Appendix F: Laboratory MDL Studies

AECOM MDL Study

2931 Soldier Springs Rd., Laramie, WY 82070 USA
1-307-742-5452 www.rt-corp.com

NPDES Laboratory Performance Evaluation Report
RTC Laboratory Proficiency Testing Program
DMRQA 32 - Concluding 06/29/2012

NPDES Permit #: AK0053341
Permit Name:Sumitomo Metal MIning Pogo LLC

Sally McLeod
PO Box 145
Delta Junction, AK 99737

If you have any questions about your report, please contact Jennifer Jones at (307) 742-5452 or email: rtcptgroup@sial.com. A copy of this report has been sent to both your State and Regional Coordinator. This report shall not be reproduced except in full, with written approval of the Laboratory. A Laboratory may not claim endorsement by ACLASS, NELAC or any other federal agency. RTC is accredited to perform PT programs for the scope of accreditation to ISO/IEC 17043 under ACLASS certificate AP-1469.

This report may contain data that are not covered by the ACLASS accreditation.

Analyzing Laboratory: AECOM Environment FCETL
EPA Labcode: CO00079

	Analysis Method	Result	Assigned Value	Acceptance Limits	Evaluation
Fathead Minnow Chronic MHSF - Survival NOEC 756	EPA 1000 10114600	25.0 %	25	12.5 to 50.0	**Acceptable**
Ceriodaphnia Chronic MHSF - Survival NOEC 766	EPA 1002 10115001	12.5 %	25	12.5 to 50.0	**Acceptable**
Ceriodaphnia Chronic MHSF - Reproduction IC25 767	EPA 1002 10115001	7.36 %	23.1	2.27 to 43.9	**Acceptable**
Ceriodaphnia Chronic MHSF - Reproduction NOEC 768	EPA 1002 10115001	6.25 %	12.5	6.25 to 25.0	**Acceptable**
Fathead Minnow Chronic MHSF - Growth IC25 (ON) 808	EPA 1000 10114600	25.6 %	29.4	9.33 to 49.4	**Acceptable**
Fathead Minnow Chronic MHSF - Growth NOEC (ON) 810	EPA 1000 10114600	12.5 %	25	12.5 to 50.0	**Acceptable**

Certifying Officer: Patrick Brumfield

Date: August 23, 2012

United States

ENVIRONMENTAL PROTECTION AGENCY

Washington, D.C. 20460

Laboratory DMR-QA Evaluation Study 32

Laboratory Performance Evaluation

Office of Enforcement and Compliance Assurance

(These data are collected under the authority of the Federal Water Pollution Control Act.)

NPDES Permittee Data Report Form

Due August 24, 2012	**Attention:** Follow the instructions on the previous page to complete this form and submit data for evaluation.	State **AK**	NPDES Permit Number **AK0053341**	Permit Extension

Permitee name: **Sumitomo Metal MIning Pogo LLC**

Current Permittee mailing address: **PO Box 145**
Delta Junction, AK 99737

Phone Number: FAX Number:

e-mail:

For DMR-QA Study 32, conducted in 2012, the Permittee ensured that their laboratory(s) performing the required analyses:

Received PT Samples:	Submitted Complete and Accurate Data by July 6, 2012:	Received a Graded Report by July 27, 2012:
Yes ☐ No ☐	Yes ☐ No ☐	Yes ☐ No ☐

Certification by Permit Holder or Authorized Representative

(as per 40 C.F.R. Part 122.22 - see instructions.)

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. Each reported value was produced from a single analytical run using the analytical system that routinely performs these analyses to produce compliance monitoring data required under our National Pollutant Discharge Elimination System (NPDES) permit. Neither I nor any of my subordinates compared our results with results from independent analyses conducted by us or any other laboratory before we reported our results to the U.S. EPA. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name of Certifying Official: **Sally McLeod** Title: **Environmental Superintendant**

Signature _____ Date: _____

Address, phone number and e-mail of Certifying Official are required if different from above.

Address:

Phone No.: **(907) 895-2879**

e-mail:

United States

ENVIRONMENTAL PROTECTION AGENCY

Washington, D.C. 20460

Laboratory DMR-QA Evaluation Study 32

Laboratory Performance Evaluation

Office of Enforcement and Compliance Assurance

(These data are collected under the authority of the Federal Water Pollution Control Act.)

Permittee name	State	NPDES Permit No.	Permit Extension
Sumitomo Metal MIning Pogo LLC	**AK**	**AK0053341**	

Identification of All CHEM, MICRO and TOX Laboratories who did analyses for Permit Number: AK0053341

Name of Laboratory	Address of Laboratory	U.S. EPA Lab Code	Lab Analysis Check box(es) that apply			Lab Type*	State-certfied Laboratory**
			CHEM	MICRO	TOX		
AECOM Environment FCETL	4303 West LaPorte Avenue Fort Collins, CO 80521 UNITED STATES	CO00079	☐	☐	■	C	☐
			☐	☐	☐		☐
			☐	☐	☐		☐
			☐	☐	☐		☐

*Lab Types: C = Commercial F = Federal G = Local Government I = Industrial O = Other S = State

** See Footnote 2 on DMR-QA Study 32 Fact Sheet

If you need additional space, please make a copy of this page for additional laboratories.

Chemistry/Microbiology/Analyte Checklist

DMR-QA Study 32

Analyte Test	Test Required	Laboratory's Graded Result		Analyte determined by state-certified laboratory*
		Acceptable	Not Acceptable (Corrective Action Required)	
Trace Metals - Waste Water				
Aluminum, Al	☐	☐	☐	☐
Antimony, Sb	☐	☐	☐	☐
Arsenic, As	☐	☐	☐	☐
Barium, Ba	☐	☐	☐	☐
Beryllium, Be	☐	☐	☐	☐
Cadmium, Cd	☐	☐	☐	☐
Chromium VI, Cr(VI)	☐	☐	☐	☐
Chromium, Cr (total)	☐	☐	☐	☐
Cobalt, Co	☐	☐	☐	☐
Copper, Cu	☐	☐	☐	☐
Iron, Fe	☐	☐	☐	☐
Lead, Pb	☐	☐	☐	☐
Low Level Mercury	☐	☐	☐	☐
Manganese, Mn	☐	☐	☐	☐
Mercury, Hg	☐	☐	☐	☐
Molybdenum, Mo	☐	☐	☐	☐
Nickel, Ni	☐	☐	☐	☐
Selenium, Se	☐	☐	☐	☐
Silver, Ag	☐	☐	☐	☐
Thallium, Tl	☐	☐	☐	☐
Vanadium, V	☐	☐	☐	☐
Zinc, Zn	☐	☐	☐	☐
Microbiology				
Escherichia coli	☐	☐	☐	☐
Escherichia coli, MPN	☐	☐	☐	☐
Fecal coliform, MPN	☐	☐	☐	☐
Fecal coliforms	☐	☐	☐	☐
Total Coliform, MPN	☐	☐	☐	☐
Total coliforms	☐	☐	☐	☐
Demands				
5-day BOD	☐	☐	☐	☐
Carbonaceous BOD (CBOD)	☐	☐	☐	☐
Chemical oxygen demand (COD)	☐	☐	☐	☐
Total organic carbon (TOC)	☐	☐	☐	☐
Minerals				
Alkalinity, total ($CaCO_3$)	☐	☐	☐	☐
Chloride	☐	☐	☐	☐
Fluoride	☐	☐	☐	☐
Hardness, total ($CaCO_3$)	☐	☐	☐	☐
Specific conductance (25°C)	☐	☐	☐	☐
Sulfate	☐	☐	☐	☐
Total Dissolved Solids at 180ºC (TDS)	☐	☐	☐	☐
Nutrients				
Ammonia as N	☐	☐	☐	☐
Kjeldahl nitrogen, total (TKN)	☐	☐	☐	☐
Nitrate as N	☐	☐	☐	☐
Nitrite as N	☐	☐	☐	☐
Orthophosphate as P	☐	☐	☐	☐
Phosphorus, total	☐	☐	☐	☐
Miscellaneous Analytes				
Low Level TRC	☐	☐	☐	☐
n-Hexane Extractable Material (O&G)	☐	☐	☐	☐
Non-Filterable Residue (TSS)	☐	☐	☐	☐
Oil and Grease (HEM-SGT)	☐	☐	☐	☐
pH	☐	☐	☐	☐
Settleable solids	☐	☐	☐	☐
Total cyanide	☐	☐	☐	☐
Total phenolics	☐	☐	☐	☐
Total residual chlorine	☐	☐	☐	☐
Turbidity	☐	☐	☐	☐

Name _____ Signature _____ Date _____

*See NPDES Permittee Instructions (Step 8) on page 5.

Use a separate checklist for EACH lab used

Permitee: **Sumitomo Metal MIning Pogo LLC** State **AK** Permit No.:**AK0053341** EPA Lab code:**CO00079**

WET Organisms/Test Conditions/End Points Checklist

DMR-QA Study 32

Analyte Number	Organisms/Conditions	End Points	Test Required	Laboratory's Graded Result		Analyte determined by state-certified laboratory*
				Acceptable	Not Acceptable (Corrective Action Required)	
Test Code 13 / EPA Method 2000						
754	Fathead Minnow Acute MHSF 25°	LC50	☐	☐	☐	☐
Test Code 14 / EPA Method 2000						
755	Fathead Minnow Acute 20% DMW 25°	LC50	☐	☐	☐	☐
Test Code 15 / EPA Method 1000						
756	Fathead Minnow Chronic MHSF	Survival NOEC	■	■	☐	☐
808	Fathead Minnow Chronic MHSF	Growth IC25 (ON)	■	■	☐	☐
809	Fathead Minnow Chronic MHSF	Growth IC25 (SN)	☐	☐	☐	☐
810	Fathead Minnow Chronic MHSF	Growth NOEC (ON)	■	■	☐	☐
811	Fathead Minnow Chronic MHSF	Growth NOEC (SN)	☐	☐	☐	☐
Test Code 16 / EPA Method 1000						
759	Fathead Minnow Chronic 20% DMV	Survival NOEC	☐	☐	☐	☐
812	Fathead Minnow Chronic 20 % DMV	Growth IC (ON)	☐	☐	☐	☐
813	Fathead Minnow Chronic 20% DMV	Growth IC (SN)	☐	☐	☐	☐
814	Fathead Minnow Chronic 20% DMV	Growth NOEC (ON)	☐	☐	☐	☐
815	Fathead Minnow Chronic 20% DMV	Growth (SN)	☐	☐	☐	☐
Test Code 19 / EPA Method 2002						
764	Ceriodaphnia Acute MHSF 25°	LC50	☐	☐	☐	☐
Test Code 20 / EPA Method 2002						
765	Ceriodaphnia Acute 20% DMW 25°	LC50	☐	☐	☐	☐
Test Code 21 / EPA Method 1002						
766	Ceriodaphnia Chronic MHSF	Survival NOEC	■	■	☐	☐
767	Ceriodaphnia Chronic MHSF	Reproduction IC25	■	■	☐	☐
768	Ceriodaphnia Chronic MHSF	Reproduction NOEC	■	■	☐	☐
Test Code 22 / EPA Method 1002						
769	Ceriodaphnia Chronic 20% DMW	Survival NOEC	☐	☐	☐	☐
770	Ceriodaphnia Chronic 20% DMW	Reproduction IC25	☐	☐	☐	☐
771	Ceriodaphnia Chronic 20% DMW	Reproduction NOEC	☐	☐	☐	☐
Test Code 32 / EPA Method 2021						
788	Daphnia Magna Acute MHSF 25°	LC50	☐	☐	☐	☐
Test Code 38 / EPA Method 2021						
794	Daphnia Pulex MHSF 25°	LC50	☐	☐	☐	☐
Test Code 42 / EPA Method 2007						
798	Mysid Acute 40 F 25°	LC50	☐	☐	☐	☐
Test Code 43 / EPA Method 1007						
799	Mysid Chronic 40 F Survival NOEC	LC50	☐	☐	☐	☐
816	Mysid Chronic 40 F Growth IC25 (ON)	Growth (SN)	☐	☐	☐	☐
817	Mysid Chronic 40 F Growth IC25 (SN)	Growth (SN)	☐	☐	☐	☐
818	Mysid Chronic 40 F Growth NOEC (ON)	Growth (SN)	☐	☐	☐	☐
819	Mysid Chronic 40 F Growth NOEC (SN)	Growth (SN)	☐	☐	☐	☐
Test Code 44 / EPA Method 2006						
803	Menidia Acute 40 F 25°	LC50	☐	☐	☐	☐
Test Code 45 / EPA Method 1006						
824	Inland silverside (Menidia berylina) NOEC SURVIVAL	Growth NOEC (SN)	☐	☐	☐	☐
825	Inland silverside (Menidia berylina) IC25 (ON) GRO	Growth NOEC (SN)	☐	☐	☐	☐
826	Inland silverside (Menidia berylina) NOEC (ON) GRO	Growth NOEC (SN)	☐	☐	☐	☐
Test Code 46 / EPA Method 2004						
804	Sheepshead Minnow Acute 40 F 25°	LC50	☐	☐	☐	☐
Test Code 47 / EPA Method 1004						
805	Sheepshead Minnow Chronic 40 F	Survival NOEC	☐	☐	☐	☐
820	Sheepshead Minnow Chronic 40 F	Growth IC25 (ON)	☐	☐	☐	☐
821	Sheepshead Minnow Chronic 40 F	Growth IC25 (SN)	☐	☐	☐	☐
822	Sheepshead Minnow Chronic 40 F	Growth NOEC (ON)	☐	☐	☐	☐
823	Sheepshead Minnow Chronic 40 F	Growth NOEC (SN)	☐	☐	☐	☐

Name _____ Signature _____ Date _____

*See NPDES Permittee Instructions (Step 8) on page 5.

Use a separate checklist for EACH lab used

Analytica MDL Study

ColCount	SDG	Method	Matrix	Lab	Instrument	AnalysisDate
1	B1112044	4500-CNIE	Aqueous	AEL - Thornton	Hach 2500 Colorimeter	10/30/2012 17:40

AnalyteName	SpikeLevel	MDL1	MDL2	MDL3	MDL4	MDL5	MDL6	MDL7	MDL8	MDL9
Cyanide, Weak Acid Dissociable	0.004	0.0032	0.0034	0.0038	0.0032	0.0036	0.0042	0.0036		

MDL10	Average	stddev	count	tvalue	MDL	AvRecov	RecFlag	Spike/MDL	SpikeFlag	PQL	PQL/MDL	PQLFlag
	0.003571	0.00035	7	3.1427	0	89.28571		3.58979124		0.004	3.5897911	

B1112033 Lab project
METHOD 200.8 MDL STUDY, 2012 - WATER
ANALYSES RUN ON MULTIPLE DATES

	MDL_1	MDL_2	MDL_3	MDL_4	MDL_5	MDL_6	MDL_7									
Analyte	1/18/12 1:48 PM	1/18/12 1:52 PM	1/18/12 1:57 PM	1/19/12 1:47 PM	1/19/12 2:11 PM	1/20/12 11:23 AM	1/20/12 11:28 AM	**SPIKE**	**Recovery**	**Average Recov**	**s**	**PQL**	**MDL**	**Spike/MDL**	**PQL/MDL**	**NOTES**
Antimony	0.25829	0.25037	0.24243	0.23859	0.237	0.26695	0.27047	0.2	135	126	0.0136	0.1	**0.043**	4.7	2.3	OK
	1/19/12 2:25 PM	1/18/12 3:30 PM	1/19/12 2:29 PM	1/19/12 2:34 PM	##############	1/20/12 12:06 PM	1/20/12 12:10 PM									
Antimony	0.54106	0.56029	0.54372	0.55292	0.58361	0.59298	0.5857	0.5	117	113	0.0214	0.1	**0.067**	7.4	1.5	OK
	1/18/12 3:40 PM	1/18/12 3:44 PM	1/18/12 3:49 PM	1/19/12 2:44 PM	1/19/12 2:48 PM	1/19/12 2:53 PM	1/20/12 12:20 PM									
Antimony	0.11811	0.12815	0.12081	0.11032	0.1126	0.11238	0.12719	0.1	127	119	0.0072	0.1	**0.023**	4.4	4.4	OK
												Antimony MDL to use:	**0.044**			
Analyte	1/18/12 1:48 PM	1/18/12 1:52 PM	1/18/12 1:57 PM	1/19/12 1:47 PM	1/19/12 2:11 PM	1/20/12 11:23 AM	1/20/12 11:28 AM	SPIKE	Recovery	Average Recov	s	PQL	MDL	Spike/MDL	PQL/MDL	NOTES
Arsenic	0.25191	0.22563	0.24602	0.178	0.19313	0.20863	0.23717	0.2	119	110	0.0278	0.15	**0.087**	2.3	1.7	OK
	1/19/12 2:25 PM	1/18/12 3:30 PM	1/19/12 2:29 PM	1/19/12 2:34 PM	##############	1/20/12 12:06 PM	1/20/12 12:10 PM									
Arsenic	0.51805	0.53213	0.5181	0.49141	0.55806	0.58124	0.56289	0.5	113	107	0.0313	0.15	**0.098**	5.1	1.5	OK
	1/18/12 3:40 PM	1/18/12 3:44 PM	1/18/12 3:49 PM	1/19/12 2:44 PM	1/19/12 2:48 PM	1/19/12 2:53 PM	1/20/12 12:20 PM									
Arsenic	0.12837	0.09705	0.11433	0.08701	0.06786	0.08519	0.11482	0.1	115	99	0.0210	0.15	**0.066**	1.5	2.3	OK
												Arsenic MDL to use:	**0.084**			
Analyte	1/19/12 2:25 PM	1/18/12 3:30 PM	1/19/12 2:29 PM	1/19/12 2:34 PM	##############	1/20/12 12:06 PM	1/20/12 12:10 PM	SPIKE	Recovery	Average Recov	s	PQL	MDL	Spike/MDL	PQL/MDL	NOTES
Barium	0.52143	0.63988	0.51835	0.52801	0.52891	0.54445	0.5377	0.5	108	109	0.0426	0.25	**0.134**	3.7	1.9	OK
												Barium MDL to use:	**0.134**			
Analyte	1/18/12 3:40 PM	1/18/12 3:44 PM	1/18/12 3:49 PM	1/19/12 2:44 PM	1/19/12 2:48 PM	1/19/12 2:53 PM	1/20/12 12:20 PM	SPIKE	Recovery	Average Recov	s	PQL	MDL	Spike/MDL	PQL/MDL	NOTES
Bismuth	0.11313	0.11338	0.12611	0.11026	0.10505	0.10573	0.11383	0.1	114	112	0.0070	0.5	**0.022**	4.5	22.7	OK
												Bismuth MDL to use:	**0.022**			
Analyte	1/18/12 1:48 PM	1/18/12 1:52 PM	1/18/12 1:57 PM	1/19/12 1:47 PM	1/19/12 2:11 PM	1/20/12 11:23 AM	1/20/12 11:28 AM	SPIKE	Recovery	Average Recov	s	PQL	MDL	Spike/MDL	PQL/MDL	NOTES
Beryllium	0.19482	0.21324	0.20138	0.16839	0.18257	0.22381	0.23941	0.2	120	102	0.0243	0.15	**0.076**	2.6	2.0	OK
												Beryllium MDL to use:	**0.076**			
Analyte	1/19/12 2:25 PM	1/18/12 3:30 PM	1/19/12 2:29 PM	1/19/12 2:34 PM	##############	1/20/12 12:06 PM	1/20/12 12:10 PM	SPIKE	Recovery	Average Recov	s	PQL	MDL	Spike/MDL	PQL/MDL	NOTES
Cadmium	0.49331	0.46143	0.48405	0.51296	0.51658	0.48925	0.49564	0.5	99	99	0.0185	0.1	**0.058**	8.6	1.7	OK
	1/18/12 3:40 PM	1/18/12 3:44 PM	1/18/12 3:49 PM	1/19/12 2:44 PM	1/19/12 2:48 PM	1/19/12 2:53 PM	1/20/12 12:20 PM									
Cadmium	0.06687	0.07625	0.06575	0.12942	0.10561	0.10473	0.10172	0.1	102	93	0.0238	0.1	**0.075**	1.3	1.3	OK
												Cadmium MDL to use:	**0.066**			
Analyte	1/19/12 2:25 PM	1/18/12 3:30 PM	1/19/12 2:29 PM	1/19/12 2:34 PM	##############	1/20/12 12:06 PM	1/20/12 12:10 PM	SPIKE	Recovery	Average Recov	s	PQL	MDL	Spike/MDL	PQL/MDL	NOTES
Chromium	0.47978	0.47031	0.44158	0.48138	0.32987	0.38332	0.3472	0.5	69	84	0.0647	0.15	**0.203**	2.5	0.7	RAISE PQL
												Chromium MDL to use:	**0.203**			
Analyte	1/18/12 1:48 PM	1/18/12 1:52 PM	1/18/12 1:57 PM	1/19/12 1:47 PM	1/19/12 2:11 PM	1/20/12 11:23 AM	1/20/12 11:28 AM	SPIKE	Recovery	Average Recov	s	PQL	MDL	Spike/MDL	PQL/MDL	NOTES
Cobalt	0.27738	0.27344	0.27215	0.26167	0.27759	0.37311	0.36114	0.2	181	150	0.0466	0.5	**0.146**	1.4	3.4	OK
	1/19/12 2:25 PM	1/18/12 3:30 PM	1/19/12 2:29 PM	1/19/12 2:34 PM	##############	1/20/12 12:06 PM	1/20/12 12:10 PM									
Cobalt	0.65973	0.66233	0.67887	0.66975	0.76609	0.75334	0.75606	0.5	151	141	0.0491	0.5	**0.154**	3.2	3.2	OK
	1/18/12 3:40 PM	1/18/12 3:44 PM	1/18/12 3:49 PM	1/19/12 2:44 PM	1/19/12 2:48 PM	1/19/12 2:53 PM	1/20/12 12:20 PM									
Cobalt	0.15687	0.15772	0.14541	0.15678	0.15243	0.15365	0.22746	0.1	227	164	0.0282	0.5	**0.088**	1.1	5.7	OK
												Cobalt MDL to use:	**0.130**			
Analyte	1/19/12 2:25 PM	1/18/12 3:30 PM	1/19/12 2:29 PM	1/19/12 2:34 PM	##############	1/20/12 12:06 PM	1/20/12 12:10 PM	SPIKE	Recovery	Average Recov	s	PQL	MDL	Spike/MDL	PQL/MDL	NOTES
Copper	0.84794	1.11744	0.80668	0.786	0.77742	0.78638	0.76006	0.5	152	168	0.1253	0.1	**0.394**	1.3	0.3	RAISE PQL
												Copper MDL to use:	**0.204**			
Analyte	1/18/12 3:40 PM	1/18/12 3:44 PM	1/18/12 3:49 PM	1/19/12 2:44 PM	1/19/12 2:48 PM	1/19/12 2:53 PM	1/20/12 12:20 PM	SPIKE	Recovery	Average Recov	s	PQL	MDL	Spike/MDL	PQL/MDL	NOTES
Lead	0.07619	0.08482	0.14564	0.1077	0.10208	0.09866	0.08337	0.1	83	100	0.0232	0.1	**0.073**	1.4	1.4	OK

B1112033 Lab project
METHOD 200.8 MDL STUDY, 2012 - WATER
ANALYSES RUN ON MULTIPLE DATES

												Lead MDL to use:	**0.073**			
Analyte	1/18/12 1:48 PM	1/18/12 1:52 PM	1/18/12 1:57 PM	1/19/12 1:47 PM	1/19/12 2:11 PM	1/20/12 11:23 AM	1/20/12 11:28 AM	SPIKE	Recovery	Average Recov	s	PQL	MDL	Spike/MDL	PQL/MDL	NOTES
Manganese	0.32185	0.2811	0.28295	0.24981	0.24643	0.2341	0.24652	0.2	123	133	0.0308	0.05	**0.097**	2.1	0.5	RAISE PQL
	1/19/12 2:25 PM	1/18/12 3:30 PM	1/19/12 2:29 PM	1/19/12 2:34 PM	##############	1/20/12 12:06 PM	1/20/12 12:10 PM									
Manganese	0.5814	0.60635	0.5924	0.58933	0.5607	0.56494	0.55792	0.5	112	116	0.0183	0.05	**0.058**	8.7	0.9	RAISE PQL
	1/18/12 3:40 PM	1/18/12 3:44 PM	1/18/12 3:49 PM	1/19/12 2:44 PM	1/19/12 2:48 PM	1/19/12 2:53 PM	1/20/12 12:20 PM									
Manganese	0.13635	0.14509	0.20393	0.12639	0.12547	0.12066	0.11298	0.1	113	139	0.0306	0.05	**0.096**	1.0	0.5	RAISE PQL
												Manganese MDL to use:	**0.083**			
Analyte	1/18/12 1:48 PM	1/18/12 1:52 PM	1/18/12 1:57 PM	1/19/12 1:47 PM	1/19/12 2:11 PM	1/20/12 11:23 AM	1/20/12 11:28 AM	SPIKE	Recovery	Average Recov	s	PQL	MDL	Spike/MDL	PQL/MDL	NOTES
Molybdenum	0.23779	0.21114	0.23277	0.21794	0.22861	0.22107	0.22468	0.2	112	112	0.0091	0.5	**0.029**	7.0	17.5	OK
	1/18/12 3:40 PM	1/18/12 3:44 PM	1/18/12 3:49 PM	1/19/12 2:44 PM	1/19/12 2:48 PM	1/19/12 2:53 PM	1/20/12 12:20 PM									
Molybdenum	0.12866	0.11459	0.12075	0.11641	0.10667	0.09872	0.14094	0.1	141	118	0.0139	0.5	**0.044**	2.3	11.4	OK
												Molybdenum MDL to use:	**0.036**			
Analyte	1/19/12 2:25 PM	1/18/12 3:30 PM	1/19/12 2:29 PM	1/19/12 2:34 PM	##############	1/20/12 12:06 PM	1/20/12 12:10 PM	SPIKE	Recovery	Average Recov	s	PQL	MDL	Spike/MDL	PQL/MDL	NOTES
Nickel	0.79689	0.9498	0.78446	0.82206	0.77001	0.79515	0.77467	0.5	155	163	0.0626	0.15	**0.197**	2.5	0.8	RAISE PQL
												Nickel MDL to use:	**0.197**			
Analyte	1/18/12 1:48 PM	1/18/12 1:52 PM	1/18/12 1:57 PM	1/19/12 1:47 PM	1/19/12 2:11 PM	1/20/12 11:23 AM	1/20/12 11:28 AM	SPIKE	Recovery	Average Recov	s	PQL	MDL	Spike/MDL	PQL/MDL	NOTES
Silver	0.31462	0.31679	0.32176	0.37704	0.33325	0.3582	0.37552	0.2	188	171	0.0273	0.1	**0.086**	2.3	1.2	
												Silver MDL to use:	**0.086**			
Analyte	1/18/12 1:48 PM	1/18/12 1:52 PM	1/18/12 1:57 PM	1/19/12 1:47 PM	1/19/12 2:11 PM	1/20/12 11:23 AM	1/20/12 11:28 AM	SPIKE	Recovery	Average Recov	s	PQL	MDL	Spike/MDL	PQL/MDL	NOTES
Thallium	0.1832	0.1917	0.18933	0.20139	0.21737	0.20743	0.20393	0.2	102	100	0.0118	0.05	**0.037**	5.4	1.4	OK
	1/18/12 3:40 PM	1/18/12 3:44 PM	1/18/12 3:49 PM	1/19/12 2:44 PM	1/19/12 2:48 PM	1/19/12 2:53 PM	1/20/12 12:20 PM									
Thallium	0.07814	0.07452	0.07823	0.1041	0.09843	0.10458	0.07151	0.1	72	87	0.0146	0.05	**0.046**	2.2	1.1	OK
												Thallium MDL to use:	**0.041**			
Analyte	1/18/12 1:48 PM	1/18/12 1:52 PM	1/18/12 1:57 PM	1/19/12 1:47 PM	1/19/12 2:11 PM	1/20/12 11:23 AM	1/20/12 11:28 AM	SPIKE	Recovery	Average Recov	s	PQL	MDL	Spike/MDL	PQL/MDL	NOTES
Vanadium	0.23795	0.22886	0.22696	0.21474	0.19959	0.18535	0.20338	0.2	102	107	0.0187	5	**0.059**	3.4	85.0	OK
	1/19/12 2:25 PM	1/18/12 3:30 PM	1/19/12 2:29 PM	1/19/12 2:34 PM	##############	1/20/12 12:06 PM	1/20/12 12:10 PM									
Vanadium	0.52124	0.56489	0.53835	0.52213	0.51136	0.50468	0.52081	0.5	104	105	0.0200	5	**0.063**	8.0	79.6	OK
	1/18/12 3:40 PM	1/18/12 3:44 PM	1/18/12 3:49 PM	1/19/12 2:44 PM	1/19/12 2:48 PM	1/19/12 2:53 PM	1/20/12 12:20 PM									
Vanadium	0.1328	0.11871	0.14884	0.12887	0.13053	0.10364	0.09215	0.1	92	122	0.0191	5	**0.060**	1.7	83.2	OK
												Vanadium MDL to use:	**0.061**			
Analyte	1/19/12 2:25 PM	1/18/12 3:30 PM	1/19/12 2:29 PM	1/19/12 2:34 PM	##############	1/18/2012 15:06	1/18/2012 15:02	SPIKE	Recovery	Average Recov	s	PQL	MDL	Spike/MDL	PQL/MDL	NOTES
Selenium	0.51643	0.57414	0.62877	0.5223	0.37174	0.38048	0.48979	0.5	0	75	0.0946	0.5	**0.297**	1.7	1.7	OK
Analyte	1/19/12 2:25 PM	1/20/2012 12:10	1/19/12 2:29 PM	1/19/12 2:34 PM	##############	1/20/12 12:06 PM	1/20/12 12:10 PM	SPIKE	Recovery	Average Recov	s	PQL	MDL	Spike/MDL	PQL/MDL	NOTES	t value
Aluminum	0.9009		0.75877	0.7607	1.17258	1.02488	1.07566	0.5	215	190	0.1707	1	**0.575**	0.9	1.7	6 points	**3.36493**
												Aluminum MDL to use:	**0.575**			

Element	MDL1	MDL2	MDL3	MDL4	MDL5	MDL6	MDL7	s	MDL
Ag	12.41	10.12	10	8.23	6.47	8.95	7.51	1.96	**6.2**
Al	46.36	33.96	54.94	32.28	44.28	45.98	44.28	7.77	**24.4**
As	51.83	48.3	47.59	18.94	23.04	36.87	44.22	12.99	**40.8**
B	55.38	55.92	53.92	38.34	38.24	78.59	78.59	16.56	**52.0**
Ba	8.81	9.36	8.6	9.63	10.21	10.72	10.34	0.80	**2.5**
Be	2.56	2.44	2.47	2.48	2.47	2.19	2.39	0.12	**0.4**
Ca	136.51	140.59	159.46	148.35	132.96	139.47	164.4	11.95	**37.6**
Cd	8.33	9.56	8.53	7.21	9.56	12.05	10.71	1.61	**5.0**
Co	9.33	9.25	12.04	7.95	6.87	9.24	12.25	1.98	**6.2**
Cr	44.38	45.31	45.52	42.66	43.67	50.43	51.28	3.35	**10.5**
Cu	12.28	10.23	10.23	7.56	7.56	7.89	7.89	1.84	**5.8**
Fe	56.94	54.33	62.97	56.07	64.65	56.07	57.07	3.90	**12.3**
K	394.21	381.19	524.36	413.26	728.52	580.04	368.36	133.95	**421.0**
Li	8.72	9.06	8.33	8.36	9.24	9.41	9.23	0.44	**1.4**
Mg	92.57	92.82	125.97	101.51	93.33	102.46	84.64	13.31	**41.8**
Mn	9.93	9.93	10.08	9.14	8.86	9.57	9.39	0.45	**1.4**
Mo	54.03	54.25	52.76	50.45	50.49	56.3	52.99	2.10	**6.6**
Na	135.9	139.05	136.77	144.73	157.19	142.92	129.08	8.84	**27.8**
Ni	7.73	6.49	6.77	4	3.86	7.31	7.45	1.63	**5.1**
Pb	48.9	44.35	44.02	50.03	49.25	51.63	61.25	5.75	**18.1**
Sb	54.14	42.43	30.91	52.31	56.45	44.52	49.61	8.76	**27.5**
Se	38.91	32.18	64	38.96	30.64	57.13	70.59	16.14	**50.7**
Si	619	604.69	572.41	-4335.97	-4309.58	1500.33	1471.87	2605.10	**8187.0**
Sn	37.91	47.45	40.88	35.56	37.3	48.5	50	6.00	**18.8**
Sr	9.46	9.67	9.38	10.72	10.86	10.03	9.86	0.59	**1.8**
Ti	8.61	8.25	9.11	8.78	7.66	8.66	8.44	0.46	**1.4**
Tl	34.94	47.61	51.18	41.79	45.28	40.14	57.39	7.44	**23.4**
V	9.63	11.7	10.91	12.42	9.6	10.41	9.23	1.19	**3.7**
Zn	8.58	10.45	16.25	13.51	10.5	8.18	8.35	3.03	**9.5**

ALL RUNS WERE CONDUCTED IN JANUARY, 2012. THE RUNS WERE ON THREE DIFFERENT DAYS EXCEPT WHERE I

UNITS	spike	Spike/MDL	PQL	PQL/MDL	Av Recov	Notes
ug/L	10	1.6	15	2.4	91	
ug/L	50	2.0	50	2.0	86	One day runs
ug/L	50	1.2	100	2.4	77	
ug/L	50	1.0	200	3.8	114	
ug/L	10	4.0	10	4.0	97	
ug/L	2.5	6.8	1	2.7	97	
ug/L	200	5.3	100	2.7	73	One day runs
ug/L	10	2.0	12	2.4	94	
ug/L	10	1.6	15	2.4	96	
ug/L	50	4.8	25	2.4	92	
ug/L	10	1.7	12	2.1	91	
ug/L	50	4.1	25	2.0	117	One day runs
ug/L	500	1.2	1000	2.4	97	
ug/L	10	7.2	100	72.4	89	
ug/L	100	2.4	100	2.4	99	
ug/L	10	7.0	10	7.0	96	
ug/L	50	7.6	20	3.0	106	
ug/L	100	3.6	3000	107.9	141	
ug/L	10	2.0	40	7.8	62	
ug/L	50	2.8	50	2.8	131	
ug/L	50	1.8	50	1.8	94	
ug/L	50	1.0	100	2.0	95	
ug/L	100	0.0	100	0.0	-554	BAD - REDO
ug/L	50	2.7	100	5.3	85	
ug/L	10	5.4	50	27.1	100	
ug/L	10	6.9	50	34.7	85	
ug/L	50	2.1	400	17.1	91	
ug/L	10	2.7	10	2.7	106	
ug/L	10	1.1	50	5.3	108	

NOTED IN THE TABLE.

MDL Study results
Method 300.0
Instrument IC_2
Thornton

Analyte	4/27/2012	5/9/2012	5/21/2012	6/8/2012	6/27/2012	7/6/2012
Bromide	0.105	0.115	0.0955	0.112	0.136	0.0593
Chloride	0.348	0.284	0.285	0.255	0.298	0.182
Fluoride	0.123	0.127	0.102	0.112	0.103	0.0662
Nitrate as N	0.109	0.13	0.107	0.116	0.124	0.0725
Nitrite as N	0.107	0.105	0.102	0.0924	0.095	0.0641
Ortho-Phosphate as P	0.134	0.113	0.122	0.0957	0.0943	0.0912
Sulfate	1.58	1.52	1.47	1.51	1.53	0.778
Total Nitrate & Nitrite as N	0.216	0.234	0.209	0.209	0.22	0.137

Operator: Tyler Ellis

7/30/2012	TV	Average	% Recov	s	MDL	Spike/MDL	Flag
0.117	0.1	0.106	105.7	0.0239	**0.075**	1.3	OK
0.243	0.25	0.271	108.3	0.0516	**0.162**	1.5	OK
0.105	0.1	0.105	105.5	0.0199	**0.062**	1.6	OK
0.118	0.1	0.111	110.9	0.0187	**0.059**	1.7	OK
0.108	0.1	0.096	96.2	0.0153	**0.048**	2.1	OK
0.112	0.1	0.109	108.9	0.0160	**0.050**	2.0	OK
1.54	1.5	1.418	94.6	0.2843	**0.893**	1.7	OK
0.226	0.2	0.207	103.6	0.0323	**0.101**	2.0	OK

CH2M Hill MDL Study

6390 Joyce Drive
100
Golden, CO 80403

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ACCREDITED
Certificate # 2427.01

DMRQA32 Graded Results Report

Study: DMRQA32-WET

Opening Date: March 19, 2012 - Closing Date: July 6, 2012

EPA Lab ID: OR00004

Laboratory: CH2M HILL Applied Sciences Laboratory
1100 NE Circle Blvd.
Suite 300
Corvallis, OR 97330
UNITED STATES
Mrs. Ginger Collins, QA Officer
541-768-3111

NPDES Permit ID: AK0053341

Permittee Name: SUMITOMO-POGO INC

Fathead Minnow Method 15 (PT-15-WET) — Lot #: 8517-15

NELAC Code	Analyte	Method Code	Method Description	Units	Assigned Value	Result	Acceptance Limits	Evaluation
3410	Fathead Minnow Chronic MHSF - Survival NOEC	10214003	EPA 1000 Fathead Minnow Chronic MHSF	S.U.	25	25.0	12.5 - 50	Acceptable
3410	Fathead Minnow Chronic MHSF - Growth IC25 (ON)	10214003	EPA 1000 Fathead Minnow Chronic MHSF	S.U.	32.3	32.4	25.8 - 38.9	Acceptable
3410	Fathead Minnow Chronic MHSF - Growth NOEC (ON)	10214003	EPA 1000 Fathead Minnow Chronic MHSF	S.U.	25	25.0	12.5 - 50	Acceptable

Ceriodaphnia Method 21 (PT-21-WET) — Lot #: 8517-21

NELAC Code	Analyte	Method Code	Method Description	Units	Assigned Value	Result	Acceptance Limits	Evaluation
3315	Ceriodaphnia Chronic MHSF - Survival NOEC	10215006	EPA 1002 Ceriodaphnia Chronic MHSF	S.U.	50	50.0	25 - 100	Acceptable
3315	Ceriodaphnia Chronic MHSF - Reproduction IC25	10215006	EPA 1002 Ceriodaphnia Chronic MHSF	S.U.	33.8	51.7	<8.25 - 63.4	Acceptable
3315	Ceriodaphnia Chronic MHSF - Reproduction NOEC	10215006	EPA 1002 Ceriodaphnia Chronic MHSF	S.U.	25	25.0	12.5 - 50	Acceptable

Test America MDL Study

TA Seattle CVAA (TAC 103)
Mercury (CVAA) Soil MDL Studies
5/22/2012
FCW

SOIL MDL#1 05/10/12

ELEMENT	Result (ug / L)	Result (ug / L)	Result (ug / L)	Result (ug / L)	Result (ug / L)	Result (ug / L)	Result (ug / L)	Std Dev	**MDL** (ug / L)
Mercury	0.124	0.112	0.116	0.122	0.124	0.117	0.119	0.004	**0.013**

SOIL MDL#2 05/15/12

ELEMENT	Result (ug / L)	Result (ug / L)	Result (ug / L)	Result (ug / L)	Result (ug / L)	Result (ug / L)	Result (ug / L)	Std Dev	**MDL** (ug / L)
Mercury	0.099	0.101	0.099	0.095	0.091	0.101	0.101	0.004	**0.011**

SOIL MDL#3 05/22/12

ELEMENT	Result (ug / L)	Result (ug / L)	Result (ug / L)	Result (ug / L)	Result (ug / L)	Result (ug / L)	Result (ug / L)	Std Dev	**MDL** (ug / L)
Mercury	0.117	0.116	0.115	0.116	0.116	0.114	0.116	0.001	**0.003**

AVERAGE MDL = 0.009 **(ug / L)**

5/22/12

MDL(S)01-051012

Method: Hg Operator: Admin Date of Analysis: 10 May 2012 09:19:10

Sample ID	Mean	Units	RSD	Date	Extended ID	Seq ID	Curve Type	Type	Method	Stnd Conc
STD 0	266	ug/l	0.307	10 May 2012 09:36:35		1710	-	Std	Hg	0.000
STD 1	1558	ug/l	0.236	10 May 2012 09:38:48		1711	-	Std	Hg	0.200
STD 2	3723	ug/l	0.216	10 May 2012 09:41:01		1712	-	Std	Hg	0.500
STD 3	15080	ug/l	0.458	10 May 2012 09:43:14		1713	-	Std	Hg	2.000
STD 4	38777	ug/l	0.313	10 May 2012 09:45:26		1714	-	Std	Hg	5.000
STD 5	77905	ug/l	0.419	10 May 2012 09:47:38		1715	-	Std	Hg	10.000

77905 µ Abs

A:0.0000e+000

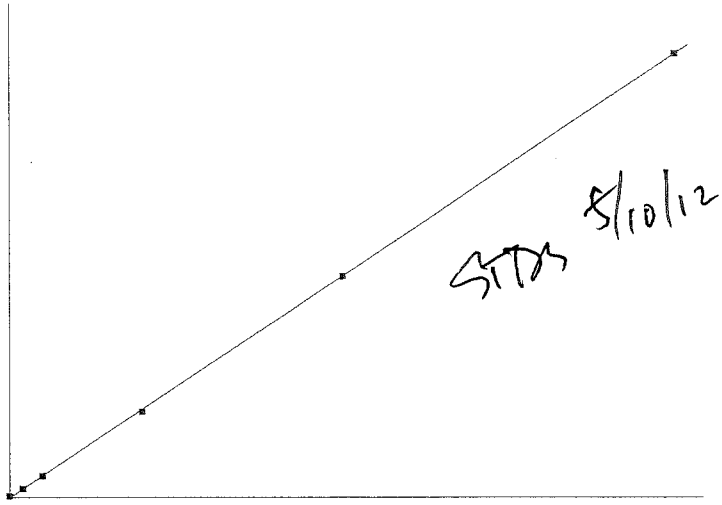
B:1.2840e-004

C:1.1479e-002

R:0.9999653

(TAC103)

Hg Soil MDL #1



STDs 5/10/12

Conc 10.0000

ICV	3.917	ug/l	0.336	10 May 2012 09:49:52		1716	Linear	CK STND	Hg	-
ICB	-0.002	ug/l	-8.169	10 May 2012 09:52:05		1717	Linear	CK STND	Hg	-
RL	0.215	ug/l	0.220	10 May 2012 09:54:18		1718	Linear	CK STND	Hg	-
CCV	5.014	ug/l	0.155	10 May 2012 10:00:47		1719	Linear	CK STND	Hg	-
CCB	-0.005	ug/l	-9.693	10 May 2012 10:03:03		1720	Linear	CK STND	Hg	-
MB (S)	0.022	ug/l	0.274	10 May 2012 10:05:22	TAC103 FCW 111008	1721	Linear	SMPL	Hg	-
MDL(S)01-1	0.124	ug/l	0.509	10 May 2012 10:07:37	TAC103 FCW 111008	1722	Linear	SMPL	Hg	-
MDL(S)01-2	0.112	ug/l	0.054	10 May 2012 10:09:53	TAC103 FCW 111008	1723	Linear	SMPL	Hg	-
MDL(S)01-3	0.116	ug/l	0.052	10 May 2012 10:12:09	TAC103 FCW 111008	1724	Linear	SMPL	Hg	-
MDL(S)01-4	0.122	ug/l	0.049	10 May 2012 10:14:25	TAC103 FCW 111008	1725	Linear	SMPL	Hg	-
MDL(S)01-5	0.124	ug/l	0.176	10 May 2012 10:16:41	TAC103 FCW 111008	1726	Linear	SMPL	Hg	-
MDL(S)01-6	0.117	ug/l	0.137	10 May 2012 10:18:57	TAC103 FCW 111008	1727	Linear	SMPL	Hg	-
MDL(S)01-7	0.119	ug/l	0.442	10 May 2012 10:21:14	TAC103 FCW 111008	1728	Linear	SMPL	Hg	-
CCV	5.046	ug/l	0.205	10 May 2012 10:23:31		1729	Linear	CK STND	Hg	-
CCB	-0.005	ug/l	-4.328	10 May 2012 10:25:47		1730	Linear	CK STND	Hg	-

Metals/Inorganics Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 580-111008 | Analyst: Boardway, Peter A | Batch Open: 5/10/2012 8:34:00AM

Method Code: 580-7471A_Prep-580 | Batch End: 5/10/2012 9:34:00AM

Preparation, Mercury

	Input Sample Lab ID (Analytical Method)	SDG	Matrix	Initial Amount	Final Amount	Due Date	Analytical TAT	Dlv Rank	Comments	Output Sample Lab ID
1	IC~580-111008/1 N/A	N/A		0.6 g	50 mL	N/A	N/A	N/A		580-903335
2	IC~580-111008/2 N/A	N/A		0.6 g	50 mL	N/A	N/A	N/A		580-903336
3	IC~580-111008/3 N/A	N/A		0.6 g	50 mL	N/A	N/A	N/A		580-903337
4	IC~580-111008/4 N/A	N/A		0.6 g	50 mL	N/A	N/A	N/A		580-903338
5	IC~580-111008/5 N/A	N/A		0.6 g	50 mL	N/A	N/A	N/A		580-903339
6	IC~580-111008/6 N/A	N/A		0.6 g	50 mL	N/A	N/A	N/A		580-903340
7	RL~580-111008/7 N/A	N/A		0.6 g	50 mL	N/A	N/A	N/A		580-903341
8	CCV~580-111008/8 N/A	N/A		0.6 g	50 mL	N/A	N/A	N/A		580-903342
9	CCV~580-111008/9 N/A	N/A		0.6 g	50 mL	N/A	N/A	N/A		580-903343
10	CCV~580-111008/10 N/A	N/A		0.6 g	50 mL	N/A	N/A	N/A		580-903344
11	CCV~580-111008/11 N/A	N/A		0.6 g	50 mL	N/A	N/A	N/A		580-903345
12	CCV~580-111008/12 N/A	N/A		0.6 g	50 mL	N/A	N/A	N/A		580-903346
13	CCV~580-111008/13 N/A	N/A		0.6 g	50 mL	N/A	N/A	N/A		580-903347
14	ICV~580-111008/14 N/A	N/A		0.6 g	50 mL	N/A	N/A	N/A		580-903348

Metals/Inorganics Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 580-111008 Analyst: Boardway, Peter A Batch Open: 5/10/2012 8:34:00AM

Method Code: 580-7471A_Prep-580 Batch End: 5/10/2012 9:34:00AM

15	ICB~580-111008/15 N/A	N/A		0.6 g	50 mL	N/A	N/A	N/A	580-903349
16	CCB~580-111008/16 N/A	N/A		0.6 g	50 mL	N/A	N/A	N/A	580-903350
17	CCB~580-111008/17 N/A	N/A		0.6 g	50 mL	N/A	N/A	N/A	580-903351
18	CCB~580-111008/18 N/A	N/A		0.6 g	50 mL	N/A	N/A	N/A	580-903352
19	CCB~580-111008/19 N/A	N/A		0.6 g	50 mL	N/A	N/A	N/A	580-903353
20	CCB~580-111008/20 N/A	N/A		0.6 g	50 mL	N/A	N/A	N/A	580-903354
21	CCB~580-111008/21 N/A	N/A		0.6 g	50 mL	N/A	N/A	N/A	580-903355
22	mdl1 N/A	N/A		0.6 g	50 mL	N/A	N/A	N/A	580-903486
23	mdl2 N/A	N/A		0.6 g	50 mL	N/A	N/A	N/A	580-903487
24	mdl3 N/A	N/A		0.6 g	50 mL	N/A	N/A	N/A	580-903488
25	mdl4 N/A	N/A		0.6 g	50 mL	N/A	N/A	N/A	580-903489
26	mdl5 N/A	N/A		0.6 g	50 mL	N/A	N/A	N/A	580-903490
27	mdl6 N/A	N/A		0.6 g	50 mL	N/A	N/A	N/A	580-903491
28	mdl7 N/A	N/A		0.6 g	50 mL	N/A	N/A	N/A	580-903492

Metals/Inorganics Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 580-111008

Method Code: 580-7471A_Prep-580

Analyst: Boardway, Peter A

Batch Open: 5/10/2012 8:34:00AM

Batch End: 5/10/2012 9:34:00AM

	Input Sample Lab ID (Analytical Method)	(Sub-List)	Analytes
1	IC 580-111008/1 N/A	N/A	N/A
2	IC 580-111008/2 N/A	N/A	N/A
3	IC 580-111008/3 N/A	N/A	N/A
4	IC 580-111008/4 N/A	N/A	N/A
5	IC 580-111008/5 N/A	N/A	N/A
6	IC 580-111008/6 N/A	N/A	N/A
7	RL 580-111008/7 N/A	N/A	N/A
8	CCV 580-111008/8 N/A	N/A	N/A
9	CCV 580-111008/9 N/A	N/A	N/A
10	CCV 580-111008/10 N/A	N/A	N/A
11	CCV 580-111008/11 N/A	N/A	N/A
12	CCV 580-111008/12 N/A	N/A	N/A
13	CCV 580-111008/13 N/A	N/A	N/A
14	ICV 580-111008/14 N/A	N/A	N/A
15	ICB 580-111008/15 N/A	N/A	N/A
16	CCB 580-111008/16 N/A	N/A	N/A

Metals/Inorganics Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 580-111008 Analyst: Boardway, Peter A Batch Open: 5/10/2012 8:34:00AM

Method Code: 580-7471A_Prep-580 Batch End: 5/10/2012 9:34:00AM

17	CCB 580-111008/17 N/A	N/A	N/A
18	CCB 580-111008/18 N/A	N/A	N/A
19	CCB 580-111008/19 N/A	N/A	N/A
20	CCB 580-111008/20 N/A	N/A	N/A
21	CCB 580-111008/21 N/A	N/A	N/A
22	mdl1 N/A	N/A	N/A
23	mdl2 N/A	N/A	N/A
24	mdl3 N/A	N/A	N/A
25	mdl4 N/A	N/A	N/A
26	mdl5 N/A	N/A	N/A
27	mdl6 N/A	N/A	N/A
28	mdl7 N/A	N/A	N/A

Analytes that are not being reported with be displayed in [...] brackets. Analytes that are not being reported but are on the spike list with be displayed in (...) parentheses.

