.686	0.02	0.8651	0.036	4.179	ug/L
	Cr	53	1763.696	0.00	1.2153	0.041	3.353	ug/L
	Mn	55	5708.011	0.02	0.5127	0.014	2.648	ug/L
	Co	59	3475.426	0.01	0.4248	0.011	2.623	ug/L
	Ni	60	2830.509	0.01	1.6988	0.069	4.044	ug/L
	Cu	65	1419.468	0.00	0.7663	0.013	1.755	ug/L
	Zn	66	6202.037	0.02	6.1002	0.135	2.218	ug/L
>	Ge	72	296772.384	296772.38				ug/L
	As	75	310.031	0.00	0.4474	0.119	26.648	ug/L
	Se	77	98.667	0.00	0.7106	0.186	26.133	ug/L
	Se	82	35.572	0.00	0.3873	0.162	41.726	ug/L
	Rb	85	32.667	0.00				mg/L
	Y	89	194596.566	-7794.02				ug/L
	Rh	103	13.333	-15.67				ug/L
	Mo	98	58.197	0.00	0.0350	0.005	15.360	ug/L
	Ag	107	2172.972	0.01	0.4322	0.023	5.430	ug/L
	Cd	114	239.918	0.00	0.2264	0.028	12.571	ug/L
>	In	115	264144.364	264144.36				ug/L
	Sn	118	182.669	-0.00	0.0470	0.003	6.313	ug/L
	Sb	123	1593.870	0.01	0.4487	0.011	2.397	ug/L
	Ba	135	1131.422	0.00	0.7645	0.022	2.844	ug/L
	Ce	140	56.673	-0.00				ug/L
>	Tb	159	382674.699	382674.70				ug/L
	Ho	165	6.667	-0.00				ug/L
	Tl	203	576.692	0.00	0.0984	0.007	7.098	ug/L
	Tl	205	1396.924	0.00	0.1048	0.012	11.382	ug/L
	Pb	206	2214.316	0.01	0.4117	0.008	1.922	ug/L
	Pb	207	2059.942	0.01	0.4125	0.006	1.401	ug/L
	Pb	208	9229.781	0.03	0.4101	0.003	0.725	ug/L
	U	238	11290.758	0.04	0.4307	0.014	3.198	ug/L
>	Bi	209	306210.638	306210.64				ug/L

Sample ID: QC Std 3
Report Date/Time: Saturday, January 28, 2012 11:22:14
Page 1

Approved: January 30, 2012
Erin D. Long

Na	23	50400.460	-0.66	0.0008	0.001	86.104	mg/L
Mg	24	1400.264	0.01	-0.0038	0.000	4.717	mg/L
K	39	504334.563	0.20	-0.0023	0.003	110.758	mg/L
Ca	43	190.021	0.00	-0.0027	0.002	56.016	mg/L
Fe	54	32707.999	0.00	-0.0022	0.005	211.845	mg/L
Fe	57	7487.444	0.01	-0.0028	0.001	22.832	mg/L
Sc-1	45	135492.790	135492.79				mg/L
Cl	35	36246.660	-677.64				mg/L
Kr	83	49.334	-3.67				mg/L
Br	81	5261.661	185.45				mg/L
P	31	7469.390	-125.40				mg/L
S	34	173479.955	-2120.50				mg/L
Sr	88	176.688	123.35				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	101.346				
Cr	52	108.137				
Cr	53					
Mn	55	102.545				
Co	59	106.200				
Ni	60	106.173				
Cu	65	95.790				
Zn	66	97.603				
Ge	72		95.113			
As	75	111.851				
Se	77					
Se	82	96.814				
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107	108.045				
Cd	114	113.211				
In	115		95.762			
Sn	118					
Sb	123	112.167				
Ba	135	101.935				
Ce	140					
Tb	159		97.599			
Ho	165					
Tl	203	123.038				
Tl	205					
Pb	206					
Pb	207					
Pb	208	102.532				
U	238	107.684				
Bi	209		95.967			

Sample ID: QC Std 3
Report Date/Time: Saturday, January 28, 2012 11:22:14
Page 2

Approved: January 30, 2012
Erin D. Long

⌈	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 3	Tl	203	LLICV IS OUT OF LIMITS (+/-20%)

Sample ID: QC Std 3
Report Date/Time: Saturday, January 28, 2012 11:22:14
Page 3

Approved: January 30, 2012

Method 6020 - Summary Report

Sample ID: QC Std 3

Sample Date/Time: Saturday, January 28, 2012 11:34:45
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: EDL

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	8504.337	-0.01				ug/L
	Be	9	9.333	0.00	-0.0187	0.004	23.814	ug/L
	Al	27	12425.976	0.08	2.5132	0.409	16.290	ug/L
>	Sc	45	125894.892	125894.89				ug/L
	Ti	49	80.008	0.00	0.1908	0.111	58.057	ug/L
	V	51	4500.834	0.01	0.3612	0.040	10.954	ug/L
	Cr	52	10615.531	0.02	0.7416	0.034	4.557	ug/L
	Cr	53	1380.253	0.00	0.7759	0.122	15.764	ug/L
	Mn	55	5446.834	0.02	0.5026	0.010	1.992	ug/L
	Co	59	3230.658	0.01	0.4054	0.005	1.227	ug/L
	Ni	60	2682.792	0.01	1.6550	0.046	2.803	ug/L
	Cu	65	1377.794	0.00	0.7653	0.025	3.316	ug/L
	Zn	66	6079.611	0.02	6.1590	0.137	2.221	ug/L
>	Ge	72	288425.291	288425.29				ug/L
	As	75	256.918	0.00	0.4000	0.059	14.789	ug/L
	Se	77	80.000	0.00	0.4864	0.087	17.851	ug/L
	Se	82	26.835	0.00	0.2981	0.138	46.309	ug/L
	Rb	85	22.667	-0.00				mg/L
	Y	89	188930.761	-13459.82				ug/L
	Rh	103	13.667	-15.33				ug/L
	Mo	98	92.901	0.00	0.0517	0.001	1.549	ug/L
	Ag	107	2001.260	0.01	0.4206	0.010	2.319	ug/L
	Cd	114	227.814	0.00	0.2272	0.044	19.585	ug/L
>	In	115	249775.944	249775.94				ug/L
	Sn	118	138.001	-0.00	0.0375	0.002	5.108	ug/L
	Sb	123	1486.723	0.01	0.4427	0.002	0.382	ug/L
	Ba	135	1065.079	0.00	0.7629	0.049	6.374	ug/L
	Ce	140	70.007	-0.00				ug/L
>	Tb	159	361080.372	361080.37				ug/L
	Ho	165	16.668	0.00				ug/L
	Tl	203	518.021	0.00	0.0917	0.002	1.776	ug/L
	Tl	205	1300.233	0.00	0.1012	0.015	15.124	ug/L
	Pb	206	2103.953	0.01	0.4041	0.004	1.099	ug/L
	Pb	207	1921.241	0.01	0.3971	0.003	0.864	ug/L
	Pb	208	8766.256	0.03	0.4025	0.003	0.817	ug/L
	U	238	10692.296	0.04	0.4221	0.009	2.172	ug/L
>	Bi	209	295910.886	295910.89				ug/L

Sample ID: QC Std 3
Report Date/Time: Saturday, January 28, 2012 11:36:59
Page 1

Approved: January 30, 2012
Erin D. Long

Na	23	53432.883	-0.61	0.0027	0.001	34.551	mg/L
Mg	24	1980.448	0.01	-0.0035	0.000	7.143	mg/L
K	39	475486.298	0.26	-0.0009	0.003	307.597	mg/L
Ca	43	183.354	0.00	-0.0020	0.004	213.391	mg/L
Fe	54	32176.784	0.02	0.0018	0.002	102.372	mg/L
Fe	57	7881.188	0.01	0.0020	0.004	181.831	mg/L
Sc-1	45	125894.892	125894.89				mg/L
Cl	35	35561.722	-1362.58				mg/L
Kr	83	57.334	4.33				mg/L
Br	81	4978.157	-98.06				mg/L
P	31	6975.595	-619.20				mg/L
S	34	154521.545	-21078.91				mg/L
Sr	88	53.339	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	90.312				
Cr	52	92.699				
Cr	53					
Mn	55	100.518				
Co	59	101.355				
Ni	60	103.435				
Cu	65	95.663				
Zn	66	98.545				
Ge	72		92.438			
As	75	99.992				
Se	77					
Se	82	74.513				
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107	105.142				
Cd	114	113.589				
In	115		90.553			
Sn	118					
Sb	123	110.675				
Ba	135	101.717				
Ce	140					
Tb	159		92.092			
Ho	165					
Tl	203	114.666				
Tl	205					
Pb	206					
Pb	207					
Pb	208	100.623				
U	238	105.514				
Bi	209		92.739			

Sample ID: QC Std 3
Report Date/Time: Saturday, January 28, 2012 11:36:59
Page 2

Approved: January 30, 2012
Erin D. Long

⌈	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
Report Date/Time: Saturday, January 28, 2012 11:36:59
Page 3

Approved: January 30, 2012

Method 6020 - Summary Report

Sample ID: QC Std 4

Sample Date/Time: Saturday, January 28, 2012 11:42:24
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: EDL

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	8204.061	-0.00				ug/L
	Be	9	4.000	-0.00	-0.0391	0.018	46.653	ug/L
	Al	27	15578277.348	131.52	4276.3687	173.060	4.047	ug/L
>	Sc	45	118554.904	118554.90				ug/L
	Ti	49	37809.370	0.15	100.4417	2.635	2.624	ug/L
	V	51	1322.758	-0.00	-0.0570	0.015	25.844	ug/L
	Cr	52	5747.706	0.00	0.0668	0.019	28.700	ug/L
	Cr	53	1496.952	0.00	1.1453	0.232	20.230	ug/L
	Mn	55	1836.221	0.01	0.1630	0.008	5.120	ug/L
	Co	59	168.337	0.00	0.0071	0.002	25.736	ug/L
	Ni	60	471.018	0.00	0.2827	0.008	2.937	ug/L
	Cu	65	295.342	0.00	0.0685	0.012	17.911	ug/L
	Zn	66	387.346	-0.00	-0.1329	0.024	18.254	ug/L
>	Ge	72	260107.855	260107.85				ug/L
	As	75	-135.855	-0.00	-0.0261	0.071	272.367	ug/L
	Se	77	100.001	0.00	0.9175	0.207	22.581	ug/L
	Se	82	-2.806	-0.00	-0.0420	0.008	19.992	ug/L
	Rb	85	1612.506	0.01				mg/L
	Y	89	169289.095	-33101.49				ug/L
	Rh	103	18.334	-10.67				ug/L
	Mo	98	216891.560	0.93	102.4417	2.002	1.954	ug/L
	Ag	107	95.668	0.00	0.0113	0.003	29.203	ug/L
	Cd	114	93.630	0.00	0.1050	0.018	16.716	ug/L
>	In	115	233309.230	233309.23				ug/L
	Sn	118	107.734	-0.00	0.0313	0.001	2.523	ug/L
	Sb	123	161.038	0.00	0.0626	0.005	7.968	ug/L
	Ba	135	45.334	0.00	0.0192	0.006	29.091	ug/L
	Ce	140	640.089	0.00				ug/L
>	Tb	159	334258.113	334258.11				ug/L
	Ho	165	10.001	-0.00				ug/L
	Tl	203	33.000	0.00	0.0097	0.001	9.347	ug/L
	Tl	205	56.673	0.00	0.0157	0.001	7.070	ug/L
	Pb	206	230.672	0.00	0.0137	0.007	49.068	ug/L
	Pb	207	212.672	0.00	0.0202	0.002	11.815	ug/L
	Pb	208	928.696	0.00	0.0138	0.001	6.756	ug/L
	U	238	34.000	0.00	0.0051	0.000	3.767	ug/L
>	Bi	209	279303.045	279303.04				ug/L

Sample ID: QC Std 4
Report Date/Time: Saturday, January 28, 2012 11:44:37
Page 1

Approved: January 30, 2012
Erin D. Long

Na	23	41021478.085	345.26	12.3637	0.520	4.208	mg/L
Mg	24	10398944.914	87.77	4.9913	0.151	3.025	mg/L
K	39	24216881.756	201.07	4.9025	0.311	6.346	mg/L
Ca	43	150413.937	1.27	14.6591	0.626	4.273	mg/L
Fe	54	5060929.256	42.48	11.9777	0.372	3.106	mg/L
Fe	57	2100370.925	17.70	11.5256	0.956	8.296	mg/L
Sc-1	45	118554.904	118554.90				mg/L
Cl	35	1566397.422	1529473.12				mg/L
Kr	83	54.334	1.33				mg/L
Br	81	4422.508	-653.71				mg/L
P	31	1217677.512	1210082.72				mg/L
S	34	256551.579	80951.12				mg/L
Sr	88	543.405	490.07				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		83.362			
As	75					
Se	77					
Se	82					
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107					
Cd	114					
In	115		84.583			
Sn	118					
Sb	123					
Ba	135					
Ce	140					
Tb	159		85.251			
Ho	165					
Tl	203					
Tl	205					
Pb	206					
Pb	207					
Pb	208					
U	238					
Bi	209		87.534			

Sample ID: QC Std 4
Report Date/Time: Saturday, January 28, 2012 11:44:37
Page 2

Approved: January 30, 2012
Erin D. Long

⌈	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
Report Date/Time: Saturday, January 28, 2012 11:44:37
Page 3

Approved: January 30, 2012

Method 6020 - Summary Report

Sample ID: QC Std 5

Sample Date/Time: Saturday, January 28, 2012 11:50:02
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: EDL

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	8387.595	0.00				ug/L
	Be	9	23554.577	0.21	109.3111	4.759	4.353	ug/L
	Al	27	14888593.670	134.06	4358.9380	243.094	5.577	ug/L
>	Sc	45	111221.569	111221.57				ug/L
	Ti	49	37628.599	0.15	105.0947	4.444	4.229	ug/L
	V	51	580911.062	2.34	93.0106	1.549	1.665	ug/L
	Cr	52	525875.129	2.11	96.5641	0.503	0.521	ug/L
	Cr	53	97507.119	0.39	148.6829	5.082	3.418	ug/L
	Mn	55	824632.283	3.33	95.6692	0.469	0.490	ug/L
	Co	59	635957.680	2.57	96.9835	1.415	1.459	ug/L
	Ni	60	132581.836	0.54	98.0937	1.014	1.034	ug/L
	Cu	65	129734.792	0.52	100.1916	0.725	0.723	ug/L
	Zn	66	76431.701	0.31	98.6035	1.372	1.392	ug/L
>	Ge	72	247395.080	247395.08				ug/L
	As	75	81395.381	0.33	99.2932	2.216	2.231	ug/L
	Se	77	8031.202	0.03	130.1131	0.188	0.145	ug/L
	Se	82	7472.318	0.03	98.7797	0.499	0.505	ug/L
	Rb	85	1471.478	0.01				mg/L
	Y	89	160034.792	-42355.79				ug/L
	Rh	103	55.667	26.67				ug/L
	Mo	98	205664.637	0.96	105.2347	2.943	2.796	ug/L
	Ag	107	402227.487	1.87	100.4808	0.300	0.299	ug/L
	Cd	114	91207.174	0.42	101.2255	2.083	2.058	ug/L
>	In	115	215465.228	215465.23				ug/L
	Sn	118	798.172	0.00	0.2530	0.012	4.834	ug/L
	Sb	123	304137.678	1.41	102.0247	2.662	2.609	ug/L
	Ba	135	117549.650	0.37	97.8510	1.193	1.219	ug/L
	Ce	140	563.409	0.00				ug/L
>	Tb	159	317337.985	317337.98				ug/L
	Ho	165	33.337	0.00				ug/L
	Tl	203	531979.013	1.92	96.3302	1.334	1.385	ug/L
	Tl	205	1329777.611	4.79	97.8505	2.985	3.050	ug/L
	Pb	206	451363.946	1.63	100.9880	0.805	0.798	ug/L
	Pb	207	394253.782	1.42	93.4056	0.333	0.357	ug/L
	Pb	208	1839174.080	6.63	97.9109	0.713	0.728	ug/L
	U	238	2330565.847	8.40	97.2524	1.683	1.731	ug/L
>	Bi	209	277504.371	277504.37				ug/L

Sample ID: QC Std 5
Report Date/Time: Saturday, January 28, 2012 11:52:16
Page 1

Approved: January 30, 2012
Erin D. Long

Na	23	38400376.752	344.75	12.3455	0.694	5.621	mg/L
Mg	24	9897998.697	89.12	5.0680	0.257	5.076	mg/L
K	39	21791295.013	192.54	4.6943	0.119	2.532	mg/L
Ca	43	137607.272	1.24	14.2968	0.581	4.062	mg/L
Fe	54	4714824.333	42.22	11.9018	0.615	5.164	mg/L
Fe	57	1924961.716	17.28	11.2502	0.527	4.681	mg/L
Sc-1	45	111221.569	111221.57				mg/L
Cl	35	53609805.137	53572880.84				mg/L
Kr	83	56.334	3.33				mg/L
Br	81	8365.531	3289.32				mg/L
P	31	1116983.319	1109388.52				mg/L
S	34	248333.991	72733.54				mg/L
Sr	88	476.728	423.39				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	93.011				
Cr	52	96.564				
Cr	53					
Mn	55	95.669				
Co	59	96.983				
Ni	60	98.094				
Cu	65	100.192				
Zn	66	98.603				
Ge	72		79.288			
As	75	99.293				
Se	77					
Se	82	98.780				
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107	100.481				
Cd	114	101.226				
In	115		78.114			
Sn	118					
Sb	123	102.025				
Ba	135	97.851				
Ce	140					
Tb	159		80.935			
Ho	165					
Tl	203	96.330				
Tl	205					
Pb	206					
Pb	207					
Pb	208	97.911				
U	238	97.252				
Bi	209		86.970			

Sample ID: QC Std 5
Report Date/Time: Saturday, January 28, 2012 11:52:16
Page 2

Approved: January 30, 2012
Erin D. Long

⌈	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
Ge 72 Int Std for QC S	Ge	72	Rerun for AFCEE QC
In 115 Int Std for QC S	In	115	Rerun for AFCEE QC

Sample ID: QC Std 5
Report Date/Time: Saturday, January 28, 2012 11:52:16
Page 3

Approved: January 30, 2012

Method 6020 - Summary Report

Sample ID: QC Std 6

Sample Date/Time: Saturday, January 28, 2012 11:57:41
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: EDL

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	9004.880	-0.00				ug/L
	Be	9	12115.469	0.09	48.9231	2.023	4.134	ug/L
	Al	27	198746.389	1.54	49.9060	2.203	4.415	ug/L
>	Sc	45	127791.393	127791.39				ug/L
	Ti	49	40354.873	0.14	100.0517	2.872	2.871	ug/L
	V	51	347301.359	1.24	49.2379	0.584	1.185	ug/L
	Cr	52	307504.256	1.08	49.6730	0.553	1.114	ug/L
	Cr	53	43668.540	0.15	58.4658	1.091	1.866	ug/L
	Mn	55	478355.377	1.71	49.2449	1.262	2.562	ug/L
	Co	59	371783.226	1.33	50.3299	0.992	1.971	ug/L
	Ni	60	76543.774	0.27	50.2514	0.763	1.518	ug/L
	Cu	65	74788.328	0.27	51.1943	0.716	1.399	ug/L
	Zn	66	44166.509	0.16	50.2859	0.705	1.401	ug/L
>	Ge	72	278692.087	278692.09				ug/L
	As	75	45481.275	0.16	49.3206	0.883	1.790	ug/L
	Se	77	3525.412	0.01	50.3252	1.569	3.118	ug/L
	Se	82	4190.402	0.02	49.1703	0.348	0.707	ug/L
	Rb	85	1662.849	0.01				mg/L
	Y	89	182487.857	-19902.73				ug/L
	Rh	103	24.334	-4.67				ug/L
	Mo	98	221561.980	0.91	100.3758	1.159	1.155	ug/L
	Ag	107	227048.310	0.93	50.2423	0.940	1.871	ug/L
	Cd	114	51036.196	0.21	50.1708	2.142	4.270	ug/L
>	In	115	243228.003	243228.00				ug/L
	Sn	118	175387.140	0.72	49.2355	1.168	2.372	ug/L
	Sb	123	169538.613	0.70	50.3661	1.029	2.043	ug/L
	Ba	135	65044.892	0.18	48.8378	0.575	1.178	ug/L
	Ce	140	80.008	-0.00				ug/L
>	Tb	159	351825.422	351825.42				ug/L
	Ho	165	6.667	-0.00				ug/L
	Tl	203	284002.506	1.00	50.0988	1.153	2.301	ug/L
	Tl	205	710083.829	2.49	50.9078	1.340	2.633	ug/L
	Pb	206	227351.990	0.80	49.5404	1.132	2.285	ug/L
	Pb	207	214154.997	0.75	49.4112	0.983	1.990	ug/L
	Pb	208	960042.669	3.37	49.7653	0.632	1.271	ug/L
	U	238	1302024.012	4.57	52.9305	1.642	3.102	ug/L
>	Bi	209	284915.612	284915.61				ug/L

Sample ID: QC Std 6
Report Date/Time: Saturday, January 28, 2012 11:59:54
Page 1

Approved: January 30, 2012
Erin D. Long

Na	23	16815959.566	130.72	4.6962	0.143	3.052	mg/L
Mg	24	10759321.488	84.36	4.7970	0.243	5.073	mg/L
K	39	25833939.584	199.07	4.8535	0.267	5.505	mg/L
Ca	43	52520.292	0.41	4.7407	0.267	5.642	mg/L
Fe	54	2192330.522	16.96	4.7796	0.297	6.216	mg/L
Fe	57	985143.335	7.67	4.9905	0.267	5.354	mg/L
> Sc-1	45	127791.393	127791.39				mg/L
Cl	35	102983.411	66059.11				mg/L
Kr	83	44.001	-9.00				mg/L
Br	81	4773.367	-302.85				mg/L
P	31	6883.529	-711.27				mg/L
S	34	146834.761	-28765.69				mg/L
Sr	88	3671.177	3617.84				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	98.476				
Cr	52	99.346				
Cr	53					
Mn	55	98.490				
Co	59	100.660				
Ni	60	100.503				
Cu	65	102.389				
Zn	66	100.572				
> Ge	72		89.318			
As	75	98.641				
Se	77					
Se	82	98.341				
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107	100.485				
Cd	114	100.342				
> In	115		88.179			
Sn	118					
Sb	123	100.732				
Ba	135	97.676				
Ce	140					
> Tb	159		89.731			
Ho	165					
Tl	203	100.198				
Tl	205					
Pb	206					
Pb	207					
Pb	208	99.531				
U	238	105.861				
> Bi	209		89.293			

Sample ID: QC Std 6
Report Date/Time: Saturday, January 28, 2012 11:59:54
Page 2

Approved: January 30, 2012
Erin D. Long

⌈	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: Saturday, January 28, 2012 11:59:54
Page 3

Approved: January 30, 2012

Method 6020 - Summary Report

Sample ID: QC Std 7

Sample Date/Time: Saturday, January 28, 2012 12:05:18
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: EDL

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	8003.873	-0.01				ug/L
	Be	9	10.667	0.00	-0.0137	0.015	107.069	ug/L
	Al	27	3817.548	0.01	0.2569	0.089	34.496	ug/L
>	Sc	45	128840.931	128840.93				ug/L
	Ti	49	86.676	0.00	0.2127	0.088	41.592	ug/L
	V	51	1774.651	-0.00	-0.0076	0.034	452.080	ug/L
	Cr	52	6064.934	0.00	0.0441	0.037	84.291	ug/L
	Cr	53	4661.789	0.01	5.2549	0.836	15.915	ug/L
	Mn	55	608.028	0.00	0.0225	0.003	15.220	ug/L
	Co	59	108.668	0.00	-0.0027	0.003	131.105	ug/L
	Ni	60	103.335	0.00	0.0186	0.011	58.455	ug/L
	Cu	65	113.335	0.00	-0.0717	0.002	2.948	ug/L
	Zn	66	745.707	0.00	0.2418	0.026	10.587	ug/L
>	Ge	72	280833.034	280833.03				ug/L
	As	75	-109.010	-0.00	0.0141	0.022	153.857	ug/L
	Se	77	98.667	0.00	0.7849	0.116	14.754	ug/L
	Se	82	6.620	0.00	0.0712	0.074	103.372	ug/L
	Rb	85	28.334	0.00				mg/L
	Y	89	181953.841	-20436.74				ug/L
	Rh	103	14.667	-14.33				ug/L
	Mo	98	81.750	0.00	0.0469	0.010	22.072	ug/L
	Ag	107	113.002	0.00	0.0136	0.004	26.834	ug/L
	Cd	114	11.863	0.00	0.0204	0.006	31.155	ug/L
>	In	115	249684.432	249684.43				ug/L
	Sn	118	656.159	0.00	0.1792	0.004	2.179	ug/L
	Sb	123	62.367	0.00	0.0308	0.003	8.416	ug/L
	Ba	135	32.334	0.00	0.0070	0.007	102.925	ug/L
	Ce	140	16.668	-0.00				ug/L
>	Tb	159	361207.285	361207.29				ug/L
	Ho	165	20.002	0.00				ug/L
	Tl	203	418.348	0.00	0.0755	0.009	11.764	ug/L
	Tl	205	940.148	0.00	0.0771	0.010	13.320	ug/L
	Pb	206	216.005	0.00	0.0084	0.002	29.494	ug/L
	Pb	207	187.004	0.00	0.0122	0.002	16.272	ug/L
	Pb	208	880.361	0.00	0.0092	0.003	27.725	ug/L
	U	238	209.338	0.00	0.0120	0.002	19.705	ug/L
>	Bi	209	292357.095	292357.09				ug/L

Sample ID: QC Std 7
Report Date/Time: Saturday, January 28, 2012 12:07:30
Page 1

Approved: January 30, 2012
Erin D. Long

Na	23	127358.611	-0.04	0.0229	0.002	8.362	mg/L
Mg	24	1950.440	0.01	-0.0036	0.000	8.183	mg/L
K	39	475213.689	0.18	-0.0030	0.005	179.381	mg/L
Ca	43	250.029	0.00	0.0036	0.001	27.567	mg/L
Fe	54	31502.191	0.01	-0.0011	0.007	661.856	mg/L
Fe	57	7487.445	0.01	-0.0009	0.001	163.402	mg/L
Sc-1	45	128840.931	128840.93				mg/L
Cl	35	57658.177	20733.88				mg/L
Kr	83	43.667	-9.33				mg/L
Br	81	4879.440	-196.77				mg/L
P	31	7842.365	247.57				mg/L
S	34	159004.655	-16595.80				mg/L
Sr	88	76.675	23.34				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		90.004			
As	75					
Se	77					
Se	82					
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107					
Cd	114					
In	115		90.520			
Sn	118					
Sb	123					
Ba	135					
Ce	140					
Tb	159		92.124			
Ho	165					
Tl	203					
Tl	205					
Pb	206					
Pb	207					
Pb	208					
U	238					
Bi	209		91.625			

Sample ID: QC Std 7
Report Date/Time: Saturday, January 28, 2012 12:07:30
Page 2

Approved: January 30, 2012
Erin D. Long

⌈	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
Report Date/Time: Saturday, January 28, 2012 12:07:30
Page 3

Approved: January 30, 2012

Method 6020 - Summary Report

Sample ID: QC Std 7

Sample Date/Time: Saturday, January 28, 2012 12:12:53
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: EDL

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	8704.549	-0.01				ug/L
	Be	9	11.333	0.00	-0.0108	0.013	123.876	ug/L
	Al	27	2717.110	0.00	-0.0124	0.009	70.163	ug/L
>	Sc	45	127350.015	127350.01				ug/L
	Ti	49	66.674	0.00	0.1631	0.052	31.815	ug/L
	V	51	1543.031	-0.00	-0.0409	0.026	64.513	ug/L
	Cr	52	5844.775	0.00	0.0067	0.022	322.211	ug/L
	Cr	53	3037.529	0.01	3.0610	0.499	16.307	ug/L
	Mn	55	581.693	0.00	0.0197	0.004	18.062	ug/L
	Co	59	77.668	0.00	-0.0069	0.002	29.638	ug/L
	Ni	60	83.668	-0.00	0.0056	0.004	77.598	ug/L
	Cu	65	103.002	0.00	-0.0788	0.007	8.891	ug/L
	Zn	66	717.371	0.00	0.2084	0.041	19.832	ug/L
>	Ge	72	281154.534	281154.53				ug/L
	As	75	-135.134	-0.00	-0.0138	0.064	466.847	ug/L
	Se	77	86.667	0.00	0.6101	0.232	38.039	ug/L
	Se	82	-7.847	-0.00	-0.0980	0.178	181.948	ug/L
	Rb	85	28.000	0.00				mg/L
	Y	89	184484.831	-17905.75				ug/L
	Rh	103	15.334	-13.67				ug/L
	Mo	98	34.009	0.00	0.0259	0.004	16.316	ug/L
	Ag	107	68.001	0.00	0.0041	0.003	71.049	ug/L
	Cd	114	-0.019	-0.00	0.0090	0.007	79.898	ug/L
>	In	115	246990.635	246990.64				ug/L
	Sn	118	583.887	0.00	0.1612	0.004	2.466	ug/L
	Sb	123	35.450	0.00	0.0231	0.003	13.878	ug/L
	Ba	135	27.000	0.00	0.0036	0.003	91.352	ug/L
	Ce	140	26.669	-0.00				ug/L
>	Tb	159	353103.197	353103.20				ug/L
	Ho	165	6.667	-0.00				ug/L
	Tl	203	189.004	0.00	0.0364	0.003	8.274	ug/L
	Tl	205	443.390	0.00	0.0427	0.004	10.044	ug/L
	Pb	206	196.338	0.00	0.0044	0.003	57.025	ug/L
	Pb	207	174.004	0.00	0.0095	0.003	28.137	ug/L
	Pb	208	784.356	0.00	0.0046	0.003	65.558	ug/L
	U	238	89.335	0.00	0.0072	0.001	14.517	ug/L
>	Bi	209	290651.761	290651.76				ug/L

Sample ID: QC Std 7
Report Date/Time: Saturday, January 28, 2012 12:15:05
Page 1

Approved: January 30, 2012
Erin D. Long

Na	23	123439.975	-0.06	0.0222	0.001	4.133	mg/L
Mg	24	880.137	0.00	-0.0040	0.000	2.711	mg/L
K	39	444384.765	-0.03	-0.0079	0.004	50.346	mg/L
Ca	43	190.021	0.00	-0.0016	0.002	142.095	mg/L
Fe	54	30296.992	-0.00	-0.0032	0.001	37.653	mg/L
Fe	57	6623.306	0.00	-0.0050	0.002	37.504	mg/L
Sc-1	45	127350.015	127350.01				mg/L
Cl	35	44304.136	7379.83				mg/L
Kr	83	59.001	6.00				mg/L
Br	81	4777.370	-298.84				mg/L
P	31	7226.499	-368.29				mg/L
S	34	138064.960	-37535.50				mg/L
Sr	88	60.006	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		90.107			
As	75					
Se	77					
Se	82					
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107					
Cd	114					
In	115		89.543			
Sn	118					
Sb	123					
Ba	135					
Ce	140					
Tb	159		90.057			
Ho	165					
Tl	203					
Tl	205					
Pb	206					
Pb	207					
Pb	208					
U	238					
Bi	209		91.091			

Sample ID: QC Std 7
Report Date/Time: Saturday, January 28, 2012 12:15:05
Page 2

Approved: January 30, 2012
Erin D. Long

⌈	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: Saturday, January 28, 2012 12:15:05
Page 3

Approved: January 30, 2012

Method 6020 - Summary Report

Sample ID: PBW 60 WG387967-04

Sample Date/Time: Saturday, January 28, 2012 12:27:01
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: EDL
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	8988.192	-0.00				ug/L
	Be	9	11.333	0.00	-0.0121	0.015	124.196	ug/L
	Al	27	17702.227	0.12	3.7296	0.271	7.259	ug/L
>	Sc	45	129583.773	129583.77				ug/L
	Ti	49	96.677	0.00	0.2320	0.081	35.084	ug/L
	V	51	1824.922	-0.00	-0.0054	0.011	207.906	ug/L
	Cr	52	6656.057	0.00	0.1210	0.026	21.294	ug/L
	Cr	53	2027.117	0.00	1.6519	0.254	15.349	ug/L
	Mn	55	2045.938	0.01	0.1658	0.010	6.315	ug/L
	Co	59	117.002	0.00	-0.0019	0.001	49.890	ug/L
	Ni	60	83.001	-0.00	0.0043	0.002	54.879	ug/L
	Cu	65	270.007	0.00	0.0318	0.003	10.491	ug/L
	Zn	66	1268.776	0.00	0.8137	0.036	4.387	ug/L
>	Ge	72	285982.232	285982.23				ug/L
	As	75	-149.664	-0.00	-0.0262	0.035	132.267	ug/L
	Se	77	76.667	0.00	0.4506	0.185	41.152	ug/L
	Se	82	-3.519	-0.00	-0.0440	0.207	469.714	ug/L
	Rb	85	85.668	0.00				mg/L
	Y	89	193159.215	-9231.37				ug/L
	Rh	103	17.334	-11.67				ug/L
	Mo	98	29.758	0.00	0.0239	0.003	13.534	ug/L
	Ag	107	64.668	0.00	0.0032	0.002	55.307	ug/L
	Cd	114	2.584	-0.00	0.0114	0.007	58.604	ug/L
>	In	115	248772.370	248772.37				ug/L
	Sn	118	1104.340	0.00	0.3029	0.012	3.854	ug/L
	Sb	123	92.910	0.00	0.0397	0.004	11.146	ug/L
	Ba	135	261.673	0.00	0.1728	0.004	2.513	ug/L
	Ce	140	196.689	0.00				ug/L
>	Tb	159	364964.911	364964.91				ug/L
	Ho	165	13.335	0.00				ug/L
	Tl	203	112.669	0.00	0.0230	0.002	6.739	ug/L
	Tl	205	256.696	0.00	0.0294	0.001	3.834	ug/L
	Pb	206	360.345	0.00	0.0386	0.005	12.117	ug/L
	Pb	207	308.009	0.00	0.0390	0.002	5.280	ug/L
	Pb	208	1439.730	0.00	0.0370	0.001	3.016	ug/L
	U	238	90.668	0.00	0.0072	0.001	19.934	ug/L
>	Bi	209	294200.194	294200.19				ug/L

Sample ID: PBW 60 WG387967-04
Report Date/Time: Saturday, January 28, 2012 12:29:13
Page 1

Approved: January 30, 2012
Erin D. Long

Na	23	574111.753	3.40	0.1459	0.005	3.093	mg/L
Mg	24	2980.838	0.02	-0.0031	0.000	6.273	mg/L
K	39	439852.860	-0.12	-0.0103	0.003	26.791	mg/L
Ca	43	340.041	0.00	0.0115	0.004	36.297	mg/L
Fe	54	66942.046	0.28	0.0756	0.013	16.826	mg/L
Fe	57	7367.326	0.01	-0.0018	0.002	109.776	mg/L
Sc-1	45	129583.773	129583.77				mg/L
Cl	35	44349.089	7424.79				mg/L
Kr	83	59.667	6.67				mg/L
Br	81	4934.128	-142.09				mg/L
P	31	11809.038	4214.24				mg/L
S	34	143598.297	-32002.16				mg/L
Sr	88	610.083	556.74				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		91.655			
As	75					
Se	77					
Se	82					
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107					
Cd	114					
In	115		90.189			
Sn	118					
Sb	123					
Ba	135					
Ce	140					
Tb	159		93.083			
Ho	165					
Tl	203					
Tl	205					
Pb	206					
Pb	207					
Pb	208					
U	238					
Bi	209		92.203			

Sample ID: PBW 60 WG387967-04
Report Date/Time: Saturday, January 28, 2012 12:29:13
Page 2

Approved: January 30, 2012

⌈	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 60 WG387967-04
Report Date/Time: Saturday, January 28, 2012 12:29:13
Page 3

Approved: January 30, 2012

Method 6020 - Summary Report

Sample ID: LCSW 60 WG387967-05

Sample Date/Time: Saturday, January 28, 2012 12:34:47
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: EDL
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	9438.680	-0.00				ug/L
	Be	9	6431.817	0.05	24.1245	0.561	2.325	ug/L
	Al	27	113045.548	0.81	26.1011	1.192	4.567	ug/L
>	Sc	45	137204.572	137204.57				ug/L
	Ti	49	110.012	0.00	0.2524	0.084	33.146	ug/L
	V	51	190596.078	0.63	24.9644	0.698	2.795	ug/L
	Cr	52	176685.162	0.57	26.0574	0.448	1.719	ug/L
	Cr	53	22419.028	0.07	27.3304	0.617	2.259	ug/L
	Mn	55	268261.420	0.89	25.6226	0.218	0.852	ug/L
	Co	59	206648.574	0.69	25.9626	0.417	1.605	ug/L
	Ni	60	42385.975	0.14	25.8129	0.470	1.820	ug/L
	Cu	65	41814.756	0.14	26.5070	0.328	1.236	ug/L
	Zn	66	23316.480	0.08	24.3341	0.258	1.060	ug/L
>	Ge	72	300146.107	300146.11				ug/L
	As	75	23581.143	0.08	23.8078	0.380	1.596	ug/L
	Se	77	1752.851	0.01	22.8862	0.810	3.537	ug/L
	Se	82	2021.154	0.01	22.0189	0.370	1.679	ug/L
	Rb	85	62.001	0.00				mg/L
	Y	89	199521.585	-2869.00				ug/L
	Rh	103	23.334	-5.67				ug/L
	Mo	98	37.420	0.00	0.0266	0.001	4.692	ug/L
	Ag	107	126730.723	0.49	26.2451	0.480	1.829	ug/L
	Cd	114	26804.565	0.10	24.6593	0.376	1.525	ug/L
>	In	115	259864.990	259864.99				ug/L
	Sn	118	198.669	-0.00	0.0520	0.003	5.821	ug/L
	Sb	123	89329.436	0.34	24.8448	0.269	1.082	ug/L
	Ba	135	36988.331	0.10	25.4793	0.950	3.729	ug/L
	Ce	140	106.678	-0.00				ug/L
>	Tb	159	383393.488	383393.49				ug/L
	Ho	165	13.335	0.00				ug/L
	Tl	203	155615.967	0.51	25.6022	0.057	0.224	ug/L
	Tl	205	388347.622	1.27	25.9711	0.195	0.750	ug/L
	Pb	206	131353.495	0.43	26.6775	0.337	1.264	ug/L
	Pb	207	115970.226	0.38	24.9419	0.338	1.355	ug/L
	Pb	208	537980.315	1.76	25.9936	0.174	0.671	ug/L
	U	238	700392.471	2.29	26.5544	0.193	0.728	ug/L
>	Bi	209	305441.923	305441.92				ug/L

Sample ID: LCSW 60 WG387967-05
Report Date/Time: Saturday, January 28, 2012 12:36:59
Page 1

Approved: January 30, 2012
Erin D. Long

Na	23	531701.364	2.84	0.1260	0.004	3.125	mg/L
Mg	24	30870.201	0.22	0.0084	0.000	5.608	mg/L
K	39	469538.216	-0.10	-0.0096	0.003	32.935	mg/L
Ca	43	643.423	0.00	0.0355	0.009	24.165	mg/L
Fe	54	67978.692	0.26	0.0696	0.011	15.918	mg/L
Fe	57	8485.169	0.01	0.0015	0.002	165.137	mg/L
Sc-1	45	137204.572	137204.57				mg/L
Cl	35	42884.077	5959.78				mg/L
Kr	83	52.667	-0.33				mg/L
Br	81	5583.872	507.66				mg/L
P	31	14283.612	6688.82				mg/L
S	34	152428.777	-23171.68				mg/L
Sr	88	3391.030	3337.69				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		96.194			
As	75					
Se	77					
Se	82					
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107					
Cd	114					
In	115		94.211			
Sn	118					
Sb	123					
Ba	135					
Ce	140					
Tb	159		97.783			
Ho	165					
Tl	203					
Tl	205					
Pb	206					
Pb	207					
Pb	208					
U	238					
Bi	209		95.726			

Sample ID: LCSW 60 WG387967-05
Report Date/Time: Saturday, January 28, 2012 12:36:59
Page 2

Approved: January 30, 2012

⌈	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 60 WG387967-05
Report Date/Time: Saturday, January 28, 2012 12:36:59
Page 3

Approved: January 30, 2012

Method 6020 - Summary Report

Sample ID: L1201061301

Sample Date/Time: Saturday, January 28, 2012 12:42:33
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: EDL

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	9905.892	0.00				ug/L
	Be	9	9.333	0.00	-0.0207	0.023	112.288	ug/L
	Al	27	35963.930	0.25	8.0582	1.896	23.528	ug/L
>	Sc	45	133021.952	133021.95				ug/L
	Ti	49	486.730	0.00	1.2177	0.198	16.286	ug/L
	V	51	11484.302	0.03	1.3934	0.036	2.618	ug/L
	Cr	52	12063.524	0.02	1.0578	0.080	7.532	ug/L
	Cr	53	3000.842	0.01	3.0884	0.310	10.039	ug/L
	Mn	55	4025.679	0.01	0.3791	0.004	0.950	ug/L
	Co	59	535.023	0.00	0.0558	0.002	4.255	ug/L
	Ni	60	1665.517	0.01	1.0556	0.065	6.165	ug/L
	Cu	65	551.024	0.00	0.2328	0.023	9.924	ug/L
	Zn	66	3522.446	0.01	3.4874	0.053	1.519	ug/L
>	Ge	72	276032.860	276032.86				ug/L
	As	75	4523.410	0.02	5.0694	0.448	8.838	ug/L
	Se	77	136.001	0.00	1.3543	0.222	16.382	ug/L
	Se	82	1669.164	0.01	19.7716	1.609	8.136	ug/L
	Rb	85	9553.910	0.03				mg/L
	Y	89	177908.475	-24482.11				ug/L
	Rh	103	81.335	52.33				ug/L
	Mo	98	1266.237	0.01	0.5907	0.025	4.244	ug/L
	Ag	107	79.335	0.00	0.0070	0.002	24.176	ug/L
	Cd	114	23.795	0.00	0.0329	0.010	29.533	ug/L
>	In	115	240319.120	240319.12				ug/L
	Sn	118	288.938	-0.00	0.0819	0.002	2.363	ug/L
	Sb	123	231.082	0.00	0.0821	0.005	6.210	ug/L
	Ba	135	38629.759	0.11	28.0498	0.612	2.180	ug/L
	Ce	140	396.716	0.00				ug/L
>	Tb	159	363660.705	363660.71				ug/L
	Ho	165	16.668	0.00				ug/L
	Tl	203	133.669	0.00	0.0263	0.001	4.457	ug/L
	Tl	205	346.709	0.00	0.0352	0.004	11.028	ug/L
	Pb	206	344.344	0.00	0.0341	0.004	13.108	ug/L
	Pb	207	272.341	0.00	0.0303	0.003	8.961	ug/L
	Pb	208	1352.058	0.00	0.0318	0.002	6.617	ug/L
	U	238	12688.456	0.04	0.4964	0.008	1.645	ug/L
>	Bi	209	298177.978	298177.98				ug/L

Sample ID: L1201061301
Report Date/Time: Saturday, January 28, 2012 12:44:46
Page 1

Approved: January 30, 2012
Erin D. Long

Na	23	49558690.838	372.03	13.3205	0.508	3.814	mg/L
Mg	24	14746879.833	111.10	6.3189	0.382	6.047	mg/L
K	39	6353499.027	44.34	1.0753	0.068	6.328	mg/L
Ca	43	393499.031	2.96	34.2204	1.414	4.133	mg/L
Fe	54	102878.478	0.54	0.1481	0.009	6.107	mg/L
Fe	57	38217.977	0.24	0.1489	0.017	11.096	mg/L
Sc-1	45	133021.952	133021.95				mg/L
Cl	35	507892.180	470967.88				mg/L
Kr	83	41.667	-11.33				mg/L
Br	81	1299678.269	1294602.05				mg/L
P	31	16055.617	8460.82				mg/L
S	34	597465.387	421864.93				mg/L
Sr	88	2198676.724	2198623.39				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		88.466			
As	75					
Se	77					
Se	82					
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107					
Cd	114					
In	115		87.125			
Sn	118					
Sb	123					
Ba	135					
Ce	140					
Tb	159		92.750			
Ho	165					
Tl	203					
Tl	205					
Pb	206					
Pb	207					
Pb	208					
U	238					
Bi	209		93.449			

Sample ID: L1201061301
Report Date/Time: Saturday, January 28, 2012 12:44:46
Page 2

Approved: January 30, 2012
Erin D. Long

⌈	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: L1201061301
Report Date/Time: Saturday, January 28, 2012 12:44:46
Page 3

Approved: January 30, 2012

Method 6020 - Summary Report

Sample ID: L1201065101 ~~WG387967-01~~ WG387967-02

Sample Date/Time: Saturday, January 28, 2012 12:50:20
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: EDL
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	9555.542	-0.01				ug/L
	Be	9	8.667	0.00	-0.0253	0.019	73.318	ug/L
	Al	27	21661.480	0.13	4.2023	0.315	7.486	ug/L
>	Sc	45	143713.691	143713.69				ug/L
	Ti	49	303.369	0.00	0.7814	0.172	22.048	ug/L
	V	51	14840.079	0.05	1.9426	0.069	3.571	ug/L
	Cr	52	10816.794	0.02	0.9060	0.029	3.176	ug/L
	Cr	53	2433.933	0.01	2.4089	0.184	7.645	ug/L
	Mn	55	3641.499	0.01	0.3508	0.009	2.651	ug/L
	Co	59	291.675	0.00	0.0238	0.002	9.425	ug/L
	Ni	60	1343.122	0.00	0.8700	0.027	3.143	ug/L
	Cu	65	477.018	0.00	0.1919	0.016	8.553	ug/L
	Zn	66	1694.523	0.00	1.4210	0.041	2.896	ug/L
>	Ge	72	267754.295	267754.30				ug/L
	As	75	879.133	0.00	1.1201	0.066	5.909	ug/L
	Se	77	132.001	0.00	1.3538	0.439	32.454	ug/L
	Se	82	327.571	0.00	3.9924	0.264	6.621	ug/L
	Rb	85	13606.245	0.05				mg/L
	Y	89	175993.191	-26397.39				ug/L
	Rh	103	59.001	30.00				ug/L
	Mo	98	1786.515	0.01	0.8480	0.035	4.087	ug/L
	Ag	107	98.668	0.00	0.0118	0.002	15.768	ug/L
	Cd	114	2.659	0.00	0.0117	0.006	55.379	ug/L
>	In	115	235151.309	235151.31				ug/L
	Sn	118	322.273	-0.00	0.0934	0.003	3.174	ug/L
	Sb	123	170.162	0.00	0.0650	0.004	5.636	ug/L
	Ba	135	35265.837	0.10	26.1048	0.487	1.865	ug/L
	Ce	140	273.366	0.00				ug/L
>	Tb	159	356720.676	356720.68				ug/L
	Ho	165	10.001	-0.00				ug/L
	Tl	203	116.002	0.00	0.0232	0.004	19.230	ug/L
	Tl	205	246.695	0.00	0.0283	0.004	15.705	ug/L
	Pb	206	280.008	0.00	0.0204	0.005	24.910	ug/L
	Pb	207	227.005	0.00	0.0199	0.002	8.605	ug/L
	Pb	208	1086.039	0.00	0.0182	0.001	5.532	ug/L
	U	238	7271.580	0.02	0.2844	0.006	2.175	ug/L
>	Bi	209	299865.293	299865.29				ug/L

Sample ID: L1201065101 WG387967-01
Report Date/Time: Saturday, January 28, 2012 12:52:33
Page 1

Approved: January 30, 2012
Erin D. Long

Na	23	38830498.239	269.74	9.6646	0.674	6.979	mg/L
Mg	24	7495773.961	52.25	2.9694	0.174	5.861	mg/L
K	39	6635430.051	42.75	1.0366	0.083	7.994	mg/L
Ca	43	232129.689	1.62	18.6922	1.402	7.503	mg/L
Fe	54	90573.782	0.39	0.1079	0.016	14.517	mg/L
Fe	57	31282.690	0.17	0.1038	0.029	27.951	mg/L
Sc-1	45	143713.691	143713.69				mg/L
Cl	35	275667.646	238743.34				mg/L
Kr	83	50.667	-2.33				mg/L
Br	81	215840.526	210764.31				mg/L
P	31	14138.706	6543.91				mg/L
S	34	393493.384	217892.93				mg/L
Sr	88	1502195.380	1502142.04				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		85.813			
As	75					
Se	77					
Se	82					
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107					
Cd	114					
In	115		85.251			
Sn	118					
Sb	123					
Ba	135					
Ce	140					
Tb	159		90.980			
Ho	165					
Tl	203					
Tl	205					
Pb	206					
Pb	207					
Pb	208					
U	238					
Bi	209		93.978			

Sample ID: L1201065101 WG387967-01
Report Date/Time: Saturday, January 28, 2012 12:52:33
Page 2

Approved: January 30, 2012

⌈	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: L1201065101 WG387967-01
Report Date/Time: Saturday, January 28, 2012 12:52:33
Page 3

Approved: January 30, 2012

Method 6020 - Summary Report

Sample ID: L1201065102S WG387967-08

Sample Date/Time: Saturday, January 28, 2012 12:58:07
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: EDL
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	9889.205	0.00				ug/L
	Be	9	6607.286	0.05	26.1945	0.209	0.798	ug/L
	Al	27	115748.771	0.88	28.2941	0.988	3.492	ug/L
>	Sc	45	129803.322	129803.32				ug/L
	Ti	49	333.374	0.00	0.8684	0.217	25.004	ug/L
	V	51	179996.542	0.68	26.8337	0.972	3.621	ug/L
	Cr	52	152335.803	0.56	25.5276	0.327	1.282	ug/L
	Cr	53	19234.114	0.07	26.6523	0.916	3.435	ug/L
	Mn	55	234119.335	0.89	25.4456	0.589	2.316	ug/L
	Co	59	174948.510	0.66	25.0185	0.824	3.294	ug/L
	Ni	60	37046.259	0.14	25.6677	0.502	1.956	ug/L
	Cu	65	35560.158	0.13	25.6334	0.204	0.796	ug/L
	Zn	66	25827.578	0.10	30.8304	0.766	2.484	ug/L
>	Ge	72	263950.514	263950.51				ug/L
	As	75	21850.461	0.08	25.0862	0.443	1.764	ug/L
	Se	77	1566.148	0.01	23.2494	1.427	6.139	ug/L
	Se	82	2063.260	0.01	25.5711	0.571	2.234	ug/L
	Rb	85	12829.673	0.05				mg/L
	Y	89	167908.270	-34482.31				ug/L
	Rh	103	56.001	27.00				ug/L
	Mo	98	1709.133	0.01	0.8399	0.024	2.884	ug/L
	Ag	107	95168.370	0.42	22.5561	0.671	2.976	ug/L
	Cd	114	23775.798	0.10	25.0438	0.126	0.503	ug/L
>	In	115	227010.907	227010.91				ug/L
	Sn	118	866.312	0.00	0.2603	0.001	0.299	ug/L
	Sb	123	80538.545	0.35	25.6378	0.143	0.557	ug/L
	Ba	135	65969.883	0.19	49.8584	0.512	1.027	ug/L
	Ce	140	336.707	0.00				ug/L
>	Tb	159	349467.651	349467.65				ug/L
	Ho	165	23.336	0.00				ug/L
	Tl	203	147506.040	0.50	25.1888	0.203	0.807	ug/L
	Tl	205	363385.339	1.23	25.2239	0.304	1.207	ug/L
	Pb	206	125021.249	0.42	26.3464	0.355	1.349	ug/L
	Pb	207	110268.038	0.37	24.6080	0.068	0.275	ug/L
	Pb	208	515723.918	1.75	25.8593	0.077	0.300	ug/L
	U	238	710177.748	2.41	27.9326	0.598	2.139	ug/L
>	Bi	209	294316.154	294316.15				ug/L

Sample ID: L1201065102S WG387967-08
Report Date/Time: Saturday, January 28, 2012 13:00:20
Page 1

Approved: January 30, 2012
Erin D. Long

Na	23	37305663.222	286.51	10.2641	0.591	5.761	mg/L
Mg	24	7503489.493	57.81	3.2861	0.125	3.818	mg/L
K	39	6312156.206	45.10	1.0940	0.045	4.130	mg/L
Ca	43	218099.513	1.68	19.4011	1.219	6.283	mg/L
Fe	54	66200.990	0.27	0.0735	0.003	4.613	mg/L
Fe	57	18525.859	0.09	0.0542	0.009	16.325	mg/L
Sc-1	45	129803.322	129803.32				mg/L
Cl	35	262628.745	225704.44				mg/L
Kr	83	41.334	-11.67				mg/L
Br	81	180555.107	175478.89				mg/L
P	31	14743.085	7148.29				mg/L
S	34	373973.832	198373.38				mg/L
Sr	88	1365723.408	1365670.07				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		84.594			
As	75					
Se	77					
Se	82					
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107					
Cd	114					
In	115		82.300			
Sn	118					
Sb	123					
Ba	135					
Ce	140					
Tb	159		89.130			
Ho	165					
Tl	203					
Tl	205					
Pb	206					
Pb	207					
Pb	208					
U	238					
Bi	209		92.239			

Sample ID: L1201065102S WG387967-08
Report Date/Time: Saturday, January 28, 2012 13:00:20
Page 2

Approved: January 30, 2012

⌈	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: L1201065102S WG387967-08
Report Date/Time: Saturday, January 28, 2012 13:00:20
Page 3

Approved: January 30, 2012

Method 6020 - Summary Report

Sample ID: L1201065103SD WG387967-09

Sample Date/Time: Saturday, January 28, 2012 13:11:04
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: EDL
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	8671.183	-0.00				ug/L
	Be	9	5817.366	0.05	25.2364	1.930	7.646	ug/L
	Al	27	117522.947	0.97	31.4833	1.397	4.438	ug/L
>	Sc	45	118825.108	118825.11				ug/L
	Ti	49	266.698	0.00	0.8147	0.211	25.876	ug/L
	V	51	154282.659	0.67	26.8008	0.288	1.076	ug/L
	Cr	52	132793.591	0.57	25.9564	0.444	1.712	ug/L
	Cr	53	16972.306	0.07	27.4376	1.238	4.514	ug/L
	Mn	55	198663.040	0.88	25.1504	0.081	0.321	ug/L
	Co	59	151025.527	0.67	25.1493	0.239	0.952	ug/L
	Ni	60	31721.587	0.14	25.6075	0.241	0.941	ug/L
	Cu	65	30871.057	0.14	25.9407	0.412	1.588	ug/L
	Zn	66	18920.648	0.08	26.2210	0.012	0.047	ug/L
>	Ge	72	226443.516	226443.52				ug/L
	As	75	19000.098	0.08	25.4188	0.272	1.069	ug/L
	Se	77	1357.444	0.01	23.5122	1.140	4.850	ug/L
	Se	82	1827.159	0.01	26.3807	0.313	1.187	ug/L
	Rb	85	11587.503	0.05				mg/L
	Y	89	150058.288	-52332.30				ug/L
	Rh	103	47.667	18.67				ug/L
	Mo	98	1681.200	0.01	0.9455	0.015	1.556	ug/L
	Ag	107	87976.743	0.44	23.8839	0.452	1.894	ug/L
	Cd	114	20330.794	0.10	24.5331	0.648	2.643	ug/L
>	In	115	198179.255	198179.26				ug/L
	Sn	118	236.270	-0.00	0.0812	0.004	5.003	ug/L
	Sb	123	70958.977	0.36	25.8784	0.338	1.307	ug/L
	Ba	135	58145.079	0.19	51.0392	1.039	2.036	ug/L
	Ce	140	446.724	0.00				ug/L
>	Tb	159	301006.627	301006.63				ug/L
	Ho	165	20.002	0.00				ug/L
	Tl	203	125088.747	0.49	24.7159	0.630	2.551	ug/L
	Tl	205	313436.713	1.23	25.1722	0.657	2.611	ug/L
	Pb	206	107866.028	0.42	26.3067	0.663	2.521	ug/L
	Pb	207	94001.603	0.37	24.2686	0.151	0.623	ug/L
	Pb	208	438791.459	1.72	25.4550	0.348	1.366	ug/L
	U	238	604508.734	2.38	27.5168	0.336	1.221	ug/L
>	Bi	209	254440.725	254440.73				ug/L

Sample ID: L1201065103SD WG387967-09
Report Date/Time: Saturday, January 28, 2012 13:13:17
Page 1

Approved: January 30, 2012
Erin D. Long

Na	23	32771530.584	275.17	9.8586	0.658	6.675	mg/L
Mg	24	6548061.706	55.17	3.1356	0.168	5.363	mg/L
K	39	5703534.795	44.52	1.0798	0.048	4.443	mg/L
Ca	43	198348.201	1.67	19.2968	1.260	6.530	mg/L
Fe	54	58499.647	0.25	0.0686	0.007	10.097	mg/L
Fe	57	15876.698	0.09	0.0482	0.002	3.500	mg/L
Sc-1	45	118825.108	118825.11				mg/L
Cl	35	241785.915	204861.61				mg/L
Kr	83	46.334	-6.67				mg/L
Br	81	233476.015	228399.80				mg/L
P	31	10792.344	3197.55				mg/L
S	34	328807.423	153206.97				mg/L
Sr	88	1231677.253	1231623.91				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		72.573			
As	75					
Se	77					
Se	82					
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107					
Cd	114					
In	115		71.847			
Sn	118					
Sb	123					
Ba	135					
Ce	140					
Tb	159		76.770			
Ho	165					
Tl	203					
Tl	205					
Pb	206					
Pb	207					
Pb	208					
U	238					
Bi	209		79.742			

Sample ID: L1201065103SD WG387967-09
Report Date/Time: Saturday, January 28, 2012 13:13:17
Page 2

Approved: January 30, 2012
Erin D. Long

⌈	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: L1201065103SD WG387967-09
Report Date/Time: Saturday, January 28, 2012 13:13:17
Page 3

Approved: January 30, 2012

Method 6020 - Summary Report

Sample ID: L1201065201

Sample Date/Time: Saturday, January 28, 2012 13:18:51
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: EDL

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	10657.021	-0.00				ug/L
	Be	9	6.667	-0.00	-0.0345	0.016	46.347	ug/L
	Al	27	414615.072	2.78	90.3480	6.036	6.681	ug/L
>	Sc	45	148516.074	148516.07				ug/L
	Ti	49	1570.306	0.01	3.6739	0.692	18.823	ug/L
	V	51	16291.321	0.05	1.9138	0.070	3.676	ug/L
	Cr	52	14066.692	0.03	1.2204	0.055	4.527	ug/L
	Cr	53	2347.237	0.01	1.9477	0.396	20.336	ug/L
	Mn	55	17234.685	0.06	1.6220	0.039	2.424	ug/L
	Co	59	542.023	0.00	0.0512	0.004	7.470	ug/L
	Ni	60	1206.100	0.00	0.6918	0.019	2.684	ug/L
	Cu	65	514.354	0.00	0.1810	0.008	4.448	ug/L
	Zn	66	3465.091	0.01	3.1238	0.130	4.149	ug/L
>	Ge	72	298100.217	298100.22				ug/L
	As	75	836.238	0.00	0.9747	0.064	6.571	ug/L
	Se	77	116.001	0.00	0.9325	0.083	8.934	ug/L
	Se	82	326.968	0.00	3.5844	0.142	3.969	ug/L
	Rb	85	9998.457	0.03				mg/L
	Y	89	193594.734	-8795.85				ug/L
	Rh	103	62.668	33.67				ug/L
	Mo	98	2931.779	0.01	1.2592	0.016	1.288	ug/L
	Ag	107	75.001	0.00	0.0048	0.002	35.303	ug/L
	Cd	114	16.325	0.00	0.0240	0.006	23.131	ug/L
>	In	115	258868.295	258868.30				ug/L
	Sn	118	294.405	-0.00	0.0775	0.001	1.784	ug/L
	Sb	123	172.204	0.00	0.0610	0.005	7.571	ug/L
	Ba	135	54093.494	0.14	36.4973	0.514	1.407	ug/L
	Ce	140	4264.851	0.01				ug/L
>	Tb	159	391628.575	391628.58				ug/L
	Ho	165	53.339	0.00				ug/L
	Tl	203	129.336	0.00	0.0233	0.004	15.082	ug/L
	Tl	205	300.035	0.00	0.0301	0.001	3.921	ug/L
	Pb	206	778.711	0.00	0.1089	0.003	3.088	ug/L
	Pb	207	623.030	0.00	0.0938	0.008	8.494	ug/L
	Pb	208	3051.588	0.01	0.1010	0.002	1.871	ug/L
	U	238	5120.295	0.02	0.1829	0.005	2.868	ug/L
>	Bi	209	330615.360	330615.36				ug/L

Sample ID: L1201065201
Report Date/Time: Saturday, January 28, 2012 13:21:05
Page 1

Approved: January 30, 2012
Erin D. Long

Na	23	33333638.809	223.58	8.0149	0.126	1.567	mg/L
Mg	24	6368963.391	42.92	2.4386	0.056	2.277	mg/L
K	39	4990377.756	30.16	0.7291	0.040	5.453	mg/L
Ca	43	200777.131	1.35	15.6074	0.161	1.029	mg/L
Fe	54	118892.992	0.56	0.1553	0.003	2.204	mg/L
Fe	57	36691.703	0.20	0.1221	0.016	12.852	mg/L
Sc-1	45	148516.074	148516.07				mg/L
Cl	35	225916.294	188991.99				mg/L
Kr	83	43.334	-9.67				mg/L
Br	81	185164.016	180087.80				mg/L
P	31	16929.896	9335.10				mg/L
S	34	363275.247	187674.79				mg/L
Sr	88	1435646.017	1435592.68				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		95.538			
As	75					
Se	77					
Se	82					
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107					
Cd	114					
In	115		93.849			
Sn	118					
Sb	123					
Ba	135					
Ce	140					
Tb	159		99.883			
Ho	165					
Tl	203					
Tl	205					
Pb	206					
Pb	207					
Pb	208					
U	238					
Bi	209		103.615			

Sample ID: L1201065201
Report Date/Time: Saturday, January 28, 2012 13:21:05
Page 2

Approved: January 30, 2012
Erin D. Long

⌈	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: L1201065201
Report Date/Time: Saturday, January 28, 2012 13:21:05
Page 3

Approved: January 30, 2012

Method 6020 - Summary Report

Sample ID: L1201065202

Sample Date/Time: Saturday, January 28, 2012 13:26:39
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: EDL

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	10706.901	0.01				ug/L
	Be	9	8.000	0.00	-0.0263	0.020	77.678	ug/L
	Al	27	31143.234	0.22	6.8476	1.821	26.593	ug/L
>	Sc	45	134527.803	134527.80				ug/L
	Ti	49	630.098	0.00	1.5695	1.305	83.143	ug/L
	V	51	11771.447	0.04	1.4209	0.085	6.008	ug/L
	Cr	52	11364.193	0.02	0.9262	0.039	4.245	ug/L
	Cr	53	2113.813	0.00	1.8429	0.125	6.776	ug/L
	Mn	55	4173.755	0.01	0.3910	0.024	6.137	ug/L
	Co	59	335.010	0.00	0.0281	0.004	13.280	ug/L
	Ni	60	1122.420	0.00	0.6896	0.042	6.093	ug/L
	Cu	65	526.355	0.00	0.2131	0.026	12.003	ug/L
	Zn	66	4317.495	0.01	4.3710	0.044	1.017	ug/L
>	Ge	72	278292.390	278292.39				ug/L
	As	75	2525.230	0.01	2.8664	0.127	4.442	ug/L
	Se	77	113.334	0.00	1.0096	0.179	17.720	ug/L
	Se	82	951.997	0.00	11.1845	0.590	5.274	ug/L
	Rb	85	3500.437	0.01				mg/L
	Y	89	185299.165	-17091.42				ug/L
	Rh	103	53.667	24.67				ug/L
	Mo	98	2301.501	0.01	1.0572	0.021	2.030	ug/L
	Ag	107	210.671	0.00	0.0360	0.001	3.048	ug/L
	Cd	114	10.757	0.00	0.0196	0.006	29.549	ug/L
>	In	115	242359.419	242359.42				ug/L
	Sn	118	315.606	-0.00	0.0887	0.002	2.449	ug/L
	Sb	123	112.869	0.00	0.0464	0.001	1.999	ug/L
	Ba	135	66584.955	0.18	47.7628	0.217	0.454	ug/L
	Ce	140	296.702	0.00				ug/L
>	Tb	159	368223.722	368223.72				ug/L
	Ho	165	20.002	0.00				ug/L
	Tl	203	97.002	0.00	0.0197	0.000	1.929	ug/L
	Tl	205	226.692	0.00	0.0267	0.002	7.835	ug/L
	Pb	206	644.698	0.00	0.0936	0.012	12.349	ug/L
	Pb	207	564.358	0.00	0.0916	0.004	3.902	ug/L
	Pb	208	2613.855	0.01	0.0912	0.004	4.167	ug/L
	U	238	4564.295	0.01	0.1767	0.003	1.653	ug/L
>	Bi	209	305467.984	305467.98				ug/L

Sample ID: L1201065202
Report Date/Time: Saturday, January 28, 2012 13:28:53
Page 1

Approved: January 30, 2012
Erin D. Long

Na	23	44597542.285	330.42	11.8331	0.401	3.393	mg/L
Mg	24	10413420.722	77.41	4.4016	0.210	4.763	mg/L
K	39	5371971.198	36.45	0.8827	0.049	5.548	mg/L
Ca	43	257582.801	1.91	22.1208	0.589	2.662	mg/L
Fe	54	87414.449	0.41	0.1131	0.010	8.742	mg/L
Fe	57	26461.312	0.15	0.0893	0.006	6.421	mg/L
Sc-1	45	134527.803	134527.80				mg/L
Cl	35	298499.857	261575.56				mg/L
Kr	83	46.667	-6.33				mg/L
Br	81	752023.074	746946.86				mg/L
P	31	14296.991	6702.20				mg/L
S	34	469135.452	293535.00				mg/L
Sr	88	1688400.781	1688347.44				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		89.190			
As	75					
Se	77					
Se	82					
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107					
Cd	114					
In	115		87.864			
Sn	118					
Sb	123					
Ba	135					
Ce	140					
Tb	159		93.914			
Ho	165					
Tl	203					
Tl	205					
Pb	206					
Pb	207					
Pb	208					
U	238					
Bi	209		95.734			

Sample ID: L1201065202
Report Date/Time: Saturday, January 28, 2012 13:28:53
Page 2

Approved: January 30, 2012

⌈	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: L1201065202
Report Date/Time: Saturday, January 28, 2012 13:28:53
Page 3

Approved: January 30, 2012

Method 6020 - Summary Report

Sample ID: L1201065202PS ~~WG388019-03~~ WG388019-04

Sample Date/Time: Saturday, January 28, 2012 13:34:28
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: EDL
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	10940.528	-0.00				ug/L
	Be	9	13812.107	0.09	47.2976	1.698	3.590	ug/L
	Al	27	232863.711	1.53	49.6288	2.946	5.937	ug/L
>	Sc	45	150583.463	150583.46				ug/L
	Ti	49	406.717	0.00	0.9437	0.107	11.354	ug/L
	V	51	360962.333	1.21	47.9507	0.742	1.547	ug/L
	Cr	52	311248.103	1.03	47.0650	0.835	1.775	ug/L
	Cr	53	38485.940	0.13	48.1179	2.339	4.860	ug/L
	Mn	55	478295.283	1.61	46.1398	0.760	1.647	ug/L
	Co	59	362726.287	1.22	46.0117	1.555	3.379	ug/L
	Ni	60	75642.849	0.25	46.5378	1.055	2.267	ug/L
	Cu	65	72739.823	0.24	46.6584	1.156	2.477	ug/L
	Zn	66	44384.336	0.15	47.3129	0.529	1.118	ug/L
>	Ge	72	297447.933	297447.93				ug/L
	As	75	46274.433	0.16	47.0164	0.207	0.440	ug/L
	Se	77	3210.618	0.01	42.8490	0.951	2.219	ug/L
	Se	82	4875.728	0.02	53.6065	0.370	0.690	ug/L
	Rb	85	3956.312	0.01				mg/L
	Y	89	195302.094	-7088.49				ug/L
	Rh	103	78.334	49.33				ug/L
	Mo	98	2560.762	0.01	1.0892	0.010	0.903	ug/L
	Ag	107	221478.122	0.85	45.5637	0.203	0.446	ug/L
	Cd	114	48286.239	0.18	44.1313	0.692	1.568	ug/L
>	In	115	261599.960	261599.96				ug/L
	Sn	118	425.878	-0.00	0.1109	0.004	3.261	ug/L
	Sb	123	162719.632	0.62	44.9421	0.018	0.041	ug/L
	Ba	135	140971.129	0.36	93.9018	1.778	1.893	ug/L
	Ce	140	346.709	0.00				ug/L
>	Tb	159	396696.767	396696.77				ug/L
	Ho	165	16.668	0.00				ug/L
	Tl	203	308696.023	0.93	46.8199	0.528	1.127	ug/L
	Tl	205	758334.940	2.29	46.7339	1.133	2.425	ug/L
	Pb	206	261185.214	0.79	48.9355	0.964	1.971	ug/L
	Pb	207	230955.353	0.70	45.8170	0.655	1.429	ug/L
	Pb	208	1070698.597	3.23	47.7252	0.729	1.528	ug/L
	U	238	1486242.181	4.49	51.9488	1.358	2.614	ug/L
>	Bi	209	331318.930	331318.93				ug/L

Sample ID: L1201065202PS WG388019-03
Report Date/Time: Saturday, January 28, 2012 13:36:41
Page 1

Approved: January 30, 2012
Erin D. Long

Na	23	49395648.397	327.26	11.7203	0.410	3.496	mg/L
Mg	24	11792027.064	78.35	4.4551	0.115	2.580	mg/L
K	39	5727318.173	34.58	0.8370	0.054	6.396	mg/L
Ca	43	280474.860	1.86	21.5240	0.644	2.990	mg/L
Fe	54	98336.167	0.42	0.1141	0.010	8.882	mg/L
Fe	57	32011.506	0.17	0.1002	0.018	17.841	mg/L
Sc-1	45	150583.463	150583.46				mg/L
Cl	35	322151.074	285226.77				mg/L
Kr	83	51.001	-2.00				mg/L
Br	81	813054.159	807977.94				mg/L
P	31	18967.061	11372.27				mg/L
S	34	522275.366	346674.91				mg/L
Sr	88	1808726.745	1808673.41				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		95.329			
As	75					
Se	77					
Se	82					
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107					
Cd	114					
In	115		94.840			
Sn	118					
Sb	123					
Ba	135					
Ce	140					
Tb	159		101.176			
Ho	165					
Tl	203					
Tl	205					
Pb	206					
Pb	207					
Pb	208					
U	238					
Bi	209		103.836			

Sample ID: L1201065202PS WG388019-03
Report Date/Time: Saturday, January 28, 2012 13:36:41
Page 2

Approved: January 30, 2012
Erin D. Long

⌈	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: L1201065202PS WG388019-03
Report Date/Time: Saturday, January 28, 2012 13:36:41
Page 3

Approved: January 30, 2012

Method 6020 - Summary Report

Sample ID: L1201065202SDL ~~WG388019-04~~ WG388019-05

Sample Date/Time: Saturday, January 28, 2012 13:42:16
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: EDL
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	10690.191	0.00				ug/L
	Be	9	10.000	0.00	-0.0205	0.030	145.089	ug/L
	Al	27	15486.087	0.09	2.8745	2.389	83.094	ug/L
>	Sc	45	137307.794	137307.79				ug/L
	Ti	49	156.684	0.00	0.3679	0.042	11.346	ug/L
	V	51	4309.242	0.01	0.3249	0.036	10.962	ug/L
	Cr	52	7104.765	0.00	0.1652	0.021	12.670	ug/L
	Cr	53	1076.845	0.00	0.3526	0.146	41.506	ug/L
	Mn	55	1815.216	0.00	0.1381	0.004	3.055	ug/L
	Co	59	143.336	0.00	0.0012	0.001	115.966	ug/L
	Ni	60	329.343	0.00	0.1567	0.018	11.177	ug/L
	Cu	65	267.674	0.00	0.0258	0.014	52.999	ug/L
	Zn	66	2735.143	0.01	2.3878	0.175	7.341	ug/L
>	Ge	72	293086.638	293086.64				ug/L
	As	75	550.242	0.00	0.6964	0.082	11.750	ug/L
	Se	77	58.000	-0.00	0.1648	0.167	101.071	ug/L
	Se	82	246.906	0.00	2.7489	0.140	5.092	ug/L
	Rb	85	915.726	0.00				mg/L
	Y	89	187134.301	-15256.28				ug/L
	Rh	103	22.000	-7.00				ug/L
	Mo	98	607.261	0.00	0.2689	0.017	6.389	ug/L
	Ag	107	106.335	0.00	0.0113	0.002	14.746	ug/L
	Cd	114	7.163	0.00	0.0156	0.005	35.266	ug/L
>	In	115	259221.472	259221.47				ug/L
	Sn	118	238.137	-0.00	0.0625	0.003	4.606	ug/L
	Sb	123	261.832	0.00	0.0857	0.002	1.752	ug/L
	Ba	135	16897.284	0.04	11.8794	0.325	2.738	ug/L
	Ce	140	226.694	0.00				ug/L
>	Tb	159	375442.267	375442.27				ug/L
	Ho	165	10.001	-0.00				ug/L
	Tl	203	77.334	0.00	0.0158	0.002	14.970	ug/L
	Tl	205	173.353	0.00	0.0226	0.004	15.664	ug/L
	Pb	206	319.343	0.00	0.0242	0.002	8.047	ug/L
	Pb	207	285.341	0.00	0.0285	0.002	5.804	ug/L
	Pb	208	1335.723	0.00	0.0261	0.002	8.837	ug/L
	U	238	1169.427	0.00	0.0458	0.001	1.836	ug/L
>	Bi	209	321519.079	321519.08				ug/L

Sample ID: L1201065202SDL WG388019-04
Report Date/Time: Saturday, January 28, 2012 13:44:30
Page 1

Approved: January 30, 2012
Erin D. Long

Na	23	11819121.216	85.30	3.0728	0.242	7.876	mg/L
Mg	24	2676211.846	19.55	1.1083	0.088	7.896	mg/L
K	39	1827003.318	9.83	0.2326	0.026	11.177	mg/L
Ca	43	65873.142	0.48	5.5495	0.628	11.322	mg/L
Fe	54	44252.178	0.08	0.0208	0.007	32.092	mg/L
Fe	57	10968.369	0.03	0.0135	0.008	62.107	mg/L
Sc-1	45	137307.794	137307.79				mg/L
Cl	35	99204.406	62280.10				mg/L
Kr	83	50.001	-3.00				mg/L
Br	81	197132.694	192056.48				mg/L
P	31	8940.797	1346.00				mg/L
S	34	243079.587	67479.13				mg/L
Sr	88	400723.915	400670.58				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		93.931			
As	75					
Se	77					
Se	82					
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107					
Cd	114					
In	115		93.977			
Sn	118					
Sb	123					
Ba	135					
Ce	140					
Tb	159		95.755			
Ho	165					
Tl	203					
Tl	205					
Pb	206					
Pb	207					
Pb	208					
U	238					
Bi	209		100.764			

Sample ID: L1201065202SDL WG388019-04
Report Date/Time: Saturday, January 28, 2012 13:44:30
Page 2

Approved: January 30, 2012

⌈	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: L1201065202SDL WG388019-04
Report Date/Time: Saturday, January 28, 2012 13:44:30
Page 3

Approved: January 30, 2012

Method 6020 - Summary Report

Sample ID: QC Std 6

Sample Date/Time: Saturday, January 28, 2012 13:50:05
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: EDL

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	10039.439	0.00				ug/L
	Be	9	14103.936	0.11	56.8444	2.539	4.467	ug/L
	Al	27	202380.155	1.57	50.7652	2.285	4.500	ug/L
>	Sc	45	127873.682	127873.68				ug/L
	Ti	49	41024.879	0.14	97.0433	1.876	1.933	ug/L
	V	51	349325.836	1.19	47.2541	1.368	2.896	ug/L
	Cr	52	309738.938	1.04	47.7068	0.375	0.787	ug/L
	Cr	53	38361.954	0.13	48.8497	0.848	1.736	ug/L
	Mn	55	489182.957	1.67	48.0582	0.074	0.154	ug/L
	Co	59	375278.679	1.28	48.4796	0.791	1.632	ug/L
	Ni	60	78021.657	0.27	48.8805	0.179	0.365	ug/L
	Cu	65	76484.826	0.26	49.9666	0.189	0.379	ug/L
	Zn	66	45614.654	0.15	49.5500	1.034	2.086	ug/L
>	Ge	72	292033.678	292033.68				ug/L
	As	75	46477.565	0.16	48.1018	1.409	2.930	ug/L
	Se	77	3657.469	0.01	49.8169	1.634	3.280	ug/L
	Se	82	4339.161	0.01	48.5992	1.821	3.747	ug/L
	Rb	85	1741.866	0.01				mg/L
	Y	89	182035.226	-20355.36				ug/L
	Rh	103	21.334	-7.67				ug/L
	Mo	98	226441.475	0.91	99.9453	1.456	1.457	ug/L
	Ag	107	229174.133	0.92	49.3985	0.888	1.798	ug/L
	Cd	114	52735.609	0.21	50.4885	1.289	2.553	ug/L
>	In	115	249671.815	249671.82				ug/L
	Sn	118	183474.018	0.73	50.1748	1.169	2.329	ug/L
	Sb	123	175491.411	0.70	50.7872	0.388	0.765	ug/L
	Ba	135	69986.029	0.19	50.4546	0.548	1.086	ug/L
	Ce	140	83.342	-0.00				ug/L
>	Tb	159	366430.568	366430.57				ug/L
	Ho	165	3.334	-0.00				ug/L
	Tl	203	300388.936	0.98	49.1408	0.798	1.624	ug/L
	Tl	205	714786.146	2.33	47.5218	1.315	2.766	ug/L
	Pb	206	242867.107	0.79	49.0805	1.006	2.049	ug/L
	Pb	207	228636.547	0.74	48.9234	0.404	0.826	ug/L
	Pb	208	1018539.781	3.31	48.9676	0.232	0.475	ug/L
	U	238	1435557.919	4.67	54.1179	0.197	0.364	ug/L
>	Bi	209	307152.017	307152.02				ug/L

Sample ID: QC Std 6
Report Date/Time: Saturday, January 28, 2012 13:52:18
Page 1

Approved: January 30, 2012
Erin D. Long

Na	23	19029479.059	147.83	5.3076	0.270	5.090	mg/L
Mg	24	11588239.046	90.63	5.1538	0.102	1.977	mg/L
K	39	26522121.428	203.90	4.9716	0.241	4.850	mg/L
Ca	43	55657.481	0.43	5.0114	0.025	0.499	mg/L
Fe	54	2180368.798	16.81	4.7383	0.063	1.330	mg/L
Fe	57	1019627.957	7.93	5.1555	0.068	1.312	mg/L
Sc-1	45	127873.682	127873.68				mg/L
Cl	35	31919.018	-5005.28				mg/L
Kr	83	42.334	-10.67				mg/L
Br	81	11459.903	6383.69				mg/L
P	31	7747.664	152.87				mg/L
S	34	166796.840	-8803.61				mg/L
Sr	88	3807.917	3754.58				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	94.508				
Cr	52	95.414				
Cr	53					
Mn	55	96.116				
Co	59	96.959				
Ni	60	97.761				
Cu	65	99.933				
Zn	66	99.100				
Ge	72		93.594			
As	75	96.204				
Se	77					
Se	82	97.198				
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107	98.797				
Cd	114	100.977				
In	115		90.515			
Sn	118					
Sb	123	101.574				
Ba	135	100.909				
Ce	140					
Tb	159		93.456			
Ho	165					
Tl	203	98.282				
Tl	205					
Pb	206					
Pb	207					
Pb	208	97.935				
U	238	108.236				
Bi	209		96.262			

Sample ID: QC Std 6
Report Date/Time: Saturday, January 28, 2012 13:52:18
Page 2

Approved: January 30, 2012
Erin D. Long

⌈	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: Saturday, January 28, 2012 13:52:18
Page 3

Approved: January 30, 2012

Method 6020 - Summary Report

Sample ID: QC Std 7

Sample Date/Time: Saturday, January 28, 2012 13:57:41
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: EDL

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	10573.388	0.01				ug/L
	Be	9	8.667	0.00	-0.0223	0.017	74.353	ug/L
	Al	27	1916.888	-0.00	-0.2196	0.052	23.819	ug/L
>	Sc	45	128314.209	128314.21				ug/L
	Ti	49	70.007	0.00	0.1650	0.042	25.474	ug/L
	V	51	1889.416	-0.00	-0.0018	0.008	453.312	ug/L
	Cr	52	5601.939	-0.00	-0.0668	0.015	23.073	ug/L
	Cr	53	1056.840	0.00	0.3314	0.202	60.993	ug/L
	Mn	55	478.019	-0.00	0.0073	0.004	51.780	ug/L
	Co	59	94.335	0.00	-0.0051	0.001	25.759	ug/L
	Ni	60	70.334	-0.00	-0.0048	0.002	47.860	ug/L
	Cu	65	100.335	0.00	-0.0832	0.008	10.011	ug/L
	Zn	66	579.026	-0.00	0.0255	0.054	213.816	ug/L
>	Ge	72	291956.891	291956.89				ug/L
	As	75	-63.008	0.00	0.0660	0.038	57.039	ug/L
	Se	77	53.334	-0.00	0.1044	0.043	41.252	ug/L
	Se	82	14.583	0.00	0.1570	0.103	65.472	ug/L
	Rb	85	30.000	0.00				mg/L
	Y	89	190215.235	-12175.35				ug/L
	Rh	103	10.667	-18.33				ug/L
	Mo	98	60.494	0.00	0.0369	0.005	12.792	ug/L
	Ag	107	80.335	0.00	0.0062	0.003	51.782	ug/L
	Cd	114	0.263	-0.00	0.0093	0.011	114.307	ug/L
>	In	115	255006.275	255006.27				ug/L
	Sn	118	504.815	-0.00	0.1350	0.004	3.259	ug/L
	Sb	123	69.994	0.00	0.0326	0.005	16.728	ug/L
	Ba	135	26.334	0.00	0.0018	0.003	164.426	ug/L
	Ce	140	16.668	-0.00				ug/L
>	Tb	159	377896.444	377896.44				ug/L
	Ho	165	6.667	-0.00				ug/L
	Tl	203	70.334	0.00	0.0150	0.002	14.220	ug/L
	Tl	205	170.019	0.00	0.0226	0.004	16.113	ug/L
	Pb	206	222.005	0.00	0.0063	0.003	50.979	ug/L
	Pb	207	179.670	0.00	0.0077	0.001	14.509	ug/L
	Pb	208	865.693	0.00	0.0054	0.001	17.874	ug/L
	U	238	136.336	0.00	0.0087	0.002	18.161	ug/L
>	Bi	209	314281.481	314281.48				ug/L

Sample ID: QC Std 7
Report Date/Time: Saturday, January 28, 2012 13:59:53
Page 1

Approved: January 30, 2012
Erin D. Long

Na	23	91604.100	-0.32	0.0130	0.001	6.092	mg/L
Mg	24	1236.897	0.01	-0.0039	0.000	6.620	mg/L
K	39	444635.582	-0.05	-0.0086	0.002	28.913	mg/L
Ca	43	186.688	0.00	-0.0022	0.006	266.914	mg/L
Fe	54	30330.637	-0.00	-0.0036	0.004	113.302	mg/L
Fe	57	6726.720	0.00	-0.0047	0.001	28.400	mg/L
Sc-1	45	128314.209	128314.21				mg/L
Cl	35	30036.046	-6888.26				mg/L
Kr	83	48.001	-5.00				mg/L
Br	81	8655.828	3579.61				mg/L
P	31	8553.730	958.94				mg/L
S	34	156188.500	-19411.96				mg/L
Sr	88	90.010	36.67				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		93.569			
As	75					
Se	77					
Se	82					
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107					
Cd	114					
In	115		92.449			
Sn	118					
Sb	123					
Ba	135					
Ce	140					
Tb	159		96.381			
Ho	165					
Tl	203					
Tl	205					
Pb	206					
Pb	207					
Pb	208					
U	238					
Bi	209		98.496			

Sample ID: QC Std 7
Report Date/Time: Saturday, January 28, 2012 13:59:53
Page 2

Approved: January 30, 2012
Erin D. Long

⌈	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: Saturday, January 28, 2012 13:59:53
Page 3

Approved: January 30, 2012

Method 6020 - Summary Report

Sample ID: PBS 95 WG388092-02

Sample Date/Time: Saturday, January 28, 2012 14:05:18
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: EDL

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	10673.591	0.01				ug/L
	Be	9	9.333	0.00	-0.0209	0.010	49.276	ug/L
	Al	27	26542.249	0.18	5.8104	0.207	3.562	ug/L
>	Sc	45	132565.320	132565.32				ug/L
	Ti	49	73.341	0.00	0.1689	0.056	32.974	ug/L
	V	51	1797.896	-0.00	-0.0193	0.025	131.230	ug/L
	Cr	52	6251.407	0.00	0.0167	0.015	89.135	ug/L
	Cr	53	893.472	0.00	0.0966	0.190	196.502	ug/L
	Mn	55	577.692	0.00	0.0160	0.003	16.286	ug/L
	Co	59	81.335	0.00	-0.0070	0.001	8.790	ug/L
	Ni	60	87.335	-0.00	0.0049	0.002	34.304	ug/L
	Cu	65	143.336	0.00	-0.0569	0.010	17.274	ug/L
	Zn	66	476.352	-0.00	-0.0973	0.028	28.538	ug/L
>	Ge	72	297623.858	297623.86				ug/L
	As	75	-139.894	-0.00	-0.0096	0.077	800.679	ug/L
	Se	77	56.000	-0.00	0.1266	0.212	167.475	ug/L
	Se	82	-5.841	-0.00	-0.0688	0.211	306.446	ug/L
	Rb	85	41.001	0.00				mg/L
	Y	89	195183.249	-7207.33				ug/L
	Rh	103	14.667	-14.33				ug/L
	Mo	98	28.676	0.00	0.0227	0.002	9.769	ug/L
	Ag	107	64.334	0.00	0.0024	0.001	35.847	ug/L
	Cd	114	7.254	0.00	0.0156	0.005	30.073	ug/L
>	In	115	263086.379	263086.38				ug/L
	Sn	118	127.868	-0.00	0.0330	0.001	1.986	ug/L
	Sb	123	129.413	0.00	0.0483	0.004	8.436	ug/L
	Ba	135	81.668	0.00	0.0391	0.005	13.964	ug/L
	Ce	140	96.677	-0.00				ug/L
>	Tb	159	387256.056	387256.06				ug/L
	Ho	165	6.667	-0.00				ug/L
	Tl	203	44.334	0.00	0.0108	0.001	4.932	ug/L
	Tl	205	103.344	0.00	0.0182	0.003	14.353	ug/L
	Pb	206	214.672	0.00	0.0045	0.003	74.419	ug/L
	Pb	207	209.005	0.00	0.0135	0.004	32.608	ug/L
	Pb	208	895.694	0.00	0.0064	0.001	19.770	ug/L
	U	238	31.000	0.00	0.0048	0.000	4.352	ug/L
>	Bi	209	317194.863	317194.86				ug/L

Sample ID: PBS 95 WG388092-02
Report Date/Time: Saturday, January 28, 2012 14:07:32
Page 1

Approved: January 30, 2012
Erin D. Long

Na	23	37032.480	-0.75	-0.0025	0.001	27.844	mg/L
Mg	24	1493.617	0.01	-0.0038	0.000	1.137	mg/L
K	39	443454.836	-0.17	-0.0113	0.006	50.087	mg/L
Ca	43	320.038	0.00	0.0093	0.009	95.249	mg/L
Fe	54	56279.956	0.19	0.0498	0.011	21.457	mg/L
Fe	57	7547.508	0.01	-0.0017	0.001	60.991	mg/L
Sc-1	45	132565.320	132565.32				mg/L
Cl	35	32959.741	-3964.56				mg/L
Kr	83	58.334	5.33				mg/L
Br	81	7618.148	2541.93				mg/L
P	31	12998.331	5403.54				mg/L
S	34	165714.266	-9886.19				mg/L
Sr	88	830.125	776.79				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		95.386			
As	75					
Se	77					
Se	82					
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107					
Cd	114					
In	115		95.379			
Sn	118					
Sb	123					
Ba	135					
Ce	140					
Tb	159		98.768			
Ho	165					
Tl	203					
Tl	205					
Pb	206					
Pb	207					
Pb	208					
U	238					
Bi	209		99.409			

Sample ID: PBS 95 WG388092-02
Report Date/Time: Saturday, January 28, 2012 14:07:32
Page 2

Approved: January 30, 2012

⌈	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: PBS 95 WG388092-02
Report Date/Time: Saturday, January 28, 2012 14:07:32
Page 3

Approved: January 30, 2012

Method 6020 - Summary Report

Sample ID: LCSS 95 WG388092-03

Sample Date/Time: Saturday, January 28, 2012 14:13:06
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: EDL
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	10489.934	0.00				ug/L
	Be	9	7074.335	0.05	26.5243	0.433	1.633	ug/L
	Al	27	118673.842	0.85	27.4124	1.660	6.056	ug/L
>	Sc	45	137271.459	137271.46				ug/L
	Ti	49	126.680	0.00	0.2894	0.073	25.391	ug/L
	V	51	187645.212	0.61	24.4160	0.599	2.453	ug/L
	Cr	52	169978.569	0.54	24.8747	0.913	3.671	ug/L
	Cr	53	21128.890	0.07	25.5321	1.236	4.843	ug/L
	Mn	55	262339.535	0.87	24.8994	0.555	2.229	ug/L
	Co	59	197875.435	0.65	24.7032	0.417	1.689	ug/L
	Ni	60	41354.783	0.14	25.0235	0.127	0.509	ug/L
	Cu	65	40649.310	0.13	25.6046	0.518	2.022	ug/L
	Zn	66	22595.821	0.07	23.4154	0.601	2.565	ug/L
>	Ge	72	302077.980	302077.98				ug/L
	As	75	23347.241	0.08	23.4247	0.379	1.619	ug/L
	Se	77	1750.851	0.01	22.7169	0.613	2.699	ug/L
	Se	82	2097.210	0.01	22.7066	0.869	3.826	ug/L
	Rb	85	41.334	0.00				mg/L
	Y	89	199718.301	-2672.28				ug/L
	Rh	103	17.334	-11.67				ug/L
	Mo	98	46.863	0.00	0.0303	0.003	9.308	ug/L
	Ag	107	118085.056	0.45	24.1137	0.695	2.883	ug/L
	Cd	114	26085.909	0.10	23.6667	0.254	1.075	ug/L
>	In	115	263582.472	263582.47				ug/L
	Sn	118	132.401	-0.00	0.0341	0.002	5.864	ug/L
	Sb	123	86853.446	0.33	23.8163	0.272	1.140	ug/L
	Ba	135	35939.031	0.09	24.4402	0.556	2.275	ug/L
	Ce	140	33.337	-0.00				ug/L
>	Tb	159	388324.744	388324.74				ug/L
	Ho	165	13.335	-0.00				ug/L
	Tl	203	158248.386	0.49	24.5747	0.598	2.433	ug/L
	Tl	205	390635.108	1.21	24.6500	0.505	2.050	ug/L
	Pb	206	135707.804	0.42	26.0113	0.593	2.280	ug/L
	Pb	207	118648.862	0.37	24.0860	0.747	3.102	ug/L
	Pb	208	550285.547	1.70	25.0999	0.888	3.537	ug/L
	U	238	730092.816	2.26	26.1319	0.953	3.648	ug/L
>	Bi	209	323759.574	323759.57				ug/L

Sample ID: LCSS 95 WG388092-03
Report Date/Time: Saturday, January 28, 2012 14:15:18
Page 1

Approved: January 30, 2012
Erin D. Long

Na	23	32754.656	-0.79	-0.0040	0.001	23.883	mg/L
Mg	24	856.797	0.00	-0.0041	0.000	0.616	mg/L
K	39	435832.760	-0.35	-0.0157	0.002	13.609	mg/L
Ca	43	240.027	0.00	0.0013	0.002	164.282	mg/L
Fe	54	57524.098	0.18	0.0478	0.005	9.771	mg/L
Fe	57	7000.306	0.00	-0.0056	0.001	9.913	mg/L
Sc-1	45	137271.459	137271.46				mg/L
Cl	35	32016.052	-4908.25				mg/L
Kr	83	48.334	-4.67				mg/L
Br	81	7224.465	2148.25				mg/L
P	31	14196.772	6601.98				mg/L
S	34	165883.464	-9716.99				mg/L
Sr	88	270.032	216.69				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		96.813			
As	75					
Se	77					
Se	82					
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107					
Cd	114					
In	115		95.558			
Sn	118					
Sb	123					
Ba	135					
Ce	140					
Tb	159		99.040			
Ho	165					
Tl	203					
Tl	205					
Pb	206					
Pb	207					
Pb	208					
U	238					
Bi	209		101.467			

Sample ID: LCSS 95 WG388092-03
Report Date/Time: Saturday, January 28, 2012 14:15:18
Page 2

Approved: January 30, 2012

⌈	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: LCSS 95 WG388092-03
Report Date/Time: Saturday, January 28, 2012 14:15:18
Page 3

Approved: January 30, 2012

Method 6020 - Summary Report

Sample ID: L1201071501

Sample Date/Time: Saturday, January 28, 2012 14:20:51
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: EDL

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	10790.319	0.01				ug/L
	Be	9	25.333	0.00	0.0451	0.012	26.301	ug/L
	Al	27	3615732.874	28.37	922.3795	53.703	5.822	ug/L
>	Sc	45	127604.433	127604.43				ug/L
	Ti	49	2577.323	0.01	6.2557	0.045	0.724	ug/L
	V	51	16896.973	0.05	2.0989	0.023	1.078	ug/L
	Cr	52	12381.983	0.02	1.0487	0.009	0.876	ug/L
	Cr	53	1960.427	0.00	1.5743	0.143	9.065	ug/L
	Mn	55	717434.216	2.52	72.3338	0.922	1.275	ug/L
	Co	59	8237.820	0.03	1.0749	0.020	1.887	ug/L
	Ni	60	3992.997	0.01	2.5206	0.053	2.121	ug/L
	Cu	65	2529.743	0.01	1.5521	0.041	2.668	ug/L
	Zn	66	6458.233	0.02	6.6753	0.050	0.752	ug/L
>	Ge	72	284611.792	284611.79				ug/L
	As	75	875.087	0.00	1.0573	0.080	7.563	ug/L
	Se	77	64.667	0.00	0.2831	0.150	53.153	ug/L
	Se	82	14.574	0.00	0.1605	0.100	62.309	ug/L
	Rb	85	7740.007	0.03				mg/L
	Y	89	216510.379	14119.80				ug/L
	Rh	103	8.333	-20.67				ug/L
	Mo	98	558.622	0.00	0.2612	0.017	6.614	ug/L
	Ag	107	94.001	0.00	0.0099	0.001	13.679	ug/L
	Cd	114	27.170	0.00	0.0354	0.003	9.534	ug/L
>	In	115	245644.958	245644.96				ug/L
	Sn	118	2218.162	0.01	0.6164	0.019	3.043	ug/L
	Sb	123	119.452	0.00	0.0479	0.002	3.872	ug/L
	Ba	135	5389.131	0.01	3.9306	0.189	4.806	ug/L
	Ce	140	135659.153	0.38				ug/L
>	Tb	159	360845.335	360845.34				ug/L
	Ho	165	2533.974	0.01				ug/L
	Tl	203	150.336	0.00	0.0285	0.002	7.994	ug/L
	Tl	205	400.050	0.00	0.0384	0.003	7.538	ug/L
	Pb	206	6799.508	0.02	1.3479	0.036	2.656	ug/L
	Pb	207	5562.912	0.02	1.1700	0.023	1.984	ug/L
	Pb	208	26375.003	0.08	1.2429	0.011	0.851	ug/L
	U	238	5288.064	0.02	0.2045	0.004	1.990	ug/L
>	Bi	209	304963.399	304963.40				ug/L

Sample ID: L1201071501
Report Date/Time: Saturday, January 28, 2012 14:23:03
Page 1

Approved: January 30, 2012
Erin D. Long

Na	23	49387.594	-0.64		0.0013	0.000	23.057	mg/L
Mg	24	675599.410	5.29		0.2970	0.003	1.127	mg/L
K	39	853551.668	3.18		0.0704	0.009	12.174	mg/L
Ca	43	6753.411	0.05		0.5939	0.033	5.631	mg/L
Fe	54	1112758.159	8.49		2.3914	0.096	4.000	mg/L
Fe	57	453623.912	3.51		2.2802	0.098	4.296	mg/L
Sc-1	45	127604.433	127604.43					mg/L
Cl	35	28447.147	-8477.15					mg/L
Kr	83	49.001	-4.00					mg/L
Br	81	5819.365	743.15					mg/L
P	31	70729.340	63134.55					mg/L
S	34	147453.226	-28147.23					mg/L
Sr	88	19421.277	19367.94					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		91.215			
As	75					
Se	77					
Se	82					
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107					
Cd	114					
In	115		89.055			
Sn	118					
Sb	123					
Ba	135					
Ce	140					
Tb	159		92.032			
Ho	165					
Tl	203					
Tl	205					
Pb	206					
Pb	207					
Pb	208					
U	238					
Bi	209		95.576			

Sample ID: L1201071501
Report Date/Time: Saturday, January 28, 2012 14:23:03
Page 2

Approved: January 30, 2012
Erin D. Long

⌈	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: L1201071501
Report Date/Time: Saturday, January 28, 2012 14:23:03
Page 3

Approved: January 30, 2012

Method 6020 - Summary Report

Sample ID: L1201071502

Sample Date/Time: Saturday, January 28, 2012 14:28:37
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: EDL

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	10590.098	0.01				ug/L
	Be	9	24.000	0.00	0.0354	0.008	22.291	ug/L
	Al	27	3462413.797	25.83	839.5474	27.955	3.330	ug/L
>	Sc	45	134070.512	134070.51				ug/L
	Ti	49	2754.064	0.01	6.2132	0.211	3.390	ug/L
	V	51	16009.151	0.05	1.8173	0.048	2.632	ug/L
	Cr	52	13057.358	0.02	1.0088	0.052	5.148	ug/L
	Cr	53	1660.332	0.00	1.0167	0.085	8.322	ug/L
	Mn	55	615337.223	2.01	57.6574	0.595	1.032	ug/L
	Co	59	7911.833	0.03	0.9576	0.010	1.018	ug/L
	Ni	60	3278.344	0.01	1.9118	0.041	2.123	ug/L
	Cu	65	1937.578	0.01	1.0619	0.029	2.739	ug/L
	Zn	66	5435.160	0.02	5.0889	0.107	2.098	ug/L
>	Ge	72	306256.053	306256.05				ug/L
	As	75	747.717	0.00	0.8669	0.020	2.298	ug/L
	Se	77	57.334	-0.00	0.1230	0.062	50.530	ug/L
	Se	82	7.528	0.00	0.0725	0.138	190.780	ug/L
	Rb	85	7686.287	0.03				mg/L
	Y	89	221555.753	19165.17				ug/L
	Rh	103	7.333	-21.67				ug/L
	Mo	98	497.143	0.00	0.2219	0.004	1.634	ug/L
	Ag	107	88.335	0.00	0.0076	0.003	44.801	ug/L
	Cd	114	25.149	0.00	0.0322	0.007	22.495	ug/L
>	In	115	259371.762	259371.76				ug/L
	Sn	118	150.535	-0.00	0.0394	0.002	4.541	ug/L
	Sb	123	117.743	0.00	0.0455	0.006	12.452	ug/L
	Ba	135	3528.116	0.01	2.4705	0.043	1.752	ug/L
	Ce	140	106456.641	0.28				ug/L
>	Tb	159	374803.682	374803.68				ug/L
	Ho	165	1850.390	0.01				ug/L
	Tl	203	136.669	0.00	0.0251	0.002	7.239	ug/L
	Tl	205	296.702	0.00	0.0303	0.002	5.127	ug/L
	Pb	206	6122.977	0.02	1.1423	0.029	2.579	ug/L
	Pb	207	5001.217	0.02	0.9904	0.024	2.429	ug/L
	Pb	208	23801.623	0.07	1.0558	0.027	2.601	ug/L
	U	238	4168.751	0.01	0.1533	0.001	0.487	ug/L
>	Bi	209	322492.570	322492.57				ug/L

Sample ID: L1201071502
Report Date/Time: Saturday, January 28, 2012 14:30:49
Page 1

Approved: January 30, 2012
Erin D. Long

Na	23	48596.246	-0.67	0.0005	0.000	56.180	mg/L
Mg	24	654003.367	4.88	0.2733	0.004	1.638	mg/L
K	39	820806.833	2.60	0.0563	0.004	6.433	mg/L
Ca	43	4945.295	0.04	0.4077	0.017	4.140	mg/L
Fe	54	991665.995	7.16	2.0164	0.047	2.319	mg/L
Fe	57	402593.859	2.96	1.9192	0.095	4.965	mg/L
Sc-1	45	134070.512	134070.51				mg/L
Cl	35	29311.488	-7612.81				mg/L
Kr	83	54.334	1.33				mg/L
Br	81	6301.722	1225.51				mg/L
P	31	58946.491	51351.70				mg/L
S	34	154590.946	-21009.51				mg/L
Sr	88	15793.204	15739.86				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		98.152			
As	75					
Se	77					
Se	82					
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107					
Cd	114					
In	115		94.032			
Sn	118					
Sb	123					
Ba	135					
Ce	140					
Tb	159		95.592			
Ho	165					
Tl	203					
Tl	205					
Pb	206					
Pb	207					
Pb	208					
U	238					
Bi	209		101.069			

Sample ID: L1201071502
Report Date/Time: Saturday, January 28, 2012 14:30:49
Page 2

Approved: January 30, 2012
Erin D. Long

⌈	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: L1201071502
Report Date/Time: Saturday, January 28, 2012 14:30:49
Page 3

Approved: January 30, 2012

Method 6020 - Summary Report

Sample ID: L1201071503

Sample Date/Time: Saturday, January 28, 2012 14:36:23
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: EDL

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	9939.262	0.01				ug/L
	Be	9	23.333	0.00	0.0390	0.055	140.168	ug/L
	Al	27	5044399.373	40.01	1300.6929	17.304	1.330	ug/L
>	Sc	45	126046.239	126046.24				ug/L
	Ti	49	5138.767	0.02	12.1634	0.659	5.418	ug/L
	V	51	16563.823	0.05	1.9950	0.071	3.581	ug/L
	Cr	52	14350.497	0.03	1.3080	0.060	4.597	ug/L
	Cr	53	1937.086	0.00	1.4775	0.144	9.717	ug/L
	Mn	55	331407.885	1.13	32.5560	0.610	1.872	ug/L
	Co	59	6545.302	0.02	0.8288	0.017	2.068	ug/L
	Ni	60	3160.298	0.01	1.9340	0.109	5.624	ug/L
	Cu	65	2199.646	0.01	1.2929	0.037	2.859	ug/L
	Zn	66	6441.219	0.02	6.4752	0.084	1.294	ug/L
>	Ge	72	291910.840	291910.84				ug/L
	As	75	659.876	0.00	0.8122	0.042	5.118	ug/L
	Se	77	68.000	0.00	0.3072	0.100	32.662	ug/L
	Se	82	12.580	0.00	0.1336	0.135	100.871	ug/L
	Rb	85	10374.233	0.04				mg/L
	Y	89	204324.889	1934.31				ug/L
	Rh	103	6.000	-23.00				ug/L
	Mo	98	550.366	0.00	0.2520	0.010	3.808	ug/L
	Ag	107	91.668	0.00	0.0089	0.000	3.359	ug/L
	Cd	114	18.690	0.00	0.0268	0.003	9.513	ug/L
>	In	115	251424.873	251424.87				ug/L
	Sn	118	550.418	-0.00	0.1493	0.003	1.916	ug/L
	Sb	123	93.538	0.00	0.0397	0.003	8.021	ug/L
	Ba	135	6400.855	0.02	4.6786	0.134	2.857	ug/L
	Ce	140	117961.476	0.33				ug/L
>	Tb	159	360342.281	360342.28				ug/L
	Ho	165	1503.622	0.00				ug/L
	Tl	203	148.336	0.00	0.0280	0.003	10.212	ug/L
	Tl	205	353.376	0.00	0.0351	0.005	15.411	ug/L
	Pb	206	8238.820	0.03	1.6289	0.053	3.269	ug/L
	Pb	207	7105.099	0.02	1.4918	0.051	3.409	ug/L
	Pb	208	33054.567	0.11	1.5554	0.055	3.563	ug/L
	U	238	4626.664	0.02	0.1781	0.005	2.862	ug/L
>	Bi	209	307242.839	307242.84				ug/L

Sample ID: L1201071503
Report Date/Time: Saturday, January 28, 2012 14:38:36
Page 1

Approved: January 30, 2012
Erin D. Long

Na	23	49186.416	-0.64	0.0015	0.001	45.587	mg/L
Mg	24	708535.910	5.62	0.3156	0.012	3.689	mg/L
K	39	913968.850	3.73	0.0838	0.003	3.142	mg/L
Ca	43	6002.765	0.05	0.5318	0.034	6.437	mg/L
Fe	54	1069621.762	8.25	2.3239	0.120	5.168	mg/L
Fe	57	436780.395	3.42	2.2194	0.084	3.782	mg/L
Sc-1	45	126046.239	126046.24				mg/L
Cl	35	29707.525	-7216.78				mg/L
Kr	83	48.334	-4.67				mg/L
Br	81	5910.764	834.55				mg/L
P	31	68905.751	61310.96				mg/L
S	34	149014.356	-26586.10				mg/L
Sr	88	15465.886	15412.55				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		93.555			
As	75					
Se	77					
Se	82					
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107					
Cd	114					
In	115		91.151			
Sn	118					
Sb	123					
Ba	135					
Ce	140					
Tb	159		91.904			
Ho	165					
Tl	203					
Tl	205					
Pb	206					
Pb	207					
Pb	208					
U	238					
Bi	209		96.290			

Sample ID: L1201071503
Report Date/Time: Saturday, January 28, 2012 14:38:36
Page 2

Approved: January 30, 2012

⌈	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: L1201071503
Report Date/Time: Saturday, January 28, 2012 14:38:36
Page 3

Approved: January 30, 2012

Method 6020 - Summary Report

Sample ID: L1201071504

Sample Date/Time: Saturday, January 28, 2012 14:44:10
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: EDL

