SDG # 8304643

Close Report

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

ANALYTICAL REPORT

Tronox LLC, Henderson

SDG: 8304643
Lots #: D9K030552 and D9K030554

Frank Hagar

Northgate Environmental Management, Inc.
1100 Quail Street
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TestAmerica Laboratories, Inc.

Michael P. Phillips

Michael P. Phillips
Project Manager

November 28, 2009

Case Narrative
SDG 8304643

The samples presented in this report were submitted to TestAmerica by Northgate Environmental Management, Inc. from the Tronox/Henderson site. The samples were received according to documented sample acceptance procedures.

TestAmerica utilizes USEPA approved methods in all analytical work. The samples presented in this report were analyzed for the parameters listed on the methods summary page in accordance with the methods indicated.

The results apply only to the samples included in this report and meet all requirements of NELAC. All data have been reviewed for compliance with the laboratory QA/QC plan and have been found to be compliant with laboratory protocols, with the exception of any items noted below.

Sample Receiving
One sample was received under chain of custody at a temperature of 2.3°C on November 3, 2009, and was logged under lot D9K030552. Two samples were received under chain of custody at a temperature of 2.3°C on November 3, 2009, and were logged under lot D9K030554. These lots are reported here under SDG 8304643.

Total Arsenic and Selenium – SW846 Method 6020/Collision Cell
The method required MS/MSD was performed for Total Metals QC batch 9308149 using sample D9K030552-001 (EB110209-GWA3), and all results were in control.

Quality Control Definitions of Terms

Term	Definition
Batch	A set of up to 20 field samples plus associated laboratory QC samples that are similar in composition (matrix) and that are processed within the same time period with the same reagent and standard lots.
Laboratory Control Sample and Laboratory Control Sample Duplicate (LCS/LCSD)	A volume of reagent water for aqueous samples or a contaminant-free solid matrix (Ottawa sand) for soil and sediment samples which is spiked with known amounts of representative target analytes and required surrogates. A LCS is carried through the entire analytical process and is used to monitor the accuracy of the analytical process independent of potential matrix effects. An LCSD is a second Laboratory Control Sample.
Matrix Spike and Matrix Spike Duplicate (MS/MSD)	A field sample fortified with known quantities of target analytes that are also added to the LCS. Matrix spike duplicate is a second matrix spike sample. MS/MSDs are carried throughout the entire analytical process and are used to determine sample matrix effect on accuracy of the measurement system. The accuracy and precision estimated using MS/MSD is only representative of the precision of the sample that was spiked.
Method Blank	A sample composed of all the reagents (in the same quantities) in reagent water carried through the entire analytical process. The method blank is used to monitor the level of contamination introduced during sample preparation steps.
Surrogate	Organic constituents not expected to be detected in environmental media and are added to every sample and QC at a known concentration. Surrogates are used to determine the efficiency of the sample preparation and the analytical process.
Sample Duplicate	A second aliquot of an environmental sample, taken from the same sample container when possible, that is processed independently with the first sample aliquot. The results are used to assess the effect of the sample matrix on the precision of the analytical process. The precision estimated using this sample is not necessarily representative of the precision for other samples in the batch.
Method Detection Limit "MDL"	The method detection limit is defined as the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero and is determined from replicate analyses of low level standards in a typical representative matrix.
Reporting Limit "RL"	The TestAmerica reporting limit is normally the lowest level at which measurements become quantitatively meaningful, ie., the quantitation limit, which is approximately three times the MDL. Some projects require RLs that are less than the quantitation limit to achieve particular maximum contaminant levels (MCLs) or relevant and appropriate requirements (ARARs), but RLs cannot be less than the statistically determined MDL.

Quality Control Definitions of Qualifiers

Qualifier	Definition
*	Surrogate or Relative Percent Difference (RPD) is outside control limits.
a	Spiked analyte recovery is outside control limits.
B	Organics: Method blank contamination. The associated method blank contains the target analyte at a reportable level. Inorganics: Estimated result. Result is less than the RL
COL	More than 40% difference between the primary and confirmation detector results. The lower of the two results is reported.
DIL	The concentration is estimated or not reported due to dilution.
E	Estimated result. Result concentration exceeds the calibration range.
G	Inorganics: Elevated reporting limit. The reporting limit is elevated due to matrix interference.
J	Organics: Estimated result. Result is less than RL Inorganics: Method blank contamination. The associated method blank contains the target analyte at a reportable level.
L	Serial dilution of a digestate in the analytical batch indicates that physical and chemical interferences are present
N	Spiked analyte recovery is outside stated control limits.
NC	The recovery and/or RPD were not calculated.
ND	The analyte was not detected at the MDL concentration and with a measurable degree of confidence can be said not to be present at or above the RL concentration.
p	Relative percent difference (RPD) is outside stated control limits.
Q	Elevated reporting limit. The reporting limit is elevated due to high analyte levels.
V	General Chemistry: Elevated reporting limit due to limited sample volume.
Wa	Post digestion spike recovery fell between 40-85% due to matrix interference.
Wb	Post digestion spike recovery fell between 115-150% due to matrix interference.
I	Percent recovery is estimated since the results exceeded the calibration range.
T1	A tentatively identified compound that did not generate a spectral match of 80% or greater. Typically called "unknown"
T2	A tentatively identified compound with a spectral match of 80% or better
T3	A tentatively identified compound that was calibrated for by the lab, but not on the client target analyte list.
IC	Diluted due to high inorganic chloride.

EXECUTIVE SUMMARY - Detection Highlights

D9K030552

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
NO DETECTABLE PARAMETERS				

EXECUTIVE SUMMARY - Detection Highlights

8304643 : D9K030554

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
M-147B 11/02/09 10:00 001				
Arsenic	170	5.0	ug/L	SW846 6020
Selenium	7.3	5.0	ug/L	SW846 6020
M-147009B 11/02/09 10:00 002				
Arsenic	180	5.0	ug/L	SW846 6020
Selenium	7.8	5.0	ug/L	SW846 6020

METHODS SUMMARY

8304643

PARAMETER	ANALYTICAL METHOD	PREPARATION METHOD
ICP-MS (6020)	SW846 6020	SW846 3020A

References:

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

METHOD / ANALYST SUMMARY

8304643

ANALYTICAL METHOD	ANALYST	ANALYST ID
SW846 6020	Luis Diaz	4729

References:

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

SAMPLE SUMMARY

8304643 : D9K030552

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
LNQ0L	001	EB110209-GWA3	11/02/09	12:40

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

(Continued on next page)

SAMPLE SUMMARY

8304643 : D9K030554

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
LNQ0R	001	M-147B	11/02/09	10:00
LNQ0T	002	M-147009B	11/02/09	10:00

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

QC DATA ASSOCIATION SUMMARY

D9K030552

Sample Preparation and Analysis Control Numbers

SAMPLE#	MATRIX	ANALYTICAL METHOD	LEACH BATCH #	PREP BATCH #	MS RUN#
001	WQ	SW846 6020		9308149	9308089

QC DATA ASSOCIATION SUMMARY

D9K030554

Sample Preparation and Analysis Control Numbers

SAMPLE#	MATRIX	ANALYTICAL METHOD	LEACH BATCH #	PREP BATCH #	MS RUN#
001	WG	SW846 6020		9308149	9308089
002	WG	SW846 6020		9308149	9308089

TestAmerica

Total Metals

CLP-Like Forms

Lot ID: D9K030552

Client: Northgate/Tronox

Method: SW846 6020/Collision Cell

Associated Samples: 001

TestAmerica

Total Metals Analysis

COVER PAGE - INORGANIC ANALYSIS DATA PACKAGE

Contract: Northgate Environmental Management, Inc. SDG No.: D9K030552

Lab Code: _____ Case No.: _____ SAS No.: _____

SOW No.: _____

Sample ID.	Lab Sample No.
EB110209-GWA3	D9K030552-001
EB110209-GWA3 MS	D9K030552-001S
EB110209-GWA3 MSD	D9K030552-001SD

Were ICP interelement corrections applied? Yes/No YES

Were ICP background corrections applied? Yes/No YES

If yes-were raw data generated before application of background corrections? Yes/No NO

Comments:

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Janice Collins Name: Janice Collins

Date: 11/17/09 Title: Metals Analyst

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Northgate Environmental Management, Inc.

Total Metals Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	EB110209-GWA3
Lot/SDG Number:	D9K030552	**Lab Sample ID:**	D9K030552-001
Matrix:	WATER	**Lab WorkOrder:**	LNQ0L
% Moisture:	N/A	**Date/Time Collected:**	11/02/09 12:40
Basis:	Wet	**Date/Time Received:**	11/03/09 09:30
Analysis Method:	6020	**Date Leached:**	
Unit:	ug/L	**Date/Time Extracted:**	11/05/09 07:00
QC Batch ID:	9308149	**Date/Time Analyzed:**	11/10/09 08:20
Sample Aliquot:	50 mL	**Instrument ID:**	024
Dilution Factor:	1		

CAS No.	Analyte	Conc.	MDL	RL	Q
7440-38-2	Arsenic	0.21	0.21	5.0	U
7782-49-2	Selenium	0.70	0.70	5.0	U

TestAmerica

Total Metals Analysis

-2A-

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Contract: Northgate Environmental Management, Inc.

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG NO.: D9K030552

Initial Calibration Source: High Purity

Continuing Calibration Source: Inorganic Ventures

Concentration Units: ug/L

Analyte	Initial Calibration			Continuing Calibration					
	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	M
Arsenic	40.0	40.1	100.2	50.0	50.9	101.8	50.5	101.0	M
Selenium	40.0	40.2	100.5	50.0	51.9	103.8	49.5	99.0	M

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

Total Metals Analysis

-2A-

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Contract: Northgate Environmental Management, Inc.

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG NO.: D9K030552

Initial Calibration Source: High Purity

Continuing Calibration Source: Inorganic Ventures

Concentration Units: ug/L

Analyte	Initial Calibration			Continuing Calibration					
	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	M
Arsenic				50.0	49.9	99.8	51.3	102.6	M
Selenium				50.0	51.0	102.0	51.5	103.0	M

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

Total Metals Analysis

-2A-

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Contract: Northgate Environmental Management, Inc.

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG NO.: D9K030552

Initial Calibration Source: High Purity

Continuing Calibration Source: Inorganic Ventures

Concentration Units: ug/L

Analyte	Initial Calibration			Continuing Calibration					
	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	M
Arsenic				50.0	51.3	102.6	51.3	102.6	M
Selenium				50.0	50.3	100.6	50.6	101.2	M

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

TestAmerica

Total Metals Analysis
-2B-
CRDL STANDARD FOR AA AND ICP

Contract: Northgate Environmental Management, Inc.

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: D9K030552

AA CRDL Standard Source: _____

ICP CRDL Standard Source: Inorganic Ventures

Concentration Units: ug/L

Analyte	CRDL Standard for AA			CRDL Standard for ICP				
				Initial			Final	
	True	Found	%R	True	Found	%R	Found	%R
Arsenic				1.00	1.051	105.1		
Selenium				1.00	1.232	123.2		

Comments:

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Northgate Environmental Management, Inc.

Total Metals Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	
Lot/SDG Number:	D9K030552	**Lab Sample ID:**	D9K040000-149B
Matrix:	WATER	**Lab WorkOrder:**	LNRQV
% Moisture:		**Date/Time Collected:**	
Basis:	Wet	**Date/Time Received:**	
Analysis Method:	6020	**Date Leached:**	
Unit:	ug/L	**Date/Time Extracted:**	11/05/09 07:00
QC Batch ID:	9308149	**Date/Time Analyzed:**	11/10/09 08:14
Sample Aliquot:	50 mL	**Instrument ID:**	024
Dilution Factor:	1		

CAS No.	Analyte	Conc.	MDL	RL	Q
7440-38-2	Arsenic	0.21	0.21	5.0	U
7782-49-2	Selenium	0.70	0.70	5.0	U

TestAmerica

Total Metals Analysis

-3-

BLANKS

Contract: Northgate Environmental Management, Inc.

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG NO.: D9K030552

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Arsenic	0.210	U	0.210	U	0.210	U	0.210	U	0.21	U	M
Selenium	0.700	U	0.700	U	0.700	U	0.700	U	0.70	U	M

Comments:

TestAmerica

Total Metals Analysis

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BLANKS

Contract: Northgate Environmental Management, Inc.

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG NO.: D9K030552

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Arsenic			0.210	U	0.210	U	0.210	U			M
Selenium			0.700	U	-1.128	B	-1.652	B			M

Comments:

TestAmerica

Total Metals Analysis

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ICP INTERFERENCE CHECK SAMPLE

Contract: Northgate Environmental Management, Inc.

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG NO.: D9K030552

ICP ID Number: Agilent 7500 ICS Source: Inorganic Ventures

Concentration Units): ug/L

Analyte	True		Initial Found			Final Found		
	Sol.A	Sol.AB	Sol.A	Sol.AB	%R	Sol.A	Sol.AB	%R
Arsenic	0.0	100.0	0.28	101.00	101.0	0.40	98.23	98.2
Selenium	0.0	100.0	0.38	100.00	100.0	0.25	104.70	104.7

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THE LEADER IN ENVIRONMENTAL TESTING

Northgate Environmental Management, Inc.

Total Metals Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	EB110209-GWA3
Lot/SDG Number:	D9K030552	**MS Lab Sample ID:**	D9K030552-001S
Matrix:	WATER	**MS Lab WorkOrder:**	LNQ0L
% Moisture:	N/A	**Date/Time Collected:**	11/02/09 12:40
Basis:	Wet	**Date/Time Received:**	11/03/09 09:30
Analysis Method:	6020	**Date Leached:**	
Unit:	ug/L	**Date/Time Extracted:**	11/05/09 07:00
QC Batch ID:	9308149	**Date/Time Analyzed:**	11/10/09 08:28
MS Sample Aliquot:	50 mL	**Instrument ID:**	024
MS Dilution Factor:	1		

Analyte	Spike Amount	Sample Result	C	MS Result	C	% Rec	Q	QC Limit
Arsenic	40.0	0.21	U	39.4		99		85 - 117
Selenium	40.0	0.70	U	38.0		95		77 - 122

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Northgate Environmental Management, Inc.

Total Metals Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	EB110209-GWA3
Lot/SDG Number:	D9K030552	**MSD Lab Sample ID:**	D9K030552-001D
Matrix:	WATER	**MSD Lab WorkOrder:**	LNQ0L
% Moisture:	N/A	**Date/Time Collected:**	11/02/09 12:40
Basis:	Wet	**Date/Time Received:**	11/03/09 09:30
Analysis Method:	6020	**Date Leached:**	
Unit:	ug/L	**Date/Time Extracted:**	11/05/09 07:00
QC Batch ID:	9308149	**Date/Time Analyzed:**	11/10/09 08:30
MSD Sample Aliquot:	50 mL	**Instrument ID:**	024
MSD Dilution Factor:	1		

Analyte	Spike Amount	Sample Result	C	MSD Result	C	% Rec	Q	RPD	Q	QC Limits	
										% Rec	RPD
Arsenic	40.0	0.21	U	38.8		97		1.6		85 - 117	20
Selenium	40.0	0.70	U	40.1		100		5.5		77 - 122	20

TestAmerica

Total Metals Analvsis
-5B-

POST DIGEST SPIKE SAMPLE RECOVERY

SAMPLE NO.

EB110209-GWA3 PDS

Contract: Northgate Environmental Management, Inc.

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG NO.: D9K030552

Matrix (soil/water): WATER Level (low/med): LOW

Concentration Units: ug/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added(SA)	%R	Q	M
Arsenic	75 - 125	184.800		0.210	U	200.00	92.4		M
Selenium	75 - 125	182.800		0.700	U	200.00	91.4		M

Comments: _____

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Northgate Environmental Management, Inc.

Total Metals Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	
Lot/SDG Number:	D9K030552	**Lab Sample ID:**	D9K040000-149C
Matrix:	WATER	**Lab WorkOrder:**	LNRQV
% Moisture:	N/A	**Date/Time Collected:**	
Basis:	Wet	**Date/Time Received:**	
Analysis Method:	6020	**Date Leached:**	
Unit:	ug/L	**Date/Time Extracted:**	11/05/09 07:00
QC Batch ID:	9308149	**Date/Time Analyzed:**	11/10/09 08:17
Sample Aliquot:	50 mL	**Instrument ID:**	024
Dilution Factor:	1		

Analyte	True	Found	%Rec	Q	Limits
Arsenic	40.0	38.6	97		85 - 117
Selenium	40.0	38.3	96		77 - 122

Total Metals Analysis

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ICP SERIAL DILUTIONS

SAMPLE NO.

EB110209-GWA3 SER

Contract: Northgate Environmental Management, Inc.

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG NO.: D9K030552

Matrix (soil/water): WATER Level (low/med): LOW

Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	M
Arsenic	0.210	U	1.050	U			M
Selenium	0.700	U	3.500	U			M

Comments: _____

TestAmerica

Total Metals Analysis

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DETECTION LIMITS

Contract: Northgate Environmental Management, Inc.

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG NO.: D9K030552

ICP ID Number: Agilent 7500 Date: 4/23/2009

Flame AA ID Number: _____

Furnace AA ID Number:

Analyte	Isotope	Back-ground	PQL (ug/L)	MDL (ug/L)	M
Arsenic	75		5.000	0.2100	M
Selenium	78		5.000	0.7000	M

Comments: _____

TestAmerica

Total Metals Analysis
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ICP LINEAR RANGES (QUARTERLY)

Contract: Northgate Environmental Management, Inc.

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG NO.: D9K030552

ICP ID Number: Agilent 7500 Date: 10/1/2009

Analyte	Integ. Time (Sec.)	Concentration ug/L	M
Arsenic	0.001	3600	M
Selenium	0.001	3600	M

Comments: _____

Total Metals Analysis

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PREPARATION LOG

Contract: Northgate Environmental Management, Inc.

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG NO.: D9K030552

Method: MS Prep Method: _____

Sample ID	Preparation Date	Initial Volume	Final Volume(mL)
EB110209-GWA3	11/5/2009	50.0	50.0
EB110209-GWA3 MS	11/5/2009	50.0	50.0
EB110209-GWA3 MSD	11/5/2009	50.0	50.0
MB9308149	11/5/2009	50.0	50.0
Check Sample	11/5/2009	50.0	50.0

Comments:

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Total Metals Analysis
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ANALYSIS RUN LOG

Contract: Northgate Environmental Management, Inc.

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: D9K030552

Instrument ID Number: Agilent 7500 Method: M

Start Date: 11/9/2009 End Date: 11/10/2009

Sample ID.	D/F	Time	% R	Analytes																								
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
CAL BLANK	1.00	20:32				X															X						
100 PPB	1.00	20:35				X															X						
ICV	1.00	20:37				X															X						
ICB	1.00	20:43				X															X						
RL STD	1.00	20:46				X															X						
ICSA	1.00	20:54				X															X						
ICSAB	1.00	20:57				X															X						
RINSE	1.00	20:59				X															X						
LR1	1.00	21:02				X															X						
RINSE	1.00	21:05				X															X						
CCV	1.00	21:08				X															X						
CCB	1.00	21:10				X															X						
CAL BLANK	1.00	23:23				X															X						
100 PPB	1.00	23:26				X															X						
CCV	1.00	23:29				X															X						
CCB	1.00	23:32				X															X						
ICSA	1.00	23:37				X															X						
ICSAB	1.00	23:40				X															X						
WASH	1.00	23:43				X															X						
CCV	1.00	23:45				X															X						
CCB	1.00	23:48				X															X						
CAL BLANK	1.00	06:37				X															X						
100 PPB	1.00	06:40				X															X						
CCV	1.00	06:42				X															X						
CCB	1.00	06:45				X															X						
CCV	1.00	08:06				X															X						
CCB	1.00	08:09				X															X						
MB9308149	1.00	08:14				X															X						
Check Sample	1.00	08:17				X															X						
EB110209-GWA3	1.00	08:20				X															X						
EB110209-GWA3 SER	5.00	08:22				X															X						
EB110209-GWA3 PDS	1.00	08:25				X															X						
EB110209-GWA3 MS	1.00	08:28				X															X						

* - Denotes additional elements (other than the standard CLP elements) are represented on another Form 14

Total Metals Analysis
-14-

ANALYSIS RUN LOG

Contract: Northgate Environmental Management, Inc.

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: D9K030552

Instrument ID Number: Agilent 7500 Method: M

Start Date: 11/9/2009 End Date: 11/10/2009

Sample ID.	D/F	Time	% R	Analytes																								
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
EB110209-GWA3 MSD	1.00	08:30				X															X						
CCV	1.00	08:39				X															X						
CCB	1.00	08:41				X															X						

* - Denotes additional elements (other than the standard CLP elements) are represented on another Form 14

TestAmerica

Total Metals

CLP-Like Forms

Lot ID: D9K030554

Client: Northgate/Tronox

Method: SW846 6020/Collision Cell

Associated Samples: 001 and 002

TestAmerica

Total Metals Analysis

COVER PAGE - INORGANIC ANALYSIS DATA PACKAGE

Contract: Northgate Environmental Management, Inc. SDG No.: D9K030554

Lab Code: _____ Case No.: _____ SAS No.: _____

SOW No.: _____

Sample ID.	Lab Sample No.
M-147009B	D9K030554-002
M-147B	D9K030554-001

Were ICP interelement corrections applied? Yes/No YES

Were ICP background corrections applied? Yes/No YES

If yes-were raw data generated before application of background corrections? Yes/No NO

Comments:

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Janice Collins Name: Janice Collins

Date: 11/17/09 Title: Metals Analyst

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Northgate Environmental Management, Inc.

Total Metals Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	M-147B
Lot/SDG Number:	D9K030554	**Lab Sample ID:**	D9K030554-001
Matrix:	WATER	**Lab WorkOrder:**	LNQ0R
% Moisture:	N/A	**Date/Time Collected:**	11/02/09 10:00
Basis:	Wet	**Date/Time Received:**	11/03/09 09:30
Analysis Method:	6020	**Date Leached:**	
Unit:	ug/L	**Date/Time Extracted:**	11/05/09 07:00
QC Batch ID:	9308149	**Date/Time Analyzed:**	11/10/09 08:33
Sample Aliquot:	50 mL	**Instrument ID:**	024
Dilution Factor:	1		

CAS No.	Analyte	Conc.	MDL	RL	Q
7440-38-2	Arsenic	**170**	0.21	5.0	
7782-49-2	Selenium	**7.3**	0.70	5.0	

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Northgate Environmental Management, Inc.

Total Metals Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	M-147009B
Lot/SDG Number:	D9K030554	**Lab Sample ID:**	D9K030554-002
Matrix:	WATER	**Lab WorkOrder:**	LNQ0T
% Moisture:	N/A	**Date/Time Collected:**	11/02/09 10:00
Basis:	Wet	**Date/Time Received:**	11/03/09 09:30
Analysis Method:	6020	**Date Leached:**	
Unit:	ug/L	**Date/Time Extracted:**	11/05/09 07:00
QC Batch ID:	9308149	**Date/Time Analyzed:**	11/10/09 08:36
Sample Aliquot:	50 mL	**Instrument ID:**	024
Dilution Factor:	1		

CAS No.	Analyte	Conc.	MDL	RL	Q
7440-38-2	Arsenic	**180**	0.21	5.0	
7782-49-2	Selenium	**7.8**	0.70	5.0	

Total Metals Analysis

-2A-

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Contract: Northgate Environmental Management, Inc.

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG NO.: D9K030554

Initial Calibration Source: High Purity

Continuing Calibration Source: Inorganic Ventures

Concentration Units: ug/L

Analyte	Initial Calibration			Continuing Calibration					
	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	M
Arsenic	40.0	40.1	100.2	50.0	50.9	101.8	50.5	101.0	M
Selenium	40.0	40.2	100.5	50.0	51.9	103.8	49.5	99.0	M

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

Total Metals Analysis

-2A-

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Contract: Northgate Environmental Management, Inc.

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG NO.: D9K030554

Initial Calibration Source: High Purity

Continuing Calibration Source: Inorganic Ventures

Concentration Units: ug/L

Analyte	Initial Calibration			Continuing Calibration					
	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	M
Arsenic				50.0	49.9	99.8	51.3	102.6	M
Selenium				50.0	51.0	102.0	51.5	103.0	M

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

Total Metals Analysis

-2A-

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Contract: Northgate Environmental Management, Inc.

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG NO.: D9K030554

Initial Calibration Source: High Purity

Continuing Calibration Source: Inorganic Ventures

Concentration Units: ug/L

Analyte	Initial Calibration			Continuing Calibration					
	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	M
Arsenic				50.0	51.3	102.6	51.3	102.6	M
Selenium				50.0	50.3	100.6	50.6	101.2	M

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

TestAmerica

Total Metals Analysis
-2B-
CRDL STANDARD FOR AA AND ICP

Contract: Northgate Environmental Management, Inc.

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: D9K030554

AA CRDL Standard Source: _____

ICP CRDL Standard Source: Inorganic Ventures

Concentration Units: ug/L

Analyte	CRDL Standard for AA			CRDL Standard for ICP				
				Initial			Final	
	True	Found	%R	True	Found	%R	Found	%R
Arsenic				1.00	1.051	105.1		
Selenium				1.00	1.232	123.2		

Comments:

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Northgate Environmental Management, Inc.

Total Metals Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	
Lot/SDG Number:	D9K030554	**Lab Sample ID:**	D9K040000-149B
Matrix:	WATER	**Lab WorkOrder:**	LNRQV
% Moisture:		**Date/Time Collected:**	
Basis:	Wet	**Date/Time Received:**	
Analysis Method:	6020	**Date Leached:**	
Unit:	ug/L	**Date/Time Extracted:**	11/05/09 07:00
QC Batch ID:	9308149	**Date/Time Analyzed:**	11/10/09 08:14
Sample Aliquot:	50 mL	**Instrument ID:**	024
Dilution Factor:	1		

CAS No.	Analyte	Conc.	MDL	RL	Q
7440-38-2	Arsenic	0.21	0.21	5.0	U
7782-49-2	Selenium	0.70	0.70	5.0	U

TestAmerica

Total Metals Analysis

-3-

BLANKS

Contract: Northgate Environmental Management, Inc.

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG NO.: D9K030554

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Arsenic	0.210	U	0.210	U	0.210	U	0.210	U	0.21	U	M
Selenium	0.700	U	0.700	U	0.700	U	0.700	U	0.70	U	M

Comments:

TestAmerica

Total Metals Analysis

-3-

BLANKS

Contract: Northgate Environmental Management, Inc.

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG NO.: D9K030554

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Arsenic			0.210	U	0.210	U	0.210	U			M
Selenium			0.700	U	-1.128	B	-1.652	B			M

Comments:

Total Metals Analvsis

-4-

ICP INTERFERENCE CHECK SAMPLE

Contract: Northgate Environmental Management, Inc.

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG NO.: D9K030554

ICP ID Number: Agilent 7500 ICS Source: Inorganic Ventures

Concentration Units): ug/L

Analyte	True		Initial Found			Final Found		
	Sol.A	Sol.AB	Sol.A	Sol.AB	%R	Sol.A	Sol.AB	%R
Arsenic	0.0	100.0	0.28	101.00	101.0	0.40	98.23	98.2
Selenium	0.0	100.0	0.38	100.00	100.0	0.25	104.70	104.7

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Northgate Environmental Management, Inc.

Total Metals Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	LAB MS/MSD
Lot/SDG Number:	D9K030554	**MS Lab Sample ID:**	D9K030552-001S
Matrix:	WATER	**MS Lab WorkOrder:**	LNQ0L
% Moisture:	N/A	**Date/Time Collected:**	11/02/09 12:40
Basis:	Wet	**Date/Time Received:**	11/03/09 09:30
Analysis Method:	6020	**Date Leached:**	
Unit:	ug/L	**Date/Time Extracted:**	11/05/09 07:00
QC Batch ID:	9308149	**Date/Time Analyzed:**	11/10/09 08:28
MS Sample Aliquot:	50 mL	**Instrument ID:**	024
MS Dilution Factor:	1		

Analyte	Spike Amount	Sample Result	C	MS Result	C	% Rec	Q	QC Limit
Arsenic	40.0	0.21	U	39.4		99		85 - 117
Selenium	40.0	0.70	U	38.0		95		77 - 122

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Northgate Environmental Management, Inc.

Total Metals Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	LAB MS/MSD
Lot/SDG Number:	D9K030554	**MSD Lab Sample ID:**	D9K030552-001D
Matrix:	WATER	**MSD Lab WorkOrder:**	LNQ0L
% Moisture:	N/A	**Date/Time Collected:**	11/02/09 12:40
Basis:	Wet	**Date/Time Received:**	11/03/09 09:30
Analysis Method:	6020	**Date Leached:**	
Unit:	ug/L	**Date/Time Extracted:**	11/05/09 07:00
QC Batch ID:	9308149	**Date/Time Analyzed:**	11/10/09 08:30
MSD Sample Aliquot:	50 mL	**Instrument ID:**	024
MSD Dilution Factor:	1		

Analyte	Spike Amount	Sample Result	C	MSD Result	C	% Rec	Q	RPD	Q	QC Limits	
										% Rec	RPD
Arsenic	40.0	0.21	U	38.8		97		1.6		85 - 117	20
Selenium	40.0	0.70	U	40.1		100		5.5		77 - 122	20

TestAmerica

Total Metals Analysis
-5B-

POST DIGEST SPIKE SAMPLE RECOVERY

SAMPLE NO.: INTRA-LAB QC PDS

Contract: Northgate Environmental Management, Inc.

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG NO.: D9K030554

Matrix (soil/water): WATER Level (low/med): LOW

Concentration Units: ug/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added(SA)	%R	Q	M
Arsenic	75 - 125	184.800		0.210	U	200.00	92.4		M
Selenium	75 - 125	182.800		0.700	U	200.00	91.4		M

Comments: _____

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Northgate Environmental Management, Inc.

Total Metals Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	
Lot/SDG Number:	D9K030554	**Lab Sample ID:**	D9K040000-149C
Matrix:	WATER	**Lab WorkOrder:**	LNRQV
% Moisture:	N/A	**Date/Time Collected:**	
Basis:	Wet	**Date/Time Received:**	
Analysis Method:	6020	**Date Leached:**	
Unit:	ug/L	**Date/Time Extracted:**	11/05/09 07:00
QC Batch ID:	9308149	**Date/Time Analyzed:**	11/10/09 08:17
Sample Aliquot:	50 mL	**Instrument ID:**	024
Dilution Factor:	1		

Analyte	True	Found	%Rec	Q	Limits
Arsenic	40.0	38.6	97		85 - 117
Selenium	40.0	38.3	96		77 - 122

Total Metals Analysis

-9-

ICP SERIAL DILUTIONS

SAMPLE NO.

INTRA-LAB QC SER

Contract: Northgate Environmental Management, Inc.

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG NO.: D9K030554

Matrix (soil/water): WATER Level (low/med): LOW

Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	M
Arsenic	0.210	U	1.050	U			M
Selenium	0.700	U	3.500	U			M

Comments: _____

TestAmerica

Total Metals Analysis

-10-

DETECTION LIMITS

Contract: Northgate Environmental Management, Inc.

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG NO.: D9K030554

ICP ID Number: Agilent 7500 Date: 4/23/2009

Flame AA ID Number: _____

Furnace AA ID Number:

Analyte	Isotope	Back-ground	PQL (ug/L)	MDL (ug/L)	M
Arsenic	75		5.000	0.2100	M
Selenium	78		5.000	0.7000	M

Comments: _____

Total Metals Analysis
-12-
ICP LINEAR RANGES (QUARTERLY)

Contract: Northgate Environmental Management, Inc.

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG NO.: D9K030554

ICP ID Number: Agilent 7500 Date: 10/1/2009

Analyte	Integ. Time (Sec.)	Concentration ug/L	M
Arsenic	0.001	3600	M
Selenium	0.001	3600	M

Comments: _____

Total Metals Analysis

-13-

PREPARATION LOG

Contract: Northgate Environmental Management, Inc.

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG NO.: D9K030554

Method: MS Prep Method: _____

Sample ID	Preparation Date	Initial Volume	Final Volume(mL)
INTRA-LAB QC	11/5/2009	50.0	50.0
LAB MS/MSD MS	11/5/2009	50.0	50.0
LAB MS/MSD MSD	11/5/2009	50.0	50.0
M-147B	11/5/2009	50.0	50.0
M-147009B	11/5/2009	50.0	50.0
MB9308149	11/5/2009	50.0	50.0
Check Sample	11/5/2009	50.0	50.0

Comments:

Total Metals Analysis
-14-

ANALYSIS RUN LOG

Contract: Northgate Environmental Management, Inc.