Metals/Inorganics Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 580-111008

Method Code: 580-7471A_Prep-580

Analyst: Boardway, Peter A

Batch Open: 5/10/2012 8:34:00AM

Batch End: 5/10/2012 9:34:00AM

Batch Notes

Acid used for pH adjustment	
Perform Calculation (0=No, 1=Yes)	
Nominal Amount Used	
SOP Number	
Digestion Tube/Cup Lot #	878617
Hot Block ID number	38008
Hood ID or number	06
Balance ID	SEA204
Blank Soil Lot Number	
Lot # of Nitric Acid	869876
ID number of the thermometer	15-041-1A-B
Lot # of hydrochloric acid	869930
Potassium Permanganate Lot Number	861293
Sulfuric Acid Lot Number	
Hydroxylamine Sulfate Lot Number	
Potassium Persulfate Lot Number	
Stannous Chloride Lot Number	790550
Uncorrected Temperature	95
Oven, Bath or Block Temperature 1	94 CORRECTED-TEMP
Uncorrected Temperature 2	

Metals/Inorganics Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 580-111008 | Analyst: Boardway, Peter A | Batch Open: 5/10/2012 8:34:00AM

Method Code: 580-7471A_Prep-580 | Batch End: 5/10/2012 9:34:00AM

Oven, Bath or Block Temperature 2	
NaCL Lot #	825163
Repittetor Volume Check	
Aqua Regia Lot Number	
Hydroxylamine Hydrochloride Lot	790508
Pipette ID	METALS-PREP-2
Filter Lot #	
Syringe Lot #	
Batch Comment	

Comments

Metals/Inorganics Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 580-111008

Method Code: 580-7471A_Prep-580

Analyst: Boardway, Peter A

Batch Open: 5/10/2012 8:34:00AM

Batch End: 5/10/2012 9:34:00AM

Reagent Additions Worksheet

Lab ID	Reagent Code	Amount Added	Final Amount	By	Witness
IC 580-111008/2	Hg_CAL_WORK_00011	0.1 mL	50 mL		
IC 580-111008/3	Hg_CAL_WORK_00011	0.25 mL	50 mL		
IC 580-111008/4	Hg_CAL_WORK_00011	1.0 mL	50 mL		
IC 580-111008/5	Hg_CAL_WORK_00011	2.5 mL	50 mL		
IC 580-111008/6	Hg_CAL_WORK_00011	5.0 mL	50 mL		
RL 580-111008/7	Hg_CAL_WORK_00011	0.1 mL	50 mL		
CCV 580-111008/8	Hg_CAL_WORK_00011	2.5 mL	50 mL		
CCV 580-111008/9	Hg_CAL_WORK_00011	2.5 mL	50 mL		
CCV 580-111008/10	Hg_CAL_WORK_00011	2.5 mL	50 mL		
CCV 580-111008/11	Hg_CAL_WORK_00011	2.5 mL	50 mL		
CCV 580-111008/12	Hg_CAL_WORK_00011	2.5 mL	50 mL		
CCV 580-111008/13	Hg_CAL_WORK_00011	2.5 mL	50 mL		
ICV 580-111008/14	Hg_ICV_WORK_00013	2.0 mL	50 mL		
mdl1	Hg_CAL_WORK_00011	0.05 mL	50 mL		
mdl2	Hg_CAL_WORK_00011	0.05 mL	50 mL		
mdl3	Hg_CAL_WORK_00011	0.05 mL	50 mL		
mdl4	Hg_CAL_WORK_00011	0.05 mL	50 mL		

Metals/Inorganics Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 580-111008 Analyst: Boardway, Peter A Batch Open: 5/10/2012 8:34:00AM

Method Code: 580-7471A_Prep-580 Batch End: 5/10/2012 9:34:00AM

mdl5	Hg_CAL_WORK_00011	0.05 mL	50 mL		
mdl6	Hg_CAL_WORK_00011	0.05 mL	50 mL		
mdl7	Hg_CAL_WORK_00011	0.05 mL	50 mL		

Other Reagents:

Reagent	Amount/Units	Lot#:

051512-HG

Method: Hg Operator: Admin Date of Analysis: 15 May 2012 09:10:06

Sample ID	Mean	Units	RSD	Date	Extended ID	Seq ID	Curve Type	Type	Method	Std Conc
STD 0	268	ug/l	0.528	15 May 2012 09:30:42		2		Std	Hg	0.000
STD 1	1631	ug/l	0.465	15 May 2012 09:32:54		3		Std	Hg	0.200
STD 2	3938	ug/l	0.110	15 May 2012 09:35:07		4		Std	Hg	0.500
STD 3	15584	ug/l	0.310	15 May 2012 09:37:20		5		Std	Hg	2.000
STD 4	39393	ug/l	0.151	15 May 2012 09:39:33		6		Std	Hg	5.000
STD 5	78643	ug/l	0.428	15 May 2012 09:41:45		7		Std	Hg	10.000

78643 µ Abs

A:0.0000e+000

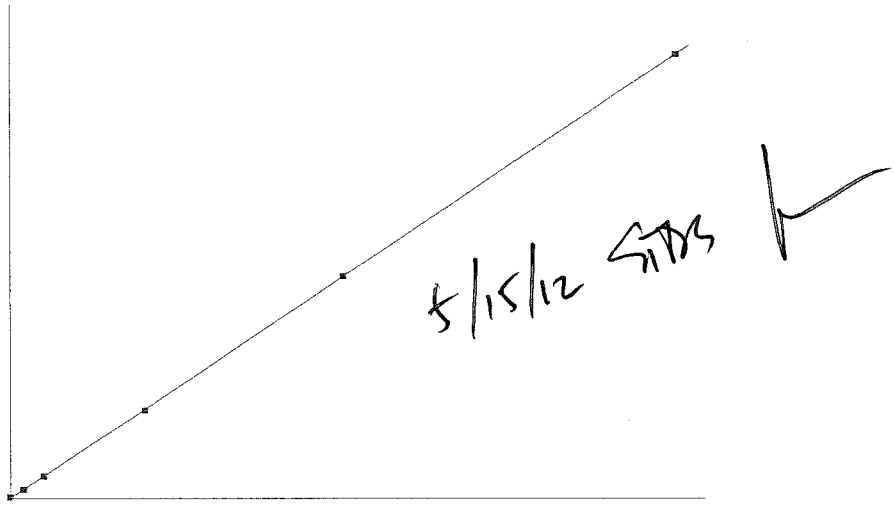
B:1.2730e-004

C:-8.7739e-003

R:0.9999912

(TAC 103)

Hg Soil MDL #2



Conc 10.0000

ICV	3.927	ug/l	0.237	15 May 2012 09:43:59		8	Linear	CK STND	Hg	-
ICB	-0.022	ug/l	-0.478	15 May 2012 09:46:13		9	Linear	CK STND	Hg	-
RL	0.195	ug/l	0.107	15 May 2012 09:48:27		10	Linear	CK STND	Hg	-
CCV	5.080	ug/l	0.358	15 May 2012 09:53:12		11	Linear	CK STND	Hg	-
CCB	-0.029	ug/l	-0.209	15 May 2012 09:55:26		12	Linear	CK STND	Hg	-
MB(S)	< 0.000	ug/l	-1.609	15 May 2012 09:57:47	TAC103 FCW 111353	13	Linear	SMPL	Hg	-
MDL(S)02-1	0.099	ug/l	0.471	15 May 2012 10:00:03	TAC103 FCW 111353	14	Linear	SMPL	Hg	-
MDL(S)02-2	0.101	ug/l	0.206	15 May 2012 10:02:19	TAC103 FCW 111353	15	Linear	SMPL	Hg	-
MDL(S)02-3	0.099	ug/l	0.105	15 May 2012 10:04:35	TAC103 FCW 111353	16	Linear	SMPL	Hg	-
MDL(S)02-4	0.095	ug/l	0.110	15 May 2012 10:06:51	TAC103 FCW 111353	17	Linear	SMPL	Hg	-
MDL(S)02-5	0.091	ug/l	0.131	15 May 2012 10:09:07	TAC103 FCW 111353	18	Linear	SMPL	Hg	-
MDL(S)02-6	0.101	ug/l	0.178	15 May 2012 10:11:23	TAC103 FCW 111353	19	Linear	SMPL	Hg	-
MDL(S)02-7	0.101	ug/l	0.307	15 May 2012 10:13:40	TAC103 FCW 111353	20	Linear	SMPL	Hg	-
CCV	5.020	ug/l	0.140	15 May 2012 10:15:57		21	Linear	CK STND	Hg	-
CCB	-0.033	ug/l	-1.573	15 May 2012 10:18:13		22	Linear	CK STND	Hg	-
MB 580-111304/21-A	< 0.000	ug/l	-3.409	15 May 2012 10:20:32	TAC103 FCW 111304	23	Linear	SMPL	Hg	-
LCS 580-111304/22-A	1.868	ug/l	0.345	15 May 2012 10:22:49	TAC103 FCW 111304	24	Linear	SMPL	Hg	-
LCSD 580-111304/23-A	1.795	ug/l	0.348	15 May 2012 10:25:06	TAC103 FCW 111304	25	Linear	SMPL	Hg	-
580-32640-A-1-G	0.547	ug/l	0.029	15 May 2012 10:27:24	TAC103 FCW 111304	26	Linear	SMPL	Hg	-
580-32640-A-1-H DU	0.325	ug/l	0.018	15 May 2012 10:29:42	TAC103 FCW 111304	27	Linear	SMPL	Hg	-
580-32640-A-1-I MS	2.340	ug/l	0.178	15 May 2012 10:31:58	TAC103 FCW 111304	28	Linear	SMPL	Hg	-
580-32640-A-1-J MSD	2.384	ug/l	0.140	15 May 2012 10:34:14	TAC103 FCW 111304	29	Linear	SMPL	Hg	-
580-32640-A-2-J	0.167	ug/l	0.498	15 May 2012 10:36:31	TAC103 FCW 111304	30	Linear	SMPL	Hg	-
580-32640-A-3-H	0.198	ug/l	0.395	15 May 2012 10:38:47	TAC103 FCW 111304	31	Linear	SMPL	Hg	-
CCV	4.846	ug/l	0.114	15 May 2012 10:41:03		32	Linear	CK STND	Hg	-
CCB	-0.036	ug/l	-0.875	15 May 2012 10:43:19		33	Linear	CK STND	Hg	-
580-32716-A-2-F	0.291	ug/l	0.218	15 May 2012 10:45:37	TAC103 FCW 111304	34	Linear	SMPL	Hg	-
580-32554-B-18-A	1.063	ug/l	0.094	15 May 2012 10:47:53	TAC103 FCW 111304	35	Linear	SMPL	Hg	-
580-32554-A-19-A	0.815	ug/l	0.102	15 May 2012 10:50:10	TAC103 FCW 111304	36	Linear	SMPL	Hg	-
580-32554-A-20-A	1.234	ug/l	0.347	15 May 2012 10:52:27	TAC103 FCW 111304	37	Linear	SMPL	Hg	-
580-32554-B-21-A	0.407	ug/l	0.078	15 May 2012 10:54:45	TAC103 FCW 111304	38	Linear	SMPL	Hg	-
580-32554-B-22-A	0.558	ug/l	0.234	15 May 2012 10:57:03	TAC103 FCW 111304	39	Linear	SMPL	Hg	-
580-32554-B-23-A	0.585	ug/l	0.251	15 May 2012 10:59:21	TAC103 FCW 111304	40	Linear	SMPL	Hg	-
580-32554-B-24-A	0.446	ug/l	0.062	15 May 2012 11:01:38	TAC103 FCW 111304	41	Linear	SMPL	Hg	-
580-32554-B-25-A	0.519	ug/l	0.092	15 May 2012 11:03:56	TAC103 FCW 111304	42	Linear	SMPL	Hg	-
580-32554-A-26-A	0.689	ug/l	0.250	15 May 2012 11:06:13	TAC103 FCW 111304	43	Linear	SMPL	Hg	-
CCV	4.767	ug/l	0.266	15 May 2012 11:08:30		44	Linear	CK STND	Hg	-
CCB	-0.028	ug/l	-0.376	15 May 2012 11:10:47		45	Linear	CK STND	Hg	-
580-32554-A-27-A	0.808	ug/l	0.127	15 May 2012 11:13:05	TAC103 FCW 111304	46	Linear	SMPL	Hg	-
580-32554-A-28-A	0.868	ug/l	0.035	15 May 2012 11:15:23	TAC103 FCW 111304	47	Linear	SMPL	Hg	-
580-32554-C-29-D	0.995	ug/l	0.111	15 May 2012 11:17:40	TAC103 FCW 111304	48	Linear	SMPL	Hg	-
580-32554-C-30-D	0.618	ug/l	0.173	15 May 2012 11:19:57	TAC103 FCW 111304	49	Linear	SMPL	Hg	-
CCV	4.687	ug/l	0.422	15 May 2012 11:22:14		50	Linear	CK STND	Hg	-
CCB	-0.032	ug/l	-0.188	15 May 2012 11:24:30		51	Linear	CK STND	Hg	-
MB 580-111298/17-A	< 0.000	ug/l	-3.811	15 May 2012 11:26:48	TAC103 FCW 111298	52	Linear	SMPL	Hg	-
LCS 580-111298/18-A	1.683	ug/l	0.529	15 May 2012 11:29:44	TAC103 FCW 111298	53	Linear	SMPL	Hg	-
LCSD 580-111298/19-A	1.678	ug/l	0.714	15 May 2012 11:32:01	TAC103 FCW 111298	54	Linear	SMPL	Hg	-
250-2532-A-2-F	< 0.000	ug/l	-0.571	15 May 2012 11:34:18	TAC103 FCW 111298	55	Linear	SMPL	Hg	-
250-2532-A-2-G DU	< 0.000	ug/l	-3.937	15 May 2012 11:36:35	TAC103 FCW 111298	56	Linear	SMPL	Hg	-
250-2532-A-2-H MS	1.788	ug/l	0.462	15 May 2012 11:38:53	TAC103 FCW 111298	57	Linear	SMPL	Hg	-
250-2532-A-2-I MSD	1.775	ug/l	0.021	15 May 2012 11:41:10	TAC103 FCW 111298	58	Linear	SMPL	Hg	-
250-2532-A-1-C	0.002	ug/l	6.860	15 May 2012 11:43:27	TAC103 FCW 111298	59	Linear	SMPL	Hg	-
250-2548-C-1-C	< 0.000	ug/l	-3.150	15 May 2012 11:45:44	TAC103 FCW 111298	60	Linear	SMPL	Hg	-
250-2548-B-2-C	< 0.000	ug/l	-3.344	15 May 2012 11:48:01	TAC103 FCW 111298	61	Linear	SMPL	Hg	-
CCV	4.718	ug/l	0.273	15 May 2012 11:50:18		62	Linear	CK STND	Hg	-
CCB	-0.026	ug/l	-1.004	15 May 2012 11:52:34		63	Linear	CK STND	Hg	-
250-2548-A-3-C	0.074	ug/l	0.352	15 May 2012 11:54:52	TAC103 FCW 111298	64	Linear	SMPL	Hg	-
250-2548-B-4-C	< 0.000	ug/l	-2.162	15 May 2012 11:57:09	TAC103 FCW 111298	65	Linear	SMPL	Hg	-
250-2548-B-5-C	< 0.000	ug/l	0.000	15 May 2012 11:59:26	TAC103 FCW 111298	66	Linear	SMPL	Hg	-
250-2548-A-6-C	0.004	ug/l	4.551	15 May 2012 12:01:43	TAC103 FCW 111298	67	Linear	SMPL	Hg	-
250-2540-A-1-C	0.000	ug/l	0.000	15 May 2012 12:04:00	TAC103 FCW 111298	68	Linear	SMPL	Hg	-
250-2540-A-2-C	< 0.000	ug/l	-3.795	15 May 2012 12:06:17	TAC103 FCW 111298	69	Linear	SMPL	Hg	-
250-2540-A-3-C	0.007	ug/l	4.881	15 May 2012 12:08:34	TAC103 FCW 111298	70	Linear	SMPL	Hg	-
250-2509-A-1-C	0.010	ug/l	2.147	15 May 2012 12:10:52	TAC103 FCW 111298	71	Linear	SMPL	Hg	-
250-2509-A-2-C	0.000	ug/l	13.826	15 May 2012 12:13:09	TAC103 FCW 111298	72	Linear	SMPL	Hg	-
580-32779-A-1-D	< 0.000	ug/l	-3.046	15 May 2012 12:15:26	TAC103 FCW 111298	73	Linear	SMPL	Hg	-
CCV	4.725	ug/l	0.374	15 May 2012 12:17:43		74	Linear	CK STND	Hg	-
CCB	-0.026	ug/l	-0.683	15 May 2012 12:19:59		75	Linear	CK STND	Hg	-
580-32767-A-1-C	0.118	ug/l	0.184	15 May 2012 12:22:18	TAC103 FCW 111298	76	Linear	SMPL	Hg	-
MB 580-111298/20-A	< 0.000	ug/l	-3.064	15 May 2012 12:24:35	TAC103 FCW 111298	77	Linear	SMPL	Hg	-

051512-HG

Method: Hg Operator: Admin Date of Analysis: 15 May 2012 09:10:06

Sample ID	Mean	Units	RSD	Date	Extended ID	Seq ID	Curve Type	Type	Method	Stnd Conc
CCV	4.651	ug/l	0.266	15 May 2012 12:26:52		78	Linear	CK STND	Hg	-
CCB	-0.023	ug/l	-0.677	15 May 2012 12:29:08		79	Linear	CK STND	Hg	-
MB 580-111363/18-A	< 0.000	ug/l	-26.950	15 May 2012 12:41:32	TAC103 PB 111363	80	Linear	SMPL	Hg	-
LCS 580-111363/19-A	1.754	ug/l	0.325	15 May 2012 12:43:48	TAC103 PB 111363	81	Linear	SMPL	Hg	-
LCSD 580-111363/20-A	1.769	ug/l	0.304	15 May 2012 12:46:04	TAC103 PB 111363	82	Linear	SMPL	Hg	-
LCSSRM 580-111363/21-A 10X	3.048	ug/l	0.108	15 May 2012 12:48:20	TAC103 PB 111363	83	Linear	SMPL	Hg	-
580-32812-H-15-B	< 0.000	ug/l	-0.448	15 May 2012 12:50:36	TAC103 PB 111363	84	Linear	SMPL	Hg	-
580-32812-H-15-C DU	< 0.000	ug/l	-49.748	15 May 2012 12:52:53	TAC103 PB 111363	85	Linear	SMPL	Hg	-
580-32812-H-15-D MS	1.012	ug/l	0.036	15 May 2012 12:55:09	TAC103 PB 111363	86	Linear	SMPL	Hg	-
580-32812-H-15-E MSD	1.009	ug/l	0.274	15 May 2012 12:57:25	TAC103 PB 111363	87	Linear	SMPL	Hg	-
580-32804-A-1-A	0.306	ug/l	0.109	15 May 2012 12:59:42	TAC103 PB 111363	88	Linear	SMPL	Hg	-
580-32804-A-2-A	0.219	ug/l	0.438	15 May 2012 13:01:59	TAC103 PB 111363	89	Linear	SMPL	Hg	-
CCV	4.530	ug/l	0.324	15 May 2012 13:04:16		90	Linear	CK STND	Hg	-
CCB	-0.027	ug/l	-0.590	15 May 2012 13:06:32		91	Linear	CK STND	Hg	-
580-32854-A-1-A	1.158	ug/l	0.389	15 May 2012 13:08:50	TAC103 PB 111363	92	Linear	SMPL	Hg	-
580-32554-C-31-D	0.518	ug/l	0.221	15 May 2012 13:11:08	TAC103 PB 111363	93	Linear	SMPL	Hg	-
580-32554-C-32-F	0.462	ug/l	0.013	15 May 2012 13:13:26	TAC103 PB 111363	94	Linear	SMPL	Hg	-
580-32554-C-33-D	0.437	ug/l	0.323	15 May 2012 13:15:43	TAC103 PB 111363	95	Linear	SMPL	Hg	-
580-32554-C-34-D	0.477	ug/l	0.263	15 May 2012 13:18:00	TAC103 PB 111363	96	Linear	SMPL	Hg	-
580-32554-C-35-D	0.566	ug/l	0.307	15 May 2012 13:20:17	TAC103 PB 111363	97	Linear	SMPL	Hg	-
580-32554-C-36-D	0.432	ug/l	0.168	15 May 2012 13:22:34	TAC103 PB 111363	98	Linear	SMPL	Hg	-
580-32554-C-37-D	0.420	ug/l	0.103	15 May 2012 13:24:51	TAC103 PB 111363	99	Linear	SMPL	Hg	-
580-32554-C-38-D	0.410	ug/l	0.514	15 May 2012 13:27:08	TAC103 PB 111363	100	Linear	SMPL	Hg	-
CCV	4.580	ug/l	0.372	15 May 2012 13:29:25		101	Linear	CK STND	Hg	-
CCB	-0.030	ug/l	-0.527	15 May 2012 13:31:42		102	Linear	CK STND	Hg	-
580-32792-A-1-K	< 0.000	ug/l	-2.973	15 May 2012 13:34:01	TAC103 PB 111363	103	Linear	SMPL	Hg	-
580-32792-A-2-K	0.008	ug/l	3.596	15 May 2012 13:36:18	TAC103 PB 111363	104	Linear	SMPL	Hg	-
CCV	4.494	ug/l	0.050	15 May 2012 13:38:35		105	Linear	CK STND	Hg	-
CCB	-0.036	ug/l	-0.926	15 May 2012 13:40:52		106	Linear	CK STND	Hg	-

Metals/Inorganics Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 580-111353

Method Code: 580-7471A_Prep-580

Analyst: Woo, Fred C

Batch Open: 5/15/2012 8:00:00AM

Batch End: 5/15/2012 9:00:00AM

Preparation, Mercury

	Input Sample Lab ID (Analytical Method)	SDG	Matrix	Initial Amount	Final Amount	Due Date	Analytical TAT	Dlv Rank	Comments	Output Sample Lab ID
1	IC~580-111353/1 N/A	N/A		0.6 g	50 mL	N/A	N/A	N/A		580-905496
2	IC~580-111353/2 N/A	N/A		0.6 g	50 mL	N/A	N/A	N/A		580-905497
3	IC~580-111353/3 N/A	N/A		0.6 g	50 mL	N/A	N/A	N/A		580-905498
4	IC~580-111353/4 N/A	N/A		0.6 g	50 mL	N/A	N/A	N/A		580-905499
5	IC~580-111353/5 N/A	N/A		0.6 g	50 mL	N/A	N/A	N/A		580-905500
6	IC~580-111353/6 N/A	N/A		0.6 g	50 mL	N/A	N/A	N/A		580-905501
7	RL~580-111353/7 N/A	N/A		0.6 g	50 mL	N/A	N/A	N/A		580-905502
8	CCV~580-111353/8 N/A	N/A		0.6 g	50 mL	N/A	N/A	N/A		580-905503
9	CCV~580-111353/9 N/A	N/A		0.6 g	50 mL	N/A	N/A	N/A		580-905504
10	CCV~580-111353/10 N/A	N/A		0.6 g	50 mL	N/A	N/A	N/A		580-905505
11	CCV~580-111353/11 N/A	N/A		0.6 g	50 mL	N/A	N/A	N/A		580-905506
12	CCV~580-111353/12 N/A	N/A		0.6 g	50 mL	N/A	N/A	N/A		580-905507
13	CCV~580-111353/13 N/A	N/A		0.6 g	50 mL	N/A	N/A	N/A		580-905508
14	ICV~580-111353/14 N/A	N/A		0.6 g	50 mL	N/A	N/A	N/A		580-905509

Metals/Inorganics Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 580-111353 Analyst: Woo, Fred C Batch Open: 5/15/2012 8:00:00AM

Method Code: 580-7471A_Prep-580 Batch End: 5/15/2012 9:00:00AM

15	ICB~580-111353/15 N/A	N/A		0.6 g	50 mL	N/A	N/A	N/A	580-905510
16	CCB~580-111353/16 N/A	N/A		0.6 g	50 mL	N/A	N/A	N/A	580-905511
17	CCB~580-111353/17 N/A	N/A		0.6 g	50 mL	N/A	N/A	N/A	580-905512
18	CCB~580-111353/18 N/A	N/A		0.6 g	50 mL	N/A	N/A	N/A	580-905513
19	CCB~580-111353/19 N/A	N/A		0.6 g	50 mL	N/A	N/A	N/A	580-905514
20	CCB~580-111353/20 N/A	N/A		0.6 g	50 mL	N/A	N/A	N/A	580-905515
21	CCB~580-111353/21 N/A	N/A		0.6 g	50 mL	N/A	N/A	N/A	580-905516
22	mdl1 N/A	N/A		0.6 g	50 mL	N/A	N/A	N/A	580-905517
23	mdl2 N/A	N/A		0.6 g	50 mL	N/A	N/A	N/A	580-905518
24	mdl3 N/A	N/A		0.6 g	50 mL	N/A	N/A	N/A	580-905519
25	mdl4 N/A	N/A		0.6 g	50 mL	N/A	N/A	N/A	580-905520
26	mdl5 N/A	N/A		0.6 g	50 mL	N/A	N/A	N/A	580-905521
27	mdl6 N/A	N/A		0.6 g	50 mL	N/A	N/A	N/A	580-905522
28	mdl7 N/A	N/A		0.6 g	50 mL	N/A	N/A	N/A	580-905523

Metals/Inorganics Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 580-111353

Method Code: 580-7471A_Prep-580

Analyst: Woo, Fred C

Batch Open: 5/15/2012 8:00:00AM

Batch End: 5/15/2012 9:00:00AM

	Input Sample Lab ID (Analytical Method)	(Sub-List)	Analytes
1	IC 580-111353/1 N/A	N/A	N/A
2	IC 580-111353/2 N/A	N/A	N/A
3	IC 580-111353/3 N/A	N/A	N/A
4	IC 580-111353/4 N/A	N/A	N/A
5	IC 580-111353/5 N/A	N/A	N/A
6	IC 580-111353/6 N/A	N/A	N/A
7	RL 580-111353/7 N/A	N/A	N/A
8	CCV 580-111353/8 N/A	N/A	N/A
9	CCV 580-111353/9 N/A	N/A	N/A
10	CCV 580-111353/10 N/A	N/A	N/A
11	CCV 580-111353/11 N/A	N/A	N/A
12	CCV 580-111353/12 N/A	N/A	N/A
13	CCV 580-111353/13 N/A	N/A	N/A
14	ICV 580-111353/14 N/A	N/A	N/A
15	ICB 580-111353/15 N/A	N/A	N/A
16	CCB 580-111353/16 N/A	N/A	N/A

Metals/Inorganics Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 580-111353 Analyst: Woo, Fred C Batch Open: 5/15/2012 8:00:00AM

Method Code: 580-7471A_Prep-580 Batch End: 5/15/2012 9:00:00AM

17	CCB 580-111353/17 N/A	N/A	N/A
18	CCB 580-111353/18 N/A	N/A	N/A
19	CCB 580-111353/19 N/A	N/A	N/A
20	CCB 580-111353/20 N/A	N/A	N/A
21	CCB 580-111353/21 N/A	N/A	N/A
22	mdl1 N/A	N/A	N/A
23	mdl2 N/A	N/A	N/A
24	mdl3 N/A	N/A	N/A
25	mdl4 N/A	N/A	N/A
26	mdl5 N/A	N/A	N/A
27	mdl6 N/A	N/A	N/A
28	mdl7 N/A	N/A	N/A

Analytes that are not being reported with be displayed in [...] brackets. Analytes that are not being reported but are on the spike list with be displayed in (...) parentheses.

Metals/Inorganics Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 580-111353

Method Code: 580-7471A_Prep-580

Analyst: Woo, Fred C

Batch Open: 5/15/2012 8:00:00AM

Batch End: 5/15/2012 9:00:00AM

Batch Notes

Acid used for pH adjustment	
Perform Calculation (0=No, 1=Yes)	
Nominal Amount Used	
SOP Number	
Digestion Tube/Cup Lot #	878617
Hot Block ID number	38008
Hood ID or number	06
Balance ID	SEA204
Blank Soil Lot Number	
Lot # of Nitric Acid	869876
ID number of the thermometer	15-041-1A-B
Lot # of hydrochloric acid	869930
Potassium Permanganate Lot Number	861293
Sulfuric Acid Lot Number	
Hydroxylamine Sulfate Lot Number	
Potassium Persulfate Lot Number	
Stannous Chloride Lot Number	790550
Uncorrected Temperature	95
Oven, Bath or Block Temperature 1	94 CORRECTED-TEMP
Uncorrected Temperature 2	

Metals/Inorganics Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 580-111353 | Analyst: Woo, Fred C | Batch Open: 5/15/2012 8:00:00AM

Method Code: 580-7471A_Prep-580 | Batch End: 5/15/2012 9:00:00AM

Oven, Bath or Block Temperature 2	
NaCL Lot #	825163
Repittetor Volume Check	
Aqua Regia Lot Number	
Hydroxylamine Hydrochloride Lot	790508
Pipette ID	METALS-PREP-2
Filter Lot #	
Syringe Lot #	
Batch Comment	

Comments

Metals/Inorganics Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 580-111353

Method Code: 580-7471A_Prep-580

Analyst: Woo, Fred C

Batch Open: 5/15/2012 8:00:00AM

Batch End: 5/15/2012 9:00:00AM

Reagent Additions Worksheet

Lab ID	Reagent Code	Amount Added	Final Amount	By	Witness
IC 580-111353/2	Hg_CAL_WORK_00011	0.1 mL	50 mL		
IC 580-111353/3	Hg_CAL_WORK_00011	0.25 mL	50 mL		
IC 580-111353/4	Hg_CAL_WORK_00011	1 mL	50 mL		
IC 580-111353/5	Hg_CAL_WORK_00011	2.5 mL	50 mL		
IC 580-111353/6	Hg_CAL_WORK_00011	5 mL	50 mL		
RL 580-111353/7	Hg_CAL_WORK_00011	0.1 mL	50 mL		
CCV 580-111353/8	Hg_CAL_WORK_00011	2.5 mL	50 mL		
CCV 580-111353/9	Hg_CAL_WORK_00011	2.5 mL	50 mL		
CCV 580-111353/10	Hg_CAL_WORK_00011	2.5 mL	50 mL		
CCV 580-111353/11	Hg_CAL_WORK_00011	2.5 mL	50 mL		
CCV 580-111353/12	Hg_CAL_WORK_00011	2.5 mL	50 mL		
CCV 580-111353/13	Hg_CAL_WORK_00011	2.5 mL	50 mL		
ICV 580-111353/14	Hg_ICV_WORK_00013	2 mL	50 mL		
mdl1	Hg_CAL_WORK_00011	0.05 mL	50 mL		
mdl2	Hg_CAL_WORK_00011	0.05 mL	50 mL		
mdl3	Hg_CAL_WORK_00011	0.05 mL	50 mL		
mdl4	Hg_CAL_WORK_00011	0.05 mL	50 mL		

Metals/Inorganics Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 580-111353 Analyst: Woo, Fred C Batch Open: 5/15/2012 8:00:00AM

Method Code: 580-7471A_Prep-580 Batch End: 5/15/2012 9:00:00AM

mdl5	Hg_CAL_WORK_00011	0.05 mL	50 mL		
mdl6	Hg_CAL_WORK_00011	0.05 mL	50 mL		
mdl7	Hg_CAL_WORK_00011	0.05 mL	50 mL		

Other Reagents:

Reagent	Amount/Units	Lot#:

052212-HG

Method: Hg Operator: Admin Date of Analysis: 22 May 2012 08:50:56

Sample ID	Mean	Units	RSD	Date	Extended ID	Seq ID	Curve Type	Type	Method	Stnd Conc
STD 0	298	ug/l	0.274	22 May 2012 08:55:19		619	-	Std	Hg	0.000
STD 1	1520	ug/l	0.093	22 May 2012 08:57:32		620	-	Std	Hg	0.200
STD 2	3779	ug/l	0.270	22 May 2012 08:59:45		621	-	Std	Hg	0.500
STD 3	15137	ug/l	0.126	22 May 2012 09:01:58		622	-	Std	Hg	2.000
STD 4	38314	ug/l	0.331	22 May 2012 09:04:10		623	-	Std	Hg	5.000
STD 5	77712	ug/l	0.330	22 May 2012 09:06:22		624	-	Std	Hg	10.000

77712 µ Abs

A:0.0000e+000

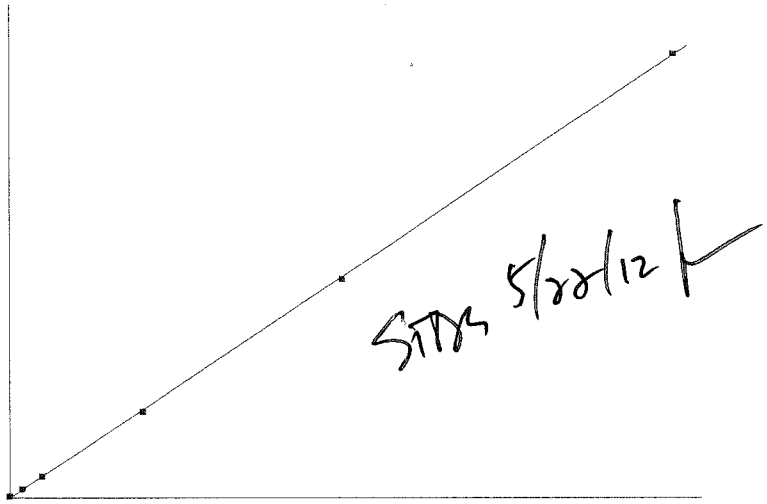
B:1.2894e-004

C:1.1074e-002

R:0.9999531

(TAC 103)

Hg SOIL MDL #3



STDs 5/22/12

Conc 10.0000

ICV	4.061	ug/l	0.327	22 May 2012 09:08:36		625	Linear	CK STND	Hg	-
ICB	-0.007	ug/l	-6.022	22 May 2012 09:10:49		626	Linear	CK STND	Hg	-
RL	0.216	ug/l	0.342	22 May 2012 09:13:01		627	Linear	CK STND	Hg	-
CCV	4.922	ug/l	0.200	22 May 2012 09:15:14		628	Linear	CK STND	Hg	-
CCB	-0.004	ug/l	-14.521	22 May 2012 09:17:25		629	Linear	CK STND	Hg	-
MS(S)	0.024	ug/l	1.953	22 May 2012 09:19:39	TAC103 FCW 111785	630	Linear	SMPL	Hg	-
MDL(S)03-1	0.117	ug/l	0.452	22 May 2012 09:21:50	TAC103 FCW 111785	631	Linear	SMPL	Hg	-
MDL(S)03-2	0.116	ug/l	0.467	22 May 2012 09:24:01	TAC103 FCW 111785	632	Linear	SMPL	Hg	-
MDL(S)03-3	0.115	ug/l	0.502	22 May 2012 09:26:12	TAC103 FCW 111785	633	Linear	SMPL	Hg	-
MDL(S)03-4	0.116	ug/l	0.210	22 May 2012 09:28:23	TAC103 FCW 111785	634	Linear	SMPL	Hg	-
MDL(S)03-5	0.116	ug/l	0.319	22 May 2012 09:30:34	TAC103 FCW 111785	635	Linear	SMPL	Hg	-
MDL(S)03-6	0.114	ug/l	0.515	22 May 2012 09:32:45	TAC103 FCW 111785	636	Linear	SMPL	Hg	-
MDL(S)03-7	0.116	ug/l	0.319	22 May 2012 09:34:56	TAC103 FCW 111785	637	Linear	SMPL	Hg	-
CCV	4.938	ug/l	0.375	22 May 2012 09:37:08		638	Linear	CK STND	Hg	-
CCB	-0.009	ug/l	-5.493	22 May 2012 09:39:19		639	Linear	CK STND	Hg	-
MB 580-111669/21-A	0.037	ug/l	0.164	22 May 2012 09:45:41	TAC103 FCW 111669	640	Linear	SMPL	Hg	-
LCS 580-111669/22-A	1.966	ug/l	0.238	22 May 2012 09:47:57	TAC103 FCW 111669	641	Linear	SMPL	Hg	-
LCSD 580-111669/23-A	1.930	ug/l	0.111	22 May 2012 09:50:13	TAC103 FCW 111669	642	Linear	SMPL	Hg	-
LCSSRM 580-111669/24-A	3.733	ug/l	0.351	22 May 2012 09:52:29	TAC103 FCW 111669 10X	643	Linear	SMPL	Hg	-
580-32898-B-1-E	0.608	ug/l	0.090	22 May 2012 09:54:45	TAC103 FCW 111669	644	Linear	SMPL	Hg	-
580-32898-B-1-F DU	0.626	ug/l	0.413	22 May 2012 09:57:03	TAC103 FCW 111669	645	Linear	SMPL	Hg	-
580-32898-A-1-N MS	2.518	ug/l	0.213	22 May 2012 09:59:19	TAC103 FCW 111669	646	Linear	SMPL	Hg	-
580-32898-A-1-O MSD	2.416	ug/l	0.068	22 May 2012 10:01:36	TAC103 FCW 111669	647	Linear	SMPL	Hg	-
580-32898-B-3-D	0.332	ug/l	0.270	22 May 2012 10:03:53	TAC103 FCW 111669	648	Linear	SMPL	Hg	-
580-32898-B-5-D	0.610	ug/l	0.494	22 May 2012 10:06:11	TAC103 FCW 111669	649	Linear	SMPL	Hg	-
CCV	4.728	ug/l	0.165	22 May 2012 10:08:28		650	Linear	CK STND	Hg	-
CCB	-0.011	ug/l	-3.459	22 May 2012 10:10:45		651	Linear	CK STND	Hg	-
580-32898-B-7-D	0.409	ug/l	0.360	22 May 2012 10:13:02	TAC103 FCW 111669	652	Linear	SMPL	Hg	-
580-32898-B-9-F	0.462	ug/l	0.121	22 May 2012 10:15:20	TAC103 FCW 111669	653	Linear	SMPL	Hg	-
580-32834-A-1-F	0.175	ug/l	0.375	22 May 2012 10:17:38	TAC103 FCW 111669	654	Linear	SMPL	Hg	-
580-32834-A-2-C	0.151	ug/l	0.145	22 May 2012 10:19:55	TAC103 FCW 111669	655	Linear	SMPL	Hg	-
580-32834-A-3-C	0.133	ug/l	0.183	22 May 2012 10:22:12	TAC103 FCW 111669	656	Linear	SMPL	Hg	-
580-32834-A-4-C	0.133	ug/l	0.183	22 May 2012 10:24:28	TAC103 FCW 111669	657	Linear	SMPL	Hg	-
580-32834-A-5-C	0.153	ug/l	0.069	22 May 2012 10:26:44	TAC103 FCW 111669	658	Linear	SMPL	Hg	-
580-32834-A-6-C	0.252	ug/l	0.274	22 May 2012 10:29:00	TAC103 FCW 111669	659	Linear	SMPL	Hg	-
580-32834-A-7-C	0.140	ug/l	0.199	22 May 2012 10:31:16	TAC103 FCW 111669	660	Linear	SMPL	Hg	-
580-32834-A-8-C	0.204	ug/l	0.309	22 May 2012 10:33:33	TAC103 FCW 111669	661	Linear	SMPL	Hg	-
CCV	4.693	ug/l	0.226	22 May 2012 10:35:50		662	Linear	CK STND	Hg	-
CCB	-0.009	ug/l	-5.772	22 May 2012 10:38:06		663	Linear	CK STND	Hg	-
580-32834-A-9-C	0.202	ug/l	0.131	22 May 2012 10:40:25	TAC103 FCW 111669	664	Linear	SMPL	Hg	-
580-32834-A-10-C	0.233	ug/l	0.427	22 May 2012 10:42:42	TAC103 FCW 111669	665	Linear	SMPL	Hg	-
580-32834-A-11-C	0.210	ug/l	0.502	22 May 2012 10:44:59	TAC103 FCW 111669	666	Linear	SMPL	Hg	-
580-32834-A-12-C	0.274	ug/l	0.044	22 May 2012 10:47:17	TAC103 FCW 111669	667	Linear	SMPL	Hg	-
CCV	4.615	ug/l	0.826	22 May 2012 10:49:34		668	Linear	CK STND	Hg	-
CCB	-0.009	ug/l	-1.989	22 May 2012 10:51:50		669	Linear	CK STND	Hg	-
MB 580-111766/21-A	0.029	ug/l	1.470	22 May 2012 10:58:16	TAC103 FCW 111766	670	Linear	SMPL	Hg	-
LCS 580-111766/22-A	1.815	ug/l	0.160	22 May 2012 11:00:34	TAC103 FCW 111766	671	Linear	SMPL	Hg	-
LCSD 580-111766/23-A	1.774	ug/l	0.292	22 May 2012 11:02:50	TAC103 FCW 111766	672	Linear	SMPL	Hg	-
LCSSRM 580-111766/24-A	2.489	ug/l	0.248	22 May 2012 11:05:06	TAC103 FCW 111766 10X	673	Linear	SMPL	Hg	-
580-32834-A-16-D	0.228	ug/l	0.301	22 May 2012 11:07:22	TAC103 FCW 111766	674	Linear	SMPL	Hg	-
580-32834-A-16-E DU	0.253	ug/l	0.271	22 May 2012 11:09:38	TAC103 FCW 111766	675	Linear	SMPL	Hg	-
580-32834-A-16-F MS	2.173	ug/l	0.361	22 May 2012 11:11:54	TAC103 FCW 111766	676	Linear	SMPL	Hg	-
580-32834-A-16-G MSD	2.145	ug/l	0.332	22 May 2012 11:14:11	TAC103 FCW 111766	677	Linear	SMPL	Hg	-
580-32834-A-13-C	0.157	ug/l	0.204	22 May 2012 11:16:28	TAC103 FCW 111766	678	Linear	SMPL	Hg	-
580-32834-A-14-C	0.298	ug/l	0.212	22 May 2012 11:18:45	TAC103 FCW 111766	679	Linear	SMPL	Hg	-
CCV	4.798	ug/l	0.579	22 May 2012 11:21:02		680	Linear	CK STND	Hg	-
CCB	-0.014	ug/l	-0.728	22 May 2012 11:23:18		681	Linear	CK STND	Hg	-
580-32834-A-15-B	0.201	ug/l	0.552	22 May 2012 11:25:37	TAC103 FCW 111766	682	Linear	SMPL	Hg	-
580-32834-A-17-B	0.238	ug/l	0.111	22 May 2012 11:27:54	TAC103 FCW 111766	683	Linear	SMPL	Hg	-
580-32834-A-18-B	0.178	ug/l	0.034	22 May 2012 11:30:12	TAC103 FCW 111766	684	Linear	SMPL	Hg	-
580-32834-A-19-B	0.301	ug/l	0.350	22 May 2012 11:32:28	TAC103 FCW 111766	685	Linear	SMPL	Hg	-
580-32834-A-20-B	0.344	ug/l	0.110	22 May 2012 11:34:45	TAC103 FCW 111766	686	Linear	SMPL	Hg	-
580-32834-A-21-B	0.451	ug/l	0.331	22 May 2012 11:37:01	TAC103 FCW 111766	687	Linear	SMPL	Hg	-
580-32834-A-22-B	0.255	ug/l	0.281	22 May 2012 11:39:17	TAC103 FCW 111766	688	Linear	SMPL	Hg	-
580-32834-A-23-B	0.198	ug/l	0.320	22 May 2012 11:41:33	TAC103 FCW 111766	689	Linear	SMPL	Hg	-
580-32834-A-24-B	0.207	ug/l	0.561	22 May 2012 11:43:49	TAC103 FCW 111766	690	Linear	SMPL	Hg	-
580-32834-A-25-B	0.187	ug/l	0.198	22 May 2012 11:46:06	TAC103 FCW 111766	691	Linear	SMPL	Hg	-
CCV	4.724	ug/l	0.088	22 May 2012 11:48:23		692	Linear	CK STND	Hg	-
CCB	-0.010	ug/l	-2.195	22 May 2012 11:50:39		693	Linear	CK STND	Hg	-
580-32834-A-26-B	0.220	ug/l	0.055	22 May 2012 11:52:58	TAC103 FCW 111766	694	Linear	SMPL	Hg	-

052212-HG

Method: Hg Operator: Admin Date of Analysis: 22 May 2012 08:50:56

Sample ID	Mean	Units	RSD	Date	Extended ID	Seq ID	Curve Type	Type	Method	Stnd Conc
580-32834-A-27-B	0.242	ug/l	0.087	22 May 2012 11:55:15	TAC103 FCW 111766	695	Linear	SMPL	Hg	-
580-32834-A-28-B	0.248	ug/l	0.176	22 May 2012 11:57:32	TAC103 FCW 111766	696	Linear	SMPL	Hg	-
580-32834-A-29-B	0.211	ug/l	0.501	22 May 2012 11:59:50	TAC103 FCW 111766	697	Linear	SMPL	Hg	-
CCV	4.773	ug/l	0.484	22 May 2012 12:02:07		698	Linear	CK STND	Hg	-
CCB	-0.018	ug/l	-0.888	22 May 2012 12:05:07		699	Linear	CK STND	Hg	-
MB 580-111772/15-A	0.013	ug/l	1.208	22 May 2012 12:07:26	TAC103 FCW 111772	700	Linear	SMPL	Hg	-
LCS 580-111772/16-A	1.909	ug/l	0.374	22 May 2012 12:09:43	TAC103 FCW 111772	701	Linear	SMPL	Hg	-
LCSD 580-111772/17-A	1.799	ug/l	0.055	22 May 2012 12:12:00	TAC103 FCW 111772	702	Linear	SMPL	Hg	-
LCSSRM 580-111772/18-A	2.231	ug/l	0.081	22 May 2012 12:14:17	TAC103 FCW 111772 10X	703	Linear	SMPL	Hg	-
580-32834-A-31-D	0.412	ug/l	0.291	22 May 2012 12:16:34	TAC103 FCW 111772	704	Linear	SMPL	Hg	-
580-32834-A-31-E DU	0.245	ug/l	0.138	22 May 2012 12:18:51	TAC103 FCW 111772	705	Linear	SMPL	Hg	-
580-32834-A-31-F MS	2.244	ug/l	0.300	22 May 2012 12:21:08	TAC103 FCW 111772	706	Linear	SMPL	Hg	-
580-32834-A-31-G MSD	2.345	ug/l	0.343	22 May 2012 12:23:25	TAC103 FCW 111772	707	Linear	SMPL	Hg	-
CCV	4.604	ug/l	0.199	22 May 2012 12:25:42		708	Linear	CK STND	Hg	-
CCB	-0.010	ug/l	-2.195	22 May 2012 12:27:58		709	Linear	CK STND	Hg	-
580-32909-A-1-G	2.355	ug/l	0.065	22 May 2012 12:30:17	TAC103 FCW 111772	710	Linear	SMPL	Hg	-
580-32882-A-1-E	0.189	ug/l	0.417	22 May 2012 12:32:34	TAC103 FCW 111772	711	Linear	SMPL	Hg	-
580-32834-A-33-B	0.252	ug/l	0.169	22 May 2012 12:34:51	TAC103 FCW 111772	712	Linear	SMPL	Hg	-
580-32834-A-34-B	0.208	ug/l	0.665	22 May 2012 12:37:08	TAC103 FCW 111772	713	Linear	SMPL	Hg	-
580-32834-A-35-B	0.197	ug/l	0.082	22 May 2012 12:39:26	TAC103 FCW 111772	714	Linear	SMPL	Hg	-
580-32834-A-36-B	0.159	ug/l	0.562	22 May 2012 12:41:43	TAC103 FCW 111772	715	Linear	SMPL	Hg	-
580-32834-A-32-B	0.130	ug/l	0.047	22 May 2012 12:44:00	TAC103 FCW 111772	716	Linear	SMPL	Hg	-
580-32834-A-30-B	0.239	ug/l	0.102	22 May 2012 12:46:17	TAC103 FCW 111772	717	Linear	SMPL	Hg	-
580-32899-A-1-F	0.231	ug/l	0.502	22 May 2012 12:48:34	TAC103 FCW 111772	718	Linear	SMPL	Hg	-
580-32839-B-3-A	1.215	ug/l	0.229	22 May 2012 12:50:51	TAC103 FCW 111772	719	Linear	SMPL	Hg	-
CCV	4.341	ug/l	0.056	22 May 2012 12:53:08		720	Linear	CK STND	Hg	-
CCB	-0.008	ug/l	-3.124	22 May 2012 12:55:24		721	Linear	CK STND	Hg	-
MB 580-111815/21-A	0.017	ug/l	2.202	22 May 2012 13:12:20	TAC103 FCW 111815	722	Linear	SMPL	Hg	-
LCS 580-111815/22-A	1.737	ug/l	0.173	22 May 2012 13:14:36	TAC103 FCW 111815	723	Linear	SMPL	Hg	-
LCSD 580-111815/23-A	1.692	ug/l	0.185	22 May 2012 13:16:52	TAC103 FCW 111815	724	Linear	SMPL	Hg	-
580-32906-B-2-B	0.012	ug/l	0.495	22 May 2012 13:19:08	TAC103 FCW 111815	725	Linear	SMPL	Hg	-
580-32906-B-2-C DU	0.020	ug/l	1.360	22 May 2012 13:21:24	TAC103 FCW 111815	726	Linear	SMPL	Hg	-
580-32906-B-2-D MS	1.960	ug/l	0.008	22 May 2012 13:23:40	TAC103 FCW 111815	727	Linear	SMPL	Hg	-
580-32906-B-2-E MSD	1.779	ug/l	0.520	22 May 2012 13:25:56	TAC103 FCW 111815	728	Linear	SMPL	Hg	-
580-32906-B-1-E	0.009	ug/l	4.576	22 May 2012 13:28:13	TAC103 FCW 111815	729	Linear	SMPL	Hg	-
580-32906-B-3-B	0.025	ug/l	0.247	22 May 2012 13:30:30	TAC103 FCW 111815	730	Linear	SMPL	Hg	-
580-32906-B-4-B	0.024	ug/l	0.444	22 May 2012 13:32:47	TAC103 FCW 111815	731	Linear	SMPL	Hg	-
CCV	4.497	ug/l	0.580	22 May 2012 13:35:04		732	Linear	CK STND	Hg	-
CCB	-0.005	ug/l	-12.808	22 May 2012 13:37:20		733	Linear	CK STND	Hg	-
580-32906-B-5-B	0.021	ug/l	0.573	22 May 2012 13:39:39	TAC103 FCW 111815	734	Linear	SMPL	Hg	-
580-32906-B-6-B	0.026	ug/l	0.626	22 May 2012 13:41:55	TAC103 FCW 111815	735	Linear	SMPL	Hg	-
580-32906-B-7-B	0.023	ug/l	0.266	22 May 2012 13:44:13	TAC103 FCW 111815	736	Linear	SMPL	Hg	-
580-32906-B-8-B	0.026	ug/l	0.708	22 May 2012 13:46:29	TAC103 FCW 111815	737	Linear	SMPL	Hg	-
580-32906-B-9-B	0.028	ug/l	1.782	22 May 2012 13:56:47	TAC103 FCW 111815	738	Linear	SMPL	Hg	-
580-32906-B-10-B	0.029	ug/l	0.422	22 May 2012 13:59:03	TAC103 FCW 111815	739	Linear	SMPL	Hg	-
580-32906-B-11-B	0.030	ug/l	0.936	22 May 2012 14:01:19	TAC103 FCW 111815	740	Linear	SMPL	Hg	-
580-32906-B-12-B	0.027	ug/l	0.684	22 May 2012 14:03:35	TAC103 FCW 111815	741	Linear	SMPL	Hg	-
580-32906-B-13-B	0.028	ug/l	0.883	22 May 2012 14:05:51	TAC103 FCW 111815	742	Linear	SMPL	Hg	-
CCV	4.462	ug/l	0.149	22 May 2012 14:08:07		743	Linear	CK STND	Hg	-
CCB	0.024	ug/l	0.861	22 May 2012 14:10:23		744	Linear	CK STND	Hg	-
580-32906-B-14-B	0.023	ug/l	1.188	22 May 2012 14:12:41	TAC103 FCW 111815	745	Linear	SMPL	Hg	-
580-32906-B-15-B	0.022	ug/l	0.828	22 May 2012 14:14:58	TAC103 FCW 111815	746	Linear	SMPL	Hg	-
580-32906-B-16-E	0.025	ug/l	0.248	22 May 2012 14:17:15	TAC103 FCW 111815	747	Linear	SMPL	Hg	-
580-32979-A-1-B	0.035	ug/l	1.656	22 May 2012 14:19:32	TAC103 FCW 111815	748	Linear	SMPL	Hg	-
CCV	4.545	ug/l	0.190	22 May 2012 14:21:49		749	Linear	CK STND	Hg	-
CCB	-0.010	ug/l	-4.261	22 May 2012 14:24:05		750	Linear	CK STND	Hg	-
MB 580-111825/22-A	0.022	ug/l	0.945	22 May 2012 14:26:23	TAC103 FCW 111825	751	Linear	SMPL	Hg	-
LCS 580-111825/23-A	1.723	ug/l	0.733	22 May 2012 14:28:40	TAC103 FCW 111825	752	Linear	SMPL	Hg	-
LCSD 580-111825/24-A	1.771	ug/l	0.324	22 May 2012 14:30:58	TAC103 FCW 111825	753	Linear	SMPL	Hg	-
580-32906-B-17-B	0.012	ug/l	1.333	22 May 2012 14:33:16	TAC103 FCW 111825	754	Linear	SMPL	Hg	-
580-32906-B-17-C DU	0.024	ug/l	0.679	22 May 2012 14:35:32	TAC103 FCW 111825	755	Linear	SMPL	Hg	-
580-32906-B-17-D MS	1.910	ug/l	0.362	22 May 2012 14:37:48	TAC103 FCW 111825	756	Linear	SMPL	Hg	-
580-32906-B-17-E MSD	1.863	ug/l	0.090	22 May 2012 14:40:05	TAC103 FCW 111825	757	Linear	SMPL	Hg	-
580-32906-B-18-B	0.008	ug/l	3.329	22 May 2012 14:42:21	TAC103 FCW 111825	758	Linear	SMPL	Hg	-
580-32906-B-19-B	0.020	ug/l	0.618	22 May 2012 14:44:38	TAC103 FCW 111825	759	Linear	SMPL	Hg	-
580-32906-B-20-B	0.025	ug/l	1.469	22 May 2012 14:46:54	TAC103 FCW 111825	760	Linear	SMPL	Hg	-
CCV	4.606	ug/l	0.364	22 May 2012 14:49:11		761	Linear	CK STND	Hg	-
CCB	-0.007	ug/l	-2.236	22 May 2012 14:51:27		762	Linear	CK STND	Hg	-
580-32906-B-21-B	0.025	ug/l	1.507	22 May 2012 14:53:46	TAC103 FCW 111825	763	Linear	SMPL	Hg	-
580-32906-B-22-B	0.028	ug/l	0.438	22 May 2012 14:56:03	TAC103 FCW 111825	764	Linear	SMPL	Hg	-
580-32906-B-23-B	0.022	ug/l	2.675	22 May 2012 14:58:20	TAC103 FCW 111825	765	Linear	SMPL	Hg	-
580-32906-B-24-B	0.026	ug/l	0.234	22 May 2012 15:00:37	TAC103 FCW 111825	766	Linear	SMPL	Hg	-
580-32906-B-25-B	0.023	ug/l	0.270	22 May 2012 15:02:54	TAC103 FCW 111825	767	Linear	SMPL	Hg	-
580-32906-B-26-B	0.025	ug/l	0.488	22 May 2012 15:05:12	TAC103 FCW 111825	768	Linear	SMPL	Hg	-
580-32906-B-27-B	0.026	ug/l	0.697	22 May 2012 15:07:29	TAC103 FCW 111825	769	Linear	SMPL	Hg	-
580-32906-B-28-B	0.026	ug/l	0.620	22 May 2012 15:09:46	TAC103 FCW 111825	770	Linear	SMPL	Hg	-
580-32906-B-29-B	0.024	ug/l	1.567	22 May 2012 15:12:03	TAC103 FCW 111825	771	Linear	SMPL	Hg	-
580-32906-B-30-B	0.026	ug/l	0.704	22 May 2012 15:14:20	TAC103 FCW 111825	772	Linear	SMPL	Hg	-
CCV	4.646	ug/l	0.270	22 May 2012 15:16:37		773	Linear	CK STND	Hg	-
CCB	-0.010	ug/l	-0.598	22 May 2012 15:18:53		774	Linear	CK STND	Hg	-
580-32906-B-31-B	0.024	ug/l	1.988	22 May 2012 15:21:12	TAC103 FCW 111825	775	Linear	SMPL	Hg	-
580-32906-B-32-B	0.022	ug/l	1.257	22 May 2012 15:23:29	TAC103 FCW 111825	776	Linear	SMPL	Hg	-
580-32906-B-33-B	0.026	ug/l	0.234	22 May 2012 15:25:46	TAC103 FCW 111825	777	Linear	SMPL	Hg	-
580-32956-A-2-E	0.030	ug/l	0.399	22 May 2012 15:28:03	TAC103 FCW 111825	778	Linear	SMPL	Hg	-
CCV	4.705	ug/l	0.074	22 May 2012 15:30:20		779	Linear	CK STND	Hg	-
CCB	-0.008	ug/l	-3.821	22 May 2012 15:32:36		780	Linear	CK STND	Hg	-
MB 580-111827/6-A	0.019	ug/l	0.325	22 May 2012 15:34:55	TAC103 FCW 111827	781	Linear	SMPL	Hg	-
LCS 580-111827/7-A	1.748	ug/l	0.322	22 May 2012 15:37:12	TAC103 FCW 111827	782	Linear	SMPL	Hg	-
LCSD 580-111827/8-A	1.804	ug/l	0.194	22 May 2012 15:39:29	TAC103 FCW 111827	783	Linear	SMPL	Hg	-
LCSSRM 580-111827/9-A	2.246	ug/l	0.605	22 May 2012 15:41:47	TAC103 FCW 111827 10X	784	Linear	SMPL	Hg	-
580-32995-A-1-D	0.648	ug/l	0.114	22 May 2012 15:44:04	TAC103 FCW 111827	785	Linear	SMPL	Hg	-
580-32995-A-1-E DU	0.444	ug/l	0.060	22 May 2012 15:46:21	TAC103 FCW 111827	786	Linear	SMPL	Hg	-
580-32995-A-1-F MS	2.353	ug/l	0.016	22 May 2012 15:48:38	TAC103 FCW 111827	787	Linear	SMPL	Hg	-
580-32995-A-1-G MSD	2.256	ug/l	0.126	22 May 2012 15:50:55	TAC103 FCW 111827	788	Linear	SMPL	Hg	-
580-32995-A-2-B	1.412	ug/l	0.478	22 May 2012 15:53:12	TAC103 FCW 111827	789	Linear	SMPL	Hg	-
CCV	4.575	ug/l	0.429	22 May 2012 15:55:29		790	Linear	CK STND	Hg	-
CCB	-0.011	ug/l	-1.437	22 May 2012 15:57:45		791	Linear	CK STND	Hg	-

Metals/Inorganics Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 580-111785

Method Code: 580-7471A_Prep-580

Analyst: Woo, Fred C

Batch Open: 5/22/2012 7:45:30AM

Batch End: 5/22/2012 8:45:00AM

Preparation, Mercury

	Input Sample Lab ID (Analytical Method)	SDG	Matrix	Initial Amount	Final Amount	Due Date	Analytical TAT	Dlv Rank	Comments	Output Sample Lab ID
1	IC~580-111785/1 N/A	N/A		0.6 g	50 mL	N/A	N/A	N/A		580-908681
2	IC~580-111785/2 N/A	N/A		0.6 g	50 mL	N/A	N/A	N/A		580-908682
3	IC~580-111785/3 N/A	N/A		0.6 g	50 mL	N/A	N/A	N/A		580-908683
4	IC~580-111785/4 N/A	N/A		0.6 g	50 mL	N/A	N/A	N/A		580-908684
5	IC~580-111785/5 N/A	N/A		0.6 g	50 mL	N/A	N/A	N/A		580-908685
6	IC~580-111785/6 N/A	N/A		0.6 g	50 mL	N/A	N/A	N/A		580-908686
7	RL~580-111785/7 N/A	N/A		0.6 g	50 mL	N/A	N/A	N/A		580-908687
8	CCV~580-111785/8 N/A	N/A		0.6 g	50 mL	N/A	N/A	N/A		580-908688
9	CCV~580-111785/9 N/A	N/A		0.6 g	50 mL	N/A	N/A	N/A		580-908689
10	CCV~580-111785/10 N/A	N/A		0.6 g	50 mL	N/A	N/A	N/A		580-908690
11	CCV~580-111785/11 N/A	N/A		0.6 g	50 mL	N/A	N/A	N/A		580-908691
12	CCV~580-111785/12 N/A	N/A		0.6 g	50 mL	N/A	N/A	N/A		580-908692
13	CCV~580-111785/13 N/A	N/A		0.6 g	50 mL	N/A	N/A	N/A		580-908693
14	ICV~580-111785/14 N/A	N/A		0.6 g	50 mL	N/A	N/A	N/A		580-908694

Metals/Inorganics Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 580-111785 Analyst: Woo, Fred C Batch Open: 5/22/2012 7:45:30AM

Method Code: 580-7471A_Prep-580 Batch End: 5/22/2012 8:45:00AM

15	ICB~580-111785/15 N/A	N/A		0.6 g	50 mL	N/A	N/A	N/A	580-908695
16	CCB~580-111785/16 N/A	N/A		0.6 g	50 mL	N/A	N/A	N/A	580-908696
17	CCB~580-111785/17 N/A	N/A		0.6 g	50 mL	N/A	N/A	N/A	580-908697
18	CCB~580-111785/18 N/A	N/A		0.6 g	50 mL	N/A	N/A	N/A	580-908698
19	CCB~580-111785/19 N/A	N/A		0.6 g	50 mL	N/A	N/A	N/A	580-908699
20	CCB~580-111785/20 N/A	N/A		0.6 g	50 mL	N/A	N/A	N/A	580-908700
21	CCB~580-111785/21 N/A	N/A		0.6 g	50 mL	N/A	N/A	N/A	580-908701
22	mdl1 N/A	N/A		0.6 g	50 mL	N/A	N/A	N/A	580-908702
23	mdl2 N/A	N/A		0.6 g	50 mL	N/A	N/A	N/A	580-908703
24	mdl3 N/A	N/A		0.6 g	50 mL	N/A	N/A	N/A	580-908704
25	mdl4 N/A	N/A		0.6 g	50 mL	N/A	N/A	N/A	580-908705
26	mdl5 N/A	N/A		0.6 g	50 mL	N/A	N/A	N/A	580-908706
27	mdl6 N/A	N/A		0.6 g	50 mL	N/A	N/A	N/A	580-908707
28	mdl7 N/A	N/A		0.6 g	50 mL	N/A	N/A	N/A	580-908708

Metals/Inorganics Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 580-111785

Method Code: 580-7471A_Prep-580

Analyst: Woo, Fred C

Batch Open: 5/22/2012 7:45:30AM

Batch End: 5/22/2012 8:45:00AM

	Input Sample Lab ID (Analytical Method)	(Sub-List)	Analytes
1	IC 580-111785/1 N/A	N/A	N/A
2	IC 580-111785/2 N/A	N/A	N/A
3	IC 580-111785/3 N/A	N/A	N/A
4	IC 580-111785/4 N/A	N/A	N/A
5	IC 580-111785/5 N/A	N/A	N/A
6	IC 580-111785/6 N/A	N/A	N/A
7	RL 580-111785/7 N/A	N/A	N/A
8	CCV 580-111785/8 N/A	N/A	N/A
9	CCV 580-111785/9 N/A	N/A	N/A
10	CCV 580-111785/10 N/A	N/A	N/A
11	CCV 580-111785/11 N/A	N/A	N/A
12	CCV 580-111785/12 N/A	N/A	N/A
13	CCV 580-111785/13 N/A	N/A	N/A
14	ICV 580-111785/14 N/A	N/A	N/A
15	ICB 580-111785/15 N/A	N/A	N/A
16	CCB 580-111785/16 N/A	N/A	N/A

Metals/Inorganics Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 580-111785 Analyst: Woo, Fred C Batch Open: 5/22/2012 7:45:30AM

Method Code: 580-7471A_Prep-580 Batch End: 5/22/2012 8:45:00AM

17	CCB 580-111785/17 N/A	N/A	N/A
18	CCB 580-111785/18 N/A	N/A	N/A
19	CCB 580-111785/19 N/A	N/A	N/A
20	CCB 580-111785/20 N/A	N/A	N/A
21	CCB 580-111785/21 N/A	N/A	N/A
22	mdl1 N/A	N/A	N/A
23	mdl2 N/A	N/A	N/A
24	mdl3 N/A	N/A	N/A
25	mdl4 N/A	N/A	N/A
26	mdl5 N/A	N/A	N/A
27	mdl6 N/A	N/A	N/A
28	mdl7 N/A	N/A	N/A

Analytes that are not being reported with be displayed in [...] brackets. Analytes that are not being reported but are on the spike list with be displayed in (...) parentheses.