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	11324.357	0.02				ug/L
	Be	9	23.333	0.00	0.0374	0.019	51.992	ug/L
	Al	27	4967865.919	39.08	1270.6256	131.889	10.380	ug/L
>	Sc	45	127520.046	127520.05				ug/L
	Ti	49	4151.450	0.01	9.5978	0.450	4.689	ug/L
	V	51	16052.654	0.05	1.8745	0.031	1.657	ug/L
	Cr	52	14096.062	0.03	1.2169	0.083	6.801	ug/L
	Cr	53	1717.016	0.00	1.1402	0.141	12.404	ug/L
	Mn	55	331256.602	1.11	31.7856	0.446	1.402	ug/L
	Co	59	7511.794	0.02	0.9311	0.022	2.339	ug/L
	Ni	60	3458.419	0.01	2.0704	0.019	0.905	ug/L
	Cu	65	1915.906	0.01	1.0777	0.018	1.706	ug/L
	Zn	66	5591.601	0.02	5.3962	0.289	5.364	ug/L
>	Ge	72	298854.121	298854.12				ug/L
	As	75	586.214	0.00	0.7223	0.029	4.000	ug/L
	Se	77	64.000	-0.00	0.2309	0.067	29.059	ug/L
	Se	82	6.522	-0.00	0.0644	0.155	240.360	ug/L
	Rb	85	8430.015	0.03				mg/L
	Y	89	213064.001	10673.42				ug/L
	Rh	103	13.000	-16.00				ug/L
	Mo	98	432.732	0.00	0.1981	0.014	7.139	ug/L
	Ag	107	88.335	0.00	0.0079	0.001	6.821	ug/L
	Cd	114	17.387	0.00	0.0254	0.013	52.771	ug/L
>	In	115	254558.077	254558.08				ug/L
	Sn	118	107.867	-0.00	0.0287	0.002	8.299	ug/L
	Sb	123	90.992	0.00	0.0386	0.002	3.981	ug/L
	Ba	135	6527.621	0.02	4.6952	0.052	1.118	ug/L
	Ce	140	120557.808	0.33				ug/L
>	Tb	159	366044.247	366044.25				ug/L
	Ho	165	1626.991	0.01				ug/L
	Tl	203	114.002	0.00	0.0222	0.001	5.807	ug/L
	Tl	205	280.033	0.00	0.0300	0.001	4.017	ug/L
	Pb	206	5729.693	0.02	1.1089	0.019	1.691	ug/L
	Pb	207	4629.999	0.01	0.9512	0.034	3.524	ug/L
	Pb	208	22015.955	0.07	1.0129	0.026	2.573	ug/L
	U	238	4082.040	0.01	0.1559	0.004	2.365	ug/L
>	Bi	209	310516.491	310516.49				ug/L

Sample ID: L1201071504
Report Date/Time: Saturday, January 28, 2012 14:46:22
Page 1

Approved: January 30, 2012
Erin D. Long

Na	23	50564.875	-0.63		0.0017	0.001	83.224	mg/L
Mg	24	712893.153	5.60		0.3145	0.022	6.952	mg/L
K	39	791638.964	2.70		0.0586	0.006	10.593	mg/L
Ca	43	5252.183	0.04		0.4575	0.024	5.199	mg/L
Fe	54	1056901.141	8.06		2.2688	0.085	3.762	mg/L
Fe	57	433049.400	3.35		2.1759	0.098	4.518	mg/L
Sc-1	45	127520.046	127520.05					mg/L
Cl	35	28730.778	-8193.52					mg/L
Kr	83	55.001	2.00					mg/L
Br	81	5719.298	643.08					mg/L
P	31	59924.021	52329.23					mg/L
S	34	146658.975	-28941.48					mg/L
Sr	88	18726.231	18672.89					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		95.780			
As	75					
Se	77					
Se	82					
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107					
Cd	114					
In	115		92.287			
Sn	118					
Sb	123					
Ba	135					
Ce	140					
Tb	159		93.358			
Ho	165					
Tl	203					
Tl	205					
Pb	206					
Pb	207					
Pb	208					
U	238					
Bi	209		97.316			

Sample ID: L1201071504
Report Date/Time: Saturday, January 28, 2012 14:46:22
Page 2

Approved: January 30, 2012
Erin D. Long

⌈	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: L1201071504
Report Date/Time: Saturday, January 28, 2012 14:46:22
Page 3

Approved: January 30, 2012

Method 6020 - Summary Report

Sample ID: L1201071505

Sample Date/Time: Saturday, January 28, 2012 14:51:57
Number of Replicates: 3
Aliquot Volume (mL):
Diluted To Volume (mL):
Autosampler Position: 28
Method File: C:\elandata\Method\6020a.mth
Sample Description: 5

User ID: EDL

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	10423.259	0.01				ug/L
	Be	9	18.000	0.00	0.0192	0.016	82.189	ug/L
	Al	27	3141023.725	25.69	835.0695	17.431	2.087	ug/L
>	Sc	45	122240.402	122240.40				ug/L
	Ti	49	2357.236	0.01	5.8558	0.230	3.933	ug/L
	V	51	16668.505	0.05	2.1218	0.025	1.194	ug/L
	Cr	52	12847.031	0.03	1.1721	0.035	2.981	ug/L
	Cr	53	1723.685	0.00	1.3138	0.206	15.678	ug/L
	Mn	55	775160.689	2.79	80.0204	1.385	1.731	ug/L
	Co	59	8633.892	0.03	1.1543	0.010	0.885	ug/L
	Ni	60	5012.891	0.02	3.2531	0.073	2.253	ug/L
	Cu	65	3438.077	0.01	2.2178	0.090	4.043	ug/L
	Zn	66	7854.115	0.03	8.4581	0.223	2.638	ug/L
>	Ge	72	278056.811	278056.81				ug/L
	As	75	981.187	0.00	1.1948	0.036	3.015	ug/L
	Se	77	58.667	-0.00	0.2197	0.185	84.109	ug/L
	Se	82	1.893	-0.00	0.0149	0.213	1426.024	ug/L
	Rb	85	6271.755	0.02				mg/L
	Y	89	204817.686	2427.10				ug/L
	Rh	103	8.667	-20.33				ug/L
	Mo	98	692.972	0.00	0.3305	0.005	1.604	ug/L
	Ag	107	103.002	0.00	0.0125	0.004	32.148	ug/L
	Cd	114	43.069	0.00	0.0521	0.004	7.555	ug/L
>	In	115	238774.647	238774.65				ug/L
	Sn	118	911.517	0.00	0.2604	0.002	0.899	ug/L
	Sb	123	82.826	0.00	0.0378	0.002	6.553	ug/L
	Ba	135	4418.215	0.01	3.2852	0.075	2.279	ug/L
	Ce	140	138797.057	0.39				ug/L
>	Tb	159	353687.230	353687.23				ug/L
	Ho	165	1877.066	0.01				ug/L
	Tl	203	145.003	0.00	0.0285	0.001	4.993	ug/L
	Tl	205	413.386	0.00	0.0401	0.009	22.567	ug/L
	Pb	206	9225.863	0.03	1.9099	0.009	0.483	ug/L
	Pb	207	7601.209	0.03	1.6691	0.045	2.707	ug/L
	Pb	208	36024.018	0.12	1.7738	0.019	1.064	ug/L
	U	238	6008.892	0.02	0.2401	0.003	1.062	ug/L
>	Bi	209	294281.631	294281.63				ug/L

Sample ID: L1201071505
Report Date/Time: Saturday, January 28, 2012 14:54:09
Page 1

Approved: January 30, 2012
Erin D. Long

Na	23	58658.267	-0.55	0.0047	0.001	12.025	mg/L
Mg	24	1642936.103	13.44	0.7608	0.021	2.699	mg/L
K	39	877052.266	3.66	0.0821	0.007	8.418	mg/L
Ca	43	26203.757	0.21	2.4595	0.066	2.680	mg/L
Fe	54	1185475.000	9.46	2.6659	0.084	3.159	mg/L
Fe	57	482382.425	3.90	2.5338	0.116	4.595	mg/L
Sc-1	45	122240.402	122240.40				mg/L
Cl	35	28136.088	-8788.21				mg/L
Kr	83	50.667	-2.33				mg/L
Br	81	5056.868	-19.35				mg/L
P	31	66568.978	58974.18				mg/L
S	34	143778.698	-31821.76				mg/L
Sr	88	37019.126	36965.79				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		89.115			
As	75					
Se	77					
Se	82					
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107					
Cd	114					
In	115		86.565			
Sn	118					
Sb	123					
Ba	135					
Ce	140					
Tb	159		90.206			
Ho	165					
Tl	203					
Tl	205					
Pb	206					
Pb	207					
Pb	208					
U	238					
Bi	209		92.228			

Sample ID: L1201071505
Report Date/Time: Saturday, January 28, 2012 14:54:09
Page 2

Approved: January 30, 2012
Erin D. Long

⌈	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: L1201071505
Report Date/Time: Saturday, January 28, 2012 14:54:09
Page 3

Approved: January 30, 2012

Method 6020 - Summary Report

Sample ID: L1201071506

Sample Date/Time: Saturday, January 28, 2012 14:59:44
Number of Replicates: 3
Aliquot Volume (mL):
Diluted To Volume (mL):
Autosampler Position: 29
Method File: C:\elandata\Method\6020a.mth
Sample Description: 5

User ID: EDL

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	11190.844	0.01				ug/L
	Be	9	23.333	0.00	0.0324	0.037	114.133	ug/L
	Al	27	3536173.386	26.03	846.2053	17.287	2.043	ug/L
>	Sc	45	135815.172	135815.17				ug/L
	Ti	49	2610.670	0.01	5.9447	0.313	5.258	ug/L
	V	51	19725.222	0.06	2.3234	0.094	4.059	ug/L
	Cr	52	14212.919	0.03	1.2017	0.030	2.469	ug/L
	Cr	53	1790.374	0.00	1.1973	0.282	23.525	ug/L
	Mn	55	959119.143	3.16	90.7210	1.533	1.690	ug/L
	Co	59	9547.896	0.03	1.1701	0.019	1.663	ug/L
	Ni	60	5419.483	0.02	3.2221	0.063	1.946	ug/L
	Cu	65	3706.196	0.01	2.1885	0.129	5.895	ug/L
	Zn	66	8610.199	0.03	8.5008	0.061	0.715	ug/L
>	Ge	72	303441.325	303441.33				ug/L
	As	75	1059.324	0.00	1.1833	0.055	4.655	ug/L
	Se	77	62.667	-0.00	0.2018	0.287	142.236	ug/L
	Se	82	4.597	-0.00	0.0424	0.110	258.518	ug/L
	Rb	85	9293.275	0.03				mg/L
	Y	89	232197.080	29806.50				ug/L
	Rh	103	12.333	-16.67				ug/L
	Mo	98	654.046	0.00	0.2875	0.010	3.441	ug/L
	Ag	107	87.668	0.00	0.0074	0.001	9.837	ug/L
	Cd	114	34.971	0.00	0.0411	0.003	6.183	ug/L
>	In	115	260363.503	260363.50				ug/L
	Sn	118	112.667	-0.00	0.0293	0.003	8.628	ug/L
	Sb	123	75.661	0.00	0.0338	0.002	7.358	ug/L
	Ba	135	6240.732	0.02	4.3834	0.074	1.683	ug/L
	Ce	140	159385.840	0.42				ug/L
>	Tb	159	374826.291	374826.29				ug/L
	Ho	165	2277.205	0.01				ug/L
	Tl	203	175.004	0.00	0.0315	0.002	6.565	ug/L
	Tl	205	446.724	0.00	0.0403	0.007	17.164	ug/L
	Pb	206	7906.829	0.02	1.5103	0.026	1.711	ug/L
	Pb	207	6360.824	0.02	1.2885	0.032	2.489	ug/L
	Pb	208	30840.953	0.09	1.4010	0.001	0.071	ug/L
	U	238	5589.931	0.02	0.2076	0.002	1.198	ug/L
>	Bi	209	317315.792	317315.79				ug/L

Sample ID: L1201071506
Report Date/Time: Saturday, January 28, 2012 15:01:57
Page 1

Approved: January 30, 2012
Erin D. Long

Na	23	65019.268	-0.55	0.0046	0.000	9.513	mg/L
Mg	24	2508650.088	18.48	1.0474	0.030	2.841	mg/L
K	39	981193.074	3.71	0.0833	0.006	6.850	mg/L
Ca	43	46678.417	0.34	3.9537	0.028	0.710	mg/L
Fe	54	1356150.339	9.76	2.7481	0.122	4.438	mg/L
Fe	57	571581.865	4.16	2.7055	0.139	5.145	mg/L
Sc-1	45	135815.172	135815.17				mg/L
Cl	35	29743.670	-7180.63				mg/L
Kr	83	46.334	-6.67				mg/L
Br	81	5961.468	885.25				mg/L
P	31	93801.215	86206.42				mg/L
S	34	166470.758	-9129.70				mg/L
Sr	88	54013.495	53960.16				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		97.250			
As	75					
Se	77					
Se	82					
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107					
Cd	114					
In	115		94.391			
Sn	118					
Sb	123					
Ba	135					
Ce	140					
Tb	159		95.598			
Ho	165					
Tl	203					
Tl	205					
Pb	206					
Pb	207					
Pb	208					
U	238					
Bi	209		99.447			

Sample ID: L1201071506
Report Date/Time: Saturday, January 28, 2012 15:01:57
Page 2

Approved: January 30, 2012

⌈	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: L1201071506
Report Date/Time: Saturday, January 28, 2012 15:01:57
Page 3

Approved: January 30, 2012

Method 6020 - Summary Report

Sample ID: L1201071506PS WG388129-01

Sample Date/Time: Saturday, January 28, 2012 15:07:31
Number of Replicates: 3
Aliquot Volume (mL):
Diluted To Volume (mL):
Autosampler Position: 30
Method File: C:\elandata\Method\6020a.mth
Sample Description: 5

User ID: EDL
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	8971.553	-0.00				ug/L
	Be	9	14831.191	0.11	58.9129	2.048	3.476	ug/L
	Al	27	3467709.357	26.71	868.3442	8.753	1.008	ug/L
>	Sc	45	129752.423	129752.42				ug/L
	Ti	49	2537.307	0.01	6.0275	0.235	3.894	ug/L
	V	51	380071.421	1.30	51.6675	0.652	1.262	ug/L
	Cr	52	337259.270	1.14	52.2769	1.868	3.574	ug/L
	Cr	53	41239.256	0.14	52.8426	1.456	2.756	ug/L
	Mn	55	1404265.451	4.83	138.6300	2.533	1.827	ug/L
	Co	59	398613.956	1.37	51.7221	0.443	0.856	ug/L
	Ni	60	86098.037	0.30	54.1849	0.275	0.508	ug/L
	Cu	65	82373.773	0.28	54.0675	1.438	2.660	ug/L
	Zn	66	56815.597	0.19	62.1439	0.261	0.419	ug/L
>	Ge	72	290742.829	290742.83				ug/L
	As	75	51943.124	0.18	53.9791	2.703	5.008	ug/L
	Se	77	3980.953	0.01	54.5116	3.014	5.530	ug/L
	Se	82	4731.932	0.02	53.2278	2.684	5.042	ug/L
	Rb	85	8761.359	0.03				mg/L
	Y	89	213772.510	11381.93				ug/L
	Rh	103	23.000	-6.00				ug/L
	Mo	98	664.933	0.00	0.3078	0.012	4.040	ug/L
	Ag	107	237770.953	0.96	51.8784	0.998	1.924	ug/L
	Cd	114	54014.790	0.22	52.3596	0.994	1.899	ug/L
>	In	115	246647.396	246647.40				ug/L
	Sn	118	123.868	-0.00	0.0341	0.002	6.432	ug/L
	Sb	123	178845.573	0.73	52.3935	0.544	1.038	ug/L
	Ba	135	74462.989	0.21	55.6107	1.420	2.554	ug/L
	Ce	140	146793.207	0.41				ug/L
>	Tb	159	353755.961	353755.96				ug/L
	Ho	165	2333.896	0.01				ug/L
	Tl	203	303445.369	1.00	50.3544	0.781	1.551	ug/L
	Tl	205	742199.700	2.45	50.0478	0.768	1.535	ug/L
	Pb	206	259309.655	0.86	53.1559	1.055	1.985	ug/L
	Pb	207	229964.202	0.76	49.9113	0.842	1.686	ug/L
	Pb	208	1074050.960	3.54	52.3806	0.894	1.707	ug/L
	U	238	1440052.343	4.75	55.0576	0.652	1.183	ug/L
>	Bi	209	302860.938	302860.94				ug/L

Sample ID: L1201071506PS WG388129-01
Report Date/Time: Saturday, January 28, 2012 15:09:44
Page 1

Approved: January 30, 2012
Erin D. Long

Na	23	64051.805	-0.54		0.0051	0.001	16.178	mg/L
Mg	24	2411311.917	18.58		1.0534	0.011	1.015	mg/L
K	39	921822.445	3.58		0.0802	0.001	1.247	mg/L
Ca	43	43390.337	0.33		3.8461	0.012	0.306	mg/L
Fe	54	1295249.996	9.74		2.7448	0.050	1.835	mg/L
Fe	57	517327.903	3.94		2.5581	0.070	2.746	mg/L
Sc-1	45	129752.423	129752.42					mg/L
Cl	35	28140.775	-8783.53					mg/L
Kr	83	56.667	3.67					mg/L
Br	81	5117.572	41.36					mg/L
P	31	89870.793	82276.00					mg/L
S	34	149760.895	-25839.56					mg/L
Sr	88	51527.412	51474.07					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		93.180			
As	75					
Se	77					
Se	82					
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107					
Cd	114					
In	115		89.419			
Sn	118					
Sb	123					
Ba	135					
Ce	140					
Tb	159		90.224			
Ho	165					
Tl	203					
Tl	205					
Pb	206					
Pb	207					
Pb	208					
U	238					
Bi	209		94.917			

Sample ID: L1201071506PS WG388129-01
Report Date/Time: Saturday, January 28, 2012 15:09:44
Page 2

Approved: January 30, 2012

⌈	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: L1201071506PS WG388129-01
Report Date/Time: Saturday, January 28, 2012 15:09:44
Page 3

Approved: January 30, 2012

Method 6020 - Summary Report

Sample ID: L1201071506SDL WG388129-02

Sample Date/Time: Saturday, January 28, 2012 15:15:19
Number of Replicates: 3
Aliquot Volume (mL):
Diluted To Volume (mL):
Autosampler Position: 31
Method File: C:\elandata\Method\6020a.mth
Sample Description: 25

User ID: EDL
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	10172.890	0.00				ug/L
	Be	9	16.667	0.00	0.0078	0.021	268.752	ug/L
	Al	27	765430.908	5.79	187.9402	4.310	2.293	ug/L
>	Sc	45	131886.216	131886.22				ug/L
	Ti	49	513.401	0.00	1.1842	0.078	6.575	ug/L
	V	51	5137.970	0.01	0.4224	0.015	3.605	ug/L
	Cr	52	6962.978	0.00	0.1194	0.012	9.658	ug/L
	Cr	53	860.131	0.00	0.0485	0.101	208.283	ug/L
	Mn	55	181480.289	0.60	17.3653	0.755	4.346	ug/L
	Co	59	1962.918	0.01	0.2300	0.014	5.912	ug/L
	Ni	60	1072.747	0.00	0.6074	0.036	5.884	ug/L
	Cu	65	804.380	0.00	0.3650	0.009	2.509	ug/L
	Zn	66	2017.265	0.00	1.5526	0.116	7.498	ug/L
>	Ge	72	299528.948	299528.95				ug/L
	As	75	150.317	0.00	0.2824	0.028	10.072	ug/L
	Se	77	55.334	-0.00	0.1146	0.175	152.425	ug/L
	Se	82	12.310	0.00	0.1278	0.089	70.039	ug/L
	Rb	85	1752.869	0.01				mg/L
	Y	89	194851.493	-7539.09				ug/L
	Rh	103	8.333	-20.67				ug/L
	Mo	98	136.829	0.00	0.0700	0.010	14.251	ug/L
	Ag	107	90.335	0.00	0.0083	0.003	35.065	ug/L
	Cd	114	5.389	0.00	0.0140	0.003	21.352	ug/L
>	In	115	255136.613	255136.61				ug/L
	Sn	118	70.934	-0.00	0.0189	0.006	33.743	ug/L
	Sb	123	262.916	0.00	0.0873	0.006	6.352	ug/L
	Ba	135	1227.103	0.00	0.8665	0.056	6.503	ug/L
	Ce	140	31412.283	0.09				ug/L
>	Tb	159	366896.084	366896.08				ug/L
	Ho	165	503.399	0.00				ug/L
	Tl	203	94.001	0.00	0.0190	0.001	6.108	ug/L
	Tl	205	226.693	0.00	0.0265	0.003	12.889	ug/L
	Pb	206	1695.856	0.00	0.3025	0.010	3.344	ug/L
	Pb	207	1401.132	0.00	0.2675	0.003	1.286	ug/L
	Pb	208	6593.757	0.02	0.2792	0.002	0.643	ug/L
	U	238	1169.094	0.00	0.0474	0.002	4.019	ug/L
>	Bi	209	309821.092	309821.09				ug/L

Sample ID: L1201071506SDL WG388129-02
Report Date/Time: Saturday, January 28, 2012 15:17:32
Page 1

Approved: January 30, 2012
Erin D. Long

Na	23	39153.892	-0.73	-0.0019	0.002	89.139	mg/L
Mg	24	512243.809	3.88	0.2167	0.002	0.911	mg/L
K	39	559169.437	0.72	0.0104	0.004	41.300	mg/L
Ca	43	8815.543	0.07	0.7541	0.027	3.555	mg/L
Fe	54	266287.241	1.78	0.4991	0.011	2.293	mg/L
Fe	57	109857.410	0.79	0.5040	0.015	2.893	mg/L
Sc-1	45	131886.216	131886.22				mg/L
Cl	35	28342.120	-8582.18				mg/L
Kr	83	41.001	-12.00				mg/L
Br	81	5424.434	348.22				mg/L
P	31	20954.313	13359.52				mg/L
S	34	157605.539	-17994.92				mg/L
Sr	88	10040.392	9987.05				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					
Cr	52					
Cr	53					
Mn	55					
Co	59					
Ni	60					
Cu	65					
Zn	66					
Ge	72		95.996			
As	75					
Se	77					
Se	82					
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107					
Cd	114					
In	115		92.496			
Sn	118					
Sb	123					
Ba	135					
Ce	140					
Tb	159		93.575			
Ho	165					
Tl	203					
Tl	205					
Pb	206					
Pb	207					
Pb	208					
U	238					
Bi	209		97.098			

Sample ID: L1201071506SDL WG388129-02
Report Date/Time: Saturday, January 28, 2012 15:17:32
Page 2

Approved: January 30, 2012

⌈	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: L1201071506SDL WG388129-02
Report Date/Time: Saturday, January 28, 2012 15:17:32
Page 3

Approved: January 30, 2012

Method 6020 - Summary Report

Sample ID: QC Std 6

Sample Date/Time: Saturday, January 28, 2012 15:23:07
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: EDL

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	10222.936	0.00				ug/L
	Be	9	14093.252	0.11	54.1864	3.856	7.117	ug/L
	Al	27	211757.601	1.56	50.6428	2.502	4.940	ug/L
>	Sc	45	134223.151	134223.15				ug/L
	Ti	49	42405.185	0.14	96.4037	1.512	1.568	ug/L
	V	51	371986.390	1.22	48.3473	1.192	2.465	ug/L
	Cr	52	330167.158	1.07	48.8840	0.703	1.437	ug/L
	Cr	53	39651.425	0.13	48.5081	0.461	0.950	ug/L
	Mn	55	518855.417	1.71	48.9786	0.185	0.377	ug/L
	Co	59	406178.960	1.34	50.4073	1.303	2.585	ug/L
	Ni	60	83289.155	0.27	50.1348	0.803	1.602	ug/L
	Cu	65	78891.983	0.26	49.5160	0.991	2.002	ug/L
	Zn	66	47793.204	0.15	49.8811	0.836	1.677	ug/L
>	Ge	72	303927.122	303927.12				ug/L
	As	75	50226.137	0.17	49.9336	0.260	0.520	ug/L
	Se	77	3751.511	0.01	49.0764	0.852	1.737	ug/L
	Se	82	4556.483	0.01	49.0200	1.152	2.350	ug/L
	Rb	85	1777.541	0.01				mg/L
	Y	89	192215.524	-10175.06				ug/L
	Rh	103	23.334	-5.67				ug/L
	Mo	98	238110.672	0.91	100.1026	3.242	3.239	ug/L
	Ag	107	240700.591	0.92	49.4174	0.778	1.574	ug/L
	Cd	114	54230.551	0.21	49.4509	1.039	2.101	ug/L
>	In	115	262174.598	262174.60				ug/L
	Sn	118	187618.405	0.71	48.8715	1.519	3.109	ug/L
	Sb	123	181082.115	0.69	49.9070	1.018	2.040	ug/L
	Ba	135	72197.588	0.19	49.7732	1.174	2.359	ug/L
	Ce	140	276.699	0.00				ug/L
>	Tb	159	383121.516	383121.52				ug/L
	Ho	165	20.002	0.00				ug/L
	Tl	203	306998.856	0.96	48.2827	0.086	0.179	ug/L
	Tl	205	749992.812	2.35	47.9453	1.586	3.308	ug/L
	Pb	206	242610.131	0.76	47.1337	0.748	1.587	ug/L
	Pb	207	232233.793	0.73	47.7721	0.577	1.208	ug/L
	Pb	208	1036432.058	3.24	47.9039	0.395	0.824	ug/L
	U	238	1470522.517	4.60	53.2930	0.606	1.138	ug/L
>	Bi	209	319503.864	319503.86				ug/L

Sample ID: QC Std 6
Report Date/Time: Saturday, January 28, 2012 15:25:20
Page 1

Approved: January 30, 2012
Erin D. Long

Na	23	19299566.626	142.92	5.1323	0.280	5.450	mg/L
Mg	24	12130775.655	90.47	5.1449	0.250	4.868	mg/L
K	39	26903502.991	197.16	4.8070	0.258	5.358	mg/L
Ca	43	56791.912	0.42	4.8768	0.251	5.147	mg/L
Fe	54	2351648.233	17.29	4.8737	0.143	2.934	mg/L
Fe	57	1059879.301	7.86	5.1119	0.289	5.658	mg/L
> Sc-1	45	134223.151	134223.15				mg/L
Cl	35	28584.278	-8340.02				mg/L
Kr	83	58.334	5.33				mg/L
Br	81	5557.186	480.97				mg/L
P	31	7927.783	332.99				mg/L
S	34	164432.473	-11167.98				mg/L
Sr	88	3931.321	3877.98				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	96.695				
Cr	52	97.768				
Cr	53					
Mn	55	97.957				
Co	59	100.815				
Ni	60	100.270				
Cu	65	99.032				
Zn	66	99.762				
> Ge	72		97.406			
As	75	99.867				
Se	77					
Se	82	98.040				
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107	98.835				
Cd	114	98.902				
> In	115		95.048			
Sn	118					
Sb	123	99.814				
Ba	135	99.546				
Ce	140					
> Tb	159		97.713			
Ho	165					
Tl	203	96.565				
Tl	205					
Pb	206					
Pb	207					
Pb	208	95.808				
U	238	106.586				
> Bi	209		100.133			

Sample ID: QC Std 6
Report Date/Time: Saturday, January 28, 2012 15:25:20
Page 2

Approved: January 30, 2012
Erin D. Long

⌈	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: Saturday, January 28, 2012 15:25:20
Page 3

Approved: January 30, 2012

Method 6020 - Summary Report

Sample ID: QC Std 7

Sample Date/Time: Saturday, January 28, 2012 15:30:44
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: EDL

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	9638.916	-0.00				ug/L
	Be	9	8.667	0.00	-0.0232	0.009	37.419	ug/L
	Al	27	3017.221	0.01	0.0366	0.116	317.518	ug/L
>	Sc	45	132173.369	132173.37				ug/L
	Ti	49	56.673	-0.00	0.1272	0.066	51.933	ug/L
	V	51	1864.066	-0.00	-0.0171	0.009	51.055	ug/L
	Cr	52	6055.927	-0.00	-0.0397	0.011	27.606	ug/L
	Cr	53	690.099	-0.00	-0.1869	0.232	124.252	ug/L
	Mn	55	465.351	-0.00	0.0039	0.004	101.627	ug/L
	Co	59	73.668	0.00	-0.0082	0.001	7.781	ug/L
	Ni	60	70.334	-0.00	-0.0068	0.003	38.776	ug/L
	Cu	65	100.002	0.00	-0.0864	0.003	3.475	ug/L
	Zn	66	623.030	-0.00	0.0422	0.015	34.565	ug/L
>	Ge	72	306163.850	306163.85				ug/L
	As	75	-118.311	-0.00	0.0148	0.034	229.930	ug/L
	Se	77	60.667	-0.00	0.1669	0.071	42.440	ug/L
	Se	82	4.942	-0.00	0.0461	0.080	173.513	ug/L
	Rb	85	29.334	-0.00				mg/L
	Y	89	199038.731	-3351.85				ug/L
	Rh	103	12.667	-16.33				ug/L
	Mo	98	40.489	0.00	0.0278	0.002	8.020	ug/L
	Ag	107	84.001	0.00	0.0065	0.003	41.213	ug/L
	Cd	114	2.661	0.00	0.0114	0.004	31.060	ug/L
>	In	115	261974.554	261974.55				ug/L
	Sn	118	507.215	-0.00	0.1320	0.007	5.326	ug/L
	Sb	123	85.495	0.00	0.0363	0.002	5.934	ug/L
	Ba	135	26.667	0.00	0.0022	0.001	45.334	ug/L
	Ce	140	150.016	-0.00				ug/L
>	Tb	159	375371.941	375371.94				ug/L
	Ho	165	10.001	-0.00				ug/L
	Tl	203	49.334	0.00	0.0115	0.001	12.058	ug/L
	Tl	205	103.344	0.00	0.0181	0.002	12.285	ug/L
	Pb	206	199.004	0.00	0.0009	0.002	238.213	ug/L
	Pb	207	175.670	0.00	0.0060	0.002	40.152	ug/L
	Pb	208	810.357	0.00	0.0019	0.000	16.809	ug/L
	U	238	89.668	0.00	0.0069	0.001	11.731	ug/L
>	Bi	209	321963.481	321963.48				ug/L

Sample ID: QC Std 7
Report Date/Time: Saturday, January 28, 2012 15:32:56
Page 1

Approved: January 30, 2012
Erin D. Long

Na	23	92362.077	-0.33	0.0125	0.001	9.734	mg/L
Mg	24	690.101	0.00	-0.0041	0.000	3.228	mg/L
K	39	460457.999	-0.04	-0.0082	0.002	19.996	mg/L
Ca	43	156.684	-0.00	-0.0052	0.004	76.731	mg/L
Fe	54	33225.932	0.01	0.0006	0.003	546.760	mg/L
Fe	57	7227.189	0.01	-0.0032	0.000	6.041	mg/L
Sc-1	45	132173.369	132173.37				mg/L
Cl	35	30398.011	-6526.29				mg/L
Kr	83	45.001	-8.00				mg/L
Br	81	5763.340	687.12				mg/L
P	31	8261.446	666.65				mg/L
S	34	173382.081	-2218.37				mg/L
Sr	88	46.671	-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		98.123			
As	75					
Se	77					
Se	82					
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107					
Cd	114					
In	115		94.975			
Sn	118					
Sb	123					
Ba	135					
Ce	140					
Tb	159		95.737			
Ho	165					
Tl	203					
Tl	205					
Pb	206					
Pb	207					
Pb	208					
U	238					
Bi	209		100.904			

Sample ID: QC Std 7
Report Date/Time: Saturday, January 28, 2012 15:32:56
Page 2

Approved: January 30, 2012
Erin D. Long

⌈	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: Saturday, January 28, 2012 15:32:56
Page 3

Approved: January 30, 2012

Method 6020 - Summary Report

Sample ID: L1201071507

Sample Date/Time: Saturday, January 28, 2012 15:38:20
Number of Replicates: 3
Aliquot Volume (mL):
Diluted To Volume (mL):
Autosampler Position: 32
Method File: C:\elandata\Method\6020a.mth
Sample Description: 5

User ID: EDL

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	9305.235	-0.00				ug/L
	Be	9	41.333	0.00	0.1072	0.051	47.390	ug/L
	Al	27	4949205.374	38.33	1246.1784	65.709	5.273	ug/L
>	Sc	45	129160.390	129160.39				ug/L
	Ti	49	3761.233	0.01	8.7442	0.992	11.344	ug/L
	V	51	20945.414	0.06	2.5424	0.040	1.555	ug/L
	Cr	52	15437.111	0.03	1.4373	0.036	2.486	ug/L
	Cr	53	1873.732	0.00	1.3541	0.184	13.601	ug/L
	Mn	55	816562.354	2.75	78.9203	1.826	2.314	ug/L
	Co	59	9171.469	0.03	1.1481	0.012	1.006	ug/L
	Ni	60	4921.502	0.02	2.9860	0.021	0.716	ug/L
	Cu	65	3761.553	0.01	2.2748	0.027	1.187	ug/L
	Zn	66	25357.444	0.08	26.8106	0.462	1.725	ug/L
>	Ge	72	296977.572	296977.57				ug/L
	As	75	1024.248	0.00	1.1704	0.054	4.655	ug/L
	Se	77	64.000	-0.00	0.2364	0.164	69.277	ug/L
	Se	82	4.844	-0.00	0.0463	0.083	179.292	ug/L
	Rb	85	10348.527	0.03				mg/L
	Y	89	216542.831	14152.25				ug/L
	Rh	103	11.000	-18.00				ug/L
	Mo	98	607.115	0.00	0.2725	0.007	2.408	ug/L
	Ag	107	105.335	0.00	0.0115	0.002	21.201	ug/L
	Cd	114	616.592	0.00	0.5862	0.058	9.847	ug/L
>	In	115	255446.111	255446.11				ug/L
	Sn	118	377.075	-0.00	0.1006	0.003	2.523	ug/L
	Sb	123	116.538	0.00	0.0457	0.006	12.992	ug/L
	Ba	135	10159.958	0.03	7.3916	0.067	0.906	ug/L
	Ce	140	153917.445	0.42				ug/L
>	Tb	159	362392.784	362392.78				ug/L
	Ho	165	2300.548	0.01				ug/L
	Tl	203	182.004	0.00	0.0328	0.003	8.124	ug/L
	Tl	205	416.719	0.00	0.0385	0.005	13.336	ug/L
	Pb	206	47933.626	0.15	9.4044	0.100	1.058	ug/L
	Pb	207	40506.284	0.13	8.4177	0.063	0.744	ug/L
	Pb	208	191544.848	0.61	8.9408	0.140	1.560	ug/L
	U	238	5210.014	0.02	0.1950	0.003	1.669	ug/L
>	Bi	209	315337.301	315337.30				ug/L

Sample ID: L1201071507
Report Date/Time: Saturday, January 28, 2012 15:40:34
Page 1

Approved: January 30, 2012
Erin D. Long

Na	23	59437.472	-0.57	0.0039	0.000	10.519	mg/L
Mg	24	1836805.086	14.22	0.8052	0.022	2.784	mg/L
K	39	963664.110	3.95	0.0891	0.009	10.034	mg/L
Ca	43	30498.832	0.24	2.7134	0.192	7.093	mg/L
Fe	54	1376420.333	10.43	2.9373	0.149	5.072	mg/L
Fe	57	572356.328	4.39	2.8491	0.087	3.042	mg/L
Sc-1	45	129160.390	129160.39				mg/L
Cl	35	27685.247	-9239.05				mg/L
Kr	83	56.334	3.33				mg/L
Br	81	5078.881	2.67				mg/L
P	31	79313.707	71718.91				mg/L
S	34	149329.574	-26270.88				mg/L
Sr	88	47939.036	47885.70				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		95.178			
As	75					
Se	77					
Se	82					
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107					
Cd	114					
In	115		92.609			
Sn	118					
Sb	123					
Ba	135					
Ce	140					
Tb	159		92.427			
Ho	165					
Tl	203					
Tl	205					
Pb	206					
Pb	207					
Pb	208					
U	238					
Bi	209		98.827			

Sample ID: L1201071507
Report Date/Time: Saturday, January 28, 2012 15:40:34
Page 2

Approved: January 30, 2012

⌈	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: L1201071507
Report Date/Time: Saturday, January 28, 2012 15:40:34
Page 3

Approved: January 30, 2012

Method 6020 - Summary Report

Sample ID: L1201071508

Sample Date/Time: Saturday, January 28, 2012 15:46:09
Number of Replicates: 3
Aliquot Volume (mL):
Diluted To Volume (mL):
Autosampler Position: 33
Method File: C:\elandata\Method\6020a.mth
Sample Description: 5

User ID: EDL

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	10139.643	0.00				ug/L
	Be	9	24.667	0.00	0.0424	0.036	85.744	ug/L
	Al	27	4485591.684	34.82	1132.1329	100.233	8.854	ug/L
>	Sc	45	128991.426	128991.43				ug/L
	Ti	49	4208.151	0.01	9.6332	0.492	5.103	ug/L
	V	51	18521.414	0.05	2.1778	0.013	0.606	ug/L
	Cr	52	16415.322	0.03	1.5472	0.029	1.878	ug/L
	Cr	53	1970.430	0.00	1.4360	0.105	7.345	ug/L
	Mn	55	685589.285	2.27	65.1528	1.209	1.855	ug/L
	Co	59	8064.652	0.03	0.9904	0.023	2.286	ug/L
	Ni	60	4432.224	0.01	2.6393	0.087	3.303	ug/L
	Cu	65	6666.402	0.02	4.0752	0.090	2.211	ug/L
	Zn	66	55933.644	0.18	58.8601	1.927	3.274	ug/L
>	Ge	72	301899.936	301899.94				ug/L
	As	75	931.969	0.00	1.0614	0.014	1.290	ug/L
	Se	77	54.667	-0.00	0.0992	0.100	101.178	ug/L
	Se	82	22.337	0.00	0.2363	0.098	41.597	ug/L
	Rb	85	10545.115	0.03				mg/L
	Y	89	211498.064	9107.48				ug/L
	Rh	103	15.667	-13.33				ug/L
	Mo	98	666.969	0.00	0.3044	0.008	2.697	ug/L
	Ag	107	117.335	0.00	0.0145	0.005	35.295	ug/L
	Cd	114	445.694	0.00	0.4351	0.031	7.150	ug/L
>	In	115	250232.703	250232.70				ug/L
	Sn	118	125.334	-0.00	0.0340	0.000	0.453	ug/L
	Sb	123	168.621	0.00	0.0614	0.001	2.304	ug/L
	Ba	135	12441.420	0.03	9.0120	0.424	4.710	ug/L
	Ce	140	128655.069	0.35				ug/L
>	Tb	159	364072.857	364072.86				ug/L
	Ho	165	1847.056	0.01				ug/L
	Tl	203	181.337	0.00	0.0335	0.001	4.158	ug/L
	Tl	205	480.062	0.00	0.0436	0.007	17.137	ug/L
	Pb	206	269558.614	0.88	54.6725	1.117	2.043	ug/L
	Pb	207	244167.707	0.80	52.4526	0.442	0.842	ug/L
	Pb	208	1118329.695	3.65	53.9685	0.898	1.663	ug/L
	U	238	5156.648	0.02	0.1988	0.006	2.816	ug/L
>	Bi	209	305964.446	305964.45				ug/L

Sample ID: L1201071508
Report Date/Time: Saturday, January 28, 2012 15:48:22
Page 1

Approved: January 30, 2012
Erin D. Long

Na	23	60122.165	-0.57	0.0042	0.001	20.377	mg/L
Mg	24	1721100.409	13.36	0.7559	0.045	5.901	mg/L
K	39	922448.560	3.64	0.0815	0.008	10.324	mg/L
Ca	43	27518.154	0.21	2.4503	0.169	6.901	mg/L
Fe	54	1242735.999	9.41	2.6519	0.245	9.237	mg/L
Fe	57	517996.535	3.97	2.5806	0.230	8.896	mg/L
Sc-1	45	128991.426	128991.43				mg/L
Cl	35	29286.719	-7637.58				mg/L
Kr	83	38.000	-15.00				mg/L
Br	81	5250.320	174.11				mg/L
P	31	71122.587	63527.79				mg/L
S	34	162109.613	-13490.84				mg/L
Sr	88	44452.786	44399.45				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		96.756			
As	75					
Se	77					
Se	82					
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107					
Cd	114					
In	115		90.719			
Sn	118					
Sb	123					
Ba	135					
Ce	140					
Tb	159		92.855			
Ho	165					
Tl	203					
Tl	205					
Pb	206					
Pb	207					
Pb	208					
U	238					
Bi	209		95.890			

Sample ID: L1201071508
Report Date/Time: Saturday, January 28, 2012 15:48:22
Page 2

Approved: January 30, 2012

⌈	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: L1201071508
Report Date/Time: Saturday, January 28, 2012 15:48:22
Page 3

Approved: January 30, 2012

Method 6020 - Summary Report

Sample ID: L1201071509

Sample Date/Time: Saturday, January 28, 2012 15:53:57
Number of Replicates: 3
Aliquot Volume (mL):
Diluted To Volume (mL):
Autosampler Position: 34
Method File: C:\elandata\Method\6020a.mth
Sample Description: 5

User ID: EDL

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	10156.211	0.00				ug/L
	Be	9	28.000	0.00	0.0546	0.021	38.285	ug/L
	Al	27	3937122.946	30.38	987.7715	19.154	1.939	ug/L
>	Sc	45	129515.514	129515.51				ug/L
	Ti	49	3634.491	0.01	8.5175	0.412	4.843	ug/L
	V	51	14868.555	0.04	1.7455	0.006	0.349	ug/L
	Cr	52	13260.007	0.02	1.1180	0.041	3.624	ug/L
	Cr	53	1660.333	0.00	1.1015	0.301	27.335	ug/L
	Mn	55	592210.904	2.01	57.6872	1.765	3.060	ug/L
	Co	59	6906.264	0.02	0.8672	0.017	1.969	ug/L
	Ni	60	3483.763	0.01	2.1178	0.093	4.372	ug/L
	Cu	65	2854.518	0.01	1.7051	0.053	3.101	ug/L
	Zn	66	20674.493	0.07	21.9235	0.078	0.356	ug/L
>	Ge	72	294631.948	294631.95				ug/L
	As	75	717.200	0.00	0.8649	0.072	8.327	ug/L
	Se	77	62.667	-0.00	0.2271	0.157	69.189	ug/L
	Se	82	4.884	-0.00	0.0468	0.078	166.791	ug/L
	Rb	85	9293.272	0.03				mg/L
	Y	89	208743.241	6352.66				ug/L
	Rh	103	23.334	-5.67				ug/L
	Mo	98	561.403	0.00	0.2571	0.010	3.940	ug/L
	Ag	107	92.001	0.00	0.0090	0.001	12.753	ug/L
	Cd	114	318.498	0.00	0.3122	0.011	3.556	ug/L
>	In	115	251060.013	251060.01				ug/L
	Sn	118	751.767	0.00	0.2042	0.003	1.256	ug/L
	Sb	123	109.913	0.00	0.0444	0.003	5.825	ug/L
	Ba	135	13671.678	0.04	9.9169	0.074	0.748	ug/L
	Ce	140	114834.659	0.32				ug/L
>	Tb	159	363655.558	363655.56				ug/L
	Ho	165	1660.332	0.01				ug/L
	Tl	203	136.002	0.00	0.0258	0.001	3.039	ug/L
	Tl	205	256.696	0.00	0.0284	0.003	10.438	ug/L
	Pb	206	519750.011	1.67	103.8767	1.635	1.574	ug/L
	Pb	207	487964.843	1.57	103.2620	2.205	2.135	ug/L
	Pb	208	2192481.135	7.05	104.2459	1.298	1.245	ug/L
	U	238	4093.379	0.01	0.1562	0.000	0.160	ug/L
>	Bi	209	310714.930	310714.93				ug/L

Sample ID: L1201071509
Report Date/Time: Saturday, January 28, 2012 15:56:11
Page 1

Approved: January 30, 2012
Erin D. Long

Na	23	52309.068	-0.63		0.0019	0.001	35.854	mg/L
Mg	24	1632168.946	12.60		0.7130	0.018	2.516	mg/L
K	39	829831.453	2.89		0.0633	0.005	8.009	mg/L
Ca	43	28728.993	0.22		2.5453	0.086	3.384	mg/L
Fe	54	1044303.930	7.83		2.2040	0.067	3.041	mg/L
Fe	57	424813.680	3.23		2.0987	0.078	3.731	mg/L
Sc-1	45	129515.514	129515.51					mg/L
Cl	35	27628.392	-9295.91					mg/L
Kr	83	51.667	-1.33					mg/L
Br	81	5004.837	-71.38					mg/L
P	31	66319.526	58724.73					mg/L
S	34	152247.035	-23353.42					mg/L
Sr	88	53315.324	53261.98					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		94.427			
As	75					
Se	77					
Se	82					
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107					
Cd	114					
In	115		91.019			
Sn	118					
Sb	123					
Ba	135					
Ce	140					
Tb	159		92.749			
Ho	165					
Tl	203					
Tl	205					
Pb	206					
Pb	207					
Pb	208					
U	238					
Bi	209		97.378			

Sample ID: L1201071509
Report Date/Time: Saturday, January 28, 2012 15:56:11
Page 2

Approved: January 30, 2012
Erin D. Long

⌈	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
Pb 206 Upper, S, EEE	Pb	206	
Pb 208 Upper, S, EEE	Pb	208	

Sample ID: L1201071509
Report Date/Time: Saturday, January 28, 2012 15:56:11
Page 3

Approved: January 30, 2012

Method 6020 - Summary Report

Sample ID: L1201071510

Sample Date/Time: Saturday, January 28, 2012 16:01:44
Number of Replicates: 3
Aliquot Volume (mL):
Diluted To Volume (mL):
Autosampler Position: 35
Method File: C:\elandata\Method\6020a.mth
Sample Description: 5

User ID: EDL

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	10222.985	0.01				ug/L
	Be	9	20.000	0.00	0.0253	0.001	3.099	ug/L
	Al	27	3506417.381	27.94	908.4147	30.990	3.411	ug/L
>	Sc	45	125403.234	125403.23				ug/L
	Ti	49	5228.830	0.02	12.7729	0.388	3.039	ug/L
	V	51	19675.286	0.06	2.5042	0.040	1.582	ug/L
	Cr	52	13468.348	0.03	1.2376	0.064	5.169	ug/L
	Cr	53	1680.337	0.00	1.2143	0.013	1.103	ug/L
	Mn	55	735519.762	2.60	74.6347	1.337	1.792	ug/L
	Co	59	8787.053	0.03	1.1550	0.019	1.665	ug/L
	Ni	60	3851.595	0.01	2.4452	0.033	1.366	ug/L
	Cu	65	2444.050	0.01	1.5047	0.044	2.940	ug/L
	Zn	66	6200.369	0.02	6.4292	0.196	3.048	ug/L
>	Ge	72	282831.027	282831.03				ug/L
	As	75	915.667	0.00	1.1069	0.031	2.796	ug/L
	Se	77	55.334	-0.00	0.1563	0.097	62.315	ug/L
	Se	82	10.594	0.00	0.1157	0.106	91.761	ug/L
	Rb	85	10468.678	0.04				mg/L
	Y	89	219446.522	17055.94				ug/L
	Rh	103	9.333	-19.67				ug/L
	Mo	98	614.673	0.00	0.2895	0.005	1.752	ug/L
	Ag	107	79.668	0.00	0.0069	0.002	28.386	ug/L
	Cd	114	34.500	0.00	0.0429	0.013	31.283	ug/L
>	In	115	242936.337	242936.34				ug/L
	Sn	118	597.888	0.00	0.1679	0.007	4.414	ug/L
	Sb	123	98.953	0.00	0.0422	0.001	2.791	ug/L
	Ba	135	4381.862	0.01	3.2594	0.066	2.013	ug/L
	Ce	140	139549.893	0.39				ug/L
>	Tb	159	353465.181	353465.18				ug/L
	Ho	165	2257.198	0.01				ug/L
	Tl	203	149.336	0.00	0.0285	0.003	9.480	ug/L
	Tl	205	296.702	0.00	0.0315	0.001	3.955	ug/L
	Pb	206	6730.118	0.02	1.3395	0.043	3.203	ug/L
	Pb	207	5382.125	0.02	1.1360	0.038	3.368	ug/L
	Pb	208	25935.506	0.08	1.2269	0.018	1.463	ug/L
	U	238	5329.425	0.02	0.2069	0.009	4.147	ug/L
>	Bi	209	303704.205	303704.21				ug/L

Sample ID: L1201071510
Report Date/Time: Saturday, January 28, 2012 16:03:56
Page 1

Approved: January 30, 2012
Erin D. Long

Na	23	49374.118	-0.64	0.0016	0.000	22.700	mg/L
Mg	24	757815.393	6.04	0.3395	0.010	2.999	mg/L
K	39	983785.972	4.32	0.0983	0.002	2.217	mg/L
Ca	43	7801.097	0.06	0.7000	0.011	1.621	mg/L
Fe	54	1146607.279	8.90	2.5080	0.018	0.726	mg/L
Fe	57	461246.843	3.63	2.3576	0.073	3.115	mg/L
Sc-1	45	125403.234	125403.23				mg/L
Cl	35	28156.168	-8768.13				mg/L
Kr	83	46.667	-6.33				mg/L
Br	81	4873.425	-202.79				mg/L
P	31	78550.618	70955.82				mg/L
S	34	144527.193	-31073.26				mg/L
Sr	88	22917.150	22863.81				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		90.645			
As	75					
Se	77					
Se	82					
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107					
Cd	114					
In	115		88.073			
Sn	118					
Sb	123					
Ba	135					
Ce	140					
Tb	159		90.150			
Ho	165					
Tl	203					
Tl	205					
Pb	206					
Pb	207					
Pb	208					
U	238					
Bi	209		95.181			

Sample ID: L1201071510
Report Date/Time: Saturday, January 28, 2012 16:03:56
Page 2

Approved: January 30, 2012

⌈	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: L1201071510
Report Date/Time: Saturday, January 28, 2012 16:03:56
Page 3

Approved: January 30, 2012

Method 6020 - Summary Report

Sample ID: L1201071511

Sample Date/Time: Saturday, January 28, 2012 16:09:30
Number of Replicates: 3
Aliquot Volume (mL):
Diluted To Volume (mL):
Autosampler Position: 36
Method File: C:\elandata\Method\6020a.mth
Sample Description: 5

User ID: EDL

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	11341.078	0.01				ug/L
	Be	9	36.000	0.00	0.0834	0.024	28.190	ug/L
	Al	27	7174601.518	54.08	1758.2051	11.047	0.628	ug/L
>	Sc	45	132630.851	132630.85				ug/L
	Ti	49	3988.022	0.01	9.4240	0.545	5.779	ug/L
	V	51	34648.581	0.11	4.4502	0.101	2.259	ug/L
	Cr	52	20469.991	0.05	2.2664	0.059	2.620	ug/L
	Cr	53	2377.244	0.01	2.0465	0.134	6.524	ug/L
	Mn	55	1183520.902	4.05	116.2693	1.396	1.201	ug/L
	Co	59	12756.218	0.04	1.6303	0.040	2.454	ug/L
	Ni	60	8540.126	0.03	5.3035	0.012	0.218	ug/L
	Cu	65	5137.635	0.02	3.2158	0.082	2.539	ug/L
	Zn	66	11484.694	0.04	12.0136	0.473	3.934	ug/L
>	Ge	72	292212.192	292212.19				ug/L
	As	75	1949.742	0.01	2.1415	0.043	2.028	ug/L
	Se	77	62.000	-0.00	0.2242	0.111	49.596	ug/L
	Se	82	3.586	-0.00	0.0325	0.137	420.983	ug/L
	Rb	85	13467.677	0.05				mg/L
	Y	89	238986.724	36596.14				ug/L
	Rh	103	11.000	-18.00				ug/L
	Mo	98	1001.486	0.00	0.4663	0.028	6.007	ug/L
	Ag	107	109.668	0.00	0.0136	0.003	23.156	ug/L
	Cd	114	36.933	0.00	0.0453	0.014	30.168	ug/L
>	In	115	242400.902	242400.90				ug/L
	Sn	118	311.606	-0.00	0.0876	0.003	3.722	ug/L
	Sb	123	80.908	0.00	0.0369	0.002	6.190	ug/L
	Ba	135	9141.770	0.03	6.6628	0.102	1.524	ug/L
	Ce	140	274846.037	0.76				ug/L
>	Tb	159	361669.169	361669.17				ug/L
	Ho	165	3714.534	0.01				ug/L
	Tl	203	248.340	0.00	0.0440	0.004	8.466	ug/L
	Tl	205	570.077	0.00	0.0492	0.007	15.222	ug/L
	Pb	206	11969.377	0.04	2.3644	0.012	0.520	ug/L
	Pb	207	9948.369	0.03	2.0837	0.020	0.939	ug/L
	Pb	208	47561.740	0.15	2.2353	0.006	0.289	ug/L
	U	238	8439.356	0.03	0.3194	0.008	2.481	ug/L
>	Bi	209	309555.338	309555.34				ug/L

Sample ID: L1201071511
Report Date/Time: Saturday, January 28, 2012 16:11:42
Page 1

Approved: January 30, 2012
Erin D. Long

Na	23	66017.137	-0.53	0.0053	0.000	4.869	mg/L
Mg	24	1020687.980	7.69	0.4337	0.006	1.358	mg/L
K	39	1288311.489	6.19	0.1440	0.006	4.454	mg/L
Ca	43	10180.568	0.08	0.8683	0.013	1.479	mg/L
Fe	54	1953797.652	14.50	4.0849	0.077	1.886	mg/L
Fe	57	898108.828	6.72	4.3732	0.183	4.180	mg/L
Sc-1	45	132630.851	132630.85				mg/L
Cl	35	26519.476	-10404.83				mg/L
Kr	83	47.667	-5.33				mg/L
Br	81	5056.202	-20.01				mg/L
P	31	104260.605	96665.81				mg/L
S	34	137796.558	-37803.90				mg/L
Sr	88	43061.955	43008.62				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		93.651			
As	75					
Se	77					
Se	82					
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107					
Cd	114					
In	115		87.879			
Sn	118					
Sb	123					
Ba	135					
Ce	140					
Tb	159		92.242			
Ho	165					
Tl	203					
Tl	205					
Pb	206					
Pb	207					
Pb	208					
U	238					
Bi	209		97.015			

Sample ID: L1201071511
Report Date/Time: Saturday, January 28, 2012 16:11:42
Page 2

Approved: January 30, 2012
Erin D. Long

⌈	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: L1201071511
Report Date/Time: Saturday, January 28, 2012 16:11:42
Page 3

Approved: January 30, 2012

Method 6020 - Summary Report

Sample ID: L1201071512

Sample Date/Time: Saturday, January 28, 2012 16:17:16
Number of Replicates: 3
Aliquot Volume (mL):
Diluted To Volume (mL):
Autosampler Position: 37
Method File: C:\elandata\Method\6020a.mth
Sample Description: 5

User ID: EDL

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	10289.684	0.01				ug/L
	Be	9	21.333	0.00	0.0342	0.013	37.785	ug/L
	Al	27	2475296.153	20.44	664.4720	12.440	1.872	ug/L
>	Sc	45	121039.932	121039.93				ug/L
	Ti	49	1430.266	0.01	3.6022	0.157	4.347	ug/L
	V	51	14527.330	0.05	1.8442	0.027	1.490	ug/L
	Cr	52	11837.521	0.02	1.0324	0.021	2.053	ug/L
	Cr	53	1423.597	0.00	0.9292	0.113	12.170	ug/L
	Mn	55	709273.765	2.58	74.1994	0.679	0.915	ug/L
	Co	59	7197.847	0.03	0.9730	0.034	3.545	ug/L
	Ni	60	4266.802	0.02	2.8003	0.107	3.834	ug/L
	Cu	65	2965.557	0.01	1.9198	0.045	2.347	ug/L
	Zn	66	6329.133	0.02	6.7972	0.064	0.942	ug/L
>	Ge	72	274341.445	274341.44				ug/L
	As	75	888.586	0.00	1.1078	0.078	7.038	ug/L
	Se	77	68.000	0.00	0.3678	0.259	70.333	ug/L
	Se	82	13.238	0.00	0.1512	0.030	19.729	ug/L
	Rb	85	4410.544	0.02				mg/L
	Y	89	204920.605	2530.02				ug/L
	Rh	103	9.333	-19.67				ug/L
	Mo	98	400.653	0.00	0.1993	0.011	5.595	ug/L
	Ag	107	77.668	0.00	0.0071	0.003	36.603	ug/L
	Cd	114	17.168	0.00	0.0267	0.014	52.805	ug/L
>	In	115	234007.571	234007.57				ug/L
	Sn	118	712.830	0.00	0.2079	0.007	3.186	ug/L
	Sb	123	92.493	0.00	0.0413	0.003	7.391	ug/L
	Ba	135	3379.719	0.01	2.6102	0.090	3.442	ug/L
	Ce	140	129183.287	0.38				ug/L
>	Tb	159	340037.773	340037.77				ug/L
	Ho	165	2260.533	0.01				ug/L
	Tl	203	135.669	0.00	0.0273	0.001	5.022	ug/L
	Tl	205	336.707	0.00	0.0352	0.003	8.797	ug/L
	Pb	206	6350.484	0.02	1.3220	0.046	3.507	ug/L
	Pb	207	5050.915	0.02	1.1148	0.017	1.510	ug/L
	Pb	208	24728.848	0.08	1.2241	0.005	0.408	ug/L
	U	238	3854.598	0.01	0.1574	0.006	4.004	ug/L
>	Bi	209	290170.734	290170.73				ug/L

Sample ID: L1201071512
Report Date/Time: Saturday, January 28, 2012 16:19:28
Page 1

Approved: January 30, 2012
Erin D. Long

Na	23	43199.398	-0.68	0.0003	0.000	28.027	mg/L
Mg	24	1000221.963	8.27	0.4662	0.017	3.617	mg/L
K	39	767058.524	2.82	0.0616	0.006	10.292	mg/L
Ca	43	16865.403	0.14	1.5929	0.068	4.292	mg/L
Fe	54	950976.177	7.62	2.1469	0.078	3.651	mg/L
Fe	57	392589.316	3.20	2.0757	0.115	5.525	mg/L
Sc-1	45	121039.932	121039.93				mg/L
Cl	35	26078.081	-10846.22				mg/L
Kr	83	49.334	-3.67				mg/L
Br	81	4368.478	-707.74				mg/L
P	31	73336.047	65741.25				mg/L
S	34	139215.521	-36384.93				mg/L
Sr	88	30207.671	30154.33				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		87.924			
As	75					
Se	77					
Se	82					
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107					
Cd	114					
In	115		84.836			
Sn	118					
Sb	123					
Ba	135					
Ce	140					
Tb	159		86.725			
Ho	165					
Tl	203					
Tl	205					
Pb	206					
Pb	207					
Pb	208					
U	238					
Bi	209		90.940			

Sample ID: L1201071512
Report Date/Time: Saturday, January 28, 2012 16:19:28
Page 2

Approved: January 30, 2012

⌈	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: L1201071512
Report Date/Time: Saturday, January 28, 2012 16:19:28
Page 3

Approved: January 30, 2012

Method 6020 - Summary Report

Sample ID: L1201071513

Sample Date/Time: Saturday, January 28, 2012 16:25:02
Number of Replicates: 3
Aliquot Volume (mL):
Diluted To Volume (mL):
Autosampler Position: 38
Method File: C:\elandata\Method\6020a.mth
Sample Description: 5

User ID: EDL

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	9989.362	0.00				ug/L
	Be	9	18.000	0.00	0.0160	0.017	108.021	ug/L
	Al	27	1861434.059	14.52	471.8081	11.041	2.340	ug/L
>	Sc	45	128128.537	128128.54				ug/L
	Ti	49	1296.898	0.00	3.0816	0.424	13.766	ug/L
	V	51	12868.816	0.04	1.4962	0.026	1.724	ug/L
	Cr	52	10340.857	0.02	0.6815	0.039	5.743	ug/L
	Cr	53	1126.856	0.00	0.4286	0.089	20.767	ug/L
	Mn	55	1343392.081	4.61	132.4827	4.867	3.674	ug/L
	Co	59	7397.357	0.03	0.9417	0.030	3.220	ug/L
	Ni	60	4644.341	0.02	2.8725	0.073	2.549	ug/L
	Cu	65	2689.128	0.01	1.6180	0.040	2.488	ug/L
	Zn	66	5850.445	0.02	5.8424	0.142	2.433	ug/L
>	Ge	72	291191.725	291191.73				ug/L
	As	75	717.136	0.00	0.8738	0.048	5.500	ug/L
	Se	77	48.000	-0.00	0.0358	0.340	949.322	ug/L
	Se	82	7.919	0.00	0.0826	0.036	43.378	ug/L
	Rb	85	3509.441	0.01				mg/L
	Y	89	215892.262	13501.68				ug/L
	Rh	103	12.000	-17.00				ug/L
	Mo	98	332.613	0.00	0.1556	0.011	6.930	ug/L
	Ag	107	63.001	0.00	0.0027	0.002	66.352	ug/L
	Cd	114	26.979	0.00	0.0346	0.013	37.775	ug/L
>	In	115	253236.250	253236.25				ug/L
	Sn	118	58.000	-0.00	0.0154	0.001	5.150	ug/L
	Sb	123	68.745	0.00	0.0324	0.003	10.481	ug/L
	Ba	135	3385.388	0.01	2.5197	0.046	1.817	ug/L
	Ce	140	102308.663	0.29				ug/L
>	Tb	159	352679.789	352679.79				ug/L
	Ho	165	1840.387	0.01				ug/L
	Tl	203	108.668	0.00	0.0219	0.001	4.570	ug/L
	Tl	205	276.699	0.00	0.0303	0.001	2.139	ug/L
	Pb	206	5570.584	0.02	1.1127	0.044	3.967	ug/L
	Pb	207	4563.962	0.01	0.9677	0.036	3.738	ug/L
	Pb	208	21491.727	0.07	1.0203	0.036	3.485	ug/L
	U	238	4451.900	0.01	0.1750	0.007	3.994	ug/L
>	Bi	209	301035.315	301035.32				ug/L

Sample ID: L1201071513
Report Date/Time: Saturday, January 28, 2012 16:27:14
Page 1

Approved: January 30, 2012
Erin D. Long

⌈	Na	23	62910.008	-0.54	0.0051	0.002	32.633	mg/L
|	Mg	24	6216881.684	48.59	2.7612	0.161	5.819	mg/L
|	K	39	730682.449	2.19	0.0462	0.007	14.169	mg/L
|	Ca	43	135438.572	1.06	12.2116	0.521	4.269	mg/L
|	Fe	54	797845.190	5.99	1.6873	0.062	3.701	mg/L
|	Fe	57	326891.352	2.51	1.6255	0.090	5.519	mg/L
⌊>	Sc-1	45	128128.537	128128.54				mg/L
	Cl	35	29035.185	-7889.12				mg/L
	Kr	83	47.667	-5.33				mg/L
	Br	81	4813.392	-262.82				mg/L
	P	31	63365.442	55770.65				mg/L
	S	34	173745.515	-1854.94				mg/L
	Sr	88	112320.121	112266.78				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		93.324			
|	As	75					
|	Se	77					
|	Se	82					
⌊	Rb	85					
	Y	89					
	Rh	103					
⌈	Mo	98					
|	Ag	107					
|	Cd	114					
|>	In	115		91.808			
|	Sn	118					
⌊	Sb	123					
⌈	Ba	135					
|	Ce	140					
⌊>	Tb	159		89.949			
⌈	Ho	165					
|	Tl	203					
|	Tl	205					
|	Pb	206					
|	Pb	207					
|	Pb	208					
|	U	238					
⌊>	Bi	209		94.345			

Sample ID: L1201071513
Report Date/Time: Saturday, January 28, 2012 16:27:14
Page 2

Approved: January 30, 2012

⌈	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: L1201071513
Report Date/Time: Saturday, January 28, 2012 16:27:14
Page 3

Approved: January 30, 2012

Method 6020 - Summary Report

Sample ID: L1201071514

Sample Date/Time: Saturday, January 28, 2012 16:32:49
Number of Replicates: 3
Aliquot Volume (mL):
Diluted To Volume (mL):
Autosampler Position: 39
Method File: C:\elandata\Method\6020a.mth
Sample Description: 5

User ID: EDL

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	9538.813	0.00				ug/L
	Be	9	20.667	0.00	0.0272	0.035	129.126	ug/L
	Al	27	2319581.465	18.07	587.5138	73.975	12.591	ug/L
>	Sc	45	129113.645	129113.65				ug/L
	Ti	49	1877.066	0.01	4.5393	0.204	4.494	ug/L
	V	51	15524.575	0.05	1.9017	0.071	3.714	ug/L
	Cr	52	12373.304	0.02	1.0415	0.042	4.035	ug/L
	Cr	53	1390.255	0.00	0.8079	0.117	14.459	ug/L
	Mn	55	743918.261	2.60	74.8043	2.154	2.880	ug/L
	Co	59	8400.983	0.03	1.0934	0.020	1.862	ug/L
	Ni	60	4761.741	0.02	3.0058	0.013	0.420	ug/L
	Cu	65	2945.217	0.01	1.8258	0.065	3.540	ug/L
	Zn	66	8355.938	0.03	8.7903	0.273	3.106	ug/L
>	Ge	72	285491.318	285491.32				ug/L
	As	75	1124.713	0.00	1.3197	0.129	9.753	ug/L
	Se	77	67.334	0.00	0.3202	0.153	47.916	ug/L
	Se	82	4.238	-0.00	0.0429	0.100	233.294	ug/L
	Rb	85	4046.356	0.01				mg/L
	Y	89	203139.691	749.11				ug/L
	Rh	103	16.667	-12.33				ug/L
	Mo	98	540.589	0.00	0.2509	0.010	3.814	ug/L
	Ag	107	82.335	0.00	0.0071	0.002	22.154	ug/L
	Cd	114	16.267	0.00	0.0247	0.004	17.620	ug/L
>	In	115	248003.051	248003.05				ug/L
	Sn	118	82.534	-0.00	0.0225	0.001	3.595	ug/L
	Sb	123	35.201	0.00	0.0230	0.001	5.117	ug/L
	Ba	135	4013.340	0.01	3.0360	0.018	0.604	ug/L
	Ce	140	104447.563	0.30				ug/L
>	Tb	159	347375.018	347375.02				ug/L
	Ho	165	1626.988	0.01				ug/L
	Tl	203	133.669	0.00	0.0268	0.003	10.927	ug/L
	Tl	205	356.710	0.00	0.0366	0.003	7.088	ug/L
	Pb	206	6035.913	0.02	1.2503	0.033	2.601	ug/L
	Pb	207	4764.409	0.02	1.0462	0.011	1.030	ug/L
	Pb	208	22969.322	0.08	1.1305	0.012	1.042	ug/L
	U	238	4888.816	0.02	0.1980	0.004	1.960	ug/L
>	Bi	209	291173.937	291173.94				ug/L

Sample ID: L1201071514
Report Date/Time: Saturday, January 28, 2012 16:35:01
Page 1

Approved: January 30, 2012
Erin D. Long

Na	23	68688.792	-0.50	0.0066	0.002	27.836	mg/L
Mg	24	5924842.678	46.10	2.6192	0.233	8.880	mg/L
K	39	904401.594	3.51	0.0785	0.013	17.053	mg/L
Ca	43	116845.101	0.91	10.4921	0.945	9.008	mg/L
Fe	54	1085293.942	8.20	2.3102	0.199	8.621	mg/L
Fe	57	443175.417	3.40	2.2051	0.143	6.480	mg/L
Sc-1	45	129113.645	129113.65				mg/L
Cl	35	28202.310	-8721.99				mg/L
Kr	83	49.334	-3.67				mg/L
Br	81	4745.351	-330.86				mg/L
P	31	59675.060	52080.27				mg/L
S	34	160389.629	-15210.83				mg/L
Sr	88	96222.280	96168.94				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		91.497			
As	75					
Se	77					
Se	82					
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107					
Cd	114					
In	115		89.910			
Sn	118					
Sb	123					
Ba	135					
Ce	140					
Tb	159		88.596			
Ho	165					
Tl	203					
Tl	205					
Pb	206					
Pb	207					
Pb	208					
U	238					
Bi	209		91.254			

Sample ID: L1201071514
Report Date/Time: Saturday, January 28, 2012 16:35:01
Page 2

Approved: January 30, 2012
Erin D. Long

⌈	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: L1201071514
Report Date/Time: Saturday, January 28, 2012 16:35:01
Page 3

Approved: January 30, 2012

Method 6020 - Summary Report

Sample ID: L1201071515

Sample Date/Time: Saturday, January 28, 2012 16:40:35
Number of Replicates: 3
Aliquot Volume (mL):
Diluted To Volume (mL):
Autosampler Position: 40
Method File: C:\elandata\Method\6020a.mth
Sample Description: 5

User ID: EDL

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	10423.189	0.00				ug/L
	Be	9	23.333	0.00	0.0315	0.036	115.558	ug/L
	Al	27	2569481.474	18.85	612.6196	13.045	2.129	ug/L
>	Sc	45	136255.332	136255.33				ug/L
	Ti	49	4434.958	0.01	9.9206	0.461	4.649	ug/L
	V	51	17005.265	0.05	1.9275	0.017	0.893	ug/L
	Cr	52	13381.204	0.02	1.0403	0.050	4.782	ug/L
	Cr	53	1516.957	0.00	0.8235	0.188	22.776	ug/L
	Mn	55	785650.484	2.54	72.9873	0.923	1.264	ug/L
	Co	59	8203.118	0.03	0.9849	0.023	2.349	ug/L
	Ni	60	4723.720	0.01	2.7511	0.077	2.794	ug/L
	Cu	65	3029.915	0.01	1.7278	0.065	3.747	ug/L
	Zn	66	8098.349	0.02	7.8064	0.159	2.031	ug/L
>	Ge	72	308926.014	308926.01				ug/L
	As	75	960.957	0.00	1.0687	0.040	3.788	ug/L
	Se	77	71.334	0.00	0.2981	0.083	27.692	ug/L
	Se	82	9.542	0.00	0.0949	0.109	114.781	ug/L
	Rb	85	5009.222	0.02				mg/L
	Y	89	224232.662	21842.08				ug/L
	Rh	103	13.667	-15.33				ug/L
	Mo	98	648.379	0.00	0.2784	0.005	1.911	ug/L
	Ag	107	90.001	0.00	0.0074	0.000	6.067	ug/L
	Cd	114	47.250	0.00	0.0513	0.009	18.479	ug/L
>	In	115	266877.362	266877.36				ug/L
	Sn	118	290.805	-0.00	0.0742	0.001	1.309	ug/L
	Sb	123	72.992	0.00	0.0325	0.005	16.187	ug/L
	Ba	135	3349.707	0.01	2.3211	0.081	3.497	ug/L
	Ce	140	138160.286	0.36				ug/L
>	Tb	159	378746.970	378746.97				ug/L
	Ho	165	1877.067	0.01				ug/L
	Tl	203	156.336	0.00	0.0291	0.002	8.183	ug/L
	Tl	205	376.713	0.00	0.0364	0.002	5.155	ug/L
	Pb	206	7411.703	0.02	1.4496	0.020	1.405	ug/L
	Pb	207	6158.671	0.02	1.2784	0.024	1.863	ug/L
	Pb	208	29248.935	0.09	1.3609	0.018	1.286	ug/L
	U	238	5606.608	0.02	0.2134	0.002	0.960	ug/L
>	Bi	209	309569.087	309569.09				ug/L

Sample ID: L1201071515
Report Date/Time: Saturday, January 28, 2012 16:42:48
Page 1

Approved: January 30, 2012
Erin D. Long

Na	23	112631.074	-0.20	0.0171	0.002	8.974	mg/L
Mg	24	8201561.427	60.22	3.4231	0.115	3.372	mg/L
K	39	981949.184	3.69	0.0828	0.004	5.218	mg/L
Ca	43	180992.523	1.33	15.3377	0.332	2.164	mg/L
Fe	54	1128579.995	8.04	2.2655	0.045	1.971	mg/L
Fe	57	464622.518	3.36	2.1824	0.011	0.507	mg/L
Sc-1	45	136255.332	136255.33				mg/L
Cl	35	30821.571	-6102.73				mg/L
Kr	83	52.667	-0.33				mg/L
Br	81	5305.691	229.48				mg/L
P	31	71594.253	63999.46				mg/L
S	34	179301.154	3700.70				mg/L
Sr	88	155122.668	155069.33				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		99.008			
As	75					
Se	77					
Se	82					
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107					
Cd	114					
In	115		96.753			
Sn	118					
Sb	123					
Ba	135					
Ce	140					
Tb	159		96.598			
Ho	165					
Tl	203					
Tl	205					
Pb	206					
Pb	207					
Pb	208					
U	238					
Bi	209		97.019			

Sample ID: L1201071515
Report Date/Time: Saturday, January 28, 2012 16:42:48
Page 2

Approved: January 30, 2012

⌈	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: L1201071515
Report Date/Time: Saturday, January 28, 2012 16:42:48
Page 3

Approved: January 30, 2012

Method 6020 - Summary Report

Sample ID: L1201071516

Sample Date/Time: Saturday, January 28, 2012 16:48:23
Number of Replicates: 3
Aliquot Volume (mL):
Diluted To Volume (mL):
Autosampler Position: 41
Method File: C:\elandata\Method\6020a.mth
Sample Description: 5

User ID: EDL

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	10072.768	0.00				ug/L
	Be	9	21.333	0.00	0.0292	0.037	125.541	ug/L
	Al	27	2480969.968	19.13	621.7250	69.771	11.222	ug/L
>	Sc	45	130264.017	130264.02				ug/L
	Ti	49	4464.976	0.01	10.2617	0.111	1.085	ug/L
	V	51	18646.462	0.06	2.2050	0.030	1.366	ug/L
	Cr	52	14228.951	0.03	1.2242	0.034	2.812	ug/L
	Cr	53	1660.332	0.00	1.0567	0.148	14.027	ug/L
	Mn	55	903291.770	3.00	86.2578	2.697	3.127	ug/L
	Co	59	7989.910	0.03	0.9857	0.026	2.662	ug/L
	Ni	60	4874.142	0.02	2.9204	0.091	3.127	ug/L
	Cu	65	2911.538	0.01	1.7047	0.036	2.113	ug/L
	Zn	66	6780.160	0.02	6.6341	0.305	4.603	ug/L
>	Ge	72	300603.746	300603.75				ug/L
	As	75	1043.684	0.00	1.1774	0.055	4.654	ug/L
	Se	77	58.667	-0.00	0.1543	0.098	63.232	ug/L
	Se	82	14.554	0.00	0.1513	0.094	62.066	ug/L
	Rb	85	4476.247	0.01				mg/L
	Y	89	225162.546	22771.96				ug/L
	Rh	103	16.667	-12.33				ug/L
	Mo	98	628.080	0.00	0.2739	0.009	3.418	ug/L
	Ag	107	77.001	0.00	0.0050	0.001	22.924	ug/L
	Cd	114	26.022	0.00	0.0327	0.007	20.439	ug/L
>	In	115	263004.972	263004.97				ug/L
	Sn	118	79.067	-0.00	0.0203	0.001	5.060	ug/L
	Sb	123	83.952	0.00	0.0358	0.001	3.675	ug/L
	Ba	135	3874.273	0.01	2.7796	0.057	2.035	ug/L
	Ce	140	142493.119	0.39				ug/L
>	Tb	159	366201.122	366201.12				ug/L
	Ho	165	2103.811	0.01				ug/L
	Tl	203	125.669	0.00	0.0245	0.001	3.443	ug/L
	Tl	205	270.032	0.00	0.0297	0.006	19.096	ug/L
	Pb	206	6068.272	0.02	1.2006	0.063	5.219	ug/L
	Pb	207	4877.811	0.02	1.0239	0.058	5.659	ug/L
	Pb	208	23266.978	0.07	1.0940	0.048	4.409	ug/L
	U	238	5305.742	0.02	0.2054	0.007	3.380	ug/L
>	Bi	209	304552.183	304552.18				ug/L

Sample ID: L1201071516
Report Date/Time: Saturday, January 28, 2012 16:50:35
Page 1

Approved: January 30, 2012
Erin D. Long

Na	23	94944.081	-0.30	0.0137	0.002	15.975	mg/L
Mg	24	9782755.593	75.34	4.2838	0.302	7.043	mg/L
K	39	903629.163	3.44	0.0767	0.011	14.139	mg/L
Ca	43	207264.261	1.59	18.4194	1.019	5.530	mg/L
Fe	54	1158800.940	8.68	2.4445	0.126	5.169	mg/L
Fe	57	476501.546	3.63	2.3542	0.199	8.454	mg/L
Sc-1	45	130264.017	130264.02				mg/L
Cl	35	28814.398	-8109.90				mg/L
Kr	83	51.334	-1.67				mg/L
Br	81	5180.281	104.07				mg/L
P	31	85070.695	77475.90				mg/L
S	34	170232.058	-5368.40				mg/L
Sr	88	185174.039	185120.70				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		96.341			
As	75					
Se	77					
Se	82					
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107					
Cd	114					
In	115		95.349			
Sn	118					
Sb	123					
Ba	135					
Ce	140					
Tb	159		93.398			
Ho	165					
Tl	203					
Tl	205					
Pb	206					
Pb	207					
Pb	208					
U	238					
Bi	209		95.447			

Sample ID: L1201071516
Report Date/Time: Saturday, January 28, 2012 16:50:35
Page 2

Approved: January 30, 2012
Erin D. Long

⌈	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: L1201071516
Report Date/Time: Saturday, January 28, 2012 16:50:35
Page 3

Approved: January 30, 2012

Method 6020 - Summary Report

Sample ID: QC Std 6

Sample Date/Time: Saturday, January 28, 2012 16:56:10
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: EDL

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	10206.255	0.00				ug/L
	Be	9	14335.000	0.11	55.1807	3.592	6.510	ug/L
	Al	27	220170.677	1.63	52.8325	3.890	7.362	ug/L
>	Sc	45	134226.767	134226.77				ug/L
	Ti	49	44395.897	0.14	96.2424	6.626	6.884	ug/L
	V	51	386543.461	1.21	47.8799	1.215	2.537	ug/L
	Cr	52	349205.379	1.07	49.2655	0.979	1.988	ug/L
	Cr	53	42961.428	0.13	50.1267	1.271	2.535	ug/L
	Mn	55	539044.730	1.69	48.4995	2.067	4.262	ug/L
	Co	59	423677.703	1.33	50.1148	0.893	1.782	ug/L
	Ni	60	87643.798	0.27	50.2988	2.093	4.160	ug/L
	Cu	65	83504.156	0.26	49.9579	1.302	2.606	ug/L
	Zn	66	49433.042	0.15	49.1635	1.078	2.193	ug/L
>	Ge	72	318991.986	318991.99				ug/L
	As	75	52521.679	0.17	49.7624	1.085	2.180	ug/L
	Se	77	4024.305	0.01	50.1819	0.676	1.347	ug/L
	Se	82	4799.325	0.02	49.2184	1.223	2.484	ug/L
	Rb	85	1926.575	0.01				mg/L
	Y	89	204940.207	2549.62				ug/L
	Rh	103	20.000	-9.00				ug/L
	Mo	98	252329.615	0.93	102.7124	0.307	0.299	ug/L
	Ag	107	249722.114	0.92	49.6435	0.728	1.466	ug/L
	Cd	114	56618.042	0.21	50.0050	0.762	1.524	ug/L
>	In	115	270697.505	270697.51				ug/L
	Sn	118	196562.540	0.72	49.5769	0.450	0.908	ug/L
	Sb	123	189634.527	0.70	50.6184	0.775	1.532	ug/L
	Ba	135	73571.124	0.19	51.1289	1.375	2.689	ug/L
	Ce	140	420.053	0.00				ug/L
>	Tb	159	380150.053	380150.05				ug/L
	Ho	165	6.667	-0.00				ug/L
	Tl	203	311877.553	1.00	50.0264	0.805	1.609	ug/L
	Tl	205	771373.183	2.46	50.2779	0.288	0.572	ug/L
	Pb	206	250741.432	0.80	49.6862	1.448	2.914	ug/L
	Pb	207	233060.984	0.74	48.8894	0.611	1.249	ug/L
	Pb	208	1055367.617	3.37	49.7448	0.349	0.702	ug/L
	U	238	1476361.574	4.71	54.5688	1.656	3.036	ug/L
>	Bi	209	313293.260	313293.26				ug/L

Sample ID: QC Std 6
Report Date/Time: Saturday, January 28, 2012 16:58:23
Page 1

Approved: January 30, 2012
Erin D. Long

Na	23	19339939.040	143.35	5.1475	0.205	3.975	mg/L
Mg	24	12201954.498	91.16	5.1839	0.324	6.247	mg/L
K	39	27706946.818	203.62	4.9647	0.333	6.717	mg/L
Ca	43	59316.695	0.44	5.1067	0.445	8.706	mg/L
Fe	54	2482625.389	18.31	5.1598	0.277	5.375	mg/L
Fe	57	1116272.368	8.30	5.3969	0.345	6.399	mg/L
Sc-1	45	134226.767	134226.77				mg/L
Cl	35	31720.938	-5203.36				mg/L
Kr	83	54.001	1.00				mg/L
Br	81	5172.939	96.72				mg/L
P	31	8922.775	1327.98				mg/L
S	34	185635.828	10035.37				mg/L
Sr	88	4158.126	4104.79				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	95.760				
Cr	52	98.531				
Cr	53					
Mn	55	96.999				
Co	59	100.230				
Ni	60	100.598				
Cu	65	99.916				
Zn	66	98.327				
Ge	72		102.234			
As	75	99.525				
Se	77					
Se	82	98.437				
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107	99.287				
Cd	114	100.010				
In	115		98.138			
Sn	118					
Sb	123	101.237				
Ba	135	102.258				
Ce	140					
Tb	159		96.955			
Ho	165					
Tl	203	100.053				
Tl	205					
Pb	206					
Pb	207					
Pb	208	99.490				
U	238	109.138				
Bi	209		98.186			

Sample ID: QC Std 6
Report Date/Time: Saturday, January 28, 2012 16:58:23
Page 2

Approved: January 30, 2012
Erin D. Long

⌈	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: Saturday, January 28, 2012 16:58:23
Page 3

Approved: January 30, 2012

Method 6020 - Summary Report

Sample ID: QC Std 7

Sample Date/Time: Saturday, January 28, 2012 17:03:47
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: EDL

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	9655.628	-0.00				ug/L
	Be	9	12.000	0.00	-0.0100	0.016	157.841	ug/L
	Al	27	2667.102	0.00	-0.0464	0.121	261.357	ug/L
>	Sc	45	131665.632	131665.63				ug/L
	Ti	49	46.671	-0.00	0.1088	0.057	52.245	ug/L
	V	51	1864.091	-0.00	-0.0046	0.012	268.716	ug/L
	Cr	52	5885.470	-0.00	-0.0197	0.021	108.895	ug/L
	Cr	53	660.093	-0.00	-0.1794	0.144	80.149	ug/L
	Mn	55	475.352	-0.00	0.0071	0.002	31.878	ug/L
	Co	59	71.001	0.00	-0.0081	0.001	7.815	ug/L
	Ni	60	75.001	-0.00	-0.0018	0.002	88.119	ug/L
	Cu	65	94.668	0.00	-0.0867	0.003	3.393	ug/L
	Zn	66	580.359	-0.00	0.0285	0.022	77.254	ug/L
>	Ge	72	291260.673	291260.67				ug/L
	As	75	-89.903	0.00	0.0378	0.047	124.971	ug/L
	Se	77	47.333	-0.00	0.0223	0.053	239.766	ug/L
	Se	82	8.939	0.00	0.0945	0.154	163.401	ug/L
	Rb	85	25.334	-0.00				mg/L
	Y	89	188651.818	-13738.77				ug/L
	Rh	103	10.667	-18.33				ug/L
	Mo	98	41.754	0.00	0.0285	0.002	8.711	ug/L
	Ag	107	70.334	0.00	0.0040	0.001	25.979	ug/L
	Cd	114	4.284	0.00	0.0130	0.003	26.236	ug/L
>	In	115	257997.145	257997.14				ug/L
	Sn	118	496.281	-0.00	0.1312	0.004	3.087	ug/L
	Sb	123	37.285	0.00	0.0232	0.002	6.861	ug/L
	Ba	135	28.334	0.00	0.0038	0.002	43.184	ug/L
	Ce	140	230.026	0.00				ug/L
>	Tb	159	367069.666	367069.67				ug/L
	Ho	165	6.667	-0.00				ug/L
	Tl	203	48.334	0.00	0.0117	0.000	3.945	ug/L
	Tl	205	83.342	0.00	0.0171	0.003	16.396	ug/L
	Pb	206	195.338	0.00	0.0023	0.002	92.680	ug/L
	Pb	207	165.670	0.00	0.0059	0.001	14.144	ug/L
	Pb	208	769.022	0.00	0.0020	0.000	19.246	ug/L
	U	238	90.335	0.00	0.0071	0.001	8.890	ug/L
>	Bi	209	304641.151	304641.15				ug/L

Sample ID: QC Std 7
Report Date/Time: Saturday, January 28, 2012 17:05:59
Page 1

Approved: January 30, 2012
Erin D. Long

Na	23	86017.516	-0.38	0.0109	0.002	14.309	mg/L
Mg	24	956.817	0.00	-0.0040	0.000	0.941	mg/L
K	39	456546.852	-0.05	-0.0085	0.003	38.795	mg/L
Ca	43	206.690	0.00	-0.0007	0.005	736.141	mg/L
Fe	54	33120.223	0.01	0.0006	0.002	390.648	mg/L
Fe	57	7363.993	0.01	-0.0024	0.002	98.172	mg/L
Sc-1	45	131665.632	131665.63				mg/L
Cl	35	28031.737	-8892.56				mg/L
Kr	83	45.334	-7.67				mg/L
Br	81	4848.747	-227.47				mg/L
P	31	8128.631	533.84				mg/L
S	34	154873.461	-20726.99				mg/L
Sr	88	40.004	-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		93.346			
As	75					
Se	77					
Se	82					
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107					
Cd	114					
In	115		93.534			
Sn	118					
Sb	123					
Ba	135					
Ce	140					
Tb	159		93.619			
Ho	165					
Tl	203					
Tl	205					
Pb	206					
Pb	207					
Pb	208					
U	238					
Bi	209		95.475			

Sample ID: QC Std 7
Report Date/Time: Saturday, January 28, 2012 17:05:59
Page 2

Approved: January 30, 2012
Erin D. Long

⌈	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: Saturday, January 28, 2012 17:05:59
Page 3

Approved: January 30, 2012

Method 6020 - Summary Report

Sample ID: L1201071517 WG388092-01

Sample Date/Time: Saturday, January 28, 2012 17:11:24
Number of Replicates: 3
Aliquot Volume (mL):
Diluted To Volume (mL):
Autosampler Position: 42
Method File: C:\elandata\Method\6020a.mth
Sample Description: 5

User ID: EDL
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	9922.575	0.00				ug/L
	Be	9	15.333	0.00	0.0035	0.006	181.334	ug/L
	Al	27	3078863.934	23.49	763.7790	40.483	5.300	ug/L
>	Sc	45	131090.424	131090.42				ug/L
	Ti	49	3387.694	0.01	7.7797	0.116	1.489	ug/L
	V	51	23563.684	0.07	2.8536	0.148	5.196	ug/L
	Cr	52	15106.502	0.03	1.3571	0.075	5.544	ug/L
	Cr	53	1650.329	0.00	1.0412	0.106	10.192	ug/L
	Mn	55	749549.539	2.49	71.5368	3.567	4.987	ug/L
	Co	59	6937.958	0.02	0.8533	0.036	4.198	ug/L
	Ni	60	3244.332	0.01	1.9270	0.144	7.454	ug/L
	Cu	65	2475.392	0.01	1.4258	0.025	1.786	ug/L
	Zn	66	5365.781	0.02	5.1176	0.133	2.600	ug/L
>	Ge	72	300838.338	300838.34				ug/L
	As	75	816.812	0.00	0.9494	0.037	3.861	ug/L
	Se	77	64.000	-0.00	0.2246	0.083	37.114	ug/L
	Se	82	4.571	-0.00	0.0432	0.156	360.418	ug/L
	Rb	85	6546.305	0.02				mg/L
	Y	89	221296.703	18906.12				ug/L
	Rh	103	10.667	-18.33				ug/L
	Mo	98	442.322	0.00	0.2032	0.009	4.205	ug/L
	Ag	107	78.001	0.00	0.0059	0.003	48.358	ug/L
	Cd	114	12.060	0.00	0.0204	0.005	22.436	ug/L
>	In	115	253118.177	253118.18				ug/L
	Sn	118	123.201	-0.00	0.0330	0.003	8.298	ug/L
	Sb	123	90.910	0.00	0.0387	0.003	8.932	ug/L
	Ba	135	2627.774	0.01	1.8673	0.073	3.914	ug/L
	Ce	140	141390.541	0.38				ug/L
>	Tb	159	368591.911	368591.91				ug/L
	Ho	165	2083.803	0.01				ug/L
	Tl	203	131.336	0.00	0.0254	0.001	5.204	ug/L
	Tl	205	340.041	0.00	0.0343	0.006	17.341	ug/L
	Pb	206	6884.247	0.02	1.3646	0.051	3.742	ug/L
	Pb	207	5293.734	0.02	1.1117	0.017	1.514	ug/L
	Pb	208	26039.312	0.08	1.2264	0.035	2.862	ug/L
	U	238	4120.393	0.01	0.1601	0.002	1.274	ug/L
>	Bi	209	304963.312	304963.31				ug/L

Sample ID: L1201071517 WG388092-01
Report Date/Time: Saturday, January 28, 2012 17:13:36
Page 1

Approved: January 30, 2012
Erin D. Long

⌈	Na	23	43189.486	-0.70	-0.0007	0.001	137.018	mg/L
|	Mg	24	648294.099	4.95	0.2773	0.013	4.849	mg/L
|	K	39	799010.470	2.58	0.0557	0.004	6.553	mg/L
|	Ca	43	9723.316	0.07	0.8396	0.064	7.571	mg/L
|	Fe	54	1279141.151	9.52	2.6817	0.060	2.239	mg/L
|	Fe	57	519130.201	3.91	2.5421	0.074	2.913	mg/L
⌊>	Sc-1	45	131090.424	131090.42				mg/L
	Cl	35	28679.268	-8245.03				mg/L
	Kr	83	49.334	-3.67				mg/L
	Br	81	5004.172	-72.04				mg/L
	P	31	108294.566	100699.77				mg/L
	S	34	159231.921	-16368.53				mg/L
	Sr	88	21580.138	21526.80				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		96.416			
|	As	75					
|	Se	77					
|	Se	82					
⌊	Rb	85					
	Y	89					
	Rh	103					
⌈	Mo	98					
|	Ag	107					
|	Cd	114					
|>	In	115		91.765			
|	Sn	118					
⌊	Sb	123					
⌈	Ba	135					
|	Ce	140					
⌊>	Tb	159		94.008			
⌈	Ho	165					
|	Tl	203					
|	Tl	205					
|	Pb	206					
|	Pb	207					
|	Pb	208					
|	U	238					
⌊>	Bi	209		95.576			

Sample ID: L1201071517 WG388092-01
Report Date/Time: Saturday, January 28, 2012 17:13:36
Page 2

Approved: January 30, 2012

⌈	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: L1201071517 WG388092-01
Report Date/Time: Saturday, January 28, 2012 17:13:36
Page 3

Approved: January 30, 2012

Method 6020 - Summary Report

Sample ID: L1201071517S WG388092-04

Sample Date/Time: Saturday, January 28, 2012 17:19:11
Number of Replicates: 3
Aliquot Volume (mL):
Diluted To Volume (mL):
Autosampler Position: 43
Method File: C:\elandata\Method\6020a.mth
Sample Description: 5

User ID: EDL
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	8521.021	-0.01				ug/L
	Be	9	1406.119	0.01	5.7645	0.240	4.166	ug/L
	Al	27	3187296.834	25.55	830.5936	8.874	1.068	ug/L
>	Sc	45	124693.317	124693.32				ug/L
	Ti	49	4071.402	0.01	10.0497	0.438	4.357	ug/L
	V	51	57993.843	0.20	7.9706	0.083	1.046	ug/L
	Cr	52	46324.531	0.15	6.6452	0.064	0.960	ug/L
	Cr	53	5532.389	0.02	6.4662	0.227	3.513	ug/L
	Mn	55	813151.057	2.90	83.3877	2.118	2.541	ug/L
	Co	59	44618.637	0.16	5.9995	0.233	3.883	ug/L
	Ni	60	11175.600	0.04	7.2635	0.092	1.263	ug/L
	Cu	65	10067.180	0.04	6.7332	0.146	2.175	ug/L
	Zn	66	10111.234	0.03	10.9894	0.304	2.764	ug/L
>	Ge	72	279916.687	279916.69				ug/L
	As	75	5433.687	0.02	5.9822	0.178	2.976	ug/L
	Se	77	384.676	0.00	4.9012	0.292	5.953	ug/L
	Se	82	388.891	0.00	4.5412	0.523	11.513	ug/L
	Rb	85	6545.971	0.02				mg/L
	Y	89	207916.456	5525.87				ug/L
	Rh	103	13.000	-16.00				ug/L
	Mo	98	396.095	0.00	0.1925	0.005	2.799	ug/L
	Ag	107	22969.517	0.10	5.1390	0.125	2.440	ug/L
	Cd	114	5183.195	0.02	5.1687	0.088	1.696	ug/L
>	In	115	240107.991	240107.99				ug/L
	Sn	118	126.401	-0.00	0.0357	0.001	2.469	ug/L
	Sb	123	1914.731	0.01	0.5888	0.013	2.206	ug/L
	Ba	135	9388.049	0.03	7.1172	0.294	4.130	ug/L
	Ce	140	141665.159	0.41				ug/L
>	Tb	159	347823.835	347823.83				ug/L
	Ho	165	2187.173	0.01				ug/L
	Tl	203	29386.015	0.10	5.1351	0.008	0.158	ug/L
	Tl	205	71751.612	0.25	5.1024	0.157	3.086	ug/L
	Pb	206	31746.371	0.11	6.8153	0.162	2.383	ug/L
	Pb	207	26601.010	0.09	6.0494	0.141	2.335	ug/L
	Pb	208	127181.226	0.44	6.4961	0.101	1.548	ug/L
	U	238	135155.354	0.47	5.4413	0.220	4.051	ug/L
>	Bi	209	287740.613	287740.61				ug/L

Sample ID: L1201071517S WG388092-04
Report Date/Time: Saturday, January 28, 2012 17:21:24
Page 1

Approved: January 30, 2012
Erin D. Long

⌈	Na	23	41353.163	-0.70	-0.0006	0.000	30.471	mg/L
|	Mg	24	578443.830	4.64	0.2597	0.005	1.959	mg/L
|	K	39	769949.946	2.66	0.0577	0.006	10.657	mg/L
|	Ca	43	8642.012	0.07	0.7827	0.036	4.621	mg/L
|	Fe	54	1249765.514	9.79	2.7580	0.099	3.597	mg/L
|	Fe	57	506134.052	4.02	2.6089	0.190	7.272	mg/L
⌊>	Sc-1	45	124693.317	124693.32				mg/L
	Cl	35	25810.584	-11113.72				mg/L
	Kr	83	52.667	-0.33				mg/L
	Br	81	4431.847	-644.37				mg/L
	P	31	107893.369	100298.58				mg/L
	S	34	136183.808	-39416.65				mg/L
	Sr	88	19955.860	19902.52				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		89.711			
|	As	75					
|	Se	77					
|	Se	82					
⌊	Rb	85					
	Y	89					
	Rh	103					
⌈	Mo	98					
|	Ag	107					
|	Cd	114					
|>	In	115		87.048			
|	Sn	118					
⌊	Sb	123					
⌈	Ba	135					
|	Ce	140					
⌊>	Tb	159		88.711			
⌈	Ho	165					
|	Tl	203					
|	Tl	205					
|	Pb	206					
|	Pb	207					
|	Pb	208					
|	U	238					
⌊>	Bi	209		90.178			

Sample ID: L1201071517S WG388092-04
Report Date/Time: Saturday, January 28, 2012 17:21:24
Page 2

Approved: January 30, 2012

⌈	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: L1201071517S WG388092-04
Report Date/Time: Saturday, January 28, 2012 17:21:24
Page 3

Approved: January 30, 2012

Method 6020 - Summary Report

Sample ID: L1201071517SD WG388092-05

Sample Date/Time: Saturday, January 28, 2012 17:26:59
Number of Replicates: 3
Aliquot Volume (mL):
Diluted To Volume (mL):
Autosampler Position: 44
Method File: C:\elandata\Method\6020a.mth
Sample Description: 5

User ID: EDL
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	9238.458	-0.00				ug/L
	Be	9	1450.126	0.01	5.8423	0.331	5.665	ug/L
	Al	27	2907640.820	22.91	744.6534	9.646	1.295	ug/L
>	Sc	45	126841.550	126841.55				ug/L
	Ti	49	3691.190	0.01	8.9396	0.817	9.134	ug/L
	V	51	59175.619	0.20	7.9778	0.122	1.530	ug/L
	Cr	52	47249.403	0.15	6.6493	0.082	1.239	ug/L
	Cr	53	5492.359	0.02	6.2697	0.103	1.642	ug/L
	Mn	55	808138.281	2.83	81.2977	2.158	2.655	ug/L
	Co	59	44301.236	0.16	5.8416	0.029	0.501	ug/L
	Ni	60	11174.600	0.04	7.1242	0.116	1.627	ug/L
	Cu	65	10108.237	0.04	6.6292	0.292	4.402	ug/L
	Zn	66	9645.680	0.03	10.2450	0.378	3.692	ug/L
>	Ge	72	285325.893	285325.89				ug/L
	As	75	5409.541	0.02	5.8452	0.063	1.070	ug/L
	Se	77	432.011	0.00	5.4656	0.362	6.629	ug/L
	Se	82	393.888	0.00	4.5094	0.296	6.566	ug/L
	Rb	85	6615.027	0.02				mg/L
	Y	89	215849.391	13458.81				ug/L
	Rh	103	10.667	-18.33				ug/L
	Mo	98	316.836	0.00	0.1536	0.002	1.592	ug/L
	Ag	107	23184.796	0.09	5.0977	0.220	4.316	ug/L
	Cd	114	5426.429	0.02	5.3176	0.188	3.538	ug/L
>	In	115	244375.981	244375.98				ug/L
	Sn	118	154.668	-0.00	0.0430	0.001	2.008	ug/L
	Sb	123	2103.737	0.01	0.6345	0.008	1.285	ug/L
	Ba	135	9742.459	0.03	7.3915	0.126	1.710	ug/L
	Ce	140	142767.099	0.41				ug/L
>	Tb	159	347429.590	347429.59				ug/L
	Ho	165	2227.187	0.01				ug/L
	Tl	203	30041.359	0.10	5.1036	0.130	2.543	ug/L
	Tl	205	72343.249	0.24	5.0017	0.137	2.738	ug/L
	Pb	206	31237.753	0.10	6.5180	0.131	2.008	ug/L
	Pb	207	27134.048	0.09	5.9985	0.122	2.028	ug/L
	Pb	208	127240.575	0.43	6.3173	0.113	1.793	ug/L
	U	238	139027.115	0.47	5.4413	0.109	1.996	ug/L
>	Bi	209	296042.588	296042.59				ug/L

Sample ID: L1201071517SD WG388092-05
Report Date/Time: Saturday, January 28, 2012 17:29:12
Page 1

Approved: January 30, 2012
Erin D. Long

Na	23	38673.476	-0.73	-0.0016	0.001	34.605	mg/L
Mg	24	542312.255	4.27	0.2390	0.010	4.233	mg/L
K	39	766671.584	2.52	0.0544	0.004	8.021	mg/L
Ca	43	8565.256	0.07	0.7617	0.014	1.890	mg/L
Fe	54	1171914.025	9.00	2.5353	0.035	1.386	mg/L
Fe	57	472689.018	3.68	2.3888	0.025	1.031	mg/L
Sc-1	45	126841.550	126841.55				mg/L
Cl	35	27118.723	-9805.58				mg/L
Kr	83	53.001	0.00				mg/L
Br	81	4418.507	-657.71				mg/L
P	31	106710.540	99115.75				mg/L
S	34	148930.651	-26669.80				mg/L
Sr	88	18352.035	18298.70				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		91.444			
As	75					
Se	77					
Se	82					
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107					
Cd	114					
In	115		88.595			
Sn	118					
Sb	123					
Ba	135					
Ce	140					
Tb	159		88.610			
Ho	165					
Tl	203					
Tl	205					
Pb	206					
Pb	207					
Pb	208					
U	238					
Bi	209		92.780			

Sample ID: L1201071517SD WG388092-05
Report Date/Time: Saturday, January 28, 2012 17:29:12
Page 2

Approved: January 30, 2012

⌈	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: L1201071517SD WG388092-05
Report Date/Time: Saturday, January 28, 2012 17:29:12
Page 3

Approved: January 30, 2012

Method 6020 - Summary Report

Sample ID: QC Std 6

Sample Date/Time: Saturday, January 28, 2012 17:34:47
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: EDL

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	9271.852	0.00				ug/L
	Be	9	12960.100	0.10	53.0435	6.809	12.836	ug/L
	Al	27	204581.693	1.60	51.9951	3.319	6.384	ug/L
>	Sc	45	126522.258	126522.26				ug/L
	Ti	49	39966.294	0.14	96.5741	1.574	1.630	ug/L
	V	51	350681.753	1.22	48.4602	0.379	0.781	ug/L
	Cr	52	315615.386	1.08	49.6891	0.474	0.954	ug/L
	Cr	53	38907.975	0.13	50.6262	1.581	3.123	ug/L
	Mn	55	494270.095	1.73	49.6191	1.735	3.497	ug/L
	Co	59	383557.350	1.34	50.6153	0.928	1.833	ug/L
	Ni	60	79724.689	0.28	51.0236	0.626	1.227	ug/L
	Cu	65	76970.987	0.27	51.3698	0.918	1.787	ug/L
	Zn	66	46093.942	0.16	51.1605	0.198	0.388	ug/L
>	Ge	72	285924.410	285924.41				ug/L
	As	75	47316.512	0.17	50.0183	1.318	2.634	ug/L
	Se	77	3645.464	0.01	50.7327	1.454	2.865	ug/L
	Se	82	4243.487	0.01	48.5481	1.159	2.386	ug/L
	Rb	85	1686.188	0.01				mg/L
	Y	89	184352.611	-18037.97				ug/L
	Rh	103	30.667	1.67				ug/L
	Mo	98	227920.257	0.93	102.6930	3.458	3.368	ug/L
	Ag	107	226887.510	0.93	49.9246	0.298	0.596	ug/L
	Cd	114	51949.382	0.21	50.7695	2.344	4.617	ug/L
>	In	115	244580.147	244580.15				ug/L
	Sn	118	177629.551	0.72	49.5820	0.479	0.966	ug/L
	Sb	123	170789.542	0.70	50.4524	0.521	1.033	ug/L
	Ba	135	68083.675	0.19	51.4953	0.453	0.879	ug/L
	Ce	140	293.368	0.00				ug/L
>	Tb	159	349232.156	349232.16				ug/L
	Ho	165	20.002	0.00				ug/L
	Tl	203	286659.665	1.01	50.9334	0.966	1.897	ug/L
	Tl	205	698876.343	2.47	50.4450	0.121	0.240	ug/L
	Pb	206	228255.680	0.81	50.0903	0.543	1.084	ug/L
	Pb	207	215282.094	0.76	50.0299	0.823	1.645	ug/L
	Pb	208	950892.961	3.36	49.6482	0.828	1.669	ug/L
	U	238	1341047.126	4.74	54.8969	0.633	1.154	ug/L
>	Bi	209	282903.833	282903.83				ug/L

Sample ID: QC Std 6
Report Date/Time: Saturday, January 28, 2012 17:37:00
Page 1

Approved: January 30, 2012
Erin D. Long

Na	23	17443575.913	137.39	4.9347	0.545	11.043	mg/L
Mg	24	11094249.054	87.94	5.0010	0.395	7.908	mg/L
K	39	26091584.018	203.22	4.9549	0.314	6.346	mg/L
Ca	43	54013.224	0.43	4.9247	0.235	4.780	mg/L
Fe	54	2237867.914	17.50	4.9329	0.380	7.702	mg/L
Fe	57	1014874.359	8.00	5.2009	0.362	6.964	mg/L
Sc-1	45	126522.258	126522.26				mg/L
Cl	35	27815.014	-9109.29				mg/L
Kr	83	37.000	-16.00				mg/L
Br	81	4665.973	-410.24				mg/L
P	31	7473.353	-121.44				mg/L
S	34	158058.453	-17542.00				mg/L
Sr	88	3854.611	3801.27				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	96.920				
Cr	52	99.378				
Cr	53					
Mn	55	99.238				
Co	59	101.231				
Ni	60	102.047				
Cu	65	102.740				
Zn	66	102.321				
Ge	72		91.636			
As	75	100.037				
Se	77					
Se	82	97.096				
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107	99.849				
Cd	114	101.539				
In	115		88.669			
Sn	118					
Sb	123	100.905				
Ba	135	102.991				
Ce	140					
Tb	159		89.070			
Ho	165					
Tl	203	101.867				
Tl	205					
Pb	206					
Pb	207					
Pb	208	99.296				
U	238	109.794				
Bi	209		88.662			

Sample ID: QC Std 6
Report Date/Time: Saturday, January 28, 2012 17:37:00
Page 2

Approved: January 30, 2012
Erin D. Long

⌈	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: Saturday, January 28, 2012 17:37:00
Page 3

Approved: January 30, 2012

Method 6020 - Summary Report

Sample ID: QC Std 7

Sample Date/Time: Saturday, January 28, 2012 17:42:24
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: EDL

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	10273.008	0.01				ug/L
	Be	9	8.667	0.00	-0.0216	0.010	44.762	ug/L
	Al	27	2717.111	0.00	-0.0085	0.046	537.121	ug/L
>	Sc	45	126553.797	126553.80				ug/L
	Ti	49	53.339	-0.00	0.1248	0.015	11.820	ug/L
	V	51	1876.125	-0.00	-0.0049	0.007	146.700	ug/L
	Cr	52	5849.111	-0.00	-0.0328	0.009	28.440	ug/L
	Cr	53	593.414	-0.00	-0.2735	0.158	57.688	ug/L
	Mn	55	564.692	0.00	0.0155	0.009	58.923	ug/L
	Co	59	88.335	0.00	-0.0059	0.005	78.466	ug/L
	Ni	60	72.334	-0.00	-0.0037	0.004	101.288	ug/L
	Cu	65	110.002	0.00	-0.0772	0.003	4.065	ug/L
	Zn	66	551.690	-0.00	-0.0075	0.025	334.590	ug/L
>	Ge	72	293480.210	293480.21				ug/L
	As	75	-109.454	-0.00	0.0188	0.008	45.043	ug/L
	Se	77	52.000	-0.00	0.0825	0.059	71.345	ug/L
	Se	82	4.919	-0.00	0.0480	0.094	194.936	ug/L
	Rb	85	25.667	-0.00				mg/L
	Y	89	191870.311	-10520.27				ug/L
	Rh	103	8.000	-21.00				ug/L
	Mo	98	56.233	0.00	0.0351	0.006	17.837	ug/L
	Ag	107	79.668	0.00	0.0062	0.002	39.231	ug/L
	Cd	114	8.626	0.00	0.0171	0.004	25.856	ug/L
>	In	115	253254.028	253254.03				ug/L
	Sn	118	518.683	-0.00	0.1397	0.010	7.088	ug/L
	Sb	123	45.035	0.00	0.0256	0.001	4.584	ug/L
	Ba	135	30.000	0.00	0.0054	0.003	59.809	ug/L
	Ce	140	146.683	-0.00				ug/L
>	Tb	159	360157.498	360157.50				ug/L
	Ho	165	16.668	0.00				ug/L
	Tl	203	56.334	0.00	0.0134	0.002	12.672	ug/L
	Tl	205	133.348	0.00	0.0208	0.004	18.748	ug/L
	Pb	206	206.671	0.00	0.0063	0.003	51.457	ug/L
	Pb	207	188.337	0.00	0.0124	0.004	29.251	ug/L
	Pb	208	839.692	0.00	0.0070	0.001	11.642	ug/L
	U	238	146.336	0.00	0.0094	0.003	29.388	ug/L
>	Bi	209	293090.591	293090.59				ug/L