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: D9K030554

Instrument ID Number: Agilent 7500 Method: M

Start Date: 11/9/2009 End Date: 11/10/2009

Sample ID.	D/F	Time	% R	Analytes																								
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
CAL BLANK	1.00	20:32				X															X						
100 PPB	1.00	20:35				X															X						
ICV	1.00	20:37				X															X						
ICB	1.00	20:43				X															X						
RL STD	1.00	20:46				X															X						
ICSA	1.00	20:54				X															X						
ICSAB	1.00	20:57				X															X						
RINSE	1.00	20:59				X															X						
LR1	1.00	21:02				X															X						
RINSE	1.00	21:05				X															X						
CCV	1.00	21:08				X															X						
CCB	1.00	21:10				X															X						
CAL BLANK	1.00	23:23				X															X						
100 PPB	1.00	23:26				X															X						
CCV	1.00	23:29				X															X						
CCB	1.00	23:32				X															X						
ICSA	1.00	23:37				X															X						
ICSAB	1.00	23:40				X															X						
WASH	1.00	23:43				X															X						
CCV	1.00	23:45				X															X						
CCB	1.00	23:48				X															X						
CAL BLANK	1.00	06:37				X															X						
100 PPB	1.00	06:40				X															X						
CCV	1.00	06:42				X															X						
CCB	1.00	06:45				X															X						
CCV	1.00	08:06				X															X						
CCB	1.00	08:09				X															X						
MB9308149	1.00	08:14				X															X						
Check Sample	1.00	08:17				X															X						
INTRA-LAB QC	1.00	08:20				X															X						
INTRA-LAB QC SER	5.00	08:22				X															X						
INTRA-LAB QC PDS	1.00	08:25				X															X						
LAB MS/MSD MS	1.00	08:28				X															X						

* = Denotes additional elements (other than the standard CLP elements) are represented on another Form 14

Total Metals Analvsis

-14-

ANALYSIS RUN LOG

Contract: Northgate Environmental Management, Inc.

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: D9K030554

Instrument ID Number: Agilent 7500 Method: M

Start Date: 11/9/2009 End Date: 11/10/2009

Sample ID.	D/F	Time	% R	Analytes																								
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
LAB MS/MSD MSD	1.00	08:30				X															X						
M-147B	1.00	08:33				X															X						
M-147009B	1.00	08:36				X															X						
CCV	1.00	08:39				X															X						
CCB	1.00	08:41				X															X						

* - Denotes additional elements (other than the standard CLP elements) are represented on another Form 14

northgate
environmental management, inc.
1100 Quail Street, Suite 102, Newport Beach, CA 92660
(949) 260-9293

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed and accurate.

COC No. 2027.001.01135
Page: 1 of 1
Cooler # ____ of ____
Collection Area: III

Required Ship to Lab:		Required Project Information:		Required Invoice Information:			
Lab Name:	TestAmerica	Site ID #:	TRONOX LLC. HENDERSON	Send Invoice to:	Susan Crowley Tronox LLC	TAT: Standard 30 day	X
Address:	4955 Yarrow Street	Project #	2027.001	Address:	PO Box 55	If Rush, Date due	
Arvada, CO 80002		Site Address	560 W. Lake Mead Drive	City/State	Henderson, NV 89009	Phone #:	(949)260-9293
Lab PM:	Michael P. Phillips	City	Henderson	State	NV	Reimbursement project?	X
Phone/Fax:	303-736-0157	Site PM Name	Derrick Willis	Send EDD to	Frank Hagar Northgate Environmental Management, Inc frank.hagar@ngem.com		
Lab PM email	michael.phillips@testamericainc.com	Phone/Fax:	949-375-7004	CC Hardcopy report to	PDF Electronic Version Only		
Applicable Lab Quote #:		Site PM Email:	derrick.willis@ngem.com	CC Hardcopy report to	see additional comments below		

Rush		Mark One
Special	EPA Stage 4	Mark one
Non-reimbursement project?		Mark one
NJ Reduced Deliverable Package?		
MA MCP Cert?	CT RCP Cert?	Mark One
Lab Project ID (lab use)		

Valid Matrix Codes

MATRIX		MATRIX	
DRINKING WATER	WP	WATER	W
GROUND WATER	WG	WW SURFACE WATER	WS
WASTE WATER	LF	WATER QC	WQ
FREE PRODUCT	SO	OIL SLUDGE	SL
SOIL	SW	RINSEATE	WH
OIL	AA	OTHER	OT
WIPE	AE	OS ANIMAL TISSUE	TA
AMBIENT AIR			
SVE AIR			
SOIL GAS			

ITEM #	SAMPLE ID One Character per box. (A-Z, 0-9 / ,-) Samples IDs MUST BE UNIQUE	MATRIX CODE	SAMPLE TYPE G=GRAB C=COMP	SAMPLE DATE	SAMPLE TIME	#OF CONTAINERS	FIELD FILTERED? (Y/N)	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Requested Analyses: EPA 6020/Collision Cell	EPA 8141A OPP Pest	Comments/Lab Sample I.D.
1	EB110209-GWA3	WG	G	11/2/2009	1240	1	N			X						X		500 ml Plastic
2																		
3																		
4																		
5																		
6	JWO																	
7																		
8																		
9																		
10																		
11																		
12																		

Additional Comments/Special Instructions:
As Se only by collison cell
All PDF reports and EDDs will be uploaded to:
Northgate Environmental Management, Inc.
FTP site address provided to labs
Notifications provided to:
cindy.arnold@ngem.com
frank.hagar@ngem.com

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
GES	11/2	1400	GES	11/2	1400
GES	11/2	1600		11/3	0930

Sample Receipt Conditions

	Temp in °C	Samples on Ice?	Sample intact?	Trip Blank?
		Y/N	Y/N	Y/N
		Y/N	Y/N	Y/N
		Y/N	Y/N	Y/N
		Y/N	Y/N	Y/N

SHIPPING METHOD: (mark as appropriate) UPS COURIER FEDEX US MAIL

SAMPLER NAME AND SIGNATURE
PRINT Name of SAMPLER: Josh W Otis
SIGNATURE of SAMPLER:
DATE Signed 11/2 Time: 1330

TestAmerica Denver

Sample Receiving Checklist

Lot #: D9K030552 Date/Time Received: 11/3/09 0930

Company Name & Sampling Site: TRONOX – NorTheast

PM to Complete This Section:	Yes	No		Yes	No		Yes	No
Residual chlorine check required:	☐	☒	Quarantined :	☐	☒	MIS prep :	☐	☒

Quote #: 830446

Special Instructions:

Time Zone:
• EDT/EST • CDT/CST • MDT/MST • PDT/PST • OTHER

Unpacking Checks:

Cooler #(s): _____ _____ _____ _____ _____ _____ _____ _____

Temperatures (°C): 2.3 _____ _____ _____ _____ _____ _____ _____

N/A	Yes	No		Initials
☐	☑	☐	1. Cooler seals intact? (N/A if hand delivered) If no, document on CUR.	CMK
	☑	☐	2. Coolers scanned for radiation. Is the reading ≤ to background levels? Yes: ✓ No:____	
	☑	☐	3. Chain of custody present? If no, document on CUR.	
	☐	☑	4. Bottles broken and/or are leaking? If yes, document on CUR.	
	☐	☑	5. Multiphasic samples obvious? If yes, document on CUR.	
	☑	☐	6. Proper container & preservatives used? (ref. Attachment D of SOP# DV-QA-0003) If no, document on CUR.	
☐	☑	☐	7. pH of all samples checked and meet requirements? If no, document on CUR.	
	☑	☐	8. Sufficient volume provided for all analysis requested? (ref. Attachment D of SOP# DV-QA-0003) If no, document on CUR, and contact PM before proceeding.	
	☑	☐	9. Did chain of custody agree with labels ID and samples received? If no, document on CUR.	
☑	☐	☐	10. Were VOA samples without headspace? If no, document on CUR.	
☐	☐	☐	11. Were VOA vials preserved? Preservative ☐HCl ☐4±2°C ☐Sodium Thiosulfate ☐ Ascorbic Acid	
	☐	☑	12. Did samples require preservation with sodium thiosulfate?	
☑	☐	☐	13. If yes to #11, did the samples contain residual chlorine? If yes, document on CUR.	
☑	☐	☐	14. Sediment present in dissolved/filtered bottles? If yes, document on CUR.	
☑	☐	☐	15. Is sufficient volume provided for client requested MS, MSD or matrix duplicates? If no, document on CUR, and contact PM before proceeding.	
	☐	☑	16. Receipt date(s) > 48 hours past the collection date(s)? If yes, notify PA/PM.	
	☐	☑	17. Are analyses with short holding times requested?	
	☐	☑	18. Was a quick Turn Around (TAT) requested?	

TestAmerica Denver

Sample Receiving Checklist

Lot # D9K030552

Login Checks:

Initials: MB

N/A	Yes	No		
	☑	☐	19. Sufficient volume provided for all analysis requested? (ref. Attachment D of SOP# DV-QA-0003)	If no, document on CUR, and contact PM before proceeding.
☑	☐	☐	20. Is sufficient volume provided for client requested MS, MSD or matrix duplicates?	If no, document on CUR, and contact PM before proceeding.
	☑	☐	21. Did the chain of custody includes "received by" and "relinquished" by signatures, dates, and times?	
☐	☑	☐	22. Were special log in instructions read and followed?	
☑	☐	☐	23. Were AFCEE metals logged for refrigerated storage?	
	☑	☐	24. Were tests logged checked against the COC? Which samples were confirmed? 1	
☑	☐	☐	25. Was a Rush form completed for quick TAT?	
☑	☐	☐	26. Was a Short Hold form completed for any short holds?	
	☐	☑	27. Were special archiving instructions indicated in the General Comments? If so, what were they?	

Labeling and Storage Checks:

Initials: KC

☒	☐	☐	28. Was the subcontract COC signed and sent with samples to bottle prep?
	☒	☐	29. Were sample labels double-checked by a second person?
☒	☐	☐	30. Were sample bottles and COC double checked for dissolved/filtered metals by a second person?
	☒	☐	31. Did the sample ID, Date, and Time from label match what was logged?
☒	☐	☐	32. Were stickers for special archiving instructions affixed to each box? See #27
☒	☐	☐	33. Were AFCEE metals stored refrigerated?

Document any problems or discrepancies and the actions taken to resolve them on a Condition Upon Receipt Anomaly Report (CUR).

2.3 IR1
fm 11/3/09.

59

northgate
environmental management, inc.

1100 Quail Street, Suite 102, Newport Beach, CA 92660
(949) 260-9293

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed and accurate.

COC No. 2027.001.01118
Page: 1 of 1
Cooler # ____ of ____

Collection Area: III

Required Ship to Lab:

Lab Name:	TestAmerica
Address:	4955 Yarrow Street
	Arvada, CO 80002
Lab PM:	Michael P. Phillips
Phone/Fax:	303-736-0157
Lab PM email	michael.phillips@testamericainc.com
Applicable Lab Quote #:	

Required Project Information:

Site ID #:	TRONOX LLC. HENDERSON
Project #	2027.001
Site Address	560 W. Lake Mead Drive
City	Henderson
State	NV
Site PM Name	Derrick Willis
Phone/Fax:	949-375-7004
Site PM Email:	derrick.willis@ngem.com

Required Invoice Information:

Send Invoice to:	Susan Crowley, Tronox LLC
Address:	PO Box 55
City/State	Henderson, NV 89009
Phone #:	(949)260-9293
Reimbursement project?	X
Non-reimbursement project?	Mark one
Send EDD to	Frank Hagar Northgate Environmental Management, Inc frank.hagar@ngem.com
CC Hardcopy report to	PDF Electronic Version Only
CC Hardcopy report to	see additional comments below

TAT: Standard 30 day	X	Rush		Mark One
If Rush, Date due				
QC level Required: Standard		Special	EPA Stage 4	Mark one
NJ Reduced Deliverable Package?				
MA MCP Cert?		CT RCP Cert?		Mark One

Lab Project ID (lab use)

Valid Matrix Codes
MATRIX: DRINKING WATER WP; GROUND WATER WG; WASTE WATER LF; FREE PRODUCT SO; SOIL BW; OIL AA; WIPE AE; AMBIENT AIR; SVE AIR; SOIL GAS
MATRIX: WATER W; WW SURFACE WATER WB; WATER QC WQ; OIL, SLUDGE SL; RINSEATE WH; OTHER OT; GS ANIMAL TISSUE TA

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / ,-) Samples IDs MUST BE UNIQUE)	MATRIX CODE	SAMPLE TYPE G=GRAB C=COMP	SAMPLE DATE	SAMPLE TIME	#OF CONTAINERS	FIELD FILTERED? (Y/N)	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Requested Analyses: EPA 6020/Collison Cell	EPA 8141A OPP Pest	Comments/Lab Sample I.D.
1	M-147B	WG	G	11/2/2009	1000	1	N			X						X		500 ml Plastic
2	~~M-147BDISS~~	~~WG~~	~~G~~	~~11/2/2009~~		~~1~~	~~Y~~			X						X		~~500 ml Plastic~~ JWO
3	M-147009B	WG	G	11/2/2009	1000	1	N			X						X		500 ml Plastic
4	~~M-147009BDISS~~	~~WG~~	~~G~~	~~11/2/2009~~		~~1~~	~~Y~~			X						X		~~500 ml Plastic~~ JWO
5																		
6																		
7																		
8	JWO																	
9																		
10																		
11																		
12																		

Additional Comments/Special Instructions:

As Se only by collison cell
All PDF reports and EDDs will be uploaded to:
Northgate Environmental Management, Inc.
FTP site address provided to labs
Notifications provided to:
cindy.arnold@ngem.com
frank.hagar@ngem.com

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
GES	11/2	1400	GES	11/2	1400
GES	11/2	1600		11/3	0930

Sample Receipt Conditions

	Temp in OC	Samples on Ice?	Sample intact?	Trip Blank?
	Y/N	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N	Y/N

SHIPPING METHOD. (mark as appropriate): UPS COURIER FEDEX; US MAIL

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Josh W Otis

SIGNATURE of SAMPLER: Josh W Otis

DATE Signed: 11/2 Time: 1210

Table of Contents

TestAmerica

TestAmerica Denver

Sample Receiving Checklist

Lot #: D9K030554 Date/Time Received: 11/3/09 0930

Company Name & Sampling Site: TRONOX - Northgate

	Yes	No		Yes	No		Yes	No
PM to Complete This Section: Residual chlorine check required:	☐	☒	Quarantined :	☐	☒	MIS prep :	☐	☒

Quote #: 230416

Special Instructions:

Time Zone:
• EDT/EST • CDT/CST • MDT/MST • PDT/PST • OTHER

Unpacking Checks:

Cooler #(s): _____ _____ _____ _____ _____ _____ _____ _____

Temperatures (°C): 2.3 _____ _____ _____ _____ _____ _____ _____

N/A	Yes	No		Initials
☐	☑	☐	1. Cooler seals intact? (N/A if hand delivered) If no, document on CUR.	CdK
	☑	☐	2. Coolers scanned for radiation. Is the reading ≤ to background levels? Yes: ✓ No:____	
	☑	☐	3. Chain of custody present? If no, document on CUR.	
	☐	☑	4. Bottles broken and/or are leaking? If yes, document on CUR.	
	☐	☑	5. Multiphasic samples obvious? If yes, document on CUR.	
	☑	☐	6. Proper container & preservatives used? (ref. Attachment D of SOP# DV-QA-0003) If no, document on CUR.	
☐	☑	☐	7. pH of all samples checked and meet requirements? If no, document on CUR.	
	☑	☐	8. Sufficient volume provided for all analysis requested? (ref. Attachment D of SOP# DV-QA-0003) If no, document on CUR, and contact PM before proceeding.	
	☑	☐	9. Did chain of custody agree with labels ID and samples received? If no, document on CUR.	
☑	☐	☐	10. Were VOA samples without headspace? If no, document on CUR.	
☑	☐	☐	11. Were VOA vials preserved? Preservative ☐HCl ☐4±2°C ☐Sodium Thiosulfate ☐ Ascorbic Acid	
	☐	☑	12. Did samples require preservation with sodium thiosulfate?	
☑	☐	☐	13. If yes to #11, did the samples contain residual chlorine? If yes, document on CUR.	
☑	☐	☐	14. Sediment present in dissolved/filtered bottles? If yes, document on CUR.	
☑	☐	☐	15. Is sufficient volume provided for client requested MS, MSD or matrix duplicates? If no, document on CUR, and contact PM before proceeding.	
	☐	☑	16. Receipt date(s) > 48 hours past the collection date(s)? If yes, notify PA/PM.	
	☐	☑	17. Are analyses with short holding times requested?	
	☐	☑	18. Was a quick Turn Around (TAT) requested?	

TestAmerica Denver

Sample Receiving Checklist

Lot # D9K030557

Login Checks:

N/A	Yes	No		Initials
	☑	☐	19. Sufficient volume provided for all analysis requested? (ref. Attachment D of SOP# DV-QA-0003) If no, document on CUR, and contact PM before proceeding.	MP
☑	☐	☐	20. Is sufficient volume provided for client requested MS, MSD or matrix duplicates? If no, document on CUR, and contact PM before proceeding.	
	☑	☐	21. Did the chain of custody includes "received by" and "relinquished" by signatures, dates, and times?	
☐	☑	☐	22. Were special log in instructions read and followed?	
☑	☐	☐	23. Were AFCEE metals logged for refrigerated storage?	
	☑	☐	24. Were tests logged checked against the COC? Which samples were confirmed? 1	
☑	☐	☐	25. Was a Rush form completed for quick TAT?	
☑	☐	☐	26. Was a Short Hold form completed for any short holds?	
	☐	☑	27. Were special archiving instructions indicated in the General Comments? If so, what were they?	

Labeling and Storage Checks:

				Initials
☑	☐	☐	28. Was the subcontract COC signed and sent with samples to bottle prep?	CMK
	☑	☐	29. Were sample labels double-checked by a second person?	
☑	☐	☐	30. Were sample bottles and COC double checked for dissolved/filtered metals by a second person?	
	☑	☐	31. Did the sample ID, Date, and Time from label match what was logged?	
☑	☐	☐	32. Were stickers for special archiving instructions affixed to each box? See #27	
☑	☐	☐	33. Were AFCEE metals stored refrigerated?	

Document any problems or discrepancies and the actions taken to resolve them on a Condition Upon Receipt Anomaly Report (CUR).

Metals

Supporting Documentation

Sample Sequence, Instrument Printouts

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Lot ID: D9K030552

Client: Northgate Env

Batch(es) #: 9308149

Associated Samples: 1

I certify that, to the best of my knowledge, the attached package represents a complete and accurate copy of the original data.

Signature/Date: LRD 11/10/2009

Metals Raw Data RoadMap

LotID			*Metal*	*WorkOrder*	*Anal Date*	*TestDesc*	*Batch*	*File Id*	*Instr*
D9K030552	1	D	SE	LNQ0L1AH	20091110	6020TOTA	9308149	AG110909A	024
D9K030552	1	S	SE	LNQ0L1AG	20091110	6020TOTA	9308149	AG110909A	024
D9K030552	1	D	AS	LNQ0L1AF	20091110	6020TOTA	9308149	AG110909A	024
D9K030552	1	S	AS	LNQ0L1AE	20091110	6020TOTA	9308149	AG110909A	024
D9K030552	1		SE	LNQ0L1AC	20091110	6020TOTA	9308149	AG110909A	024
D9K030552	1		AS	LNQ0L1AA	20091110	6020TOTA	9308149	AG110909A	024

METALS
PREPARATION LOGS
ICP-MS

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Batch Number: **9308149**

TestAmerica Laboratories, Inc.
Metals Prep Log/ Batch Summary

Prepared By: Katie Stoltz

Prep Date: 11/05/09
Due Date: 11/16/09

Lot	Work Order			Initial Weight/Volume
D9K040000 Water	**LNRQV**	B	Due Date: SDG:	50 mL
D9K040000 Water	**LNRQV**	C	Due Date: SDG:	50 mL
D9K030552 Water	**LNQ0L** Total		Due Date: 11/16/09 SDG:	50 mL
D9K030552 Water	**LNQ0L** Total	S	Due Date: 11/16/09 SDG:	50 mL
D9K030552 Water	**LNQ0L** Total	D	Due Date: 11/16/09 SDG:	50 mL
D9K030554 Water	**LNQ0R** Total		Due Date: 11/16/09 SDG:	50 mL
D9K030554 Water	**LNQ0T** Total		Due Date: 11/16/09 SDG:	50 mL

Comments:

B-BLANK; C-CHECK SAMPLE; L-CHECK SAMPLE DUPLICATE; P-SERIAL DILUTION; S-MATRIX SPIKE SAMPLE; D-MATRIX SPIKE DUPLICATE SAMPLE

ICPMS ELEMENTS WITHIN THE BATCH:

AS SE

LRP 11/10/09

METALS PREP SHEET
SOP: DEN-IP-0014

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
TestAmerica Denver

TOTAL WATER DIGESTION FOR ICPMS (Prep code MS)

BATCH # 9308149 **ALLIQUOTTED BY:** JRW
PREP DATE: 11.5.2009 **DIGESTED BY:** KS

CONSUMABLES USED

Digestion Cups: **Manufacturer:** Environmental Express **Lot #:** A901LS268

One or more samples were filtered prior to analysis at the instrument. ☐ Yes ☑ No

If "yes", then the method blank and the LCS were also filtered in the same manner using the same type of filter.

Analyst(s) Initials:

STANDARDS USED

Standard ID	Verification #	Exp. Date	Spike Amount	Pipette ID
2008Cal-1	STD-6471-09	11/1/10	100uL	15
2008Cal-2	STD-5356-09	1/10/10	100uL	15

REAGENTS USED

Reagent	Manufacturer	Lot #	Volume Used (mL)
HNO_3	JT Baker	H14024	3

TEMPERATURE CYCLES

Thermometer ID: 4110 Block & Cup # : 2, 2

Cycle	Start Time	Temperature (°C)	End Time	Temperature (°C)
HNO3	700	94	1120	95
HNO3	1130	95	1200	96
HNO3				

Samples and QC revolumed to: 50 mL Analyst's Initials KS

COMMENTS:

LPD 11/10/09

I certify that all information above is correct and complete.

Signature: Katie St ***Date:*** 11.5.09

METALS
SAMPLE DATA
ICP-MS

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ICP-MS Standard and Spike True Values

Element	Cal. Std. 100 ppb	Initial Calibration Standard	Continuing Calibration Standard	Interference Check Sample A	Interference Check Sample AB	Laboratory Control Sample and Duplicate	Matrix Spike Sample and Duplicate	Post Digestion Spike
Aluminum	100	40	50	100,000 Aluminum	--	40	40	200
Antimony	100	40	50	100,000 Calcium	100	40	40	200
Arsenic	100	40	50	100,000 Iron	100	40	40	200
Barium	100	40	50	100,000 Magnesium	100	40	40	200
Beryllium	100	40	50	100,000 Sodium	100	40	40	200
Cadmium	100	40	50	100,000 Phosphorus	100	40	40	200
Chromium	100	40	50	100,000 Potassium	100	40	40	200
Cobalt	100	40	50	100,000 Sulfur	100	40	40	200
Copper	100	40	50	200,000 Carbon	100	40	40	200
Lead	100	40	50	1,000,000 Chloride	100	40	40	200
Manganese	100	40	50	2000 Molybdenum	--	40	40	200
Molybdenum	100	40	50	2000 Titanium	100	40	40	200
Nickel	100	40	50		100	40	40	200
Selenium	100	40	50		100	40	40	200
Silver	100	40	50		100	40	40	50
Thallium	100	40	50		100	40	40	200
Tin	100	40	50		100	40	40	200
Uranium	100	40	50		100	40	40	200
Vanadium	100	40	50		100	40	40	200
Zinc	100	40	50		100	40	40	200

All units are ug/L.

Due to the presence of trace contaminants in the ICSA solution, the % recovery for the ICSAB solution is calculated by subtracting the levels in the ICSA from the ICSAB.

Quality Control Standards

ICV = Initial Calibration Verification (Second Source)
CCV = Continuing Calibration Verification

ICB = Initial Calibration Blank
CCB = Continuing Calibration Blank

Denver

RUN SUMMARY

Method: 6020 (ICP/MS) | ICPMS_024 (024) | Reported: 11/10/09 12:39:51

File ID: AG110909A **Analyst: LRD**

#	Sample ID	Lot No.	Batch		DF	Analyzed Date	Comment	Q
3	Cal Blank				1.0	11/09/09 20:32		☐
4	100 ppb				1.0	11/09/09 20:35		☐
5	ICV				1.0	11/09/09 20:37		☐
6	RLIV				1.0	11/09/09 20:40		☐
7	ICB				1.0	11/09/09 20:43		☐
8	RL STD				1.0	11/09/09 20:46		☐
9	AFCEE RL				1.0	11/09/09 20:48		☐
10	ALTSe				1.0	11/09/09 20:51		☐
11	ICSA				1.0	11/09/09 20:54		☐
12	ICSAB				1.0	11/09/09 20:57		☐
13	RINSE				1.0	11/09/09 20:59		☐
14	LR1				1.0	11/09/09 21:02		☐
15	RINSE				1.0	11/09/09 21:05		☐
16	CCV				1.0	11/09/09 21:08		☐
17	CCB				1.0	11/09/09 21:10		☐
18	RLCV				1.0	11/09/09 21:13		☐
19	LNNP6B	D9K020000	9306276	MS	1.0	11/09/09 21:16		☐
20	LNNP6C	D9K020000	9306276	MS	1.0	11/09/09 21:19		☐
21	LNLN9 2X	D9J300353-1	9306276	MS	2.0	11/09/09 21:21		☐
22	LNLR4 2X	D9J300356-1	9306276	MS	2.0	11/09/09 21:24		☐
23	LNME4	D9J310138-1	9306276	MS	1.0	11/09/09 21:27		☐
24	LNME4P5	D9J310138	9306276		5.0	11/09/09 21:30		☐
25	LNME4Z	D9J310138-1	9306276		1.0	11/09/09 21:32		☐
26	LNME4S	D9J310138-1	9306276	MS	1.0	11/09/09 21:35		☐
27	LNME4D	D9J310138-1	9306276	MS	1.0	11/09/09 21:38		☐
28	CCV				1.0	11/09/09 21:41		☐
29	CCB				1.0	11/09/09 21:43		☐
30	RLCV				1.0	11/09/09 21:50		☐
31	LM900B	D9J260000	9299244	MS	1.0	11/09/09 21:52		☐
32	LM900C	D9J260000	9299244	MS	1.0	11/09/09 21:55		☐
33	LM900L	D9J260000	9299244	MS	1.0	11/09/09 21:58		☐
34	LM9J9	D9J240206-1	9299244	MS	1.0	11/09/09 22:01		☐
35	~~LM9KA 2X~~	~~D9J240206-2~~	~~9299244~~	~~MS~~	~~2.0~~	~~11/09/09 22:03~~		☐
36	~~LM9KC 2X~~	~~D9J240206-3~~	~~9299244~~	~~MS~~	~~2.0~~	~~11/09/09 22:06~~	DNU LRD 11-10-09	☐
37	LM9KD	D9J240206-4	9299244	MS	1.0	11/09/09 22:09		☐
38	~~LM9KE 2X~~	~~D9J240206-5~~	~~9299244~~	~~MS~~	~~2.0~~	~~11/09/09 22:12~~		☐
39	~~LM9KF 2X~~	~~D9J240206-6~~	~~9299244~~	~~MS~~	~~2.0~~	~~11/09/09 22:14~~		☐
40	LM9KG	D9J240206-7	9299244	MS	1.0	11/09/09 22:17		☐
41	CCV				1.0	11/09/09 22:20		☐
42	CCB				1.0	11/09/09 22:23		☐
43	RLCV				1.0	11/09/09 22:26		☐
44	LM9KH	D9J240206-8	9299244	MS	1.0	11/09/09 22:28		☐
45	LM9KJ	D9J240206-9	9299244	MS	1.0	11/09/09 22:31		☐
46	LM9KK	D9J240206-10	9299244	MS	1.0	11/09/09 22:34		☐
47	LM9KL	D9J240206-11	9299244	MS	1.0	11/09/09 22:37		☐
48	LM9KP	D9J240206-13	9299244	MS	1.0	11/09/09 22:39		☐

Denver

RUN SUMMARY

Method: 6020 (ICP/MS) ICPMS_024 (024) Reported: 11/10/09 12:39:51

File ID: AG110909A **Analyst: LRD**

#	Sample ID	Lot No.	Batch		DF	Analyzed Date	Comment	Q
49	LM9KPP5	D9J240206	9299244		5.0	11/09/09 22:42		☐
50	LM9KPZ	D9J240206-13	9299244		1.0	11/09/09 22:45		☐
51	LM9KPS	D9J240206-13	9299244	MS	1.0	11/09/09 22:48		☐
52	LM9KPD	D9J240206-13	9299244	MS	1.0	11/09/09 22:50		☐
53	CCV				1.0	11/09/09 22:53		☐
54	CCB				1.0	11/09/09 22:56		☐
55	RLCV				1.0	11/09/09 22:59		☐
56	LM9KA	D9J240206-2	9299244	MS	1.0	11/09/09 23:01		☐
57	LM9KC	D9J240206-3	9299244	MS	1.0	11/09/09 23:04		☐
58	LM9KE	D9J240206-5	9299244	MS	1.0	11/09/09 23:07		☐
59	LM9KF	D9J240206-6	9299244	MS	1.0	11/09/09 23:10		☐
60	CCV				1.0	11/09/09 23:12		☐
61	CCB				1.0	11/09/09 23:15		☐
62	RLCV				1.0	11/09/09 23:18		☐
64	Cal Blank				1.0	11/09/09 23:23		☐
65	100 ppb				1.0	11/09/09 23:26		☐
66	CCV				1.0	11/09/09 23:29		☐
67	CCB				1.0	11/09/09 23:32		☐
68	RLCV				1.0	11/09/09 23:34		☐
69	ICSA				1.0	11/09/09 23:37		☐
70	ICSAB				1.0	11/09/09 23:40		☐
71	WASH				1.0	11/09/09 23:43		☐
72	CCV				1.0	11/09/09 23:45		☐
73	CCB				1.0	11/09/09 23:48		☐
74	RLCV				1.0	11/09/09 23:51		☐
75	LN04NB	D9K060000	9310238	04	1.0	11/09/09 23:54		☐
76	LN04NC	D9K060000	9310238	04	1.0	11/09/09 23:57		☐
77	LNEA7	D9J280172-1	9310238	04	1.0	11/10/09 00:00		☐
78	LNEA7P5	D9J280172	9310238		5.0	11/10/09 00:02		☐
79	LNEA7Z	D9J280172-1	9310238		1.0	11/10/09 00:05		☐
80	LNEA7S	D9J280172-1	9310238	04	1.0	11/10/09 00:08		☐
81	LNEA7D	D9J280172-1	9310238	04	1.0	11/10/09 00:11		☐
82	LNECN	D9J280172-2	9310238	04	1.0	11/10/09 00:13		☐
83	CCV				1.0	11/10/09 00:16		☐
84	CCB				1.0	11/10/09 00:20		☐
85	RLCV				1.0	11/10/09 00:22		☐
86	LNECV	D9J280172-3	9310238	04	1.0	11/10/09 00:25		☐
87	LNECX	D9J280172-4	9310238	04	1.0	11/10/09 00:28		☐
88	LNEC0	D9J280172-5	9310238	04	1.0	11/10/09 00:31		☐
89	LNEC1	D9J280172-6	9310238	04	1.0	11/10/09 00:34		☐
90	LNEC3	D9J280172-7	9310238	04	1.0	11/10/09 00:36		☐
91	LNEC5	D9J280172-8	9310238	04	1.0	11/10/09 00:39		☐
92	CCV				1.0	11/10/09 00:42		☐
93	CCB				1.0	11/10/09 00:45		☐
94	RLCV				1.0	11/10/09 00:48		☐
95	LNKFHB	D9J300000	9303368	04	1.0	11/10/09 00:51		☐