Metals/Inorganics Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 580-111785

Method Code: 580-7471A_Prep-580

Analyst: Woo, Fred C

Batch Open: 5/22/2012 7:45:30AM

Batch End: 5/22/2012 8:45:00AM

Batch Notes

Acid used for pH adjustment	
Perform Calculation (0=No, 1=Yes)	
Nominal Amount Used	
SOP Number	
Digestion Tube/Cup Lot #	905458
Hot Block ID number	38008
Hood ID or number	06
Balance ID	SEA204
Blank Soil Lot Number	
Lot # of Nitric Acid	869876
ID number of the thermometer	15-041-1A-B
Lot # of hydrochloric acid	869930
Potassium Permanganate Lot Number	861293
Sulfuric Acid Lot Number	
Hydroxylamine Sulfate Lot Number	
Potassium Persulfate Lot Number	
Stannous Chloride Lot Number	790550
Uncorrected Temperature	95
Oven, Bath or Block Temperature 1	94 CORRECTED-TEMP
Uncorrected Temperature 2	

Metals/Inorganics Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 580-111785 | Analyst: Woo, Fred C | Batch Open: 5/22/2012 7:45:30AM

Method Code: 580-7471A_Prep-580 | Batch End: 5/22/2012 8:45:00AM

Oven, Bath or Block Temperature 2	
NaCL Lot #	825163
Repittetor Volume Check	
Aqua Regia Lot Number	
Hydroxylamine Hydrochloride Lot	790508
Pipette ID	METALS-PREP-2
Filter Lot #	
Syringe Lot #	
Batch Comment	

Comments

Metals/Inorganics Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 580-111785

Method Code: 580-7471A_Prep-580

Analyst: Woo, Fred C

Batch Open: 5/22/2012 7:45:30AM

Batch End: 5/22/2012 8:45:00AM

Reagent Additions Worksheet

Lab ID	Reagent Code	Amount Added	Final Amount	By	Witness
IC 580-111785/2	Hg_CAL_WORK_00011	0.1 mL	50 mL		
IC 580-111785/3	Hg_CAL_WORK_00011	0.25 mL	50 mL		
IC 580-111785/4	Hg_CAL_WORK_00011	1 mL	50 mL		
IC 580-111785/5	Hg_CAL_WORK_00011	2.5 mL	50 mL		
IC 580-111785/6	Hg_CAL_WORK_00011	5 mL	50 mL		
RL 580-111785/7	Hg_CAL_WORK_00011	0.1 mL	50 mL		
CCV 580-111785/8	Hg_CAL_WORK_00011	2.5 mL	50 mL		
CCV 580-111785/9	Hg_CAL_WORK_00011	2.5 mL	50 mL		
CCV 580-111785/10	Hg_CAL_WORK_00011	2.5 mL	50 mL		
CCV 580-111785/11	Hg_CAL_WORK_00011	2.5 mL	50 mL		
CCV 580-111785/12	Hg_CAL_WORK_00011	2.5 mL	50 mL		
CCV 580-111785/13	Hg_CAL_WORK_00011	2.5 mL	50 mL		
ICV 580-111785/14	Hg_ICV_WORK_00013	2 mL	50 mL		
mdl1	Hg_CAL_WORK_00011	0.05 mL	50 mL		
mdl2	Hg_CAL_WORK_00011	0.05 mL	50 mL		
mdl3	Hg_CAL_WORK_00011	0.05 mL	50 mL		
mdl4	Hg_CAL_WORK_00011	0.05 mL	50 mL		

Metals/Inorganics Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 580-111785 Analyst: Woo, Fred C Batch Open: 5/22/2012 7:45:30AM

Method Code: 580-7471A_Prep-580 Batch End: 5/22/2012 8:45:00AM

mdl5	Hg_CAL_WORK_00011	0.05 mL	50 mL		
mdl6	Hg_CAL_WORK_00011	0.05 mL	50 mL		
mdl7	Hg_CAL_WORK_00011	0.05 mL	50 mL		

Other Reagents:

Reagent	Amount/Units	Lot#:

TA Seattle Agilent 7500ce ICP-MS
Soil MDL Studies
11/10/2012
FCW

AVERAGE SOIL MDL

ELEMENT	MDL RUN #1 (ug / l)	MDL RUN #2 (ug / l)	MDL RUN #3 (ug / l)	**AVERAGE MDL (ug / l)**
Beryllium	0.020	0.027	0.028	**0.025**
Sodium	1.076	2.177	1.746	**1.666**
Magnesium	0.147	0.181	0.059	**0.129**
Aluminum	2.824	0.380	1.377	**1.527**
Phosphorus	1.360	1.061	1.658	**1.360**
Potassium	1.864	1.967	2.795	**2.209**
Calcium	0.966	2.739	1.752	**1.819**
Titanium	0.041	0.022	0.034	**0.032**
Vanadium	0.038	0.084	0.100	**0.074**
Chromium	0.009	0.014	0.022	**0.015**
Manganese	0.015	0.011	0.015	**0.014**
Iron	0.539	0.910	0.315	**0.588**
Cobalt	0.005	0.007	0.006	**0.006**
Nickel	0.030	0.031	0.037	**0.033**
Copper	0.020	0.037	0.030	**0.029**
Zinc	0.047	0.071	0.219	**0.112**
Arsenic	0.023	0.025	0.032	**0.027**
Selenium	0.083	0.138	0.102	**0.108**
Strontium	0.009	0.012	0.017	**0.013**
Molybdenum	0.016	0.016	0.025	**0.019**
Silver	0.003	0.005	0.005	**0.004**
Cadmium	0.005	0.011	0.006	**0.008**
Tin	0.023	0.028	0.031	**0.027**
Antimony	0.018	0.019	0.016	**0.017**
Barium	0.010	0.017	0.011	**0.013**
Mercury	0.010	0.009	0.009	**0.009**
Thallium	0.024	0.014	0.014	**0.017**
Lead	0.008	0.005	0.007	**0.007**
Uranium	0.003	0.004	0.004	**0.004**

10/10/12

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TA Seattle ICP-MS
Soil MDL Studies
10/10/2012
FCW

SOIL MDL#3

ELEMENT	Result (ug / L)	Result (ug / L)	Result (ug / L)	Result (ug / L)	Result (ug / L)	Result (ug / L)	Result (ug / L)	Std Dev	**MDL** (ug / L)
Beryllium	0.056	0.034	0.048	0.037	0.05	0.038	0.03	0.009	**0.028**
Sodium	-4.161	-4.726	-4.668	-5.097	-3.414	-4.03	-3.711	0.556	**1.746**
Magnesium	0.073	0.105	0.12	0.082	0.087	0.105	0.062	0.019	**0.059**
Aluminum	6.476	5.349	5.736	5.111	5.694	5.263	5.208	0.438	**1.377**
Phosphorus	0.489	0.148	0.384	-0.078	-0.405	0.817	1.312	0.528	**1.658**
Potassium	0.937	-0.281	1.515	-0.344	1.807	1.367	2.022	0.890	**2.795**
Calcium	-0.225	-0.638	-1.128	-0.716	0.44	-1.183	-1.193	0.558	**1.752**
Titanium	0.179	0.143	0.157	0.153	0.153	0.162	0.147	0.011	**0.034**
Vanadium	0.186	0.239	0.221	0.235	0.269	0.281	0.278	0.032	**0.100**
Chromium	0.08	0.058	0.065	0.07	0.068	0.073	0.06	0.007	**0.022**
Manganese	0.068	0.07	0.072	0.068	0.071	0.082	0.067	0.005	**0.015**
Iron	2.488	2.3	2.47	2.285	2.443	2.498	2.245	0.100	**0.315**
Cobalt	0.029	0.028	0.029	0.024	0.025	0.027	0.026	0.002	**0.006**
Nickel	0.116	0.117	0.13	0.098	0.117	0.104	0.094	0.012	**0.037**
Copper	-0.067	-0.057	-0.055	-0.062	-0.082	-0.077	-0.059	0.010	**0.030**
Zinc	0.279	0.344	0.51	0.318	0.359	0.4	0.321	0.070	**0.219**
Arsenic	0.185	0.17	0.193	0.165	0.187	0.19	0.171	0.010	**0.032**
Selenium	0.212	0.251	0.216	0.267	0.2	0.221	0.159	0.032	**0.102**
Strontium	0.059	0.045	0.048	0.043	0.055	0.055	0.053	0.005	**0.017**
Molybdenum	0.116	0.101	0.104	0.099	0.106	0.122	0.103	0.008	**0.025**
Silver	0.011	0.009	0.011	0.008	0.012	0.012	0.008	0.002	**0.005**
Cadmium	0.006	0.005	0.008	0.003	0.005	0.002	0.002	0.002	**0.006**
Tin	0.126	0.107	0.112	0.092	0.11	0.104	0.099	0.010	**0.031**
Antimony	0.054	0.051	0.048	0.04	0.041	0.044	0.042	0.005	**0.016**
Barium	0.048	0.046	0.039	0.048	0.048	0.043	0.05	0.004	**0.011**
Mercury	0.013	0.011	0.011	0.007	0.008	0.005	0.005	0.003	**0.009**
Thallium	0.102	0.102	0.106	0.093	0.098	0.103	0.094	0.004	**0.014**
Lead	0.018	0.019	0.019	0.015	0.023	0.017	0.02	0.002	**0.007**
Uranium	0.022	0.02	0.021	0.02	0.019	0.019	0.018	0.001	**0.004**

10/10/12

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TA Seattle Sample Report 200.8/6020 7500ce ICPMS

Data File: C:\ICPCHEM\1\DATA\101012AM.B\028SMPL.D\028SMPL.D#
Date Acquired: Oct 10 2012 08:15 am Acq. Method: 0000RUN.M
Sample Name: MDL(S)03-1 Vial Number: 2401
Misc Info: STDS&RL&CCV 00012,ICV 00015,ICSA&ICSAB 100812

Current Method: C:\ICPCHEM\1\METHODS\00He REP.M Operator: FCW ICP-MS 1D#SEA44
Calibration File: C:\ICPCHEM\1\CALIB\00He REP.C
Last Cal. Update: Oct 10 2012 10:07 am
ISTD Ref File : C:\ICPCHEM\1\DATA\101012AM.B\005CALB.D\005CALB.D#

Tune #	Name
1	\1\7500\he.u
2	CHEM\1\7500\
3	CHEM\1\7500\

Dilution Factor: 1.00 Final Dil Factor: 1.00

QC Elements

Element		T#	Conc.	Units	Corr. Conc	RSD(%)	LDR	IS	P/A	Flag
9	Be	1	0.056	ug/l	0.06	47.4	9000	6	P	
23	Na	1	-4.161	ug/l	-4.16	4.9	450000	45	P	
24	Mg	1	0.073	ug/l	0.07	40.8	450000	45	P	
27	Al	1	6.476	ug/l	6.48	4.6	450000	45	P	
31	P	1	0.489	ug/l	0.49	255.5	450000	45	P	
39	K	1	0.937	ug/l	0.94	95.6	450000	45	P	
44	Ca	1	-0.225	ug/l	-0.23	160.6	450000	45	P	
47	Ti	1	0.179	ug/l	0.18	6.5	4500	74	P	
51	V	1	0.186	ug/l	0.19	10.0	9000	74	P	
52	Cr	1	0.080	ug/l	0.08	16.7	9000	74	P	
55	Mn	1	0.068	ug/l	0.07	5.4	9000	74	P	
56	Fe	1	2.488	ug/l	2.49	1.7	225000	74	P	
59	Co	1	0.029	ug/l	0.03	22.2	9000	74	P	
60	Ni	1	0.116	ug/l	0.12	14.8	9000	74	P	
63	Cu	1	-0.067	ug/l	-0.07	18.5	9000	74	P	
66	Zn	1	0.279	ug/l	0.28	18.6	9000	74	P	
75	As	1	0.185	ug/l	0.18	1.7	9000	74	P	
78	Se	1	0.212	ug/l	0.21	33.0	9000	74	P	
88	Sr	1	0.059	ug/l	0.06	14.3	9000	74	P	
95	Mo	1	0.116	ug/l	0.12	3.9	4500	103	P	
109	Ag	1	0.011	ug/l	0.01	9.8	900	103	P	
114	Cd	1	0.006	ug/l	0.01	105.6	9000	103	P	
118	Sn	1	0.126	ug/l	0.13	0.9	4500	103	P	
123	Sb	1	0.054	ug/l	0.05	13.5	900	103	P	
135	Ba	1	0.048	ug/l	0.05	16.3	9000	103	P	
200	Hg	1	0.013	ug/l	0.01	31.2	45	209	P	
205	Tl	1	0.102	ug/l	0.10	6.6	900	209	P	
208	Pb	1	0.018	ug/l	0.02	13.7	9000	209	P	
238	U	1	0.022	ug/l	0.02	12.2	9000	209	P	

ISTD Elements

IS	Mass	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)			Flag
6	Li	1	208270	0.99	196600	105.9	30	-	125	
45	Sc	1	2609853	0.73	2410000	108.3	30	-	125	
74	Ge	1	5353402	1.45	5113000	104.7	30	-	125	
103	Rh	1	7381450	0.39	7235000	102.0	30	-	125	
165	Ho	1	3290492	0.34	3204000	102.7	30	-	125	
175	Lu	1	2816133	0.27	2756000	102.2	30	-	125	
209	Bi	1	3954428	0.53	3882000	101.9	30	-	125	

Analytes: Pass ISTD: Pass

0 :Element Failures 0 :Max. Number of Failures Allowed

0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

TA Seattle Sample Report 200.8/6020 7500ce ICPMS

Data File: C:\ICPCHEM\1\DATA\101012AM.B\029SMPL.D\029SMPL.D#
Date Acquired: Oct 10 2012 08:18 am Acq. Method: 0000RUN.M
Sample Name: MDL(S)03-2 Vial Number: 2402
Misc Info: STDS&RL&CCV 00012,ICV 00015,ICSA&ICSAB 100812

Current Method: C:\ICPCHEM\1\METHODS\00He REP.M Operator: FCW ICP-MS ID#SEA44
Calibration File: C:\ICPCHEM\1\CALIB\00He REP.C
Last Cal. Update: Oct 10 2012 10:07 am
ISTD Ref File : C:\ICPCHEM\1\DATA\101012AM.B\005CALB.D\005CALB.D#

Tune #	Name
1	:\1\7500\he.u
2	'CHEM\1\7500\
3	'CHEM\1\7500\

Dilution Factor: 1.00 Final Dil Factor: 1.00

QC Elements

Element		T#	Conc.	Units	Corr. Conc	RSD(%)	LDR	IS	P/A	Flag
9	Be	1	0.034	ug/l	0.03	48.7	9000	6	P	
23	Na	1	-4.726	ug/l	-4.73	11.6	450000	45	P	
24	Mg	1	0.105	ug/l	0.10	28.6	450000	45	P	
27	Al	1	5.349	ug/l	5.35	1.5	450000	45	P	
31	P	1	0.148	ug/l	0.15	592.6	450000	45	P	
39	K	1	-0.281	ug/l	-0.28	351.9	450000	45	P	
44	Ca	1	-0.638	ug/l	-0.64	113.6	450000	45	P	
47	Ti	1	0.143	ug/l	0.14	6.7	4500	74	P	
51	V	1	0.239	ug/l	0.24	7.8	9000	74	P	
52	Cr	1	0.058	ug/l	0.06	6.2	9000	74	P	
55	Mn	1	0.070	ug/l	0.07	5.8	9000	74	P	
56	Fe	1	2.300	ug/l	2.30	3.4	225000	74	P	
59	Co	1	0.028	ug/l	0.03	13.7	9000	74	P	
60	Ni	1	0.117	ug/l	0.12	8.7	9000	74	P	
63	Cu	1	-0.057	ug/l	-0.06	16.9	9000	74	P	
66	Zn	1	0.344	ug/l	0.34	7.7	9000	74	P	
75	As	1	0.170	ug/l	0.17	2.2	9000	74	P	
78	Se	1	0.251	ug/l	0.25	30.9	9000	74	P	
88	Sr	1	0.045	ug/l	0.04	12.4	9000	74	P	
95	Mo	1	0.101	ug/l	0.10	1.5	4500	103	P	
109	Ag	1	0.009	ug/l	0.01	6.3	900	103	P	
114	Cd	1	0.005	ug/l	0.00	40.9	9000	103	P	
118	Sn	1	0.107	ug/l	0.11	10.1	4500	103	P	
123	Sb	1	0.051	ug/l	0.05	9.7	900	103	P	
135	Ba	1	0.046	ug/l	0.05	20.7	9000	103	P	
200	Hg	1	0.011	ug/l	0.01	40.0	45	209	P	
205	Tl	1	0.102	ug/l	0.10	5.7	900	209	P	
208	Pb	1	0.019	ug/l	0.02	16.1	9000	209	P	
238	U	1	0.020	ug/l	0.02	15.8	9000	209	P	

ISTD Elements

IS	Mass	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)			Flag
6	Li	1	210372	0.68	196600	107.0	30	-	125	
45	Sc	1	2643896	0.16	2410000	109.7	30	-	125	
74	Ge	1	5380580	1.75	5113000	105.2	30	-	125	
103	Rh	1	7492771	0.10	7235000	103.6	30	-	125	
165	Ho	1	3307531	0.46	3204000	103.2	30	-	125	
175	Lu	1	2852359	2.15	2756000	103.5	30	-	125	
209	Bi	1	3942188	1.03	3882000	101.6	30	-	125	

Analytes: Pass ISTD: Pass

0 :Element Failures 0 :Max. Number of Failures Allowed

0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

TA Seattle Sample Report 200.8/6020 7500ce ICPMS

Data File: C:\ICPCHEM\1\DATA\101012AM.B\030SMPL.D\030SMPL.D#
Date Acquired: Oct 10 2012 08:22 am Acq. Method: 0000RUN.M
Sample Name: MDL(S)03-3 Vial Number: 2403
Misc Info: STDS&RL&CCV 00012,ICV 00015,ICSA&ICSAB 100812

Current Method: C:\ICPCHEM\1\METHODS\00He REP.M Operator: FCW ICP-MS ID#SEA44
Calibration File: C:\ICPCHEM\1\CALIB\00He REP.C
Last Cal. Update: Oct 10 2012 10:07 am
ISTD Ref File : C:\ICPCHEM\1\DATA\101012AM.B\005CALB.D\005CALB.D#

Tune #	Name
1	\1\7500\he.u
2	CHEM\1\7500\
3	CHEM\1\7500\

Dilution Factor: 1.00 Final Dil Factor: 1.00

QC Elements

Element		T#	Conc.	Units	Corr. Conc	RSD(%)	LDR	IS	P/A	Flag
9	Be	1	0.048	ug/l	0.05	71.0	9000	6	P	
23	Na	1	-4.668	ug/l	-4.67	16.8	450000	45	P	
24	Mg	1	0.120	ug/l	0.12	24.0	450000	45	P	
27	Al	1	5.736	ug/l	5.74	9.3	450000	45	P	
31	P	1	0.384	ug/l	0.38	171.5	450000	45	P	
39	K	1	1.515	ug/l	1.52	77.0	450000	45	P	
44	Ca	1	-1.128	ug/l	-1.13	17.2	450000	45	P	
47	Ti	1	0.157	ug/l	0.16	9.0	4500	74	P	
51	V	1	0.221	ug/l	0.22	9.0	9000	74	P	
52	Cr	1	0.065	ug/l	0.06	16.2	9000	74	P	
55	Mn	1	0.072	ug/l	0.07	6.1	9000	74	P	
56	Fe	1	2.470	ug/l	2.47	0.7	225000	74	P	
59	Co	1	0.029	ug/l	0.03	3.2	9000	74	P	
60	Ni	1	0.130	ug/l	0.13	10.6	9000	74	P	
63	Cu	1	-0.055	ug/l	-0.06	26.2	9000	74	P	
66	Zn	1	0.510	ug/l	0.51	5.5	9000	74	P	
75	As	1	0.193	ug/l	0.19	4.7	9000	74	P	
78	Se	1	0.216	ug/l	0.22	31.0	9000	74	P	
88	Sr	1	0.048	ug/l	0.05	22.0	9000	74	P	
95	Mo	1	0.104	ug/l	0.10	1.5	4500	103	P	
109	Ag	1	0.011	ug/l	0.01	26.4	900	103	P	
114	Cd	1	0.008	ug/l	0.01	35.4	9000	103	P	
118	Sn	1	0.112	ug/l	0.11	7.8	4500	103	P	
123	Sb	1	0.048	ug/l	0.05	8.7	900	103	P	
135	Ba	1	0.039	ug/l	0.04	24.4	9000	103	P	
200	Hg	1	0.011	ug/l	0.01	25.0	45	209	P	
205	Tl	1	0.106	ug/l	0.11	8.7	900	209	P	
208	Pb	1	0.019	ug/l	0.02	9.3	9000	209	P	
238	U	1	0.021	ug/l	0.02	13.7	9000	209	P	

ISTD Elements

IS	Mass	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)			Flag
6	Li	1	208642	1.03	196600	106.1	30	-	125	
45	Sc	1	2625056	2.23	2410000	108.9	30	-	125	
74	Ge	1	5345733	1.33	5113000	104.6	30	-	125	
103	Rh	1	7487894	0.72	7235000	103.5	30	-	125	
165	Ho	1	3300084	1.04	3204000	103.0	30	-	125	
175	Lu	1	2849271	0.28	2756000	103.4	30	-	125	
209	Bi	1	3966108	0.96	3882000	102.2	30	-	125	

Analytes: **Pass** **ISTD:** **Pass**

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

TA Seattle Sample Report 200.8/6020 7500ce ICPMS

Data File: C:\ICPCHEM\1\DATA\101012AM.B\031SMPL.D\031SMPL.D#
Date Acquired: Oct 10 2012 08:26 am Acq. Method: 0000RUN.M
Sample Name: MDL(S)03-4 Vial Number: 2404
Misc Info: STDS&RL&CCV 00012,ICV 00015,ICSA&ICSAB 100812

Current Method: C:\ICPCHEM\1\METHODS\00He REP.M Operator: FCW ICP-MS ID#SEA44
Calibration File: C:\ICPCHEM\1\CALIB\00He REP.C
Last Cal. Update: Oct 10 2012 10:07 am
ISTD Ref File : C:\ICPCHEM\1\DATA\101012AM.B\005CALB.D\005CALB.D#

Tune #	Name
1	\1\7500\he.u
2	CHEM\1\7500\
3	CHEM\1\7500\

Dilution Factor: 1.00 Final Dil Factor: 1.00

QC Elements

Element		T#	Conc.	Units	Corr. Conc	RSD(%)	LDR	IS	P/A	Flag
9	Be	1	0.037	ug/l	0.04	19.6	9000	6	P	
23	Na	1	-5.097	ug/l	-5.10	11.5	450000	45	P	
24	Mg	1	0.082	ug/l	0.08	11.6	450000	45	P	
27	Al	1	5.111	ug/l	5.11	3.7	450000	45	P	
31	P	1	-0.078	ug/l	-0.08	876.0	450000	45	P	
39	K	1	-0.344	ug/l	-0.34	540.5	450000	45	P	
44	Ca	1	-0.716	ug/l	-0.72	101.0	450000	45	P	
47	Ti	1	0.153	ug/l	0.15	10.7	4500	74	P	
51	V	1	0.235	ug/l	0.23	15.4	9000	74	P	
52	Cr	1	0.070	ug/l	0.07	23.0	9000	74	P	
55	Mn	1	0.068	ug/l	0.07	7.3	9000	74	P	
56	Fe	1	2.285	ug/l	2.29	0.6	225000	74	P	
59	Co	1	0.024	ug/l	0.02	5.5	9000	74	P	
60	Ni	1	0.098	ug/l	0.10	1.2	9000	74	P	
63	Cu	1	-0.062	ug/l	-0.06	4.5	9000	74	P	
66	Zn	1	0.318	ug/l	0.32	6.5	9000	74	P	
75	As	1	0.165	ug/l	0.16	7.4	9000	74	P	
78	Se	1	0.267	ug/l	0.27	25.7	9000	74	P	
88	Sr	1	0.043	ug/l	0.04	18.1	9000	74	P	
95	Mo	1	0.099	ug/l	0.10	9.2	4500	103	P	
109	Ag	1	0.008	ug/l	0.01	23.2	900	103	P	
114	Cd	1	0.003	ug/l	0.00	73.7	9000	103	P	
118	Sn	1	0.092	ug/l	0.09	2.9	4500	103	P	
123	Sb	1	0.040	ug/l	0.04	8.3	900	103	P	
135	Ba	1	0.048	ug/l	0.05	20.1	9000	103	P	
200	Hg	1	0.007	ug/l	0.01	23.3	45	209	P	
205	Tl	1	0.093	ug/l	0.09	5.8	900	209	P	
208	Pb	1	0.015	ug/l	0.02	12.9	9000	209	P	
238	U	1	0.020	ug/l	0.02	4.3	9000	209	P	

ISTD Elements

IS Mass		Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)			Flag
6	Li	1	211788	0.80	196600	107.7	30	-	125	
45	Sc	1	2679990	2.30	2410000	111.2	30	-	125	
74	Ge	1	5369101	0.94	5113000	105.0	30	-	125	
103	Rh	1	7476295	0.38	7235000	103.3	30	-	125	
165	Ho	1	3291905	0.48	3204000	102.7	30	-	125	
175	Lu	1	2833184	0.44	2756000	102.8	30	-	125	
209	Bi	1	3958683	0.45	3882000	102.0	30	-	125	

Analytes: Pass ISTD: Pass

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

TA Seattle Sample Report 200.8/6020 7500ce ICPMS

Data File: C:\ICPCHEM\1\DATA\101012AM.B\032SMPL.D\032SMPL.D#
Date Acquired: Oct 10 2012 08:30 am Acq. Method: 0000RUN.M
Sample Name: MDL(S)03-5 Vial Number: 2405
Misc Info: STDS&RL&CCV 00012,ICV 00015,ICSA&ICSAB 100812

Current Method: C:\ICPCHEM\1\METHODS\00He REP.M Operator: FCW ICP-MS 1D#SEA44
Calibration File: C:\ICPCHEM\1\CALIB\00He REP.C
Last Cal. Update: Oct 10 2012 10:07 am
ISTD Ref File : C:\ICPCHEM\1\DATA\101012AM.B\005CALB.D\005CALB.D#

Tune #	Name
1	\1\7500\he.u
2	CHEM\1\7500\
3	CHEM\1\7500\

Dilution Factor: 1.00 Final Dil Factor: 1.00

QC Elements

Element		T#	Conc.	Units	Corr. Conc	RSD(%)	LDR	IS	P/A	Flag
9	Be	1	0.050	ug/l	0.05	27.2	9000	6	P	
23	Na	1	-3.414	ug/l	-3.41	11.9	450000	45	P	
24	Mg	1	0.087	ug/l	0.09	9.7	450000	45	P	
27	Al	1	5.694	ug/l	5.69	3.3	450000	45	P	
31	P	1	-0.405	ug/l	-0.41	285.7	450000	45	P	
39	K	1	1.807	ug/l	1.81	28.3	450000	45	P	
44	Ca	1	-0.440	ug/l	-0.44	131.7	450000	45	P	
47	Ti	1	0.153	ug/l	0.15	8.4	4500	74	P	
51	V	1	0.269	ug/l	0.27	12.0	9000	74	P	
52	Cr	1	0.068	ug/l	0.07	15.6	9000	74	P	
55	Mn	1	0.071	ug/l	0.07	15.4	9000	74	P	
56	Fe	1	2.443	ug/l	2.44	4.2	225000	74	P	
59	Co	1	0.025	ug/l	0.03	8.0	9000	74	P	
60	Ni	1	0.117	ug/l	0.12	10.8	9000	74	P	
63	Cu	1	-0.082	ug/l	-0.08	7.9	9000	74	P	
66	Zn	1	0.359	ug/l	0.36	14.2	9000	74	P	
75	As	1	0.187	ug/l	0.19	4.3	9000	74	P	
78	Se	1	0.200	ug/l	0.20	28.8	9000	74	P	
88	Sr	1	0.055	ug/l	0.05	5.5	9000	74	P	
95	Mo	1	0.106	ug/l	0.11	5.6	4500	103	P	
109	Ag	1	0.012	ug/l	0.01	9.6	900	103	P	
114	Cd	1	0.005	ug/l	0.00	107.6	9000	103	P	
118	Sn	1	0.110	ug/l	0.11	6.1	4500	103	P	
123	Sb	1	0.041	ug/l	0.04	6.2	900	103	P	
135	Ba	1	0.048	ug/l	0.05	2.9	9000	103	P	
200	Hg	1	0.008	ug/l	0.01	14.5	45	209	P	
205	Tl	1	0.098	ug/l	0.10	6.6	900	209	P	
208	Pb	1	0.023	ug/l	0.02	10.0	9000	209	P	
238	U	1	0.019	ug/l	0.02	11.4	9000	209	P	

ISTD Elements

IS	Mass	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)			Flag
6	Li	1	211412	0.12	196600	107.5	30	-	125	
45	Sc	1	2634020	0.52	2410000	109.3	30	-	125	
74	Ge	1	5327491	1.11	5113000	104.2	30	-	125	
103	Rh	1	7430509	1.06	7235000	102.7	30	-	125	
165	Ho	1	3268561	0.82	3204000	102.0	30	-	125	
175	Lu	1	2829349	0.17	2756000	102.7	30	-	125	
209	Bi	1	3844133	0.85	3882000	99.0	30	-	125	

Analytes: Pass ISTD: Pass

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

TA Seattle Sample Report 200.8/6020 7500ce ICPMS

Data File: C:\ICPCHEM\1\DATA\101012AM.B\033SMPL.D\033SMPL.D#
Date Acquired: Oct 10 2012 08:33 am Acq. Method: 0000RUN.M
Sample Name: MDL(S)03-6 Vial Number: 2406
Misc Info: STDS&RL&CCV 00012,ICV 00015,ICSA&ICSAB 100812

Current Method: C:\ICPCHEM\1\METHODS\00He REP.M Operator: FCW ICP-MS ID#SEA44
Calibration File: C:\ICPCHEM\1\CALIB\00He REP.C
Last Cal. Update: Oct 10 2012 10:07 am
ISTD Ref File : C:\ICPCHEM\1\DATA\101012AM.B\005CALB.D\005CALB.D#

Tune #	Name
1	\1\7500\he.m
2	CHEM\1\7500\
3	CHEM\1\7500\

Dilution Factor: 1.00 Final Dil Factor: 1.00

QC Elements

Element		T#	Conc.	Units	Corr. Conc	RSD(%)	LDR	IS	P/A	Flag
9	Be	1	0.038	ug/l	0.04	19.4	9000	6	P	
23	Na	1	-4.030	ug/l	-4.03	8.9	450000	45	P	
24	Mg	1	0.105	ug/l	0.10	33.6	450000	45	P	
27	Al	1	5.263	ug/l	5.26	3.0	450000	45	P	
31	P	1	0.817	ug/l	0.82	127.1	450000	45	P	
39	K	1	1.367	ug/l	1.37	63.8	450000	45	P	
44	Ca	1	-1.183	ug/l	-1.18	60.1	450000	45	P	
47	Ti	1	0.162	ug/l	0.16	15.8	4500	74	P	
51	V	1	0.281	ug/l	0.28	2.6	9000	74	P	
52	Cr	1	0.073	ug/l	0.07	6.4	9000	74	P	
55	Mn	1	0.082	ug/l	0.08	8.2	9000	74	P	
56	Fe	1	2.498	ug/l	2.50	4.3	225000	74	P	
59	Co	1	0.027	ug/l	0.03	10.6	9000	74	P	
60	Ni	1	0.104	ug/l	0.10	9.6	9000	74	P	
63	Cu	1	-0.077	ug/l	-0.08	25.7	9000	74	P	
66	Zn	1	0.400	ug/l	0.40	5.4	9000	74	P	
75	As	1	0.190	ug/l	0.19	13.8	9000	74	P	
78	Se	1	0.221	ug/l	0.22	28.0	9000	74	P	
88	Sr	1	0.055	ug/l	0.06	13.8	9000	74	P	
95	Mo	1	0.122	ug/l	0.12	8.5	4500	103	P	
109	Ag	1	0.012	ug/l	0.01	17.2	900	103	P	
114	Cd	1	0.002	ug/l	0.00	122.9	9000	103	P	
118	Sn	1	0.104	ug/l	0.10	9.2	4500	103	P	
123	Sb	1	0.044	ug/l	0.04	7.0	900	103	P	
135	Ba	1	0.043	ug/l	0.04	5.9	9000	103	P	
200	Hg	1	0.005	ug/l	0.00	32.8	45	209	P	
205	Tl	1	0.103	ug/l	0.10	5.0	900	209	P	
208	Pb	1	0.017	ug/l	0.02	28.9	9000	209	P	
238	U	1	0.019	ug/l	0.02	6.6	9000	209	P	

ISTD Elements

IS	Mass	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)			Flag
6	Li	1	210051	1.23	196600	106.8	30	-	125	
45	Sc	1	2658673	0.59	2410000	110.3	30	-	125	
74	Ge	1	5373399	1.14	5113000	105.1	30	-	125	
103	Rh	1	7436114	1.29	7235000	102.8	30	-	125	
165	Ho	1	3257234	0.58	3204000	101.7	30	-	125	
175	Lu	1	2789907	0.39	2756000	101.2	30	-	125	
209	Bi	1	3873069	1.36	3882000	99.8	30	-	125	

Analytes: **Pass** **ISTD:** **Pass**

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

TA Seattle Sample Report 200.8/6020 7500ce ICPMS

Data File: C:\ICPCHEM\1\DATA\101012AM.B\034SMPL.D\034SMPL.D#
Date Acquired: Oct 10 2012 08:37 am Acq. Method: 0000RUN.M
Sample Name: MDL(S)03-7 Vial Number: 2407
Misc Info: STDS&RL&CCV 00012,ICV 00015,ICSA&ICSAB 100812

Current Method: C:\ICPCHEM\1\METHODS\00He REP.M Operator: FCW ICP-MS ID#SEA44
Calibration File: C:\ICPCHEM\1\CALIB\00He REP.C
Last Cal. Update: Oct 10 2012 10:07 am
ISTD Ref File : C:\ICPCHEM\1\DATA\101012AM.B\005CALB.D\005CALB.D#

Tune #	Name
1	\1\7500\he.u
2	CHEM\1\7500\
3	CHEM\1\7500\

Dilution Factor: 1.00 Final Dil Factor: 1.00

QC Elements

Element		T#	Conc.	Units	Corr. Conc	RSD(%)	LDR	IS	P/A	Flag
9	Be	1	0.030	ug/l	0.03	97.3	9000	6	P	
23	Na	1	-3.711	ug/l	-3.71	14.9	450000	45	P	
24	Mg	1	0.062	ug/l	0.06	25.9	450000	45	P	
27	Al	1	5.208	ug/l	5.21	2.7	450000	45	P	
31	P	1	1.312	ug/l	1.31	178.7	450000	45	P	
39	K	1	2.022	ug/l	2.02	31.3	450000	45	P	
44	Ca	1	-1.193	ug/l	-1.19	22.5	450000	45	P	
47	Ti	1	0.147	ug/l	0.15	6.0	4500	74	P	
51	V	1	0.278	ug/l	0.28	19.7	9000	74	P	
52	Cr	1	0.060	ug/l	0.06	8.0	9000	74	P	
55	Mn	1	0.067	ug/l	0.07	11.0	9000	74	P	
56	Fe	1	2.245	ug/l	2.25	3.7	225000	74	P	
59	Co	1	0.026	ug/l	0.03	14.9	9000	74	P	
60	Ni	1	0.094	ug/l	0.09	12.5	9000	74	P	
63	Cu	1	-0.059	ug/l	-0.06	1.8	9000	74	P	
66	Zn	1	0.321	ug/l	0.32	8.2	9000	74	P	
75	As	1	0.171	ug/l	0.17	10.7	9000	74	P	
78	Se	1	0.159	ug/l	0.16	60.6	9000	74	P	
88	Sr	1	0.053	ug/l	0.05	7.7	9000	74	P	
95	Mo	1	0.103	ug/l	0.10	1.1	4500	103	P	
109	Ag	1	0.008	ug/l	0.01	8.8	900	103	P	
114	Cd	1	0.002	ug/l	0.00	215.2	9000	103	P	
118	Sn	1	0.099	ug/l	0.10	16.3	4500	103	P	
123	Sb	1	0.042	ug/l	0.04	4.5	900	103	P	
135	Ba	1	0.050	ug/l	0.05	45.9	9000	103	P	
200	Hg	1	0.005	ug/l	0.01	53.0	45	209	P	
205	Tl	1	0.094	ug/l	0.09	3.8	900	209	P	
208	Pb	1	0.020	ug/l	0.02	14.5	9000	209	P	
238	U	1	0.018	ug/l	0.02	10.6	9000	209	P	

ISTD Elements

IS	Mass	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)			Flag
6	Li	1	211792	0.61	196600	107.7	30	-	125	
45	Sc	1	2654610	1.47	2410000	110.1	30	-	125	
74	Ge	1	5403202	1.14	5113000	105.7	30	-	125	
103	Rh	1	7440919	0.42	7235000	102.8	30	-	125	
165	Ho	1	3269300	1.23	3204000	102.0	30	-	125	
175	Lu	1	2826712	1.25	2756000	102.6	30	-	125	
209	Bi	1	3836211	0.17	3882000	98.8	30	-	125	

Analytes: Pass **ISTD:** Pass

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Step	Mass	Element	r	b(blank)	DL	BEC	Unit
1	6	Li	0.0000	--- ---	---	ug/l	
1	7	Li	0.0000	--- ---	---	ug/l	
1	9	Be	1.0000	3.398E-04	8.785E-03	3.381E-03	ug/l
1	23	Na	0.9999	1.521 1.727	36.87	ug/l	
1	24	Mg	0.9999	2.594E-03	2.652E-02	1.109E-01	ug/l
1	27	Al	0.9998	1.816E-02	9.423E-02	1.106	ug/l
1	31	P	0.9999	2.577E-02	4.771	21.54	ug/l
1	39	K	0.9998	2.325 1.472E-01		73.04	ug/l
1	44	Ca	0.9999	1.248E-02	1.028	8.547	ug/l
1	45	Sc	0.0000	--- ---	---	ug/l	
1	47	Ti	0.9999	5.055E-05	1.504E-02	1.363E-02	ug/l
1	51	V	0.9999	6.021E-02	5.379E-02	7.293E-01	ug/l
1	52	Cr	0.9998	1.342E-02	4.339E-02	1.486E-01	ug/l
1	55	Mn	0.9998	1.956E-03	1.108E-02	2.594E-02	ug/l
1	56	Fe	0.9998	1.745E-01	1.093E-01	2.101	ug/l
1	59	Co	0.9998	7.825E-04	2.362E-03	6.164E-03	ug/l
1	60	Ni	0.9996	5.542E-04	5.344E-03	1.726E-02	ug/l
1	63	Cu	0.9996	4.695E-02	4.524E-02	5.750E-01	ug/l
1	66	Zn	0.9996	3.457E-03	1.213E-01	1.944E-01	ug/l
1	74	Ge	0.0000	--- ---	---	ug/l	
1	75	As	0.9999	2.958E-03	1.378E-02	2.092E-01	ug/l
1	78	Se	0.9997	1.803E-03	1.162E-01	1.085	ug/l
1	88	Sr	0.9996	7.289E-03	1.065E-02	6.926E-02	ug/l
1	95	Mo	1.0000	3.408E-04	6.464E-03	1.149E-02	ug/l
1	103	Rh	0.0000	--- ---	---	ug/l	
1	109	Ag	0.9998	6.721E-04	1.777E-03	7.694E-03	ug/l
1	114	Cd	0.9999	6.053E-04	7.258E-03	1.513E-02	ug/l
1	118	Sn	1.0000	1.476E-03	3.089E-02	3.728E-02	ug/l
1	123	Sb	0.9999	2.486E-04	1.727E-03	5.853E-03	ug/l
1	135	Ba	0.9999	1.943E-04	1.956E-02	1.747E-02	ug/l
1	165	Ho	0.0000	--- ---	---	ug/l	
1	175	Lu	0.0000	--- ---	---	ug/l	
1	200	Hg	0.9999	5.367E-04	2.155E-03	1.736E-02	ug/l
1	205	Tl	0.9998	2.408E-03	8.134E-03	8.580E-03	ug/l
1	208	Pb	0.9999	1.357E-02	8.606E-03	3.606E-02	ug/l
1	209	Bi	0.0000	--- ---	---	ug/l	
1	238	U	0.9999	8.626E-05	8.503E-04	2.473E-04	ug/l

101012 AM SiDS 9/17/12

EZpw 12/17/12

TA Seattle Calibration Blank QC Report 200.8/6020 ICP-MS 7500ce

Data File: C:\ICPCHEM\1\DATA\101012AM.B\005CALB.D\005CALB.D#
Date Acquired: Oct 10 2012 06:49 am Acq. Method: 0000RUN.M
Sample Name: STD0 Vial Number: 1306
Misc Info: STDS&RL&CCV 00012,ICV 00015,ICSA&ICSAB 100812
Current Method: C:\ICPCHEM\1\METHODS\00He REP.M
Operator: FCW ICP-MS ID#SEA44
Calibration File: C:\ICPCHEM\1\CALIB\00He REP.C
Last Cal. Update: Oct 10 2012 10:07 am
ISTD Ref File : ---

Tune #	Name
1	c:\icpchem\1\7500\he.u
2	C:\ICPCHEM\1\7500\
3	C:\ICPCHEM\1\7500\

Sample Type: CalBlk

QC&ISTD Elements

Element		Tune	CPS Mean		SD	RSD(%)
6	Li	1	196602.8	P	1788.00	0.91
7	Li	1	15770.3	P	316.10	2.00
9	Be	1	1.3	P	1.16	86.62
23	Na	1	73308.0	P	702.80	0.96
24	Mg	1	125.0	P	10.00	8.00
27	Al	1	875.0	P	17.32	1.98
31	P	1	1241.8	P	93.06	7.49
39	K	1	112050.8	P	1022.00	0.91
44	Ca	1	601.8	P	28.34	4.71
45	Sc	1	2409602.0	A	20390.00	0.85
47	Ti	1	5.2	P	1.89	36.64
51	V	1	6156.6	P	136.20	2.21
52	Cr	1	1371.8	P	129.10	9.41
55	Mn	1	200.0	P	27.84	13.92
56	Fe	1	17839.5	P	300.80	1.69
57	Fe	1		P		
59	Co	1	80.0	P	10.00	12.50
60	Ni	1	56.7	P	5.77	10.19
63	Cu	1	4801.0	P	139.20	2.90
66	Zn	1	353.3	P	72.52	20.52
74	Ge	1	5112875.0	A	16010.00	0.31
75	As	1	302.5	P	6.95	2.30
78	Se	1	184.3	P	6.17	3.35
88	Sr	1	745.5	P	40.16	5.39
95	Mo	1	49.3	P	9.45	19.16
99	(Mo)	1		P		
103	Rh	1	7235367.0	A	124900.00	1.73
106	(Cd)	1		P		
108	(Cd)	1		P		
109	Ag	1	97.3	P	9.02	9.27
111	Cd	1		P		
114	Cd	1	87.6	P	14.10	16.10
118	Sn	1	213.3	P	58.38	27.37
123	Sb	1	36.0	P	4.00	11.11
135	Ba	1	28.0	P	10.00	35.71
165	Ho	1	3203706.0	A	14250.00	0.44
175	Lu	1	2755975.0	A	60330.00	2.19
200	Hg	1	41.7	P	1.61	3.86
205	Tl	1	186.7	P	57.95	31.04
206	Pb	1		P		
207	Pb	1		P		
208	Pb	1	1053.4	P	76.38	7.25
209	Bi	1	3882468.0	A	29260.00	0.75
238	U	1	6.7	P	7.64	114.57

TA Seattle Calibration Standard QC Report 200.8/6020 ICP-MS 7500ce

Data File: C:\ICPCHEM\1\DATA\101012AM.B\006CALS.D\006CALS.D#
Date Acquired: Oct 10 2012 06:52 am
Acq. Method: 0000RUN.M
Sample Name: **STD1**
Vial Number: 1305
Misc Info: STDS&RL&CCV 00012,ICV 00015,ICSA&ICSAB 100812
Operator: FCW ICP-MS ID#SEA44
Current Method: C:\ICPCHEM\1\METHODS\00He REP.M
Calibration File: C:\ICPCHEM\1\CALIB\00He REP.C
Last Cal. Update: Oct 10 2012 10:07 am
ISTD Ref File : C:\ICPCHEM\1\DATA\101012AM.B\005CALB.D\005CALB.D#

Tune #	Name
1	icpchem\1\7500\he.u
2	C:\ICPCHEM\1\7500\
3	C:\ICPCHEM\1\7500\

QC&ISTD Elements

Sample Type: CalStd

Element		IS	T#	CPS Mean	SD	RSD(%)
9	Be	6	1	35.3 P	2.31	6.53
23	Na	45	1	135769.2 P	1313.00	0.97
24	Mg	45	1	25213.3 P	188.40	0.75
27	Al	45	1	11016.6 P	225.60	2.05
31	P	45	1	2318.6 P	142.30	6.14
39	K	45	1	158869.1 P	953.80	0.60
44	Ca	45	1	2208.9 P	72.95	3.30
47	Ti	74	1	52.7 P	1.44	2.74
51	V	74	1	7814.2 P	102.60	1.31
52	Cr	74	1	2673.7 P	109.80	4.11
55	Mn	74	1	2553.7 P	129.90	5.09
56	Fe	74	1	201250.7 P	1186.00	0.59
59	Co	74	1	1553.5 P	55.08	3.55
60	Ni	74	1	766.7 P	85.05	11.09
63	Cu	74	1	6726.9 P	319.40	4.75
66	Zn	74	1	1833.5 P	75.23	4.10
75	As	74	1	468.8 P	19.21	4.10
78	Se	74	1	194.0 P	6.76	3.49
88	Sr	74	1	2147.4 P	199.70	9.30
95	Mo	103	1	500.0 P	41.76	8.35
109	Ag	103	1	1472.1 P	102.90	6.99
114	Cd	103	1	699.3 P	63.32	9.06
118	Sn	103	1	1263.4 P	43.68	3.46
123	Sb	103	1	647.4 P	61.98	9.57
135	Ba	103	1	248.0 P	20.30	8.19
200	Hg	209	1	45.3 P	5.20	11.48
205	Tl	209	1	2368.6 P	208.30	8.79
208	Pb	209	1	4675.5 P	13.24	0.28
238	U	209	1	2932.1 P	180.80	6.17

ISTD Elements

IS	Mass	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	1	197855	0.97	196600	100.6	30 - 125	
45	Sc	1	2469246	1.79	2410000	102.5	30 - 125	
74	Ge	1	5105399	0.92	5113000	99.9	30 - 125	
103	Rh	1	7304122	0.91	7235000	101.0	30 - 125	
165	Ho	1	3244829	1.36	3204000	101.3	30 - 125	
175	Lu	1	2757022	1.45	2756000	100.0	30 - 125	
209	Bi	1	3844461	0.72	3882000	99.0	30 - 125	

Analytes: Pass ISTD: Pass

0 :Element Failures :Max. Number of Failures Allowed

0 :ISTD Failures :Max. Number of ISTD Failures Allowed

TA Seattle Calibration Standard QC Report 200.8/6020 ICP-MS 7500ce

Data File: C:\ICPCHEM\1\DATA\101012AM.B\007CALS.D\007CALS.D#

Date Acquired: Oct 10 2012 06:56 am

Acq. Method: 0000RUN.M

Sample Name: STD2

Vial Number: 1304

Misc Info: STDS&RL&CCV 00012,ICV 00015,ICSA&ICSAB 100&12

Operator: FCW ICP-MS ID#SEA44

Current Method: C:\ICPCHEM\1\METHODS\00He REP.M

Calibration File: C:\ICPCHEM\1\CALIB\00He REP.C

Last Cal. Update: Oct 10 2012 10:07 am

ISTD Ref File : C:\ICPCHEM\1\DATA\101012AM.B\005CALB.D\005CALB.D#

Tune #	Name
1	icpchem\1\7500\he.u
2	C:\ICPCHEM\1\7500\
3	C:\ICPCHEM\1\7500\

Sample Type: CalStd

QC&ISTD Elements

Element		IS	T#	CPS Mean	SD	RSD(%)
9	Be	6	1	349.3 P	19.01	5.44
23	Na	45	1	293400.7 P	1704.00	0.58
24	Mg	45	1	125105.1 P	1553.00	1.24
27	Al	45	1	15659.8 P	326.40	2.08
31	P	45	1	7107.1 P	55.00	0.77
39	K	45	1	288407.6 P	678.30	0.24
44	Ca	45	1	8050.6 P	235.80	2.93
47	Ti	74	1	391.0 P	17.77	4.54
51	V	74	1	14790.5 P	657.80	4.45
52	Cr	74	1	11410.3 P	160.50	1.41
55	Mn	74	1	8788.3 P	112.70	1.28
56	Fe	74	1	954138.3 P	7281.00	0.76
59	Co	74	1	13956.2 P	15.31	0.11
60	Ni	74	1	3755.6 P	165.80	4.41
63	Cu	74	1	14370.1 P	371.00	2.58
66	Zn	74	1	3110.4 P	116.30	3.74
75	As	74	1	1800.8 P	24.03	1.33
78	Se	74	1	352.2 P	13.77	3.91
88	Sr	74	1	11846.0 P	168.70	1.42
95	Mo	103	1	4329.5 P	104.40	2.41
109	Ag	103	1	13015.6 P	178.00	1.37
114	Cd	103	1	6143.7 P	21.08	0.34
118	Sn	103	1	6225.0 P	185.50	2.98
123	Sb	103	1	6115.6 P	123.30	2.02
135	Ba	103	1	1658.8 P	84.40	5.09
200	Hg	209	1	162.2 P	6.53	4.02
205	Tl	209	1	22338.5 P	619.60	2.77
208	Pb	209	1	31206.9 P	573.40	1.84
238	U	209	1	27074.0 P	235.00	0.87

ISTD Elements

IS	Mass	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	1	195820	0.43	196600	99.6	30 - 125	
45	Sc	1	2479420	1.31	2410000	102.9	30 - 125	
74	Ge	1	5132453	0.64	5113000	100.4	30 - 125	
103	Rh	1	7278302	0.64	7235000	100.6	30 - 125	
165	Ho	1	3238273	1.11	3204000	101.1	30 - 125	
175	Lu	1	2767959	0.52	2756000	100.4	30 - 125	
209	Bi	1	3917995	0.41	3882000	100.9	30 - 125	

Analytes: Pass ISTD: Pass

0 :Element Failures :Max. Number of Failures Allowed

0 :ISTD Failures :Max. Number of ISTD Failures Allowed

TA Seattle Calibration Standard QC Report 200.8/6020 ICP-MS 7500ce

Data File: C:\ICPCHEM\1\DATA\101012AM.B\008CALS.D\008CALS.D#

Date Acquired: Oct 10 2012 07:00 am

Acq. Method: 0000RUN.M

Sample Name: STD3

Vial Number: 1303

Misc Info: STDS&RL&CCV 00012,ICV 00015,ICSA&ICSAB 100812

Operator: FCW ICP-MS ID#SEA44

Current Method: C:\ICPCHEM\1\METHODS\00He REP.M

Calibration File: C:\ICPCHEM\1\CALIB\00He REP.C

Last Cal. Update: Oct 10 2012 10:07 am

ISTD Ref File : C:\ICPCHEM\1\DATA\101012AM.B\005CALB.D\005CALB.D#

Tune #	Name
1	icpchem\1\7500\he.u
2	C:\ICPCHEM\1\7500\
3	C:\ICPCHEM\1\7500\

Sample Type: CalStd

QC&ISTD Elements

Element		IS	T#	CPS Mean	SD	RSD(%)
9	Be	6	1	3819.3 P	94.74	2.48
23	Na	45	1	2244239.0 A	36490.00	1.63
24	Mg	45	1	1216731.0 A	21230.00	1.74
27	Al	45	1	86566.1 P	572.50	0.66
31	P	45	1	60783.6 P	593.70	0.98
39	K	45	1	1781056.0 A	32680.00	1.83
44	Ca	45	1	74212.7 P	1569.00	2.11
47	Ti	74	1	3860.1 P	71.05	1.84
51	V	74	1	91726.9 P	858.10	0.94
52	Cr	74	1	98281.8 P	1423.00	1.45
55	Mn	74	1	82084.4 P	359.50	0.44
56	Fe	74	1	8763879.0 A	84670.00	0.97
59	Co	74	1	136298.6 P	2123.00	1.56
60	Ni	74	1	35174.2 P	1085.00	3.08
63	Cu	74	1	96554.1 P	2295.00	2.38
66	Zn	74	1	22391.8 P	84.85	0.38
75	As	74	1	15217.5 P	224.90	1.48
78	Se	74	1	1959.8 P	21.58	1.10
88	Sr	74	1	112304.9 P	2017.00	1.80
95	Mo	103	1	42473.9 P	842.20	1.98
109	Ag	103	1	129639.0 P	1598.00	1.23
114	Cd	103	1	58747.6 P	1423.00	2.42
118	Sn	103	1	58223.5 P	1006.00	1.73
123	Sb	103	1	61110.6 P	1411.00	2.31
135	Ba	103	1	16335.1 P	335.80	2.06
200	Hg	209	1	1200.1 P	13.45	1.12
205	Tl	209	1	218742.1 P	2795.00	1.28
208	Pb	209	1	296351.2 P	4617.00	1.56
238	U	209	1	271510.8 P	3240.00	1.19

ISTD Elements

IS	Mass	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	1	192984	0.43	196600	98.2	30 - 125	
45	Sc	1	2456837	0.34	2410000	101.9	30 - 125	
74	Ge	1	5104042	0.36	5113000	99.8	30 - 125	
103	Rh	1	7290734	0.89	7235000	100.8	30 - 125	
165	Ho	1	3234360	1.15	3204000	100.9	30 - 125	
175	Lu	1	2778772	1.20	2756000	100.8	30 - 125	
209	Bi	1	3889592	0.68	3882000	100.2	30 - 125	

Analytes: Pass ISTD: Pass

0 :Element Failures :Max. Number of Failures Allowed

0 :ISTD Failures :Max. Number of ISTD Failures Allowed

TA Seattle Calibration Standard QC Report 200.8/6020 ICP-MS 7500ce

Data File: C:\ICPCHEM\1\DATA\101012AM.B\009CALS.D\009CALS.D#
Date Acquired: Oct 10 2012 07:04 am
Acq. Method: 0000RUN.M
Sample Name: STD4
Vial Number: 1302
Misc Info: STD5&RL&CCV 00012,ICV 00015,ICSA&ICSAB 100812
Operator: FCW ICP-MS ID#SEA44
Current Method: C:\ICPCHEM\1\METHODS\00Be REP.M
Calibration File: C:\ICPCHEM\1\CALIB\00Be REP.C
Last Cal. Update: Oct 10 2012 10:07 am
ISTD Ref File : C:\ICPCHEM\1\DATA\101012AM.B\005CALB.D\005CALB.D#

Tune #	Name
1	icpchem\1\7500\be.u
2	C:\ICPCHEM\1\7500\
3	C:\ICPCHEM\1\7500\

Sample Type: CalStd

QC&ISTD Elements

Element		IS	T#	CPS Mean	SD	RSD(%)
9	Be	6	1	18867.7 P	156.10	0.83
23	Na	45	1	10401650.0 A	71000.00	0.68
24	Mg	45	1	5900701.0 A	53590.00	0.91
27	Al	45	1	415371.4 P	4346.00	1.05
31	P	45	1	301270.3 P	2634.00	0.87
39	K	45	1	8166209.0 A	95860.00	1.17
44	Ca	45	1	366836.9 P	1917.00	0.52
47	Ti	74	1	19327.2 P	77.94	0.40
51	V	74	1	436161.4 P	3669.00	0.84
52	Cr	74	1	474625.8 P	7251.00	1.53
55	Mn	74	1	395796.7 P	5340.00	1.35
56	Fe	74	1	43663368.0 A	177700.00	0.41
59	Co	74	1	665589.4 P	1674.00	0.25
60	Ni	74	1	170569.0 P	1035.00	0.61
63	Cu	74	1	439503.4 P	7419.00	1.69
66	Zn	74	1	94391.3 P	162.20	0.17
75	As	74	1	74098.1 P	942.00	1.27
78	Se	74	1	8975.4 P	65.53	0.73
88	Sr	74	1	560054.3 P	5320.00	0.95
95	Mo	103	1	212360.4 P	3699.00	1.74
109	Ag	103	1	640365.6 P	6910.00	1.08
114	Cd	103	1	289100.2 P	3773.00	1.31
118	Sn	103	1	282888.1 P	2849.00	1.01
123	Sb	103	1	306095.5 P	4707.00	1.54
135	Ba	103	1	80348.2 P	1218.00	1.52
200	Hg	209	1	5890.7 P	40.48	0.69
205	Tl	209	1	1078069.0 P	20210.00	1.87
208	Pb	209	1	1438966.0 P	24410.00	1.70
238	U	209	1	1337017.0 A	5334.00	0.40

ISTD Elements

IS	Mass	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	1	187823	0.68	196600	95.5	30 - 125	
45	Sc	1	2454262	0.93	2410000	101.8	30 - 125	
74	Ge	1	5081930	0.60	5113000	99.4	30 - 125	
103	Rh	1	7084617	1.49	7235000	97.9	30 - 125	
165	Ho	1	3197802	0.86	3204000	99.8	30 - 125	
175	Lu	1	2772066	0.41	2756000	100.6	30 - 125	
209	Bi	1	3727110	0.95	3882000	96.0	30 - 125	