Sample ID: QC Std 7
Report Date/Time: Saturday, January 28, 2012 17:44:36
Page 1

Approved: January 30, 2012
Erin D. Long

Na	23	87340.811	-0.34	0.0122	0.001	6.504	mg/L
Mg	24	1410.269	0.01	-0.0038	0.000	5.521	mg/L
K	39	457462.958	0.09	-0.0050	0.001	22.216	mg/L
Ca	43	153.350	-0.00	-0.0048	0.005	106.993	mg/L
Fe	54	31735.801	0.01	0.0004	0.004	1008.454	mg/L
Fe	57	7323.955	0.01	-0.0011	0.002	210.879	mg/L
Sc-1	45	126553.797	126553.80				mg/L
Cl	35	27776.883	-9147.42				mg/L
Kr	83	47.667	-5.33				mg/L
Br	81	5030.188	-46.03				mg/L
P	31	7307.203	-287.59				mg/L
S	34	153424.959	-22175.50				mg/L
Sr	88	83.342	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		94.058			
As	75					
Se	77					
Se	82					
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107					
Cd	114					
In	115		91.814			
Sn	118					
Sb	123					
Ba	135					
Ce	140					
Tb	159		91.856			
Ho	165					
Tl	203					
Tl	205					
Pb	206					
Pb	207					
Pb	208					
U	238					
Bi	209		91.855			

Sample ID: QC Std 7
Report Date/Time: Saturday, January 28, 2012 17:44:36
Page 2

Approved: January 30, 2012
Erin D. Long

⌈	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: Saturday, January 28, 2012 17:44:36
Page 3

Approved: January 30, 2012

Method 6020 - Summary Report

Sample ID: PBW B6 WG387506-02

Sample Date/Time: Saturday, January 28, 2012 17:50:01
Number of Replicates: 3
Aliquot Volume (mL):
Diluted To Volume (mL):
Autosampler Position: 45
Method File: C:\elandata\Method\6020a.mth
Sample Description: 1

User ID: EDL
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	9688.990	-0.00				ug/L
	Be	9	6.667	-0.00	-0.0316	0.016	50.226	ug/L
	Al	27	31844.135	0.22	6.9403	0.325	4.687	ug/L
>	Sc	45	135407.955	135407.96				ug/L
	Ti	49	66.674	0.00	0.1579	0.025	15.824	ug/L
	V	51	1940.843	0.00	0.0074	0.023	312.790	ug/L
	Cr	52	6458.570	0.00	0.0762	0.055	72.685	ug/L
	Cr	53	756.777	0.00	-0.0497	0.018	35.976	ug/L
	Mn	55	1112.752	0.00	0.0706	0.003	4.686	ug/L
	Co	59	87.335	0.00	-0.0059	0.001	19.726	ug/L
	Ni	60	110.002	0.00	0.0207	0.005	26.280	ug/L
	Cu	65	271.674	0.00	0.0307	0.016	50.822	ug/L
	Zn	66	1416.801	0.00	0.9600	0.035	3.661	ug/L
>	Ge	72	289605.273	289605.27				ug/L
	As	75	-108.647	-0.00	0.0182	0.048	266.784	ug/L
	Se	77	53.334	-0.00	0.1099	0.048	43.696	ug/L
	Se	82	2.974	-0.00	0.0276	0.079	287.944	ug/L
	Rb	85	46.334	0.00				mg/L
	Y	89	198599.312	-3791.27				ug/L
	Rh	103	12.333	-16.67				ug/L
	Mo	98	101.458	0.00	0.0549	0.005	9.943	ug/L
	Ag	107	70.668	0.00	0.0043	0.002	41.998	ug/L
	Cd	114	2.560	-0.00	0.0114	0.001	7.818	ug/L
>	In	115	253034.277	253034.28				ug/L
	Sn	118	173.068	-0.00	0.0465	0.002	4.903	ug/L
	Sb	123	99.657	0.00	0.0412	0.007	16.699	ug/L
	Ba	135	69.001	0.00	0.0318	0.008	24.444	ug/L
	Ce	140	1110.187	0.00				ug/L
>	Tb	159	376649.988	376649.99				ug/L
	Ho	165	23.336	0.00				ug/L
	Tl	203	27.334	0.00	0.0084	0.000	0.897	ug/L
	Tl	205	63.340	0.00	0.0159	0.002	13.879	ug/L
	Pb	206	222.672	0.00	0.0096	0.002	19.173	ug/L
	Pb	207	211.671	0.00	0.0175	0.005	27.558	ug/L
	Pb	208	883.693	0.00	0.0092	0.002	21.007	ug/L
	U	238	63.001	0.00	0.0061	0.001	12.069	ug/L
>	Bi	209	293795.113	293795.11				ug/L

Sample ID: PBW B6 WG387506-02
Report Date/Time: Saturday, January 28, 2012 17:52:14
Page 1

Approved: January 30, 2012
Erin D. Long

Na	23	276781.879	1.01	0.0605	0.002	3.166	mg/L
Mg	24	4038.050	0.03	-0.0027	0.000	2.985	mg/L
K	39	449906.967	-0.20	-0.0121	0.001	10.805	mg/L
Ca	43	380.047	0.00	0.0136	0.007	50.059	mg/L
Fe	54	67720.681	0.26	0.0707	0.009	12.034	mg/L
Fe	57	7941.259	0.01	-0.0006	0.003	533.604	mg/L
> Sc-1	45	135407.955	135407.96				mg/L
Cl	35	31116.654	-5807.65				mg/L
Kr	83	41.334	-11.67				mg/L
Br	81	4909.448	-166.77				mg/L
P	31	13911.667	6316.87				mg/L
S	34	148716.654	-26883.80				mg/L
Sr	88	1096.849	1043.51				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		92.816			
As	75					
Se	77					
Se	82					
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107					
Cd	114					
> In	115		91.734			
Sn	118					
Sb	123					
Ba	135					
Ce	140					
> Tb	159		96.063			
Ho	165					
Tl	203					
Tl	205					
Pb	206					
Pb	207					
Pb	208					
U	238					
> Bi	209		92.076			

Sample ID: PBW B6 WG387506-02
Report Date/Time: Saturday, January 28, 2012 17:52:14
Page 2

Approved: January 30, 2012
Erin D. Long

⌈	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 B6 WG387506-02
Report Date/Time: Saturday, January 28, 2012 17:52:14
Page 3

Approved: January 30, 2012

Method 6020 - Summary Report

Sample ID: LCSW B6 WG387506-03

Sample Date/Time: Saturday, January 28, 2012 17:57:50
Number of Replicates: 3
Aliquot Volume (mL):
Diluted To Volume (mL):
Autosampler Position: 46
Method File: C:\elandata\Method\6020a.mth
Sample Description: 1

User ID: EDL
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	8904.770	-0.01				ug/L
	Be	9	6255.686	0.05	24.5565	1.471	5.988	ug/L
	Al	27	115545.906	0.86	27.9575	0.942	3.370	ug/L
>	Sc	45	131089.731	131089.73				ug/L
	Ti	49	73.341	0.00	0.1747	0.038	21.587	ug/L
	V	51	181644.080	0.62	24.7156	0.444	1.798	ug/L
	Cr	52	170217.289	0.57	26.0841	0.504	1.931	ug/L
	Cr	53	19638.424	0.07	24.7785	0.883	3.562	ug/L
	Mn	55	254893.653	0.88	25.2944	0.394	1.557	ug/L
	Co	59	192026.688	0.66	25.0667	0.427	1.704	ug/L
	Ni	60	40801.049	0.14	25.8202	0.596	2.308	ug/L
	Cu	65	39621.363	0.14	26.0962	0.427	1.638	ug/L
	Zn	66	21817.416	0.07	23.6378	0.243	1.028	ug/L
>	Ge	72	288923.723	288923.72				ug/L
	As	75	22561.659	0.08	23.6705	0.775	3.275	ug/L
	Se	77	1556.146	0.01	21.0529	0.762	3.619	ug/L
	Se	82	1912.849	0.01	21.6521	0.625	2.889	ug/L
	Rb	85	36.000	0.00				mg/L
	Y	89	189496.927	-12893.66				ug/L
	Rh	103	14.000	-15.00				ug/L
	Mo	98	71.161	0.00	0.0422	0.004	8.515	ug/L
	Ag	107	118186.468	0.47	25.5286	0.675	2.645	ug/L
	Cd	114	25342.591	0.10	24.3286	0.974	4.004	ug/L
>	In	115	249152.715	249152.72				ug/L
	Sn	118	380.809	-0.00	0.1042	0.008	7.901	ug/L
	Sb	123	84823.754	0.34	24.6054	0.366	1.486	ug/L
	Ba	135	34243.224	0.09	25.0187	0.271	1.083	ug/L
	Ce	140	463.393	0.00				ug/L
>	Tb	159	361411.947	361411.95				ug/L
	Ho	165	13.335	0.00				ug/L
	Tl	203	146698.427	0.50	25.1597	0.163	0.648	ug/L
	Tl	205	359843.771	1.23	25.0832	0.881	3.514	ug/L
	Pb	206	120664.883	0.41	25.5426	0.166	0.650	ug/L
	Pb	207	107963.625	0.37	24.2016	0.073	0.301	ug/L
	Pb	208	500541.002	1.71	25.2087	0.061	0.241	ug/L
	U	238	680638.617	2.32	26.8989	0.262	0.972	ug/L
>	Bi	209	293011.605	293011.61				ug/L

Sample ID: LCSW B6 WG387506-03
Report Date/Time: Saturday, January 28, 2012 18:00:03
Page 1

Approved: January 30, 2012
Erin D. Long

Na	23	254596.966	0.91	0.0569	0.002	3.630	mg/L
Mg	24	3267.634	0.02	-0.0030	0.000	1.653	mg/L
K	39	441739.298	-0.15	-0.0110	0.000	2.914	mg/L
Ca	43	313.371	0.00	0.0088	0.003	38.956	mg/L
Fe	54	60261.652	0.22	0.0593	0.002	2.825	mg/L
Fe	57	6833.489	0.00	-0.0049	0.002	40.336	mg/L
Sc-1	45	131089.731	131089.73				mg/L
Cl	35	29245.228	-7679.07				mg/L
Kr	83	46.001	-7.00				mg/L
Br	81	5303.701	227.49				mg/L
P	31	12530.869	4936.07				mg/L
S	34	140815.530	-34784.92				mg/L
Sr	88	553.407	500.07				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		92.597			
As	75					
Se	77					
Se	82					
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107					
Cd	114					
In	115		90.327			
Sn	118					
Sb	123					
Ba	135					
Ce	140					
Tb	159		92.176			
Ho	165					
Tl	203					
Tl	205					
Pb	206					
Pb	207					
Pb	208					
U	238					
Bi	209		91.830			

Sample ID: LCSW B6 WG387506-03
Report Date/Time: Saturday, January 28, 2012 18:00:03
Page 2

Approved: January 30, 2012

⌈	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 B6 WG387506-03
Report Date/Time: Saturday, January 28, 2012 18:00:03
Page 3

Approved: January 30, 2012

Method 6020 - Summary Report

Sample ID: L1201047901

Sample Date/Time: Saturday, January 28, 2012 18:05:37
Number of Replicates: 3
Aliquot Volume (mL):
Diluted To Volume (mL):
Autosampler Position: 47
Method File: C:\elandata\Method\6020a.mth
Sample Description: 1

User ID: EDL

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	9422.087	-0.00				ug/L
	Be	9	10.000	0.00	-0.0184	0.007	39.686	ug/L
	Al	27	63962.087	0.46	14.8437	1.042	7.019	ug/L
>	Sc	45	133714.495	133714.50				ug/L
	Ti	49	313.371	0.00	0.7861	0.117	14.902	ug/L
	V	51	16448.940	0.05	2.1160	0.106	5.031	ug/L
	Cr	52	12671.755	0.03	1.1655	0.011	0.973	ug/L
	Cr	53	1717.016	0.00	1.3282	0.165	12.438	ug/L
	Mn	55	17547.632	0.06	1.7916	0.031	1.741	ug/L
	Co	59	563.358	0.00	0.0600	0.004	7.137	ug/L
	Ni	60	1184.096	0.00	0.7397	0.072	9.673	ug/L
	Cu	65	1187.430	0.00	0.6767	0.034	5.032	ug/L
	Zn	66	4203.770	0.01	4.2957	0.223	5.197	ug/L
>	Ge	72	275154.886	275154.89				ug/L
	As	75	398.322	0.00	0.5669	0.074	13.010	ug/L
	Se	77	118.668	0.00	1.1063	0.393	35.481	ug/L
	Se	82	106.289	0.00	1.2560	0.111	8.840	ug/L
	Rb	85	11214.655	0.04				mg/L
	Y	89	178885.847	-23504.74				ug/L
	Rh	103	50.334	21.33				ug/L
	Mo	98	2313.797	0.01	1.0831	0.032	2.934	ug/L
	Ag	107	193.338	0.00	0.0330	0.002	7.357	ug/L
	Cd	114	25.318	0.00	0.0345	0.006	18.390	ug/L
>	In	115	237713.652	237713.65				ug/L
	Sn	118	280.538	-0.00	0.0804	0.003	3.122	ug/L
	Sb	123	190.372	0.00	0.0706	0.002	2.539	ug/L
	Ba	135	56835.415	0.16	42.7258	1.049	2.455	ug/L
	Ce	140	603.416	0.00				ug/L
>	Tb	159	351411.836	351411.84				ug/L
	Ho	165	16.668	0.00				ug/L
	Tl	203	63.668	0.00	0.0147	0.001	5.214	ug/L
	Tl	205	143.349	0.00	0.0215	0.001	3.734	ug/L
	Pb	206	1232.437	0.00	0.2236	0.007	2.948	ug/L
	Pb	207	987.735	0.00	0.1917	0.005	2.442	ug/L
	Pb	208	4703.900	0.01	0.2018	0.002	1.175	ug/L
	U	238	10297.468	0.04	0.4103	0.016	3.847	ug/L
>	Bi	209	293168.956	293168.96				ug/L

Sample ID: L1201047901
Report Date/Time: Saturday, January 28, 2012 18:07:49
Page 1

Approved: January 30, 2012
Erin D. Long

Na	23	34072764.540	253.99	9.1018	0.602	6.618	mg/L
Mg	24	7824308.658	58.54	3.3278	0.177	5.326	mg/L
K	39	5837998.280	40.16	0.9733	0.038	3.902	mg/L
Ca	43	211935.746	1.58	18.3017	0.239	1.308	mg/L
Fe	54	147554.841	0.86	0.2409	0.005	2.193	mg/L
Fe	57	49001.979	0.32	0.2000	0.011	5.311	mg/L
Sc-1	45	133714.495	133714.50				mg/L
Cl	35	298329.727	261405.43				mg/L
Kr	83	43.667	-9.33				mg/L
Br	81	49424.221	44348.01				mg/L
P	31	15191.837	7597.04				mg/L
S	34	319448.223	143847.77				mg/L
Sr	88	1618837.959	1618784.62				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		88.184			
As	75					
Se	77					
Se	82					
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107					
Cd	114					
In	115		86.180			
Sn	118					
Sb	123					
Ba	135					
Ce	140					
Tb	159		89.626			
Ho	165					
Tl	203					
Tl	205					
Pb	206					
Pb	207					
Pb	208					
U	238					
Bi	209		91.879			

Sample ID: L1201047901
Report Date/Time: Saturday, January 28, 2012 18:07:49
Page 2

Approved: January 30, 2012
Erin D. Long

⌈	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: L1201047901
Report Date/Time: Saturday, January 28, 2012 18:07:49
Page 3

Approved: January 30, 2012

Method 6020 - Summary Report

Sample ID: L1201050302

Sample Date/Time: Saturday, January 28, 2012 18:13:23
Number of Replicates: 3
Aliquot Volume (mL):
Diluted To Volume (mL):
Autosampler Position: 48
Method File: C:\elandata\Method\6020a.mth
Sample Description: 5

User ID: EDL

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	9271.838	0.00				ug/L
	Be	9	8.667	0.00	-0.0210	0.024	112.810	ug/L
	Al	27	19021.736	0.14	4.3171	0.306	7.080	ug/L
>	Sc	45	123153.669	123153.67				ug/L
	Ti	49	56.673	0.00	0.1449	0.078	54.145	ug/L
	V	51	1770.781	-0.00	0.0035	0.013	367.100	ug/L
	Cr	52	5320.085	-0.00	-0.0368	0.011	29.729	ug/L
	Cr	53	516.734	-0.00	-0.3096	0.069	22.335	ug/L
	Mn	55	294099.087	1.10	31.4645	1.043	3.316	ug/L
	Co	59	446.016	0.00	0.0455	0.003	7.221	ug/L
	Ni	60	553.357	0.00	0.3293	0.023	7.022	ug/L
	Cu	65	2840.846	0.01	1.8785	0.026	1.387	ug/L
	Zn	66	4663.685	0.01	4.9753	0.131	2.629	ug/L
>	Ge	72	268124.380	268124.38				ug/L
	As	75	889.917	0.00	1.1314	0.020	1.770	ug/L
	Se	77	45.333	-0.00	0.0488	0.088	180.095	ug/L
	Se	82	22.626	0.00	0.2698	0.059	21.766	ug/L
	Rb	85	702.370	0.00				mg/L
	Y	89	173998.505	-28392.08				ug/L
	Rh	103	19.667	-9.33				ug/L
	Mo	98	367.427	0.00	0.1859	0.019	10.042	ug/L
	Ag	107	55.667	0.00	0.0022	0.002	86.578	ug/L
	Cd	114	3.380	0.00	0.0125	0.002	14.649	ug/L
>	In	115	231216.039	231216.04				ug/L
	Sn	118	149.335	-0.00	0.0439	0.000	0.874	ug/L
	Sb	123	73.784	0.00	0.0358	0.002	4.785	ug/L
	Ba	135	14653.690	0.04	11.4253	0.266	2.327	ug/L
	Ce	140	210.024	0.00				ug/L
>	Tb	159	338387.689	338387.69				ug/L
	Ho	165	6.667	-0.00				ug/L
	Tl	203	33.334	0.00	0.0096	0.001	9.183	ug/L
	Tl	205	66.674	0.00	0.0163	0.001	4.440	ug/L
	Pb	206	761.709	0.00	0.1279	0.012	9.546	ug/L
	Pb	207	708.037	0.00	0.1329	0.004	2.660	ug/L
	Pb	208	3117.592	0.01	0.1257	0.007	5.217	ug/L
	U	238	1388.463	0.00	0.0598	0.000	0.517	ug/L
>	Bi	209	286191.206	286191.21				ug/L

Sample ID: L1201050302
Report Date/Time: Saturday, January 28, 2012 18:15:35
Page 1

Approved: January 30, 2012
Erin D. Long

Na	23	10879928.823	87.38	3.1471	0.156	4.960	mg/L
Mg	24	3129370.753	25.42	1.4424	0.039	2.692	mg/L
K	39	1600253.806	9.48	0.2241	0.004	1.829	mg/L
Ca	43	98390.685	0.80	9.2159	0.127	1.377	mg/L
Fe	54	278686.486	2.03	0.5682	0.026	4.528	mg/L
Fe	57	109441.983	0.84	0.5406	0.031	5.822	mg/L
Sc-1	45	123153.669	123153.67				mg/L
Cl	35	60710.350	23786.05				mg/L
Kr	83	43.001	-10.00				mg/L
Br	81	19713.290	14637.08				mg/L
P	31	8638.476	1043.68				mg/L
S	34	181820.859	6220.40				mg/L
Sr	88	490905.563	490852.22				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		85.931			
As	75					
Se	77					
Se	82					
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107					
Cd	114					
In	115		83.824			
Sn	118					
Sb	123					
Ba	135					
Ce	140					
Tb	159		86.304			
Ho	165					
Tl	203					
Tl	205					
Pb	206					
Pb	207					
Pb	208					
U	238					
Bi	209		89.693			

Sample ID: L1201050302
Report Date/Time: Saturday, January 28, 2012 18:15:35
Page 2

Approved: January 30, 2012
Erin D. Long

⌈	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: L1201050302
Report Date/Time: Saturday, January 28, 2012 18:15:35
Page 3

Approved: January 30, 2012

Method 6020 - Summary Report

Sample ID: L1201050303

Sample Date/Time: Saturday, January 28, 2012 18:21:09
Number of Replicates: 3
Aliquot Volume (mL):
Diluted To Volume (mL):
Autosampler Position: 49
Method File: C:\elandata\Method\6020a.mth
Sample Description: 5

User ID: EDL

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	9305.250	0.00				ug/L
	Be	9	6.000	-0.00	-0.0315	0.022	71.147	ug/L
	Al	27	17885.921	0.13	4.1147	0.471	11.442	ug/L
>	Sc	45	120768.994	120768.99				ug/L
	Ti	49	116.679	0.00	0.2951	0.032	10.999	ug/L
	V	51	2051.205	0.00	0.0399	0.012	31.027	ug/L
	Cr	52	6246.403	0.00	0.1045	0.034	32.316	ug/L
	Cr	53	693.432	-0.00	-0.0750	0.190	253.326	ug/L
	Mn	55	221042.511	0.81	23.2504	0.407	1.752	ug/L
	Co	59	493.020	0.00	0.0510	0.002	3.428	ug/L
	Ni	60	1358.124	0.00	0.8639	0.025	2.865	ug/L
	Cu	65	1837.221	0.01	1.1410	0.009	0.777	ug/L
	Zn	66	4257.463	0.01	4.4061	0.134	3.036	ug/L
>	Ge	72	272549.317	272549.32				ug/L
	As	75	218.109	0.00	0.3724	0.030	8.104	ug/L
	Se	77	56.667	-0.00	0.2067	0.195	94.493	ug/L
	Se	82	22.221	0.00	0.2608	0.114	43.590	ug/L
	Rb	85	1467.477	0.01				mg/L
	Y	89	173685.586	-28705.00				ug/L
	Rh	103	32.334	3.33				ug/L
	Mo	98	204.237	0.00	0.1061	0.011	10.180	ug/L
	Ag	107	53.334	-0.00	0.0014	0.004	253.671	ug/L
	Cd	114	2.137	-0.00	0.0111	0.007	63.249	ug/L
>	In	115	236273.699	236273.70				ug/L
	Sn	118	150.935	-0.00	0.0434	0.002	3.882	ug/L
	Sb	123	30.825	0.00	0.0222	0.002	7.128	ug/L
	Ba	135	14980.270	0.04	11.4394	0.333	2.907	ug/L
	Ce	140	136.682	-0.00				ug/L
>	Tb	159	345637.170	345637.17				ug/L
	Ho	165	16.668	0.00				ug/L
	Tl	203	30.667	0.00	0.0091	0.000	4.810	ug/L
	Tl	205	93.343	0.00	0.0181	0.001	8.130	ug/L
	Pb	206	505.020	0.00	0.0708	0.004	6.058	ug/L
	Pb	207	436.016	0.00	0.0691	0.004	6.203	ug/L
	Pb	208	2031.119	0.00	0.0683	0.005	6.701	ug/L
	U	238	5036.238	0.02	0.2050	0.001	0.613	ug/L
>	Bi	209	289625.530	289625.53				ug/L

Sample ID: L1201050303
Report Date/Time: Saturday, January 28, 2012 18:23:21
Page 1

Approved: January 30, 2012
Erin D. Long

Na	23	17026337.691	140.03	5.0288	0.229	4.548	mg/L
Mg	24	4503764.170	37.31	2.1193	0.101	4.787	mg/L
K	39	3508313.110	25.53	0.6162	0.006	1.039	mg/L
Ca	43	148140.073	1.23	14.1581	0.073	0.517	mg/L
Fe	54	105891.704	0.64	0.1770	0.007	4.022	mg/L
Fe	57	41008.079	0.29	0.1824	0.003	1.541	mg/L
Sc-1	45	120768.994	120768.99				mg/L
Cl	35	115215.751	78291.45				mg/L
Kr	83	51.334	-1.67				mg/L
Br	81	23933.657	18857.44				mg/L
P	31	8440.940	846.15				mg/L
S	34	259921.150	84320.69				mg/L
Sr	88	692621.569	692568.23				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		87.349			
As	75					
Se	77					
Se	82					
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107					
Cd	114					
In	115		85.658			
Sn	118					
Sb	123					
Ba	135					
Ce	140					
Tb	159		88.153			
Ho	165					
Tl	203					
Tl	205					
Pb	206					
Pb	207					
Pb	208					
U	238					
Bi	209		90.769			

Sample ID: L1201050303
Report Date/Time: Saturday, January 28, 2012 18:23:21
Page 2

Approved: January 30, 2012

⌈	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: L1201050303
Report Date/Time: Saturday, January 28, 2012 18:23:21
Page 3

Approved: January 30, 2012

Method 6020 - Summary Report

Sample ID: L1201050304

Sample Date/Time: Saturday, January 28, 2012 18:28:55
Number of Replicates: 3
Aliquot Volume (mL):
Diluted To Volume (mL):
Autosampler Position: 50
Method File: C:\elandata\Method\6020a.mth
Sample Description: 5

User ID: EDL

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	8754.608	0.00				ug/L
	Be	9	6.000	-0.00	-0.0297	0.009	31.644	ug/L
	Al	27	3917.594	0.02	0.4142	0.124	29.982	ug/L
>	Sc	45	113720.918	113720.92				ug/L
	Ti	49	46.671	-0.00	0.1287	0.042	32.813	ug/L
	V	51	1874.825	0.00	0.0406	0.014	33.839	ug/L
	Cr	52	5236.030	0.00	0.0190	0.015	80.708	ug/L
	Cr	53	606.750	-0.00	-0.1149	0.088	76.470	ug/L
	Mn	55	426407.195	1.71	49.2022	0.829	1.685	ug/L
	Co	59	299.342	0.00	0.0281	0.005	18.002	ug/L
	Ni	60	1921.908	0.01	1.3664	0.014	1.012	ug/L
	Cu	65	660.700	0.00	0.3597	0.028	7.922	ug/L
	Zn	66	2740.812	0.01	2.9281	0.097	3.318	ug/L
>	Ge	72	248670.740	248670.74				ug/L
	As	75	472.994	0.00	0.7042	0.039	5.483	ug/L
	Se	77	42.667	-0.00	0.0587	0.172	292.743	ug/L
	Se	82	17.281	0.00	0.2212	0.137	61.775	ug/L
	Rb	85	596.027	0.00				mg/L
	Y	89	159069.879	-43320.70				ug/L
	Rh	103	15.667	-13.33				ug/L
	Mo	98	387.173	0.00	0.2108	0.019	9.010	ug/L
	Ag	107	50.001	0.00	0.0019	0.002	105.411	ug/L
	Cd	114	0.285	-0.00	0.0093	0.001	11.851	ug/L
>	In	115	213126.584	213126.58				ug/L
	Sn	118	381.742	-0.00	0.1221	0.005	4.282	ug/L
	Sb	123	81.036	0.00	0.0402	0.003	7.171	ug/L
	Ba	135	20306.585	0.06	16.8967	0.285	1.687	ug/L
	Ce	140	46.671	-0.00				ug/L
>	Tb	159	317250.065	317250.07				ug/L
	Ho	165	6.667	-0.00				ug/L
	Tl	203	21.334	0.00	0.0078	0.000	5.404	ug/L
	Tl	205	60.006	0.00	0.0161	0.003	20.768	ug/L
	Pb	206	641.031	0.00	0.1108	0.002	2.037	ug/L
	Pb	207	512.021	0.00	0.0957	0.012	12.123	ug/L
	Pb	208	2470.503	0.01	0.1007	0.001	1.387	ug/L
	U	238	2384.698	0.01	0.1065	0.000	0.412	ug/L
>	Bi	209	268359.284	268359.28				ug/L

Sample ID: L1201050304
Report Date/Time: Saturday, January 28, 2012 18:31:07
Page 1

Approved: January 30, 2012
Erin D. Long

Na	23	10234188.561	88.97	3.2042	0.047	1.453	mg/L
Mg	24	3115164.377	27.40	1.5551	0.034	2.218	mg/L
K	39	1228144.069	7.28	0.1705	0.004	2.311	mg/L
Ca	43	92985.661	0.82	9.4289	0.165	1.746	mg/L
Fe	54	74277.462	0.41	0.1139	0.007	6.335	mg/L
Fe	57	26772.306	0.19	0.1146	0.008	7.133	mg/L
Sc-1	45	113720.918	113720.92				mg/L
Cl	35	52184.216	15259.91				mg/L
Kr	83	44.334	-8.67				mg/L
Br	81	17818.389	12742.17				mg/L
P	31	8087.287	492.49				mg/L
S	34	161148.625	-14451.83				mg/L
Sr	88	427520.688	427467.35				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		79.697			
As	75					
Se	77					
Se	82					
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107					
Cd	114					
In	115		77.266			
Sn	118					
Sb	123					
Ba	135					
Ce	140					
Tb	159		80.913			
Ho	165					
Tl	203					
Tl	205					
Pb	206					
Pb	207					
Pb	208					
U	238					
Bi	209		84.104			

Sample ID: L1201050304
Report Date/Time: Saturday, January 28, 2012 18:31:07
Page 2

Approved: January 30, 2012
Erin D. Long

⌈	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: L1201050304
Report Date/Time: Saturday, January 28, 2012 18:31:07
Page 3

Approved: January 30, 2012

Method 6020 - Summary Report

Sample ID: L1201050305

Sample Date/Time: Saturday, January 28, 2012 18:36:42
Number of Replicates: 3
Aliquot Volume (mL):
Diluted To Volume (mL):
Autosampler Position: 51
Method File: C:\elandata\Method\6020a.mth
Sample Description: 5

User ID: EDL

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	9071.657	0.00				ug/L
	Be	9	7.333	0.00	-0.0251	0.006	23.760	ug/L
	Al	27	6635.983	0.04	1.1017	0.079	7.149	ug/L
>	Sc	45	119298.866	119298.87				ug/L
	Ti	49	100.011	0.00	0.2508	0.028	11.277	ug/L
	V	51	2299.284	0.00	0.0734	0.005	7.473	ug/L
	Cr	52	5919.161	0.00	0.0413	0.021	51.872	ug/L
	Cr	53	530.070	-0.00	-0.3094	0.127	41.170	ug/L
	Mn	55	479116.762	1.74	50.0262	0.405	0.810	ug/L
	Co	59	652.032	0.00	0.0723	0.004	5.010	ug/L
	Ni	60	1274.110	0.00	0.8005	0.041	5.121	ug/L
	Cu	65	712.704	0.00	0.3474	0.022	6.406	ug/L
	Zn	66	2426.378	0.01	2.2243	0.055	2.473	ug/L
>	Ge	72	274797.532	274797.53				ug/L
	As	75	126.772	0.00	0.2702	0.007	2.755	ug/L
	Se	77	54.667	-0.00	0.1703	0.090	52.605	ug/L
	Se	82	21.615	0.00	0.2505	0.019	7.706	ug/L
	Rb	85	703.703	0.00				mg/L
	Y	89	179834.635	-22555.95				ug/L
	Rh	103	19.334	-9.67				ug/L
	Mo	98	583.181	0.00	0.2784	0.007	2.605	ug/L
	Ag	107	55.001	0.00	0.0016	0.002	131.184	ug/L
	Cd	114	2.362	-0.00	0.0113	0.007	61.339	ug/L
>	In	115	240001.355	240001.36				ug/L
	Sn	118	219.203	-0.00	0.0621	0.003	4.624	ug/L
	Sb	123	72.577	0.00	0.0346	0.001	2.890	ug/L
	Ba	135	18396.137	0.05	14.0317	0.132	0.942	ug/L
	Ce	140	90.010	-0.00				ug/L
>	Tb	159	345983.422	345983.42				ug/L
	Ho	165	3.334	-0.00				ug/L
	Tl	203	37.334	0.00	0.0102	0.001	4.946	ug/L
	Tl	205	43.338	0.00	0.0146	0.001	7.626	ug/L
	Pb	206	1464.477	0.00	0.2759	0.004	1.463	ug/L
	Pb	207	1186.096	0.00	0.2389	0.010	4.279	ug/L
	Pb	208	5706.164	0.02	0.2553	0.003	1.342	ug/L
	U	238	2278.335	0.01	0.0945	0.003	3.396	ug/L
>	Bi	209	290239.630	290239.63				ug/L

Sample ID: L1201050305
Report Date/Time: Saturday, January 28, 2012 18:38:54
Page 1

Approved: January 30, 2012
Erin D. Long

Na	23	8726531.230	72.20	2.6048	0.108	4.128	mg/L
Mg	24	2736148.057	22.95	1.3019	0.038	2.901	mg/L
K	39	1708502.640	10.81	0.2567	0.011	4.257	mg/L
Ca	43	92537.042	0.77	8.9504	0.165	1.846	mg/L
Fe	54	60562.794	0.27	0.0730	0.006	8.598	mg/L
Fe	57	20216.566	0.12	0.0716	0.004	5.468	mg/L
Sc-1	45	119298.866	119298.87				mg/L
Cl	35	45964.431	9040.13				mg/L
Kr	83	44.334	-8.67				mg/L
Br	81	15107.689	10031.47				mg/L
P	31	10849.157	3254.36				mg/L
S	34	192944.717	17344.26				mg/L
Sr	88	433608.558	433555.22				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		88.070			
As	75					
Se	77					
Se	82					
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107					
Cd	114					
In	115		87.009			
Sn	118					
Sb	123					
Ba	135					
Ce	140					
Tb	159		88.241			
Ho	165					
Tl	203					
Tl	205					
Pb	206					
Pb	207					
Pb	208					
U	238					
Bi	209		90.961			

Sample ID: L1201050305
Report Date/Time: Saturday, January 28, 2012 18:38:54
Page 2

Approved: January 30, 2012

⌈	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: L1201050305
Report Date/Time: Saturday, January 28, 2012 18:38:54
Page 3

Approved: January 30, 2012

Method 6020 - Summary Report

Sample ID: L1201050305PS WG387531-03

Sample Date/Time: Saturday, January 28, 2012 18:44:28
Number of Replicates: 3
Aliquot Volume (mL):
Diluted To Volume (mL):
Autosampler Position: 52
Method File: C:\elandata\Method\6020a.mth
Sample Description: 5

User ID: EDL
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	9338.565	0.01				ug/L
	Be	9	12644.255	0.11	57.1373	2.918	5.107	ug/L
	Al	27	185696.834	1.61	52.2366	2.385	4.566	ug/L
>	Sc	45	114143.604	114143.60				ug/L
	Ti	49	100.011	0.00	0.2742	0.125	45.677	ug/L
	V	51	317719.462	1.26	49.9564	1.773	3.550	ug/L
	Cr	52	285392.422	1.12	51.1449	1.445	2.826	ug/L
	Cr	53	34069.587	0.13	50.4314	0.595	1.180	ug/L
	Mn	55	892921.940	3.55	101.9739	3.522	3.454	ug/L
	Co	59	339726.547	1.35	51.0127	2.820	5.527	ug/L
	Ni	60	70738.701	0.28	51.5025	1.688	3.277	ug/L
	Cu	65	70290.704	0.28	53.3859	2.637	4.940	ug/L
	Zn	66	42544.768	0.17	53.7448	1.313	2.443	ug/L
>	Ge	72	251430.251	251430.25				ug/L
	As	75	42034.950	0.17	50.5371	1.365	2.702	ug/L
	Se	77	3121.918	0.01	49.3982	1.358	2.750	ug/L
	Se	82	3659.537	0.01	47.6190	1.371	2.880	ug/L
	Rb	85	719.038	0.00				mg/L
	Y	89	162801.056	-39589.53				ug/L
	Rh	103	30.000	1.00				ug/L
	Mo	98	573.185	0.00	0.2999	0.014	4.708	ug/L
	Ag	107	207195.014	0.95	51.0757	2.127	4.164	ug/L
	Cd	114	46168.139	0.21	50.5438	1.987	3.931	ug/L
>	In	115	218468.545	218468.54				ug/L
	Sn	118	203.869	-0.00	0.0635	0.002	3.490	ug/L
	Sb	123	155565.707	0.71	51.4829	1.878	3.648	ug/L
	Ba	135	79997.291	0.25	66.4684	1.135	1.708	ug/L
	Ce	140	36.670	-0.00				ug/L
>	Tb	159	317950.423	317950.42				ug/L
	Ho	165	10.001	-0.00				ug/L
	Tl	203	271455.859	1.02	51.4146	1.188	2.310	ug/L
	Tl	205	668886.466	2.52	51.4826	0.739	1.436	ug/L
	Pb	206	229139.310	0.86	53.6175	1.620	3.022	ug/L
	Pb	207	201947.974	0.76	50.0309	1.779	3.556	ug/L
	Pb	208	928491.049	3.50	51.6865	1.761	3.406	ug/L
	U	238	1268075.663	4.78	55.3505	1.704	3.079	ug/L
>	Bi	209	265359.053	265359.05				ug/L

Sample ID: L1201050305PS WG387531-03
Report Date/Time: Saturday, January 28, 2012 18:46:41
Page 1

Approved: January 30, 2012
Erin D. Long

Na	23	7833170.261	67.64	2.4419	0.082	3.370	mg/L
Mg	24	2555580.117	22.41	1.2714	0.078	6.133	mg/L
K	39	1637493.482	10.84	0.2574	0.016	6.204	mg/L
Ca	43	91222.480	0.80	9.2269	0.455	4.932	mg/L
Fe	54	54078.162	0.24	0.0633	0.003	4.756	mg/L
Fe	57	17804.127	0.11	0.0629	0.005	8.747	mg/L
Sc-1	45	114143.604	114143.60				mg/L
Cl	35	42601.974	5677.67				mg/L
Kr	83	36.667	-16.33				mg/L
Br	81	13221.149	8144.93				mg/L
P	31	7335.228	-259.57				mg/L
S	34	159117.453	-16483.00				mg/L
Sr	88	399793.420	399740.08				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		80.581			
As	75					
Se	77					
Se	82					
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107					
Cd	114					
In	115		79.203			
Sn	118					
Sb	123					
Ba	135					
Ce	140					
Tb	159		81.092			
Ho	165					
Tl	203					
Tl	205					
Pb	206					
Pb	207					
Pb	208					
U	238					
Bi	209		83.164			

Sample ID: L1201050305PS WG387531-03
Report Date/Time: Saturday, January 28, 2012 18:46:41
Page 2

Approved: January 30, 2012

⌈	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: L1201050305PS WG387531-03
Report Date/Time: Saturday, January 28, 2012 18:46:41
Page 3

Approved: January 30, 2012

Method 6020 - Summary Report

Sample ID: L1201050305SDL WG387531-04

Sample Date/Time: Saturday, January 28, 2012 18:52:16
Number of Replicates: 3
Aliquot Volume (mL):
Diluted To Volume (mL):
Autosampler Position: 53
Method File: C:\elandata\Method\6020a.mth
Sample Description: 25

User ID: EDL
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	8904.766	0.00				ug/L
	Be	9	8.000	0.00	-0.0208	0.017	80.820	ug/L
	Al	27	2617.086	0.01	0.0315	0.115	363.739	ug/L
>	Sc	45	115038.997	115039.00				ug/L
	Ti	49	83.342	0.00	0.2185	0.041	18.814	ug/L
	V	51	1812.931	0.00	0.0153	0.017	109.017	ug/L
	Cr	52	5447.502	0.00	0.0045	0.016	347.873	ug/L
	Cr	53	536.738	-0.00	-0.2653	0.083	31.129	ug/L
	Mn	55	91105.891	0.35	9.9240	0.131	1.319	ug/L
	Co	59	180.004	0.00	0.0086	0.002	24.170	ug/L
	Ni	60	302.342	0.00	0.1620	0.010	6.029	ug/L
	Cu	65	224.339	0.00	0.0146	0.004	27.556	ug/L
	Zn	66	595.694	-0.00	0.1171	0.030	25.767	ug/L
>	Ge	72	262574.160	262574.16				ug/L
	As	75	-102.574	-0.00	0.0134	0.031	228.633	ug/L
	Se	77	57.334	0.00	0.2497	0.217	87.072	ug/L
	Se	82	-6.455	-0.00	-0.0869	0.091	104.621	ug/L
	Rb	85	167.337	0.00				mg/L
	Y	89	167608.882	-34781.70				ug/L
	Rh	103	14.000	-15.00				ug/L
	Mo	98	112.646	0.00	0.0652	0.004	5.777	ug/L
	Ag	107	71.334	0.00	0.0061	0.002	30.141	ug/L
	Cd	114	-0.302	-0.00	0.0087	0.003	36.617	ug/L
>	In	115	227774.475	227774.47				ug/L
	Sn	118	1227.157	0.00	0.3677	0.009	2.411	ug/L
	Sb	123	252.083	0.00	0.0927	0.009	9.850	ug/L
	Ba	135	3649.836	0.01	2.8986	0.024	0.826	ug/L
	Ce	140	86.676	-0.00				ug/L
>	Tb	159	330830.533	330830.53				ug/L
	Ho	165	0.000	-0.00				ug/L
	Tl	203	47.334	0.00	0.0122	0.001	9.884	ug/L
	Tl	205	96.677	0.00	0.0186	0.003	16.387	ug/L
	Pb	206	439.683	0.00	0.0594	0.006	10.242	ug/L
	Pb	207	383.013	0.00	0.0596	0.007	11.825	ug/L
	Pb	208	1699.084	0.00	0.0538	0.001	1.934	ug/L
	U	238	516.021	0.00	0.0249	0.001	4.359	ug/L
>	Bi	209	281775.100	281775.10				ug/L

Sample ID: L1201050305SDL WG387531-04
Report Date/Time: Saturday, January 28, 2012 18:54:28
Page 1

Approved: January 30, 2012
Erin D. Long

Na	23	1602600.598	12.91	0.4857	0.021	4.353	mg/L
Mg	24	548788.039	4.77	0.2672	0.005	1.989	mg/L
K	39	678435.290	2.38	0.0508	0.004	6.961	mg/L
Ca	43	18031.305	0.16	1.7925	0.031	1.756	mg/L
Fe	54	32272.446	0.04	0.0088	0.003	30.311	mg/L
Fe	57	8478.509	0.03	0.0092	0.004	46.275	mg/L
> Sc-1	45	115038.997	115039.00				mg/L
Cl	35	30214.008	-6710.29				mg/L
Kr	83	52.334	-0.67				mg/L
Br	81	7054.325	1978.11				mg/L
P	31	7427.316	-167.48				mg/L
S	34	166459.958	-9140.50				mg/L
Sr	88	82504.672	82451.33				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		84.152			
As	75					
Se	77					
Se	82					
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107					
Cd	114					
> In	115		82.577			
Sn	118					
Sb	123					
Ba	135					
Ce	140					
> Tb	159		84.377			
Ho	165					
Tl	203					
Tl	205					
Pb	206					
Pb	207					
Pb	208					
U	238					
> Bi	209		88.309			

Sample ID: L1201050305SDL WG387531-04
Report Date/Time: Saturday, January 28, 2012 18:54:28
Page 2

Approved: January 30, 2012

⌈	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: L1201050305SDL WG387531-04
Report Date/Time: Saturday, January 28, 2012 18:54:28
Page 3

Approved: January 30, 2012

Method 6020 - Summary Report

Sample ID: QC Std 6

Sample Date/Time: Saturday, January 28, 2012 19:00:03
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: EDL

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	8587.761	0.00				ug/L
	Be	9	12453.322	0.11	55.3482	3.740	6.758	ug/L
	Al	27	192532.617	1.64	53.2935	1.848	3.467	ug/L
>	Sc	45	115968.115	115968.11				ug/L
	Ti	49	37615.123	0.14	98.2607	4.687	4.770	ug/L
	V	51	324275.439	1.22	48.3810	0.767	1.585	ug/L
	Cr	52	289013.509	1.07	49.1333	1.350	2.748	ug/L
	Cr	53	34608.530	0.13	48.6445	2.082	4.280	ug/L
	Mn	55	455114.961	1.72	49.3489	1.720	3.485	ug/L
	Co	59	352269.154	1.33	50.1758	0.392	0.782	ug/L
	Ni	60	73416.339	0.28	50.7311	0.706	1.391	ug/L
	Cu	65	71382.513	0.27	51.4275	0.563	1.095	ug/L
	Zn	66	42884.538	0.16	51.4213	1.326	2.579	ug/L
>	Ge	72	264898.152	264898.15				ug/L
	As	75	43677.811	0.17	49.8118	0.319	0.641	ug/L
	Se	77	3307.990	0.01	49.7176	1.656	3.330	ug/L
	Se	82	3924.950	0.01	48.4662	0.944	1.948	ug/L
	Rb	85	1511.486	0.01				mg/L
	Y	89	165592.279	-36798.30				ug/L
	Rh	103	16.667	-12.33				ug/L
	Mo	98	211558.403	0.92	101.7393	1.692	1.663	ug/L
	Ag	107	211237.696	0.92	49.6205	0.408	0.822	ug/L
	Cd	114	46441.926	0.20	48.5188	2.804	5.779	ug/L
>	In	115	229147.734	229147.73				ug/L
	Sn	118	166239.728	0.72	49.5433	0.646	1.305	ug/L
	Sb	123	160351.009	0.70	50.5651	0.338	0.669	ug/L
	Ba	135	63060.048	0.19	50.7064	1.527	3.012	ug/L
	Ce	140	56.673	-0.00				ug/L
>	Tb	159	328672.154	328672.15				ug/L
	Ho	165	6.667	-0.00				ug/L
	Tl	203	271204.129	1.00	50.3311	0.812	1.613	ug/L
	Tl	205	675410.855	2.49	50.9314	1.596	3.134	ug/L
	Pb	206	220268.945	0.81	50.4998	0.605	1.198	ug/L
	Pb	207	204894.418	0.76	49.7400	0.245	0.492	ug/L
	Pb	208	914874.552	3.38	49.9006	0.962	1.929	ug/L
	U	238	1297162.665	4.79	55.4787	0.407	0.734	ug/L
>	Bi	209	270736.468	270736.47				ug/L

Sample ID: QC Std 6
Report Date/Time: Saturday, January 28, 2012 19:02:16
Page 1

Approved: January 30, 2012
Erin D. Long

Na	23	16850727.395	144.32	5.1824	0.345	6.652	mg/L
Mg	24	10651426.510	91.86	5.2241	0.171	3.268	mg/L
K	39	23743968.617	201.25	4.9069	0.181	3.683	mg/L
Ca	43	51523.975	0.44	5.1157	0.038	0.748	mg/L
Fe	54	2051327.463	17.45	4.9193	0.160	3.248	mg/L
Fe	57	932069.700	7.99	5.1992	0.324	6.227	mg/L
Sc-1	45	115968.115	115968.11				mg/L
Cl	35	25305.705	-11618.60				mg/L
Kr	83	42.334	-10.67				mg/L
Br	81	4591.939	-484.28				mg/L
P	31	7237.142	-357.65				mg/L
S	34	148898.481	-26701.97				mg/L
Sr	88	3341.004	3287.66				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	96.762				
Cr	52	98.267				
Cr	53					
Mn	55	98.698				
Co	59	100.352				
Ni	60	101.462				
Cu	65	102.855				
Zn	66	102.843				
Ge	72		84.897			
As	75	99.624				
Se	77					
Se	82	96.932				
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107	99.241				
Cd	114	97.038				
In	115		83.075			
Sn	118					
Sb	123	101.130				
Ba	135	101.413				
Ce	140					
Tb	159		83.826			
Ho	165					
Tl	203	100.662				
Tl	205					
Pb	206					
Pb	207					
Pb	208	99.801				
U	238	110.957				
Bi	209		84.849			

Sample ID: QC Std 6
Report Date/Time: Saturday, January 28, 2012 19:02:16
Page 2

Approved: January 30, 2012
Erin D. Long

⌈	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: Saturday, January 28, 2012 19:02:16
Page 3

Approved: January 30, 2012

Method 6020 - Summary Report

Sample ID: QC Std 7

Sample Date/Time: Saturday, January 28, 2012 19:07:40
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: EDL

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	9121.670	0.00				ug/L
	Be	9	9.333	0.00	-0.0165	0.021	126.359	ug/L
	Al	27	1950.232	-0.00	-0.1666	0.117	70.197	ug/L
>	Sc	45	118420.494	118420.49				ug/L
	Ti	49	70.007	0.00	0.1785	0.044	24.646	ug/L
	V	51	1734.419	-0.00	-0.0033	0.015	456.683	ug/L
	Cr	52	5558.576	0.00	-0.0009	0.011	1179.358	ug/L
	Cr	53	520.069	-0.00	-0.3098	0.197	63.722	ug/L
	Mn	55	588.694	0.00	0.0230	0.010	42.543	ug/L
	Co	59	123.336	0.00	-0.0000	0.006	18498.546	ug/L
	Ni	60	77.001	-0.00	0.0034	0.002	68.893	ug/L
	Cu	65	97.002	0.00	-0.0800	0.011	13.168	ug/L
	Zn	66	544.023	-0.00	0.0370	0.025	67.342	ug/L
>	Ge	72	269517.832	269517.83				ug/L
	As	75	-103.006	-0.00	0.0158	0.023	144.656	ug/L
	Se	77	56.667	-0.00	0.2148	0.222	103.314	ug/L
	Se	82	1.913	-0.00	0.0166	0.019	111.756	ug/L
	Rb	85	24.000	-0.00				mg/L
	Y	89	177243.134	-25147.45				ug/L
	Rh	103	9.667	-19.33				ug/L
	Mo	98	69.161	0.00	0.0431	0.007	16.942	ug/L
	Ag	107	100.335	0.00	0.0123	0.006	45.801	ug/L
	Cd	114	9.366	0.00	0.0185	0.005	26.067	ug/L
>	In	115	235088.649	235088.65				ug/L
	Sn	118	507.082	-0.00	0.1471	0.003	2.182	ug/L
	Sb	123	88.034	0.00	0.0398	0.006	15.856	ug/L
	Ba	135	42.001	0.00	0.0161	0.007	42.047	ug/L
	Ce	140	33.337	-0.00				ug/L
>	Tb	159	339065.910	339065.91				ug/L
	Ho	165	6.667	-0.00				ug/L
	Tl	203	89.335	0.00	0.0196	0.006	32.443	ug/L
	Tl	205	256.696	0.00	0.0300	0.005	17.514	ug/L
	Pb	206	236.339	0.00	0.0140	0.007	51.895	ug/L
	Pb	207	217.672	0.00	0.0203	0.003	13.578	ug/L
	Pb	208	960.031	0.00	0.0145	0.006	39.756	ug/L
	U	238	271.008	0.00	0.0147	0.005	33.031	ug/L
>	Bi	209	285101.467	285101.47				ug/L

Sample ID: QC Std 7
Report Date/Time: Saturday, January 28, 2012 19:09:52
Page 1

Approved: January 30, 2012
Erin D. Long

Na	23	83656.495	-0.32	0.0128	0.002	12.292	mg/L
Mg	24	2827.535	0.02	-0.0030	0.001	26.542	mg/L
K	39	466669.920	0.43	0.0032	0.007	228.322	mg/L
Ca	43	223.359	0.00	0.0030	0.003	113.893	mg/L
Fe	54	29659.429	0.01	0.0006	0.008	1344.356	mg/L
Fe	57	6783.439	0.01	-0.0015	0.001	88.202	mg/L
Sc-1	45	118420.494	118420.49				mg/L
Cl	35	27360.845	-9563.46				mg/L
Kr	83	48.334	-4.67				mg/L
Br	81	4880.769	-195.45				mg/L
P	31	7139.745	-455.05				mg/L
S	34	168161.633	-7438.82				mg/L
Sr	88	103.344	50.01				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		86.378			
As	75					
Se	77					
Se	82					
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107					
Cd	114					
In	115		85.228			
Sn	118					
Sb	123					
Ba	135					
Ce	140					
Tb	159		86.477			
Ho	165					
Tl	203					
Tl	205					
Pb	206					
Pb	207					
Pb	208					
U	238					
Bi	209		89.351			

Sample ID: QC Std 7
Report Date/Time: Saturday, January 28, 2012 19:09:52
Page 2

Approved: January 30, 2012
Erin D. Long

⌈	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: Saturday, January 28, 2012 19:09:52
Page 3

Approved: January 30, 2012

Method 6020 - Summary Report

Sample ID: L1201050306 WG387506-01

Sample Date/Time: Saturday, January 28, 2012 19:15:16
Number of Replicates: 3
Aliquot Volume (mL):
Diluted To Volume (mL):
Autosampler Position: 54
Method File: C:\elandata\Method\6020a.mth
Sample Description: 5

User ID: EDL

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	9472.050	0.01				ug/L
	Be	9	4.000	-0.00	-0.0403	0.017	41.144	ug/L
	Al	27	5835.386	0.03	0.8728	0.148	16.993	ug/L
>	Sc	45	120313.636	120313.64				ug/L
	Ti	49	103.344	0.00	0.2634	0.030	11.394	ug/L
	V	51	1805.056	-0.00	0.0066	0.013	204.673	ug/L
	Cr	52	7733.333	0.01	0.3665	0.056	15.214	ug/L
	Cr	53	656.758	-0.00	-0.1178	0.097	81.999	ug/L
	Mn	55	565673.659	2.09	60.0836	1.111	1.849	ug/L
	Co	59	896.391	0.00	0.1079	0.001	1.374	ug/L
	Ni	60	6537.631	0.02	4.3854	0.224	5.118	ug/L
	Cu	65	9206.175	0.03	6.3738	0.197	3.097	ug/L
	Zn	66	2233.988	0.01	2.0444	0.028	1.372	ug/L
>	Ge	72	270173.147	270173.15				ug/L
	As	75	24.793	0.00	0.1595	0.059	37.115	ug/L
	Se	77	50.667	-0.00	0.1237	0.173	140.185	ug/L
	Se	82	21.276	0.00	0.2537	0.253	99.581	ug/L
	Rb	85	895.724	0.00				mg/L
	Y	89	173533.191	-28857.39				ug/L
	Rh	103	23.667	-5.33				ug/L
	Mo	98	136.459	0.00	0.0749	0.007	9.644	ug/L
	Ag	107	69.668	0.00	0.0052	0.002	39.031	ug/L
	Cd	114	9.734	0.00	0.0189	0.001	5.562	ug/L
>	In	115	234140.928	234140.93				ug/L
	Sn	118	113.467	-0.00	0.0329	0.001	3.386	ug/L
	Sb	123	114.410	0.00	0.0482	0.009	17.736	ug/L
	Ba	135	17771.110	0.05	13.9099	0.188	1.352	ug/L
	Ce	140	43.338	-0.00				ug/L
>	Tb	159	337147.630	337147.63				ug/L
	Ho	165	16.668	0.00				ug/L
	Tl	203	45.001	0.00	0.0119	0.002	13.583	ug/L
	Tl	205	76.675	0.00	0.0172	0.000	2.269	ug/L
	Pb	206	2444.716	0.01	0.5096	0.014	2.717	ug/L
	Pb	207	2006.595	0.01	0.4456	0.014	3.123	ug/L
	Pb	208	9420.176	0.03	0.4662	0.009	1.895	ug/L
	U	238	643.031	0.00	0.0305	0.001	2.024	ug/L
>	Bi	209	277581.579	277581.58				ug/L

Sample ID: L1201050306 WG387506-01
Report Date/Time: Saturday, January 28, 2012 19:17:29
Page 1

Approved: January 30, 2012
Erin D. Long

Na	23	12893430.179	106.30	3.8236	0.188	4.921	mg/L
Mg	24	2751628.109	22.91	1.2996	0.073	5.610	mg/L
K	39	2105808.896	13.99	0.3344	0.009	2.668	mg/L
Ca	43	146714.908	1.22	14.0934	0.590	4.189	mg/L
Fe	54	172538.100	1.20	0.3348	0.024	7.182	mg/L
Fe	57	71526.274	0.55	0.3488	0.015	4.346	mg/L
Sc-1	45	120313.636	120313.64				mg/L
Cl	35	107939.944	71015.64				mg/L
Kr	83	45.001	-8.00				mg/L
Br	81	18689.618	13613.40				mg/L
P	31	8412.975	818.18				mg/L
S	34	185803.654	10203.20				mg/L
Sr	88	600278.883	600225.54				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		86.588			
As	75					
Se	77					
Se	82					
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107					
Cd	114					
In	115		84.885			
Sn	118					
Sb	123					
Ba	135					
Ce	140					
Tb	159		85.988			
Ho	165					
Tl	203					
Tl	205					
Pb	206					
Pb	207					
Pb	208					
U	238					
Bi	209		86.994			

Sample ID: L1201050306 WG387506-01
Report Date/Time: Saturday, January 28, 2012 19:17:29
Page 2

Approved: January 30, 2012

⌈	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: L1201050306 WG387506-01
Report Date/Time: Saturday, January 28, 2012 19:17:29
Page 3

Approved: January 30, 2012

Method 6020 - Summary Report

Sample ID: L1201050306S WG387506-04

Sample Date/Time: Saturday, January 28, 2012 19:23:04
Number of Replicates: 3
Aliquot Volume (mL):
Diluted To Volume (mL):
Autosampler Position: 55
Method File: C:\elandata\Method\6020a.mth
Sample Description: 5

User ID: EDL
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	9271.823	0.00				ug/L
	Be	9	1318.771	0.01	5.4630	0.386	7.071	ug/L
	Al	27	26224.553	0.20	6.2087	0.116	1.867	ug/L
>	Sc	45	123357.282	123357.28				ug/L
	Ti	49	113.346	0.00	0.2861	0.101	35.255	ug/L
	V	51	34975.786	0.12	4.8383	0.092	1.897	ug/L
	Cr	52	36629.037	0.11	5.2185	0.093	1.775	ug/L
	Cr	53	4404.938	0.01	5.0970	0.182	3.580	ug/L
	Mn	55	601132.762	2.20	63.2950	0.238	0.375	ug/L
	Co	59	36102.742	0.13	4.9816	0.074	1.495	ug/L
	Ni	60	12810.301	0.05	8.5601	0.151	1.762	ug/L
	Cu	65	16079.325	0.06	11.1407	0.076	0.683	ug/L
	Zn	66	6253.409	0.02	6.7569	0.132	1.954	ug/L
>	Ge	72	272532.878	272532.88				ug/L
	As	75	4425.616	0.02	5.0249	0.145	2.894	ug/L
	Se	77	390.676	0.00	5.1405	0.365	7.094	ug/L
	Se	82	405.639	0.00	4.8618	0.177	3.642	ug/L
	Rb	85	897.724	0.00				mg/L
	Y	89	172368.974	-30021.61				ug/L
	Rh	103	26.667	-2.33				ug/L
	Mo	98	143.829	0.00	0.0780	0.005	6.932	ug/L
	Ag	107	21082.181	0.09	4.8110	0.048	0.997	ug/L
	Cd	114	4855.018	0.02	4.9407	0.248	5.026	ug/L
>	In	115	235353.533	235353.53				ug/L
	Sn	118	128.401	-0.00	0.0371	0.002	6.176	ug/L
	Sb	123	16526.827	0.07	5.0848	0.058	1.137	ug/L
	Ba	135	23840.636	0.07	18.3586	0.520	2.832	ug/L
	Ce	140	63.340	-0.00				ug/L
>	Tb	159	342889.139	342889.14				ug/L
	Ho	165	10.001	-0.00				ug/L
	Tl	203	28267.145	0.10	4.9404	0.024	0.483	ug/L
	Tl	205	68746.100	0.24	4.8907	0.186	3.801	ug/L
	Pb	206	26290.673	0.09	5.6394	0.123	2.183	ug/L
	Pb	207	22649.632	0.08	5.1477	0.058	1.122	ug/L
	Pb	208	105311.281	0.36	5.3738	0.009	0.159	ug/L
	U	238	134431.947	0.47	5.4137	0.116	2.141	ug/L
>	Bi	209	287711.544	287711.54				ug/L

Sample ID: L1201050306S WG387506-04
Report Date/Time: Saturday, January 28, 2012 19:25:17
Page 1

Approved: January 30, 2012
Erin D. Long

Na	23	12827436.810	103.08	3.7083	0.168	4.527	mg/L
Mg	24	2689511.953	21.82	1.2374	0.035	2.788	mg/L
K	39	2101889.141	13.53	0.3230	0.008	2.581	mg/L
Ca	43	147503.623	1.19	13.7994	0.096	0.693	mg/L
Fe	54	173271.126	1.17	0.3260	0.010	3.059	mg/L
Fe	57	67374.802	0.50	0.3176	0.025	7.859	mg/L
Sc-1	45	123357.282	123357.28				mg/L
Cl	35	107694.193	70769.89				mg/L
Kr	83	43.334	-9.67				mg/L
Br	81	19226.843	14150.63				mg/L
P	31	8593.776	998.98				mg/L
S	34	194812.850	19212.40				mg/L
Sr	88	591402.907	591349.57				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		87.344			
As	75					
Se	77					
Se	82					
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107					
Cd	114					
In	115		85.324			
Sn	118					
Sb	123					
Ba	135					
Ce	140					
Tb	159		87.452			
Ho	165					
Tl	203					
Tl	205					
Pb	206					
Pb	207					
Pb	208					
U	238					
Bi	209		90.169			

Sample ID: L1201050306S WG387506-04
Report Date/Time: Saturday, January 28, 2012 19:25:17
Page 2

Approved: January 30, 2012

⌈	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: L1201050306S WG387506-04
Report Date/Time: Saturday, January 28, 2012 19:25:17
Page 3

Approved: January 30, 2012

Method 6020 - Summary Report

Sample ID: L1201050306SD WG387506-05

Sample Date/Time: Saturday, January 28, 2012 19:30:52
Number of Replicates: 3
Aliquot Volume (mL):
Diluted To Volume (mL):
Autosampler Position: 56
Method File: C:\elandata\Method\6020a.mth
Sample Description: 5

User ID: EDL
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	8470.994	0.00				ug/L
	Be	9	1312.104	0.01	5.9303	0.131	2.212	ug/L
	Al	27	31308.742	0.26	8.3193	0.620	7.450	ug/L
>	Sc	45	112978.012	112978.01				ug/L
	Ti	49	130.014	0.00	0.3421	0.123	35.995	ug/L
	V	51	34065.994	0.12	4.8980	0.053	1.088	ug/L
	Cr	52	35727.123	0.12	5.2994	0.053	1.003	ug/L
	Cr	53	4241.507	0.01	5.0969	0.439	8.614	ug/L
	Mn	55	584504.888	2.23	63.9266	1.535	2.401	ug/L
	Co	59	35755.971	0.14	5.1246	0.150	2.934	ug/L
	Ni	60	12449.765	0.05	8.6399	0.360	4.164	ug/L
	Cu	65	16119.070	0.06	11.6077	0.209	1.801	ug/L
	Zn	66	7887.477	0.03	9.0423	0.123	1.357	ug/L
>	Ge	72	262367.610	262367.61				ug/L
	As	75	4457.407	0.02	5.2507	0.168	3.191	ug/L
	Se	77	380.009	0.00	5.2034	0.358	6.884	ug/L
	Se	82	412.930	0.00	5.1408	0.469	9.129	ug/L
	Rb	85	911.726	0.00				mg/L
	Y	89	169265.550	-33125.03				ug/L
	Rh	103	22.667	-6.33				ug/L
	Mo	98	133.610	0.00	0.0754	0.007	8.976	ug/L
	Ag	107	21497.576	0.09	5.0728	0.042	0.822	ug/L
	Cd	114	4772.916	0.02	5.0202	0.047	0.934	ug/L
>	In	115	227644.889	227644.89				ug/L
	Sn	118	121.734	-0.00	0.0363	0.003	9.471	ug/L
	Sb	123	16141.026	0.07	5.1346	0.119	2.313	ug/L
	Ba	135	23242.935	0.07	18.7014	0.320	1.712	ug/L
	Ce	140	126.681	-0.00				ug/L
>	Tb	159	328134.291	328134.29				ug/L
	Ho	165	23.336	0.00				ug/L
	Tl	203	27688.879	0.10	5.0049	0.104	2.073	ug/L
	Tl	205	69182.986	0.25	5.0894	0.152	2.979	ug/L
	Pb	206	25358.455	0.09	5.6252	0.149	2.642	ug/L
	Pb	207	22103.166	0.08	5.1950	0.039	0.753	ug/L
	Pb	208	102310.199	0.37	5.3990	0.079	1.467	ug/L
	U	238	128036.386	0.46	5.3326	0.060	1.121	ug/L
>	Bi	209	278203.050	278203.05				ug/L

Sample ID: L1201050306SD WG387506-05
Report Date/Time: Saturday, January 28, 2012 19:33:05
Page 1

Approved: January 30, 2012
Erin D. Long

Na	23	12024380.003	105.44	3.7928	0.065	1.721	mg/L
Mg	24	2591732.895	22.95	1.3021	0.046	3.550	mg/L
K	39	2029161.795	14.46	0.3458	0.024	6.863	mg/L
Ca	43	140609.285	1.24	14.3841	1.080	7.508	mg/L
Fe	54	168702.794	1.26	0.3512	0.019	5.493	mg/L
Fe	57	65839.324	0.53	0.3407	0.004	1.164	mg/L
Sc-1	45	112978.012	112978.01				mg/L
Cl	35	104356.147	67431.85				mg/L
Kr	83	48.334	-4.67				mg/L
Br	81	19846.278	14770.06				mg/L
P	31	7504.714	-90.08				mg/L
S	34	186220.524	10620.07				mg/L
Sr	88	574782.564	574729.23				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		84.086			
As	75					
Se	77					
Se	82					
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107					
Cd	114					
In	115		82.530			
Sn	118					
Sb	123					
Ba	135					
Ce	140					
Tb	159		83.689			
Ho	165					
Tl	203					
Tl	205					
Pb	206					
Pb	207					
Pb	208					
U	238					
Bi	209		87.189			

Sample ID: L1201050306SD WG387506-05
Report Date/Time: Saturday, January 28, 2012 19:33:05
Page 2

Approved: January 30, 2012

⌈	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: L1201050306SD WG387506-05
Report Date/Time: Saturday, January 28, 2012 19:33:05
Page 3

Approved: January 30, 2012

Method 6020 - Summary Report

Sample ID: QC Std 6

Sample Date/Time: Saturday, January 28, 2012 19:38:40
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: EDL

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	8971.524	-0.00				ug/L
	Be	9	13162.391	0.11	54.5260	2.286	4.192	ug/L
	Al	27	199105.277	1.58	51.3499	3.508	6.831	ug/L
>	Sc	45	124456.294	124456.29				ug/L
	Ti	49	40301.255	0.14	98.0697	1.351	1.377	ug/L
	V	51	357751.496	1.25	49.7872	1.213	2.436	ug/L
	Cr	52	318080.379	1.10	50.4479	1.414	2.802	ug/L
	Cr	53	39125.602	0.14	51.3049	1.787	3.484	ug/L
	Mn	55	496194.994	1.75	50.1465	0.588	1.173	ug/L
	Co	59	379063.772	1.33	50.3638	0.564	1.120	ug/L
	Ni	60	78072.150	0.27	50.3118	0.248	0.494	ug/L
	Cu	65	75516.375	0.27	50.7490	0.416	0.820	ug/L
	Zn	66	45263.043	0.16	50.5875	0.305	0.602	ug/L
>	Ge	72	283907.131	283907.13				ug/L
	As	75	47506.328	0.17	50.5584	0.625	1.237	ug/L
	Se	77	3562.095	0.01	49.8990	0.356	0.714	ug/L
	Se	82	4252.052	0.01	48.9799	1.129	2.305	ug/L
	Rb	85	1623.508	0.01				mg/L
	Y	89	176419.738	-25970.85				ug/L
	Rh	103	21.334	-7.67				ug/L
	Mo	98	224573.481	0.92	101.0500	3.345	3.310	ug/L
	Ag	107	227485.213	0.93	49.9832	0.528	1.057	ug/L
	Cd	114	51654.801	0.21	50.4451	3.507	6.953	ug/L
>	In	115	244955.851	244955.85				ug/L
	Sn	118	181098.592	0.74	50.4875	1.468	2.907	ug/L
	Sb	123	172830.057	0.71	50.9848	0.887	1.740	ug/L
	Ba	135	68951.198	0.19	51.2362	0.670	1.308	ug/L
	Ce	140	73.341	-0.00				ug/L
>	Tb	159	355433.049	355433.05				ug/L
	Ho	165	16.668	0.00				ug/L
	Tl	203	290548.272	1.01	50.5946	1.119	2.211	ug/L
	Tl	205	720579.112	2.50	50.9930	1.595	3.128	ug/L
	Pb	206	231726.466	0.80	49.8380	0.647	1.299	ug/L
	Pb	207	220395.357	0.76	50.1998	1.386	2.761	ug/L
	Pb	208	973401.957	3.37	49.8068	0.515	1.034	ug/L
	U	238	1379516.959	4.78	55.3501	1.713	3.096	ug/L
>	Bi	209	288632.811	288632.81				ug/L

Sample ID: QC Std 6
Report Date/Time: Saturday, January 28, 2012 19:40:53
Page 1

Approved: January 30, 2012
Erin D. Long

Na	23	17757917.857	141.71	5.0891	0.200	3.924	mg/L
Mg	24	11311851.548	90.98	5.1736	0.288	5.576	mg/L
K	39	25744103.038	203.51	4.9620	0.233	4.701	mg/L
Ca	43	54150.812	0.43	5.0141	0.238	4.753	mg/L
Fe	54	2239746.479	17.77	5.0074	0.211	4.210	mg/L
Fe	57	1003422.718	8.02	5.2192	0.309	5.922	mg/L
Sc-1	45	124456.294	124456.29				mg/L
Cl	35	27343.461	-9580.84				mg/L
Kr	83	50.001	-3.00				mg/L
Br	81	5601.216	525.00				mg/L
P	31	8184.691	589.90				mg/L
S	34	166209.485	-9390.97				mg/L
Sr	88	3777.902	3724.56				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	99.574				
Cr	52	100.896				
Cr	53					
Mn	55	100.293				
Co	59	100.728				
Ni	60	100.624				
Cu	65	101.498				
Zn	66	101.175				
Ge	72		90.989			
As	75	101.117				
Se	77					
Se	82	97.960				
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107	99.966				
Cd	114	100.890				
In	115		88.806			
Sn	118					
Sb	123	101.970				
Ba	135	102.472				
Ce	140					
Tb	159		90.651			
Ho	165					
Tl	203	101.189				
Tl	205					
Pb	206					
Pb	207					
Pb	208	99.614				
U	238	110.700				
Bi	209		90.458			

Sample ID: QC Std 6
Report Date/Time: Saturday, January 28, 2012 19:40:53
Page 2

Approved: January 30, 2012
Erin D. Long

⌈	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: Saturday, January 28, 2012 19:40:53
Page 3

Approved: January 30, 2012

Method 6020 - Summary Report

Sample ID: QC Std 7

Sample Date/Time: Saturday, January 28, 2012 19:46:17
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: EDL

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	9104.974	-0.00				ug/L
	Be	9	8.000	0.00	-0.0239	0.008	34.726	ug/L
	Al	27	1866.886	-0.00	-0.2207	0.123	55.750	ug/L
>	Sc	45	124693.472	124693.47				ug/L
	Ti	49	60.006	0.00	0.1486	0.021	14.372	ug/L
	V	51	1859.727	0.00	0.0082	0.010	125.357	ug/L
	Cr	52	5759.714	0.00	0.0081	0.015	189.405	ug/L
	Cr	53	550.073	-0.00	-0.2883	0.105	36.418	ug/L
	Mn	55	624.363	0.00	0.0251	0.004	14.142	ug/L
	Co	59	144.669	0.00	0.0024	0.001	60.479	ug/L
	Ni	60	73.334	-0.00	-0.0004	0.002	492.866	ug/L
	Cu	65	99.668	0.00	-0.0799	0.002	3.063	ug/L
	Zn	66	555.691	-0.00	0.0339	0.015	43.166	ug/L
>	Ge	72	276698.122	276698.12				ug/L
	As	75	-57.867	0.00	0.0683	0.016	22.759	ug/L
	Se	77	42.667	-0.00	-0.0071	0.187	2640.513	ug/L
	Se	82	9.589	0.00	0.1084	0.111	102.730	ug/L
	Rb	85	32.667	0.00				mg/L
	Y	89	174414.019	-27976.56				ug/L
	Rh	103	10.333	-18.67				ug/L
	Mo	98	90.714	0.00	0.0530	0.002	4.311	ug/L
	Ag	107	132.336	0.00	0.0194	0.001	3.273	ug/L
	Cd	114	8.393	0.00	0.0175	0.005	26.523	ug/L
>	In	115	236335.115	236335.11				ug/L
	Sn	118	498.682	-0.00	0.1438	0.003	2.024	ug/L
	Sb	123	77.579	0.00	0.0365	0.006	15.810	ug/L
	Ba	135	50.667	0.00	0.0224	0.004	17.967	ug/L
	Ce	140	23.336	-0.00				ug/L
>	Tb	159	342811.848	342811.85				ug/L
	Ho	165	20.002	0.00				ug/L
	Tl	203	104.335	0.00	0.0224	0.004	15.764	ug/L
	Tl	205	230.026	0.00	0.0282	0.001	3.887	ug/L
	Pb	206	239.339	0.00	0.0151	0.005	33.966	ug/L
	Pb	207	221.338	0.00	0.0217	0.004	16.880	ug/L
	Pb	208	1015.035	0.00	0.0179	0.003	18.855	ug/L
	U	238	368.012	0.00	0.0188	0.003	15.558	ug/L
>	Bi	209	282107.647	282107.65				ug/L

Sample ID: QC Std 7
Report Date/Time: Saturday, January 28, 2012 19:48:29
Page 1

Approved: January 30, 2012
Erin D. Long

Na	23	88297.512	-0.32	0.0128	0.001	8.679	mg/L
Mg	24	3564.465	0.03	-0.0028	0.000	9.952	mg/L
K	39	463838.472	0.20	-0.0023	0.004	177.856	mg/L
Ca	43	210.024	0.00	0.0006	0.003	391.803	mg/L
Fe	54	29573.369	-0.00	-0.0034	0.002	70.140	mg/L
Fe	57	7000.308	0.01	-0.0022	0.003	120.844	mg/L
Sc-1	45	124693.472	124693.47				mg/L
Cl	35	27184.958	-9739.34				mg/L
Kr	83	47.334	-5.67				mg/L
Br	81	4892.103	-184.11				mg/L
P	31	7707.575	112.78				mg/L
S	34	164957.491	-10642.96				mg/L
Sr	88	130.014	76.68				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		88.679			
As	75					
Se	77					
Se	82					
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107					
Cd	114					
In	115		85.680			
Sn	118					
Sb	123					
Ba	135					
Ce	140					
Tb	159		87.432			
Ho	165					
Tl	203					
Tl	205					
Pb	206					
Pb	207					
Pb	208					
U	238					
Bi	209		88.413			

Sample ID: QC Std 7
Report Date/Time: Saturday, January 28, 2012 19:48:29
Page 2

Approved: January 30, 2012
Erin D. Long

⌈	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: Saturday, January 28, 2012 19:48:29
Page 3

Approved: January 30, 2012

Method 6020 - Summary Report

Sample ID: QC Std 8

Sample Date/Time: Saturday, January 28, 2012 19:53:55
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: EDL

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	9722.368	0.01				ug/L
	Be	9	9.333	0.00	-0.0176	0.020	113.021	ug/L
	Al	27	2800.471	0.01	0.0507	0.050	99.111	ug/L
>	Sc	45	120499.599	120499.60				ug/L
	Ti	49	76.675	0.00	0.1920	0.127	66.234	ug/L
	V	51	4521.060	0.01	0.3954	0.024	6.011	ug/L
	Cr	52	10497.046	0.02	0.8074	0.029	3.613	ug/L
	Cr	53	1103.517	0.00	0.4854	0.170	35.114	ug/L
	Mn	55	5337.098	0.02	0.5187	0.032	6.158	ug/L
	Co	59	3161.965	0.01	0.4175	0.017	4.126	ug/L
	Ni	60	2525.741	0.01	1.6363	0.038	2.348	ug/L
	Cu	65	1273.443	0.00	0.7389	0.012	1.675	ug/L
	Zn	66	5836.436	0.02	6.2183	0.222	3.578	ug/L
>	Ge	72	274484.992	274484.99				ug/L
	As	75	227.479	0.00	0.3805	0.056	14.682	ug/L
	Se	77	74.667	0.00	0.4640	0.250	53.774	ug/L
	Se	82	25.603	0.00	0.2981	0.076	25.385	ug/L
	Rb	85	24.667	-0.00				mg/L
	Y	89	174353.238	-28037.35				ug/L
	Rh	103	4.333	-24.67				ug/L
	Mo	98	49.973	0.00	0.0343	0.006	17.422	ug/L
	Ag	107	1932.577	0.01	0.4347	0.011	2.616	ug/L
	Cd	114	237.439	0.00	0.2521	0.026	10.347	ug/L
>	In	115	233519.211	233519.21				ug/L
	Sn	118	159.468	-0.00	0.0464	0.003	7.421	ug/L
	Sb	123	1427.752	0.01	0.4544	0.022	4.768	ug/L
	Ba	135	1025.740	0.00	0.7784	0.015	1.956	ug/L
	Ce	140	10.001	-0.00				ug/L
>	Tb	159	340862.884	340862.88				ug/L
	Ho	165	10.001	-0.00				ug/L
	Tl	203	516.355	0.00	0.0947	0.004	3.887	ug/L
	Tl	205	1240.217	0.00	0.1003	0.009	9.377	ug/L
	Pb	206	2062.276	0.01	0.4116	0.008	1.831	ug/L
	Pb	207	1911.238	0.01	0.4108	0.010	2.434	ug/L
	Pb	208	8608.516	0.03	0.4107	0.006	1.379	ug/L
	U	238	11013.717	0.04	0.4507	0.004	0.780	ug/L
>	Bi	209	285234.190	285234.19				ug/L

Sample ID: QC Std 8
Report Date/Time: Saturday, January 28, 2012 19:56:09
Page 1

Approved: January 30, 2012
Erin D. Long

Na	23	34561.770	-0.75	-0.0022	0.000	20.795	mg/L
Mg	24	953.491	0.01	-0.0040	0.000	4.981	mg/L
K	39	438931.891	0.13	-0.0042	0.005	114.229	mg/L
Ca	43	166.685	0.00	-0.0029	0.002	60.070	mg/L
Fe	54	29048.262	0.00	-0.0022	0.005	221.390	mg/L
Fe	57	6079.497	0.00	-0.0060	0.002	25.250	mg/L
Sc-1	45	120499.599	120499.60				mg/L
Cl	35	25040.231	-11884.07				mg/L
Kr	83	45.667	-7.33				mg/L
Br	81	4527.899	-548.32				mg/L
P	31	6416.486	-1178.31				mg/L
S	34	155401.900	-20198.56				mg/L
Sr	88	83.342	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	98.853				
Cr	52	100.923				
Cr	53					
Mn	55	103.749				
Co	59	104.364				
Ni	60	102.271				
Cu	65	92.365				
Zn	66	99.493				
Ge	72		87.970			
As	75	95.133				
Se	77					
Se	82	74.513				
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107	108.675				
Cd	114	126.038				
In	115		84.659			
Sn	118					
Sb	123	113.601				
Ba	135	103.792				
Ce	140					
Tb	159		86.935			
Ho	165					
Tl	203	118.401				
Tl	205					
Pb	206					
Pb	207					
Pb	208	102.672				
U	238	112.680				
Bi	209		89.393			

Sample ID: QC Std 8
Report Date/Time: Saturday, January 28, 2012 19:56:09
Page 2

Approved: January 30, 2012
Erin D. Long

⌈	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 8	Cd	114	LLCCV IS OUT OF LIMITS (+/-20%)

Sample ID: QC Std 8
Report Date/Time: Saturday, January 28, 2012 19:56:09
Page 3

Approved: January 30, 2012

Method 6020 - Summary Report

Sample ID: PBW 89 WG387787-02

Sample Date/Time: Saturday, January 28, 2012 20:01:34
Number of Replicates: 3
Aliquot Volume (mL):
Diluted To Volume (mL):
Autosampler Position: 57
Method File: C:\elandata\Method\6020a.mth
Sample Description: 1

User ID: EDL

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	10139.504	0.00				ug/L
	Be	9	6.667	-0.00	-0.0311	0.005	16.337	ug/L
	Al	27	5468.478	0.02	0.6350	0.232	36.569	ug/L
>	Sc	45	133462.660	133462.66				ug/L
	Ti	49	70.007	0.00	0.1661	0.062	37.312	ug/L
	V	51	1834.535	-0.00	-0.0066	0.017	263.048	ug/L
	Cr	52	6343.811	0.00	0.0602	0.004	6.457	ug/L
	Cr	53	546.739	-0.00	-0.3233	0.035	10.875	ug/L
	Mn	55	694.036	0.00	0.0292	0.001	4.490	ug/L
	Co	59	76.668	0.00	-0.0073	0.001	16.358	ug/L
	Ni	60	78.001	-0.00	0.0006	0.006	955.786	ug/L
	Cu	65	130.669	0.00	-0.0623	0.006	10.150	ug/L
	Zn	66	670.367	-0.00	0.1337	0.032	24.083	ug/L
>	Ge	72	288908.276	288908.28				ug/L
	As	75	-119.159	-0.00	0.0067	0.022	333.832	ug/L
	Se	77	52.000	-0.00	0.0926	0.138	149.221	ug/L
	Se	82	0.577	-0.00	0.0002	0.069	42438.957	ug/L
	Rb	85	36.667	0.00				mg/L
	Y	89	192057.621	-10332.96				ug/L
	Rh	103	11.667	-17.33				ug/L
	Mo	98	110.792	0.00	0.0589	0.003	5.590	ug/L
	Ag	107	62.668	0.00	0.0026	0.003	112.338	ug/L
	Cd	114	3.192	0.00	0.0120	0.005	41.435	ug/L
>	In	115	253578.639	253578.64				ug/L
	Sn	118	120.801	-0.00	0.0323	0.001	1.981	ug/L
	Sb	123	135.371	0.00	0.0513	0.004	7.584	ug/L
	Ba	135	42.667	0.00	0.0141	0.004	31.039	ug/L
	Ce	140	50.005	-0.00				ug/L
>	Tb	159	367423.455	367423.45				ug/L
	Ho	165	26.669	0.00				ug/L
	Tl	203	29.667	0.00	0.0088	0.001	7.480	ug/L
	Tl	205	46.671	0.00	0.0148	0.000	2.626	ug/L
	Pb	206	194.671	0.00	0.0032	0.004	137.949	ug/L
	Pb	207	155.003	0.00	0.0045	0.003	68.610	ug/L
	Pb	208	738.354	0.00	0.0015	0.002	166.202	ug/L
	U	238	43.667	0.00	0.0054	0.000	6.181	ug/L
>	Bi	209	296727.818	296727.82				ug/L

Sample ID: PBW 89 WG387787-02
Report Date/Time: Saturday, January 28, 2012 20:03:47
Page 1

Approved: January 30, 2012
Erin D. Long

Na	23	42348.388	-0.71	-0.0011	0.001	106.982	mg/L
Mg	24	1296.904	0.01	-0.0039	0.000	5.131	mg/L
K	39	446248.239	-0.17	-0.0114	0.006	51.085	mg/L
Ca	43	276.699	0.00	0.0051	0.002	36.866	mg/L
Fe	54	64221.918	0.24	0.0656	0.007	10.946	mg/L
Fe	57	7040.351	0.00	-0.0045	0.002	35.111	mg/L
Sc-1	45	133462.660	133462.66				mg/L
Cl	35	31378.315	-5545.99				mg/L
Kr	83	48.667	-4.33				mg/L
Br	81	5445.112	368.90				mg/L
P	31	14689.990	7095.20				mg/L
S	34	170978.449	-4622.01				mg/L
Sr	88	276.699	223.36				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		92.592			
As	75					
Se	77					
Se	82					
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107					
Cd	114					
In	115		91.932			
Sn	118					
Sb	123					
Ba	135					
Ce	140					
Tb	159		93.710			
Ho	165					
Tl	203					
Tl	205					
Pb	206					
Pb	207					
Pb	208					
U	238					
Bi	209		92.995			

Sample ID: PBW 89 WG387787-02
Report Date/Time: Saturday, January 28, 2012 20:03:47
Page 2

Approved: January 30, 2012

⌈	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 89 WG387787-02
Report Date/Time: Saturday, January 28, 2012 20:03:47
Page 3

Approved: January 30, 2012

Method 6020 - Summary Report

Sample ID: LCSW 89 WG387787-03

Sample Date/Time: Saturday, January 28, 2012 20:09:22
Number of Replicates: 3
Aliquot Volume (mL):
Diluted To Volume (mL):
Autosampler Position: 58
Method File: C:\elandata\Method\6020a.mth
Sample Description: 1

User ID: EDL
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	9755.714	0.00				ug/L
	Be	9	6271.026	0.05	25.5473	1.024	4.009	ug/L
	Al	27	117844.139	0.92	29.6182	0.850	2.870	ug/L
>	Sc	45	126453.241	126453.24				ug/L
	Ti	49	90.010	0.00	0.2234	0.047	21.098	ug/L
	V	51	173442.464	0.62	24.6366	0.194	0.789	ug/L
	Cr	52	161252.234	0.56	25.7880	0.121	0.469	ug/L
	Cr	53	18362.042	0.06	24.1683	0.469	1.941	ug/L
	Mn	55	244324.205	0.88	25.3171	0.460	1.815	ug/L
	Co	59	184290.592	0.67	25.1179	0.341	1.359	ug/L
	Ni	60	37895.712	0.14	25.0346	0.547	2.184	ug/L
	Cu	65	37157.044	0.13	25.5510	0.642	2.513	ug/L
	Zn	66	20923.781	0.07	23.6733	0.164	0.692	ug/L
>	Ge	72	276693.829	276693.83				ug/L
	As	75	21415.649	0.08	23.4596	0.344	1.465	ug/L
	Se	77	1503.469	0.01	21.2580	0.818	3.849	ug/L
	Se	82	1792.852	0.01	21.1857	0.597	2.820	ug/L
	Rb	85	45.334	0.00				mg/L
	Y	89	178925.395	-23465.19				ug/L
	Rh	103	23.000	-6.00				ug/L
	Mo	98	52.055	0.00	0.0346	0.008	22.985	ug/L
	Ag	107	112527.667	0.47	25.1969	0.522	2.071	ug/L
	Cd	114	23778.439	0.10	23.6705	0.804	3.398	ug/L
>	In	115	240271.589	240271.59				ug/L
	Sn	118	587.354	0.00	0.1668	0.010	5.925	ug/L
	Sb	123	81312.203	0.34	24.4679	0.765	3.128	ug/L
	Ba	135	33685.988	0.10	25.5854	0.908	3.551	ug/L
	Ce	140	100.011	-0.00				ug/L
>	Tb	159	347707.856	347707.86				ug/L
	Ho	165	20.002	0.00				ug/L
	Tl	203	143337.831	0.50	25.2747	0.850	3.362	ug/L
	Tl	205	357117.421	1.25	25.5740	0.718	2.808	ug/L
	Pb	206	120761.046	0.42	26.2732	0.148	0.564	ug/L
	Pb	207	105701.195	0.37	24.3571	0.487	1.999	ug/L
	Pb	208	491331.699	1.72	25.4344	0.324	1.273	ug/L
	U	238	674219.934	2.37	27.3878	0.565	2.062	ug/L
>	Bi	209	285117.486	285117.49				ug/L

Sample ID: LCSW 89 WG387787-03
Report Date/Time: Saturday, January 28, 2012 20:11:36
Page 1

Approved: January 30, 2012
Erin D. Long

	Na	23	96427.878	-0.27	0.0148	0.001	5.674	mg/L
	Mg	24	2970.830	0.02	-0.0031	0.000	3.665	mg/L
	K	39	428967.710	-0.13	-0.0103	0.003	27.151	mg/L
	Ca	43	443.390	0.00	0.0218	0.006	25.929	mg/L
	Fe	54	63364.261	0.26	0.0711	0.004	6.274	mg/L
	Fe	57	6189.584	0.00	-0.0069	0.002	23.742	mg/L
>	Sc-1	45	126453.241	126453.24				mg/L
	Cl	35	26735.486	-10188.82				mg/L
	Kr	83	42.334	-10.67				mg/L
	Br	81	4665.306	-410.91				mg/L
	P	31	13088.272	5493.48				mg/L
	S	34	151232.566	-24367.89				mg/L
	Sr	88	343.375	290.04				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		88.678			
	As	75					
	Se	77					
	Se	82					
	Rb	85					
	Y	89					
	Rh	103					
	Mo	98					
	Ag	107					
	Cd	114					
>	In	115		87.107			
	Sn	118					
	Sb	123					
	Ba	135					
	Ce	140					
>	Tb	159		88.681			
	Ho	165					
	Tl	203					
	Tl	205					
	Pb	206					
	Pb	207					
	Pb	208					
	U	238					
>	Bi	209		89.356			

Sample ID: LCSW 89 WG387787-03
Report Date/Time: Saturday, January 28, 2012 20:11:36
Page 2

Approved: January 30, 2012

⌈	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 89 WG387787-03
Report Date/Time: Saturday, January 28, 2012 20:11:36
Page 3

Approved: January 30, 2012

Method 6020 - Summary Report

Sample ID: L1201053601 WG387787-01

Sample Date/Time: Saturday, January 28, 2012 20:17:10
Number of Replicates: 3
Aliquot Volume (mL):
Diluted To Volume (mL):
Autosampler Position: 59
Method File: C:\elandata\Method\6020a.mth
Sample Description: 1

User ID: EDL
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	9789.149	-0.00				ug/L
	Be	9	5.333	-0.00	-0.0369	0.012	32.608	ug/L
	Al	27	27997.591	0.18	5.7287	0.453	7.914	ug/L
>	Sc	45	141020.616	141020.62				ug/L
	Ti	49	210.024	0.00	0.4923	0.068	13.795	ug/L
	V	51	19965.736	0.06	2.4450	0.047	1.923	ug/L
	Cr	52	15170.623	0.03	1.4258	0.054	3.810	ug/L
	Cr	53	1707.013	0.00	1.1670	0.062	5.344	ug/L
	Mn	55	8738.670	0.03	0.8156	0.005	0.617	ug/L
	Co	59	301.342	0.00	0.0214	0.003	11.689	ug/L
	Ni	60	711.038	0.00	0.3945	0.032	8.199	ug/L
	Cu	65	294.008	0.00	0.0431	0.014	32.121	ug/L
	Zn	66	2778.158	0.01	2.4292	0.041	1.701	ug/L
>	Ge	72	293352.455	293352.46				ug/L
	As	75	403.725	0.00	0.5455	0.041	7.580	ug/L
	Se	77	97.334	0.00	0.7044	0.063	8.991	ug/L
	Se	82	50.233	0.00	0.5554	0.133	23.963	ug/L
	Rb	85	9956.715	0.03				mg/L
	Y	89	193943.633	-8446.95				ug/L
	Rh	103	41.334	12.33				ug/L
	Mo	98	3559.957	0.01	1.5707	0.055	3.476	ug/L
	Ag	107	513.354	0.00	0.0992	0.003	2.657	ug/L
	Cd	114	17.886	0.00	0.0261	0.004	14.381	ug/L
>	In	115	251457.180	251457.18				ug/L
	Sn	118	375.075	-0.00	0.1017	0.004	3.985	ug/L
	Sb	123	268.625	0.00	0.0899	0.001	1.634	ug/L
	Ba	135	63048.727	0.17	45.2446	0.958	2.116	ug/L
	Ce	140	350.043	0.00				ug/L
>	Tb	159	368109.794	368109.79				ug/L
	Ho	165	10.001	-0.00				ug/L
	Tl	203	65.334	0.00	0.0146	0.002	10.514	ug/L
	Tl	205	163.351	0.00	0.0226	0.002	10.298	ug/L
	Pb	206	387.680	0.00	0.0420	0.003	7.846	ug/L
	Pb	207	324.676	0.00	0.0407	0.006	13.927	ug/L
	Pb	208	1534.071	0.00	0.0396	0.001	2.447	ug/L
	U	238	7088.421	0.02	0.2748	0.010	3.575	ug/L
>	Bi	209	302757.893	302757.89				ug/L

Sample ID: L1201053601 WG387787-01
Report Date/Time: Saturday, January 28, 2012 20:19:22
Page 1

Approved: January 30, 2012
Erin D. Long

Na	23	28013796.886	197.79	7.0930	0.138	1.949	mg/L
Mg	24	5764065.689	40.91	2.3242	0.051	2.188	mg/L
K	39	3944121.001	24.51	0.5913	0.034	5.671	mg/L
Ca	43	148379.567	1.05	12.1548	0.304	2.503	mg/L
Fe	54	65600.356	0.23	0.0607	0.003	4.576	mg/L
Fe	57	14176.838	0.05	0.0268	0.005	18.359	mg/L
Sc-1	45	141020.616	141020.62				mg/L
Cl	35	142617.598	105693.30				mg/L
Kr	83	50.001	-3.00				mg/L
Br	81	19768.790	14692.57				mg/L
P	31	17085.878	9491.08				mg/L
S	34	293421.498	117821.04				mg/L
Sr	88	1131505.016	1131451.68				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		94.017			
As	75					
Se	77					
Se	82					
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107					
Cd	114					
In	115		91.163			
Sn	118					
Sb	123					
Ba	135					
Ce	140					
Tb	159		93.885			
Ho	165					
Tl	203					
Tl	205					
Pb	206					
Pb	207					
Pb	208					
U	238					
Bi	209		94.885			

Sample ID: L1201053601 WG387787-01
Report Date/Time: Saturday, January 28, 2012 20:19:22
Page 2

Approved: January 30, 2012
Erin D. Long

⌈	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: L1201053601 WG387787-01
Report Date/Time: Saturday, January 28, 2012 20:19:22
Page 3

Approved: January 30, 2012

Method 6020 - Summary Report

Sample ID: L1201053601S WG387787-04

Sample Date/Time: Saturday, January 28, 2012 20:24:56
Number of Replicates: 3
Aliquot Volume (mL):
Diluted To Volume (mL):
Autosampler Position: 60
Method File: C:\elandata\Method\6020a.mth
Sample Description: 1

User ID: EDL
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	10540.017	0.01				ug/L
	Be	9	6679.346	0.05	25.6992	0.295	1.148	ug/L
	Al	27	119720.559	0.88	28.4329	1.291	4.540	ug/L
>	Sc	45	133732.093	133732.09				ug/L
	Ti	49	153.350	0.00	0.3925	0.205	52.191	ug/L
	V	51	187175.834	0.69	27.2976	0.895	3.280	ug/L
	Cr	52	161108.737	0.58	26.4551	0.860	3.251	ug/L
	Cr	53	18950.082	0.07	25.6457	0.317	1.235	ug/L
	Mn	55	239145.303	0.89	25.4269	0.860	3.384	ug/L
	Co	59	177518.789	0.66	24.8162	0.551	2.222	ug/L
	Ni	60	37438.953	0.14	25.3750	0.395	1.557	ug/L
	Cu	65	36499.798	0.14	25.7478	0.470	1.825	ug/L
	Zn	66	24463.778	0.09	28.5132	0.299	1.048	ug/L
>	Ge	72	269739.685	269739.69				ug/L
	As	75	21666.989	0.08	24.3416	0.233	0.956	ug/L
	Se	77	1555.479	0.01	22.5972	0.466	2.064	ug/L
	Se	82	1831.853	0.01	22.2041	0.717	3.228	ug/L
	Rb	85	9849.918	0.04				mg/L
	Y	89	177778.570	-24612.01				ug/L
	Rh	103	51.334	22.33				ug/L
	Mo	98	3345.198	0.01	1.5494	0.030	1.944	ug/L
	Ag	107	108087.508	0.45	24.2768	0.673	2.772	ug/L
	Cd	114	24601.813	0.10	24.5468	0.389	1.585	ug/L
>	In	115	239610.101	239610.10				ug/L
	Sn	118	282.271	-0.00	0.0803	0.005	5.836	ug/L
	Sb	123	81056.756	0.34	24.4630	0.945	3.864	ug/L
	Ba	135	94129.825	0.27	70.4934	2.242	3.180	ug/L
	Ce	140	176.686	0.00				ug/L
>	Tb	159	352789.520	352789.52				ug/L
	Ho	165	23.336	0.00				ug/L
	Tl	203	147309.753	0.49	24.7644	0.414	1.673	ug/L
	Tl	205	363435.064	1.22	24.8374	0.793	3.193	ug/L
	Pb	206	125113.729	0.42	25.9673	0.840	3.235	ug/L
	Pb	207	111178.121	0.37	24.4364	0.887	3.631	ug/L
	Pb	208	510113.462	1.70	25.1861	0.497	1.973	ug/L
	U	238	734486.127	2.46	28.4550	0.473	1.662	ug/L
>	Bi	209	298931.057	298931.06				ug/L

Sample ID: L1201053601S WG387787-04
Report Date/Time: Saturday, January 28, 2012 20:27:09
Page 1

Approved: January 30, 2012
Erin D. Long

Na	23	28192367.178	209.74	7.5204	0.067	0.893	mg/L
Mg	24	5738567.693	42.91	2.4378	0.001	0.027	mg/L
K	39	3802029.883	24.93	0.6015	0.025	4.164	mg/L
Ca	43	143557.197	1.07	12.3954	0.390	3.145	mg/L
Fe	54	63076.041	0.23	0.0628	0.007	11.222	mg/L
Fe	57	12059.956	0.04	0.0199	0.004	19.891	mg/L
Sc-1	45	133732.093	133732.09				mg/L
Cl	35	131367.444	94443.14				mg/L
Kr	83	43.334	-9.67				mg/L
Br	81	19097.864	14021.65				mg/L
P	31	15039.576	7444.78				mg/L
S	34	268784.933	93184.48				mg/L
Sr	88	1076201.692	1076148.35				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		86.449			
As	75					
Se	77					
Se	82					
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107					
Cd	114					
In	115		86.868			
Sn	118					
Sb	123					
Ba	135					
Ce	140					
Tb	159		89.977			
Ho	165					
Tl	203					
Tl	205					
Pb	206					
Pb	207					
Pb	208					
U	238					
Bi	209		93.685			

Sample ID: L1201053601S WG387787-04
Report Date/Time: Saturday, January 28, 2012 20:27:09
Page 2

Approved: January 30, 2012

⌈	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: L1201053601S WG387787-04
Report Date/Time: Saturday, January 28, 2012 20:27:09
Page 3

Approved: January 30, 2012

Method 6020 - Summary Report

Sample ID: L1201053601SD WG387787-05

Sample Date/Time: Saturday, January 28, 2012 20:32:43
Number of Replicates: 3
Aliquot Volume (mL):
Diluted To Volume (mL):
Autosampler Position: 61
Method File: C:\elandata\Method\6020a.mth
Sample Description: 1

User ID: EDL
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	9755.711	-0.00				ug/L
	Be	9	6558.583	0.05	25.3445	2.885	11.385	ug/L
	Al	27	118893.930	0.88	28.3312	3.551	12.534	ug/L
>	Sc	45	133938.476	133938.48				ug/L
	Ti	49	236.694	0.00	0.6057	0.054	8.890	ug/L
	V	51	188365.055	0.69	27.5146	0.786	2.855	ug/L
	Cr	52	165809.662	0.60	27.2839	0.339	1.243	ug/L
	Cr	53	19972.589	0.07	27.1107	0.805	2.969	ug/L
	Mn	55	245243.169	0.91	26.0974	0.419	1.606	ug/L
	Co	59	175534.353	0.65	24.5679	0.361	1.471	ug/L
	Ni	60	37526.385	0.14	25.4570	0.442	1.737	ug/L
	Cu	65	36033.444	0.13	25.4424	0.319	1.252	ug/L
	Zn	66	21787.670	0.08	25.3594	0.541	2.133	ug/L
>	Ge	72	269419.145	269419.15				ug/L
	As	75	21928.032	0.08	24.6592	0.369	1.496	ug/L
	Se	77	1544.810	0.01	22.4628	1.384	6.162	ug/L
	Se	82	1871.509	0.01	22.7107	0.996	4.388	ug/L
	Rb	85	9614.643	0.04				mg/L
	Y	89	176443.930	-25946.65				ug/L
	Rh	103	43.334	14.33				ug/L
	Mo	98	3473.106	0.01	1.6463	0.047	2.839	ug/L
	Ag	107	107976.802	0.46	24.8308	0.380	1.530	ug/L
	Cd	114	24202.942	0.10	24.7342	0.730	2.953	ug/L
>	In	115	234015.092	234015.09				ug/L
	Sn	118	260.137	-0.00	0.0757	0.003	3.303	ug/L
	Sb	123	82028.006	0.35	25.3373	0.528	2.082	ug/L
	Ba	135	95083.999	0.27	70.9775	0.217	0.306	ug/L
	Ce	140	256.697	0.00				ug/L
>	Tb	159	353876.292	353876.29				ug/L
	Ho	165	10.001	-0.00				ug/L
	Tl	203	149601.057	0.50	25.1620	0.294	1.169	ug/L
	Tl	205	372406.985	1.25	25.4610	0.348	1.365	ug/L
	Pb	206	128016.103	0.43	26.5833	0.572	2.151	ug/L
	Pb	207	111331.590	0.37	24.4816	0.619	2.528	ug/L
	Pb	208	518246.180	1.73	25.6031	0.543	2.121	ug/L
	U	238	739241.764	2.47	28.6585	0.779	2.717	ug/L
>	Bi	209	298772.957	298772.96				ug/L

Sample ID: L1201053601SD WG387787-05
Report Date/Time: Saturday, January 28, 2012 20:34:55
Page 1

Approved: January 30, 2012
Erin D. Long

Na	23	26942375.132	201.25	7.2170	0.800	11.082	mg/L
Mg	24	5564588.572	41.78	2.3739	0.273	11.494	mg/L
K	39	3723926.117	24.39	0.5884	0.055	9.421	mg/L
Ca	43	143767.136	1.08	12.4301	0.860	6.922	mg/L
Fe	54	58985.943	0.20	0.0543	0.013	23.192	mg/L
Fe	57	11929.736	0.04	0.0195	0.007	33.948	mg/L
Sc-1	45	133938.476	133938.48				mg/L
Cl	35	135381.517	98457.22				mg/L
Kr	83	45.667	-7.33				mg/L
Br	81	18919.469	13843.25				mg/L
P	31	13105.055	5510.26				mg/L
S	34	277885.500	102285.04				mg/L
Sr	88	1089194.906	1089141.57				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		86.346			
As	75					
Se	77					
Se	82					
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107					
Cd	114					
In	115		84.839			
Sn	118					
Sb	123					
Ba	135					
Ce	140					
Tb	159		90.254			
Ho	165					
Tl	203					
Tl	205					
Pb	206					
Pb	207					
Pb	208					
U	238					
Bi	209		93.636			

Sample ID: L1201053601SD WG387787-05
Report Date/Time: Saturday, January 28, 2012 20:34:55
Page 2

Approved: January 30, 2012

⌈	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: L1201053601SD WG387787-05
Report Date/Time: Saturday, January 28, 2012 20:34:55
Page 3

Approved: January 30, 2012

Method 6020 - Summary Report

Sample ID: L1201053602

Sample Date/Time: Saturday, January 28, 2012 20:40:29
Number of Replicates: 3
Aliquot Volume (mL):
Diluted To Volume (mL):
Autosampler Position: 62
Method File: C:\elandata\Method\6020a.mth
Sample Description: 1

User ID: EDL

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	10172.903	0.00				ug/L
	Be	9	4.000	-0.00	-0.0416	0.016	38.271	ug/L
	Al	27	13277.473	0.08	2.4933	0.690	27.673	ug/L
>	Sc	45	135731.842	135731.84				ug/L
	Ti	49	430.054	0.00	1.0980	0.238	21.704	ug/L
	V	51	7740.815	0.02	0.8753	0.012	1.391	ug/L
	Cr	52	9331.649	0.01	0.6322	0.019	3.081	ug/L
	Cr	53	1860.394	0.00	1.5650	0.061	3.926	ug/L
	Mn	55	7011.019	0.02	0.7030	0.019	2.732	ug/L
	Co	59	551.357	0.00	0.0595	0.001	2.373	ug/L
	Ni	60	1825.885	0.01	1.1843	0.023	1.909	ug/L
	Cu	65	364.345	0.00	0.1082	0.020	18.518	ug/L
	Zn	66	2074.279	0.01	1.8460	0.014	0.764	ug/L
>	Ge	72	271093.739	271093.74				ug/L
	As	75	1983.516	0.01	2.3357	0.101	4.341	ug/L
	Se	77	134.668	0.00	1.3686	0.045	3.308	ug/L
	Se	82	784.060	0.00	9.4519	0.448	4.743	ug/L
	Rb	85	5487.530	0.02				mg/L
	Y	89	178210.971	-24179.61				ug/L
	Rh	103	69.668	40.67				ug/L
	Mo	98	495.659	0.00	0.2436	0.009	3.770	ug/L
	Ag	107	93.335	0.00	0.0107	0.001	7.972	ug/L
	Cd	114	13.723	0.00	0.0227	0.011	50.150	ug/L
>	In	115	234635.859	234635.86				ug/L
	Sn	118	1637.361	0.00	0.4763	0.017	3.598	ug/L
	Sb	123	215.121	0.00	0.0789	0.005	6.761	ug/L
	Ba	135	28487.916	0.08	20.8499	0.274	1.316	ug/L
	Ce	140	196.689	0.00				ug/L
>	Tb	159	360704.481	360704.48				ug/L
	Ho	165	36.670	0.00				ug/L
	Tl	203	66.334	0.00	0.0149	0.001	6.484	ug/L
	Tl	205	160.018	0.00	0.0225	0.004	18.650	ug/L
	Pb	206	316.009	0.00	0.0281	0.007	25.621	ug/L
	Pb	207	276.341	0.00	0.0308	0.003	9.880	ug/L
	Pb	208	1261.050	0.00	0.0269	0.002	7.833	ug/L
	U	238	17942.810	0.06	0.6971	0.009	1.280	ug/L
>	Bi	209	299622.928	299622.93				ug/L

Sample ID: L1201053602
Report Date/Time: Saturday, January 28, 2012 20:42:41
Page 1

Approved: January 30, 2012
Erin D. Long

⌈	Na	23	63005810.234	464.74	16.6338	1.587	9.544	mg/L
|	Mg	24	16029789.086	118.54	6.7426	0.751	11.141	mg/L
|	K	39	6330377.770	43.24	1.0486	0.085	8.151	mg/L
|	Ca	43	415078.460	3.06	35.3766	1.517	4.289	mg/L
|	Fe	54	84103.801	0.38	0.1047	0.011	10.119	mg/L
|	Fe	57	32787.975	0.19	0.1193	0.022	18.077	mg/L
⌊>	Sc-1	45	135731.842	135731.84				mg/L
	Cl	35	586518.610	549594.31				mg/L
	Kr	83	37.000	-16.00				mg/L
	Br	81	588244.765	583168.55				mg/L
	P	31	13186.427	5591.63				mg/L
	S	34	562842.820	387242.36				mg/L
	Sr	88	2151856.300	2151802.96				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		86.883			
|	As	75					
|	Se	77					
|	Se	82					
⌊	Rb	85					
	Y	89					
	Rh	103					
⌈	Mo	98					
|	Ag	107					
|	Cd	114					
|>	In	115		85.064			
|	Sn	118					
⌊	Sb	123					
⌈	Ba	135					
|	Ce	140					
⌊>	Tb	159		91.996			
⌈	Ho	165					
|	Tl	203					
|	Tl	205					
|	Pb	206					
|	Pb	207					
|	Pb	208					
|	U	238					
⌊>	Bi	209		93.902			

Sample ID: L1201053602
Report Date/Time: Saturday, January 28, 2012 20:42:41
Page 2

Approved: January 30, 2012
Erin D. Long

⌈	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: L1201053602
Report Date/Time: Saturday, January 28, 2012 20:42:41
Page 3