Denver

RUN SUMMARY

Method: 6020 (ICP/MS) | ICPMS_024 (024) | Reported: 11/10/09 12:39:51

File ID: **AG110909A** **Analyst: LRD**

#	Sample ID	Lot No.	Batch		DF	Analyzed Date	Comment	Q
96	LNKFHC	D9J300000	9303368	04	1.0	11/10/09 00:53		☐
97	LNC5C	D9J270250-1	9303368	04	1.0	11/10/09 00:56		☐
98	LNC5E	D9J270250-2	9303368	04	1.0	11/10/09 00:59		☐
99	LNC5F	D9J270250-3	9303368	04	1.0	11/10/09 01:02		☐
100	LNEHJ	D9J280192-1	9303368	04	1.0	11/10/09 01:05		☐
101	LNEHJP5	D9J280192	9303368		5.0	11/10/09 01:07		☐
102	LNEHJZ	D9J280192-1	9303368		1.0	11/10/09 01:10		☐
103	LNEHJS	D9J280192-1	9303368	04	1.0	11/10/09 01:13		☐
104	CCV				1.0	11/10/09 01:16		☐
105	CCB				1.0	11/10/09 01:18		☐
106	RLCV				1.0	11/10/09 01:21		☐
107	LNEHJD	D9J280192-1	9303368	04	1.0	11/10/09 01:24		☐
108	LNGXD 5X	D9J290182-1	9303368	04	5.0	11/10/09 01:27		☐
109	LNGXG 5X	D9J290182-2	9303368	04	5.0	11/10/09 01:29		☐
110	LNG17	D9J290192-1	9303368	04	1.0	11/10/09 01:32		☐
111	LNG2D	D9J290192-2	9303368	04	1.0	11/10/09 01:35		☐
112	~~LNH27 2X~~	~~D9J290314-1~~	~~9303368~~	~~04~~	~~2.0~~	~~11/10/09 01:38~~	DNU LRD 11/10/09	☐
113	~~LNH29 2X~~	~~D9J290314-2~~	~~9303368~~	~~04~~	~~2.0~~	~~11/10/09 01:40~~		☐
114	LNH3A	D9J290314-3	9303368	04	1.0	11/10/09 01:43		☐
115	CCV				1.0	11/10/09 01:46		☐
116	CCB				1.0	11/10/09 01:49		☐
117	RLCV				1.0	11/10/09 01:52		☐
118	RINSE				1.0	11/10/09 01:54		☐
119	RINSE				1.0	11/10/09 01:57		☐
121	Cal Blank				1.0	11/10/09 02:03		☐
122	100 ppb				1.0	11/10/09 02:05		☐
123	CCV				1.0	11/10/09 02:08		☐
124	CCB				1.0	11/10/09 02:11		☐
125	RLCV				1.0	11/10/09 02:14		☐
126	LNNPLBF	D9K020000	9306272	MD	1.0	11/10/09 02:16		☐
127	LNNPLCF	D9K020000	9306272	MD	1.0	11/10/09 02:19		☐
128	LNLPFF	D9J300353-2	9306272	MD	1.0	11/10/09 02:22		☐
129	LNLPFP5F	D9J300353	9306272		5.0	11/10/09 02:25		☐
130	LNLPFZF	D9J300353-2	9306272		1.0	11/10/09 02:27		☐
131	LNLPFSF	D9J300353-2	9306272	MD	1.0	11/10/09 02:30		☐
132	LNLPFDF	D9J300353-2	9306272	MD	1.0	11/10/09 02:33		☐
133	CCV				1.0	11/10/09 02:36		☐
134	CCB				1.0	11/10/09 02:38		☐
135	RLCV				1.0	11/10/09 02:41		☐
136	LNNQ5BF	D9K020000	9306285	MD	1.0	11/10/09 02:44		☐
137	LNNQ5CF	D9K020000	9306285	MD	1.0	11/10/09 02:47		☐
138	LNLGXF 2X	D9J300326-1	9306285	MD	2.0	11/10/09 02:50		☐
139	LNLG3F	D9J300326-2	9306285	MD	1.0	11/10/09 02:52		☐
140	LNLG4F	D9J300326-3	9306285	MD	1.0	11/10/09 02:55		☐
141	LNLHHF	D9J300329-1	9306285	MD	1.0	11/10/09 02:58		☐
142	LNLHMF	D9J300329-2	9306285	MD	1.0	11/10/09 03:01		☐

Denver

RUN SUMMARY

Method: 6020 (ICP/MS) | ICPMS_024 (024) | Reported: 11/10/09 12:39:51

File ID: AG110909A **Analyst: LRD**

#	Sample ID	Lot No.	Batch		DF	Analyzed Date	Comment	Q
143	CCV				1.0	11/10/09 03:03		☐
144	CCB				1.0	11/10/09 03:06		☐
145	RLCV				1.0	11/10/09 03:09		☐
146	LNLHPF	D9J300329-3	9306285	MD	1.0	11/10/09 03:12		☐
147	LNLJJF	D9J300340-1	9306285	MD	1.0	11/10/09 03:15		☐
148	LNLJJP5F	D9J300340	9306285		5.0	11/10/09 03:17		☐
149	LNLJJZF	D9J300340-1	9306285		1.0	11/10/09 03:20		☐
150	LNLJJSF	D9J300340-1	9306285	MD	1.0	11/10/09 03:23		☐
151	LNLJJDF	D9J300340-1	9306285	MD	1.0	11/10/09 03:25		☐
152	LNLJMF	D9J300340-2	9306285	MD	1.0	11/10/09 03:28		☐
153	CCV				1.0	11/10/09 03:31		☐
154	CCB				1.0	11/10/09 03:34		☐
155	RLCV				1.0	11/10/09 03:37		☐
156	LN0Q4BF	D9K060000	9310095	MD	1.0	11/10/09 03:39		☐
157	LN0Q4CF	D9K060000	9310095	MD	1.0	11/10/09 03:42		☐
158	LN0Q4LF	D9K060000	9310095	MD	1.0	11/10/09 03:45		☐
159	LNR5CF	D9K040450-3	9310095	MD	1.0	11/10/09 03:48		☐
160	LNR5CP5F	D9K040450	9310095		5.0	11/10/09 03:50		☐
161	LNR5CZF	D9K040450-3	9310095		1.0	11/10/09 03:53		☐
162	CCV				1.0	11/10/09 03:56		☐
163	CCB				1.0	11/10/09 03:59		☐
164	RLCV				1.0	11/10/09 04:01		☐
165	RINSE				1.0	11/10/09 04:04		☐
166	RINSE				1.0	11/10/09 04:07		☐
168	Cal Blank				1.0	11/10/09 04:12		☐
169	100 ppb				1.0	11/10/09 04:15		☐
170	CCV				1.0	11/10/09 04:18		☐
171	CCB				1.0	11/10/09 04:21		☐
172	RLCV				1.0	11/10/09 04:23		☐
173	LN16EB	D9K060000	9310417	04	2.5	11/10/09 04:26		☐
174	LN16EC	D9K060000	9310417	04	2.5	11/10/09 04:29		☐
175	LN1FW	D9K060478-7	9310417	04	2.5	11/10/09 04:32		☐
176	LN1LX	D9K060478-17	9310417	04	2.5	11/10/09 04:35		☐
177	LN1MD	D9K060478-19	9310417	04	2.5	11/10/09 04:37		☐
178	LN1MH	D9K060478-21	9310417	04	2.5	11/10/09 04:40		☐
179	LN1MHS	D9K060478-21	9310417	04	2.5	11/10/09 04:43		☐
180	LN1MHD	D9K060478-21	9310417	04	2.5	11/10/09 04:46		☐
181	CCV				1.0	11/10/09 04:48		☐
182	CCB				1.0	11/10/09 04:51		☐
183	RLCV				1.0	11/10/09 04:54		☐
184	LN1T6BF	D9K060000	9310368	87	2.5	11/10/09 04:57		☐
185	LN1T6CF	D9K060000	9310368	87	2.5	11/10/09 05:00		☐
186	LNVQWF	D9K040610-1	9310368	87	2.5	11/10/09 05:02		☐
187	LNVRHF	D9K040610-3	9310368	87	2.5	11/10/09 05:05		☐
188	LNVRLF	D9K040610-5	9310368	87	2.5	11/10/09 05:08		☐
189	LNVRLSF	D9K040610-5	9310368	87	2.5	11/10/09 05:11		☐

Denver

RUN SUMMARY

Method: 6020 (ICP/MS) | ICPMS_024 (024) | Reported: 11/10/09 12:39:51

File ID: AG110909A **Analyst:** LRD

#	Sample ID	Lot No.	Batch		DF	Analyzed Date	Comment	Q
190	LNVRLDF	D9K040610-5	9310368	87	2.5	11/10/09 05:14		
191	LNX48F	D9K050627-2	9310368	87	2.5	11/10/09 05:16		
192	LNX5JF	D9K050627-6	9310368	87	2.5	11/10/09 05:19		
193	CCV				1.0	11/10/09 05:22		
194	CCB				1.0	11/10/09 05:25		
195	RLCV				1.0	11/10/09 05:27		
196	LN4QNB	D9K090000	9313106	04	2.5	11/10/09 05:30		
197	LN4QNC	D9K090000	9313106	04	2.5	11/10/09 05:33		
198	LN314	D9K070460-2	9313106	04	2.5	11/10/09 05:36		
199	LN3L7 2X	D9K070423-1	9313106	04	5.0	11/10/09 05:39		
200	LN3L7S 2X	D9K070423-1	9313106	04	5.0	11/10/09 05:41		
201	LN3L7D 2X	D9K070423-1	9313106	04	5.0	11/10/09 05:44		
202	CCV				1.0	11/10/09 05:47		
203	CCB				1.0	11/10/09 05:50		
204	RLCV				1.0	11/10/09 05:52		
205	LN0PDBF	D9K060000	9310068	PD	2.5	11/10/09 05:55		
206	LN0PDCF	D9K060000	9310068	PD	2.5	11/10/09 05:58		
207	LNT1RF	D9K040539-2	9310068	PD	2.5	11/10/09 06:01		
208	LNT15F	D9K040539-3	9310068	PD	2.5	11/10/09 06:04	DNU	
209	LNT15SF	D9K040539-3	9310068	PD	2.5	11/10/09 06:06		
210	LNT15DF	D9K040539-3	9310068	PD	2.5	11/10/09 06:09	LRD	
211	LNT2CF	D9K040539-4	9310068	PD	2.5	11/10/09 06:12	11-10-2009	
212	LNPC2F	D9K020476-1	9310068	PD	2.5	11/10/09 06:15		
213	LNPC4F	D9K020476-2	9310068	PD	2.5	11/10/09 06:18		
214	CCV				1.0	11/10/09 06:20		
215	CCB				1.0	11/10/09 06:23		
216	RLCV				1.0	11/10/09 06:26		
217	RINSE				1.0	11/10/09 06:29		
218	RINSE				1.0	11/10/09 06:31		
220	Cal Blank				1.0	11/10/09 06:37		
221	100 ppb				1.0	11/10/09 06:40		
222	CCV				1.0	11/10/09 06:42		
223	CCB				1.0	11/10/09 06:45		
224	RLCV				1.0	11/10/09 06:48		
225	LNW1QB	D9K050000	9309222	MS	1.0	11/10/09 06:51		
226	LNW1QC	D9K050000	9309222	MS	1.0	11/10/09 06:53		
227	LNR42	D9K040449-1	9309222	MS	1.0	11/10/09 06:56		
228	LNR42P5	D9K040449	9309222		5.0	11/10/09 06:59		
229	LNR42Z	D9K040449-1	9309222		1.0	11/10/09 07:02		
230	LNR42S	D9K040449-1	9309222	MS	1.0	11/10/09 07:04		
231	LNR42D	D9K040449-1	9309222	MS	1.0	11/10/09 07:07		
232	CCV				1.0	11/10/09 07:10		
233	CCB				1.0	11/10/09 07:13		
234	RLCV				1.0	11/10/09 07:16		
235	LNR48	D9K040449-2	9309222	MS	1.0	11/10/09 07:18		
236	LNR5E	D9K040449-3	9309222	MS	1.0	11/10/09 07:21		

Denver

RUN SUMMARY

Method: 6020 (ICP/MS) ICPMS_024 (024) Reported: 11/10/09 12:39:51

File ID: AG110909A **Analyst: LRD**

#	Sample ID	Lot No.	Batch		DF	Analyzed Date	Comment	Q
237	LNR5G	D9K040449-4	9309222	MS	1.0	11/10/09 07:24		☐
238	LNP8M	D9K030460-1	9309222	MS	1.0	11/10/09 07:27		☐
239	LNP8X	D9K030460-2	9309222	MS	1.0	11/10/09 07:30		☐
240	LNP81	D9K030460-3	9309222	MS	1.0	11/10/09 07:32		☐
241	CCV				1.0	11/10/09 07:35		☐
242	CCB				1.0	11/10/09 07:38		☐
243	RLCV				1.0	11/10/09 07:41		☐
244	LNN6NB	D9K020000	9306426	MS	1.0	11/10/09 07:44		☐
245	LNN6NC	D9K020000	9306426	MS	1.0	11/10/09 07:46		☐
246	LNN6NL	D9K020000	9306426	MS	1.0	11/10/09 07:49		☐
247	LNM4D	D9J310189-1	9306426	MS	1.0	11/10/09 07:52		☐
248	LNM4DP5	D9J310189	9306426		5.0	11/10/09 07:55		☐
249	LNM4DZ	D9J310189-1	9306426		1.0	11/10/09 07:58		☐
250	LNM4E	D9J310189-2	9306426	MS	1.0	11/10/09 08:00		☐
251	LNM5E	D9J310191-14	9306426	MS	1.0	11/10/09 08:03		☐
252	CCV				1.0	11/10/09 08:06		☐
253	CCB				1.0	11/10/09 08:09		☐
254	RLCV				1.0	11/10/09 08:11		☐
255	LNRQVB	D9K040000	9308149	MS	1.0	11/10/09 08:14		☐
256	LNRQVC	D9K040000	9308149	MS	1.0	11/10/09 08:17		☐
257	LNQ0L	D9K030552-1	9308149	MS	1.0	11/10/09 08:20		☐
258	LNQ0LP5	D9K030552	9308149		5.0	11/10/09 08:22		☐
259	LNQ0LZ	D9K030552-1	9308149		1.0	11/10/09 08:25		☐
260	LNQ0LS	D9K030552-1	9308149	MS	1.0	11/10/09 08:28		☐
261	LNQ0LD	D9K030552-1	9308149	MS	1.0	11/10/09 08:30		☐
262	LNQ0R	D9K030554-1	9308149	MS	1.0	11/10/09 08:33		☐
263	LNQ0T	D9K030554-2	9308149	MS	1.0	11/10/09 08:36		☐
264	CCV				1.0	11/10/09 08:39		☐
265	CCB				1.0	11/10/09 08:41		☐
266	RLCV				1.0	11/10/09 08:44		☐
267	LNWG5BF	D9K050000	9309184	87	2.5	11/10/09 08:47		☐
268	LNWG5CF	D9K050000	9309184	87	2.5	11/10/09 08:50		☐
269	LNT4AF	D9K040553-1	9309184	87	2.5	11/10/09 08:52		☐
270	LNT42F	D9K040553-2	9309184	87	2.5	11/10/09 08:55		☐
271	LNT42SF	D9K040553-2	9309184	87	2.5	11/10/09 08:58		☐
272	LNT42DF	D9K040553-2	9309184	87	2.5	11/10/09 09:01		☐
273	LNT5HF	D9K040553-3	9309184	87	2.5	11/10/09 09:03		☐
274	CCV				1.0	11/10/09 09:06		☐
275	CCB				1.0	11/10/09 09:09		☐
276	RLCV				1.0	11/10/09 09:12		☐
277	LNT5LF	D9K040553-4	9309184	87	2.5	11/10/09 09:14		☐
278	LNT5VF	D9K040553-5	9309184	87	2.5	11/10/09 09:17		☐
279	LNT51F	D9K040553-6	9309184	87	2.5	11/10/09 09:20		☐
280	LNT55F	D9K040553-7	9309184	87	2.5	11/10/09 09:23		☐
281	LNT57F	D9K040553-8	9309184	87	2.5	11/10/09 09:26		☐
282	LNT58F	D9K040553-9	9309184	87	2.5	11/10/09 09:28		☐

Denver

RUN SUMMARY

Method: 6020 (ICP/MS) ICPMS_024 (024) Reported: 11/10/09 12:39:51

File ID: AG110909A **Analyst: LRD**

#	Sample ID	Lot No.	Batch		DF	Analyzed Date	Comment	Q
283	LNT59F	D9K040553-10	9309184	87	2.5	11/10/09 09:31		☐
284	CCV				1.0	11/10/09 09:34		☐
285	CCB				1.0	11/10/09 09:37		☐
286	RLCV				1.0	11/10/09 09:39		☐
287	D9J270274-0				1.0	11/10/09 09:42		☐
288	CCV				1.0	11/10/09 09:45		☐
289	CCB				1.0	11/10/09 09:48		☐
290	RLCV				1.0	11/10/09 09:50		☐

TestAmerica Denver

Standards Preparation Logbook Record

Nov-10-2009

Logbook: \\Densvr06\StdsLog\metals.std

STD6653-08, 1000 Se

Analyst: trudelll

Vendor: Inorganic Ventures Lot No.: B2-SE02003 Vendor's Expiration Date: 12-01-2009
Solvent: 2% HNO3
Date Prep./Opened: 11-25-2008 Date Received: 11-25-2008
Date Expires(1): 12-01-2009 (None)
Date Expires(2): 12-01-2009 (None)
(METALS)-Inventory ID: 803

Component	Initial Conc (mg/L)	Final Conc (mg/L)
Se	1,000.0	1,000.0

STD1198-09, 1000 mg/L Sn

Analyst: trudelll

Vendor: Inorganic Ventures Lot No.: B2-SN02016 Vendor's Expiration Date: 03-01-2010
Solvent: 1% HNO3
Date Prep./Opened: 03-02-2009 Date Received: 03-02-2009
Date Expires(1): 03-01-2010 (None)
Date Expires(2): 03-01-2010 (None)
(METALS)-Inventory ID: 833

Component	Initial Conc (mg/L)	Final Conc (mg/L)
Sn	1,000.0	1,000.0

STD1853-09, 1 mg/l Se

Analyst: DIAZL

Solvent: 5% HN03 Lot No.: H02026 Volume (ml): 100.00
Date Prep./Opened: 04-01-2009
Date Expires(1): 12-01-2009 (1 Year)
pipette: Met 21

Parent Std No.: STD6653-08, 1000 Se Aliquot Amount (ml): 0.1000
Parent Date Expires(1): 12-01-2009 Parent Date Expires(2): 12-01-2009

Component	Initial Conc (mg/L)	Final Conc (mg/L)
Se	1,000.0	1.0000

STD2483-09, 1000 Zn (Inorganic Ventures)

Analyst: trudelll

Vendor: Inorganic Ventures Lot No.: C2-ZN02051 Vendor's Expiration Date: 05-01-2010
Solvent: 2% HNO3
Date Prep./Opened: 04-28-2009 Date Received: 04-28-2009
Date Expires(1): 05-01-2010 (None)
Date Expires(2): 05-01-2010 (None)
(METALS)-Inventory ID: 856

Component	Initial Conc (mg/L)	Final Conc (mg/L)
1000 Zn	1,000.0	1,000.0

STD6662-09, ICP-MS (024) INT STD BRC

Analyst: DIAZL

Solvent: 5% HNO3 Lot No.: H14024 Volume (ml): 250.00
Date Prep./Opened: 10-30-2009
Date Expires(1): 03-16-2010 (1 Year)
Date Verified: 12-31--4714 by - (Verification ID: 0)
pipettes: Met 20

Parent Std No.: STD1469-09, Germanium Stock Aliquot Amount (ml): 0.7500
Parent Date Expires(1): 03-16-2010 Parent Date Expires(2): 04-01-2010

Component	Initial Conc (mg/L)	Final Conc (ug/L)
Ge	1,000.0	3,000.0

Parent Std No.: STD1972-09, Lithium 6 Stock Aliquot Amount (ml): 1.0000
Parent Date Expires(1): 04-07-2010 Parent Date Expires(2): 05-01-2010

Component	Initial Conc (mg/L)	Final Conc (ug/L)
Lithium6	1,000.0	4,000.0

Parent Std No.: STD1973-09, Indium Stock Aliquot Amount (ml): 0.2500
Parent Date Expires(1): 04-07-2010 Parent Date Expires(2): 05-01-2010

Component	Initial Conc (mg/L)	Final Conc (ug/L)
In	1,000.0	1,000.0

Parent Std No.: STD6531-09, Scandium stock Aliquot Amount (ml): 0.5000
Parent Date Expires(1): 10-26-2010 Parent Date Expires(2): 11-01-2010

Component	Initial Conc (mg/L)	Final Conc (ug/L)
Sc	1,000.0	2,000.0

Parent Std No.: STD6532-09, Holmium stock Aliquot Amount (ml): 0.2500
Parent Date Expires(1): 10-26-2010 Parent Date Expires(2): 11-01-2010

Component	Initial Conc (mg/L)	Final Conc (ug/L)
Ho	1,000.0	1,000.0

STD6674-09, ICP-MS 1ppm Sn/Zn

Analyst: DIAZL

Solvent: 5% HNO3 Lot No.: H14024 Volume (ml): 50.000
Date Prep./Opened: 10-31-2009
Date Expires(1): 03-01-2010 (1 Year)
Date Expires(2): 03-01-2010 (None)

Parent Std No.: STD1198-09, 1000 mg/L Sn Aliquot Amount (ml): 0.0500
Parent Date Expires(1): 03-01-2010 Parent Date Expires(2): 03-01-2010

Component	Initial Conc (mg/L)	Final Conc (mg/L)
Sn	1,000.0	1.0000

Parent Std No.: STD2483-09, 1000 Zn (Inorganic Ventures) Aliquot Amount (ml): 0.0500
Parent Date Expires(1): 05-01-2010 Parent Date Expires(2): 05-01-2010

Component	Initial Conc (mg/L)	Final Conc (mg/L)
1000 Zn	1,000.0	1.0000

STD6795-09, ICP-MS ICSA

Analyst: DIAZL

Solvent: 5% HNO3 Lot No.: H14024 Volume (ml): 50.000
Date Prep./Opened: 11-05-2009
Date Expires(1): 12-05-2009 (1 Month)
Date Expires(2): 11-01-2010 (None)
pipettes: Met 8

Parent Std No.: STD6475-09, ICPMS Interferent Check Standard Aliquot Amount (ml): 5.0000
Parent Date Expires(1): 10-23-2010 Parent Date Expires(2): 11-01-2010

Component	Initial Conc (ug/ml)	Final Conc (ug/L)
Al	1,000.0	100,000
C	2,000.0	200,000
Ca	1,000.0	100,000
Cl	10,000	1,000,000
Fe	1,000.0	100,000
K	1,000.0	100,000
Mg	1,000.0	100,000
Mo	20.000	2,000.0
Na	1,000.0	100,000
P	1,000.0	100,000
S	1,000.0	100,000
Ti	20.000	2,000.0

STD6858-09, ICP-MS BLANK

Analyst: DIAZL

Solvent: Water Volume (ml): 1,000.0
Date Prep./Opened: 11-09-2009
Date Expires(1): 05-09-2010 (6 Months)
Date Expires(2): 05-09-2010 (6 Months)
Date Verified: 12-31--4714 by - (Verification ID: 0)

Parent Std No.: STD6857-09, NITRIC ACID — Aliquot Amount (ml): 50.000

Component	Initial Conc (%)	Final Conc (%)
HNO3	100.00	5.0000

STD6859-09, ICP-MS CAL STD

Analyst: DIAZL

Solvent: 5% HNO3 — Lot No.: H14024 — Volume (ml): 100.00
Date Prep./Opened: 11-09-2009
Date Expires(1): 11-10-2009 (1 Day)

Parent Std No.: STD3109-09, ICP-MS CALSTD 1 — Aliquot Amount (ml): 0.5000

Component	Initial Conc (mg/L)	Final Conc (mg/L)
Ag	20.000	0.1000
As	20.000	0.1000
Ba	20.000	0.1000
Be	20.000	0.1000
Cd	20.000	0.1000
Co	20.000	0.1000
Cr	20.000	0.1000
Cu	20.000	0.1000
Mn	20.000	0.1000
Ni	20.000	0.1000
Pb	20.000	0.1000
Se	20.000	0.1000
Th	20.000	0.1000
Tl	20.000	0.1000
U	20.000	0.1000
V	20.000	0.1000
Zn	20.000	0.1000

Parent Std No.: STD3110-09, ICP-MS CALSTD 2 — Aliquot Amount (ml): 0.5000

Component	Initial Conc (mg/L)	Final Conc (mg/L)
Mo	20.000	0.1000
Sb	20.000	0.1000
Sn	20.000	0.1000

STD6860-09, ICP-MS CCV STD

Analyst: DIAZL

Solvent: 5% HNO3 — Lot No.: H14024 — Volume (ml): 100.00
Date Prep./Opened: 11-09-2009
Date Expires(1): 11-10-2009 (1 Day)

Parent Std No.: STD3109-09, ICP-MS CALSTD 1 — Aliquot Amount (ml): 0.2500

Component	Initial Conc (mg/L)	Final Conc (mg/L)
Ag	20.000	0.0500
As	20.000	0.0500

Ba	20.000	0.0500
Be	20.000	0.0500
Cd	20.000	0.0500
Co	20.000	0.0500
Cr	20.000	0.0500
Cu	20.000	0.0500
Mn	20.000	0.0500
Ni	20.000	0.0500
Pb	20.000	0.0500
Se	20.000	0.0500
Th	20.000	0.0500
Tl	20.000	0.0500
U	20.000	0.0500
V	20.000	0.0500
Zn	20.000	0.0500

Parent Std No.: STD3110-09, ICP-MS CALSTD 2 Aliquot Amount (ml): 0.2500

Component	Initial Conc (mg/L)	Final Conc (mg/L)
Mo	20.000	0.0500
Sb	20.000	0.0500
Sn	20.000	0.0500

STD6861-09, ICP-MS RL STD

Analyst: DIAZL

Solvent: 5% HNO3 Lot No.: H14024 Volume (ml): 10.000
Date Prep./Opened: 11-09-2009
Date Expires(1): 11-10-2009 (1 Day)

Parent Std No.: STD6674-09, ICP-MS 1ppm Sn/Zn Aliquot Amount (ml): 0.0900
Parent Date Expires(1): 03-01-2010 Parent Date Expires(2): 03-01-2010

Component	Initial Conc (mg/L)	Final Conc (mg/L)
Sn	1.0000	0.0090
1000 Zn	1.0000	0.0090

Parent Std No.: STD6859-09, ICP-MS CAL STD Aliquot Amount (ml): 0.1000

Component	Initial Conc (mg/L)	Final Conc (mg/L)
Ag	0.1000	0.0010
As	0.1000	0.0010
Ba	0.1000	0.0010
Be	0.1000	0.0010
Cd	0.1000	0.0010
Co	0.1000	0.0010
Cr	0.1000	0.0010
Cu	0.1000	0.0010
Mn	0.1000	0.0010
Ni	0.1000	0.0010
Pb	0.1000	0.0010
Se	0.1000	0.0010
Th	0.1000	0.0010

Tl	0.1000	0.0010
U	0.1000	0.0010
V	0.1000	0.0010
Zn	0.1000	0.0010
Mo	0.1000	0.0010
Sb	0.1000	0.0010
Sn	0.1000	0.0010

STD6862-09, ICP-MS AFCEE RL STD

Analyst: DIAZL

Solvent: 5% HNO3 Lot No.: H14024 Volume (ml): 10.000
Date Prep./Opened: 11-09-2009
Date Expires(1): 11-10-2009 (1 Day)

Parent Std No.: STD6861-09, ICP-MS RL STD Aliquot Amount (ml): 2.0000

Component	Initial Conc (mg/L)	Final Conc (mg/L)
Sn	0.0090	0.0018
1000 Zn	0.0090	0.0018
Ag	0.0010	0.0002
As	0.0010	0.0002
Ba	0.0010	0.0002
Be	0.0010	0.0002
Cd	0.0010	0.0002
Co	0.0010	0.0002
Cr	0.0010	0.0002
Cu	0.0010	0.0002
Mn	0.0010	0.0002
Ni	0.0010	0.0002
Pb	0.0010	0.0002
Se	0.0010	0.0002
Th	0.0010	0.0002
Tl	0.0010	0.0002
U	0.0010	0.0002
V	0.0010	0.0002
Zn	0.0010	0.0002
Mo	0.0010	0.0002
Sb	0.0010	0.0002
Sn	0.0010	0.0002

STD6863-09, ICP-MS ICSAB

Analyst: DIAZL

Solvent: 5% HNO3 Lot No.: H14024 Volume (ml): 10.000
Date Prep./Opened: 11-09-2009
Date Expires(1): 11-10-2009 (1 Day)

Parent Std No.: STD3109-09, ICP-MS CALSTD 1 Aliquot Amount (ml): 0.0500

Component	Initial Conc (mg/L)	Final Conc (mg/L)
Ag	20.000	0.1000

As	20.000	0.1000
Ba	20.000	0.1000
Be	20.000	0.1000
Cd	20.000	0.1000
Co	20.000	0.1000
Cr	20.000	0.1000
Cu	20.000	0.1000
Mn	20.000	0.1000
Ni	20.000	0.1000
Pb	20.000	0.1000
Se	20.000	0.1000
Th	20.000	0.1000
Tl	20.000	0.1000
U	20.000	0.1000
V	20.000	0.1000
Zn	20.000	0.1000

Parent Std No.: STD3110-09, ICP-MS CALSTD 2 Aliquot Amount (ml): 0.0500

Component	Initial Conc (mg/L)	Final Conc (mg/L)
Mo	20.000	0.1000
Sb	20.000	0.1000
Sn	20.000	0.1000

Parent Std No.: STD4542-09, ICPMS Interferent Check Standard Aliquot Amount (ml): 1.0000
Parent Date Expires(1): 07-31-2010 Parent Date Expires(2): 08-01-2010

Component	Initial Conc (ug/ml)	Final Conc (mg/L)
Al	1,000.0	100.00
C	2,000.0	200.00
Ca	1,000.0	100.00
Cl	10,000	1,000.0
Fe	1,000.0	100.00
K	1,000.0	100.00
Mg	1,000.0	100.00
Mo	20.000	2.0000
Na	1,000.0	100.00
P	1,000.0	100.00
S	1,000.0	100.00
Ti	20.000	2.0000

STD6864-09, ICP-MS LR STD Analyst: DIAZL

Solvent: 5% HNO3 Lot No.: H14024 Volume (ml): 10.000
Date Prep./Opened: 11-09-2009
Date Expires(1): 11-10-2009 (1 Day)

Parent Std No.: STD3109-09, ICP-MS CALSTD 1 Aliquot Amount (ml): 0.5000

Component	Initial Conc (mg/L)	Final Conc (mg/L)
Ag	20.000	1.0000
As	20.000	1.0000

Ba	20.000	1.0000
Be	20.000	1.0000
Cd	20.000	1.0000
Co	20.000	1.0000
Cr	20.000	1.0000
Cu	20.000	1.0000
Mn	20.000	1.0000
Ni	20.000	1.0000
Pb	20.000	1.0000
Se	20.000	1.0000
Th	20.000	1.0000
Tl	20.000	1.0000
U	20.000	1.0000
V	20.000	1.0000
Zn	20.000	1.0000

Parent Std No.: STD3110-09, ICP-MS CALSTD 2 Aliquot Amount (ml): 0.5000

Component	Initial Conc (mg/L)	Final Conc (mg/L)
Mo	20.000	1.0000
Sb	20.000	1.0000
Sn	20.000	1.0000

STD6865-09, ICP-MS ICV STD

Analyst: DIAZL

Solvent: 5% HNO3 Lot No.: H14024 Volume (ml): 50.000
Date Prep./Opened: 11-09-2009
Date Expires(1): 11-10-2009 (1 Day)

Parent Std No.: STD3113-09, ICP-MS TA ICV A Aliquot Amount (ml): 0.1000
Parent Date Expires(1): 04-21-2010 Parent Date Expires(2): 04-21-2010

Component	Initial Conc (mg/L)	Final Conc (mg/L)
As	20.000	0.0400
Ba	20.000	0.0400
Be	20.000	0.0400
Cd	20.000	0.0400
Co	20.000	0.0400
Cr	20.000	0.0400
Cu	20.000	0.0400
Mn	20.000	0.0400
Ni	20.000	0.0400
Pb	20.000	0.0400
Se	20.000	0.0400
Th	20.000	0.0400
Tl	20.000	0.0400
U	20.000	0.0400
V	20.000	0.0400
Zn	20.000	0.0400

Parent Std No.: STD3114-09, ICP-MS TA ICV B Aliquot Amount (ml): 0.1000
Parent Date Expires(1): 04-21-2010 Parent Date Expires(2): 04-21-2010

Component	Initial Conc (mg/L)	Final Conc (mg/L)
Ag	20.000	0.0400
Mo	20.000	0.0400
Sb	20.000	0.0400
Sn	20.000	0.0400

STD6866-09, ALTSe

Analyst: DIAZL

Solvent: 5% HNO3 Lot No.: H14024 Volume (ml): 50.000
Date Prep./Opened: 11-09-2009
Date Expires(1): 11-10-2009 (1 Day)
pipettes: Met 21 and Met 8

Parent Std No.: STD1853-09, 1 mg/l Se Aliquot Amount (ml): 0.1000

Component	Initial Conc (mg/L)	Final Conc (mg/L)
Se	1.0000	0.0020

STD6867-09, LLCCV/RLICV

Analyst: DIAZL

Solvent: 5% HNO3 Lot No.: H14024 Volume (ml): 100.00
Date Prep./Opened: 11-09-2009
Date Expires(1): 11-10-2009 (1 Day)
pipettes: Met 20

Parent Std No.: STD6469-09, ICP-MS LLCCV 1 Aliquot Amount (ml): 1.0000
Parent Date Expires(1): 10-20-2010 Parent Date Expires(2): 11-01-2010

Component	Initial Conc (mg/L)	Final Conc (ug/L)
Ag	0.5000	5.0000
Al	3.0000	30.000
As	0.5000	5.0000
Ba	0.1000	1.0000
Be	0.1000	1.0000
Ca	5.0000	50.000
Cd	0.1000	1.0000
Co	0.1000	1.0000
Cr	0.2000	2.0000
Cu	0.2000	2.0000
Fe	5.0000	50.000
K	10.000	100.00
Mg	5.0000	50.000
Mn	0.1000	1.0000
Na	5.0000	50.000
Ni	0.2000	2.0000
Pb	0.1000	1.0000
Se	0.5000	5.0000
Th	0.2000	2.0000

Tl	0.1000	1.0000
U	0.1000	1.0000
V	0.5000	5.0000
Zn	1.0000	10.000

Parent Std No.: STD6470-09, ICP-MS LLCCV 2 Aliquot Amount (ml): 1.0000

Parent Date Expires(1): 10-20-2010 Parent Date Expires(2): 11-01-2010

Component	Initial Conc (mg/L)	Final Conc (ug/L)
Mo	0.2000	2.0000
Sb	0.2000	2.0000
Sn	1.0000	10.000