Analytes: Pass ISTD: Pass

0 :Element Failures :Max. Number of Failures Allowed

0 :ISTD Failures :Max. Number of ISTD Failures Allowed

TA Seattle Calibration Standard QC Report 200.8/6020 ICP-MS 7500ce

Data File: C:\ICPCHEM\1\DATA\101012AM.B\010CALS.D\010CALS.D#

Date Acquired: Oct 10 2012 07:07 am

Acq. Method: 0000RUN.M

Sample Name: STD5

Vial Number: 1301

Misc Info: STDS&RL&CCV 00012,ICV 00015,ICSA&ICSAB 100812

Operator: FCW ICP-MS ID#SEA44

Current Method: C:\ICPCHEM\1\METHODS\00He REP.M

Calibration File: C:\ICPCHEM\1\CALIB\00He REP.C

Last Cal. Update: Oct 10 2012 10:07 am

ISTD Ref File : C:\ICPCHEM\1\DATA\101012AM.B\005CALB.D\005CALB.D#

Tune #	Name
1	icpchem\1\7500\he.u
2	C:\ICPCHEM\1\7500\
3	C:\ICPCHEM\1\7500\

Sample Type: CalStd

QC&ISTD Elements

Element		IS	T#	CPS Mean		SD	RSD(%)
9	Be	6	1	36610.6	P	485.70	1.33
23	Na	45	1	20220390.0	A	101400.00	0.50
24	Mg	45	1	11400260.0	A	95380.00	0.84
27	Al	45	1	800381.0	P	6836.00	0.85
31	P	45	1	585151.2	P	4134.00	0.71
39	K	45	1	15615330.0	A	270000.00	1.73
44	Ca	45	1	713748.6	P	1461.00	0.20
47	Ti	74	1	37557.4	P	367.40	0.98
51	V	74	1	841894.7	P	12440.00	1.48
52	Cr	74	1	913770.1	P	13710.00	1.50
55	Mn	74	1	762043.6	P	3499.00	0.46
56	Fe	74	1	83893608.0	A	607600.00	0.72
59	Co	74	1	1282773.0	A	16940.00	1.32
60	Ni	74	1	323372.6	P	3155.00	0.98
63	Cu	74	1	825841.8	P	3846.00	0.47
66	Zn	74	1	179229.1	P	1913.00	1.07
75	As	74	1	143345.3	P	934.20	0.65
78	Se	74	1	16933.9	P	55.90	0.33
88	Sr	74	1	1060505.0	A	5653.00	0.53
95	Mo	103	1	410897.8	P	3219.00	0.78
109	Ag	103	1	1202339.0	A	18090.00	1.50
114	Cd	103	1	552881.9	P	8064.00	1.46
118	Sn	103	1	548893.5	P	8416.00	1.53
123	Sb	103	1	587276.7	P	3689.00	0.63
135	Ba	103	1	153713.9	P	1043.00	0.68
200	Hg	209	1	11220.5	P	141.90	1.26
205	Tl	209	1	2022686.0	A	28180.00	1.39
208	Pb	209	1	2716824.0	A	28820.00	1.06
238	U	209	1	2515226.0	A	27660.00	1.10

ISTD Elements

IS	Mass	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	1	182063	1.25	196600	92.6	30 - 125	
45	Sc	1	2455082	0.70	2410000	101.9	30 - 125	
74	Ge	1	5095094	1.07	5113000	99.6	30 - 125	
103	Rh	1	6943532	0.72	7235000	96.0	30 - 125	
165	Ho	1	3197105	1.20	3204000	99.8	30 - 125	
175	Lu	1	2718917	1.15	2756000	98.7	30 - 125	
209	Bi	1	3631237	0.47	3882000	93.5	30 - 125	

Analytes: Pass ISTD: Pass

0 :Element Failures :Max. Number of Failures Allowed

0 :ISTD Failures :Max. Number of ISTD Failures Allowed

TA Seattle Sample Report 200.8/6020 7500ce ICPMS

Data File: C:\ICPCHEM\1\DATA\101012AM.B\012SMPL.D\012SMPL.D#
Date Acquired: Oct 10 2012 07:15 am Acq. Method: 0000RUN.M
Sample Name: ICV Vial Number: 1105
Misc Info: STDS&RL&CCV 00012,ICV 00015,ICSA&ICSAB 100812

Current Method: C:\ICPCHEM\1\METHODS\00He REP.M Operator: FCW ICP-MS ID#SEA44
Calibration File: C:\ICPCHEM\1\CALIB\00He REP.C
Last Cal. Update: Oct 10 2012 10:07 am
ISTD Ref File : C:\ICPCHEM\1\DATA\101012AM.B\005CALB.D\005CALB.D#

Tune #	Name
1	)\1\7500\he.u
2	?CHEM\1\7500\
3	?CHEM\1\7500\

Dilution Factor: 1.00 Final Dil Factor: 1.00

QC Elements

Element		T#	Conc.	Units	Corr. Conc	RSD(%)	LDR	IS	P/A	Flag
9	Be	1	39.230	ug/l	39.23	1.9	9000	6	P	
23	Na	1	4128.000	ug/l	4,128.00	2.3	450000	45	A	
24	Mg	1	4140.000	ug/l	4,140.00	2.7	450000	45	A	
27	Al	1	410.300	ug/l	410.30	3.4	450000	45	P	
31	P	1	4071.000	ug/l	4,071.00	2.2	450000	45	P	
39	K	1	4132.000	ug/l	4,132.00	0.7	450000	45	A	
44	Ca	1	4132.000	ug/l	4,132.00	2.1	450000	45	P	
47	Ti	1	40.970	ug/l	40.97	1.0	4500	74	P	
51	V	1	40.810	ug/l	40.81	1.7	9000	74	P	
52	Cr	1	41.130	ug/l	41.13	1.8	9000	74	P	
55	Mn	1	41.390	ug/l	41.39	2.0	9000	74	P	
56	Fe	1	4102.000	ug/l	4,102.00	2.1	225000	74	A	
59	Co	1	41.070	ug/l	41.07	2.2	9000	74	P	
60	Ni	1	41.270	ug/l	41.27	2.1	9000	74	P	
63	Cu	1	41.440	ug/l	41.44	2.5	9000	74	P	
66	Zn	1	41.330	ug/l	41.33	1.5	9000	74	P	
75	As	1	40.930	ug/l	40.93	1.7	9000	74	P	
78	Se	1	41.260	ug/l	41.26	0.5	9000	74	P	
88	Sr	1	41.850	ug/l	41.85	1.3	9000	74	P	
95	Mo	1	40.760	ug/l	40.76	1.6	4500	103	P	
109	Ag	1	41.250	ug/l	41.25	1.4	900	103	P	
114	Cd	1	40.610	ug/l	40.61	1.3	9000	103	P	
118	Sn	1	40.870	ug/l	40.87	2.2	4500	103	P	
123	Sb	1	40.650	ug/l	40.65	2.1	900	103	P	
135	Ba	1	40.810	ug/l	40.81	2.3	9000	103	P	
200	Hg	1	2.042	ug/l	2.04	1.3	45	209	P	
205	Tl	1	40.910	ug/l	40.91	2.3	900	209	P	
208	Pb	1	40.830	ug/l	40.83	1.7	9000	209	P	
238	U	1	41.040	ug/l	41.04	2.0	9000	209	P	

ISTD Elements

IS	Mass	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)			Flag
6	Li	1	191916	1.03	196600	97.6	30	-	125	
45	Sc	1	2473234	2.03	2410000	102.6	30	-	125	
74	Ge	1	5123498	0.74	5113000	100.2	30	-	125	
103	Rh	1	7075167	0.70	7235000	97.8	30	-	125	
165	Ho	1	3213048	0.28	3204000	100.3	30	-	125	
175	Lu	1	2759231	1.03	2756000	100.1	30	-	125	
209	Bi	1	3750710	0.61	3882000	96.6	30	-	125	

Analytes: **Pass** **ISTD:** **Pass**

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

TA Seattle Sample Report 200.8/6020 7500ce ICPMS

Data File: C:\ICPCHEM\1\DATA\101012AM.B\013SMPL.D\013SMPL.D#
Date Acquired: Oct 10 2012 07:18 am Acq. Method: 0000RUN.M
Sample Name: ICB Vial Number: 1306
Misc Info: STDS&RL&CCV 00012,ICV 00015,ICSA&ICSAB 100812

Current Method: C:\ICPCHEM\1\METHODS\00He REP.M Operator: FCW ICP-MS ID#SEA44
Calibration File: C:\ICPCHEM\1\CALIB\00He REP.C
Last Cal. Update: Oct 10 2012 10:07 am
ISTD Ref File : C:\ICPCHEM\1\DATA\101012AM.B\005CALB.D\005CALB.D#

Tune #	Name
1	\1\7500\he.u
2	CHEM\1\7500\
3	CHEM\1\7500\

Dilution Factor: 1.00 Final Dil Factor: 1.00

QC Elements

Element		T#	Conc.	Units	Corr. Conc	RSD(%)	LDR	IS	P/A	Flag
9	Be	1	0.015	ug/l	0.02	101.0	9000	6	P	
23	Na	1	-1.304	ug/l	-1.30	59.2	450000	45	P	
24	Mg	1	0.351	ug/l	0.35	23.9	450000	45	P	
27	Al	1	-0.088	ug/l	-0.09	44.1	450000	45	P	
31	P	1	0.074	ug/l	0.07	770.3	450000	45	P	
39	K	1	1.039	ug/l	1.04	134.7	450000	45	P	
44	Ca	1	-0.209	ug/l	-0.21	523.3	450000	45	P	
47	Ti	1	0.010	ug/l	0.01	90.4	4500	74	P	
51	V	1	-0.035	ug/l	-0.04	131.4	9000	74	P	
52	Cr	1	0.010	ug/l	0.01	109.8	9000	74	P	
55	Mn	1	0.007	ug/l	0.01	76.3	9000	74	P	
56	Fe	1	0.462	ug/l	0.46	2.0	225000	74	P	
59	Co	1	0.005	ug/l	0.00	16.1	9000	74	P	
60	Ni	1	0.002	ug/l	0.00	311.2	9000	74	P	
63	Cu	1	-0.021	ug/l	-0.02	184.5	9000	74	P	
66	Zn	1	0.023	ug/l	0.02	92.0	9000	74	P	
75	As	1	0.014	ug/l	0.01	35.2	9000	74	P	
78	Se	1	0.063	ug/l	0.06	36.1	9000	74	P	
88	Sr	1	0.007	ug/l	0.01	58.1	9000	74	P	
95	Mo	1	0.041	ug/l	0.04	16.8	4500	103	P	
109	Ag	1	0.004	ug/l	0.00	64.9	900	103	P	
114	Cd	1	0.001	ug/l	0.00	197.0	9000	103	P	
118	Sn	1	0.047	ug/l	0.05	45.9	4500	103	P	
123	Sb	1	0.060	ug/l	0.06	16.6	900	103	P	
135	Ba	1	0.000	ug/l	0.00	2643.6	9000	103	P	
200	Hg	1	0.027	ug/l	0.03	24.3	45	209	P	
205	Tl	1	0.012	ug/l	0.01	24.5	900	209	P	
208	Pb	1	-0.003	ug/l	0.00	46.4	9000	209	P	
238	U	1	0.006	ug/l	0.01	10.9	9000	209	P	

ISTD Elements

IS Mass		Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)			Flag
6	Li	1	196659	1.53	196600	100.0	30	-	125	
45	Sc	1	2488065	1.77	2410000	103.2	30	-	125	
74	Ge	1	5129591	1.16	5113000	100.3	30	-	125	
103	Rh	1	7270177	0.47	7235000	100.5	30	-	125	
165	Ho	1	3217947	1.04	3204000	100.4	30	-	125	
175	Lu	1	2761720	1.20	2756000	100.2	30	-	125	
209	Bi	1	3889287	0.69	3882000	100.2	30	-	125	

Analytes: **Pass** **ISTD:** **Pass**

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

TA Seattle Sample Report 200.8/6020 7500ce ICPMS

Data File: C:\ICPCHEM\1\DATA\101012AM.B\014SMPL.D\014SMPL.D#
Date Acquired: Oct 10 2012 07:22 am Acq. Method: 0000RUN.M
Sample Name: CRI Vial Number: 1107
Misc Info: STDS&RL&CCV 00012,ICV 00015,ICSA&ICSAB 100812

Current Method: C:\ICPCHEM\1\METHODS\00He REP.M Operator: FCW ICP-MS ID#SEA44
Calibration File: C:\ICPCHEM\1\CALIB\00He REP.C
Last Cal. Update: Oct 10 2012 10:07 am
ISTD Ref File : C:\ICPCHEM\1\DATA\101012AM.B\005CALB.D\005CALB.D#

Tune #	Name
1	1\1\7500\he.u
2	CHEM\1\7500\
3	CHEM\1\7500\

Dilution Factor: 1.00 Final Dil Factor: 1.00

QC Elements

Element		T#	Conc.	Units	Corr. Conc	RSD(%)	LDR	IS	P/A	Flag
9	Be	1	1.858	ug/l	1.86	4.6	9000	6	P	
23	Na	1	198.400	ug/l	198.40	0.7	450000	45	P	
24	Mg	1	207.300	ug/l	207.30	0.6	450000	45	P	
27	Al	1	20.540	ug/l	20.54	1.3	450000	45	P	
31	P	1	193.900	ug/l	193.90	3.3	450000	45	P	
39	K	1	210.400	ug/l	210.40	0.5	450000	45	P	
44	Ca	1	197.100	ug/l	197.10	2.7	450000	45	P	
47	Ti	1	2.004	ug/l	2.00	4.3	4500	74	P	
51	V	1	1.907	ug/l	1.91	1.3	9000	74	P	
52	Cr	1	2.014	ug/l	2.01	2.4	9000	74	P	
55	Mn	1	2.041	ug/l	2.04	4.7	9000	74	P	
56	Fe	1	207.700	ug/l	207.70	3.4	225000	74	A	
59	Co	1	2.039	ug/l	2.04	2.7	9000	74	P	
60	Ni	1	2.048	ug/l	2.05	1.9	9000	74	P	
63	Cu	1	2.060	ug/l	2.06	5.4	9000	74	P	
66	Zn	1	2.199	ug/l	2.20	2.8	9000	74	P	
75	As	1	2.004	ug/l	2.00	2.3	9000	74	P	
78	Se	1	2.060	ug/l	2.06	0.5	9000	74	P	
88	Sr	1	2.028	ug/l	2.03	1.3	9000	74	P	
95	Mo	1	1.934	ug/l	1.93	2.4	4500	103	P	
109	Ag	1	2.000	ug/l	2.00	0.9	900	103	P	
114	Cd	1	1.957	ug/l	1.96	3.7	9000	103	P	
118	Sn	1	1.976	ug/l	1.98	0.9	4500	103	P	
123	Sb	1	1.939	ug/l	1.94	1.3	900	103	P	
135	Ba	1	1.967	ug/l	1.97	3.9	9000	103	P	
200	Hg	1	0.115	ug/l	0.11	13.0	45	209	P	
205	Tl	1	1.990	ug/l	1.99	1.9	900	209	P	
208	Pb	1	2.004	ug/l	2.00	2.7	9000	209	P	
238	U	1	1.972	ug/l	1.97	2.5	9000	209	P	

ISTD Elements

IS	Mass	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)			Flag
6	Li	1	197239	0.54	196600	100.3	30	-	125	
45	Sc	1	2541574	0.58	2410000	105.5	30	-	125	
74	Ge	1	5185247	1.32	5113000	101.4	30	-	125	
103	Rh	1	7303432	0.58	7235000	100.9	30	-	125	
165	Ho	1	3271525	0.82	3204000	102.1	30	-	125	
175	Lu	1	2797887	0.25	2756000	101.5	30	-	125	
209	Bi	1	3874774	0.85	3882000	99.8	30	-	125	

Analytes: Pass **ISTD:** Pass

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

TA Seattle Sample Report 200.8/6020 7500ce ICPMS

Data File: C:\ICPCHEM\1\DATA\101012AM.B\015SMPL.D\015SMPL.D#
Date Acquired: Oct 10 2012 07:26 am Acq. Method: 0000RUN.M
Sample Name: ICSA Vial Number: 1101
Misc Info: STDS&RL&CCV 00012,ICV 00015,ICSA&ICSAB 100812

Current Method: C:\ICPCHEM\1\METHODS\00He REP.M Operator: FCW ICP-MS ID#SEA44
Calibration File: C:\ICPCHEM\1\CALIB\00He REP.C
Last Cal. Update: Oct 10 2012 10:07 am
ISTD Ref File : C:\ICPCHEM\1\DATA\101012AM.B\005CALB.D\005CALB.D#

Tune #	Name
1	:\1\7500\he.u
2	²CHEM\1\7500\
3	²CHEM\1\7500\

Dilution Factor: 1.00 Final Dil Factor: 1.00

QC Elements

Element		T#	Conc.	Units	Corr. Conc	RSD(%)	LDR	IS	P/A	Flag
9	Be	1	0.017	ug/l	0.02	37.7	9000	6	P	
23	Na	1	48240.000	ug/l	48,240.00	1.0	450000	45	A	
24	Mg	1	19650.000	ug/l	19,650.00	2.7	450000	45	A	
27	Al	1	18500.000	ug/l	18,500.00	2.8	450000	45	A	
31	P	1	20510.000	ug/l	20,510.00	1.5	450000	45	A	
39	K	1	19650.000	ug/l	19,650.00	0.6	450000	45	A	
44	Ca	1	58360.000	ug/l	58,360.00	1.9	450000	45	A	
47	Ti	1	406.100	ug/l	406.10	2.3	4500	74	P	
51	V	1	0.080	ug/l	0.08	20.9	9000	74	P	
52	Cr	1	0.576	ug/l	0.58	3.8	9000	74	P	
55	Mn	1	1.051	ug/l	1.05	6.0	9000	74	P	
56	Fe	1	49260.000	ug/l	49,260.00	1.8	225000	74	A	
59	Co	1	0.057	ug/l	0.06	10.5	9000	74	P	
60	Ni	1	0.445	ug/l	0.45	10.1	9000	74	P	
63	Cu	1	0.092	ug/l	0.09	28.0	9000	74	P	
66	Zn	1	1.202	ug/l	1.20	3.1	9000	74	P	
75	As	1	0.195	ug/l	0.19	7.8	9000	74	P	
78	Se	1	0.073	ug/l	0.07	69.1	9000	74	P	
88	Sr	1	-0.550	ug/l	-0.55	1.9	9000	74	P	
95	Mo	1	422.600	ug/l	422.60	1.8	4500	103	A	
109	Ag	1	0.030	ug/l	0.03	7.0	900	103	P	
114	Cd	1	0.580	ug/l	0.58	8.3	9000	103	P	
118	Sn	1	0.083	ug/l	0.08	11.5	4500	103	P	
123	Sb	1	0.175	ug/l	0.17	2.6	900	103	P	
135	Ba	1	0.103	ug/l	0.10	8.1	9000	103	P	
200	Hg	1	0.015	ug/l	0.02	8.8	45	209	P	
205	Tl	1	0.008	ug/l	0.01	32.5	900	209	P	
208	Pb	1	0.090	ug/l	0.09	3.7	9000	209	P	
238	U	1	0.022	ug/l	0.02	4.3	9000	209	P	

ISTD Elements

IS	Mass	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)			Flag
6	Li	1	182593	0.84	196600	92.9	30	-	125	
45	Sc	1	2396237	1.60	2410000	99.4	30	-	125	
74	Ge	1	4937994	1.86	5113000	96.6	30	-	125	
103	Rh	1	6402378	1.27	7235000	88.5	30	-	125	
165	Ho	1	3059829	1.64	3204000	95.5	30	-	125	
175	Lu	1	2667558	1.84	2756000	96.8	30	-	125	
209	Bi	1	3461617	0.93	3882000	89.2	30	-	125	

Analytes: **Pass** **ISTD:** **Pass**

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

TA Seattle Sample Report 200.8/6020 7500ce ICPMS

Data File: C:\ICPCHEM\1\DATA\101012AM.B\016SMPL.D\016SMPL.D#
Date Acquired: Oct 10 2012 07:30 am Acq. Method: 0000RUN.M
Sample Name: ICSAB Vial Number: 1102
Misc Info: STDS&RL&CCV 00012,ICV 00015,ICSA&ICSAB 100812

Current Method: C:\ICPCHEM\1\METHODS\00He REP.M Operator: FCW ICP-MS ID#SEA44
Calibration File: C:\ICPCHEM\1\CALIB\00He REP.C
Last Cal. Update: Oct 10 2012 10:07 am
ISTD Ref File : C:\ICPCHEM\1\DATA\101012AM.B\005CALB.D\005CALB.D#

Tune #	Name
1	\1\7500\he.u
2	CHEM\1\7500\
3	CHEM\1\7500\

Dilution Factor: 1.00 Final Dil Factor: 1.00

QC Elements

Element		T#	Conc.	Units	Corr. Conc	RSD(%)	LDR	IS	P/A	Flag
9	Be	1	0.027	ug/l	0.03	97.9	9000	6	P	
23	Na	1	48650.000	ug/l	48,650.00	0.7	450000	45	A	
24	Mg	1	19340.000	ug/l	19,340.00	1.0	450000	45	A	
27	Al	1	18500.000	ug/l	18,500.00	0.3	450000	45	A	
31	P	1	20400.000	ug/l	20,400.00	1.3	450000	45	A	
39	K	1	19680.000	ug/l	19,680.00	0.5	450000	45	A	
44	Ca	1	58120.000	ug/l	58,120.00	1.0	450000	45	A	
47	Ti	1	402.700	ug/l	402.70	1.2	4500	74	P	
51	V	1	40.280	ug/l	40.28	1.4	9000	74	P	
52	Cr	1	40.190	ug/l	40.19	1.1	9000	74	P	
55	Mn	1	40.360	ug/l	40.36	0.2	9000	74	P	
56	Fe	1	48580.000	ug/l	48,580.00	0.6	225000	74	A	
59	Co	1	40.070	ug/l	40.07	1.4	9000	74	P	
60	Ni	1	39.910	ug/l	39.91	2.4	9000	74	P	
63	Cu	1	39.090	ug/l	39.09	2.2	9000	74	P	
66	Zn	1	20.710	ug/l	20.71	2.1	9000	74	P	
75	As	1	20.850	ug/l	20.85	1.8	9000	74	P	
78	Se	1	20.460	ug/l	20.46	1.2	9000	74	P	
88	Sr	1	-0.537	ug/l	-0.54	4.8	9000	74	P	
95	Mo	1	413.600	ug/l	413.60	0.9	4500	103	A	
109	Ag	1	10.090	ug/l	10.09	1.1	900	103	P	
114	Cd	1	20.720	ug/l	20.72	1.3	9000	103	P	
118	Sn	1	0.141	ug/l	0.14	1.2	4500	103	P	
123	Sb	1	0.167	ug/l	0.17	8.5	900	103	P	
135	Ba	1	0.151	ug/l	0.15	17.7	9000	103	P	
200	Hg	1	0.011	ug/l	0.01	36.3	45	209	P	
205	Tl	1	0.007	ug/l	0.01	29.4	900	209	P	
208	Pb	1	0.120	ug/l	0.12	8.8	9000	209	P	
238	U	1	0.041	ug/l	0.04	6.3	9000	209	P	

ISTD Elements

IS	Mass	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)			Flag
6	Li	1	185106	1.20	196600	94.2	30	-	125	
45	Sc	1	2421410	0.82	2410000	100.5	30	-	125	
74	Ge	1	4980598	0.93	5113000	97.4	30	-	125	
103	Rh	1	6496281	0.62	7235000	89.8	30	-	125	
165	Ho	1	3094108	0.79	3204000	96.6	30	-	125	
175	Lu	1	2641860	1.17	2756000	95.9	30	-	125	
209	Bi	1	3422066	1.15	3882000	88.2	30	-	125	

Analytes: Pass ISTD: Pass

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

TA Seattle Sample Report 200.8/6020 7500ce ICPMS

Data File: C:\ICPCHEM\1\DATA\101012AM.B\017SMPL.D\017SMPL.D#
Date Acquired: Oct 10 2012 07:33 am Acq. Method: 0000RUN.M
Sample Name: CCV Vial Number: 1104
Misc Info: STDS&RL&CCV 00012,ICV 00015,ICSA&ICSAB 100812

Current Method: C:\ICPCHEM\1\METHODS\00He REP.M Operator: FCW ICP-MS ID#SEA44
Calibration File: C:\ICPCHEM\1\CALIB\00He REP.C
Last Cal. Update: Oct 10 2012 10:07 am
ISTD Ref File : C:\ICPCHEM\1\DATA\101012AM.B\005CALB.D\005CALB.D#

Tune #	Name
1	\1\7500\he.u
2	CHEM\1\7500\
3	CHEM\1\7500\

Dilution Factor: 1.00 Final Dil Factor: 1.00

QC Elements

Element		T#	Conc.	Units	Corr. Conc	RSD(%)	LDR	IS	P/A	Flag
9	Be	1	47.840	ug/l	47.84	0.9	9000	6	P	
23	Na	1	4922.000	ug/l	4,922.00	1.7	450000	45	A	
24	Mg	1	4990.000	ug/l	4,990.00	1.2	450000	45	A	
27	Al	1	497.600	ug/l	497.60	2.0	450000	45	P	
31	P	1	4983.000	ug/l	4,983.00	1.1	450000	45	P	
39	K	1	5025.000	ug/l	5,025.00	1.9	450000	45	A	
44	Ca	1	4987.000	ug/l	4,987.00	1.2	450000	45	P	
47	Ti	1	49.990	ug/l	49.99	1.3	4500	74	P	
51	V	1	49.360	ug/l	49.36	2.1	9000	74	P	
52	Cr	1	49.380	ug/l	49.38	3.1	9000	74	P	
55	Mn	1	49.830	ug/l	49.83	1.8	9000	74	P	
56	Fe	1	4900.000	ug/l	4,900.00	1.7	225000	74	A	
59	Co	1	49.520	ug/l	49.52	2.3	9000	74	P	
60	Ni	1	49.950	ug/l	49.95	2.4	9000	74	P	
63	Cu	1	50.260	ug/l	50.26	2.3	9000	74	P	
66	Zn	1	50.160	ug/l	50.16	2.4	9000	74	P	
75	As	1	49.360	ug/l	49.36	1.6	9000	74	P	
78	Se	1	49.700	ug/l	49.70	1.8	9000	74	P	
88	Sr	1	49.610	ug/l	49.61	2.0	9000	74	P	
95	Mo	1	49.150	ug/l	49.15	1.4	4500	103	P	
109	Ag	1	49.400	ug/l	49.40	1.6	900	103	P	
114	Cd	1	48.710	ug/l	48.71	1.7	9000	103	P	
118	Sn	1	48.890	ug/l	48.89	1.8	4500	103	P	
123	Sb	1	48.990	ug/l	48.99	1.1	900	103	P	
135	Ba	1	49.270	ug/l	49.27	0.6	9000	103	P	
200	Hg	1	2.410	ug/l	2.41	1.3	45	209	P	
205	Tl	1	49.310	ug/l	49.31	1.4	900	209	P	
208	Pb	1	49.010	ug/l	49.01	1.2	9000	209	P	
238	U	1	48.780	ug/l	48.78	1.3	9000	209	A	

ISTD Elements

IS Mass		Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)			Flag
6	Li	1	193718	1.16	196600	98.5	30	-	125	
45	Sc	1	2533423	0.78	2410000	105.1	30	-	125	
74	Ge	1	5211955	1.07	5113000	101.9	30	-	125	
103	Rh	1	7132499	0.39	7235000	98.6	30	-	125	
165	Ho	1	3205808	0.66	3204000	100.1	30	-	125	
175	Lu	1	2772696	0.82	2756000	100.6	30	-	125	
209	Bi	1	3733210	0.47	3882000	96.2	30	-	125	

Analytes: Pass **ISTD:** Pass

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

TA Seattle Sample Report 200.8/6020 7500ce ICPMS

Data File: C:\ICPCHEM\1\DATA\101012AM.B\018SMPL.D\018SMPL.D#
Date Acquired: Oct 10 2012 07:37 am Acq. Method: 0000RUN.M
Sample Name: CCB Vial Number: 1306
Misc Info: STDS&RL&CCV 00012,ICV 00015,ICSA&ICSAB 100812

Current Method: C:\ICPCHEM\1\METHODS\00He REP.M Operator: PCW ICP-MS ID#SEA44
Calibration File: C:\ICPCHEM\1\CALIB\00He REP.C
Last Cal. Update: Oct 10 2012 10:07 am
ISTD Ref File : C:\ICPCHEM\1\DATA\101012AM.B\005CALB.D\005CALB.D#

Tune #	Name
1	\1\7500\he.u
2	CHEM\1\7500\
3	CHEM\1\7500\

Dilution Factor: 1.00 Final Dil Factor: 1.00

QC Elements

Element		T#	Conc.	Units	Corr. Conc	RSD(%)	LDR	IS	P/A	Flag
9	Be	1	0.006	ug/l	0.01	76.8	9000	6	P	
23	Na	1	-1.932	ug/l	-1.93	42.1	450000	45	P	
24	Mg	1	0.523	ug/l	0.52	22.6	450000	45	P	
27	Al	1	0.878	ug/l	0.88	7.9	450000	45	P	
31	P	1	0.083	ug/l	0.08	2419.0	450000	45	P	
39	K	1	0.871	ug/l	0.87	29.6	450000	45	P	
44	Ca	1	-0.262	ug/l	-0.26	416.4	450000	45	P	
47	Ti	1	0.029	ug/l	0.03	11.4	4500	74	P	
51	V	1	-0.011	ug/l	-0.01	376.7	9000	74	P	
52	Cr	1	-0.002	ug/l	0.00	176.2	9000	74	P	
55	Mn	1	0.008	ug/l	0.01	57.0	9000	74	P	
56	Fe	1	1.268	ug/l	1.27	5.9	225000	74	P	
59	Co	1	0.002	ug/l	0.00	151.9	9000	74	P	
60	Ni	1	0.002	ug/l	0.00	248.8	9000	74	P	
63	Cu	1	-0.062	ug/l	-0.06	40.4	9000	74	P	
66	Zn	1	0.120	ug/l	0.12	20.0	9000	74	P	
75	As	1	-0.003	ug/l	0.00	224.2	9000	74	P	
78	Se	1	0.029	ug/l	0.03	292.9	9000	74	P	
88	Sr	1	0.003	ug/l	0.00	210.3	9000	74	P	
95	Mo	1	0.100	ug/l	0.10	13.7	4500	103	P	
109	Ag	1	0.002	ug/l	0.00	93.4	900	103	P	
114	Cd	1	0.003	ug/l	0.00	177.9	9000	103	P	
118	Sn	1	0.042	ug/l	0.04	5.4	4500	103	P	
123	Sb	1	0.047	ug/l	0.05	22.0	900	103	P	
135	Ba	1	0.005	ug/l	0.01	212.7	9000	103	P	
200	Hg	1	0.017	ug/l	0.02	22.0	45	209	P	
205	Tl	1	0.010	ug/l	0.01	18.5	900	209	P	
208	Pb	1	0.001	ug/l	0.00	15.0	9000	209	P	
238	U	1	0.005	ug/l	0.00	31.6	9000	209	P	

ISTD Elements

IS Mass		Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)			Flag
6	Li	1	202609	0.43	196600	103.1	30	-	125	
45	Sc	1	2550804	1.47	2410000	105.8	30	-	125	
74	Ge	1	5242785	1.50	5113000	102.5	30	-	125	
103	Rh	1	7395784	0.66	7235000	102.2	30	-	125	
165	Ho	1	3245729	0.74	3204000	101.3	30	-	125	
175	Lu	1	2785013	0.55	2756000	101.1	30	-	125	
209	Bi	1	3888832	0.41	3882000	100.2	30	-	125	

Analytes: Pass **ISTD:** Pass

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

TA Seattle Sample Report 200.8/6020 7500ce ICPMS

Data File: C:\ICPCHEM\1\DATA\101012AM.B\026SMPL.D\026SMPL.D#
Date Acquired: Oct 10 2012 08:07 am Acq. Method: 0000RUN.M
Sample Name: CCV Vial Number: 1104
Misc Info: STDS&RL&CCV 00012,ICV 00015,ICSA&ICSAB 100812

Current Method: C:\ICPCHEM\1\METHODS\00He REP.M Operator: ECW ICP-MS ID#SEA44
Calibration File: C:\ICPCHEM\1\CALIB\00He REP.C
Last Cal. Update: Oct 10 2012 10:07 am
ISTD Ref File : C:\ICPCHEM\1\DATA\101012AM.B\005CALB.D\005CALB.D#

Tune #	Name
1	:\1\7500\he.u
2	?CHEM\1\7500\
3	?CHEM\1\7500\

Dilution Factor: 1.00 Final Dil Factor: 1.00

QC Elements

Element		T#	Conc.	Units	Corr. Conc	RSD(%)	LDR	IS	P/A	Flag
9	Be	1	47.860	ug/l	47.86	1.4	9000	6	P	
23	Na	1	4885.000	ug/l	4,885.00	1.3	450000	45	A	
24	Mg	1	4955.000	ug/l	4,955.00	1.7	450000	45	A	
27	Al	1	496.300	ug/l	496.30	1.1	450000	45	P	
31	P	1	5031.000	ug/l	5,031.00	1.5	450000	45	P	
39	K	1	5005.000	ug/l	5,005.00	1.7	450000	45	A	
44	Ca	1	4981.000	ug/l	4,981.00	1.5	450000	45	P	
47	Ti	1	49.610	ug/l	49.61	1.2	4500	74	P	
51	V	1	49.170	ug/l	49.17	1.5	9000	74	P	
52	Cr	1	49.520	ug/l	49.52	1.6	9000	74	P	
55	Mn	1	49.580	ug/l	49.58	1.0	9000	74	P	
56	Fe	1	4934.000	ug/l	4,934.00	0.9	225000	74	A	
59	Co	1	49.040	ug/l	49.04	1.5	9000	74	P	
60	Ni	1	49.040	ug/l	49.04	1.4	9000	74	P	
63	Cu	1	49.150	ug/l	49.15	1.0	9000	74	P	
66	Zn	1	49.440	ug/l	49.44	0.8	9000	74	P	
75	As	1	48.930	ug/l	48.93	1.2	9000	74	P	
78	Se	1	49.460	ug/l	49.46	1.0	9000	74	P	
88	Sr	1	49.630	ug/l	49.63	1.9	9000	74	P	
95	Mo	1	48.650	ug/l	48.65	1.9	4500	103	P	
109	Ag	1	49.200	ug/l	49.20	2.1	900	103	P	
114	Cd	1	48.810	ug/l	48.81	1.9	9000	103	P	
118	Sn	1	49.000	ug/l	49.00	2.0	4500	103	P	
123	Sb	1	48.790	ug/l	48.79	1.9	900	103	P	
135	Ba	1	49.370	ug/l	49.37	1.6	9000	103	P	
200	Hg	1	2.395	ug/l	2.40	1.4	45	209	P	
205	Tl	1	49.470	ug/l	49.47	1.5	900	209	P	
208	Pb	1	49.400	ug/l	49.40	0.8	9000	209	P	
238	U	1	48.690	ug/l	48.69	1.6	9000	209	A	

ISTD Elements

IS Mass		Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)			Flag
6	Li	1	195696	0.63	196600	99.5	30	-	125	
45	Sc	1	2538060	0.67	2410000	105.3	30	-	125	
74	Ge	1	5213843	0.57	5113000	102.0	30	-	125	
103	Rh	1	7103146	0.79	7235000	98.2	30	-	125	
165	Ho	1	3200492	1.37	3204000	99.9	30	-	125	
175	Lu	1	2777480	1.11	2756000	100.8	30	-	125	
209	Bi	1	3707249	0.74	3882000	95.5	30	-	125	

Analytes: **Pass** **ISTD:** **Pass**

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

TA Seattle Sample Report 200.8/6020 7500ce ICPMS

Data File: C:\ICPCHEM\1\DATA\101012AM.B\027SMPL.D\027SMPL.D#
Date Acquired: Oct 10 2012 08:11 am Acq. Method: 0000RUN.M
Sample Name: CCB Vial Number: 1306
Misc Info: STDS&RL&CCV 00012,ICV 00015,ICSA&ICSAB 100812
Current Method: C:\ICPCHEM\1\METHODS\00He REP.M Operator: FCW ICP-MS ID#SEA44
Calibration File: C:\ICPCHEM\1\CALIB\00He REP.C
Last Cal. Update: Oct 10 2012 10:07 am
ISTD Ref File : C:\ICPCHEM\1\DATA\101012AM.B\005CALB.D\005CALB.D#

Tune #	Name
1	\1\7500\he.u
2	CHEM\1\7500\
3	CHEM\1\7500\

Dilution Factor: 1.00 Final Dil Factor: 1.00

QC Elements

Element		T#	Conc.	Units	Corr. Conc	RSD(%)	LDR	IS	P/A	Flag
9	Be	1	0.013	ug/l	0.01	95.7	9000	6	P	
23	Na	1	-3.977	ug/l	-3.98	7.4	450000	45	P	
24	Mg	1	0.229	ug/l	0.23	54.6	450000	45	P	
27	Al	1	0.515	ug/l	0.52	3.0	450000	45	P	
31	P	1	-0.089	ug/l	-0.09	2047.2	450000	45	P	
39	K	1	1.804	ug/l	1.80	47.6	450000	45	P	
44	Ca	1	-0.768	ug/l	-0.77	100.9	450000	45	P	
47	Ti	1	0.011	ug/l	0.01	56.7	4500	74	P	
51	V	1	0.018	ug/l	0.02	58.8	9000	74	P	
52	Cr	1	0.013	ug/l	0.01	34.0	9000	74	P	
55	Mn	1	0.004	ug/l	0.00	102.2	9000	74	P	
56	Fe	1	0.448	ug/l	0.45	2.0	225000	74	P	
59	Co	1	0.002	ug/l	0.00	54.6	9000	74	P	
60	Ni	1	0.002	ug/l	0.00	316.6	9000	74	P	
63	Cu	1	-0.125	ug/l	-0.13	14.8	9000	74	P	
66	Zn	1	0.129	ug/l	0.13	12.5	9000	74	P	
75	As	1	0.013	ug/l	0.01	51.2	9000	74	P	
78	Se	1	0.117	ug/l	0.12	44.7	9000	74	P	
88	Sr	1	0.009	ug/l	0.01	14.7	9000	74	P	
95	Mo	1	0.039	ug/l	0.04	11.0	4500	103	P	
109	Ag	1	0.002	ug/l	0.00	33.4	900	103	P	
114	Cd	1	0.000	ug/l	0.00	826.3	9000	103	P	
118	Sn	1	0.038	ug/l	0.04	15.9	4500	103	P	
123	Sb	1	0.052	ug/l	0.05	21.4	900	103	P	
135	Ba	1	0.005	ug/l	0.01	74.3	9000	103	P	
200	Hg	1	0.018	ug/l	0.02	30.2	45	209	P	
205	Tl	1	0.012	ug/l	0.01	6.5	900	209	P	
208	Pb	1	0.001	ug/l	0.00	225.1	9000	209	P	
238	U	1	0.005	ug/l	0.00	8.7	9000	209	P	

ISTD Elements

IS Mass		Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)			Flag
6	Li	1	203952	0.51	196600	103.7	30	-	125	
45	Sc	1	2563946	0.94	2410000	106.4	30	-	125	
74	Ge	1	5285238	1.39	5113000	103.4	30	-	125	
103	Rh	1	7349027	0.30	7235000	101.6	30	-	125	
165	Ho	1	3221885	0.87	3204000	100.6	30	-	125	
175	Lu	1	2807708	1.02	2756000	101.9	30	-	125	
209	Bi	1	3925256	0.96	3882000	101.1	30	-	125	

Analytes: Pass **ISTD:** Pass

0 :Element Failures 0 :Max. Number of Failures Allowed

0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

TA Seattle Sample Report 200.8/6020 7500ce ICPMS

Data File: C:\ICPCHEM\1\DATA\101012AM.B\035SMPL.D\035SMPL.D#
Date Acquired: Oct 10 2012 08:41 am Acq. Method: 0000RUN.M
Sample Name: CCV Vial Number: 1104
Misc Info: STDS&RL&CCV 00012,ICV 00015,ICSA&ICSAB 100812

Current Method: C:\ICPCHEM\1\METHODS\00He REP.M Operator: FCW ICP-MS TD#SEA44
Calibration File: C:\ICPCHEM\1\CALIB\00He REP.C
Last Cal. Update: Oct 10 2012 10:07 am
ISTD Ref File : C:\ICPCHEM\1\DATA\101012AM.B\005CALB.D\005CALB.D#

Tune #	Name
1	\1\7500\he.u
2	CHEM\1\7500\
3	CHEM\1\7500\

Dilution Factor: 1.00 Final Dil Factor: 1.00

QC Elements

Element		T#	Conc.	Units	Corr. Conc	RSD(%)	LDR	IS	P/A	Flag
9	Be	1	47.110	ug/l	47.11	0.3	9000	6	P	
23	Na	1	5049.000	ug/l	5,049.00	1.1	450000	45	A	
24	Mg	1	5037.000	ug/l	5,037.00	2.5	450000	45	A	
27	Al	1	517.700	ug/l	517.70	2.9	450000	45	P	
31	P	1	5111.000	ug/l	5,111.00	1.4	450000	45	P	
39	K	1	5085.000	ug/l	5,085.00	0.5	450000	45	A	
44	Ca	1	5062.000	ug/l	5,062.00	0.6	450000	45	P	
47	Ti	1	50.850	ug/l	50.85	1.2	4500	74	P	
51	V	1	50.430	ug/l	50.43	1.6	9000	74	P	
52	Cr	1	50.270	ug/l	50.27	2.4	9000	74	P	
55	Mn	1	50.480	ug/l	50.48	1.6	9000	74	P	
56	Fe	1	5032.000	ug/l	5,032.00	2.6	225000	74	A	
59	Co	1	49.510	ug/l	49.51	1.5	9000	74	P	
60	Ni	1	49.670	ug/l	49.67	2.3	9000	74	P	
63	Cu	1	49.510	ug/l	49.51	1.8	9000	74	P	
66	Zn	1	49.810	ug/l	49.81	2.2	9000	74	P	
75	As	1	49.170	ug/l	49.17	1.5	9000	74	P	
78	Se	1	49.570	ug/l	49.57	1.7	9000	74	P	
88	Sr	1	50.030	ug/l	50.03	1.2	9000	74	P	
95	Mo	1	48.460	ug/l	48.46	1.7	4500	103	P	
109	Ag	1	48.840	ug/l	48.84	1.3	900	103	P	
114	Cd	1	48.590	ug/l	48.59	1.3	9000	103	P	
118	Sn	1	48.810	ug/l	48.81	1.8	4500	103	P	
123	Sb	1	48.620	ug/l	48.62	1.6	900	103	P	
135	Ba	1	48.830	ug/l	48.83	0.6	9000	103	P	
200	Hg	1	2.396	ug/l	2.40	1.0	45	209	P	
205	Tl	1	48.740	ug/l	48.74	1.6	900	209	P	
208	Pb	1	48.810	ug/l	48.81	1.2	9000	209	P	
238	U	1	48.380	ug/l	48.38	1.1	9000	209	A	

ISTD Elements

IS Mass		Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)			Flag
6	Li	1	204095	0.89	196600	103.8	30	-	125	
45	Sc	1	2593234	1.20	2410000	107.6	30	-	125	
74	Ge	1	5279433	1.32	5113000	103.3	30	-	125	
103	Rh	1	7244201	0.75	7235000	100.1	30	-	125	
165	Ho	1	3226942	1.02	3204000	100.7	30	-	125	
175	Lu	1	2764824	1.43	2756000	100.3	30	-	125	
209	Bi	1	3720873	0.19	3882000	95.8	30	-	125	

Analytes: Pass ISTD: Pass

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

TA Seattle Sample Report 200.8/6020 7500ce ICPMS

Data File: C:\ICPCHEM\1\DATA\101012AM.B\036SMPL.D\036SMPL.D#
Date Acquired: Oct 10 2012 08:45 am Acq. Method: 0000RUN.M
Sample Name: CCB Vial Number: 1306
Misc Info: STDS&RL&CCV 00012,ICV 00015,ICSA&ICSAB 100812

Current Method: C:\ICPCHEM\1\METHODS\00Be REP.M Operator: FCW ICP-MS ID#SEA44
Calibration File: C:\ICPCHEM\1\CALIB\00Be REP.C
Last Cal. Update: Oct 10 2012 10:07 am
ISTD Ref File : C:\ICPCHEM\1\DATA\101012AM.B\005CALB.D\005CALB.D#

Tune #	Name
1	\1\7500\be.u
2	CHEM\1\7500\
3	CHEM\1\7500\

Dilution Factor: 1.00 Final Dil Factor: 1.00

QC Elements

Element		T#	Conc.	Units	Corr. Conc	RSD(%)	LDR	IS	P/A	Flag
9	Be	1	0.009	ug/l	0.01	77.4	9000	6	P	
23	Na	1	-3.826	ug/l	-3.83	14.2	450000	45	P	
24	Mg	1	0.196	ug/l	0.20	24.7	450000	45	P	
27	Al	1	0.381	ug/l	0.38	21.3	450000	45	P	
31	P	1	2.010	ug/l	2.01	34.2	450000	45	P	
39	K	1	1.757	ug/l	1.76	61.2	450000	45	P	
44	Ca	1	-1.208	ug/l	-1.21	19.6	450000	45	P	
47	Ti	1	0.012	ug/l	0.01	44.0	4500	74	P	
51	V	1	0.041	ug/l	0.04	68.5	9000	74	P	
52	Cr	1	0.007	ug/l	0.01	215.2	9000	74	P	
55	Mn	1	0.002	ug/l	0.00	239.7	9000	74	P	
56	Fe	1	0.422	ug/l	0.42	18.8	225000	74	P	
59	Co	1	0.001	ug/l	0.00	172.0	9000	74	P	
60	Ni	1	0.002	ug/l	0.00	97.7	9000	74	P	
63	Cu	1	-0.129	ug/l	-0.13	12.8	9000	74	P	
66	Zn	1	0.107	ug/l	0.11	39.8	9000	74	P	
75	As	1	0.021	ug/l	0.02	4.4	9000	74	P	
78	Se	1	0.101	ug/l	0.10	12.4	9000	74	P	
88	Sr	1	0.010	ug/l	0.01	58.4	9000	74	P	
95	Mo	1	0.032	ug/l	0.03	30.5	4500	103	P	
109	Ag	1	0.003	ug/l	0.00	21.1	900	103	P	
114	Cd	1	-0.003	ug/l	0.00	87.4	9000	103	P	
118	Sn	1	0.038	ug/l	0.04	34.5	4500	103	P	
123	Sb	1	0.047	ug/l	0.05	25.4	900	103	P	
135	Ba	1	-0.001	ug/l	0.00	262.1	9000	103	P	
200	Hg	1	0.015	ug/l	0.02	28.1	45	209	P	
205	Tl	1	0.013	ug/l	0.01	11.2	900	209	P	
208	Pb	1	0.003	ug/l	0.00	131.0	9000	209	P	
238	U	1	0.004	ug/l	0.00	2.4	9000	209	P	

ISTD Elements

IS Mass		Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)			Flag
6	Li	1	207921	0.70	196600	105.8	30	-	125	
45	Sc	1	2630455	1.74	2410000	109.1	30	-	125	
74	Ge	1	5339715	1.26	5113000	104.4	30	-	125	
103	Rh	1	7434569	0.16	7235000	102.8	30	-	125	
165	Ho	1	3240494	0.69	3204000	101.1	30	-	125	
175	Lu	1	2766395	0.87	2756000	100.4	30	-	125	
209	Bi	1	3810906	0.05	3882000	98.2	30	-	125	

Analytes: Pass ISTD: Pass

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

TA Seattle Sample Report 200.8/6020 7500ce ICPMS

Data File: C:\ICPCHEM\1\DATA\101012AM.B\044SMPL.D\044SMPL.D#
Date Acquired: Oct 10 2012 09:15 am Acq. Method: 0000RUN.M
Sample Name: CCV Vial Number: 1104
Misc Info: STDS&RL&CCV 00012,ICV 00015,ICSA&ICSAB 100812

Current Method: C:\ICPCHEM\1\METHODS\00He REP.M Operator: FCW ICP-MS ID#SEA44
Calibration File: C:\ICPCHEM\1\CALIB\00He REP.C
Last Cal. Update: Oct 10 2012 10:07 am
ISTD Ref File : C:\ICPCHEM\1\DATA\101012AM.B\005CALB.D\005CALB.D#

Tune #	Name
1	\1\7500\he.u
2	CHEM\1\7500\
3	CHEM\1\7500\

Dilution Factor: 1.00 Final Dil Factor: 1.00

QC Elements

Element		T#	Conc.	Units	Corr. Conc	RSD(%)	LDR	IS	P/A	Flag
9	Be	1	47.150	ug/l	47.15	0.6	9000	6	P	
23	Na	1	5074.000	ug/l	5,074.00	2.4	450000	45	A	
24	Mg	1	4994.000	ug/l	4,994.00	2.8	450000	45	A	
27	Al	1	510.400	ug/l	510.40	2.7	450000	45	P	
31	P	1	5089.000	ug/l	5,089.00	2.6	450000	45	P	
39	K	1	5060.000	ug/l	5,060.00	2.0	450000	45	A	
44	Ca	1	5042.000	ug/l	5,042.00	2.2	450000	45	P	
47	Ti	1	50.350	ug/l	50.35	0.2	4500	74	P	
51	V	1	49.890	ug/l	49.89	1.1	9000	74	P	
52	Cr	1	49.810	ug/l	49.81	0.9	9000	74	P	
55	Mn	1	50.420	ug/l	50.42	0.6	9000	74	P	
56	Fe	1	5021.000	ug/l	5,021.00	0.6	225000	74	A	
59	Co	1	49.380	ug/l	49.38	0.9	9000	74	P	
60	Ni	1	49.470	ug/l	49.47	1.0	9000	74	P	
63	Cu	1	49.140	ug/l	49.14	1.5	9000	74	P	
66	Zn	1	49.170	ug/l	49.17	1.1	9000	74	P	
75	As	1	48.550	ug/l	48.55	0.9	9000	74	P	
78	Se	1	49.740	ug/l	49.74	0.2	9000	74	P	
88	Sr	1	49.250	ug/l	49.25	0.7	9000	74	P	
95	Mo	1	49.260	ug/l	49.26	0.4	4500	103	P	
109	Ag	1	49.920	ug/l	49.92	1.3	900	103	P	
114	Cd	1	48.810	ug/l	48.81	1.8	9000	103	P	
118	Sn	1	49.460	ug/l	49.46	1.5	4500	103	P	
123	Sb	1	49.330	ug/l	49.33	1.0	900	103	P	
135	Ba	1	49.480	ug/l	49.48	1.2	9000	103	P	
200	Hg	1	2.398	ug/l	2.40	0.8	45	209	P	
205	Tl	1	49.330	ug/l	49.33	1.0	900	209	P	
208	Pb	1	49.160	ug/l	49.16	1.2	9000	209	P	
238	U	1	49.040	ug/l	49.04	0.4	9000	209	A	

ISTD Elements

IS	Mass	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)			Flag
6	Li	1	208361	0.74	196600	106.0	30	-	125	
45	Sc	1	2660315	1.88	2410000	110.4	30	-	125	
74	Ge	1	5409312	0.28	5113000	105.8	30	-	125	
103	Rh	1	7215183	1.18	7235000	99.7	30	-	125	
165	Ho	1	3278199	2.30	3204000	102.3	30	-	125	
175	Lu	1	2795865	0.31	2756000	101.4	30	-	125	
209	Bi	1	3732601	0.40	3882000	96.2	30	-	125	

Analytes: Pass ISTD: Pass

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

TA Seattle Sample Report 200.8/6020 7500ce ICPMS

Data File: C:\ICPCHEM\1\DATA\101012AM.B\045SMPL.D\045SMPL.D#
Date Acquired: Oct 10 2012 09:19 am Acq. Method: 0000RUN.M
Sample Name: CCB Vial Number: 1306
Misc Info: STDS&RL&CCV 00012,ICV 00015,ICSA&ICSAB 100812

Current Method: C:\ICPCHEM\1\METHODS\00He REP.M Operator: FCW ICP-MS ID#SEA44
Calibration File: C:\ICPCHEM\1\CALIB\00He REP.C
Last Cal. Update: Oct 10 2012 10:07 am
ISTD Ref File : C:\ICPCHEM\1\DATA\101012AM.B\005CALB.D\005CALB.D#

Tune #	Name
1	:\1\7500\he.u
2	²CHEM\1\7500\
3	²CHEM\1\7500\

Dilution Factor: 1.00 Final Dil Factor: 1.00

QC Elements

Element		T#	Conc.	Units	Corr. Conc	RSD(%)	LDR	IS	P/A	Flag
9	Be	1	0.007	ug/l	0.01	130.5	9000	6	P	
23	Na	1	-4.564	ug/l	-4.56	42.4	450000	45	P	
24	Mg	1	0.243	ug/l	0.24	32.8	450000	45	P	
27	Al	1	2.157	ug/l	2.16	3.7	450000	45	P	
31	P	1	0.034	ug/l	0.03	3092.7	450000	45	P	
39	K	1	0.189	ug/l	0.19	807.2	450000	45	P	
44	Ca	1	-1.529	ug/l	-1.53	13.3	450000	45	P	
47	Ti	1	0.023	ug/l	0.02	101.6	4500	74	P	
51	V	1	0.085	ug/l	0.08	44.9	9000	74	P	
52	Cr	1	0.012	ug/l	0.01	131.1	9000	74	P	
55	Mn	1	0.007	ug/l	0.01	62.6	9000	74	P	
56	Fe	1	0.664	ug/l	0.66	6.3	225000	74	P	
59	Co	1	0.001	ug/l	0.00	35.2	9000	74	P	
60	Ni	1	0.005	ug/l	0.01	71.7	9000	74	P	
63	Cu	1	-0.144	ug/l	-0.14	8.8	9000	74	P	
66	Zn	1	0.328	ug/l	0.33	6.4	9000	74	P	
75	As	1	0.023	ug/l	0.02	23.3	9000	74	P	
78	Se	1	0.064	ug/l	0.06	166.6	9000	74	P	
88	Sr	1	0.010	ug/l	0.01	103.2	9000	74	P	
95	Mo	1	0.038	ug/l	0.04	5.5	4500	103	P	
109	Ag	1	0.002	ug/l	0.00	67.1	900	103	P	
114	Cd	1	0.000	ug/l	0.00	688.7	9000	103	P	
118	Sn	1	0.046	ug/l	0.05	16.7	4500	103	P	
123	Sb	1	0.046	ug/l	0.05	19.4	900	103	P	
135	Ba	1	0.002	ug/l	0.00	240.7	9000	103	P	
200	Hg	1	0.017	ug/l	0.02	23.1	45	209	P	
205	Tl	1	0.012	ug/l	0.01	10.2	900	209	P	
208	Pb	1	0.011	ug/l	0.01	26.1	9000	209	P	
238	U	1	0.006	ug/l	0.01	20.0	9000	209	P	

ISTD Elements

IS	Mass	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)			Flag
6	Li	1	217228	0.54	196600	110.5	30	-	125	
45	Sc	1	2717663	2.21	2410000	112.8	30	-	125	
74	Ge	1	5448340	0.56	5113000	106.6	30	-	125	
103	Rh	1	7519911	0.24	7235000	103.9	30	-	125	
165	Ho	1	3269065	1.18	3204000	102.0	30	-	125	
175	Lu	1	2824157	0.72	2756000	102.5	30	-	125	
209	Bi	1	3871664	0.86	3882000	99.7	30	-	125	

Analytes: Pass ISTD: Pass

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

TA Seattle ICP-MS
Soil MDL Studies
10/08/2012
FCW

SOIL MDL#2

ELEMENT	Result (ug / L)	Result (ug / L)	Result (ug / L)	Result (ug / L)	Result (ug / L)	Result (ug / L)	Result (ug / L)	Std Dev	**MDL (ug / L)**
Beryllium	0.042	0.055	0.045	0.05	0.031	0.053	0.033	0.009	**0.027**
Sodium	-0.747	-0.876	0.717	0.594	1.107	0.091	0.435	0.693	**2.177**
Magnesium	0.228	0.11	0.061	0.045	0.062	0.128	0.094	0.058	**0.181**
Aluminum	2.595	2.55	2.469	2.494	2.216	2.464	2.331	0.121	**0.380**
Phosphorus	0.636	0.753	1.583	0.817	1.074	1.255	0.583	0.338	**1.061**
Potassium	-1.513	-1.725	-0.577	-0.215	-0.191	-0.965	-0.015	0.627	**1.967**
Calcium	-1.129	-1.698	-0.749	0.755	0.885	-0.441	-0.37	0.872	**2.739**
Titanium	0.144	0.149	0.142	0.159	0.136	0.14	0.15	0.007	**0.022**
Vanadium	0.052	0.098	0.102	0.115	0.117	0.138	0.135	0.027	**0.084**
Chromium	0.047	0.054	0.047	0.059	0.048	0.056	0.051	0.004	**0.014**
Manganese	0.063	0.058	0.063	0.064	0.058	0.061	0.053	0.004	**0.011**
Iron	2.431	2.289	3.012	2.212	2.017	2.35	2.246	0.290	**0.910**
Cobalt	0.032	0.028	0.026	0.03	0.025	0.028	0.026	0.002	**0.007**
Nickel	0.112	0.111	0.099	0.125	0.098	0.095	0.101	0.010	**0.031**
Copper	0.02	0.001	-0.006	0.012	-0.006	-0.014	0.016	0.012	**0.037**
Zinc	0.191	0.195	0.17	0.198	0.135	0.188	0.208	0.023	**0.071**
Arsenic	0.164	0.175	0.16	0.175	0.152	0.171	0.163	0.008	**0.025**
Selenium	0.171	0.163	0.286	0.179	0.253	0.246	0.233	0.044	**0.138**
Strontium	0.049	0.037	0.045	0.039	0.039	0.045	0.043	0.004	**0.012**
Molybdenum	0.112	0.103	0.103	0.109	0.096	0.109	0.101	0.005	**0.016**
Silver	0.014	0.011	0.01	0.011	0.009	0.012	0.011	0.001	**0.005**
Cadmium	0.009	0.014	0.008	0.008	0.001	0.006	0.008	0.004	**0.011**
Tin	0.108	0.086	0.087	0.095	0.081	0.102	0.095	0.009	**0.028**
Antimony	0.054	0.046	0.04	0.04	0.034	0.04	0.038	0.006	**0.019**
Barium	0.038	0.046	0.044	0.052	0.038	0.053	0.044	0.006	**0.017**
Mercury	0.015	0.013	0.012	0.01	0.007	0.008	0.007	0.003	**0.009**
Thallium	0.103	0.111	0.099	0.107	0.097	0.105	0.103	0.004	**0.014**
Lead	0.01	0.011	0.009	0.011	0.009	0.01	0.006	0.002	**0.005**
Uranium	0.022	0.021	0.02	0.02	0.02	0.022	0.018	0.001	**0.004**