Approved: January 30, 2012

Method 6020 - Summary Report

Sample ID: L1201053603

Sample Date/Time: Saturday, January 28, 2012 20:48:15
Number of Replicates: 3
Aliquot Volume (mL):
Diluted To Volume (mL):
Autosampler Position: 63
Method File: C:\elandata\Method\6020a.mth
Sample Description: 1

User ID: EDL

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	10156.196	0.00				ug/L
	Be	9	9.333	0.00	-0.0203	0.013	63.284	ug/L
	Al	27	10356.436	0.06	1.8434	0.060	3.242	ug/L
>	Sc	45	132123.745	132123.74				ug/L
	Ti	49	386.714	0.00	0.9564	0.070	7.284	ug/L
	V	51	8365.514	0.02	0.9322	0.074	7.953	ug/L
	Cr	52	9525.542	0.01	0.6193	0.053	8.486	ug/L
	Cr	53	1880.401	0.00	1.5155	0.197	12.975	ug/L
	Mn	55	8618.207	0.03	0.8476	0.026	3.114	ug/L
	Co	59	571.359	0.00	0.0600	0.001	2.258	ug/L
	Ni	60	1976.921	0.01	1.2487	0.017	1.369	ug/L
	Cu	65	452.350	0.00	0.1614	0.008	4.898	ug/L
	Zn	66	12297.860	0.04	13.5450	0.080	0.594	ug/L
>	Ge	72	278972.676	278972.68				ug/L
	As	75	1330.771	0.01	1.5686	0.154	9.792	ug/L
	Se	77	144.001	0.00	1.4481	0.160	11.036	ug/L
	Se	82	556.941	0.00	6.5228	0.402	6.161	ug/L
	Rb	85	5682.660	0.02				mg/L
	Y	89	177985.001	-24405.58				ug/L
	Rh	103	87.335	58.33				ug/L
	Mo	98	538.593	0.00	0.2608	0.007	2.698	ug/L
	Ag	107	85.668	0.00	0.0087	0.003	33.861	ug/L
	Cd	114	5.160	0.00	0.0142	0.004	25.642	ug/L
>	In	115	237353.610	237353.61				ug/L
	Sn	118	252.271	-0.00	0.0724	0.006	8.287	ug/L
	Sb	123	140.413	0.00	0.0555	0.001	2.594	ug/L
	Ba	135	29774.734	0.08	21.8376	0.407	1.865	ug/L
	Ce	140	116.679	-0.00				ug/L
>	Tb	159	360080.273	360080.27				ug/L
	Ho	165	23.336	0.00				ug/L
	Tl	203	60.667	0.00	0.0139	0.002	10.813	ug/L
	Tl	205	126.680	0.00	0.0202	0.000	2.355	ug/L
	Pb	206	322.009	0.00	0.0291	0.002	5.502	ug/L
	Pb	207	269.007	0.00	0.0290	0.006	19.725	ug/L
	Pb	208	1251.383	0.00	0.0263	0.000	0.710	ug/L
	U	238	18884.904	0.06	0.7316	0.018	2.481	ug/L
>	Bi	209	300379.107	300379.11				ug/L

Sample ID: L1201053603
Report Date/Time: Saturday, January 28, 2012 20:50:28
Page 1

Approved: January 30, 2012
Erin D. Long

Na	23	64501142.333	487.84	17.4594	0.922	5.280	mg/L
Mg	24	16797325.301	127.23	7.2368	0.235	3.252	mg/L
K	39	6743223.312	47.52	1.1532	0.023	1.988	mg/L
Ca	43	423430.955	3.20	37.0338	0.869	2.346	mg/L
Fe	54	83447.926	0.39	0.1081	0.010	9.247	mg/L
Fe	57	33025.284	0.20	0.1242	0.008	6.725	mg/L
Sc-1	45	132123.745	132123.74				mg/L
Cl	35	600315.783	563391.48				mg/L
Kr	83	48.334	-4.67				mg/L
Br	81	405465.693	400389.48				mg/L
P	31	13418.811	5824.02				mg/L
S	34	582677.370	407076.91				mg/L
Sr	88	2281862.526	2281809.19				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		89.408			
As	75					
Se	77					
Se	82					
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107					
Cd	114					
In	115		86.049			
Sn	118					
Sb	123					
Ba	135					
Ce	140					
Tb	159		91.837			
Ho	165					
Tl	203					
Tl	205					
Pb	206					
Pb	207					
Pb	208					
U	238					
Bi	209		94.139			

Sample ID: L1201053603
Report Date/Time: Saturday, January 28, 2012 20:50:28
Page 2

Approved: January 30, 2012

⌈	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: L1201053603
Report Date/Time: Saturday, January 28, 2012 20:50:28
Page 3

Approved: January 30, 2012

Method 6020 - Summary Report

Sample ID: L1201053902

Sample Date/Time: Saturday, January 28, 2012 20:56:02
Number of Replicates: 3
Aliquot Volume (mL):
Diluted To Volume (mL):
Autosampler Position: 64
Method File: C:\elandata\Method\6020a.mth
Sample Description: 1

User ID: EDL

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	8904.768	-0.00				ug/L
	Be	9	10.000	0.00	-0.0142	0.010	68.572	ug/L
	Al	27	5385.080	0.03	0.7378	0.096	13.010	ug/L
>	Sc	45	121243.412	121243.41				ug/L
	Ti	49	130.014	0.00	0.3439	0.070	20.219	ug/L
	V	51	3080.285	0.01	0.2108	0.007	3.549	ug/L
	Cr	52	8084.334	0.01	0.4767	0.016	3.306	ug/L
	Cr	53	850.128	0.00	0.1975	0.048	24.510	ug/L
	Mn	55	1501571.876	5.76	165.4889	1.832	1.107	ug/L
	Co	59	530.689	0.00	0.0596	0.003	4.233	ug/L
	Ni	60	1700.190	0.01	1.1465	0.019	1.697	ug/L
	Cu	65	20263.149	0.08	14.7375	0.387	2.629	ug/L
	Zn	66	14641.665	0.05	17.4398	0.171	0.982	ug/L
>	Ge	72	260477.892	260477.89				ug/L
	As	75	8401.470	0.03	9.8517	0.083	0.838	ug/L
	Se	77	58.000	0.00	0.2652	0.303	114.265	ug/L
	Se	82	96.225	0.00	1.2023	0.251	20.912	ug/L
	Rb	85	1603.170	0.01				mg/L
	Y	89	166632.784	-35757.80				ug/L
	Rh	103	74.334	45.33				ug/L
	Mo	98	893.070	0.00	0.4461	0.023	5.128	ug/L
	Ag	107	111.335	0.00	0.0157	0.002	10.887	ug/L
	Cd	114	7.145	0.00	0.0164	0.008	50.861	ug/L
>	In	115	226130.265	226130.26				ug/L
	Sn	118	222.403	-0.00	0.0670	0.002	3.499	ug/L
	Sb	123	164.831	0.00	0.0654	0.003	3.836	ug/L
	Ba	135	148925.451	0.45	118.5928	1.706	1.438	ug/L
	Ce	140	106.678	-0.00				ug/L
>	Tb	159	331783.555	331783.55				ug/L
	Ho	165	3.334	-0.00				ug/L
	Tl	203	34.334	0.00	0.0102	0.001	5.894	ug/L
	Tl	205	80.008	0.00	0.0177	0.002	13.305	ug/L
	Pb	206	8922.865	0.03	2.0408	0.049	2.397	ug/L
	Pb	207	7280.253	0.03	1.7654	0.057	3.221	ug/L
	Pb	208	34679.429	0.13	1.8863	0.023	1.207	ug/L
	U	238	482.352	0.00	0.0246	0.001	4.879	ug/L
>	Bi	209	266721.175	266721.18				ug/L

Sample ID: L1201053902
Report Date/Time: Saturday, January 28, 2012 20:58:15
Page 1

Approved: January 30, 2012
Erin D. Long

Na	23	55838153.983	459.79	16.4567	0.756	4.595	mg/L
Mg	24	12398418.884	102.30	5.8183	0.207	3.550	mg/L
K	39	3985013.579	29.40	0.7106	0.044	6.150	mg/L
Ca	43	395032.805	3.26	37.6697	1.116	2.964	mg/L
Fe	54	601522.432	4.73	1.3306	0.064	4.790	mg/L
Fe	57	239467.776	1.93	1.2506	0.096	7.665	mg/L
> Sc-1	45	121243.412	121243.41				mg/L
Cl	35	210866.202	173941.90				mg/L
Kr	83	51.001	-2.00				mg/L
Br	81	83623.507	78547.29				mg/L
P	31	14770.444	7175.65				mg/L
S	34	165108.995	-10491.46				mg/L
Sr	88	2204293.877	2204240.54				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		83.481			
	As	75					
	Se	77					
	Se	82					
	Rb	85					
	Y	89					
	Rh	103					
	Mo	98					
	Ag	107					
	Cd	114					
>	In	115		81.981			
	Sn	118					
	Sb	123					
	Ba	135					
	Ce	140					
>	Tb	159		84.620			
	Ho	165					
	Tl	203					
	Tl	205					
	Pb	206					
	Pb	207					
	Pb	208					
	U	238					
>	Bi	209		83.591			

Sample ID: L1201053902
Report Date/Time: Saturday, January 28, 2012 20:58:15
Page 2

Approved: January 30, 2012
Erin D. Long

⌈	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	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1201053902
Report Date/Time: Saturday, January 28, 2012 20:58:15
Page 3

Approved: January 30, 2012

Method 6020 - Summary Report

Sample ID: L1201053902PS WG387809-03

Sample Date/Time: Saturday, January 28, 2012 21:03:49
Number of Replicates: 3
Aliquot Volume (mL):
Diluted To Volume (mL):
Autosampler Position: 65
Method File: C:\elandata\Method\6020a.mth
Sample Description: 1

User ID: EDL
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	9555.567	0.00				ug/L
	Be	9	11962.581	0.09	48.4181	4.138	8.546	ug/L
	Al	27	187758.789	1.46	47.2721	4.368	9.240	ug/L
>	Sc	45	127826.517	127826.52				ug/L
	Ti	49	193.355	0.00	0.5024	0.070	14.018	ug/L
	V	51	332394.967	1.24	49.4524	1.247	2.521	ug/L
	Cr	52	296924.918	1.10	50.3313	0.575	1.143	ug/L
	Cr	53	36145.167	0.13	50.6515	1.239	2.446	ug/L
	Mn	55	1946837.497	7.33	210.4377	5.436	2.583	ug/L
	Co	59	340527.946	1.28	48.3623	0.522	1.080	ug/L
	Ni	60	70955.849	0.27	48.8764	0.715	1.463	ug/L
	Cu	65	87155.337	0.33	62.6307	0.271	0.433	ug/L
	Zn	66	50857.594	0.19	60.8691	0.551	0.905	ug/L
>	Ge	72	265632.556	265632.56				ug/L
	As	75	50048.545	0.19	56.9164	0.632	1.111	ug/L
	Se	77	2965.194	0.01	44.3202	0.891	2.010	ug/L
	Se	82	3523.039	0.01	43.3794	1.067	2.461	ug/L
	Rb	85	1643.845	0.01				mg/L
	Y	89	169013.791	-33376.79				ug/L
	Rh	103	85.001	56.00				ug/L
	Mo	98	930.148	0.00	0.4626	0.022	4.853	ug/L
	Ag	107	204001.222	0.90	48.3861	0.249	0.515	ug/L
	Cd	114	45690.590	0.20	48.1512	1.298	2.695	ug/L
>	In	115	226917.663	226917.66				ug/L
	Sn	118	262.804	-0.00	0.0789	0.003	3.178	ug/L
	Sb	123	158562.618	0.70	50.5058	1.480	2.930	ug/L
	Ba	135	213489.656	0.64	170.0577	1.591	0.936	ug/L
	Ce	140	116.679	-0.00				ug/L
>	Tb	159	331674.197	331674.20				ug/L
	Ho	165	16.668	0.00				ug/L
	Tl	203	269424.652	1.01	50.9413	0.868	1.704	ug/L
	Tl	205	666221.572	2.51	51.1915	0.667	1.303	ug/L
	Pb	206	231050.807	0.87	53.9659	0.517	0.958	ug/L
	Pb	207	201237.333	0.76	49.7676	0.557	1.119	ug/L
	Pb	208	937174.719	3.52	52.0761	0.563	1.081	ug/L
	U	238	1277099.838	4.81	55.6413	1.051	1.889	ug/L
>	Bi	209	265759.463	265759.46				ug/L

Sample ID: L1201053902PS WG387809-03
Report Date/Time: Saturday, January 28, 2012 21:06:02
Page 1

Approved: January 30, 2012
Erin D. Long

⌈	Na	23	56867650.538	445.60	15.9497	1.276	7.999	mg/L
|	Mg	24	12477705.159	98.09	5.5785	0.543	9.729	mg/L
|	K	39	4033348.396	28.12	0.6794	0.044	6.459	mg/L
|	Ca	43	390434.615	3.06	35.3862	2.360	6.669	mg/L
|	Fe	54	588647.326	4.38	1.2308	0.058	4.676	mg/L
|	Fe	57	235408.961	1.80	1.1657	0.097	8.333	mg/L
⌊>	Sc-1	45	127826.517	127826.52				mg/L
	Cl	35	213549.070	176624.77				mg/L
	Kr	83	49.334	-3.67				mg/L
	Br	81	82149.915	77073.70				mg/L
	P	31	14448.544	6853.75				mg/L
	S	34	162466.716	-13133.74				mg/L
	Sr	88	2213222.876	2213169.54				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		85.133			
|	As	75					
|	Se	77					
|	Se	82					
⌊	Rb	85					
	Y	89					
	Rh	103					
⌈	Mo	98					
|	Ag	107					
|	Cd	114					
|>	In	115		82.266			
|	Sn	118					
⌊	Sb	123					
⌈	Ba	135					
|	Ce	140					
⌊>	Tb	159		84.592			
⌈	Ho	165					
|	Tl	203					
|	Tl	205					
|	Pb	206					
|	Pb	207					
|	Pb	208					
|	U	238					
⌊>	Bi	209		83.289			

Sample ID: L1201053902PS WG387809-03
Report Date/Time: Saturday, January 28, 2012 21:06:02
Page 2

Approved: January 30, 2012

⌈	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	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1201053902PS WG387809-03
Report Date/Time: Saturday, January 28, 2012 21:06:02
Page 3

Approved: January 30, 2012

Method 6020 - Summary Report

Sample ID: L1201053902SDL WG387809-04

Sample Date/Time: Saturday, January 28, 2012 21:11:37
Number of Replicates: 3
Aliquot Volume (mL):
Diluted To Volume (mL):
Autosampler Position: 66
Method File: C:\elandata\Method\6020a.mth
Sample Description: 5

User ID: EDL
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	10122.813	0.01				ug/L
	Be	9	10.667	0.00	-0.0127	0.007	57.518	ug/L
	Al	27	2417.020	0.00	-0.0745	0.100	134.277	ug/L
>	Sc	45	125100.551	125100.55				ug/L
	Ti	49	83.342	0.00	0.2049	0.033	16.092	ug/L
	V	51	2110.645	0.00	0.0413	0.003	7.898	ug/L
	Cr	52	6449.227	0.00	0.1129	0.016	13.961	ug/L
	Cr	53	586.746	-0.00	-0.2421	0.099	41.041	ug/L
	Mn	55	367774.750	1.32	37.7794	0.546	1.446	ug/L
	Co	59	175.337	0.00	0.0064	0.001	15.288	ug/L
	Ni	60	499.353	0.00	0.2787	0.020	7.034	ug/L
	Cu	65	5154.980	0.02	3.3846	0.009	0.255	ug/L
	Zn	66	4823.779	0.01	4.9392	0.216	4.373	ug/L
>	Ge	72	279164.438	279164.44				ug/L
	As	75	2000.351	0.01	2.2895	0.064	2.809	ug/L
	Se	77	59.334	-0.00	0.2268	0.125	54.894	ug/L
	Se	82	29.612	0.00	0.3401	0.051	14.847	ug/L
	Rb	85	418.348	0.00				mg/L
	Y	89	180536.574	-21854.01				ug/L
	Rh	103	29.667	0.67				ug/L
	Mo	98	244.093	0.00	0.1226	0.010	7.978	ug/L
	Ag	107	85.335	0.00	0.0084	0.003	36.172	ug/L
	Cd	114	1.571	-0.00	0.0106	0.002	17.423	ug/L
>	In	115	240196.267	240196.27				ug/L
	Sn	118	247.604	-0.00	0.0702	0.003	4.297	ug/L
	Sb	123	255.916	0.00	0.0897	0.012	13.509	ug/L
	Ba	135	36636.107	0.11	28.0335	0.568	2.025	ug/L
	Ce	140	36.670	-0.00				ug/L
>	Tb	159	345061.034	345061.03				ug/L
	Ho	165	6.667	-0.00				ug/L
	Tl	203	28.000	0.00	0.0088	0.001	16.973	ug/L
	Tl	205	83.342	0.00	0.0176	0.002	11.882	ug/L
	Pb	206	2249.326	0.01	0.4591	0.015	3.210	ug/L
	Pb	207	1890.567	0.01	0.4121	0.009	2.254	ug/L
	Pb	208	8857.611	0.03	0.4300	0.020	4.564	ug/L
	U	238	173.004	0.00	0.0108	0.000	3.651	ug/L
>	Bi	209	281356.472	281356.47				ug/L

Sample ID: L1201053902SDL WG387809-04
Report Date/Time: Saturday, January 28, 2012 21:13:49
Page 1

Approved: January 30, 2012
Erin D. Long

Na	23	13422711.555	106.33	3.8246	0.073	1.907	mg/L
Mg	24	3007293.893	24.05	1.3645	0.029	2.140	mg/L
K	39	1440391.688	8.00	0.1882	0.010	5.492	mg/L
Ca	43	95164.309	0.76	8.7754	0.313	3.568	mg/L
Fe	54	168863.409	1.11	0.3107	0.011	3.506	mg/L
Fe	57	63870.302	0.46	0.2942	0.014	4.633	mg/L
Sc-1	45	125100.551	125100.55				mg/L
Cl	35	71707.299	34783.00				mg/L
Kr	83	44.667	-8.33				mg/L
Br	81	25450.152	20373.94				mg/L
P	31	8801.326	1206.53				mg/L
S	34	164621.823	-10978.63				mg/L
Sr	88	611405.164	611351.83				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		89.470			
As	75					
Se	77					
Se	82					
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107					
Cd	114					
In	115		87.080			
Sn	118					
Sb	123					
Ba	135					
Ce	140					
Tb	159		88.006			
Ho	165					
Tl	203					
Tl	205					
Pb	206					
Pb	207					
Pb	208					
U	238					
Bi	209		88.177			

Sample ID: L1201053902SDL WG387809-04
Report Date/Time: Saturday, January 28, 2012 21:13:49
Page 2

Approved: January 30, 2012

⌈	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: L1201053902SDL WG387809-04
Report Date/Time: Saturday, January 28, 2012 21:13:49
Page 3

Approved: January 30, 2012

Method 6020 - Summary Report

Sample ID: QC Std 6

Sample Date/Time: Saturday, January 28, 2012 21:19:24
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: EDL

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	8504.348	-0.00				ug/L
	Be	9	12469.331	0.10	53.2616	1.990	3.736	ug/L
	Al	27	195927.710	1.61	52.1133	1.630	3.128	ug/L
>	Sc	45	120616.640	120616.64				ug/L
	Ti	49	39102.117	0.14	97.0720	2.875	2.962	ug/L
	V	51	343767.966	1.23	48.7990	1.004	2.057	ug/L
	Cr	52	307922.399	1.09	49.7977	0.657	1.319	ug/L
	Cr	53	36469.963	0.13	48.7214	0.811	1.665	ug/L
	Mn	55	473529.243	1.70	48.8134	0.725	1.485	ug/L
	Co	59	360895.924	1.30	48.8980	0.664	1.357	ug/L
	Ni	60	75819.114	0.27	49.8428	0.901	1.808	ug/L
	Cu	65	72913.019	0.26	49.9899	1.597	3.194	ug/L
	Zn	66	43604.553	0.15	49.7048	1.081	2.175	ug/L
>	Ge	72	278371.565	278371.57				ug/L
	As	75	45900.574	0.17	49.8226	0.354	0.710	ug/L
	Se	77	3379.352	0.01	48.2594	1.338	2.772	ug/L
	Se	82	4031.917	0.01	47.3570	0.638	1.348	ug/L
	Rb	85	1592.168	0.01				mg/L
	Y	89	172099.422	-30291.16				ug/L
	Rh	103	17.000	-12.00				ug/L
	Mo	98	215780.110	0.90	99.0701	1.540	1.554	ug/L
	Ag	107	213905.019	0.89	47.9618	0.481	1.004	ug/L
	Cd	114	49732.051	0.21	49.5393	1.841	3.716	ug/L
>	In	115	240021.948	240021.95				ug/L
	Sn	118	175462.403	0.73	49.9126	0.904	1.812	ug/L
	Sb	123	170163.077	0.71	51.2316	1.310	2.557	ug/L
	Ba	135	67195.834	0.20	51.6323	0.133	0.259	ug/L
	Ce	140	100.011	-0.00				ug/L
>	Tb	159	343755.593	343755.59				ug/L
	Ho	165	10.001	-0.00				ug/L
	Tl	203	273837.010	1.01	50.8161	0.338	0.666	ug/L
	Tl	205	680657.686	2.51	51.3368	1.221	2.377	ug/L
	Pb	206	220464.554	0.81	50.5348	1.056	2.091	ug/L
	Pb	207	205819.261	0.76	49.9569	0.383	0.767	ug/L
	Pb	208	918242.893	3.39	50.0774	0.464	0.927	ug/L
	U	238	1267180.490	4.68	54.1893	0.694	1.280	ug/L
>	Bi	209	270767.561	270767.56				ug/L

Sample ID: QC Std 6
Report Date/Time: Saturday, January 28, 2012 21:21:38
Page 1

Approved: January 30, 2012
Erin D. Long

Na	23	16847743.137	138.66	4.9799	0.203	4.066	mg/L
Mg	24	10745972.393	89.09	5.0663	0.200	3.952	mg/L
K	39	25047446.049	204.14	4.9774	0.026	0.529	mg/L
Ca	43	51550.800	0.43	4.9207	0.092	1.879	mg/L
Fe	54	2165074.712	17.71	4.9916	0.042	0.851	mg/L
Fe	57	960872.264	7.92	5.1508	0.231	4.477	mg/L
Sc-1	45	120616.640	120616.64				mg/L
Cl	35	25684.189	-11240.11				mg/L
Kr	83	52.667	-0.33				mg/L
Br	81	5561.856	485.64				mg/L
P	31	6346.433	-1248.36				mg/L
S	34	152710.751	-22889.70				mg/L
Sr	88	3717.868	3664.53				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	97.598				
Cr	52	99.595				
Cr	53					
Mn	55	97.627				
Co	59	97.796				
Ni	60	99.686				
Cu	65	99.980				
Zn	66	99.410				
Ge	72		89.215			
As	75	99.645				
Se	77					
Se	82	94.714				
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107	95.924				
Cd	114	99.079				
In	115		87.017			
Sn	118					
Sb	123	102.463				
Ba	135	103.265				
Ce	140					
Tb	159		87.673			
Ho	165					
Tl	203	101.632				
Tl	205					
Pb	206					
Pb	207					
Pb	208	100.155				
U	238	108.379				
Bi	209		84.859			

Sample ID: QC Std 6
Report Date/Time: Saturday, January 28, 2012 21:21:38
Page 2

Approved: January 30, 2012
Erin D. Long

⌈	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: Saturday, January 28, 2012 21:21:38
Page 3

Approved: January 30, 2012

Method 6020 - Summary Report

Sample ID: QC Std 7

Sample Date/Time: Saturday, January 28, 2012 21:27:01
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: EDL

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	9004.901	0.00				ug/L
	Be	9	10.667	0.00	-0.0112	0.030	269.897	ug/L
	Al	27	1666.838	-0.00	-0.2594	0.088	34.084	ug/L
>	Sc	45	121073.360	121073.36				ug/L
	Ti	49	83.342	0.00	0.1997	0.029	14.717	ug/L
	V	51	1932.016	0.00	0.0082	0.022	270.421	ug/L
	Cr	52	6113.304	0.00	0.0294	0.032	107.946	ug/L
	Cr	53	486.730	-0.00	-0.3980	0.157	39.434	ug/L
	Mn	55	739.374	0.00	0.0342	0.006	17.369	ug/L
	Co	59	161.003	0.00	0.0038	0.004	99.202	ug/L
	Ni	60	94.668	0.00	0.0115	0.001	13.003	ug/L
	Cu	65	122.335	0.00	-0.0674	0.004	5.663	ug/L
	Zn	66	569.692	-0.00	0.0257	0.008	29.354	ug/L
>	Ge	72	287224.764	287224.76				ug/L
	As	75	-82.241	0.00	0.0448	0.031	68.648	ug/L
	Se	77	36.000	-0.00	-0.1270	0.070	54.856	ug/L
	Se	82	5.907	-0.00	0.0606	0.070	115.807	ug/L
	Rb	85	25.334	-0.00				mg/L
	Y	89	181241.180	-21149.40				ug/L
	Rh	103	7.000	-22.00				ug/L
	Mo	98	92.453	0.00	0.0509	0.004	7.733	ug/L
	Ag	107	142.336	0.00	0.0195	0.002	11.847	ug/L
	Cd	114	23.336	0.00	0.0310	0.003	11.008	ug/L
>	In	115	253473.039	253473.04				ug/L
	Sn	118	553.618	-0.00	0.1489	0.003	2.125	ug/L
	Sb	123	112.368	0.00	0.0448	0.000	0.966	ug/L
	Ba	135	58.334	0.00	0.0271	0.003	11.560	ug/L
	Ce	140	26.669	-0.00				ug/L
>	Tb	159	352908.077	352908.08				ug/L
	Ho	165	3.334	-0.00				ug/L
	Tl	203	129.336	0.00	0.0260	0.004	14.023	ug/L
	Tl	205	296.702	0.00	0.0322	0.006	19.410	ug/L
	Pb	206	273.674	0.00	0.0206	0.005	22.920	ug/L
	Pb	207	230.339	0.00	0.0219	0.005	24.189	ug/L
	Pb	208	1083.039	0.00	0.0194	0.002	9.983	ug/L
	U	238	471.685	0.00	0.0223	0.002	11.027	ug/L
>	Bi	209	292485.363	292485.36				ug/L

Sample ID: QC Std 7
Report Date/Time: Saturday, January 28, 2012 21:29:13
Page 1

Approved: January 30, 2012
Erin D. Long

⌈	Na	23	99939.109	-0.21	0.0170	0.001	6.029	mg/L
|	Mg	24	4968.675	0.04	-0.0021	0.000	19.797	mg/L
|	K	39	483081.318	0.47	0.0042	0.002	58.420	mg/L
|	Ca	43	223.359	0.00	0.0024	0.003	124.034	mg/L
|	Fe	54	30941.971	0.02	0.0017	0.003	173.911	mg/L
|	Fe	57	6853.505	0.01	-0.0019	0.002	98.527	mg/L
⌊>	Sc-1	45	121073.360	121073.36				mg/L
	Cl	35	28039.096	-8885.21				mg/L
	Kr	83	49.001	-4.00				mg/L
	Br	81	5576.540	500.33				mg/L
	P	31	7563.443	-31.35				mg/L
	S	34	169874.651	-5725.80				mg/L
	Sr	88	306.703	253.36				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		92.053			
|	As	75					
|	Se	77					
|	Se	82					
⌊	Rb	85					
	Y	89					
	Rh	103					
⌈	Mo	98					
|	Ag	107					
|	Cd	114					
|>	In	115		91.893			
|	Sn	118					
⌊	Sb	123					
⌈	Ba	135					
|	Ce	140					
⌊>	Tb	159		90.007			
⌈	Ho	165					
|	Tl	203					
|	Tl	205					
|	Pb	206					
|	Pb	207					
|	Pb	208					
|	U	238					
⌊>	Bi	209		91.665			

Sample ID: QC Std 7
Report Date/Time: Saturday, January 28, 2012 21:29:13
Page 2

Approved: January 30, 2012
Erin D. Long

⌈	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: Saturday, January 28, 2012 21:29:13
Page 3

Approved: January 30, 2012

Method 6020 - Summary Report

Sample ID: L1201053903

Sample Date/Time: Saturday, January 28, 2012 21:34:38
Number of Replicates: 3
Aliquot Volume (mL):
Diluted To Volume (mL):
Autosampler Position: 67
Method File: C:\elandata\Method\6020a.mth
Sample Description: 1

User ID: EDL

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	9822.494	0.00				ug/L
	Be	9	11.333	0.00	-0.0129	0.025	192.172	ug/L
	Al	27	17201.136	0.11	3.5261	0.472	13.372	ug/L
>	Sc	45	132633.090	132633.09				ug/L
	Ti	49	193.355	0.00	0.4846	0.144	29.700	ug/L
	V	51	9300.360	0.03	1.0889	0.023	2.114	ug/L
	Cr	52	8060.311	0.01	0.4020	0.024	6.037	ug/L
	Cr	53	1053.505	0.00	0.4178	0.078	18.771	ug/L
	Mn	55	2955329.349	10.78	309.6479	7.954	2.569	ug/L
	Co	59	1074.413	0.00	0.1306	0.002	1.875	ug/L
	Ni	60	2565.087	0.01	1.6653	0.063	3.764	ug/L
	Cu	65	583.693	0.00	0.2584	0.013	5.080	ug/L
	Zn	66	3831.919	0.01	3.8795	0.124	3.209	ug/L
>	Ge	72	274100.737	274100.74				ug/L
	As	75	1472.044	0.01	1.7499	0.050	2.830	ug/L
	Se	77	62.000	0.00	0.2790	0.157	56.108	ug/L
	Se	82	87.906	0.00	1.0427	0.102	9.778	ug/L
	Rb	85	2450.718	0.01				mg/L
	Y	89	174369.502	-28021.08				ug/L
	Rh	103	46.001	17.00				ug/L
	Mo	98	907.035	0.00	0.4336	0.007	1.647	ug/L
	Ag	107	76.668	0.00	0.0067	0.002	31.186	ug/L
	Cd	114	2.651	0.00	0.0117	0.006	52.020	ug/L
>	In	115	236331.883	236331.88				ug/L
	Sn	118	448.545	-0.00	0.1294	0.003	2.033	ug/L
	Sb	123	219.371	0.00	0.0798	0.001	1.200	ug/L
	Ba	135	160376.863	0.46	121.2399	2.723	2.246	ug/L
	Ce	140	153.350	-0.00				ug/L
>	Tb	159	349477.344	349477.34				ug/L
	Ho	165	10.001	-0.00				ug/L
	Tl	203	113.335	0.00	0.0245	0.001	5.804	ug/L
	Tl	205	283.367	0.00	0.0326	0.003	9.236	ug/L
	Pb	206	1100.751	0.00	0.2115	0.020	9.513	ug/L
	Pb	207	968.066	0.00	0.2020	0.010	5.083	ug/L
	Pb	208	4428.508	0.01	0.2030	0.004	1.764	ug/L
	U	238	6931.284	0.03	0.2959	0.002	0.749	ug/L
>	Bi	209	274613.275	274613.27				ug/L

Sample ID: L1201053903
Report Date/Time: Saturday, January 28, 2012 21:36:51
Page 1

Approved: January 30, 2012
Erin D. Long

⌈	Na	23	100695011.388	758.75	27.1412	0.528	1.944	mg/L
|	Mg	24	9923055.805	74.91	4.2595	0.159	3.744	mg/L
|	K	39	5828198.893	40.49	0.9814	0.043	4.401	mg/L
|	Ca	43	447455.071	3.38	39.0536	2.076	5.315	mg/L
|	Fe	54	244519.880	1.61	0.4514	0.044	9.757	mg/L
|	Fe	57	96979.050	0.68	0.4381	0.031	7.174	mg/L
⌊>	Sc-1	45	132633.090	132633.09				mg/L
	Cl	35	258121.322	221197.02				mg/L
	Kr	83	49.334	-3.67				mg/L
	Br	81	68064.425	62988.21				mg/L
	P	31	13428.824	5834.03				mg/L
	S	34	225855.079	50254.62				mg/L
	Sr	88	1426602.207	1426548.87				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		87.847			
|	As	75					
|	Se	77					
|	Se	82					
⌊	Rb	85					
	Y	89					
	Rh	103					
⌈	Mo	98					
|	Ag	107					
|	Cd	114					
|>	In	115		85.679			
|	Sn	118					
⌊	Sb	123					
⌈	Ba	135					
|	Ce	140					
⌊>	Tb	159		89.132			
⌈	Ho	165					
|	Tl	203					
|	Tl	205					
|	Pb	206					
|	Pb	207					
|	Pb	208					
|	U	238					
⌊>	Bi	209		86.064			

Sample ID: L1201053903
Report Date/Time: Saturday, January 28, 2012 21:36:51
Page 2

Approved: January 30, 2012

⌈	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	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1201053903
Report Date/Time: Saturday, January 28, 2012 21:36:51
Page 3

Approved: January 30, 2012

Method 6020 - Summary Report

Sample ID: L1201053904

Sample Date/Time: Saturday, January 28, 2012 21:42:26
Number of Replicates: 3
Aliquot Volume (mL):
Diluted To Volume (mL):
Autosampler Position: 68
Method File: C:\elandata\Method\6020a.mth
Sample Description: 1

User ID: EDL

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	9872.515	0.00				ug/L
	Be	9	10.000	0.00	-0.0155	0.023	145.316	ug/L
	Al	27	127013.560	0.99	32.0146	3.254	10.166	ug/L
>	Sc	45	126572.854	126572.85				ug/L
	Ti	49	213.357	0.00	0.5374	0.105	19.555	ug/L
	V	51	6932.640	0.02	0.7461	0.047	6.294	ug/L
	Cr	52	6875.905	0.00	0.2045	0.010	4.844	ug/L
	Cr	53	830.125	0.00	0.1064	0.166	155.625	ug/L
	Mn	55	767990.546	2.80	80.4767	1.240	1.541	ug/L
	Co	59	965.732	0.00	0.1157	0.001	0.627	ug/L
	Ni	60	2286.003	0.01	1.4801	0.051	3.452	ug/L
	Cu	65	8911.521	0.03	6.0755	0.107	1.760	ug/L
	Zn	66	7632.237	0.03	8.3388	0.209	2.509	ug/L
>	Ge	72	273937.288	273937.29				ug/L
	As	75	1020.849	0.00	1.2540	0.034	2.697	ug/L
	Se	77	74.000	0.00	0.4570	0.026	5.625	ug/L
	Se	82	162.952	0.00	1.9361	0.176	9.069	ug/L
	Rb	85	1031.741	0.00				mg/L
	Y	89	178923.550	-23467.03				ug/L
	Rh	103	43.334	14.33				ug/L
	Mo	98	710.197	0.00	0.3469	0.008	2.369	ug/L
	Ag	107	128.336	0.00	0.0190	0.005	27.925	ug/L
	Cd	114	9.525	0.00	0.0187	0.006	31.159	ug/L
>	In	115	232711.965	232711.97				ug/L
	Sn	118	692.962	0.00	0.2030	0.003	1.423	ug/L
	Sb	123	171.199	0.00	0.0658	0.006	8.807	ug/L
	Ba	135	52644.042	0.15	39.4369	0.312	0.790	ug/L
	Ce	140	1226.880	0.00				ug/L
>	Tb	159	352557.296	352557.30				ug/L
	Ho	165	36.670	0.00				ug/L
	Tl	203	81.335	0.00	0.0181	0.002	12.410	ug/L
	Tl	205	176.686	0.00	0.0242	0.002	7.498	ug/L
	Pb	206	1734.865	0.01	0.3401	0.017	4.907	ug/L
	Pb	207	1456.475	0.00	0.3056	0.017	5.426	ug/L
	Pb	208	6855.182	0.02	0.3196	0.011	3.421	ug/L
	U	238	9445.113	0.03	0.3867	0.009	2.395	ug/L
>	Bi	209	285626.753	285626.75				ug/L

Sample ID: L1201053904
Report Date/Time: Saturday, January 28, 2012 21:44:39
Page 1

Approved: January 30, 2012
Erin D. Long

Na	23	115103304.792	910.92	32.5798	2.577	7.911	mg/L
Mg	24	8641983.584	68.51	3.8947	0.386	9.919	mg/L
K	39	2908564.117	19.52	0.4693	0.038	8.035	mg/L
Ca	43	370670.190	2.93	33.8778	1.324	3.909	mg/L
Fe	54	133348.483	0.82	0.2276	0.025	11.113	mg/L
Fe	57	49568.944	0.34	0.2168	0.019	8.857	mg/L
Sc-1	45	126572.854	126572.85				mg/L
Cl	35	209121.051	172196.75				mg/L
Kr	83	44.334	-8.67				mg/L
Br	81	113653.030	108576.81				mg/L
P	31	17144.042	9549.25				mg/L
S	34	277032.853	101432.40				mg/L
Sr	88	1089850.182	1089796.84				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		87.794			
As	75					
Se	77					
Se	82					
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107					
Cd	114					
In	115		84.367			
Sn	118					
Sb	123					
Ba	135					
Ce	140					
Tb	159		89.918			
Ho	165					
Tl	203					
Tl	205					
Pb	206					
Pb	207					
Pb	208					
U	238					
Bi	209		89.516			

Sample ID: L1201053904
Report Date/Time: Saturday, January 28, 2012 21:44:39
Page 2

Approved: January 30, 2012
Erin D. Long

⌈	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: L1201053904
Report Date/Time: Saturday, January 28, 2012 21:44:39
Page 3

Approved: January 30, 2012

Method 6020 - Summary Report

Sample ID: L1201053905

Sample Date/Time: Saturday, January 28, 2012 21:50:14
Number of Replicates: 3
Aliquot Volume (mL):
Diluted To Volume (mL):
Autosampler Position: 69
Method File: C:\elandata\Method\6020a.mth
Sample Description: 1

User ID: EDL

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	10673.500	0.00				ug/L
	Be	9	6.667	-0.00	-0.0326	0.012	37.292	ug/L
	Al	27	27813.404	0.18	5.6018	0.440	7.859	ug/L
>	Sc	45	143086.235	143086.23				ug/L
	Ti	49	126.680	0.00	0.2798	0.103	36.767	ug/L
	V	51	3012.315	0.00	0.1253	0.003	2.166	ug/L
	Cr	52	7539.486	0.00	0.1635	0.023	14.335	ug/L
	Cr	53	820.123	0.00	-0.0418	0.140	335.154	ug/L
	Mn	55	1938810.761	6.22	178.7411	1.615	0.904	ug/L
	Co	59	937.396	0.00	0.0963	0.006	6.555	ug/L
	Ni	60	2252.994	0.01	1.2763	0.050	3.951	ug/L
	Cu	65	10710.320	0.03	6.4327	0.132	2.049	ug/L
	Zn	66	11115.521	0.03	10.8512	0.168	1.544	ug/L
>	Ge	72	311401.445	311401.45				ug/L
	As	75	9958.572	0.03	9.7695	0.145	1.481	ug/L
	Se	77	64.000	-0.00	0.1960	0.085	43.435	ug/L
	Se	82	95.266	0.00	0.9937	0.073	7.368	ug/L
	Rb	85	1656.848	0.01				mg/L
	Y	89	197530.273	-4860.31				ug/L
	Rh	103	78.668	49.67				ug/L
	Mo	98	3850.016	0.01	1.5901	0.068	4.249	ug/L
	Ag	107	89.668	0.00	0.0073	0.003	47.041	ug/L
	Cd	114	50.653	0.00	0.0541	0.003	4.714	ug/L
>	In	115	268521.225	268521.22				ug/L
	Sn	118	456.146	-0.00	0.1158	0.003	2.669	ug/L
	Sb	123	197.163	0.00	0.0658	0.007	11.033	ug/L
	Ba	135	163195.907	0.42	109.7048	0.883	0.804	ug/L
	Ce	140	283.367	0.00				ug/L
>	Tb	159	392965.096	392965.10				ug/L
	Ho	165	13.335	0.00				ug/L
	Tl	203	36.000	0.00	0.0097	0.000	3.111	ug/L
	Tl	205	103.344	0.00	0.0185	0.001	8.099	ug/L
	Pb	206	4840.454	0.02	0.9433	0.014	1.487	ug/L
	Pb	207	4014.007	0.01	0.8313	0.021	2.536	ug/L
	Pb	208	18759.115	0.06	0.8690	0.024	2.723	ug/L
	U	238	1332.453	0.00	0.0540	0.002	2.857	ug/L
>	Bi	209	306591.488	306591.49				ug/L

Sample ID: L1201053905
Report Date/Time: Saturday, January 28, 2012 21:52:27
Page 1

Approved: January 30, 2012
Erin D. Long

⌈	Na	23	60249616.594	420.87	15.0658	1.129	7.491	mg/L
|	Mg	24	13233386.398	92.58	5.2651	0.236	4.485	mg/L
|	K	39	4277459.081	26.43	0.6381	0.051	7.967	mg/L
|	Ca	43	443341.179	3.10	35.8342	1.479	4.126	mg/L
|	Fe	54	715225.783	4.76	1.3406	0.077	5.741	mg/L
|	Fe	57	288246.722	1.97	1.2756	0.097	7.603	mg/L
⌊>	Sc-1	45	143086.235	143086.23				mg/L
	Cl	35	214416.086	177491.78				mg/L
	Kr	83	46.334	-6.67				mg/L
	Br	81	87352.517	82276.30				mg/L
	P	31	17743.138	10148.34				mg/L
	S	34	191786.619	16186.16				mg/L
	Sr	88	2284914.621	2284861.28				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		99.801			
|	As	75					
|	Se	77					
|	Se	82					
⌊	Rb	85					
	Y	89					
	Rh	103					
⌈	Mo	98					
|	Ag	107					
|	Cd	114					
|>	In	115		97.349			
|	Sn	118					
⌊	Sb	123					
⌈	Ba	135					
|	Ce	140					
⌊>	Tb	159		100.224			
⌈	Ho	165					
|	Tl	203					
|	Tl	205					
|	Pb	206					
|	Pb	207					
|	Pb	208					
|	U	238					
⌊>	Bi	209		96.086			

Sample ID: L1201053905
Report Date/Time: Saturday, January 28, 2012 21:52:27
Page 2

Approved: January 30, 2012

⌈	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	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1201053905
Report Date/Time: Saturday, January 28, 2012 21:52:27
Page 3

Approved: January 30, 2012

Method 6020 - Summary Report

Sample ID: L1201053906

Sample Date/Time: Saturday, January 28, 2012 21:58:03
Number of Replicates: 3
Aliquot Volume (mL):
Diluted To Volume (mL):
Autosampler Position: 70
Method File: C:\elandata\Method\6020a.mth
Sample Description: 5

User ID: EDL

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	9622.229	0.00				ug/L
	Be	9	9.333	0.00	-0.0199	0.009	44.331	ug/L
	Al	27	4984.856	0.02	0.5421	0.220	40.566	ug/L
>	Sc	45	129820.400	129820.40				ug/L
	Ti	49	60.006	0.00	0.1371	0.061	44.773	ug/L
	V	51	3847.962	0.01	0.2488	0.011	4.531	ug/L
	Cr	52	6267.753	0.00	0.0080	0.013	167.983	ug/L
	Cr	53	586.746	-0.00	-0.3021	0.028	9.346	ug/L
	Mn	55	606488.575	2.01	57.8341	2.656	4.592	ug/L
	Co	59	599.361	0.00	0.0578	0.003	5.062	ug/L
	Ni	60	687.702	0.00	0.3697	0.028	7.641	ug/L
	Cu	65	3271.009	0.01	1.9318	0.155	8.047	ug/L
	Zn	66	5471.518	0.02	5.2281	0.263	5.034	ug/L
>	Ge	72	301054.158	301054.16				ug/L
	As	75	93.875	0.00	0.2250	0.012	5.382	ug/L
	Se	77	70.000	0.00	0.3057	0.115	37.631	ug/L
	Se	82	27.914	0.00	0.2971	0.168	56.594	ug/L
	Rb	85	599.028	0.00				mg/L
	Y	89	184253.266	-18137.32				ug/L
	Rh	103	18.334	-10.67				ug/L
	Mo	98	300.506	0.00	0.1391	0.008	5.445	ug/L
	Ag	107	56.667	-0.00	0.0011	0.002	198.808	ug/L
	Cd	114	7.454	0.00	0.0159	0.002	10.735	ug/L
>	In	115	257756.766	257756.77				ug/L
	Sn	118	204.136	-0.00	0.0539	0.006	10.476	ug/L
	Sb	123	99.701	0.00	0.0407	0.001	3.268	ug/L
	Ba	135	32602.683	0.09	23.3055	0.572	2.456	ug/L
	Ce	140	26.669	-0.00				ug/L
>	Tb	159	369325.452	369325.45				ug/L
	Ho	165	23.336	0.00				ug/L
	Tl	203	40.667	0.00	0.0105	0.001	9.576	ug/L
	Tl	205	80.008	0.00	0.0170	0.001	8.559	ug/L
	Pb	206	1587.167	0.00	0.2894	0.015	5.275	ug/L
	Pb	207	1358.124	0.00	0.2663	0.012	4.583	ug/L
	Pb	208	6302.668	0.02	0.2735	0.009	3.389	ug/L
	U	238	1645.512	0.01	0.0668	0.004	5.771	ug/L
>	Bi	209	301737.006	301737.01				ug/L

Sample ID: L1201053906
Report Date/Time: Saturday, January 28, 2012 22:00:16
Page 1

Approved: January 30, 2012
Erin D. Long

Na	23	14432968.131	110.21	3.9633	0.166	4.196	mg/L
Mg	24	2187414.529	16.85	0.9546	0.030	3.094	mg/L
K	39	1316834.892	6.62	0.1545	0.004	2.382	mg/L
Ca	43	106578.153	0.82	9.4692	0.143	1.515	mg/L
Fe	54	37133.539	0.05	0.0104	0.004	40.263	mg/L
Fe	57	10667.904	0.03	0.0147	0.004	26.646	mg/L
Sc-1	45	129820.400	129820.40				mg/L
Cl	35	77810.946	40886.64				mg/L
Kr	83	48.334	-4.67				mg/L
Br	81	26025.917	20949.70				mg/L
P	31	8570.407	975.61				mg/L
S	34	203299.430	27698.97				mg/L
Sr	88	354680.956	354627.62				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		96.485			
As	75					
Se	77					
Se	82					
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107					
Cd	114					
In	115		93.446			
Sn	118					
Sb	123					
Ba	135					
Ce	140					
Tb	159		94.195			
Ho	165					
Tl	203					
Tl	205					
Pb	206					
Pb	207					
Pb	208					
U	238					
Bi	209		94.565			

Sample ID: L1201053906
Report Date/Time: Saturday, January 28, 2012 22:00:16
Page 2

Approved: January 30, 2012

⌈	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: L1201053906
Report Date/Time: Saturday, January 28, 2012 22:00:16
Page 3

Approved: January 30, 2012

Method 6020 - Summary Report

Sample ID: L1201057601

Sample Date/Time: Saturday, January 28, 2012 22:05:50
Number of Replicates: 3
Aliquot Volume (mL):
Diluted To Volume (mL):
Autosampler Position: 71
Method File: C:\elandata\Method\6020a.mth
Sample Description: 1

User ID: EDL

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	8954.826	-0.00				ug/L
	Be	9	6.000	-0.00	-0.0326	0.021	65.468	ug/L
	Al	27	67270.946	0.52	16.6307	1.252	7.528	ug/L
>	Sc	45	126283.225	126283.23				ug/L
	Ti	49	323.372	0.00	0.8538	0.150	17.617	ug/L
	V	51	22417.402	0.08	3.1388	0.036	1.160	ug/L
	Cr	52	14131.448	0.03	1.5269	0.040	2.638	ug/L
	Cr	53	1750.359	0.00	1.4941	0.075	5.046	ug/L
	Mn	55	21632.934	0.08	2.3305	0.030	1.278	ug/L
	Co	59	235.006	0.00	0.0165	0.001	5.455	ug/L
	Ni	60	648.698	0.00	0.4046	0.020	4.879	ug/L
	Cu	65	407.014	0.00	0.1484	0.024	16.037	ug/L
	Zn	66	3251.667	0.01	3.3724	0.038	1.129	ug/L
>	Ge	72	262090.802	262090.80				ug/L
	As	75	544.923	0.00	0.7574	0.023	3.097	ug/L
	Se	77	90.000	0.00	0.7488	0.180	24.015	ug/L
	Se	82	52.624	0.00	0.6524	0.145	22.179	ug/L
	Rb	85	7629.569	0.03				mg/L
	Y	89	167549.606	-34840.98				ug/L
	Rh	103	32.000	3.00				ug/L
	Mo	98	3257.496	0.01	1.5986	0.037	2.322	ug/L
	Ag	107	95.001	0.00	0.0119	0.001	9.260	ug/L
	Cd	114	14.810	0.00	0.0246	0.002	6.415	ug/L
>	In	115	226039.873	226039.87				ug/L
	Sn	118	243.737	-0.00	0.0734	0.003	4.311	ug/L
	Sb	123	194.456	0.00	0.0749	0.002	2.755	ug/L
	Ba	135	68373.451	0.20	54.0428	1.188	2.198	ug/L
	Ce	140	1216.879	0.00				ug/L
>	Tb	159	334196.987	334196.99				ug/L
	Ho	165	20.002	0.00				ug/L
	Tl	203	28.000	0.00	0.0088	0.000	3.031	ug/L
	Tl	205	66.674	0.00	0.0164	0.002	9.348	ug/L
	Pb	206	2098.619	0.01	0.4306	0.003	0.789	ug/L
	Pb	207	1816.217	0.01	0.3989	0.023	5.739	ug/L
	Pb	208	8500.810	0.03	0.4158	0.009	2.215	ug/L
	U	238	9432.764	0.03	0.3960	0.011	2.821	ug/L
>	Bi	209	278451.793	278451.79				ug/L

Sample ID: L1201057601
Report Date/Time: Saturday, January 28, 2012 22:08:03
Page 1

Approved: January 30, 2012
Erin D. Long

Na	23	25799525.262	203.39	7.2932	0.363	4.979	mg/L
Mg	24	4959494.921	39.28	2.2312	0.039	1.766	mg/L
K	39	4012637.258	28.26	0.6828	0.011	1.663	mg/L
Ca	43	139590.176	1.10	12.7626	0.476	3.733	mg/L
Fe	54	67527.144	0.30	0.0806	0.008	9.827	mg/L
Fe	57	15586.124	0.08	0.0416	0.001	3.036	mg/L
Sc-1	45	126283.225	126283.23				mg/L
Cl	35	103775.543	66851.24				mg/L
Kr	83	43.334	-9.67				mg/L
Br	81	16944.546	11868.33				mg/L
P	31	12363.842	4769.05				mg/L
S	34	252118.762	76518.31				mg/L
Sr	88	1065905.062	1065851.72				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		83.998			
As	75					
Se	77					
Se	82					
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107					
Cd	114					
In	115		81.948			
Sn	118					
Sb	123					
Ba	135					
Ce	140					
Tb	159		85.235			
Ho	165					
Tl	203					
Tl	205					
Pb	206					
Pb	207					
Pb	208					
U	238					
Bi	209		87.267			

Sample ID: L1201057601
Report Date/Time: Saturday, January 28, 2012 22:08:03
Page 2

Approved: January 30, 2012
Erin D. Long

⌈	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: L1201057601
Report Date/Time: Saturday, January 28, 2012 22:08:03
Page 3

Approved: January 30, 2012

Method 6020 - Summary Report

Sample ID: L1201057602

Sample Date/Time: Saturday, January 28, 2012 22:13:37
Number of Replicates: 3
Aliquot Volume (mL):
Diluted To Volume (mL):
Autosampler Position: 72
Method File: C:\elandata\Method\6020a.mth
Sample Description: 1

User ID: EDL

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	9772.400	0.00				ug/L
	Be	9	10.000	0.00	-0.0177	0.013	72.665	ug/L
	Al	27	37250.396	0.27	8.5341	0.678	7.939	ug/L
>	Sc	45	130888.025	130888.03				ug/L
	Ti	49	193.355	0.00	0.4979	0.054	10.876	ug/L
	V	51	18720.338	0.06	2.5175	0.073	2.891	ug/L
	Cr	52	19886.903	0.05	2.4594	0.045	1.850	ug/L
	Cr	53	2490.624	0.01	2.4908	0.404	16.218	ug/L
	Mn	55	16905.301	0.06	1.7727	0.023	1.284	ug/L
	Co	59	268.007	0.00	0.0205	0.004	19.882	ug/L
	Ni	60	3556.461	0.01	2.3831	0.039	1.657	ug/L
	Cu	65	438.016	0.00	0.1641	0.002	1.276	ug/L
	Zn	66	3052.590	0.01	3.0491	0.103	3.386	ug/L
>	Ge	72	267810.964	267810.96				ug/L
	As	75	779.946	0.00	1.0088	0.041	4.085	ug/L
	Se	77	110.667	0.00	1.0334	0.320	30.981	ug/L
	Se	82	83.289	0.00	1.0106	0.123	12.205	ug/L
	Rb	85	13474.354	0.05				mg/L
	Y	89	166962.548	-35428.03				ug/L
	Rh	103	37.000	8.00				ug/L
	Mo	98	3293.657	0.01	1.5976	0.037	2.339	ug/L
	Ag	107	48.667	-0.00	0.0007	0.001	127.967	ug/L
	Cd	114	14.866	0.00	0.0244	0.007	29.447	ug/L
>	In	115	228822.619	228822.62				ug/L
	Sn	118	546.285	0.00	0.1627	0.004	2.378	ug/L
	Sb	123	331.087	0.00	0.1175	0.008	6.927	ug/L
	Ba	135	67988.388	0.20	53.2835	1.033	1.939	ug/L
	Ce	140	1817.047	0.00				ug/L
>	Tb	159	337232.245	337232.24				ug/L
	Ho	165	26.669	0.00				ug/L
	Tl	203	42.001	0.00	0.0113	0.002	13.835	ug/L
	Tl	205	113.346	0.00	0.0198	0.005	24.922	ug/L
	Pb	206	368.345	0.00	0.0439	0.003	5.827	ug/L
	Pb	207	311.009	0.00	0.0429	0.000	1.085	ug/L
	Pb	208	1437.729	0.00	0.0403	0.001	2.559	ug/L
	U	238	9240.882	0.03	0.3845	0.006	1.587	ug/L
>	Bi	209	280933.868	280933.87				ug/L

Sample ID: L1201057602
Report Date/Time: Saturday, January 28, 2012 22:15:50
Page 1

Approved: January 30, 2012
Erin D. Long

⌈	Na	23	26543309.349	202.10	7.2474	0.392	5.403	mg/L
|	Mg	24	6233194.523	47.71	2.7109	0.160	5.906	mg/L
|	K	39	7022479.368	50.17	1.2179	0.044	3.598	mg/L
|	Ca	43	179916.225	1.37	15.8841	0.531	3.343	mg/L
|	Fe	54	60249.424	0.22	0.0596	0.005	8.869	mg/L
|	Fe	57	14283.705	0.06	0.0322	0.003	9.021	mg/L
⌊>	Sc-1	45	130888.025	130888.03				mg/L
	Cl	35	174506.195	137581.89				mg/L
	Kr	83	43.667	-9.33				mg/L
	Br	81	22989.684	17913.47				mg/L
	P	31	19509.509	11914.71				mg/L
	S	34	247455.448	71854.99				mg/L
	Sr	88	1258818.912	1258765.57				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		85.831			
|	As	75					
|	Se	77					
|	Se	82					
⌊	Rb	85					
	Y	89					
	Rh	103					
⌈	Mo	98					
|	Ag	107					
|	Cd	114					
|>	In	115		82.957			
|	Sn	118					
⌊	Sb	123					
⌈	Ba	135					
|	Ce	140					
⌊>	Tb	159		86.009			
⌈	Ho	165					
|	Tl	203					
|	Tl	205					
|	Pb	206					
|	Pb	207					
|	Pb	208					
|	U	238					
⌊>	Bi	209		88.045			

Sample ID: L1201057602
Report Date/Time: Saturday, January 28, 2012 22:15:50
Page 2

Approved: January 30, 2012

⌈	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: L1201057602
Report Date/Time: Saturday, January 28, 2012 22:15:50
Page 3

Approved: January 30, 2012

Method 6020 - Summary Report

Sample ID: L1201057603

Sample Date/Time: Saturday, January 28, 2012 22:21:24
Number of Replicates: 3
Aliquot Volume (mL):
Diluted To Volume (mL):
Autosampler Position: 73
Method File: C:\elandata\Method\6020a.mth
Sample Description: 1

User ID: EDL

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	9338.573	0.00				ug/L
	Be	9	8.667	0.00	-0.0210	0.025	121.126	ug/L
	Al	27	31208.668	0.24	7.5989	0.468	6.154	ug/L
>	Sc	45	122021.014	122021.01				ug/L
	Ti	49	246.695	0.00	0.6590	0.131	19.920	ug/L
	V	51	14941.425	0.05	2.0384	0.066	3.255	ug/L
	Cr	52	9507.184	0.02	0.7416	0.030	4.061	ug/L
	Cr	53	1570.305	0.00	1.2687	0.104	8.211	ug/L
	Mn	55	3880.276	0.01	0.3917	0.011	2.909	ug/L
	Co	59	247.339	0.00	0.0188	0.001	6.533	ug/L
	Ni	60	2058.608	0.01	1.4111	0.026	1.825	ug/L
	Cu	65	530.689	0.00	0.2445	0.012	4.945	ug/L
	Zn	66	3694.189	0.01	3.9839	0.150	3.761	ug/L
>	Ge	72	258332.276	258332.28				ug/L
	As	75	492.935	0.00	0.7072	0.052	7.358	ug/L
	Se	77	120.668	0.00	1.2512	0.094	7.547	ug/L
	Se	82	143.986	0.00	1.8158	0.049	2.705	ug/L
	Rb	85	12019.788	0.05				mg/L
	Y	89	161628.897	-40761.69				ug/L
	Rh	103	39.667	10.67				ug/L
	Mo	98	1780.596	0.01	0.8923	0.033	3.693	ug/L
	Ag	107	60.334	0.00	0.0038	0.003	70.701	ug/L
	Cd	114	11.476	0.00	0.0212	0.010	47.429	ug/L
>	In	115	222671.113	222671.11				ug/L
	Sn	118	1150.613	0.00	0.3526	0.003	0.961	ug/L
	Sb	123	181.039	0.00	0.0715	0.003	3.990	ug/L
	Ba	135	36711.064	0.11	29.8284	0.194	0.651	ug/L
	Ce	140	366.712	0.00				ug/L
>	Tb	159	325036.410	325036.41				ug/L
	Ho	165	6.667	-0.00				ug/L
	Tl	203	22.667	0.00	0.0080	0.000	5.535	ug/L
	Tl	205	43.338	0.00	0.0149	0.001	8.163	ug/L
	Pb	206	465.018	0.00	0.0700	0.004	5.320	ug/L
	Pb	207	394.013	0.00	0.0665	0.006	9.337	ug/L
	Pb	208	1841.432	0.00	0.0660	0.003	4.862	ug/L
	U	238	4880.478	0.02	0.2139	0.004	1.757	ug/L
>	Bi	209	268743.493	268743.49				ug/L

Sample ID: L1201057603
Report Date/Time: Saturday, January 28, 2012 22:23:36
Page 1

Approved: January 30, 2012
Erin D. Long

Na	23	33928355.521	277.17	9.9303	0.227	2.290	mg/L
Mg	24	6769387.250	55.50	3.1544	0.078	2.466	mg/L
K	39	4698620.860	35.02	0.8478	0.033	3.851	mg/L
Ca	43	193821.955	1.59	18.3460	0.460	2.509	mg/L
Fe	54	62255.046	0.27	0.0736	0.004	5.746	mg/L
Fe	57	16661.646	0.09	0.0501	0.001	2.971	mg/L
Sc-1	45	122021.014	122021.01				mg/L
Cl	35	278566.304	241642.00				mg/L
Kr	83	40.334	-12.67				mg/L
Br	81	75471.588	70395.37				mg/L
P	31	11330.384	3735.59				mg/L
S	34	315076.124	139475.67				mg/L
Sr	88	1236009.301	1235955.96				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		82.793			
As	75					
Se	77					
Se	82					
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107					
Cd	114					
In	115		80.727			
Sn	118					
Sb	123					
Ba	135					
Ce	140					
Tb	159		82.899			
Ho	165					
Tl	203					
Tl	205					
Pb	206					
Pb	207					
Pb	208					
U	238					
Bi	209		84.224			

Sample ID: L1201057603
Report Date/Time: Saturday, January 28, 2012 22:23:36
Page 2

Approved: January 30, 2012
Erin D. Long

⌈	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: L1201057603
Report Date/Time: Saturday, January 28, 2012 22:23:36
Page 3

Approved: January 30, 2012

Method 6020 - Summary Report

Sample ID: QC Std 6

Sample Date/Time: Saturday, January 28, 2012 22:29:11
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: EDL

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	9605.537	-0.00				ug/L
	Be	9	14444.520	0.11	55.8193	3.750	6.718	ug/L
	Al	27	220051.143	1.63	52.9390	2.536	4.790	ug/L
>	Sc	45	133528.918	133528.92				ug/L
	Ti	49	43454.084	0.14	95.6321	2.843	2.973	ug/L
	V	51	397160.598	1.26	49.9917	0.910	1.820	ug/L
	Cr	52	350143.078	1.10	50.2244	1.117	2.223	ug/L
	Cr	53	41594.380	0.13	49.2862	0.620	1.258	ug/L
	Mn	55	538766.834	1.71	49.2412	0.928	1.885	ug/L
	Co	59	418758.346	1.33	50.3238	1.609	3.197	ug/L
	Ni	60	84486.529	0.27	49.2451	1.557	3.162	ug/L
	Cu	65	82304.300	0.26	50.0239	0.852	1.704	ug/L
	Zn	66	50285.782	0.16	50.8334	0.805	1.584	ug/L
>	Ge	72	313905.419	313905.42				ug/L
	As	75	52528.777	0.17	50.5622	1.299	2.570	ug/L
	Se	77	3846.888	0.01	48.7238	0.864	1.772	ug/L
	Se	82	4642.906	0.01	48.3706	1.363	2.817	ug/L
	Rb	85	1861.894	0.01				mg/L
	Y	89	196028.393	-6362.19				ug/L
	Rh	103	17.000	-12.00				ug/L
	Mo	98	245331.512	0.92	100.8587	2.269	2.250	ug/L
	Ag	107	249577.098	0.93	50.1144	1.268	2.531	ug/L
	Cd	114	55082.058	0.21	49.1355	1.759	3.581	ug/L
>	In	115	268115.126	268115.13				ug/L
	Sn	118	199425.824	0.74	50.7971	0.947	1.864	ug/L
	Sb	123	191171.255	0.71	51.5350	1.245	2.415	ug/L
	Ba	135	74743.793	0.19	50.8929	0.217	0.427	ug/L
	Ce	140	90.010	-0.00				ug/L
>	Tb	159	387923.515	387923.51				ug/L
	Ho	165	10.001	-0.00				ug/L
	Tl	203	311656.147	1.02	51.0951	1.145	2.241	ug/L
	Tl	205	770353.677	2.51	51.3397	2.101	4.092	ug/L
	Pb	206	253509.152	0.83	51.3462	1.566	3.050	ug/L
	Pb	207	236531.145	0.77	50.7288	1.696	3.343	ug/L
	Pb	208	1056350.683	3.44	50.8986	1.211	2.379	ug/L
	U	238	1498450.563	4.89	56.6011	0.641	1.133	ug/L
>	Bi	209	306576.508	306576.51				ug/L

Sample ID: QC Std 6
Report Date/Time: Saturday, January 28, 2012 22:31:25
Page 1

Approved: January 30, 2012
Erin D. Long

Na	23	19400497.660	144.43	5.1861	0.343	6.617	mg/L
Mg	24	12485665.629	93.62	5.3239	0.341	6.413	mg/L
K	39	28608702.336	210.85	5.1414	0.185	3.606	mg/L
Ca	43	58802.723	0.44	5.0740	0.193	3.796	mg/L
Fe	54	2393014.389	17.70	4.9876	0.180	3.606	mg/L
Fe	57	1095045.157	8.16	5.3102	0.292	5.507	mg/L
Sc-1	45	133528.918	133528.92				mg/L
Cl	35	28096.626	-8827.68				mg/L
Kr	83	53.334	0.33				mg/L
Br	81	7217.799	2141.58				mg/L
P	31	8258.104	663.31				mg/L
S	34	175376.378	-224.08				mg/L
Sr	88	4111.425	4058.09				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	99.983				
Cr	52	100.449				
Cr	53					
Mn	55	98.482				
Co	59	100.648				
Ni	60	98.490				
Cu	65	100.048				
Zn	66	101.667				
Ge	72		100.604			
As	75	101.124				
Se	77					
Se	82	96.741				
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107	100.229				
Cd	114	98.271				
In	115		97.202			
Sn	118					
Sb	123	103.070				
Ba	135	101.786				
Ce	140					
Tb	159		98.938			
Ho	165					
Tl	203	102.190				
Tl	205					
Pb	206					
Pb	207					
Pb	208	101.797				
U	238	113.202				
Bi	209		96.081			

Sample ID: QC Std 6
Report Date/Time: Saturday, January 28, 2012 22:31:25
Page 2

Approved: January 30, 2012
Erin D. Long

⌈	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: Saturday, January 28, 2012 22:31:25
Page 3

Approved: January 30, 2012

Method 6020 - Summary Report

Sample ID: QC Std 7

Sample Date/Time: Saturday, January 28, 2012 22:36:48
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: EDL

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	10006.041	-0.00				ug/L
	Be	9	10.000	0.00	-0.0207	0.020	95.069	ug/L
	Al	27	1866.879	-0.00	-0.2833	0.076	26.675	ug/L
>	Sc	45	144017.903	144017.90				ug/L
	Ti	49	60.006	-0.00	0.1252	0.023	18.687	ug/L
	V	51	2171.685	-0.00	0.0028	0.013	470.959	ug/L
	Cr	52	6450.895	-0.00	-0.0489	0.018	36.184	ug/L
	Cr	53	420.053	-0.00	-0.5590	0.071	12.733	ug/L
	Mn	55	644.032	0.00	0.0164	0.006	38.451	ug/L
	Co	59	152.003	0.00	0.0002	0.006	3222.195	ug/L
	Ni	60	90.335	-0.00	0.0013	0.004	308.654	ug/L
	Cu	65	120.335	0.00	-0.0790	0.001	1.577	ug/L
	Zn	66	639.031	-0.00	0.0118	0.024	201.444	ug/L
>	Ge	72	329521.667	329521.67				ug/L
	As	75	-116.707	-0.00	0.0237	0.059	249.531	ug/L
	Se	77	59.334	-0.00	0.0956	0.160	166.950	ug/L
	Se	82	5.577	-0.00	0.0476	0.097	204.809	ug/L
	Rb	85	25.334	-0.00				mg/L
	Y	89	208806.725	6416.14				ug/L
	Rh	103	13.000	-16.00				ug/L
	Mo	98	88.823	0.00	0.0448	0.007	16.333	ug/L
	Ag	107	137.336	0.00	0.0150	0.006	39.941	ug/L
	Cd	114	7.180	0.00	0.0148	0.006	37.329	ug/L
>	In	115	288202.072	288202.07				ug/L
	Sn	118	629.490	-0.00	0.1489	0.004	2.545	ug/L
	Sb	123	69.868	0.00	0.0304	0.005	15.908	ug/L
	Ba	135	45.001	0.00	0.0122	0.004	35.356	ug/L
	Ce	140	30.003	-0.00				ug/L
>	Tb	159	412130.795	412130.79				ug/L
	Ho	165	13.335	-0.00				ug/L
	Tl	203	131.669	0.00	0.0232	0.007	28.573	ug/L
	Tl	205	276.699	0.00	0.0281	0.007	24.143	ug/L
	Pb	206	268.340	0.00	0.0118	0.003	26.903	ug/L
	Pb	207	231.006	0.00	0.0151	0.001	9.483	ug/L
	Pb	208	1080.039	0.00	0.0119	0.002	19.573	ug/L
	U	238	334.677	0.00	0.0151	0.004	28.031	ug/L
>	Bi	209	337809.851	337809.85				ug/L

Sample ID: QC Std 7
Report Date/Time: Saturday, January 28, 2012 22:39:00
Page 1

Approved: January 30, 2012
Erin D. Long

Na	23	111994.295	-0.25	0.0153	0.002	15.239	mg/L
Mg	24	3527.853	0.02	-0.0030	0.001	19.511	mg/L
K	39	491353.066	-0.11	-0.0099	0.003	32.926	mg/L
Ca	43	216.691	0.00	-0.0015	0.002	141.721	mg/L
Fe	54	35712.061	0.01	-0.0003	0.004	1272.401	mg/L
Fe	57	7387.347	0.00	-0.0054	0.002	28.408	mg/L
Sc-1	45	144017.903	144017.90				mg/L
Cl	35	29439.242	-7485.06				mg/L
Kr	83	48.667	-4.33				mg/L
Br	81	6992.937	1916.72				mg/L
P	31	10158.231	2563.44				mg/L
S	34	199827.170	24226.71				mg/L
Sr	88	120.013	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		105.609			
As	75					
Se	77					
Se	82					
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107					
Cd	114					
In	115		104.484			
Sn	118					
Sb	123					
Ba	135					
Ce	140					
Tb	159		105.112			
Ho	165					
Tl	203					
Tl	205					
Pb	206					
Pb	207					
Pb	208					
U	238					
Bi	209		105.870			

Sample ID: QC Std 7
Report Date/Time: Saturday, January 28, 2012 22:39:00
Page 2

Approved: January 30, 2012
Erin D. Long

⌈	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: Saturday, January 28, 2012 22:39:00
Page 3

Approved: January 30, 2012

Method 6020 - Summary Report

Sample ID: QC Std 8

Sample Date/Time: Saturday, January 28, 2012 22:44:26
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: EDL

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	10156.200	0.00				ug/L
	Be	9	8.000	0.00	-0.0260	0.013	49.223	ug/L
	Al	27	3183.963	0.01	0.0788	0.187	237.582	ug/L
>	Sc	45	132224.854	132224.85				ug/L
	Ti	49	73.341	0.00	0.1607	0.049	30.403	ug/L
	V	51	4987.495	0.01	0.3741	0.016	4.313	ug/L
	Cr	52	11261.722	0.02	0.7036	0.018	2.571	ug/L
	Cr	53	1096.849	0.00	0.2903	0.094	32.546	ug/L
	Mn	55	5941.844	0.02	0.5055	0.006	1.105	ug/L
	Co	59	3490.100	0.01	0.4035	0.012	3.055	ug/L
	Ni	60	2884.529	0.01	1.6386	0.058	3.561	ug/L
	Cu	65	1438.472	0.00	0.7306	0.007	1.012	ug/L
	Zn	66	6600.012	0.02	6.1639	0.150	2.427	ug/L
>	Ge	72	312929.524	312929.52				ug/L
	As	75	339.078	0.00	0.4575	0.022	4.702	ug/L
	Se	77	72.667	0.00	0.3037	0.178	58.578	ug/L
	Se	82	47.633	0.00	0.4917	0.069	14.019	ug/L
	Rb	85	28.667	-0.00				mg/L
	Y	89	191944.993	-10445.59				ug/L
	Rh	103	10.667	-18.33				ug/L
	Mo	98	75.161	0.00	0.0419	0.006	15.164	ug/L
	Ag	107	2149.632	0.01	0.4251	0.007	1.543	ug/L
	Cd	114	254.288	0.00	0.2381	0.023	9.572	ug/L
>	In	115	265509.620	265509.62				ug/L
	Sn	118	186.002	-0.00	0.0476	0.004	7.725	ug/L
	Sb	123	1557.695	0.01	0.4365	0.008	1.723	ug/L
	Ba	135	1171.761	0.00	0.8182	0.036	4.377	ug/L
	Ce	140	26.669	-0.00				ug/L
>	Tb	159	371007.043	371007.04				ug/L
	Ho	165	6.667	-0.00				ug/L
	Tl	203	596.694	0.00	0.1009	0.004	4.189	ug/L
	Tl	205	1450.271	0.00	0.1075	0.005	4.832	ug/L
	Pb	206	2284.669	0.01	0.4225	0.009	2.031	ug/L
	Pb	207	2174.305	0.01	0.4336	0.008	1.871	ug/L
	Pb	208	9597.611	0.03	0.4243	0.009	2.023	ug/L
	U	238	12263.147	0.04	0.4637	0.009	2.033	ug/L
>	Bi	209	308591.420	308591.42				ug/L

Sample ID: QC Std 8
Report Date/Time: Saturday, January 28, 2012 22:46:40
Page 1

Approved: January 30, 2012
Erin D. Long

Na	23	43206.628	-0.70	-0.0008	0.001	184.091	mg/L
Mg	24	2113.858	0.01	-0.0035	0.000	14.041	mg/L
K	39	458184.247	-0.05	-0.0086	0.003	30.104	mg/L
Ca	43	143.349	-0.00	-0.0063	0.003	54.431	mg/L
Fe	54	32038.053	0.00	-0.0019	0.003	131.394	mg/L
Fe	57	6396.429	0.00	-0.0073	0.001	19.704	mg/L
Sc-1	45	132224.854	132224.85				mg/L
Cl	35	25741.029	-11183.27				mg/L
Kr	83	42.334	-10.67				mg/L
Br	81	5520.497	444.28				mg/L
P	31	7620.162	25.37				mg/L
S	34	165782.871	-9817.58				mg/L
Sr	88	103.344	50.01				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	93.530				
Cr	52	87.955				
Cr	53					
Mn	55	101.108				
Co	59	100.871				
Ni	60	102.412				
Cu	65	91.330				
Zn	66	98.622				
Ge	72		100.291			
As	75	114.381				
Se	77					
Se	82	122.913				
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107	106.273				
Cd	114	119.047				
In	115		96.257			
Sn	118					
Sb	123	109.114				
Ba	135	109.088				
Ce	140					
Tb	159		94.624			
Ho	165					
Tl	203	126.135				
Tl	205					
Pb	206					
Pb	207					
Pb	208	106.081				
U	238	115.917				
Bi	209		96.713			

Sample ID: QC Std 8
Report Date/Time: Saturday, January 28, 2012 22:46:40
Page 2

Approved: January 30, 2012
Erin D. Long

⌈	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 8	Tl	203	LLCCV IS OUT OF LIMITS (+/-20%)

Sample ID: QC Std 8
Report Date/Time: Saturday, January 28, 2012 22:46:40
Page 3

Approved: January 30, 2012

Method 6020 - Summary Report

Sample ID: PBW 74 WG382898-02

Sample Date/Time: Saturday, January 28, 2012 22:52:04
Number of Replicates: 3
Aliquot Volume (mL):
Diluted To Volume (mL):
Autosampler Position: 74
Method File: C:\elandata\Method\6020a.mth
Sample Description: 1

User ID: EDL

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	10139.502	-0.01				ug/L
	Be	9	8.667	-0.00	-0.0272	0.005	18.402	ug/L
	Al	27	23249.061	0.14	4.3023	0.172	4.000	ug/L
>	Sc	45	151023.840	151023.84				ug/L
	Ti	49	90.010	0.00	0.1862	0.077	41.298	ug/L
	V	51	2182.483	-0.00	0.0008	0.019	2272.128	ug/L
	Cr	52	8984.265	0.01	0.2874	0.008	2.679	ug/L
	Cr	53	723.437	-0.00	-0.2189	0.027	12.449	ug/L
	Mn	55	1052.744	0.00	0.0508	0.004	8.252	ug/L
	Co	59	96.002	0.00	-0.0065	0.001	10.400	ug/L
	Ni	60	88.335	-0.00	-0.0004	0.005	1266.411	ug/L
	Cu	65	148.336	0.00	-0.0638	0.005	8.069	ug/L
	Zn	66	3478.761	0.01	2.7353	0.038	1.387	ug/L
>	Ge	72	333855.126	333855.13				ug/L
	As	75	-118.022	-0.00	0.0248	0.041	165.851	ug/L
	Se	77	57.334	-0.00	0.0605	0.053	88.285	ug/L
	Se	82	5.916	-0.00	0.0517	0.058	112.244	ug/L
	Rb	85	40.667	0.00				mg/L
	Y	89	216193.795	13803.21				ug/L
	Rh	103	6.667	-22.33				ug/L
	Mo	98	37.119	0.00	0.0246	0.002	7.871	ug/L
	Ag	107	89.335	0.00	0.0056	0.001	12.642	ug/L
	Cd	114	3.123	0.00	0.0116	0.006	48.069	ug/L
>	In	115	293942.193	293942.19				ug/L
	Sn	118	203.869	-0.00	0.0471	0.002	5.026	ug/L
	Sb	123	118.160	0.00	0.0418	0.000	0.961	ug/L
	Ba	135	59.334	0.00	0.0203	0.010	50.107	ug/L
	Ce	140	40.004	-0.00				ug/L
>	Tb	159	424187.641	424187.64				ug/L
	Ho	165	16.668	0.00				ug/L
	Tl	203	24.000	0.00	0.0074	0.001	12.284	ug/L
	Tl	205	50.005	0.00	0.0146	0.002	14.658	ug/L
	Pb	206	241.006	0.00	0.0077	0.002	31.676	ug/L
	Pb	207	205.338	0.00	0.0109	0.003	28.311	ug/L
	Pb	208	922.029	0.00	0.0058	0.001	20.664	ug/L
	U	238	38.000	0.00	0.0050	0.000	4.286	ug/L
>	Bi	209	331077.358	331077.36				ug/L

Sample ID: PBW 74 WG382898-02
Report Date/Time: Saturday, January 28, 2012 22:54:17
Page 1

Approved: January 30, 2012
Erin D. Long

Na	23	49618.936	-0.70	-0.0008	0.000	35.665	mg/L
Mg	24	6296.341	0.04	-0.0021	0.000	2.884	mg/L
K	39	468631.433	-0.42	-0.0174	0.002	9.055	mg/L
Ca	43	630.087	0.00	0.0293	0.005	16.887	mg/L
Fe	54	72722.243	0.24	0.0655	0.005	7.446	mg/L
Fe	57	7447.427	0.00	-0.0066	0.004	64.749	mg/L
Sc-1	45	151023.840	151023.84				mg/L
Cl	35	38863.759	1939.46				mg/L
Kr	83	48.001	-5.00				mg/L
Br	81	7006.278	1930.06				mg/L
P	31	16298.615	8703.82				mg/L
S	34	190703.395	15102.94				mg/L
Sr	88	543.405	490.07				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		106.997			
As	75					
Se	77					
Se	82					
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107					
Cd	114					
In	115		106.565			
Sn	118					
Sb	123					
Ba	135					
Ce	140					
Tb	159		108.187			
Ho	165					
Tl	203					
Tl	205					
Pb	206					
Pb	207					
Pb	208					
U	238					
Bi	209		103.760			

Sample ID: PBW 74 WG382898-02
Report Date/Time: Saturday, January 28, 2012 22:54:17
Page 2

Approved: January 30, 2012

⌈	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 74 WG382898-02
Report Date/Time: Saturday, January 28, 2012 22:54:17
Page 3

Approved: January 30, 2012

Method 6020 - Summary Report

Sample ID: LCSW 74 WG382898-03

Sample Date/Time: Saturday, January 28, 2012 22:59:51
Number of Replicates: 3
Aliquot Volume (mL):
Diluted To Volume (mL):
Autosampler Position: 75
Method File: C:\elandata\Method\6020a.mth
Sample Description: 1

User ID: EDL
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	10139.499	0.00				ug/L
	Be	9	7100.360	0.05	26.7054	0.164	0.612	ug/L
	Al	27	145391.174	1.05	33.8560	0.756	2.232	ug/L
>	Sc	45	136849.034	136849.03				ug/L
	Ti	49	110.012	0.00	0.2411	0.076	31.625	ug/L
	V	51	204322.363	0.65	25.6506	0.496	1.935	ug/L
	Cr	52	188885.330	0.58	26.7127	0.283	1.060	ug/L
	Cr	53	22312.089	0.07	26.0071	0.568	2.184	ug/L
	Mn	55	290400.996	0.93	26.5860	0.396	1.490	ug/L
	Co	59	216214.715	0.69	26.0324	0.302	1.162	ug/L
	Ni	60	44189.981	0.14	25.7899	0.236	0.914	ug/L
	Cu	65	43640.073	0.14	26.5183	0.642	2.421	ug/L
	Zn	66	24331.380	0.08	24.3402	0.529	2.173	ug/L
>	Ge	72	313226.767	313226.77				ug/L
	As	75	25530.387	0.08	24.6970	0.242	0.980	ug/L
	Se	77	1906.885	0.01	23.8870	0.090	0.375	ug/L
	Se	82	2101.842	0.01	21.9396	0.130	0.593	ug/L
	Rb	85	101.668	0.00				mg/L
	Y	89	200691.486	-1699.10				ug/L
	Rh	103	16.334	-12.67				ug/L
	Mo	98	46.717	0.00	0.0293	0.003	9.744	ug/L
	Ag	107	132395.325	0.48	25.6867	0.353	1.376	ug/L
	Cd	114	27770.721	0.10	23.9600	1.352	5.641	ug/L
>	In	115	277357.183	277357.18				ug/L
	Sn	118	217.603	-0.00	0.0534	0.005	9.656	ug/L
	Sb	123	95838.043	0.35	24.9727	0.186	0.745	ug/L
	Ba	135	38889.926	0.10	26.0371	0.072	0.276	ug/L
	Ce	140	36.670	-0.00				ug/L
>	Tb	159	394396.247	394396.25				ug/L
	Ho	165	0.000	-0.00				ug/L
	Tl	203	165460.572	0.51	25.8717	0.382	1.476	ug/L
	Tl	205	409533.149	1.27	26.0332	0.513	1.970	ug/L
	Pb	206	141364.502	0.44	27.2883	0.175	0.640	ug/L
	Pb	207	121327.434	0.38	24.7973	0.355	1.433	ug/L
	Pb	208	568643.766	1.77	26.1158	0.200	0.764	ug/L
	U	238	777715.294	2.42	28.0256	0.252	0.900	ug/L
>	Bi	209	321348.863	321348.86				ug/L

Sample ID: LCSW 74 WG382898-03
Report Date/Time: Saturday, January 28, 2012 23:02:04
Page 1

Approved: January 30, 2012
Erin D. Long

Na	23	65812.535	-0.55	0.0047	0.000	4.476	mg/L
Mg	24	8648.692	0.06	-0.0008	0.000	13.967	mg/L
K	39	452611.286	-0.21	-0.0124	0.003	20.950	mg/L
Ca	43	370.045	0.00	0.0124	0.001	5.747	mg/L
Fe	54	74332.459	0.30	0.0828	0.000	0.112	mg/L
Fe	57	7674.299	0.01	-0.0023	0.002	75.893	mg/L
Sc-1	45	136849.034	136849.03				mg/L
Cl	35	31738.996	-5185.31				mg/L
Kr	83	52.667	-0.33				mg/L
Br	81	5851.387	775.17				mg/L
P	31	14398.463	6803.67				mg/L
S	34	167707.956	-7892.50				mg/L
Sr	88	563.409	510.07				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		100.386			
As	75					
Se	77					
Se	82					
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107					
Cd	114					
In	115		100.552			
Sn	118					
Sb	123					
Ba	135					
Ce	140					
Tb	159		100.589			
Ho	165					
Tl	203					
Tl	205					
Pb	206					
Pb	207					
Pb	208					
U	238					
Bi	209		100.711			

Sample ID: LCSW 74 WG382898-03
Report Date/Time: Saturday, January 28, 2012 23:02:04
Page 2

Approved: January 30, 2012

⌈	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 74 WG382898-03
Report Date/Time: Saturday, January 28, 2012 23:02:04
Page 3

Approved: January 30, 2012

Method 6020 - Summary Report

Sample ID: L1111072701 WG382898-01

Sample Date/Time: Saturday, January 28, 2012 23:07:38
Number of Replicates: 3
Aliquot Volume (mL):
Diluted To Volume (mL):
Autosampler Position: 76
Method File: C:\elandata\Method\6020a.mth
Sample Description: 1

User ID: EDL
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	10423.212	-0.00				ug/L
	Be	9	12.000	0.00	-0.0150	0.023	156.055	ug/L
	Al	27	14880.005	0.09	2.6338	0.440	16.703	ug/L
>	Sc	45	145477.558	145477.56				ug/L
	Ti	49	200.023	0.00	0.4479	0.183	40.790	ug/L
	V	51	2380.465	0.00	0.0468	0.007	15.005	ug/L
	Cr	52	8253.836	0.01	0.2777	0.026	9.491	ug/L
	Cr	53	1306.900	0.00	0.5638	0.050	8.855	ug/L
	Mn	55	13944644.045	45.11	1295.3614	27.084	2.091	ug/L
	Co	59	1365.459	0.00	0.1495	0.010	6.651	ug/L
	Ni	60	1492.149	0.00	0.8352	0.030	3.603	ug/L
	Cu	65	379.346	0.00	0.0860	0.012	13.687	ug/L
	Zn	66	2945.550	0.01	2.4501	0.152	6.224	ug/L
>	Ge	72	309164.339	309164.34				ug/L
	As	75	190.971	0.00	0.3172	0.015	4.713	ug/L
	Se	77	90.667	0.00	0.5518	0.178	32.172	ug/L
	Se	82	34.624	0.00	0.3603	0.137	37.937	ug/L
	Rb	85	3542.788	0.01				mg/L
	Y	89	197291.332	-5099.25				ug/L
	Rh	103	21.334	-7.67				ug/L
	Mo	98	84.088	0.00	0.0458	0.003	7.627	ug/L
	Ag	107	70.668	0.00	0.0037	0.001	18.370	ug/L
	Cd	114	11.122	0.00	0.0191	0.002	8.197	ug/L
>	In	115	264004.166	264004.17				ug/L
	Sn	118	493.748	-0.00	0.1275	0.002	1.447	ug/L
	Sb	123	121.494	0.00	0.0459	0.004	7.722	ug/L
	Ba	135	255716.965	0.68	178.7338	1.347	0.753	ug/L
	Ce	140	423.387	0.00				ug/L
>	Tb	159	377973.837	377973.84				ug/L
	Ho	165	43.338	0.00				ug/L
	Tl	203	33.000	0.00	0.0090	0.001	7.621	ug/L
	Tl	205	33.337	-0.00	0.0137	0.001	5.192	ug/L
	Pb	206	253.340	0.00	0.0121	0.003	26.916	ug/L
	Pb	207	221.338	0.00	0.0161	0.003	20.566	ug/L
	Pb	208	1022.368	0.00	0.0123	0.002	14.819	ug/L
	U	238	71.668	0.00	0.0063	0.001	15.983	ug/L
>	Bi	209	317226.427	317226.43				ug/L

Sample ID: L1111072701 WG382898-01
Report Date/Time: Saturday, January 28, 2012 23:09:51
Page 1

Approved: January 30, 2012
Erin D. Long

⌈	Na	23	52762086.602	362.52	12.9804	0.985	7.591	mg/L
|	Mg	24	9029499.235	62.14	3.5325	0.138	3.918	mg/L
|	K	39	2589395.421	14.29	0.3416	0.009	2.497	mg/L
|	Ca	43	105382.762	0.72	8.3620	0.265	3.165	mg/L
|	Fe	54	10184050.762	69.84	19.6934	0.680	3.453	mg/L
|	Fe	57	4081169.423	28.04	18.2608	0.763	4.177	mg/L
⌊>	Sc-1	45	145477.558	145477.56				mg/L
	Cl	35	665130.783	628206.48				mg/L
	Kr	83	43.334	-9.67				mg/L
	Br	81	22561.845	17485.63				mg/L
	P	31	39134.360	31539.57				mg/L
	S	34	363735.998	188135.54				mg/L
	Sr	88	471820.732	471767.39				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		99.084			
|	As	75					
|	Se	77					
|	Se	82					
⌊	Rb	85					
	Y	89					
	Rh	103					
⌈	Mo	98					
|	Ag	107					
|	Cd	114					
|>	In	115		95.711			
|	Sn	118					
⌊	Sb	123					
⌈	Ba	135					
|	Ce	140					
⌊>	Tb	159		96.400			
⌈	Ho	165					
|	Tl	203					
|	Tl	205					
|	Pb	206					
|	Pb	207					
|	Pb	208					
|	U	238					
⌊>	Bi	209		99.419			

Sample ID: L1111072701 WG382898-01
Report Date/Time: Saturday, January 28, 2012 23:09:51
Page 2

Approved: January 30, 2012
Erin D. Long

⌈	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	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1111072701 WG382898-01
Report Date/Time: Saturday, January 28, 2012 23:09:51
Page 3

Approved: January 30, 2012

Method 6020 - Summary Report

Sample ID: L1111072702S WG382898-04

Sample Date/Time: Saturday, January 28, 2012 23:15:25
Number of Replicates: 3
Aliquot Volume (mL):
Diluted To Volume (mL):
Autosampler Position: 77
Method File: C:\elandata\Method\6020a.mth
Sample Description: 1

User ID: EDL
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	9755.741	0.00				ug/L
	Be	9	6601.948	0.05	26.8465	1.426	5.312	ug/L
	Al	27	110764.672	0.86	27.7316	0.827	2.982	ug/L
>	Sc	45	126740.842	126740.84				ug/L
	Ti	49	240.027	0.00	0.5957	0.040	6.778	ug/L
	V	51	178138.534	0.63	25.2020	0.342	1.357	ug/L
	Cr	52	160437.762	0.56	25.5382	0.612	2.396	ug/L
	Cr	53	19107.128	0.07	25.0724	0.411	1.640	ug/L
	Mn	55	13119463.710	47.21	1355.7120	29.591	2.183	ug/L
	Co	59	185189.756	0.67	25.1308	0.503	2.000	ug/L
	Ni	60	39122.680	0.14	25.7355	0.345	1.339	ug/L
	Cu	65	36897.911	0.13	25.2600	0.763	3.022	ug/L
	Zn	66	23843.636	0.08	26.9423	0.228	0.846	ug/L
>	Ge	72	277897.296	277897.30				ug/L
	As	75	22285.935	0.08	24.2980	0.385	1.583	ug/L
	Se	77	1640.162	0.01	23.1357	0.616	2.664	ug/L
	Se	82	1896.167	0.01	22.3081	0.238	1.067	ug/L
	Rb	85	3239.329	0.01				mg/L
	Y	89	176174.806	-26215.78				ug/L
	Rh	103	25.000	-4.00				ug/L
	Mo	98	68.649	0.00	0.0434	0.002	3.810	ug/L
	Ag	107	52345.416	0.23	12.1776	0.358	2.936	ug/L
	Cd	114	24690.285	0.11	25.5341	0.763	2.989	ug/L
>	In	115	231290.591	231290.59				ug/L
	Sn	118	468.547	-0.00	0.1382	0.007	5.275	ug/L
	Sb	123	84624.576	0.37	26.4462	0.583	2.204	ug/L
	Ba	135	261581.694	0.76	201.9578	2.745	1.359	ug/L
	Ce	140	333.374	0.00				ug/L
>	Tb	159	342212.608	342212.61				ug/L
	Ho	165	13.335	0.00				ug/L
	Tl	203	147566.702	0.52	26.3016	0.134	0.508	ug/L
	Tl	205	367513.398	1.30	26.6265	0.557	2.094	ug/L
	Pb	206	125848.720	0.45	27.6953	0.898	3.242	ug/L
	Pb	207	110989.163	0.39	25.8586	0.360	1.392	ug/L
	Pb	208	510275.332	1.81	26.7117	0.273	1.022	ug/L
	U	238	703701.516	2.50	28.9049	0.442	1.528	ug/L
>	Bi	209	281950.519	281950.52				ug/L

Sample ID: L1111072702S WG382898-04
Report Date/Time: Saturday, January 28, 2012 23:17:38
Page 1

Approved: January 30, 2012
Erin D. Long

Na	23	48414288.183	381.45	13.6570	0.665	4.867	mg/L
Mg	24	8359056.253	65.97	3.7503	0.044	1.175	mg/L
K	39	2468942.411	15.98	0.3829	0.020	5.217	mg/L
Ca	43	99166.824	0.78	9.0341	0.487	5.393	mg/L
Fe	54	9359587.695	73.64	20.7645	0.478	2.300	mg/L
Fe	57	3771025.605	29.75	19.3736	1.129	5.826	mg/L
Sc-1	45	126740.842	126740.84				mg/L
Cl	35	637209.546	600285.24				mg/L
Kr	83	47.334	-5.67				mg/L
Br	81	24851.001	19774.79				mg/L
P	31	33927.147	26332.35				mg/L
S	34	322538.092	146937.64				mg/L
Sr	88	444798.631	444745.29				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		89.063			
As	75					
Se	77					
Se	82					
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107					
Cd	114					
In	115		83.851			
Sn	118					
Sb	123					
Ba	135					
Ce	140					
Tb	159		87.280			
Ho	165					
Tl	203					
Tl	205					
Pb	206					
Pb	207					
Pb	208					
U	238					
Bi	209		88.364			

Sample ID: L1111072702S WG382898-04
Report Date/Time: Saturday, January 28, 2012 23:17:38
Page 2

Approved: January 30, 2012

⌈	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	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1111072702S WG382898-04
Report Date/Time: Saturday, January 28, 2012 23:17:38
Page 3

Approved: January 30, 2012

Method 6020 - Summary Report

Sample ID: L1111072703SD WG382898-05

Sample Date/Time: Saturday, January 28, 2012 23:23:12
Number of Replicates: 3
Aliquot Volume (mL):
Diluted To Volume (mL):
Autosampler Position: 78
Method File: C:\elandata\Method\6020a.mth
Sample Description: 1

User ID: EDL
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	10206.254	-0.00				ug/L
	Be	9	7118.374	0.05	25.8482	0.282	1.089	ug/L
	Al	27	120363.065	0.83	26.9275	1.040	3.862	ug/L
>	Sc	45	141746.369	141746.37				ug/L
	Ti	49	233.360	0.00	0.5251	0.166	31.638	ug/L
	V	51	191609.521	0.62	24.5410	1.456	5.932	ug/L
	Cr	52	176497.143	0.55	25.4349	1.238	4.867	ug/L
	Cr	53	21830.794	0.07	25.9789	1.735	6.679	ug/L
	Mn	55	14308599.985	46.62	1338.6106	50.411	3.766	ug/L
	Co	59	203392.107	0.66	24.9898	0.882	3.528	ug/L
	Ni	60	43941.336	0.14	26.1632	0.134	0.510	ug/L
	Cu	65	41095.829	0.13	25.4676	0.348	1.367	ug/L
	Zn	66	24109.406	0.08	24.6123	0.660	2.684	ug/L
>	Ge	72	306999.087	306999.09				ug/L
	As	75	24886.511	0.08	24.5628	0.253	1.028	ug/L
	Se	77	1798.194	0.01	22.9586	0.056	0.242	ug/L
	Se	82	2054.899	0.01	21.8857	0.158	0.721	ug/L
	Rb	85	3591.810	0.01				mg/L
	Y	89	198404.191	-3986.39				ug/L
	Rh	103	30.334	1.33				ug/L
	Mo	98	48.160	0.00	0.0313	0.005	14.516	ug/L
	Ag	107	70908.130	0.27	14.7773	0.232	1.568	ug/L
	Cd	114	27025.908	0.10	25.0314	0.408	1.631	ug/L
>	In	115	258153.144	258153.14				ug/L
	Sn	118	466.146	-0.00	0.1231	0.003	2.265	ug/L
	Sb	123	92229.222	0.36	25.8204	0.286	1.108	ug/L
	Ba	135	288023.301	0.77	203.2861	3.715	1.827	ug/L
	Ce	140	376.713	0.00				ug/L
>	Tb	159	374322.287	374322.29				ug/L
	Ho	165	33.337	0.00				ug/L
	Tl	203	159759.504	0.52	26.1031	0.373	1.428	ug/L
	Tl	205	396931.254	1.29	26.3588	0.508	1.928	ug/L
	Pb	206	135986.246	0.44	27.4269	0.321	1.172	ug/L
	Pb	207	119424.637	0.39	25.5091	0.686	2.690	ug/L
	Pb	208	552624.565	1.79	26.5179	0.422	1.593	ug/L
	U	238	769821.027	2.50	28.9761	0.612	2.112	ug/L
>	Bi	209	307588.650	307588.65				ug/L

Sample ID: L1111072703SD WG382898-05
Report Date/Time: Saturday, January 28, 2012 23:25:25
Page 1

Approved: January 30, 2012
Erin D. Long

Na	23	54496547.614	383.81	13.7414	0.561	4.085	mg/L
Mg	24	9035794.130	63.80	3.6271	0.145	3.997	mg/L
K	39	2641332.174	15.12	0.3619	0.007	1.996	mg/L
Ca	43	107963.190	0.76	8.7821	0.090	1.030	mg/L
Fe	54	10077489.061	70.82	19.9678	0.668	3.346	mg/L
Fe	57	4221896.272	29.74	19.3663	0.403	2.083	mg/L
Sc-1	45	141746.369	141746.37				mg/L
Cl	35	667218.428	630294.13				mg/L
Kr	83	44.334	-8.67				mg/L
Br	81	26566.333	21490.12				mg/L
P	31	38414.586	30819.79				mg/L
S	34	349350.098	173749.64				mg/L
Sr	88	482492.830	482439.49				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		98.390			
As	75					
Se	77					
Se	82					
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107					
Cd	114					
In	115		93.590			
Sn	118					
Sb	123					
Ba	135					
Ce	140					
Tb	159		95.469			
Ho	165					
Tl	203					
Tl	205					
Pb	206					
Pb	207					
Pb	208					
U	238					
Bi	209		96.399			

Sample ID: L1111072703SD WG382898-05
Report Date/Time: Saturday, January 28, 2012 23:25:25
Page 2

Approved: January 30, 2012
Erin D. Long

⌈	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	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1111072703SD WG382898-05
Report Date/Time: Saturday, January 28, 2012 23:25:25
Page 3

Approved: January 30, 2012

Method 6020 - Summary Report

Sample ID: L1111078702

Sample Date/Time: Saturday, January 28, 2012 23:31:00
Number of Replicates: 3
Aliquot Volume (mL):
Diluted To Volume (mL):
Autosampler Position: 79
Method File: C:\elandata\Method\6020a.mth
Sample Description: 1

User ID: EDL

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	9622.259	-0.01				ug/L
	Be	9	12.000	0.00	-0.0127	0.021	162.947	ug/L
	Al	27	28481.934	0.19	5.8631	0.338	5.768	ug/L
>	Sc	45	141274.024	141274.02				ug/L
	Ti	49	836.793	0.00	1.8881	0.193	10.229	ug/L
	V	51	2390.259	0.00	0.0515	0.029	55.921	ug/L
	Cr	52	10313.482	0.01	0.5996	0.026	4.366	ug/L
	Cr	53	1667.002	0.00	1.0294	0.277	26.905	ug/L
	Mn	55	4611996.634	15.07	432.8569	6.318	1.460	ug/L
	Co	59	9206.842	0.03	1.1185	0.020	1.829	ug/L
	Ni	60	6132.985	0.02	3.6227	0.086	2.367	ug/L
	Cu	65	1021.406	0.00	0.4899	0.013	2.738	ug/L
	Zn	66	8547.802	0.03	8.3601	0.136	1.622	ug/L
>	Ge	72	305937.074	305937.07				ug/L
	As	75	935.635	0.00	1.0532	0.086	8.119	ug/L
	Se	77	99.334	0.00	0.6766	0.097	14.356	ug/L
	Se	82	247.527	0.00	2.6402	0.150	5.684	ug/L
	Rb	85	3935.969	0.01				mg/L
	Y	89	191598.057	-10792.53				ug/L
	Rh	103	39.667	10.67				ug/L
	Mo	98	615.819	0.00	0.2742	0.008	2.967	ug/L
	Ag	107	72.334	0.00	0.0044	0.001	23.639	ug/L
	Cd	114	19.702	0.00	0.0274	0.007	24.974	ug/L
>	In	115	257528.847	257528.85				ug/L
	Sn	118	1280.498	0.00	0.3392	0.007	1.949	ug/L
	Sb	123	667.360	0.00	0.1999	0.004	1.991	ug/L
	Ba	135	44276.786	0.12	30.6496	0.310	1.011	ug/L
	Ce	140	1576.974	0.00				ug/L
>	Tb	159	381566.286	381566.29				ug/L
	Ho	165	96.677	0.00				ug/L
	Tl	203	92.668	0.00	0.0194	0.003	14.029	ug/L
	Tl	205	193.355	0.00	0.0248	0.001	3.385	ug/L
	Pb	206	786.045	0.00	0.1270	0.007	5.135	ug/L
	Pb	207	657.032	0.00	0.1157	0.001	0.904	ug/L
	Pb	208	3082.922	0.01	0.1181	0.004	3.559	ug/L
	U	238	68509.502	0.23	2.6756	0.033	1.241	ug/L
>	Bi	209	296892.417	296892.42				ug/L

Sample ID: L1111078702
Report Date/Time: Saturday, January 28, 2012 23:33:13
Page 1

Approved: January 30, 2012
Erin D. Long

Na	23	184470875.785	1306.54	46.7190	1.501	3.214	mg/L
Mg	24	55485206.710	393.35	22.3831	0.795	3.551	mg/L
K	39	3143749.414	18.74	0.4503	0.018	4.097	mg/L
Ca	43	778757.759	5.52	63.8203	3.064	4.801	mg/L
Fe	54	138607.405	0.75	0.2072	0.020	9.575	mg/L
Fe	57	68016.681	0.43	0.2757	0.023	8.161	mg/L
Sc-1	45	141274.024	141274.02				mg/L
Cl	35	1210452.153	1173527.85				mg/L
Kr	83	55.334	2.33				mg/L
Br	81	217969.288	212893.07				mg/L
P	31	15529.225	7934.43				mg/L
S	34	1047371.917	871771.46				mg/L
Sr	88	1052628.191	1052574.85				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		98.050			
As	75					
Se	77					
Se	82					
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107					
Cd	114					
In	115		93.364			
Sn	118					
Sb	123					
Ba	135					
Ce	140					
Tb	159		97.317			
Ho	165					
Tl	203					
Tl	205					
Pb	206					
Pb	207					
Pb	208					
U	238					
Bi	209		93.046			

Sample ID: L1111078702
Report Date/Time: Saturday, January 28, 2012 23:33:13
Page 2

Approved: January 30, 2012
Erin D. Long

⌈	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: L1111078702
Report Date/Time: Saturday, January 28, 2012 23:33:13
Page 3

Approved: January 30, 2012

Method 6020 - Summary Report

Sample ID: L1111078703

Sample Date/Time: Saturday, January 28, 2012 23:38:48
Number of Replicates: 3
Aliquot Volume (mL):
Diluted To Volume (mL):
Autosampler Position: 80
Method File: C:\elandata\Method\6020a.mth
Sample Description: 5

User ID: EDL

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	9088.295	0.00				ug/L
	Be	9	12.667	0.00	-0.0015	0.005	328.463	ug/L
	Al	27	9188.403	0.06	1.8342	0.216	11.788	ug/L
>	Sc	45	117947.559	117947.56				ug/L
	Ti	49	366.712	0.00	0.9215	0.156	16.966	ug/L
	V	51	1920.992	0.00	0.0187	0.022	118.965	ug/L
	Cr	52	6543.304	0.00	0.1488	0.035	23.612	ug/L
	Cr	53	1140.192	0.00	0.5413	0.116	21.488	ug/L
	Mn	55	1223017.846	4.46	128.0165	0.438	0.342	ug/L
	Co	59	1796.545	0.01	0.2301	0.007	3.111	ug/L
	Ni	60	3083.604	0.01	2.0086	0.045	2.246	ug/L
	Cu	65	426.349	0.00	0.1497	0.025	16.524	ug/L
	Zn	66	4243.124	0.01	4.3618	0.114	2.605	ug/L
>	Ge	72	274245.960	274245.96				ug/L
	As	75	2546.915	0.01	2.9280	0.063	2.158	ug/L
	Se	77	83.334	0.00	0.5954	0.332	55.699	ug/L
	Se	82	168.935	0.00	2.0008	0.236	11.815	ug/L
	Rb	85	3165.967	0.01				mg/L
	Y	89	170854.780	-31535.80				ug/L
	Rh	103	71.334	42.33				ug/L
	Mo	98	295.392	0.00	0.1534	0.002	1.349	ug/L
	Ag	107	58.334	0.00	0.0031	0.003	82.471	ug/L
	Cd	114	-9.973	-0.00	-0.0014	0.002	144.905	ug/L
>	In	115	228241.798	228241.80				ug/L
	Sn	118	5924.781	0.02	1.7702	0.062	3.504	ug/L
	Sb	123	76.621	0.00	0.0370	0.002	4.267	ug/L
	Ba	135	3606.818	0.01	2.8036	0.063	2.240	ug/L
	Ce	140	113.345	-0.00				ug/L
>	Tb	159	337800.590	337800.59				ug/L
	Ho	165	40.004	0.00				ug/L
	Tl	203	27.000	0.00	0.0088	0.001	9.765	ug/L
	Tl	205	56.673	0.00	0.0158	0.003	18.642	ug/L
	Pb	206	234.339	0.00	0.0168	0.006	36.624	ug/L
	Pb	207	210.005	0.00	0.0217	0.002	11.030	ug/L
	Pb	208	953.698	0.00	0.0173	0.002	10.109	ug/L
	U	238	11651.281	0.04	0.5071	0.020	3.973	ug/L
>	Bi	209	267773.374	267773.37				ug/L

Sample ID: L1111078703
Report Date/Time: Saturday, January 28, 2012 23:41:01
Page 1

Approved: January 30, 2012
Erin D. Long

Na	23	108932536.607	922.23	32.9840	0.754	2.287	mg/L
Mg	24	20646861.353	175.26	9.9706	0.447	4.485	mg/L
K	39	1860132.323	12.30	0.2932	0.032	11.048	mg/L
Ca	43	329218.645	2.79	32.2787	1.088	3.370	mg/L
Fe	54	541604.352	4.36	1.2255	0.055	4.491	mg/L
Fe	57	233129.045	1.93	1.2481	0.043	3.428	mg/L
Sc-1	45	117947.559	117947.56				mg/L
Cl	35	1012498.836	975574.53				mg/L
Kr	83	46.334	-6.67				mg/L
Br	81	135365.757	130289.54				mg/L
P	31	10696.195	3101.40				mg/L
S	34	504071.262	328470.81				mg/L
Sr	88	2229684.703	2229631.36				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		87.893			
As	75					
Se	77					
Se	82					
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107					
Cd	114					
In	115		82.746			
Sn	118					
Sb	123					
Ba	135					
Ce	140					
Tb	159		86.154			
Ho	165					
Tl	203					
Tl	205					
Pb	206					
Pb	207					
Pb	208					
U	238					
Bi	209		83.920			

Sample ID: L1111078703
Report Date/Time: Saturday, January 28, 2012 23:41:01
Page 2

Approved: January 30, 2012

⌈	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: L1111078703
Report Date/Time: Saturday, January 28, 2012 23:41:01
Page 3

Approved: January 30, 2012

Method 6020 - Summary Report

Sample ID: L1111078704

Sample Date/Time: Saturday, January 28, 2012 23:46:36
Number of Replicates: 3
Aliquot Volume (mL):
Diluted To Volume (mL):
Autosampler Position: 81
Method File: C:\elandata\Method\6020a.mth
Sample Description: 5