File AG1109094

Reviewed By: LRD 11/10/2009

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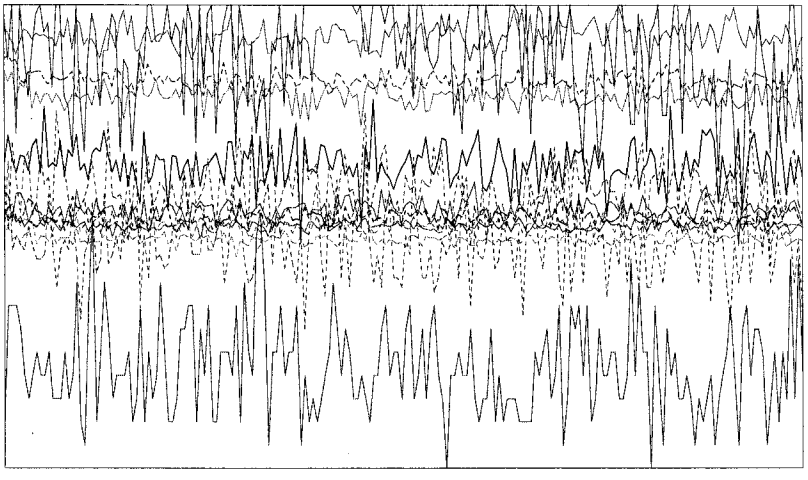
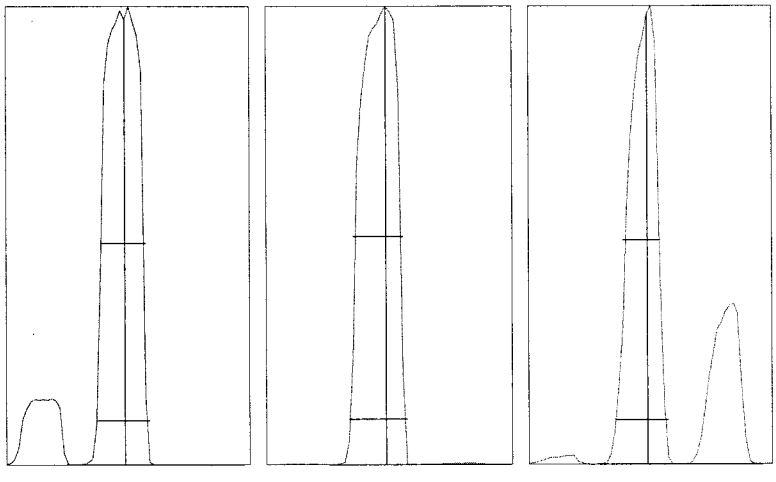
Tune Report

Tune File : NORM.U
Comment : AG110909



Integration Time:	0.1000 sec	
Sampling Period:	1.5300 sec	
n:	200	
Oxide:	156/140	1.475%
Doubly Charged:	70/140	1.275%

m/z	Range	Count	Mean	RSD%	Background
6	5,000	2614.0	2789.3	3.67	0.80
7	20,000	18632.0	18633.8	3.00	0.50
59	20,000	15677.0	16033.1	2.87	1.00
63	50	35.0	45.6	15.88	0.70
70	500	313.0	327.1	7.08	0.40
75	20	4.0	4.4	46.88	0.60
78	200	109.0	120.3	9.42	0.60
89	50,000	26589.0	26185.6	2.22	1.00
115	50,000	24518.0	24639.8	1.99	1.10
118	100	33.0	48.4	15.31	0.80
137	5,000	2637.0	2712.3	2.91	1.20
205	20,000	16431.0	16723.1	2.17	1.70
238	50,000	25920.0	26106.3	1.87	2.50
156/140	2	1.499%	1.485%	7.38	
70/140	2	1.311%	1.332%	7.11	



m/z:	7	89	205
Height:	18,699	26,853	17,221
Axis:	7.00	89.00	205.00
W-50%:	0.55	0.60	0.45
W-10%:	0.6500	0.700	0.6500

Integration Time:	0.1000 sec
Acquisition Time:	22.7600 sec

Y axis : Linear

Generated : Nov 09, 2009 18:55:12
Printed : Nov 09, 2009 18:55:15

Tune Report

Tune File : NORM.U
Comment : AG110909

Tuning Parameters

===Plasma Condition===			===Ion Lenses===			===Q-Pole Parameters===		
RF Power	:	1600 W	Extract 1	:	0 V	AMU Gain	:	134
RF Matching	:	1.7 V	Extract 2	:	-170 V	AMU Offset	:	125
Smpl Depth	:	8 mm	Omega Bias-ce	:	-30 V	Axis Gain	:	1.0007
Torch-H	:	-0.8 mm	Omega Lens-ce	:	1.4 V	Axis Offset	:	-0.03
Torch-V	:	-0.3 mm	Cell Entrance	:	-30 V	QP Bias	:	-3 V
Carrier Gas	:	0.81 L/min	QP Focus	:	7 V			
Makeup Gas	:	0.23 L/min	Cell Exit	:	-30 V	===Detector Parameters===		
Optional Gas	:	--- %				Discriminator	:	8 mV
Nebulizer Pump	:	0.1 rps	===Octopole Parameters===			Analog HV	:	1770 V
Sample Pump	:	--- rps	OctP RF	:	180 V	Pulse HV	:	1480 V
S/C Temp	:	2 degC	OctP Bias	:	-18 V			

===Reaction Cell===

Reaction Mode	:	OFF						
H2 Gas	:	0 mL/min	He Gas	:	0 mL/min	Optional Gas	:	--- %

Generated : Nov 09, 2009 18:55:12
Printed : Nov 09, 2009 18:55:18

P/A Factor Tuning Report

Acquired:Nov 9 2009 08:15 pm

Mass[amu]	Element	P/A Factor
6	Li	Sensitivity too high
7	(Li)	0.055201
9	Be	0.058738
23	Na	0.063579
24	Mg	0.064637
27	Al	0.065724
39	K	0.065936
43	Ca	Sensitivity too low
45	Sc	0.065581
51	V	0.066938
52	Cr	0.068029
53	(Cr)	Sensitivity too low
55	Mn	0.069052
57	Fe	Sensitivity too low
59	Co	0.070056
60	Ni	Sensitivity too low
63	Cu	Sensitivity too low
66	Zn	Sensitivity too low
72	Ge	0.069902
75	As	Sensitivity too low
77	(Se)	Sensitivity too low
78	Se	Sensitivity too low
82	(Se)	Sensitivity too low
83	(Se)	Sensitivity too low
93	Nb	Sensitivity too low
95	Mo	Sensitivity too low
98	(Mo)	0.071630
99	(Mo)	Sensitivity too low
105	Pd	Sensitivity too low
106	(Cd)	0.071534
107	Ag	Sensitivity too low
108	(Cd)	0.071984
111	Cd	Sensitivity too low
115	In	0.068812
118	Sn	0.070115
121	Sb	0.070721
137	Ba	Sensitivity too low
165	Ho	0.069269
182	W	Sensitivity too low
195	Pt	Sensitivity too low
205	Tl	0.071349
206	(Pb)	0.070737
207	(Pb)	0.071002
208	Pb	0.070189
232	Th	0.070155
238	U	0.070301

===Detector Parameters===
Discriminator: 8.0 mV
Analog HV: 1770 V
Pulse HV: 1480 V

P/A Factor Tuning Report

Acquired:Nov 9 2009 08:21 pm

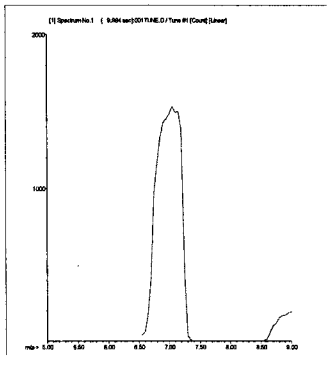
Mass[amu]	Element	P/A Factor
6	Li	Sensitivity too high
7	(Li)	0.055259
9	Be	0.058421
23	Na	0.062917
24	Mg	0.063700
27	Al	0.064930
39	K	0.065662
43	Ca	Sensitivity too low
45	Sc	0.065581
51	V	0.066016
52	Cr	0.066969
53	(Cr)	Sensitivity too low
55	Mn	0.067116
57	Fe	Sensitivity too low
59	Co	0.068255
60	Ni	0.068756
63	Cu	0.069073
66	Zn	0.068997
72	Ge	0.068697
75	As	0.069000
77	(Se)	Sensitivity too low
78	Se	Sensitivity too low
82	(Se)	Sensitivity too low
83	(Se)	Sensitivity too low
93	Nb	Sensitivity too low
95	Mo	0.071094
98	(Mo)	0.069583
99	(Mo)	0.069992
105	Pd	0.069782
106	(Cd)	0.069206
107	Ag	Sensitivity too low
108	(Cd)	0.069821
111	Cd	0.069450
115	In	0.068812
118	Sn	0.068484
121	Sb	0.068561
137	Ba	0.070024
165	Ho	0.068599
182	W	Sensitivity too low
195	Pt	Sensitivity too low
205	Tl	0.068219
206	(Pb)	0.067897
207	(Pb)	0.068227
208	Pb	0.070189
232	Th	0.070155
238	U	0.070301

===Detector Parameters===
Discriminator: 8.0 mV
Analog HV: 1770 V
Pulse HV: 1480 V

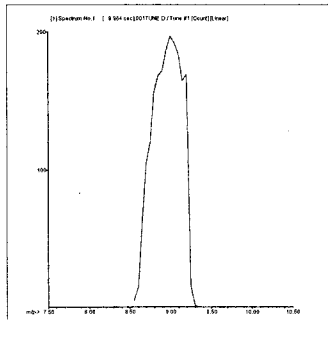
200.8 QC Tune Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\001TUNE.D
Date Acquired: Nov 9 2009 08:26 pm
Acq. Method: tun_isis.M
Operator: LRD
Sample Name: 200.8 TUNE
Misc Info:
Vial Number: 4
Current Method: C:\ICPCHEM\1\METHODS\tun_isis.M

Element	CPS Mean	Rep1	Rep2	Rep3	Rep4	Rep5	%RSD	Required	Flag
7 Li	14906	14929	14975	14838	14916	14868	**0.36**	5.00	
9 Be	1915	1908	1914	1983	1809	1957	**3.47**	5.00	RSD~~fail~~ Pass LRD 11-04-09
24 Mg	8679	8669	8688	8662	8744	8633	**0.48**	5.00	
59 Co	35756	36567	35777	35985	34517	35933	**2.11**	5.00	
115 In	692825	688204	694293	692146	693236	696245	**0.43**	5.00	
208 Pb	51450	52572	50561	51250	51590	51275	**1.42**	5.00	
238 U	109376	111991	110522	109499	107788	107079	**1.83**	5.00	

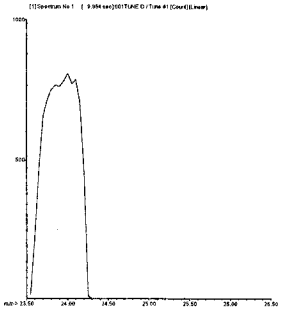


7 Li
Mass Calib.
Actual: 7.05
Required: 6.90 - 7.10
Flag:
Peak Width
Actual: 0.60
Required: 0.90
Flag:



9 Be
Mass Calib.
Actual: 9.00
Required: 8.90 - 9.10
Flag:
Peak Width
Actual: 0.55
Required: 0.90
Flag:

C:\ICPCHEM\1\DATA\AG110909A.B\001TUNE.D



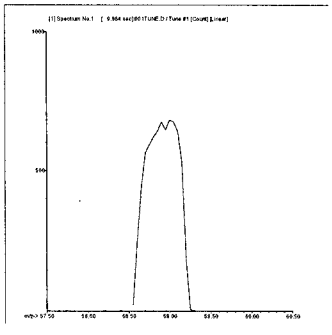
24 Mg

Mass Calib.

Actual: 24.00
Required: 23.90 - 24.10
Flag:

Peak Width

Actual: 0.60
Required: 0.90
Flag:



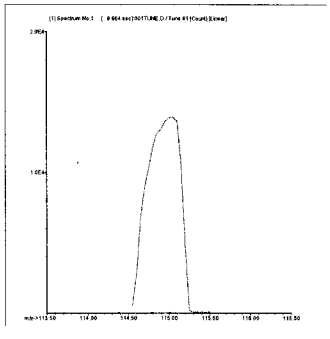
59 Co

Mass Calib.

Actual: 59.00
Required: 58.90 - 59.10
Flag:

Peak Width

Actual: 0.60
Required: 0.90
Flag:



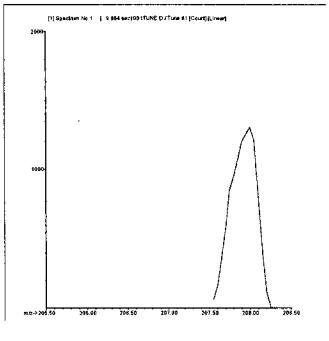
115 In

Mass Calib.

Actual: 115.00
Required: 114.90 - 115.10
Flag:

Peak Width

Actual: 0.60
Required: 0.90
Flag:



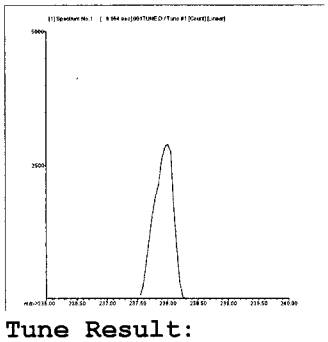
208 Pb

Mass Calib.

Actual: 207.95
Required: 207.90 - 208.10
Flag:

Peak Width

Actual: 0.55
Required: 0.90
Flag:



238 U

Mass Calib.

Actual: 237.95
Required: 237.90 - 238.10
Flag:

Peak Width

Actual: 0.50
Required: 0.90
Flag:

Tune Result: ~~Fail~~ Pass

LRD 11/09/09

Calibration Blank QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\002CALB.D\002CALB.D#
Date Acquired: Nov 9 2009 08:29 pm
Acq. Method: NormISIS.M
Operator: LRD
Sample Name: Cal Blank
Misc Info:
Vial Number: 1101
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal. Update: Nov 09 2009 08:30 pm
Sample Type: CalBlk

D6/11/11/09

QC Elements

Element		IS Ref	Tune	CPS Mean	RSD(%)
9	Be	6	1	0	0.00
51	V	72	1	577	3.61
52	Cr	72	1	1697	4.80
55	Mn	72	1	263	10.96
59	Co	72	1	17	34.64
60	Ni	72	1	63	32.87
63	Cu	72	1	100	43.59
66	Zn	72	1	131	19.98
75	As	72	1	31	32.13
78	Se	72	1	153	20.97
95	Mo	72	1	23	24.74
107	Ag	115	1	7	86.60
111	Cd	115	1	-4	15.03
118	Sn	115	1	123	26.06
121	Sb	115	1	43	42.83
137	Ba	115	1	10	33.33
205	Tl	165	1	341	20.90
208	Pb	165	1	206	7.66
232	Th	165	1	130	26.65
238	U	165	1	97	23.89

Internal Standard Elements

Element		Tune	CPS Mean	RSD(%)
6	Li	1	307725	0.62
45	Sc	1	863740	1.75
72	Ge	1	419764	0.40
115	In	1	1321877	2.10
165	Ho	1	2596118	0.41

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

Calibration Blank QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\003CALB.D\003CALB.D#
Date Acquired: Nov 9 2009 08:32 pm
Acq. Method: NormISIS.M
Operator: LRD
Sample Name: Cal Blank
Misc Info:
Vial Number: 2101
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal. Update: Nov 09 2009 08:30 pm
Sample Type: CalBlk

QC Elements

Element		IS Ref	Tune	CPS Mean	RSD(%)
9	Be	6	1	0	0.00
51	V	72	1	513	5.95
52	Cr	72	1	1570	2.30
55	Mn	72	1	337	11.25
59	Co	72	1	20	50.00
60	Ni	72	1	63	48.24
63	Cu	72	1	120	44.10
66	Zn	72	1	137	9.29
75	As	72	1	35	18.20
78	Se	72	1	97	23.89
95	Mo	72	1	20	50.00
107	Ag	115	1	3	173.21
111	Cd	115	1	-4	393.57
118	Sn	115	1	297	22.95
121	Sb	115	1	39	26.19
137	Ba	115	1	12	41.66
205	Tl	165	1	221	20.47
208	Pb	165	1	199	12.35
232	Th	165	1	113	22.21
238	U	165	1	77	26.09

Internal Standard Elements

Element		Tune	CPS Mean	RSD(%)
6	Li	1	316659	2.14
45	Sc	1	888972	0.50
72	Ge	1	425816	0.47
115	In	1	1335258	0.87
165	Ho	1	2617754	0.65

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

Calibration Standard QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\004ICAL.D\004ICAL.D#
Date Acquired: Nov 9 2009 08:35 pm
Acq. Method: NormISIS.M
Operator: LRD
Sample Name: 100 ppb
Misc Info:
Vial Number: 2102
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal. Update: Nov 09 2009 08:33 pm
Sample Type: ICAL

QC Elements

Element		IS Ref	Tune	CPS Mean	RSD(%)
9	Be	6	1	38609	1.25
51	V	72	1	510366	0.88
52	Cr	72	1	524956	1.26
55	Mn	72	1	613525	1.41
59	Co	72	1	633231	0.83
60	Ni	72	1	140397	0.74
63	Cu	72	1	332088	1.69
66	Zn	72	1	83275	0.84
75	As	72	1	64491	1.06
78	Se	72	1	13670	3.37
95	Mo	72	1	194872	1.16
107	Ag	115	1	568219	1.98
111	Cd	115	1	121298	1.44
118	Sn	115	1	331811	1.14
121	Sb	115	1	398020	0.91
137	Ba	115	1	158724	1.91
205	Tl	165	1	1472389	1.01
208	Pb	165	1	2154560	0.36
232	Th	165	1	2284596	1.76
238	U	165	1	2432923	0.19

ISTD Elements

Element		Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	1	317523	0.04	316659	100.3	30 - 120	
45	Sc	1	902480	1.79	888972	101.5	30 - 120	
72	Ge	1	417361	1.39	425816	98.0	30 - 120	
115	In	1	1332995	0.81	1335258	99.8	30 - 120	
165	Ho	1	2606293	0.43	2617754	99.6	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\003CALB.D\003CALB.D#

0 :Element Failures 0
0 :ISTD Failures 0

Initial Calibration Verification (ICV) QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\005 ICV.D\005 ICV.D#
Date Acquired: Nov 9 2009 08:37 pm
Operator: LRD
Sample Name: ICV
Misc Info:
Vial Number: 2103
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal Update: Nov 09 2009 08:35 pm
Sample Type: ICV
Total Dil Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Conc.		RSD(%)	Expected	Rec(%)	QC Range(%)	Flag
9 Be	6	1	39.82	ppb	0.59	40	99.6	90 - 110	
51 V	72	1	40.01	ppb	0.57	40	100.0	90 - 110	
52 Cr	72	1	40.10	ppb	1.04	40	100.3	90 - 110	
55 Mn	72	1	40.83	ppb	1.35	40	102.1	90 - 110	
59 Co	72	1	39.98	ppb	2.35	40	100.0	90 - 110	
60 Ni	72	1	39.48	ppb	1.75	40	98.7	90 - 110	
63 Cu	72	1	39.44	ppb	0.71	40	98.6	90 - 110	
66 Zn	72	1	40.87	ppb	1.27	40	102.2	90 - 110	
75 As	72	1	40.05	ppb	0.47	40	100.1	90 - 110	
78 Se	72	1	40.20	ppb	7.43	40	100.5	90 - 110	
95 Mo	72	1	39.50	ppb	1.39	40	98.8	90 - 110	
107 Ag	115	1	40.28	ppb	1.09	40	100.7	90 - 110	
111 Cd	115	1	40.39	ppb	2.54	40	101.0	90 - 110	
118 Sn	115	1	39.95	ppb	2.27	40	99.9	90 - 110	
121 Sb	115	1	40.57	ppb	2.67	40	101.4	90 - 110	
137 Ba	115	1	40.04	ppb	2.19	40	100.1	90 - 110	
205 Tl	165	1	40.86	ppb	1.20	40	102.2	90 - 110	
208 Pb	165	1	40.91	ppb	0.95	40	102.3	90 - 110	
232 Th	165	1	41.04	ppb	0.97	40	102.6	90 - 110	
238 U	165	1	40.74	ppb	0.82	40	101.9	90 - 110	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	320321	1.05	316659	101.2	30 - 120	
45 Sc	1	893394	1.16	888972	100.5	30 - 120	
72 Ge	1	421619	1.04	425816	99.0	30 - 120	
115 In	1	1339730	1.68	1335258	100.3	30 - 120	
165 Ho	1	2633489	0.36	2617754	100.6	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\003CALB.D\003CALB.D#

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

Wash QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\006WASH.D\006WASH.D#
Date Acquired: Nov 9 2009 08:40 pm
Operator: LRD
Sample Name: RLIV
Misc Info:
Vial Number: 1204
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal Update: Nov 09 2009 08:35 pm
Sample Type: WASH
Total Dil Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Conc.	RSD(%)	High Limit	Flag
9 Be	6	1	0.977 ppb	23.08	1.30	
51 V	72	1	5.088 ppb	3.63	6.50	
52 Cr	72	1	2.010 ppb	2.80	2.60	
55 Mn	72	1	1.052 ppb	2.54	1.30	
59 Co	72	1	1.026 ppb	2.82	1.30	
60 Ni	72	1	2.053 ppb	3.73	2.60	
63 Cu	72	1	1.949 ppb	1.86	2.60	
66 Zn	72	1	10.200 ppb	0.76	13.00	
75 As	72	1	4.975 ppb	1.56	6.50	
78 Se	72	1	5.397 ppb	12.87	6.50	
95 Mo	72	1	2.077 ppb	3.08	2.60	
107 Ag	115	1	5.417 ppb	1.62	6.50	
111 Cd	115	1	0.994 ppb	8.21	1.30	
118 Sn	115	1	10.400 ppb	2.50	13.00	
121 Sb	115	1	2.182 ppb	1.55	2.60	
137 Ba	115	1	1.043 ppb	2.05	1.30	
205 Tl	165	1	1.340 ppb	3.63	1.30	
208 Pb	165	1	1.058 ppb	2.34	1.30	
232 Th	165	1	2.228 ppb	2.96	2.60	
238 U	165	1	1.119 ppb	1.48	1.30	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	327943	1.12	316659	103.6	30 - 120	
45 Sc	1	927967	1.66	888972	104.4	30 - 120	
72 Ge	1	437192	0.23	425816	102.7	30 - 120	
115 In	1	1360935	0.96	1335258	101.9	30 - 120	
165 Ho	1	2638135	1.11	2617754	100.8	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\003CALB.D\003CALB.D#

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

Initial Calibration Blank (ICB) QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\007 ICB.D\007 ICB.D#
Date Acquired: Nov 9 2009 08:43 pm
Operator: LRD
Sample Name: ICB
Misc Info:
Vial Number: 2104
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal Update: Nov 09 2009 08:35 pm
Sample Type: ICB
Total Dil Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Conc.		RSD(%)	High Limit	Flag
9 Be	6	1	0.00	ppb	0.00	1.00	
51 V	72	1	-0.03	ppb	24.58	1.00	
52 Cr	72	1	0.01	ppb	375.24	1.00	
55 Mn	72	1	0.01	ppb	99.37	1.00	
59 Co	72	1	0.00	ppb	102.49	1.00	
60 Ni	72	1	0.06	ppb	11.55	1.00	
63 Cu	72	1	0.03	ppb	95.69	1.00	
66 Zn	72	1	0.75	ppb	6.06	1.00	
75 As	72	1	-0.01	ppb	401.95	1.00	
78 Se	72	1	0.14	ppb	223.63	1.00	
95 Mo	72	1	0.01	ppb	53.61	1.00	
107 Ag	115	1	0.01	ppb	41.41	1.00	
111 Cd	115	1	0.01	ppb	115.64	1.00	
118 Sn	115	1	0.25	ppb	23.38	1.00	
121 Sb	115	1	0.07	ppb	21.20	1.00	
137 Ba	115	1	0.06	ppb	14.45	1.00	
205 Tl	165	1	0.04	ppb	19.24	1.00	
208 Pb	165	1	0.01	ppb	22.30	1.00	
232 Th	165	1	0.02	ppb	1.72	1.00	
238 U	165	1	0.00	ppb	21.71	1.00	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	331180	1.57	316659	104.6	30 - 120	
45 Sc	1	905311	1.15	888972	101.8	30 - 120	
72 Ge	1	441723	1.46	425816	103.7	30 - 120	
115 In	1	1364402	1.70	1335258	102.2	30 - 120	
165 Ho	1	2652248	1.61	2617754	101.3	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\003CALB.D\003CALB.D#

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

RL STD QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\008RLST.D\008RLST.D#
Date Acquired: Nov 9 2009 08:46 pm
Operator: LRD
Sample Name: RL STD
Misc Info:
Vial Number: 2105
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal Update: Nov 09 2009 08:35 pm
Sample Type: RLSTD
Total Dil Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Conc.		RSD(%)	Expected	Rec(%)	QC Range(%)	Flag
9 Be	6	1	0.99	ppb	9.34	1	99.0	50 - 150	
51 V	72	1	0.92	ppb	9.25	1	91.9	50 - 150	
52 Cr	72	1	1.00	ppb	9.84	1	99.9	50 - 150	
55 Mn	72	1	1.01	ppb	0.70	1	100.8	50 - 150	
59 Co	72	1	0.98	ppb	2.45	1	97.7	50 - 150	
60 Ni	72	1	1.03	ppb	5.51	1	103.0	50 - 150	
63 Cu	72	1	1.05	ppb	5.54	1	104.6	50 - 150	
66 Zn	72	1	10.39	ppb	0.48	10	103.9	50 - 150	
75 As	72	1	1.05	ppb	4.38	1	105.1	50 - 150	
78 Se	72	1	1.23	ppb	32.18	1	123.2	50 - 150	
95 Mo	72	1	1.01	ppb	7.94	1	101.0	50 - 150	
107 Ag	115	1	1.01	ppb	4.94	1	101.1	50 - 150	
111 Cd	115	1	1.05	ppb	5.12	1	104.5	50 - 150	
118 Sn	115	1	10.46	ppb	2.14	10	104.6	50 - 150	
121 Sb	115	1	1.03	ppb	4.27	1	103.4	50 - 150	
137 Ba	115	1	1.04	ppb	2.63	1	104.3	50 - 150	
205 Tl	165	1	1.11	ppb	1.97	1	110.8	50 - 150	
208 Pb	165	1	1.05	ppb	1.92	1	105.4	50 - 150	
232 Th	165	1	1.04	ppb	1.88	1	103.6	50 - 150	
238 U	165	1	1.07	ppb	2.22	1	107.2	50 - 150	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	332529	1.31	316659	105.0	30 - 120	
45 Sc	1	924723	1.34	888972	104.0	30 - 120	
72 Ge	1	440304	0.81	425816	103.4	30 - 120	
115 In	1	1361149	0.37	1335258	101.9	30 - 120	
165 Ho	1	2647952	0.34	2617754	101.2	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\003CALB.D\003CALB.D#

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

AFCEE RL QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\009AFCE.D\009AFCE.D#
Date Acquired: Nov 9 2009 08:48 pm
Operator: LRD
Sample Name: AFCEE RL
Misc Info:
Vial Number: 2106
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal Update: Nov 09 2009 08:35 pm
Sample Type: AFCEERL
Total Dil Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Conc.		RSD(%)	Expected	Rec(%)	QC Range(%)	Flag
9 Be	6	1	0.16	ppb	9.52	0	82.7	80 - 120	
51 V	72	1	0.15	ppb	12.92	0	84.2	80 - 120	
52 Cr	72	1	0.17	ppb	11.54	0	87.5	80 - 120	
55 Mn	72	1	0.19	ppb	4.01	0	92.3	80 - 120	
59 Co	72	1	0.20	ppb	10.00	0	101.6	80 - 120	
60 Ni	72	1	0.17	ppb	39.79	0	82.5	80 - 120	
63 Cu	72	1	0.21	ppb	8.40	0	98.5	80 - 120	
66 Zn	72	1	1.88	ppb	3.20	2	90.5	80 - 120	
75 As	72	1	0.18	ppb	4.43	0	84.9	80 - 120	
78 Se	72	1	0.34	ppb	52.18	0	137.7	80 - 120	
95 Mo	72	1	0.20	ppb	20.48	0	97.8	80 - 120	
107 Ag	115	1	0.19	ppb	11.02	0	95.4	80 - 120	
111 Cd	115	1	0.18	ppb	8.60	0	87.8	80 - 120	
118 Sn	115	1	2.07	ppb	1.60	2	98.7	80 - 120	
121 Sb	115	1	0.24	ppb	8.81	0	117.2	80 - 120	
137 Ba	115	1	0.17	ppb	15.49	0	82.0	80 - 120	
205 Tl	165	1	0.21	ppb	3.14	0	95.1	80 - 120	
208 Pb	165	1	0.21	ppb	4.91	0	97.5	80 - 120	
232 Th	165	1	0.21	ppb	2.80	0	102.7	80 - 120	
238 U	165	1	0.21	ppb	1.79	0	97.4	80 - 120	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	334891	0.91	316659	105.8	30 - 120	
45 Sc	1	926450	1.15	888972	104.2	30 - 120	
72 Ge	1	444347	1.22	425816	104.4	30 - 120	
115 In	1	1347595	1.10	1335258	100.9	30 - 120	
165 Ho	1	2645674	1.06	2617754	101.1	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\003CALB.D\003CALB.D#

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

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\010SMPL.D\010SMPL.D#
Date Acquired: Nov 9 2009 08:51 pm
Acq. Method: NormISIS.M
Operator: LRD
Sample Name: ALTSe
Misc Info: 2 ppb
Vial Number: 2107
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal. Update: Nov 09 2009 08:35 pm
Sample Type: SA
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	6	1	0.01	0.01	ppb	173.18	3600	
51 V	72	1	-0.05	-0.05	ppb	4.45	3600	
52 Cr	72	1	0.03	0.03	ppb	21.71	3600	
55 Mn	72	1	-0.01	-0.01	ppb	107.83	3600	
59 Co	72	1	0.00	0.00	ppb	91.53	3600	
60 Ni	72	1	-0.01	-0.01	ppb	120.90	3600	
63 Cu	72	1	0.00	0.00	ppb	249.88	3600	
66 Zn	72	1	0.21	0.21	ppb	4.91	3600	
75 As	72	1	-0.01	-0.01	ppb	276.53	3600	
78 Se	72	1	2.30	2.30	ppb	3.47	3600	
95 Mo	72	1	0.00	0.00	ppb	270.91	3600	
107 Ag	115	1	0.01	0.01	ppb	12.59	3600	
111 Cd	115	1	0.01	0.01	ppb	40.90	3600	
118 Sn	115	1	0.03	0.03	ppb	42.36	3600	
121 Sb	115	1	0.02	0.02	ppb	52.41	3600	
137 Ba	115	1	0.00	0.00	ppb	159.45	3600	
205 Tl	165	1	0.00	0.00	ppb	223.71	3600	
208 Pb	165	1	0.00	0.00	ppb	93.52	3600	
232 Th	165	1	0.01	0.01	ppb	41.10	1000	
238 U	165	1	0.00	0.00	ppb	39.39	3600	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	336598	0.66	316659	106.3	30 - 120	
45 Sc	1	916084	0.54	888972	103.0	30 - 120	
72 Ge	1	444955	0.00	425816	104.5	30 - 120	
115 In	1	1367875	0.83	1335258	102.4	30 - 120	
165 Ho	1	2646991	0.40	2617754	101.1	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\003CALB.D\003CALB.D#

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

Interference Check Solution A (ICS-A) QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\011ICSA.D\011ICSA.D#
Date Acquired: Nov 9 2009 08:54 pm
Acq. Method: NormISIS.M
Operator: LRD
Sample Name: ICSA
Misc Info:
Vial Number: 2108
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal. Update: Nov 09 2009 08:35 pm
Sample Type: ICSA
Dilution Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Conc.	RSD(%)	High Limit ppb	Flag
9 Be	6	1	0.00 ppb	0.00	1.00	
51 V	72	1	2.09 ppb	3.15	1.00	
52 Cr	72	1	1.97 ppb	9.78	1.00	
55 Mn	72	1	2.81 ppb	1.66	1.00	
59 Co	72	1	0.10 ppb	6.63	1.00	
60 Ni	72	1	1.02 ppb	13.74	1.00	
63 Cu	72	1	0.53 ppb	7.97	1.00	
66 Zn	72	1	3.94 ppb	2.38	10.00	
75 As	72	1	0.28 ppb	11.27	1.00	
78 Se	72	1	0.38 ppb	63.23	1.00	
95 Mo	72	1	1936.00 ppb	0.91	2000.00	
107 Ag	115	1	0.03 ppb	12.20	1.00	
111 Cd	115	1	0.30 ppb	66.71	1.00	
118 Sn	115	1	0.12 ppb	33.50	10.00	
121 Sb	115	1	0.92 ppb	2.59	1.00	
137 Ba	115	1	0.03 ppb	33.26	1.00	
205 Tl	165	1	0.03 ppb	11.11	1.00	
208 Pb	165	1	1.00 ppb	2.07	1.00	
232 Th	165	1	0.02 ppb	12.13	1.00	
238 U	165	1	0.00 ppb	5.79	1.00	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	239339	0.28	316659	75.6	30 - 120	
45 Sc	1	700629	1.42	888972	78.8	30 - 120	
72 Ge	1	343237	0.37	425816	80.6	30 - 120	
115 In	1	1048448	1.55	1335258	78.5	30 - 120	
165 Ho	1	2104424	0.97	2617754	80.4	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\003CALB.D\003CALB.D#