10/8/12

10/16/12

TA Seattle Sample Report 200.8/6020 7500ce ICPMS

Data File: C:\ICPCHEM\1\DATA\100812PM.B\042SMPL.D\042SMPL.D#
Date Acquired: Oct 8 2012 05:19 pm Acq. Method: 0000RUN.M
Sample Name: MDL(S)02-1 Vial Number: 2301
Misc Info: STDS&RL&CCV 00012,ICV 00015,ICSA&ICSAB 100812

Current Method: C:\ICPCHEM\1\METHODS\00He REP.M Operator: FCW ICP-MS ID#SEA44
Calibration File: C:\ICPCHEM\1\CALIB\00He REP.C
Last Cal. Update: Oct 09 2012 06:13 am
ISTD Ref File : C:\ICPCHEM\1\DATA\100812PM.B\007CALB.D\007CALB.D#

Tune #	Name
1	\1\7500\he.u
2	CHEM\1\7500\
3	CHEM\1\7500\

Dilution Factor: 1.00 Final Dil Factor: 1.00

QC Elements

Element		T#	Conc.	Units	Corr. Conc	RSD(%)	LDR	IS	P/A	Flag
9	Be	1	0.042	ug/l	0.04	58.6	9000	6	P	
23	Na	1	-0.747	ug/l	-0.75	88.2	450000	45	P	
24	Mg	1	0.228	ug/l	0.23	11.4	450000	45	P	
27	Al	1	2.595	ug/l	2.60	4.4	450000	45	P	
31	P	1	0.636	ug/l	0.64	291.4	450000	45	P	
39	K	1	-1.513	ug/l	-1.51	109.7	450000	45	P	
44	Ca	1	-1.129	ug/l	-1.13	90.9	450000	45	P	
47	Ti	1	0.144	ug/l	0.14	6.7	4500	45	P	
51	V	1	0.052	ug/l	0.05	10.9	9000	45	P	
52	Cr	1	0.047	ug/l	0.05	9.5	9000	45	P	
55	Mn	1	0.063	ug/l	0.06	5.5	9000	74	P	
56	Fe	1	2.431	ug/l	2.43	3.0	225000	74	P	
59	Co	1	0.032	ug/l	0.03	6.5	9000	74	P	
60	Ni	1	0.112	ug/l	0.11	18.3	9000	74	P	
63	Cu	1	0.020	ug/l	0.02	82.7	9000	74	P	
66	Zn	1	0.191	ug/l	0.19	19.0	9000	74	P	
75	As	1	0.164	ug/l	0.16	1.3	9000	74	P	
78	Se	1	0.171	ug/l	0.17	51.2	9000	74	P	
88	Sr	1	0.049	ug/l	0.05	8.6	9000	74	P	
95	Mo	1	0.112	ug/l	0.11	5.6	4500	103	P	
109	Ag	1	0.014	ug/l	0.01	4.3	900	103	P	
114	Cd	1	0.009	ug/l	0.01	62.6	9000	103	P	
118	Sn	1	0.108	ug/l	0.11	12.7	4500	103	P	
123	Sb	1	0.054	ug/l	0.05	4.6	900	103	P	
135	Ba	1	0.038	ug/l	0.04	10.6	9000	103	P	
200	Hg	1	0.015	ug/l	0.02	15.2	45	209	P	
205	Tl	1	0.103	ug/l	0.10	4.9	900	209	P	
208	Pb	1	0.010	ug/l	0.01	22.6	9000	209	P	
238	U	1	0.022	ug/l	0.02	6.4	9000	209	P	

ISTD Elements

IS	Mass	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)			Flag
6	Li	1	189060	0.19	195300	96.8	30	-	125	
45	Sc	1	2640484	1.94	2556000	103.3	30	-	125	
74	Ge	1	5422682	1.53	5397000	100.5	30	-	125	
103	Rh	1	7573293	1.44	7620000	99.4	30	-	125	
165	Ho	1	3518000	1.33	3508000	100.3	30	-	125	
175	Lu	1	3084207	1.48	3117000	98.9	30	-	125	
209	Bi	1	4390141	0.40	4252000	103.2	30	-	125	

Analytes: **Pass** **ISTD:** **Pass**

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

TA Seattle Sample Report 200.8/6020 7500ce ICPMS

Data File: C:\ICPCHEM\1\DATA\100812PM.B\043SMPL.D\043SMPL.D#
Date Acquired: Oct 8 2012 05:22 pm Acq. Method: 0000RUN.M
Sample Name: MDL(S)02-2 Vial Number: 2302
Misc Info: STDS&RL&CCV 00012,ICV 00015,ICSA&ICSAB 100812

Current Method: C:\ICPCHEM\1\METHODS\00He REP.M Operator: FCW ICP-MS ID#SEA44
Calibration File: C:\ICPCHEM\1\CALIB\00He REP.C
Last Cal. Update: Oct 09 2012 06:13 am
ISTD Ref File : C:\ICPCHEM\1\DATA\100812PM.B\007CALB.D\007CALB.D#

Tune #	Name
1	\1\7500\he.u
2	CHEM\1\7500\
3	CHEM\1\7500\

Dilution Factor: 1.00 Final Dil Factor: 1.00

QC Elements

Element		T#	Conc.	Units	Corr. Conc	RSD(%)	LDR	IS	P/A	Flag
9	Be	1	0.055	ug/l	0.06	19.9	9000	6	P	
23	Na	1	-0.876	ug/l	-0.88	36.8	450000	45	P	
24	Mg	1	0.110	ug/l	0.11	34.5	450000	45	P	
27	Al	1	2.550	ug/l	2.55	2.3	450000	45	P	
31	P	1	0.753	ug/l	0.75	307.9	450000	45	P	
39	K	1	-1.725	ug/l	-1.73	69.9	450000	45	P	
44	Ca	1	-1.698	ug/l	-1.70	44.6	450000	45	P	
47	Ti	1	0.149	ug/l	0.15	2.2	4500	45	P	
51	V	1	0.098	ug/l	0.10	22.8	9000	45	P	
52	Cr	1	0.054	ug/l	0.05	11.6	9000	45	P	
55	Mn	1	0.058	ug/l	0.06	8.7	9000	74	P	
56	Fe	1	2.289	ug/l	2.29	6.5	225000	74	P	
59	Co	1	0.028	ug/l	0.03	14.3	9000	74	P	
60	Ni	1	0.111	ug/l	0.11	5.4	9000	74	P	
63	Cu	1	0.001	ug/l	0.00	2684.8	9000	74	P	
66	Zn	1	0.195	ug/l	0.20	7.6	9000	74	P	
75	As	1	0.175	ug/l	0.17	1.6	9000	74	P	
78	Se	1	0.163	ug/l	0.16	52.7	9000	74	P	
88	Sr	1	0.037	ug/l	0.04	9.6	9000	74	P	
95	Mo	1	0.103	ug/l	0.10	6.4	4500	103	P	
109	Ag	1	0.011	ug/l	0.01	14.1	900	103	P	
114	Cd	1	0.014	ug/l	0.01	40.1	9000	103	P	
118	Sn	1	0.086	ug/l	0.09	6.9	4500	103	P	
123	Sb	1	0.046	ug/l	0.05	7.9	900	103	P	
135	Ba	1	0.046	ug/l	0.05	3.7	9000	103	P	
200	Hg	1	0.013	ug/l	0.01	30.1	45	209	P	
205	Tl	1	0.111	ug/l	0.11	4.0	900	209	P	
208	Pb	1	0.011	ug/l	0.01	13.3	9000	209	P	
238	U	1	0.021	ug/l	0.02	7.0	9000	209	P	

ISTD Elements

IS	Mass	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)			Flag
6	Li	1	193335	0.79	195300	99.0	30	-	125	
45	Sc	1	2647078	1.96	2556000	103.6	30	-	125	
74	Ge	1	5515915	1.56	5397000	102.2	30	-	125	
103	Rh	1	7669413	1.89	7620000	100.6	30	-	125	
165	Ho	1	3567437	0.95	3508000	101.7	30	-	125	
175	Lu	1	3182423	0.33	3117000	102.1	30	-	125	
209	Bi	1	4394852	1.15	4252000	103.4	30	-	125	

Analytes: **Pass** **ISTD:** **Pass**

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

TA Seattle Sample Report 200.8/6020 7500ce ICPMS

Data File: C:\ICPCHEM\1\DATA\100812PM.B\044SMPL.D\044SMPL.D#
Date Acquired: Oct 8 2012 05:26 pm Acq. Method: 0000RUN.M
Sample Name: MDL(S)02-3 Vial Number: 2303
Misc Info: STDS&RL&CCV 00012,ICV 00015,ICSA&ICSAB 100812

Current Method: C:\ICPCHEM\1\METHODS\00He REP.M Operator: FCW ICP-MS ID#SEA44
Calibration File: C:\ICPCHEM\1\CALIB\00He REP.C
Last Cal. Update: Oct 09 2012 06:13 am
ISTD Ref File : C:\ICPCHEM\1\DATA\100812PM.B\007CALB.D\007CALB.D#

Tune #	Name
1	:\1\7500\he.u
2	'CHEM\1\7500\
3	'CHEM\1\7500\

Dilution Factor: 1.00 Final Dil Factor: 1.00

QC Elements

Element		T#	Conc.	Units	Corr. Conc	RSD(%)	LDR	IS	P/A	Flag
9	Be	1	0.045	ug/l	0.04	43.1	9000	6	P	
23	Na	1	0.717	ug/l	0.72	336.9	450000	45	P	
24	Mg	1	0.061	ug/l	0.06	54.2	450000	45	P	
27	Al	1	2.469	ug/l	2.47	3.6	450000	45	P	
31	P	1	1.583	ug/l	1.58	102.2	450000	45	P	
39	K	1	-0.577	ug/l	-0.58	155.3	450000	45	P	
44	Ca	1	-0.749	ug/l	-0.75	148.2	450000	45	P	
47	Ti	1	0.142	ug/l	0.14	7.1	4500	45	P	
51	V	1	0.102	ug/l	0.10	37.0	9000	45	P	
52	Cr	1	0.047	ug/l	0.05	16.7	9000	45	P	
55	Mn	1	0.063	ug/l	0.06	4.4	9000	74	P	
56	Fe	1	3.012	ug/l	3.01	49.8	225000	74	P	
59	Co	1	0.026	ug/l	0.03	27.9	9000	74	P	
60	Ni	1	0.099	ug/l	0.10	16.4	9000	74	P	
63	Cu	1	-0.006	ug/l	-0.01	337.5	9000	74	P	
66	Zn	1	0.170	ug/l	0.17	20.6	9000	74	P	
75	As	1	0.160	ug/l	0.16	11.7	9000	74	P	
78	Se	1	0.286	ug/l	0.29	18.1	9000	74	P	
88	Sr	1	0.045	ug/l	0.05	20.4	9000	74	P	
95	Mo	1	0.103	ug/l	0.10	4.8	4500	103	P	
109	Ag	1	0.010	ug/l	0.01	10.5	900	103	P	
114	Cd	1	0.008	ug/l	0.01	71.8	9000	103	P	
118	Sn	1	0.087	ug/l	0.09	2.4	4500	103	P	
123	Sb	1	0.040	ug/l	0.04	6.0	900	103	P	
135	Ba	1	0.044	ug/l	0.04	16.2	9000	103	P	
200	Hg	1	0.012	ug/l	0.01	29.5	45	209	P	
205	Tl	1	0.099	ug/l	0.10	5.3	900	209	P	
208	Pb	1	0.009	ug/l	0.01	29.7	9000	209	P	
238	U	1	0.020	ug/l	0.02	7.4	9000	209	P	

ISTD Elements

IS	Mass	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)			Flag
6	Li	1	191132	0.50	195300	97.9	30	-	125	
45	Sc	1	2610129	0.30	2556000	102.1	30	-	125	
74	Ge	1	5445238	0.95	5397000	100.9	30	-	125	
103	Rh	1	7677809	0.28	7620000	100.8	30	-	125	
165	Ho	1	3559236	1.35	3508000	101.5	30	-	125	
175	Lu	1	3119210	0.93	3117000	100.1	30	-	125	
209	Bi	1	4348454	0.78	4252000	102.3	30	-	125	

Analytes: **Pass** **ISTD:** **Pass**

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

TA Seattle Sample Report 200.8/6020 7500ce ICPMS

Data File: C:\ICPCHEM\1\DATA\100812PM.B\045SMPL.D\045SMPL.D#
Date Acquired: Oct 8 2012 05:30 pm Acq. Method: 0000RUN.M
Sample Name: MDL(S)02-4 Vial Number: 2304
Misc Info: STDS&RL&CCV 00012,ICV 00015,ICSA&ICSAB 100812

Current Method: C:\ICPCHEM\1\METHODS\00He REP.M Operator: FCW ICP-MS ID#SEA44
Calibration File: C:\ICPCHEM\1\CALIB\00He REP.C
Last Cal. Update: Oct 09 2012 06:13 am
ISTD Ref File : C:\ICPCHEM\1\DATA\100812PM.B\007CALB.D\007CALB.D#

Tune #	Name
1	\1\7500\he.u
2	CHEM\1\7500\
3	CHEM\1\7500\

Dilution Factor: 1.00 Final Dil Factor: 1.00

QC Elements

Element		T#	Conc.	Units	Corr. Conc	RSD(%)	LDR	IS	P/A	Flag
9	Be	1	0.050	ug/l	0.05	46.0	9000	6	P	
23	Na	1	0.594	ug/l	0.59	82.9	450000	45	P	
24	Mg	1	0.045	ug/l	0.04	18.7	450000	45	P	
27	Al	1	2.494	ug/l	2.49	9.3	450000	45	P	
31	P	1	0.817	ug/l	0.82	390.0	450000	45	P	
39	K	1	-0.215	ug/l	-0.22	127.8	450000	45	P	
44	Ca	1	0.755	ug/l	0.76	112.2	450000	45	P	
47	Ti	1	0.159	ug/l	0.16	10.9	4500	45	P	
51	V	1	0.115	ug/l	0.12	11.7	9000	45	P	
52	Cr	1	0.059	ug/l	0.06	10.5	9000	45	P	
55	Mn	1	0.064	ug/l	0.06	3.5	9000	74	P	
56	Fe	1	2.212	ug/l	2.21	6.2	225000	74	P	
59	Co	1	0.030	ug/l	0.03	13.0	9000	74	P	
60	Ni	1	0.125	ug/l	0.12	4.6	9000	74	P	
63	Cu	1	0.012	ug/l	0.01	77.1	9000	74	P	
66	Zn	1	0.198	ug/l	0.20	5.2	9000	74	P	
75	As	1	0.175	ug/l	0.17	12.6	9000	74	P	
78	Se	1	0.179	ug/l	0.18	11.8	9000	74	P	
88	Sr	1	0.039	ug/l	0.04	21.9	9000	74	P	
95	Mo	1	0.109	ug/l	0.11	4.6	4500	103	P	
109	Ag	1	0.011	ug/l	0.01	5.2	900	103	P	
114	Cd	1	0.008	ug/l	0.01	54.5	9000	103	P	
118	Sn	1	0.095	ug/l	0.09	6.0	4500	103	P	
123	Sb	1	0.040	ug/l	0.04	5.7	900	103	P	
135	Ba	1	0.052	ug/l	0.05	19.1	9000	103	P	
200	Hg	1	0.010	ug/l	0.01	11.4	45	209	P	
205	Tl	1	0.107	ug/l	0.11	2.8	900	209	P	
208	Pb	1	0.011	ug/l	0.01	25.1	9000	209	P	
238	U	1	0.020	ug/l	0.02	14.5	9000	209	P	

ISTD Elements

IS	Mass	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)			Flag
6	Li	1	184984	0.18	195300	94.7	30	-	125	
45	Sc	1	2588037	0.47	2556000	101.3	30	-	125	
74	Ge	1	5379935	1.33	5397000	99.7	30	-	125	
103	Rh	1	7554008	0.67	7620000	99.1	30	-	125	
165	Ho	1	3516477	1.12	3508000	100.2	30	-	125	
175	Lu	1	3109540	1.71	3117000	99.8	30	-	125	
209	Bi	1	4265752	2.50	4252000	100.3	30	-	125	

Analytes: **Pass** **ISTD:** **Pass**

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

TA Seattle Sample Report 200.8/6020 7500ce ICPMS

Data File: C:\ICPCHEM\1\DATA\100812PM.B\046SMPL.D\046SMPL.D#
Date Acquired: Oct 8 2012 05:34 pm Acq. Method: 0000RUN.M
Sample Name: MDL(S)02-5 Vial Number: 2305
Misc Info: STDS&RL&CCV 00012,ICV 00015,ICSA&ICSAB 100812

Current Method: C:\ICPCHEM\1\METHODS\00He REP.M Operator: FCW ICP-MS ID#SEA44
Calibration File: C:\ICPCHEM\1\CALIB\00He REP.C
Last Cal. Update: Oct 09 2012 06:13 am
ISTD Ref File : C:\ICPCHEM\1\DATA\100812PM.B\007CALB.D\007CALB.D#

Tune #	Name
1	:\1\7500\he.u
2	'CHEM\1\7500\
3	'CHEM\1\7500\

Dilution Factor: 1.00 Final Dil Factor: 1.00

QC Elements

Element		T#	Conc.	Units	Corr. Conc	RSD(%)	LDR	IS	P/A	Flag
9	Be	1	0.031	ug/l	0.03	27.9	9000	6	P	
23	Na	1	1.107	ug/l	1.11	91.8	450000	45	P	
24	Mg	1	0.062	ug/l	0.06	42.3	450000	45	P	
27	Al	1	2.216	ug/l	2.22	5.9	450000	45	P	
31	P	1	1.074	ug/l	1.07	126.7	450000	45	P	
39	K	1	-0.191	ug/l	-0.19	348.7	450000	45	P	
44	Ca	1	0.885	ug/l	0.89	60.0	450000	45	P	
47	Ti	1	0.136	ug/l	0.14	13.7	4500	45	P	
51	V	1	0.117	ug/l	0.12	29.4	9000	45	P	
52	Cr	1	0.048	ug/l	0.05	41.6	9000	45	P	
55	Mn	1	0.058	ug/l	0.06	27.4	9000	74	P	
56	Fe	1	2.017	ug/l	2.02	3.3	225000	74	P	
59	Co	1	0.025	ug/l	0.03	4.6	9000	74	P	
60	Ni	1	0.098	ug/l	0.10	31.0	9000	74	P	
63	Cu	1	-0.006	ug/l	-0.01	545.1	9000	74	P	
66	Zn	1	0.135	ug/l	0.13	41.7	9000	74	P	
75	As	1	0.152	ug/l	0.15	6.2	9000	74	P	
78	Se	1	0.253	ug/l	0.25	10.9	9000	74	P	
88	Sr	1	0.039	ug/l	0.04	8.5	9000	74	P	
95	Mo	1	0.096	ug/l	0.10	14.0	4500	103	P	
109	Ag	1	0.009	ug/l	0.01	18.1	900	103	P	
114	Cd	1	0.001	ug/l	0.00	137.1	9000	103	P	
118	Sn	1	0.081	ug/l	0.08	9.1	4500	103	P	
123	Sb	1	0.034	ug/l	0.03	3.3	900	103	P	
135	Ba	1	0.038	ug/l	0.04	27.3	9000	103	P	
200	Hg	1	0.007	ug/l	0.01	56.4	45	209	P	
205	Tl	1	0.097	ug/l	0.10	1.9	900	209	P	
208	Pb	1	0.009	ug/l	0.01	13.9	9000	209	P	
238	U	1	0.020	ug/l	0.02	8.9	9000	209	P	

ISTD Elements

IS Mass		Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)			Flag
6	Li	1	187903	1.06	195300	96.2	30	-	125	
45	Sc	1	2607850	0.55	2556000	102.0	30	-	125	
74	Ge	1	5457078	1.30	5397000	101.1	30	-	125	
103	Rh	1	7655731	0.48	7620000	100.5	30	-	125	
165	Ho	1	3595541	0.61	3508000	102.5	30	-	125	
175	Lu	1	3137085	0.83	3117000	100.6	30	-	125	
209	Bi	1	4306158	1.41	4252000	101.3	30	-	125	

Analytes: Pass **ISTD:** Pass

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

TA Seattle Sample Report 200.8/6020 7500ce ICPMS

Data File: C:\ICPCHEM\1\DATA\100812PM.B\047SMPL.D\047SMPL.D#
Date Acquired: Oct 8 2012 05:38 pm Acq. Method: 0000RUN.M
Sample Name: MDL(S)02-6 Vial Number: 2306
Misc Info: STDS&RL&CCV 00012,ICV 00015,ICSA&ICSAB 100812

Current Method: C:\ICPCHEM\1\METHODS\00He REP.M Operator: FCW ICP-MS ID#SEA44
Calibration File: C:\ICPCHEM\1\CALIB\00He REP.C
Last Cal. Update: Oct 09 2012 06:13 am
ISTD Ref File : C:\ICPCHEM\1\DATA\100812PM.B\007CALB.D\007CALB.D#

Tune #	Name
1	:\1\7500\he.u
2	'CHEM\1\7500\
3	'CHEM\1\7500\

Dilution Factor: 1.00 Final Dil Factor: 1.00

QC Elements

Element		T#	Conc.	Units	Corr. Conc	RSD(%)	LDR	IS	P/A	Flag
9	Be	1	0.053	ug/l	0.05	57.5	9000	6	P	
23	Na	1	0.091	ug/l	0.09	579.0	450000	45	P	
24	Mg	1	0.128	ug/l	0.13	37.4	450000	45	P	
27	Al	1	2.464	ug/l	2.46	4.5	450000	45	P	
31	P	1	1.255	ug/l	1.26	99.7	450000	45	P	
39	K	1	-0.965	ug/l	-0.97	136.5	450000	45	P	
44	Ca	1	-0.441	ug/l	-0.44	77.3	450000	45	P	
47	Ti	1	0.140	ug/l	0.14	9.6	4500	45	P	
51	V	1	0.138	ug/l	0.14	20.3	9000	45	P	
52	Cr	1	0.056	ug/l	0.06	2.5	9000	45	P	
55	Mn	1	0.061	ug/l	0.06	4.1	9000	74	P	
56	Fe	1	2.350	ug/l	2.35	1.9	225000	74	P	
59	Co	1	0.028	ug/l	0.03	14.6	9000	74	P	
60	Ni	1	0.095	ug/l	0.10	14.2	9000	74	P	
63	Cu	1	-0.014	ug/l	-0.01	245.1	9000	74	P	
66	Zn	1	0.188	ug/l	0.19	23.4	9000	74	P	
75	As	1	0.171	ug/l	0.17	3.0	9000	74	P	
78	Se	1	0.246	ug/l	0.25	23.8	9000	74	P	
88	Sr	1	0.045	ug/l	0.04	22.7	9000	74	P	
95	Mo	1	0.109	ug/l	0.11	8.4	4500	103	P	
109	Ag	1	0.012	ug/l	0.01	27.5	900	103	P	
114	Cd	1	0.006	ug/l	0.01	82.5	9000	103	P	
118	Sn	1	0.102	ug/l	0.10	13.0	4500	103	P	
123	Sb	1	0.040	ug/l	0.04	14.6	900	103	P	
135	Ba	1	0.053	ug/l	0.05	20.4	9000	103	P	
200	Hg	1	0.008	ug/l	0.01	7.0	45	209	P	
205	Tl	1	0.105	ug/l	0.10	3.9	900	209	P	
208	Pb	1	0.010	ug/l	0.01	25.6	9000	209	P	
238	U	1	0.022	ug/l	0.02	11.7	9000	209	P	

ISTD Elements

IS	Mass	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)			Flag
6	Li	1	187716	0.80	195300	96.1	30	-	125	
45	Sc	1	2613711	0.66	2556000	102.3	30	-	125	
74	Ge	1	5477400	1.77	5397000	101.5	30	-	125	
103	Rh	1	7572963	1.39	7620000	99.4	30	-	125	
165	Ho	1	3583105	1.92	3508000	102.1	30	-	125	
175	Lu	1	3148693	2.30	3117000	101.0	30	-	125	
209	Bi	1	4349651	1.25	4252000	102.3	30	-	125	

Analytes: Pass ISTD: Pass

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

TA Seattle Sample Report 200.8/6020 7500ce ICPMS

Data File: C:\ICPCHEM\1\DATA\100812PM.B\048SMPL.D\048SMPL.D#
Date Acquired: Oct 8 2012 05:41 pm Acq. Method: 0000RUN.M
Sample Name: MDL(S)02-7 Vial Number: 2307
Misc Info: STDS&RL&CCV 00012,ICV 00015,ICSA&ICSAB 100812

Current Method: C:\ICPCHEM\1\METHODS\00He REP.M Operator: FCW ICP-MS ID#SEA44
Calibration File: C:\ICPCHEM\1\CALIB\00He REP.C
Last Cal. Update: Oct 09 2012 06:13 am
ISTD Ref File : C:\ICPCHEM\1\DATA\100812PM.B\007CALB.D\007CALB.D#

Tune #	Name
1	\1\7500\he.u
2	CHEM\1\7500\
3	CHEM\1\7500\

Dilution Factor: 1.00 Final Dil Factor: 1.00

QC Elements

Element		T#	Conc.	Units	Corr. Conc	RSD(%)	LDR	IS	P/A	Flag
9	Be	1	0.033	ug/l	0.03	41.2	9000	6	P	
23	Na	1	0.435	ug/l	0.43	112.4	450000	45	P	
24	Mg	1	0.094	ug/l	0.09	65.4	450000	45	P	
27	Al	1	2.331	ug/l	2.33	4.0	450000	45	P	
31	P	1	0.583	ug/l	0.58	33.4	450000	45	P	
39	K	1	-0.015	ug/l	-0.02	1444.4	450000	45	P	
44	Ca	1	-0.370	ug/l	-0.37	79.6	450000	45	P	
47	Ti	1	0.150	ug/l	0.15	10.5	4500	45	P	
51	V	1	0.135	ug/l	0.14	7.0	9000	45	P	
52	Cr	1	0.051	ug/l	0.05	24.5	9000	45	P	
55	Mn	1	0.053	ug/l	0.05	9.5	9000	74	P	
56	Fe	1	2.246	ug/l	2.25	4.2	225000	74	P	
59	Co	1	0.026	ug/l	0.03	23.1	9000	74	P	
60	Ni	1	0.101	ug/l	0.10	19.8	9000	74	P	
63	Cu	1	0.016	ug/l	0.02	103.8	9000	74	P	
66	Zn	1	0.208	ug/l	0.21	19.7	9000	74	P	
75	As	1	0.163	ug/l	0.16	11.9	9000	74	P	
78	Se	1	0.233	ug/l	0.23	18.5	9000	74	P	
88	Sr	1	0.043	ug/l	0.04	10.7	9000	74	P	
95	Mo	1	0.101	ug/l	0.10	7.1	4500	103	P	
109	Ag	1	0.011	ug/l	0.01	14.0	900	103	P	
114	Cd	1	0.008	ug/l	0.01	8.1	9000	103	P	
118	Sn	1	0.095	ug/l	0.09	9.2	4500	103	P	
123	Sb	1	0.038	ug/l	0.04	5.6	900	103	P	
135	Ba	1	0.044	ug/l	0.04	18.3	9000	103	P	
200	Hg	1	0.007	ug/l	0.01	16.9	45	209	P	
205	Tl	1	0.103	ug/l	0.10	5.8	900	209	P	
208	Pb	1	0.006	ug/l	0.01	19.6	9000	209	P	
238	U	1	0.018	ug/l	0.02	6.3	9000	209	P	

ISTD Elements

IS Mass		Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)			Flag
6	Li	1	188167	0.62	195300	96.3	30	-	125	
45	Sc	1	2567435	2.32	2556000	100.4	30	-	125	
74	Ge	1	5418778	1.55	5397000	100.4	30	-	125	
103	Rh	1	7585331	1.40	7620000	99.5	30	-	125	
165	Ho	1	3567743	0.95	3508000	101.7	30	-	125	
175	Lu	1	3168279	1.83	3117000	101.6	30	-	125	
209	Bi	1	4340579	0.86	4252000	102.1	30	-	125	

Analytes: **Pass** **ISTD:** **Pass**

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Step	Mass	Element	r	b(blank)	DL	BEC	Unit
1	6	Li	0.0000	--- ---	---	ug/l	
1	7	Li	0.0000	--- ---	---	ug/l	
1	9	Be	0.9999	3.402E-04	9.101E-03	3.503E-03	ug/l
1	23	Na	0.9998	1.126 1.078	28.63	ug/l	
1	24	Mg	0.9997	2.055E-03	3.605E-02	9.176E-02	ug/l
1	27	Al	0.9998	1.848E-02	1.137E-01	1.131	ug/l
1	31	P	0.9999	2.494E-02	7.285	20.64	ug/l
1	39	K	0.9998	2.480 2.079	76.46	ug/l	
1	44	Ca	0.9999	1.448E-02	2.048	9.732	ug/l
1	45	Sc	0.0000	--- ---	---	ug/l	
1	47	Ti	0.9999	1.627E-04	2.113E-02	2.106E-02	ug/l
1	51	V	0.9999	1.437E-01	2.058E-01	8.539E-01	ug/l
1	52	Cr	0.9998	2.891E-02	2.821E-02	1.595E-01	ug/l
1	55	Mn	0.9998	1.823E-03	8.787E-03	2.444E-02	ug/l
1	56	Fe	0.9999	1.829E-01	1.338E-01	2.266	ug/l
1	59	Co	0.9998	8.630E-04	6.120E-03	7.184E-03	ug/l
1	60	Ni	0.9998	6.027E-04	2.005E-02	1.977E-02	ug/l
1	63	Cu	0.9998	2.949E-02	1.298E-01	3.799E-01	ug/l
1	66	Zn	0.9998	3.629E-03	8.981E-02	2.115E-01	ug/l
1	74	Ge	0.0000	--- ---	---	ug/l	
1	75	As	0.9999	3.102E-03	1.669E-02	2.225E-01	ug/l
1	78	Se	0.9999	2.045E-03	6.170E-02	1.194	ug/l
1	88	Sr	0.9998	7.770E-03	1.430E-02	7.145E-02	ug/l
1	95	Mo	0.9999	3.370E-04	6.345E-03	1.139E-02	ug/l
1	103	Rh	0.0000	--- ---	---	ug/l	
1	109	Ag	0.9998	4.985E-04	1.526E-03	5.720E-03	ug/l
1	114	Cd	0.9999	5.150E-04	4.432E-03	1.265E-02	ug/l
1	118	Sn	1.0000	1.586E-03	1.050E-02	3.861E-02	ug/l
1	123	Sb	0.9999	2.099E-04	4.657E-03	4.731E-03	ug/l
1	135	Ba	1.0000	1.575E-04	2.806E-04	1.337E-02	ug/l
1	165	Ho	0.0000	--- ---	---	ug/l	
1	175	Lu	0.0000	--- ---	---	ug/l	
1	200	Hg	1.0000	5.038E-04	4.190E-03	1.650E-02	ug/l
1	205	Tl	0.9999	1.864E-03	7.711E-03	6.661E-03	ug/l
1	208	Pb	0.9999	1.297E-02	7.207E-03	3.450E-02	ug/l
1	209	Bi	0.0000	--- ---	---	ug/l	
1	238	U	0.9999	1.368E-04	1.161E-03	3.926E-04	ug/l

100812PM STBS 9/17/12

EtpW 12/17/12

TA Seattle Calibration Blank QC Report 200.8/6020 ICP-MS 7500ce

Data File: C:\ICPCHEM\1\DATA\100812PM.B\007CALB.D\007CALB.D#
Date Acquired: Oct 8 2012 03:07 pm Acq. Method: 0000RUN.M
Sample Name: STD0 Vial Number: 1306
Misc Info: STDS&RL&CCV 00012,ICV 00015,ICSA&ICSAB 100812
Current Method: C:\ICPCHEM\1\METHODS\00He REP.M
Operator: FCW ICP-MS ID#SEA44
Calibration File: C:\ICPCHEM\1\CALIB\00He REP.C
Last Cal. Update: Oct 09 2012 06:13 am
ISTD Ref File : ---

Tune #	Name
1	c:\icpchem\1\7500\he.u
2	C:\ICPCHEM\1\7500\
3	C:\ICPCHEM\1\7500\

Sample Type: CalBlk

QC&ISTD Elements

Element		Tune	CPS Mean		SD	RSD(%)
6	Li	1	195271.7	P	1249.00	0.64
7	Li	1	15116.0	P	264.20	1.75
9	Be	1	1.3	P	1.16	86.62
23	Na	1	57552.9	P	477.10	0.83
24	Mg	1	105.0	P	13.23	12.60
27	Al	1	945.1	P	32.79	3.47
31	P	1	1275.1	P	147.30	11.55
39	K	1	126805.1	P	488.60	0.39
44	Ca	1	739.9	P	47.24	6.38
45	Sc	1	2556452.0	A	17070.00	0.67
47	Ti	1	8.3	P	2.84	34.12
51	V	1	7344.0	P	541.70	7.38
52	Cr	1	1478.5	P	97.14	6.57
55	Mn	1	196.7	P	22.55	11.47
56	Fe	1	19735.7	P	203.50	1.03
57	Fe	1		P		
59	Co	1	93.3	P	27.54	29.51
60	Ni	1	65.0	P	21.80	33.54
63	Cu	1	3180.5	P	331.60	10.43
66	Zn	1	391.7	P	54.85	14.00
74	Ge	1	5396939.0	A	56660.00	1.05
75	As	1	334.8	P	10.68	3.19
78	Se	1	220.7	P	2.52	1.14
88	Sr	1	838.5	P	54.08	6.45
95	Mo	1	51.3	P	9.24	18.00
99	(Mo)	1		P		
103	Rh	1	7620368.0	A	53460.00	0.70
106	(Cd)	1		P		
108	(Cd)	1		P		
109	Ag	1	76.0	P	7.21	9.49
111	Cd	1		P		
114	Cd	1	78.5	P	9.06	11.54
118	Sn	1	241.7	P	20.82	8.61
123	Sb	1	32.0	P	10.58	33.06
135	Ba	1	24.0	P	0.00	0.00
165	Ho	1	3508457.0	A	29410.00	0.84
175	Lu	1	3116670.0	A	39150.00	1.26
200	Hg	1	42.8	P	3.40	7.94
205	Tl	1	158.3	P	60.28	38.07
206	Pb	1		P		
207	Pb	1		P		
208	Pb	1	1103.4	P	82.52	7.48
209	Bi	1	4252040.0	A	28630.00	0.67
238	U	1	11.7	P	11.55	99.00

TA Seattle Calibration Standard QC Report 200.8/6020 ICP-MS 7500ce

Data File: C:\ICPCHEM\1\DATA\100812PM.B\008CALS.D\008CALS.D#
Date Acquired: Oct 8 2012 03:10 pm
Acq. Method: 0000RUN.M
Sample Name: **STD1**
Vial Number: 1305
Misc Info: STDS&RL&CCV 00012,ICV 00015,ICSA&ICSAB 100812
Operator: FCW ICP-MS ID#SEA44
Current Method: C:\ICPCHEM\1\METHODS\00He REP.M
Calibration File: C:\ICPCHEM\1\CALIB\00He REP.C
Last Cal. Update: Oct 09 2012 06:13 am
ISTD Ref File : C:\ICPCHEM\1\DATA\100812PM.B\007CALB.D\007CALB.D#

Tune #	Name
1	icpchem\1\7500\he.u
2	C:\ICPCHEM\1\7500\
3	C:\ICPCHEM\1\7500\

Sample Type: CalStd

QC&ISTD Elements

Element		IS	T#	CPS Mean		SD	RSD(%)
9	Be	6	1	43.3	P	9.45	21.81
23	Na	45	1	106191.5	P	896.90	0.84
24	Mg	45	1	20912.3	P	467.60	2.24
27	Al	45	1	8062.7	P	364.30	4.52
31	P	45	1	2265.2	P	35.00	1.55
39	K	45	1	165638.1	P	1045.00	0.63
44	Ca	45	1	2177.8	P	110.30	5.06
47	Ti	45	1	104.0	P	91.61	88.06
51	V	45	1	8543.1	P	234.20	2.74
52	Cr	45	1	2805.4	P	117.20	4.18
55	Mn	74	1	2091.9	P	32.54	1.56
56	Fe	74	1	172671.8	P	3586.00	2.08
59	Co	74	1	1596.8	P	55.32	3.46
60	Ni	74	1	638.4	P	25.66	4.02
63	Cu	74	1	4987.8	P	159.50	3.20
66	Zn	74	1	1420.1	P	152.10	10.71
75	As	74	1	496.3	P	27.86	5.61
78	Se	74	1	243.2	P	8.08	3.32
88	Sr	74	1	2200.8	P	67.18	3.05
95	Mo	103	1	503.3	P	34.43	6.84
109	Ag	103	1	1448.1	P	101.90	7.04
114	Cd	103	1	774.8	P	38.68	4.99
118	Sn	103	1	1181.8	P	59.66	5.05
123	Sb	103	1	663.4	P	21.94	3.31
135	Ba	103	1	246.7	P	38.28	15.52
200	Hg	209	1	53.2	P	1.44	2.71
205	Tl	209	1	2672.0	P	265.60	9.94
208	Pb	209	1	4903.9	P	318.10	6.49
238	U	209	1	3095.5	P	228.60	7.38

ISTD Elements

IS	Mass	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	1	193658	0.25	195300	99.2	30 - 125	
45	Sc	1	2553958	2.16	2556000	99.9	30 - 125	
74	Ge	1	5396655	1.53	5397000	100.0	30 - 125	
103	Rh	1	7528521	0.84	7620000	98.8	30 - 125	
165	Ho	1	3491066	1.13	3508000	99.5	30 - 125	
175	Lu	1	3048288	1.07	3117000	97.8	30 - 125	
209	Bi	1	4222931	0.83	4252000	99.3	30 - 125	

Analytes: Pass ISTD: Pass

0 :Element Failures :Max. Number of Failures Allowed

0 :ISTD Failures :Max. Number of ISTD Failures Allowed

TA Seattle Calibration Standard QC Report 200.8/6020 ICP-MS 7500ce

Data File: C:\ICPCHEM\1\DATA\100812PM.B\009CALS.D\009CALS.D#

Date Acquired: Oct 8 2012 03:14 pm

Acq. Method: 0000RUN.M

Sample Name: **STD2**

Vial Number: 1304

Misc Info: STDS&RL&CCV 00012,ICV 00015,ICSA&ICSAB 100812

Operator: FCW ICP-MS ID#SEA44

Current Method: C:\ICPCHEM\1\METHODS\00He REP.M

Calibration File: C:\ICPCHEM\1\CALIB\00He REP.C

Last Cal. Update: Oct 09 2012 06:13 am

ISTD Ref File : C:\ICPCHEM\1\DATA\100812PM.B\007CALB.D\007CALB.D#

Tune #	Name
1	icpchem\1\7500\he.u
2	C:\ICPCHEM\1\7500\
3	C:\ICPCHEM\1\7500\

QC&ISTD Elements

Sample Type: CalStd

Element		IS	T#	CPS Mean	SD	RSD(%)
9	Be	6	1	350.0 P	42.33	12.09
23	Na	45	1	271536.4 P	2801.00	1.03
24	Mg	45	1	124218.6 P	1539.00	1.24
27	Al	45	1	15546.3 P	153.50	0.99
31	P	45	1	7384.0 P	282.80	3.83
39	K	45	1	307447.2 P	486.00	0.16
44	Ca	45	1	8443.4 P	212.70	2.52
47	Ti	45	1	401.2 P	23.19	5.78
51	V	45	1	15723.4 P	400.80	2.55
52	Cr	45	1	11490.5 P	182.10	1.58
55	Mn	74	1	8639.8 P	262.70	3.04
56	Fe	74	1	963035.8 P	13940.00	1.45
59	Co	74	1	13879.5 P	24.69	0.18
60	Ni	74	1	3799.0 P	90.76	2.39
63	Cu	74	1	12604.8 P	459.80	3.65
66	Zn	74	1	2843.7 P	184.60	6.49
75	As	74	1	1858.3 P	51.84	2.79
78	Se	74	1	404.0 P	10.33	2.56
88	Sr	74	1	12802.8 P	90.11	0.70
95	Mo	103	1	4409.5 P	84.70	1.92
109	Ag	103	1	13445.4 P	140.30	1.04
114	Cd	103	1	6014.9 P	143.90	2.39
118	Sn	103	1	6486.9 P	359.00	5.53
123	Sb	103	1	6621.2 P	152.40	2.30
135	Ba	103	1	1790.1 P	52.58	2.94
200	Hg	209	1	167.2 P	5.97	3.57
205	Tl	209	1	23883.2 P	932.30	3.90
208	Pb	209	1	33462.8 P	437.60	1.31
238	U	209	1	29165.8 P	1245.00	4.27

ISTD Elements

IS	Mass	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	1	190645	1.84	195300	97.6	30 - 125	
45	Sc	1	2567202	2.75	2556000	100.4	30 - 125	
74	Ge	1	5366712	0.21	5397000	99.4	30 - 125	
103	Rh	1	7490441	1.05	7620000	98.3	30 - 125	
165	Ho	1	3493071	0.30	3508000	99.6	30 - 125	
175	Lu	1	3070772	0.70	3117000	98.5	30 - 125	
209	Bi	1	4231330	0.53	4252000	99.5	30 - 125	

Analytes: Pass ISTD: Pass

0 :Element Failures :Max. Number of Failures Allowed

0 :ISTD Failures :Max. Number of ISTD Failures Allowed

TA Seattle Calibration Standard QC Report 200.8/6020 ICP-MS 7500ce

Data File: C:\ICPCHEM\1\DATA\100812PM.B\010CALS.D\010CALS.D#
Date Acquired: Oct 8 2012 03:18 pm
Acq. Method: 0000RUN.M
Sample Name: STD3
Vial Number: 1303
Misc Info: STDS&RL&CCV 00012,ICV 00015,ICSA&ICSAB 100812
Operator: FCW ICP-MS ID#SEA44
Current Method: C:\ICPCHEM\1\METHODS\00He REP.M
Calibration File: C:\ICPCHEM\1\CALIB\00He REP.C
Last Cal. Update: Oct 09 2012 06:13 am
ISTD Ref File : C:\ICPCHEM\1\DATA\100812PM.B\007CALB.D\007CALB.D#

Tune #	Name
1	icpchem\1\7500\he.u
2	C:\ICPCHEM\1\7500\
3	C:\ICPCHEM\1\7500\

Sample Type: CalStd

QC&ISTD Elements

Element		IS	T#	CPS Mean	SD	RSD(%)
9	Be	6	1	3516.5 P	71.12	2.02
23	Na	45	1	2135759.0 A	21800.00	1.02
24	Mg	45	1	1197888.0 A	26370.00	2.20
27	Al	45	1	87067.0 P	996.60	1.14
31	P	45	1	61937.3 P	280.70	0.45
39	K	45	1	1852970.0 A	14340.00	0.77
44	Ca	45	1	77650.5 P	554.50	0.71
47	Ti	45	1	3963.1 P	128.00	3.23
51	V	45	1	92695.1 P	511.90	0.55
52	Cr	45	1	95449.0 P	2318.00	2.43
55	Mn	74	1	83198.3 P	1471.00	1.77
56	Fe	74	1	8744605.0 A	111500.00	1.28
59	Co	74	1	133294.0 P	2543.00	1.91
60	Ni	74	1	34236.7 P	608.20	1.78
63	Cu	74	1	91025.3 P	2013.00	2.21
66	Zn	74	1	20946.0 P	733.70	3.50
75	As	74	1	15414.1 P	159.10	1.03
78	Se	74	1	2042.8 P	52.53	2.57
88	Sr	74	1	119073.7 P	674.70	0.57
95	Mo	103	1	42896.0 P	710.40	1.66
109	Ag	103	1	132266.5 P	1776.00	1.34
114	Cd	103	1	60358.1 P	909.10	1.51
118	Sn	103	1	61310.2 P	1329.00	2.17
123	Sb	103	1	65011.3 P	1070.00	1.65
135	Ba	103	1	17303.7 P	52.63	0.30
200	Hg	209	1	1281.4 P	27.12	2.12
205	Tl	209	1	233584.8 P	5619.00	2.39
208	Pb	209	1	317279.6 P	8459.00	2.67
238	U	209	1	289363.4 P	5818.00	2.01

ISTD Elements

IS	Mass	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	1	185238	0.29	195300	94.8	30 - 125	
45	Sc	1	2528807	1.17	2556000	98.9	30 - 125	
74	Ge	1	5287349	1.18	5397000	98.0	30 - 125	
103	Rh	1	7377373	0.41	7620000	96.8	30 - 125	
165	Ho	1	3506154	1.14	3508000	99.9	30 - 125	
175	Lu	1	3084953	1.33	3117000	99.0	30 - 125	
209	Bi	1	4141664	0.79	4252000	97.4	30 - 125	

Analytes: Pass ISTD: Pass

0 :Element Failures :Max. Number of Failures Allowed

0 :ISTD Failures :Max. Number of ISTD Failures Allowed

TA Seattle Calibration Standard QC Report 200.8/6020 ICP-MS 7500ce

Data File: C:\ICPCHEM\1\DATA\100812PM.B\011CALS.D\011CALS.D#
Date Acquired: Oct 8 2012 03:22 pm
Acq. Method: 0000RUN.M
Sample Name: **STD4**
Vial Number: 1302
Misc Info: STD5&RL&CCV 00012,ICV 00015,ICSA&ICSAB 100812
Operator: FCW ICP-MS ID#SEA44
Current Method: C:\ICPCHEM\1\METHODS\00He REP.M
Calibration File: C:\ICPCHEM\1\CALIB\00He REP.C
Last Cal. Update: Oct 09 2012 06:13 am
ISTD Ref File : C:\ICPCHEM\1\DATA\100812PM.B\007CALB.D\007CALB.D#

Tune #	Name
1	icpchem\1\7500\he.u
2	C:\ICPCHEM\1\7500\
3	C:\ICPCHEM\1\7500\

Sample Type: CalStd

QC&ISTD Elements

Element		IS	T#	CPS Mean		SD	RSD(%)
9	Be	6	1	17926.4	P	230.40	1.29
23	Na	45	1	10225860.0	A	103500.00	1.01
24	Mg	45	1	5820599.0	A	35850.00	0.62
27	Al	45	1	424390.2	P	5214.00	1.23
31	P	45	1	310970.5	P	3101.00	1.00
39	K	45	1	8504903.0	A	24690.00	0.29
44	Ca	45	1	382847.9	P	2390.00	0.62
47	Ti	45	1	19888.4	P	245.90	1.24
51	V	45	1	439413.7	P	6121.00	1.39
52	Cr	45	1	471236.4	P	6937.00	1.47
55	Mn	74	1	408495.4	P	3065.00	0.75
56	Fe	74	1	44097540.0	A	496300.00	1.13
59	Co	74	1	661564.7	P	8823.00	1.33
60	Ni	74	1	167807.3	P	1014.00	0.60
63	Cu	74	1	431233.3	P	9930.00	2.30
66	Zn	74	1	94168.5	P	1569.00	1.67
75	As	74	1	75935.1	P	625.90	0.82
78	Se	74	1	9550.0	P	83.82	0.88
88	Sr	74	1	598043.1	P	10500.00	1.76
95	Mo	103	1	218040.6	P	3557.00	1.63
109	Ag	103	1	652319.7	P	7893.00	1.21
114	Cd	103	1	300598.6	P	3786.00	1.26
118	Sn	103	1	301175.3	P	3125.00	1.04
123	Sb	103	1	325723.5	P	3426.00	1.05
135	Ba	103	1	86535.0	P	1118.00	1.29
200	Hg	209	1	6325.5	P	85.00	1.34
205	Tl	209	1	1165019.0	P	20050.00	1.72
208	Pb	209	1	1559024.0	P	25630.00	1.64
238	U	209	1	1451923.0	A	42430.00	2.92

ISTD Elements

IS	Mass	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	1	180568	0.37	195300	92.5	30 - 125	
45	Sc	1	2505246	1.25	2556000	98.0	30 - 125	
74	Ge	1	5320985	0.52	5397000	98.6	30 - 125	
103	Rh	1	7223596	0.55	7620000	94.8	30 - 125	
165	Ho	1	3422391	0.23	3508000	97.6	30 - 125	
175	Lu	1	3017329	1.11	3117000	96.8	30 - 125	
209	Bi	1	4064916	0.81	4252000	95.6	30 - 125	

Analytes: Pass ISTD: Pass

0 :Element Failures :Max. Number of Failures Allowed

0 :ISTD Failures :Max. Number of ISTD Failures Allowed

TA Seattle Calibration Standard QC Report 200.8/6020 ICP-MS 7500ce

Data File: C:\ICPCHEM\1\DATA\100812PM.B\012CALS.D\012CALS.D#
Date Acquired: Oct 8 2012 03:26 pm
Acq. Method: 0000RUN.M
Sample Name: STD5
Vial Number: 1301
Misc Info: STDS&RL&CCV 00012,ICV 00015,ICSA&ICSAB 100812
Operator: FCW ICP-MS ID#SEA44
Current Method: C:\ICPCHEM\1\METHODS\00He REP.M
Calibration File: C:\ICPCHEM\1\CALIB\00He REP.C
Last Cal. Update: Oct 09 2012 06:13 am
ISTD Ref File : C:\ICPCHEM\1\DATA\100812PM.B\007CALB.D\007CALB.D#

Tune #	Name
1	icpchem\1\7500\he.u
2	C:\ICPCHEM\1\7500\
3	C:\ICPCHEM\1\7500\

Sample Type: CalStd

QC&ISTD Elements

Element		IS	T#	CPS Mean	SD	RSD(%)
9	Be	6	1	33545.1 P	289.60	0.86
23	Na	45	1	19301340.0 A	177900.00	0.92
24	Mg	45	1	10945110.0 A	194300.00	1.78
27	Al	45	1	800080.0 P	9257.00	1.16
31	P	45	1	594636.2 P	7502.00	1.26
39	K	45	1	16004630.0 A	87150.00	0.54
44	Ca	45	1	730320.0 P	4765.00	0.65
47	Ti	45	1	37894.6 P	440.00	1.16
51	V	45	1	832557.5 P	13350.00	1.60
52	Cr	45	1	888526.7 P	12000.00	1.35
55	Mn	74	1	770537.6 P	9684.00	1.26
56	Fe	74	1	83420624.0 A	440400.00	0.53
59	Co	74	1	1238928.0 A	24150.00	1.95
60	Ni	74	1	314527.5 P	4760.00	1.51
63	Cu	74	1	802979.2 P	12080.00	1.50
66	Zn	74	1	177495.4 P	1803.00	1.02
75	As	74	1	144725.7 P	1296.00	0.90
78	Se	74	1	17925.9 P	184.40	1.03
88	Sr	74	1	1123137.0 A	16920.00	1.51
95	Mo	103	1	415074.4 P	7473.00	1.80
109	Ag	103	1	1216715.0 A	8326.00	0.68
114	Cd	103	1	570562.7 P	5116.00	0.90
118	Sn	103	1	577059.3 P	6694.00	1.16
123	Sb	103	1	622528.9 P	7142.00	1.15
135	Ba	103	1	165378.4 P	2998.00	1.81
200	Hg	209	1	11924.2 P	141.70	1.19
205	Tl	209	1	2171372.0 A	32350.00	1.49
208	Pb	209	1	2920987.0 A	52200.00	1.79
238	U	209	1	2703446.0 A	68780.00	2.54

ISTD Elements

IS	Mass	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	1	173609	1.21	195300	88.9	30 - 125	
45	Sc	1	2469224	1.26	2556000	96.6	30 - 125	
74	Ge	1	5204431	1.19	5397000	96.4	30 - 125	
103	Rh	1	7046231	0.66	7620000	92.5	30 - 125	
165	Ho	1	3377465	1.29	3508000	96.3	30 - 125	
175	Lu	1	3000831	0.83	3117000	96.3	30 - 125	
209	Bi	1	3902480	0.70	4252000	91.8	30 - 125	

Analytes: Pass ISTD: Pass

0 :Element Failures :Max. Number of Failures Allowed

0 :ISTD Failures :Max. Number of ISTD Failures Allowed

TA Seattle Sample Report 200.8/6020 7500ce ICPMS

Data File: C:\ICPCHEM\1\DATA\100812PM.B\013SMPL.D\013SMPL.D#
Date Acquired: Oct 8 2012 03:29 pm Acq. Method: 0000RUN.M
Sample Name: ICV Vial Number: 1105
Misc Info: STDS&RL&CCV 00012,ICV 00015,ICSA&ICSAB 100812

Current Method: C:\ICPCHEM\1\METHODS\00He REP.M Operator: FCW ICP-MS ID#SEA44
Calibration File: C:\ICPCHEM\1\CALIB\00He REP.C
Last Cal. Update: Oct 09 2012 06:13 am
ISTD Ref File : C:\ICPCHEM\1\DATA\100812PM.B\007CALB.D\007CALB.D#

Tune #	Name
1	\1\7500\he.u
2	CHEM\1\7500\
3	CHEM\1\7500\

Dilution Factor: 1.00 Final Dil Factor: 1.00

QC Elements

Element		T#	Conc.	Units	Corr. Conc	RSD(%)	LDR	IS	P/A	Flag
9	Be	1	40.670	ug/l	40.67	0.5	9000	6	P	
23	Na	1	4096.000	ug/l	4,096.00	2.0	450000	45	A	
24	Mg	1	4116.000	ug/l	4,116.00	2.7	450000	45	A	
27	Al	1	409.400	ug/l	409.40	2.0	450000	45	P	
31	P	1	4053.000	ug/l	4,053.00	1.7	450000	45	P	
39	K	1	4081.000	ug/l	4,081.00	0.4	450000	45	A	
44	Ca	1	4078.000	ug/l	4,078.00	1.3	450000	45	P	
47	Ti	1	40.770	ug/l	40.77	2.1	4500	45	P	
51	V	1	40.820	ug/l	40.82	2.0	9000	45	P	
52	Cr	1	41.100	ug/l	41.10	2.1	9000	45	P	
55	Mn	1	40.940	ug/l	40.94	0.4	9000	74	P	
56	Fe	1	4117.000	ug/l	4,117.00	0.5	225000	74	A	
59	Co	1	41.540	ug/l	41.54	0.4	9000	74	P	
60	Ni	1	41.380	ug/l	41.38	1.1	9000	74	P	
63	Cu	1	41.540	ug/l	41.54	0.8	9000	74	P	
66	Zn	1	41.310	ug/l	41.31	0.6	9000	74	P	
75	As	1	40.800	ug/l	40.80	1.1	9000	74	P	
78	Se	1	40.850	ug/l	40.85	1.9	9000	74	P	
88	Sr	1	41.270	ug/l	41.27	1.0	9000	74	P	
95	Mo	1	40.120	ug/l	40.12	1.7	4500	103	P	
109	Ag	1	41.230	ug/l	41.23	0.6	900	103	P	
114	Cd	1	40.360	ug/l	40.36	0.6	9000	103	P	
118	Sn	1	40.570	ug/l	40.57	0.9	4500	103	P	
123	Sb	1	40.110	ug/l	40.11	0.5	900	103	P	
135	Ba	1	40.350	ug/l	40.35	0.2	9000	103	P	
200	Hg	1	2.030	ug/l	2.03	1.7	45	209	P	
205	Tl	1	40.980	ug/l	40.98	1.8	900	209	P	
208	Pb	1	41.020	ug/l	41.02	1.6	9000	209	P	
238	U	1	40.830	ug/l	40.83	0.9	9000	209	M	

ISTD Elements

IS	Mass	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)			Flag
6	Li	1	180448	0.73	195300	92.4	30	-	125	
45	Sc	1	2546841	1.18	2556000	99.6	30	-	125	
74	Ge	1	5363128	0.31	5397000	99.4	30	-	125	
103	Rh	1	7361463	1.28	7620000	96.6	30	-	125	
165	Ho	1	3462066	1.30	3508000	98.7	30	-	125	
175	Lu	1	3055216	1.08	3117000	98.0	30	-	125	
209	Bi	1	4074317	0.59	4252000	95.8	30	-	125	

Analytes: **Pass** **ISTD:** **Pass**

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

TA Seattle Sample Report 200.8/6020 7500ce ICPMS

Data File: C:\ICPCHEM\1\DATA\100812PM.B\014SMPL.D\014SMPL.D#
Date Acquired: Oct 8 2012 03:33 pm Acq. Method: 0000RUN.M
Sample Name: ICB Vial Number: 1306
Misc Info: STDS&RL&CCV 00012,ICV 00015,ICSA&ICSAB 100812

Current Method: C:\ICPCHEM\1\METHODS\00He REP.M Operator: FCW ICP-MS ID#SEA44
Calibration File: C:\ICPCHEM\1\CALIB\00He REP.C
Last Cal. Update: Oct 09 2012 06:13 am
ISTD Ref File : C:\ICPCHEM\1\DATA\100812PM.B\007CALB.D\007CALB.D#