User ID: EDL

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	9588.862	0.01				ug/L
	Be	9	9.333	0.00	-0.0171	0.010	60.848	ug/L
	Al	27	23332.627	0.18	5.5538	0.135	2.436	ug/L
>	Sc	45	121225.836	121225.84				ug/L
	Ti	49	330.040	0.00	0.7931	0.097	12.170	ug/L
	V	51	2150.505	0.00	0.0387	0.027	68.577	ug/L
	Cr	52	7023.363	0.00	0.1751	0.034	19.549	ug/L
	Cr	53	1170.199	0.00	0.5053	0.024	4.820	ug/L
	Mn	55	1341074.356	4.67	134.0605	3.222	2.404	ug/L
	Co	59	1920.241	0.01	0.2350	0.007	3.002	ug/L
	Ni	60	3578.471	0.01	2.2336	0.059	2.639	ug/L
	Cu	65	502.687	0.00	0.1861	0.006	3.255	ug/L
	Zn	66	4242.122	0.01	4.1320	0.054	1.317	ug/L
>	Ge	72	287186.565	287186.56				ug/L
	As	75	2718.277	0.01	2.9845	0.092	3.078	ug/L
	Se	77	82.000	0.00	0.5186	0.113	21.711	ug/L
	Se	82	172.477	0.00	1.9596	0.364	18.570	ug/L
	Rb	85	3492.767	0.01				mg/L
	Y	89	184971.193	-17419.39				ug/L
	Rh	103	96.002	67.00				ug/L
	Mo	98	317.685	0.00	0.1524	0.009	5.734	ug/L
	Ag	107	174.004	0.00	0.0272	0.006	20.847	ug/L
	Cd	114	-15.049	-0.00	-0.0055	0.006	111.968	ug/L
>	In	115	247148.941	247148.94				ug/L
	Sn	118	5395.080	0.02	1.4903	0.010	0.699	ug/L
	Sb	123	91.994	0.00	0.0396	0.001	3.511	ug/L
	Ba	135	3935.969	0.01	2.9039	0.082	2.827	ug/L
	Ce	140	183.354	0.00				ug/L
>	Tb	159	356217.460	356217.46				ug/L
	Ho	165	23.336	0.00				ug/L
	Tl	203	31.667	0.00	0.0093	0.001	13.819	ug/L
	Tl	205	46.671	0.00	0.0149	0.002	11.023	ug/L
	Pb	206	273.007	0.00	0.0219	0.001	5.044	ug/L
	Pb	207	251.673	0.00	0.0281	0.002	8.526	ug/L
	Pb	208	1097.039	0.00	0.0215	0.003	11.965	ug/L
	U	238	11702.333	0.04	0.4787	0.017	3.623	ug/L
>	Bi	209	285273.248	285273.25				ug/L

Sample ID: L1111078704
Report Date/Time: Saturday, January 28, 2012 23:48:50
Page 1

Approved: January 30, 2012
Erin D. Long

Na	23	116660748.297	961.97	34.4042	1.549	4.502	mg/L
Mg	24	22393167.901	184.83	10.5155	0.343	3.263	mg/L
K	39	1846999.129	11.72	0.2790	0.013	4.762	mg/L
Ca	43	358438.850	2.96	34.1563	0.538	1.574	mg/L
Fe	54	611325.894	4.80	1.3518	0.044	3.244	mg/L
Fe	57	251707.648	2.03	1.3139	0.051	3.906	mg/L
Sc-1	45	121225.836	121225.84				mg/L
Cl	35	1114855.322	1077931.02				mg/L
Kr	83	60.667	7.67				mg/L
Br	81	145524.559	140448.34				mg/L
P	31	12370.509	4775.71				mg/L
S	34	548347.333	372746.88				mg/L
Sr	88	2480573.341	2480520.00				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		92.041			
As	75					
Se	77					
Se	82					
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107					
Cd	114					
In	115		89.601			
Sn	118					
Sb	123					
Ba	135					
Ce	140					
Tb	159		90.852			
Ho	165					
Tl	203					
Tl	205					
Pb	206					
Pb	207					
Pb	208					
U	238					
Bi	209		89.405			

Sample ID: L1111078704
Report Date/Time: Saturday, January 28, 2012 23:48:50
Page 2

Approved: January 30, 2012

⌈	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: L1111078704
Report Date/Time: Saturday, January 28, 2012 23:48:50
Page 3

Approved: January 30, 2012

Method 6020 - Summary Report

Sample ID: L1111078704PS WG384033-03

Sample Date/Time: Saturday, January 28, 2012 23:54:25
Number of Replicates: 3
Aliquot Volume (mL):
Diluted To Volume (mL):
Autosampler Position: 82
Method File: C:\elandata\Method\6020a.mth
Sample Description: 5

User ID: EDL
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	9238.488	0.00				ug/L
	Be	9	13118.323	0.11	54.9947	1.091	1.984	ug/L
	Al	27	206169.362	1.66	53.8535	1.336	2.481	ug/L
>	Sc	45	122934.132	122934.13				ug/L
	Ti	49	396.716	0.00	0.9924	0.096	9.679	ug/L
	V	51	349173.533	1.26	50.0171	0.560	1.120	ug/L
	Cr	52	304823.317	1.08	49.7524	0.978	1.965	ug/L
	Cr	53	37524.709	0.13	50.6514	1.814	3.582	ug/L
	Mn	55	1816398.074	6.58	189.0386	2.578	1.364	ug/L
	Co	59	362328.816	1.31	49.5563	0.953	1.922	ug/L
	Ni	60	76193.641	0.28	50.5314	0.497	0.984	ug/L
	Cu	65	72187.733	0.26	49.9350	1.170	2.343	ug/L
	Zn	66	45139.043	0.16	51.9494	1.213	2.335	ug/L
>	Ge	72	275915.101	275915.10				ug/L
	As	75	48272.585	0.18	52.8712	0.858	1.622	ug/L
	Se	77	3376.017	0.01	48.6819	1.786	3.668	ug/L
	Se	82	4068.319	0.01	48.1984	0.970	2.013	ug/L
	Rb	85	3230.658	0.01				mg/L
	Y	89	176081.983	-26308.60				ug/L
	Rh	103	79.668	50.67				ug/L
	Mo	98	350.171	0.00	0.1770	0.015	8.540	ug/L
	Ag	107	202403.129	0.87	46.9183	1.930	4.113	ug/L
	Cd	114	49947.507	0.22	51.4244	2.377	4.623	ug/L
>	In	115	232396.063	232396.06				ug/L
	Sn	118	4628.619	0.02	1.3604	0.036	2.623	ug/L
	Sb	123	170333.669	0.73	53.0090	2.124	4.007	ug/L
	Ba	135	69518.530	0.20	53.5203	1.619	3.025	ug/L
	Ce	140	173.353	0.00				ug/L
>	Tb	159	343281.365	343281.36				ug/L
	Ho	165	13.335	0.00				ug/L
	Tl	203	283019.185	1.02	51.4621	0.582	1.132	ug/L
	Tl	205	708667.080	2.56	52.3620	0.538	1.028	ug/L
	Pb	206	237483.700	0.86	53.3434	0.395	0.740	ug/L
	Pb	207	205774.432	0.74	48.9463	0.979	2.000	ug/L
	Pb	208	960396.542	3.47	51.3204	0.449	0.875	ug/L
	U	238	1364046.442	4.94	57.1694	1.746	3.053	ug/L
>	Bi	209	276367.640	276367.64				ug/L

Sample ID: L1111078704PS WG384033-03
Report Date/Time: Saturday, January 28, 2012 23:56:38
Page 1

Approved: January 30, 2012
Erin D. Long

Na	23	115968206.120	942.32	33.7019	1.017	3.016	mg/L
Mg	24	21765833.923	177.12	10.0763	0.326	3.233	mg/L
K	39	1852746.338	11.56	0.2751	0.015	5.374	mg/L
Ca	43	350730.930	2.85	32.9892	1.594	4.833	mg/L
Fe	54	595235.147	4.60	1.2954	0.023	1.807	mg/L
Fe	57	241916.451	1.92	1.2448	0.077	6.153	mg/L
Sc-1	45	122934.132	122934.13				mg/L
Cl	35	1098071.254	1061146.95				mg/L
Kr	83	46.667	-6.33				mg/L
Br	81	134554.359	129478.14				mg/L
P	31	10311.044	2716.25				mg/L
S	34	518821.724	343221.27				mg/L
Sr	88	2414174.058	2414120.72				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		88.428			
As	75					
Se	77					
Se	82					
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107					
Cd	114					
In	115		84.252			
Sn	118					
Sb	123					
Ba	135					
Ce	140					
Tb	159		87.552			
Ho	165					
Tl	203					
Tl	205					
Pb	206					
Pb	207					
Pb	208					
U	238					
Bi	209		86.614			

Sample ID: L1111078704PS WG384033-03
Report Date/Time: Saturday, January 28, 2012 23:56:38
Page 2

Approved: January 30, 2012

⌈	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: L1111078704PS WG384033-03
Report Date/Time: Saturday, January 28, 2012 23:56:38
Page 3

Approved: January 30, 2012

Method 6020 - Summary Report

Sample ID: L1111078704SDL WG384033-04

Sample Date/Time: Sunday, January 29, 2012 00:02:13
Number of Replicates: 3
Aliquot Volume (mL):
Diluted To Volume (mL):
Autosampler Position: 83
Method File: C:\elandata\Method\6020a.mth
Sample Description: 25

User ID: EDL
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	9371.953	0.00				ug/L
	Be	9	9.333	0.00	-0.0178	0.020	112.537	ug/L
	Al	27	8687.908	0.06	1.6365	0.405	24.741	ug/L
>	Sc	45	121175.746	121175.75				ug/L
	Ti	49	130.014	0.00	0.3171	0.107	33.767	ug/L
	V	51	1948.506	0.00	0.0149	0.020	134.241	ug/L
	Cr	52	6510.608	0.00	0.1098	0.012	11.278	ug/L
	Cr	53	860.131	0.00	0.1141	0.203	178.305	ug/L
	Mn	55	266722.800	0.94	27.0611	0.349	1.291	ug/L
	Co	59	422.348	0.00	0.0391	0.001	2.651	ug/L
	Ni	60	827.716	0.00	0.4875	0.016	3.339	ug/L
	Cu	65	273.674	0.00	0.0364	0.010	26.609	ug/L
	Zn	66	3505.773	0.01	3.3725	0.111	3.303	ug/L
>	Ge	72	282590.345	282590.34				ug/L
	As	75	454.291	0.00	0.6156	0.010	1.687	ug/L
	Se	77	58.667	-0.00	0.2046	0.327	159.776	ug/L
	Se	82	41.934	0.00	0.4787	0.114	23.852	ug/L
	Rb	85	687.702	0.00				mg/L
	Y	89	174189.350	-28201.23				ug/L
	Rh	103	22.000	-7.00				ug/L
	Mo	98	88.239	0.00	0.0512	0.007	13.456	ug/L
	Ag	107	104.002	0.00	0.0126	0.003	27.835	ug/L
	Cd	114	-0.918	-0.00	0.0081	0.008	97.883	ug/L
>	In	115	240218.644	240218.64				ug/L
	Sn	118	4982.156	0.02	1.4158	0.008	0.537	ug/L
	Sb	123	280.625	0.00	0.0971	0.003	3.189	ug/L
	Ba	135	780.711	0.00	0.5890	0.020	3.360	ug/L
	Ce	140	46.671	-0.00				ug/L
>	Tb	159	340699.449	340699.45				ug/L
	Ho	165	20.002	0.00				ug/L
	Tl	203	33.000	0.00	0.0097	0.001	8.585	ug/L
	Tl	205	66.674	0.00	0.0164	0.004	26.464	ug/L
	Pb	206	225.339	0.00	0.0123	0.005	44.182	ug/L
	Pb	207	179.004	0.00	0.0120	0.001	9.603	ug/L
	Pb	208	841.025	0.00	0.0089	0.002	26.252	ug/L
	U	238	2440.716	0.01	0.1043	0.005	4.688	ug/L
>	Bi	209	280989.036	280989.04				ug/L

Sample ID: L1111078704SDL WG384033-04
Report Date/Time: Sunday, January 29, 2012 00:04:25
Page 1

Approved: January 30, 2012
Erin D. Long

Na	23	23032462.126	189.22	6.7868	0.299	4.402	mg/L
Mg	24	4405103.336	36.38	2.0665	0.074	3.572	mg/L
K	39	785293.097	2.97	0.0652	0.006	9.540	mg/L
Ca	43	69851.960	0.58	6.6482	0.202	3.039	mg/L
Fe	54	140701.504	0.92	0.2573	0.008	3.162	mg/L
Fe	57	54318.644	0.40	0.2533	0.004	1.601	mg/L
Sc-1	45	121175.746	121175.75				mg/L
Cl	35	246631.209	209706.91				mg/L
Kr	83	46.001	-7.00				mg/L
Br	81	35494.112	30417.90				mg/L
P	31	7089.015	-505.78				mg/L
S	34	240123.460	64523.01				mg/L
Sr	88	536347.516	536294.18				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		90.567			
As	75					
Se	77					
Se	82					
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107					
Cd	114					
In	115		87.088			
Sn	118					
Sb	123					
Ba	135					
Ce	140					
Tb	159		86.894			
Ho	165					
Tl	203					
Tl	205					
Pb	206					
Pb	207					
Pb	208					
U	238					
Bi	209		88.062			

Sample ID: L1111078704SDL WG384033-04
Report Date/Time: Sunday, January 29, 2012 00:04:25
Page 2

Approved: January 30, 2012

⌈	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: L1111078704SDL WG384033-04
Report Date/Time: Sunday, January 29, 2012 00:04:25
Page 3

Approved: January 30, 2012

Method 6020 - Summary Report

Sample ID: QC Std 6

Sample Date/Time: Sunday, January 29, 2012 00:10:00
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: EDL

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	9038.250	0.00				ug/L
	Be	9	12855.913	0.11	56.3544	2.182	3.871	ug/L
	Al	27	192498.301	1.62	52.5608	2.476	4.711	ug/L
>	Sc	45	117693.517	117693.52				ug/L
	Ti	49	38757.120	0.14	98.1541	2.132	2.172	ug/L
	V	51	339765.012	1.24	49.2121	1.312	2.666	ug/L
	Cr	52	301373.246	1.08	49.7242	1.189	2.390	ug/L
	Cr	53	36285.800	0.13	49.4773	1.255	2.537	ug/L
	Mn	55	469964.830	1.72	49.4209	0.554	1.120	ug/L
	Co	59	356462.196	1.31	49.2803	0.345	0.699	ug/L
	Ni	60	73614.790	0.27	49.3662	0.637	1.291	ug/L
	Cu	65	72066.054	0.26	50.3958	1.164	2.309	ug/L
	Zn	66	43648.785	0.16	50.7652	0.627	1.235	ug/L
>	Ge	72	272860.951	272860.95				ug/L
	As	75	44889.300	0.16	49.7079	0.733	1.474	ug/L
	Se	77	3313.992	0.01	48.2970	1.267	2.623	ug/L
	Se	82	3998.564	0.01	47.9329	1.144	2.387	ug/L
	Rb	85	1570.497	0.01				mg/L
	Y	89	170912.067	-31478.52				ug/L
	Rh	103	18.000	-11.00				ug/L
	Mo	98	214562.603	0.91	100.3975	1.885	1.877	ug/L
	Ag	107	217175.762	0.92	49.6360	1.204	2.426	ug/L
	Cd	114	50860.559	0.22	51.6254	1.024	1.983	ug/L
>	In	115	235490.724	235490.72				ug/L
	Sn	118	173959.386	0.74	50.4411	1.387	2.749	ug/L
	Sb	123	167295.749	0.71	51.3316	0.748	1.457	ug/L
	Ba	135	65783.332	0.19	50.6317	1.026	2.027	ug/L
	Ce	140	96.677	-0.00				ug/L
>	Tb	159	343229.324	343229.32				ug/L
	Ho	165	6.667	-0.00				ug/L
	Tl	203	276877.909	1.00	50.3480	0.176	0.349	ug/L
	Tl	205	694844.491	2.51	51.3485	0.913	1.778	ug/L
	Pb	206	223603.319	0.81	50.2273	0.747	1.487	ug/L
	Pb	207	210311.172	0.76	50.0230	0.823	1.645	ug/L
	Pb	208	942899.259	3.41	50.3892	0.475	0.943	ug/L
	U	238	1343723.938	4.86	56.3055	0.820	1.456	ug/L
>	Bi	209	276335.022	276335.02				ug/L

Sample ID: QC Std 6
Report Date/Time: Sunday, January 29, 2012 00:12:13
Page 1

Approved: January 30, 2012
Erin D. Long

Na	23	17553629.561	148.26	5.3229	0.141	2.640	mg/L
Mg	24	11081316.353	94.27	5.3609	0.186	3.469	mg/L
K	39	25077956.575	209.88	5.1177	0.230	4.504	mg/L
Ca	43	51906.337	0.44	5.0897	0.318	6.245	mg/L
Fe	54	2188127.751	18.39	5.1826	0.316	6.100	mg/L
Fe	57	965749.956	8.19	5.3247	0.536	10.064	mg/L
> Sc-1	45	117693.517	117693.52				mg/L
Cl	35	25797.210	-11127.09				mg/L
Kr	83	53.001	0.00				mg/L
Br	81	6655.324	1579.11				mg/L
P	31	6622.633	-972.16				mg/L
S	34	153914.424	-21686.03				mg/L
Sr	88	3597.803	3544.46				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	98.424				
Cr	52	99.448				
Cr	53					
Mn	55	98.842				
Co	59	98.561				
Ni	60	98.732				
Cu	65	100.792				
Zn	66	101.530				
> Ge	72		87.449			
As	75	99.416				
Se	77					
Se	82	95.866				
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107	99.272				
Cd	114	103.251				
> In	115		85.374			
Sn	118					
Sb	123	102.663				
Ba	135	101.263				
Ce	140					
> Tb	159		87.539			
Ho	165					
Tl	203	100.696				
Tl	205					
Pb	206					
Pb	207					
Pb	208	100.778				
U	238	112.611				
> Bi	209		86.604			

Sample ID: QC Std 6
Report Date/Time: Sunday, January 29, 2012 00:12:13
Page 2

Approved: January 30, 2012
Erin D. Long

⌈	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: Sunday, January 29, 2012 00:12:13
Page 3

Approved: January 30, 2012

Method 6020 - Summary Report

Sample ID: QC Std 7

Sample Date/Time: Sunday, January 29, 2012 00:17:37
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: EDL

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	9004.887	0.00				ug/L
	Be	9	12.667	0.00	-0.0022	0.011	480.741	ug/L
	Al	27	2183.627	0.00	-0.1117	0.120	107.037	ug/L
>	Sc	45	119586.026	119586.03				ug/L
	Ti	49	80.008	0.00	0.1949	0.085	43.871	ug/L
	V	51	1828.330	-0.00	-0.0009	0.013	1529.748	ug/L
	Cr	52	5695.669	-0.00	-0.0181	0.011	58.916	ug/L
	Cr	53	580.078	-0.00	-0.2586	0.078	29.994	ug/L
	Mn	55	565.692	0.00	0.0180	0.003	17.397	ug/L
	Co	59	107.668	0.00	-0.0028	0.003	111.002	ug/L
	Ni	60	78.001	-0.00	0.0019	0.001	68.338	ug/L
	Cu	65	105.668	0.00	-0.0770	0.011	14.730	ug/L
	Zn	66	571.025	-0.00	0.0408	0.035	85.387	ug/L
>	Ge	72	281283.402	281283.40				ug/L
	As	75	-102.795	-0.00	0.0206	0.048	232.131	ug/L
	Se	77	51.333	-0.00	0.1043	0.162	155.523	ug/L
	Se	82	6.881	0.00	0.0724	0.109	150.045	ug/L
	Rb	85	33.667	0.00				mg/L
	Y	89	177093.204	-25297.38				ug/L
	Rh	103	10.667	-18.33				ug/L
	Mo	98	62.160	0.00	0.0392	0.004	9.574	ug/L
	Ag	107	88.668	0.00	0.0091	0.005	49.457	ug/L
	Cd	114	11.690	0.00	0.0206	0.001	6.047	ug/L
>	In	115	240330.668	240330.67				ug/L
	Sn	118	511.882	-0.00	0.1452	0.006	4.114	ug/L
	Sb	123	76.409	0.00	0.0357	0.003	8.470	ug/L
	Ba	135	34.334	0.00	0.0096	0.006	63.581	ug/L
	Ce	140	36.670	-0.00				ug/L
>	Tb	159	346801.391	346801.39				ug/L
	Ho	165	16.668	0.00				ug/L
	Tl	203	67.001	0.00	0.0156	0.001	9.293	ug/L
	Tl	205	126.680	0.00	0.0206	0.002	8.290	ug/L
	Pb	206	216.005	0.00	0.0097	0.003	27.825	ug/L
	Pb	207	188.004	0.00	0.0136	0.003	19.015	ug/L
	Pb	208	825.357	0.00	0.0076	0.001	7.155	ug/L
	U	238	212.338	0.00	0.0123	0.001	8.998	ug/L
>	Bi	209	284557.909	284557.91				ug/L

Sample ID: QC Std 7
Report Date/Time: Sunday, January 29, 2012 00:19:49
Page 1

Approved: January 30, 2012
Erin D. Long

Na	23	100563.434	-0.19	0.0176	0.002	9.041	mg/L
Mg	24	2477.293	0.02	-0.0032	0.000	8.471	mg/L
K	39	458610.450	0.32	0.0005	0.004	843.692	mg/L
Ca	43	226.692	0.00	0.0031	0.002	72.983	mg/L
Fe	54	29906.467	0.01	0.0002	0.001	542.847	mg/L
Fe	57	6746.739	0.01	-0.0020	0.002	88.556	mg/L
Sc-1	45	119586.026	119586.03				mg/L
Cl	35	25953.022	-10971.28				mg/L
Kr	83	52.001	-1.00				mg/L
Br	81	6164.947	1088.73				mg/L
P	31	6633.311	-961.48				mg/L
S	34	158542.827	-17057.63				mg/L
Sr	88	186.688	133.35				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		90.149			
As	75					
Se	77					
Se	82					
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107					
Cd	114					
In	115		87.129			
Sn	118					
Sb	123					
Ba	135					
Ce	140					
Tb	159		88.450			
Ho	165					
Tl	203					
Tl	205					
Pb	206					
Pb	207					
Pb	208					
U	238					
Bi	209		89.181			

Sample ID: QC Std 7
Report Date/Time: Sunday, January 29, 2012 00:19:49
Page 2

Approved: January 30, 2012
Erin D. Long

⌈	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: Sunday, January 29, 2012 00:19:49
Page 3

Approved: January 30, 2012

Method 6020 - Summary Report

Sample ID: L1111078706

Sample Date/Time: Sunday, January 29, 2012 00:25:13
Number of Replicates: 3
Aliquot Volume (mL):
Diluted To Volume (mL):
Autosampler Position: 84
Method File: C:\elandata\Method\6020a.mth
Sample Description: 1

User ID: EDL

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	8337.508	0.00				ug/L
	Be	9	11.333	0.00	-0.0047	0.029	627.018	ug/L
	Al	27	65674.649	0.57	18.3542	0.099	0.539	ug/L
>	Sc	45	112049.061	112049.06				ug/L
	Ti	49	573.410	0.00	1.5815	0.040	2.506	ug/L
	V	51	2205.870	0.00	0.0913	0.009	10.233	ug/L
	Cr	52	8513.432	0.01	0.6152	0.070	11.452	ug/L
	Cr	53	1456.940	0.00	1.1694	0.037	3.188	ug/L
	Mn	55	3835866.745	15.34	440.4138	14.705	3.339	ug/L
	Co	59	2879.860	0.01	0.4171	0.006	1.443	ug/L
	Ni	60	4178.423	0.02	3.0101	0.064	2.139	ug/L
	Cu	65	644.365	0.00	0.3441	0.011	3.069	ug/L
	Zn	66	2874.524	0.01	3.0799	0.114	3.692	ug/L
>	Ge	72	250237.879	250237.88				ug/L
	As	75	254.745	0.00	0.4377	0.073	16.742	ug/L
	Se	77	88.000	0.00	0.7866	0.435	55.316	ug/L
	Se	82	100.234	0.00	1.3079	0.285	21.818	ug/L
	Rb	85	1868.562	0.01				mg/L
	Y	89	163249.792	-39140.79				ug/L
	Rh	103	80.668	51.67				ug/L
	Mo	98	267.797	0.00	0.1481	0.008	5.105	ug/L
	Ag	107	79.668	0.00	0.0092	0.002	25.826	ug/L
	Cd	114	13.284	0.00	0.0238	0.007	28.166	ug/L
>	In	115	214839.490	214839.49				ug/L
	Sn	118	1920.355	0.01	0.6098	0.018	3.006	ug/L
	Sb	123	212.662	0.00	0.0843	0.001	0.957	ug/L
	Ba	135	24441.381	0.08	20.2063	0.278	1.375	ug/L
	Ce	140	1917.080	0.01				ug/L
>	Tb	159	319332.095	319332.10				ug/L
	Ho	165	30.003	0.00				ug/L
	Tl	203	69.334	0.00	0.0176	0.000	2.036	ug/L
	Tl	205	160.018	0.00	0.0245	0.003	13.916	ug/L
	Pb	206	277.341	0.00	0.0307	0.007	24.237	ug/L
	Pb	207	249.006	0.00	0.0350	0.007	20.045	ug/L
	Pb	208	1139.042	0.00	0.0314	0.002	4.797	ug/L
	U	238	27311.958	0.11	1.2562	0.014	1.101	ug/L
>	Bi	209	252483.656	252483.66				ug/L

Sample ID: L1111078706
Report Date/Time: Sunday, January 29, 2012 00:27:26
Page 1

Approved: January 30, 2012
Erin D. Long

Na	23	127109439.569	1135.33	40.6001	2.643	6.510	mg/L
Mg	24	36282105.080	324.26	18.4512	1.021	5.533	mg/L
K	39	3524204.009	27.98	0.6758	0.041	6.078	mg/L
Ca	43	593875.269	5.31	61.3283	3.601	5.871	mg/L
Fe	54	138174.160	1.00	0.2778	0.016	5.804	mg/L
Fe	57	65083.012	0.53	0.3399	0.014	4.111	mg/L
Sc-1	45	112049.061	112049.06				mg/L
Cl	35	1003724.772	966800.47				mg/L
Kr	83	50.001	-3.00				mg/L
Br	81	76362.300	71286.08				mg/L
P	31	11149.463	3554.67				mg/L
S	34	752656.915	577056.46				mg/L
Sr	88	2309558.658	2309505.32				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					
Cr	52					
Cr	53					
Mn	55					
Co	59					
Ni	60					
Cu	65					
Zn	66					
Ge	72		80.199			
As	75					
Se	77					
Se	82					
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107					
Cd	114					
In	115		77.887			
Sn	118					
Sb	123					
Ba	135					
Ce	140					
Tb	159		81.444			
Ho	165					
Tl	203					
Tl	205					
Pb	206					
Pb	207					
Pb	208					
U	238					
Bi	209		79.129			

Sample ID: L1111078706
Report Date/Time: Sunday, January 29, 2012 00:27:26
Page 2

Approved: January 30, 2012
Erin D. Long

⌈	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: L1111078706
Report Date/Time: Sunday, January 29, 2012 00:27:26
Page 3

Approved: January 30, 2012

Method 6020 - Summary Report

Sample ID: L1111078707

Sample Date/Time: Sunday, January 29, 2012 00:33:00
Number of Replicates: 3
Aliquot Volume (mL):
Diluted To Volume (mL):
Autosampler Position: 85
Method File: C:\elandata\Method\6020a.mth
Sample Description: 5

User ID: EDL

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	10273.027	0.00				ug/L
	Be	9	8.000	0.00	-0.0261	0.008	30.851	ug/L
	Al	27	77727.542	0.56	18.1565	0.698	3.843	ug/L
>	Sc	45	134053.256	134053.26				ug/L
	Ti	49	253.363	0.00	0.5511	0.055	10.054	ug/L
	V	51	2266.140	0.00	0.0252	0.008	30.598	ug/L
	Cr	52	8636.226	0.01	0.3035	0.011	3.652	ug/L
	Cr	53	1376.918	0.00	0.6088	0.110	18.088	ug/L
	Mn	55	470395.739	1.48	42.5921	0.993	2.330	ug/L
	Co	59	983.068	0.00	0.0998	0.005	5.136	ug/L
	Ni	60	2162.969	0.01	1.2013	0.017	1.416	ug/L
	Cu	65	357.011	0.00	0.0667	0.002	2.732	ug/L
	Zn	66	3489.432	0.01	2.9255	0.017	0.598	ug/L
>	Ge	72	316822.838	316822.84				ug/L
	As	75	204.388	0.00	0.3257	0.022	6.844	ug/L
	Se	77	94.667	0.00	0.5726	0.238	41.578	ug/L
	Se	82	87.185	0.00	0.8944	0.113	12.608	ug/L
	Rb	85	2185.975	0.01				mg/L
	Y	89	201738.947	-651.64				ug/L
	Rh	103	115.335	86.33				ug/L
	Mo	98	135.865	0.00	0.0664	0.002	2.370	ug/L
	Ag	107	72.001	0.00	0.0037	0.001	25.034	ug/L
	Cd	114	-13.075	-0.00	-0.0026	0.003	113.949	ug/L
>	In	115	269029.562	269029.56				ug/L
	Sn	118	3572.766	0.01	0.9066	0.019	2.076	ug/L
	Sb	123	128.872	0.00	0.0474	0.004	9.443	ug/L
	Ba	135	16046.607	0.04	10.9854	0.310	2.824	ug/L
	Ce	140	950.150	0.00				ug/L
>	Tb	159	385353.348	385353.35				ug/L
	Ho	165	40.004	0.00				ug/L
	Tl	203	25.334	0.00	0.0079	0.001	7.111	ug/L
	Tl	205	66.674	0.00	0.0159	0.002	12.600	ug/L
	Pb	206	416.681	0.00	0.0458	0.003	6.008	ug/L
	Pb	207	350.011	0.00	0.0442	0.004	9.000	ug/L
	Pb	208	1662.749	0.00	0.0438	0.004	8.032	ug/L
	U	238	6450.896	0.02	0.2441	0.010	4.106	ug/L
>	Bi	209	310714.725	310714.72				ug/L

Sample ID: L1111078707
Report Date/Time: Sunday, January 29, 2012 00:35:13
Page 1

Approved: January 30, 2012
Erin D. Long

Na	23	80501040.516	599.53	21.4511	0.240	1.120	mg/L
Mg	24	10231530.119	76.32	4.3392	0.025	0.565	mg/L
K	39	2132823.423	12.39	0.2953	0.001	0.392	mg/L
Ca	43	199544.664	1.49	17.1804	0.670	3.900	mg/L
Fe	54	137196.860	0.78	0.2181	0.012	5.711	mg/L
Fe	57	52875.882	0.35	0.2182	0.008	3.513	mg/L
Sc-1	45	134053.256	134053.26				mg/L
Cl	35	760652.565	723728.26				mg/L
Kr	83	55.667	2.67				mg/L
Br	81	76882.381	71806.17				mg/L
P	31	9392.625	1797.83				mg/L
S	34	298082.348	122481.89				mg/L
Sr	88	3347595.383	3347542.04				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		101.539			
As	75					
Se	77					
Se	82					
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107					
Cd	114					
In	115		97.533			
Sn	118					
Sb	123					
Ba	135					
Ce	140					
Tb	159		98.282			
Ho	165					
Tl	203					
Tl	205					
Pb	206					
Pb	207					
Pb	208					
U	238					
Bi	209		97.378			

Sample ID: L1111078707
Report Date/Time: Sunday, January 29, 2012 00:35:13
Page 2

Approved: January 30, 2012
Erin D. Long

⌈	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: L1111078707
Report Date/Time: Sunday, January 29, 2012 00:35:13
Page 3

Approved: January 30, 2012

Method 6020 - Summary Report

Sample ID: L1111078709

Sample Date/Time: Sunday, January 29, 2012 00:40:47
Number of Replicates: 3
Aliquot Volume (mL):
Diluted To Volume (mL):
Autosampler Position: 86
Method File: C:\elandata\Method\6020a.mth
Sample Description: 1

User ID: EDL

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	10273.042	-0.00				ug/L
	Be	9	8.667	0.00	-0.0266	0.005	20.426	ug/L
	Al	27	57346.678	0.37	11.8923	0.710	5.969	ug/L
>	Sc	45	148259.129	148259.13				ug/L
	Ti	49	466.727	0.00	1.0091	0.169	16.761	ug/L
	V	51	2505.811	0.00	0.0529	0.008	15.405	ug/L
	Cr	52	9579.933	0.01	0.4307	0.030	7.060	ug/L
	Cr	53	1300.232	0.00	0.5042	0.054	10.758	ug/L
	Mn	55	5502251.828	17.25	495.3201	15.887	3.207	ug/L
	Co	59	4655.014	0.01	0.5331	0.007	1.280	ug/L
	Ni	60	6455.899	0.02	3.6566	0.074	2.030	ug/L
	Cu	65	897.057	0.00	0.3893	0.022	5.573	ug/L
	Zn	66	5714.683	0.02	5.1428	0.175	3.398	ug/L
>	Ge	72	319110.165	319110.16				ug/L
	As	75	351.728	0.00	0.4642	0.050	10.696	ug/L
	Se	77	71.334	0.00	0.2671	0.128	47.735	ug/L
	Se	82	60.917	0.00	0.6194	0.088	14.269	ug/L
	Rb	85	1612.172	0.00				mg/L
	Y	89	199167.988	-3222.60				ug/L
	Rh	103	39.667	10.67				ug/L
	Mo	98	359.577	0.00	0.1561	0.005	3.514	ug/L
	Ag	107	67.668	0.00	0.0027	0.002	81.215	ug/L
	Cd	114	19.829	0.00	0.0263	0.012	46.163	ug/L
>	In	115	272666.926	272666.93				ug/L
	Sn	118	1529.874	0.00	0.3831	0.013	3.485	ug/L
	Sb	123	324.044	0.00	0.0987	0.006	5.832	ug/L
	Ba	135	31068.126	0.08	20.1815	0.346	1.715	ug/L
	Ce	140	1046.838	0.00				ug/L
>	Tb	159	406475.446	406475.45				ug/L
	Ho	165	23.336	0.00				ug/L
	Tl	203	46.001	0.00	0.0110	0.001	5.719	ug/L
	Tl	205	83.342	0.00	0.0169	0.001	3.942	ug/L
	Pb	206	470.685	0.00	0.0541	0.003	5.088	ug/L
	Pb	207	418.348	0.00	0.0564	0.003	5.966	ug/L
	Pb	208	1905.105	0.00	0.0530	0.002	3.960	ug/L
	U	238	19206.975	0.06	0.7009	0.006	0.851	ug/L
>	Bi	209	318999.099	318999.10				ug/L

Sample ID: L1111078709
Report Date/Time: Sunday, January 29, 2012 00:43:00
Page 1

Approved: January 30, 2012
Erin D. Long

⌈	Na	23	34572761.358	232.23	8.3240	0.081	0.976	mg/L
|	Mg	24	30858208.620	208.28	11.8499	0.273	2.307	mg/L
|	K	39	2905227.028	16.11	0.3860	0.025	6.413	mg/L
|	Ca	43	466847.322	3.15	36.4021	1.415	3.886	mg/L
|	Fe	54	390285.250	2.40	0.6730	0.033	4.892	mg/L
|	Fe	57	160721.289	1.04	0.6687	0.042	6.307	mg/L
⌊>	Sc-1	45	148259.129	148259.13				mg/L
	Cl	35	331522.945	294598.64				mg/L
	Kr	83	48.001	-5.00				mg/L
	Br	81	31496.131	26419.92				mg/L
	P	31	16036.156	8441.36				mg/L
	S	34	518377.599	342777.14				mg/L
	Sr	88	890974.363	890921.02				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		102.272			
|	As	75					
|	Se	77					
|	Se	82					
⌊	Rb	85					
	Y	89					
	Rh	103					
⌈	Mo	98					
|	Ag	107					
|	Cd	114					
|>	In	115		98.852			
|	Sn	118					
⌊	Sb	123					
⌈	Ba	135					
|	Ce	140					
⌊>	Tb	159		103.670			
⌈	Ho	165					
|	Tl	203					
|	Tl	205					
|	Pb	206					
|	Pb	207					
|	Pb	208					
|	U	238					
⌊>	Bi	209		99.975			

Sample ID: L1111078709
Report Date/Time: Sunday, January 29, 2012 00:43:00
Page 2

Approved: January 30, 2012

⌈	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: L1111078709
Report Date/Time: Sunday, January 29, 2012 00:43:00
Page 3

Approved: January 30, 2012

Method 6020 - Summary Report

Sample ID: L1111078711

Sample Date/Time: Sunday, January 29, 2012 00:48:35
Number of Replicates: 3
Aliquot Volume (mL):
Diluted To Volume (mL):
Autosampler Position: 87
Method File: C:\elandata\Method\6020a.mth
Sample Description: 1

User ID: EDL

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	9855.826	0.00				ug/L
	Be	9	10.667	0.00	-0.0153	0.016	107.604	ug/L
	Al	27	92411.296	0.68	22.0240	1.563	7.098	ug/L
>	Sc	45	132173.293	132173.29				ug/L
	Ti	49	380.047	0.00	0.8584	0.238	27.780	ug/L
	V	51	2207.731	0.00	0.0277	0.016	56.938	ug/L
	Cr	52	9821.217	0.01	0.5263	0.014	2.674	ug/L
	Cr	53	1216.879	0.00	0.4673	0.210	44.865	ug/L
	Mn	55	4181524.151	13.68	392.7149	10.450	2.661	ug/L
	Co	59	2385.032	0.01	0.2771	0.007	2.652	ug/L
	Ni	60	4450.566	0.01	2.6177	0.093	3.561	ug/L
	Cu	65	586.026	0.00	0.2180	0.017	7.637	ug/L
	Zn	66	4056.028	0.01	3.6486	0.036	0.973	ug/L
>	Ge	72	305766.655	305766.65				ug/L
	As	75	420.541	0.00	0.5456	0.032	5.936	ug/L
	Se	77	87.334	0.00	0.5182	0.119	22.921	ug/L
	Se	82	53.279	0.00	0.5626	0.069	12.266	ug/L
	Rb	85	9203.506	0.03				mg/L
	Y	89	196138.850	-6251.73				ug/L
	Rh	103	63.334	34.33				ug/L
	Mo	98	460.994	0.00	0.2049	0.006	2.714	ug/L
	Ag	107	55.334	-0.00	0.0006	0.003	426.254	ug/L
	Cd	114	12.620	0.00	0.0206	0.010	46.448	ug/L
>	In	115	261501.292	261501.29				ug/L
	Sn	118	1510.804	0.00	0.3943	0.012	3.087	ug/L
	Sb	123	151.077	0.00	0.0545	0.006	11.530	ug/L
	Ba	135	61757.955	0.16	42.9932	0.736	1.712	ug/L
	Ce	140	1150.194	0.00				ug/L
>	Tb	159	379452.630	379452.63				ug/L
	Ho	165	33.337	0.00				ug/L
	Tl	203	31.334	0.00	0.0090	0.001	9.380	ug/L
	Tl	205	73.341	0.00	0.0165	0.000	2.469	ug/L
	Pb	206	1950.248	0.01	0.3642	0.019	5.249	ug/L
	Pb	207	1704.858	0.01	0.3419	0.017	4.941	ug/L
	Pb	208	7740.482	0.02	0.3439	0.008	2.225	ug/L
	U	238	55364.917	0.18	2.1292	0.076	3.578	ug/L
>	Bi	209	301694.483	301694.48				ug/L

Sample ID: L1111078711
Report Date/Time: Sunday, January 29, 2012 00:50:47
Page 1

Approved: January 30, 2012
Erin D. Long

Na	23	50470175.721	380.80	13.6338	0.394	2.888	mg/L
Mg	24	43049434.855	325.69	18.5321	0.411	2.220	mg/L
K	39	2612172.376	16.24	0.3893	0.009	2.209	mg/L
Ca	43	651467.861	4.93	56.9450	1.224	2.150	mg/L
Fe	54	181660.265	1.14	0.3173	0.014	4.531	mg/L
Fe	57	82804.459	0.58	0.3693	0.012	3.139	mg/L
Sc-1	45	132173.293	132173.29				mg/L
Cl	35	485560.742	448636.44				mg/L
Kr	83	44.667	-8.33				mg/L
Br	81	34348.020	29271.81				mg/L
P	31	15265.454	7670.66				mg/L
S	34	494323.339	318722.88				mg/L
Sr	88	1845965.028	1845911.69				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		97.995			
As	75					
Se	77					
Se	82					
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107					
Cd	114					
In	115		94.804			
Sn	118					
Sb	123					
Ba	135					
Ce	140					
Tb	159		96.778			
Ho	165					
Tl	203					
Tl	205					
Pb	206					
Pb	207					
Pb	208					
U	238					
Bi	209		94.551			

Sample ID: L1111078711
Report Date/Time: Sunday, January 29, 2012 00:50:47
Page 2

Approved: January 30, 2012
Erin D. Long

⌈	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: L1111078711
Report Date/Time: Sunday, January 29, 2012 00:50:47
Page 3

Approved: January 30, 2012

Method 6020 - Summary Report

Sample ID: L1111078713

Sample Date/Time: Sunday, January 29, 2012 00:56:22
Number of Replicates: 3
Aliquot Volume (mL):
Diluted To Volume (mL):
Autosampler Position: 88
Method File: C:\elandata\Method\6020a.mth
Sample Description: 5

User ID: EDL

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	9522.136	-0.01				ug/L
	Be	9	8.667	0.00	-0.0249	0.006	22.908	ug/L
	Al	27	16132.309	0.10	3.0347	0.142	4.666	ug/L
>	Sc	45	140170.364	140170.36				ug/L
	Ti	49	186.688	0.00	0.4045	0.117	28.979	ug/L
	V	51	1622.332	-0.00	-0.0554	0.042	76.065	ug/L
	Cr	52	7939.528	0.00	0.1992	0.041	20.501	ug/L
	Cr	53	2590.664	0.01	2.0456	0.112	5.494	ug/L
	Mn	55	2418.376	0.01	0.1785	0.002	1.174	ug/L
	Co	59	310.009	0.00	0.0195	0.003	13.726	ug/L
	Ni	60	813.381	0.00	0.4197	0.019	4.628	ug/L
	Cu	65	478.019	0.00	0.1384	0.011	7.806	ug/L
	Zn	66	3786.566	0.01	3.2132	0.083	2.587	ug/L
>	Ge	72	318219.685	318219.69				ug/L
	As	75	569.637	0.00	0.6720	0.064	9.596	ug/L
	Se	77	168.668	0.00	1.5113	0.202	13.336	ug/L
	Se	82	166.877	0.00	1.7132	0.117	6.821	ug/L
	Rb	85	11221.335	0.04				mg/L
	Y	89	202363.847	-26.74				ug/L
	Rh	103	44.001	15.00				ug/L
	Mo	98	9961.029	0.04	4.0022	0.114	2.843	ug/L
	Ag	107	61.334	-0.00	0.0013	0.000	29.971	ug/L
	Cd	114	-7.354	-0.00	0.0028	0.007	247.502	ug/L
>	In	115	275146.506	275146.51				ug/L
	Sn	118	4191.324	0.01	1.0400	0.062	5.991	ug/L
	Sb	123	117.785	0.00	0.0438	0.006	14.453	ug/L
	Ba	135	83024.744	0.21	55.6095	0.629	1.131	ug/L
	Ce	140	176.686	-0.00				ug/L
>	Tb	159	394488.482	394488.48				ug/L
	Ho	165	13.335	0.00				ug/L
	Tl	203	32.334	0.00	0.0092	0.002	17.442	ug/L
	Tl	205	73.341	0.00	0.0166	0.001	6.055	ug/L
	Pb	206	238.672	0.00	0.0125	0.003	25.725	ug/L
	Pb	207	213.672	0.00	0.0173	0.006	32.574	ug/L
	Pb	208	986.033	0.00	0.0138	0.002	13.005	ug/L
	U	238	124.669	0.00	0.0085	0.001	11.803	ug/L
>	Bi	209	296991.662	296991.66				ug/L

Sample ID: L1111078713
Report Date/Time: Sunday, January 29, 2012 00:58:34
Page 1

Approved: January 30, 2012
Erin D. Long

⌈	Na	23	S	S	S	S	S	mg/L
|	Mg	24	193140.350	1.38	0.0740	0.000	0.634	mg/L
|	K	39	5251677.097	33.94	0.8216	0.004	0.494	mg/L
|	Ca	43	175581.790	1.25	14.4522	0.263	1.822	mg/L
|	Fe	54	42841.454	0.07	0.0158	0.003	21.344	mg/L
|	Fe	57	15589.544	0.06	0.0337	0.007	22.199	mg/L
⌊>	Sc-1	45	140170.364	140170.36				mg/L
	Cl	35	2192446.072	2155521.77				mg/L
	Kr	83	53.001	0.00				mg/L
	Br	81	149503.491	144427.28				mg/L
	P	31	9402.033	1807.24				mg/L
	S	34	199415.346	23814.89				mg/L
	Sr	88	1071959.038	1071905.70				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		101.986			
|	As	75					
|	Se	77					
|	Se	82					
⌊	Rb	85					
	Y	89					
	Rh	103					
⌈	Mo	98					
|	Ag	107					
|	Cd	114					
|>	In	115		99.751			
|	Sn	118					
⌊	Sb	123					
⌈	Ba	135					
|	Ce	140					
⌊>	Tb	159		100.612			
⌈	Ho	165					
|	Tl	203					
|	Tl	205					
|	Pb	206					
|	Pb	207					
|	Pb	208					
|	U	238					
⌊>	Bi	209		93.077			

Sample ID: L1111078713
Report Date/Time: Sunday, January 29, 2012 00:58:34
Page 2

Approved: January 30, 2012

⌈	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: L1111078713
Report Date/Time: Sunday, January 29, 2012 00:58:34
Page 3

Approved: January 30, 2012

Method 6020 - Summary Report

Sample ID: QC Std 6

Sample Date/Time: Sunday, January 29, 2012 01:04:09
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: EDL

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	9155.070	-0.01				ug/L
	Be	9	14310.949	0.10	53.1937	4.571	8.594	ug/L
	Al	27	237562.696	1.69	54.8352	1.147	2.092	ug/L
>	Sc	45	139121.458	139121.46				ug/L
	Ti	49	47164.787	0.14	97.4218	6.512	6.684	ug/L
	V	51	419587.538	1.25	49.5650	2.691	5.429	ug/L
	Cr	52	370101.271	1.09	49.8025	1.755	3.523	ug/L
	Cr	53	44814.732	0.13	49.8355	1.602	3.216	ug/L
	Mn	55	589664.801	1.76	50.5710	0.613	1.212	ug/L
	Co	59	436015.386	1.30	49.1637	1.117	2.273	ug/L
	Ni	60	91282.836	0.27	49.9186	0.250	0.500	ug/L
	Cu	65	86195.021	0.26	49.1526	0.772	1.570	ug/L
	Zn	66	53129.697	0.16	50.3910	0.950	1.885	ug/L
>	Ge	72	334576.299	334576.30				ug/L
	As	75	56153.844	0.17	50.7044	0.823	1.624	ug/L
	Se	77	4329.792	0.01	51.4887	1.356	2.634	ug/L
	Se	82	5120.546	0.02	50.0414	0.865	1.728	ug/L
	Rb	85	2013.930	0.01				mg/L
	Y	89	221273.163	18882.58				ug/L
	Rh	103	26.334	-2.67				ug/L
	Mo	98	268224.181	0.92	100.8712	3.542	3.512	ug/L
	Ag	107	275963.477	0.94	50.7223	2.752	5.426	ug/L
	Cd	114	59509.192	0.20	48.5039	2.117	4.365	ug/L
>	In	115	293213.703	293213.70				ug/L
	Sn	118	211912.283	0.72	49.3652	0.942	1.909	ug/L
	Sb	123	202942.621	0.69	50.0266	0.757	1.512	ug/L
	Ba	135	80026.275	0.19	51.0976	1.305	2.554	ug/L
	Ce	140	93.343	-0.00				ug/L
>	Tb	159	413748.748	413748.75				ug/L
	Ho	165	16.668	0.00				ug/L
	Tl	203	327606.660	1.00	50.2569	0.280	0.557	ug/L
	Tl	205	817928.703	2.50	50.9835	0.956	1.876	ug/L
	Pb	206	268794.866	0.82	50.9435	1.146	2.249	ug/L
	Pb	207	250265.944	0.76	50.2183	0.434	0.865	ug/L
	Pb	208	1122089.926	3.42	50.5897	0.724	1.431	ug/L
	U	238	1586759.139	4.84	56.0805	1.457	2.597	ug/L
>	Bi	209	327569.670	327569.67				ug/L

Sample ID: QC Std 6
Report Date/Time: Sunday, January 29, 2012 01:06:22
Page 1

Approved: January 30, 2012
Erin D. Long

Na	23	21529608.723	153.92	5.5253	0.166	3.005	mg/L
Mg	24	13476266.444	97.00	5.5163	0.183	3.321	mg/L
K	39	30086767.773	213.16	5.1978	0.269	5.180	mg/L
Ca	43	62946.595	0.45	5.2246	0.366	6.997	mg/L
Fe	54	2706941.012	19.27	5.4304	0.325	5.991	mg/L
Fe	57	1177314.616	8.43	5.4821	0.191	3.488	mg/L
> Sc-1	45	139121.458	139121.46				mg/L
Cl	35	33704.091	-3220.21				mg/L
Kr	83	51.001	-2.00				mg/L
Br	81	9079.614	4003.40				mg/L
P	31	8987.569	1392.77				mg/L
S	34	196978.249	21377.79				mg/L
Sr	88	4921.954	4868.61				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	99.130				
	Cr	52	99.605				
	Cr	53					
	Mn	55	101.142				
	Co	59	98.327				
	Ni	60	99.837				
	Cu	65	98.305				
	Zn	66	100.782				
>	Ge	72		107.228			
	As	75	101.409				
	Se	77					
	Se	82	100.083				
	Rb	85					
	Y	89					
	Rh	103					
	Mo	98					
	Ag	107	101.445				
	Cd	114	97.008				
>	In	115		106.301			
	Sn	118					
	Sb	123	100.053				
	Ba	135	102.195				
	Ce	140					
>	Tb	159		105.525			
	Ho	165					
	Tl	203	100.514				
	Tl	205					
	Pb	206					
	Pb	207					
	Pb	208	101.179				
	U	238	112.161				
>	Bi	209		102.661			

Sample ID: QC Std 6
Report Date/Time: Sunday, January 29, 2012 01:06:22
Page 2

Approved: January 30, 2012
Erin D. Long

⌈	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: Sunday, January 29, 2012 01:06:22
Page 3

Approved: January 30, 2012

Method 6020 - Summary Report

Sample ID: QC Std 7

Sample Date/Time: Sunday, January 29, 2012 01:11:46
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: EDL

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	9605.539	-0.01				ug/L
	Be	9	10.667	0.00	-0.0198	0.004	20.114	ug/L
	Al	27	2066.924	-0.00	-0.2529	0.016	6.260	ug/L
>	Sc	45	148122.112	148122.11				ug/L
	Ti	49	70.007	0.00	0.1420	0.078	55.150	ug/L
	V	51	2116.866	-0.00	-0.0139	0.012	87.649	ug/L
	Cr	52	6580.667	-0.00	-0.0664	0.010	15.728	ug/L
	Cr	53	710.101	-0.00	-0.2554	0.057	22.361	ug/L
	Mn	55	707.037	0.00	0.0193	0.007	34.697	ug/L
	Co	59	134.336	0.00	-0.0026	0.003	113.930	ug/L
	Ni	60	86.668	-0.00	-0.0027	0.005	200.009	ug/L
	Cu	65	127.669	0.00	-0.0776	0.008	10.043	ug/L
	Zn	66	689.035	-0.00	0.0344	0.028	81.722	ug/L
>	Ge	72	342694.699	342694.70				ug/L
	As	75	-108.707	-0.00	0.0351	0.029	81.376	ug/L
	Se	77	65.334	-0.00	0.1349	0.148	110.023	ug/L
	Se	82	8.591	0.00	0.0721	0.136	187.982	ug/L
	Rb	85	33.334	-0.00				mg/L
	Y	89	222950.080	20559.50				ug/L
	Rh	103	13.667	-15.33				ug/L
	Mo	98	103.901	0.00	0.0490	0.011	22.718	ug/L
	Ag	107	143.003	0.00	0.0150	0.007	46.342	ug/L
	Cd	114	14.687	0.00	0.0208	0.001	5.115	ug/L
>	In	115	298142.468	298142.47				ug/L
	Sn	118	663.893	-0.00	0.1518	0.000	0.283	ug/L
	Sb	123	65.828	0.00	0.0287	0.002	6.721	ug/L
	Ba	135	45.667	0.00	0.0117	0.002	19.051	ug/L
	Ce	140	40.004	-0.00				ug/L
>	Tb	159	425775.072	425775.07				ug/L
	Ho	165	20.002	0.00				ug/L
	Tl	203	94.668	0.00	0.0175	0.004	24.750	ug/L
	Tl	205	203.356	0.00	0.0236	0.004	16.111	ug/L
	Pb	206	272.007	0.00	0.0116	0.004	32.919	ug/L
	Pb	207	232.006	0.00	0.0146	0.002	13.115	ug/L
	Pb	208	1055.370	0.00	0.0101	0.003	30.880	ug/L
	U	238	305.009	0.00	0.0139	0.003	18.025	ug/L
>	Bi	209	343236.839	343236.84				ug/L

Sample ID: QC Std 7
Report Date/Time: Sunday, January 29, 2012 01:13:58
Page 1

Approved: January 30, 2012
Erin D. Long

Na	23	148633.137	-0.03	0.0233	0.003	14.240	mg/L
Mg	24	3994.826	0.02	-0.0029	0.001	23.371	mg/L
K	39	485962.110	-0.24	-0.0131	0.000	1.515	mg/L
Ca	43	183.354	-0.00	-0.0046	0.003	65.070	mg/L
Fe	54	36290.911	0.01	-0.0012	0.001	116.503	mg/L
Fe	57	7003.656	-0.00	-0.0081	0.002	23.604	mg/L
Sc-1	45	148122.112	148122.11				mg/L
Cl	35	29037.883	-7886.42				mg/L
Kr	83	47.001	-6.00				mg/L
Br	81	7561.434	2485.22				mg/L
P	31	8572.430	977.64				mg/L
S	34	187290.967	11690.51				mg/L
Sr	88	280.034	226.69				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		109.830			
As	75					
Se	77					
Se	82					
Rb	85					
Y	89					
Rh	103					
Mo	98					
Ag	107					
Cd	114					
In	115		108.088			
Sn	118					
Sb	123					
Ba	135					
Ce	140					
Tb	159		108.592			
Ho	165					
Tl	203					
Tl	205					
Pb	206					
Pb	207					
Pb	208					
U	238					
Bi	209		107.571			

Sample ID: QC Std 7
Report Date/Time: Sunday, January 29, 2012 01:13:58
Page 2

Approved: January 30, 2012
Erin D. Long

⌈	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: Sunday, January 29, 2012 01:13:58
Page 3

Approved: January 30, 2012

2.1.3 Metals CVAA Data (Mercury)

2.1.3.1 Summary Data

Login Number: L12010651
Department: Metals - AA
Analyst: Sheri Pfalzgraf

METHOD

Preparation: SW-846 7470

Preparation: SW-846 7471(solid)/SW-846 7470(water)

Analysis: SW-846 7470

Analysis: SW-846 7471(solid)/SW-846 7470(water)

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: WG388140 - All acceptance criteria were met.

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

Matrix Spikes: WG388140 - Sample 01 was chosen by the client for MS/MSD analysis. Samples 02(MS) and 03(MSD) yielded noncompliant recoveries and a noncompliant RPD for mercury.

Matrix Spikes: All acceptance criteria were met.

SAMPLES

Samples: All acceptance criteria were met.

Narrative ID: 41413
Approved By: Maren Beery

Maren Beery

Microbac

Lab Report #: L12010651
Lab Project #: 3005.011
Project Name: White Sands MR
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L12010651-01	**PrePrep Method:**	N/A	**Instrument:**	HYDRA
Client ID:	MPL-16-0112-1	**Prep Method:**	7470A	**Prep Date:**	01/27/2012 08:27
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	01/27/2012 14:02
Workgroup #:	WG388140	**Analyst:**	SLP	**Run Date:**	01/27/2012 14:25
Collect Date:	01/24/2012 14:20	**Dilution:**	1	**File ID:**	HY.012712.142556
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 #:	L12010651-02	**PrePrep Method:**	N/A	**Instrument:**	HYDRA
Client ID:	MPL-16-0112-MS	**Prep Method:**	7470A	**Prep Date:**	01/27/2012 08:27
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	01/27/2012 14:02
Workgroup #:	WG388140	**Analyst:**	SLP	**Run Date:**	01/27/2012 14:29
Collect Date:	01/24/2012 14:20	**Dilution:**	1	**File ID:**	HY.012712.142956
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Mercury	7439-97-6	0.00340		0.000222	0.000111

Sample #:	L12010651-03	**PrePrep Method:**	N/A	**Instrument:**	HYDRA
Client ID:	MPL-16-0112-MSD	**Prep Method:**	7470A	**Prep Date:**	01/27/2012 08:27
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	01/27/2012 14:02
Workgroup #:	WG388140	**Analyst:**	SLP	**Run Date:**	01/27/2012 14:31
Collect Date:	01/24/2012 14:20	**Dilution:**	1	**File ID:**	HY.012712.143151
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Mercury	7439-97-6	0.00207		0.000222	0.000111

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: WG388098
Analyst: REK
Spike Analyst: REK
Method: 7470A
Run Date: 01/27/2012 08:27
Hotblock Start Temp: 93.5 @ 08:20
Hotblock End Temp: 94.6 @ 10:20

SOP: ME404 Revison 13
Spike Solution: STD49767
Spike Witness: BRG
H2SO4 Lot #: COA15776
HNO3 Lot #: COA15827
Digestion Tubes Lot #: COA15882
K2S2O8 1:1 Lot #: RGT16927
KMnO4 1:1 Lot #: RGT16964
Mercury Water ICV Lot #: STD49769
HG H2O STDS 10PPM Lot #: STD49775

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Spike Amount	Due Date
1	WG388098-03	BLANK	1	40 mL	40 mL		
2	WG388088-01	FBLK	17	4 mL	40 mL		
3	WG388098-04	LCS	1	40 mL	40 mL	4 mL	
4	L12010613-01	SAMP	1	40 mL	40 mL		02/03/12
5	WG388098-01	REF	1	40 mL	40 mL		
6	L12010651-01	RS01	1	40 mL	40 mL		02/03/12
7	WG388098-05	MS	1	36 mL	40 mL	4 mL	
8	L12010651-02	MS01	1	36 mL	40 mL	4 mL	02/03/12
9	WG388098-06	MSD	1	36 mL	40 mL	4 mL	
10	L12010651-03	SD01	1	36 mL	40 mL	4 mL	02/03/12
11	L12010652-01	SAMP	1	40 mL	40 mL		02/03/12
12	L12010652-02	SAMP	1	40 mL	40 mL		02/03/12
13	L12010669-01	SAMP	17	4 mL	40 mL		02/03/12
14	L12010683-01	SAMP	1	40 mL	40 mL		02/02/12
15	L12010686-01	SAMP	1	40 mL	40 mL		02/06/12
16	L12010686-02	SAMP	1	40 mL	40 mL		02/06/12
17	L12010686-03	SAMP	1	40 mL	40 mL		02/06/12
18	WG388098-02	REF	17	4 mL	40 mL		
19	L12010699-01	SAMP	17	4 mL	40 mL		02/06/12
20	WG388098-07	MS	1	4 mL	40 mL	4 mL	

Analyst: [signature]

Reviewer: [signature]

HB_DIG - Modified 09/30/2009
PDF ID: 2291389
Report generated: 01/27/2012 11:07

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HYDRA
Dataset: 012712A.PRN
Analyst1: SLP
Analyst2: N/A
Method: 7470
SOP: ME404
Rev: 13
Maintenance Log ID: 40436

Calibration Std: STD49775
ICV Std: STD49769
Post Spike: STD49775
ICSA: N/A
ICSAB: N/A
Int. Std:
CCV:
LLCCV:

Workgroups: 388140

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	HY.012712.135322	WG388198-01	Calibration Point		1		01/27/12 13:53
2	HY.012712.135504	WG388198-02	Calibration Point		1		01/27/12 13:55
3	HY.012712.135706	WG388198-03	Calibration Point		1		01/27/12 13:57
4	HY.012712.135908	WG388198-04	Calibration Point		1		01/27/12 13:59
5	HY.012712.140103	WG388198-05	Calibration Point		1		01/27/12 14:01
6	HY.012712.140258	WG388198-06	Calibration Point		1		01/27/12 14:02
7	HY.012712.140749	WG388198-07	Initial Calibration Verification		1		01/27/12 14:07
8	HY.012712.140933	WG388198-08	Initial Calib Blank		1		01/27/12 14:09
9	HY.012712.141150	WG388198-09	CCV		1		01/27/12 14:11
10	HY.012712.141352	WG388198-10	CCB		1		01/27/12 14:13
11	HY.012712.141816	WG388098-03	Method/Prep Blank	40/40	1		01/27/12 14:18
12	HY.012712.141958	WG388098-04	Laboratory Control S	40/40	1		01/27/12 14:19
13	HY.012712.142142	WG388088-01	Fluid Blank		1		01/27/12 14:21
14	HY.012712.142414	L12010613-01	MPL28-0112-1	40/40	1		01/27/12 14:24
15	HY.012712.142556	WG388098-01	Reference Sample	40/40	1	L12010651-01	01/27/12 14:25
16	HY.012712.142810	WG388140-01	Post Digestion Spike		1	L12010651-01	01/27/12 14:28
17	HY.012712.142956	WG388098-05	Matrix Spike	36/40	1	L12010651-01	01/27/12 14:29
18	HY.012712.143151	WG388098-06	Matrix Spike Duplica	36/40	1	L12010651-01	01/27/12 14:31
19	HY.012712.143335	L12010652-01	MPL13-0112-1	40/40	1		01/27/12 14:33
20	HY.012712.143538	L12010652-02	MPL10-0112-1	40/40	1		01/27/12 14:35
21	HY.012712.143720	WG388198-11	CCV		1		01/27/12 14:37
22	HY.012712.143904	WG388198-12	CCB		1		01/27/12 14:39
23	HY.012712.144107	L12010669-01	1109-112-SP3	4/40	1		01/27/12 14:41
24	HY.012712.144251	WG388140-02	Post Digestion Spike		1	L12010669-01	01/27/12 14:42
25	HY.012712.144435	L12010683-01	11-30-11	40/40	1		01/27/12 14:44
26	HY.012712.144637	L12010686-01	MPL30-0112-1	40/40	1		01/27/12 14:46
27	HY.012712.144821	L12010686-02	MPL29-0112-1	40/40	1		01/27/12 14:48
28	HY.012712.145004	L12010686-03	MPL26-0112-1	40/40	1		01/27/12 14:50
29	HY.012712.145148	WG388098-02	Reference Sample	4/40	1	L12010699-01	01/27/12 14:51
30	HY.012712.145330	WG388098-07	Matrix Spike	4/40	1	L12010699-01	01/27/12 14:53
31	HY.012712.145526	WG388198-13	CCV		1		01/27/12 14:55
32	HY.012712.145713	WG388198-14	CCB		1		01/27/12 14:57

Page: 1 Approved: January 30, 2012

Maren Berry

Microbac Laboratories Inc.

Data Checklist

Date: 27-JAN-2012
Analyst: SLP
Analyst: NA
Method: 7470
Instrument: HYDRA
Curve Workgroup: 388198
Runlog ID: 44867
Analytical Workgroups: 388140

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	0613, 0651, 0652, 0669, 0686, 0699
Client Forms	X
Level X	
Level 3	
Level 4	0613, 0651, 0652, 0669, 0686, 0699
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	SLP
Secondary Reviewer	MMB
Comments	

Primary Reviewer:
27-JAN-2012

Secondary Reviewer:
30-JAN-2012

CHECKLIST1 - Modified 03/05/2008
Generated: JAN-30-2012 09:53:03

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 7470A

AAB#: WG388140

Login Number: L12010651

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
MPL-16-0112-1	01	01/24/12					01/27/12	2.8	28		01/27/12	3	28	
MPL-16-0112-MS	02	01/24/12					01/27/12	2.8	28		01/27/12	3	28	
MPL-16-0112-MSD	03	01/24/12					01/27/12	2.8	28		01/27/12	3	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 2292188
Report generated 01/27/2012 15:15

Microbac Laboratories Inc.

METHOD BLANK SUMMARY

Login Number: L12010651
Blank File ID: HY.012712.141816
Prep Date: 01/27/12 08:27
Analyzed Date: 01/27/12 14:18
Analyst: SLP

Work Group: WG388140
Blank Sample ID: WG388098-03
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	WG388098-04	HY.012712.141958	01/27/12 14:19	01
MPL-16-0112-1	L12010651-01	HY.012712.142556	01/27/12 14:25	01
MPL-16-0112-MS	L12010651-02	HY.012712.142956	01/27/12 14:29	01
MPL-16-0112-MSD	L12010651-03	HY.012712.143151	01/27/12 14:31	01

Report Name: BLANK_SUMMARY
PDF File ID: 2292189
Report generated 01/27/2012 15:15

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L12010651 Prep Date: 01/27/12 08:27 Sample ID: WG388098-03
Instrument ID: HYDRA Run Date: 01/27/12 14:18 Prep Method: 7470A
File ID: HY.012712.141816 Analyst: SLP Method: 7470A
Workgroup (AAB#): WG388140 Matrix: Water Units: mg/L
Contract #: Cal ID: HYDRA-27-JAN-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: 2292190
27-JAN-2012 15:15

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L12010651 Run Date: 01/27/2012 Sample ID: WG388098-04
Instrument ID: HYDRA Run Time: 14:19 Prep Method: 7470A
File ID: HY.012712.141958 Analyst: SLP Method: 7470A
Workgroup (AAB#): WG388140 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD49767 Cal ID: HYDRA-27-JAN-12

Analytes	Expected	Found	% Rec	LCS Limits	Q
Mercury	0.00400	0.00379	94.8	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 2292191
Report generated: 01/27/2012 15:15

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L12010651 Cal ID: HYDRA- 27-JAN-12 Worknum: WG388140

Instrument ID: HYDRA Contract #: Prep Method: 7470A

Parent ID: L12010651-01 File ID: HY.012712.142556 Dil: 1 Method: 7470A

Sample ID: L12010651-02 MS File ID: HY.012712.142956 Dil: 1 Matrix: Water

Sample ID: L12010651-03 MSD File ID: HY.012712.143151 Dil: 1 Units: mg/L

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Mercury	U	0.00444	0.00340	76.5	0.00444	0.00207	46.5	48.8	80 - 120	20	*#

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

MS_MSD - Modified 03/06/2008
PDF File ID: 2292192
Report generated 01/27/2012 15:15

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L12010651 **Worknum:** WG388140
Instrument ID: HYDRA **Method:** 7470A
Post Spike ID: WG388140-01 **File ID:** HY.012712.142810 **Dil:** 1 **Units:** ug/L
Sample ID: L12010651-01 **File ID:** HY.012712.142556 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
MERCURY	1.04		0	U	1	104.0	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: 2292187
Report generated: 01/27/2012 15:15

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L12010651
Analytical Method: 7470A
ICAL Worknum: WG388198

Workgroup (AAB#): WG388140
Instrument ID: HYDRA
Initial Calibration Date: 01/27/2012 14:02

Analyte	WG388198-01		WG388198-02		WG388198-03		WG388198-04		WG388198-05		WG388198-06	
	STD	INT	STD	INT	STD	INT	STD	INT	STD	INT	STD	INT
Mercury	0	-125	0.200	692	1.00	3854	2.00	7484	5.00	17735	10.0	35509

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: 2292193
Report generated 01/27/2012 15:15

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L12010651
Analytical Method: 7470A
ICAL Worknum: WG388198

Workgroup (AAB#): WG388140
Instrument ID: HYDRA
Initial Calibration Date: 01/27/2012 14:02

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: 2292193
Report generated 01/27/2012 15:15

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L12010651
Instrument ID: HYDRA
File ID: HY.012712.140933
Workgroup (AAB#): WG388140
Matrix: WATER

Run Date: 01/27/2012
Run Time: 14:09
Analyst: SLP
Cal ID: HYDRA - 27-JAN-12

Sample ID: WG388198-08
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: 2292195
Report generated 01/27/2012 15:15

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L12010651 Run Date: 01/27/2012 Sample ID: WG388198-10
Instrument ID: HYDRA Run Time: 14:13 Method: 7470A
File ID: HY.012712.141352 Analyst: SLP Units: ug/L
Workgroup (AAB#): WG388140 Cal ID: HYDRA - 27-JAN-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: 2292197
Report generated 01/27/2012 15:15

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L12010651
Run Date: 01/27/2012
Sample ID: WG388198-12
Instrument ID: HYDRA
Run Time: 14:39
Method: 7470A
File ID: HY.012712.143904
Analyst: SLP
Units: ug/L
Workgroup (AAB#): WG388140
Cal ID: HYDRA - 27-JAN-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: 2292197
Report generated 01/27/2012 15:15

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L12010651
Run Date: 01/27/2012
Sample ID: WG388198-14
Instrument ID: HYDRA
Run Time: 14:57
Method: 7470A
File ID: HY.012712.145713
Analyst: SLP
Units: ug/L
Workgroup (AAB#): WG388140
Cal ID: HYDRA - 27-JAN-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: 2292197
Report generated 01/27/2012 15:15

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L12010651 Run Date: 01/27/2012 Sample ID: WG388198-07
Instrument ID: HYDRA Run Time: 14:07 Method: 7470A
File ID: HY.012712.140749 Analyst: SLP Units: ug/L
Workgroup (AAB#): WG388140 Cal ID: HYDRA - 27-JAN-12
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Mercury		2	1.94	97.0	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 2292194
Report generated 01/27/2012 15:15

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L12010651
Run Date: 01/27/2012
Sample ID: WG388198-09
Instrument ID: HYDRA
Run Time: 14:11
Method: 7470A
File ID: HY.012712.141150
Analyst: SLP
QC Key: DOD4
Workgroup (AAB#): WG388140
Cal ID: HYDRA - 27-JAN-12
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00213	mg/L	107	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 2292196
Report generated 01/27/2012 15:15

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L12010651
Run Date: 01/27/2012
Sample ID: WG388198-11
Instrument ID: HYDRA
Run Time: 14:37
Method: 7470A
File ID: HY.012712.143720
Analyst: SLP
QC Key: DOD4
Workgroup (AAB#): WG388140
Cal ID: HYDRA - 27-JAN-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: 2292196
Report generated 01/27/2012 15:15

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L12010651
Run Date: 01/27/2012
Sample ID: WG388198-13
Instrument ID: HYDRA
Run Time: 14:55
Method: 7470A
File ID: HY.012712.145526
Analyst: SLP
QC Key: DOD4
Workgroup (AAB#): WG388140
Cal ID: HYDRA - 27-JAN-12
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00201	mg/L	101	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 2292196
Report generated 01/27/2012 15:15

2.1.3.3 Raw Data

```
Line   Conc.  Units     SD/RSD      1       2       3       4       5
--------------------------------------------------------------------------------

*** Standard: 1 Rep: 1              Seq:  1       13:53:22 27 Jan 12   HG

Hg    .000    ppb      -125

*** Standard: 2 Rep: 1              Seq:  2       13:55:04 27 Jan 12   HG

Hg    .200    ppb      692

*** Standard: 3 Rep: 1              Seq:  3       13:57:06 27 Jan 12   HG

Hg    1.00    ppb      3854

*** Standard: 4 Rep: 1              Seq:  4       13:59:08 27 Jan 12   HG

Hg    2.00    ppb      7484

*** Standard: 5 Rep: 1              Seq:  5       14:01:03 27 Jan 12   HG

Hg    5.00    ppb      17735

*** Standard: 6 Rep: 1              Seq:  6       14:02:58 27 Jan 12   HG

Hg    10.0    ppb      35509

*** Check Standard: 2  Ck2ICV       Seq:  7       14:07:49 27 Jan 12   HG
Line  Flag  %Rcv.   Found    True  Units      SD/RSD
Hg          96.8     1.94    2.00   ppb        .000

*** Check Standard: 3  Ck3ICB       Seq:  8       14:09:33 27 Jan 12   HG
Line  Flag  %Rcv.   Found    True  Units      SD/RSD
Hg          32.1     .064    .200   ppb        .000

*** Check Standard: 4  Ck4CCV       Seq:  9       14:11:50 27 Jan 12   HG
Line  Flag  %Rcv.   Found    True  Units      SD/RSD
Hg          107.     2.13    2.00   ppb        .000

*** Check Standard: 5  Ck5CCB       Seq:  10      14:13:52 27 Jan 12   HG
Line  Flag  %Rcv.   Found    True  Units      SD/RSD
Hg          1.29     .003    .200   ppb        .000

*** Sample ID: WG38809803            Seq:  11      14:18:16 27 Jan 12   HG
                          PBW D1
Hg   -.014    ppb       .000     -.014

==============================================================================
*** Sample ID: WG38809804            Seq:  12      14:19:58 27 Jan 12   HG
                          LCSW D1
Hg    3.79    ppb       .000      3.79
                                                                            =
==============================================================================
```

Approved: January 27, 2012

```
Line   Conc.  Units     SD/RSD      1       2       3       4       5
--------------------------------------------------------------------------------

*** Sample ID: WG38808801            Seq:  13     14:21:42 27 Jan 12   HG
                           FBLK
Hg   -.082    ppb       .000     -.082
                                                                                =
================================================================================
*** Sample ID: 1201061301            Seq:  14     14:24:14 27 Jan 12   HG

Hg   -.063    ppb       .000     -.063
                                                                                =
================================================================================
*** Sample ID: 1201065101            Seq:  15     14:25:56 27 Jan 12   HG
                           WG38809801
Hg    .035    ppb       .000      .035
                                                                                =
================================================================================
*** Sample ID: WG38814001            Seq:  16     14:28:10 27 Jan 12   HG
                           1201065101PS.9
Hg    1.04    ppb       .000      1.04
                                                                                =
================================================================================
*** Sample ID: 1201065102            Seq:  17     14:29:56 27 Jan 12   HG
                           WG38809805S
Hg    3.06    ppb       .000      3.06
                                                                                =
================================================================================
*** Sample ID: 1201065103            Seq:  18     14:31:51 27 Jan 12   HG
                           WG38809806SD
Hg    1.86    ppb       .000      1.86
                                                                                =
================================================================================
*** Sample ID: ~~1201035201~~            Seq:  19     14:33:35 27 Jan 12   HG
               1201065201
Hg   -.074    ppb       .000     -.074
                                                                                =
================================================================================
*** Sample ID: 1201065202            Seq:  20     14:35:38 27 Jan 12   HG

Hg   -.069    ppb       .000     -.069
                                                                                =
*** Check Standard: 4  Ck4CCV        Seq:  21     14:37:20 27 Jan 12   HG
Line  Flag  %Rcv.   Found    True  Units      SD/RSD
Hg          99.1     1.98    2.00   ppb        .000
                                                                                =
*** Check Standard: 5  Ck5CCB        Seq:  22     14:39:04 27 Jan 12   HG
Line  Flag  %Rcv.   Found    True  Units      SD/RSD
Hg         -35.7    -.071    .200   ppb        .000
                                                                                =
```

Approved: January 27, 2012

```
Line   Conc.  Units     SD/RSD      1       2       3       4       5
--------------------------------------------------------------------------------

*** Sample ID: 1201066901            Seq:  23     14:41:07 27 Jan 12   HG

Hg   -.112    ppb       .000     -.112
                                                                                =
================================================================================
*** Sample ID: WG38814002            Seq:  24     14:42:51 27 Jan 12   HG
                          1201066901PS.9
Hg    1.07    ppb       .000      1.07
                                                                                =
================================================================================
*** Sample ID: 1201068301            Seq:  25     14:44:35 27 Jan 12   HG

Hg    5.63    ppb       .000      5.63
                                                                                =
================================================================================
*** Sample ID: 1201068601            Seq:  26     14:46:37 27 Jan 12   HG

Hg   -.012    ppb       .000     -.012
                                                                                =
================================================================================
*** Sample ID: 1201068602            Seq:  27     14:48:21 27 Jan 12   HG

Hg   -.011    ppb       .000     -.011
                                                                                =
================================================================================
*** Sample ID: 1201068603            Seq:  28     14:50:04 27 Jan 12   HG

Hg   -.116    ppb       .000     -.116
                                                                                =
================================================================================
*** Sample ID: 1201069901            Seq:  29     14:51:48 27 Jan 12   HG
                          WG38809802
Hg    .018    ppb       .000      .018
                                                                                =
================================================================================
*** Sample ID: WG38809807            Seq:  30     14:53:30 27 Jan 12   HG
                          1201069901S
Hg    4.33    ppb       .000      4.33
                                                                                =
*** Check Standard: 4  Ck4CCV        Seq:  31     14:55:26 27 Jan 12   HG
Line  Flag  %Rcv.   Found    True  Units      SD/RSD
Hg          101.     2.01    2.00   ppb        .000
                                                                                =
*** Check Standard: 5  Ck5CCB        Seq:  32     14:57:13 27 Jan 12   HG
Line  Flag  %Rcv.   Found    True  Units      SD/RSD
Hg         -4.35    -.009    .200   ppb        .000
                                                                                =
```

Approved: January 27, 2012

2.2 General Chemistry Data

2.2.1 Method 9056

2.2.1.1 Summary Data

Login Number: L12010651
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: Recoveries out of range were observed for the following analytes: Chloride. Please see the applicable QC report for a detailed presentation of the failures.

SAMPLES

Samples: Fractions -01, -02, and -03 were analyzed at dilutions due to Cl concentrations greater than the ICAL. Fractions -01, -02, and -03 were analyzed for fluoride via method SM4500-F C (Potentiometric Determination) due to greatly reduced fluoride recoveries via IC analysis. Fluoride recoveries fail due to high concentrations of metal cations found in sample matrices. Efforts are made to prevent the precipitation of these cations in the gaurd and analytical columns and suppressor but are not completely effective. Even with the preventative efforts to eliminate these interferences the instrument was unable to analyze F at greater than 90% recovery.

Surrogates: All acceptance criteria were met.

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: 41524
Approved By: Jeremy Kinney

Microbac

Lab Report #: L12010651
Lab Project #: 3005.011
Project Name: White Sands MR
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L12010651-01	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	MPL-16-0112-1	**Prep Method:**	300.0	**Prep Date:**	01/26/2012 15:17
Matrix:	Water	**Analytical Method:**	300.0	**Cal Date:**	09/14/2011 11:03
Workgroup #:	WG387948	**Analyst:**	JBK	**Run Date:**	01/26/2012 17:37
Collect Date:	01/24/2012 14:20	**Dilution:**	4	**File ID:**	I10126121737.11
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Chloride	16887-00-6	41.0		0.800	0.400
Sulfate	14808-79-8	64.7		4.00	2.00

Sample #:	L12010651-02	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	MPL-16-0112-MS	**Prep Method:**	300.0	**Prep Date:**	01/26/2012 15:17
Matrix:	Water	**Analytical Method:**	300.0	**Cal Date:**	09/14/2011 11:03
Workgroup #:	WG387948	**Analyst:**	JBK	**Run Date:**	01/26/2012 18:11
Collect Date:	01/24/2012 14:20	**Dilution:**	4	**File ID:**	I10126121811.13
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Chloride	16887-00-6	47.9		0.800	0.400
Sulfate	14808-79-8	105		4.00	2.00

Sample #:	L12010651-03	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	MPL-16-0112-MSD	**Prep Method:**	300.0	**Prep Date:**	01/26/2012 15:17
Matrix:	Water	**Analytical Method:**	300.0	**Cal Date:**	09/14/2011 11:03
Workgroup #:	WG387948	**Analyst:**	JBK	**Run Date:**	01/26/2012 18:29
Collect Date:	01/24/2012 14:20	**Dilution:**	4	**File ID:**	I10126121829.14
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Chloride	16887-00-6	48.0		0.800	0.400
Sulfate	14808-79-8	105		4.00	2.00

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: 091411 ICAL IC1.SEQ
Analyst1: JBK Analyst2: NA
Method: 9056/300 SOP: IC1 Rev: 12

Maintenance Log ID: Syringe Filter Lot#:

Column 1 ID: AS14A-4MM Column 2 ID: NA
Workgroups: WG375960
Internal STD: NA Surrogate STD: NA Calibration STD STD43577

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	I10914110936.01	WG375960-01 STD \#6	1	1		09/14/11 09:36
2	I10914110954.02	WG375960-02 STD \#5	1	1		09/14/11 09:54
3	I10914111011.03	WG375960-03 STD \#4	1	1		09/14/11 10:11
4	I10914111028.04	WG375960-04 STD \#3	1	1		09/14/11 10:28
5	I10914111046.05	WG375960-05 STD \#2	1	1		09/14/11 10:46
6	I10914111103.06	WG375960-06 STD \#1	1	1		09/14/11 11:03
7	I10914111121.07	WG375960-07 ALT STD	1	1		09/14/11 11:21
8	I10914111138.08	LCR Test Level \#6	1	1		09/14/11 11:38
9	I10914111156.09	LCR Test Level \#2	1	1		09/14/11 11:56
10	I10914111213.10	LCR Test Level \#0	1	1		09/14/11 12:13
11	I10914111230.11	LOD LEVEL 1/2	1	1		09/14/11 12:30
12	I10914111248.12	LOD/LOQ LEVEL 1	1	1		09/14/11 12:48
13	I10914111305.13	LOD/LOQ LEVEL 1	1	1		09/14/11 13:05
14	I10914111323.14	LOQ LEVEL 2	1	1		09/14/11 13:23
15	I10914111340.15	WG375984-01 ANION CCV	1	1		09/14/11 13:40
16	I10914111357.16	WG375984-02 ANION CCB	1	1		09/14/11 13:57
17	I10914111415.17	END	1	1		09/14/11 14:15

Comments

Seq.	Rerun	Dil.	Reason	Analytes

Page: 1 Approved: 03-OCT-11

Microbac Laboratories Inc.

Instrument Run Log

Instrument: IC1 Dataset: 012612 IC1.SEQ
Analyst1: JBK Analyst2: NA
Method: 9056/300 SOP: IC1 Rev: 12

Maintenance Log ID: 40455 Syringe Filter Lot#: 00124728

Column 1 ID: AG14A-4MM Column 2 ID: AS14A-4MM
Workgroups: WG387948
Internal STD: NA Surrogate STD: NA Calibration STD NA
CCV STD: STD43577 LCS STD: STD43577 MS/MSD STD: STD43577

Comments: L12010536-02, -03; L12010613-01; L12010651-01, -02, -03; L12010652-01, and -02 were all analyzed at dilutions only due to Cl concentrations greater than the ICAL. L12010606-01 was analyzed at a dilution only due to SO4 concentrations greater than the ICAL. L12010616-01 and -02 were analyzed at dilutions only due to Cl concentrations greater than 200 ppm.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	I10126121443.01	ELUENT	1	1		01/26/12 14:43
2	I10126121500.02	DI WATER	1	1		01/26/12 15:00
3	I10126121517.03	WG388203-01 ANION CCV	1	1		01/26/12 15:17
4	I10126121535.04	WG388203-02 ANION CCB	1	1		01/26/12 15:35
5	I10126121552.05	WG387948-01 ANION BLANK	1	1		01/26/12 15:52
6	I10126121610.06	WG387948-02 ANION LCS	1	1		01/26/12 16:10
7	I10126121627.07	L12010536-01 (F,CL,SO4)	1	1		01/26/12 16:27
8	I10126121644.08	L12010536-02 1/10 (F,CL,SO4)	1	10		01/26/12 16:44
9	I10126121702.09	L12010536-03 1/10 (F,CL,SO4)	1	10		01/26/12 17:02
10	I10126121719.10	L12010613-01 1/10 (F,CL,SO4)	1	10		01/26/12 17:19
11	I10126121737.11	L12010651-01 1/4 RS (F,CL,SO4)	1	4		01/26/12 17:37
12	I10126121754.12	WG387948-04 DUP 1/4 651-01	1	4		01/26/12 17:54
13	I10126121811.13	L12010651-02 1/4 MS	1	4		01/26/12 18:11
14	I10126121829.14	L12010651-03 1/4 SD	1	4		01/26/12 18:29
15	I10126121846.15	WG388203-03 ANION CCV	1	1		01/26/12 18:46
16	I10126121904.16	WG388203-04 ANION CCB	1	1		01/26/12 19:04
17	I10126121921.17	L12010652-01 1/2 (F,CL,SO4)	1	2		01/26/12 19:21
18	I10126121939.18	L12010652-02 1/2 (F,CL,SO4)	1	2		01/26/12 19:39
19	I10126121956.19	L12010626-01 1/500 (F)	1	500		01/26/12 19:56
20	I10126122013.20	DI WATER	1	1		01/26/12 20:13
21	I10126122031.21	L12010626-02 (F)	1	1		01/26/12 20:31
22	I10126122048.22	DI WATER	1	1		01/26/12 20:48
23	I10126122106.23	L12010604-01 RS (SO4)	1	1		01/26/12 21:06
24	I10126122123.24	WG387948-08 DUP 604-01	2	1		01/26/12 21:23
25	I10126122140.25	L12010604-04 MS	1	1		01/26/12 21:40
26	I10126122158.26	L12010604-05 SD	1	1		01/26/12 21:58
27	I10126122215.27	WG388203-05 ANION CCV	1	1		01/26/12 22:15
28	I10126122233.28	WG388203-06 ANION CCB	1	1		01/26/12 22:33
29	I10126122250.29	L12010604-02 (SO4)	2	1		01/26/12 22:50
30	I10126122307.30	L12010605-02 (SO4)	2	1		01/26/12 23:07
31	I10126122325.31	L12010605-01 (SO4)	2	1		01/26/12 23:25
32	I10126122342.32	L12010606-01 1/2 (SO4)	2	2		01/26/12 23:42
33	I10127120000.33	L12010540-01 (SO4)	2	1		01/27/12 00:00

Page: 1 Approved: 31-JAN-12

Microbac Laboratories Inc.

Instrument Run Log

Instrument: IC1 Dataset: 012612 IC1.SEQ
Analyst1: JBK Analyst2: NA
Method: 9056/300 SOP: IC1 Rev: 12

Maintenance Log ID: 40455 Syringe Filter Lot#: 00124728

Column 1 ID: AG14A-4MM Column 2 ID: AS14A-4MM
Workgroups: WG387948
Internal STD: NA Surrogate STD: NA NA
CCV STD: STD43577 LCS STD: STD43577 STD43577

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	I10127120017.34	L12010540-02 (SO4)	2	1		01/27/12 00:17
35	I10127120034.35	L12010616-01 1/5 SO4	1	5		01/27/12 00:34
36	I10127120052.36	L12010616-01 1/50 CL	1	50		01/27/12 00:52
37	I10127120109.37	L12010616-02 1/5 SO4	1	5		01/27/12 01:09
38	I10127120127.38	L12010616-02 1/50 CL	1	50		01/27/12 01:27
39	I10127120144.39	WG388203-07 ANION CCV	1	1		01/27/12 01:44
40	I10127120201.40	WG388203-08 ANION CCB	1	1		01/27/12 02:01
41	I10127120219.41	END	1	1		01/27/12 02:19

Comments

Seq.	Rerun	Dil.	Reason	Analytes

Page: 2 Approved: 31-JAN-12

Microbac Laboratories Inc.

Data Checklist

Date: 14-SEP-2011
Analyst: JBK
Analyst: NA
Method: 300/9056
Instrument: IC1
Curve Workgroup: WG375960
Runlog ID: 42897
Analytical Workgroups:

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	X
Average RF	NA
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (MS)	NA
Continuing calibration blank (CCB) (IC)	X
Special standards	NA
Blanks	NA
TCL hits	NA
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	NA
Recoveries	NA
Surrogate recoveries	NA
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
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	NA
Reruns	NA
Manual Integrations	X
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	HAV
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:
03-OCT-2011
Hema Vilasagar

Secondary Reviewer:
03-OCT-2011
Michael Cochran

CHECKLIST1 - Modified 03/05/2008
Generated: OCT-03-2011 09:37:05

Microbac Laboratories Inc.

Data Checklist

Date: 26-JAN-2012
Analyst: JBK
Analyst: NA
Method: 300/9056
Instrument: IC1
Curve Workgroup: NA
Runlog ID: 44890
Analytical Workgroups: WG387948

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:
31-JAN-2012

Secondary Reviewer:
31-JAN-2012

CHECKLIST1 - Modified 03/05/2008
Generated: JAN-31-2012 15:10:23

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 300.0 AAB#: WG387948

Login Number: L12010651

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
MPL-16-0112-1	01	01/24/12					01/26/12	2	28		01/26/12	.1	28	
MPL-16-0112-MS	02	01/24/12					01/26/12	2	28		01/26/12	.1	28	
MPL-16-0112-MSD	03	01/24/12					01/26/12	2	28		01/26/12	.1	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 2294211
Report generated 02/01/2012 09:01

Microbac Laboratories Inc.

METHOD BLANK SUMMARY

Login Number: L12010651
Blank File ID: I10126121552.05
Prep Date: 01/26/12 15:17
Analyzed Date: 01/26/12 15:52
Analyst: JBK

Work Group: WG387948
Blank Sample ID: WG387948-01
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	WG387948-02	I10126121610.06	01/26/12 16:10	01
MPL-16-0112-1	L12010651-01	I10126121737.11	01/26/12 17:37	DL01
DUP	WG387948-04	I10126121754.12	01/26/12 17:54	DL01
MPL-16-0112-MS	L12010651-02	I10126121811.13	01/26/12 18:11	DL01
MPL-16-0112-MSD	L12010651-03	I10126121829.14	01/26/12 18:29	DL01
DUP	WG387948-08	I10126122123.24	01/26/12 21:23	01

Report Name: BLANK_SUMMARY
PDF File ID: 2294212
Report generated 02/01/2012 09:01

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L12010651 Prep Date: 01/26/12 15:17 Sample ID: WG387948-01
Instrument ID: IC1 Run Date: 01/26/12 15:52 Prep Method: 300.0
File ID: I10126121552.05 Analyst: JBK Method: 300.0
Workgroup (AAB#): WG387948 Matrix: Water Units: mg/L
Contract #: Cal ID: IC1-14-SEP-11

Analytes	LOD	LOQ	Concentration	Dilution	Qualifier
Chloride	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: 2294213
01-FEB-2012 09:01

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L12010651 Run Date: 01/26/2012 Sample ID: WG387948-02
Instrument ID: IC1 Run Time: 16:10 Prep Method: 300.0
File ID: I10126121610.06 Analyst: JBK Method: 300.0
Workgroup (AAB#): WG387948 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD48131 Cal ID: IC1-14-SEP-11

Analytes	Expected	Found	% Rec	LCS Limits	Q
Chloride	8.00	7.59	94.9	90 - 110	
Sulfate	40.0	38.7	96.7	90 - 110	

LCS - Modified 03/06/2008
PDF File ID: 2294214
Report generated: 02/01/2012 09:01

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L12010651 Cal ID: IC1- 14-SEP-11 Worknum: WG387948

Instrument ID: IC1 Contract #: Prep Method: 300.0

Parent ID: L12010651-01 File ID: I10126121737.11 Dil: 4 Method: 300.0

Sample ID: L12010651-02 MS File ID: I10126121811.13 Dil: 4 Matrix: Water

Sample ID: L12010651-03 MSD File ID: I10126121829.14 Dil: 4 Units: mg/L

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Chloride	41.0	8.00	47.9	86.8	8.00	48.0	87.4	0.108	90 - 110	20	*
Sulfate	64.7	40.0	105	101	40.0	105	101	0.133	90 - 110	20	

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

MS_MSD - Modified 03/06/2008
PDF File ID: 2294215
Report generated 02/01/2012 09:01

Microbac Laboratories Inc.