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

Interference Check Solution AB (ICS-AB) QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\012ICSB.D\012ICSB.D#
Date Acquired: Nov 9 2009 08:57 pm
Acq. Method: NormISIS.M
Operator: LRD
Sample Name: ICSAB
Misc Info:
Vial Number: 2109
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal. Update: Nov 09 2009 08:35 pm
Sample Type: ICSAB
Dilution Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Conc. ppb	RSD(%)	Expected	%Recovery	QC Range(%)	Flag
9 Be	6	1	109.40	3.64	100	109.4	80 - 120	
51 V	72	1	99.64	0.20	100	99.6	80 - 120	
52 Cr	72	1	97.24	0.93	100	97.2	80 - 120	
55 Mn	72	1	98.22	0.64	100	98.2	80 - 120	
59 Co	72	1	92.77	2.10	100	92.8	80 - 120	
60 Ni	72	1	89.04	1.65	100	89.0	80 - 120	
63 Cu	72	1	86.53	0.30	100	86.5	80 - 120	
66 Zn	72	1	96.58	0.54	100	96.6	80 - 120	
75 As	72	1	101.00	1.32	100	101.0	80 - 120	
78 Se	72	1	100.00	0.62	100	100.0	80 - 120	
95 Mo	72	1	2093.00	0.96	2100	99.7	80 - 120	
107 Ag	115	1	89.66	3.28	100	89.7	80 - 120	
111 Cd	115	1	95.05	1.99	100	95.1	80 - 120	
118 Sn	115	1	100.40	1.69	100	100.4	80 - 120	
121 Sb	115	1	103.00	1.30	100	103.0	80 - 120	
137 Ba	115	1	101.30	1.03	100	101.3	80 - 120	
205 Tl	165	1	94.31	0.93	100	94.3	80 - 120	
208 Pb	165	1	93.76	0.89	100	93.8	80 - 120	
232 Th	165	1	101.30	1.54	100	101.3	80 - 120	
238 U	165	1	99.94	0.63	100	99.9	80 - 120	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	233202	3.01	316659	73.6	30 - 120	
45 Sc	1	711798	0.20	888972	80.1	30 - 120	
72 Ge	1	338298	0.97	425816	79.4	30 - 120	
115 In	1	1075320	0.68	1335258	80.5	30 - 120	
165 Ho	1	2161438	0.51	2617754	82.6	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\003CALB.D\003CALB.D#

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

AFCEE RL QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\013AFCE.D\013AFCE.D#
Date Acquired: Nov 9 2009 08:59 pm
Operator: LRD
Sample Name: RINSE
Misc Info:
Vial Number: 1101
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal Update: Nov 09 2009 08:35 pm
Sample Type: AFCEERL
Total Dil Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Conc.		RSD(%)	Expected	Rec(%)	QC Range(%)	Flag
9 Be	6	1	0.01	ppb	173.15	0	4.2	80 - 120	
51 V	72	1	0.02	ppb	35.98	0	10.9	80 - 120	
52 Cr	72	1	0.03	ppb	89.50	0	13.7	80 - 120	
55 Mn	72	1	-0.01	ppb	113.19	0	-3.4	80 - 120	
59 Co	72	1	0.00	ppb	1352.30	0	-0.1	80 - 120	
60 Ni	72	1	-0.02	ppb	102.45	0	-9.9	80 - 120	
63 Cu	72	1	0.00	ppb	649.06	0	0.6	80 - 120	
66 Zn	72	1	0.04	ppb	63.69	2	1.7	80 - 120	
75 As	72	1	-0.01	ppb	61.99	0	-3.9	80 - 120	
78 Se	72	1	0.39	ppb	99.84	0	156.3	80 - 120	
95 Mo	72	1	0.80	ppb	31.54	0	396.5	80 - 120	
107 Ag	115	1	0.01	ppb	53.68	0	3.6	80 - 120	
111 Cd	115	1	0.00	ppb	41.35	0	1.7	80 - 120	
118 Sn	115	1	0.00	ppb	#######	2	0.0	80 - 120	
121 Sb	115	1	0.11	ppb	20.17	0	52.7	80 - 120	
137 Ba	115	1	0.00	ppb	105.76	0	-0.5	80 - 120	
205 Tl	165	1	-0.01	ppb	3.09	0	-2.6	80 - 120	
208 Pb	165	1	0.00	ppb	49.94	0	0.7	80 - 120	
232 Th	165	1	0.03	ppb	6.82	0	13.2	80 - 120	
238 U	165	1	0.01	ppb	15.94	0	6.9	80 - 120	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	331840	0.43	316659	104.8	30 - 120	
45 Sc	1	927075	1.00	888972	104.3	30 - 120	
72 Ge	1	454961	0.83	425816	106.8	30 - 120	
115 In	1	1407675	0.48	1335258	105.4	30 - 120	
165 Ho	1	2715373	0.43	2617754	103.7	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\003CALB.D\003CALB.D#

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

Linear Dynamic Range Sample QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\014 LR.D\014 LR.D#
Date Acquired: Nov 9 2009 09:02 pm
Acq. Method: NormISIS.M
Operator: LRD
Sample Name: LR1
Misc Info:
Vial Number: 2110
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal. Update: Nov 09 2009 08:35 pm
Sample Type: LR
Prep Dil. Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

Analyte Elements

Element	IS Ref	Tune	Conc.	RSD(%)	Expected	Rec(%)	QC Range(%)	Flag
9 Be	6	1	989.70 ppb	1.24	1000	99.0	90 - 110	
51 V	72	1	962.50 ppb	1.62	1000	96.3	90 - 110	
52 Cr	72	1	955.40 ppb	1.40	1000	95.5	90 - 110	
55 Mn	72	1	950.30 ppb	1.50	1000	95.0	90 - 110	
59 Co	72	1	955.50 ppb	1.19	1000	95.6	90 - 110	
60 Ni	72	1	979.40 ppb	1.79	1000	97.9	90 - 110	
63 Cu	72	1	966.20 ppb	0.98	1000	96.6	90 - 110	
66 Zn	72	1	974.60 ppb	0.75	1000	97.5	90 - 110	
75 As	72	1	1009.00 ppb	0.73	1000	100.9	90 - 110	
78 Se	72	1	988.90 ppb	0.77	1000	98.9	90 - 110	
95 Mo	72	1	987.40 ppb	1.52	1000	98.7	90 - 110	
107 Ag	115	1	932.40 ppb	1.41	1000	93.2	90 - 110	
111 Cd	115	1	967.10 ppb	0.44	1000	96.7	90 - 110	
118 Sn	115	1	933.80 ppb	0.50	1000	93.4	90 - 110	
121 Sb	115	1	927.90 ppb	0.18	1000	92.8	90 - 110	
137 Ba	115	1	972.50 ppb	0.87	1000	97.3	90 - 110	
205 Tl	165	1	947.60 ppb	0.99	1000	94.8	90 - 110	
208 Pb	165	1	915.00 ppb	0.94	1000	91.5	90 - 110	
232 Th	165	1	966.60 ppb	0.64	1000	96.7	90 - 110	
238 U	165	1	963.20 ppb	1.88	1000	96.3	90 - 110	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	328068	1.06	316659	103.6	30 - 120	
45 Sc	1	922726	2.01	888972	103.8	30 - 120	
72 Ge	1	430093	1.37	425816	101.0	30 - 120	
115 In	1	1364755	0.41	1335258	102.2	30 - 120	
165 Ho	1	2644039	0.70	2617754	101.0	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\003CALB.D\003CALB.D#

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

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\015SMPL.D\015SMPL.D#
Date Acquired: Nov 9 2009 09:05 pm
Acq. Method: NormISIS.M
Operator: LRD
Sample Name: RINSE
Misc Info:
Vial Number: 1101
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal. Update: Nov 09 2009 08:35 pm
Sample Type: SA
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	6	1	0.02	0.02	ppb	173.25	3600	
51 V	72	1	-0.02	-0.02	ppb	88.49	3600	
52 Cr	72	1	0.05	0.05	ppb	36.35	3600	
55 Mn	72	1	-0.01	-0.01	ppb	183.98	3600	
59 Co	72	1	0.01	0.01	ppb	88.77	3600	
60 Ni	72	1	0.02	0.02	ppb	167.72	3600	
63 Cu	72	1	0.03	0.03	ppb	35.08	3600	
66 Zn	72	1	0.05	0.05	ppb	19.57	3600	
75 As	72	1	0.02	0.02	ppb	85.94	3600	
78 Se	72	1	0.69	0.69	ppb	46.45	3600	
95 Mo	72	1	0.53	0.53	ppb	26.09	3600	
107 Ag	115	1	0.03	0.03	ppb	35.34	3600	
111 Cd	115	1	0.02	0.02	ppb	21.52	3600	
118 Sn	115	1	1.11	1.11	ppb	27.74	3600	
121 Sb	115	1	1.31	1.31	ppb	17.77	3600	
137 Ba	115	1	0.02	0.02	ppb	70.23	3600	
205 Tl	165	1	0.06	0.06	ppb	21.10	3600	
208 Pb	165	1	0.02	0.02	ppb	25.81	3600	
232 Th	165	1	0.13	0.13	ppb	10.54	1000	
238 U	165	1	0.13	0.13	ppb	15.65	3600	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	341210	2.06	316659	107.8	30 - 120	
45 Sc	1	953002	0.82	888972	107.2	30 - 120	
72 Ge	1	451794	0.58	425816	106.1	30 - 120	
115 In	1	1384812	1.01	1335258	103.7	30 - 120	
165 Ho	1	2634408	0.76	2617754	100.6	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\003CALB.D\003CALB.D#

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

Continuing Calibration Verification (CCV) QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\016 CCV.D\016 CCV.D#
Date Acquired: Nov 9 2009 09:08 pm
Operator: LRD
Sample Name: CCV
Misc Info:
Vial Number: 1107
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal Update: Nov 09 2009 08:35 pm
Sample Type: CCV
Total Dil Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Conc.		RSD(%)	Expected	Rec(%)	QC Range(%)	Flag
9 Be	6	1	49.36	ppb	2.54	50	98.7	90 - 110	
51 V	72	1	50.77	ppb	1.34	50	101.5	90 - 110	
52 Cr	72	1	50.82	ppb	0.60	50	101.6	90 - 110	
55 Mn	72	1	50.95	ppb	1.41	50	101.9	90 - 110	
59 Co	72	1	50.68	ppb	1.40	50	101.4	90 - 110	
60 Ni	72	1	49.56	ppb	1.57	50	99.1	90 - 110	
63 Cu	72	1	49.68	ppb	0.10	50	99.4	90 - 110	
66 Zn	72	1	49.76	ppb	0.33	50	99.5	90 - 110	
75 As	72	1	50.93	ppb	0.82	50	101.9	90 - 110	
78 Se	72	1	51.94	ppb	5.89	50	103.9	90 - 110	
95 Mo	72	1	48.88	ppb	1.24	50	97.8	90 - 110	
107 Ag	115	1	50.11	ppb	0.43	50	100.2	90 - 110	
111 Cd	115	1	50.35	ppb	0.26	50	100.7	90 - 110	
118 Sn	115	1	50.40	ppb	1.11	50	100.8	90 - 110	
121 Sb	115	1	50.58	ppb	0.97	50	101.2	90 - 110	
137 Ba	115	1	50.03	ppb	0.58	50	100.1	90 - 110	
205 Tl	165	1	50.31	ppb	0.12	50	100.6	90 - 110	
208 Pb	165	1	50.77	ppb	1.01	50	101.5	90 - 110	
232 Th	165	1	50.58	ppb	2.06	50	101.2	90 - 110	
238 U	165	1	50.76	ppb	2.06	50	101.5	90 - 110	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	339265	1.56	316659	107.1	30 - 120	
45 Sc	1	947544	0.15	888972	106.6	30 - 120	
72 Ge	1	441263	0.72	425816	103.6	30 - 120	
115 In	1	1386188	0.72	1335258	103.8	30 - 120	
165 Ho	1	2649982	0.75	2617754	101.2	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\003CALB.D\003CALB.D#

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

Continuing Calibration Blank (CCB) QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\017 CCB.D\017 CCB.D#
Date Acquired: Nov 9 2009 09:10 pm
Operator: LRD
Sample Name: CCB
Misc Info:
Vial Number: 1307
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal Update: Nov 09 2009 08:35 pm
Sample Type: CCB
Total Dil Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Conc.		RSD(%)	High Limit	Flag
9 Be	6	1	0.008	ppb	173.22	1.00	
51 V	72	1	-0.046	ppb	29.01	1.00	
52 Cr	72	1	0.000	ppb	12322.00	1.00	
55 Mn	72	1	-0.007	ppb	43.73	1.00	
59 Co	72	1	0.001	ppb	393.70	1.00	
60 Ni	72	1	-0.005	ppb	329.15	1.00	
63 Cu	72	1	0.007	ppb	98.78	1.00	
66 Zn	72	1	0.040	ppb	14.37	1.00	
75 As	72	1	-0.008	ppb	123.42	1.00	
78 Se	72	1	0.405	ppb	68.29	1.00	
95 Mo	72	1	0.105	ppb	49.03	1.00	
107 Ag	115	1	0.009	ppb	76.77	1.00	
111 Cd	115	1	0.002	ppb	275.78	1.00	
118 Sn	115	1	0.252	ppb	28.94	1.00	
121 Sb	115	1	0.323	ppb	22.12	1.00	
137 Ba	115	1	0.000	ppb	357.00	1.00	
205 Tl	165	1	0.012	ppb	22.43	1.00	
208 Pb	165	1	0.003	ppb	36.91	1.00	
232 Th	165	1	0.060	ppb	22.01	1.00	
238 U	165	1	0.020	ppb	26.01	1.00	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	347509	1.01	316659	109.7	30 - 120	
45 Sc	1	955495	2.12	888972	107.5	30 - 120	
72 Ge	1	455532	0.79	425816	107.0	30 - 120	
115 In	1	1386791	1.63	1335258	103.9	30 - 120	
165 Ho	1	2651802	0.80	2617754	101.3	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\003CALB.D\003CALB.D#

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

Wash QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\018WASH.D\018WASH.D#
Date Acquired: Nov 9 2009 09:13 pm
Operator: LRD
Sample Name: RLCV
Misc Info:
Vial Number: 1204
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal Update: Nov 09 2009 08:35 pm
Sample Type: WASH
Total Dil Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Conc.	RSD(%)	High Limit	Flag
9 Be	6	1	1.024 ppb	7.78	1.30	
51 V	72	1	5.126 ppb	1.88	6.50	
52 Cr	72	1	2.083 ppb	6.13	2.60	
55 Mn	72	1	1.010 ppb	2.87	1.30	
59 Co	72	1	1.062 ppb	1.70	1.30	
60 Ni	72	1	2.095 ppb	2.27	2.60	
63 Cu	72	1	2.060 ppb	2.82	2.60	
66 Zn	72	1	10.130 ppb	1.17	13.00	
75 As	72	1	5.125 ppb	4.68	6.50	
78 Se	72	1	5.045 ppb	5.92	6.50	
95 Mo	72	1	1.951 ppb	3.60	2.60	
107 Ag	115	1	5.311 ppb	0.48	6.50	
111 Cd	115	1	1.030 ppb	11.33	1.30	
118 Sn	115	1	10.360 ppb	1.60	13.00	
121 Sb	115	1	2.190 ppb	4.18	2.60	
137 Ba	115	1	1.055 ppb	3.38	1.30	
205 Tl	165	1	1.095 ppb	1.41	1.30	
208 Pb	165	1	1.069 ppb	0.47	1.30	
232 Th	165	1	2.172 ppb	3.24	2.60	
238 U	165	1	1.103 ppb	1.52	1.30	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	350643	0.28	316659	110.7	30 - 120	
45 Sc	1	970129	1.19	888972	109.1	30 - 120	
72 Ge	1	456907	0.32	425816	107.3	30 - 120	
115 In	1	1395760	1.56	1335258	104.5	30 - 120	
165 Ho	1	2660739	0.79	2617754	101.6	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\003CALB.D\003CALB.D#

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

Continuing Calibration Verification (CCV) QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\060 CCV.D\060 CCV.D#
Date Acquired: Nov 9 2009 11:12 pm
Operator: LRD
Sample Name: CCV
Misc Info:
Vial Number: 1107
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal Update: Nov 09 2009 08:35 pm
Sample Type: CCV
Total Dil Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Conc.		RSD(%)	Expected	Rec(%)	QC Range(%)	Flag
9 Be	6	1	47.76	ppb	2.01	50	95.5	90 - 110	
51 V	72	1	53.33	ppb	0.36	50	106.7	90 - 110	
52 Cr	72	1	52.02	ppb	0.91	50	104.0	90 - 110	
55 Mn	72	1	50.55	ppb	1.03	50	101.1	90 - 110	
59 Co	72	1	51.60	ppb	1.26	50	103.2	90 - 110	
60 Ni	72	1	51.77	ppb	1.81	50	103.5	90 - 110	
63 Cu	72	1	51.63	ppb	0.61	50	103.3	90 - 110	
66 Zn	72	1	48.55	ppb	1.53	50	97.1	90 - 110	
75 As	72	1	52.15	ppb	0.82	50	104.3	90 - 110	
78 Se	72	1	49.57	ppb	2.57	50	99.1	90 - 110	
95 Mo	72	1	47.79	ppb	1.06	50	95.6	90 - 110	
107 Ag	115	1	50.33	ppb	2.15	50	100.7	90 - 110	
111 Cd	115	1	48.29	ppb	2.01	50	96.6	90 - 110	
118 Sn	115	1	48.91	ppb	3.81	50	97.8	90 - 110	
121 Sb	115	1	48.67	ppb	1.99	50	97.3	90 - 110	
137 Ba	115	1	50.76	ppb	0.77	50	101.5	90 - 110	
205 Tl	165	1	51.23	ppb	4.59	50	102.5	90 - 110	
208 Pb	165	1	49.88	ppb	2.00	50	99.8	90 - 110	
232 Th	165	1	49.71	ppb	2.61	50	99.4	90 - 110	
238 U	165	1	49.08	ppb	0.86	50	98.2	90 - 110	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	371239	0.44	316659	117.2	30 - 120	
45 Sc	1	996118	0.60	888972	112.1	30 - 120	
72 Ge	1	449415	1.43	425816	105.5	30 - 120	
115 In	1	1358249	0.76	1335258	101.7	30 - 120	
165 Ho	1	2424776	0.66	2617754	92.6	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\003CALB.D\003CALB.D#

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

Continuing Calibration Blank (CCB) QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\061 CCB.D\061 CCB.D#
Date Acquired: Nov 9 2009 11:15 pm
Operator: LRD
Sample Name: CCB
Misc Info:
Vial Number: 1307
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal Update: Nov 09 2009 08:35 pm
Sample Type: CCB
Total Dil Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Conc.		RSD(%)	High Limit	Flag
9 Be	6	1	0.007	ppb	173.25	1.00	
51 V	72	1	-0.033	ppb	15.18	1.00	
52 Cr	72	1	0.027	ppb	19.92	1.00	
55 Mn	72	1	0.057	ppb	24.29	1.00	
59 Co	72	1	0.002	ppb	40.00	1.00	
60 Ni	72	1	-0.008	ppb	174.20	1.00	
63 Cu	72	1	0.033	ppb	81.15	1.00	
66 Zn	72	1	0.057	ppb	34.92	1.00	
75 As	72	1	-0.012	ppb	116.84	1.00	
78 Se	72	1	0.544	ppb	106.14	1.00	
95 Mo	72	1	0.025	ppb	55.86	1.00	
107 Ag	115	1	0.006	ppb	0.78	1.00	
111 Cd	115	1	0.011	ppb	84.87	1.00	
118 Sn	115	1	0.063	ppb	27.95	1.00	
121 Sb	115	1	0.170	ppb	15.64	1.00	
137 Ba	115	1	0.021	ppb	35.77	1.00	
205 Tl	165	1	0.004	ppb	85.40	1.00	
208 Pb	165	1	0.006	ppb	13.99	1.00	
232 Th	165	1	0.047	ppb	18.57	1.00	
238 U	165	1	0.010	ppb	26.90	1.00	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	375737	0.86	316659	118.7	30 - 120	
45 Sc	1	1005396	1.10	888972	113.1	30 - 120	
72 Ge	1	462662	0.61	425816	108.7	30 - 120	
115 In	1	1347936	0.72	1335258	100.9	30 - 120	
165 Ho	1	2437556	0.89	2617754	93.1	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\003CALB.D\003CALB.D#

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

Wash QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\062WASH.D\062WASH.D#
Date Acquired: Nov 9 2009 11:18 pm
Operator: LRD
Sample Name: RLCV
Misc Info:
Vial Number: 1204
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal Update: Nov 09 2009 08:35 pm
Sample Type: WASH
Total Dil Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Conc.	RSD(%)	High Limit	Flag
9 Be	6	1	0.988 ppb	13.49	1.30	
51 V	72	1	5.317 ppb	1.85	6.50	
52 Cr	72	1	2.215 ppb	1.75	2.60	
55 Mn	72	1	1.081 ppb	2.43	1.30	
59 Co	72	1	1.073 ppb	4.20	1.30	
60 Ni	72	1	2.102 ppb	1.66	2.60	
63 Cu	72	1	2.102 ppb	1.56	2.60	
66 Zn	72	1	10.000 ppb	2.32	13.00	
75 As	72	1	5.122 ppb	1.19	6.50	
78 Se	72	1	5.883 ppb	5.54	6.50	
95 Mo	72	1	1.969 ppb	1.32	2.60	
107 Ag	115	1	5.324 ppb	0.46	6.50	
111 Cd	115	1	0.960 ppb	12.77	1.30	
118 Sn	115	1	10.230 ppb	2.10	13.00	
121 Sb	115	1	2.053 ppb	1.15	2.60	
137 Ba	115	1	1.068 ppb	9.25	1.30	
205 Tl	165	1	1.085 ppb	2.24	1.30	
208 Pb	165	1	1.017 ppb	0.46	1.30	
232 Th	165	1	2.117 ppb	2.07	2.60	
238 U	165	1	1.040 ppb	1.77	1.30	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	377304	1.01	316659	119.2	30 - 120	
45 Sc	1	1005985	1.51	888972	113.2	30 - 120	
72 Ge	1	461018	0.47	425816	108.3	30 - 120	
115 In	1	1347706	0.37	1335258	100.9	30 - 120	
165 Ho	1	2446876	0.21	2617754	93.5	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\003CALB.D\003CALB.D#

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

Calibration Blank QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\063CALB.D\063CALB.D#
Date Acquired: Nov 9 2009 11:21 pm
Acq. Method: NormISIS.M
Operator: LRD
Sample Name: Cal Blank
Misc Info:
Vial Number: 1101
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal. Update: Nov 09 2009 08:35 pm
Sample Type: CalBlk

DNW
LRD
11/09/2009

QC Elements

Element		IS Ref	Tune	CPS Mean	RSD(%)
9	Be	6	1	3	173.23
51	V	72	1	377	2.88
52	Cr	72	1	1847	11.91
55	Mn	72	1	490	7.02
59	Co	72	1	27	43.08
60	Ni	72	1	90	38.28
63	Cu	72	1	207	26.41
66	Zn	72	1	224	7.60
75	As	72	1	37	2.96
78	Se	72	1	180	14.95
95	Mo	72	1	70	0.37
107	Ag	115	1	37	102.75
111	Cd	115	1	1	1018.80
118	Sn	115	1	230	7.23
121	Sb	115	1	168	17.49
137	Ba	115	1	30	19.55
205	Tl	165	1	118	2.17
208	Pb	165	1	187	13.74
232	Th	165	1	340	3.31
238	U	165	1	107	28.05

Internal Standard Elements

Element		Tune	CPS Mean	RSD(%)
6	Li	1	381407	0.74
45	Sc	1	1012136	1.26
72	Ge	1	467118	0.37
115	In	1	1351742	0.80
165	Ho	1	2415684	0.57

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

Reslope Before Continuing Analytical Run

Corrective action was taken as stated in method 6020 section 7.8

…"During the course of an analytical run, the instrument may be "resloped" or recalibrated to correct for instrument drift. A recalibration must then be followed immediately by a new analysis of a CCV and CCB before any further samples are analyzed."

Analyst: LRD

Date: 11/09/2009

Calibration Blank QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\064CALB.D\064CALB.D#
Date Acquired: Nov 9 2009 11:23 pm
Acq. Method: NormISIS.M
Operator: LRD
Sample Name: Cal Blank
Misc Info:
Vial Number: 2101
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal. Update: Nov 09 2009 11:21 pm
Sample Type: CalBlk

QC Elements

Element		IS Ref	Tune	CPS Mean	RSD(%)
9	Be	6	1	3	173.21
51	V	72	1	330	13.77
52	Cr	72	1	2014	3.51
55	Mn	72	1	663	10.90
59	Co	72	1	33	75.74
60	Ni	72	1	80	50.41
63	Cu	72	1	197	11.45
66	Zn	72	1	343	6.91
75	As	72	1	34	14.74
78	Se	72	1	173	12.49
95	Mo	72	1	40	49.31
107	Ag	115	1	10	99.72
111	Cd	115	1	5	690.53
118	Sn	115	1	340	20.42
121	Sb	115	1	100	28.11
137	Ba	115	1	23	24.93
205	Tl	165	1	98	12.19
208	Pb	165	1	236	9.19
232	Th	165	1	170	15.62
238	U	165	1	78	28.11

Internal Standard Elements

Element		Tune	CPS Mean	RSD(%)
6	Li	1	380157	0.54
45	Sc	1	1002329	1.13
72	Ge	1	466393	0.79
115	In	1	1358080	0.44
165	Ho	1	2422153	0.33

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

Calibration Standard QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\065ICAL.D\065ICAL.D#
Date Acquired: Nov 9 2009 11:26 pm
Acq. Method: NormISIS.M
Operator: LRD
Sample Name: 100 ppb
Misc Info:
Vial Number: 2102
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal. Update: Nov 09 2009 11:24 pm
Sample Type: ICAL

QC Elements

Element		IS Ref	Tune	CPS Mean	RSD(%)
9	Be	6	1	43479	0.71
51	V	72	1	576998	0.10
52	Cr	72	1	580585	0.35
55	Mn	72	1	647521	2.20
59	Co	72	1	696629	1.39
60	Ni	72	1	153810	1.14
63	Cu	72	1	367490	0.55
66	Zn	72	1	85809	0.55
75	As	72	1	71337	0.80
78	Se	72	1	14168	2.89
95	Mo	72	1	198709	1.88
107	Ag	115	1	570960	1.47
111	Cd	115	1	117474	1.83
118	Sn	115	1	325069	1.28
121	Sb	115	1	387694	1.11
137	Ba	115	1	161998	1.24
205	Tl	165	1	1342275	1.10
208	Pb	165	1	1942480	0.67
232	Th	165	1	2057394	0.68
238	U	165	1	2166904	0.49

ISTD Elements

Element		Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	1	365465	0.26	380157	96.1	30 - 120	
45	Sc	1	986653	1.27	1002329	98.4	30 - 120	
72	Ge	1	442828	1.10	466393	94.9	30 - 120	
115	In	1	1328586	0.28	1358080	97.8	30 - 120	
165	Ho	1	2432710	0.17	2422153	100.4	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\064CALB.D\064CALB.D#

0 :Element Failures 0
0 :ISTD Failures 0

Continuing Calibration Verification (CCV) QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\066 CCV.D\066 CCV.D#
Date Acquired: Nov 9 2009 11:29 pm
Operator: LRD
Sample Name: CCV
Misc Info:
Vial Number: 1107
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal Update: Nov 09 2009 11:27 pm
Sample Type: CCV
Total Dil Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Conc.		RSD(%)	Expected	Rec(%)	QC Range(%)	Flag
9 Be	6	1	46.93	ppb	3.91	50	93.9	90 - 110	
51 V	72	1	49.96	ppb	0.87	50	99.9	90 - 110	
52 Cr	72	1	49.84	ppb	0.96	50	99.7	90 - 110	
55 Mn	72	1	51.01	ppb	0.50	50	102.0	90 - 110	
59 Co	72	1	50.30	ppb	0.45	50	100.6	90 - 110	
60 Ni	72	1	50.29	ppb	1.97	50	100.6	90 - 110	
63 Cu	72	1	49.99	ppb	0.18	50	100.0	90 - 110	
66 Zn	72	1	50.01	ppb	0.68	50	100.0	90 - 110	
75 As	72	1	50.48	ppb	0.16	50	101.0	90 - 110	
78 Se	72	1	49.48	ppb	2.05	50	99.0	90 - 110	
95 Mo	72	1	49.81	ppb	0.18	50	99.6	90 - 110	
107 Ag	115	1	49.81	ppb	2.30	50	99.6	90 - 110	
111 Cd	115	1	50.05	ppb	1.51	50	100.1	90 - 110	
118 Sn	115	1	50.31	ppb	2.81	50	100.6	90 - 110	
121 Sb	115	1	50.29	ppb	2.80	50	100.6	90 - 110	
137 Ba	115	1	49.63	ppb	3.25	50	99.3	90 - 110	
205 Tl	165	1	52.26	ppb	4.30	50	104.5	90 - 110	
208 Pb	165	1	51.13	ppb	1.50	50	102.3	90 - 110	
232 Th	165	1	51.46	ppb	0.54	50	102.9	90 - 110	
238 U	165	1	51.98	ppb	0.56	50	104.0	90 - 110	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	367332	1.49	380157	96.6	30 - 120	
45 Sc	1	986000	0.43	1002329	98.4	30 - 120	
72 Ge	1	439576	1.54	466393	94.3	30 - 120	
115 In	1	1323940	1.40	1358080	97.5	30 - 120	
165 Ho	1	2412483	0.54	2422153	99.6	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\064CALB.D\064CALB.D#

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

Continuing Calibration Blank (CCB) QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\067 CCB.D\067 CCB.D#
Date Acquired: Nov 9 2009 11:32 pm
Operator: LRD
Sample Name: CCB
Misc Info:
Vial Number: 1307
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal Update: Nov 09 2009 11:27 pm
Sample Type: CCB
Total Dil Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Conc.		RSD(%)	High Limit	Flag
9 Be	6	1	0.000	ppb	7714.50	1.00	
51 V	72	1	0.007	ppb	88.19	1.00	
52 Cr	72	1	-0.013	ppb	132.92	1.00	
55 Mn	72	1	0.016	ppb	41.75	1.00	
59 Co	72	1	-0.002	ppb	220.37	1.00	
60 Ni	72	1	-0.013	ppb	101.75	1.00	
63 Cu	72	1	0.005	ppb	237.12	1.00	
66 Zn	72	1	-0.125	ppb	6.55	1.00	
75 As	72	1	-0.003	ppb	254.46	1.00	
78 Se	72	1	0.068	ppb	820.68	1.00	
95 Mo	72	1	0.036	ppb	12.78	1.00	
107 Ag	115	1	0.013	ppb	34.78	1.00	
111 Cd	115	1	-0.004	ppb	335.65	1.00	
118 Sn	115	1	0.114	ppb	40.09	1.00	
121 Sb	115	1	0.218	ppb	17.21	1.00	
137 Ba	115	1	0.020	ppb	38.49	1.00	
205 Tl	165	1	0.017	ppb	13.22	1.00	
208 Pb	165	1	0.004	ppb	41.00	1.00	
232 Th	165	1	0.058	ppb	8.27	1.00	
238 U	165	1	0.015	ppb	19.36	1.00	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	370403	0.21	380157	97.4	30 - 120	
45 Sc	1	986390	1.51	1002329	98.4	30 - 120	
72 Ge	1	448979	0.79	466393	96.3	30 - 120	
115 In	1	1330065	0.95	1358080	97.9	30 - 120	
165 Ho	1	2397227	1.01	2422153	99.0	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\064CALB.D\064CALB.D#