Tune #	Name
1	\1\7500\he.u
2	CHEM\1\7500\
3	CHEM\1\7500\

Dilution Factor: 1.00 Final Dil Factor: 1.00

QC Elements

Element		T#	Conc.	Units	Corr. Conc	RSD(%)	LDR	IS	P/A	Flag
9	Be	1	0.004	ug/l	0.00	166.1	9000	6	P	
23	Na	1	0.945	ug/l	0.94	17.8	450000	45	P	
24	Mg	1	0.794	ug/l	0.79	13.2	450000	45	P	
27	Al	1	0.178	ug/l	0.18	52.3	450000	45	P	
31	P	1	4.362	ug/l	4.36	22.1	450000	45	P	
39	K	1	0.108	ug/l	0.11	368.3	450000	45	P	
44	Ca	1	0.314	ug/l	0.31	137.3	450000	45	P	
47	Ti	1	0.009	ug/l	0.01	17.4	4500	45	P	
51	V	1	-0.105	ug/l	-0.10	21.4	9000	45	P	
52	Cr	1	0.010	ug/l	0.01	46.6	9000	45	P	
55	Mn	1	0.009	ug/l	0.01	4.2	9000	74	P	
56	Fe	1	0.928	ug/l	0.93	3.4	225000	74	P	
59	Co	1	0.006	ug/l	0.01	10.9	9000	74	P	
60	Ni	1	0.009	ug/l	0.01	35.0	9000	74	P	
63	Cu	1	-0.002	ug/l	0.00	1164.9	9000	74	P	
66	Zn	1	-0.030	ug/l	-0.03	61.4	9000	74	P	
75	As	1	0.001	ug/l	0.00	1087.4	9000	74	P	
78	Se	1	0.064	ug/l	0.06	115.2	9000	74	P	
88	Sr	1	0.004	ug/l	0.00	17.9	9000	74	P	
95	Mo	1	0.048	ug/l	0.05	17.6	4500	103	P	
109	Ag	1	0.008	ug/l	0.01	10.9	900	103	P	
114	Cd	1	0.007	ug/l	0.01	29.5	9000	103	P	
118	Sn	1	0.064	ug/l	0.06	2.7	4500	103	P	
123	Sb	1	0.082	ug/l	0.08	15.0	900	103	P	
135	Ba	1	0.003	ug/l	0.00	88.0	9000	103	P	
200	Hg	1	0.029	ug/l	0.03	9.0	45	209	P	
205	Tl	1	0.021	ug/l	0.02	8.1	900	209	P	
208	Pb	1	0.006	ug/l	0.01	115.8	9000	209	P	
238	U	1	0.013	ug/l	0.01	7.8	9000	209	P	

ISTD Elements

IS	Mass	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)			Flag
6	Li	1	187470	0.16	195300	96.0	30	-	125	
45	Sc	1	2589880	0.71	2556000	101.3	30	-	125	
74	Ge	1	5427052	0.61	5397000	100.6	30	-	125	
103	Rh	1	7598693	0.33	7620000	99.7	30	-	125	
165	Ho	1	3515394	0.13	3508000	100.2	30	-	125	
175	Lu	1	3072867	0.90	3117000	98.6	30	-	125	
209	Bi	1	4249302	0.90	4252000	99.9	30	-	125	

Analytes: **Pass** **ISTD:** **Pass**

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

TA Seattle Sample Report 200.8/6020 7500ce ICPMS

Data File: C:\ICPCHEM\1\DATA\100812PM.B\015SMPL.D\015SMPL.D#
Date Acquired: Oct 8 2012 03:37 pm Acq. Method: 0000RUN.M
Sample Name: CRI Vial Number: 1107
Misc Info: STDS&RL&CCV 00012,ICV 00015,ICSA&ICSAB 100812

Current Method: C:\ICPCHEM\1\METHODS\00He REP.M Operator: FCW ICP-MS ID#SEA44
Calibration File: C:\ICPCHEM\1\CALIB\00He REP.C
Last Cal. Update: Oct 09 2012 06:13 am
ISTD Ref File : C:\ICPCHEM\1\DATA\100812PM.B\007CALB.D\007CALB.D#

Tune #	Name
1	\1\7500\he.u
2	CHEM\1\7500\
3	CHEM\1\7500\

Dilution Factor: 1.00 Final Dil Factor: 1.00

QC Elements

Element		T#	Conc.	Units	Corr. Conc	RSD(%)	LDR	IS	P/A	Flag
9	Be	1	1.924	ug/l	1.92	7.9	9000	6	P	
23	Na	1	206.400	ug/l	206.40	1.1	450000	45	P	
24	Mg	1	213.800	ug/l	213.80	1.5	450000	45	P	
27	Al	1	20.070	ug/l	20.07	2.5	450000	45	P	
31	P	1	204.800	ug/l	204.80	4.3	450000	45	P	
39	K	1	213.600	ug/l	213.60	0.2	450000	45	P	
44	Ca	1	197.900	ug/l	197.90	3.0	450000	45	P	
47	Ti	1	1.998	ug/l	2.00	1.7	4500	45	P	
51	V	1	1.917	ug/l	1.92	3.8	9000	45	P	
52	Cr	1	2.062	ug/l	2.06	0.8	9000	45	P	
55	Mn	1	2.125	ug/l	2.13	3.6	9000	74	P	
56	Fe	1	211.300	ug/l	211.30	2.0	225000	74	A	
59	Co	1	2.103	ug/l	2.10	2.2	9000	74	P	
60	Ni	1	2.087	ug/l	2.09	2.8	9000	74	P	
63	Cu	1	2.129	ug/l	2.13	5.6	9000	74	P	
66	Zn	1	2.210	ug/l	2.21	6.9	9000	74	P	
75	As	1	2.028	ug/l	2.03	2.2	9000	74	P	
78	Se	1	2.047	ug/l	2.05	3.0	9000	74	P	
88	Sr	1	2.065	ug/l	2.07	2.6	9000	74	P	
95	Mo	1	1.968	ug/l	1.97	2.5	4500	103	P	
109	Ag	1	2.035	ug/l	2.04	1.1	900	103	P	
114	Cd	1	1.993	ug/l	1.99	2.3	9000	103	P	
118	Sn	1	2.021	ug/l	2.02	2.1	4500	103	P	
123	Sb	1	1.985	ug/l	1.99	2.5	900	103	P	
135	Ba	1	1.950	ug/l	1.95	1.6	9000	103	P	
200	Hg	1	0.111	ug/l	0.11	7.9	45	209	P	
205	Tl	1	2.006	ug/l	2.01	2.0	900	209	P	
208	Pb	1	2.014	ug/l	2.01	2.2	9000	209	P	
238	U	1	1.977	ug/l	1.98	2.1	9000	209	P	

ISTD Elements

IS	Mass	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)			Flag
6	Li	1	191024	0.33	195300	97.8	30	-	125	
45	Sc	1	2601806	0.40	2556000	101.8	30	-	125	
74	Ge	1	5471751	1.50	5397000	101.4	30	-	125	
103	Rh	1	7630134	0.39	7620000	100.1	30	-	125	
165	Ho	1	3570455	1.13	3508000	101.8	30	-	125	
175	Lu	1	3104108	0.69	3117000	99.6	30	-	125	
209	Bi	1	4287198	1.13	4252000	100.8	30	-	125	

Analytes: **Pass** **ISTD:** **Pass**

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

TA Seattle Sample Report 200.8/6020 7500ce ICPMS

Data File: C:\ICPCHEM\1\DATA\100812PM.B\018SMPL.D\018SMPL.D#
Date Acquired: Oct 8 2012 03:48 pm Acq. Method: 0000RUN.M
Sample Name: ICSA Vial Number: 1101
Misc Info: STDS&RL&CCV 00012,ICV 00015,ICSA&ICSAB 100812

Current Method: C:\ICPCHEM\1\METHODS\00He REP.M Operator: FCW ICP-MS ID#SEA44
Calibration File: C:\ICPCHEM\1\CALIB\00He REP.C
Last Cal. Update: Oct 09 2012 06:13 am
ISTD Ref File : C:\ICPCHEM\1\DATA\100812PM.B\007CALB.D\007CALB.D#

Tune #	Name
1	)\1\7500\he.u
2	?CHEM\1\7500\
3	?CHEM\1\7500\

Dilution Factor: 1.00 Final Dil Factor: 1.00

QC Elements

Element		T#	Conc.	Units	Corr. Conc	RSD(%)	LDR	IS	P/A	Flag
9	Be	1	0.041	ug/l	0.04	52.4	9000	6	P	
23	Na	1	48220.000	ug/l	48,220.00	0.7	450000	45	A	
24	Mg	1	19450.000	ug/l	19,450.00	2.4	450000	45	A	
27	Al	1	18520.000	ug/l	18,520.00	1.3	450000	45	A	
31	P	1	20190.000	ug/l	20,190.00	1.0	450000	45	A	
39	K	1	19440.000	ug/l	19,440.00	1.5	450000	45	A	
44	Ca	1	58410.000	ug/l	58,410.00	0.5	450000	45	A	
47	Ti	1	398.400	ug/l	398.40	1.2	4500	45	P	
51	V	1	0.018	ug/l	0.02	23.0	9000	45	P	
52	Cr	1	0.564	ug/l	0.56	2.0	9000	45	P	
55	Mn	1	1.071	ug/l	1.07	3.1	9000	74	P	
56	Fe	1	49310.000	ug/l	49,310.00	1.0	225000	74	A	
59	Co	1	0.062	ug/l	0.06	13.0	9000	74	P	
60	Ni	1	0.439	ug/l	0.44	4.9	9000	74	P	
63	Cu	1	0.146	ug/l	0.15	14.8	9000	74	P	
66	Zn	1	1.206	ug/l	1.21	6.6	9000	74	P	
75	As	1	0.208	ug/l	0.21	10.7	9000	74	P	
78	Se	1	0.138	ug/l	0.14	41.3	9000	74	P	
88	Sr	1	-0.538	ug/l	-0.54	2.2	9000	74	P	
95	Mo	1	414.800	ug/l	414.80	1.2	4500	103	A	
109	Ag	1	0.029	ug/l	0.03	10.1	900	103	P	
114	Cd	1	0.536	ug/l	0.54	4.0	9000	103	P	
118	Sn	1	0.081	ug/l	0.08	17.0	4500	103	P	
123	Sb	1	0.186	ug/l	0.19	3.1	900	103	P	
135	Ba	1	0.091	ug/l	0.09	8.0	9000	103	P	
200	Hg	1	0.022	ug/l	0.02	13.9	45	209	P	
205	Tl	1	0.012	ug/l	0.01	28.5	900	209	P	
208	Pb	1	0.094	ug/l	0.09	5.3	9000	209	P	
238	U	1	0.026	ug/l	0.03	4.7	9000	209	P	

ISTD Elements

IS	Mass	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)			Flag
6	Li	1	170953	0.62	195300	87.5	30	-	125	
45	Sc	1	2455209	1.00	2556000	96.1	30	-	125	
74	Ge	1	5089191	1.26	5397000	94.3	30	-	125	
103	Rh	1	6669678	0.89	7620000	87.5	30	-	125	
165	Ho	1	3341746	1.47	3508000	95.3	30	-	125	
175	Lu	1	2923962	1.10	3117000	93.8	30	-	125	
209	Bi	1	3734578	0.51	4252000	87.8	30	-	125	

Analytes: **Pass** **ISTD:** **Pass**

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

TA Seattle Sample Report 200.8/6020 7500ce ICPMS

Data File: C:\ICPCHEM\1\DATA\100812PM.B\019SMPL.D\019SMPL.D#
Date Acquired: Oct 8 2012 03:52 pm Acq. Method: 0000RUN.M
Sample Name: ICSAB Vial Number: 1102
Misc Info: STDS&RL&CCV 00012,ICV 00015,ICSA&ICSAB 100812

Current Method: C:\ICPCHEM\1\METHODS\00He REP.M Operator: FCW ICP-MS ID#SEA44
Calibration File: C:\ICPCHEM\1\CALIB\00He REP.C
Last Cal. Update: Oct 09 2012 06:13 am
ISTD Ref File : C:\ICPCHEM\1\DATA\100812PM.B\007CALB.D\007CALB.D#

Tune #	Name
1	\1\7500\he.u
2	CHEM\1\7500\
3	CHEM\1\7500\

Dilution Factor: 1.00 Final Dil Factor: 1.00

QC Elements

Element		T#	Conc.	Units	Corr. Conc	RSD(%)	LDR	IS	P/A	Flag
9	Be	1	0.032	ug/l	0.03	38.1	9000	6	P	
23	Na	1	48880.000	ug/l	48,880.00	1.6	450000	45	A	
24	Mg	1	19550.000	ug/l	19,550.00	1.9	450000	45	A	
27	Al	1	18340.000	ug/l	18,340.00	1.9	450000	45	A	
31	P	1	20150.000	ug/l	20,150.00	2.4	450000	45	A	
39	K	1	19290.000	ug/l	19,290.00	0.6	450000	45	A	
44	Ca	1	58450.000	ug/l	58,450.00	0.9	450000	45	A	
47	Ti	1	393.100	ug/l	393.10	1.1	4500	45	P	
51	V	1	39.850	ug/l	39.85	1.2	9000	45	P	
52	Cr	1	40.200	ug/l	40.20	1.3	9000	45	P	
55	Mn	1	40.890	ug/l	40.89	1.7	9000	74	P	
56	Fe	1	49200.000	ug/l	49,200.00	1.5	225000	74	A	
59	Co	1	40.830	ug/l	40.83	2.1	9000	74	P	
60	Ni	1	39.980	ug/l	39.98	2.8	9000	74	P	
63	Cu	1	39.470	ug/l	39.47	2.2	9000	74	P	
66	Zn	1	20.930	ug/l	20.93	2.6	9000	74	P	
75	As	1	21.020	ug/l	21.02	1.7	9000	74	P	
78	Se	1	20.600	ug/l	20.60	2.2	9000	74	P	
88	Sr	1	-0.540	ug/l	-0.54	1.0	9000	74	P	
95	Mo	1	413.400	ug/l	413.40	2.0	4500	103	A	
109	Ag	1	10.050	ug/l	10.05	2.4	900	103	P	
114	Cd	1	20.620	ug/l	20.62	3.1	9000	103	P	
118	Sn	1	0.108	ug/l	0.11	7.6	4500	103	P	
123	Sb	1	0.182	ug/l	0.18	5.6	900	103	P	
135	Ba	1	0.127	ug/l	0.13	23.1	9000	103	P	
200	Hg	1	0.017	ug/l	0.02	8.3	45	209	P	
205	Tl	1	0.009	ug/l	0.01	21.9	900	209	P	
208	Pb	1	0.106	ug/l	0.11	2.8	9000	209	P	
238	U	1	0.032	ug/l	0.03	1.9	9000	209	P	

ISTD Elements

IS Mass		Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)			Flag
6	Li	1	173185	1.14	195300	88.7	30	-	125	
45	Sc	1	2457410	0.47	2556000	96.1	30	-	125	
74	Ge	1	5060379	1.10	5397000	93.8	30	-	125	
103	Rh	1	6670105	1.24	7620000	87.5	30	-	125	
165	Ho	1	3372812	0.19	3508000	96.1	30	-	125	
175	Lu	1	2948851	1.42	3117000	94.6	30	-	125	
209	Bi	1	3705790	0.97	4252000	87.2	30	-	125	

Analytes: **Pass** **ISTD:** **Pass**

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

TA Seattle Sample Report 200.8/6020 7500ce ICPMS

Data File: C:\ICPCHEM\1\DATA\100812PM.B\020SMPL.D\020SMPL.D#
Date Acquired: Oct 8 2012 03:55 pm Acq. Method: 0000RUN.M
Sample Name: CCV Vial Number: 1104
Misc Info: STDS&RL&CCV 00012,ICV 00015,ICSA&ICSAB 100812

Current Method: C:\ICPCHEM\1\METHODS\00He REP.M Operator: FCW ICP-MS ID#SEA44
Calibration File: C:\ICPCHEM\1\CALIB\00He REP.C
Last Cal. Update: Oct 09 2012 06:13 am
ISTD Ref File : C:\ICPCHEM\1\DATA\100812PM.B\007CALB.D\007CALB.D#

Tune #	Name
1	)\1\7500\he.u
2	?CHEM\1\7500\
3	?CHEM\1\7500\

Dilution Factor: 1.00 Final Dil Factor: 1.00

QC Elements

Element		T#	Conc.	Units	Corr. Conc	RSD(%)	LDR	IS	P/A	Flag
9	Be	1	48.220	ug/l	48.22	1.6	9000	6	P	
23	Na	1	4965.000	ug/l	4,965.00	0.7	450000	45	A	
24	Mg	1	5001.000	ug/l	5,001.00	1.2	450000	45	A	
27	Al	1	499.600	ug/l	499.60	2.3	450000	45	P	
31	P	1	4941.000	ug/l	4,941.00	2.5	450000	45	P	
39	K	1	4942.000	ug/l	4,942.00	1.3	450000	45	A	
44	Ca	1	4929.000	ug/l	4,929.00	2.1	450000	45	P	
47	Ti	1	49.000	ug/l	49.00	2.3	4500	45	P	
51	V	1	48.770	ug/l	48.77	2.3	9000	45	P	
52	Cr	1	49.260	ug/l	49.26	2.8	9000	45	P	
55	Mn	1	49.470	ug/l	49.47	1.6	9000	74	P	
56	Fe	1	4929.000	ug/l	4,929.00	1.5	225000	74	A	
59	Co	1	50.130	ug/l	50.13	0.9	9000	74	P	
60	Ni	1	49.760	ug/l	49.76	0.5	9000	74	P	
63	Cu	1	50.030	ug/l	50.03	0.5	9000	74	P	
66	Zn	1	49.560	ug/l	49.56	1.0	9000	74	P	
75	As	1	49.100	ug/l	49.10	1.2	9000	74	P	
78	Se	1	48.940	ug/l	48.94	0.9	9000	74	P	
88	Sr	1	49.560	ug/l	49.56	1.4	9000	74	P	
95	Mo	1	48.950	ug/l	48.95	1.3	4500	103	P	
109	Ag	1	49.250	ug/l	49.25	1.4	900	103	P	
114	Cd	1	48.900	ug/l	48.90	1.4	9000	103	P	
118	Sn	1	48.760	ug/l	48.76	2.2	4500	103	P	
123	Sb	1	48.370	ug/l	48.37	1.9	900	103	P	
135	Ba	1	48.850	ug/l	48.85	1.2	9000	103	P	
200	Hg	1	2.390	ug/l	2.39	1.4	45	209	P	
205	Tl	1	49.470	ug/l	49.47	2.2	900	209	P	
208	Pb	1	49.000	ug/l	49.00	2.0	9000	209	P	
238	U	1	48.790	ug/l	48.79	3.3	9000	209	A	

ISTD Elements

IS	Mass	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)			Flag
6	Li	1	184652	1.41	195300	94.5	30	-	125	
45	Sc	1	2540809	1.40	2556000	99.4	30	-	125	
74	Ge	1	5335551	0.63	5397000	98.9	30	-	125	
103	Rh	1	7269134	0.25	7620000	95.4	30	-	125	
165	Ho	1	3439965	0.53	3508000	98.1	30	-	125	
175	Lu	1	3029114	1.46	3117000	97.2	30	-	125	
209	Bi	1	4017210	0.69	4252000	94.5	30	-	125	

Analytes: **Pass** **ISTD:** **Pass**

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

TA Seattle Sample Report 200.8/6020 7500ce ICPMS

Data File: C:\ICPCHEM\1\DATA\100812PM.B\021SMPL.D\021SMPL.D#
Date Acquired: Oct 8 2012 03:59 pm Acq. Method: 0000RUN.M
Sample Name: CCB Vial Number: 1306
Misc Info: STDS&RL&CCV 00012,ICV 00015,ICSA&ICSAB 100812

Current Method: C:\ICPCHEM\1\METHODS\00He REP.M Operator: FCW ICP-MS ID#SEA44
Calibration File: C:\ICPCHEM\1\CALIB\00He REP.C
Last Cal. Update: Oct 09 2012 06:13 am
ISTD Ref File : C:\ICPCHEM\1\DATA\100812PM.B\007CALB.D\007CALB.D#

Tune #	Name
1	:\1\7500\he.u
2	'CHEM\1\7500\
3	'CHEM\1\7500\

Dilution Factor: 1.00 Final Dil Factor: 1.00

QC Elements

Element		T#	Conc.	Units	Corr. Conc	RSD(%)	LDR	IS	P/A	Flag
9	Be	1	0.011	ug/l	0.01	57.5	9000	6	P	
23	Na	1	3.287	ug/l	3.29	13.7	450000	45	P	
24	Mg	1	1.489	ug/l	1.49	8.4	450000	45	P	
27	Al	1	1.598	ug/l	1.60	16.7	450000	45	P	
31	P	1	3.438	ug/l	3.44	48.5	450000	45	P	
39	K	1	-0.051	ug/l	-0.05	1409.5	450000	45	P	
44	Ca	1	4.137	ug/l	4.14	29.9	450000	45	P	
47	Ti	1	0.029	ug/l	0.03	7.8	4500	45	P	
51	V	1	-0.112	ug/l	-0.11	8.5	9000	45	P	
52	Cr	1	-0.005	ug/l	-0.01	193.0	9000	45	P	
55	Mn	1	0.008	ug/l	0.01	109.9	9000	74	P	
56	Fe	1	3.577	ug/l	3.58	9.2	225000	74	P	
59	Co	1	0.003	ug/l	0.00	92.9	9000	74	P	
60	Ni	1	0.000	ug/l	0.00	2993.7	9000	74	P	
63	Cu	1	-0.008	ug/l	-0.01	91.8	9000	74	P	
66	Zn	1	0.064	ug/l	0.06	15.4	9000	74	P	
75	As	1	0.020	ug/l	0.02	50.0	9000	74	P	
78	Se	1	0.050	ug/l	0.05	83.1	9000	74	P	
88	Sr	1	-0.001	ug/l	0.00	331.5	9000	74	P	
95	Mo	1	0.125	ug/l	0.12	17.7	4500	103	P	
109	Ag	1	0.004	ug/l	0.00	17.5	900	103	P	
114	Cd	1	0.002	ug/l	0.00	232.7	9000	103	P	
118	Sn	1	0.040	ug/l	0.04	49.5	4500	103	P	
123	Sb	1	0.053	ug/l	0.05	17.6	900	103	P	
135	Ba	1	0.012	ug/l	0.01	33.2	9000	103	P	
200	Hg	1	0.024	ug/l	0.02	6.5	45	209	P	
205	Tl	1	0.015	ug/l	0.02	20.2	900	209	P	
208	Pb	1	0.003	ug/l	0.00	54.1	9000	209	P	
238	U	1	0.005	ug/l	0.01	19.1	9000	209	P	

ISTD Elements

IS Mass		Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)			Flag
6	Li	1	187801	1.06	195300	96.2	30	-	125	
45	Sc	1	2582103	1.15	2556000	101.0	30	-	125	
74	Ge	1	5304907	1.07	5397000	98.3	30	-	125	
103	Rh	1	7431420	0.83	7620000	97.5	30	-	125	
165	Ho	1	3452477	1.49	3508000	98.4	30	-	125	
175	Lu	1	3042539	1.59	3117000	97.6	30	-	125	
209	Bi	1	4133665	0.84	4252000	97.2	30	-	125	

Analytes: **Pass** **ISTD:** **Pass**

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

TA Seattle Sample Report 200.8/6020 7500ce ICPMS

Data File: C:\ICPCHEM\1\DATA\100812PM.B\031SMPL.D\031SMPL.D#
Date Acquired: Oct 8 2012 04:37 pm Acq. Method: 0000RUN.M
Sample Name: CCV Vial Number: 1104
Misc Info: STDS&RL&CCV 00012,ICV 00015,ICSA&ICSAB 100812

Current Method: C:\ICPCHEM\1\METHODS\00He REP.M Operator: FCW ICP-MS ID#SEA44
Calibration File: C:\ICPCHEM\1\CALIB\00He REP.C
Last Cal. Update: Oct 09 2012 06:13 am
ISTD Ref File : C:\ICPCHEM\1\DATA\100812PM.B\007CALB.D\007CALB.D#

Tune #	Name
1	\1\7500\he.u
2	CHEM\1\7500\
3	CHEM\1\7500\

Dilution Factor: 1.00 Final Dil Factor: 1.00

QC Elements

Element		T#	Conc.	Units	Corr. Conc	RSD(%)	LDR	IS	P/A	Flag
9	Be	1	48.240	ug/l	48.24	2.4	9000	6	P	
23	Na	1	4833.000	ug/l	4,833.00	2.6	450000	45	A	
24	Mg	1	4891.000	ug/l	4,891.00	1.7	450000	45	A	
27	Al	1	491.100	ug/l	491.10	2.1	450000	45	P	
31	P	1	4899.000	ug/l	4,899.00	2.3	450000	45	P	
39	K	1	4935.000	ug/l	4,935.00	0.6	450000	45	A	
44	Ca	1	4935.000	ug/l	4,935.00	1.6	450000	45	P	
47	Ti	1	48.620	ug/l	48.62	2.3	4500	45	P	
51	V	1	48.460	ug/l	48.46	3.6	9000	45	P	
52	Cr	1	49.040	ug/l	49.04	3.1	9000	45	P	
55	Mn	1	49.390	ug/l	49.39	1.9	9000	74	P	
56	Fe	1	4944.000	ug/l	4,944.00	2.2	225000	74	A	
59	Co	1	49.380	ug/l	49.38	1.7	9000	74	P	
60	Ni	1	49.220	ug/l	49.22	2.5	9000	74	P	
63	Cu	1	49.180	ug/l	49.18	1.9	9000	74	P	
66	Zn	1	49.950	ug/l	49.95	2.2	9000	74	P	
75	As	1	48.810	ug/l	48.81	1.7	9000	74	P	
78	Se	1	49.590	ug/l	49.59	1.9	9000	74	P	
88	Sr	1	49.280	ug/l	49.28	1.5	9000	74	P	
95	Mo	1	47.570	ug/l	47.57	1.2	4500	103	P	
109	Ag	1	48.120	ug/l	48.12	1.0	900	103	P	
114	Cd	1	48.210	ug/l	48.21	0.9	9000	103	P	
118	Sn	1	48.210	ug/l	48.21	0.8	4500	103	P	
123	Sb	1	47.980	ug/l	47.98	1.3	900	103	P	
135	Ba	1	48.230	ug/l	48.23	1.4	9000	103	P	
200	Hg	1	2.355	ug/l	2.36	2.0	45	209	P	
205	Tl	1	49.250	ug/l	49.25	0.7	900	209	P	
208	Pb	1	48.580	ug/l	48.58	1.1	9000	209	P	
238	U	1	49.420	ug/l	49.42	2.0	9000	209	A	

ISTD Elements

IS Mass		Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)			Flag
6	Li	1	183685	1.13	195300	94.1	30	-	125	
45	Sc	1	2559993	1.19	2556000	100.2	30	-	125	
74	Ge	1	5389468	0.45	5397000	99.9	30	-	125	
103	Rh	1	7425665	0.53	7620000	97.4	30	-	125	
165	Ho	1	3540594	1.39	3508000	100.9	30	-	125	
175	Lu	1	3098625	0.55	3117000	99.4	30	-	125	
209	Bi	1	4185255	1.47	4252000	98.4	30	-	125	

Analytes: **Pass** **ISTD:** **Pass**

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

TA Seattle Sample Report 200.8/6020 7500ce ICPMS

Data File: C:\ICPCHEM\1\DATA\100812PM.B\032SMPL.D\032SMPL.D#
Date Acquired: Oct 8 2012 04:41 pm Acq. Method: 0000RUN.M
Sample Name: CCB Vial Number: 1306
Misc Info: STDS&RL&CCV 00012,ICV 00015,ICSA&ICSAB 100812

Current Method: C:\ICPCHEM\1\METHODS\00He REP.M Operator: FCW ICP-MS ID#SEA44
Calibration File: C:\ICPCHEM\1\CALIB\00He REP.C
Last Cal. Update: Oct 09 2012 06:13 am
ISTD Ref File : C:\ICPCHEM\1\DATA\100812PM.B\007CALB.D\007CALB.D#

Tune #	Name
1	\1\7500\he.u
2	CHEM\1\7500\
3	CHEM\1\7500\

Dilution Factor: 1.00 Final Dil Factor: 1.00

QC Elements

Element		T#	Conc.	Units	Corr. Conc	RSD(%)	LDR	IS	P/A	Flag
9	Be	1	0.007	ug/l	0.01	127.6	9000	6	P	
23	Na	1	0.510	ug/l	0.51	39.0	450000	45	P	
24	Mg	1	0.383	ug/l	0.38	12.9	450000	45	P	
27	Al	1	0.545	ug/l	0.55	10.3	450000	45	P	
31	P	1	2.553	ug/l	2.55	32.3	450000	45	P	
39	K	1	-0.763	ug/l	-0.76	123.9	450000	45	P	
44	Ca	1	-0.207	ug/l	-0.21	721.1	450000	45	P	
47	Ti	1	0.006	ug/l	0.01	153.5	4500	45	P	
51	V	1	-0.051	ug/l	-0.05	55.1	9000	45	P	
52	Cr	1	0.012	ug/l	0.01	97.7	9000	45	P	
55	Mn	1	0.007	ug/l	0.01	32.7	9000	74	P	
56	Fe	1	0.550	ug/l	0.55	3.1	225000	74	P	
59	Co	1	0.002	ug/l	0.00	125.3	9000	74	P	
60	Ni	1	-0.004	ug/l	0.00	43.3	9000	74	P	
63	Cu	1	-0.028	ug/l	-0.03	19.1	9000	74	P	
66	Zn	1	0.054	ug/l	0.05	30.1	9000	74	P	
75	As	1	0.008	ug/l	0.01	194.2	9000	74	P	
78	Se	1	0.068	ug/l	0.07	107.4	9000	74	P	
88	Sr	1	0.002	ug/l	0.00	139.2	9000	74	P	
95	Mo	1	0.038	ug/l	0.04	18.7	4500	103	P	
109	Ag	1	0.004	ug/l	0.00	53.1	900	103	P	
114	Cd	1	0.003	ug/l	0.00	140.5	9000	103	P	
118	Sn	1	0.039	ug/l	0.04	10.2	4500	103	P	
123	Sb	1	0.053	ug/l	0.05	22.8	900	103	P	
135	Ba	1	0.009	ug/l	0.01	92.7	9000	103	P	
200	Hg	1	0.020	ug/l	0.02	23.0	45	209	P	
205	Tl	1	0.014	ug/l	0.01	3.2	900	209	P	
208	Pb	1	0.004	ug/l	0.00	46.5	9000	209	P	
238	U	1	0.007	ug/l	0.01	22.3	9000	209	P	

ISTD Elements

IS	Mass	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)			Flag
6	Li	1	189769	1.44	195300	97.2	30	-	125	
45	Sc	1	2595118	1.09	2556000	101.5	30	-	125	
74	Ge	1	5396443	0.22	5397000	100.0	30	-	125	
103	Rh	1	7572416	0.95	7620000	99.4	30	-	125	
165	Ho	1	3565745	0.67	3508000	101.6	30	-	125	
175	Lu	1	3159893	0.70	3117000	101.4	30	-	125	
209	Bi	1	4353642	1.48	4252000	102.4	30	-	125	

Analytes: **Pass** **ISTD:** **Pass**

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

TA Seattle Sample Report 200.8/6020 7500ce ICPMS

Data File: C:\ICPCHEM\1\DATA\100812PM.B\040SMPL.D\040SMPL.D#
Date Acquired: Oct 8 2012 05:11 pm Acq. Method: 0000RUN.M
Sample Name: CCV Vial Number: 1104
Misc Info: STDS&RL&CCV 00012,ICV 00015,ICSA&ICSAB 100812

Current Method: C:\ICPCHEM\1\METHODS\00He REP.M Operator: FCW ICP-MS ID#SEA44
Calibration File: C:\ICPCHEM\1\CALIB\00He REP.C
Last Cal. Update: Oct 09 2012 06:13 am
ISTD Ref File : C:\ICPCHEM\1\DATA\100813PM.B\007CALB.D\007CALB.D#

Tune #	Name
1	\1\7500\he.u
2	CHEM\1\7500\
3	CHEM\1\7500\

Dilution Factor: 1.00 Final Dil Factor: 1.00

QC Elements

Element		T#	Conc.	Units	Corr. Conc	RSD(%)	LDR	IS	P/A	Flag
9	Be	1	48.640	ug/l	48.64	0.8	9000	6	P	
23	Na	1	4876.000	ug/l	4,876.00	2.1	450000	45	A	
24	Mg	1	4909.000	ug/l	4,909.00	2.8	450000	45	A	
27	Al	1	488.400	ug/l	488.40	2.1	450000	45	P	
31	P	1	4883.000	ug/l	4,883.00	2.0	450000	45	P	
39	K	1	4941.000	ug/l	4,941.00	0.4	450000	45	A	
44	Ca	1	4917.000	ug/l	4,917.00	1.8	450000	45	P	
47	Ti	1	48.550	ug/l	48.55	1.6	4500	45	P	
51	V	1	48.230	ug/l	48.23	1.5	9000	45	P	
52	Cr	1	48.690	ug/l	48.69	1.5	9000	45	P	
55	Mn	1	49.440	ug/l	49.44	0.7	9000	74	P	
56	Fe	1	4909.000	ug/l	4,909.00	0.7	225000	74	A	
59	Co	1	49.320	ug/l	49.32	1.6	9000	74	P	
60	Ni	1	49.160	ug/l	49.16	1.8	9000	74	P	
63	Cu	1	49.350	ug/l	49.35	1.3	9000	74	P	
66	Zn	1	49.910	ug/l	49.91	1.1	9000	74	P	
75	As	1	49.210	ug/l	49.21	0.7	9000	74	P	
78	Se	1	49.570	ug/l	49.57	1.9	9000	74	P	
88	Sr	1	49.890	ug/l	49.89	1.1	9000	74	P	
95	Mo	1	48.610	ug/l	48.61	1.6	4500	103	P	
109	Ag	1	49.200	ug/l	49.20	2.4	900	103	P	
114	Cd	1	49.100	ug/l	49.10	2.3	9000	103	P	
118	Sn	1	48.990	ug/l	48.99	2.1	4500	103	P	
123	Sb	1	48.590	ug/l	48.59	2.6	900	103	P	
135	Ba	1	48.920	ug/l	48.92	2.3	9000	103	P	
200	Hg	1	2.380	ug/l	2.38	1.0	45	209	P	
205	Tl	1	49.620	ug/l	49.62	2.5	900	209	P	
208	Pb	1	49.190	ug/l	49.19	1.3	9000	209	P	
238	U	1	48.790	ug/l	48.79	1.2	9000	209	A	

ISTD Elements

IS	Mass	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)			Flag
6	Li	1	180886	1.05	195300	92.6	30	-	125	
45	Sc	1	2570429	0.68	2556000	100.6	30	-	125	
74	Ge	1	5347258	0.21	5397000	99.1	30	-	125	
103	Rh	1	7302144	1.36	7620000	95.8	30	-	125	
165	Ho	1	3475554	1.61	3508000	99.1	30	-	125	
175	Lu	1	3065861	0.43	3117000	98.4	30	-	125	
209	Bi	1	4134719	0.97	4252000	97.2	30	-	125	

Analytes: Pass ISTD: Pass

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

TA Seattle Sample Report 200.8/6020 7500ce ICPMS

Data File: C:\ICPCHEM\1\DATA\100812PM.B\041SMPL.D\041SMPL.D#
Date Acquired: Oct 8 2012 05:15 pm Acq. Method: 0000RUN.M
Sample Name: CCB Vial Number: 1306
Misc Info: STDS&RL&CCV 00012,ICV 00015,ICSA&ICSAB 100812

Current Method: C:\ICPCHEM\1\METHODS\00He REP.M Operator: FCW ICP-MS ID#SEA44

Tune #	Name
1	1\1\7500\he.c
2	CHEM\1\7500\
3	CHEM\1\7500\

Calibration File: C:\ICPCHEM\1\CALIB\00He REP.C
Last Cal. Update: Oct 09 2012 06:13 am
ISTD Ref File : C:\ICPCHEM\1\DATA\100812PM.B\007CALB.D\007CALB.D#

Dilution Factor: 1.00 Final Dil Factor: 1.00

QC Elements

Element		T#	Conc.	Units	Corr. Conc	RSD(%)	LDR	IS	P/A	Flag
9	Be	1	0.013	ug/l	0.01	42.0	9000	6	P	
23	Na	1	-0.551	ug/l	-0.55	89.7	450000	45	P	
24	Mg	1	0.283	ug/l	0.28	34.6	450000	45	P	
27	Al	1	0.339	ug/l	0.34	25.7	450000	45	P	
31	P	1	0.696	ug/l	0.70	354.9	450000	45	P	
39	K	1	-1.540	ug/l	-1.54	31.5	450000	45	P	
44	Ca	1	0.110	ug/l	0.11	1860.0	450000	45	P	
47	Ti	1	-0.003	ug/l	0.00	106.3	4500	45	P	
51	V	1	-0.057	ug/l	-0.06	29.3	9000	45	P	
52	Cr	1	0.001	ug/l	0.00	370.1	9000	45	P	
55	Mn	1	0.004	ug/l	0.00	65.4	9000	74	P	
56	Fe	1	0.448	ug/l	0.45	20.9	225000	74	P	
59	Co	1	0.001	ug/l	0.00	255.9	9000	74	P	
60	Ni	1	0.002	ug/l	0.00	382.9	9000	74	P	
63	Cu	1	-0.058	ug/l	-0.06	40.7	9000	74	P	
66	Zn	1	0.016	ug/l	0.02	137.0	9000	74	P	
75	As	1	0.002	ug/l	0.00	737.1	9000	74	P	
78	Se	1	0.078	ug/l	0.08	88.9	9000	74	P	
88	Sr	1	0.006	ug/l	0.01	25.4	9000	74	P	
95	Mo	1	0.039	ug/l	0.04	7.7	4500	103	P	
109	Ag	1	0.005	ug/l	0.00	45.7	900	103	P	
114	Cd	1	0.002	ug/l	0.00	65.2	9000	103	P	
118	Sn	1	0.031	ug/l	0.03	17.8	4500	103	P	
123	Sb	1	0.050	ug/l	0.05	20.2	900	103	P	
135	Ba	1	0.009	ug/l	0.01	55.0	9000	103	P	
200	Hg	1	0.012	ug/l	0.01	44.6	45	209	P	
205	Tl	1	0.014	ug/l	0.01	10.4	900	209	P	
208	Pb	1	0.001	ug/l	0.00	229.6	9000	209	P	
238	U	1	0.007	ug/l	0.01	14.1	9000	209	P	

ISTD Elements

IS Mass		Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)			Flag
6	Li	1	188934	0.46	195300	96.7	30	-	125	
45	Sc	1	2626319	1.29	2556000	102.8	30	-	125	
74	Ge	1	5495460	2.01	5397000	101.8	30	-	125	
103	Rh	1	7669750	0.44	7620000	100.7	30	-	125	
165	Ho	1	3569843	0.82	3508000	101.8	30	-	125	
175	Lu	1	3150355	0.99	3117000	101.1	30	-	125	
209	Bi	1	4358010	0.37	4252000	102.5	30	-	125	

Analytes: Pass ISTD: Pass

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

TA Seattle Sample Report 200.8/6020 7500ce ICPMS

Data File: C:\ICPCHEM\1\DATA\100812PM.B\049SMPL.D\049SMPL.D#
Date Acquired: Oct 8 2012 05:45 pm Acq. Method: 0000RUN.M
Sample Name: CCV Vial Number: 1104
Misc Info: STDS&RL&CCV 00012,ICV 00015,ICSA&ICSAB 100812

Current Method: C:\ICPCHEM\1\METHODS\00He REP.M Operator: FCW ICP-MS ID#SEA44
Calibration File: C:\ICPCHEM\1\CALIB\00He REP.C
Last Cal. Update: Oct 09 2012 06:13 am
ISTD Ref File : C:\ICPCHEM\1\DATA\100812PM.B\007CALB.D\007CALB.D#

Tune #	Name
1	\1\7500\be.u
2	CHEM\1\7500\
3	CHEM\1\7500\

Dilution Factor: 1.00 Final Dil Factor: 1.00

QC Elements

Element		T#	Conc.	Units	Corr. Conc	RSD(%)	LDR	IS	P/A	Flag
9	Be	1	49.260	ug/l	49.26	0.2	9000	6	P	
23	Na	1	4901.000	ug/l	4,901.00	2.8	450000	45	A	
24	Mg	1	4972.000	ug/l	4,972.00	1.5	450000	45	A	
27	Al	1	498.100	ug/l	498.10	2.3	450000	45	P	
31	P	1	4964.000	ug/l	4,964.00	1.8	450000	45	P	
39	K	1	4976.000	ug/l	4,976.00	1.3	450000	45	A	
44	Ca	1	4990.000	ug/l	4,990.00	1.4	450000	45	P	
47	Ti	1	49.460	ug/l	49.46	1.8	4500	45	P	
51	V	1	49.410	ug/l	49.41	1.2	9000	45	P	
52	Cr	1	49.880	ug/l	49.88	1.3	9000	45	P	
55	Mn	1	49.540	ug/l	49.54	0.9	9000	74	P	
56	Fe	1	4920.000	ug/l	4,920.00	0.7	225000	74	A	
59	Co	1	49.390	ug/l	49.39	1.0	9000	74	P	
60	Ni	1	49.080	ug/l	49.08	1.7	9000	74	P	
63	Cu	1	49.320	ug/l	49.32	1.9	9000	74	P	
66	Zn	1	49.580	ug/l	49.58	1.9	9000	74	P	
75	As	1	49.310	ug/l	49.31	1.3	9000	74	P	
78	Se	1	49.720	ug/l	49.72	0.7	9000	74	P	
88	Sr	1	50.130	ug/l	50.13	0.9	9000	74	P	
95	Mo	1	49.080	ug/l	49.08	0.2	4500	103	P	
109	Ag	1	49.650	ug/l	49.65	0.7	900	103	P	
114	Cd	1	49.580	ug/l	49.58	1.0	9000	103	P	
118	Sn	1	49.460	ug/l	49.46	1.2	4500	103	P	
123	Sb	1	49.080	ug/l	49.08	0.7	900	103	P	
135	Ba	1	49.290	ug/l	49.29	0.3	9000	103	P	
200	Hg	1	2.367	ug/l	2.37	2.1	45	209	P	
205	Tl	1	49.690	ug/l	49.69	2.0	900	209	P	
208	Pb	1	49.180	ug/l	49.18	1.6	9000	209	P	
238	U	1	49.280	ug/l	49.28	2.1	9000	209	A	

ISTD Elements

IS Mass		Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)			Flag
6	Li	1	177552	0.98	195300	90.9	30	-	125	
45	Sc	1	2527654	1.69	2556000	98.9	30	-	125	
74	Ge	1	5385192	0.16	5397000	99.8	30	-	125	
103	Rh	1	7310951	1.05	7620000	95.9	30	-	125	
165	Ho	1	3539335	0.79	3508000	100.9	30	-	125	
175	Lu	1	3119907	0.79	3117000	100.1	30	-	125	
209	Bi	1	4195761	0.76	4252000	98.7	30	-	125	

Analytes: **Pass** **ISTD:** **Pass**

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

TA Seattle Sample Report 200.8/6020 7500ce ICPMS

Data File: C:\ICPCHEM\1\DATA\100812PM.B\050SMPL.D\050SMPL.D#
Date Acquired: Oct 8 2012 05:49 pm Acq. Method: 0000RUN.M
Sample Name: CCB Vial Number: 1306
Misc Info: STDS&RL&CCV 00012,ICV 00015,ICSA&ICSAB 100812

Current Method: C:\ICPCHEM\1\METHODS\00He REP.M Operator: FCW ICP-MS ID#SEA44
Calibration File: C:\ICPCHEM\1\CALIB\00He REP.C
Last Cal. Update: Oct 09 2012 06:13 am
ISTD Ref File : C:\ICPCHEM\1\DATA\100812PM.B\007CALB.D\007CALB.D#

Tune #	Name
1	\1\7500\he.u
2	CHEM\1\7500\
3	CHEM\1\7500\

Dilution Factor: 1.00 Final Dil Factor: 1.00

QC Elements

Element		T#	Conc.	Units	Corr. Conc	RSD(%)	LDR	IS	P/A	Flag
9	Be	1	0.004	ug/l	0.00	162.8	9000	6	P	
23	Na	1	1.264	ug/l	1.26	30.4	450000	45	P	
24	Mg	1	0.368	ug/l	0.37	24.5	450000	45	P	
27	Al	1	0.394	ug/l	0.39	34.3	450000	45	P	
31	P	1	0.540	ug/l	0.54	191.5	450000	45	P	
39	K	1	0.043	ug/l	0.04	1842.3	450000	45	P	
44	Ca	1	-0.165	ug/l	-0.17	601.9	450000	45	P	
47	Ti	1	0.007	ug/l	0.01	9.8	4500	45	P	
51	V	1	-0.081	ug/l	-0.08	22.4	9000	45	P	
52	Cr	1	0.011	ug/l	0.01	105.1	9000	45	P	
55	Mn	1	0.004	ug/l	0.00	35.7	9000	74	P	
56	Fe	1	0.511	ug/l	0.51	5.1	225000	74	P	
59	Co	1	0.004	ug/l	0.00	21.4	9000	74	P	
60	Ni	1	0.002	ug/l	0.00	253.6	9000	74	P	
63	Cu	1	-0.042	ug/l	-0.04	41.6	9000	74	P	
66	Zn	1	0.041	ug/l	0.04	86.3	9000	74	P	
75	As	1	-0.002	ug/l	0.00	962.7	9000	74	P	
78	Se	1	0.106	ug/l	0.11	12.0	9000	74	P	
88	Sr	1	0.006	ug/l	0.01	81.6	9000	74	P	
95	Mo	1	0.044	ug/l	0.04	11.1	4500	103	P	
109	Ag	1	0.004	ug/l	0.00	24.0	900	103	P	
114	Cd	1	0.000	ug/l	0.00	14794.0	9000	103	P	
118	Sn	1	0.033	ug/l	0.03	21.7	4500	103	P	
123	Sb	1	0.048	ug/l	0.05	6.1	900	103	P	
135	Ba	1	0.007	ug/l	0.01	18.7	9000	103	P	
200	Hg	1	0.017	ug/l	0.02	22.8	45	209	P	
205	Tl	1	0.018	ug/l	0.02	7.8	900	209	P	
208	Pb	1	0.003	ug/l	0.00	149.7	9000	209	P	
238	U	1	0.007	ug/l	0.01	21.4	9000	209	P	

ISTD Elements

IS	Mass	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)			Flag
6	Li	1	183497	0.12	195300	94.0	30	-	125	
45	Sc	1	2563582	1.42	2556000	100.3	30	-	125	
74	Ge	1	5428998	1.32	5397000	100.6	30	-	125	
103	Rh	1	7573034	2.38	7620000	99.4	30	-	125	
165	Ho	1	3575624	1.81	3508000	101.9	30	-	125	
175	Lu	1	3164266	0.76	3117000	101.5	30	-	125	
209	Bi	1	4287496	1.39	4252000	100.8	30	-	125	

Analytes: **Pass** **ISTD:** **Pass**

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

TA Seattle ICP-MS
Soil MDL Studies
10/05/2012
FCW

SOIL MDL#1

ELEMENT	Result (ug / L)	Result (ug / L)	Result (ug / L)	Result (ug / L)	Result (ug / L)	Result (ug / L)	Result (ug / L)	Std Dev	**MDL** (ug / L)
Beryllium	0.03	0.035	0.036	0.034	0.032	0.016	0.034	0.006	**0.020**
Sodium	-0.668	-0.962	-0.216	-0.905	-1.358	-1.041	-1.159	0.343	**1.076**
Magnesium	0.169	0.091	0.066	0.051	0.018	0.032	0.043	0.047	**0.147**
Aluminum	2.746	2.624	2.454	2.404	2.32	2.777	5.083	0.899	**2.824**
Phosphorus	0.061	0.66	1.117	0.636	1.055	0.392	1.431	0.433	**1.360**
Potassium	-0.964	-0.851	-0.449	-1.245	-0.657	0.39	0.369	0.594	**1.864**
Calcium	1.628	1.343	1.164	0.974	0.607	1.243	0.89	0.308	**0.966**
Titanium	0.152	0.167	0.145	0.121	0.148	0.151	0.155	0.013	**0.041**
Vanadium	0.065	0.07	0.084	0.082	0.092	0.088	0.103	0.012	**0.038**
Chromium	0.046	0.046	0.05	0.051	0.054	0.049	0.053	0.003	**0.009**
Manganese	0.07	0.056	0.063	0.057	0.059	0.061	0.066	0.005	**0.015**
Iron	2.366	2.216	2.275	2.149	2.175	2.695	2.292	0.172	**0.539**
Cobalt	0.028	0.027	0.027	0.027	0.025	0.023	0.025	0.002	**0.005**
Nickel	0.125	0.112	0.106	0.095	0.099	0.117	0.113	0.010	**0.030**
Copper	-0.019	-0.01	-0.011	-0.029	-0.014	-0.011	-0.013	0.006	**0.020**
Zinc	0.264	0.281	0.258	0.237	0.246	0.236	0.247	0.015	**0.047**
Arsenic	0.166	0.145	0.16	0.148	0.151	0.153	0.163	0.007	**0.023**
Selenium	0.267	0.2	0.205	0.252	0.197	0.247	0.241	0.026	**0.083**
Strontium	0.034	0.039	0.041	0.04	0.04	0.04	0.034	0.003	**0.009**
Molybdenum	0.11	0.099	0.101	0.092	0.097	0.1	0.1	0.005	**0.016**
Silver	0.012	0.01	0.011	0.01	0.009	0.01	0.011	0.001	**0.003**
Cadmium	0.008	0.007	0.008	0.009	0.009	0.004	0.006	0.002	**0.005**
Tin	0.105	0.092	0.091	0.085	0.102	0.085	0.091	0.007	**0.023**
Antimony	0.051	0.041	0.042	0.038	0.033	0.034	0.037	0.006	**0.018**
Barium	0.047	0.04	0.04	0.045	0.044	0.047	0.039	0.003	**0.010**
Mercury	0.016	0.009	0.015	0.011	0.009	0.008	0.008	0.003	**0.010**
Thallium	0.112	0.105	0.106	0.094	0.099	0.087	0.1	0.008	**0.024**
Lead	0.017	0.013	0.012	0.009	0.013	0.01	0.015	0.003	**0.008**
Uranium	0.021	0.02	0.019	0.019	0.019	0.019	0.018	0.001	**0.003**

10/5/12

10/16/12

TA Seattle Sample Report 200.8/6020 7500ce ICPMS

Data File: C:\ICPCHEM\1\DATA\100512AM.B\036SMPL.D\036SMPL.D#
Date Acquired: Oct 5 2012 01:09 pm Acq. Method: 0000RUN.M
Sample Name: MDL(S)01-1 Vial Number: 2302
Misc Info: STDS&RL&CCV 00012,ICV 00015,ICSA&ICSAB 100212

Current Method: C:\ICPCHEM\1\METHODS\00He REP.M Operator: FCW ICP-MS ID#SEA44
Calibration File: C:\ICPCHEM\1\CALIB\00He REP.C
Last Cal. Update: Oct 08 2012 08:26 am
ISTD Ref File : C:\ICPCHEM\1\DATA\100512AM.B\005CALB.D\005CALB.D#

Tune #	Name
1	\1\7500\he.u
2	CHEM\1\7500\
3	CHEM\1\7500\

Dilution Factor: 1.00 Final Dil Factor: 1.00

QC Elements

Element		T#	Conc.	Units	Corr. Conc	RSD(%)	LDR	IS	P/A	Flag
9	Be	1	0.030	ug/l	0.03	9.1	9000	6	P	
23	Na	1	-0.668	ug/l	-0.67	48.5	450000	45	P	
24	Mg	1	0.169	ug/l	0.17	19.2	450000	45	P	
27	Al	1	2.746	ug/l	2.75	6.4	450000	45	P	
31	P	1	0.061	ug/l	0.06	3710.5	450000	45	P	
39	K	1	-0.964	ug/l	-0.96	46.4	450000	45	P	
44	Ca	1	1.628	ug/l	1.63	49.4	450000	45	P	
47	Ti	1	0.152	ug/l	0.15	18.1	4500	45	P	
51	V	1	0.065	ug/l	0.06	34.2	9000	45	P	
52	Cr	1	0.046	ug/l	0.05	18.9	9000	45	P	
55	Mn	1	0.070	ug/l	0.07	24.5	9000	74	P	
56	Fe	1	2.366	ug/l	2.37	5.1	225000	74	P	
59	Co	1	0.028	ug/l	0.03	12.8	9000	74	P	
60	Ni	1	0.125	ug/l	0.13	4.4	9000	74	P	
63	Cu	1	-0.019	ug/l	-0.02	158.7	9000	74	P	
66	Zn	1	0.264	ug/l	0.26	15.0	9000	74	P	
75	As	1	0.166	ug/l	0.17	5.8	9000	74	P	
78	Se	1	0.267	ug/l	0.27	16.4	9000	74	P	
88	Sr	1	0.034	ug/l	0.03	27.6	9000	74	P	
95	Mo	1	0.110	ug/l	0.11	1.5	4500	103	P	
109	Ag	1	0.012	ug/l	0.01	16.2	900	103	P	
114	Cd	1	0.008	ug/l	0.01	43.7	9000	103	P	
118	Sn	1	0.105	ug/l	0.10	4.0	4500	103	P	
123	Sb	1	0.051	ug/l	0.05	13.4	900	103	P	
135	Ba	1	0.047	ug/l	0.05	3.2	9000	103	P	
200	Hg	1	0.016	ug/l	0.02	7.9	45	209	P	
205	Tl	1	0.112	ug/l	0.11	1.6	900	209	P	
208	Pb	1	0.017	ug/l	0.02	21.4	9000	209	P	
238	U	1	0.021	ug/l	0.02	10.0	9000	209	P	

ISTD Elements

IS Mass		Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)			Flag
6	Li	1	192331	0.39	198000	97.1	30	-	125	
45	Sc	1	2657819	1.97	2483000	107.0	30	-	125	
74	Ge	1	5334274	0.83	5068000	105.3	30	-	125	
103	Rh	1	7334183	0.38	7158000	102.5	30	-	125	
165	Ho	1	3218930	1.03	3077000	104.6	30	-	125	
175	Lu	1	2757622	1.05	2625000	105.1	30	-	125	
209	Bi	1	3763237	0.73	3656000	102.9	30	-	125	

Analytes: **Pass** **ISTD:** **Pass**

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

TA Seattle Sample Report 200.8/6020 7500ce ICPMS

Data File: C:\ICPCHEM\1\DATA\100512AM.B\037SMPL.D\037SMPL.D#
Date Acquired: Oct 5 2012 01:13 pm Acq. Method: 0000RUN.M
Sample Name: MDL(S)01-2 Vial Number: 2303
Misc Info: STDS&RL&CCV 00012,ICV 00015,ICSA&ICSAB 100212

Current Method: C:\ICPCHEM\1\METHODS\00He REP.M Operator: FCW ICP-MS ID#SEA44
Calibration File: C:\ICPCHEM\1\CALIB\00He REP.C
Last Cal. Update: Oct 08 2012 08:26 am
ISTD Ref File : C:\ICPCHEM\1\DATA\100512AM.B\005CALB.D\005CALB.D#

Tune #	Name
1	\1\7500\he.u
2	CHEM\1\7500\
3	CHEM\1\7500\

Dilution Factor: 1.00 Final Dil Factor: 1.00

QC Elements

Element		T#	Conc.	Units	Corr. Conc	RSD(%)	LDR	IS	P/A	Flag
9	Be	1	0.035	ug/l	0.04	28.4	9000	6	P	
23	Na	1	-0.962	ug/l	-0.96	43.4	450000	45	P	
24	Mg	1	0.091	ug/l	0.09	6.5	450000	45	P	
27	Al	1	2.624	ug/l	2.62	5.8	450000	45	P	
31	P	1	0.660	ug/l	0.66	219.8	450000	45	P	
39	K	1	-0.851	ug/l	-0.85	128.0	450000	45	P	
44	Ca	1	1.343	ug/l	1.34	42.5	450000	45	P	
47	Ti	1	0.167	ug/l	0.17	7.0	4500	45	P	
51	V	1	0.070	ug/l	0.07	83.2	9000	45	P	
52	Cr	1	0.046	ug/l	0.05	16.3	9000	45	P	
55	Mn	1	0.056	ug/l	0.06	19.9	9000	74	P	
56	Fe	1	2.216	ug/l	2.22	1.5	225000	74	P	
59	Co	1	0.027	ug/l	0.03	7.2	9000	74	P	
60	Ni	1	0.112	ug/l	0.11	3.6	9000	74	P	
63	Cu	1	-0.010	ug/l	-0.01	100.9	9000	74	P	
66	Zn	1	0.281	ug/l	0.28	3.3	9000	74	P	
75	As	1	0.145	ug/l	0.15	3.4	9000	74	P	
78	Se	1	0.200	ug/l	0.20	21.4	9000	74	P	
88	Sr	1	0.039	ug/l	0.04	16.5	9000	74	P	
95	Mo	1	0.099	ug/l	0.10	7.7	4500	103	P	
109	Ag	1	0.010	ug/l	0.01	0.9	900	103	P	
114	Cd	1	0.007	ug/l	0.01	112.4	9000	103	P	
118	Sn	1	0.092	ug/l	0.09	6.7	4500	103	P	
123	Sb	1	0.041	ug/l	0.04	8.9	900	103	P	
135	Ba	1	0.040	ug/l	0.04	9.5	9000	103	P	
200	Hg	1	0.009	ug/l	0.01	12.0	45	209	P	
205	Tl	1	0.105	ug/l	0.11	7.3	900	209	P	
208	Pb	1	0.013	ug/l	0.01	27.3	9000	209	P	
238	U	1	0.020	ug/l	0.02	8.1	9000	209	P	

ISTD Elements

IS	Mass	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)			Flag
6	Li	1	192288	0.32	198000	97.1	30	-	125	
45	Sc	1	2664027	2.62	2483000	107.3	30	-	125	
74	Ge	1	5320976	1.43	5068000	105.0	30	-	125	
103	Rh	1	7310022	1.31	7158000	102.1	30	-	125	
165	Ho	1	3190615	1.07	3077000	103.7	30	-	125	
175	Lu	1	2735019	2.55	2625000	104.2	30	-	125	
209	Bi	1	3774280	0.98	3656000	103.2	30	-	125	