DUPLICATE (DUP)

Sample Ref: L12010651-01 Cal ID: IC1 - Worknum: WG387948

Instrument ID: IC1 Method: 9056

Sample ID: WG387948-03 File ID: I10126121737.11 Dil: 4 Matrix: WATER

Duplicate ID: WG387948-04 File ID: I10126121754.12 Dil: 4 Units: mg/L

Analyte	Sample	Duplicate	RPD	RPD Limit	Q
Chloride	41.0	40.1	2.26	20	
Sulfate	64.7	65.3	0.978	20	

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_DUP_DRYWT - Modified 03/06/2008

PDF File ID: 2295476

Report generated 02/01/2012 09:01

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L12010651
Analytical Method: 300.0
ICAL Workgroup: WG375960

Instrument ID: IC1
Initial Calibration Date: 14-SEP-11 11:03
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Chloride		5.967	5.16	0.99900	
Sulfate		7.895	10.2	0.99700	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 2294216
Report generated 02/01/2012 09:01

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L12010651

Analytical Method: 300.0

Instrument ID: IC1

Initial Calibration Date: 14-SEP-11 11:03

Column ID: F

Analyte	WG375960-01			WG375960-02			WG375960-03		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Chloride	24.0	4.41900000	5.431	12.0	2.03500000	5.897	8.00	1.30000000	6.154
Sulfate	120	17.7850000	6.747	60.0	8.10100000	7.406	40.0	5.18300000	7.718

INT_CAL - Modified 03/06/2008
PDF File ID: 2294216
Report generated 02/01/2012 09:01

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L12010651

Analytical Method: 300.0

Instrument ID: IC1

Initial Calibration Date: 14-SEP-11 11:03

Column ID: F

Analyte	WG375960-04			WG375960-05			WG375960-06		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Chloride	4.00	0.638000000	6.270	1.00	0.167000000	5.988	0.200	0.0330000000	6.061
Sulfate	20.0	2.49200000	8.026	5.00	0.585000000	8.547	1.00	0.112000000	8.929

INT_CAL - Modified 03/06/2008
PDF File ID: 2294216
Report generated 02/01/2012 09:01

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L12010651 Run Date: 09/14/2011 Sample ID: WG375960-07
Instrument ID: IC1 Run Time: 11:21 Method: 300.0
File ID: I10914111121.07 Analyst: JBK QC Key: DOD4
ICal Workgroup: WG375960 Cal ID: IC1 - 14-SEP-11

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloride		8.00	7.74	mg/L	6.13	3.20	10	
Sulfate		40.0	39.2	mg/L	7.71	1.90	10	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 2294217
Report generated 02/01/2012 09:01

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L12010651 Run Date: 01/26/2012 Sample ID: WG388203-02
Instrument ID: IC1 Run Time: 15:35 Method: 300.0
File ID: I10126121535.04 Analyst: JBK Units: mg/L
Workgroup (AAB#): WG387948 Cal ID: IC1 - 14-SEP-11
Matrix: WATER QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Chloride	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: 2294219
Report generated 02/01/2012 09:01

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L12010651
Run Date: 01/26/2012
Sample ID: WG388203-04
Instrument ID: IC1
Run Time: 19:04
Method: 300.0
File ID: I10126121904.16
Analyst: JBK
Units: mg/L
Workgroup (AAB#): WG387948
Cal ID: IC1 - 14-SEP-11
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Chloride	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: 2294219
Report generated 02/01/2012 09:01

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L12010651
Run Date: 01/26/2012
Sample ID: WG388203-01
Instrument ID: IC1
Run Time: 15:17
Method: 300.0
File ID: I10126121517.03
Analyst: JBK
QC Key: DOD4
Workgroup (AAB#): WG387948
Cal ID: IC1 - 14-SEP-11
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloride		8.00	7.64	mg/L	6.21	4.49	10	
Sulfate		40.0	38.6	mg/L	7.84	3.46	10	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 2294218
Report generated 02/01/2012 09:01

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L12010651
Run Date: 01/26/2012
Sample ID: WG388203-03
Instrument ID: IC1
Run Time: 18:46
Method: 300.0
File ID: I10126121846.15
Analyst: JBK
QC Key: DOD4
Workgroup (AAB#): WG387948
Cal ID: IC1 - 14-SEP-11
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloride		8.00	7.73	mg/L	6.14	3.41	10	
Sulfate		40.0	38.9	mg/L	7.77	2.63	10	

* Exceeds %D Criteria

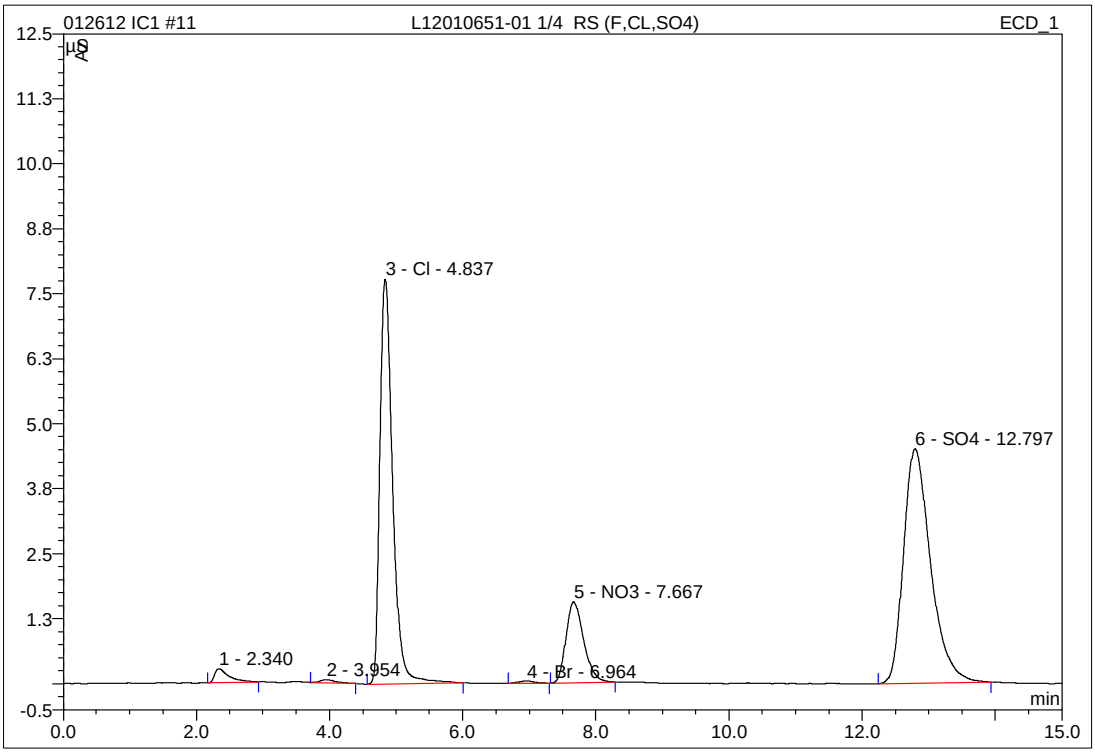
CCV - Modified 03/05/2008
PDF File ID: 2294218
Report generated 02/01/2012 09:01

2.2.1.3 Sample Data

11 L12010651-01 1/4 RS (F,CL,SO4)

1,4 JBK WG387948-03 REF

Sample Name:	**L12010651-01 1/4 RS (F,CL,SO4)**	*Injection Volume:*	**20.0**
Vial Number:	**19**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**1/26/2012 17:37**	*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	2.34	n.a.	0.267	0.067	1.52	n.a.	BMB
2	3.95	n.a.	0.061	0.016	0.36	n.a.	BMB
3	4.84	Cl	7.781	1.728	39.03	10.242	BMB
4	6.96	Br	0.047	0.012	0.27	0.214	BMB
5	7.67	NO3	1.556	0.480	10.85	1.194	BMB
6	12.80	SO4	4.507	2.124	47.97	16.171	BMB
Total:			14.218	4.427	100.00	27.821	

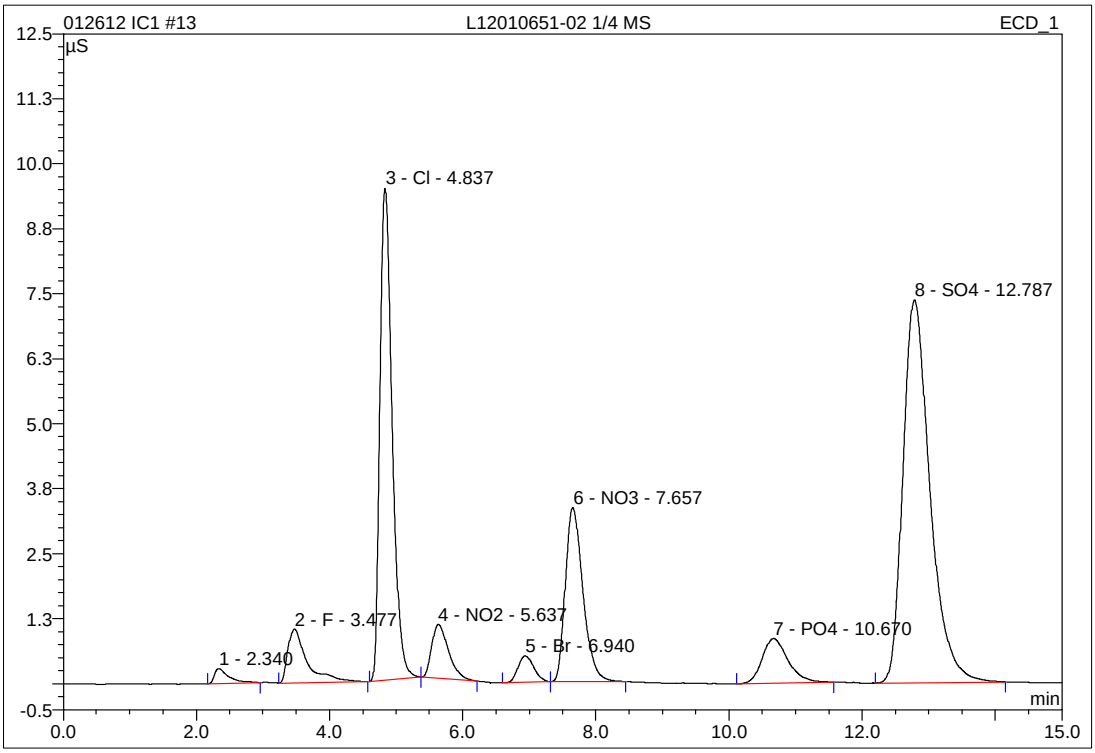
IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

13 L12010651-02 1/4 MS

1,4 JBK WG387948-05 MS

Sample Name:	**L12010651-02 1/4 MS**	*Injection Volume:*	**20.0**
Vial Number:	**20**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**1/26/2012 18:11**	*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	2.34	n.a.	0.285	0.071	0.92	n.a.	BMB
2	3.48	F	1.032	0.347	4.47	1.805	BMB
3	4.84	Cl	9.455	2.021	26.01	11.977	BMb
4	5.64	NO2	1.040	0.304	3.91	1.104	bMB
5	6.94	Br	0.511	0.141	1.81	2.174	BMB
6	7.66	NO3	3.350	1.030	13.26	2.553	BMB
7	10.67	PO4	0.864	0.392	5.05	2.666	BMB
8	12.79	SO4	7.366	3.462	44.56	26.245	BMB
Total:			23.904	7.768	100.00	48.523	

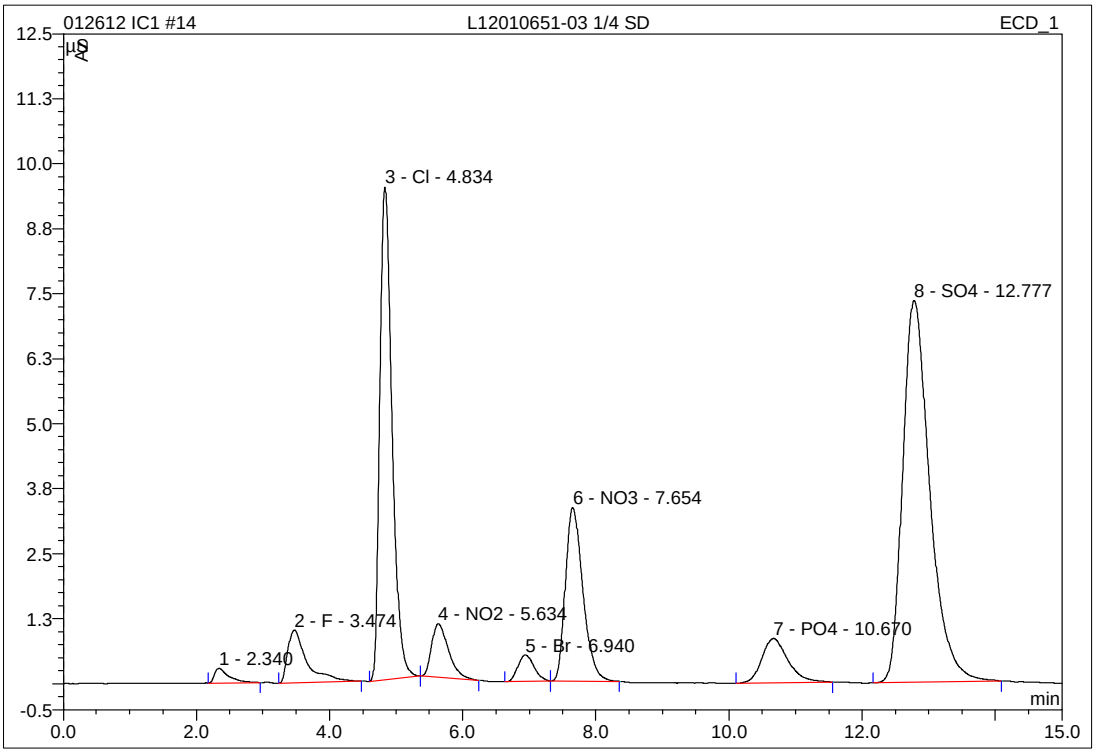
IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

14 L12010651-03 1/4 SD

1,4 JBK WG387948-06 SD

Sample Name:	**L12010651-03 1/4 SD**	*Injection Volume:*	**20.0**
Vial Number:	**20**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**1/26/2012 18:29**	*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	2.34	n.a.	0.281	0.070	0.90	n.a.	BMB
2	3.47	F	1.017	0.338	4.36	1.760	BMB
3	4.83	Cl	9.472	2.023	26.08	11.990	BMb
4	5.63	NO2	1.033	0.305	3.93	1.107	bMB
5	6.94	Br	0.512	0.143	1.84	2.202	BMB
6	7.65	NO3	3.342	1.020	13.16	2.528	BMB
7	10.67	PO4	0.855	0.390	5.03	2.649	BMB
8	12.78	SO4	7.347	3.466	44.70	26.280	BMB
Total:			23.860	7.755	100.00	48.517	

IC/Integration

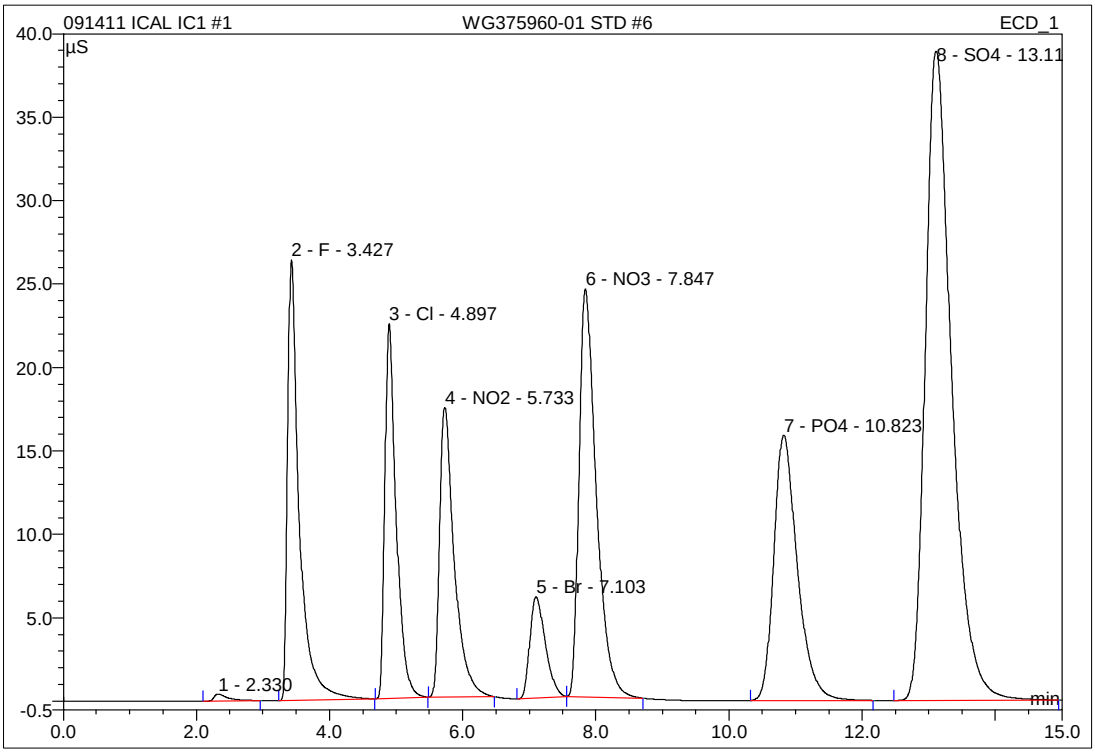
Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

2.2.1.4 Standards Data

1 WG375960-01 STD #6

1,1 JBK STD43577

Sample Name:	**WG375960-01 STD #6**	*Injection Volume:*	**20.0**
Vial Number:	**9**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**9/14/2011 9:36**	*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	2.33	n.a.	0.411	0.099	0.21	n.a.	BMB
2	3.43	F	26.381	5.381	11.30	26.730	BMB
3	4.90	Cl	22.439	4.419	9.28	26.190	BMB
4	5.73	NO2	17.332	4.431	9.31	15.893	BMB
5	7.10	Br	6.075	1.642	3.45	25.011	BMB
6	7.85	NO3	24.446	7.334	15.40	18.119	BMB
7	10.82	PO4	15.909	6.515	13.68	43.174	BMB
8	13.11	SO4	38.892	17.785	37.36	134.109	BMB
Total:			151.884	47.607	100.00	289.226	

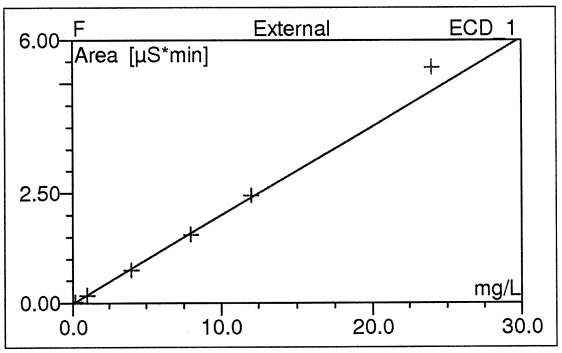
IC/Integration

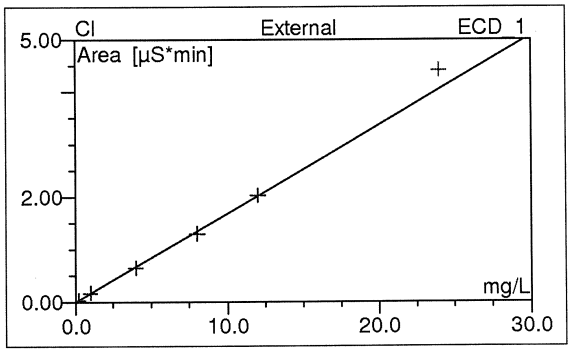
Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

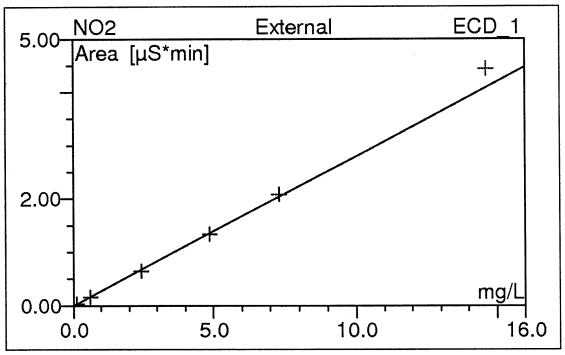
1 WG375960-01 STD #6

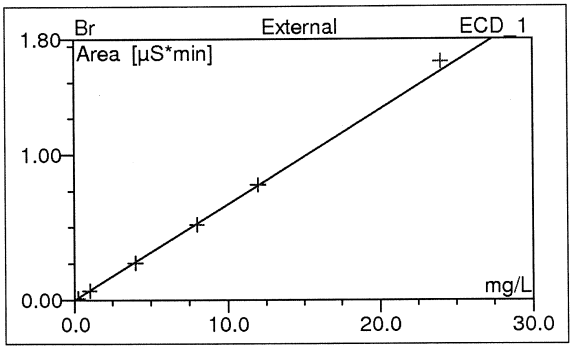
1,1 JBK STD43577

Sample Name:	**WG375960-01 STD #6**	*Injection Volume:*	**20.0**
Vial Number:	**9**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**9/14/2011 9:36**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.00**	*Sample Amount:*	**1.0000**







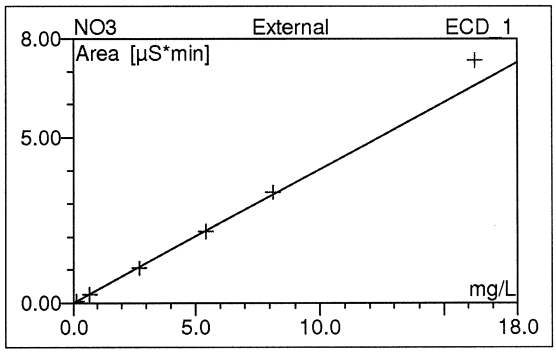


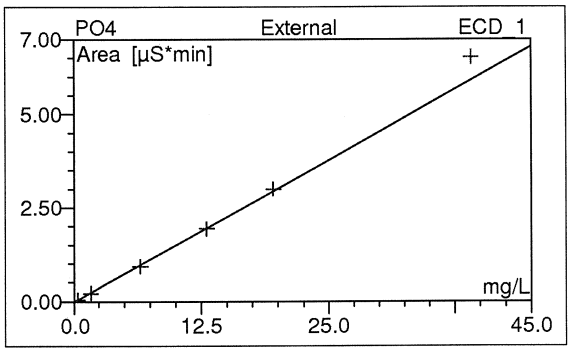
No.	Ret.Time min	Peak Name	Cal.Type	Points	Corr.Coeff. %	Offset	Slope	Curve
1	2.33	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2	3.43	F	XXLOff	6	99.7539	-0.0171	0.2020	0.0000
3	4.90	Cl	XXLOff	6	99.8542	-0.0006	0.1688	0.0000
4	5.73	NO2	XXLOff	6	99.8341	-0.0042	0.2790	0.0000
5	7.10	Br	XXLOff	6	99.9680	-0.0021	0.0657	0.0000
6	7.85	NO3	XXLOff	6	99.7374	-0.0035	0.4050	0.0000
7	10.82	PO4	XXLOff	6	99.7717	-0.0106	0.1511	0.0000
8	13.11	SO4	XXLOff	6	99.7200	-0.0236	0.1328	0.0000
Average:					99.8056	-0.0088	0.2006	0.0000

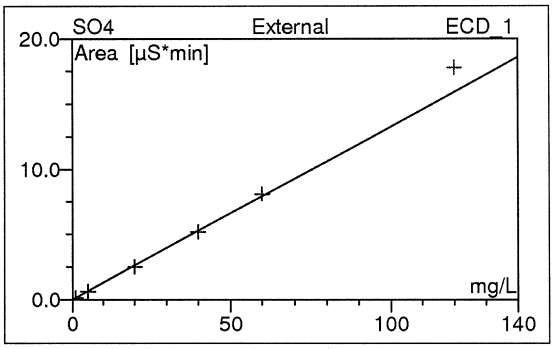
1 WG375960-01 STD #6

1,1 JBK STD43577

Sample Name:	**WG375960-01 STD #6**	*Injection Volume:*	**20.0**
Vial Number:	**9**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**9/14/2011 9:36**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.00**	*Sample Amount:*	**1.0000**





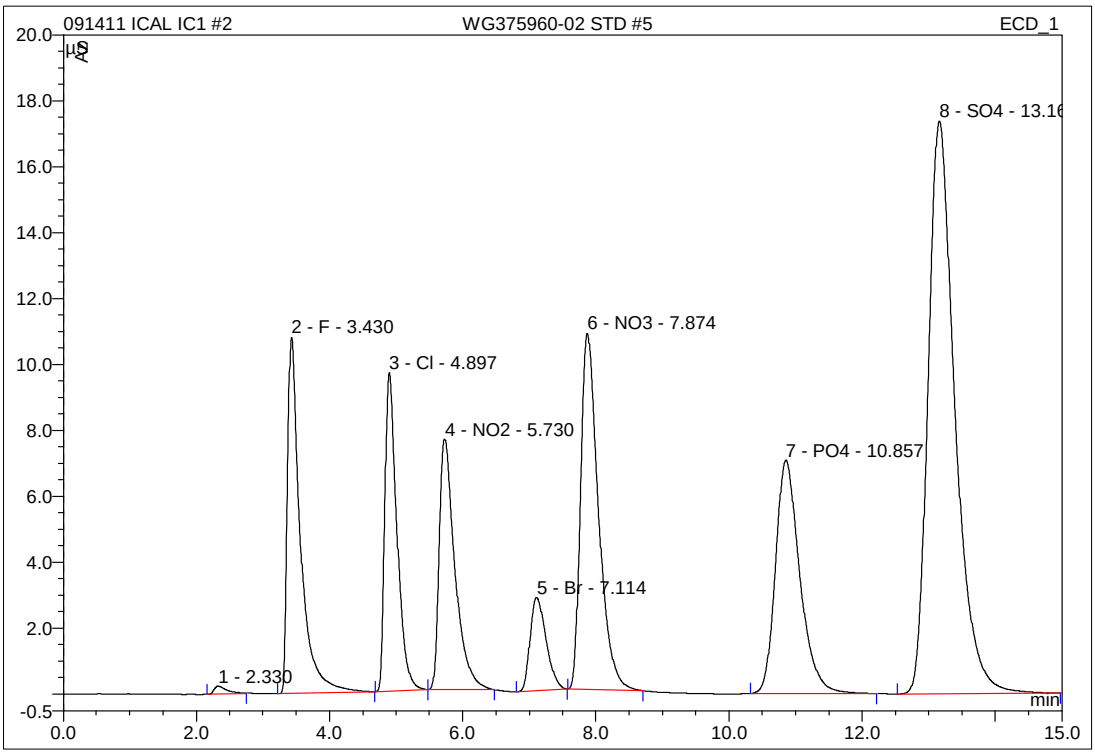


No.	Ret.Time min	Peak Name	Cal.Type	Points	Corr.Coeff. %	Offset	Slope	Curve
1	2.33	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2	3.43	F	XXLOff	6	99.7539	-0.0171	0.2020	0.0000
3	4.90	Cl	XXLOff	6	99.8542	-0.0006	0.1688	0.0000
4	5.73	NO2	XXLOff	6	99.8341	-0.0042	0.2790	0.0000
5	7.10	Br	XXLOff	6	99.9680	-0.0021	0.0657	0.0000
6	7.85	NO3	XXLOff	6	99.7374	-0.0035	0.4050	0.0000
7	10.82	PO4	XXLOff	6	99.7717	-0.0106	0.1511	0.0000
8	13.11	SO4	XXLOff	6	99.7200	-0.0236	0.1328	0.0000
Average:					99.8056	-0.0088	0.2006	0.0000

2 WG375960-02 STD #5

1,1 JBK STD43577

Sample Name:	**WG375960-02 STD #5**	*Injection Volume:*	**20.0**
Vial Number:	**10**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**9/14/2011 9:54**	*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	2.33	n.a.	0.236	0.051	0.24	n.a.	BMB
2	3.43	F	10.803	2.452	11.22	12.226	BMB
3	4.90	Cl	9.655	2.035	9.31	12.060	BMB
4	5.73	NO2	7.599	2.077	9.50	7.459	BMB
5	7.11	Br	2.833	0.791	3.62	12.063	BMB
6	7.87	NO3	10.797	3.347	15.31	8.274	BMB
7	10.86	PO4	7.082	3.006	13.75	19.962	BMB
8	13.16	SO4	17.367	8.101	37.06	61.182	BMB
Total:			66.372	21.861	100.00	133.226	

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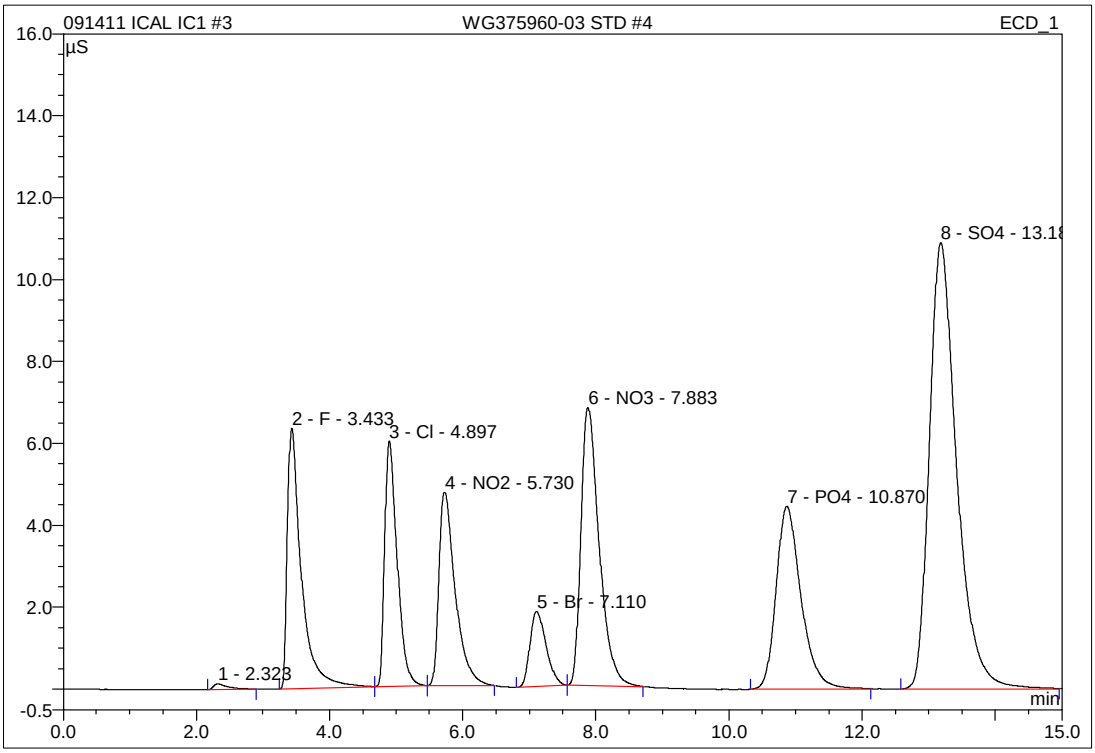
Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

3 WG375960-03 STD #4

1,1 JBK STD43577

Sample Name:	**WG375960-03 STD #4**	*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:	**9/14/2011 10:11**	*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	2.32	n.a.	0.136	0.034	0.24	n.a.	BMB
2	3.43	F	6.364	1.560	11.13	7.808	BMB
3	4.90	Cl	5.991	1.300	9.28	7.705	BMB
4	5.73	NO2	4.716	1.337	9.54	4.806	BMB
5	7.11	Br	1.834	0.516	3.69	7.886	BMB
6	7.88	NO3	6.779	2.146	15.32	5.309	BMB
7	10.87	PO4	4.466	1.934	13.80	12.865	BMB
8	13.18	SO4	10.897	5.183	36.99	39.205	BMB
Total:			41.182	14.009	100.00	85.583	

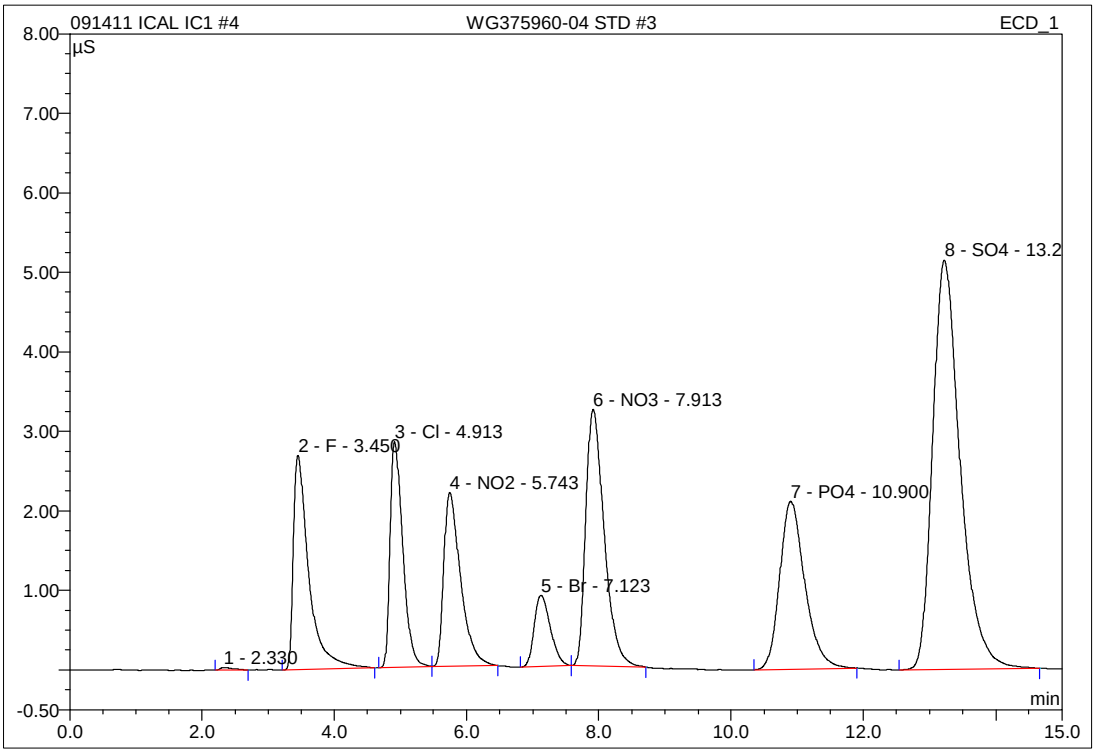
IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

4 WG375960-04 STD #3

1,1 JBK STD43577

Sample Name:	**WG375960-04 STD #3**	*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:	**9/14/2011 10:28**	*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	2.33	n.a.	0.034	0.008	0.12	n.a.	BMB
2	3.45	F	2.699	0.738	10.94	3.740	BMB
3	4.91	Cl	2.837	0.638	9.45	3.781	BMB
4	5.74	NO2	2.182	0.644	9.55	2.324	BMB
5	7.12	Br	0.893	0.254	3.76	3.896	BMB
6	7.91	NO3	3.227	1.044	15.48	2.588	BMB
7	10.90	PO4	2.109	0.928	13.76	6.211	BMB
8	13.22	SO4	5.151	2.492	36.94	18.944	BMB
Total:			19.132	6.747	100.00	41.484	

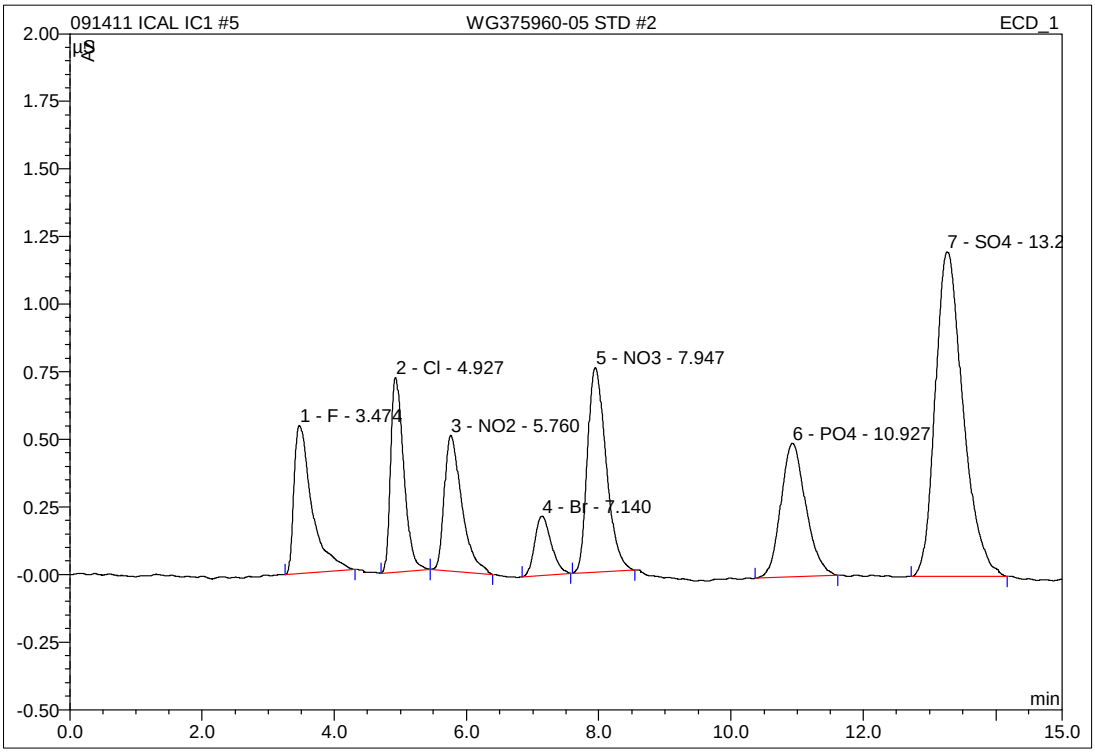
IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

5 WG375960-05 STD #2

1,1 JBK STD43577

Sample Name:	**WG375960-05 STD #2**	*Injection Volume:*	**20.0**
Vial Number:	**13**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**9/14/2011 10:46**	*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	3.47	F	0.547	0.173	10.78	0.942	BMB
2	4.93	Cl	0.720	0.167	10.36	0.991	BMb
3	5.76	NO2	0.502	0.155	9.65	0.571	bMB
4	7.14	Br	0.219	0.063	3.92	0.990	BMB
5	7.95	NO3	0.756	0.248	15.43	0.621	BMB
6	10.93	PO4	0.493	0.216	13.46	1.502	BMB
7	13.27	SO4	1.201	0.585	36.41	4.585	BMB
Total:			4.438	1.607	100.00	10.201	

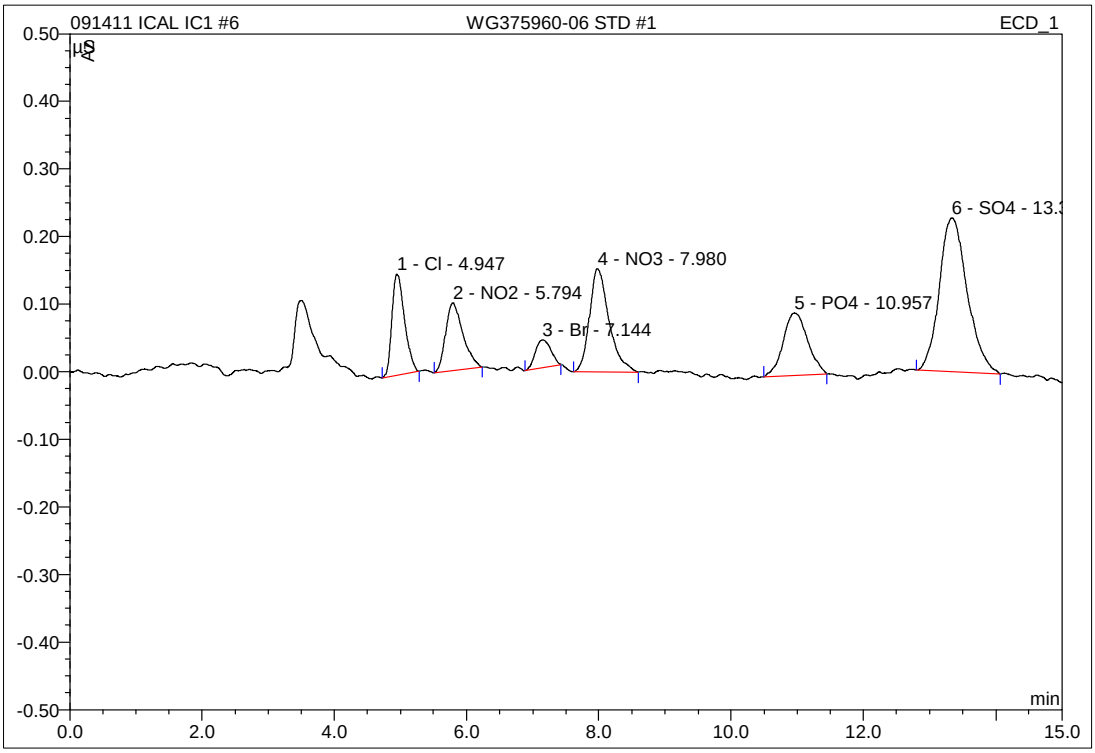
IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

6 WG375960-06 STD #1

1,1 JBK STD43577

Sample Name:	**WG375960-06 STD #1**	*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:	**9/14/2011 11:03**	*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	4.95	Cl	0.150	0.033	11.96	0.201	BMB
2	5.79	NO2	0.100	0.030	10.89	0.124	BMB
3	7.14	Br	0.041	0.011	4.00	0.201	BMB
4	7.98	NO3	0.153	0.052	18.83	0.136	BMB
5	10.96	PO4	0.092	0.039	14.20	0.332	BMB
6	13.33	SO4	0.228	0.112	40.12	1.018	BMB
Total:			0.764	0.278	100.00	2.011	

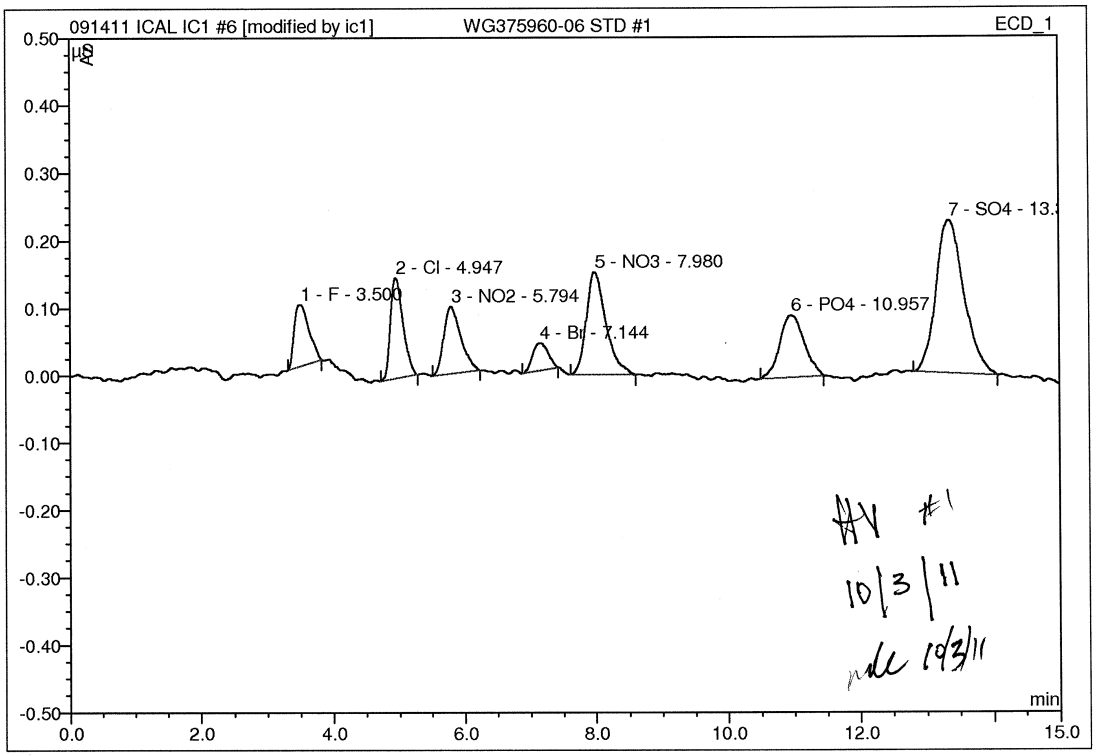
IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

6 WG375960-06 STD #1

1,1 JBK STD43577

Sample Name:	**WG375960-06 STD #1**	*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:	**9/14/2011 11:03**	*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	3.50	F	0.092	0.024	7.91	0.203	BMB*
2	4.95	Cl	0.150	0.033	11.01	0.201	BMB
3	5.79	NO2	0.100	0.030	10.03	0.124	BMB
4	7.14	Br	0.041	0.011	3.69	0.201	BMB
5	7.98	NO3	0.153	0.052	17.34	0.138	BMB
6	10.96	PO4	0.092	0.039	13.07	0.332	BMB
7	13.33	SO4	0.228	0.112	36.95	1.018	BMB
Total:			0.856	0.302	100.00	2.216	

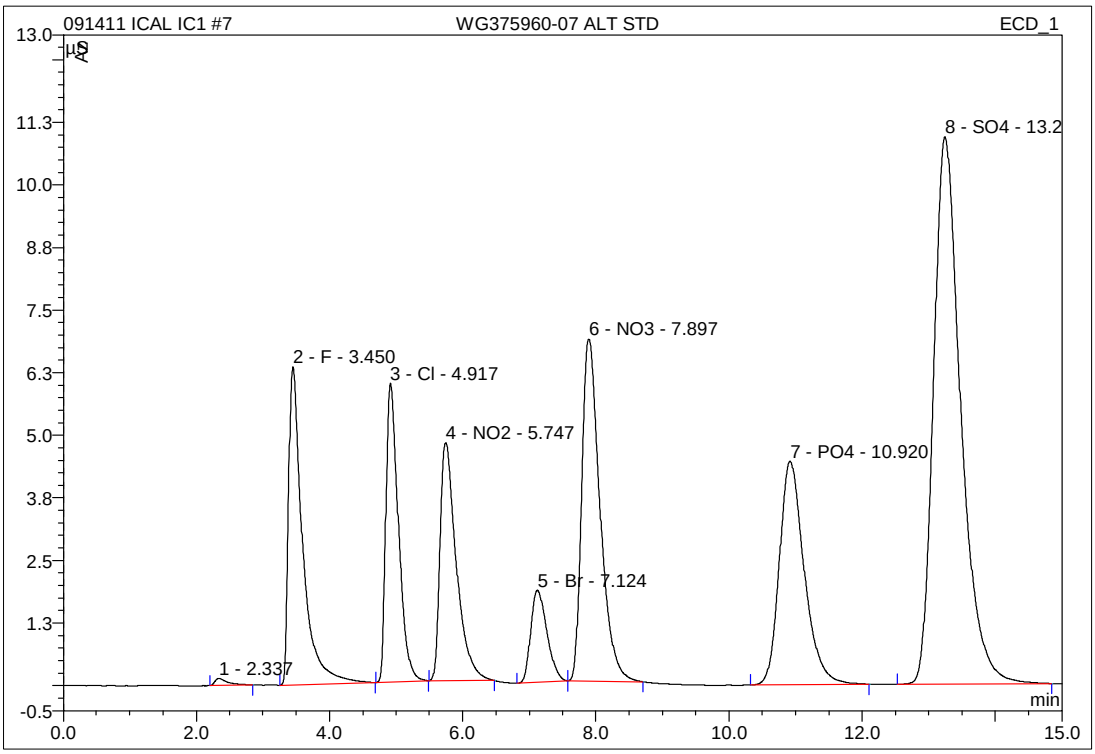
IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

7 WG375960-07 ALT STD

1,1 JBK STD43577

Sample Name:	**WG375960-07 ALT STD**	*Injection Volume:*	**20.0**
Vial Number:	**15**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**9/14/2011 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	2.34	n.a.	0.139	0.031	0.22	n.a.	BMB
2	3.45	F	6.355	1.568	11.16	7.850	BMB
3	4.92	Cl	5.968	1.306	9.29	7.744	BMB
4	5.75	NO2	4.751	1.344	9.56	4.831	BMB
5	7.12	Br	1.840	0.519	3.69	7.925	BMB
6	7.90	NO3	6.829	2.164	15.39	5.352	bMB
7	10.92	PO4	4.465	1.939	13.80	12.901	BMB
8	13.25	SO4	10.937	5.186	36.89	39.228	BMB
Total:			41.284	14.057	100.00	85.831	

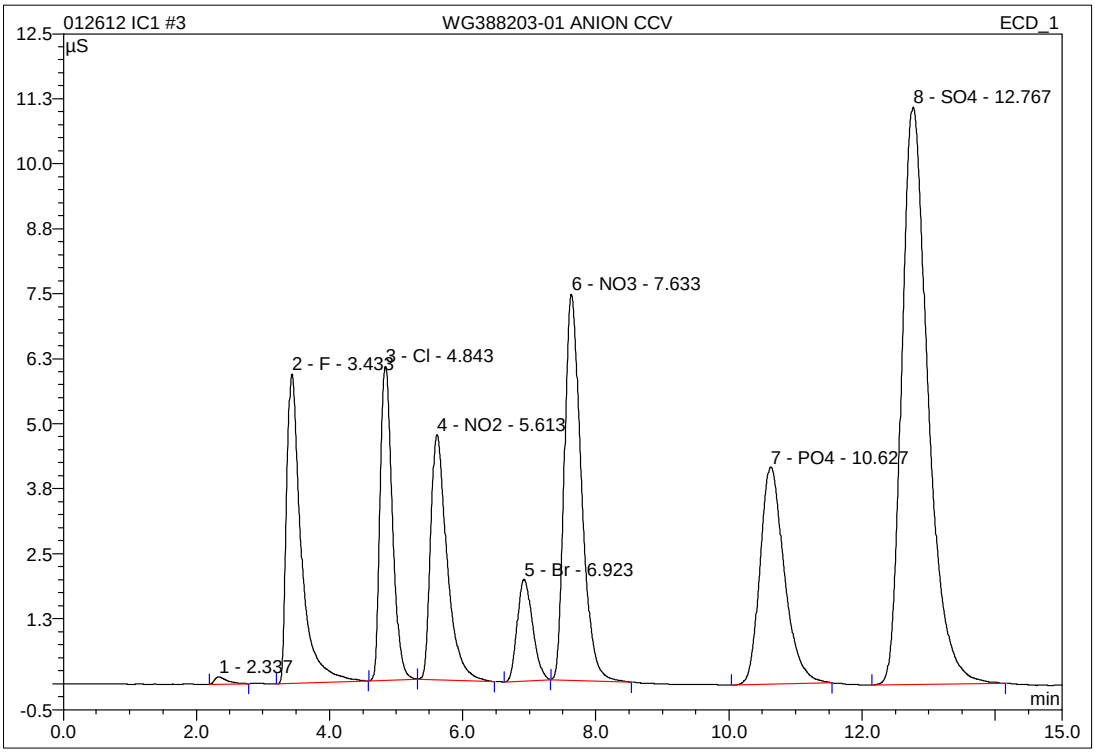
IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

3 WG388203-01 ANION CCV

1,1 JBK STD48131 _____ psi @ _____

Sample Name:	**WG388203-01 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:	**1/26/2012 15:17**	*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	2.34	n.a.	0.139	0.030	0.22	n.a.	BMB
2	3.43	F	5.950	1.530	11.09	7.659	BMB
3	4.84	Cl	6.032	1.289	9.34	7.641	BMb
4	5.61	NO2	4.715	1.350	9.79	4.852	bMB
5	6.92	Br	1.954	0.522	3.78	7.971	BMB
6	7.63	NO3	7.423	2.194	15.91	5.430	BMB
7	10.63	PO4	4.181	1.772	12.85	11.797	BMB
8	12.77	SO4	11.106	5.105	37.01	38.618	BMB
Total:			41.500	13.792	100.00	83.967	

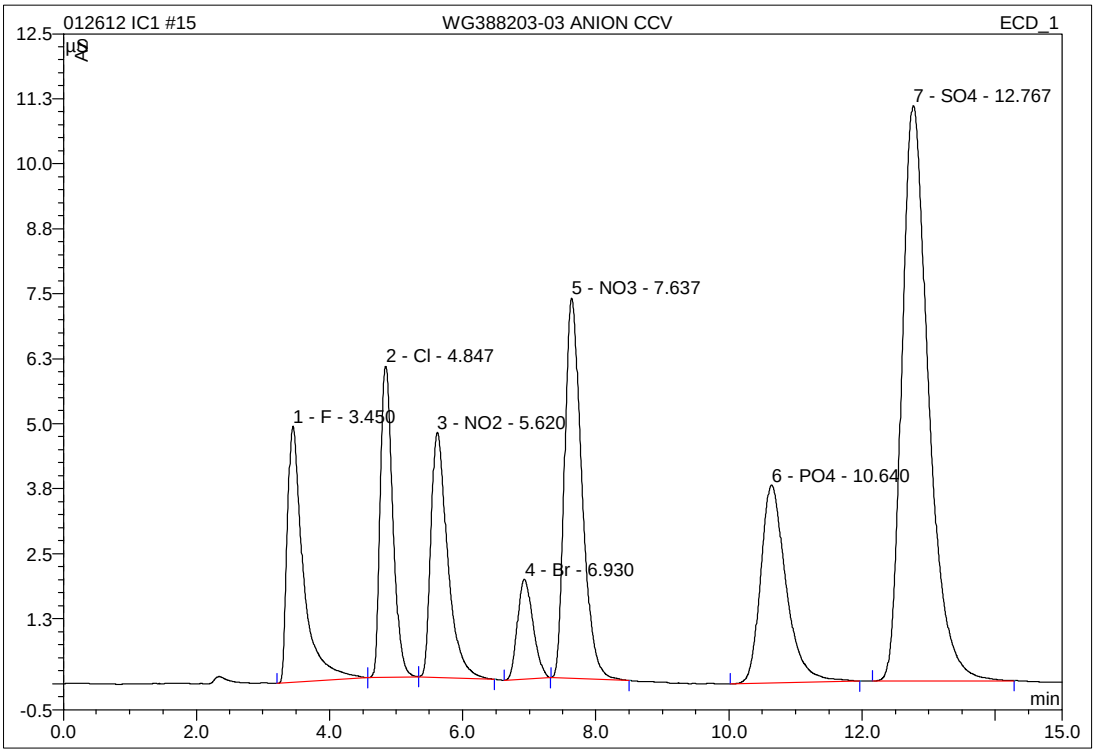
IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

15 WG388203-03 ANION CCV

1,1 JBK STD48131

Sample Name:	**WG388203-03 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:	**1/26/2012 18:46**	*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	3.45	F	4.929	1.388	10.19	6.959	BMB
2	4.85	Cl	5.978	1.303	9.56	7.727	bMb
3	5.62	NO2	4.713	1.373	10.08	4.935	bMB
4	6.93	Br	1.922	0.522	3.83	7.968	BMB
5	7.64	NO3	7.315	2.201	16.15	5.447	BMB
6	10.64	PO4	3.811	1.691	12.41	11.259	BMB
7	12.77	SO4	11.066	5.148	37.78	38.947	BMB
Total:			39.735	13.627	100.00	83.241	

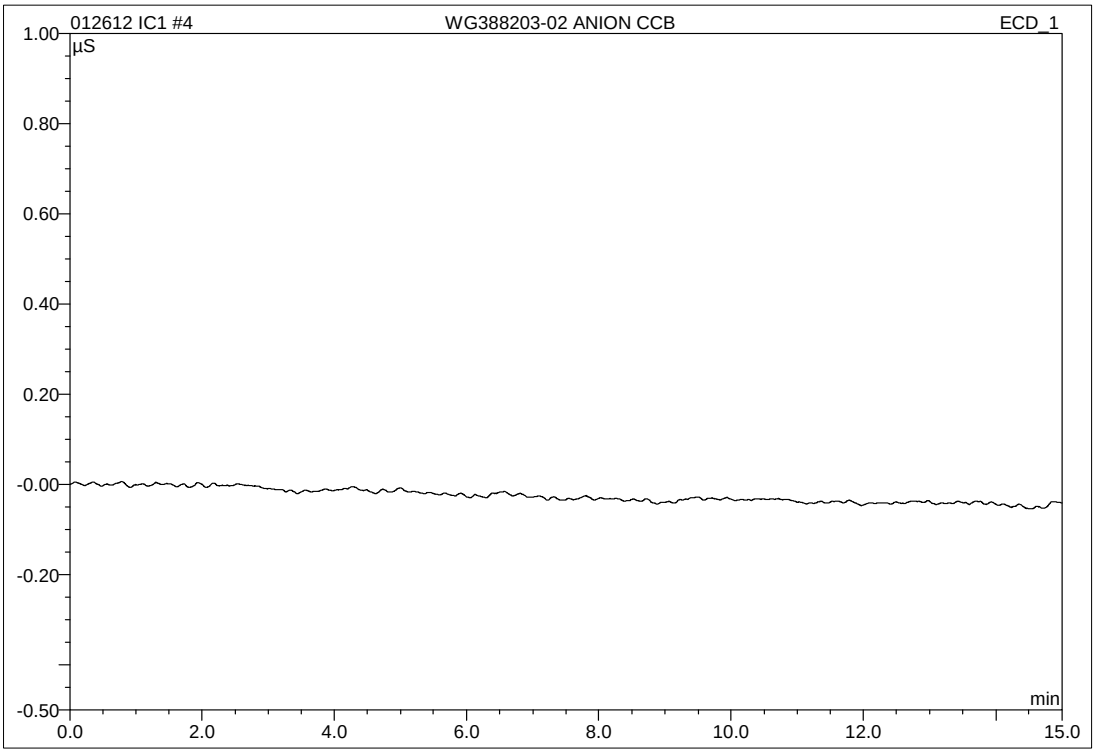
IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

4 WG388203-02 ANION CCB

1,1 JBK

Sample Name:	**WG388203-02 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:	**1/26/2012 15:35**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.00**	*Sample Amount:*	**1.0000**

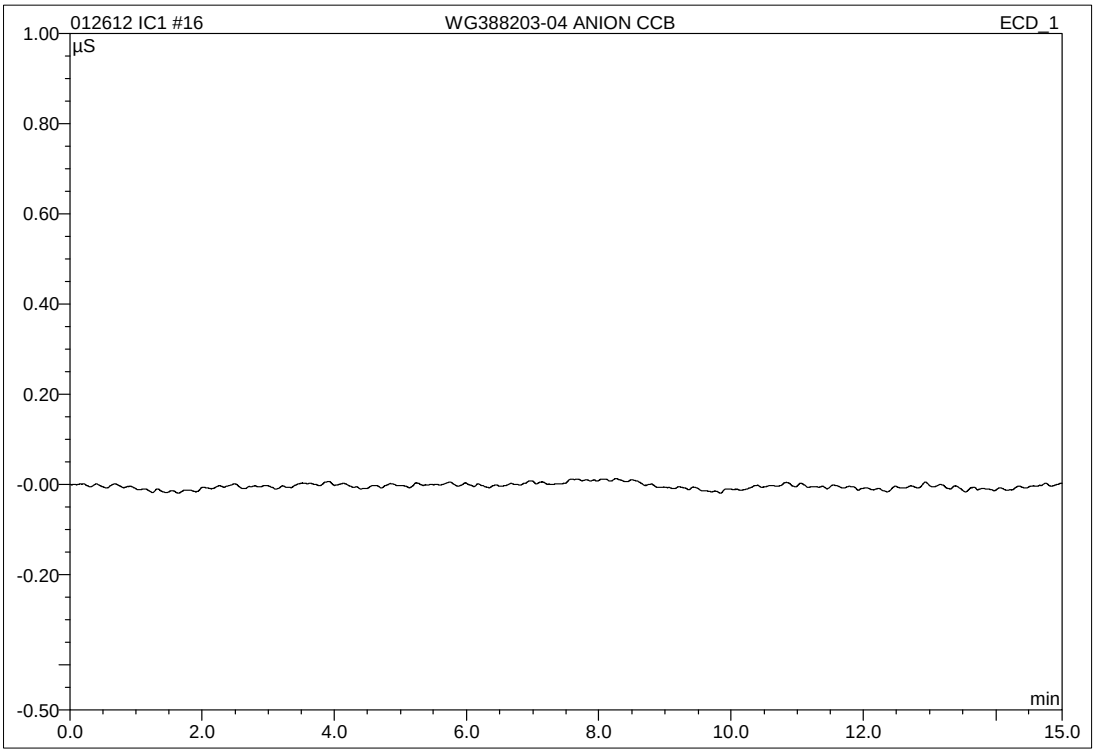


No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
Total:			0.000	0.000	0.00	0.000	

16 WG388203-04 ANION CCB

1,1 JBK

Sample Name:	**WG388203-04 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:	**1/26/2012 19:04**	*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
Total:			0.000	0.000	0.00	0.000	

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

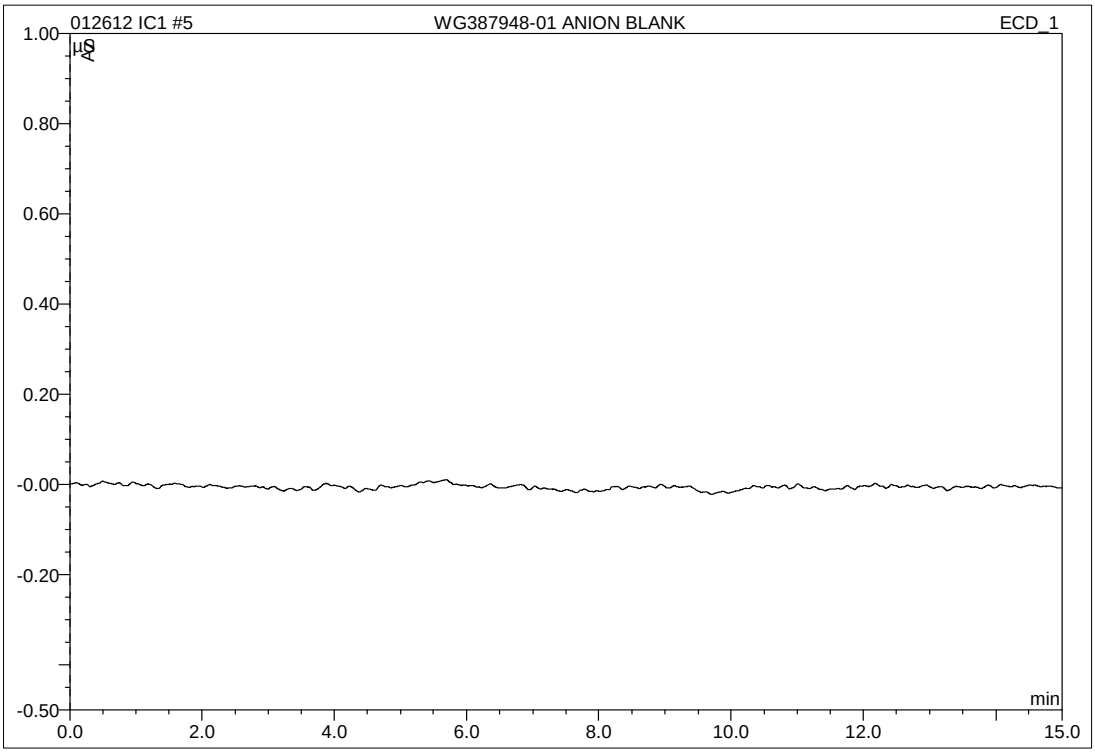
COMPOUND	STD #1 RT	STD #2 RT	STD #3 RT	RT WIN
F	3.387	3.377	3.367	0.030
Cl	4.867	4.864	4.837	0.050
NO2-N	5.724	5.717	5.684	0.064
Br	7.174	7.160	7.117	0.089
NO3-N	8.020	8.007	7.954	0.105
PO4-P	10.640	10.607	10.580	0.090
SO4	12.580	12.574	12.507	0.122

2.2.1.5 Raw QC Data

5 WG387948-01 ANION BLANK

1,1 JBK

Sample Name:	**WG387948-01 ANION BLANK**	*Injection Volume:*	**20.0**
Vial Number:	**13**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**1/26/2012 15:52**	*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
Total:			0.000	0.000	0.00	0.000	

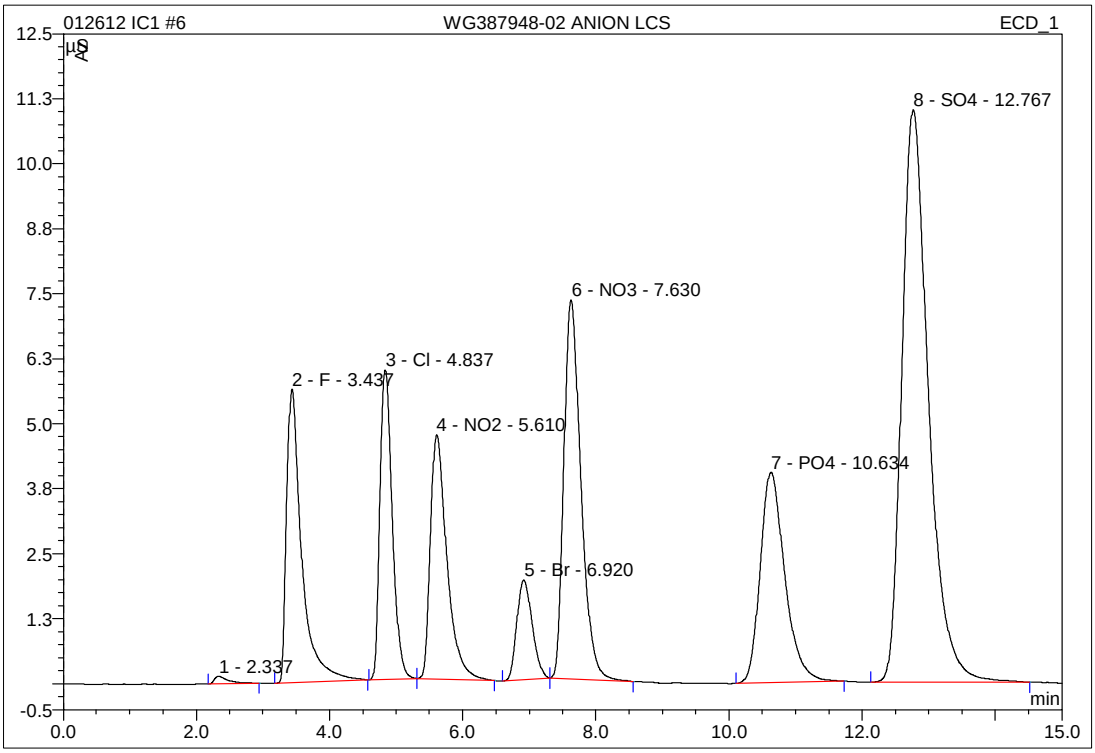
IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

6 WG387948-02 ANION LCS

1,1 JBK STD48131

Sample Name:	**WG387948-02 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:	**1/26/2012 16:10**	*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	2.34	n.a.	0.144	0.035	0.26	n.a.	BMB
2	3.44	F	5.646	1.491	10.89	7.468	BMB
3	4.84	Cl	5.946	1.280	9.35	7.588	BMb
4	5.61	NO2	4.695	1.353	9.88	4.863	bMB
5	6.92	Br	1.918	0.515	3.76	7.863	BMB
6	7.63	NO3	7.290	2.170	15.85	5.369	BMB
7	10.63	PO4	4.049	1.736	12.68	11.559	BMB
8	12.77	SO4	11.013	5.112	37.34	38.675	BMB
Total:			40.701	13.692	100.00	83.384	

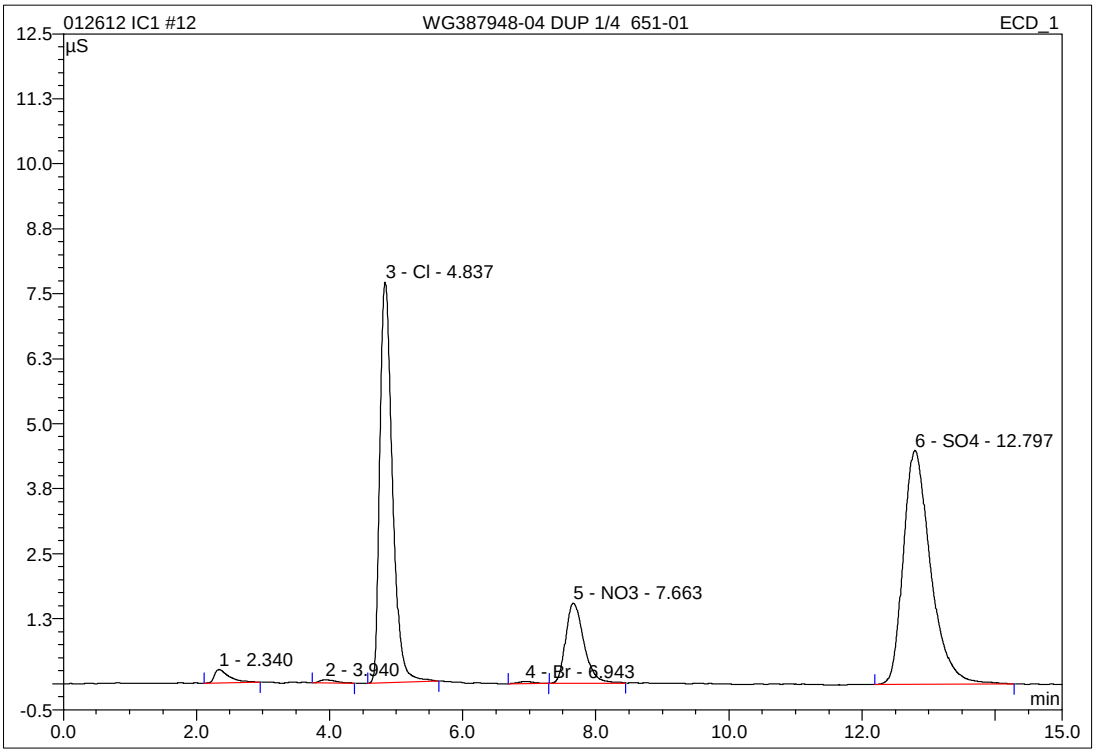
IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

12 WG387948-04 DUP 1/4 651-01

1,4 JBK

Sample Name:	**WG387948-04 DUP 1/4 651-01**	*Injection Volume:*	**20.0**
Vial Number:	**19**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**1/26/2012 17:54**	*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	2.34	n.a.	0.255	0.066	1.49	n.a.	BMB
2	3.94	n.a.	0.061	0.017	0.39	n.a.	BMB
3	4.84	Cl	7.706	1.689	38.20	10.013	BMB
4	6.94	Br	0.042	0.012	0.26	0.206	BMB
5	7.66	NO3	1.543	0.493	11.15	1.225	BMB
6	12.80	SO4	4.502	2.145	48.51	16.330	BMB
Total:			14.109	4.421	100.00	27.774	

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: L12010651
Department: Conventionals
Analyst: Dorothy Payne

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.

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Narrative ID: 41703
Approved By: Deanna Hesson

Microbac

Lab Report #: L12010651
Lab Project #: 3005.011
Project Name: White Sands MR
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L12010651-01	**PrePrep Method:**	N/A	**Instrument:**	ORION-4STAR
Client ID:	MPL-16-0112-1	**Prep Method:**	9040C	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	9040C	**Cal Date:**	
Workgroup #:	WG387893	**Analyst:**	DLP	**Run Date:**	01/25/2012 14:15
Collect Date:	01/24/2012 14:20	**Dilution:**	1	**File ID:**	OS12012612101001
Sample Tag:		**Units:**	UNITS		

Analyte	CAS #	Result	Qual	LOQ	LOD
Corrosivity pH	10-29-7	7.64		0.000	0.000

Sample #:	L12010651-02	**PrePrep Method:**	N/A	**Instrument:**	ORION-4STAR
Client ID:	MPL-16-0112-MS	**Prep Method:**	9040C	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	9040C	**Cal Date:**	
Workgroup #:	WG387893	**Analyst:**	DLP	**Run Date:**	01/25/2012 14:17
Collect Date:	01/24/2012 14:20	**Dilution:**	1	**File ID:**	OS12012612101401
Sample Tag:		**Units:**	UNITS		

Analyte	CAS #	Result	Qual	LOQ	LOD
Corrosivity pH	10-29-7	7.63		0.000	0.000

Sample #:	L12010651-03	**PrePrep Method:**	N/A	**Instrument:**	ORION-4STAR
Client ID:	MPL-16-0112-MSD	**Prep Method:**	9040C	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	9040C	**Cal Date:**	
Workgroup #:	WG387893	**Analyst:**	DLP	**Run Date:**	01/25/2012 14:21
Collect Date:	01/24/2012 14:20	**Dilution:**	1	**File ID:**	OS12012612101801
Sample Tag:		**Units:**	UNITS		

Analyte	CAS #	Result	Qual	LOQ	LOD
Corrosivity pH	10-29-7	7.67		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: 25-JAN-2012
Analyst: DLP
Analyst: NA
Method: PH
Instrument: ORION 4-STAR
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG387893

Calibration/Linearity	01-25-12
Second Source Check	
ICV/CCV (std)	
ICB/CCB	
Blank	
LCS/LCS Dup	
MS/MSD	
Duplicate	X
Upload Results	
Client Forms	X
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:
25-JAN-2012

Secondary Reviewer:
26-JAN-2012

CHECKLIST1 - Modified 03/05/2008
Generated: JAN-26-2012 14:13:39

2.2.2.3 Raw Data

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 49324	7,4,10.45	1350	5.99			1352
01-581-01				7.89		1358
03				7.88		1404
01-564-01				9.07		1408
02				9.14		1411
0601-651-01			7.64			1415
MS 02			7.63			1417
MSD -03			7.67			1421
01-652-01			7.79			1425
-02			7.68			1427
01-659-01			8.50			1430
01-663-01			8.35			1435
01-653-01				8.02		1440
DUP 01-581-01	7,4,10.45	1350		7.89		1400
LCS 9 49325			900			1445

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: 01-25-12 / 1350

DCN#89708

2.2.3 Alkalinity Data

2.2.3.1 Summary Data

Login Number: L12010651
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: The blank result was greater than the absolute value of the LOD.

Laboratory Control Sample: All acceptance criteria were met.

Matrix Spikes: Recoveries out of range were observed for the following analytes: Alkalinity, Bicarbonate (as CaCO3), Alkalinity, Carbonate (as CaCO3), Alkalinity, Total (as CaCO3). Please see the applicable QC report for a detailed presentation of the failures.

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: 41625
Approved By: Deanna Hesson

Microbac

Lab Report #: L12010651
Lab Project #: 3005.011
Project Name: White Sands MR
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L12010651-01	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	MPL-16-0112-1	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	01/31/2012 08:52
Workgroup #:	WG388329	**Analyst:**	DIH	**Run Date:**	01/31/2012 08:56
Collect Date:	01/24/2012 14:20	**Dilution:**	1	**File ID:**	SC120131001.014
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 #:	L12010651-01	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	MPL-16-0112-1	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	01/31/2012 08:52
Workgroup #:	WG388329	**Analyst:**	DIH	**Run Date:**	01/31/2012 08:56
Collect Date:	01/24/2012 14:20	**Dilution:**	1	**File ID:**	SC120131001.014
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Alkalinity, Total (as CaCO3)		84.7		20.0	10.0

Sample #:	L12010651-01	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	MPL-16-0112-1	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	01/31/2012 08:52
Workgroup #:	WG388329	**Analyst:**	DIH	**Run Date:**	01/31/2012 08:56
Collect Date:	01/24/2012 14:20	**Dilution:**	1	**File ID:**	SC120131001.014
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Alkalinity, Bicarbonate (as CaCO3)		84.7		20.0	10.0

Sample #:	L12010651-02	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	MPL-16-0112-MS	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	01/31/2012 08:52
Workgroup #:	WG388329	**Analyst:**	DIH	**Run Date:**	01/31/2012 08:57
Collect Date:	01/24/2012 14:20	**Dilution:**	1	**File ID:**	SC120131001.016
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Alkalinity, Bicarbonate (as CaCO3)		157		20.0	10.0

Sample #:	L12010651-02	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	MPL-16-0112-MS	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	01/31/2012 08:52
Workgroup #:	WG388329	**Analyst:**	DIH	**Run Date:**	01/31/2012 08:57
Collect Date:	01/24/2012 14:20	**Dilution:**	1	**File ID:**	SC120131001.016
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Alkalinity, Total (as CaCO3)		157		20.0	10.0

Certificate of Analysis

Sample #:	L12010651-02	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	MPL-16-0112-MS	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	01/31/2012 08:52
Workgroup #:	WG388329	**Analyst:**	DIH	**Run Date:**	01/31/2012 08:57
Collect Date:	01/24/2012 14:20	**Dilution:**	1	**File ID:**	SC120131001.016
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 #:	L12010651-03	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	MPL-16-0112-MSD	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	01/31/2012 08:52
Workgroup #:	WG388329	**Analyst:**	DIH	**Run Date:**	01/31/2012 08:58
Collect Date:	01/24/2012 14:20	**Dilution:**	1	**File ID:**	SC120131001.017
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 #:	L12010651-03	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	MPL-16-0112-MSD	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	01/31/2012 08:52
Workgroup #:	WG388329	**Analyst:**	DIH	**Run Date:**	01/31/2012 08:58
Collect Date:	01/24/2012 14:20	**Dilution:**	1	**File ID:**	SC120131001.017
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Alkalinity, Bicarbonate (as CaCO3)		156		20.0	10.0

Sample #:	L12010651-03	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	MPL-16-0112-MSD	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	01/31/2012 08:52
Workgroup #:	WG388329	**Analyst:**	DIH	**Run Date:**	01/31/2012 08:58
Collect Date:	01/24/2012 14:20	**Dilution:**	1	**File ID:**	SC120131001.017
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Alkalinity, Total (as CaCO3)		156		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: 31-JAN-2012
Analyst: DIH
Analyst: NA
Method: ALK
Instrument: SC
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG388329

Calibration/Linearity	1/31/2012
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:
02-FEB-2012

Secondary Reviewer:
02-FEB-2012

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-02-2012 10:36:59

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 310.2 AAB#: WG388329

Login Number: L12010651

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
MPL-16-0112-1	01	01/24/12							14		01/31/12	6.8	14	
MPL-16-0112-MS	02	01/24/12							14		01/31/12	6.8	14	
MPL-16-0112-MSD	03	01/24/12							14		01/31/12	6.8	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 2296316
Report generated 02/02/2012 08:53

Microbac Laboratories Inc.

METHOD BLANK SUMMARY

Login Number: L12010651
Blank File ID: SC120131001.010
Prep Date: 01/31/12 08:54
Analyzed Date: 01/31/12 08:54
Analyst: DIH

Work Group: WG388329
Blank Sample ID: WG388329-01
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	WG388329-02	SC120131001.011	01/31/12 08:54	01
LCS2	WG388329-03	SC120131001.012	01/31/12 08:55	01
MPL-16-0112-1	L12010651-01	SC120131001.014	01/31/12 08:56	01
MPL-16-0112-1	L12010651-01	SC120131001.014	01/31/12 08:56	01
MPL-16-0112-1	L12010651-01	SC120131001.014	01/31/12 08:56	01
DUP	WG388329-05	SC120131001.015	01/31/12 08:56	01
MPL-16-0112-MS	L12010651-02	SC120131001.016	01/31/12 08:57	01
MPL-16-0112-MS	L12010651-02	SC120131001.016	01/31/12 08:57	01
MPL-16-0112-MS	L12010651-02	SC120131001.016	01/31/12 08:57	01
MPL-16-0112-MSD	L12010651-03	SC120131001.017	01/31/12 08:58	01
MPL-16-0112-MSD	L12010651-03	SC120131001.017	01/31/12 08:58	01
MPL-16-0112-MSD	L12010651-03	SC120131001.017	01/31/12 08:58	01

Report Name: BLANK_SUMMARY
PDF File ID: 2296317
Report generated 02/02/2012 08:53

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L12010651 Prep Date: 01/31/12 08:54 Sample ID: WG388329-01
Instrument ID: SMARTCHEM Run Date: 01/31/12 08:54 Prep Method: 310.2
File ID: SC120131001.010 Analyst: DIH Method: 310.2
Workgroup (AAB#): WG388329 Matrix: Water Units: mg/L
Contract #: Cal ID: SMARTC - 31-JAN-12

Analytes	LOD	LOQ	Concentration	Dilution	Qualifier
Alkalinity, Total (as CaCO3)	10.0	20.0	-12.6	1	*

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: 2296318
02-FEB-2012 08:53

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L12010651 Analyst: DIH Prep Method: 310.2
Instrument ID: SMARTCHEM Matrix: Water Method: 310.2
Workgroup (AAB#): WG388329 Units: mg/L
QC Key: DOD4 Lot #: STD49459

Sample ID: WG388329-02 LCS File ID: SC120131001.011 Run Date: 01/31/2012 08:54
Sample ID: WG388329-03 LCS2 File ID: SC120131001.012 Run Date: 01/31/2012 08:55

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Alkalinity, Total (as CaCO3)	200	193	96.3	200	190	95.1	1.25	85 - 115	20	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 2296319
Report generated: 02/02/2012 08:53

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L12010651 Cal ID: SMARTCHEM- 31-JAN-12 Worknum: WG388329

Instrument ID: SMARTCHEM Contract #: Prep Method: 310.2

Parent ID: L12010651-01 File ID: SC120131001.014 Dil: 1 Method: 310.2

Sample ID: L12010651-02 MS File ID: SC120131001.016 Dil: 1 Matrix: Water

Sample ID: L12010651-03 MSD File ID: SC120131001.017 Dil: 1 Units: mg/L

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Alkalinity, Total (as CaCO3)	84.7	100	157	72	100	156	70.8	0.780	85 - 115	20	*

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

MS_MSD - Modified 03/06/2008
PDF File ID: 2296320
Report generated 02/02/2012 08:53

2.2.3.3 Raw Data

SMARTCHEM RUN LOG

Daily Check

- [x] Lamp On
- [x] Probe Rinse Full
- [x] DI Water > ½ Full
- [x] Wash Solution > ½ Full
- [ ] 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 Plan #** 20120131001
2) **Workgroup Plan #** _____
3) **Workgroup Plan #** _____

Analyte		1	2	3
		AIK		
		Dilution		
SC Prepared Curve				
Position				
1-1	ICV 250			
1-2	BIK			
1-3	LCS 200			
1-4	LCSDUP			
1-5	01-710-01			B,C
1-6	01-651-01			+BC
1-7	DUP 01			↓
1-8	MS 02			↓
1-9	MSD 03			↓
1-10	01-652-01			+BC
1-11	02			↓
1-12	01-726-01			
1-13	02			
1-14	01-743-02	~~1/4~~ 1/10		color
1-15	03	1/4		↓
1-16	05	1/10		↓
1-17	06	1/4		↓
1-18	08	1/10		↓
1-19	09	1/4		↓
1-20	01-686-01			+BC
1-21	02			↓
1-22	03			↓
2-1	01-767-01			+BC
2-2	MS02			↓
2-3	MSD03			↓

Analyte		1	2	3
Position				
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#89762

SMARTCHEM RUN LOG

Position	Analyte	1	2	3
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				

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)
- [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	K3102 R14		Rot16994
Curve Stock (SC made)	std47063		
Curve ID (user made)			
ICV	std49458		
CCV	std49513		
LCS	std49459		
MS	std47064 Dilution 0.25(2500)=100		

Comments: 01-710, 01-651, 01-652, 01-686, 01-767 all pH < 8.3

Analyst: Deanna Jason Date: 1/31/12

DCN#89762

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	0.7757	0.00		8:46:53 AM
DIL-1	RBL	0.0	0.7824	0.00		8:47:11 AM
DIL-1	RBL	0.0	0.7756	0.00		8:48:05 AM
DIL-1	Std-1	0.0	0.0040	0.00	INV	8:48:23 AM
SR5-1	Std-2	10.0	-0.0138	0.00		8:49:17 AM
SR5-2	Std-3	20.0	-0.0376	0.00		8:49:35 AM
SR5-3	Std-4	50.0	-0.0806	0.00		8:50:29 AM
SR5-4	Std-5	100.0	-0.1563	0.00		8:50:47 AM
SR5-5	Std-6	200.0	-0.3548	0.00		8:51:41 AM
SR5-6	Std-7	250.0	-0.4720	0.00		8:51:59 AM
SR5-7	Std-8	300.0	-0.5583	0.00		8:52:53 AM
1	ICV 250	238.8	-0.4339	0.00		8:53:11 AM
2	WG388329-01 BLK	-12.6	0.0227	0.00	INV,><,LL	8:54:05 AM
3	WG388329-02 LCS	192.6	-0.3400	0.00		8:54:23 AM
4	WG388329-03 LCSDUP	190.2	-0.3353	0.00		8:55:18 AM
5	L12010710-01	215.5	-0.3858	0.00		8:55:36 AM
6	L12010651-01	84.7	-0.1400	0.00		8:56:30 AM
7	WG388329-05 DUP	80.6	-0.1329	0.00		8:56:48 AM
8	L12010651-02 MS	156.8	-0.2708	0.00		8:57:42 AM
9	L12010651-03 MSD	155.5	-0.2685	0.00		8:58:00 AM
10	L12010652-01	70.7	-0.1157	0.00		8:58:54 AM
ST-2	CCV (150 mg/L)	156.1	-0.2696	104.09		8:59:12 AM
ST-3	CCB (0 mg/L)	-8.3	0.0157	0.00	INV,><,LL	9:00:06 AM
11	L12010652-02	74.9	-0.1230	0.00		9:00:24 AM
12	L12010726-01	344.7 X	-0.6762	0.00	><,LH	9:01:18 AM
13	L12010726-02 du 2/1/12	8.8	-0.0119	0.00		9:01:36 AM
14	L12010743-02 (10)	135.7	-0.2315	0.00		9:02:30 AM
15	L12010743-03 (4)	241.9	-0.4403	0.00		9:02:48 AM
16	L12010743-05 (10)	118.5	-0.2001	0.00		9:03:42 AM
17	L12010743-06 (4)	223.2	-0.4015	0.00		9:04:00 AM
18	L12010743-08 (10)	93.4	-0.1552	0.00		9:04:54 AM
19	L12010743-09 (4)	238.2	-0.4327	0.00		9:05:12 AM

Report Date :01/31/2012 **Run Date :1/31/2012** **Operator : WESTCO** **Plan # :20120131001**

Plan Description : ALK-A-DIH/1/31/2012

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	L12010686-01	114.8	-0.1933	0.00		9:06:06 AM
ST-2	CCV (150 mg/L)	157.4	-0.2720	104.94		9:06:24 AM
ST-3	CCB (0 mg/L)	11.3	-0.0160	0.00		9:07:18 AM
21	L12010686-02	141.4	-0.2420	0.00		9:07:36 AM
22	L12010686-03	88.5	-0.1466	0.00		9:08:30 AM
23	L12010767-01	100.6	-0.1679	0.00		9:08:48 AM
24	L12010767-02 MS	187.0	-0.3290	0.00		9:09:42 AM
25	L12010767-03 MSD	187.4	-0.3297	0.00		9:10:00 AM
26	ID 26	15.0	-0.0220	0.00		9:10:54 AM
27	ID 27	12.9	-0.0186	0.00		9:11:12 AM
ST-2	CCV (150 mg/L)	166.8	-0.2899	111.22		9:12:06 AM
ST-3	CCB (0 mg/L)	14.6	-0.0214	0.00		9:12:24 AM
12-[1/2]	L12010726-01	618.5 X	-0.5900	0.00	><,LH	9:20:04 AM
ST-2	CCV (150 mg/L)	183.4 X	-0.3218	122.24		9:20:04 AM
ST-3	CCB (0 mg/L)	30.7 X	-0.0479	0.00		9:20:58 AM
12-[1/4]	L12010726-01	709.3 X	-0.3101	0.00	LH	9:28:28 AM
ST-2	CCV (150 mg/L)	184.3 X	-0.3237	122.88		9:28:28 AM
ST-3	CCB (0 mg/L)	34.9 X	-0.0550	0.00		9:29:22 AM

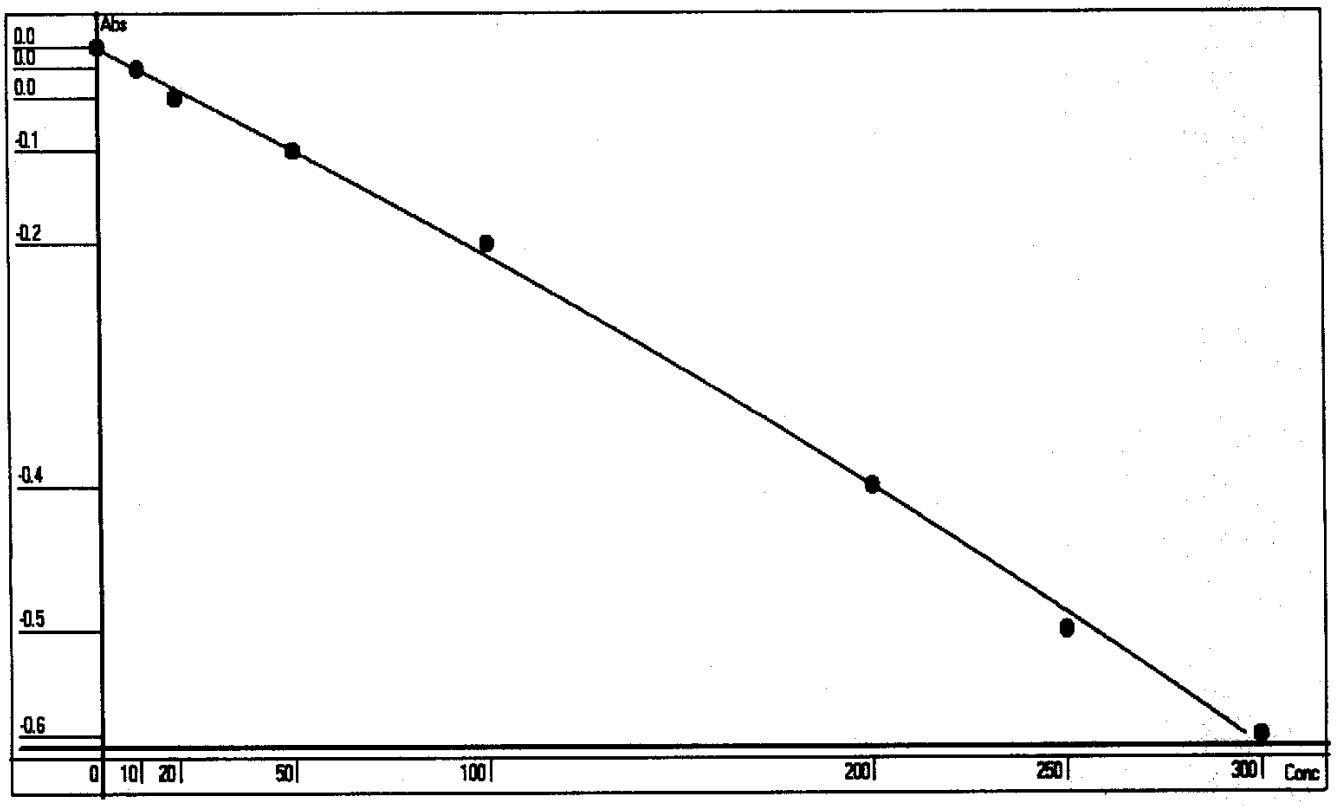
Report Date :01/31/2012 **Run Date :1/31/2012** **Operator : WESTCO** **Plan # :20120131001**

Plan Description : ALK-A-DIH/1/31/2012

Calibrant Report - WALK -

Calib Lot #:010104 Exp Date:6/21/2020 User:MICROBAC

Plan # : 20120131001 Description : [ALK-A-DIH/1/31/2012]



Point	OD	Conc	Recalc Conc	% Error
1	0.0040	0	-0.9987	-99.87
2	-0.0138	10	9.9657	-0.34
3	-0.0376	20	24.4649	22.32
4	-0.0806	50	50.1943	0.39
5	-0.1563	100	94.0299	-5.97
6	-0.3548	200	200.1303	0.07
7	-0.4720	250	256.7623	2.70
8	-0.5583	300	295.6093	-1.46

Conc= -162.5029*Abso^2 -617.566*Abso +1.4742 R^2=0.9988

RBL
0.7757
0

Report Date 1/31/2012 Run Date 1/31/2012

2.2.4 Cyanide Data

2.2.4.1 Summary Data

Login Number: L12010651
Department: Conventionals
Analyst: Jeremy Kinney

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.

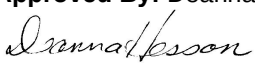
Duplicates: All acceptance criteria were met.

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: 41407
Approved By: Deanna Hesson



Certificate of Analysis

Sample #:	L12010651-01	**PrePrep Method:**	N/A	**Instrument:**	UV-120-1V
Client ID:	MPL-16-0112-1	**Prep Method:**	9014-9010C	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	9014-9010C	**Cal Date:**	01/27/2012 11:10
Workgroup #:	WG388027	**Analyst:**	JBK	**Run Date:**	01/27/2012 11:30
Collect Date:	01/24/2012 14:20	**Dilution:**	1	**File ID:**	1V.1201271130-05
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Cyanide	57-12-5	0.105		0.0100	0.00500

Sample #:	L12010651-01	**PrePrep Method:**	N/A	**Instrument:**	UV-120-1V
Client ID:	MPL-16-0112-1	**Prep Method:**	SM4500-CN-C,G	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-CN-C,G	**Cal Date:**	01/27/2012 11:10
Workgroup #:	WG388028	**Analyst:**	JBK	**Run Date:**	01/27/2012 11:50
Collect Date:	01/24/2012 14:20	**Dilution:**	1	**File ID:**	1V.1201271150-11
Sample Tag:	CN-A	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Cyanide, Amenable to Chlor.	57-12-5	0.0406		0.0100	0.00500

Sample #:	L12010651-01	**PrePrep Method:**	N/A	**Instrument:**	UV-120-1V
Client ID:	MPL-16-0112-1	**Prep Method:**	SM4500-CN-I	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-CN-I	**Cal Date:**	01/30/2012 15:15
Workgroup #:	WG388302	**Analyst:**	DLP	**Run Date:**	01/30/2012 18:00
Collect Date:	01/24/2012 14:20	**Dilution:**	1	**File ID:**	1V.1201301800-09
Sample Tag:	D01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Cyanide, Weak/Dissociable	57-12-5	0.0139		0.0100	0.00500

Sample #:	L12010651-02	**PrePrep Method:**	N/A	**Instrument:**	UV-120-1V
Client ID:	MPL-16-0112-MS	**Prep Method:**	9014-9010C	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	9014-9010C	**Cal Date:**	01/27/2012 11:10
Workgroup #:	WG388027	**Analyst:**	JBK	**Run Date:**	01/27/2012 11:30
Collect Date:	01/24/2012 14:20	**Dilution:**	1	**File ID:**	1V.1201271130-07
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Cyanide	57-12-5	0.307		0.0100	0.00500

Certificate of Analysis

Sample #:	L12010651-02	**PrePrep Method:**	N/A	**Instrument:**	UV-120-1V
Client ID:	MPL-16-0112-MS	**Prep Method:**	SM4500-CN-C,G	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-CN-C,G	**Cal Date:**	01/27/2012 11:10
Workgroup #:	WG388028	**Analyst:**	JBK	**Run Date:**	01/27/2012 11:50
Collect Date:	01/24/2012 14:20	**Dilution:**	1	**File ID:**	1V.1201271150-13
Sample Tag:	CN-A	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Cyanide, Amenable to Chlor.	57-12-5	0.0419		0.0100	0.00500

Sample #:	L12010651-02	**PrePrep Method:**	N/A	**Instrument:**	UV-120-1V
Client ID:	MPL-16-0112-MS	**Prep Method:**	SM4500-CN-I	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-CN-I	**Cal Date:**	01/30/2012 15:00
Workgroup #:	WG388302	**Analyst:**	DLP	**Run Date:**	01/30/2012 18:00
Collect Date:	01/24/2012 14:20	**Dilution:**	1	**File ID:**	1V.1201301800-10
Sample Tag:	D01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Cyanide, Weak/Dissociable	57-12-5	0.221		0.0100	0.00500

Sample #:	L12010651-03	**PrePrep Method:**	N/A	**Instrument:**	UV-120-1V
Client ID:	MPL-16-0112-MSD	**Prep Method:**	9014-9010C	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	9014-9010C	**Cal Date:**	01/27/2012 11:10
Workgroup #:	WG388027	**Analyst:**	JBK	**Run Date:**	01/27/2012 11:30
Collect Date:	01/24/2012 14:20	**Dilution:**	1	**File ID:**	1V.1201271130-08
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Cyanide	57-12-5	0.307		0.0100	0.00500

Sample #:	L12010651-03	**PrePrep Method:**	N/A	**Instrument:**	UV-120-1V
Client ID:	MPL-16-0112-MSD	**Prep Method:**	SM4500-CN-C,G	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-CN-C,G	**Cal Date:**	01/27/2012 11:10
Workgroup #:	WG388028	**Analyst:**	JBK	**Run Date:**	01/27/2012 11:50
Collect Date:	01/24/2012 14:20	**Dilution:**	1	**File ID:**	1V.1201271150-14
Sample Tag:	CN-A	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Cyanide, Amenable to Chlor.	57-12-5	0.0394		0.0100	0.00500

Certificate of Analysis

Sample #:	L12010651-03	**PrePrep Method:**	N/A	**Instrument:**	UV-120-1V
Client ID:	MPL-16-0112-MSD	**Prep Method:**	SM4500-CN-I	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-CN-I	**Cal Date:**	01/30/2012 15:00
Workgroup #:	WG388302	**Analyst:**	DLP	**Run Date:**	01/30/2012 18:00
Collect Date:	01/24/2012 14:20	**Dilution:**	1	**File ID:**	1V.1201301800-11
Sample Tag:	D01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Cyanide, Weak/Dissociable	57-12-5	0.218		0.0100	0.00500

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: 27-JAN-2012
Analyst: JBK
Analyst: NA
Method: CN
Instrument: UV-120-1V
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG388027

Calibration/Linearity	01/27/2012
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	
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:
27-JAN-2012

Secondary Reviewer:
27-JAN-2012

CHECKLIST1 - Modified 03/05/2008
Generated: JAN-27-2012 15:50:08

Microbac Laboratories Inc.

Data Checklist

Date: 27-JAN-2012
Analyst: JBK
Analyst: NA
Method: CN-A
Instrument: UV-120-1V
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG388028

Calibration/Linearity	01/27/2012
Second Source Check	X
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	JBK
Secondary Reviewer	DIH
Comments	

Primary Reviewer:
27-JAN-2012

Secondary Reviewer:
27-JAN-2012

CHECKLIST1 - Modified 03/05/2008
Generated: JAN-27-2012 15:49:31

Microbac Laboratories Inc.

Data Checklist

Date: 30-JAN-2012
Analyst: DLP
Analyst: NA
Method: CN-WD
Instrument: UV-120-1V
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG388302

Calibration/Linearity	01-30-12
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:
31-JAN-2012

Secondary Reviewer:
01-FEB-2012

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-01-2012 13:24:44

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 9014-9010C

AAB#: WG388027

Login Number: L12010651

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
MPL-16-0112-1	01	01/24/12							14		01/27/12	2.9	14	
MPL-16-0112-MS	02	01/24/12							14		01/27/12	2.9	14	
MPL-16-0112-MSD	03	01/24/12							14		01/27/12	2.9	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 2292096
Report generated 01/27/2012 15:03

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: SM4500-CN-C,G

AAB#: WG388028

Login Number: L12010651

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
MPL-16-0112-1	01	01/24/12							14		01/27/12	2.9	14	
MPL-16-0112-MS	02	01/24/12							14		01/27/12	2.9	14	
MPL-16-0112-MSD	03	01/24/12							14		01/27/12	2.9	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 2292133
Report generated 01/27/2012 15:08

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: SM4500-CN-I

AAB#: WG388302

Login Number: L12010651

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
MPL-16-0112-1	01	01/24/12							14		01/30/12	6.2	14	
MPL-16-0112-MS	02	01/24/12							14		01/30/12	6.2	14	
MPL-16-0112-MSD	03	01/24/12							14		01/30/12	6.2	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 2294802
Report generated 01/31/2012 14:58

Microbac Laboratories Inc.

METHOD BLANK SUMMARY

Login Number: L12010651
Blank File ID: 1V.1201271130-01
Prep Date: 01/27/12 11:30
Analyzed Date: 01/27/12 11:30
Analyst: JBK

Work Group: WG388027
Blank Sample ID: WG388027-01
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	WG388027-02	1V.1201271130-02	01/27/12 11:30	
LCS	WG388027-03	1V.1201271130-03	01/27/12 11:30	
MPL-16-0112-1	L12010651-01	1V.1201271130-05	01/27/12 11:30	
DUP	WG388027-05	1V.1201271130-06	01/27/12 11:30	
MPL-16-0112-MS	L12010651-02	1V.1201271130-07	01/27/12 11:30	
MPL-16-0112-MSD	L12010651-03	1V.1201271130-08	01/27/12 11:30	

Report Name: BLANK_SUMMARY
PDF File ID: 2292097
Report generated 01/27/2012 15:03

Microbac Laboratories Inc.

METHOD BLANK SUMMARY

Login Number: L12010651
Blank File ID: 1V.1201271150-01
Prep Date: 01/27/12 11:50
Analyzed Date: 01/27/12 11:50
Analyst: JBK

Work Group: WG388028
Blank Sample ID: WG388028-01
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	WG388028-02	1V.1201271150-02	01/27/12 11:50	CN-A
MPL-16-0112-1	L12010651-01	1V.1201271150-11	01/27/12 11:50	CN-A
DUP	WG388028-04	1V.1201271150-12	01/27/12 11:50	CN-A
MPL-16-0112-MS	L12010651-02	1V.1201271150-13	01/27/12 11:50	CN-A
MPL-16-0112-MSD	L12010651-03	1V.1201271150-14	01/27/12 11:50	CN-A

Report Name: BLANK_SUMMARY
PDF File ID: 2292134
Report generated 01/27/2012 15:08

Microbac Laboratories Inc.

METHOD BLANK SUMMARY

Login Number: L12010651
Blank File ID: 1V.1201301800-03
Prep Date: 01/30/12 18:00
Analyzed Date: 01/30/12 18:00
Analyst: DLP

Work Group: WG388302
Blank Sample ID: WG388302-01
Instrument ID: UV-120-1V
Method: SM4500-CN-I

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG388302-02	1V.1201301800-04	01/30/12 18:00	
LCS	WG388302-03	1V.1201301800-05	01/30/12 18:00	
MPL-16-0112-1	L12010651-01	1V.1201301800-09	01/30/12 18:00	D01
MPL-16-0112-MS	L12010651-02	1V.1201301800-10	01/30/12 18:00	D01
MPL-16-0112-MSD	L12010651-03	1V.1201301800-11	01/30/12 18:00	D01
DUP	WG388302-06	1V.1201301800-22	01/30/12 18:00	

Report Name: BLANK_SUMMARY
PDF File ID: 2294803
Report generated 01/31/2012 14:58

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L12010651 Prep Date: 01/27/12 11:30 Sample ID: WG388027-01
Instrument ID: UV-120-1V Run Date: 01/27/12 11:30 Prep Method: 9014-9010C
File ID: 1V.1201271130-01 Analyst: JBK Method: 9014-9010C
Workgroup (AAB#): WG388027 Matrix: Water Units: mg/L
Contract #: Cal ID: UV-120 - 27-JAN-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: 2292098
27-JAN-2012 15:03

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L12010651 Prep Date: 01/27/12 11:50 Sample ID: WG388028-01
Instrument ID: UV-120-1V Run Date: 01/27/12 11:50 Prep Method: SM4500-CN-C,G
File ID: 1V.1201271150-01 Analyst: JBK Method: SM4500-CN-C,G
Workgroup (AAB#): WG388028 Matrix: Water Units: mg/L
Contract #: Cal ID: UV-120 - 27-JAN-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: 2292135
27-JAN-2012 15:08

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L12010651 Prep Date: 01/30/12 18:00 Sample ID: WG388302-01
Instrument ID: UV-120-1V Run Date: 01/30/12 18:00 Prep Method: SM4500-CN-I
File ID: 1V.1201301800-03 Analyst: DLP Method: SM4500-CN-I
Workgroup (AAB#): WG388302 Matrix: Water Units: mg/L
Contract #: Cal ID: UV-120 - 30-JAN-12

Analytes	LOD	LOQ	Concentration	Dilution	Qualifier
Cyanide, Weak/Dissociable	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: 2294804
31-JAN-2012 14:58

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L12010651 Run Date: 01/27/2012 Sample ID: WG388027-02
Instrument ID: UV-120-1V Run Time: 11:30 Prep Method: 9014-9010C
File ID: 1V.1201271130-02 Analyst: JBK Method: 9014-9010C
Workgroup (AAB#): WG388027 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD48862 Cal ID: UV-120 - 27-JAN-12

Analytes	Expected	Found	% Rec	LCS Limits	Q
Cyanide	0.200	0.201	100	90 - 110	

LCS - Modified 03/06/2008
PDF File ID: 2292099
Report generated: 01/27/2012 15:03

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L12010651 Run Date: 01/27/2012 Sample ID: WG388027-03
Instrument ID: UV-120-1V Run Time: 11:30 Prep Method: 9014-9010C
File ID: 1V.1201271130-03 Analyst: JBK Method: 9014-9010C
Workgroup (AAB#): WG388027 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD48862 Cal ID: UV-120 - 27-JAN-12

Analytes	Expected	Found	% Rec	LCS Limits	Q
Cyanide	0.0400	0.0395	98.7	90 - 110	

LCS - Modified 03/06/2008
PDF File ID: 2292099
Report generated: 01/27/2012 15:03

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L12010651 Run Date: 01/27/2012 Sample ID: WG388028-02
Instrument ID: UV-120-1V Run Time: 11:50 Prep Method: SM4500-CN-C,G
File ID: 1V.1201271150-02 Analyst: JBK Method: SM4500-CN-C,G
Workgroup (AAB#): WG388028 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD48862 Cal ID: UV-120 - 27-JAN-12

Analytes	Expected	Found	% Rec	LCS Limits	Q
Cyanide, Amenable to Chlor.	2.00	0.000965	0.0482	90 - 110	*

LCS - Modified 03/06/2008
PDF File ID: 2292136
Report generated: 01/27/2012 15:08

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L12010651 Run Date: 01/30/2012 Sample ID: WG388302-02
Instrument ID: UV-120-1V Run Time: 18:00 Prep Method: SM4500-CN-I
File ID: 1V.1201301800-04 Analyst: DLP Method: SM4500-CN-I
Workgroup (AAB#): WG388302 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD48862 Cal ID: UV-120 - 30-JAN-12

Analytes	Expected	Found	% Rec	LCS Limits	Q
Cyanide, Weak/Dissociable	0.200	0.201	101	90 - 110	

LCS - Modified 03/06/2008
PDF File ID: 2294805
Report generated: 01/31/2012 14:58

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L12010651 Run Date: 01/30/2012 Sample ID: WG388302-03
Instrument ID: UV-120-1V Run Time: 18:00 Prep Method: SM4500-CN-I
File ID: 1V.1201301800-05 Analyst: DLP Method: SM4500-CN-I
Workgroup (AAB#): WG388302 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD48862 Cal ID: UV-120 - 30-JAN-12

Analytes	Expected	Found	% Rec	LCS Limits	Q
Cyanide, Weak/Dissociable	0.0400	0.0386	96.5	90 - 110	

LCS - Modified 03/06/2008
PDF File ID: 2294805
Report generated: 01/31/2012 14:58

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L12010651 Cal ID: UV-120-1V- 27-JAN-12 Worknum: WG388027

Instrument ID: UV-120-1V Contract #: Prep Method: 9014-9010C

Parent ID: L12010651-01 File ID: 1V.1201271130-05 Dil: 1 Method: 9014-9010C

Sample ID: L12010651-02 MS File ID: 1V.1201271130-07 Dil: 1 Matrix: Water

Sample ID: L12010651-03 MSD File ID: 1V.1201271130-08 Dil: 1 Units: mg/L

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Cyanide	0.105	0.200	0.307	101	0.200	0.307	101	0	80 - 120	20	

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

MS_MSD - Modified 03/06/2008
PDF File ID: 2292100
Report generated 01/27/2012 15:03

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L12010651 Cal ID: UV-120-1V- 27-JAN-12 Worknum: WG388028

Instrument ID: UV-120-1V Contract #: Prep Method: SM4500-CN-C,G

Parent ID: L12010651-01 File ID: 1V.1201271150-11 Dil: 1 Method: SM4500-CN-C,G

Sample ID: L12010651-02 MS File ID: 1V.1201271150-13 Dil: 1 Matrix: Water

Sample ID: L12010651-03 MSD File ID: 1V.1201271150-14 Dil: 1 Units: mg/L

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Cyanide, Amenable to Chlor.	0.0406	0.200	0.0419	.635	0.200	0.0394	-.635	6.25	80 - 120	20	*

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

MS_MSD - Modified 03/06/2008
PDF File ID: 2292137
Report generated 01/27/2012 15:08

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L12010651 Cal ID: UV-120-1V- 30-JAN-12 Worknum: WG388302

Instrument ID: UV-120-1V Contract #: Prep Method: SM4500-CN-I

Parent ID: L12010651-01 File ID: 1V.1201301800-09 Dil: 1 Method: SM4500-CN-I

Sample ID: L12010651-02 MS File ID: 1V.1201301800-10 Dil: 1 Matrix: Water

Sample ID: L12010651-03 MSD File ID: 1V.1201301800-11 Dil: 1 Units: mg/L

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Cyanide, Weak/Dissociable	0.0139	0.200	0.221	104	0.200	0.218	102	1.47	90 - 110	15	

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

MS_MSD - Modified 03/06/2008
PDF File ID: 2294806
Report generated 01/31/2012 14:58

2.2.4.3 Raw Data

388164

Curves

Parameter: Cyanide - low

Spectrophotometer: UV-120-1V

Calibration (Curve) standard stock: STD48861

Concentration: 990mg/L

Recipe for preparation of curve standards found in:

SOP: L3354 Revision: 12 Page: 15

Second Source Stock: STD48862 (concentration: 1000mg/L

Daily Preparation: 5(1000)/250=20
10(20)/100=2
concentration = 1(2)/50=0.04

Calibration Standards (mg/L)	Volume (mL)	Cell Size (cm)	Wavelength (nm)	Absorbance
0.000	50	5	578	0.000
0.00495	↓	↓	↓	0.037
0.0099				0.074
0.0198				0.154
0.0297				0.239
0.0396				0.318
0.0495				0.402
Tcn (0.04)				0.323

Analyst: [signature] Date/Time: 1/27/12/1115

DCN#89740

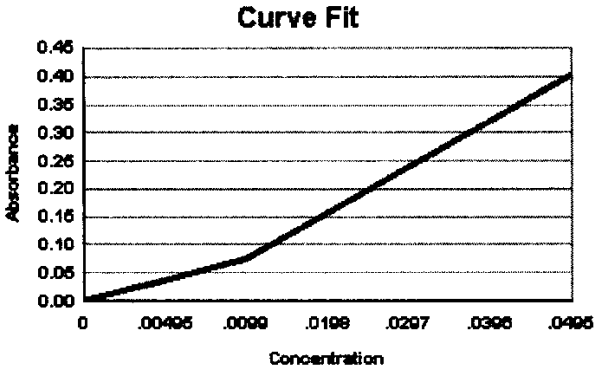
Microbac Laboratories Inc.
INITIAL CALIBRATION

Workgroup: WG388164
Analytical Method: 300
Instrument ID: UV-120-1V

Analyst: JBK
Initial Calibration Date: 01/27/2012

Analyte: CYANIDE
Number of Points: 7
Slope: 8.15286
Y-Intercept: -0.00386519
Coef. Of Correlation (R^2): 0.999686
Coef. Of Correlation (R): 0.999843

Concentration X	Absorbance Y	X^2	X * Y	Y-Fitted (mX^2+B)
0.00	0.00	0.00	0.00	-0.00386519
0.00495	0.0370	0.0000245	0.000183	0.0364915
0.00990	0.0740	0.0000980	0.000733	0.0768481
0.0198	0.154	0.000392	0.00305	0.157561
0.0297	0.239	0.000882	0.00710	0.238275
0.0396	0.318	0.00157	0.0126	0.318988
0.0495	0.402	0.00245	0.0199	0.399701



WG_ICAL_CAL_WET - Modified 03/06/2008
Report generated 01/27/2012 13:19

[redacted]

Microbac Laboratories Inc.
ALTERNATE SOURCE REPORT

Workgroup #: WG388164
File ID: 1V.1201271115-08
CCV ID: WG388164-08
Units: mg/L
Analyte: CYANIDE

Instrument ID: UV-120-1V
Run Date: 01/27/2012
Run Time: 11:15
Analyst: JBK
Cal ID: UV-120 - 27-JAN-12 11:15:07

Analyte	Expected	Found	RF	%D	Q
Cyanide	.04	0.0401	8.08	0.3	

* Exceeds %D Limit

CCC Calibrtion Check Compounds
SPCC System Performance Check Compounds

WET_WG_SSCV - Modified 03/06/2008
Report generated 01/27/2012 13:19

[redacted]

388163

Curves

Parameter: Cyanide - High

Spectrophotometer: UV-178-1V

Calibration (Curve) standard stock: STD48861

Concentration: 990mg/L

Recipe for preparation of curve standards found in:

SOP: K3354 Revision: 14 Page: 15

Second Source Stock: STD48862 (concentration: 1000mg/L

Daily Preparation: 5(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
0.000	50	1	578	0.000
0.0198	↓	↓	↓	0.031
0.0396				0.062
0.099				0.155
0.198				0.310
0.292				0.468
0.396				0.619
ICV(0.2)				0.319

Analyst: [signature] Date/Time: 1/27/12/1110

DCN#89739

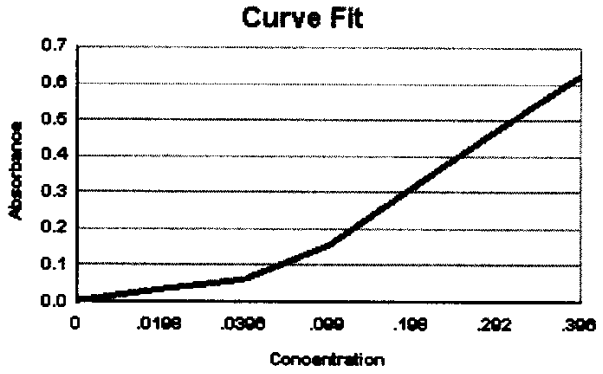
Microbac Laboratories Inc.
INITIAL CALIBRATION

Workgroup: WG388163
Analytical Method: 300
Instrument ID: UV-120-1V

Analyst: JBK
Initial Calibration Date: 01/27/2012

Analyte: CYANIDE
Number of Points: 7
Slope: 1.57513
Y-Intercept: -0.00000888204
Coef. Of Correlation (R^2): 0.999729
Coef. Of Correlation (R): 0.999865

Concentration X	Absorbance Y	X^2	X * Y	Y-Fitted (mX^2+B)
0.00	0.00	0.00	0.00	-0.00000888204
0.0198	0.0310	0.000392	0.000614	0.0311786
0.0396	0.0620	0.00157	0.00246	0.0623661
0.0990	0.155	0.00980	0.0153	0.155929
0.198	0.310	0.0392	0.0614	0.311866
0.292	0.468	0.0853	0.137	0.459928
0.396	0.619	0.157	0.245	0.623741



WG_ICAL_CAL_WET - Modified 03/06/2008
Report generated 01/27/2012 13:18

[redacted]

Microbac Laboratories Inc.
ALTERNATE SOURCE REPORT

Workgroup #: WG388163
File ID: 1V.1201271110-08
CCV ID: WG388163-08
Units: mg/L
Analyte: CYANIDE

Instrument ID: UV-120-1V
Run Date: 01/27/2012
Run Time: 11:10
Analyst: JBK
Cal ID: UV-120 - 27-JAN-12 11:10:07

Analyte	Expected	Found	RF	%D	Q
Cyanide	.2	0.203	1.60	1.5	

* Exceeds %D Limit

CCC Calibrtion Check Compounds
SPCC System Performance Check Compounds

WET_WG_SSCV - Modified 03/06/2008
Report generated 01/27/2012 13:18

[redacted]

Curves

WG 388298

Parameter: CN - LOW

Spectrophotometer: WV-120-IV

Calibration (Curve) standard stock: STD 48861

Concentration: 990 mg/L

Recipe for preparation of curve standards found in:

SOP: K3354 Revision: 14 Page: 15

Second Source Stock: STD 48862 (concentration: 1000 mg/L)

Daily Preparation: 5(1000)/250 = 20

~~10(20)/100 = 2~~

concentration = 5(2)/250 = 0.2

1(2)/250 = 0.04

	Calibration Standards (mg/L)	Volume (mL)	Cell Size (cm)	Wavelength (nm)	Absorbance
0.0495	STD 5 0.05	50	5 cm	578	~~0.395~~ 0.394
0.0296	STD 6 0.04			DUP 01-30-12	~~0.296~~ 0.296 0.296
0.0297	STD 7 0.03			DUP 01-30-12	~~0.194~~ 0.210
0.0198	STD 8 0.02			DUP 01-30-12	~~0.141~~ ~~0.150~~ 0.151
0.0094	STD 9 0.01			DUP 01-30-12	~~0.069~~ 0.071
0.00495	STD 10 0.005			DUP 01-30-12	~~0.035~~ 0.034
	STD 11 0.00				0.000
	2nd Source 0.04				0.313

Analyst: [illegible signature] Date/Time: 01-30-12/1515

DCN#89759

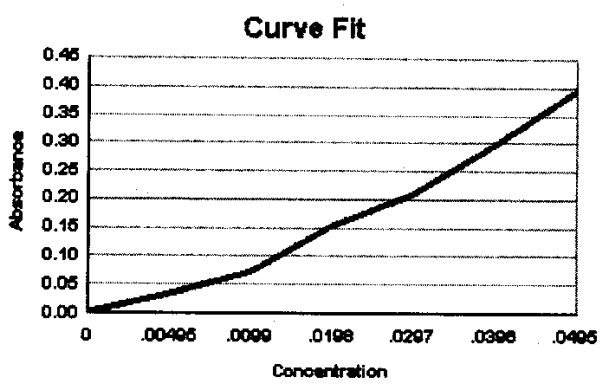
Microbac Laboratories Inc.
INITIAL CALIBRATION

Workgroup: WG388298
Analytical Method: 300
Instrument ID: UV-120-1V

Analyst: DLP
Initial Calibration Date: 01/30/2012

Analyte: CYANIDE
Number of Points: 7
Slope: 7.79122
Y-Intercept: -0.00565188
Coef. Of Correlation (R^2): 0.995762
Coef. Of Correlation (R): 0.997879

Concentration X	Absorbance Y	X^2	X * Y	Y-Fitted (mX^2+B)
0.00	0.00	0.00	0.00	-0.00565188
0.00495	0.0340	0.0000245	0.000168	0.0329147
0.00990	0.0710	0.0000980	0.000703	0.0714812
0.0198	0.151	0.000392	0.00299	0.148614
0.0297	0.210	0.000882	0.00624	0.225747
0.0396	0.296	0.00157	0.0117	0.302881
0.0495	0.394	0.00245	0.0195	0.380014



WG_ICAL_CAL_WET - Modified 03/06/2008
Report generated 01/30/2012 17:17

[redacted]

Microbac Laboratories Inc.
ALTERNATE SOURCE REPORT

Workgroup #: WG388298
File ID: 1V.1201301515-08
CCV ID: WG388298-08
Units: mg/L
Analyte: CYANIDE

Instrument ID: UV-120-1V
Run Date: 01/30/2012
Run Time: 15:15
Analyst: DLP
Cal ID: UV-120 - 30-JAN-12 15:15:07

Analyte	Expected	Found	RF	%D	Q
Cyanide	.04	0.0409	7.83	2.3	

* Exceeds %D Limit

CCC Calibrtion Check Compounds
SPCC System Performance Check Compounds

WET_WG_SSCV - Modified 03/06/2008
Report generated 01/30/2012 17:17

[redacted]

Curves

WG 388297

Parameter: CN- High

Spectrophotometer: UV 120-1V

Calibration (Curve) standard stock: ST D4 8861

Concentration: 990 mg/L

Recipe for preparation of curve standards found in:
SOP: K3354 Revision: 14 Page: 15

Second Source Stock: ST D4 8862 (concentration: 1000 mg/L)

Daily Preparation: 5(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
(0.396) STD 1 0.4	50	1cm	578	0.614
0.297 STD 2 0.3				0.455
0.198 STD 3 0.2				0.306
0.099 STD 4 0.1				0.150
0.0396 STD 6 0.04				0.058
0.0198 STD 8 0.02				0.028
~~0.0099~~ STD 11 0.00				0.000
DW 01-30-12				
2nd Source 0.2				0.333

Analyst: [illegible] Date/Time: 01-30-12/1500

DCN#89758

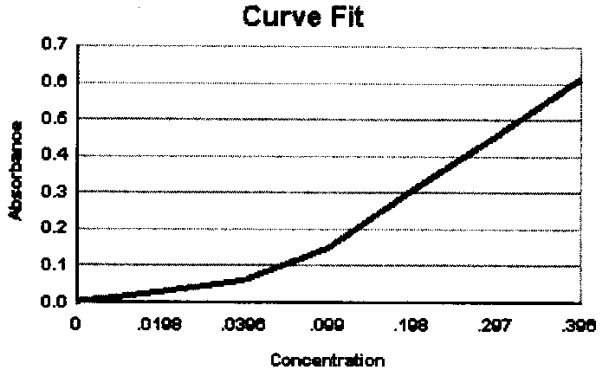
Microbac Laboratories Inc.
INITIAL CALIBRATION

Workgroup: WG388297
Analytical Method: 300
Instrument ID: UV-120-1V

Analyst: DLP
Initial Calibration Date: 01/30/2012

Analyte: CYANIDE
Number of Points: 7
Slope: 1.55085
Y-Intercept: -0.00235137
Coef. Of Correlation (R^2): 0.999924
Coef. Of Correlation (R): 0.999962

Concentration X	Absorbance Y	X^2	X * Y	Y-Fitted (mX^2+B)
0.00	0.00	0.00	0.00	-0.00235137
0.0198	0.0280	0.000392	0.000554	0.0283554
0.0396	0.0580	0.00157	0.00230	0.0590622
0.0990	0.150	0.00980	0.0149	0.151183
0.198	0.306	0.0392	0.0606	0.304716
0.297	0.455	0.0882	0.135	0.458250
0.396	0.614	0.157	0.243	0.611784



WG_ICAL_CAL_WET - Modified 03/06/2008
Report generated 01/30/2012 16:44

[redacted]

Microbac Laboratories Inc.
ALTERNATE SOURCE REPORT

Workgroup #: WG388297
File ID: 1V.1201301500-08
CCV ID: WG388297-08
Units: mg/L
Analyte: CYANIDE

Instrument ID: UV-120-1V
Run Date: 01/30/2012
Run Time: 15:00
Analyst: DLP
Cal ID: UV-120 - 30-JAN-12 15:00:07

Analyte	Expected	Found	RF	%D	Q
Cyanide	.2	0.216	1.67	8.0	

* Exceeds %D Limit

CCC Calibrtion Check Compounds
SPCC System Performance Check Compounds

WET_WG_SSCV - Modified 03/06/2008
Report generated 01/30/2012 16:45

[redacted]