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

Wash QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\068WASH.D\068WASH.D#
Date Acquired: Nov 9 2009 11:34 pm
Operator: LRD
Sample Name: RLCV
Misc Info:
Vial Number: 1204
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal Update: Nov 09 2009 11:27 pm
Sample Type: WASH
Total Dil Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Conc.	RSD(%)	High Limit	Flag
9 Be	6	1	0.846 ppb	15.54	1.30	
51 V	72	1	5.105 ppb	1.52	6.50	
52 Cr	72	1	1.946 ppb	5.53	2.60	
55 Mn	72	1	1.034 ppb	8.27	1.30	
59 Co	72	1	1.006 ppb	1.60	1.30	
60 Ni	72	1	2.032 ppb	5.86	2.60	
63 Cu	72	1	2.022 ppb	3.80	2.60	
66 Zn	72	1	10.060 ppb	2.89	13.00	
75 As	72	1	5.074 ppb	1.10	6.50	
78 Se	72	1	5.789 ppb	19.52	6.50	
95 Mo	72	1	2.059 ppb	3.74	2.60	
107 Ag	115	1	5.439 ppb	1.68	6.50	
111 Cd	115	1	1.029 ppb	3.65	1.30	
118 Sn	115	1	10.700 ppb	3.27	13.00	
121 Sb	115	1	2.106 ppb	1.70	2.60	
137 Ba	115	1	1.052 ppb	6.93	1.30	
205 Tl	165	1	1.129 ppb	1.04	1.30	
208 Pb	165	1	1.059 ppb	0.98	1.30	
232 Th	165	1	2.213 ppb	1.62	2.60	
238 U	165	1	1.097 ppb	1.65	1.30	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	371066	0.42	380157	97.6	30 - 120	
45 Sc	1	964688	0.29	1002329	96.2	30 - 120	
72 Ge	1	445105	0.41	466393	95.4	30 - 120	
115 In	1	1302898	1.20	1358080	95.9	30 - 120	
165 Ho	1	2377516	0.60	2422153	98.2	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\064CALB.D\064CALB.D#

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

Interference Check Solution A (ICS-A) QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\069ICSA.D\069ICSA.D#
Date Acquired: Nov 9 2009 11:37 pm
Acq. Method: NormISIS.M
Operator: LRD
Sample Name: ICSA
Misc Info:
Vial Number: 2108
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal. Update: Nov 09 2009 11:27 pm
Sample Type: ICSA
Dilution Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

QC Elements

Element		IS Ref	Tune	Conc.	RSD(%)	High Limit ppb	Flag
9	Be	6	1	-0.01 ppb	0.00	1.00	
51	V	72	1	3.14 ppb	3.11	1.00	
52	Cr	72	1	1.87 ppb	2.39	1.00	
55	Mn	72	1	3.00 ppb	3.46	1.00	
59	Co	72	1	0.12 ppb	14.06	1.00	
60	Ni	72	1	1.18 ppb	6.20	1.00	
63	Cu	72	1	0.57 ppb	5.88	1.00	
66	Zn	72	1	4.08 ppb	4.97	10.00	
75	As	72	1	0.40 ppb	5.91	1.00	
78	Se	72	1	0.25 ppb	58.42	1.00	
95	Mo	72	1	1968.00 ppb	1.40	2000.00	
107	Ag	115	1	0.05 ppb	11.35	1.00	
111	Cd	115	1	0.47 ppb	58.03	1.00	
118	Sn	115	1	0.17 ppb	23.23	10.00	
121	Sb	115	1	0.97 ppb	1.38	1.00	
137	Ba	115	1	0.04 ppb	20.16	1.00	
205	Tl	165	1	0.04 ppb	30.89	1.00	
208	Pb	165	1	1.00 ppb	1.65	1.00	
232	Th	165	1	0.03 ppb	24.22	1.00	
238	U	165	1	0.01 ppb	11.29	1.00	

ISTD Elements

Element		Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	1	291637	0.61	380157	76.7	30 - 120	
45	Sc	1	784216	1.43	1002329	78.2	30 - 120	
72	Ge	1	362840	1.19	466393	77.8	30 - 120	
115	In	1	1050065	1.20	1358080	77.3	30 - 120	
165	Ho	1	2003482	0.67	2422153	82.7	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\064CALB.D\064CALB.D#

0 :Element Failures
0 :ISTD Failures

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

Interference Check Solution AB (ICS-AB) QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\070ICSB.D\070ICSB.D#
Date Acquired: Nov 9 2009 11:40 pm
Acq. Method: NormISIS.M
Operator: LRD
Sample Name: ICSAB
Misc Info:
Vial Number: 2109
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal. Update: Nov 09 2009 11:27 pm
Sample Type: ICSAB
Dilution Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Conc. ppb	RSD(%)	Expected	%Recovery	QC Range(%)	Flag
9 Be	6	1	98.69	0.29	100	98.7	80 - 120	
51 V	72	1	100.10	0.51	100	100.1	80 - 120	
52 Cr	72	1	96.39	1.13	100	96.4	80 - 120	
55 Mn	72	1	100.10	0.37	100	100.1	80 - 120	
59 Co	72	1	92.34	0.82	100	92.3	80 - 120	
60 Ni	72	1	90.79	1.30	100	90.8	80 - 120	
63 Cu	72	1	86.68	0.74	100	86.7	80 - 120	
66 Zn	72	1	97.33	0.89	100	97.3	80 - 120	
75 As	72	1	98.23	0.81	100	98.2	80 - 120	
78 Se	72	1	104.70	2.41	100	104.7	80 - 120	
95 Mo	72	1	2087.00	0.34	2100	99.4	80 - 120	
107 Ag	115	1	85.94	0.48	100	85.9	80 - 120	
111 Cd	115	1	94.98	1.32	100	95.0	80 - 120	
118 Sn	115	1	99.84	0.78	100	99.8	80 - 120	
121 Sb	115	1	102.50	0.96	100	102.5	80 - 120	
137 Ba	115	1	99.50	0.68	100	99.5	80 - 120	
205 Tl	165	1	94.70	0.86	100	94.7	80 - 120	
208 Pb	165	1	94.59	1.37	100	94.6	80 - 120	
232 Th	165	1	101.60	1.79	100	101.6	80 - 120	
238 U	165	1	101.00	1.69	100	101.0	80 - 120	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	284581	0.95	380157	74.9	30 - 120	
45 Sc	1	773360	0.68	1002329	77.2	30 - 120	
72 Ge	1	354105	0.59	466393	75.9	30 - 120	
115 In	1	1057991	0.87	1358080	77.9	30 - 120	
165 Ho	1	2026193	0.86	2422153	83.7	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\064CALB.D\064CALB.D#

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

Wash QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\071WASH.D\071WASH.D#
Date Acquired: Nov 9 2009 11:43 pm
Operator: LRD
Sample Name: WASH
Misc Info:
Vial Number: 1101
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal Update: Nov 09 2009 11:27 pm
Sample Type: WASH
Total Dil Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Conc.	RSD(%)	High Limit	Flag
9 Be	6	1	-0.007 ppb	0.00	1.30	
51 V	72	1	0.175 ppb	10.68	6.50	
52 Cr	72	1	-0.015 ppb	224.26	2.60	
55 Mn	72	1	-0.011 ppb	101.02	1.30	
59 Co	72	1	0.002 ppb	273.67	1.30	
60 Ni	72	1	-0.002 ppb	1290.40	2.60	
63 Cu	72	1	0.012 ppb	163.09	2.60	
66 Zn	72	1	-0.119 ppb	10.41	13.00	
75 As	72	1	0.016 ppb	84.22	6.50	
78 Se	72	1	0.333 ppb	141.71	6.50	
95 Mo	72	1	0.839 ppb	19.14	2.60	
107 Ag	115	1	0.007 ppb	41.41	6.50	
111 Cd	115	1	0.003 ppb	77.60	1.30	
118 Sn	115	1	0.020 ppb	132.11	13.00	
121 Sb	115	1	0.104 ppb	5.43	2.60	
137 Ba	115	1	0.013 ppb	14.03	1.30	
205 Tl	165	1	0.006 ppb	22.65	1.30	
208 Pb	165	1	0.002 ppb	44.35	1.30	
232 Th	165	1	0.032 ppb	26.02	2.60	
238 U	165	1	0.022 ppb	3.15	1.30	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	346070	0.78	380157	91.0	30 - 120	
45 Sc	1	934865	1.04	1002329	93.3	30 - 120	
72 Ge	1	440586	0.16	466393	94.5	30 - 120	
115 In	1	1292185	0.88	1358080	95.1	30 - 120	
165 Ho	1	2424319	0.81	2422153	100.1	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\064CALB.D\064CALB.D#

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

Continuing Calibration Verification (CCV) QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\072 CCV.D\072 CCV.D#
Date Acquired: Nov 9 2009 11:45 pm
Operator: LRD
Sample Name: CCV
Misc Info:
Vial Number: 1107
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal Update: Nov 09 2009 11:27 pm
Sample Type: CCV
Total Dil Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Conc.	RSD(%)	Expected	Rec(%)	QC Range(%)	Flag
9 Be	6	1	49.64 ppb	0.29	50	99.3	90 - 110	
51 V	72	1	49.05 ppb	0.51	50	98.1	90 - 110	
52 Cr	72	1	49.17 ppb	1.20	50	98.3	90 - 110	
55 Mn	72	1	50.37 ppb	0.69	50	100.7	90 - 110	
59 Co	72	1	49.63 ppb	1.02	50	99.3	90 - 110	
60 Ni	72	1	50.09 ppb	0.34	50	100.2	90 - 110	
63 Cu	72	1	49.59 ppb	0.85	50	99.2	90 - 110	
66 Zn	72	1	49.99 ppb	1.41	50	100.0	90 - 110	
75 As	72	1	49.85 ppb	0.63	50	99.7	90 - 110	
78 Se	72	1	50.96 ppb	3.57	50	101.9	90 - 110	
95 Mo	72	1	50.33 ppb	1.11	50	100.7	90 - 110	
107 Ag	115	1	49.87 ppb	2.11	50	99.7	90 - 110	
111 Cd	115	1	49.47 ppb	1.27	50	98.9	90 - 110	
118 Sn	115	1	49.40 ppb	0.99	50	98.8	90 - 110	
121 Sb	115	1	49.90 ppb	1.97	50	99.8	90 - 110	
137 Ba	115	1	49.24 ppb	1.59	50	98.5	90 - 110	
205 Tl	165	1	52.17 ppb	4.22	50	104.3	90 - 110	
208 Pb	165	1	51.29 ppb	1.50	50	102.6	90 - 110	
232 Th	165	1	51.54 ppb	0.75	50	103.1	90 - 110	
238 U	165	1	51.49 ppb	1.24	50	103.0	90 - 110	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	344840	0.36	380157	90.7	30 - 120	
45 Sc	1	960040	0.97	1002329	95.8	30 - 120	
72 Ge	1	435616	0.46	466393	93.4	30 - 120	
115 In	1	1327656	0.92	1358080	97.8	30 - 120	
165 Ho	1	2430200	0.49	2422153	100.3	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\064CALB.D\064CALB.D#

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

Continuing Calibration Blank (CCB) QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\073 CCB.D\073 CCB.D#
Date Acquired: Nov 9 2009 11:48 pm
Operator: LRD
Sample Name: CCB
Misc Info:
Vial Number: 1307
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal Update: Nov 09 2009 11:27 pm
Sample Type: CCB
Total Dil Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Conc.		RSD(%)	High Limit	Flag
9 Be	6	1	0.001	ppb	2466.00	1.00	
51 V	72	1	0.058	ppb	15.57	1.00	
52 Cr	72	1	-0.012	ppb	231.32	1.00	
55 Mn	72	1	0.017	ppb	109.77	1.00	
59 Co	72	1	0.003	ppb	86.96	1.00	
60 Ni	72	1	-0.007	ppb	180.98	1.00	
63 Cu	72	1	-0.002	ppb	619.28	1.00	
66 Zn	72	1	-0.062	ppb	46.64	1.00	
75 As	72	1	0.009	ppb	16.14	1.00	
78 Se	72	1	0.083	ppb	474.84	1.00	
95 Mo	72	1	0.119	ppb	13.01	1.00	
107 Ag	115	1	0.012	ppb	51.78	1.00	
111 Cd	115	1	0.015	ppb	63.58	1.00	
118 Sn	115	1	0.055	ppb	78.86	1.00	
121 Sb	115	1	0.163	ppb	17.84	1.00	
137 Ba	115	1	0.017	ppb	13.64	1.00	
205 Tl	165	1	0.018	ppb	11.16	1.00	
208 Pb	165	1	0.005	ppb	21.07	1.00	
232 Th	165	1	0.054	ppb	24.52	1.00	
238 U	165	1	0.015	ppb	17.65	1.00	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	354004	0.85	380157	93.1	30 - 120	
45 Sc	1	982510	1.03	1002329	98.0	30 - 120	
72 Ge	1	452984	0.53	466393	97.1	30 - 120	
115 In	1	1333424	0.83	1358080	98.2	30 - 120	
165 Ho	1	2422993	0.32	2422153	100.0	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\064CALB.D\064CALB.D#

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

Wash QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\074WASH.D\074WASH.D#
Date Acquired: Nov 9 2009 11:51 pm
Operator: LRD
Sample Name: RLCV
Misc Info:
Vial Number: 1204
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal Update: Nov 09 2009 11:27 pm
Sample Type: WASH
Total Dil Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Conc.	RSD(%)	High Limit	Flag
9 Be	6	1	0.952 ppb	11.71	1.30	
51 V	72	1	4.966 ppb	1.97	6.50	
52 Cr	72	1	1.993 ppb	3.95	2.60	
55 Mn	72	1	1.097 ppb	4.84	1.30	
59 Co	72	1	1.021 ppb	2.48	1.30	
60 Ni	72	1	2.009 ppb	4.37	2.60	
63 Cu	72	1	2.060 ppb	6.37	2.60	
66 Zn	72	1	11.960 ppb	1.85	13.00	
75 As	72	1	4.930 ppb	2.64	6.50	
78 Se	72	1	5.436 ppb	4.49	6.50	
95 Mo	72	1	2.193 ppb	2.61	2.60	
107 Ag	115	1	5.282 ppb	1.22	6.50	
111 Cd	115	1	0.986 ppb	2.05	1.30	
118 Sn	115	1	10.340 ppb	1.29	13.00	
121 Sb	115	1	2.115 ppb	3.91	2.60	
137 Ba	115	1	1.056 ppb	4.52	1.30	
205 Tl	165	1	1.119 ppb	1.07	1.30	
208 Pb	165	1	1.065 ppb	1.09	1.30	
232 Th	165	1	2.185 ppb	3.45	2.60	
238 U	165	1	1.104 ppb	0.87	1.30	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	356450	1.14	380157	93.8	30 - 120	
45 Sc	1	964047	0.67	1002329	96.2	30 - 120	
72 Ge	1	452729	0.90	466393	97.1	30 - 120	
115 In	1	1319982	1.15	1358080	97.2	30 - 120	
165 Ho	1	2426292	0.34	2422153	100.2	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\064CALB.D\064CALB.D#

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

Continuing Calibration Verification (CCV) QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\115 CCV.D\115 CCV.D#
Date Acquired: Nov 10 2009 01:46 am
Operator: LRD
Sample Name: CCV
Misc Info:
Vial Number: 1107
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal Update: Nov 09 2009 11:27 pm
Sample Type: CCV
Total Dil Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Conc.		RSD(%)	Expected	Rec(%)	QC Range(%)	Flag
9 Be	6	1	49.47	ppb	2.23	50	98.9	90 - 110	
51 V	72	1	50.56	ppb	0.37	50	101.1	90 - 110	
52 Cr	72	1	50.65	ppb	0.47	50	101.3	90 - 110	
55 Mn	72	1	50.77	ppb	1.14	50	101.5	90 - 110	
59 Co	72	1	50.40	ppb	0.87	50	100.8	90 - 110	
60 Ni	72	1	49.84	ppb	0.41	50	99.7	90 - 110	
63 Cu	72	1	50.51	ppb	0.76	50	101.0	90 - 110	
66 Zn	72	1	49.77	ppb	0.09	50	99.5	90 - 110	
75 As	72	1	50.26	ppb	0.16	50	100.5	90 - 110	
78 Se	72	1	49.87	ppb	2.78	50	99.7	90 - 110	
95 Mo	72	1	49.39	ppb	0.94	50	98.8	90 - 110	
107 Ag	115	1	50.12	ppb	2.41	50	100.2	90 - 110	
111 Cd	115	1	49.40	ppb	2.86	50	98.8	90 - 110	
118 Sn	115	1	49.66	ppb	2.32	50	99.3	90 - 110	
121 Sb	115	1	49.95	ppb	2.09	50	99.9	90 - 110	
137 Ba	115	1	49.37	ppb	3.54	50	98.7	90 - 110	
205 Tl	165	1	52.74	ppb	1.97	50	105.5	90 - 110	
208 Pb	165	1	51.04	ppb	1.99	50	102.1	90 - 110	
232 Th	165	1	50.20	ppb	0.81	50	100.4	90 - 110	
238 U	165	1	50.45	ppb	0.19	50	100.9	90 - 110	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	369807	1.50	380157	97.3	30 - 120	
45 Sc	1	1018477	0.34	1002329	101.6	30 - 120	
72 Ge	1	453154	1.41	466393	97.2	30 - 120	
115 In	1	1349823	1.36	1358080	99.4	30 - 120	
165 Ho	1	2413896	0.92	2422153	99.7	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\064CALB.D\064CALB.D#

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

Continuing Calibration Blank (CCB) QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\116 CCB.D\116 CCB.D#
Date Acquired: Nov 10 2009 01:49 am
Operator: LRD
Sample Name: CCB
Misc Info:
Vial Number: 1307
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal Update: Nov 09 2009 11:27 pm
Sample Type: CCB
Total Dil Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Conc.		RSD(%)	High Limit	Flag
9 Be	6	1	0.008	ppb	169.87	1.00	
51 V	72	1	0.084	ppb	16.99	1.00	
52 Cr	72	1	-0.004	ppb	232.14	1.00	
55 Mn	72	1	-0.012	ppb	86.50	1.00	
59 Co	72	1	0.002	ppb	114.75	1.00	
60 Ni	72	1	0.010	ppb	269.98	1.00	
63 Cu	72	1	0.021	ppb	60.58	1.00	
66 Zn	72	1	0.020	ppb	111.79	1.00	
75 As	72	1	0.011	ppb	110.07	1.00	
78 Se	72	1	-0.018	ppb	805.68	1.00	
95 Mo	72	1	0.019	ppb	66.39	1.00	
107 Ag	115	1	0.013	ppb	61.58	1.00	
111 Cd	115	1	-0.003	ppb	256.84	1.00	
118 Sn	115	1	0.069	ppb	66.41	1.00	
121 Sb	115	1	0.152	ppb	15.07	1.00	
137 Ba	115	1	0.009	ppb	26.07	1.00	
205 Tl	165	1	0.013	ppb	9.99	1.00	
208 Pb	165	1	0.002	ppb	100.06	1.00	
232 Th	165	1	0.053	ppb	19.40	1.00	
238 U	165	1	0.012	ppb	14.27	1.00	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	372110	0.64	380157	97.9	30 - 120	
45 Sc	1	1022224	0.42	1002329	102.0	30 - 120	
72 Ge	1	464891	0.56	466393	99.7	30 - 120	
115 In	1	1352890	0.37	1358080	99.6	30 - 120	
165 Ho	1	2419064	1.22	2422153	99.9	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\064CALB.D\064CALB.D#

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

Wash QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\117WASH.D\117WASH.D#
Date Acquired: Nov 10 2009 01:52 am
Operator: LRD
Sample Name: RLCV
Misc Info:
Vial Number: 1204
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal Update: Nov 09 2009 11:27 pm
Sample Type: WASH
Total Dil Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Conc.	RSD(%)	High Limit	Flag
9 Be	6	1	1.035 ppb	2.74	1.30	
51 V	72	1	5.187 ppb	0.57	6.50	
52 Cr	72	1	2.031 ppb	0.75	2.60	
55 Mn	72	1	1.067 ppb	2.38	1.30	
59 Co	72	1	0.970 ppb	1.63	1.30	
60 Ni	72	1	2.058 ppb	2.00	2.60	
63 Cu	72	1	2.068 ppb	3.91	2.60	
66 Zn	72	1	11.900 ppb	1.49	13.00	
75 As	72	1	5.068 ppb	3.34	6.50	
78 Se	72	1	5.362 ppb	14.08	6.50	
95 Mo	72	1	2.047 ppb	1.20	2.60	
107 Ag	115	1	5.331 ppb	2.52	6.50	
111 Cd	115	1	1.046 ppb	1.94	1.30	
118 Sn	115	1	10.310 ppb	1.17	13.00	
121 Sb	115	1	2.073 ppb	0.88	2.60	
137 Ba	115	1	1.049 ppb	2.40	1.30	
205 Tl	165	1	1.100 ppb	1.48	1.30	
208 Pb	165	1	1.054 ppb	0.90	1.30	
232 Th	165	1	2.156 ppb	2.05	2.60	
238 U	165	1	1.079 ppb	1.97	1.30	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	368170	0.68	380157	96.8	30 - 120	
45 Sc	1	1000230	0.23	1002329	99.8	30 - 120	
72 Ge	1	456074	0.97	466393	97.8	30 - 120	
115 In	1	1327112	0.29	1358080	97.7	30 - 120	
165 Ho	1	2402449	0.69	2422153	99.2	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\064CALB.D\064CALB.D#

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

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\118SMPL.D\118SMPL.D#
Date Acquired: Nov 10 2009 01:54 am
Acq. Method: NormISIS.M
Operator: LRD
Sample Name: RINSE
Misc Info:
Vial Number: 1301
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal. Update: Nov 09 2009 11:27 pm
Sample Type: SA
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

DNW LRD 11/10/09

QC Elements

Element	IS Ref	Tune	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	6	1	18.76	18.76	ppb	0.54	3600	
51 V	72	1	23.38	23.38	ppb	1.45	3600	
52 Cr	72	1	20.11	20.11	ppb	1.09	3600	
55 Mn	72	1	22.39	22.39	ppb	1.28	3600	
59 Co	72	1	18.57	18.57	ppb	0.84	3600	
60 Ni	72	1	18.78	18.78	ppb	3.80	3600	
63 Cu	72	1	17.78	17.78	ppb	1.66	3600	
66 Zn	72	1	22.05	22.05	ppb	1.64	3600	
75 As	72	1	19.60	19.60	ppb	1.50	3600	
78 Se	72	1	20.84	20.84	ppb	12.31	3600	
95 Mo	72	1	2,115.00	2115.00	ppb	0.39	3600	
107 Ag	115	1	16.62	16.62	ppb	3.07	3600	
111 Cd	115	1	16.24	16.24	ppb	1.06	3600	
118 Sn	115	1	40.85	40.85	ppb	1.86	3600	
121 Sb	115	1	42.03	42.03	ppb	1.54	3600	
137 Ba	115	1	19.75	19.75	ppb	1.56	3600	
205 Tl	165	1	19.50	19.50	ppb	2.07	3600	
208 Pb	165	1	19.31	19.31	ppb	2.03	3600	
232 Th	165	1	20.35	20.35	ppb	1.43	1000	
238 U	165	1	20.19	20.19	ppb	1.38	3600	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	285150	0.98	380157	75.0	30 - 120	
45 Sc	1	779494	1.35	1002329	77.8	30 - 120	
72 Ge	1	350892	0.50	466393	75.2	30 - 120	
115 In	1	1024662	0.55	1358080	75.4	30 - 120	
165 Ho	1	1912062	0.40	2422153	78.9	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\064CALB.D\064CALB.D#

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

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\119SMPL.D\119SMPL.D#
Date Acquired: Nov 10 2009 01:57 am
Acq. Method: NormISIS.M
Operator: LRD
Sample Name: RINSE
Misc Info:
Vial Number: 1101
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal. Update: Nov 09 2009 11:27 pm
Sample Type: SA
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

JNW (RD 11/10/09

QC Elements

Element	IS Ref	Tune	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	6	1	0.01	0.01	ppb	313.89	3600	
51 V	72	1	0.16	0.16	ppb	20.44	3600	
52 Cr	72	1	0.00	0.00	ppb	701.08	3600	
55 Mn	72	1	-0.03	-0.03	ppb	34.36	3600	
59 Co	72	1	0.00	0.00	ppb	2064.30	3600	
60 Ni	72	1	-0.02	-0.02	ppb	39.77	3600	
63 Cu	72	1	-0.01	-0.01	ppb	79.63	3600	
66 Zn	72	1	0.10	0.10	ppb	21.02	3600	
75 As	72	1	-0.01	-0.01	ppb	155.04	3600	
78 Se	72	1	0.58	0.58	ppb	54.66	3600	
95 Mo	72	1	0.71	0.71	ppb	20.97	3600	
107 Ag	115	1	0.01	0.01	ppb	34.30	3600	
111 Cd	115	1	0.00	0.00	ppb	292.93	3600	
118 Sn	115	1	-0.03	-0.03	ppb	81.68	3600	
121 Sb	115	1	0.01	0.01	ppb	74.05	3600	
137 Ba	115	1	0.00	0.00	ppb	64.23	3600	
205 Tl	165	1	0.00	0.00	ppb	52.33	3600	
208 Pb	165	1	0.00	0.00	ppb	34.79	3600	
232 Th	165	1	0.01	0.01	ppb	12.23	1000	
238 U	165	1	0.00	0.00	ppb	63.73	3600	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	339194	1.35	380157	89.2	30 - 120	
45 Sc	1	935735	0.87	1002329	93.4	30 - 120	
72 Ge	1	437417	0.42	466393	93.8	30 - 120	
115 In	1	1299039	0.24	1358080	95.7	30 - 120	
165 Ho	1	2306804	0.65	2422153	95.2	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\064CALB.D\064CALB.D#

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

Calibration Blank QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\120CALB.D\120CALB.D#
Date Acquired: Nov 10 2009 02:00 am
Acq. Method: NormISIS.M
Operator: LRD
Sample Name: Cal Blank
Misc Info:
Vial Number: 1101
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal. Update: Nov 09 2009 11:27 pm
Sample Type: CalBlk

DNO
LRD
11-10-09

QC Elements

Element		IS Ref	Tune	CPS Mean	RSD(%)
9	Be	6	1	0	0.00
51	V	72	1	897	5.64
52	Cr	72	1	1794	15.11
55	Mn	72	1	377	11.82
59	Co	72	1	27	78.54
60	Ni	72	1	60	33.98
63	Cu	72	1	160	5.50
66	Zn	72	1	389	5.28
75	As	72	1	38	9.69
78	Se	72	1	183	14.07
95	Mo	72	1	390	15.00
107	Ag	115	1	23	89.28
111	Cd	115	1	9	30.03
118	Sn	115	1	200	52.50
121	Sb	115	1	96	23.66
137	Ba	115	1	22	52.67
205	Tl	165	1	41	13.17
208	Pb	165	1	174	3.68
232	Th	165	1	167	27.85
238	U	165	1	68	20.50

Internal Standard Elements

Element		Tune	CPS Mean	RSD(%)
6	Li	1	346465	1.01
45	Sc	1	965226	0.47
72	Ge	1	449173	0.78
115	In	1	1321554	0.64
165	Ho	1	2347213	0.78

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

Reslope Before Continuing Analytical Run

Corrective action was taken as stated in method 6020 section 7.8

…"During the course of an analytical run, the instrument may be "resloped" or recalibrated to correct for instrument drift. A recalibration must then be followed immediately by a new analysis of a CCV and CCB before any further samples are analyzed."

Analyst: LRD

Date: 11/10/2025

Calibration Blank QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\121CALB.D\121CALB.D#
Date Acquired: Nov 10 2009 02:03 am
Acq. Method: NormISIS.M
Operator: LRD
Sample Name: Cal Blank
Misc Info:
Vial Number: 2101
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal. Update: Nov 10 2009 02:01 am
Sample Type: CalBlk

QC Elements

Element		IS Ref	Tune	CPS Mean	RSD(%)
9	Be	6	1	0	0.00
51	V	72	1	730	18.51
52	Cr	72	1	1797	5.23
55	Mn	72	1	380	20.15
59	Co	72	1	23	65.65
60	Ni	72	1	80	12.92
63	Cu	72	1	177	12.30
66	Zn	72	1	295	3.34
75	As	72	1	29	28.60
78	Se	72	1	180	31.25
95	Mo	72	1	177	34.62
107	Ag	115	1	10	100.23
111	Cd	115	1	2	77.88
118	Sn	115	1	250	7.37
121	Sb	115	1	63	13.14
137	Ba	115	1	26	26.02
205	Tl	165	1	46	23.48
208	Pb	165	1	193	5.70
232	Th	165	1	160	44.04
238	U	165	1	51	14.32

Internal Standard Elements

Element		Tune	CPS Mean	RSD(%)
6	Li	1	350699	0.51
45	Sc	1	975170	1.39
72	Ge	1	456352	0.62
115	In	1	1314315	1.31
165	Ho	1	2357107	0.71

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

Calibration Standard QC Report

Data File:	C:\ICPCHEM\1\DATA\AG110909A.B\122ICAL.D\122ICAL.D#
Date Acquired:	Nov 10 2009 02:05 am
Acq. Method:	NormISIS.M
Operator:	LRD
Sample Name:	100 ppb
Misc Info:	
Vial Number:	2102
Current Method:	C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File:	C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal. Update:	Nov 10 2009 02:03 am
Sample Type:	ICAL

QC Elements

Element		IS Ref	Tune	CPS Mean	RSD(%)
9	Be	6	1	40216	1.15
51	V	72	1	565936	0.42
52	Cr	72	1	564690	0.33
55	Mn	72	1	641392	0.30
59	Co	72	1	668817	1.09
60	Ni	72	1	151107	0.73
63	Cu	72	1	358263	0.61
66	Zn	72	1	82902	0.25
75	As	72	1	70507	0.36
78	Se	72	1	14505	2.61
95	Mo	72	1	194487	0.27
107	Ag	115	1	559008	2.42
111	Cd	115	1	115153	2.20
118	Sn	115	1	321843	1.50
121	Sb	115	1	379416	1.53
137	Ba	115	1	159256	1.48
205	Tl	165	1	1303983	2.38
208	Pb	165	1	1889337	1.40
232	Th	165	1	2003367	1.08
238	U	165	1	2096675	0.62

ISTD Elements

Element		Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	1	338335	1.13	350699	96.5	30 - 120	
45	Sc	1	958735	1.30	975170	98.3	30 - 120	
72	Ge	1	428707	1.21	456352	93.9	30 - 120	
115	In	1	1296877	0.96	1314315	98.7	30 - 120	
165	Ho	1	2326407	0.76	2357107	98.7	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\121CALB.D\121CALB.D#

0 :Element Failures	0
0 :ISTD Failures	0

Continuing Calibration Verification (CCV) QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\123 CCV.D\123 CCV.D#
Date Acquired: Nov 10 2009 02:08 am
Operator: LRD
Sample Name: CCV
Misc Info:
Vial Number: 1107
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal Update: Nov 10 2009 02:06 am
Sample Type: CCV
Total Dil Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Conc.		RSD(%)	Expected	Rec(%)	QC Range(%)	Flag
9 Be	6	1	49.91	ppb	2.75	50	99.8	90 - 110	
51 V	72	1	49.24	ppb	0.23	50	98.5	90 - 110	
52 Cr	72	1	49.45	ppb	0.29	50	98.9	90 - 110	
55 Mn	72	1	49.86	ppb	0.27	50	99.7	90 - 110	
59 Co	72	1	50.04	ppb	0.73	50	100.1	90 - 110	
60 Ni	72	1	49.40	ppb	1.02	50	98.8	90 - 110	
63 Cu	72	1	49.26	ppb	0.55	50	98.5	90 - 110	
66 Zn	72	1	49.37	ppb	0.57	50	98.7	90 - 110	
75 As	72	1	49.47	ppb	0.63	50	98.9	90 - 110	
78 Se	72	1	47.86	ppb	3.12	50	95.7	90 - 110	
95 Mo	72	1	49.27	ppb	1.81	50	98.5	90 - 110	
107 Ag	115	1	49.54	ppb	2.30	50	99.1	90 - 110	
111 Cd	115	1	49.21	ppb	1.38	50	98.4	90 - 110	
118 Sn	115	1	48.98	ppb	1.17	50	98.0	90 - 110	
121 Sb	115	1	49.67	ppb	0.57	50	99.3	90 - 110	
137 Ba	115	1	49.45	ppb	0.45	50	98.9	90 - 110	
205 Tl	165	1	52.26	ppb	1.95	50	104.5	90 - 110	
208 Pb	165	1	50.46	ppb	2.07	50	100.9	90 - 110	
232 Th	165	1	51.10	ppb	1.01	50	102.2	90 - 110	
238 U	165	1	50.56	ppb	2.70	50	101.1	90 - 110	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	339355	0.90	350699	96.8	30 - 120	
45 Sc	1	953700	0.62	975170	97.8	30 - 120	
72 Ge	1	425622	0.78	456352	93.3	30 - 120	
115 In	1	1290326	0.89	1314315	98.2	30 - 120	
165 Ho	1	2316506	0.95	2357107	98.3	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\121CALB.D\121CALB.D#