Analytes: **Pass** **ISTD:** **Pass**

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

TA Seattle Sample Report 200.8/6020 7500ce ICPMS

Data File: C:\ICPCHEM\1\DATA\100512AM.B\038SMPL.D\038SMPL.D#
Date Acquired: Oct 5 2012 01:17 pm Acq. Method: 0000RUN.M
Sample Name: MDL(S)01-3 Vial Number: 2304
Misc Info: STDS&RL&CCV 00012,ICV 00015,ICSA&ICSAB 100212

Current Method: C:\ICPCHEM\1\METHODS\00He REP.M Operator: FCW ICP-MS ID#SEA44
Calibration File: C:\ICPCHEM\1\CALIB\00He REP.C
Last Cal. Update: Oct 08 2012 08:26 am
ISTD Ref File : C:\ICPCHEM\1\DATA\100512AM.B\005CALB.D\005CALB.D#

Tune #	Name
1	\1\7500\he.u
2	CHEM\1\7500\
3	CHEM\1\7500\

Dilution Factor: 1.00 Final Dil Factor: 1.00

QC Elements

Element		T#	Conc.	Units	Corr. Conc	RSD(%)	LDR	IS	P/A	Flag
9	Be	1	0.036	ug/l	0.04	26.8	9000	6	P	
23	Na	1	-0.216	ug/l	-0.22	821.4	450000	45	P	
24	Mg	1	0.066	ug/l	0.07	53.0	450000	45	P	
27	Al	1	2.454	ug/l	2.45	9.4	450000	45	P	
31	P	1	1.117	ug/l	1.12	110.3	450000	45	P	
39	K	1	-0.449	ug/l	-0.45	301.8	450000	45	P	
44	Ca	1	1.164	ug/l	1.16	17.1	450000	45	P	
47	Ti	1	0.145	ug/l	0.15	8.1	4500	45	P	
51	V	1	0.084	ug/l	0.08	16.2	9000	45	P	
52	Cr	1	0.050	ug/l	0.05	45.3	9000	45	P	
55	Mn	1	0.063	ug/l	0.06	19.2	9000	74	P	
56	Fe	1	2.275	ug/l	2.28	2.8	225000	74	P	
59	Co	1	0.027	ug/l	0.03	3.8	9000	74	P	
60	Ni	1	0.106	ug/l	0.11	21.5	9000	74	P	
63	Cu	1	-0.011	ug/l	-0.01	165.5	9000	74	P	
66	Zn	1	0.258	ug/l	0.26	1.3	9000	74	P	
75	As	1	0.160	ug/l	0.16	4.7	9000	74	P	
78	Se	1	0.205	ug/l	0.20	19.8	9000	74	P	
88	Sr	1	0.041	ug/l	0.04	7.1	9000	74	P	
95	Mo	1	0.101	ug/l	0.10	4.5	4500	103	P	
109	Ag	1	0.011	ug/l	0.01	4.7	900	103	P	
114	Cd	1	0.008	ug/l	0.01	27.5	9000	103	P	
118	Sn	1	0.091	ug/l	0.09	14.4	4500	103	P	
123	Sb	1	0.042	ug/l	0.04	8.5	900	103	P	
135	Ba	1	0.040	ug/l	0.04	2.4	9000	103	P	
200	Hg	1	0.015	ug/l	0.02	14.0	45	209	P	
205	Tl	1	0.106	ug/l	0.11	2.6	900	209	P	
208	Pb	1	0.012	ug/l	0.01	44.0	9000	209	P	
238	U	1	0.019	ug/l	0.02	13.3	9000	209	P	

ISTD Elements

IS	Mass	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)			Flag
6	Li	1	194895	1.05	198000	98.4	30	-	125	
45	Sc	1	2667487	1.51	2483000	107.4	30	-	125	
74	Ge	1	5304758	0.63	5068000	104.7	30	-	125	
103	Rh	1	7361516	1.74	7158000	102.8	30	-	125	
165	Ho	1	3226652	1.07	3077000	104.9	30	-	125	
175	Lu	1	2760467	1.05	2625000	105.2	30	-	125	
209	Bi	1	3771078	0.12	3656000	103.1	30	-	125	

Analytes: **Pass** **ISTD:** **Pass**

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

TA Seattle Sample Report 200.8/6020 7500ce ICPMS

Data File: C:\ICPCHEM\1\DATA\100512AM.B\039SMPL.D\039SMPL.D#
Date Acquired: Oct 5 2012 01:21 pm Acq. Method: 0000RUN.M
Sample Name: MDL(S)01-4 Vial Number: 2305
Misc Info: STDS&RL&CCV 00012,ICV 00015,ICSA&ICSAB 100212

Current Method: C:\ICPCHEM\1\METHODS\00He REP.M Operator: FCW ICP-MS ID#SEA44
Calibration File: C:\ICPCHEM\1\CALIB\00He REP.C
Last Cal. Update: Oct 08 2012 08:26 am
ISTD Ref File : C:\ICPCHEM\1\DATA\100512AM.B\005CALB.D\005CALB.D#

Tune #	Name
1	\1\7500\he.u
2	CHEM\1\7500\
3	CHEM\1\7500\

Dilution Factor: 1.00 Final Dil Factor: 1.00

QC Elements

Element		T#	Conc.	Units	Corr. Conc	RSD(%)	LDR	IS	P/A	Flag
9	Be	1	0.034	ug/l	0.03	20.4	9000	6	P	
23	Na	1	-0.905	ug/l	-0.91	51.9	450000	45	P	
24	Mg	1	0.051	ug/l	0.05	34.3	450000	45	P	
27	Al	1	2.404	ug/l	2.40	4.7	450000	45	P	
31	P	1	0.636	ug/l	0.64	106.1	450000	45	P	
39	K	1	-1.245	ug/l	-1.25	113.8	450000	45	P	
44	Ca	1	0.974	ug/l	0.97	36.9	450000	45	P	
47	Ti	1	0.121	ug/l	0.12	11.1	4500	45	P	
51	V	1	0.082	ug/l	0.08	49.6	9000	45	P	
52	Cr	1	0.051	ug/l	0.05	26.6	9000	45	P	
55	Mn	1	0.057	ug/l	0.06	1.4	9000	74	P	
56	Fe	1	2.149	ug/l	2.15	5.1	225000	74	P	
59	Co	1	0.027	ug/l	0.03	12.3	9000	74	P	
60	Ni	1	0.095	ug/l	0.09	11.9	9000	74	P	
63	Cu	1	-0.029	ug/l	-0.03	58.3	9000	74	P	
66	Zn	1	0.237	ug/l	0.24	19.1	9000	74	P	
75	As	1	0.148	ug/l	0.15	3.1	9000	74	P	
78	Se	1	0.252	ug/l	0.25	46.9	9000	74	P	
88	Sr	1	0.040	ug/l	0.04	8.4	9000	74	P	
95	Mo	1	0.092	ug/l	0.09	5.5	4500	103	P	
109	Ag	1	0.010	ug/l	0.01	10.9	900	103	P	
114	Cd	1	0.009	ug/l	0.01	68.1	9000	103	P	
118	Sn	1	0.085	ug/l	0.09	9.7	4500	103	P	
123	Sb	1	0.038	ug/l	0.04	3.9	900	103	P	
135	Ba	1	0.045	ug/l	0.04	24.9	9000	103	P	
200	Hg	1	0.011	ug/l	0.01	21.3	45	209	P	
205	Tl	1	0.094	ug/l	0.09	4.7	900	209	P	
208	Pb	1	0.009	ug/l	0.01	21.4	9000	209	P	
238	U	1	0.019	ug/l	0.02	6.9	9000	209	P	

ISTD Elements

IS	Mass	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)			Flag
6	Li	1	196428	0.29	198000	99.2	30	-	125	
45	Sc	1	2674700	1.89	2483000	107.7	30	-	125	
74	Ge	1	5336852	1.62	5068000	105.3	30	-	125	
103	Rh	1	7369204	0.97	7158000	103.0	30	-	125	
165	Ho	1	3228901	0.71	3077000	104.9	30	-	125	
175	Lu	1	2773886	1.99	2625000	105.7	30	-	125	
209	Bi	1	3788497	0.77	3656000	103.6	30	-	125	

Analytes: **Pass** **ISTD:** **Pass**

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

TA Seattle Sample Report 200.8/6020 7500ce ICPMS

Data File: C:\ICPCHEM\1\DATA\100512AM.B\040SMPL.D\040SMPL.D#
Date Acquired: Oct 5 2012 01:25 pm Acq. Method: 0000RUN.M
Sample Name: MDL(S)01-5 Vial Number: 2306
Misc Info: STDS&RL&CCV 00012,ICV 00015,ICSA&ICSAB 100212

Current Method: C:\ICPCHEM\1\METHODS\00He REP.M Operator: FCW ICP-MS ID#SEA44
Calibration File: C:\ICPCHEM\1\CALIB\00He REP.C
Last Cal. Update: Oct 08 2012 08:26 am
ISTD Ref File : C:\ICPCHEM\1\DATA\100512AM.B\005CALB.D\005CALB.D#

Tune #	Name
1	\\1\7500\he.u
2	CHEM\1\7500\
3	CHEM\1\7500\

Dilution Factor: 1.00 Final Dil Factor: 1.00

QC Elements

Element		T#	Conc.	Units	Corr. Conc	RSD(%)	LDR	IS	P/A	Flag
9	Be	1	0.032	ug/l	0.03	80.9	9000	6	P	
23	Na	1	-1.358	ug/l	-1.36	10.4	450000	45	P	
24	Mg	1	0.018	ug/l	0.02	107.6	450000	45	P	
27	Al	1	2.320	ug/l	2.32	5.0	450000	45	P	
31	P	1	1.055	ug/l	1.06	235.1	450000	45	P	
39	K	1	-0.657	ug/l	-0.66	115.2	450000	45	P	
44	Ca	1	0.607	ug/l	0.61	91.8	450000	45	P	
47	Ti	1	0.148	ug/l	0.15	11.4	4500	45	P	
51	V	1	0.092	ug/l	0.09	19.8	9000	45	P	
52	Cr	1	0.054	ug/l	0.05	22.9	9000	45	P	
55	Mn	1	0.059	ug/l	0.06	28.8	9000	74	P	
56	Fe	1	2.175	ug/l	2.18	1.7	225000	74	P	
59	Co	1	0.025	ug/l	0.03	15.0	9000	74	P	
60	Ni	1	0.099	ug/l	0.10	13.5	9000	74	P	
63	Cu	1	-0.014	ug/l	-0.01	14.0	9000	74	P	
66	Zn	1	0.246	ug/l	0.25	18.7	9000	74	P	
75	As	1	0.151	ug/l	0.15	9.0	9000	74	P	
78	Se	1	0.197	ug/l	0.20	29.0	9000	74	P	
88	Sr	1	0.040	ug/l	0.04	17.2	9000	74	P	
95	Mo	1	0.097	ug/l	0.10	10.6	4500	103	P	
109	Ag	1	0.009	ug/l	0.01	9.0	900	103	P	
114	Cd	1	0.009	ug/l	0.01	67.6	9000	103	P	
118	Sn	1	0.102	ug/l	0.10	10.5	4500	103	P	
123	Sb	1	0.033	ug/l	0.03	2.7	900	103	P	
135	Ba	1	0.044	ug/l	0.04	24.3	9000	103	P	
200	Hg	1	0.009	ug/l	0.01	43.4	45	209	P	
205	Tl	1	0.099	ug/l	0.10	8.1	900	209	P	
208	Pb	1	0.013	ug/l	0.01	15.2	9000	209	P	
238	U	1	0.019	ug/l	0.02	3.6	9000	209	P	

ISTD Elements

IS	Mass	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)			Flag
6	Li	1	193931	1.08	198000	97.9	30	-	125	
45	Sc	1	2676459	1.69	2483000	107.8	30	-	125	
74	Ge	1	5302081	0.98	5068000	104.6	30	-	125	
103	Rh	1	7268471	0.62	7158000	101.5	30	-	125	
165	Ho	1	3190796	1.13	3077000	103.7	30	-	125	
175	Lu	1	2757387	0.89	2625000	105.0	30	-	125	
209	Bi	1	3727279	1.50	3656000	101.9	30	-	125	

Analytes: **Pass** **ISTD:** **Pass**

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

TA Seattle Sample Report 200.8/6020 7500ce ICPMS

Data File: C:\ICPCHEM\1\DATA\100512AM.B\041SMPL.D\041SMPL.D#
Date Acquired: Oct 5 2012 01:28 pm Acq. Method: 0000RUN.M
Sample Name: MDL(S)01-6 Vial Number: 2307
Misc Info: STDS&RL&CCV 00012,ICV 00015,ICSA&ICSAB 100212

Current Method: C:\ICPCHEM\1\METHODS\00He REP.M Operator: FCW ICP-MS ID#SEA44
Calibration File: C:\ICPCHEM\1\CALIB\00He REP.C
Last Cal. Update: Oct 08 2012 08:26 am
ISTD Ref File : C:\ICPCHEM\1\DATA\100512AM.B\005CALB.D\005CALB.D#

Tune #	Name
1	\1\7500\he.u
2	CHEM\1\7500\
3	CHEM\1\7500\

Dilution Factor: 1.00 Final Dil Factor: 1.00

QC Elements

Element		T#	Conc.	Units	Corr. Conc	RSD(%)	LDR	IS	P/A	Flag
9	Be	1	0.016	ug/l	0.02	45.3	9000	6	P	
23	Na	1	-1.041	ug/l	-1.04	28.5	450000	45	P	
24	Mg	1	0.032	ug/l	0.03	226.3	450000	45	P	
27	Al	1	2.777	ug/l	2.78	6.5	450000	45	P	
31	P	1	0.392	ug/l	0.39	254.2	450000	45	P	
39	K	1	0.390	ug/l	0.39	152.2	450000	45	P	
44	Ca	1	1.243	ug/l	1.24	53.1	450000	45	P	
47	Ti	1	0.151	ug/l	0.15	6.7	4500	45	P	
51	V	1	0.088	ug/l	0.09	10.0	9000	45	P	
52	Cr	1	0.049	ug/l	0.05	25.0	9000	45	P	
55	Mn	1	0.061	ug/l	0.06	10.4	9000	74	P	
56	Fe	1	2.695	ug/l	2.70	2.7	225000	74	P	
59	Co	1	0.023	ug/l	0.02	16.9	9000	74	P	
60	Ni	1	0.117	ug/l	0.12	5.6	9000	74	P	
63	Cu	1	-0.011	ug/l	-0.01	68.7	9000	74	P	
66	Zn	1	0.236	ug/l	0.24	3.2	9000	74	P	
75	As	1	0.153	ug/l	0.15	6.2	9000	74	P	
78	Se	1	0.247	ug/l	0.25	22.4	9000	74	P	
88	Sr	1	0.040	ug/l	0.04	9.0	9000	74	P	
95	Mo	1	0.100	ug/l	0.10	3.5	4500	103	P	
109	Ag	1	0.010	ug/l	0.01	16.3	900	103	P	
114	Cd	1	0.004	ug/l	0.00	200.7	9000	103	P	
118	Sn	1	0.085	ug/l	0.09	5.1	4500	103	P	
123	Sb	1	0.034	ug/l	0.03	11.2	900	103	P	
135	Ba	1	0.047	ug/l	0.05	3.9	9000	103	P	
200	Hg	1	0.008	ug/l	0.01	30.7	45	209	P	
205	Tl	1	0.087	ug/l	0.09	3.9	900	209	P	
208	Pb	1	0.010	ug/l	0.01	34.5	9000	209	P	
238	U	1	0.019	ug/l	0.02	17.2	9000	209	P	

ISTD Elements

IS	Mass	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)			Flag
6	Li	1	194722	0.10	198000	98.3	30	-	125	
45	Sc	1	2646336	0.99	2483000	106.6	30	-	125	
74	Ge	1	5294258	0.90	5068000	104.5	30	-	125	
103	Rh	1	7292303	0.19	7158000	101.9	30	-	125	
165	Ho	1	3178094	0.58	3077000	103.3	30	-	125	
175	Lu	1	2742560	0.35	2625000	104.5	30	-	125	
209	Bi	1	3759645	1.30	3656000	102.8	30	-	125	

Analytes: **Pass** **ISTD:** **Pass**

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

TA Seattle Sample Report 200.8/6020 7500ce ICPMS

Data File: C:\ICPCHEM\1\DATA\100512AM.B\042SMPL.D\042SMPL.D#
Date Acquired: Oct 5 2012 01:32 pm Acq. Method: 0000RUN.M
Sample Name: MDL(S)01-7 Vial Number: 2308
Misc Info: STDS&RL&CCV 00012,ICV 00015,ICSA&ICSAB 100212

Current Method: C:\ICPCHEM\1\METHODS\00He REP.M Operator: FCW ICP-MS ID#SEA44
Calibration File: C:\ICPCHEM\1\CALIB\00He REP.C
Last Cal. Update: Oct 08 2012 08:26 am
ISTD Ref File : C:\ICPCHEM\1\DATA\100512AM.B\005CALB.D\005CALB.D#

Tune #	Name
1	\1\7500\he.u
2	CHEM\1\7500\
3	CHEM\1\7500\

Dilution Factor: 1.00 Final Dil Factor: 1.00

QC Elements

Element		T#	Conc.	Units	Corr. Conc	RSD(%)	LDR	IS	P/A	Flag
9	Be	1	0.034	ug/l	0.03	21.9	9000	6	P	
23	Na	1	-1.159	ug/l	-1.16	31.6	450000	45	P	
24	Mg	1	0.043	ug/l	0.04	70.9	450000	45	P	
27	Al	1	5.083	ug/l	5.08	1.3	450000	45	P	
31	P	1	1.431	ug/l	1.43	135.0	450000	45	P	
39	K	1	0.369	ug/l	0.37	264.2	450000	45	P	
44	Ca	1	0.890	ug/l	0.89	60.8	450000	45	P	
47	Ti	1	0.155	ug/l	0.16	9.6	4500	45	P	
51	V	1	0.103	ug/l	0.10	16.2	9000	45	P	
52	Cr	1	0.053	ug/l	0.05	10.8	9000	45	P	
55	Mn	1	0.066	ug/l	0.07	3.5	9000	74	P	
56	Fe	1	2.292	ug/l	2.29	2.6	225000	74	P	
59	Co	1	0.025	ug/l	0.03	11.3	9000	74	P	
60	Ni	1	0.113	ug/l	0.11	8.3	9000	74	P	
63	Cu	1	-0.013	ug/l	-0.01	68.8	9000	74	P	
66	Zn	1	0.247	ug/l	0.25	15.2	9000	74	P	
75	As	1	0.163	ug/l	0.16	4.5	9000	74	P	
78	Se	1	0.241	ug/l	0.24	31.4	9000	74	P	
88	Sr	1	0.034	ug/l	0.03	28.5	9000	74	P	
95	Mo	1	0.100	ug/l	0.10	5.5	4500	103	P	
109	Ag	1	0.011	ug/l	0.01	16.7	900	103	P	
114	Cd	1	0.006	ug/l	0.01	38.8	9000	103	P	
118	Sn	1	0.091	ug/l	0.09	9.3	4500	103	P	
123	Sb	1	0.037	ug/l	0.04	9.7	900	103	P	
135	Ba	1	0.039	ug/l	0.04	20.5	9000	103	P	
200	Hg	1	0.008	ug/l	0.01	25.9	45	209	P	
205	Tl	1	0.100	ug/l	0.10	9.3	900	209	P	
208	Pb	1	0.015	ug/l	0.02	10.0	9000	209	P	
238	U	1	0.018	ug/l	0.02	22.5	9000	209	P	

ISTD Elements

IS	Mass	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)			Flag
6	Li	1	197571	0.89	198000	99.8	30	-	125	
45	Sc	1	2640661	0.92	2483000	106.3	30	-	125	
74	Ge	1	5264023	0.55	5068000	103.9	30	-	125	
103	Rh	1	7286916	1.31	7158000	101.8	30	-	125	
165	Ho	1	3165155	0.37	3077000	102.9	30	-	125	
175	Lu	1	2742359	0.51	2625000	104.5	30	-	125	
209	Bi	1	3747774	0.15	3656000	102.5	30	-	125	

Analytes: **Pass** **ISTD:** **Pass**

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Step	Mass	Element	r	b(blank)	DL	BEC	Unit
1	6	Li	0.0000	--- ---	---	ug/l	
1	7	Li	0.0000	--- ---	---	ug/l	
1	9	Be	1.0000	1.010E-03	1.881E-04	9.263E-03	ug/l
1	23	Na	0.9993	8.363E-01	3.550E-01	18.27	ug/l
1	24	Mg	0.9995	2.553E-03	8.135E-02	9.858E-02	ug/l
1	27	Al	0.9992	1.356E-02	3.240E-01	7.489E-01	ug/l
1	31	P	0.9996	2.575E-02	6.036	19.31	ug/l
1	39	K	0.9996	2.544	9.914E-01	71.08	ug/l
1	44	Ca	0.9997	1.247E-02	2.565	7.603	ug/l
1	45	Sc	0.0000	--- ---	---	ug/l	
1	47	Ti	0.9996	1.478E-04	1.805E-02	1.727E-02	ug/l
1	51	V	0.9997	1.606E-01	1.193E-01	8.545E-01	ug/l
1	52	Cr	0.9995	2.965E-02	2.925E-02	1.456E-01	ug/l
1	55	Mn	0.9998	2.319E-03	6.377E-03	2.723E-02	ug/l
1	56	Fe	0.9998	2.098E-01	1.417E-01	2.244	ug/l
1	59	Co	0.9998	9.699E-04	3.116E-03	6.808E-03	ug/l
1	60	Ni	0.9997	5.590E-04	4.596E-03	1.564E-02	ug/l
1	63	Cu	0.9998	2.669E-02	3.961E-02	2.933E-01	ug/l
1	66	Zn	0.9998	2.450E-03	5.320E-02	1.263E-01	ug/l
1	74	Ge	0.0000	--- ---	---	ug/l	
1	75	As	0.9999	3.358E-03	1.100E-02	2.187E-01	ug/l
1	78	Se	0.9999	2.093E-03	5.202E-02	1.117	ug/l
1	88	Sr	1.0000	8.392E-03	2.129E-02	7.071E-02	ug/l
1	95	Mo	1.0000	4.188E-04	7.708E-03	1.265E-02	ug/l
1	103	Rh	0.0000	--- ---	---	ug/l	
1	109	Ag	0.9999	6.101E-04	6.450E-04	6.341E-03	ug/l
1	114	Cd	1.0000	4.141E-04	6.500E-03	9.362E-03	ug/l
1	118	Sn	1.0000	1.477E-03	2.958E-02	3.336E-02	ug/l
1	123	Sb	1.0000	3.629E-04	5.763E-03	7.790E-03	ug/l
1	135	Ba	1.0000	2.096E-04	3.555E-03	1.686E-02	ug/l
1	165	Ho	0.0000	--- ---	---	ug/l	
1	175	Lu	0.0000	--- ---	---	ug/l	
1	200	Hg	0.9999	5.377E-04	8.019E-03	1.623E-02	ug/l
1	205	Tl	0.9997	2.279E-03	2.028E-03	7.391E-03	ug/l
1	208	Pb	0.9997	1.156E-02	7.103E-03	2.800E-02	ug/l
1	209	Bi	0.0000	--- ---	---	ug/l	
1	238	U	0.9997	1.133E-04	1.122E-03	2.995E-04	ug/l

100512AM STDs 9/17/12

Exp'N 12/17/12

TA Seattle Calibration Blank QC Report 200.8/6020 ICP-MS 7500ce

Date File: C:\ICPCHEM\1\DATA\100512AM.B\005CALB.D\005CALB.D#
Date Acquired: Oct 5 2012 11:33 am Acq. Method: 0000RUN.M
Sample Name: STD0 Vial Number: 1306
Misc Info: STDS&RL&CCV 00012,ICV 00015,ICSA&ICSAB 100212
Current Method: C:\ICPCHEM\1\METHODS\00He REP.M
Operator: FCW ICP-MS ID#SEA44
Calibration File: C:\ICPCHEM\1\CALIB\00He REP.C
Last Cal. Update: Oct 08 2012 08:26 am
ISTD Ref File : ---

Tune #	Name
1	c:\icpchem\1\7500\he.u
2	C:\ICPCHEM\1\7500\
3	C:\ICPCHEM\1\7500\

Sample Type: CalBlk

QC&ISTD Elements

Element		Tune	CPS Mean		SD	RSD(%)
6	Li	1	198004.0	P	1337.00	0.68
7	Li	1	16107.4	P	829.50	5.15
9	Be	1	4.0	P	0.00	0.00
23	Na	1	41538.5	P	250.40	0.60
24	Mg	1	126.7	P	34.04	26.87
27	Al	1	673.4	P	93.86	13.94
31	P	1	1278.4	P	125.80	9.84
39	K	1	126376.5	P	1061.00	0.84
44	Ca	1	619.7	P	76.51	12.35
45	Sc	1	2483489.0	A	26480.00	1.07
47	Ti	1	7.3	P	2.52	34.32
51	V	1	7981.0	P	458.20	5.74
52	Cr	1	1471.8	P	83.73	5.69
55	Mn	1	235.0	P	17.32	7.37
56	Fe	1	21264.8	P	421.30	1.98
57	Fe	1		P		
59	Co	1	98.3	P	15.28	15.54
60	Ni	1	56.7	P	5.77	10.19
63	Cu	1	2705.4	P	132.60	4.90
66	Zn	1	248.3	P	35.12	14.14
74	Ge	1	5067691.0	A	21290.00	0.42
75	As	1	340.3	P	7.02	2.06
78	Se	1	212.2	P	2.75	1.30
88	Sr	1	850.4	P	83.87	9.86
95	Mo	1	60.0	P	12.49	20.82
99	(Mo)	1		P		
103	Rh	1	7157882.0	A	41620.00	0.58
106	(Cd)	1		P		
108	(Cd)	1		P		
109	Ag	1	87.3	P	3.06	3.50
111	Cd	1		P		
114	Cd	1	59.3	P	13.76	23.21
118	Sn	1	211.7	P	63.71	30.10
123	Sb	1	52.0	P	13.12	25.23
135	Ba	1	30.0	P	2.00	6.67
165	Ho	1	3077094.0	A	13830.00	0.45
175	Lu	1	2624989.0	A	18440.00	0.70
200	Hg	1	39.3	P	6.66	16.93
205	Tl	1	166.7	P	16.07	9.64
206	Pb	1		P		
207	Pb	1		P		
208	Pb	1	845.0	P	74.00	8.76
209	Bi	1	3655973.0	A	32790.00	0.90
238	U	1	8.3	P	10.41	124.92

TA Seattle Calibration Standard QC Report 200.8/6020 ICP-MS 7500ce

Data File: C:\ICPCHEM\1\DATA\100512AM.B\006CALS.D\006CALS.D#
Date Acquired: Oct 5 2012 11:17 am
Sample Name: STD1
Misc Info: STDS&RL&CCV 00012,ICV 00015,ICSA&ICSAB 100212
Current Method: C:\ICPCHEM\1\METHODS\00He REP.M
Calibration File: C:\ICPCHEM\1\CALIB\00He REP.C
Last Cal. Update: Oct 08 2012 08:26 am
ISTD Ref File : C:\ICPCHEM\1\DATA\100512AM.B\005CALB.D\005CALB.D#

Acq. Method: 0000RUN.M
Vial Number: 1305
Operator: FCW ICP-MS ID#SEA44

Tune #	Name
1	icpchem\1\7500\he.u
2	C:\ICPCHEM\1\7500\
3	C:\ICPCHEM\1\7500\

Sample Type: CalStd

QC&ISTD Elements

Element		IS	T#	CPS Mean	SD	RSD(%)
9	Be	6	1	40.7 P	4.62	11.36
23	Na	45	1	86082.1 P	274.20	0.32
24	Mg	45	1	20204.5 P	773.70	3.83
27	Al	45	1	5991.5 P	203.10	3.39
31	P	45	1	2113.6 P	111.40	5.27
39	K	45	1	160534.5 P	859.50	0.54
44	Ca	45	1	1913.5 P	57.60	3.01
47	Ti	45	1	59.8 P	7.57	12.66
51	V	45	1	8988.4 P	360.80	4.01
52	Cr	45	1	2908.7 P	114.30	3.93
55	Mn	74	1	2013.5 P	99.31	4.93
56	Fe	74	1	167005.9 P	1327.00	0.79
59	Co	74	1	1695.2 P	91.25	5.38
60	Ni	74	1	620.0 P	32.79	5.29
63	Cu	74	1	4450.9 P	359.40	8.07
66	Zn	74	1	1220.1 P	88.90	7.29
75	As	74	1	530.0 P	14.57	2.75
78	Se	74	1	232.5 P	6.87	2.96
88	Sr	74	1	2161.3 P	52.10	2.41
95	Mo	103	1	530.7 P	44.06	8.30
109	Ag	103	1	1535.4 P	27.16	1.77
114	Cd	103	1	687.6 P	86.75	12.62
118	Sn	103	1	1078.4 P	67.52	6.26
123	Sb	103	1	716.0 P	71.19	9.94
135	Ba	103	1	242.0 P	24.00	9.92
200	Hg	209	1	54.3 P	6.53	12.01
205	Tl	209	1	2403.6 P	117.50	4.89
208	Pb	209	1	4260.4 P	35.00	0.82
238	U	209	1	2870.4 P	98.51	3.43

ISTD Elements

IS	Mass	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	1	196576	1.32	198000	99.3	30 - 125	
45	Sc	1	2542675	0.89	2483000	102.4	30 - 125	
74	Ge	1	5108325	0.55	5068000	100.8	30 - 125	
103	Rh	1	7178871	1.84	7158000	100.3	30 - 125	
165	Ho	1	3056373	0.46	3077000	99.3	30 - 125	
175	Lu	1	2653536	0.54	2625000	101.1	30 - 125	
209	Bi	1	3643231	0.27	3656000	99.7	30 - 125	

Analytes: Pass
0 :Element Failures
0 :ISTD Failures

ISTD: Pass
:Max. Number of Failures Allowed
:Max. Number of ISTD Failures Allowed

TA Seattle Calibration Standard QC Report 200.8/6020 ICP-MS 7500ce

Data File: C:\ICPCHEM\1\DATA\100512AM.B\007CALS.D\007CALS.D#
Date Acquired: Oct 5 2012 11:20 am
Sample Name: STD2
Misc Info: STDS&RL&CCV 00012,ICV 00015,ICSA&ICSAB 100212
Current Method: C:\ICPCHEM\1\METHODS\00He REP.M
Calibration File: C:\ICPCHEM\1\CALIB\00He REP.C
Last Cal. Update: Oct 08 2012 08:26 am
ISTD Ref File : C:\ICPCHEM\1\DATA\100512AM.B\005CALB.D\005CALB.D#

Acq. Method: 0000RUN.M
Vial Number: 1304
Operator: FCW ICP-MS ID#SEA44

Tune #	Name
1	icpchem\1\7500\he.u
2	C:\ICPCHEM\1\7500\
3	C:\ICPCHEM\1\7500\

Sample Type: CalStd

QC&ISTD Elements

Element		IS	T#	CPS Mean	SD	RSD(%)
9	Be	6	1	401.3 P	11.37	2.83
23	Na	45	1	291022.7 P	2906.00	1.00
24	Mg	45	1	144388.2 P	2386.00	1.65
27	Al	45	1	17345.3 P	452.00	2.61
31	P	45	1	8034.3 P	130.90	1.63
39	K	45	1	327667.7 P	3217.00	0.98
44	Ca	45	1	9522.2 P	474.20	4.98
47	Ti	45	1	433.0 P	20.29	4.69
51	V	45	1	17724.4 P	282.10	1.59
52	Cr	45	1	12684.9 P	121.10	0.95
55	Mn	74	1	9643.9 P	70.07	0.73
56	Fe	74	1	1049784.0 A	27050.00	2.58
59	Co	74	1	15581.6 P	378.50	2.43
60	Ni	74	1	4042.4 P	55.32	1.37
63	Cu	74	1	12895.1 P	515.70	4.00
66	Zn	74	1	3077.1 P	206.00	6.69
75	As	74	1	1965.7 P	25.36	1.29
78	Se	74	1	411.7 P	8.13	1.97
88	Sr	74	1	13231.1 P	383.10	2.90
95	Mo	103	1	4670.2 P	86.66	1.86
109	Ag	103	1	14198.3 P	297.40	2.09
114	Cd	103	1	6496.5 P	95.82	1.48
118	Sn	103	1	6436.8 P	191.70	2.98
123	Sb	103	1	6631.9 P	250.90	3.78
135	Ba	103	1	1791.5 P	52.63	2.94
200	Hg	209	1	168.0 P	6.08	3.62
205	Tl	209	1	23084.8 P	616.80	2.67
208	Pb	209	1	31515.8 P	420.40	1.33
238	U	209	1	27160.9 P	527.70	1.94

ISTD Elements

IS	Mass	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	1	194278	1.05	198000	98.1	30 - 125	
45	Sc	1	2573522	0.53	2483000	103.6	30 - 125	
74	Ge	1	5182828	0.33	5068000	102.3	30 - 125	
103	Rh	1	7117045	0.61	7158000	99.4	30 - 125	
165	Ho	1	3050988	0.97	3077000	99.2	30 - 125	
175	Lu	1	2624080	0.43	2625000	100.0	30 - 125	
209	Bi	1	3641871	0.80	3656000	99.6	30 - 125	

Analytes: Pass ISTD: Pass

0 :Element Failures :Max. Number of Failures Allowed

0 :ISTD Failures :Max. Number of ISTD Failures Allowed

TA Seattle Calibration Standard QC Report 200.8/6020 ICP-MS 7500ce

Data File: C:\ICPCHEM\1\DATA\100512AM.B\008CALS.D\008CALS.D#
Date Acquired: Oct 5 2012 11:24 am
Sample Name: STD3
Misc Info: STDS&RL&CCV 00012,ICV 00015,ICSA&ICSAB 100212
Current Method: C:\ICPCHEM\1\METHODS\00He REP.M
Calibration File: C:\ICPCHEM\1\CALIB\00He REP.C
Last Cal. Update: Oct 08 2012 08:26 am
ISTD Ref File : C:\ICPCHEM\1\DATA\100512AM.B\005CALB.D\005CALB.D#

Acq. Method: 0000RUN.M
Vial Number: 1303
Operator: FCW ICP-MS ID#SEA44

Tune #	Name
1	icpchem\1\7500\he.u
2	C:\ICPCHEM\1\7500\
3	C:\ICPCHEM\1\7500\

Sample Type: CalStd

QC&ISTD Elements

Element		IS	T#	CPS Mean	SD	RSD(%)
9	Be	6	1	3982.0 P	200.10	5.03
23	Na	45	1	2492722.0 A	50010.00	2.01
24	Mg	45	1	1388195.0 A	23700.00	1.71
27	Al	45	1	98502.2 P	1302.00	1.32
31	P	45	1	68940.1 P	1870.00	2.71
39	K	45	1	2053865.0 A	34240.00	1.67
44	Ca	45	1	85644.2 P	874.00	1.02
47	Ti	45	1	4385.4 P	97.49	2.22
51	V	45	1	103252.3 P	1429.00	1.38
52	Cr	45	1	108061.8 P	1511.00	1.40
55	Mn	74	1	91483.9 P	148.90	0.16
56	Fe	74	1	9701746.0 A	72340.00	0.75
59	Co	74	1	150611.1 P	1759.00	1.17
60	Ni	74	1	38733.0 P	607.30	1.57
63	Cu	74	1	102329.6 P	1067.00	1.04
66	Zn	74	1	22859.4 P	708.30	3.10
75	As	74	1	16348.6 P	149.40	0.91
78	Se	74	1	2157.5 P	23.26	1.08
88	Sr	74	1	123035.9 P	187.30	0.15
95	Mo	103	1	45550.6 P	580.30	1.27
109	Ag	103	1	139592.2 P	439.70	0.31
114	Cd	103	1	63265.9 P	556.30	0.88
118	Sn	103	1	61995.6 P	1278.00	2.06
123	Sb	103	1	64814.3 P	1112.00	1.72
135	Ba	103	1	17520.7 P	272.30	1.55
200	Hg	209	1	1213.1 P	26.56	2.19
205	Tl	209	1	226274.6 P	4404.00	1.95
208	Pb	209	1	301555.1 P	5543.00	1.84
238	U	209	1	270801.8 P	6143.00	2.27

ISTD Elements

IS	Mass	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	1	190947	0.93	198000	96.4	30 - 125	
45	Sc	1	2547797	1.74	2483000	102.6	30 - 125	
74	Ge	1	5139787	1.41	5068000	101.4	30 - 125	
103	Rh	1	7079496	0.57	7158000	98.9	30 - 125	
165	Ho	1	3079864	0.17	3077000	100.1	30 - 125	
175	Lu	1	2620100	1.14	2625000	99.8	30 - 125	
209	Bi	1	3576520	1.09	3656000	97.8	30 - 125	

Analytes: Pass ISTD: Pass

0 :Element Failures :Max. Number of Failures Allowed

0 :ISTD Failures :Max. Number of ISTD Failures Allowed

TA Seattle Calibration Standard QC Report 200.8/6020 ICP-MS 7500ce

Data File: C:\ICPCHEM\1\DATA\100512AM.B\009CALS.D\009CALS.D#
Date Acquired: Oct 5 2012 11:28 am
Acq. Method: 0000RUN.M
Sample Name: STD4
Vial Number: 1302
Misc Info: STDS&RL&CCV 00012,ICV 00015,ICSA&ICSAB 100212
Operator: FCW ICP-MS ID#SEA44
Current Method: C:\ICPCHEM\1\METHODS\00He REP.M
Calibration File: C:\ICPCHEM\1\CALIB\00He REP.C
Last Cal. Update: Oct 08 2012 08:26 am
ISTD Ref File : C:\ICPCHEM\1\DATA\100512AM.B\005CALB.D\005CALB.D#

Tune #	Name
1	icpchem\1\7500\he.u
2	C:\ICPCHEM\1\7500\
3	C:\ICPCHEM\1\7500\

Sample Type: CalStd

QC&ISTD Elements

Element		IS	T#	CPS Mean		SD	RSD(%)
9	Be	6	1	20701.2	P	557.00	2.69
23	Na	45	1	12181690.0	A	212300.00	1.74
24	Mg	45	1	6820446.0	A	158300.00	2.32
27	Al	45	1	484324.1	P	4428.00	0.91
31	P	45	1	350102.7	P	4181.00	1.19
39	K	45	1	9474176.0	A	104700.00	1.11
44	Ca	45	1	426733.5	P	4256.00	1.00
47	Ti	45	1	22331.4	P	82.54	0.37
51	V	45	1	497821.3	P	3547.00	0.71
52	Cr	45	1	536848.3	P	5364.00	1.00
55	Mn	74	1	450147.7	P	3242.00	0.72
56	Fe	74	1	49512448.0	A	677100.00	1.37
59	Co	74	1	751226.8	P	9288.00	1.24
60	Ni	74	1	190543.7	P	1524.00	0.80
63	Cu	74	1	484263.3	P	2739.00	0.57
66	Zn	74	1	102362.6	P	804.30	0.79
75	As	74	1	80506.9	P	190.80	0.24
78	Se	74	1	10083.1	P	127.50	1.26
88	Sr	74	1	618550.0	P	3071.00	0.50
95	Mo	103	1	232499.2	P	3652.00	1.57
109	Ag	103	1	688585.8	P	5318.00	0.77
114	Cd	103	1	310699.5	P	2294.00	0.74
118	Sn	103	1	310252.3	P	4426.00	1.43
123	Sb	103	1	326467.4	P	4690.00	1.44
135	Ba	103	1	87209.1	P	897.60	1.03
200	Hg	209	1	5957.9	P	46.24	0.78
205	Tl	209	1	1121859.0	P	18780.00	1.67
208	Pb	209	1	1494331.0	P	19740.00	1.32
238	U	209	1	1376177.0	A	12210.00	0.89

ISTD Elements

IS	Mass	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	1	187750	1.73	198000	94.8	30 - 125	
45	Sc	1	2497945	1.55	2483000	100.6	30 - 125	
74	Ge	1	5124286	1.52	5068000	101.1	30 - 125	
103	Rh	1	7009244	0.75	7158000	97.9	30 - 125	
165	Ho	1	3010630	0.35	3077000	97.8	30 - 125	
175	Lu	1	2631053	0.42	2625000	100.2	30 - 125	
209	Bi	1	3484178	0.65	3656000	95.3	30 - 125	

Analytes: Pass ISTD: Pass

0 :Element Failures :Max. Number of Failures Allowed

0 :ISTD Failures :Max. Number of ISTD Failures Allowed

TA Seattle Calibration Standard QC Report 200.8/6020 ICP-MS 7500ce

Data File: C:\ICPCHEM\1\DATA\100512AM.B\010CALS.D\010CALS.D#
Date Acquired: Oct 5 2012 11:32 am
Sample Name: STD5
Misc Info: STD5&RL&CCV 00012,ICV 00015,ICSA&ICSAB 100212
Current Method: C:\ICPCHEM\1\METHODS\00He REP.M
Calibration File: C:\ICPCHEM\1\CALIB\00He REP.C
Last Cal. Update: Oct 08 2012 08:26 am
ISTD Ref File : C:\ICPCHEM\1\DATA\100512AM.B\005CALB.D\005CALB.D#

Acq. Method: 0000RUN.M
Vial Number: 1301
Operator: FCW ICP-MS ID#SEA44

Tune #	Name
1	icpchem\1\7500\he.u
2	C:\ICPCHEM\1\7500\
3	C:\ICPCHEM\1\7500\

Sample Type: CalStd

QC&ISTD Elements

Element		IS	T#	CPS Mean	SD	RSD(%)
9	Be	6	1	39608.7 P	550.60	1.39
23	Na	45	1	22772700.0 A	464200.00	2.04
24	Mg	45	1	12884790.0 A	185800.00	1.44
27	Al	45	1	898291.4 A	14400.00	1.60
31	P	45	1	666509.7 P	4688.00	0.70
39	K	45	1	17982100.0 A	217000.00	1.21
44	Ca	45	1	819551.2 P	10250.00	1.25
47	Ti	45	1	42702.9 P	577.90	1.35
51	V	45	1	946730.4 A	7401.00	0.78
52	Cr	45	1	1015482.0 A	28850.00	2.84
55	Mn	74	1	850060.0 P	8808.00	1.04
56	Fe	74	1	93290208.0 A	518500.00	0.56
59	Co	74	1	1422511.0 A	2394.00	0.17
60	Ni	74	1	355873.5 P	2394.00	0.67
63	Cu	74	1	910006.5 P	11310.00	1.24
66	Zn	74	1	193838.0 P	3152.00	1.63
75	As	74	1	154076.1 P	1173.00	0.76
78	Se	74	1	18937.1 P	149.70	0.79
88	Sr	74	1	1190041.0 A	4479.00	0.38
95	Mo	103	1	445191.4 P	4800.00	1.08
109	Ag	103	1	1287059.0 A	3479.00	0.27
114	Cd	103	1	594672.1 P	6690.00	1.13
118	Sn	103	1	595979.1 P	5313.00	0.89
123	Sb	103	1	626842.9 P	4141.00	0.66
135	Ba	103	1	167257.3 P	1107.00	0.66
200	Hg	209	1	11294.6 P	161.70	1.43
205	Tl	209	1	2085807.0 A	17950.00	0.86
208	Pb	209	1	2796331.0 A	53350.00	1.91
238	U	209	1	2560509.0 A	32600.00	1.27

ISTD Elements

IS	Mass	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	1	181987	0.59	198000	91.9	30 - 125	
45	Sc	1	2523922	1.14	2483000	101.6	30 - 125	
74	Ge	1	5030390	1.01	5068000	99.3	30 - 125	
103	Rh	1	6725491	0.04	7158000	94.0	30 - 125	
165	Ho	1	3011490	0.47	3077000	97.9	30 - 125	
175	Lu	1	2587571	0.93	2625000	98.6	30 - 125	
209	Bi	1	3420755	1.15	3656000	93.6	30 - 125	

Analytes: Pass ISTD: Pass

0 :Element Failures :Max. Number of Failures Allowed

0 :ISTD Failures :Max. Number of ISTD Failures Allowed

TA Seattle Sample Report 200.8/6020 7500ce ICPMS

Data File: C:\ICPCHEM\1\DATA\100512AM.B\012SMPL.D\012SMPL.D#
Date Acquired: Oct 5 2012 11:39 am Acq. Method: 0000RUN.M
Sample Name: ICV Vial Number: 1105
Misc Info: STDS&RL&CCV 00012,ICV 00015,ICSA&ICSAB 100212

Current Method: C:\ICPCHEM\1\METHODS\00He REP.M Operator: FCW ICP-MS ID#SEA44
Calibration File: C:\ICPCHEM\1\CALIB\00He REP.C
Last Cal. Update: Oct 08 2012 08:26 am
ISTD Ref File : C:\ICPCHEM\1\DATA\100512AM.B\005CALB.D\005CALB.D#

Tune #	Name
1	\1\7500\he.u
2	CHEM\1\7500\
3	CHEM\1\7500\

Dilution Factor: 1.00 Final Dil Factor: 1.00

QC Elements

Element		T#	Conc.	Units	Corr. Conc	RSD(%)	LDR	IS	P/A	Flag
9	Be	1	40.720	ug/l	40.72	1.2	9000	6	P	
23	Na	1	4033.000	ug/l	4,033.00	2.8	450000	45	A	
24	Mg	1	4085.000	ug/l	4,085.00	1.6	450000	45	A	
27	Al	1	412.100	ug/l	412.10	3.2	450000	45	P	
31	P	1	4042.000	ug/l	4,042.00	3.1	450000	45	P	
39	K	1	4060.000	ug/l	4,060.00	3.0	450000	45	A	
44	Ca	1	4057.000	ug/l	4,057.00	1.8	450000	45	P	
47	Ti	1	40.080	ug/l	40.08	2.0	4500	45	P	
51	V	1	40.270	ug/l	40.27	2.4	9000	45	P	
52	Cr	1	40.660	ug/l	40.66	2.1	9000	45	P	
55	Mn	1	41.760	ug/l	41.76	0.7	9000	74	P	
56	Fe	1	4141.000	ug/l	4,141.00	1.2	225000	74	A	
59	Co	1	41.250	ug/l	41.25	1.0	9000	74	P	
60	Ni	1	41.950	ug/l	41.95	0.9	9000	74	P	
63	Cu	1	41.690	ug/l	41.69	1.2	9000	74	P	
66	Zn	1	41.310	ug/l	41.31	1.5	9000	74	P	
75	As	1	40.780	ug/l	40.78	1.4	9000	74	P	
78	Se	1	41.030	ug/l	41.03	1.0	9000	74	P	
88	Sr	1	40.970	ug/l	40.97	1.4	9000	74	P	
95	Mo	1	40.410	ug/l	40.41	1.9	4500	103	P	
109	Ag	1	41.690	ug/l	41.69	1.6	900	103	P	
114	Cd	1	40.810	ug/l	40.81	1.7	9000	103	P	
118	Sn	1	40.660	ug/l	40.66	2.0	4500	103	P	
123	Sb	1	40.540	ug/l	40.54	1.6	900	103	P	
135	Ba	1	40.440	ug/l	40.44	2.0	9000	103	P	
200	Hg	1	2.080	ug/l	2.08	1.4	45	209	P	
205	Tl	1	41.660	ug/l	41.66	1.0	900	209	P	
208	Pb	1	41.060	ug/l	41.06	1.1	9000	209	P	
238	U	1	41.080	ug/l	41.08	1.4	9000	209	P	

ISTD Elements

IS	Mass	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)			Flag
6	Li	1	185444	1.34	198000	93.7	30	-	125	
45	Sc	1	2597135	2.19	2483000	104.6	30	-	125	
74	Ge	1	5135263	1.03	5068000	101.3	30	-	125	
103	Rh	1	6916204	0.68	7158000	96.6	30	-	125	
165	Ho	1	3037325	0.35	3077000	98.7	30	-	125	
175	Lu	1	2597013	0.05	2625000	98.9	30	-	125	
209	Bi	1	3491027	0.46	3656000	95.5	30	-	125	

Analytes: Pass ISTD: Pass

0 :Element Failures 0 :Max. Number of Failures Allowed

0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

TA Seattle Sample Report 200.8/6020 7500ce ICPMS

Data File: C:\ICPCHEM\1\DATA\100512AM.B\013SMPL.D\013SMPL.D#
Date Acquired: Oct 5 2012 11:43 am Acq. Method: 0000RUN.M
Sample Name: ICB Vial Number: 1306
Misc Info: STDS&RL&CCV 00012,ICV 00015,ICSA&ICSAB 100212
Current Method: C:\ICPCHEM\1\METHODS\00He REP.M Operator: FCW ICP-MS ID#SEA44
Calibration File: C:\ICPCHEM\1\CALIB\00He REP.C
Last Cal. Update: Oct 08 2012 08:26 am
ISTD Ref File : C:\ICPCHEM\1\DATA\100512AM.B\005CALB.D\005CALB.D#
Dilution Factor: 1.00 Final Dil Factor: 1.00

Tune #	Name
1	\1\7500\he.u
2	CHEM\1\7500\
3	CHEM\1\7500\

QC Elements

Element		T#	Conc.	Units	Corr. Conc	RSD(%)	LDR	IS	P/A	Flag
9	Be	1	0.002	ug/l	0.00	155.8	9000	6	P	
23	Na	1	-0.072	ug/l	-0.07	173.0	450000	45	P	
24	Mg	1	0.215	ug/l	0.21	35.9	450000	45	P	
27	Al	1	0.003	ug/l	0.00	1855.4	450000	45	P	
31	P	1	0.768	ug/l	0.77	108.5	450000	45	P	
39	K	1	-1.237	ug/l	-1.24	16.5	450000	45	P	
44	Ca	1	0.848	ug/l	0.85	102.8	450000	45	P	
47	Ti	1	0.008	ug/l	0.01	75.4	4500	45	P	
51	V	1	-0.123	ug/l	-0.12	5.9	9000	45	P	
52	Cr	1	-0.016	ug/l	-0.02	42.2	9000	45	P	
55	Mn	1	0.006	ug/l	0.01	37.7	9000	74	P	
56	Fe	1	0.336	ug/l	0.34	15.0	225000	74	P	
59	Co	1	0.001	ug/l	0.00	137.9	9000	74	P	
60	Ni	1	0.005	ug/l	0.01	175.2	9000	74	P	
63	Cu	1	-0.030	ug/l	-0.03	30.1	9000	74	P	
66	Zn	1	0.007	ug/l	0.01	465.1	9000	74	P	
75	As	1	0.000	ug/l	0.00	1616.9	9000	74	P	
78	Se	1	0.044	ug/l	0.04	88.5	9000	74	P	
88	Sr	1	0.005	ug/l	0.01	47.2	9000	74	P	
95	Mo	1	0.037	ug/l	0.04	22.6	4500	103	P	
109	Ag	1	0.003	ug/l	0.00	63.5	900	103	P	
114	Cd	1	0.005	ug/l	0.00	82.7	9000	103	P	
118	Sn	1	0.040	ug/l	0.04	23.0	4500	103	P	
123	Sb	1	0.058	ug/l	0.06	32.3	900	103	P	
135	Ba	1	-0.002	ug/l	0.00	316.3	9000	103	P	
200	Hg	1	0.021	ug/l	0.02	12.4	45	209	P	
205	Tl	1	0.011	ug/l	0.01	32.8	900	209	P	
208	Pb	1	0.005	ug/l	0.01	12.2	9000	209	P	
238	U	1	0.005	ug/l	0.00	35.3	9000	209	P	

ISTD Elements

IS Mass		Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)			Flag
6	Li	1	193583	1.35	198000	97.8	30	-	125	
45	Sc	1	2613977	0.93	2483000	105.3	30	-	125	
74	Ge	1	5176352	0.66	5068000	102.1	30	-	125	
103	Rh	1	7169751	1.01	7158000	100.2	30	-	125	
165	Ho	1	3106327	1.23	3077000	101.0	30	-	125	
175	Lu	1	2646556	0.84	2625000	100.8	30	-	125	
209	Bi	1	3621093	0.63	3656000	99.0	30	-	125	

Analytes: Pass ISTD: Pass

0 :Element Failures 0 :Max. Number of Failures Allowed

0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

TA Seattle Sample Report 200.8/6020 7500ce ICPMS

Data File: C:\ICPCHEM\1\DATA\100512AM.B\015SMPL.D\015SMPL.D#
Date Acquired: Oct 5 2012 11:50 am Acq. Method: 0000RUN.M
Sample Name: CCV Vial Number: 1104
Misc Info: STDS&RL&CCV 00012,ICV 00015,ICSA&ICSAB 100212
Current Method: C:\ICPCHEM\1\METHODS\00He REP.M Operator: FCW ICP-MS ID#SEA44
Calibration File: C:\ICPCHEM\1\CALIB\00He REP.C
Last Cal. Update: Oct 08 2012 08:26 am
ISTD Ref File : C:\ICPCHEM\1\DATA\100512AM.B\005CALB.D\005CALB.D#

Tune #	Name
1	\1\7500\he.u
2	CHEM\1\7500\
3	CHEM\1\7500\

Dilution Factor: 1.00 Final Dil Factor: 1.00

QC Elements

Element		T#	Conc.	Units	Corr. Conc	RSD(%)	LDR	IS	P/A	Flag
9	Be	1	48.270	ug/l	48.27	1.1	9000	6	P	
23	Na	1	4939.000	ug/l	4,939.00	2.0	450000	45	A	
24	Mg	1	4948.000	ug/l	4,948.00	2.0	450000	45	A	
27	Al	1	498.800	ug/l	498.80	3.2	450000	45	P	
31	P	1	4914.000	ug/l	4,914.00	1.8	450000	45	P	
39	K	1	4923.000	ug/l	4,923.00	1.9	450000	45	A	
44	Ca	1	4916.000	ug/l	4,916.00	2.0	450000	45	P	
47	Ti	1	48.990	ug/l	48.99	2.3	4500	45	P	
51	V	1	48.830	ug/l	48.83	2.3	9000	45	P	
52	Cr	1	49.210	ug/l	49.21	2.2	9000	45	P	
55	Mn	1	49.580	ug/l	49.58	1.0	9000	74	P	
56	Fe	1	4879.000	ug/l	4,879.00	1.4	225000	74	A	
59	Co	1	49.020	ug/l	49.02	2.1	9000	74	P	
60	Ni	1	49.390	ug/l	49.39	1.7	9000	74	P	
63	Cu	1	49.210	ug/l	49.21	2.0	9000	74	P	
66	Zn	1	48.560	ug/l	48.56	0.9	9000	74	P	
75	As	1	48.790	ug/l	48.79	1.3	9000	74	P	
78	Se	1	49.280	ug/l	49.28	0.5	9000	74	P	
88	Sr	1	48.560	ug/l	48.56	1.4	9000	74	P	
95	Mo	1	47.740	ug/l	47.74	1.9	4500	103	P	
109	Ag	1	49.230	ug/l	49.23	1.1	900	103	P	
114	Cd	1	48.490	ug/l	48.49	2.0	9000	103	P	
118	Sn	1	48.230	ug/l	48.23	1.8	4500	103	P	
123	Sb	1	48.190	ug/l	48.19	1.6	900	103	P	
135	Ba	1	48.390	ug/l	48.39	1.8	9000	103	P	
200	Hg	1	2.468	ug/l	2.47	1.8	45	209	P	
205	Tl	1	49.790	ug/l	49.79	2.9	900	209	P	
208	Pb	1	49.420	ug/l	49.42	2.1	9000	209	P	
238	U	1	49.310	ug/l	49.31	3.4	9000	209	A	

ISTD Elements

IS	Mass	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)			Flag
6	Li	1	184818	0.23	198000	93.3	30	-	125	
45	Sc	1	2553184	1.35	2483000	102.8	30	-	125	
74	Ge	1	5130267	0.58	5068000	101.2	30	-	125	
103	Rh	1	6966325	0.56	7158000	97.3	30	-	125	
165	Ho	1	3069258	0.35	3077000	99.7	30	-	125	
175	Lu	1	2618391	1.51	2625000	99.7	30	-	125	
209	Bi	1	3469808	1.46	3656000	94.9	30	-	125	

Analytes: Pass ISTD: Pass

0 :Element Failures 0 :Max. Number of Failures Allowed

0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

TA Seattle Sample Report 200.8/6020 7500ce ICPMS

Data File: C:\ICPCHEM\1\DATA\100512AM.B\016SMPL.D\016SMPL.D#
Date Acquired: Oct 5 2012 11:54 am Acq. Method: 0000RUN.M
Sample Name: CCB Vial Number: 1306
Misc Info: STDS&RL&CCV 00012,ICV 00015,ICSA&ICSAB 100212
Current Method: C:\ICPCHEM\1\METHODS\00He REP.M Operator: FCW ICP-MS ID#SEA44
Calibration File: C:\ICPCHEM\1\CALIB\00He REP.C
Last Cal. Update: Oct 08 2012 08:26 am
ISTD Ref File : C:\ICPCHEM\1\DATA\100512AM.B\005CALB.D\005CALB.D#
Dilution Factor: 1.00 Final Dil Factor: 1.00