WORKGROUP: WG388027

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): 4/556 TRUE VALUE: 990
Daily dilution: 5(990)/250 = 19.8
10(198)/100 = 1.98 5/50(1.98) = 0.198
10(1.98)/100 = 0.198 5/50(0.198) = 0.0198

LCS STOCK: 2/1962 TRUE VALUE: 1000
Daily dilution: 5(1000)/250 = 20
10(20)/100 = 2
5(2)/50 = 0.2
10(2)/50 = 0.04

curve reference: 01/27/12
Spec: UV-120-1V

SPIKE: (daily dilution) 5(2)/50 = 0.2
(same stock as LCS)

Sample	Volume mL/grams	pH>12	Sulfide Presence	Dilution	Cell Size (cm)	Absorbance λ = 578 nm
CCV (high): 0.2 ppm	50	✓	X=none		1	0.310
CCV (low): 0.02 ppm		✓	X		5	0.155
Blank		✓	X		1	0.005
LCS: 0.2 ppm		✓	X		1	0.316
LCS: 0.04 ppm		✓	X		5	0.318
01-LCS SPD(0.0198)		✓	X		1	0.152
SPD (0.198)		✓	X		1	0.303
01-654-02		✓	X		5	0.048
01-651-01		✓	X		1	0.166
Dup ↓		✓	X			0.169
MS(0.2) -02		✓	X			0.454
SD(0.2) -03		✓	X			0.454
01-652-01		✓	X			0.202
-02		✓	X			0.465
01-613-01		✓	X	1/2		0.270
01-626-01 *	5	✓	X	1/500		0.454
-02	50	✓	X	1/100		0.380
CCV CCV(0.2)	50	✓	X			0.313
CCV CCV(0.02)		✓	X		5	0.156
Duplicate:						
MS: (ppm)						
MSD: (ppm)						
CCV high: (ppm)						
CCV (low): (ppm)						

ANALYST: [signature]

DATE/TIME: (on) 01/26/12 1100
(off) 1245
(color) 1/27/12 1130

* 01-626-01: Add'n of 1:1 H_2SO_4 to full aliquot caused a violent reaction resulting in loss of sx volume due to gas formation. Distilled at dilution due to this matrix interference

DCN#89728

Microbac Laboratories Inc.
SAMPLE REPORT

Workgroup: WG388027
Analyte: CYANIDE

Analyst: JBK
Date: 01/27/2012

Sample ID	I Vol	F Vol	Response	Slope	Y Intercept	Anal. Conc.	Rep. Conc.	Dil	Units
WG388027-01	50	50	0.00500	8.153	-0.003865	0.0010874	0.0010874	1	mg/L
WG388027-02	50	50	0.316	1.575	-0.000008882	0.20062	0.20062	1	mg/L
WG388027-03	50	50	0.318	8.153	-0.003865	0.039479	0.039479	1	mg/L
L12010654-02	50	50	0.0480	8.153	-0.003865	0.0063616	ND	1	mg/L
L12010651-01	50	50	0.166	1.575	-0.000008882	0.10539	0.10539	1	mg/L
WG388027-04	50	50	0.166	1.575	-0.000008882	0.10539	0.10539	1	mg/L
WG388027-05	50	50	0.169	1.575	-0.000008882	0.10730	0.10730	1	mg/L
L12010651-02	50	50	0.484	1.575	-0.000008882	0.30728	0.30728	1	mg/L
WG388027-06	50	50	0.484	1.575	-0.000008882	0.30728	0.30728	1	mg/L
L12010651-03	50	50	0.484	1.575	-0.000008882	0.30728	0.30728	1	mg/L
WG388027-07	50	50	0.484	1.575	-0.000008882	0.30728	0.30728	1	mg/L
L12010652-01	50	50	0.202	1.575	-0.000008882	0.12825	0.12825	1	mg/L
L12010652-02	50	50	0.465	1.575	-0.000008882	0.29522	0.29522	1	mg/L
L12010613-01	50	50	0.270	1.575	-0.000008882	0.17142	0.34284	2	mg/L
L12010626-01	5	50	0.484	1.575	-0.000008882	0.30728	1536.4	500	mg/L
L12010626-02	50	50	0.380	1.575	-0.000008882	0.24126	24.126	100	mg/L

UV_SAMPLE_REPORT - Modified 03/06/2008

Report generated 01/27/2012 13:25

[redacted]

Microbac Laboratories Inc.
CONTINUING CALIBRATION REPORT

Workgroup #: WG388165
File ID: 1V.1201271130-14
CCV ID: WG388165-01
Units: mg/L
Analyte: CYANIDE

Instrument ID: UV-120-1V
Run Date: 01/27/2012
Run Time: 11:30
Analyst: JBK
Cal ID: UV-120 - 27-JAN-12

Analyte	Expected	Found	RF	%D	Q
Cyanide	.198	0.197	1.57	0.5	

* Exceeds %D Limit

CCC Calibrtion Check Compounds
SPCC System Performance Check Compounds

WET_WG_CCV - Modified 03/06/2008

Report generated 01/27/2012 13:26

[redacted]

Microbac Laboratories Inc.
CONTINUING CALIBRATION REPORT

Workgroup #: WG388165
File ID: 1V.1201271130-15
CCV ID: WG388165-02
Units: mg/L
Analyte: CYANIDE

Instrument ID: UV-120-1V
Run Date: 01/27/2012
Run Time: 11:30
Analyst: JBK
Cal ID: UV-120 - 27-JAN-12

Analyte	Expected	Found	RF	%D	Q
Cyanide	.0198	0.0195	7.83	1.5	

* Exceeds %D Limit

CCC Calibrtion Check Compounds
SPCC System Performance Check Compounds

WET_WG_CCV - Modified 03/06/2008

Report generated 01/27/2012 13:26

[redacted]

Microbac Laboratories Inc.
DISTILLED STANDARD REPORT

Workgroup #: WG388165
File ID: 1V.1201271130-16
CCV ID: WG388165-03
Units: mg/L

Instrument ID: UV-120-1V
Run Date: 01/27/2012
Run Time: 11:30
Analyst: JBK
Cal ID: UV-120 - 27-JAN-12

Analyte	Expected	Found	RF	%D	Q
Cyanide	.0198	0.0191	7.68	3.5	

* Exceeds %D Limit

CCC Calibrtion Check Compounds
SPCC System Performance Check Compounds

WG_CCV_LCS - Modified 03/06/2008
Report generated 01/27/2012 13:27

[redacted]

Microbac Laboratories Inc.
DISTILLED STANDARD REPORT

Workgroup #: WG388165
File ID: 1V.1201271130-17
CCV ID: WG388165-04
Units: mg/L

Instrument ID: UV-120-1V
Run Date: 01/27/2012
Run Time: 11:30
Analyst: JBK
Cal ID: UV-120 - 27-JAN-12

Analyte	Expected	Found	RF	%D	Q
Cyanide	.198	0.192	1.53	3.0	

* Exceeds %D Limit

CCC Calibrtion Check Compounds
SPCC System Performance Check Compounds

WG_CCV_LCS - Modified 03/06/2008
Report generated 01/27/2012 13:27

[redacted]

Microbac Laboratories Inc.
CONTINUING CALIBRATION REPORT

Workgroup #: WG388165
File ID: 1V.1201271130-18
CCV ID: WG388165-05
Units: mg/L
Analyte: CYANIDE

Instrument ID: UV-120-1V
Run Date: 01/27/2012
Run Time: 11:30
Analyst: JBK
Cal ID: UV-120 - 27-JAN-12

Analyte	Expected	Found	RF	%D	Q
Cyanide	.198	0.199	1.58	0.5	

* Exceeds %D Limit

CCC Calibrtion Check Compounds
SPCC System Performance Check Compounds

WET_WG_CCV - Modified 03/06/2008

Report generated 01/27/2012 13:26

[redacted]

Microbac Laboratories Inc.
CONTINUING CALIBRATION REPORT

Workgroup #: WG388165
File ID: 1V.1201271130-19
CCV ID: WG388165-06
Units: mg/L
Analyte: CYANIDE

Instrument ID: UV-120-1V
Run Date: 01/27/2012
Run Time: 11:30
Analyst: JBK
Cal ID: UV-120 - 27-JAN-12

Analyte	Expected	Found	RF	%D	Q
Cyanide	.0198	0.0196	7.88	1.0	

* Exceeds %D Limit

CCC Calibrtion Check Compounds
SPCC System Performance Check Compounds

WET_WG_CCV - Modified 03/06/2008

Report generated 01/27/2012 13:26

[redacted]

WORKGROUP: WG388302

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): 488611 TRUE VALUE: 990
Daily dilution: 5(990)/250 = 19.8
1(1.98)/50 = 0.396
5(19.8)/100 = 1.98
5(1.98)/50 = 0.198

LCS STOCK: 488612 TRUE VALUE: 1000
Daily dilution: 5(1000)/250 = 20
10(20)/100 = 2
5(2)/50 = 0.2
10(2)/50 = 0.04

curve reference: 388297 388298
Spec: UV-120-1V 01-30-12

SPIKE: (daily dilution) 5(2)/50 = 0.2
(same stock as LCS)

Sample	Volume mL/grams	pH>12	Sulfide Presence	Dilution	Cell Size (cm)	Absorbance λ = 578 nm
CCV (high): 0.198 ppm	50				1cm	0.302
CCV (low): 0.0396 ppm	50				5cm	0.296
Blank	50	yes	NO		5cm	0.008
LCS: 0.2 ppm	50	✓	✓		1cm	0.310
LCS: 0.04 ppm	50	✓	✓		5cm	0.295
01-626-01	5	✓	✓	YSD	1cm	0.239
-02	50	✓	✓		5cm	0.032
Ref 01-613-01	50	✓	✓	DF 01-30-12	~~5cm~~ 1cm	0.093
01-651-01	50	✓	✓		5cm	0.103
MS -02	50	✓	✓		1cm	0.341
MSD 03	50	✓	✓		1cm	0.336
01-652-01	50	✓	✓		5cm	0.147
-02	50	✓	✓		5cm	0.241
01-686-01	50	✓	✓		5cm	0.283
-02	50	✓	✓		5cm	0.190
-03	50	✓	✓		5cm	0.008
Ref 01-767-01	50	✓	✓		5cm	0.008
MS 02	50	✓	✓		1cm	0.311
MSD 03	50	✓	✓		1cm	0.297
STD 0.2	50	✓	✓		1cm	0.301
STD 0.02	50	✓	✓		5cm	0.148
Duplicate: 01-651-01	50	yes	NO		5cm	0.105
MS: (ppm)						
MSD: (ppm)						
CCV high: (ppm) 0.198	50				1cm	0.303
CCV (low): (ppm) 0.0396	50				5cm	0.295

ANALYST: Quattey Pieper

DATE/TIME: (on) 01-30-12 / 1020
(off) 01-30-12 / 1150
(color) 01-30-12 / 1310

DCN#89760

Microbac Laboratories Inc.
SAMPLE REPORT

Workgroup: WG388302 **Analyst:** DLP
Analyte: CYANIDE **Date:** 01/30/2012

Sample ID	I Vol	F Vol	Response	Slope	Y Intercept	Anal. Conc.	Rep. Conc.	Dil	Units
WG388302-01	50	50	0.00800	7.791	-0.005652	0.0017522	0.0017522	1	mg/L
WG388302-02	50	50	0.310	1.551	-0.002351	0.20141	0.20141	1	mg/L
WG388302-03	50	50	0.295	7.791	-0.005652	0.038589	0.038589	1	mg/L
L12010626-01	5	50	0.239	1.551	-0.002351	0.15563	77.813	50	mg/L
L12010626-02	50	50	0.0320	7.791	-0.005652	0.0048326	ND	1	mg/L
L12010613-01	50	50	0.0930	1.551	-0.002351	0.061483	0.061483	1	mg/L
WG388302-04	50	50	0.103	7.791	-0.005652	0.013945	0.013945	1	mg/L
L12010651-01	50	50	0.103	7.791	-0.005652	0.013945	0.013945	1	mg/L
WG388302-07	50	50	0.341	1.551	-0.002351	0.22140	0.22140	1	mg/L
L12010651-02	50	50	0.341	1.551	-0.002351	0.22140	0.22140	1	mg/L
L12010651-03	50	50	0.336	1.551	-0.002351	0.21817	0.21817	1	mg/L
WG388302-08	50	50	0.336	1.551	-0.002351	0.21817	0.21817	1	mg/L
L12010652-01	50	50	0.147	7.791	-0.005652	0.019593	0.019593	1	mg/L
L12010652-02	50	50	0.241	7.791	-0.005652	0.031658	0.031658	1	mg/L
L12010686-01	50	50	0.283	7.791	-0.005652	0.037048	0.037048	1	mg/L
L12010686-02	50	50	0.190	7.791	-0.005652	0.025112	0.025112	1	mg/L
L12010686-03	50	50	0.00800	7.791	-0.005652	0.0017522	ND	1	mg/L
L12010767-01	50	50	0.00800	7.791	-0.005652	0.0017522	ND	1	mg/L
WG388302-05	50	50	0.00800	7.791	-0.005652	0.0017522	0.0017522	1	mg/L
WG388302-09	50	50	0.311	1.551	-0.002351	0.20205	0.20205	1	mg/L
L12010767-02	50	50	0.311	1.551	-0.002351	0.20205	0.20205	1	mg/L
WG388302-10	50	50	0.297	1.551	-0.002351	0.19302	0.19302	1	mg/L
L12010767-03	50	50	0.297	1.551	-0.002351	0.19302	0.19302	1	mg/L
WG388302-06	50	50	0.105	7.791	-0.005652	0.014202	0.014202	1	mg/L

UV_SAMPLE_REPORT - Modified 03/06/2008

Report generated 01/31/2012 14:55

[redacted]

Microbac Laboratories Inc.
DISTILLED STANDARD REPORT

Workgroup #: WG388388
File ID: 1V.1201301800-20
CCV ID: WG388388-03
Units: mg/L

Instrument ID: UV-120-1V
Run Date: 01/30/2012
Run Time: 18:00
Analyst: DLP
Cal ID: UV-120 - 30-JAN-12

Analyte	Expected	Found	RF	%D	Q
Cyanide	.198	0.196	1.52	1.0	

* Exceeds %D Limit

CCC Calibrtion Check Compounds
SPCC System Performance Check Compounds

WG_CCV_LCS - Modified 03/06/2008
Report generated 01/31/2012 12:48

[redacted]

Microbac Laboratories Inc.
DISTILLED STANDARD REPORT

Workgroup #: WG388388
File ID: 1V.1201301800-21
CCV ID: WG388388-04
Units: mg/L

Instrument ID: UV-120-1V
Run Date: 01/30/2012
Run Time: 18:00
Analyst: DLP
Cal ID: UV-120 - 30-JAN-12

Analyte	Expected	Found	RF	%D	Q
Cyanide	.0198	0.0197	7.47	0.5	

* Exceeds %D Limit

CCC Calibrtion Check Compounds
SPCC System Performance Check Compounds

WG_CCV_LCS - Modified 03/06/2008
Report generated 01/31/2012 12:48

[redacted]

Microbac Laboratories Inc.
CONTINUING CALIBRATION REPORT

Workgroup #: WG388388
File ID: 1V.1201301800-02
CCV ID: WG388388-02
Units: mg/L
Analyte: CYANIDE

Instrument ID: UV-120-1V
Run Date: 01/30/2012
Run Time: 18:00
Analyst: DLP
Cal ID: UV-120 - 30-JAN-12

Analyte	Expected	Found	RF	%D	Q
Cyanide	.0396	0.0387	7.47	2.3	

* Exceeds %D Limit

CCC Calibrtion Check Compounds
SPCC System Performance Check Compounds

WET_WG_CCV - Modified 03/06/2008

Report generated 01/31/2012 12:40

[redacted]

Microbac Laboratories Inc.
CONTINUING CALIBRATION REPORT

Workgroup #: WG388388
File ID: 1V.1201301800-23
CCV ID: WG388388-05
Units: mg/L
Analyte: CYANIDE

Instrument ID: UV-120-1V
Run Date: 01/30/2012
Run Time: 18:00
Analyst: DLP
Cal ID: UV-120 - 30-JAN-12

Analyte	Expected	Found	RF	%D	Q
Cyanide	.198	0.197	1.53	0.5	

* Exceeds %D Limit

CCC Calibrtion Check Compounds
SPCC System Performance Check Compounds

WET_WG_CCV - Modified 03/06/2008

Report generated 01/31/2012 12:40

[redacted]

Microbac Laboratories Inc.
CONTINUING CALIBRATION REPORT

Workgroup #: WG388388
File ID: 1V.1201301800-24
CCV ID: WG388388-06
Units: mg/L
Analyte: CYANIDE

Instrument ID: UV-120-1V
Run Date: 01/30/2012
Run Time: 18:00
Analyst: DLP
Cal ID: UV-120 - 30-JAN-12

Analyte	Expected	Found	RF	%D	Q
Cyanide	.0396	0.0386	7.45	2.5	

* Exceeds %D Limit

CCC Calibrtion Check Compounds
SPCC System Performance Check Compounds

WET_WG_CCV - Modified 03/06/2008

Report generated 01/31/2012 12:40

[redacted]

Microbac Laboratories Inc.
CONTINUING CALIBRATION REPORT

Workgroup #: WG388388
File ID: 1V.1201301800-01
CCV ID: WG388388-01
Units: mg/L
Analyte: CYANIDE

Instrument ID: UV-120-1V
Run Date: 01/30/2012
Run Time: 18:00
Analyst: DLP
Cal ID: UV-120 - 30-JAN-12

Analyte	Expected	Found	RF	%D	Q
Cyanide	.198	0.196	1.53	1.0	

* Exceeds %D Limit

CCC Calibrtion Check Compounds
SPCC System Performance Check Compounds

WET_WG_CCV - Modified 03/06/2008

Report generated 01/31/2012 12:40

[redacted]

WORKGROUP: WG388028

CYANIDE

☑ Total method 9010B/9014
SM4500 CN C,E
EPA 335.2 (Amenable)
☐ WD method SM4500 CN I

Matrix: Liquid (mg/L) Soil (mg/Kg)

SOP #: K3354 Revision 14

CCV(Cal STDs): 48862 TRUE VALUE: 990
Daily dilution: 5(990)/250 = 19.8
10(99)/100 = 0.99 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
5(20)/50 = 2 *

curve reference: 1/27/12
Spec: UV-120-1V

SPIKE: (daily dilution) 5(2)/50 = 0.2
(same stock as LCS)

Sample	Volume mL/grams	pH>12	Sulfide Presence	Dilution	Cell Size (cm)	Absorbance λ = 578 nm
CCV (high): 0.2 ppm	50	✓	X-none		1	0.313
CCV (low): 0.02 ppm		✓	X		5	0.155
Blank		✓	X			0.003
LCS: ~~0.2~~ ppm		✓	X			0.004
LCS: 48862/1177 ppm		✓	X	—	—	—
01-479-01		✓	X		5	0.017
01-536-01		✓	X			0.021
-02		✓	X			0.019
-03		✓	X		1,5	0.054, 0.276
01-576-01		✓	X		5	0.027
-02		✓	X			0.041
-03		✓	X			0.039
01-613-01		✓	X		1	0.410
01-651-01		✓	X			0.162
DuP *		✓	X			0.104
MS(0.2)-02		✓	X			0.100
SD(0.2)-03		✓	X			0.104
01-652-01		✓	X		5	0.019
-02		✓	Y			0.023
CCV (0.2)	50	✓	X		1	0.313
CCV (0.02)	50	✓	Y		5	0.157
* LCS analyzed at 2mg/L to verify that even at high concentrations the spike solⁿ is 100% Amenable						
Duplicate:						
MS: (ppm)						
MSD: (ppm)						
CCV high: (ppm)						
CCV (low): (ppm)						

ANALYST: [signature]

DATE/TIME: (on) 01/26/12 1410
(off) 1555
(color) 01/27/12 1150

DCN#89729

Microbac Laboratories Inc.
SAMPLE REPORT

Workgroup: WG387757 **Analyst:** JBK
Analyte: CYANIDE (TOTAL) **Date:** 01/24/2012

Sample ID	I Vol	F Vol	Response	Slope	Y Intercept	Anal. Conc.	Rep. Conc.	Dil	Units
WG387757-01	50	50	0.00600	7.983	-0.004275	0.0012871	0.0012871	1	mg/L
WG387757-02	50	50	0.321	1.632	-0.001580	0.19771	0.19771	1	mg/L
WG387757-03	50	50	0.322	7.983	-0.004275	0.040873	0.040873	1	mg/L
L12010479-01	50	50	0.143	1.632	-0.001580	0.088612	0.088612 ✓	1	mg/L
L12010536-01	50	50	0.0350	7.983	-0.004275	0.0049201	ND ✓	1	mg/L
L12010536-02	50	50	0.302	1.632	-0.001580	0.18606	0.37212 ✓	2	mg/L
L12010536-03	50	50	0.310	1.632	-0.001580	0.19096	0.38193 ✓	2	mg/L
L12010576-01	50	50	0.0260	7.983	-0.004275	0.0037926	ND ✓	1	mg/L
L12010576-02	50	50	0.0140	7.983	-0.004275	0.0022893	ND ✓	1	mg/L
L12010576-03	50	50	0.0880	1.632	-0.001580	0.054903	0.054903 ✓	1	mg/L
L12010604-01	50	50	0.00400	7.983	-0.004275	0.0010366	ND	1	mg/L
WG387757-04	50	50	0.00400	7.983	-0.004275	0.0010366	0.0010366	1	mg/L
L12010604-02	50	50	0.00400	7.983	-0.004275	0.0010366	ND	1	mg/L
L12010604-04	50	50	0.00600	7.983	-0.004275	0.0012871	ND	1	mg/L
WG387757-05	50	50	0.00600	7.983	-0.004275	0.0012871	0.0012871	1	mg/L
L12010604-05	50	50	0.00500	7.983	-0.004275	0.0011619	ND	1	mg/L
WG387757-06	50	50	0.00500	7.983	-0.004275	0.0011619	0.0011619	1	mg/L
L12010449-02	50	50	0.0630	7.983	-0.004275	0.0084277	ND	1	mg/L
L12010567-01	50	50	0.0340	7.983	-0.004275	0.0047948	ND	1	mg/L
L12010586-03	50	50	0.0230	7.983	-0.004275	0.0034168	ND	1	mg/L
L12010586-04	50	50	0.0530	7.983	-0.004275	0.0071750	0.0071750 F	1	mg/L
L12010514-01	50	50	0.0120	7.983	-0.004275	0.0020388	ND	1	mg/L
WG387757-07	50	50	0.0120	7.983	-0.004275	0.0020388	0.0020388	1	mg/L
WG387757-08	50	50	0.0130	7.983	-0.004275	0.0021641	0.0021641	1	mg/L

UV_SAMPLE_REPORT - Modified 03/06/2008

Report generated 01/27/2012 13:30

[redacted]

Microbac Laboratories Inc.
SAMPLE REPORT

Workgroup: WG388027 **Analyst:** JBK
Analyte: CYANIDE (TOTAL) **Date:** 01/27/2012

Sample ID	I Vol	F Vol	Response	Slope	Y Intercept	Anal. Conc.	Rep. Conc.	Dil	Units
WG388027-01	50	50	0.00500	8.153	-0.003865	0.0010874	0.0010874	1	mg/L
WG388027-02	50	50	0.316	1.575	-0.000008882	0.20062	0.20062	1	mg/L
WG388027-03	50	50	0.318	8.153	-0.003865	0.039479	0.039479	1	mg/L
L12010654-02	50	50	0.0480	8.153	-0.003865	0.0063616	ND	1	mg/L
L12010651-01	50	50	0.166	1.575	-0.000008882	0.10539	0.10539 ✓	1	mg/L
WG388027-04	50	50	0.166	1.575	-0.000008882	0.10539	0.10539	1	mg/L
WG388027-05	50	50	0.169	1.575	-0.000008882	0.10730	0.10730	1	mg/L
L12010651-02	50	50	0.484	1.575	-0.000008882	0.30728	0.30728 ✓ MSX	1	mg/L
WG388027-06	50	50	0.484	1.575	-0.000008882	0.30728	0.30728	1	mg/L
L12010651-03	50	50	0.484	1.575	-0.000008882	0.30728	0.30728 ✓ SDX	1	mg/L
WG388027-07	50	50	0.484	1.575	-0.000008882	0.30728	0.30728	1	mg/L
L12010652-01	50	50	0.202	1.575	-0.000008882	0.12825	0.12825 ✓	1	mg/L
L12010652-02	50	50	0.465	1.575	-0.000008882	0.29522	0.29522 ✓	1	mg/L
L12010613-01	50	50	0.270	1.575	-0.000008882	0.17142	0.34284 ✓	2	mg/L
L12010626-01	5	50	0.484	1.575	-0.000008882	0.30728	1536.4	500	mg/L
L12010626-02	50	50	0.380	1.575	-0.000008882	0.24126	24.126	100	mg/L

UV_SAMPLE_REPORT - Modified 03/06/2008

Report generated 01/27/2012 13:24

[redacted]

Microbac Laboratories Inc.
SAMPLE REPORT

Workgroup: WG388028 **Analyst:** JBK
Analyte: CYANIDE (TREATED) **Date:** 01/27/2012

Sample ID	I Vol	F Vol	Response	Slope	Y Intercept	Anal. Conc.	Rep. Conc.	Dil	Units
WG388028-01	50	50	0.00300	8.153	-0.003865	0.00084206	0.00084206	1	mg/L
WG388028-02	50	50	0.00400	8.153	-0.003865	0.00096472	0.00096472	1	mg/L
L12010479-01	50	50	0.0170	8.153	-0.003865	0.0025592	ND	1	mg/L
L12010536-01	50	50	0.0210	8.153	-0.003865	0.0030499	ND	1	mg/L
L12010536-02	50	50	0.0490	8.153	-0.003865	0.0064843	0.0064843 F	1	mg/L
L12010536-03	50	50	0.276	8.153	-0.003865	0.034327	0.034327	1	mg/L
L12010576-01	50	50	0.0270	8.153	-0.003865	0.0037858	ND	1	mg/L
L12010576-02	50	50	0.0410	8.153	-0.003865	0.0055030	0.0055030 F	1	mg/L
L12010576-03	50	50	0.0390	8.153	-0.003865	0.0052577	0.0052577 F	1	mg/L
L12010613-01	50	50	0.410	1.575	-0.000008882	0.26030	0.26030	1	mg/L
L12010651-01	50	50	0.102	1.575	-0.000008882	0.064762	0.064762	1	mg/L
WG388028-03	50	50	0.102	1.575	-0.000008882	0.064762	0.064762	1	mg/L
WG388028-04	50	50	0.104	1.575	-0.000008882	0.066032	0.066032	1	mg/L
L12010651-02	50	50	0.100	1.575	-0.000008882	0.063493	0.063493	1	mg/L
WG388028-05	50	50	0.100	1.575	-0.000008882	0.063493	0.063493	1	mg/L
L12010651-03	50	50	0.104	1.575	-0.000008882	0.066032	0.066032	1	mg/L
WG388028-06	50	50	0.104	1.575	-0.000008882	0.066032	0.066032	1	mg/L
L12010652-01	50	50	0.0190	8.153	-0.003865	0.0028046	ND	1	mg/L
L12010652-02	50	50	0.0230	8.153	-0.003865	0.0032952	ND	1	mg/L

UV_SAMPLE_REPORT - Modified 03/06/2008

Report generated 01/27/2012 13:34

[redacted]

Cyanide, Amenable to Chlorination (mg/L)
CN (Total) - CN (Treated) = CN-A

SAMPLE	1/24/2012 CN (Total)	1/27/2012 CN (Treated)	CN-A
L12010479-01	0.088612	0.0025592	0.086053
L12010536-01	0.0049201	0.0030499	0.00187
L12010536-02	0.37212	0.0064843	0.365636
L12010536-03	0.38193	0.034327	0.347603
L12010576-01	0.0037926	0.0037858	6.8E-06
L12010576-02	0.0022893	0.005503	-0.003214
L12010576-03	0.054903	0.0052577	0.049645
L12010613-01	0.34284	0.2603	0.08254
L12010651-01	0.10539	0.064762	0.040628
L12010651-02	0.10539	0.063493	0.041897
L12010651-03	0.10539	0.066032	0.039358
L12010652-01	0.12825	0.0028046	0.125445
L12010652-02	0.29522	0.0032952	0.291925
			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.
CONTINUING CALIBRATION REPORT

Workgroup #: WG388167
File ID: 1V.1201271150-17
CCV ID: WG388167-01
Units: mg/L
Analyte: CYANIDE

Instrument ID: UV-120-1V
Run Date: 01/27/2012
Run Time: 11:50
Analyst: JBK
Cal ID: UV-120 - 27-JAN-12

Analyte	Expected	Found	RF	%D	Q
Cyanide	.198	0.199	1.58	0.5	

* Exceeds %D Limit

CCC Calibrtion Check Compounds
SPCC System Performance Check Compounds

WET_WG_CCV - Modified 03/06/2008

Report generated 01/27/2012 13:35

[redacted]

Microbac Laboratories Inc.
CONTINUING CALIBRATION REPORT

Workgroup #: WG388167
File ID: 1V.1201271150-18
CCV ID: WG388167-02
Units: mg/L
Analyte: CYANIDE

Instrument ID: UV-120-1V
Run Date: 01/27/2012
Run Time: 11:50
Analyst: JBK
Cal ID: UV-120 - 27-JAN-12

Analyte	Expected	Found	RF	%D	Q
Cyanide	.0198	0.0195	7.83	1.5	

* Exceeds %D Limit

CCC Calibrtion Check Compounds
SPCC System Performance Check Compounds

WET_WG_CCV - Modified 03/06/2008

Report generated 01/27/2012 13:35

[redacted]

Microbac Laboratories Inc.
CONTINUING CALIBRATION REPORT

Workgroup #: WG388167
File ID: 1V.1201271150-19
CCV ID: WG388167-03
Units: mg/L
Analyte: CYANIDE

Instrument ID: UV-120-1V
Run Date: 01/27/2012
Run Time: 11:50
Analyst: JBK
Cal ID: UV-120 - 27-JAN-12

Analyte	Expected	Found	RF	%D	Q
Cyanide	.198	0.199	1.58	0.5	

* Exceeds %D Limit

CCC Calibrtion Check Compounds
SPCC System Performance Check Compounds

WET_WG_CCV - Modified 03/06/2008

Report generated 01/27/2012 13:35

[redacted]

Microbac Laboratories Inc.
CONTINUING CALIBRATION REPORT

Workgroup #: WG388167
File ID: 1V.1201271150-20
CCV ID: WG388167-04
Units: mg/L
Analyte: CYANIDE

Instrument ID: UV-120-1V
Run Date: 01/27/2012
Run Time: 11:50
Analyst: JBK
Cal ID: UV-120 - 27-JAN-12

Analyte	Expected	Found	RF	%D	Q
Cyanide	.0198	0.0197	7.93	0.5	

* Exceeds %D Limit

CCC Calibrtion Check Compounds
SPCC System Performance Check Compounds

WET_WG_CCV - Modified 03/06/2008

Report generated 01/27/2012 13:35

[redacted]

2.2.5 Conductivity Data

2.2.5.1 Summary Data

Login Number: L12010651
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: Recoveries out of range were observed for the following analytes: Conductivity. Please see the applicable QC report for a detailed presentation of the failures.

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: 41702
Approved By: Deanna Hesson

Microbac

Lab Report #: L12010651
Lab Project #: 3005.011
Project Name: White Sands MR
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L12010651-01	**PrePrep Method:**	N/A	**Instrument:**	YSI-32
Client ID:	MPL-16-0112-1	**Prep Method:**	120.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	120.1	**Cal Date:**	
Workgroup #:	WG388141	**Analyst:**	DLP	**Run Date:**	01/27/2012 11:20
Collect Date:	01/24/2012 14:20	**Dilution:**	1	**File ID:**	32.1201271120-07
Sample Tag:		**Units:**	umhos/cm		

Analyte	CAS #	Result	Qual	LOQ	LOD
Conductivity		494		1.00	0.500

Sample #:	L12010651-02	**PrePrep Method:**	N/A	**Instrument:**	YSI-32
Client ID:	MPL-16-0112-MS	**Prep Method:**	120.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	120.1	**Cal Date:**	
Workgroup #:	WG388141	**Analyst:**	DLP	**Run Date:**	01/27/2012 11:20
Collect Date:	01/24/2012 14:20	**Dilution:**	1	**File ID:**	32.1201271120-08
Sample Tag:		**Units:**	umhos/cm		

Analyte	CAS #	Result	Qual	LOQ	LOD
Conductivity		497		1.00	0.500

Sample #:	L12010651-03	**PrePrep Method:**	N/A	**Instrument:**	YSI-32
Client ID:	MPL-16-0112-MSD	**Prep Method:**	120.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	120.1	**Cal Date:**	
Workgroup #:	WG388141	**Analyst:**	DLP	**Run Date:**	01/27/2012 11:20
Collect Date:	01/24/2012 14:20	**Dilution:**	1	**File ID:**	32.1201271120-09
Sample Tag:		**Units:**	umhos/cm		

Analyte	CAS #	Result	Qual	LOQ	LOD
Conductivity		497		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: 27-JAN-2012
Analyst: DLP
Analyst: NA
Method: COND
Instrument: YSI-32
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG388141

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:
31-JAN-2012

Secondary Reviewer:
01-FEB-2012

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-01-2012 15:43:24

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 120.1 AAB#: WG388141

Login Number: L12010651

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
MPL-16-0112-1	01	01/24/12							28		01/27/12	2.9	28	
MPL-16-0112-MS	02	01/24/12							28		01/27/12	2.9	28	
MPL-16-0112-MSD	03	01/24/12							28		01/27/12	2.9	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 2296126
Report generated 02/01/2012 14:45

Microbac Laboratories Inc.

METHOD BLANK SUMMARY

Login Number: L12010651
Blank File ID: 32.1201271120-01
Prep Date: 01/27/12 11:20
Analyzed Date: 01/27/12 11:20
Analyst: DLP

Work Group: WG388141
Blank Sample ID: WG388141-01
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	WG388141-02	32.1201271120-02	01/27/12 11:20	
MPL-16-0112-1	L12010651-01	32.1201271120-07	01/27/12 11:20	
MPL-16-0112-MS	L12010651-02	32.1201271120-08	01/27/12 11:20	
MPL-16-0112-MSD	L12010651-03	32.1201271120-09	01/27/12 11:20	
DUP	WG388141-06	32.1201271120-16	01/27/12 11:20	
DUP	WG388141-07	32.1201271120-17	01/27/12 11:20	
LCS2	WG388141-03	32.1201271120-18	01/27/12 11:20	

Report Name: BLANK_SUMMARY
PDF File ID: 2296127
Report generated 02/01/2012 14:45

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L12010651 Prep Date: 01/27/12 11:20 Sample ID: WG388141-01
Instrument ID: YSI-32 Run Date: 01/27/12 11:20 Prep Method: 120.1
File ID: 32.1201271120-01 Analyst: DLP Method: 120.1
Workgroup (AAB#): WG388141 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: 2296128
01-FEB-2012 14:45

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L12010651 Analyst: DLP Prep Method: 120.1
Instrument ID: YSI-32 Matrix: Water Method: 120.1
Workgroup (AAB#): WG388141 Units: umhos/cm
QC Key: DOD4 Lot #: STD49280

Sample ID: WG388141-02 LCS File ID: 32.1201271120-02 Run Date: 01/27/2012 11:20
Sample ID: WG388141-03 LCS2 File ID: 32.1201271120-18 Run Date: 01/27/2012 11:20

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Conductivity	1410	1460	103	1410	1460	103	0.149	90 - 110	10	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 2296129
Report generated: 02/01/2012 14:45

2.2.5.3 Raw Data

CONDUCTIVITY

☐EPA 120.1/SM2510B SOP K1201 Revision#: 13

LCS: STD 49280
Daily Dilution: 10(01)/100 = 1412

☑Cell Constants Determined 1-13-12
☑Cells Clean

SAMPLE	DILUTION	CELL	MULTIPLIER	Direct Instrument READING
BLANK		01	WS	3.60
LCS: (1412)		1.0	mS 01 01-27-12	~~1.339~~ 1.339
01-576-01		1.0	mS	0.292
-02		1.0	mS	0.370
-03		1.0	mS	0.421
01-613-01		1.0	mS	0.685
Ref 01-651-01		1.0	mS	0.454
MS -02		1.0	mS	0.457
MSD -03		1.0	mS	0.457
01-652-01		1.0	mS	0.368
-02		1.0	mS	0.488
01-686-01		1.0	mS	0.620
-02		1.0	mS	0.681
-03		1.0	mS	1.32
01-710-01		1.0	mS	8.39
DUP 01-576-02		1.0	mS	0.374
DUP 01-686-01		1.0	mS	0.621
LCS: 1412		1.0	mS	1.341

Analyst: [signature] Date/Time: 01-27-12/1120

*LCS/CCV required at end of run
* Duplicate required on 10% of samples

DCN#89742

Microbac Laboratories Inc.

TITRAMETRIC REPORT

Workgroup (AAB#): WG388141
Product: 120.1\
Analyte: Conductivity

Analyst: DLP
Run Date: 01/27/2012 11:20

SAMPLE NUMBER	Cell	Multiplier	Reading	Dil	Analytical	Reported	Units
WG388141-01	.1008	1	3.6	1	0.3629	0.3629	umhos/cm
WG388141-02	1.0874	1000	1.339	1	1456	1456	umhos/cm
L12010576-01	1.0874	1000	.292	1	317.5	317.5	umhos/cm
L12010576-02	1.0874	1000	.37	1	402.3	402.3	umhos/cm
WG388141-04	1.0874	1000	.37	1	402.3	402.3	umhos/cm
L12010576-03	1.0874	1000	.421	1	457.8	457.8	umhos/cm
L12010613-01	1.0874	1000	.685	1	744.9	744.9	umhos/cm
L12010651-01	1.0874	1000	.454	1	493.7	493.7	umhos/cm
L12010651-02	1.0874	1000	.457	1	496.9	496.9	umhos/cm
L12010651-03	1.0874	1000	.457	1	496.9	496.9	umhos/cm
L12010652-01	1.0874	1000	.368	1	400.2	400.2	umhos/cm
L12010652-02	1.0874	1000	.488	1	530.7	530.7	umhos/cm
L12010686-01	1.0874	1000	.62	1	674.2	674.2	umhos/cm
WG388141-05	1.0874	1000	.62	1	674.2	674.2	umhos/cm
L12010686-02	1.0874	1000	.681	1	740.5	740.5	umhos/cm
L12010686-03	1.0874	1000	1.32	1	1435	1435	umhos/cm
L12010710-01	1.0874	1000	8.39	1	9123	9123	umhos/cm
WG388141-06	1.0874	1000	.374	1	406.7	406.7	umhos/cm
WG388141-07	1.0874	1000	.621	1	675.3	675.3	umhos/cm
WG388141-03	1.0874	1000	1.341	1	1458	1458	umhos/cm

COND_REPORT - Modified 03/05/2008
Report generated 01/31/2012 13:53

[redacted]

2.2.6 Fluoride Data

2.2.6.1 Summary Data

Login Number: L12010651
Department: Conventionals
Analyst: Deanna Hesson

METHOD

Analysis SM4500-F-C (Fluoride)

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: The samples were analyzed by SM4500-F C due to instrument failure for Method 300.

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: 41709
Approved By: Deanna Hesson

Microbac

Lab Report #: L12010651
Lab Project #: 3005.011
Project Name: White Sands MR
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L12010651-01	**PrePrep Method:**	N/A	**Instrument:**	ORION-710A1
Client ID:	MPL-16-0112-1	**Prep Method:**	SM4500-F-C	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-F-C	**Cal Date:**	
Workgroup #:	WG388474	**Analyst:**	DIH	**Run Date:**	02/01/2012 10:45
Collect Date:	01/24/2012 14:20	**Dilution:**	1	**File ID:**	O112020113425401
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Fluoride	16984-48-8	0.237		0.100	0.0500

Sample #:	L12010651-02	**PrePrep Method:**	N/A	**Instrument:**	ORION-710A1
Client ID:	MPL-16-0112-MS	**Prep Method:**	SM4500-F-C	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-F-C	**Cal Date:**	
Workgroup #:	WG388474	**Analyst:**	DIH	**Run Date:**	02/01/2012 10:45
Collect Date:	01/24/2012 14:20	**Dilution:**	1	**File ID:**	O112020113425701
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Fluoride	16984-48-8	0.620		0.100	0.0500

Sample #:	L12010651-03	**PrePrep Method:**	N/A	**Instrument:**	ORION-710A1
Client ID:	MPL-16-0112-MSD	**Prep Method:**	SM4500-F-C	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-F-C	**Cal Date:**	
Workgroup #:	WG388474	**Analyst:**	DIH	**Run Date:**	02/01/2012 10:45
Collect Date:	01/24/2012 14:20	**Dilution:**	1	**File ID:**	O112020113430101
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Fluoride	16984-48-8	0.620		0.100	0.0500

2.2.6.2 QC Summary Data

Example Fluoride Calculations

(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: 01-FEB-2012
Analyst: DIH
Analyst: NA
Method: FLUORIDE
Instrument: ORION 710A 1
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG388474

Calibration/Linearity	2/1/12
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: Dianna Ibsson

Secondary Reviewer: 01-FEB-2012 Dianna Ibsson

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-01-2012 14:06:42

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: SM4500-F-C

AAB#: WG388474

Login Number: L12010651

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
MPL-16-0112-1	01	01/24/12							28		02/01/12	7.9	28	
MPL-16-0112-MS	02	01/24/12							28		02/01/12	7.9	28	
MPL-16-0112-MSD	03	01/24/12							28		02/01/12	7.9	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 2296047
Report generated 02/01/2012 14:23

Microbac Laboratories Inc.

METHOD BLANK SUMMARY

Login Number: L12010651
Blank File ID: O112020113420201
Prep Date: 02/01/12 10:45
Analyzed Date: 02/01/12 10:45
Analyst: DIH

Work Group: WG388474
Blank Sample ID: WG388474-01
Instrument ID: ORION-710A1
Method: SM4500-F-C

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
MPL-16-0112-1	L12010651-01	O112020113425401	02/01/12 10:45	
MPL-16-0112-MSD	L12010651-03	O112020113430101	02/01/12 10:45	
MPL-16-0112-MS	L12010651-02	O112020113425701	02/01/12 10:45	
LCS	WG388474-04	O112020113421201	02/01/12 10:45	
DUP	WG388474-08	O112020113423501	02/01/12 10:45	
LCS	WG388474-02	O112020113420601	02/01/12 10:45	1
LCS2	WG388474-03	O112020113420901	02/01/12 10:45	1

Report Name: BLANK_SUMMARY
PDF File ID: 2296048
Report generated 02/01/2012 14:23

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L12010651 Prep Date: 02/01/12 10:45 Sample ID: WG388474-01
Instrument ID: ORION-710A1 Run Date: 02/01/12 10:45 Prep Method: SM4500-F-C
File ID: O112020113420201 Analyst: DIH Method: SM4500-F-C
Workgroup (AAB#): WG388474 Matrix: Water Units: mg/L
Contract #: Cal ID: ORION- -

Analytes	LOD	LOQ	Concentration	Dilution	Qualifier
Fluoride	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: 2296049
01-FEB-2012 14:23

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L12010651 Analyst: DIH Prep Method: SM4500-F-C
Instrument ID: ORION-710A1 Matrix: Water Method: SM4500-F-C
Workgroup (AAB#): WG388474 Units: mg/L
QC Key: DOD4 Lot #: STD49853

Sample ID: WG388474-02 LCS File ID: O112020113420601 Run Date: 02/01/2012 10:45
Sample ID: WG388474-03 LCS2 File ID: O112020113420901 Run Date: 02/01/2012 10:45

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Fluoride	2.00	2.03	102	2.00	2.02	101	0.494	85 - 115	20	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 2296050
Report generated: 02/01/2012 14:23

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L12010651 Cal ID: ORION-710A1- Worknum: WG388474

Instrument ID: ORION-710A1 Contract #: Prep Method: SM4500-F-C

Parent ID: L12010651-01 File ID: O112020113425401 Dil: 1 Method: SM4500-F-C

Sample ID: L12010651-02 MS File ID: O112020113425701 Dil: 1 Matrix: Water

Sample ID: L12010651-03 MSD File ID: O112020113430101 Dil: 1 Units: mg/L

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Fluoride	0.237	0.400	0.620	95.8	0.400	0.620	95.8	0	85 - 115	20	

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

MS_MSD - Modified 03/06/2008
PDF File ID: 2296051
Report generated 02/01/2012 14:23

2.2.6.3 Raw Data

FLUORIDE

Cal. Stds: STD 49852 LCS/ICV: STD 49853

non-dist method SM4500-F C / EPA 340.2
SOP #: K3402 Rev. #: 13
TISAB COA: 15850
Slope: -59.1 (-54 to -60)
Volumes are in mL / readout and result are in mg/L

10/100 of 100 = 10 mg/L
10/100 of 10 - 1.0 mg/L
10/100 of 1.0 - 0.10 mg/L
Spk dilution: 1/25(10)=0.4
CCV: 1 mg/L

Daily Dilution: = 2 mg/L
Daily Dilution: 1/5(2)=0.4 mg/L

Instrument: Orion 710-A 1

SAMPLE	VOLUME	DILUTION	READOUT	FINAL RESULT
ICV / LCS (2 ppm)	25		2.03	
ICB / BLANK	25		0.0444	
LCS: (0.4 ppm)	25		0.409	
01-536-01	25		0.320	
02	25		0.127	1.27
03	25		0.123	
01-613-01	25		0.183	
01-651-01	25		0.237	
01-652-01	25		0.300	
02	25		0.240	
LCS dup 2	25		2.02	
	25			
	25			
	25			
	25			
	25			
	25			
	25			
	25			
	25			
	25			
	25			
	25			
DUP: 651-01	25		0.235	
MS: (0.4) 651-02	25		0.620	
MSD: (0.4) 651-03	25		0.620	
CCV: 1 mg/L (ppm)	25		1.02	

ANALYST: Deanne Dixson DATE: 2/1/12 1045

DCN#89788

2.2.7 Ammonia Data

2.2.7.1 Summary Data

Login Number: L12010651
Department: Conventionals
Analyst: Deanna Hesson

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.

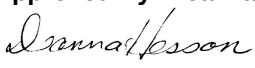
Matrix Spikes: Recoveries out of range were observed for the following analytes: Nitrogen, Ammonia. Please see the applicable QC report for a detailed presentation of the failures.

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: 41704
Approved By: Deanna Hesson



Microbac

Lab Report #: L12010651
Lab Project #: 3005.011
Project Name: White Sands MR
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L12010651-01	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	MPL-16-0112-1	**Prep Method:**	350.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	350.1	**Cal Date:**	01/27/2012 11:48
Workgroup #:	WG388059	**Analyst:**	DIH	**Run Date:**	01/27/2012 12:08
Collect Date:	01/24/2012 14:20	**Dilution:**	1	**File ID:**	SC120127002.029
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Nitrogen, Ammonia	7664-41-7	0.107		0.100	0.0500

Sample #:	L12010651-02	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	MPL-16-0112-MS	**Prep Method:**	350.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	350.1	**Cal Date:**	01/27/2012 11:48
Workgroup #:	WG388059	**Analyst:**	DIH	**Run Date:**	01/27/2012 12:11
Collect Date:	01/24/2012 14:20	**Dilution:**	1	**File ID:**	SC120127002.032
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Nitrogen, Ammonia	7664-41-7	1.03		0.100	0.0500

Sample #:	L12010651-03	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	MPL-16-0112-MSD	**Prep Method:**	350.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	350.1	**Cal Date:**	01/27/2012 11:48
Workgroup #:	WG388059	**Analyst:**	DIH	**Run Date:**	01/27/2012 12:11
Collect Date:	01/24/2012 14:20	**Dilution:**	1	**File ID:**	SC120127002.033
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Nitrogen, Ammonia	7664-41-7	0.920		0.100	0.0500

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: 27-JAN-2012
Analyst: DIH
Analyst: NA
Method: NH3
Instrument: SC
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG388059

Calibration/Linearity	1/30/12
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:
01-FEB-2012

Secondary Reviewer:
01-FEB-2012

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-01-2012 14:08:17

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 350.1 AAB#: WG388059

Login Number: L12010651

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
MPL-16-0112-1	01	01/24/12							28		01/27/12	2.9	28	
MPL-16-0112-MS	02	01/24/12							28		01/27/12	2.9	28	
MPL-16-0112-MSD	03	01/24/12							28		01/27/12	2.9	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 2293812
Report generated 01/31/2012 09:27

Microbac Laboratories Inc.

METHOD BLANK SUMMARY

Login Number: L12010651
Blank File ID: SC120127002.009
Prep Date: 01/27/12 11:50
Analyzed Date: 01/27/12 11:50
Analyst: DIH

Work Group: WG388059
Blank Sample ID: WG388059-01
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	WG388059-02	SC120127002.010	01/27/12 11:51	01
MPL-16-0112-1	L12010651-01	SC120127002.029	01/27/12 12:08	01
MPL-16-0112-MS	L12010651-02	SC120127002.032	01/27/12 12:11	01
MPL-16-0112-MSD	L12010651-03	SC120127002.033	01/27/12 12:11	01
DUP	WG388059-04	SC120127002.038	01/27/12 12:16	01

Report Name: BLANK_SUMMARY
PDF File ID: 2293814
Report generated 01/31/2012 09:27

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L12010651 Prep Date: 01/27/12 11:50 Sample ID: WG388059-01
Instrument ID: SMARTCHEM Run Date: 01/27/12 11:50 Prep Method: 350.1
File ID: SC120127002.009 Analyst: DIH Method: 350.1
Workgroup (AAB#): WG388059 Matrix: Water Units: mg/L
Contract #: Cal ID: SMARTC-27-JAN-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: 2293815
31-JAN-2012 09:27

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L12010651 Run Date: 01/27/2012 Sample ID: WG388059-02
Instrument ID: SMARTCHEM Run Time: 11:51 Prep Method: 350.1
File ID: SC120127002.010 Analyst: DIH Method: 350.1
Workgroup (AAB#): WG388059 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD46741 Cal ID: SMARTC-27-JAN-12

Analytes	Expected	Found	% Rec	LCS Limits	Q
Nitrogen, Ammonia	2.00	2.06	103	90 - 110	

LCS - Modified 03/06/2008
PDF File ID: 2293816
Report generated: 01/31/2012 09:27

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L12010651 Cal ID: SMARTCHEM- 27-JAN-12 Worknum: WG388059

Instrument ID: SMARTCHEM Contract #: Prep Method: 350.1

Parent ID: L12010651-01 File ID: SC120127002.029 Dil: 1 Method: 350.1

Sample ID: L12010651-02 MS File ID: SC120127002.032 Dil: 1 Matrix: Water

Sample ID: L12010651-03 MSD File ID: SC120127002.033 Dil: 1 Units: mg/L

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Nitrogen, Ammonia	0.107	1.00	1.03	92.1	1.00	0.920	81.4	11.0	90 - 110	20	*

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

MS_MSD - Modified 03/06/2008
PDF File ID: 2293817
Report generated 01/31/2012 09:27

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
- [ ] 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** _____
Plan # 20120127002
2) **Workgroup** _____
Plan # _____
3) **Workgroup** _____
Plan # _____

	Analyte	1	2	3
		NH3		
		Dilution		
SC Prepared Curve				
Position				
1-1	ICV 1.5			
1-2	BLK			
1-3	LCS 2			
1-4	01-661-01	5ml/50*	1/20	1/200
1-5	02	5ml/50*	1/20	1/200
1-6	03	5ml/50*	1/20	1/200
1-7	06	5ml/50*	1/2	1/20
1-8	01-674-01	1/100		
1-9	02	1/50		
1-10	01-679-01			
1-11	01-576-01			
1-12	02			
1-13	03			
1-14	01-604-01	1/20		
1-15	MS04	1/20		
1-16	MSd05	1/20		
1-17	02			
1-18	01-606-01			
1-19	01-613-01			
1-20	01-651-01			
1-21	MS02			
1-22	MSd03			
2-1	01-652-01			
2-2	02			
2-3	01-684-01		1/5	

Position	Analyte	1	2	3
2-4	01-684-02		1/5	
2-5	DUP 576-01		~~1/5~~	
2-6 R	New ICV			
2-7 R				
2-8 R				
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#89734

SMARTCHEM RUN LOG

Position	Analyte	1	2	3
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				

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	R3501 Rev 17		Rot 16729
Curve Stock (SC made)	std 49628		Rot 16833
Curve ID (user made)			Rot 16835
ICV	std 49784		
CCV	std 49630		
LCS			
MS	All dilut log Dilution		

Comments: ICV >90% LCS same source was 103%

Analyst: Deanna Gibson Date: 1/27/12

DCN#89734

AMMONIA DISTILLATION LOG

SOP K3501 Revision # 17

LCS: STD46741 10(100)/100 = 10
DAILY DIL. 10(10)/50 = 2

SPIKE: STD46741 10(100)/100 = 10
DAILY DIL. 5(10)/50 = 1

WATER (mg/L)
SOIL (mg/Kg)

☒ easy-dist method ☐ macro method

RGT 16894
RGT 16972

SAMPLE	VOLUME DISTILLED (mL)	CHLORINE PRESENT?	pH ADJUSTED 9.5 ± 0.2	COMMENTS
BLANK ✓	50	No	yes	
LCS( ) ✓	50			
01-661-01 ✓	5			
-02 ✓	5			
-03 ✓	5			
06 ✓	5			
01-674-01 ✓	50			
-02 ✓	50	yes		
Re5 01-572-01 ✓	50	No		
-02 ✓	50			
03 ✓	50			
01-604-01 ✓	50			
-02 ✓	50			
01-606-01 ✓	50			
01-613-01 ✓	50			
Re5 01-651-01 ✓	50			
ms -02 ✓	50			
msd -03 ✓	50			
01-652-01 ✓	50			
-02 ✓	50			
01-679-01 ✓	50			
01-684-01 ✓	50			
DUP 01-576-01	50			
MS 01-604-04 ✓	50			
msd 01-604-05 ✓	50			

Analyst: [illegible] Date/Time: 01-26-12/0830

*MS required on 10% of samples (EPA 350.1)
*MS/MS required on each set of 20 samples (SM4500)

01-684-02 ✓	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	0.0465	0.00		11:40:51 AM
DIL-1	RBL	0.000	0.0435	0.00		11:41:09 AM
DIL-1	RBL	0.000	0.0451	0.00		11:42:39 AM
DIL-1	Std-1	0.000	-0.0017	0.00	INV	11:42:57 AM
SR5-1	Std-2	0.030	0.0046	0.00		11:44:27 AM
SR5-2	Std-3	0.094	0.0191	0.00		11:44:45 AM
SR5-3	Std-4	0.600	0.1368	0.00		11:46:15 AM
SR5-4	Std-5	1.050	0.2479	0.00		11:46:33 AM
SR5-5	Std-6	2.100	0.5016	0.00		11:48:03 AM
ST-1	Std-7	3.000	0.7344	0.00		11:48:21 AM
1	ICV 1.5	2.032 X	0.4914	0.00		11:49:52 AM
2	WG388059-01 BLK	0.026	0.0009	0.00		11:50:10 AM
3	WG388059-02 LCS	2.062	0.4988	0.00		11:51:40 AM
4	L12010661-01 (200)	2.869	0.6960	0.00		11:51:58 AM
5	L12010661-02 (200)	2.593	0.6286	0.00		11:53:28 AM
6	L12010661-03 (200)	1.691	0.4079	0.00		11:53:46 AM
7	L12010661-06 (20)	2.272	0.5500	0.00		11:55:16 AM
8	L12010674-01 (100)	1.494	0.3598	0.00		11:55:34 AM
9	L12010674-02 (50)	1.592	0.3837	0.00		11:57:04 AM
10	L12010679-01	0.406	0.0939	0.00		11:57:22 AM
ST-2	CCV (1.5 mg/L)	1.415	0.3406	94.35		11:58:52 AM
ST-3	CCB (0 mg/L)	0.023	0.0001	0.00		11:59:10 AM
11	L12010576-01	0.230	0.0509	0.00		12:00:40 PM
12	L12010576-02	0.173	0.0368	0.00		12:00:58 PM
13	L12010576-03	0.149	0.0309	0.00		12:02:28 PM
14	L12010604-01 (20)	2.180	0.5275	0.00		12:02:46 PM
15 =	L12010604-04 (20) MS	2.146	0.5192	0.00		12:04:16 PM
16	L12010604-05 (20) MS	1.841	0.4447	0.00		12:04:34 PM
17	L12010604-02	0.169	0.0359	0.00		12:06:04 PM
18	L12010606-01	0.207	0.0452	0.00		12:06:22 PM
19	L12010613-01	0.137	0.0281	0.00		12:07:52 PM
20	L12010651-01	0.107	0.0207	0.00		12:08:10 PM

Report Date :01/27/2012 **Run Date :1/27/2012** **Operator : WESTCO** **Plan # :20120127002**

Plan Description : NH3-B-DIH/1/27/2012

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)	1.408	0.3389	93.88		12:09:40 PM
ST-3	CCB (0 mg/L)	0.028	0.0013	0.00		12:09:58 PM
21	L12010651-02 MS	1.028	0.2458	0.00		12:11:28 PM
22	L12010651-03 MSD	0.920	0.2196	0.00		12:11:46 PM
23	L12010652-01	0.195	0.0423	0.00		12:13:16 PM
24	L12010652-02	0.093	0.0174	0.00		12:13:34 PM
25	L12010684-01 (5)	1.480	0.3565	0.00		12:15:04 PM
26	L12010684-02 (5)	1.529	0.3685	0.00		12:15:22 PM
27	WG388059-04 DUP	0.165	0.0349	0.00		12:16:52 PM
28	ID 28 new ICV	1.652	0.3986	0.00		12:17:10 PM
29	ID 29	1.703	0.4109	0.00		12:18:40 PM
30	ID 30	1.310	0.3148	0.00		12:18:58 PM
ST-2	CCV (1.5 mg/L)	1.391	0.3346	92.71		12:20:28 PM
ST-3	CCB (0 mg/L)	0.027	0.0011	0.00		12:20:46 PM

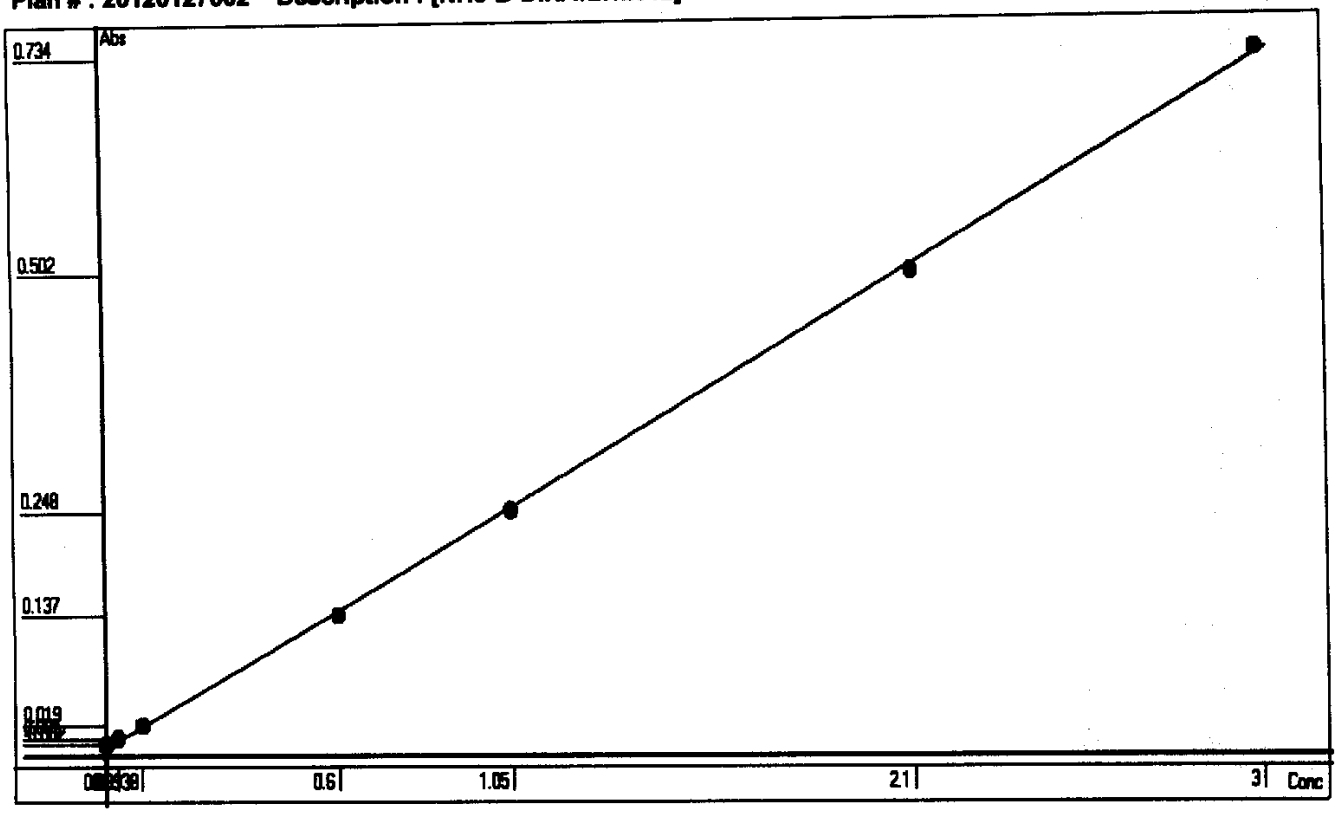
Report Date :01/27/2012 **Run Date :1/27/2012** **Operator : WESTCO** **Plan # :20120127002**

Plan Description : NH3-B-DIH/1/27/2012

Calibrant Report - WNH3 -

Calib Lot #:010104 Exp Date:6/17/2020 User:Westco Scientific

Plan # : 20120127002 Description : [NH3-B-DIH/1/27/2012]



Point	OD	Conc	Recalc Conc	% Error
1	-0.0017	0	0.0152	1.52
2	0.0046	0.03	0.0410	36.67
3	0.0191	0.0938	0.1003	6.93
4	0.1368	0.6	0.5817	-3.05
5	0.2479	1.05	1.0361	-1.32
6	0.5016	2.1	2.0737	-1.25
7	0.7344	3	3.0259	0.86

Conc= +4.09*Abso +0.0222 R^2=0.9997

RBL
0.0458
0

Report Date 1/27/2012 Run Date 1/27/2012

2.2.8 Nitrate Data

2.2.8.1 Summary Data

Login Number: L12010651
Department: Conventionals
Analyst: Deanna Hesson

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.

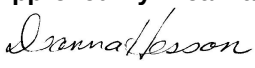
Duplicates: All acceptance criteria were met.

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: 41705
Approved By: Deanna Hesson



Microbac

Lab Report #: L12010651
Lab Project #: 3005.011
Project Name: White Sands MR
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L12010651-01	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	MPL-16-0112-1	**Prep Method:**	353.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	353.2	**Cal Date:**	01/30/2012 09:15
Workgroup #:	WG388287	**Analyst:**	DIH	**Run Date:**	01/30/2012 14:40
Collect Date:	01/24/2012 14:20	**Dilution:**	4	**File ID:**	SC12013112371101
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Nitrate-Nitrite (as N)		4.43		0.200	0.100

Sample #:	L12010651-02	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	MPL-16-0112-MS	**Prep Method:**	353.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	353.2	**Cal Date:**	01/30/2012 09:15
Workgroup #:	WG388287	**Analyst:**	DIH	**Run Date:**	01/30/2012 14:40
Collect Date:	01/24/2012 14:20	**Dilution:**	4	**File ID:**	SC12013112371601
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Nitrate-Nitrite (as N)		5.15		0.200	0.100

Sample #:	L12010651-03	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	MPL-16-0112-MSD	**Prep Method:**	353.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	353.2	**Cal Date:**	01/30/2012 09:15
Workgroup #:	WG388287	**Analyst:**	DIH	**Run Date:**	01/30/2012 14:40
Collect Date:	01/24/2012 14:20	**Dilution:**	4	**File ID:**	SC12013112372401
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Nitrate-Nitrite (as N)		4.92		0.200	0.100

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: 30-JAN-2012
Analyst: DIH
Analyst: NA
Method: NO3
Instrument: SC
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG388287

Calibration/Linearity	1/30/12
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:
01-FEB-2012

Secondary Reviewer:
01-FEB-2012

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-01-2012 14:09:07

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 353.2 AAB#: WG388287

Login Number: L12010651

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
MPL-16-0112-1	01	01/24/12							28		01/30/12	6	28	
MPL-16-0112-MS	02	01/24/12							28		01/30/12	6	28	
MPL-16-0112-MSD	03	01/24/12							28		01/30/12	6	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 2294897
Report generated 01/31/2012 15:23

Microbac Laboratories Inc.

METHOD BLANK SUMMARY

Login Number: L12010651
Blank File ID: SC12013112342001
Prep Date: 01/30/12 14:40
Analyzed Date: 01/30/12 14:40
Analyst: DIH

Work Group: WG388287
Blank Sample ID: WG388287-01
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	WG388287-05	SC12013112344701	01/30/12 14:40	
MPL-16-0112-MS	L12010651-02	SC12013112371601	01/30/12 14:40	
LCS2	WG388287-03	SC12013112343301	01/30/12 14:40	
LCS	WG388287-02	SC12013112342701	01/30/12 14:40	
MPL-16-0112-1	L12010651-01	SC12013112371101	01/30/12 14:40	
MPL-16-0112-MSD	L12010651-03	SC12013112372401	01/30/12 14:40	

Report Name: BLANK_SUMMARY
PDF File ID: 2294898
Report generated 01/31/2012 15:23

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L12010651 Prep Date: 01/30/12 14:40 Sample ID: WG388287-01
Instrument ID: SMARTCHEM Run Date: 01/30/12 14:40 Prep Method: 353.2
File ID: SC12013112342001 Analyst: DIH Method: 353.2
Workgroup (AAB#): WG388287 Matrix: Water Units: mg/L
Contract #: Cal ID: SMARTC-30-JAN-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: 2294899
31-JAN-2012 15:23

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L12010651 Analyst: DIH Prep Method: 353.2
Instrument ID: SMARTCHEM Matrix: Water Method: 353.2
Workgroup (AAB#): WG388287 Units: mg/L
QC Key: DOD4 Lot #: STD49812

Sample ID: WG388287-02 LCS File ID: SC12013112342701 Run Date: 01/30/2012 14:40
Sample ID: WG388287-03 LCS2 File ID: SC12013112343301 Run Date: 01/30/2012 14:40

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Nitrate-Nitrite (as N)	2.00	1.88	94.0	2.00	1.97	98.7	4.88	90 - 110	15	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 2294900
Report generated: 01/31/2012 15:23

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L12010651 Cal ID: SMARTCHEM- 30-JAN-12 Worknum: WG388287

Instrument ID: SMARTCHEM Contract #: Prep Method: 353.2

Parent ID: L12010651-01 File ID: SC12013112371101 Dil: 4 Method: 353.2

Sample ID: L12010651-02 MS File ID: SC12013112371601 Dil: 4 Matrix: Water

Sample ID: L12010651-03 MSD File ID: SC12013112372401 Dil: 4 Units: mg/L

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Nitrate-Nitrite (as N)	4.43	0.500	5.15	144	0.500	4.92	98.4	4.53	90 - 110	15	*

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

MS_MSD - Modified 03/06/2008
PDF File ID: 2294901
Report generated 01/31/2012 15:23

2.2.8.3 Raw Data

wg 388287

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 # 131442

1) **Workgroup** _____
Plan # 20120130005
2) **Workgroup** _____
Plan # _____
3) **Workgroup** _____
Plan # _____

	Analyte	1	2	3
		NO3		
		Dilution		
SC Prepared Curve				
Position				
1-1	ICV 1.5			
1-2	NO2 1			
1-3	BLK			
1-4	LCS 2			
1-5	LCSDUP			
1-6	01-604-01			
1-7	DUP01			
1-8	MS02	04		
1-9	msd05			
1-10	01-606-01	1/4		
1-11	01-698-01	1/5		
1-12	01-734-02	1/20		
1-13	01-613-01	1/5		
1-14	01-652-01	1/4		
1-15	02	1/4		
1-16	01-686-01	~~1/4~~	1/5	
1-17	02	1/4		
1-18	03	1/5		
1-19				
1-20	01-651-01	1/4		
1-21	MS02	1/4		
1-22	msd03	1/4		
2-1	01-767-01			
2-2	MS02			
2-3	msd03			

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#89757

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
- [x] 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	K3532 R18		Rgt 16628
Curve Stock (SC made)	std 49809		Rgt 16820
Curve ID (user made) NO2	std 49488		
ICV	std 49811		
CCV	std 49810		
LCS	std 49812		
MS	std 48249 Dilution 0.1/5(25)=0.5		

Comments: _____

Analyst: Dann Dann Date: 1/30/12

DCN#89757

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	0.0209	0.00		2:25:59 PM
DIL-1	RBL	0.000	0.0180	0.00		2:27:11 PM
DIL-1	RBL	0.000	0.0164	0.00		2:28:23 PM
DIL-1	RBL	0.000	0.0157	0.00		2:29:35 PM
DIL-1	Std-1	0.000	-0.0021	0.00	INV	2:30:47 PM
SR5-1	Std-2	0.040	0.0111	0.00		2:31:59 PM
SR5-2	Std-3	0.100	0.0341	0.00		2:33:11 PM
SR5-3	Std-4	0.500	0.1812	0.00		2:34:23 PM
SR5-4	Std-5	1.000	0.3718	0.00		2:35:35 PM
ST-1	Std-6	2.000	0.7419	0.00		2:36:47 PM
1	ICV 1.5	1.359	0.5036	0.00		2:37:59 PM
2	NO2	0.916	0.3382	0.00		2:39:11 PM
3	BLK wg388287-01	0.002	-0.0026	0.00	INV,><	2:40:23 PM
4	LCS -02	1.879	0.6972	0.00		2:41:35 PM
5	LCSDUP 03	1.973	0.7325	0.00		2:42:47 PM
6	L12010604-01	0.705	0.2597	0.00		2:43:59 PM
7	DUP 604-01	0.922	0.3405	0.00	NO2	2:45:11 PM
8	L12010604-04 MS	1.166	0.4317	0.00	0.004	2:46:23 PM
9	L12010604-05 MSD	1.290	0.4777	0.00		2:47:35 PM
10	L12010606-01 (4)	1.588	0.5887	0.00	0.004	2:48:47 PM
ST-2	CCV (1 mg/L)	0.946	0.3495	94.60		2:49:59 PM
ST-3	CCB (0 mg/L)	0.001	-0.0027	0.00	INV,><	2:51:11 PM
11	L12010698-01 (5)	1.683	0.6243	0.00	0.007	2:52:23 PM
12	L12010734-02 (20)	1.058	0.3914	0.00	0.110	2:53:35 PM
13	L12010613-01 (5)	1.631	0.6048	0.00		2:54:47 PM
14	L12010652-01 (4)	1.028	0.3802	0.00		2:55:59 PM
15	L12010652-02 (4)	1.324	0.4904	0.00		2:57:11 PM
16	L12010686-01 (5)	1.501	0.5564	0.00		2:58:23 PM
17	L12010686-02 (4)	1.547	0.5736	0.00		2:59:36 PM
18	L12010686-03 (5)	1.432	0.5307	0.00		3:00:48 PM
19	ID 19	0.875 X	0.3232	0.00		3:02:00 PM
20	L12010651-01 (4)	1.107	0.4095	0.00		3:03:12 PM

Report Date :01/30/2012 **Run Date :1/30/2012** **Operator : WESTCO** **Plan # :20120130005**

Plan Description : NO3-C-DIH/1/30/2012

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)	0.924	0.3413	92.40		3:04:24 PM
ST-3	CCB (0 mg/L)	0.001	-0.0030	0.00	INV,><	3:05:36 PM
21	L12010651-02 MS (4)	1.287	0.4767	0.00		3:06:48 PM
22	L12010651-03 MSD (4)	1.230	0.4554	0.00		3:08:00 PM
23	ID 23 01-767-01	1.518	0.5627	0.00		3:09:12 PM
24	ID 24 -02 MS	1.902	0.7061	0.00		3:10:24 PM
25	ID 25 -03 MSd	2.026 OK	0.7520	0.00	><,LH	3:11:36 PM
ST-2	CCV (1 mg/L)	0.958	0.3540	95.80		3:12:48 PM
ST-3	CCB (0 mg/L)	0.002	-0.0024	0.00	INV,><	3:14:00 PM
25-[1/4]	ID 25	2.077 X	0.1904	0.00	LH	3:23:10 PM
ST-2	CCV (1 mg/L)	0.898 X	0.3317	89.82		3:24:04 PM
ST-3	CCB (0 mg/L)	0.008 X	-0.0001	0.00	INV	3:25:16 PM

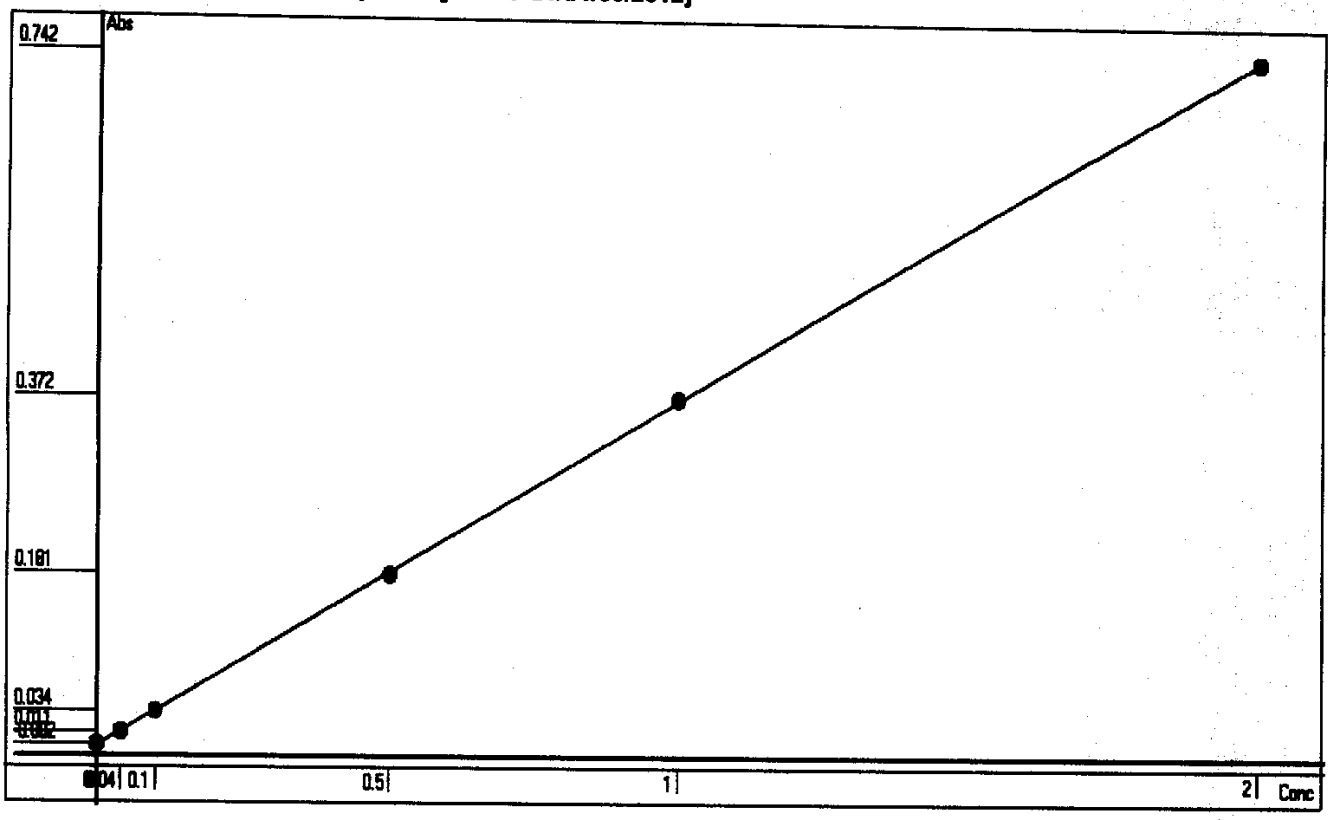
Report Date :01/30/2012 **Run Date :1/30/2012** **Operator : WESTCO** **Plan # :20120130005**

Plan Description : NO3-C-DIH/1/30/2012

Calibrant Report - WNO3 -

Calib Lot #:010104 Exp Date:6/17/2020 User:MICROBAC

Plan # : 20120130005 Description : [NO3-C-DIH/1/30/2012]



Point	OD	Conc	Recalc Conc	% Error
1	-0.0021	0	0.0029	0.29
2	0.0111	0.04	0.0383	-4.25
3	0.0341	0.1	0.1000	0.00
4	0.1812	0.5	0.4945	-1.10
5	0.3718	1	1.0057	0.57
6	0.7419	2	1.9984	-0.08

Conc= +2.6822*Abso +0.0085 R^2=1.0000

RBL
0.0172
0

Report Date 1/30/2012 Run Date 1/30/2012

2.2.9 Orthophosphate Data

2.2.9.1 Summary Data

Login Number: L12010651
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: 41706
Approved By: Deanna Hesson

Microbac

Lab Report #: L12010651
Lab Project #: 3005.011
Project Name: White Sands MR
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L12010651-01	**PrePrep Method:**	N/A	**Instrument:**	UV-120-1V
Client ID:	MPL-16-0112-1	**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 #:	WG387929	**Analyst:**	HJR	**Run Date:**	01/25/2012 12:45
Collect Date:	01/24/2012 14:20	**Dilution:**	1	**File ID:**	1V.1201251245-08
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 #:	L12010651-02	**PrePrep Method:**	N/A	**Instrument:**	UV-120-1V
Client ID:	MPL-16-0112-MS	**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 #:	WG387929	**Analyst:**	HJR	**Run Date:**	01/25/2012 12:45
Collect Date:	01/24/2012 14:20	**Dilution:**	1	**File ID:**	1V.1201251245-10
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Orthophosphate	14265-44-2	0.404		0.0500	0.0250

Sample #:	L12010651-03	**PrePrep Method:**	N/A	**Instrument:**	UV-120-1V
Client ID:	MPL-16-0112-MSD	**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 #:	WG387929	**Analyst:**	HJR	**Run Date:**	01/25/2012 12:45
Collect Date:	01/24/2012 14:20	**Dilution:**	1	**File ID:**	1V.1201251245-11
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Orthophosphate	14265-44-2	0.406		0.0500	0.0250

2.2.9.2 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: 25-JAN-2012
Analyst: HJR
Analyst: NA
Method: PO4
Instrument: UV-120-1V
Curve Workgroup: WG385747
Runlog ID:
Analytical Workgroups: WG387929

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:
03-FEB-2012

Secondary Reviewer:
03-FEB-2012

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-03-2012 14:36:08

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: SM4500-P-E-20th AAB#: WG387929

Login Number: L12010651

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
MPL-16-0112-1	01	01/24/12							2		01/25/12	.9	2	
MPL-16-0112-MS	02	01/24/12							2		01/25/12	.9	2	
MPL-16-0112-MSD	03	01/24/12							2		01/25/12	.9	2	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 2298040
Report generated 02/03/2012 13:02

Microbac Laboratories Inc.

METHOD BLANK SUMMARY

Login Number: L12010651
Blank File ID: 1V.1201251245-02
Prep Date: 01/25/12 12:45
Analyzed Date: 01/25/12 12:45
Analyst: HJR

Work Group: WG387929
Blank Sample ID: WG387929-01
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	WG387929-02	1V.1201251245-03	01/25/12 12:45	
LCS2	WG387929-03	1V.1201251245-04	01/25/12 12:45	
MPL-16-0112-1	L12010651-01	1V.1201251245-08	01/25/12 12:45	
DUP	WG387929-05	1V.1201251245-09	01/25/12 12:45	
MPL-16-0112-MS	L12010651-02	1V.1201251245-10	01/25/12 12:45	
MPL-16-0112-MSD	L12010651-03	1V.1201251245-11	01/25/12 12:45	

Report Name: BLANK_SUMMARY
PDF File ID: 2298041
Report generated 02/03/2012 13:02

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L12010651 Prep Date: 01/25/12 12:45 Sample ID: WG387929-01
Instrument ID: UV-120-1V Run Date: 01/25/12 12:45 Prep Method: SM4500-P-E-20th
File ID: 1V.1201251245-02 Analyst: HJR Method: SM4500-P-E-20th
Workgroup (AAB#): WG387929 Matrix: Water Units: mg/L
Contract #: Cal ID: UV-120 - 24-JAN-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: 2298042
03-FEB-2012 13:02

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L12010651 Analyst: HJR Prep Method: SM4500-P-E-20th
Instrument ID: UV-120-1V Matrix: Water Method: SM4500-P-E-20th
Workgroup (AAB#): WG387929 Units: mg/L
QC Key: DOD4 Lot #: STD49682

Sample ID: WG387929-02 LCS File ID: 1V.1201251245-03 Run Date: 01/25/2012 12:45
Sample ID: WG387929-03 LCS2 File ID: 1V.1201251245-04 Run Date: 01/25/2012 12:45

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Orthophosphate	1.00	0.989	98.9	1.00	0.986	98.6	0.312	90 - 110	20	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 2298043
Report generated: 02/03/2012 13:02

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L12010651 Cal ID: UV-120-1V- 21-DEC-11 Worknum: WG387929

Instrument ID: UV-120-1V Contract #: Prep Method: SM4500-P-E-20th

Parent ID: L12010651-01 File ID: 1V.1201251245-08 Dil: 1 Method: SM4500-P-E-20th

Sample ID: L12010651-02 MS File ID: 1V.1201251245-10 Dil: 1 Matrix: Water

Sample ID: L12010651-03 MSD File ID: 1V.1201251245-11 Dil: 1 Units: mg/L

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Orthophosphate	U	0.400	0.404	101	0.400	0.406	101	0.380	90 - 110	20	

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

MS_MSD - Modified 03/06/2008
PDF File ID: 2298044
Report generated 02/03/2012 13:02

2.2.9.3 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: ~~CH3653~~ 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

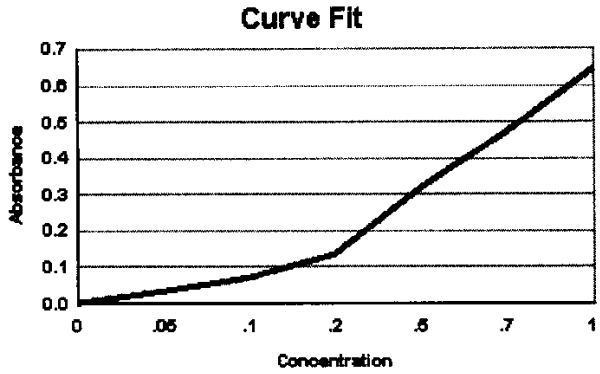
Microbac Laboratories Inc.
INITIAL CALIBRATION

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
~~CA~~ 15323
148166
165166
168165

CCV: ~~Std~~ 49681
Daily Dilution: 5(5)/50
Daily Dilution: 0.5
Spectrophotometer: UV-120-1V

LCS: ~~Std~~ 49682
Daily Dilution: 5(10)/50
Daily Dilution: 1.0
Curve ID: ~~WG385~~ 747 12/21/11

Spike: ~~Std~~ 49682
Daily Dilution: 2(10)/50
Daily Dilution: 0.4

SAMPLE	VOLUME	pH 7 ± 0.2	DILUTION	ABSORBANCE @ 880 nm
CCV: 0.5 mg/L	50	✓		0.323
BLANK	50	✓		0.002
LCS: 1.0 ppm	50	✓		0.645
LCSDUP: 1.0 ppm	50	✓		0.643
01-0613-01	50	✓		0.019
0860 01-0652-02	50	✓		0.013
1220 -01	50	✓		0.014
1420 01-0651-01RS	50	✓		0.011
	50			
	50			
	50			
	50			
	50			
	50			
	50			
	50			
	50			
	50			
	50			
	50			
	50			
DUP: 01-0613-01	50	✓		0.020
1420 MS: (0.4) 01-0651-02	50	✓		0.265
1420 MSD: (0.4) -03	50	✓		0.266
CCV: (0.5)	50	✓		0.326

ANALYST: Dolly Reed DATE / TIME: 1/25/12 1245

DCN#89710

Microbac Laboratories Inc.
SAMPLE REPORT

Workgroup: WG387929
Analyte: ORTHOPHOSPHATE

Analyst: HJR
Date: 01/25/2012

Sample ID	I Vol	F Vol	Response	Slope	Y Intercept	Anal. Conc.	Rep. Conc.	Dil	Units
WG387929-01	50	50	0.00200	0.6499	0.002393	-0.00060517	-0.00060517	1	mg/L
WG387929-02	50	50	0.645	0.6499	0.002393	0.98878	0.98878	1	mg/L
WG387929-03	50	50	0.643	0.6499	0.002393	0.98570	0.98570	1	mg/L
L12010613-01	50	50	0.0190	0.6499	0.002393	0.025553	0.025553 F	1	mg/L
WG387929-04	50	50	0.0190	0.6499	0.002393	0.025553	0.025553	1	mg/L
L12010652-02	50	50	0.0130	0.6499	0.002393	0.016320	ND	1	mg/L
L12010652-01	50	50	0.0140	0.6499	0.002393	0.017859	ND	1	mg/L
L12010651-01	50	50	0.0110	0.6499	0.002393	0.013243	ND	1	mg/L
WG387929-06	50	50	0.0110	0.6499	0.002393	0.013243	0.013243	1	mg/L
WG387929-05	50	50	0.0200	0.6499	0.002393	0.027091	0.027091	1	mg/L
L12010651-02	50	50	0.265	0.6499	0.002393	0.40407	0.40407	1	mg/L
WG387929-07	50	50	0.265	0.6499	0.002393	0.40407	0.40407	1	mg/L
L12010651-03	50	50	0.266	0.6499	0.002393	0.40561	0.40561	1	mg/L
WG387929-08	50	50	0.266	0.6499	0.002393	0.40561	0.40561	1	mg/L

UV_SAMPLE_REPORT - Modified 03/06/2008

Report generated 02/03/2012 08:58

[redacted]

[redacted]

Microbac Laboratories Inc.
CONTINUING CALIBRATION REPORT

Workgroup #: WG388687
File ID: 1V.1201251245-12
CCV ID: WG388687-02
Units: mg/L
Analyte: ORTHOPHOSPHATE

Instrument ID: UV-120-1V
Run Date: 01/25/2012
Run Time: 12:45
Analyst: HJR
Cal ID: UV-120 - 24-JAN-12

Analyte	Expected	Found	RF	%D	Q
Orthophosphate	.5	0.498	0.652	0.4	

* Exceeds %D Limit

CCC Calibrtion Check Compounds
SPCC System Performance Check Compounds

WET_WG_CCV - Modified 03/06/2008

Report generated 02/03/2012 08:56

[redacted]

Microbac Laboratories Inc.
CONTINUING CALIBRATION REPORT

Workgroup #: WG388687
File ID: 1V.1201251245-01
CCV ID: WG388687-01
Units: mg/L
Analyte: ORTHOPHOSPHATE

Instrument ID: UV-120-1V
Run Date: 01/25/2012
Run Time: 12:45
Analyst: HJR
Cal ID: UV-120 - 24-JAN-12

Analyte	Expected	Found	RF	%D	Q
Orthophosphate	.5	0.493	0.646	1.4	

* Exceeds %D Limit

CCC Calibrtion Check Compounds
SPCC System Performance Check Compounds

WET_WG_CCV - Modified 03/06/2008

Report generated 02/03/2012 08:56

[redacted]

2.2.10 Total Dissolved Solids Data

2.2.10.1 Summary Data

Login Number: L12010651
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: 41710
Approved By: Deanna Hesson

Microbac

Lab Report #: L12010651
Lab Project #: 3005.011
Project Name: White Sands MR
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L12010651-01	**PrePrep Method:**	N/A	**Instrument:**	OVEN
Client ID:	MPL-16-0112-1	**Prep Method:**	160.1/SM2540C	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	160.1	**Cal Date:**	
Workgroup #:	WG388025	**Analyst:**	HJR	**Run Date:**	01/27/2012 13:33
Collect Date:	01/24/2012 14:20	**Dilution:**	1	**File ID:**	EN.1201271333-04
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Total Dissolved Solids		302		20.0	10.0

Sample #:	L12010651-02	**PrePrep Method:**	N/A	**Instrument:**	OVEN
Client ID:	MPL-16-0112-MS	**Prep Method:**	160.1/SM2540C	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	160.1	**Cal Date:**	
Workgroup #:	WG388025	**Analyst:**	HJR	**Run Date:**	01/27/2012 13:33
Collect Date:	01/24/2012 14:20	**Dilution:**	1	**File ID:**	EN.1201271333-05
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Total Dissolved Solids		796		20.0	10.0

Sample #:	L12010651-03	**PrePrep Method:**	N/A	**Instrument:**	OVEN
Client ID:	MPL-16-0112-MSD	**Prep Method:**	160.1/SM2540C	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	160.1	**Cal Date:**	
Workgroup #:	WG388025	**Analyst:**	HJR	**Run Date:**	01/27/2012 13:33
Collect Date:	01/24/2012 14:20	**Dilution:**	1	**File ID:**	EN.1201271333-06
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Total Dissolved Solids		804		20.0	10.0

2.2.10.2 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: 27-JAN-2012
Analyst: HJR
Analyst: NA
Method: TDS
Instrument: OVEN
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG388025

Calibration/Linearity	1/27/12
Second Source Check	
ICV/CCV (std)	
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:
31-JAN-2012

Secondary Reviewer:
01-FEB-2012

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-01-2012 13:27:46

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 160.1 AAB#: WG388025

Login Number: L12010651

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
MPL-16-0112-1	01	01/24/12							7		01/27/12	3	7	
MPL-16-0112-MS	02	01/24/12							7		01/27/12	3	7	
MPL-16-0112-MSD	03	01/24/12							7		01/27/12	3	7	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 2294558
Report generated 01/31/2012 13:52

Microbac Laboratories Inc.

METHOD BLANK SUMMARY

Login Number: L12010651
Blank File ID: EN.1201271333-01
Prep Date: 01/27/12 13:33
Analyzed Date: 01/27/12 13:33
Analyst: HJR

Work Group: WG388025
Blank Sample ID: WG388025-01
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	WG388025-02	EN.1201271333-02	01/27/12 13:33	
LCS2	WG388025-03	EN.1201271333-03	01/27/12 13:33	
MPL-16-0112-1	L12010651-01	EN.1201271333-04	01/27/12 13:33	
MPL-16-0112-MS	L12010651-02	EN.1201271333-05	01/27/12 13:33	
MPL-16-0112-MSD	L12010651-03	EN.1201271333-06	01/27/12 13:33	
DUP	WG388025-05	EN.1201271333-22	01/27/12 13:33	
DUP	WG388025-07	EN.1201271333-23	01/27/12 13:33	

Report Name: BLANK_SUMMARY
PDF File ID: 2294559
Report generated 01/31/2012 13:52

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L12010651 Prep Date: 01/27/12 13:33 Sample ID: WG388025-01
Instrument ID: OVEN Run Date: 01/27/12 13:33 Prep Method: 160.1/SM2540C
File ID: EN.1201271333-01 Analyst: HJR Method: 160.1
Workgroup (AAB#): WG388025 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: 2294560
31-JAN-2012 13:52

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L12010651 Analyst: HJR Prep Method: 160.1/SM2540C
Instrument ID: OVEN Matrix: Water Method: 160.1
Workgroup (AAB#): WG388025 Units: mg/L
QC Key: DOD4 Lot #: STD48299

Sample ID: WG388025-02 LCS File ID: EN.1201271333-02 Run Date: 01/27/2012 13:33
Sample ID: WG388025-03 LCS2 File ID: EN.1201271333-03 Run Date: 01/27/2012 13:33

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Total Dissolved Solids	500	502	100	500	498	99.6	0.800	80 - 120	10	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 2294561
Report generated: 01/31/2012 13:52

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L12010651 Cal ID: OVEN- Worknum: WG388025

Instrument ID: OVEN Contract #: Prep Method: 160.1/SM2540 C

Parent ID: L12010651-01 File ID: EN.1201271333-04 Dil: 1 Method: 160.1

Sample ID: L12010651-02 MS File ID: EN.1201271333-05 Dil: 1 Matrix: Water

Sample ID: L12010651-03 MSD File ID: EN.1201271333-06 Dil: 1 Units: mg/L

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Total Dissolved Solids	302	500	796	98.8	500	804	100	1.00	80 - 120	10	

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

MS_MSD - Modified 03/06/2008
PDF File ID: 2294562
Report generated 01/31/2012 13:52

2.2.10.3 Raw Data

TOTAL DISSOLVED SOLIDS

Oven: ☒ TDS1 ☐ MISC1

SOP K1601 Revision #: 12
☒ EPA 160.1/ SM2540C

Balance: AND GR-202 / Other

LCS: Std 48299
Daily Dilution:

Matrix Spike:
Daily Dilution:

SAMPLE	#	VOLUME (mL)	INITIAL WEIGHT WT1 (g)	DRY WEIGHT WT2A (g)	DRY WEIGHT WT2B (g)	DRY WEIGHT WT2C (g)
TVDS BLANK		100				
LCS: mg/L		50				
LCSDUP: mg/L		50				
01-0651-01 RS		50				
-02 MS		50				
-03 MSD		50				
01-0652-01		50				
-02		50				
01-0647-02		50				
01-0659-01		50				
01-0661-01		10				
-03		10				
01-0663-01		50				
01-0679-01		50				
01-0686-01		50				
-02		50				
-03		50				
01-0700-05		50				
01-0726-01		~~100~~ Blank? 100				
-02		50				
01-0730-01		50				
TVDS DUP: ~~01-0644-03~~		10				
DUP: ~~01-0730-01~~		50				

in oven in the hood

TVDS

ANALYST: Holly Reed

DATE/TIME: (on) 1/27/12

DATE/TIME: (off)

DATE/TIME: (off)

DATE/TIME: (off)

* Duplicate required on 10% of samples

DCN#89727

Microbac Laboratories Inc.
GRAVIMETRIC REPORT

Workgroup (AAB#): WG388025
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
WG388025-01	S	100	66.8558	66.8554	66.8556		-2.000	-2.000	mg/L
WG388025-02	12X	50	55.0914	55.1163	55.1165		502.0	502.0	mg/L
WG388025-03	112X	50	52.1271	52.1519	52.152		498.0	498.0	mg/L
L12010651-01	C7	50	64.8232	64.8383	64.8383		302.0	302.0	mg/L
WG388025-08	C7	50	64.8232	64.8383	64.8383		302.0	302.0	mg/L
L12010651-02	6X	50	51.1064	51.1464	51.1462		796.0	796.0	mg/L
WG388025-09	6X	50	51.1064	51.1464	51.1462		796.0	796.0	mg/L
L12010651-03	7	50	55.6317	55.6717	55.6719		804.0	804.0	mg/L
WG388025-10	7	50	55.6317	55.6717	55.6719		804.0	804.0	mg/L
L12010652-01	C5	50	64.0879	64.0993	64.0995		232.0	232.0	mg/L
L12010652-02	19	50	53.0294	53.0457	53.0457		326.0	326.0	mg/L
L12010647-02	15	50	50.6989	50.7949	50.7945		1912	1912	mg/L
L12010659-01	12A	50	53.192	53.2372	53.2371		902.0	902.0	mg/L
L12010661-01	77	10	20.464	20.6286	20.6284		16440	16440	mg/L
L12010661-03	11	10	20.2338	20.3711	20.371		13720	13720	mg/L
WG388025-04	11	10	20.2338	20.3711	20.371		13720	13720	mg/L
L12010663-01	P8	50	74.9905	75.0164	75.0165		520.0	520.0	mg/L
L12010679-01	L17	50	77.9323	77.9446	77.9441		236.0	236.0	mg/L
L12010686-01	K4	50	82.1571	82.1782	82.1786		430.0	430.0	mg/L
L12010686-02	P5	50	75.5438	75.5657	75.5662		448.0	448.0	mg/L
L12010686-03	W6	50	75.6952	75.7462	75.746		1016	1016	mg/L
L12010700-05	L	50	65.9752	66.1181	66.1184		2864	2864	mg/L
L12010726-01	L7	100	80.5551	80.555	80.555		-1.000	ND	mg/L
L12010726-02	D2	50	75.5639	75.6239	75.6238		1198	1198	mg/L
L12010730-01	Q	50	64.2031	64.2092	64.2093		124.0	124.0	mg/L
WG388025-06	Q	50	64.2031	64.2092	64.2093		124.0	124.0	mg/L
WG388025-05	44	10	19.3468	19.483	19.4835		13670	13670	mg/L
WG388025-07	B4	50	66.9285	66.9349	66.9347		124.0	124.0	mg/L

WG388025-09	ms=5(5000)/50=500
WG388025-10	msd=5(5000)/50=500
L12010651-02	ms=5(5000)/50=500
L12010651-03	msd=5(5000)/50=500

Analyst: HJR

*Duplicate required on 10% of samples

Date/Time (on) : 01/27/2012 13:33
Date/Time (off): 01/31/2012 09:30
Date/Time (off): 01/31/2012 11:20
Date/Time (off):

CONT_GRAV_REPORT - Modified 02/18/2011
PDF ID: 2292163
Report generated: 01/31/2012 11:36

Microbac

2.2.11 Total Organic Carbon Data

2.2.11.1 Summary Data

Login Number: L12010651
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: Recoveries out of range were observed for the following analytes: Total Organic Carbon. Please see the applicable QC report for a detailed presentation of the failures.

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: 41707
Approved By: Deanna Hesson

Microbac

Lab Report #: L12010651
Lab Project #: 3005.011
Project Name: White Sands MR
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L12010651-01	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	MPL-16-0112-1	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	12/06/2011 09:40
Workgroup #:	WG388050	**Analyst:**	DIH	**Run Date:**	01/26/2012 22:06
Collect Date:	01/24/2012 14:20	**Dilution:**	1	**File ID:**	TC01262012.019
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Total Organic Carbon		1.06		1.00	0.500

Sample #:	L12010651-02	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	MPL-16-0112-MS	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	12/06/2011 09:40
Workgroup #:	WG388050	**Analyst:**	DIH	**Run Date:**	01/26/2012 22:28
Collect Date:	01/24/2012 14:20	**Dilution:**	1	**File ID:**	TC01262012.020
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Total Organic Carbon		9.36		1.00	0.500

Sample #:	L12010651-03	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	MPL-16-0112-MSD	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	12/06/2011 09:40
Workgroup #:	WG388050	**Analyst:**	DIH	**Run Date:**	01/26/2012 22:50
Collect Date:	01/24/2012 14:20	**Dilution:**	1	**File ID:**	TC01262012.021
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Total Organic Carbon		10.3		1.00	0.500

2.2.11.2 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: 26-JAN-2012
Analyst: DIH
Analyst: NA
Method: TOC
Instrument: TOC
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG388050

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:
01-FEB-2012

Secondary Reviewer:
01-FEB-2012

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-01-2012 14:11:27

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 415.1 AAB#: WG388050

Login Number: L12010651

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
MPL-16-0112-1	01	01/24/12							28		01/26/12	2.3	28	
MPL-16-0112-MS	02	01/24/12							28		01/26/12	2.3	28	
MPL-16-0112-MSD	03	01/24/12							28		01/26/12	2.4	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 2293882
Report generated 01/31/2012 09:32

Microbac Laboratories Inc.