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

Continuing Calibration Blank (CCB) QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\124 CCB.D\124 CCB.D#
Date Acquired: Nov 10 2009 02:11 am
Operator: LRD
Sample Name: CCB
Misc Info:
Vial Number: 1307
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal Update: Nov 10 2009 02:06 am
Sample Type: CCB
Total Dil Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Conc.		RSD(%)	High Limit	Flag
9 Be	6	1	0.000	ppb	0.00	1.00	
51 V	72	1	-0.043	ppb	3.53	1.00	
52 Cr	72	1	0.018	ppb	155.75	1.00	
55 Mn	72	1	0.020	ppb	32.27	1.00	
59 Co	72	1	0.006	ppb	60.80	1.00	
60 Ni	72	1	-0.011	ppb	58.90	1.00	
63 Cu	72	1	-0.008	ppb	59.29	1.00	
66 Zn	72	1	0.060	ppb	53.66	1.00	
75 As	72	1	0.016	ppb	150.06	1.00	
78 Se	72	1	-0.177	ppb	77.78	1.00	
95 Mo	72	1	-0.001	ppb	3159.70	1.00	
107 Ag	115	1	0.011	ppb	29.33	1.00	
111 Cd	115	1	0.017	ppb	45.14	1.00	
118 Sn	115	1	0.139	ppb	49.06	1.00	
121 Sb	115	1	0.222	ppb	11.27	1.00	
137 Ba	115	1	0.004	ppb	98.08	1.00	
205 Tl	165	1	0.025	ppb	20.85	1.00	
208 Pb	165	1	0.005	ppb	19.31	1.00	
232 Th	165	1	0.066	ppb	20.41	1.00	
238 U	165	1	0.016	ppb	18.15	1.00	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	344141	0.34	350699	98.1	30 - 120	
45 Sc	1	943043	0.60	975170	96.7	30 - 120	
72 Ge	1	437268	0.59	456352	95.8	30 - 120	
115 In	1	1299591	0.93	1314315	98.9	30 - 120	
165 Ho	1	2322442	0.24	2357107	98.5	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\121CALB.D\121CALB.D#

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

Wash QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\125WASH.D\125WASH.D#
Date Acquired: Nov 10 2009 02:14 am
Operator: LRD
Sample Name: RLCV
Misc Info:
Vial Number: 1204
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal Update: Nov 10 2009 02:06 am
Sample Type: WASH
Total Dil Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Conc.	RSD(%)	High Limit	Flag
9 Be	6	1	0.915 ppb	26.94	1.30	
51 V	72	1	4.853 ppb	1.04	6.50	
52 Cr	72	1	2.109 ppb	4.44	2.60	
55 Mn	72	1	0.986 ppb	3.94	1.30	
59 Co	72	1	1.067 ppb	3.16	1.30	
60 Ni	72	1	2.030 ppb	2.53	2.60	
63 Cu	72	1	2.033 ppb	2.52	2.60	
66 Zn	72	1	11.810 ppb	0.98	13.00	
75 As	72	1	5.019 ppb	1.79	6.50	
78 Se	72	1	5.516 ppb	15.59	6.50	
95 Mo	72	1	1.978 ppb	4.60	2.60	
107 Ag	115	1	5.258 ppb	1.36	6.50	
111 Cd	115	1	1.018 ppb	4.53	1.30	
118 Sn	115	1	10.530 ppb	2.41	13.00	
121 Sb	115	1	2.096 ppb	2.55	2.60	
137 Ba	115	1	1.042 ppb	4.12	1.30	
205 Tl	165	1	1.095 ppb	0.66	1.30	
208 Pb	165	1	1.059 ppb	2.54	1.30	
232 Th	165	1	2.173 ppb	2.30	2.60	
238 U	165	1	1.093 ppb	2.96	1.30	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	343734	1.06	350699	98.0	30 - 120	
45 Sc	1	947887	0.88	975170	97.2	30 - 120	
72 Ge	1	434228	1.12	456352	95.2	30 - 120	
115 In	1	1279175	0.95	1314315	97.3	30 - 120	
165 Ho	1	2318596	0.84	2357107	98.4	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\121CALB.D\121CALB.D#

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

Denver

SAMPLE SPIKE

Method: 6020 (ICP/MS) | ICPMS_024 | Reported: 11/10/09 21:12:21

Department: 090 (Metals)

Source: Spreadsheet

Sample: **LNR5CZF**

Spike Dilution: **1.00** Sample Dilution: **1.00**

Instrument: **Agilent7500**
File: AG110909A # 161
Acquired: 11/10/2009 03:53:00
Calibrated: 11/10/2009 02:03:00

Channel 272
Method 6020_
ICPMS_024

Matrix: AQUEOUS
Units: ug/L

CASN	Analyte Name	M/S	Area	Amount	Sample	%Rec.	Spike	Flag	Q
7440-41-7	Beryllium	9	70359	198.70	0.00941	99.3	200		☑
7440-62-2	Vanadium	51	990931	200.70	2.2630	99.2	200		☑
7440-47-3	Chromium	52	969468	196.90	0.18720	98.4	200		☑
7439-96-5	Manganese	55	1799890	321.60	136.90	92.4	200		☐
7440-48-4	Cobalt	59	1109460	190.00	0.56900	94.7	200		☐
7440-02-0	Nickel	60	236220	179.10	2.4070	88.3	200		☑
7440-50-8	Copper	63	545370	174.40	0.63770	86.9	200		☐
7440-66-6	Zinc	66	140569	194.50	6.9590	93.8	200		☑
7440-38-2	Arsenic	75	123534	200.70	4.1530	98.3	200		☑
7782-49-2	Selenium	78	24669	195.90	0.16940	97.9	200		☑
7439-98-7	Molybdenum	95	361753	213.10	12.380	100	200		☐
7440-22-4	Silver	107	210428	43.200	0.01205	86.4	50.0		☐
7440-43-9	Cadmium	111	188097	187.40	0.20330	93.6	200		☑
7440-31-5	Tin	118	491653	175.40	0.27240	87.6	200		☐
7440-36-0	Antimony	121	648473	196.10	0.35850	97.9	200		☑
7440-39-3	Barium	137	292363	210.70	16.840	96.9	200		☑
7440-28-0	Thallium	205	2091910	173.90	0.03680	86.9	200		☑
7439-92-1	Lead	208	2973200	170.60	0.05501	85.3	200		☐
7440-61-1	Uranium	238	4048820	209.30	31.950	88.7	200		☐
7440-29-1	Thorium	232	610	0.02511	0.07622				
7439-93-2	Lithium	6			0				
7440-20-2	Scandium	45			0				
7440-74-6	Indium	115			0				
7440-56-4	Germanium	72			0				
7440-60-0	Holmium	165			0				

Reviewed by: LRD Date: 11/10/09

Continuing Calibration Verification (CCV) QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\162 CCV.D\162 CCV.D#
Date Acquired: Nov 10 2009 03:56 am
Operator: LRD
Sample Name: CCV
Misc Info:
Vial Number: 1107
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal Update: Nov 10 2009 02:06 am
Sample Type: CCV
Total Dil Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Conc.		RSD(%)	Expected	Rec(%)	QC Range(%)	Flag
9 Be	6	1	49.14	ppb	1.54	50	98.3	90 - 110	
51 V	72	1	49.98	ppb	0.38	50	100.0	90 - 110	
52 Cr	72	1	50.06	ppb	0.20	50	100.1	90 - 110	
55 Mn	72	1	50.50	ppb	0.45	50	101.0	90 - 110	
59 Co	72	1	50.94	ppb	0.53	50	101.9	90 - 110	
60 Ni	72	1	50.18	ppb	0.53	50	100.4	90 - 110	
63 Cu	72	1	49.87	ppb	0.68	50	99.7	90 - 110	
66 Zn	72	1	50.11	ppb	0.75	50	100.2	90 - 110	
75 As	72	1	49.25	ppb	1.16	50	98.5	90 - 110	
78 Se	72	1	48.42	ppb	0.76	50	96.8	90 - 110	
95 Mo	72	1	50.11	ppb	0.46	50	100.2	90 - 110	
107 Ag	115	1	50.24	ppb	2.24	50	100.5	90 - 110	
111 Cd	115	1	49.98	ppb	1.72	50	100.0	90 - 110	
118 Sn	115	1	50.13	ppb	1.39	50	100.3	90 - 110	
121 Sb	115	1	49.17	ppb	1.55	50	98.3	90 - 110	
137 Ba	115	1	49.59	ppb	2.33	50	99.2	90 - 110	
205 Tl	165	1	52.50	ppb	0.99	50	105.0	90 - 110	
208 Pb	165	1	50.59	ppb	1.11	50	101.2	90 - 110	
232 Th	165	1	50.04	ppb	1.35	50	100.1	90 - 110	
238 U	165	1	50.86	ppb	1.21	50	101.7	90 - 110	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	347591	0.09	350699	99.1	30 - 120	
45 Sc	1	985512	0.74	975170	101.1	30 - 120	
72 Ge	1	438985	0.98	456352	96.2	30 - 120	
115 In	1	1327077	0.71	1314315	101.0	30 - 120	
165 Ho	1	2367409	0.84	2357107	100.4	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\121CALB.D\121CALB.D#

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

Continuing Calibration Blank (CCB) QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\163 CCB.D\163 CCB.D#
Date Acquired: Nov 10 2009 03:59 am
Operator: LRD
Sample Name: CCB
Misc Info:
Vial Number: 1307
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal Update: Nov 10 2009 02:06 am
Sample Type: CCB
Total Dil Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Conc.		RSD(%)	High Limit	Flag
9 Be	6	1	0.000	ppb	0.00	1.00	
51 V	72	1	-0.068	ppb	10.36	1.00	
52 Cr	72	1	0.056	ppb	42.07	1.00	
55 Mn	72	1	0.018	ppb	21.12	1.00	
59 Co	72	1	0.008	ppb	45.64	1.00	
60 Ni	72	1	-0.006	ppb	344.27	1.00	
63 Cu	72	1	0.015	ppb	69.30	1.00	
66 Zn	72	1	0.031	ppb	121.06	1.00	
75 As	72	1	0.010	ppb	183.70	1.00	
78 Se	72	1	0.149	ppb	70.44	1.00	
95 Mo	72	1	-0.009	ppb	434.05	1.00	
107 Ag	115	1	0.012	ppb	24.62	1.00	
111 Cd	115	1	0.001	ppb	529.73	1.00	
118 Sn	115	1	0.210	ppb	20.95	1.00	
121 Sb	115	1	0.191	ppb	18.75	1.00	
137 Ba	115	1	0.007	ppb	60.79	1.00	
205 Tl	165	1	0.024	ppb	18.34	1.00	
208 Pb	165	1	0.008	ppb	23.89	1.00	
232 Th	165	1	0.054	ppb	20.74	1.00	
238 U	165	1	0.024	ppb	19.21	1.00	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	351264	0.16	350699	100.2	30 - 120	
45 Sc	1	989371	0.85	975170	101.5	30 - 120	
72 Ge	1	449966	1.04	456352	98.6	30 - 120	
115 In	1	1316003	0.47	1314315	100.1	30 - 120	
165 Ho	1	2374784	0.82	2357107	100.7	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\121CALB.D\121CALB.D#

0 :Element Failures
0 :ISTD Failures

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

Wash QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\164WASH.D\164WASH.D#
Date Acquired: Nov 10 2009 04:01 am
Operator: LRD
Sample Name: RLCV
Misc Info:
Vial Number: 1204
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal Update: Nov 10 2009 02:06 am
Sample Type: WASH
Total Dil Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Conc.	RSD(%)	High Limit	Flag
9 Be	6	1	0.883 ppb	20.26	1.30	
51 V	72	1	4.985 ppb	1.67	6.50	
52 Cr	72	1	2.102 ppb	3.49	2.60	
55 Mn	72	1	1.007 ppb	1.98	1.30	
59 Co	72	1	0.993 ppb	0.49	1.30	
60 Ni	72	1	2.145 ppb	6.11	2.60	
63 Cu	72	1	2.015 ppb	4.43	2.60	
66 Zn	72	1	12.050 ppb	1.22	13.00	
75 As	72	1	4.962 ppb	2.28	6.50	
78 Se	72	1	4.279 ppb	3.14	6.50	
95 Mo	72	1	1.986 ppb	5.22	2.60	
107 Ag	115	1	5.288 ppb	3.07	6.50	
111 Cd	115	1	1.004 ppb	6.21	1.30	
118 Sn	115	1	10.380 ppb	2.77	13.00	
121 Sb	115	1	2.090 ppb	0.62	2.60	
137 Ba	115	1	1.015 ppb	4.60	1.30	
205 Tl	165	1	1.115 ppb	1.61	1.30	
208 Pb	165	1	1.044 ppb	2.86	1.30	
232 Th	165	1	2.176 ppb	0.73	2.60	
238 U	165	1	1.083 ppb	1.17	1.30	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	346060	0.49	350699	98.7	30 - 120	
45 Sc	1	960806	0.86	975170	98.5	30 - 120	
72 Ge	1	440039	1.15	456352	96.4	30 - 120	
115 In	1	1304767	0.27	1314315	99.3	30 - 120	
165 Ho	1	2323183	0.86	2357107	98.6	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\121CALB.D\121CALB.D#

0 :Element Failures
0 :ISTD Failures

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

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\165SMPL.D\165SMPL.D#
Date Acquired: Nov 10 2009 04:04 am
Acq. Method: NormISIS.M
Operator: LRD
Sample Name: RINSE
Misc Info:
Vial Number: 1301
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal. Update: Nov 10 2009 02:06 am
Sample Type: SA
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

DNW LRD 11-10-09

QC Elements

Element	IS Ref	Tune	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	6	1	18.73	18.73	ppb	2.09	3600	
51 V	72	1	22.54	22.54	ppb	1.72	3600	
52 Cr	72	1	19.86	19.86	ppb	2.70	3600	
55 Mn	72	1	21.89	21.89	ppb	1.78	3600	
59 Co	72	1	18.77	18.77	ppb	1.16	3600	
60 Ni	72	1	19.02	19.02	ppb	1.78	3600	
63 Cu	72	1	17.83	17.83	ppb	0.82	3600	
66 Zn	72	1	22.31	22.31	ppb	0.84	3600	
75 As	72	1	19.33	19.33	ppb	1.04	3600	
78 Se	72	1	17.88	17.88	ppb	10.24	3600	
95 Mo	72	1	2,128.00	2128.00	ppb	0.90	3600	
107 Ag	115	1	16.32	16.32	ppb	1.76	3600	
111 Cd	115	1	16.10	16.10	ppb	5.07	3600	
118 Sn	115	1	40.89	40.89	ppb	1.16	3600	
121 Sb	115	1	42.04	42.04	ppb	1.73	3600	
137 Ba	115	1	19.64	19.64	ppb	1.67	3600	
205 Tl	165	1	19.40	19.40	ppb	1.04	3600	
208 Pb	165	1	18.98	18.98	ppb	1.21	3600	
232 Th	165	1	20.25	20.25	ppb	1.42	1000	
238 U	165	1	20.00	20.00	ppb	1.51	3600	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	266814	0.52	350699	76.1	30 - 120	
45 Sc	1	762856	0.31	975170	78.2	30 - 120	
72 Ge	1	348103	1.14	456352	76.3	30 - 120	
115 In	1	1022663	1.01	1314315	77.8	30 - 120	
165 Ho	1	1912332	0.21	2357107	81.1	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\121CALB.D\121CALB.D#

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

Sample QC Report

Data File:	C:\ICPCHEM\1\DATA\AG110909A.B\166SMPL.D\166SMPL.D#
Date Acquired:	Nov 10 2009 04:07 am
Acq. Method:	NormISIS.M
Operator:	LRD
Sample Name:	RINSE
Misc Info:	
Vial Number:	1101
Current Method:	C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File:	C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal. Update:	Nov 10 2009 02:06 am
Sample Type:	SA
Dilution Factor:	1.00
Autodil Factor:	Undiluted
Final Dil Factor:	1.00

QC Summary:
Analytes: Pass
ISTD: Pass

DJW LRD 11/10/09

QC Elements

Element	IS Ref	Tune	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	6	1	0.00	0.00	ppb	0.00	3600	
51 V	72	1	0.04	0.04	ppb	27.50	3600	
52 Cr	72	1	0.03	0.03	ppb	73.66	3600	
55 Mn	72	1	-0.01	-0.01	ppb	70.68	3600	
59 Co	72	1	0.00	0.00	ppb	119.30	3600	
60 Ni	72	1	-0.02	-0.02	ppb	48.95	3600	
63 Cu	72	1	0.01	0.01	ppb	176.84	3600	
66 Zn	72	1	0.11	0.11	ppb	24.51	3600	
75 As	72	1	0.01	0.01	ppb	16.79	3600	
78 Se	72	1	0.27	0.27	ppb	60.38	3600	
95 Mo	72	1	0.74	0.74	ppb	11.93	3600	
107 Ag	115	1	0.01	0.01	ppb	40.61	3600	
111 Cd	115	1	0.00	0.00	ppb	228.34	3600	
118 Sn	115	1	0.03	0.03	ppb	36.60	3600	
121 Sb	115	1	0.02	0.02	ppb	12.69	3600	
137 Ba	115	1	0.00	0.00	ppb	28.78	3600	
205 Tl	165	1	0.00	0.00	ppb	51.08	3600	
208 Pb	165	1	0.00	0.00	ppb	114.67	3600	
232 Th	165	1	0.01	0.01	ppb	51.03	1000	
238 U	165	1	0.01	0.01	ppb	35.69	3600	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	322179	0.60	350699	91.9	30 - 120	
45 Sc	1	916911	0.48	975170	94.0	30 - 120	
72 Ge	1	427622	0.35	456352	93.7	30 - 120	
115 In	1	1267601	0.22	1314315	96.4	30 - 120	
165 Ho	1	2288070	1.08	2357107	97.1	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\121CALB.D\121CALB.D#

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

Calibration Blank QC Report

Data File:	C:\ICPCHEM\1\DATA\AG110909A.B\167CALB.D\167CALB.D#
Date Acquired:	Nov 10 2009 04:10 am
Acq. Method:	NormISIS.M
Operator:	LRD
Sample Name:	Cal Blank
Misc Info:	
Vial Number:	1101
Current Method:	C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File:	C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal. Update:	Nov 10 2009 02:06 am
Sample Type:	CalBlk

DNU
LRD
11-10-09

QC Elements

Element		IS Ref	Tune	CPS Mean	RSD(%)
9	Be	6	1	0	0.00
51	V	72	1	623	5.36
52	Cr	72	1	1907	8.36
55	Mn	72	1	297	31.81
59	Co	72	1	13	43.79
60	Ni	72	1	90	21.75
63	Cu	72	1	187	13.96
66	Zn	72	1	381	9.40
75	As	72	1	33	3.98
78	Se	72	1	237	34.02
95	Mo	72	1	333	13.72
107	Ag	115	1	27	21.34
111	Cd	115	1	0	4036.20
118	Sn	115	1	247	31.15
121	Sb	115	1	77	16.27
137	Ba	115	1	17	52.78
205	Tl	165	1	54	27.12
208	Pb	165	1	180	13.82
232	Th	165	1	183	17.65
238	U	165	1	80	44.17

Internal Standard Elements

Element		Tune	CPS Mean	RSD(%)
6	Li	1	328514	0.74
45	Sc	1	943505	0.53
72	Ge	1	436667	0.49
115	In	1	1277330	1.17
165	Ho	1	2304323	0.71

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

Reslope Before Continuing Analytical Run

Corrective action was taken as stated in method 6020 section 7.8

…"During the course of an analytical run, the instrument may be "resloped" or recalibrated to correct for instrument drift. A recalibration must then be followed immediately by a new analysis of a CCV and CCB before any further samples are analyzed."

Analyst: LRD

Date: 11/10/2009

Calibration Blank QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\168CALB.D\168CALB.D#
Date Acquired: Nov 10 2009 04:12 am
Acq. Method: NormISIS.M
Operator: LRD
Sample Name: Cal Blank
Misc Info:
Vial Number: 2101
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal. Update: Nov 10 2009 04:10 am
Sample Type: CalBlk

QC Elements

Element		IS Ref	Tune	CPS Mean	RSD(%)
9	Be	6	1	3	173.19
51	V	72	1	430	20.39
52	Cr	72	1	1770	9.94
55	Mn	72	1	347	21.51
59	Co	72	1	33	75.05
60	Ni	72	1	60	50.12
63	Cu	72	1	187	34.96
66	Zn	72	1	286	12.88
75	As	72	1	27	15.13
78	Se	72	1	277	14.05
95	Mo	72	1	223	2.09
107	Ag	115	1	23	108.16
111	Cd	115	1	3	99.84
118	Sn	115	1	267	31.66
121	Sb	115	1	84	40.17
137	Ba	115	1	32	30.32
205	Tl	165	1	39	12.02
208	Pb	165	1	178	14.64
232	Th	165	1	167	15.20
238	U	165	1	77	28.89

Internal Standard Elements

Element		Tune	CPS Mean	RSD(%)
6	Li	1	331510	0.57
45	Sc	1	950514	1.56
72	Ge	1	444072	0.55
115	In	1	1307174	0.43
165	Ho	1	2307209	1.43

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

Calibration Standard QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\169ICAL.D\169ICAL.D#
Date Acquired: Nov 10 2009 04:15 am
Acq. Method: NormISIS.M
Operator: LRD
Sample Name: 100 ppb
Misc Info:
Vial Number: 2102
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal. Update: Nov 10 2009 04:13 am
Sample Type: ICAL

QC Elements

Element		IS Ref	Tune	CPS Mean	RSD(%)
9	Be	6	1	38692	2.12
51	V	72	1	545754	1.79
52	Cr	72	1	551698	0.21
55	Mn	72	1	626206	0.45
59	Co	72	1	664361	0.63
60	Ni	72	1	146860	0.36
63	Cu	72	1	352436	0.19
66	Zn	72	1	81444	0.40
75	As	72	1	69255	0.69
78	Se	72	1	13787	2.63
95	Mo	72	1	192259	1.13
107	Ag	115	1	554555	1.71
111	Cd	115	1	112962	1.30
118	Sn	115	1	315447	1.98
121	Sb	115	1	372367	1.45
137	Ba	115	1	157571	0.95
205	Tl	165	1	1285739	1.22
208	Pb	165	1	1856303	1.04
232	Th	165	1	1978465	1.43
238	U	165	1	2066107	1.25

ISTD Elements

Element		Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	1	321948	0.26	331510	97.1	30 - 120	
45	Sc	1	936724	1.17	950514	98.5	30 - 120	
72	Ge	1	418042	1.36	444072	94.1	30 - 120	
115	In	1	1273420	0.09	1307174	97.4	30 - 120	
165	Ho	1	2283231	0.43	2307209	99.0	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\168CALB.D\168CALB.D#

0 :Element Failures 0
0 :ISTD Failures 0

Continuing Calibration Verification (CCV) QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\170 CCV.D\170 CCV.D#
Date Acquired: Nov 10 2009 04:18 am
Operator: LRD
Sample Name: CCV
Misc Info:
Vial Number: 1107
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal Update: Nov 10 2009 04:16 am
Sample Type: CCV
Total Dil Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Conc.		RSD(%)	Expected	Rec(%)	QC Range(%)	Flag
9 Be	6	1	48.43	ppb	4.05	50	96.9	90 - 110	
51 V	72	1	49.93	ppb	0.68	50	99.9	90 - 110	
52 Cr	72	1	49.22	ppb	0.29	50	98.4	90 - 110	
55 Mn	72	1	49.73	ppb	0.69	50	99.5	90 - 110	
59 Co	72	1	49.33	ppb	0.19	50	98.7	90 - 110	
60 Ni	72	1	49.83	ppb	1.16	50	99.7	90 - 110	
63 Cu	72	1	48.72	ppb	0.60	50	97.4	90 - 110	
66 Zn	72	1	49.42	ppb	0.33	50	98.8	90 - 110	
75 As	72	1	49.46	ppb	0.34	50	98.9	90 - 110	
78 Se	72	1	50.37	ppb	0.72	50	100.7	90 - 110	
95 Mo	72	1	48.96	ppb	1.30	50	97.9	90 - 110	
107 Ag	115	1	48.74	ppb	2.09	50	97.5	90 - 110	
111 Cd	115	1	49.15	ppb	1.05	50	98.3	90 - 110	
118 Sn	115	1	49.69	ppb	2.94	50	99.4	90 - 110	
121 Sb	115	1	49.41	ppb	1.16	50	98.8	90 - 110	
137 Ba	115	1	49.28	ppb	2.02	50	98.6	90 - 110	
205 Tl	165	1	52.00	ppb	1.32	50	104.0	90 - 110	
208 Pb	165	1	50.12	ppb	1.70	50	100.2	90 - 110	
232 Th	165	1	50.13	ppb	0.35	50	100.3	90 - 110	
238 U	165	1	50.62	ppb	0.36	50	101.2	90 - 110	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	321387	1.44	331510	96.9	30 - 120	
45 Sc	1	919553	0.84	950514	96.7	30 - 120	
72 Ge	1	415473	1.26	444072	93.6	30 - 120	
115 In	1	1268904	0.29	1307174	97.1	30 - 120	
165 Ho	1	2288136	0.21	2307209	99.2	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\168CALB.D\168CALB.D#

0 :Element Failures
0 :ISTD Failures

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

Continuing Calibration Blank (CCB) QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\171 CCB.D\171 CCB.D#
Date Acquired: Nov 10 2009 04:21 am
Operator: LRD
Sample Name: CCB
Misc Info:
Vial Number: 1307
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal Update: Nov 10 2009 04:16 am
Sample Type: CCB
Total Dil Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Conc.		RSD(%)	High Limit	Flag
9 Be	6	1	0.008	ppb	345.13	1.00	
51 V	72	1	-0.030	ppb	27.71	1.00	
52 Cr	72	1	0.011	ppb	359.14	1.00	
55 Mn	72	1	0.026	ppb	59.87	1.00	
59 Co	72	1	0.009	ppb	69.21	1.00	
60 Ni	72	1	-0.005	ppb	262.82	1.00	
63 Cu	72	1	0.015	ppb	124.47	1.00	
66 Zn	72	1	0.057	ppb	55.45	1.00	
75 As	72	1	0.007	ppb	158.35	1.00	
78 Se	72	1	-0.354	ppb	24.33	1.00	
95 Mo	72	1	-0.036	ppb	90.23	1.00	
107 Ag	115	1	0.013	ppb	53.73	1.00	
111 Cd	115	1	-0.001	ppb	615.07	1.00	
118 Sn	115	1	0.156	ppb	39.27	1.00	
121 Sb	115	1	0.229	ppb	15.59	1.00	
137 Ba	115	1	0.007	ppb	108.18	1.00	
205 Tl	165	1	0.028	ppb	26.51	1.00	
208 Pb	165	1	0.008	ppb	50.89	1.00	
232 Th	165	1	0.067	ppb	17.50	1.00	
238 U	165	1	0.018	ppb	11.10	1.00	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	326857	0.75	331510	98.6	30 - 120	
45 Sc	1	919441	0.17	950514	96.7	30 - 120	
72 Ge	1	426513	0.32	444072	96.0	30 - 120	
115 In	1	1258252	1.28	1307174	96.3	30 - 120	
165 Ho	1	2278633	0.87	2307209	98.8	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\168CALB.D\168CALB.D#

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

Wash QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\172WASH.D\172WASH.D#
Date Acquired: Nov 10 2009 04:23 am
Operator: LRD
Sample Name: RLCV
Misc Info:
Vial Number: 1204
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal Update: Nov 10 2009 04:16 am
Sample Type: WASH
Total Dil Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Conc.	RSD(%)	High Limit	Flag
9 Be	6	1	1.058 ppb	8.94	1.30	
51 V	72	1	4.957 ppb	0.65	6.50	
52 Cr	72	1	2.087 ppb	1.77	2.60	
55 Mn	72	1	1.034 ppb	2.61	1.30	
59 Co	72	1	1.010 ppb	6.87	1.30	
60 Ni	72	1	1.990 ppb	6.16	2.60	
63 Cu	72	1	1.958 ppb	2.72	2.60	
66 Zn	72	1	12.020 ppb	0.99	13.00	
75 As	72	1	4.981 ppb	4.13	6.50	
78 Se	72	1	4.357 ppb	9.07	6.50	
95 Mo	72	1	2.054 ppb	4.51	2.60	
107 Ag	115	1	5.395 ppb	2.38	6.50	
111 Cd	115	1	0.972 ppb	2.90	1.30	
118 Sn	115	1	10.390 ppb	1.20	13.00	
121 Sb	115	1	2.124 ppb	1.76	2.60	
137 Ba	115	1	1.088 ppb	3.09	1.30	
205 Tl	165	1	1.105 ppb	1.14	1.30	
208 Pb	165	1	1.069 ppb	0.68	1.30	
232 Th	165	1	2.148 ppb	0.91	2.60	
238 U	165	1	1.100 ppb	0.38	1.30	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	325227	0.23	331510	98.1	30 - 120	
45 Sc	1	915220	1.26	950514	96.3	30 - 120	
72 Ge	1	422961	0.75	444072	95.2	30 - 120	
115 In	1	1245164	0.55	1307174	95.3	30 - 120	
165 Ho	1	2249355	0.16	2307209	97.5	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\168CALB.D\168CALB.D#

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

Reslope Before Continuing Analytical Run

Corrective action was taken as stated in method 6020 section 7.8

…"During the course of an analytical run, the instrument may be "resloped" or recalibrated to correct for instrument drift. A recalibration must then be followed immediately by a new analysis of a CCV and CCB before any further samples are analyzed."