Tune #	Name
1	1\1\7500\he.u
2	CHEM\1\7500\
3	CHEM\1\7500\

QC Elements

Element		T#	Conc.	Units	Corr. Conc	RSD(%)	LDR	IS	P/A	Flag
9	Be	1	0.000	ug/l	0.00	1430.3	9000	6	P	
23	Na	1	0.211	ug/l	0.21	185.8	450000	45	P	
24	Mg	1	0.130	ug/l	0.13	44.5	450000	45	P	
27	Al	1	0.180	ug/l	0.18	64.8	450000	45	P	
31	P	1	-0.232	ug/l	-0.23	286.1	450000	45	P	
39	K	1	-0.735	ug/l	-0.73	38.5	450000	45	P	
44	Ca	1	1.231	ug/l	1.23	46.8	450000	45	P	
47	Ti	1	0.009	ug/l	0.01	63.8	4500	45	P	
51	V	1	-0.109	ug/l	-0.11	25.3	9000	45	P	
52	Cr	1	-0.004	ug/l	0.00	110.3	9000	45	P	
55	Mn	1	0.000	ug/l	0.00	877.4	9000	74	P	
56	Fe	1	0.271	ug/l	0.27	6.0	225000	74	P	
59	Co	1	0.000	ug/l	0.00	378.3	9000	74	P	
60	Ni	1	-0.002	ug/l	0.00	174.5	9000	74	P	
63	Cu	1	-0.016	ug/l	-0.02	37.8	9000	74	P	
66	Zn	1	0.052	ug/l	0.05	33.7	9000	74	P	
75	As	1	0.005	ug/l	0.00	104.7	9000	74	P	
78	Se	1	0.030	ug/l	0.03	4.4	9000	74	P	
88	Sr	1	-0.002	ug/l	0.00	351.7	9000	74	P	
95	Mo	1	0.037	ug/l	0.04	23.3	4500	103	P	
109	Ag	1	0.003	ug/l	0.00	26.7	900	103	P	
114	Cd	1	0.006	ug/l	0.01	77.7	9000	103	P	
118	Sn	1	0.045	ug/l	0.04	47.0	4500	103	P	
123	Sb	1	0.059	ug/l	0.06	19.0	900	103	P	
135	Ba	1	0.005	ug/l	0.00	83.4	9000	103	P	
200	Hg	1	0.024	ug/l	0.02	14.1	45	209	P	
205	Tl	1	0.011	ug/l	0.01	13.3	900	209	P	
208	Pb	1	0.004	ug/l	0.00	91.3	9000	209	P	
238	U	1	0.006	ug/l	0.01	26.7	9000	209	P	

ISTD Elements

IS	Mass	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)			Flag
6	Li	1	190956	0.54	198000	96.4	30	-	125	
45	Sc	1	2587613	0.41	2483000	104.2	30	-	125	
74	Ge	1	5188662	1.56	5068000	102.4	30	-	125	
103	Rh	1	7215084	0.14	7158000	100.8	30	-	125	
165	Ho	1	3131662	0.62	3077000	101.8	30	-	125	
175	Lu	1	2682582	0.99	2625000	102.2	30	-	125	
209	Bi	1	3672092	1.70	3656000	100.4	30	-	125	

Analytes: Pass ISTD: Pass

0 :Element Failures 0 :Max. Number of Failures Allowed

0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

TA Seattle Sample Report 200.8/6020 7500ce ICPMS

Data File: C:\ICPCHEM\1\DATA\100512AM.B\017SMPL.D\017SMPL.D#
Date Acquired: Oct 5 2012 11:58 am Acq. Method: 0000RUN.M
Sample Name: MB (W) Vial Number: 2101
Misc Info: STDS&RL&CCV 00012,ICV 00015,ICSA&ICSAB 100212
Current Method: C:\ICPCHEM\1\METHODS\00He REP.M Operator: FCW ICP-MS ID#SEA44
Calibration File: C:\ICPCHEM\1\CALIB\00He REP.C
Last Cal. Update: Oct 08 2012 08:26 am
ISTD Ref File : C:\ICPCHEM\1\DATA\100512AM.B\005CALB.D\005CALB.D#
Dilution Factor: 5.00 Final Dil Factor: 5.00

Tune #	Name
1	\1\7500\he.u
2	CHEM\1\7500\
3	CHEM\1\7500\

QC Elements

Element		T#	Conc. Units	Corr. Conc	RSD(%)	LDR	IS	P/A	Flag
9	Be	1	-0.006 ug/l	-0.03	90.9	9000	6	P	
23	Na	1	1.563 ug/l	7.82	15.5	450000	45	P	
24	Mg	1	0.224 ug/l	1.12	1.2	450000	45	P	
27	Al	1	0.163 ug/l	0.82	31.1	450000	45	P	
31	P	1	0.889 ug/l	4.44	119.4	450000	45	P	
39	K	1	-0.287 ug/l	-1.43	194.1	450000	45	P	
44	Ca	1	0.496 ug/l	2.48	159.1	450000	45	P	
47	Ti	1	0.001 ug/l	0.00	689.9	4500	45	P	
51	V	1	-0.069 ug/l	-0.35	25.2	9000	45	P	
52	Cr	1	0.000 ug/l	0.00	4146.9	9000	45	P	
55	Mn	1	0.019 ug/l	0.09	3.2	9000	74	P	
56	Fe	1	0.244 ug/l	1.22	31.0	225000	74	P	
59	Co	1	0.002 ug/l	0.01	34.9	9000	74	P	
60	Ni	1	0.012 ug/l	0.06	32.4	9000	74	P	
63	Cu	1	-0.018 ug/l	-0.09	64.6	9000	74	P	
66	Zn	1	0.084 ug/l	0.42	15.1	9000	74	P	
75	As	1	-0.010 ug/l	-0.05	18.2	9000	74	P	
78	Se	1	0.024 ug/l	0.12	87.3	9000	74	P	
88	Sr	1	-0.008 ug/l	-0.04	59.7	9000	74	P	
95	Mo	1	0.011 ug/l	0.06	53.7	4500	103	P	
109	Ag	1	0.002 ug/l	0.01	43.9	900	103	P	
114	Cd	1	0.003 ug/l	0.01	11.3	9000	103	P	
118	Sn	1	0.015 ug/l	0.08	57.4	4500	103	P	
123	Sb	1	0.023 ug/l	0.12	19.2	900	103	P	
135	Ba	1	0.000 ug/l	0.00	6403.7	9000	103	P	
200	Hg	1	0.014 ug/l	0.07	18.1	45	209	P	
205	Tl	1	0.008 ug/l	0.04	26.9	900	209	P	
208	Pb	1	0.007 ug/l	0.03	45.2	9000	209	P	
238	U	1	0.003 ug/l	0.01	23.7	9000	209	P	

ISTD Elements

IS	Mass	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)			Flag
6	Li	1	191028	0.61	198000	96.5	30	-	125	
45	Sc	1	2586356	1.60	2483000	104.2	30	-	125	
74	Ge	1	5188884	0.61	5068000	102.4	30	-	125	
103	Rh	1	7125165	0.58	7158000	99.5	30	-	125	
165	Ho	1	3110419	0.55	3077000	101.1	30	-	125	
175	Lu	1	2667613	1.81	2625000	101.6	30	-	125	
209	Bi	1	3630986	1.02	3656000	99.3	30	-	125	

Analytes: Pass ISTD: Pass

0 :Element Failures 0 :Max. Number of Failures Allowed

0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

TA Seattle Sample Report 200.8/6020 7500ce ICPMS

Data File: C:\ICPCHEM\1\DATA\100512AM.B\018SMPL.D\018SMPL.D#
Date Acquired: Oct 5 2012 12:01 pm Acq. Method: 0000RUN.M
Sample Name: MB (S) Vial Number: 2102
Misc Info: STDS&RL&CCV 00012,ICV 00015,ICSA&ICSAB 100212

Current Method: C:\ICPCHEM\1\METHODS\00He REP.M Operator: FCW ICP-MS ID#SEA44
Calibration File: C:\ICPCHEM\1\CALIB\00He REP.C
Last Cal. Update: Oct 08 2012 08:26 am
ISTD Ref File : C:\ICPCHEM\1\DATA\100512AM.B\005CALB.D\005CALB.D#

Tune #	Name
1	\1\7500\he.b
2	CHEM\1\7500\
3	CHEM\1\7500\

Dilution Factor: 10.00 Final Dil Factor: 10.00

QC Elements

Element		T#	Conc.	Units	Corr. Conc	RSD(%)	LDR	IS	P/A	Flag
9	Be	1	-0.006	ug/l	-0.06	46.2	9000	6	P	
23	Na	1	-0.132	ug/l	-1.32	117.8	450000	45	P	
24	Mg	1	0.052	ug/l	0.52	78.5	450000	45	P	
27	Al	1	-0.007	ug/l	-0.07	1340.4	450000	45	P	
31	P	1	1.390	ug/l	13.90	66.6	450000	45	P	
39	K	1	-0.323	ug/l	-3.23	152.8	450000	45	P	
44	Ca	1	0.939	ug/l	9.39	62.1	450000	45	P	
47	Ti	1	0.003	ug/l	0.03	34.9	4500	45	P	
51	V	1	-0.069	ug/l	-0.69	18.6	9000	45	P	
52	Cr	1	-0.003	ug/l	-0.03	135.8	9000	45	P	
55	Mn	1	0.009	ug/l	0.09	26.5	9000	74	P	
56	Fe	1	0.085	ug/l	0.85	66.5	225000	74	P	
59	Co	1	0.000	ug/l	0.00	844.4	9000	74	P	
60	Ni	1	0.000	ug/l	0.00	1322.6	9000	74	P	
63	Cu	1	-0.026	ug/l	-0.26	52.6	9000	74	P	
66	Zn	1	0.035	ug/l	0.35	21.5	9000	74	P	
75	As	1	0.007	ug/l	0.07	160.3	9000	74	P	
78	Se	1	0.050	ug/l	0.50	161.6	9000	74	P	
88	Sr	1	-0.004	ug/l	-0.04	195.9	9000	74	P	
95	Mo	1	0.007	ug/l	0.07	88.5	4500	103	P	
109	Ag	1	0.001	ug/l	0.01	251.1	900	103	P	
114	Cd	1	0.004	ug/l	0.04	100.2	9000	103	P	
118	Sn	1	0.009	ug/l	0.09	42.3	4500	103	P	
123	Sb	1	0.011	ug/l	0.11	39.0	900	103	P	
135	Ba	1	0.001	ug/l	0.01	610.2	9000	103	P	
200	Hg	1	0.012	ug/l	0.12	19.6	45	209	P	
205	Tl	1	0.003	ug/l	0.03	49.6	900	209	P	
208	Pb	1	0.004	ug/l	0.04	100.8	9000	209	P	
238	U	1	0.001	ug/l	0.01	23.9	9000	209	P	

ISTD Elements

IS	Mass	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)			Flag
6	Li	1	189898	0.22	198000	95.9	30	-	125	
45	Sc	1	2557998	1.94	2483000	103.0	30	-	125	
74	Ge	1	5212334	0.22	5068000	102.8	30	-	125	
103	Rh	1	7203566	0.97	7158000	100.6	30	-	125	
165	Ho	1	3172521	0.43	3077000	103.1	30	-	125	
175	Lu	1	2724480	1.49	2625000	103.8	30	-	125	
209	Bi	1	3717991	0.67	3656000	101.7	30	-	125	

Analytes: Pass ISTD: Pass

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

TA Seattle Sample Report 200.8/6020 7500ce ICPMS

Data File: C:\ICPCHEM\1\DATA\100512AM.B\025SMPL.D\025SMPL.D#
Date Acquired: Oct 5 2012 12:28 pm Acq. Method: 0000RUN.M
Sample Name: CCV Vial Number: 1104
Misc Info: STDS&RL&CCV 00012,ICV 00015,ICSA&ICSAB 100212

Current Method: C:\ICPCHEM\1\METHODS\00He REP.M Operator: FCW ICP-MS ID#SEA44
Calibration File: C:\ICPCHEM\1\CALIB\00He REP.C
Last Cal. Update: Oct 08 2012 08:26 am
ISTD Ref File : C:\ICPCHEM\1\DATA\100512AM.B\005CALB.D\005CALB.D#

Tune #	Name
1	\1\7500\he.u
2	CHEM\1\7500\
3	CHEM\1\7500\

Dilution Factor: 1.00 Final Dil Factor: 1.00

QC Elements

Element		T#	Conc.	Units	Corr. Conc	RSD(%)	LDR	IS	P/A	Flag
9	Be	1	48.800	ug/l	48.80	1.1	9000	6	P	
23	Na	1	4883.000	ug/l	4,883.00	0.5	450000	45	A	
24	Mg	1	4885.000	ug/l	4,885.00	1.0	450000	45	A	
27	Al	1	493.100	ug/l	493.10	2.2	450000	45	P	
31	P	1	4904.000	ug/l	4,904.00	2.2	450000	45	P	
39	K	1	4942.000	ug/l	4,942.00	1.0	450000	45	A	
44	Ca	1	4925.000	ug/l	4,925.00	1.5	450000	45	P	
47	Ti	1	48.920	ug/l	48.92	2.2	4500	45	P	
51	V	1	48.660	ug/l	48.66	2.8	9000	45	P	
52	Cr	1	49.200	ug/l	49.20	3.0	9000	45	P	
55	Mn	1	48.930	ug/l	48.93	1.2	9000	74	P	
56	Fe	1	4870.000	ug/l	4,870.00	0.4	225000	74	A	
59	Co	1	48.340	ug/l	48.34	1.9	9000	74	P	
60	Ni	1	48.720	ug/l	48.72	1.7	9000	74	P	
63	Cu	1	49.030	ug/l	49.03	1.3	9000	74	P	
66	Zn	1	49.280	ug/l	49.28	1.7	9000	74	P	
75	As	1	48.990	ug/l	48.99	0.8	9000	74	P	
78	Se	1	49.350	ug/l	49.35	0.3	9000	74	P	
88	Sr	1	48.620	ug/l	48.62	0.4	9000	74	P	
95	Mo	1	48.470	ug/l	48.47	1.9	4500	103	P	
109	Ag	1	49.660	ug/l	49.66	2.2	900	103	P	
114	Cd	1	48.780	ug/l	48.78	2.3	9000	103	P	
118	Sn	1	48.750	ug/l	48.75	1.8	4500	103	P	
123	Sb	1	48.920	ug/l	48.92	2.3	900	103	P	
135	Ba	1	49.060	ug/l	49.06	1.9	9000	103	P	
200	Hg	1	2.498	ug/l	2.50	0.6	45	209	P	
205	Tl	1	49.100	ug/l	49.10	1.6	900	209	P	
208	Pb	1	48.860	ug/l	48.86	1.3	9000	209	P	
238	U	1	48.780	ug/l	48.78	1.8	9000	209	A	

ISTD Elements

IS	Mass	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)			Flag
6	Li	1	164217	0.85	198000	82.9	30	-	125	
45	Sc	1	2286085	2.05	2483000	92.1	30	-	125	
74	Ge	1	4649955	0.48	5068000	91.8	30	-	125	
103	Rh	1	6241947	1.17	7158000	87.2	30	-	125	
165	Ho	1	2818297	0.78	3077000	91.6	30	-	125	
175	Lu	1	2437988	0.57	2625000	92.9	30	-	125	
209	Bi	1	3252555	0.43	3656000	89.0	30	-	125	

Analytes: Pass ISTD: Pass

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

TA Seattle Sample Report 200.8/6020 7500ce ICPMS

Data File: C:\ICPCHEM\1\DATA\100512AM.B\026SMPL.D\026SMPL.D#
Date Acquired: Oct 5 2012 12:32 pm Acq. Method: 0000RUN.M
Sample Name: CCB Vial Number: 1306
Misc Info: STDS&RL&CCV 00012,ICV 00015,ICSA&ICSAB 100212
Current Method: C:\ICPCHEM\1\METHODS\00He REP.M Operator: FCW ICP-MS ID#SEA44
Calibration File: C:\ICPCHEM\1\CALIB\00He REP.C
Last Cal. Update: Oct 08 2012 08:26 am
ISTD Ref File : C:\ICPCHEM\1\DATA\100512AM.B\005CALB.D\005CALB.D#

Tune #	Name
1	\1\7500\he.u
2	CHEM\1\7500\
3	CHEM\1\7500\

Dilution Factor: 1.00 Final Dil Factor: 1.00

QC Elements

Element		T#	Conc. Units	Corr. Conc	RSD(%)	LDR	IS	P/A	Flag
9	Be	1	0.005 ug/l	0.00	4.5	9000	6	P	
23	Na	1	-1.132 ug/l	-1.13	36.8	450000	45	P	
24	Mg	1	0.135 ug/l	0.14	10.5	450000	45	P	
27	Al	1	0.035 ug/l	0.04	63.6	450000	45	P	
31	P	1	0.199 ug/l	0.20	347.0	450000	45	P	
39	K	1	-2.850 ug/l	-2.85	66.8	450000	45	P	
44	Ca	1	-0.149 ug/l	-0.15	591.1	450000	45	P	
47	Ti	1	0.008 ug/l	0.01	47.1	4500	45	P	
51	V	1	-0.115 ug/l	-0.11	18.4	9000	45	P	
52	Cr	1	-0.004 ug/l	0.00	195.7	9000	45	P	
55	Mn	1	0.002 ug/l	0.00	205.1	9000	74	P	
56	Fe	1	0.280 ug/l	0.28	26.5	225000	74	P	
59	Co	1	0.001 ug/l	0.00	137.3	9000	74	P	
60	Ni	1	-0.002 ug/l	0.00	473.0	9000	74	P	
63	Cu	1	-0.049 ug/l	-0.05	35.0	9000	74	P	
66	Zn	1	0.053 ug/l	0.05	39.7	9000	74	P	
75	As	1	-0.005 ug/l	-0.01	167.8	9000	74	P	
78	Se	1	0.053 ug/l	0.05	18.3	9000	74	P	
88	Sr	1	-0.004 ug/l	0.00	159.2	9000	74	P	
95	Mo	1	0.037 ug/l	0.04	24.8	4500	103	P	
109	Ag	1	0.001 ug/l	0.00	53.3	900	103	P	
114	Cd	1	0.002 ug/l	0.00	53.9	9000	103	P	
118	Sn	1	0.037 ug/l	0.04	10.1	4500	103	P	
123	Sb	1	0.048 ug/l	0.05	18.1	900	103	P	
135	Ba	1	0.000 ug/l	0.00	1964.2	9000	103	P	
200	Hg	1	0.018 ug/l	0.02	16.3	45	209	P	
205	Tl	1	0.009 ug/l	0.01	33.2	900	209	P	
208	Pb	1	0.004 ug/l	0.00	38.4	9000	209	P	
238	U	1	0.005 ug/l	0.01	23.9	9000	209	P	

ISTD Elements

IS Mass		Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)			Flag
6	Li	1	194101	1.57	198000	98.0	30	-	125	
45	Sc	1	2686529	3.75	2483000	108.2	30	-	125	
74	Ge	1	5324388	2.55	5068000	105.1	30	-	125	
103	Rh	1	7346669	2.89	7158000	102.6	30	-	125	
165	Ho	1	3241055	3.37	3077000	105.3	30	-	125	
175	Lu	1	2779560	2.30	2625000	105.9	30	-	125	
209	Bi	1	3798709	2.11	3656000	103.9	30	-	125	

Analytes: Pass ISTD: Pass

0 :Element Failures 0 :Max. Number of Failures Allowed

0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

TA Seattle Sample Report 200.8/6020 7500ce ICPMS

Data File: C:\ICPCHEM\1\DATA\100512AM.B\034SMPL.D\034SMPL.D#
Date Acquired: Oct 5 2012 01:02 pm Acq. Method: 0000RUN.M
Sample Name: CCV Vial Number: 1104
Misc Info: STDS&RL&CCV 00012,ICV 00015,ICSA&ICSAB 100212

Current Method: C:\ICPCHEM\1\METHODS\00He REP.M Operator: FCW ICP-MS ID#SEA44
Calibration File: C:\ICPCHEM\1\CALIB\00He REP.C
Last Cal. Update: Oct 08 2012 08:26 am
ISTD Ref File : C:\ICPCHEM\1\DATA\100512AM.B\005CALB.D\005CALB.D#

Tune #	Name
1	\1\7500\he.u
2	CHEM\1\7500\
3	CHEM\1\7500\

Dilution Factor: 1.00 Final Dil Factor: 1.00

QC Elements

Element		T#	Conc.	Units	Corr. Conc	RSD(%)	LDR	IS	P/A	Flag
9	Be	1	48.980	ug/l	48.98	2.3	9000	6	P	
23	Na	1	4882.000	ug/l	4,882.00	1.8	450000	45	A	
24	Mg	1	4916.000	ug/l	4,916.00	2.8	450000	45	A	
27	Al	1	503.500	ug/l	503.50	2.1	450000	45	P	
31	P	1	4963.000	ug/l	4,963.00	1.2	450000	45	P	
39	K	1	5003.000	ug/l	5,003.00	0.3	450000	45	A	
44	Ca	1	4964.000	ug/l	4,964.00	0.6	450000	45	P	
47	Ti	1	49.070	ug/l	49.07	1.3	4500	45	P	
51	V	1	49.090	ug/l	49.09	1.4	9000	45	P	
52	Cr	1	49.130	ug/l	49.13	1.5	9000	45	P	
55	Mn	1	49.510	ug/l	49.51	1.6	9000	74	P	
56	Fe	1	4905.000	ug/l	4,905.00	1.5	225000	74	A	
59	Co	1	48.850	ug/l	48.85	1.2	9000	74	P	
60	Ni	1	49.140	ug/l	49.14	1.1	9000	74	P	
63	Cu	1	48.930	ug/l	48.93	2.2	9000	74	P	
66	Zn	1	48.700	ug/l	48.70	1.2	9000	74	P	
75	As	1	48.720	ug/l	48.72	0.9	9000	74	P	
78	Se	1	49.470	ug/l	49.47	0.4	9000	74	P	
88	Sr	1	48.650	ug/l	48.65	0.4	9000	74	P	
95	Mo	1	48.250	ug/l	48.25	1.5	4500	103	P	
109	Ag	1	49.280	ug/l	49.28	2.2	900	103	P	
114	Cd	1	48.850	ug/l	48.85	1.8	9000	103	P	
118	Sn	1	48.620	ug/l	48.62	2.4	4500	103	P	
123	Sb	1	48.750	ug/l	48.75	2.1	900	103	P	
135	Ba	1	49.160	ug/l	49.16	1.8	9000	103	P	
200	Hg	1	2.393	ug/l	2.39	2.4	45	209	P	
205	Tl	1	49.330	ug/l	49.33	2.0	900	209	P	
208	Pb	1	49.080	ug/l	49.08	1.4	9000	209	P	
238	U	1	49.280	ug/l	49.28	0.7	9000	209	A	

ISTD Elements

IS	Mass	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)			Flag
6	Li	1	186659	0.78	198000	94.3	30	-	125	
45	Sc	1	2596313	0.89	2483000	104.6	30	-	125	
74	Ge	1	5259180	0.41	5068000	103.8	30	-	125	
103	Rh	1	7028899	0.78	7158000	98.2	30	-	125	
165	Ho	1	3144260	1.14	3077000	102.2	30	-	125	
175	Lu	1	2700060	1.08	2625000	102.9	30	-	125	
209	Bi	1	3611343	1.43	3656000	98.8	30	-	125	

Analytes: Pass ISTD: Pass

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

TA Seattle Sample Report 200.8/6020 7500ce ICPMS

Data File: C:\ICPCHEM\1\DATA\100512AM.B\035SMPL.D\035SMPL.D#
Date Acquired: Oct 5 2012 01:06 pm
Acq. Method: 0000RUN.M
Sample Name: CCB
Vial Number: 1306
Misc Info: STDS&RL&CCV 00012,ICV 00015,ICSA&ICSAB 100212
Current Method: C:\ICPCHEM\1\METHODS\00He REP.M
Operator: FCW ICP-MS ID#SEA44
Calibration File: C:\ICPCHEM\1\CALIB\00He REP.C
Last Cal. Update: Oct 08 2012 08:26 am
ISTD Ref File : C:\ICPCHEM\1\DATA\100512AM.B\005CALB.D\005CALB.D#

Tune #	Name
1	\1\7500\he.u
2	CHEM\1\7500\
3	CHEM\1\7500\

Dilution Factor: 1.00
Final Dil Factor: 1.00

QC Elements

Element		T#	Conc. Units	Corr. Conc	RSD(%)	LDR	IS	P/A	Flag
9	Be	1	-0.004 ug/l	0.00	185.8	9000	6	P	
23	Na	1	-0.507 ug/l	-0.51	57.3	450000	45	P	
24	Mg	1	0.139 ug/l	0.14	52.2	450000	45	P	
27	Al	1	0.131 ug/l	0.13	24.0	450000	45	P	
31	P	1	-1.184 ug/l	-1.18	26.5	450000	45	P	
39	K	1	-0.518 ug/l	-0.52	38.2	450000	45	P	
44	Ca	1	1.743 ug/l	1.74	9.7	450000	45	P	
47	Ti	1	0.004 ug/l	0.00	204.3	4500	45	P	
51	V	1	-0.058 ug/l	-0.06	27.7	9000	45	P	
52	Cr	1	0.000 ug/l	0.00	13159.0	9000	45	P	
55	Mn	1	-0.004 ug/l	0.00	51.0	9000	74	P	
56	Fe	1	0.336 ug/l	0.34	13.2	225000	74	P	
59	Co	1	0.000 ug/l	0.00	3391.4	9000	74	P	
60	Ni	1	0.003 ug/l	0.00	162.8	9000	74	P	
63	Cu	1	-0.067 ug/l	-0.07	19.7	9000	74	P	
66	Zn	1	0.059 ug/l	0.06	17.9	9000	74	P	
75	As	1	0.011 ug/l	0.01	88.7	9000	74	P	
78	Se	1	0.039 ug/l	0.04	166.1	9000	74	P	
88	Sr	1	-0.003 ug/l	0.00	123.6	9000	74	P	
95	Mo	1	0.039 ug/l	0.04	21.0	4500	103	P	
109	Ag	1	0.003 ug/l	0.00	27.8	900	103	P	
114	Cd	1	0.002 ug/l	0.00	74.8	9000	103	P	
118	Sn	1	0.034 ug/l	0.03	7.1	4500	103	P	
123	Sb	1	0.052 ug/l	0.05	27.2	900	103	P	
135	Ba	1	0.003 ug/l	0.00	42.7	9000	103	P	
200	Hg	1	0.016 ug/l	0.02	14.6	45	209	P	
205	Tl	1	0.011 ug/l	0.01	5.5	900	209	P	
208	Pb	1	0.003 ug/l	0.00	101.4	9000	209	P	
238	U	1	0.005 ug/l	0.01	21.1	9000	209	P	

ISTD Elements

IS	Mass	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)			Flag
6	Li	1	193126	0.89	198000	97.5	30	-	125	
45	Sc	1	2630733	0.52	2483000	105.9	30	-	125	
74	Ge	1	5296836	0.65	5068000	104.5	30	-	125	
103	Rh	1	7276081	1.14	7158000	101.6	30	-	125	
165	Ho	1	3188046	1.43	3077000	103.6	30	-	125	
175	Lu	1	2721221	1.18	2625000	103.7	30	-	125	
209	Bi	1	3735180	1.43	3656000	102.2	30	-	125	

Analytes: Pass
0 :Element Failures
0 :ISTD Failures

ISTD: Pass
0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

TA Seattle Sample Report 200.8/6020 7500ce ICPMS

Data File: C:\ICPCHEM\1\DATA\100512AM.B\043SMPL.D\043SMPL.D#
Date Acquired: Oct 5 2012 01:36 pm
Acq. Method: 0000RUN.M
Sample Name: CCV
Vial Number: 1104
Misc Info: STDS&RL&CCV 00012,ICV 00015,ICSA&ICSAB 100212
Current Method: C:\ICPCHEM\1\METHODS\00He REP.M
Operator: FCW ICP-MS ID#SEA44
Calibration File: C:\ICPCHEM\1\CALIB\00He REP.C
Last Cal. Update: Oct 08 2012 08:26 am
ISTD Ref File : C:\ICPCHEM\1\DATA\100512AM.B\005CALB.D\005CALB.D#
Dilution Factor: 1.00
Final Dil Factor: 1.00

Tune #	Name
1	\1\7500\he.u
2	CHEM\1\7500\
3	CHEM\1\7500\

QC Elements

Element		T#	Conc.	Units	Corr. Conc	RSD(%)	LDR	IS	P/A	Flag
9	Be	1	48.660	ug/l	48.66	0.7	9000	6	P	
23	Na	1	4870.000	ug/l	4,870.00	0.1	450000	45	A	
24	Mg	1	4916.000	ug/l	4,916.00	0.5	450000	45	A	
27	Al	1	500.200	ug/l	500.20	1.0	450000	45	P	
31	P	1	4920.000	ug/l	4,920.00	0.5	450000	45	P	
39	K	1	4989.000	ug/l	4,989.00	1.6	450000	45	A	
44	Ca	1	4915.000	ug/l	4,915.00	0.2	450000	45	P	
47	Ti	1	49.040	ug/l	49.04	0.8	4500	45	P	
51	V	1	48.510	ug/l	48.51	0.9	9000	45	P	
52	Cr	1	48.650	ug/l	48.65	1.1	9000	45	P	
55	Mn	1	49.870	ug/l	49.87	1.9	9000	74	P	
56	Fe	1	4947.000	ug/l	4,947.00	2.5	225000	74	A	
59	Co	1	48.930	ug/l	48.93	2.2	9000	74	P	
60	Ni	1	49.570	ug/l	49.57	1.7	9000	74	P	
63	Cu	1	49.550	ug/l	49.55	1.7	9000	74	P	
66	Zn	1	49.280	ug/l	49.28	2.2	9000	74	P	
75	As	1	49.240	ug/l	49.24	1.3	9000	74	P	
78	Se	1	49.630	ug/l	49.63	1.2	9000	74	P	
88	Sr	1	49.230	ug/l	49.23	1.5	9000	74	P	
95	Mo	1	48.670	ug/l	48.67	1.7	4500	103	P	
109	Ag	1	49.570	ug/l	49.57	2.0	900	103	P	
114	Cd	1	49.170	ug/l	49.17	1.6	9000	103	P	
118	Sn	1	48.940	ug/l	48.94	1.4	4500	103	P	
123	Sb	1	48.980	ug/l	48.98	2.0	900	103	P	
135	Ba	1	49.260	ug/l	49.26	1.3	9000	103	P	
200	Hg	1	2.433	ug/l	2.43	0.4	45	209	P	
205	Tl	1	49.700	ug/l	49.70	1.3	900	209	P	
208	Pb	1	49.400	ug/l	49.40	1.2	9000	209	P	
238	U	1	49.660	ug/l	49.66	2.6	9000	209	A	

ISTD Elements

IS	Mass	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)			Flag
6	Li	1	187415	0.83	198000	94.7	30	-	125	
45	Sc	1	2622708	0.32	2483000	105.6	30	-	125	
74	Ge	1	5213718	0.65	5068000	102.9	30	-	125	
103	Rh	1	6974194	0.55	7158000	97.4	30	-	125	
165	Ho	1	3093453	0.61	3077000	100.5	30	-	125	
175	Lu	1	2688449	0.88	2625000	102.4	30	-	125	
209	Bi	1	3581313	0.69	3656000	98.0	30	-	125	

Analytes: Pass
ISTD: Pass

0 :Element Failures
0 :ISTD Failures
0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

TA Seattle Sample Report 200.8/6020 7500ce ICPMS

Data File: C:\ICPCHEM\1\DATA\100512AM.B\044SMPL.D\044SMPL.D#
Date Acquired: Oct 5 2012 01:40 pm
Acq. Method: 0000RUN.M
Sample Name: CCB
Vial Number: 1306
Misc Info: STDS&RL&CCV 00012,ICV 00015,ICSA&ICSAB 100212
Current Method: C:\ICPCHEM\1\METHODS\00He REP.M
Operator: FCW ICP-MS ID#SEA44
Calibration File: C:\ICPCHEM\1\CALIB\00He REP.C
Last Cal. Update: Oct 08 2012 08:26 am
ISTD Ref File : C:\ICPCHEM\1\DATA\100512AM.B\005CALB.D\005CALB.D#
Dilution Factor: 1.00
Final Dil Factor: 1.00

Tune #	Name
1	\1\7500\he.u
2	CHEM\1\7500\
3	CHEM\1\7500\

QC Elements

Element		T#	Conc.	Units	Corr. Conc	RSD(%)	LDR	IS	P/A	Flag
9	Be	1	-0.008	ug/l	-0.01	34.7	9000	6	P	
23	Na	1	-0.239	ug/l	-0.24	496.4	450000	45	P	
24	Mg	1	0.137	ug/l	0.14	59.0	450000	45	P	
27	Al	1	0.066	ug/l	0.07	36.6	450000	45	P	
31	P	1	-1.388	ug/l	-1.39	56.6	450000	45	P	
39	K	1	-0.989	ug/l	-0.99	61.8	450000	45	P	
44	Ca	1	0.658	ug/l	0.66	140.1	450000	45	P	
47	Ti	1	0.009	ug/l	0.01	97.6	4500	45	P	
51	V	1	-0.071	ug/l	-0.07	19.5	9000	45	P	
52	Cr	1	-0.009	ug/l	-0.01	29.7	9000	45	P	
55	Mn	1	0.000	ug/l	0.00	6797.3	9000	74	P	
56	Fe	1	0.365	ug/l	0.37	16.0	225000	74	P	
59	Co	1	0.000	ug/l	0.00	238.1	9000	74	P	
60	Ni	1	0.001	ug/l	0.00	560.7	9000	74	P	
63	Cu	1	-0.063	ug/l	-0.06	18.1	9000	74	P	
66	Zn	1	0.071	ug/l	0.07	42.5	9000	74	P	
75	As	1	0.009	ug/l	0.01	66.3	9000	74	P	
78	Se	1	0.039	ug/l	0.04	64.1	9000	74	P	
88	Sr	1	-0.004	ug/l	0.00	114.8	9000	74	P	
95	Mo	1	0.037	ug/l	0.04	11.7	4500	103	P	
109	Ag	1	0.002	ug/l	0.00	20.6	900	103	P	
114	Cd	1	0.001	ug/l	0.00	241.5	9000	103	P	
118	Sn	1	0.039	ug/l	0.04	17.6	4500	103	P	
123	Sb	1	0.052	ug/l	0.05	22.0	900	103	P	
135	Ba	1	0.001	ug/l	0.00	518.7	9000	103	P	
200	Hg	1	0.018	ug/l	0.02	8.0	45	209	P	
205	Tl	1	0.012	ug/l	0.01	6.1	900	209	P	
208	Pb	1	0.004	ug/l	0.00	34.5	9000	209	P	
238	U	1	0.006	ug/l	0.01	10.7	9000	209	P	

ISTD Elements

IS	Mass	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)			Flag
6	Li	1	197415	0.43	198000	99.7	30	-	125	
45	Sc	1	2677402	1.27	2483000	107.8	30	-	125	
74	Ge	1	5337623	1.13	5068000	105.3	30	-	125	
103	Rh	1	7356997	0.92	7158000	102.8	30	-	125	
165	Ho	1	3231815	0.42	3077000	105.0	30	-	125	
175	Lu	1	2753247	0.80	2625000	104.9	30	-	125	
209	Bi	1	3811212	0.57	3656000	104.2	30	-	125	

Analytes: Pass
ISTD: Pass

0 :Element Failures
0 :ISTD Failures
0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

TA Seattle Sample Report 200.8/6020 7500ce ICPMS

Data File: C:\ICPCHEM\1\DATA\100512AM.B\050SMPL.D\050SMPL.D#
Date Acquired: Oct 5 2012 02:02 pm
Acq. Method: 0000RUN.M
Sample Name: CCV
Vial Number: 1104
Misc Info: STDS&RL&CCV 00012,ICV 00015,ICSA&ICSAB 100212
Current Method: C:\ICPCHEM\1\METHODS\00He REP.M
Operator: FCW ICP-MS ID#SEA44
Calibration File: C:\ICPCHEM\1\CALIB\00He REP.C
Last Cal. Update: Oct 08 2012 08:26 am
ISTD Ref File : C:\ICPCHEM\1\DATA\100512AM.B\005CALB.D\005CALB.D#

Tune #	Name
1	\1\7500\he.u
2	CHEM\1\7500\
3	CHEM\1\7500\

Dilution Factor: 1.00
Final Dil Factor: 1.00

QC Elements

Element		T#	Conc.	Units	Corr. Conc	RSD(%)	LDR	IS	P/A	Flag
9	Be	1	48.050	ug/l	48.05	1.7	9000	6	P	
23	Na	1	4890.000	ug/l	4,890.00	1.3	450000	45	A	
24	Mg	1	4870.000	ug/l	4,870.00	2.0	450000	45	A	
27	Al	1	498.200	ug/l	498.20	2.0	450000	45	P	
31	P	1	4906.000	ug/l	4,906.00	1.9	450000	45	P	
39	K	1	4920.000	ug/l	4,920.00	1.1	450000	45	A	
44	Ca	1	4932.000	ug/l	4,932.00	1.9	450000	45	P	
47	Ti	1	48.650	ug/l	48.65	2.6	4500	45	P	
51	V	1	48.270	ug/l	48.27	2.2	9000	45	P	
52	Cr	1	48.460	ug/l	48.46	2.8	9000	45	P	
55	Mn	1	49.940	ug/l	49.94	0.8	9000	74	P	
56	Fe	1	4949.000	ug/l	4,949.00	1.7	225000	74	A	
59	Co	1	49.070	ug/l	49.07	2.2	9000	74	P	
60	Ni	1	49.180	ug/l	49.18	2.6	9000	74	P	
63	Cu	1	49.040	ug/l	49.04	2.0	9000	74	P	
66	Zn	1	49.370	ug/l	49.37	1.3	9000	74	P	
75	As	1	49.140	ug/l	49.14	1.6	9000	74	P	
78	Se	1	49.820	ug/l	49.82	1.3	9000	74	P	
88	Sr	1	49.340	ug/l	49.34	0.5	9000	74	P	
95	Mo	1	47.740	ug/l	47.74	0.6	4500	103	P	
109	Ag	1	49.260	ug/l	49.26	1.0	900	103	P	
114	Cd	1	48.350	ug/l	48.35	0.4	9000	103	P	
118	Sn	1	48.610	ug/l	48.61	0.8	4500	103	P	
123	Sb	1	48.690	ug/l	48.69	1.1	900	103	P	
135	Ba	1	48.630	ug/l	48.63	0.5	9000	103	P	
200	Hg	1	2.477	ug/l	2.48	2.5	45	209	P	
205	Tl	1	49.810	ug/l	49.81	1.8	900	209	P	
208	Pb	1	49.440	ug/l	49.44	1.4	9000	209	P	
238	U	1	50.000	ug/l	50.00	1.0	9000	209	A	

ISTD Elements

IS	Mass	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)			Flag
6	Li	1	191571	1.17	198000	96.8	30	-	125	
45	Sc	1	2655992	1.18	2483000	107.0	30	-	125	
74	Ge	1	5245779	0.64	5068000	103.5	30	-	125	
103	Rh	1	7109475	0.80	7158000	99.3	30	-	125	
165	Ho	1	3203038	1.60	3077000	104.1	30	-	125	
175	Lu	1	2756564	1.86	2625000	105.0	30	-	125	
209	Bi	1	3626122	0.40	3656000	99.2	30	-	125	

Analytes: Pass
0 :Element Failures
0 :ISTD Failures

ISTD: Pass
0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

TA Seattle Sample Report 200.8/6020 7500ce ICPMS

Data File: C:\ICPCHEM\1\DATA\100512AM.B\051SMPL.D\051SMPL.D#
Date Acquired: Oct 5 2012 02:06 pm Acq. Method: 0000RUN.M
Sample Name: CCB Vial Number: 1306
Misc Info: STDS&RL&CCV 00012,ICV 00015,ICSA&ICSAB 100212

Current Method: C:\ICPCHEM\1\METHODS\00He REP.M Operator: FCW ICP-MS ID#SEA44
Calibration File: C:\ICPCHEM\1\CALIB\00He REP.C
Last Cal. Update: Oct 08 2012 08:26 am
ISTD Ref File : C:\ICPCHEM\1\DATA\100512AM.B\005CALB.D\005CALB.D#

Tune #	Name
1	\1\7500\he.u
2	CHEM\1\7500\
3	CHEM\1\7500\

Dilution Factor: 1.00 Final Dil Factor: 1.00

QC Elements

Element		T#	Conc.	Units	Corr. Conc	RSD(%)	LDR	IS	P/A	Flag
9	Be	1	-0.001	ug/l	0.00	486.0	9000	6	P	
23	Na	1	-0.695	ug/l	-0.69	49.9	450000	45	P	
24	Mg	1	0.167	ug/l	0.17	21.7	450000	45	P	
27	Al	1	0.842	ug/l	0.84	10.2	450000	45	P	
31	P	1	1.087	ug/l	1.09	155.5	450000	45	P	
39	K	1	0.354	ug/l	0.35	388.9	450000	45	P	
44	Ca	1	0.629	ug/l	0.63	66.4	450000	45	P	
47	Ti	1	0.046	ug/l	0.05	80.5	4500	45	P	
51	V	1	-0.063	ug/l	-0.06	37.8	9000	45	P	
52	Cr	1	-0.006	ug/l	-0.01	96.7	9000	45	P	
55	Mn	1	0.003	ug/l	0.00	56.2	9000	74	P	
56	Fe	1	0.410	ug/l	0.41	9.7	225000	74	P	
59	Co	1	0.000	ug/l	0.00	378.3	9000	74	P	
60	Ni	1	0.006	ug/l	0.01	106.0	9000	74	P	
63	Cu	1	-0.052	ug/l	-0.05	17.8	9000	74	P	
66	Zn	1	0.321	ug/l	0.32	7.5	9000	74	P	
75	As	1	0.018	ug/l	0.02	18.3	9000	74	P	
78	Se	1	0.088	ug/l	0.09	99.5	9000	74	P	
88	Sr	1	0.001	ug/l	0.00	163.8	9000	74	P	
95	Mo	1	0.064	ug/l	0.06	10.4	4500	103	P	
109	Ag	1	0.002	ug/l	0.00	50.0	900	103	P	
114	Cd	1	-0.001	ug/l	0.00	169.3	9000	103	P	
118	Sn	1	0.089	ug/l	0.09	15.0	4500	103	P	
123	Sb	1	0.093	ug/l	0.09	15.2	900	103	P	
135	Ba	1	0.006	ug/l	0.01	39.0	9000	103	P	
200	Hg	1	0.024	ug/l	0.02	23.5	45	209	P	
205	Tl	1	0.020	ug/l	0.02	24.8	900	209	P	
208	Pb	1	0.008	ug/l	0.01	37.2	9000	209	P	
238	U	1	0.005	ug/l	0.00	21.2	9000	209	P	

ISTD Elements

IS	Mass	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)			Flag
6	Li	1	195472	0.55	198000	98.7	30	-	125	
45	Sc	1	2690540	2.17	2483000	108.4	30	-	125	
74	Ge	1	5360074	0.62	5068000	105.8	30	-	125	
103	Rh	1	7314062	0.07	7158000	102.2	30	-	125	
165	Ho	1	3237644	0.67	3077000	105.2	30	-	125	
175	Lu	1	2766717	0.88	2625000	105.4	30	-	125	
209	Bi	1	3789584	0.60	3656000	103.7	30	-	125	

Analytes: Pass ISTD: Pass

0 :Element Failures 0 :Max. Number of Failures Allowed

0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

TA Seattle Sample Report 200.8/6020 7500ce ICPMS

Data File: C:\ICPCHEM\1\DATA\100512AM.B\052SMPL.D\052SMPL.D#
Date Acquired: Oct 5 2012 02:10 pm Acq. Method: 0000RUN.M
Sample Name: CRI Vial Number: 1107
Misc Info: STDS&RL&CCV 00012,ICV 00015,ICSA&ICSAB 100212
Current Method: C:\ICPCHEM\1\METHODS\00He REP.M Operator: FCW ICP-MS ID#SEA44
Calibration File: C:\ICPCHEM\1\CALIB\00He REP.C
Last Cal. Update: Oct 08 2012 08:26 am
ISTD Ref File : C:\ICPCHEM\1\DATA\100512AM.B\005CALB.D\005CALB.D#

Tune #	Name
1	:\1\7500\he.u
2	'CHEM\1\7500\
3	'CHEM\1\7500\

Dilution Factor: 1.00 Final Dil Factor: 1.00

QC Elements

Element		T#	Conc.	Units	Corr. Conc	RSD(%)	LDR	IS	P/A	Flag
9	Be	1	1.892	ug/l	1.89	6.9	9000	6	P	
23	Na	1	205.000	ug/l	205.00	1.4	450000	45	P	
24	Mg	1	210.300	ug/l	210.30	2.1	450000	45	P	
27	Al	1	20.690	ug/l	20.69	1.0	450000	45	P	
31	P	1	198.800	ug/l	198.80	1.6	450000	45	P	
39	K	1	215.000	ug/l	215.00	0.1	450000	45	P	
44	Ca	1	200.900	ug/l	200.90	3.1	450000	45	P	
47	Ti	1	1.976	ug/l	1.98	0.5	4500	45	P	
51	V	1	1.924	ug/l	1.92	2.2	9000	45	P	
52	Cr	1	1.998	ug/l	2.00	2.5	9000	45	P	
55	Mn	1	2.093	ug/l	2.09	2.2	9000	74	P	
56	Fe	1	205.600	ug/l	205.60	2.1	225000	74	A	
59	Co	1	2.032	ug/l	2.03	1.2	9000	74	P	
60	Ni	1	2.121	ug/l	2.12	1.4	9000	74	P	
63	Cu	1	2.059	ug/l	2.06	4.6	9000	74	P	
66	Zn	1	2.305	ug/l	2.31	2.4	9000	74	P	
75	As	1	1.984	ug/l	1.98	3.6	9000	74	P	
78	Se	1	1.993	ug/l	1.99	5.9	9000	74	P	
88	Sr	1	1.964	ug/l	1.96	2.7	9000	74	P	
95	Mo	1	1.930	ug/l	1.93	0.5	4500	103	P	
109	Ag	1	1.992	ug/l	1.99	0.6	900	103	P	
114	Cd	1	1.986	ug/l	1.99	3.4	9000	103	P	
118	Sn	1	1.996	ug/l	2.00	1.9	4500	103	P	
123	Sb	1	1.973	ug/l	1.97	1.8	900	103	P	
135	Ba	1	1.994	ug/l	1.99	0.6	9000	103	P	
200	Hg	1	0.111	ug/l	0.11	7.3	45	209	P	
205	Tl	1	1.955	ug/l	1.96	2.9	900	209	P	
208	Pb	1	1.979	ug/l	1.98	2.8	9000	209	P	
238	U	1	1.896	ug/l	1.90	3.0	9000	209	P	

ISTD Elements

IS	Mass	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)			Flag
6	Li	1	198396	0.61	198000	100.2	30	-	125	
45	Sc	1	2644772	0.89	2483000	106.5	30	-	125	
74	Ge	1	5325453	1.11	5068000	105.1	30	-	125	
103	Rh	1	7294079	1.03	7158000	101.9	30	-	125	
165	Ho	1	3246563	1.51	3077000	105.5	30	-	125	
175	Lu	1	2804559	1.01	2625000	106.8	30	-	125	
209	Bi	1	3878803	1.13	3656000	106.1	30	-	125	

Analytes: Pass ISTD: Pass

0 :Element Failures 0 :Max. Number of Failures Allowed

0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

TA Seattle Sample Report 200.8/6020 7500ce ICPMS

Data File: C:\ICPCHEM\1\DATA\100512AM.B\053SMPL.D\053SMPL.D#
Date Acquired: Oct 5 2012 02:13 pm Acq. Method: 0000RUN.M
Sample Name: ICSA Vial Number: 1101
Misc Info: STDS&RL&CCV 00012,ICV 00015,ICSA&ICSAB 100212

Current Method: C:\ICPCHEM\1\METHODS\00He REP.M Operator: FCW ICP-MS ID#SEA44
Calibration File: C:\ICPCHEM\1\CALIB\00He REP.C
Last Cal. Update: Oct 08 2012 08:26 am
ISTD Ref File : C:\ICPCHEM\1\DATA\100512AM.B\005CALB.D\005CALB.D#

Tune #	Name
1	\1\7500\he.u
2	CHEM\1\7500\
3	CHEM\1\7500\

Dilution Factor: 1.00 Final Dil Factor: 1.00

QC Elements

Element		T#	Conc.	Units	Corr. Conc	RSD(%)	LDR	IS	P/A	Flag
9	Be	1	0.013	ug/l	0.01	19.6	9000	6	P	
23	Na	1	47750.000	ug/l	47,750.00	1.1	450000	45	A	
24	Mg	1	19420.000	ug/l	19,420.00	1.5	450000	45	A	
27	Al	1	18670.000	ug/l	18,670.00	2.8	450000	45	A	
31	P	1	20390.000	ug/l	20,390.00	1.1	450000	45	A	
39	K	1	19500.000	ug/l	19,500.00	0.8	450000	45	A	
44	Ca	1	58240.000	ug/l	58,240.00	1.4	450000	45	A	
47	Ti	1	397.300	ug/l	397.30	1.8	4500	45	P	
51	V	1	0.000	ug/l	0.00	15335.0	9000	45	P	
52	Cr	1	0.570	ug/l	0.57	5.5	9000	45	P	
55	Mn	1	1.059	ug/l	1.06	6.2	9000	74	P	
56	Fe	1	49230.000	ug/l	49,230.00	1.7	225000	74	A	
59	Co	1	0.055	ug/l	0.05	7.6	9000	74	P	
60	Ni	1	0.471	ug/l	0.47	5.0	9000	74	P	
63	Cu	1	0.093	ug/l	0.09	18.9	9000	74	P	
66	Zn	1	1.113	ug/l	1.11	2.7	9000	74	P	
75	As	1	0.233	ug/l	0.23	4.9	9000	74	P	
78	Se	1	0.143	ug/l	0.14	30.8	9000	74	P	
88	Sr	1	-0.583	ug/l	-0.58	2.8	9000	74	P	
95	Mo	1	415.900	ug/l	415.90	1.2	4500	103	A	
109	Ag	1	0.030	ug/l	0.03	9.1	900	103	P	
114	Cd	1	0.584	ug/l	0.58	7.5	9000	103	P	
118	Sn	1	0.093	ug/l	0.09	8.8	4500	103	P	
123	Sb	1	0.179	ug/l	0.18	4.7	900	103	P	
135	Ba	1	0.095	ug/l	0.09	8.3	9000	103	P	
200	Hg	1	0.012	ug/l	0.01	7.3	45	209	P	
205	Tl	1	0.008	ug/l	0.01	30.6	900	209	P	
208	Pb	1	0.096	ug/l	0.10	1.4	9000	209	P	
238	U	1	0.023	ug/l	0.02	5.9	9000	209	P	

ISTD Elements

IS	Mass	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)			Flag
6	Li	1	178425	1.78	198000	90.1	30	-	125	
45	Sc	1	2521734	0.68	2483000	101.6	30	-	125	
74	Ge	1	4976103	0.38	5068000	98.2	30	-	125	
103	Rb	1	6353124	0.49	7158000	88.8	30	-	125	
165	Ho	1	3037773	0.25	3077000	98.7	30	-	125	
175	Lu	1	2633349	1.09	2625000	100.3	30	-	125	
209	Bi	1	3323567	0.81	3656000	90.9	30	-	125	

Analytes: Pass ISTD: Pass

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

TA Seattle Sample Report 200.8/6020 7500ce ICPMS

Data File: C:\ICPCHEM\1\DATA\100512AM.B\054SMPL.D\054SMPL.D#
Date Acquired: Oct 5 2012 02:17 pm Acq. Method: 0000RUN.M
Sample Name: ICSAB Vial Number: 1102
Misc Info: STDS&RL&CCV 00012,ICV 00015,ICSA&ICSAB 100212

Current Method: C:\ICPCHEM\1\METHODS\00He REP.M Operator: PCW ICP-MS ID#SEA44
Calibration File: C:\ICPCHEM\1\CALIB\00He REP.C
Last Cal. Update: Oct 08 2012 08:26 am
ISTD Ref File : C:\ICPCHEM\1\DATA\100512AM.B\005CALB.D\005CALB.D#

Tune #	Name
1	\1\7500\he.u
2	CHEM\1\7500\
3	CHEM\1\7500\

Dilution Factor: 1.00 Final Dil Factor: 1.00

QC Elements

Element		T#	Conc.	Units	Corr. Conc	RSD(%)	LDR	IS	P/A	Flag
9	Be	1	0.015	ug/l	0.02	86.9	9000	6	P	
23	Na	1	47580.000	ug/l	47,580.00	2.7	450000	45	A	
24	Mg	1	19400.000	ug/l	19,400.00	2.1	450000	45	A	
27	Al	1	18510.000	ug/l	18,510.00	2.7	450000	45	A	
31	P	1	20370.000	ug/l	20,370.00	1.6	450000	45	A	
39	K	1	19450.000	ug/l	19,450.00	1.0	450000	45	A	
44	Ca	1	56960.000	ug/l	56,960.00	1.9	450000	45	A	
47	Ti	1	393.900	ug/l	393.90	2.1	4500	45	P	
51	V	1	39.650	ug/l	39.65	1.2	9000	45	P	
52	Cr	1	39.880	ug/l	39.88	1.7	9000	45	P	
55	Mn	1	40.620	ug/l	40.62	1.3	9000	74	P	
56	Fe	1	48540.000	ug/l	48,540.00	0.8	225000	74	A	
59	Co	1	39.780	ug/l	39.78	1.5	9000	74	P	
60	Ni	1	39.860	ug/l	39.86	1.8	9000	74	P	
63	Cu	1	38.530	ug/l	38.53	2.2	9000	74	P	
66	Zn	1	20.550	ug/l	20.55	3.5	9000	74	P	
75	As	1	20.890	ug/l	20.89	1.7	9000	74	P	
78	Se	1	20.420	ug/l	20.42	0.8	9000	74	P	
88	Sr	1	-0.576	ug/l	-0.58	4.3	9000	74	P	
95	Mo	1	414.400	ug/l	414.40	1.3	4500	103	A	
109	Ag	1	10.080	ug/l	10.08	0.7	900	103	P	
114	Cd	1	20.790	ug/l	20.79	0.9	9000	103	P	
118	Sn	1	0.082	ug/l	0.08	0.9	4500	103	P	
123	Sb	1	0.172	ug/l	0.17	2.2	900	103	P	
135	Ba	1	0.095	ug/l	0.09	5.6	9000	103	P	
200	Hg	1	0.015	ug/l	0.01	28.6	45	209	P	
205	Tl	1	0.008	ug/l	0.01	14.8	900	209	P	
208	Pb	1	0.093	ug/l	0.09	6.7	9000	209	P	
238	U	1	0.024	ug/l	0.02	10.4	9000	209	P	

ISTD Elements

IS	Mass	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)			Flag
6	Li	1	174112	0.32	198000	87.9	30	-	125	
45	Sc	1	2458238	1.58	2483000	99.0	30	-	125	
74	Ge	1	4870913	0.48	5068000	96.1	30	-	125	
103	Rh	1	6306925	0.66	7158000	88.1	30	-	125	
165	Ho	1	2998723	0.41	3077000	97.5	30	-	125	
175	Lu	1	2589631	0.93	2625000	98.7	30	-	125	
209	Bi	1	3268205	0.96	3656000	89.4	30	-	125	

Analytes: Pass ISTD: Pass

0 :Element Failures 0 :Max. Number of Failures Allowed

0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Metals/Inorganics Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 580-121702

Method Code: 580-3050B-580

Analyst: Woo, Fred C

Batch Open: 10/5/2012 7:20:58AM

Batch End: 10/5/2012 9:50:00AM

Preparation, Metals

	Input Sample Lab ID (Analytical Method)	SDG	Matrix	Initial Amount	Final Amount	Due Date	Analytical TAT	Div Rank	Comments	Output Sample Lab ID
1	mdl1 N/A	N/A		1 g	50 mL	N/A	N/A	N/A		580-990520
2	mdl2 N/A	N/A		1 g	50 mL	N/A	N/A	N/A		580-990521
3	mdl3 N/A	N/A		1 g	50 mL	N/A	N/A	N/A		580-990522
4	mdl4 N/A	N/A		1 g	50 mL	N/A	N/A	N/A		580-990523
5	mdl5 N/A	N/A		1 g	50 mL	N/A	N/A	N/A		580-990524
6	mdl6 N/A	N/A		1 g	50 mL	N/A	N/A	N/A		580-990525
7	mdl7 N/A	N/A		1 g	50 mL	N/A	N/A	N/A		580-990526
8	N/A	N/A		1 g	50 mL	N/A	N/A	N/A		580-990078

Metals/Inorganics Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 580-121702 | Analyst: Woo, Fred C | Batch Open: 10/5/2012 7:20:58AM

Method Code: 580-3050B-580 | Batch End: 10/5/2012 9:50:00AM

	Input Sample Lab ID (Analytical Method)	(Sub-List)	Analytes
1	mdl1 N/A	N/A	N/A
2	mdl2 N/A	N/A	N/A
3	mdl3 N/A	N/A	N/A
4	mdl4 N/A	N/A	N/A
5	mdl5 N/A	N/A	N/A
6	mdl6 N/A	N/A	N/A
7	mdl7 N/A	N/A	N/A
8	N/A	N/A	N/A

Analytes that are not being reported with be displayed in [...] brackets. Analytes that are not being reported but are on the spike list with be displayed in (...) parentheses.

Metals/Inorganics Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 580-121702 | Analyst: Woo, Fred C | Batch Open: 10/5/2012 7:20:58AM

Method Code: 580-3050B-580 | Batch End: 10/5/2012 9:50:00AM

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Perform Calculation (0=No, 1=Yes)	
Nominal Amount Used	
Digestion Tube/Cup Lot #	905458
Blank<Soil Lot Number	
Balance ID	SEA220
Hood ID or number	06
Hot Block<ID number	38009
Lot # of hydrochloric acid	981221
Lot # of Nitric Acid	984854
Logbook<ID for diluted Nitric	
Hydrogen peroxide lot number	762108
ID number of the thermometer	15-041-1A-B
Temperature	
Filter Paper Lot Number	
Acid used for pH adjustment	
Pipette ID	METALS-PREP-2
Analyst	
First Start time	
First End time	
Person's name who witnessed reagent drop	

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Uncorrected Temperature	95	
Oven, Bath or Block<Temperature 1	94	CORRECTED-TEMP
Uncorrected Temperature 2		
Oven, Bath or Block<Temperature 2		
Batch Comment		

Comments