METHOD BLANK SUMMARY

Login Number: L12010651
Blank File ID: TC01262012.003
Prep Date: 01/26/12 16:02
Analyzed Date: 01/26/12 16:02
Analyst: DIH

Work Group: WG388050
Blank Sample ID: WG388050-01
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	WG388050-02	TC01262012.004	01/26/12 16:22	01
LCS2	WG388050-03	TC01262012.005	01/26/12 16:44	01
MPL-16-0112-1	L12010651-01	TC01262012.019	01/26/12 22:06	01
MPL-16-0112-MS	L12010651-02	TC01262012.020	01/26/12 22:28	01
MPL-16-0112-MSD	L12010651-03	TC01262012.021	01/26/12 22:50	01
DUP	WG388050-05	TC01262012.040	01/27/12 08:34	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 2293883
Report generated 01/31/2012 09:32

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L12010651 Prep Date: 01/26/12 16:02 Sample ID: WG388050-01
Instrument ID: TOC-VWP Run Date: 01/26/12 16:02 Prep Method: 415.1
File ID: TC01262012.003 Analyst: DIH Method: 415.1
Workgroup (AAB#): WG388050 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: 2293884
31-JAN-2012 09:32

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L12010651 Analyst: DIH Prep Method: 415.1
Instrument ID: TOC-VWP Matrix: Water Method: 415.1
Workgroup (AAB#): WG388050 Units: mg/L
QC Key: DOD4 Lot #: STD49306

Sample ID: WG388050-02 LCS File ID: TC01262012.004 Run Date: 01/26/2012 16:22
Sample ID: WG388050-03 LCS2 File ID: TC01262012.005 Run Date: 01/26/2012 16:44

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Total Organic Carbon	25.0	23.8	95.2	25.0	22.7	90.7	4.82	85 - 115	15	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 2293885
Report generated: 01/31/2012 09:32

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L12010651 Cal ID: TOC-VWP- 06-DEC-11 Worknum: WG388050

Instrument ID: TOC-VWP Contract #: Prep Method: 415.1

Parent ID: L12010651-01 File ID: TC01262012.019 Dil: 1 Method: 415.1

Sample ID: L12010651-02 MS File ID: TC01262012.020 Dil: 1 Matrix: Water

Sample ID: L12010651-03 MSD File ID: TC01262012.021 Dil: 1 Units: mg/L

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Total Organic Carbon	1.06	10.0	9.36	83	10.0	10.3	91.9	9.03	85 - 115	15	*

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

MS_MSD - Modified 03/06/2008
PDF File ID: 2293886
Report generated 01/31/2012 09:32

2.2.11.3 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

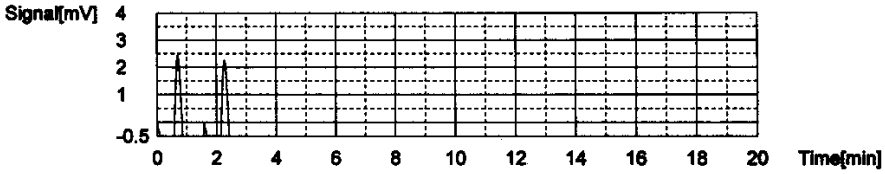
Sample Name: TC CURVE
Sample ID: Untitled
Cal. Curve: TCCURVE-12-06-2011.2011_12_06_08_40_57.cal
Status Completed

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

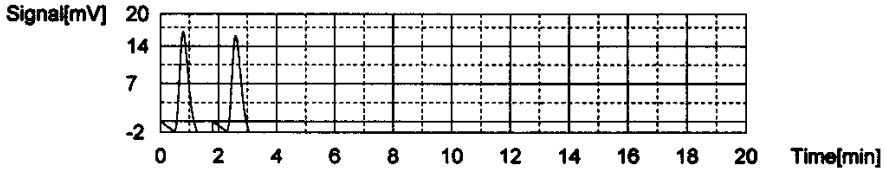
Acid Add. 0.000%
Mean Area 5.716



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

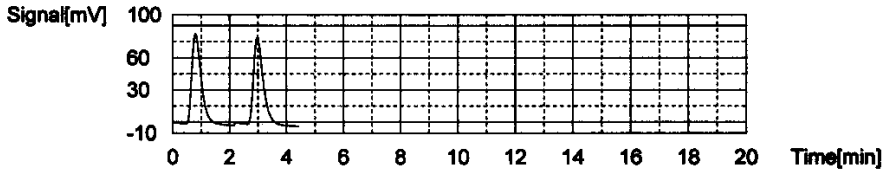
Acid Add. 0.000%
Mean Area 39.48



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

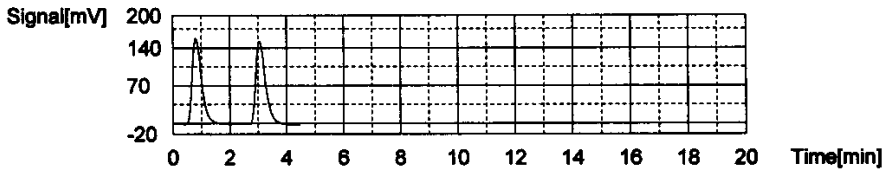
Acid Add. 0.000%
Mean Area 190.6



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

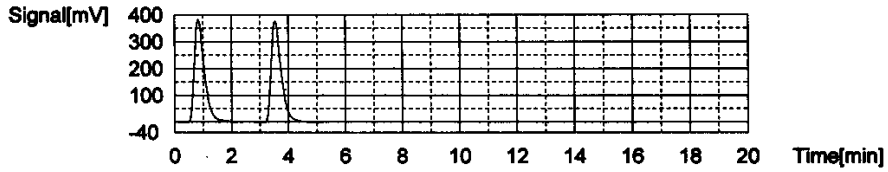
Acid Add. 0.000%
Mean Area 367.4



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

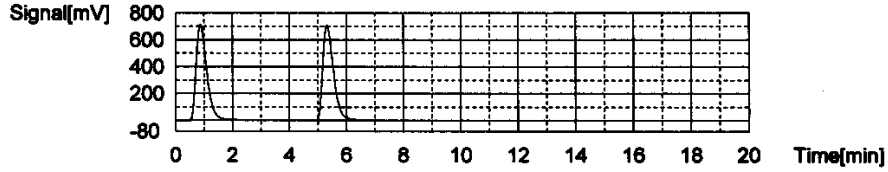
Acid Add. 0.000%
Mean Area 933.4



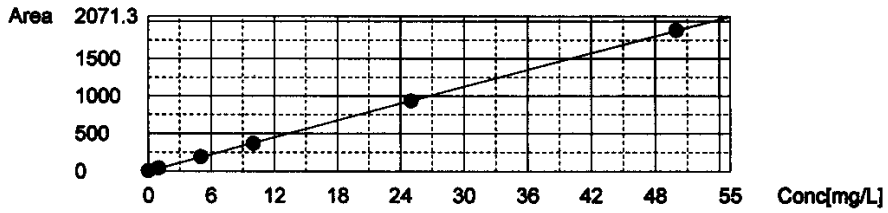
Conc: 50.00mg/L

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

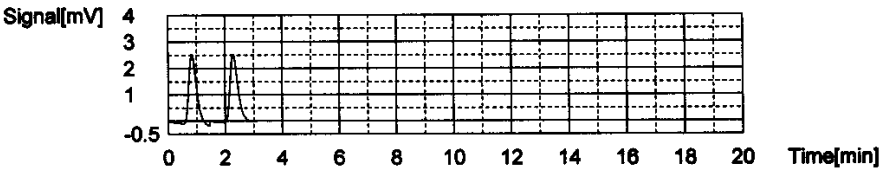
Sample Name: TIC CURVE
Sample ID: Untitled
Cal. Curve: TICCURVE-12-06-2011B.2011_12_06_15_47_44.cal
Status Completed

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

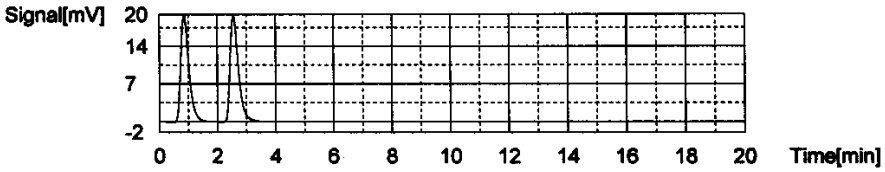
Acid Add. 10.00%
Mean Area 4.883



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

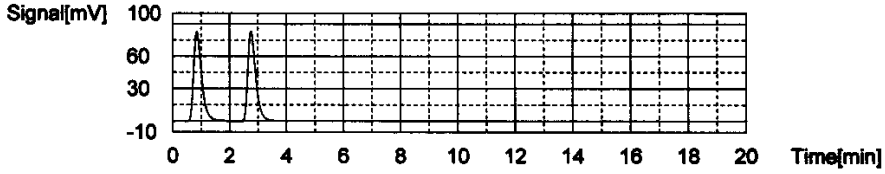
Acid Add. 10.00%
Mean Area 38.90



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

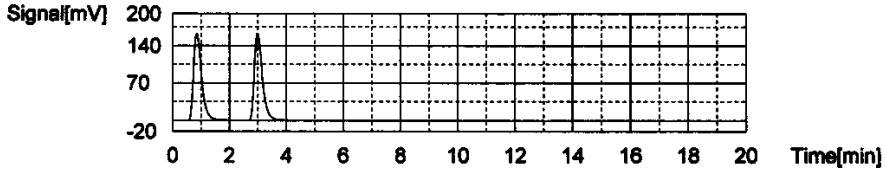
Acid Add. 10.00%
Mean Area 161.3



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

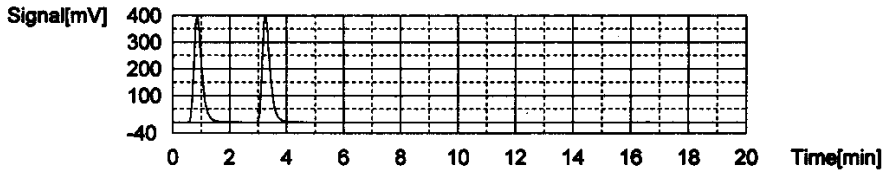
Acid Add. 10.00%
Mean Area 318.9



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

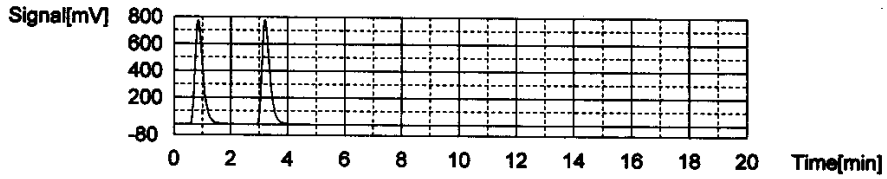
Acid Add. 10.00%
Mean Area 765.5



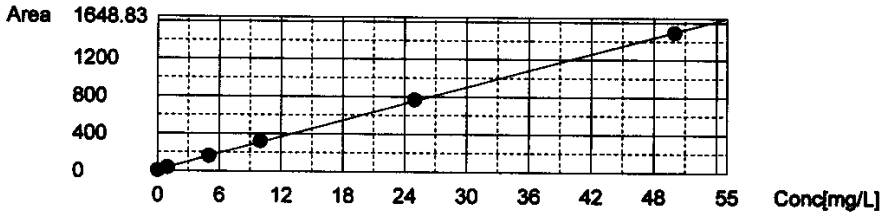
Conc: 50.00mg/L

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

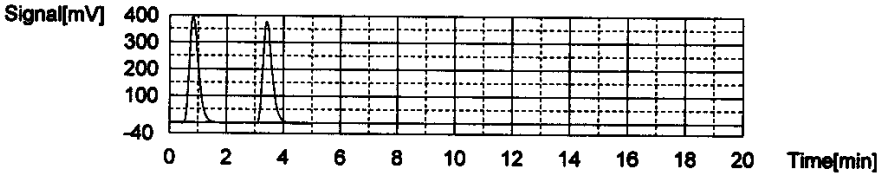
Type	Anal.	Dil.	Result
Unknown	TC	1.000	TC:23.27mg/L

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

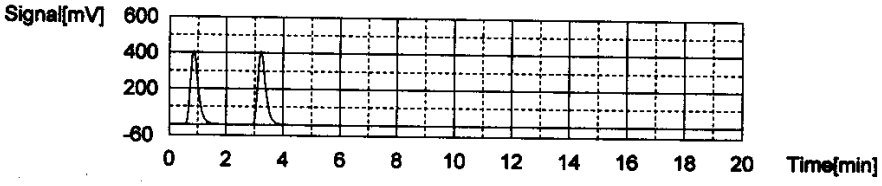
Type	Anal.	Dil.	Result
Unknown	IC	1.000	IC:26.21mg/L

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: WG388050

Total Organic Carbon

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: Rot 16963
Rot 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	CCV 25	
2	TIC 25	
3	BLK	
4	LCS 25	
5	LCSDUP	
6	01-604-01	1/5
7	DUP 01	1/5
8	MS 04	1/5
9	MSD 05	1/5
10	01-604-02	
11	01-605-01	
12	02	
13	01-688-01	
14	CCV	
15	CCB	
16	01-688-02	
17	03	
18	04	
19	01-651-01	
20	MS 02	
21	MSD 03	
22	01-652-01	
23	02	
24	01-684-01	
25	02	

Position	Sample ID	Dilution
26	CCV	
27	CCB	
28	01-686-01	
29	02	
30	03	
31	01-693-01	
32	02	
33	03	
34	01-698-01	
35	CCV	
36	CCB	
37	CCV	
38	CCB	
39	01-604-01	1/10
40	DUP 01	1/10
41	MS 04	1/10
42	MSD 05	1/10
43	01-605-01	1/5
44	01	1/10
45	01-688-02	1/2
46	CCV	
47	CCB	
48		
49		
50		

Position	Sample ID	Dilution
51		
52		
53		
54		
55		
56		
57		
58		
59		
60		
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62		
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74		
75		

Analyst: Deanna Dobson Date/Time: 1/26/12

DCN#89731

C:\TOC3201\Data\01-26-2012-DIH-TOC.t32

	Analysi	Sample Name	Result	Status	Date / Time	Vial
1	TOC	CCV 25	!!Error!! TOC:21.58mg/L TC:21.35mg/L IC:-0.2283mg	Complet	01/26/2012 03:43:17 PM	1
2	TOC	TIC25	TOC:1.131mg/L TC:25.17mg/L IC:24.04mg/L	Complet	01/26/2012 03:56:32 PM	2
3	TOC	WG388050-01 BLK	!!Error!! TOC:0.4614mg/L TC:0.2660mg/L IC:-0.1954m	Complet	01/26/2012 04:14:04 PM	0
4	TOC	WG388050-02 LCS	!!Error!! TOC:23.79mg/L TC:23.50mg/L IC:-0.2924mg	Complet	01/26/2012 04:36:02 PM	4
5	TOC	WG388050-03 LCSDUP	!!Error!! TOC:22.67mg/L TC:22.39mg/L IC:-0.2799mg	Complet	01/26/2012 04:57:20 PM	5
6	TOC	<Untitled>	TOC:31.86mg/L TC:71.34mg/L IC:39.49mg/L	Complet	01/26/2012 05:25:20 PM	6
7	TOC	<Untitled>	TOC:10.58mg/L TC:59.96mg/L IC:49.38mg/L	Complet	01/26/2012 05:53:57 PM	7
8	TOC	<Untitled>	TOC:12.69mg/L TC:53.28mg/L IC:40.60mg/L	Complet	01/26/2012 06:21:45 PM	8
9	TOC	<Untitled>	TOC:34.08mg/L TC:68.07mg/L IC:33.99mg/L	Complet	01/26/2012 06:50:28 PM	9
10	TOC	L12010604-02	!!Error!! TOC:0.6255mg/L TC:0.5285mg/L IC:-0.09696	Complet	01/26/2012 07:10:22 PM	10
11	TOC	<Untitled>	!!Error!! TOC:-12.06mg/L TC:109.4mg/L IC:121.5mg/L	Complet	01/26/2012 07:43:33 PM	11
12	TOC	L12010605-02	TOC:0.7997mg/L TC:1.057mg/L IC:0.2577mg/L	Complet	01/26/2012 08:03:58 PM	12
13	TOC	L12010688-01	TOC:2.703mg/L TC:8.599mg/L IC:5.895mg/L	Complet	01/26/2012 08:25:42 PM	13
14	TOC	CCV	!!Error!! TOC:22.01mg/L TC:21.84mg/L IC:-0.1711mg	Complet	01/26/2012 08:38:00 PM	14
15	TOC	CCB	!!Error!! TOC:0.4060mg/L TC:0.2268mg/L IC:-0.1792m	Complet	01/26/2012 08:47:16 PM	0
16	TOC	<Untitled>	TOC:9.376mg/L TC:59.19mg/L IC:49.82mg/L	Complet	01/26/2012 09:12:42 PM	16
17	TOC	L12010688-03	TOC:7.965mg/L TC:35.44mg/L IC:27.47mg/L	Complet	01/26/2012 09:37:27 PM	17
18	TOC	L12010688-04	TOC:2.504mg/L TC:9.456mg/L IC:6.952mg/L	Complet	01/26/2012 09:59:28 PM	18
19	TOC	L12010651-01	TOC:1.062mg/L TC:6.533mg/L IC:5.471mg/L	Complet	01/26/2012 10:20:42 PM	19
20	TOC	L12010651-02 MS	TOC:9.364mg/L TC:16.90mg/L IC:7.541mg/L	Complet	01/26/2012 10:42:20 PM	20
21	TOC	L12010651-03 MSD	TOC:10.25mg/L TC:15.39mg/L IC:5.145mg/L	Complet	01/26/2012 11:04:02 PM	21
22	TOC	L12010652-01	TOC:0.8001mg/L TC:3.596mg/L IC:2.796mg/L	Complet	01/26/2012 11:24:33 PM	22
23	TOC	L12010652-02	TOC:0.9715mg/L TC:4.372mg/L IC:3.400mg/L	Complet	01/26/2012 11:45:25 PM	23
24	TOC	L12010684-01	TOC:4.910mg/L TC:20.88mg/L IC:15.97mg/L	Complet	01/27/2012 12:10:16 AM	24
25	TOC	L12010684-02	TOC:4.194mg/L TC:12.85mg/L IC:8.651mg/L	Complet	01/27/2012 12:35:30 AM	25
26	TOC	CCV	!!Error!! TOC:23.52mg/L TC:23.33mg/L IC:-0.1861mg	Complet	01/27/2012 12:47:39 AM	26
27	TOC	CCB	!!Error!! TOC:0.4225mg/L TC:0.2277mg/L IC:-0.1948m	Complet	01/27/2012 12:57:01 AM	0
28	TOC	L12010686-01	TOC:1.508mg/L TC:5.800mg/L IC:4.292mg/L	Complet	01/27/2012 01:17:55 AM	28
29	TOC	L12010686-02	TOC:1.323mg/L TC:7.537mg/L IC:6.213mg/L	Complet	01/27/2012 01:39:21 AM	29
30	TOC	L12010686-03	TOC:0.9954mg/L TC:3.982mg/L IC:2.987mg/L	Complet	01/27/2012 02:00:08 AM	30
31	TOC	L12010693-01	TOC:5.099mg/L TC:26.72mg/L IC:21.62mg/L	Complet	01/27/2012 02:24:16 AM	31
32	TOC	L12010693-02	TOC:6.335mg/L TC:38.79mg/L IC:32.46mg/L	Complet	01/27/2012 02:49:46 AM	32
33	TOC	L12010693-03	TOC:6.408mg/L TC:18.41mg/L IC:12.00mg/L	Complet	01/27/2012 03:12:43 AM	33
34	TOC	L12010698-01	TOC:4.391mg/L TC:8.587mg/L IC:4.196mg/L	Complet	01/27/2012 03:35:42 AM	34
35	TOC	CCV	!!Error!! TOC:23.96mg/L TC:23.76mg/L IC:-0.1999mg	Complet	01/27/2012 03:49:24 AM	35
36	TOC	CCB	!!Error!! TOC:0.4076mg/L TC:0.2142mg/L IC:-0.1935m	Complet	01/27/2012 03:58:51 AM	0
37	TOC	CCV	!!Error!! TOC:24.16mg/L TC:23.93mg/L IC:-0.2216mg	Complet	01/27/2012 07:52:35 AM	1
38	TOC	CCB	!!Error!! TOC:0.4384mg/L TC:0.2410mg/L IC:-0.1973m	Complet	01/27/2012 08:01:59 AM	0
39	TOC	L12010604-01 (10)	TOC:3.895mg/L TC:30.41mg/L IC:26.51mg/L	Complet	01/27/2012 08:26:27 AM	39
40	TOC	WG388050-05 (10) DUP	TOC:4.153mg/L TC:30.77mg/L IC:26.61mg/L	Complet	01/27/2012 08:50:28 AM	40
41	TOC	L12010604-04 (10) MS	TOC:4.955mg/L TC:21.86mg/L IC:16.90mg/L	Complet	01/27/2012 09:14:44 AM	41
42	TOC	L12010604-05 (10) MSD	TOC:4.557mg/L TC:21.30mg/L IC:16.74mg/L	Complet	01/27/2012 09:38:50 AM	42
43	TOC	L12010605-01 (5)	TOC:3.723mg/L TC:29.36mg/L IC:25.63mg/L	Complet	01/27/2012 10:03:01 AM	43
44	TOC	<Untitled>	TOC:2.170mg/L TC:14.01mg/L IC:11.84mg/L	Complet	01/27/2012 10:26:16 AM	44
45	TOC	L12010688-02 (2)	TOC:4.398mg/L TC:28.72mg/L IC:24.32mg/L	Complet	01/27/2012 10:50:00 AM	45
46	TOC	CCV	!!Error!! TOC:24.24mg/L TC:24.13mg/L IC:-0.1090mg	Complet	01/27/2012 11:02:48 AM	14
47	TOC	CCB	!!Error!! TOC:0.4017mg/L TC:0.2242mg/L IC:-0.1775m	Complet	01/27/2012 11:12:15 AM	0

01/27/2012 12:46:58 PM 1/1

Instr.Information

System TOCVW ASI
Detector Wet Chemical

Sample

Sample Name: CCV 25
Sample ID:
Origin: TOC-12-06-2011.met
Status Completed
Chk. Result

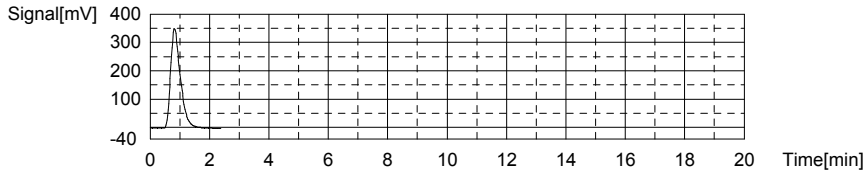
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:21.58mg/L TC:21.35mg/L IC:-0.2283mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	802.4	21.35mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	01/26/2012 03:38:58 PM

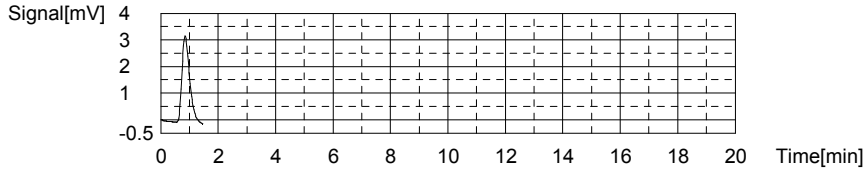
Mean Area 802.4
Mean Conc. 21.35mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	6.100	-0.2283mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	01/26/2012 03:43:17 PM

Mean Area 6.100
Mean Conc. -0.2283mg/L



Sample

Sample Name: TIC25
Sample ID:
Origin: TOC-12-06-2011.met
Status Completed
Chk. Result

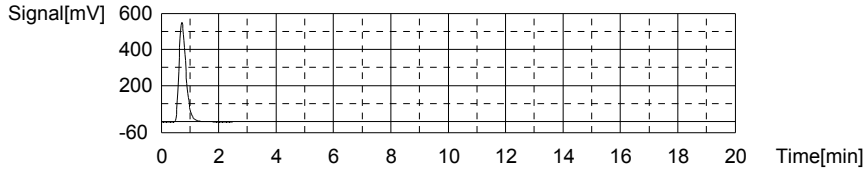
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.131mg/L TC:25.17mg/L IC:24.04mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	945.7	25.17mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	01/26/2012 03:51:11 PM

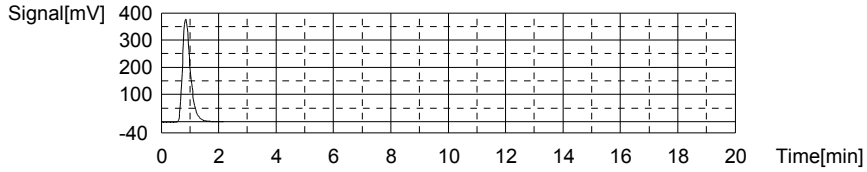
Mean Area 945.7
Mean Conc. 25.17mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	727.3	24.04mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	01/26/2012 03:56:32 PM

Mean Area 727.3
Mean Conc. 24.04mg/L



Sample

Sample Name: WG388050-01 BLK
Sample ID: <Untitled>
Origin: TOC-12-06-2011A.met
Status Completed
Chk. Result

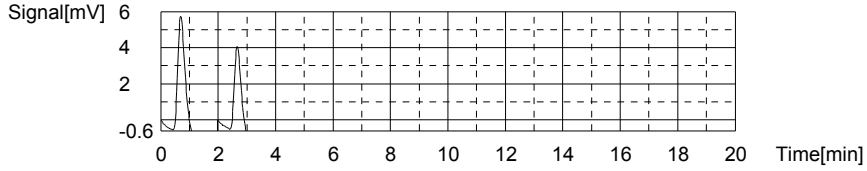
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.4614mg/L TC:0.2660mg/L IC:-0.1954mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	12.36	0.3265mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	01/26/2012 04:02:08 PM
2	7.813	0.2055mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	01/26/2012 04:06:16 PM

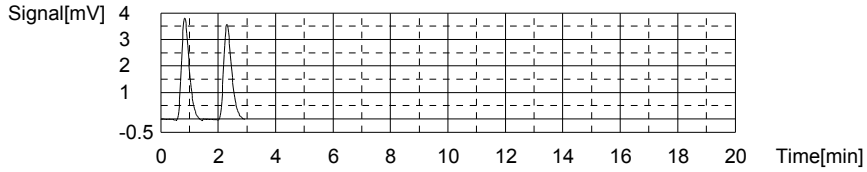
Mean Area 10.09
Mean Conc. 0.2660mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.259	-0.1893mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	01/26/2012 04:10:11 PM
2	6.898	-0.2015mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	01/26/2012 04:14:04 PM

Mean Area 7.079
Mean Conc. -0.1954mg/L



Sample

Sample Name: WG388050-02 LCS
Sample ID: <Untitled>
Origin: TOC-12-06-2011A.met
Status Completed
Chk. Result

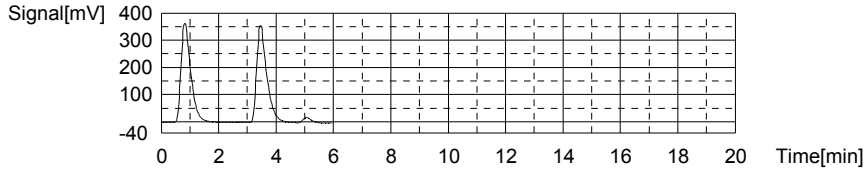
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:23.79mg/L TC:23.50mg/L IC:-0.2924mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	856.2	22.79mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	01/26/2012 04:22:08 PM
2	909.8	24.21mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	01/26/2012 04:27:43 PM

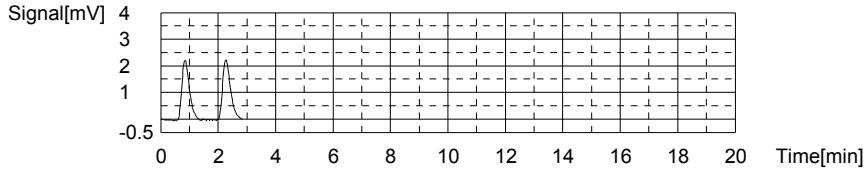
Mean Area 883.0
Mean Conc. 23.50mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	4.214	-0.2918mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	01/26/2012 04:32:01 PM
2	4.175	-0.2931mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	01/26/2012 04:36:02 PM

Mean Area 4.194
Mean Conc. -0.2924mg/L



Sample

Sample Name: WG388050-03 LCSDUP
Sample ID: <Untitled>
Origin: TOC-12-06-2011A.met
Status Completed
Chk. Result

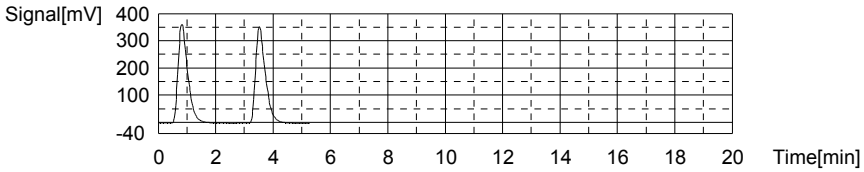
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:22.67mg/L TC:22.39mg/L IC:-0.2799mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	845.7	22.51mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	01/26/2012 04:44:10 PM
2	836.7	22.27mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	01/26/2012 04:49:01 PM

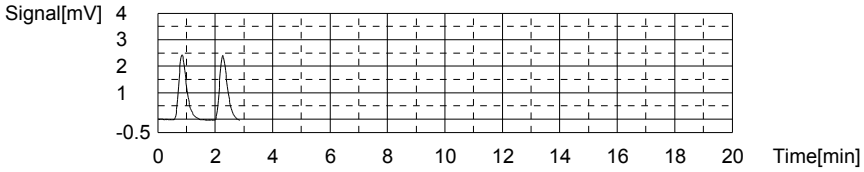
Mean Area 841.2
Mean Conc. 22.39mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	4.543	-0.2807mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	01/26/2012 04:53:17 PM
2	4.588	-0.2792mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	01/26/2012 04:57:20 PM

Mean Area 4.566
Mean Conc. -0.2799mg/L



Sample

Sample Name: <Untitled>
Sample ID: <Untitled>
Origin: TOC-12-06-2011A.met
Status Completed
Chk. Result

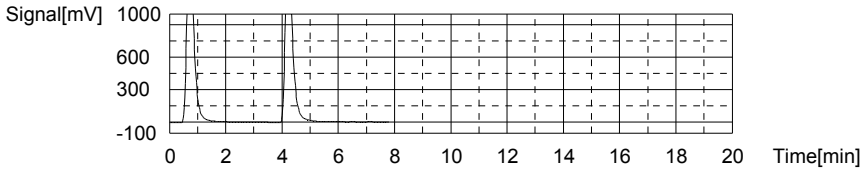
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:31.86mg/L TC:71.34mg/L IC:39.49mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2663	70.88mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	01/26/2012 05:06:16 PM
2	2698	71.81mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	01/26/2012 05:13:39 PM

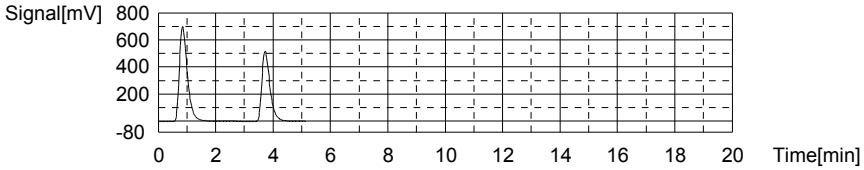
Mean Area 2681
Mean Conc. 71.34mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1360	45.33mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	01/26/2012 05:19:56 PM
2	1013	33.65mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	01/26/2012 05:25:20 PM

Mean Area 1187
Mean Conc. 39.49mg/L



Sample

Sample Name: <Untitled>
Sample ID: <Untitled>
Origin: TOC-12-06-2011A.met
Status Completed
Chk. Result

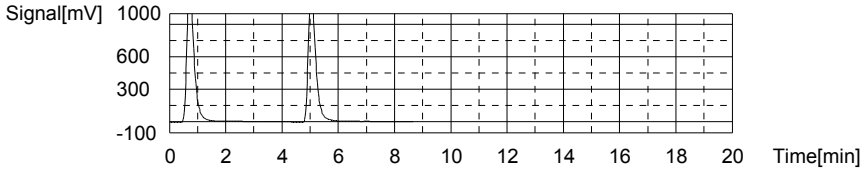
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:10.58mg/L TC:59.96mg/L IC:49.38mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2257	60.07mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	01/26/2012 05:35:05 PM
2	2249	59.86mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	01/26/2012 05:41:49 PM

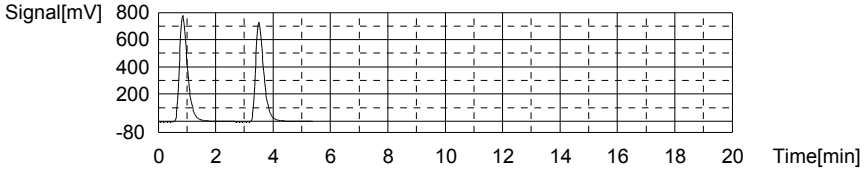
Mean Area 2253
Mean Conc. 59.96mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1522	50.78mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	01/26/2012 05:48:01 PM
2	1439	47.98mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	01/26/2012 05:53:57 PM

Mean Area 1481
Mean Conc. 49.38mg/L



Sample

Sample Name: <Untitled>
Sample ID: <Untitled>
Origin: TOC-12-06-2011A.met
Status Completed
Chk. Result

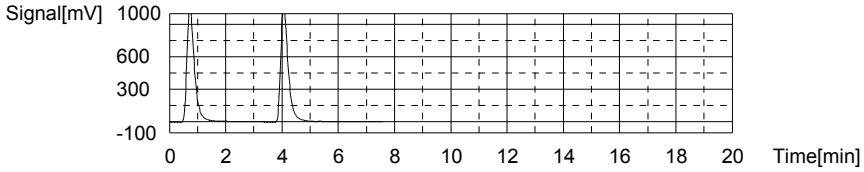
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:12.69mg/L TC:53.28mg/L IC:40.60mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1992	53.02mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	01/26/2012 06:02:43 PM
2	2012	53.55mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	01/26/2012 06:10:08 PM

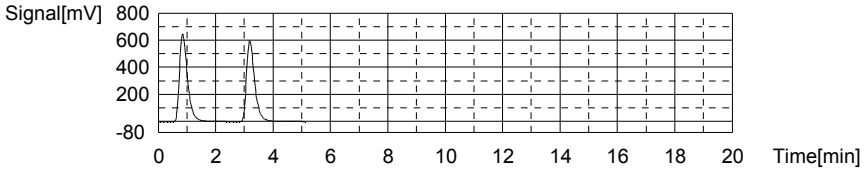
Mean Area 2002
Mean Conc. 53.28mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1260	41.96mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	01/26/2012 06:15:52 PM
2	1179	39.24mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	01/26/2012 06:21:45 PM

Mean Area 1220
Mean Conc. 40.60mg/L



Sample

Sample Name: <Untitled>
Sample ID: <Untitled>
Origin: TOC-12-06-2011A.met
Status Completed
Chk. Result

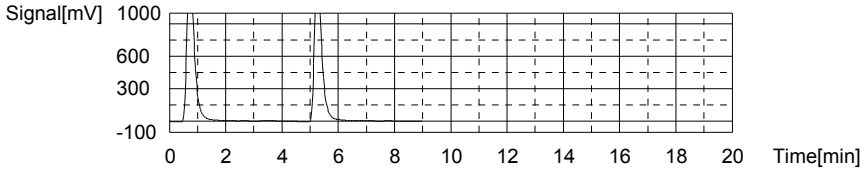
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:34.08mg/L TC:68.07mg/L IC:33.99mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2617	69.65mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	01/26/2012 06:31:43 PM
2	2498	66.49mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	01/26/2012 06:38:28 PM

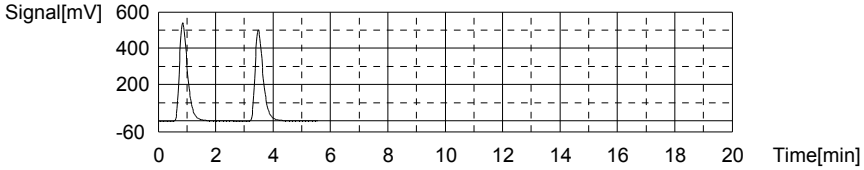
Mean Area 2558
Mean Conc. 68.07mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1060	35.23mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	01/26/2012 06:44:33 PM
2	986.3	32.75mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	01/26/2012 06:50:28 PM

Mean Area 1023
Mean Conc. 33.99mg/L



Sample

Sample Name: L12010604-02
Sample ID: <Untitled>
Origin: TOC-12-06-2011A.met
Status Completed
Chk. Result

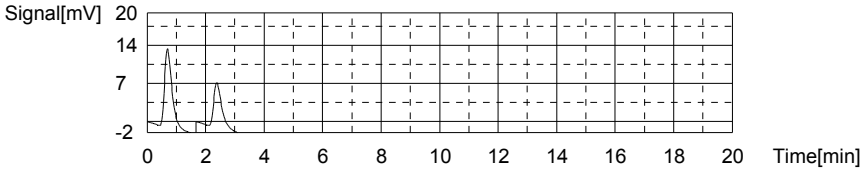
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.6255mg/L TC:0.5285mg/L IC:-0.09698mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	24.73	0.6557mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	01/26/2012 06:57:34 PM
2	15.17	0.4013mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	01/26/2012 07:01:38 PM

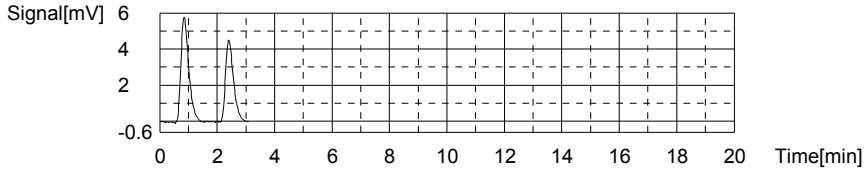
Mean Area 19.95
Mean Conc. 0.5285mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	11.23	-0.05571mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	01/26/2012 07:06:12 PM
2	8.777	-0.1382mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	01/26/2012 07:10:22 PM

Mean Area 10.00
Mean Conc. -0.09698mg/L



Sample

Sample Name: <Untitled>
Sample ID: <Untitled>
Origin: TOC-12-06-2011A.met
Status Completed
Chk. Result

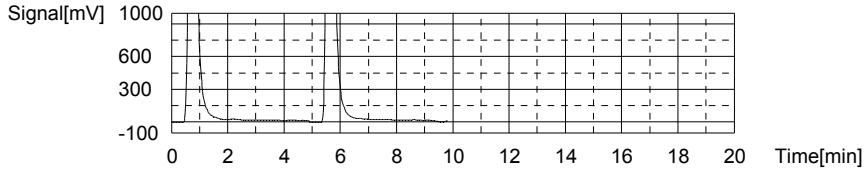
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:-12.06mg/L TC:109.4mg/L IC:121.5mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	4096	109.0mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	01/26/2012 07:20:41 PM
2	4128	109.9mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	01/26/2012 07:29:14 PM

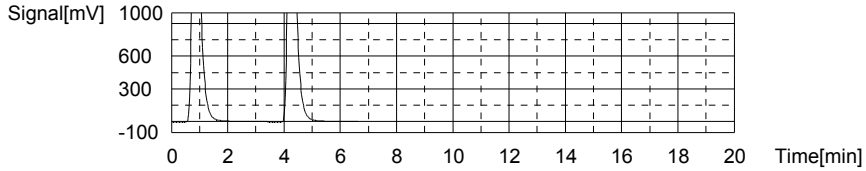
Mean Area 4112
Mean Conc. 109.4mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	3635	121.9mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	01/26/2012 07:36:38 PM
2	3613	121.1mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	01/26/2012 07:43:33 PM

Mean Area 3624
Mean Conc. 121.5mg/L



Sample

Sample Name: L12010605-02
Sample ID: <Untitled>
Origin: TOC-12-06-2011A.met
Status Completed
Chk. Result

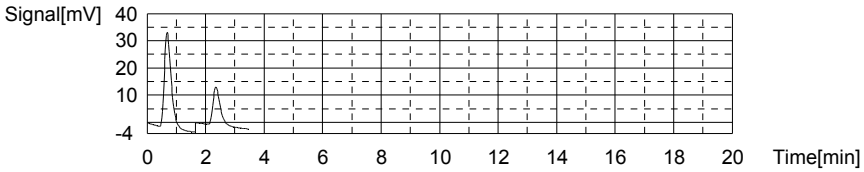
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.7997mg/L TC:1.057mg/L IC:0.2577mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	55.99	1.488mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	01/26/2012 07:50:38 PM
2	23.65	0.6270mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	01/26/2012 07:54:43 PM

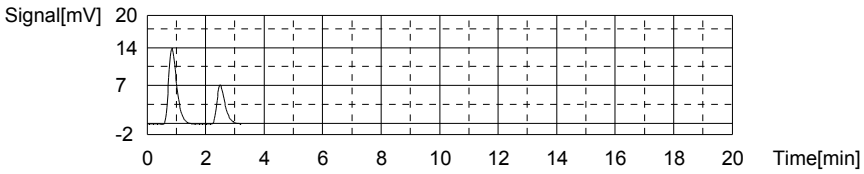
Mean Area 39.82
Mean Conc. 1.057mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	27.26	0.4836mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	01/26/2012 07:59:43 PM
2	13.83	0.03177mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	01/26/2012 08:03:58 PM

Mean Area 20.55
Mean Conc. 0.2577mg/L



Sample

Sample Name: L12010688-01
Sample ID: <Untitled>
Origin: TOC-12-06-2011A.met
Status Completed
Chk. Result

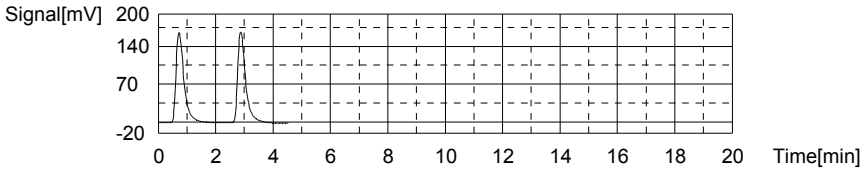
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.703mg/L TC:8.599mg/L IC:5.895mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	322.4	8.579mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	01/26/2012 08:11:33 PM
2	323.9	8.619mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	01/26/2012 08:16:11 PM

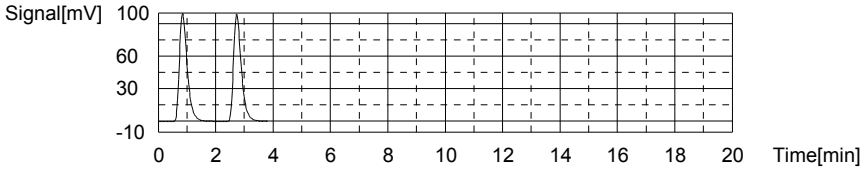
Mean Area 323.2
Mean Conc. 8.599mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	188.7	5.915mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	01/26/2012 08:21:02 PM
2	187.5	5.875mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	01/26/2012 08:25:42 PM

Mean Area 188.1
Mean Conc. 5.895mg/L



Sample

Sample Name: CCV
Sample ID:
Origin: TOC-12-06-2011.met
Status Completed
Chk. Result

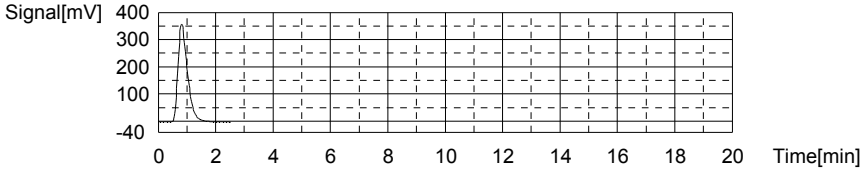
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:22.01mg/L TC:21.84mg/L IC:-0.1711mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	820.7	21.84mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	01/26/2012 08:33:40 PM

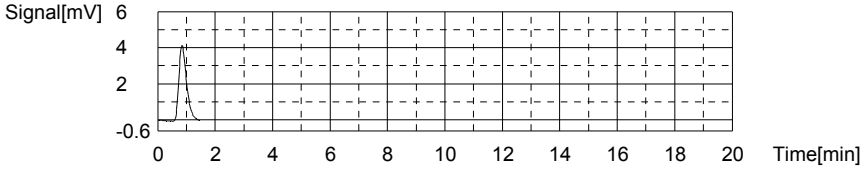
Mean Area 820.7
Mean Conc. 21.84mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.801	-0.1711mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	01/26/2012 08:38:00 PM

Mean Area 7.801
Mean Conc. -0.1711mg/L



Sample

Sample Name: CCB
Sample ID:
Origin: TOC-12-06-2011.met
Status Completed
Chk. Result

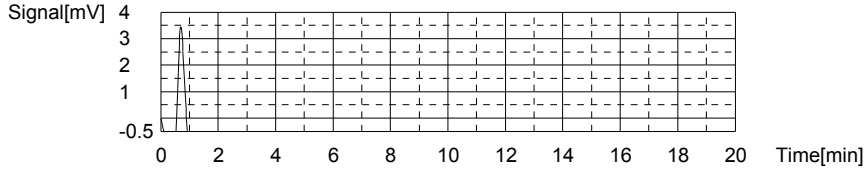
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.4060mg/L TC:0.2268mg/L IC:-0.1792mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.613	0.2268mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	01/26/2012 08:43:24 PM

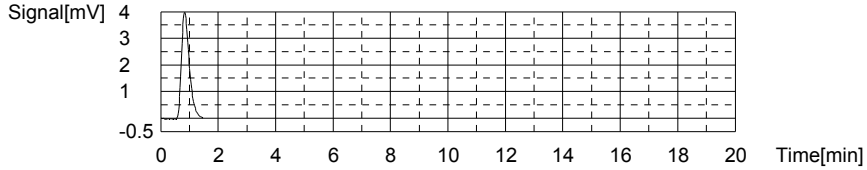
Mean Area 8.613
Mean Conc. 0.2268mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.559	-0.1792mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47_	01/26/2012 08:47:16 PM

Mean Area 7.559
Mean Conc. -0.1792mg/L



Sample

Sample Name: <Untitled>
Sample ID: <Untitled>
Origin: TOC-12-06-2011A.met
Status Completed
Chk. Result

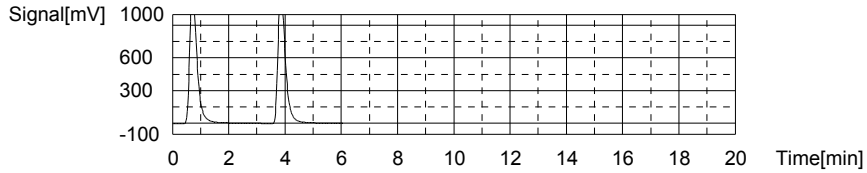
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:9.376mg/L TC:59.19mg/L IC:49.82mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2222	59.14mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	01/26/2012 08:55:51 PM
2	2226	59.25mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	01/26/2012 09:01:02 PM

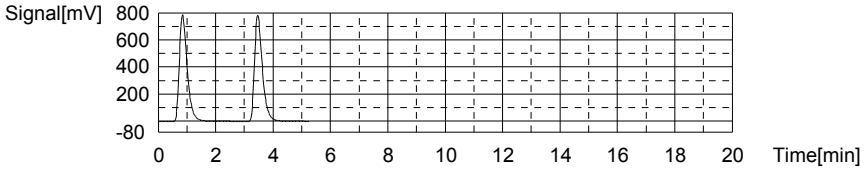
Mean Area 2224
Mean Conc. 59.19mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1496	49.90mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	01/26/2012 09:07:02 PM
2	1491	49.73mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	01/26/2012 09:12:42 PM

Mean Area 1494
Mean Conc. 49.82mg/L



Sample

Sample Name: L12010688-03
Sample ID: <Untitled>
Origin: TOC-12-06-2011A.met
Status Completed
Chk. Result

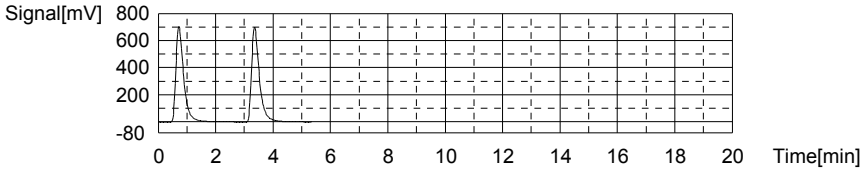
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:7.965mg/L TC:35.44mg/L IC:27.47mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1327	35.32mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	01/26/2012 09:20:47 PM
2	1336	35.56mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	01/26/2012 09:26:41 PM

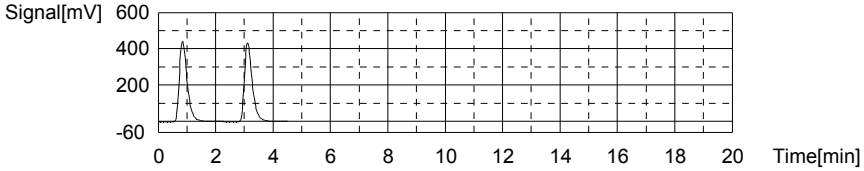
Mean Area 1332
Mean Conc. 35.44mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	838.8	27.79mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	01/26/2012 09:32:17 PM
2	820.0	27.16mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	01/26/2012 09:37:27 PM

Mean Area 829.4
Mean Conc. 27.47mg/L



Sample

Sample Name: L12010688-04
Sample ID: <Untitled>
Origin: TOC-12-06-2011A.met
Status Completed
Chk. Result

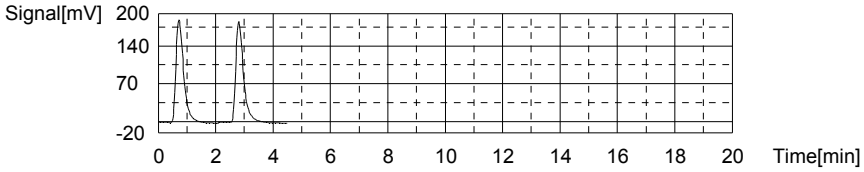
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.504mg/L TC:9.456mg/L IC:6.952mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	357.1	9.502mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	01/26/2012 09:44:58 PM
2	353.6	9.409mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	01/26/2012 09:49:46 PM

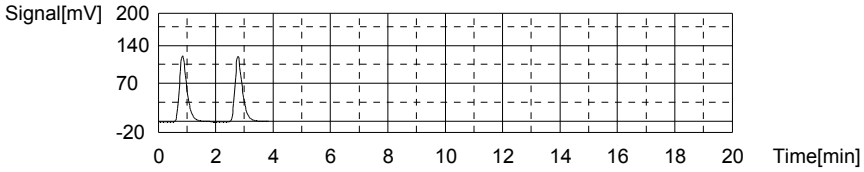
Mean Area 355.4
Mean Conc. 9.456mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	220.3	6.979mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	01/26/2012 09:54:48 PM
2	218.7	6.925mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	01/26/2012 09:59:28 PM

Mean Area 219.5
Mean Conc. 6.952mg/L



Sample

Sample Name: L12010651-01
Sample ID: <Untitled>
Origin: TOC-12-06-2011A.met
Status Completed
Chk. Result

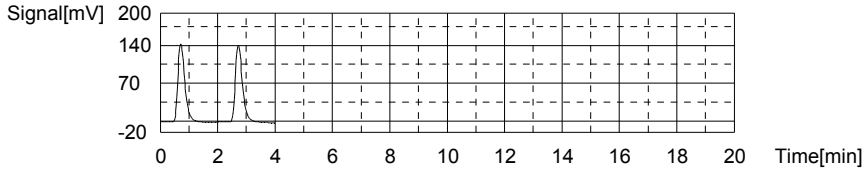
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.062mg/L TC:6.533mg/L IC:5.471mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	245.0	6.519mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	01/26/2012 10:06:53 PM
2	246.1	6.548mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	01/26/2012 10:11:09 PM

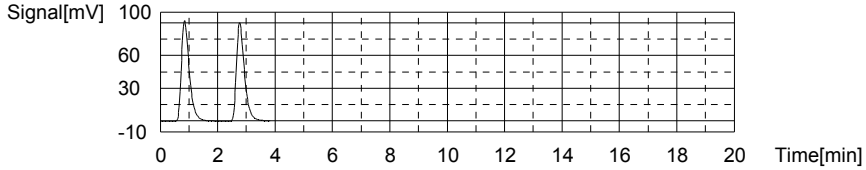
Mean Area 245.6
Mean Conc. 6.533mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	176.4	5.502mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	01/26/2012 10:16:02 PM
2	174.6	5.441mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	01/26/2012 10:20:42 PM

Mean Area 175.5
Mean Conc. 5.471mg/L



Sample

Sample Name: L12010651-02 MS
Sample ID: <Untitled>
Origin: TOC-12-06-2011A.met
Status Completed
Chk. Result

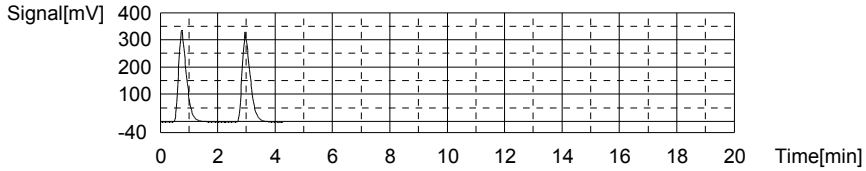
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:9.364mg/L TC:16.90mg/L IC:7.541mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	638.7	17.00mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	01/26/2012 10:28:22 PM
2	631.7	16.81mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	01/26/2012 10:32:40 PM

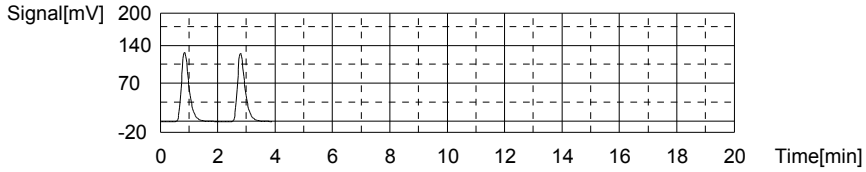
Mean Area 635.2
Mean Conc. 16.90mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	238.6	7.594mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	01/26/2012 10:37:37 PM
2	235.4	7.487mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	01/26/2012 10:42:20 PM

Mean Area 237.0
Mean Conc. 7.541mg/L



Sample

Sample Name: L12010651-03 MSD
Sample ID: <Untitled>
Origin: TOC-12-06-2011A.met
Status Completed
Chk. Result

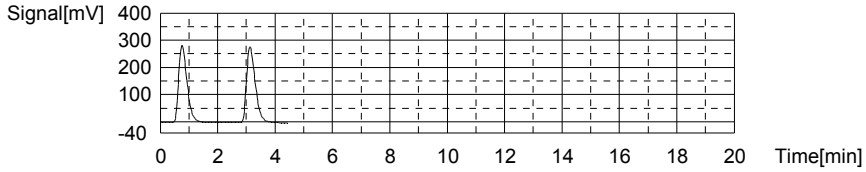
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:10.25mg/L TC:15.39mg/L IC:5.145mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	574.5	15.29mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	01/26/2012 10:50:09 PM
2	582.2	15.49mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	01/26/2012 10:54:33 PM

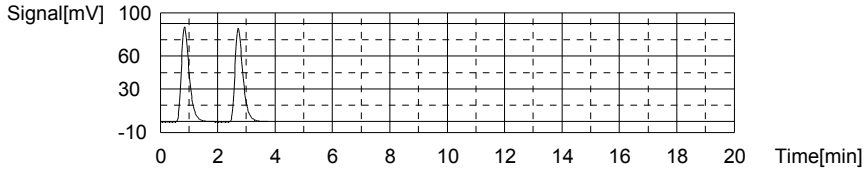
Mean Area 578.4
Mean Conc. 15.39mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	166.2	5.158mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	01/26/2012 10:59:21 PM
2	165.4	5.132mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	01/26/2012 11:04:02 PM

Mean Area 165.8
Mean Conc. 5.145mg/L



Sample

Sample Name: L12010652-01
Sample ID: <Untitled>
Origin: TOC-12-06-2011A.met
Status Completed
Chk. Result

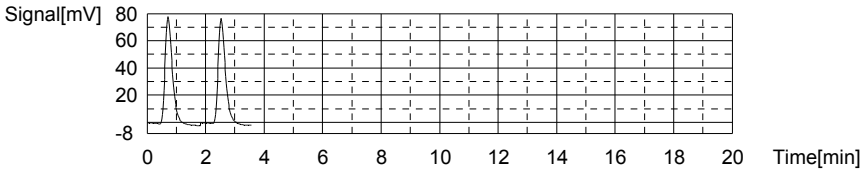
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.8001mg/L TC:3.596mg/L IC:2.796mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	136.6	3.633mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	01/26/2012 11:11:16 PM
2	133.8	3.559mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	01/26/2012 11:15:16 PM

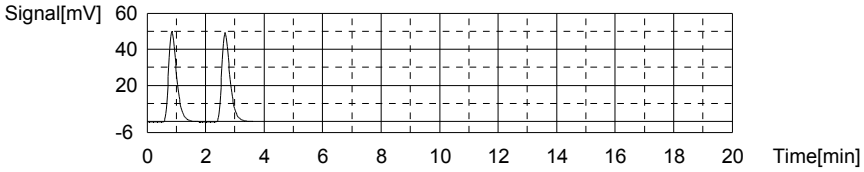
Mean Area 135.2
Mean Conc. 3.596mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	96.32	2.807mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	01/26/2012 11:20:02 PM
2	95.65	2.785mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	01/26/2012 11:24:33 PM

Mean Area 95.99
Mean Conc. 2.796mg/L



Sample

Sample Name: L12010652-02
Sample ID: <Untitled>
Origin: TOC-12-06-2011A.met
Status Completed
Chk. Result

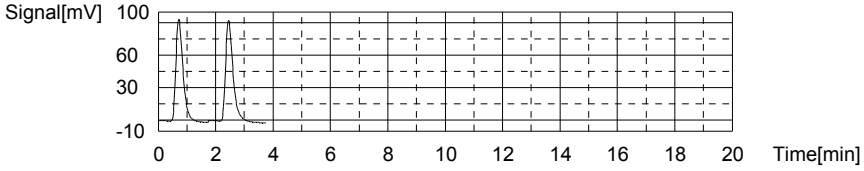
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.9715mg/L TC:4.372mg/L IC:3.400mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	162.2	4.315mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	01/26/2012 11:31:44 PM
2	166.5	4.429mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	01/26/2012 11:36:06 PM

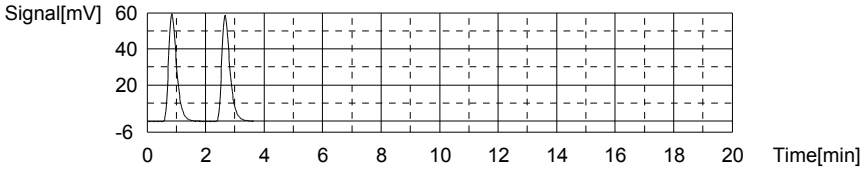
Mean Area 164.4
Mean Conc. 4.372mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	114.5	3.419mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	01/26/2012 11:40:54 PM
2	113.4	3.382mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	01/26/2012 11:45:25 PM

Mean Area 114.0
Mean Conc. 3.400mg/L



Sample

Sample Name: L12010684-01
Sample ID: <Untitled>
Origin: TOC-12-06-2011A.met
Status Completed
Chk. Result

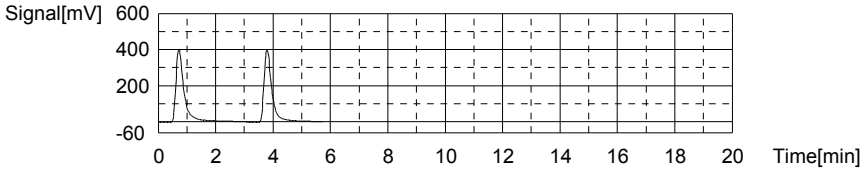
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:4.910mg/L TC:20.88mg/L IC:15.97mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	797.5	21.22mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	01/26/2012 11:53:56 PM
2	771.8	20.54mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	01/27/2012 12:00:05 AM

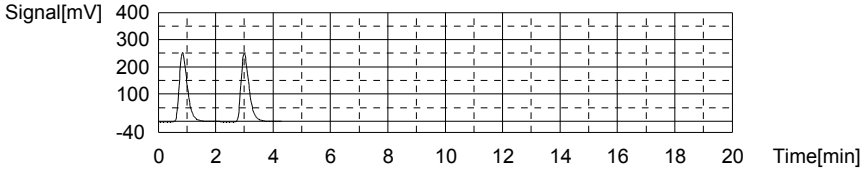
Mean Area 784.7
Mean Conc. 20.88mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	489.9	16.05mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	01/27/2012 12:05:16 AM
2	485.3	15.89mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	01/27/2012 12:10:16 AM

Mean Area 487.6
Mean Conc. 15.97mg/L



Sample

Sample Name: L12010684-02
Sample ID: <Untitled>
Origin: TOC-12-06-2011A.met
Status Completed
Chk. Result

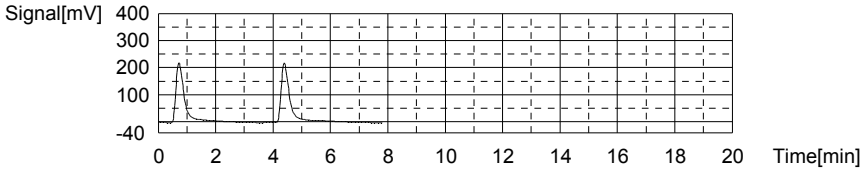
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:4.194mg/L TC:12.85mg/L IC:8.651mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	486.2	12.94mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	01/27/2012 12:19:21 AM
2	479.2	12.75mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	01/27/2012 12:25:45 AM

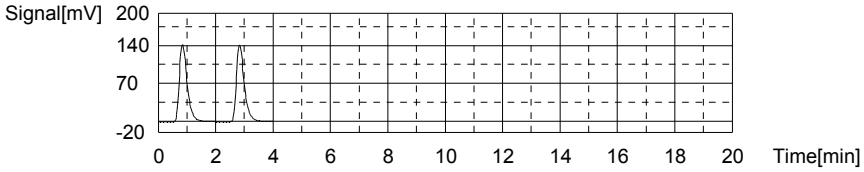
Mean Area 482.7
Mean Conc. 12.85mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	269.5	8.634mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	01/27/2012 12:30:44 AM
2	270.5	8.668mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	01/27/2012 12:35:30 AM

Mean Area 270.0
Mean Conc. 8.651mg/L



Sample

Sample Name: CCV
Sample ID:
Origin: TOC-12-06-2011.met
Status Completed
Chk. Result

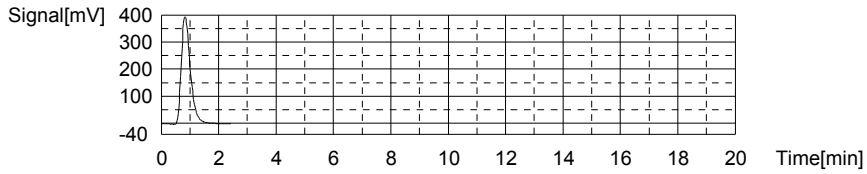
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:23.52mg/L TC:23.33mg/L IC:-0.1861mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	876.6	23.33mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	01/27/2012 12:43:21 AM

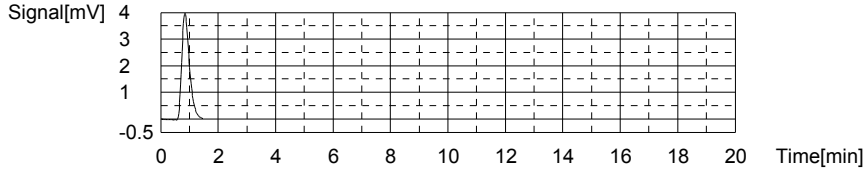
Mean Area 876.6
Mean Conc. 23.33mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.356	-0.1861mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	01/27/2012 12:47:39 AM

Mean Area 7.356
Mean Conc. -0.1861mg/L



Sample

Sample Name: CCB
Sample ID:
Origin: TOC-12-06-2011.met
Status Completed
Chk. Result

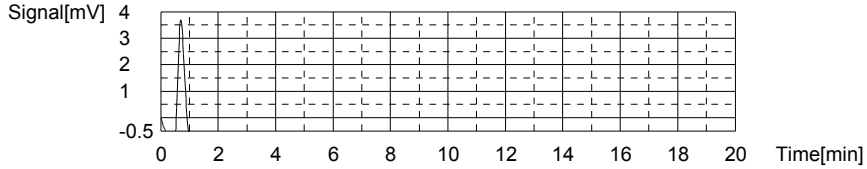
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.4225mg/L TC:0.2277mg/L IC:-0.1948mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.648	0.2277mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	01/27/2012 12:53:09 AM

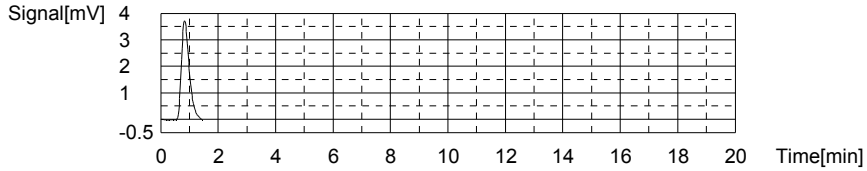
Mean Area 8.648
Mean Conc. 0.2277mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.095	-0.1948mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	01/27/2012 12:57:01 AM

Mean Area 7.095
Mean Conc. -0.1948mg/L



Sample

Sample Name: L12010686-01
Sample ID: <Untitled>
Origin: TOC-12-06-2011A.met
Status Completed
Chk. Result

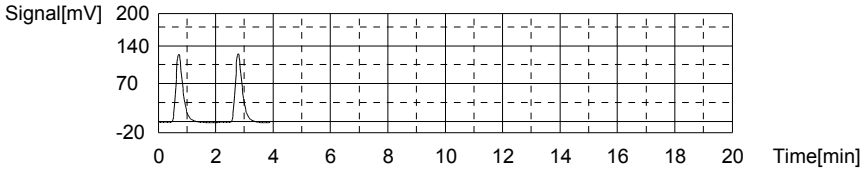
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.508mg/L TC:5.800mg/L IC:4.292mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	216.8	5.768mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	01/27/2012 01:04:31 AM
2	219.2	5.832mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	01/27/2012 01:08:35 AM

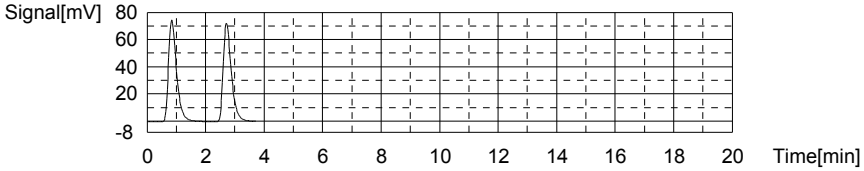
Mean Area 218.0
Mean Conc. 5.800mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	142.1	4.348mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	01/27/2012 01:13:23 AM
2	138.8	4.237mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	01/27/2012 01:17:55 AM

Mean Area 140.4
Mean Conc. 4.292mg/L



Sample

Sample Name: L12010686-02
Sample ID: <Untitled>
Origin: TOC-12-06-2011A.met
Status Completed
Chk. Result

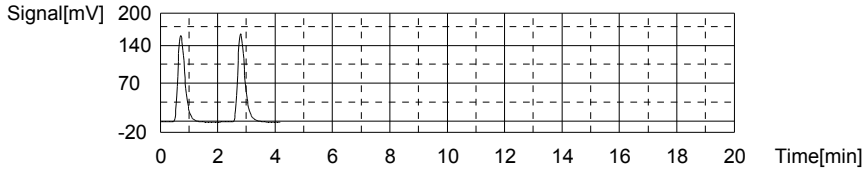
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.323mg/L TC:7.537mg/L IC:6.213mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	276.0	7.344mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	01/27/2012 01:25:27 AM
2	290.5	7.730mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	01/27/2012 01:29:50 AM

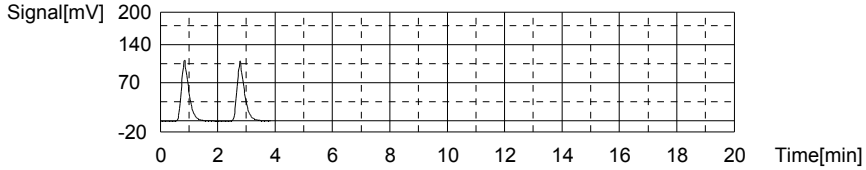
Mean Area 283.3
Mean Conc. 7.537mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	199.1	6.265mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	01/27/2012 01:34:43 AM
2	196.0	6.161mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	01/27/2012 01:39:21 AM

Mean Area 197.6
Mean Conc. 6.213mg/L



Sample

Sample Name: L12010686-03
Sample ID: <Untitled>
Origin: TOC-12-06-2011A.met
Status Completed
Chk. Result

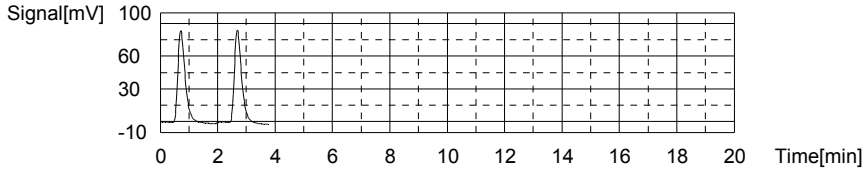
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.9954mg/L TC:3.982mg/L IC:2.987mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	150.6	4.006mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	01/27/2012 01:46:46 AM
2	148.8	3.958mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	01/27/2012 01:50:52 AM

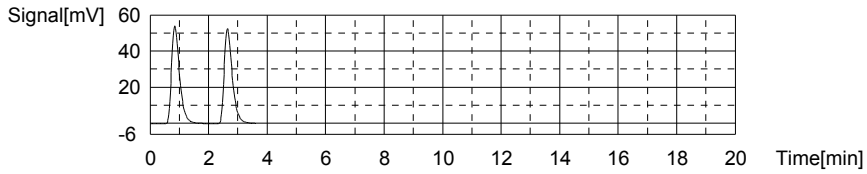
Mean Area 149.7
Mean Conc. 3.982mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	102.7	3.022mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	01/27/2012 01:55:36 AM
2	100.6	2.951mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	01/27/2012 02:00:08 AM

Mean Area 101.7
Mean Conc. 2.987mg/L



Sample

Sample Name: L12010693-01
Sample ID: <Untitled>
Origin: TOC-12-06-2011A.met
Status Completed
Chk. Result

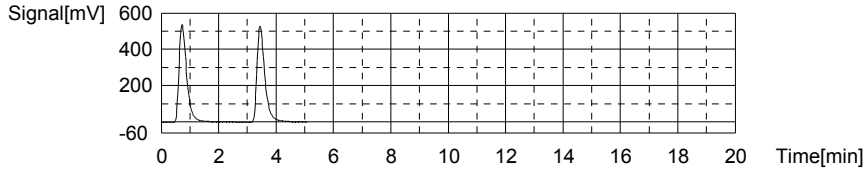
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:5.099mg/L TC:26.72mg/L IC:21.62mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1002	26.67mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	01/27/2012 02:08:18 AM
2	1006	26.77mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	01/27/2012 02:13:47 AM

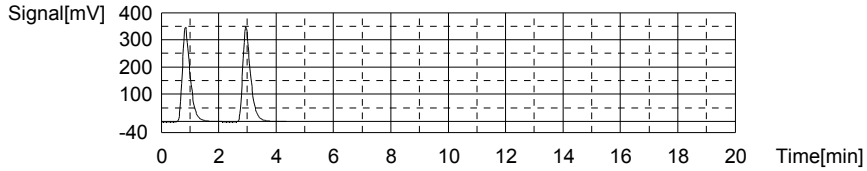
Mean Area 1004
Mean Conc. 26.72mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	651.2	21.48mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	01/27/2012 02:19:05 AM
2	659.8	21.77mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	01/27/2012 02:24:16 AM

Mean Area 655.5
Mean Conc. 21.62mg/L



Sample

Sample Name: L12010693-02
Sample ID: <Untitled>
Origin: TOC-12-06-2011A.met
Status Completed
Chk. Result

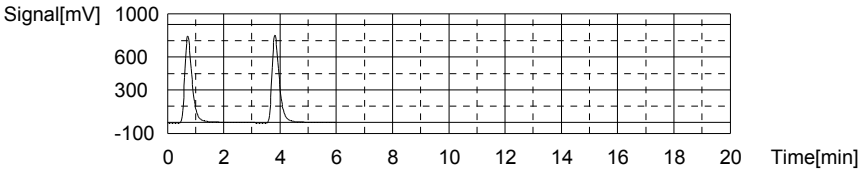
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:6.335mg/L TC:38.79mg/L IC:32.46mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1456	38.75mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	01/27/2012 02:32:49 AM
2	1459	38.83mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	01/27/2012 02:38:46 AM

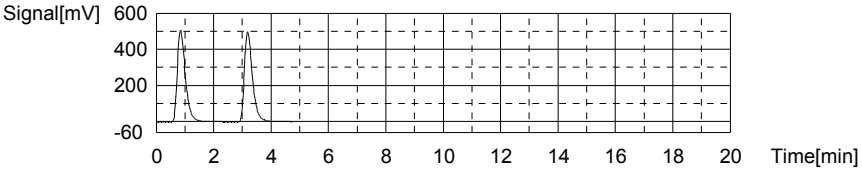
Mean Area 1458
Mean Conc. 38.79mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	983.9	32.67mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	01/27/2012 02:44:22 AM
2	971.1	32.24mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	01/27/2012 02:49:46 AM

Mean Area 977.5
Mean Conc. 32.46mg/L



Sample

Sample Name: L12010693-03
Sample ID: <Untitled>
Origin: TOC-12-06-2011A.met
Status Completed
Chk. Result

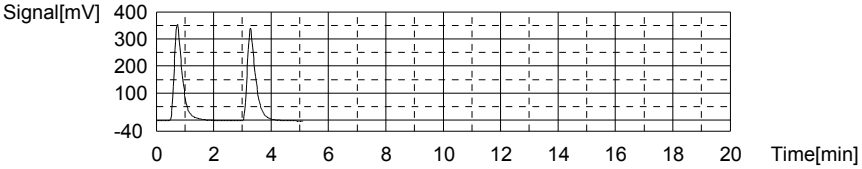
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:6.408mg/L TC:18.41mg/L IC:12.00mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	700.2	18.63mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	01/27/2012 02:57:46 AM
2	683.5	18.19mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	01/27/2012 03:02:35 AM

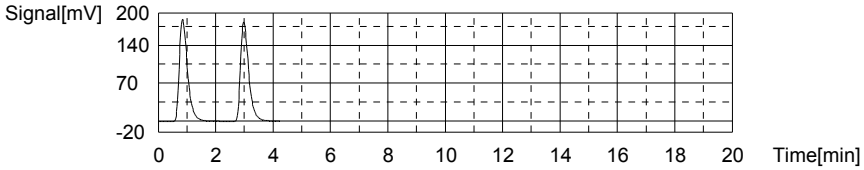
Mean Area 691.9
Mean Conc. 18.41mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	375.9	12.21mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	01/27/2012 03:07:50 AM
2	363.4	11.79mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	01/27/2012 03:12:43 AM

Mean Area 369.7
Mean Conc. 12.00mg/L



Sample

Sample Name: L12010698-01
Sample ID: <Untitled>
Origin: TOC-12-06-2011A.met
Status Completed
Chk. Result

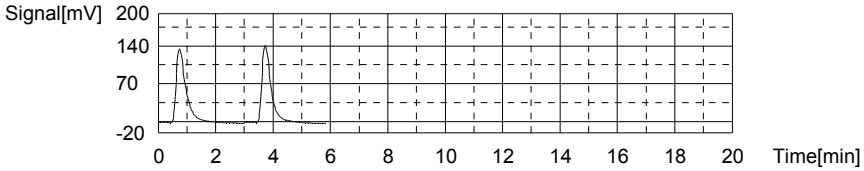
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:4.391mg/L TC:8.587mg/L IC:4.196mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	327.7	8.720mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	01/27/2012 03:21:10 AM
2	317.7	8.454mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	01/27/2012 03:26:18 AM

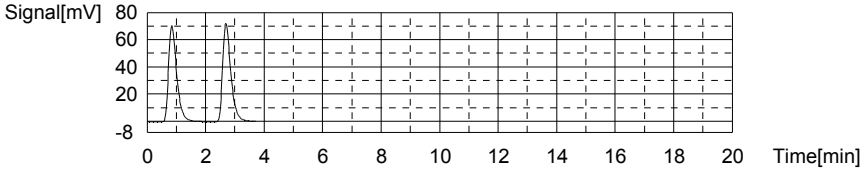
Mean Area 322.7
Mean Conc. 8.587mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	135.9	4.139mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	01/27/2012 03:31:07 AM
2	139.3	4.253mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	01/27/2012 03:35:42 AM

Mean Area 137.6
Mean Conc. 4.196mg/L



Sample

Sample Name: CCV
Sample ID:
Origin: TOC-12-06-2011.met
Status Completed
Chk. Result

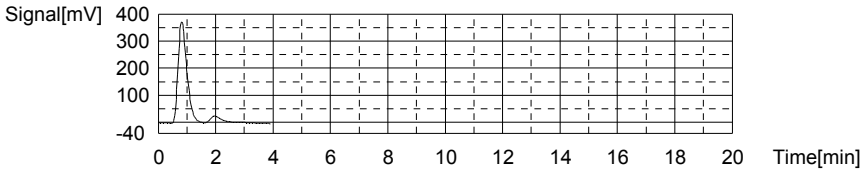
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:23.96mg/L TC:23.76mg/L IC:-0.1999mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	892.7	23.76mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	01/27/2012 03:45:04 AM

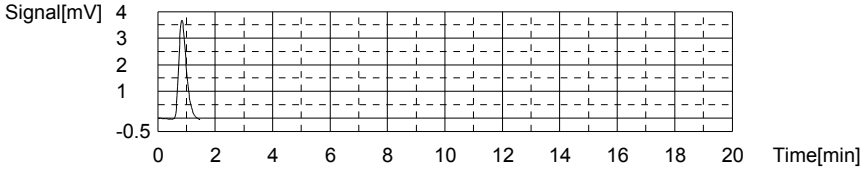
Mean Area 892.7
Mean Conc. 23.76mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	6.945	-0.1999mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	01/27/2012 03:49:24 AM

Mean Area 6.945
Mean Conc. -0.1999mg/L



Sample

Sample Name: CCB
Sample ID:
Origin: TOC-12-06-2011.met
Status Completed
Chk. Result

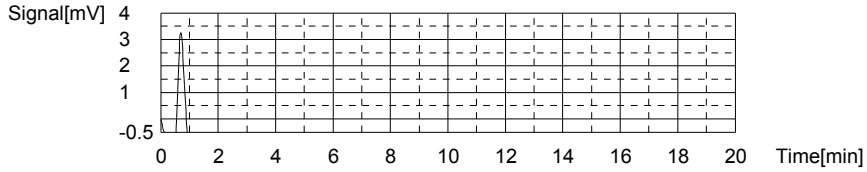
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.4076mg/L TC:0.2142mg/L IC:-0.1935mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.140	0.2142mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	01/27/2012 03:54:56 AM

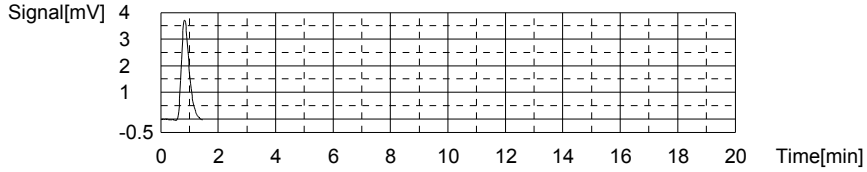
Mean Area 8.140
Mean Conc. 0.2142mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.136	-0.1935mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	01/27/2012 03:58:51 AM

Mean Area 7.136
Mean Conc. -0.1935mg/L



Sample

Sample Name: CCV
Sample ID:
Origin: TOC-12-06-2011.met
Status Completed
Chk. Result

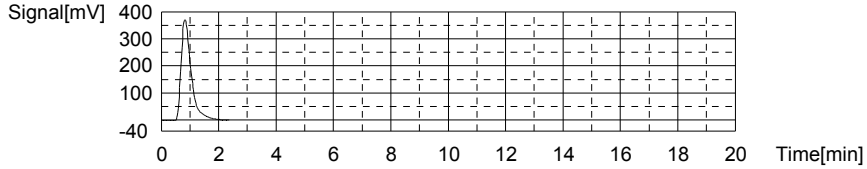
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:24.16mg/L TC:23.93mg/L IC:-0.2216mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	899.3	23.93mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	01/27/2012 07:48:15 AM

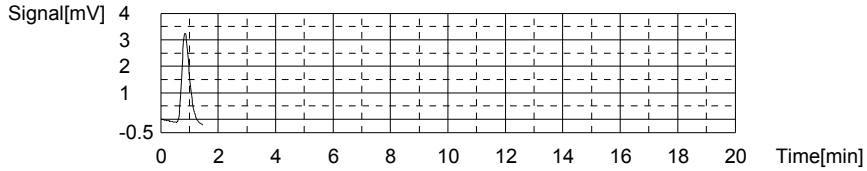
Mean Area 899.3
Mean Conc. 23.93mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	6.299	-0.2216mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	01/27/2012 07:52:35 AM

Mean Area 6.299
Mean Conc. -0.2216mg/L



Sample

Sample Name: CCB
Sample ID:
Origin: TOC-12-06-2011.met
Status Completed
Chk. Result

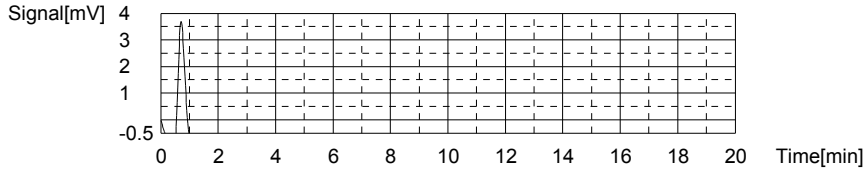
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.4384mg/L TC:0.2410mg/L IC:-0.1973mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.149	0.2410mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	01/27/2012 07:58:06 AM

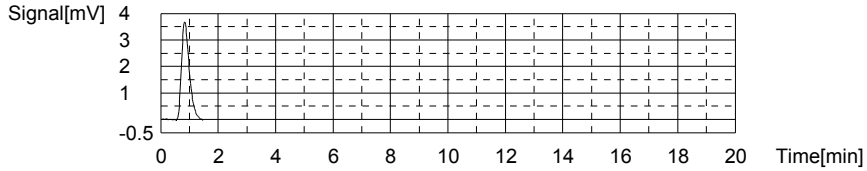
Mean Area 9.149
Mean Conc. 0.2410mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.021	-0.1973mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	01/27/2012 08:01:59 AM

Mean Area 7.021
Mean Conc. -0.1973mg/L



Sample

Sample Name: L12010604-01 (10)
Sample ID: <Untitled>
Origin: TOC-12-06-2011A.met
Status Completed
Chk. Result

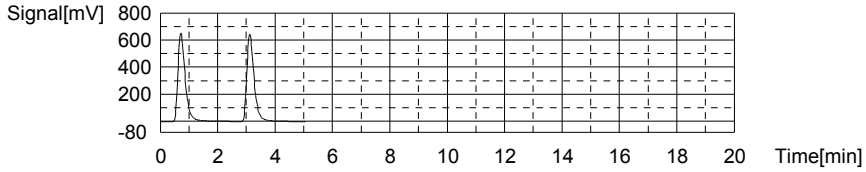
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.895mg/L TC:30.41mg/L IC:26.51mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1149	30.58mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	01/27/2012 08:09:58 AM
2	1136	30.23mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	01/27/2012 08:15:47 AM

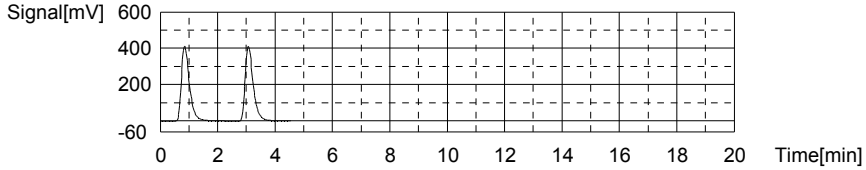
Mean Area 1143
Mean Conc. 30.41mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	798.1	26.42mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	01/27/2012 08:21:07 AM
2	803.6	26.60mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	01/27/2012 08:26:27 AM

Mean Area 800.9
Mean Conc. 26.51mg/L



Sample

Sample Name: WG388050-05 (10) DUP
Sample ID: <Untitled>
Origin: TOC-12-06-2011A.met
Status Completed
Chk. Result

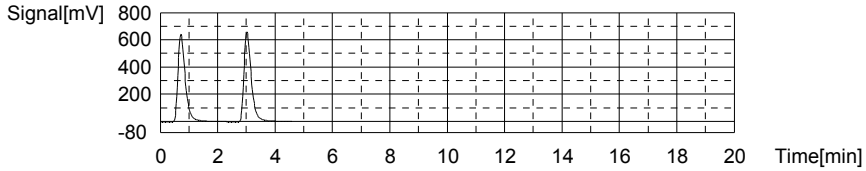
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:4.153mg/L TC:30.77mg/L IC:26.61mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1138	30.29mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	01/27/2012 08:34:13 AM
2	1174	31.25mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	01/27/2012 08:39:35 AM

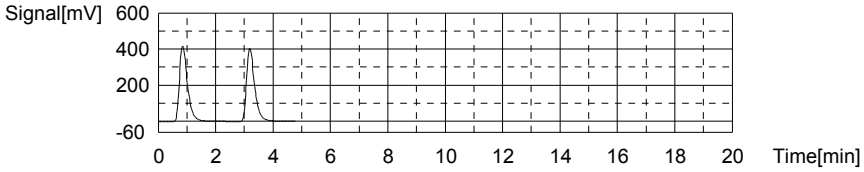
Mean Area 1156
Mean Conc. 30.77mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	813.6	26.94mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	01/27/2012 08:45:03 AM
2	794.1	26.28mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	01/27/2012 08:50:28 AM

Mean Area 803.9
Mean Conc. 26.61mg/L



Sample

Sample Name: L12010604-04 (10) MS
Sample ID: <Untitled>
Origin: TOC-12-06-2011A.met
Status Completed
Chk. Result

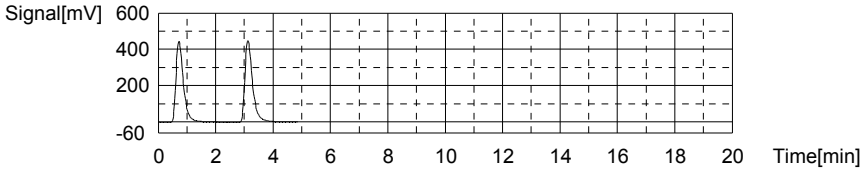
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:4.955mg/L TC:21.86mg/L IC:16.90mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	806.1	21.45mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	01/27/2012 08:58:20 AM
2	836.6	22.26mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	01/27/2012 09:04:04 AM

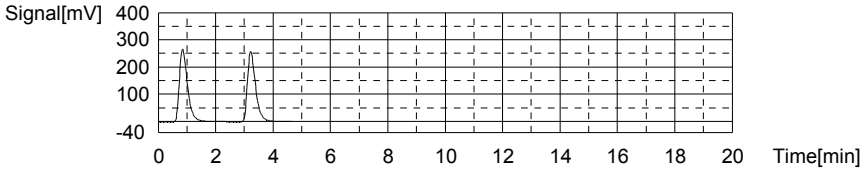
Mean Area 821.4
Mean Conc. 21.86mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	524.4	17.21mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	01/27/2012 09:09:34 AM
2	506.2	16.60mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	01/27/2012 09:14:44 AM

Mean Area 515.3
Mean Conc. 16.90mg/L



Sample

Sample Name: L12010604-05 (10) MSD
Sample ID: <Untitled>
Origin: TOC-12-06-2011A.met
Status Completed
Chk. Result

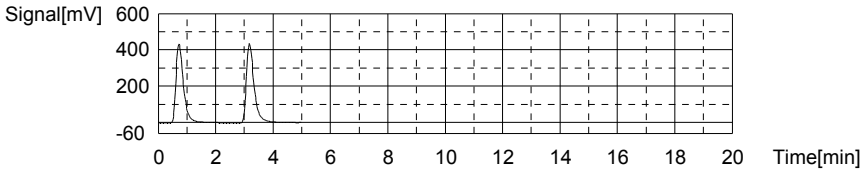
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:4.557mg/L TC:21.30mg/L IC:16.74mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	789.2	21.00mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	01/27/2012 09:22:40 AM
2	811.2	21.59mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	01/27/2012 09:28:19 AM

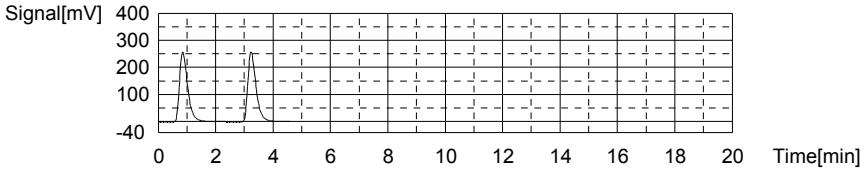
Mean Area 800.2
Mean Conc. 21.30mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	511.9	16.79mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	01/27/2012 09:33:48 AM
2	508.9	16.69mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	01/27/2012 09:38:50 AM

Mean Area 510.4
Mean Conc. 16.74mg/L



Sample

Sample Name: L12010605-01 (5)
Sample ID: <Untitled>
Origin: TOC-12-06-2011A.met
Status Completed
Chk. Result

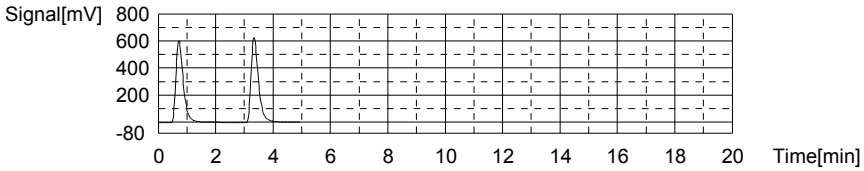
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.723mg/L TC:29.36mg/L IC:25.63mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1078	28.69mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	01/27/2012 09:46:55 AM
2	1128	30.02mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	01/27/2012 09:52:20 AM

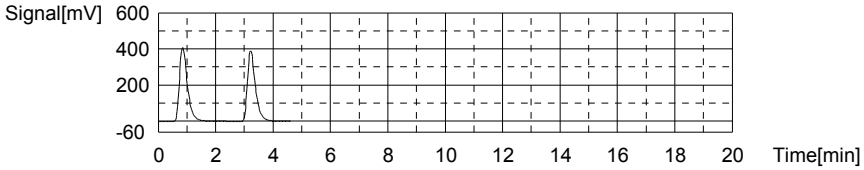
Mean Area 1103
Mean Conc. 29.36mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	792.3	26.22mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	01/27/2012 09:57:52 AM
2	757.1	25.04mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	01/27/2012 10:03:01 AM

Mean Area 774.7
Mean Conc. 25.63mg/L



Sample

Sample Name: <Untitled>
Sample ID: <Untitled>
Origin: TOC-12-06-2011A.met
Status Completed
Chk. Result

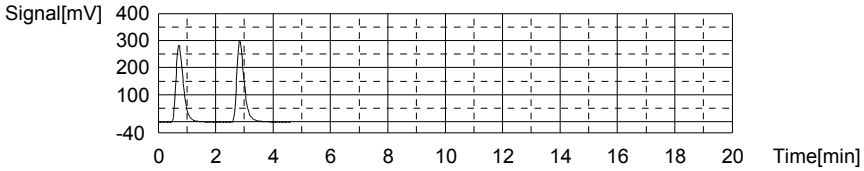
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.170mg/L TC:14.01mg/L IC:11.84mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	507.2	13.50mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	01/27/2012 10:10:36 AM
2	545.9	14.53mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	01/27/2012 10:16:09 AM

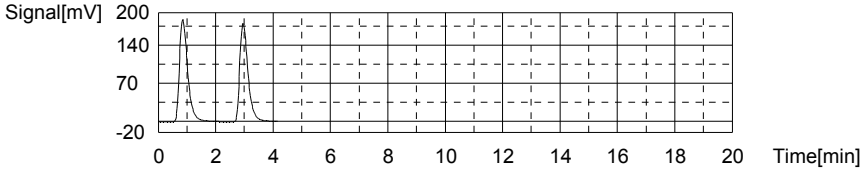
Mean Area 526.5
Mean Conc. 14.01mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	371.5	12.07mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	01/27/2012 10:21:20 AM
2	358.2	11.62mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	01/27/2012 10:26:16 AM

Mean Area 364.9
Mean Conc. 11.84mg/L



Sample

Sample Name: L12010688-02 (2)
Sample ID: <Untitled>
Origin: TOC-12-06-2011A.met
Status Completed
Chk. Result

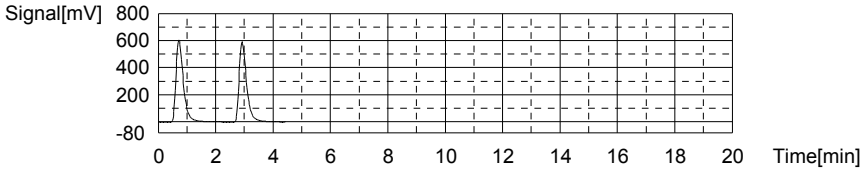
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:4.398mg/L TC:28.72mg/L IC:24.32mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1083	28.82mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	01/27/2012 10:33:56 AM
2	1075	28.61mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	01/27/2012 10:39:22 AM

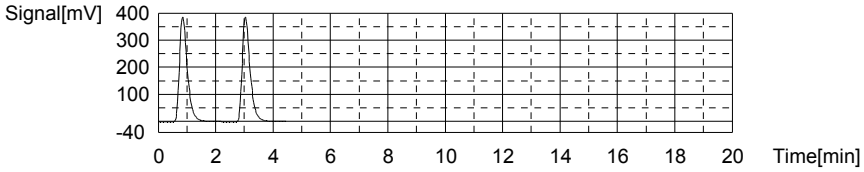
Mean Area 1079
Mean Conc. 28.72mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	735.3	24.31mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	01/27/2012 10:44:46 AM
2	736.0	24.33mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	01/27/2012 10:50:00 AM

Mean Area 735.7
Mean Conc. 24.32mg/L



Sample

Sample Name: CCV
Sample ID:
Origin: TOC-12-06-2011.met
Status Completed
Chk. Result

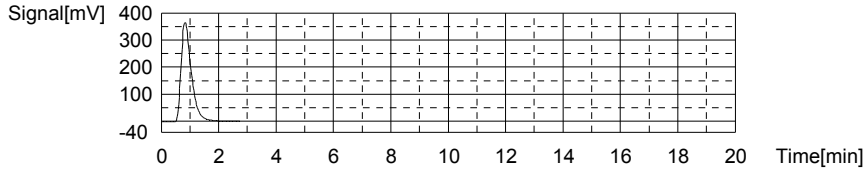
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:24.24mg/L TC:24.13mg/L IC:-0.1090mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	906.7	24.13mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	01/27/2012 10:58:21 AM

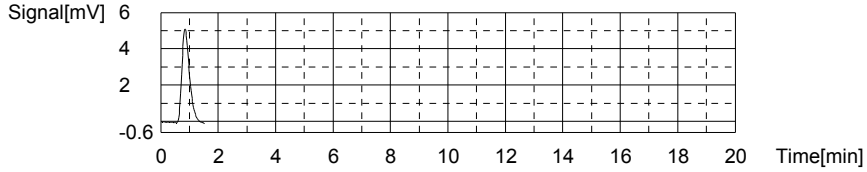
Mean Area 906.7
Mean Conc. 24.13mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.646	-0.1090mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	01/27/2012 11:02:48 AM

Mean Area 9.646
Mean Conc. -0.1090mg/L



Sample

Sample Name: CCB
Sample ID:
Origin: TOC-12-06-2011.met
Status Completed
Chk. Result

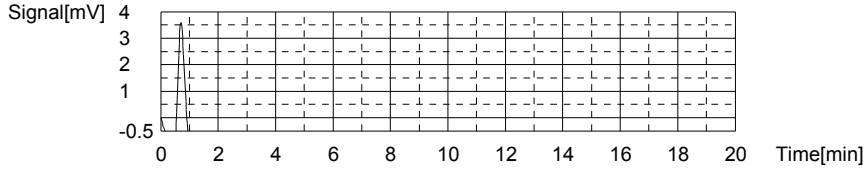
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.4017mg/L TC:0.2242mg/L IC:-0.1775mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.516	0.2242mg/L	500uL	1		TCCURVE-12-06-2011.2011_12_06_08_40_5	01/27/2012 11:08:18 AM

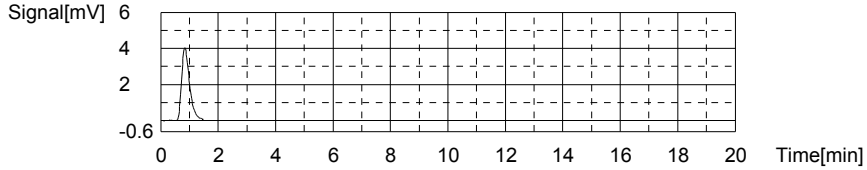
Mean Area 8.516
Mean Conc. 0.2242mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.609	-0.1775mg/L	500uL	1		TICCURVE-12-06-2011B.2011_12_06_15_47	01/27/2012 11:12:15 AM

Mean Area 7.609
Mean Conc. -0.1775mg/L



2.2.12 Total Suspended Solids Data

2.2.12.1 Summary Data

Login Number: L12010651
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: 41708
Approved By: Deanna Hesson

Microbac

Lab Report #: L12010651
Lab Project #: 3005.011
Project Name: White Sands MR
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L12010651-01	**PrePrep Method:**	N/A	**Instrument:**	OVEN
Client ID:	MPL-16-0112-1	**Prep Method:**	160.2/SM2540D	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	160.2	**Cal Date:**	
Workgroup #:	WG388022	**Analyst:**	HJR	**Run Date:**	01/26/2012 14:57
Collect Date:	01/24/2012 14:20	**Dilution:**	1	**File ID:**	EN.1201261457-16
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 #:	L12010651-02	**PrePrep Method:**	N/A	**Instrument:**	OVEN
Client ID:	MPL-16-0112-MS	**Prep Method:**	160.2/SM2540D	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	160.2	**Cal Date:**	
Workgroup #:	WG388022	**Analyst:**	HJR	**Run Date:**	01/26/2012 14:57
Collect Date:	01/24/2012 14:20	**Dilution:**	1	**File ID:**	EN.1201261457-17
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Total Suspended Solids		30.5		5.00	2.50

Sample #:	L12010651-03	**PrePrep Method:**	N/A	**Instrument:**	OVEN
Client ID:	MPL-16-0112-MSD	**Prep Method:**	160.2/SM2540D	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	160.2	**Cal Date:**	
Workgroup #:	WG388022	**Analyst:**	HJR	**Run Date:**	01/26/2012 14:57
Collect Date:	01/24/2012 14:20	**Dilution:**	1	**File ID:**	EN.1201261457-18
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Total Suspended Solids		28.5		5.00	2.50

2.2.12.2 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: 26-JAN-2012
Analyst: HJR
Analyst: NA
Method: TSS
Instrument: OVEN
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG388022

Calibration/Linearity	1/26/12
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	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:
27-JAN-2012

Secondary Reviewer:
27-JAN-2012

CHECKLIST1 - Modified 03/05/2008
Generated: JAN-27-2012 15:53:13

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 160.2 AAB#: WG388022

Login Number: L12010651

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
MPL-16-0112-1	01	01/24/12							7		01/26/12	2	7	
MPL-16-0112-MS	02	01/24/12							7		01/26/12	2	7	
MPL-16-0112-MSD	03	01/24/12							7		01/26/12	2	7	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 2291771
Report generated 01/27/2012 14:13

Microbac Laboratories Inc.

METHOD BLANK SUMMARY

Login Number: L12010651
Blank File ID: EN.1201261457-01
Prep Date: 01/26/12 14:57
Analyzed Date: 01/26/12 14:57
Analyst: HJR

Work Group: WG388022
Blank Sample ID: WG388022-01
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	WG388022-02	EN.1201261457-02	01/26/12 14:57	
LCS2	WG388022-03	EN.1201261457-03	01/26/12 14:57	
MPL-16-0112-1	L12010651-01	EN.1201261457-16	01/26/12 14:57	
MPL-16-0112-MS	L12010651-02	EN.1201261457-17	01/26/12 14:57	
MPL-16-0112-MSD	L12010651-03	EN.1201261457-18	01/26/12 14:57	
DUP	WG388022-05	EN.1201261457-24	01/26/12 14:57	
DUP	WG388022-07	EN.1201261457-25	01/26/12 14:57	

Report Name: BLANK_SUMMARY
PDF File ID: 2291772
Report generated 01/27/2012 14:13

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L12010651 Prep Date: 01/26/12 14:57 Sample ID: WG388022-01
Instrument ID: OVEN Run Date: 01/26/12 14:57 Prep Method: 160.2/SM2540D
File ID: EN.1201261457-01 Analyst: HJR Method: 160.2
Workgroup (AAB#): WG388022 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: 2291774
27-JAN-2012 14:14

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L12010651 Analyst: HJR Prep Method: 160.2/SM2540D
Instrument ID: OVEN Matrix: Water Method: 160.2
Workgroup (AAB#): WG388022 Units: mg/L
QC Key: DOD4 Lot #: STD49755

Sample ID: WG388022-02 LCS File ID: EN.1201261457-02 Run Date: 01/26/2012 14:57
Sample ID: WG388022-03 LCS2 File ID: EN.1201261457-03 Run Date: 01/26/2012 14:57

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Total Suspended Solids	50.0	52.0	104	50.0	50.0	100	3.92	75 - 125	10	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 2291775
Report generated: 01/27/2012 14:14

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L12010651 Cal ID: OVEN- Worknum: WG388022

Instrument ID: OVEN Contract #: Prep Method: 160.2/SM2540

Parent ID: L12010651-01 File ID: EN.1201261457-16 Dil: 1 Method: D

Sample ID: L12010651-02 MS File ID: EN.1201261457-17 Dil: 1 Matrix: 160.2

Sample ID: L12010651-03 MSD File ID: EN.1201261457-18 Dil: 1 Units: Water

mg/L

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Total Suspended Solids	U	25.0	30.5	122	25.0	28.5	114	6.78	75 - 125	10	

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

MS_MSD - Modified 03/06/2008

PDF File ID: 2291776

Report generated 01/27/2012 14:14

2.2.12.3 Raw Data

Trial 12

WORKGROUP: WG388022

TOTAL SUSPENDED SOLIDS

LCS: Std49755

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	LCSD	100				
01-0665-04	1	10				
-05	2	10				
-06	3	10				
-07	4	10				
-01	5	1000				
-02	6	5				
-03	7	30				
24hr. 01-0681-02	8	200				
01-0676-02	9	200				
-04	10	200				
-06	11	200				
-08	12	200				
01-0651-01	13	200				
-02 MS	14	200				
-03 MSD	15	200				
01-0657-02	16	50				
-09	17	200				
01-0647-02	18	200				
-04	19	200				
01-0659-01	20	200				
DUP: 01-0665-02	DP1	5				
DUP: 01-0657-01	DP2	200				

ANALYST: [signature]

DATE/TIME: (on) 1/26/12

DATE/TIME: (off)

DATE/TIME: (off)

DATE/TIME: (off)

* Duplicate required on 10% of samples

DCN#89725

Microbac Laboratories Inc.
GRAVIMETRIC REPORT

Workgroup (AAB#): WG388022
Analyst: HJR
Analyte: TOTAL SUSPENDED SOLIDS
Balance: BAL004
Instrument: OVEN

Method: 160.2/SM2540D
SOP: K1602 Revison 13
Spike Solution: STD49755
Daily Dilution:

SAMPLE NUMBER	#	INITIAL VOL	INITIAL WT	DRY WT A	DRY WT B	DRY WT C	Anal. Conc	Rep. Conc.	Units
WG388022-01	BLK	200	0.0957	0.0955	0.0956		-0.5000	-0.5000	mg/L
WG388022-02	LCS	100	0.0973	0.1026	0.1025		52.00	52.00	mg/L
WG388022-03	LCS2	100	0.0968	0.1017	0.1018		50.00	50.00	mg/L
L12010665-04	1	10	0.0952	0.1136	0.1137		1850	1850	mg/L
L12010665-05	2	10	0.0951	0.1368	0.1369		4180	4180	mg/L
L12010665-06	3	10	0.0961	0.1286	0.1288		3270	3270	mg/L
L12010665-07	4	10	0.0963	0.1359	0.136		3970	3970	mg/L
L12010665-01	5	100	0.0958	0.1126	0.1128		170.0	170.0	mg/L
L12010665-02	6	5	0.0967	0.1041	0.104		1460	1460	mg/L
WG388022-04	6	5	0.0967	0.1041	0.104		1460	1460	mg/L
L12010665-03	7	30	0.0958	0.1048	0.1049		303.3	303.3	mg/L
L12010681-02	8	200	0.0943	0.0949	0.095		3.500	3.500	mg/L
L12010676-02	9	200	0.0954	0.0974	0.0973		9.500	9.500	mg/L
L12010676-04	10	200	0.0927	0.094	0.094		6.500	6.500	mg/L
L12010676-06	11	200	0.0943	0.0971	0.097		13.50	13.50	mg/L
L12010676-08	12	200	0.0979	0.1008	0.1009		15.00	15.00	mg/L
L12010651-01	13	200	0.0946	0.095	0.095		2.000	ND	mg/L
WG388022-06	13	200	0.0946	0.095	0.095		2.000	2.000	mg/L
L12010651-02	14	200	0.0968	0.1031	0.1029		30.50	30.50	mg/L
WG388022-08	14	200	0.0968	0.1031	0.1029		30.50	30.50	mg/L
L12010651-03	15	200	0.0963	0.102	0.102		28.50	28.50	mg/L
WG388022-09	15	200	0.0963	0.102	0.102		28.50	28.50	mg/L
L12010657-02	16	50	0.0962	0.1026	0.1025		126.0	126.0	mg/L
L12010657-04	17	200	0.0968	0.0979	0.0979		5.500	5.500	mg/L
L12010647-02	18	200	0.0971	0.0994	0.0995		12.00	12.00	mg/L
L12010647-04	19	200	0.0969	0.0988	0.0989		10.00	10.00	mg/L
L12010659-01	20	200	0.0946	0.099	0.0991		22.50	22.50	mg/L
WG388022-05	DUP1	5	0.0951	0.1021	0.1023		1440	1440	mg/L
WG388022-07	DUP2	200	0.0956	0.096	0.096		2.000	2.000	mg/L

L12010651-02	ms=100ml of lcs to 200ml of sample
L12010651-03	msd=100ml of lcs to 200ml of sample
WG388022-08	ms=100ml of lcs to 200ml of sample
WG388022-09	msd=100ml of lcs to 200ml of sample

Analyst:

*Duplicate required on 10% of samples

Date/Time (on) : 01/26/2012 14:57
Date/Time (off): 01/27/2012 09:15
Date/Time (off): 01/27/2012 11:05
Date/Time (off):

CONT_GRAV_REPORT - Modified 02/18/2011
PDF ID: 2290701
Report generated: 01/27/2012 11:10

Microbac

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
February 3, 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	DHG - DEBORAH H. GRIFFITHS
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		

Microbac Laboratories Inc.
List of Valid Qualifiers
February 03, 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.

L12010651 / Revision: 0 / 891 total pages

COC No. A 28522

158 Starlite Drive
Marietta, OH 45750

Microbac

CHAIN-OF-CUSTODY RECORD

Phone: 740-373-4071
Fax: 740-373-4835

Company Name: Zia / SAAW

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 NO3 NO2	TSS TDS								TOTAL # (LAB USE)	ADDITIONAL REQUIREMENTS
MPL 16-0112-1		X	1-24-12	1420	W	7		X	X	X	X	X	X	X									
MPL 16-0112-MS		X	1-24-12	1420	W	7		X	X	X	X	X	X	X									
MPL 16-0112-MSD		X	1-24-12	1420	W	7		X	X	X	X	X	X	X									

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Brad T. Davis	1-24-12	1700			
Relinquished by: (Signature)	Date	Time	Remarks:		

Microbac OVD 221000021870
Received: 01/25/2012 10:34
By: BOB BUCHANAN
RF Buchanan

*Water (W), Soil (S), Solid Waste (SD), Unknown (X)

Page 1 of 1

Generated: 02/03/2012 15:30

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L12010651
Account: 3005
Project: 3005.011
Samples: 3
Due Date: 03-FEB-2012

Samplenum	Container ID	Products
L12010651-01	931500	300

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	25-JAN-2012 12:16	RLK		
2	ANALYZ	W1	WET	25-JAN-2012 13:17	JBK	RLK	
3	STORE	SEM	A1	03-FEB-2012 11:29	RLK	JBK	

Samplenum	Container ID	Products
L12010651-01	931501	ALK ALK-B ALK-C

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	25-JAN-2012 12:16	RLK		
2	ANALYZ	W1	WET	30-JAN-2012 08:01	DIH	JKS	
3	STORE	WET	A1	02-FEB-2012 07:37	AZH	DIH	

Samplenum	Container ID	Products
L12010651-01	931502	COND COR-PH PO4 F

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	25-JAN-2012 12:16	RLK		
2	ANALYZ	L1	WET	25-JAN-2012 13:49	TMM	RLK	
3	STORE	WET	A1	30-JAN-2012 08:11	JKS	DLP	

Samplenum	Container ID	Products
L12010651-01	931503	TDS TSS

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	25-JAN-2012 12:16	RLK		
2	ANALYZ	W1	WET	26-JAN-2012 08:58	HJR	RLK	
3	STORE	WET	A1	31-JAN-2012 08:51	RLK	HJR	

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: L12010651
Account: 3005
Project: 3005.011
Samples: 3
Due Date: 03-FEB-2012

Samplenum	Container ID	Products
L12010651-01	931504	NH3 NO3NO2 TOC

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	25-JAN-2012 12:16	RLK		<2
2	ANALYZ	W1	WET	26-JAN-2012 08:14	DLP	JKS	
3	STORE	WET	A1	02-FEB-2012 07:37	AZH	DIH	

Samplenum	Container ID	Products
L12010651-01	931505	AG-MS AS-MS BA-MS BE-AX CA CD-MS CO-MS CR-MS (

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	25-JAN-2012 12:16	RLK		
2	ANALYZ	W1	DIG	25-JAN-2012 14:17	ERP	RLK	
3	STORE	DIG	A1	27-JAN-2012 12:31	RLK	ERP	

Samplenum	Container ID	Products
L12010651-01	931506	CN CN-A CN-WD

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	25-JAN-2012 12:16	RLK		
2	ANALYZ	W1	WET	26-JAN-2012 09:25	JBK	RLK	
3	STORE	WET	A1	01-FEB-2012 08:50	RLK	JBK	

Samplenum	Container ID	Products
L12010651-02	931507	300

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	25-JAN-2012 12:16	RLK		
2	ANALYZ	W1	WET	25-JAN-2012 13:17	JBK	RLK	
3	STORE	SEM	A1	03-FEB-2012 11:19	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: L12010651
Account: 3005
Project: 3005.011
Samples: 3
Due Date: 03-FEB-2012

Samplenum	Container ID	Products
L12010651-02	931508	ALK ALK-B ALK-C

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	25-JAN-2012 12:16	RLK		
2	ANALYZ	W1	WET	30-JAN-2012 08:01	DIH	JKS	
3	STORE	WET	A1	02-FEB-2012 07:37	AZH	DIH	

Samplenum	Container ID	Products
L12010651-02	931509	COND COR-PH PO4 F

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	25-JAN-2012 12:16	RLK		
2	ANALYZ	L1	WET	25-JAN-2012 13:49	TMM	RLK	
3	STORE	WET	A1	30-JAN-2012 08:12	JKS	DLP	

Samplenum	Container ID	Products
L12010651-02	931510	TDS TSS

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	25-JAN-2012 12:16	RLK		
2	ANALYZ	W1	WET	26-JAN-2012 08:58	HJR	RLK	
3	STORE	WET	A1	31-JAN-2012 08:51	RLK	HJR	

Samplenum	Container ID	Products
L12010651-02	931511	NH3 NO3NO2 TOC

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	25-JAN-2012 12:16	RLK		<2
2	ANALYZ	W1	WET	26-JAN-2012 08:14	DLP	JKS	
3	STORE	WET	A1	02-FEB-2012 07:37	AZH	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: L12010651
Account: 3005
Project: 3005.011
Samples: 3
Due Date: 03-FEB-2012

Samplenum	Container ID	Products
L12010651-02	931512	AG-MS AS-MS BA-MS BE-AX CA CD-MS CO-MS CR-MS (

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	25-JAN-2012 12:16	RLK		
2	ANALYZ	W1	DIG	25-JAN-2012 14:17	ERP	RLK	
3	STORE	DIG	A1	27-JAN-2012 12:31	RLK	ERP	

Samplenum	Container ID	Products
L12010651-02	931513	CN CN-A CN-WD

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	25-JAN-2012 12:16	RLK		
2	ANALYZ	W1	WET	26-JAN-2012 09:25	JBK	RLK	
3	STORE	WET	A1	01-FEB-2012 08:50	RLK	JBK	

Samplenum	Container ID	Products
L12010651-03	931514	300

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	25-JAN-2012 12:16	RLK		
2	ANALYZ	W1	WET	25-JAN-2012 13:18	JBK	RLK	
3	STORE	SEM	A1	03-FEB-2012 11:19	RLK	JBK	

Samplenum	Container ID	Products
L12010651-03	931515	ALK-C ALK ALK-B

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	25-JAN-2012 12:16	RLK		
2	ANALYZ	W1	WET	30-JAN-2012 08:01	DIH	JKS	
3	STORE	WET	A1	02-FEB-2012 07:37	AZH	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: L12010651
Account: 3005
Project: 3005.011
Samples: 3
Due Date: 03-FEB-2012

Samplenum	Container ID	Products
L12010651-03	931516	COND COR-PH PO4 F

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	25-JAN-2012 12:16	RLK		
2	ANALYZ	L1	WET	25-JAN-2012 13:49	TMM	RLK	
3	STORE	WET	A1	30-JAN-2012 08:11	JKS	DLP	

Samplenum	Container ID	Products
L12010651-03	931517	TDS TSS

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	25-JAN-2012 12:16	RLK		
2	ANALYZ	W1	WET	26-JAN-2012 08:58	HJR	RLK	
3	STORE	WET	A1	31-JAN-2012 08:52	RLK	HJR	

Samplenum	Container ID	Products
L12010651-03	931518	NH3 NO3NO2 TOC

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	25-JAN-2012 12:16	RLK		<2
2	ANALYZ	W1	WET	26-JAN-2012 08:14	DLP	JKS	
3	STORE	WET	A1	02-FEB-2012 07:37	AZH	DIH	

Samplenum	Container ID	Products
L12010651-03	931519	AS-MS BA-MS BE-AX CA CD-MS AG-MS CO-MS CR-MS (

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	25-JAN-2012 12:16	RLK		
2	ANALYZ	W1	DIG	25-JAN-2012 14:17	ERP	RLK	
3	STORE	DIG	A1	27-JAN-2012 12:31	RLK	ERP	

Samplenum	Container ID	Products
L12010651-03	931520	CN CN-A CN-WD

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	25-JAN-2012 12:16	RLK		
2	ANALYZ	W1	WET	26-JAN-2012 09:25	JBK	RLK	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login