Analyst: LRD

Date: 11/10/2009

Calibration Blank QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\220CALB.D\220CALB.D#
Date Acquired: Nov 10 2009 06:37 am
Acq. Method: NormISIS.M
Operator: LRD
Sample Name: Cal Blank
Misc Info:
Vial Number: 2101
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal. Update: Nov 10 2009 06:35 am
Sample Type: CalBlk

QC Elements

Element		IS Ref	Tune	CPS Mean	RSD(%)
9	Be	6	1	7	173.21
51	V	72	1	2004	2.44
52	Cr	72	1	2430	7.26
55	Mn	72	1	360	7.16
59	Co	72	1	13	173.19
60	Ni	72	1	60	43.50
63	Cu	72	1	2637	2.85
66	Zn	72	1	385	12.41
75	As	72	1	32	37.03
78	Se	72	1	653	3.79
95	Mo	72	1	320	32.85
107	Ag	115	1	17	69.43
111	Cd	115	1	1	249.94
118	Sn	115	1	283	25.15
121	Sb	115	1	76	25.21
137	Ba	115	1	32	31.73
205	Tl	165	1	50	13.94
208	Pb	165	1	228	21.30
232	Th	165	1	133	39.32
238	U	165	1	58	19.42

Internal Standard Elements

Element		Tune	CPS Mean	RSD(%)
6	Li	1	364209	0.54
45	Sc	1	1163848	0.93
72	Ge	1	535322	0.55
115	In	1	1515637	0.20
165	Ho	1	2559530	0.96

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

Calibration Standard QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\221ICAL.D\221ICAL.D#
Date Acquired: Nov 10 2009 06:40 am
Acq. Method: NormISIS.M
Operator: LRD
Sample Name: 100 ppb
Misc Info:
Vial Number: 2102
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal. Update: Nov 10 2009 06:38 am
Sample Type: ICAL

QC Elements

Element		IS Ref	Tune	CPS Mean	RSD(%)
9	Be	6	1	42416	1.81
51	V	72	1	672139	1.06
52	Cr	72	1	659574	1.44
55	Mn	72	1	774797	1.06
59	Co	72	1	818826	1.81
60	Ni	72	1	178503	0.85
63	Cu	72	1	428340	0.94
66	Zn	72	1	97488	0.66
75	As	72	1	84133	0.50
78	Se	72	1	17141	0.69
95	Mo	72	1	231551	0.64
107	Ag	115	1	666285	2.14
111	Cd	115	1	131920	2.25
118	Sn	115	1	371553	2.41
121	Sb	115	1	432842	2.02
137	Ba	115	1	184022	1.81
205	Tl	165	1	1381951	1.10
208	Pb	165	1	1982145	1.18
232	Th	165	1	2077430	0.61
238	U	165	1	2162746	1.04

ISTD Elements

Element		Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	1	353326	1.41	364209	97.0	30 - 120	
45	Sc	1	1143344	0.28	1163848	98.2	30 - 120	
72	Ge	1	509057	0.76	535322	95.1	30 - 120	
115	In	1	1490409	1.11	1515637	98.3	30 - 120	
165	Ho	1	2545650	0.70	2559530	99.5	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\220CALB.D\220CALB.D#

0 :Element Failures 0
0 :ISTD Failures 0

Continuing Calibration Verification (CCV) QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\222 CCV.D\222 CCV.D#
Date Acquired: Nov 10 2009 06:42 am
Operator: LRD
Sample Name: CCV
Misc Info:
Vial Number: 1105
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal Update: Nov 10 2009 06:40 am
Sample Type: CCV
Total Dil Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Conc.		RSD(%)	Expected	Rec(%)	QC Range(%)	Flag
9 Be	6	1	50.60	ppb	2.07	50	101.2	90 - 110	
51 V	72	1	50.78	ppb	0.80	50	101.6	90 - 110	
52 Cr	72	1	51.77	ppb	0.83	50	103.5	90 - 110	
55 Mn	72	1	50.64	ppb	0.56	50	101.3	90 - 110	
59 Co	72	1	50.76	ppb	1.10	50	101.5	90 - 110	
60 Ni	72	1	51.24	ppb	1.27	50	102.5	90 - 110	
63 Cu	72	1	51.07	ppb	1.06	50	102.1	90 - 110	
66 Zn	72	1	50.62	ppb	0.29	50	101.2	90 - 110	
75 As	72	1	51.30	ppb	0.67	50	102.6	90 - 110	
78 Se	72	1	51.54	ppb	3.37	50	103.1	90 - 110	
95 Mo	72	1	51.02	ppb	0.24	50	102.0	90 - 110	
107 Ag	115	1	50.85	ppb	0.78	50	101.7	90 - 110	
111 Cd	115	1	51.50	ppb	1.11	50	103.0	90 - 110	
118 Sn	115	1	51.33	ppb	1.89	50	102.7	90 - 110	
121 Sb	115	1	51.31	ppb	1.40	50	102.6	90 - 110	
137 Ba	115	1	51.31	ppb	1.19	50	102.6	90 - 110	
205 Tl	165	1	51.59	ppb	1.22	50	103.2	90 - 110	
208 Pb	165	1	51.49	ppb	1.73	50	103.0	90 - 110	
232 Th	165	1	51.84	ppb	0.78	50	103.7	90 - 110	
238 U	165	1	51.15	ppb	0.42	50	102.3	90 - 110	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	353999	0.17	364209	97.2	30 - 120	
45 Sc	1	1138235	1.19	1163848	97.8	30 - 120	
72 Ge	1	507424	0.78	535322	94.8	30 - 120	
115 In	1	1482389	0.58	1515637	97.8	30 - 120	
165 Ho	1	2558437	0.95	2559530	100.0	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\220CALB.D\220CALB.D#

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

Continuing Calibration Blank (CCB) QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\223 CCB.D\223 CCB.D#
Date Acquired: Nov 10 2009 06:45 am
Operator: LRD
Sample Name: CCB
Misc Info:
Vial Number: 1305
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal Update: Nov 10 2009 06:40 am
Sample Type: CCB
Total Dil Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Conc.		RSD(%)	High Limit	Flag
9 Be	6	1	-0.007	ppb	184.78	1.00	
51 V	72	1	-0.117	ppb	19.65	1.00	
52 Cr	72	1	0.012	ppb	280.31	1.00	
55 Mn	72	1	0.000	ppb	1946.00	1.00	
59 Co	72	1	0.002	ppb	27.62	1.00	
60 Ni	72	1	0.005	ppb	175.59	1.00	
63 Cu	72	1	0.078	ppb	23.29	1.00	
66 Zn	72	1	-0.155	ppb	14.23	1.00	
75 As	72	1	0.010	ppb	29.71	1.00	
78 Se	72	1	0.334	ppb	51.17	1.00	
95 Mo	72	1	-0.051	ppb	15.15	1.00	
107 Ag	115	1	0.011	ppb	32.61	1.00	
111 Cd	115	1	-0.004	ppb	194.86	1.00	
118 Sn	115	1	0.141	ppb	56.46	1.00	
121 Sb	115	1	0.220	ppb	13.59	1.00	
137 Ba	115	1	0.002	ppb	341.19	1.00	
205 Tl	165	1	0.020	ppb	21.44	1.00	
208 Pb	165	1	0.002	ppb	21.77	1.00	
232 Th	165	1	0.056	ppb	19.23	1.00	
238 U	165	1	0.013	ppb	23.71	1.00	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	357737	0.71	364209	98.2	30 - 120	
45 Sc	1	1128439	0.55	1163848	97.0	30 - 120	
72 Ge	1	516804	0.54	535322	96.5	30 - 120	
115 In	1	1488400	1.45	1515637	98.2	30 - 120	
165 Ho	1	2518587	0.57	2559530	98.4	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\220CALB.D\220CALB.D#

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

Wash QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\224WASH.D\224WASH.D#
Date Acquired: Nov 10 2009 06:48 am
Operator: LRD
Sample Name: RLCV
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal Update: Nov 10 2009 06:40 am
Sample Type: WASH
Total Dil Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Conc.	RSD(%)	High Limit	Flag
9 Be	6	1	0.831 ppb	12.89	1.30	
51 V	72	1	4.919 ppb	1.95	6.50	
52 Cr	72	1	2.149 ppb	6.24	2.60	
55 Mn	72	1	1.062 ppb	1.02	1.30	
59 Co	72	1	1.032 ppb	4.01	1.30	
60 Ni	72	1	2.120 ppb	5.42	2.60	
63 Cu	72	1	2.105 ppb	6.06	2.60	
66 Zn	72	1	10.120 ppb	1.02	13.00	
75 As	72	1	5.038 ppb	3.16	6.50	
78 Se	72	1	4.729 ppb	30.66	6.50	
95 Mo	72	1	1.958 ppb	5.38	2.60	
107 Ag	115	1	5.392 ppb	0.75	6.50	
111 Cd	115	1	1.053 ppb	3.90	1.30	
118 Sn	115	1	10.510 ppb	0.78	13.00	
121 Sb	115	1	2.156 ppb	0.96	2.60	
137 Ba	115	1	1.085 ppb	4.04	1.30	
205 Tl	165	1	1.118 ppb	0.53	1.30	
208 Pb	165	1	1.072 ppb	0.88	1.30	
232 Th	165	1	2.213 ppb	1.48	2.60	
238 U	165	1	1.092 ppb	1.07	1.30	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	354401	0.17	364209	97.3	30 - 120	
45 Sc	1	1124522	0.87	1163848	96.6	30 - 120	
72 Ge	1	509218	0.28	535322	95.1	30 - 120	
115 In	1	1464876	0.38	1515637	96.7	30 - 120	
165 Ho	1	2510955	0.27	2559530	98.1	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\220CALB.D\220CALB.D#

0 :Element Failures
0 :ISTD Failures

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

Continuing Calibration Verification (CCV) QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\252 CCV.D\252 CCV.D#
Date Acquired: Nov 10 2009 08:06 am
Operator: LRD
Sample Name: CCV
Misc Info:
Vial Number: 1105
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal Update: Nov 10 2009 06:40 am
Sample Type: CCV
Total Dil Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Conc.	RSD(%)	Expected	Rec(%)	QC Range(%)	Flag
9 Be	6	1	49.76 ppb	2.25	50	99.5	90 - 110	
51 V	72	1	50.29 ppb	0.27	50	100.6	90 - 110	
52 Cr	72	1	51.74 ppb	0.29	50	103.5	90 - 110	
55 Mn	72	1	50.98 ppb	1.06	50	102.0	90 - 110	
59 Co	72	1	50.43 ppb	1.17	50	100.9	90 - 110	
60 Ni	72	1	50.96 ppb	0.54	50	101.9	90 - 110	
63 Cu	72	1	50.60 ppb	0.59	50	101.2	90 - 110	
66 Zn	72	1	50.79 ppb	0.58	50	101.6	90 - 110	
75 As	72	1	51.27 ppb	1.12	50	102.5	90 - 110	
78 Se	72	1	50.26 ppb	6.40	50	100.5	90 - 110	
95 Mo	72	1	51.25 ppb	0.32	50	102.5	90 - 110	
107 Ag	115	1	49.80 ppb	1.00	50	99.6	90 - 110	
111 Cd	115	1	50.73 ppb	0.32	50	101.5	90 - 110	
118 Sn	115	1	50.51 ppb	0.85	50	101.0	90 - 110	
121 Sb	115	1	50.89 ppb	0.44	50	101.8	90 - 110	
137 Ba	115	1	51.32 ppb	1.22	50	102.6	90 - 110	
205 Tl	165	1	51.66 ppb	1.29	50	103.3	90 - 110	
208 Pb	165	1	53.05 ppb	1.61	50	106.1	90 - 110	
232 Th	165	1	53.11 ppb	1.41	50	106.2	90 - 110	
238 U	165	1	53.24 ppb	0.58	50	106.5	90 - 110	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	337057	0.05	364209	92.5	30 - 120	
45 Sc	1	1035951	0.48	1163848	89.0	30 - 120	
72 Ge	1	467404	0.78	535322	87.3	30 - 120	
115 In	1	1410055	1.77	1515637	93.0	30 - 120	
165 Ho	1	2427353	0.78	2559530	94.8	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\220CALB.D\220CALB.D#

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

Continuing Calibration Blank (CCB) QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\253 CCB.D\253 CCB.D#
Date Acquired: Nov 10 2009 08:09 am
Operator: LRD
Sample Name: CCB
Misc Info:
Vial Number: 1305
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal Update: Nov 10 2009 06:40 am
Sample Type: CCB
Total Dil Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Conc.		RSD(%)	High Limit	Flag
9 Be	6	1	-0.007	ppb	197.74	1.00	
51 V	72	1	-0.211	ppb	5.94	1.00	
52 Cr	72	1	0.004	ppb	634.04	1.00	
55 Mn	72	1	0.010	ppb	127.23	1.00	
59 Co	72	1	0.006	ppb	25.34	1.00	
60 Ni	72	1	0.002	ppb	518.32	1.00	
63 Cu	72	1	-0.141	ppb	11.22	1.00	
66 Zn	72	1	-0.125	ppb	2.91	1.00	
75 As	72	1	0.014	ppb	51.54	1.00	
78 Se	72	1	-1.128	ppb	15.75	1.00	
95 Mo	72	1	-0.075	ppb	31.45	1.00	
107 Ag	115	1	0.005	ppb	49.01	1.00	
111 Cd	115	1	0.008	ppb	34.71	1.00	
118 Sn	115	1	0.103	ppb	37.96	1.00	
121 Sb	115	1	0.175	ppb	19.38	1.00	
137 Ba	115	1	0.009	ppb	33.98	1.00	
205 Tl	165	1	0.022	ppb	14.13	1.00	
208 Pb	165	1	0.004	ppb	27.09	1.00	
232 Th	165	1	0.054	ppb	22.40	1.00	
238 U	165	1	0.015	ppb	12.73	1.00	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	342419	0.39	364209	94.0	30 - 120	
45 Sc	1	1043040	0.42	1163848	89.6	30 - 120	
72 Ge	1	479974	0.41	535322	89.7	30 - 120	
115 In	1	1389176	0.31	1515637	91.7	30 - 120	
165 Ho	1	2416963	0.94	2559530	94.4	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\220CALB.D\220CALB.D#

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

Wash QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\254WASH.D\254WASH.D#
Date Acquired: Nov 10 2009 08:11 am
Operator: LRD
Sample Name: RLCV
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal Update: Nov 10 2009 06:40 am
Sample Type: WASH
Total Dil Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Conc.	RSD(%)	High Limit	Flag
9 Be	6	1	0.910 ppb	12.07	1.30	
51 V	72	1	4.862 ppb	1.34	6.50	
52 Cr	72	1	2.078 ppb	1.50	2.60	
55 Mn	72	1	1.069 ppb	4.07	1.30	
59 Co	72	1	1.000 ppb	2.77	1.30	
60 Ni	72	1	1.963 ppb	8.51	2.60	
63 Cu	72	1	1.834 ppb	5.78	2.60	
66 Zn	72	1	10.190 ppb	1.13	13.00	
75 As	72	1	4.974 ppb	2.72	6.50	
78 Se	72	1	3.540 ppb	16.73	6.50	
95 Mo	72	1	1.876 ppb	2.40	2.60	
107 Ag	115	1	5.337 ppb	2.40	6.50	
111 Cd	115	1	1.170 ppb	5.36	1.30	
118 Sn	115	1	10.450 ppb	2.13	13.00	
121 Sb	115	1	2.117 ppb	0.77	2.60	
137 Ba	115	1	1.072 ppb	2.67	1.30	
205 Tl	165	1	1.159 ppb	1.50	1.30	
208 Pb	165	1	1.126 ppb	3.33	1.30	
232 Th	165	1	2.273 ppb	2.31	2.60	
238 U	165	1	1.149 ppb	2.34	1.30	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	339102	0.95	364209	93.1	30 - 120	
45 Sc	1	1029086	1.08	1163848	88.4	30 - 120	
72 Ge	1	474132	0.75	535322	88.6	30 - 120	
115 In	1	1387037	0.47	1515637	91.5	30 - 120	
165 Ho	1	2384076	0.99	2559530	93.1	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\220CALB.D\220CALB.D#

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

Blank QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\255 BLK.D\255 BLK.D#
Date Acquired: Nov 10 2009 08:14 am
Operator: LRD
Sample Name: LNRQVB
Misc Info: BLANK 9308149 6020
Vial Number: 2201
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal Update: Nov 10 2009 06:40 am
Sample Type: BLK
Total Dil Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Conc.	RSD(%)	High Limit	Flag
9 Be	6	1	0.001 ppb	1079.40	2.00	
51 V	72	1	-0.220 ppb	1.91	2.00	
52 Cr	72	1	0.110 ppb	34.78	2.00	
55 Mn	72	1	0.075 ppb	19.71	2.00	
59 Co	72	1	0.006 ppb	36.03	2.00	
60 Ni	72	1	0.013 ppb	272.90	2.00	
63 Cu	72	1	-0.120 ppb	22.88	2.00	
66 Zn	72	1	0.770 ppb	2.91	2.00	
75 As	72	1	0.004 ppb	279.25	2.00	
78 Se	72	1	-1.345 ppb	10.51	2.00	
95 Mo	72	1	-0.076 ppb	19.35	2.00	
107 Ag	115	1	0.007 ppb	35.88	2.00	
111 Cd	115	1	0.001 ppb	630.63	2.00	
118 Sn	115	1	0.101 ppb	22.49	2.00	
121 Sb	115	1	0.043 ppb	50.71	2.00	
137 Ba	115	1	0.022 ppb	18.19	2.00	
205 Tl	165	1	0.017 ppb	15.75	2.00	
208 Pb	165	1	0.005 ppb	20.19	2.00	
232 Th	165	1	0.025 ppb	7.90	2.00	
238 U	165	1	0.004 ppb	14.80	2.00	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	335830	0.81	364209	92.2	30 - 120	
45 Sc	1	1010475	1.28	1163848	86.8	30 - 120	
72 Ge	1	463458	0.50	535322	86.6	30 - 120	
115 In	1	1368292	0.77	1515637	90.3	30 - 120	
165 Ho	1	2375975	1.22	2559530	92.8	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\220CALB.D\220CALB.D#

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

Laboratory Control Spike (LCS) QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\256 LCS.D\256 LCS.D#
Date Acquired: Nov 10 2009 08:17 am
Acq. Method: NormISIS.M
Operator: LRD
Sample Name: LNRQVC
Misc Info: LCS
Vial Number: 2202
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal. Update: Nov 10 2009 06:40 am
Sample Type: LCS
Prep Dil. Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

Analyte Elements

Element	IS Ref	Tune	Conc. ppb	RSD(%)	Expected	Rec(%)	QC Range(%)	Flag
9 Be	6	1	38.04	0.50	40	95.1	80 - 120	
51 V	72	1	39.99	1.47	40	100.0	80 - 120	
52 Cr	72	1	40.93	0.52	40	102.3	80 - 120	
55 Mn	72	1	40.25	1.15	40	100.6	80 - 120	
59 Co	72	1	40.06	0.69	40	100.2	80 - 120	
60 Ni	72	1	40.11	1.18	40	100.3	80 - 120	
63 Cu	72	1	39.88	1.44	40	99.7	80 - 120	
66 Zn	72	1	39.60	2.05	40	99.0	80 - 120	
75 As	72	1	38.64	0.87	40	96.6	80 - 120	
78 Se	72	1	38.30	6.65	40	95.8	80 - 120	
95 Mo	72	1	40.75	1.03	40	101.9	80 - 120	
107 Ag	115	1	39.43	1.65	40	98.6	80 - 120	
111 Cd	115	1	39.24	1.50	40	98.1	80 - 120	
118 Sn	115	1	0.15	13.64	40	0.4	80 - 120	
121 Sb	115	1	39.81	0.14	40	99.5	80 - 120	
137 Ba	115	1	40.45	1.42	40	101.1	80 - 120	
205 Tl	165	1	43.01	0.90	40	107.5	80 - 120	
208 Pb	165	1	41.56	1.29	40	103.9	80 - 120	
232 Th	165	1	41.58	0.43	40	104.0	80 - 120	
238 U	165	1	41.56	1.57	40	103.9	80 - 120	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	334746	0.80	364209	91.9	30 - 120	
45 Sc	1	1019898	1.10	1163848	87.6	30 - 120	
72 Ge	1	456120	1.29	535322	85.2	30 - 120	
115 In	1	1371697	0.52	1515637	90.5	30 - 120	
165 Ho	1	2380578	0.47	2559530	93.0	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\220CALB.D\220CALB.D#

0 :Element Failures
0 :ISTD Failures

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

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\257AREF.D\257AREF.D#
Date Acquired: Nov 10 2009 08:20 am
Acq. Method: NormISIS.M
Operator: LRD
Sample Name: LNQ0L
Misc Info: D9K040449
Vial Number: 2203
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal. Update: Nov 10 2009 06:40 am
Sample Type: AllRef
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	6	1	0.00	0.00	ppb	1070.50	3600	
51 V	72	1	-0.14	-0.14	ppb	16.06	3600	
52 Cr	72	1	0.17	0.17	ppb	10.32	3600	
55 Mn	72	1	10.85	10.85	ppb	1.22	3600	
59 Co	72	1	0.20	0.20	ppb	11.79	3600	
60 Ni	72	1	0.22	0.22	ppb	11.80	3600	
63 Cu	72	1	0.05	0.05	ppb	61.17	3600	
66 Zn	72	1	2.67	2.67	ppb	3.77	3600	
75 As	72	1	0.04	0.04	ppb	49.23	3600	
78 Se	72	1	-1.08	-1.08	ppb	29.82	3600	
95 Mo	72	1	0.01	0.01	ppb	338.98	3600	
107 Ag	115	1	0.01	0.01	ppb	26.13	3600	
111 Cd	115	1	0.00	0.00	ppb	16.09	3600	
118 Sn	115	1	0.06	0.06	ppb	35.67	3600	
121 Sb	115	1	0.05	0.05	ppb	25.24	3600	
137 Ba	115	1	1.29	1.29	ppb	4.75	3600	
205 Tl	165	1	0.03	0.03	ppb	9.39	3600	
208 Pb	165	1	0.07	0.07	ppb	1.37	3600	
232 Th	165	1	0.06	0.06	ppb	22.94	1000	
238 U	165	1	0.01	0.01	ppb	21.69	3600	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	337825	0.54	364209	92.8	30 - 120	
45 Sc	1	1020792	1.58	1163848	87.7	30 - 120	
72 Ge	1	467424	0.37	535322	87.3	30 - 120	
115 In	1	1375678	0.28	1515637	90.8	30 - 120	
165 Ho	1	2389893	0.33	2559530	93.4	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\220CALB.D\220CALB.D#

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

Dilution Sample QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\258SDIL.D\258SDIL.D#
Date Acquired: Nov 10 2009 08:22 am
Acq. Method: NormISIS.M
Operator: LRD
Sample Name: LNQ0LP5
Misc Info: SERIAL DILUTION
Vial Number: 2204
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal. Update: Nov 10 2009 06:40 am
Sample Type: SDIL
Dilution Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

Dilution Ref File: C:\ICPCHEM\1\DATA\AG110909A.B\257AREF.D\257AREF.D#

QC elements

Element	IS Ref	Tune	Conc.ppb		RSD(%)	Ref Conc.	Actual(%)	QC Range(%)	Flag
9 Be	6	1	-0.02	ppb	0.00	0.00	-5678.4	90 - 110	
51 V	72	1	-0.20	ppb	5.37	-0.03	711.3	90 - 110	
52 Cr	72	1	0.13	ppb	19.67	0.03	384.4	90 - 110	
55 Mn	72	1	2.19	ppb	2.30	2.17	100.8	90 - 110	
59 Co	72	1	0.05	ppb	9.24	0.04	113.5	90 - 110	
60 Ni	72	1	0.50	ppb	3.58	0.04	1151.2	90 - 110	
63 Cu	72	1	-0.07	ppb	25.79	0.01	-756.7	90 - 110	
66 Zn	72	1	0.45	ppb	3.86	0.53	84.7	90 - 110	
75 As	72	1	0.01	ppb	64.34	0.01	107.3	90 - 110	
78 Se	72	1	-0.86	ppb	107.44	-0.22	397.9	90 - 110	
95 Mo	72	1	-0.08	ppb	12.08	0.00	-3692.2	90 - 110	
107 Ag	115	1	0.00	ppb	41.24	0.00	207.6	90 - 110	
111 Cd	115	1	0.01	ppb	74.50	0.00	1248.5	90 - 110	
118 Sn	115	1	0.16	ppb	17.18	0.01	1443.7	90 - 110	
121 Sb	115	1	0.02	ppb	18.39	0.01	169.2	90 - 110	
137 Ba	115	1	0.27	ppb	4.14	0.26	102.6	90 - 110	
205 Tl	165	1	0.01	ppb	15.37	0.01	134.0	90 - 110	
208 Pb	165	1	0.02	ppb	18.92	0.01	122.7	90 - 110	
232 Th	165	1	0.01	ppb	20.47	0.01	84.4	90 - 110	
238 U	165	1	0.00	ppb	3.00	0.00	201.5	90 - 110	

ISTD elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	342070	1.01	364209	93.9	30 - 120	
45 Sc	1	1032134	0.85	1163848	88.7	30 - 120	
72 Ge	1	477332	0.66	535322	89.2	30 - 120	
115 In	1	1400864	1.17	1515637	92.4	30 - 120	
165 Ho	1	2419284	0.73	2559530	94.5	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\220CALB.D\220CALB.D#

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

Denver

SERIAL DILUTION

Method: 6020 (ICP/MS) | ICPMS_024 | Reported: 11/10/09 21:13:30

Department: 090 (Metals)

Source: Spreadsheet

Sample: **LNQ0LP5**

Serial Dilution: **5.00** Sample Dilution: **1.00**

Instrument: **Agilent7500**
File: AG110909A # 258
Acquired: 11/10/2009 08:22:00
Calibrated: 11/10/2009 06:37:00

Channel 272
Method 6020_
ICPMS_024

Matrix: AQUEOUS
Units: ug/L

CASN	Analyte Name	M/S	Area	Dilution	Sample	%Diff.	MDL	Flag	Q
7440-41-7	Beryllium	9		-0.07575	0.00133	5780		*	
7440-62-2	Vanadium	51	500	-1.0235	-0.14390			*	
7440-47-3	Chromium	52	2977	0.65700	0.17090	284		*	
7439-96-5	Manganese	55	16210	10.940	10.850	0.829		*	
7440-48-4	Cobalt	59	360	0.22675	0.19980	13.5		*	
7440-02-0	Nickel	60	887	2.4900	0.21630	1050		*	
7440-50-8	Copper	63	2070	-0.35135	0.04643	857		*	
7440-66-6	Zinc	66	755	2.2605	2.6680	15.3		*	
7440-38-2	Arsenic	75	35	0.03897	0.03634	7.25	0.21	NC	☑
7782-49-2	Selenium	78	450	-4.2970	-1.0800		0.70	NC	☑
7439-98-7	Molybdenum	95	107	-0.41205	0.01116	3790		*	
7440-22-4	Silver	107	40	0.01964	0.00946	108		*	
7440-43-9	Cadmium	111	16	0.06195	0.00496	1150		*	
7440-31-5	Tin	118	820	0.79850	0.05531	1340		*	
7440-36-0	Antimony	121	136	0.08065	0.04766	69.2		*	
7440-39-3	Barium	137	489	1.3270	1.2930	2.63		*	
7440-28-0	Thallium	205	136	0.03363	0.02509	34.0		*	
7439-92-1	Lead	208	536	0.08495	0.06924	22.7		*	
7440-61-1	Uranium	238	152	0.02374	0.01178	101		*	
7440-29-1	Thorium	232	313	0.04739	0.05614	15.6		*	
7439-93-2	Lithium	6			0			*	
7440-20-2	Scandium	45			0			*	
7440-74-6	Indium	115			0			*	
7440-56-4	Germanium	72			0			*	
7440-60-0	Holmium	165			0			*	

* Analyte not requested for this batch, no MDL

NC : Serial dilution concentration < 100 X MDL

E : Difference greater than Limit (10%)

Reviewed by: LRD Date: 11/10/09

Post Digestion Spiked Sample (PDS) QC Report

Data File:	C:\ICPCHEM\1\DATA\AG110909A.B\259PDS.D\259PDS.D#
Date Acquired:	Nov 10 2009 08:25 am
Acq. Method:	NormISIS.M
Operator:	LRD
Sample Name:	LNQ0LZ
Misc Info:	POST DIGESTION SPIKE
Vial Number:	2205
Current Method:	C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File:	C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal. Update:	Nov 10 2009 06:40 am
Sample Type:	PDS
Prep Dil. Factor:	1.00
Autodil Factor:	Undiluted
Final Dil Factor:	1.00

QC Summary:
Analytes: Pass
ISTD: Pass

Spike Ref. File: ---

QC Elements

Element	IS Ref	Tune	Conc.	Ref Conc		RSD(%)	Spk Amt	Rec(%)	QC Range(%)	QC Flag
9 Be	6	1	181.30	0.00	ppb	0.67	200	90.6	75 - 125	
51 V	72	1	189.00	-0.14	ppb	1.11	200	94.6	75 - 125	
52 Cr	72	1	197.60	0.17	ppb	0.58	200	98.7	75 - 125	
55 Mn	72	1	201.90	10.85	ppb	1.35	200	95.8	75 - 125	
59 Co	72	1	188.10	0.20	ppb	2.04	200	94.0	75 - 125	
60 Ni	72	1	189.70	0.22	ppb	1.08	200	94.7	75 - 125	
63 Cu	72	1	190.00	0.05	ppb	0.31	200	95.0	75 - 125	
66 Zn	72	1	189.20	2.67	ppb	0.66	200	93.4	75 - 125	
75 As	72	1	184.80	0.04	ppb	1.01	200	92.4	75 - 125	
78 Se	72	1	182.80	-1.08	ppb	1.12	200	91.9	75 - 125	
95 Mo	72	1	194.00	0.01	ppb	0.60	200	97.0	75 - 125	
107 Ag	115	1	46.62	0.01	ppb	0.84	50	93.2	75 - 125	
111 Cd	115	1	188.40	0.00	ppb	0.36	200	94.2	75 - 125	
118 Sn	115	1	174.10	0.06	ppb	0.48	200	87.0	75 - 125	
121 Sb	115	1	182.70	0.05	ppb	1.47	200	91.3	75 - 125	
137 Ba	115	1	192.70	1.29	ppb	0.17	200	95.7	75 - 125	
205 Tl	165	1	190.30	0.03	ppb	0.94	200	95.1	75 - 125	
208 Pb	165	1	190.60	0.07	ppb	1.29	200	95.3	75 - 125	
232 Th	165	1	0.03	0.06	ppb	7.72	200	0.0	75 - 125	
238 U	165	1	191.30	0.01	ppb	1.54	200	95.6	75 - 125	

ISTD Elements

Element	Tune	Counts	RSD(%)	Ref. Counts	Rec(%)	QC Range(%)	QC Flag
6 Li	1	331145	1.17	364209	90.9	30 - 120	
45 Sc	1	1013467	0.18	1163848	87.1	30 - 120	
72 Ge	1	455008	0.80	535322	85.0	30 - 120	
115 In	1	1375478	0.92	1515637	90.8	30 - 120	
165 Ho	1	2376594	0.72	2559530	92.9	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\220CALB.D\220CALB.D#

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

Denver

SAMPLE SPIKE

Method: 6020 (ICP/MS) | ICPMS_024 | Reported: 11/10/09 21:13:38

Department: 090 (Metals)

Source: Spreadsheet

Sample: **LNQ0LZ**

Spike Dilution: **1.00**

Sample Dilution: **1.00**

Instrument: **Agilent7500**
File: AG110909A # 259
Acquired: 11/10/2009 08:25:00
Calibrated: 11/10/2009 06:37:00

Channel 272
Method 6020_
ICPMS_024

Matrix: AQUEOUS
Units: ug/L

CASN	Analyte Name	M/S	Area	Amount	Sample	%Rec.	Spike	Flag	Q
7440-41-7	Beryllium	9	72075	181.30	0.00133	90.6	200		☑
7440-62-2	Vanadium	51	1133820	189.00	-0.14390	94.5	200		☑
7440-47-3	Chromium	52	1162930	197.60	0.17090	98.7	200		☑
7439-96-5	Manganese	55	1398240	201.90	10.850	95.5	200		☑
7440-48-4	Cobalt	59	1376780	188.10	0.19980	94.0	200		☐
7440-02-0	Nickel	60	302672	189.70	0.21630	94.7	200		☑
7440-50-8	Copper	63	725336	190.00	0.04643	95.0	200		☑
7440-66-6	Zinc	66	164598	189.20	2.6680	93.3	200		☑
7440-38-2	Arsenic	75	138973	184.80	0.03634	92.4	200		☑
7782-49-2	Selenium	78	27555	182.80	-1.0800	91.4	200		☑
7439-98-7	Molybdenum	95	401318	194.00	0.01116	97.0	200		☐
7440-22-4	Silver	107	286701	46.620	0.00946	93.2	50.0		☑
7440-43-9	Cadmium	111	229402	188.40	0.00496	94.2	200		☑
7440-31-5	Tin	118	596827	174.10	0.05531	87.0	200		☐
7440-36-0	Antimony	121	729828	182.70	0.04766	91.3	200		☑
7440-39-3	Barium	137	327271	192.70	1.2930	95.7	200		☑
7440-28-0	Thallium	205	2455640	190.30	0.02509	95.1	200		☑
7439-92-1	Lead	208	3527770	190.60	0.06924	95.3	200		☑
7440-61-1	Uranium	238	3863170	191.30	0.01178	95.6	200		☐
7440-29-1	Thorium	232	783	0.03400	0.05614				
7439-93-2	Lithium	6			0				
7440-20-2	Scandium	45			0				
7440-74-6	Indium	115			0				
7440-56-4	Germanium	72			0				
7440-60-0	Holmium	165			0				

Reviewed by: LRD Date: 11/10/09

Spiked Sample (MS) QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\260_MS.D\260_MS.D#
Date Acquired: Nov 10 2009 08:28 am
Acq. Method: NormISIS.M
Operator: LRD
Sample Name: LNQ0LS
Misc Info: MATRIX SPIKE
Vial Number: 2206
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal. Update: Nov 10 2009 06:40 am
Sample Type: MS
Prep Dil. Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Spike Ref. File: ---

QC Summary:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Conc.	Ref Conc		RSD(%)	Spk Amt	Rec(%)	QC Range(%)	QC Flag
9 Be	6	1	38.37	0.00	ppb	1.85	40	95.9	50 - 150	
51 V	72	1	39.99	-0.14	ppb	0.89	40	100.3	50 - 150	
52 Cr	72	1	40.78	0.17	ppb	0.87	40	101.5	50 - 150	
55 Mn	72	1	49.45	10.85	ppb	1.58	40	97.2	50 - 150	
59 Co	72	1	39.70	0.20	ppb	0.42	40	98.8	50 - 150	
60 Ni	72	1	40.51	0.22	ppb	0.05	40	100.7	50 - 150	
63 Cu	72	1	40.33	0.05	ppb	1.16	40	100.7	50 - 150	
66 Zn	72	1	43.73	2.67	ppb	1.22	40	102.5	50 - 150	
75 As	72	1	39.44	0.04	ppb	0.71	40	98.5	50 - 150	
78 Se	72	1	37.96	-1.08	ppb	6.43	40	97.5	50 - 150	
95 Mo	72	1	40.49	0.01	ppb	1.50	40	101.2	50 - 150	
107 Ag	115	1	39.21	0.01	ppb	2.03	40	98.0	50 - 150	
111 Cd	115	1	39.97	0.00	ppb	2.37	40	99.9	50 - 150	
118 Sn	115	1	0.33	0.06	ppb	30.76	40	0.8	50 - 150	
121 Sb	115	1	40.58	0.05	ppb	2.79	40	101.3	50 - 150	
137 Ba	115	1	41.73	1.29	ppb	2.01	40	101.1	50 - 150	
205 Tl	165	1	43.06	0.03	ppb	1.27	40	107.6	50 - 150	
208 Pb	165	1	41.75	0.07	ppb	1.41	40	104.2	50 - 150	
232 Th	165	1	41.70	0.06	ppb	0.45	40	104.1	50 - 150	
238 U	165	1	42.15	0.01	ppb	1.05	40	105.3	50 - 150	

ISTD Elements

Element	Tune	Counts	RSD(%)	Ref. Counts	Rec(%)	QC Range(%)	QC Flag
6 Li	1	334090	0.46	364209	91.7	30 - 120	
45 Sc	1	1030199	0.15	1163848	88.5	30 - 120	
72 Ge	1	460031	1.28	535322	85.9	30 - 120	
115 In	1	1386296	0.98	1515637	91.5	30 - 120	
165 Ho	1	2400300	0.60	2559530	93.8	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\220CALB.D\220CALB.D#

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

Duplicate Spike (MSD) QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\261 MSD.D\261 MSD.D#
Date Acquired: Nov 10 2009 08:30 am
Acq. Method: NormISIS.M
Operator: LRD
Sample Name: LNQ0LD
Misc Info: MATRIX SPIKE DUPLICATE
Vial Number: 2207
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal. Update: Nov 10 2009 06:40 am
Sample Type: MSD
Dilution Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

Duplicate Ref File: C:\ICPCHEM\1\DATA\AG110909A.B\260 MS.D\260 MS.D#

QC Elements

Element	IS Ref	Tune	Conc.		RSD(%)	Ref Conc	Differ(%)	High Limit	Flag
9 Be	6	1	38.46	ppb	3.92	38.37	0.23	20	
51 V	72	1	39.52	ppb	1.53	39.99	1.18	20	
52 Cr	72	1	40.51	ppb	0.58	40.78	0.66	20	
55 Mn	72	1	49.35	ppb	1.03	49.45	0.20	20	
59 Co	72	1	39.87	ppb	0.36	39.70	0.43	20	
60 Ni	72	1	40.41	ppb	1.54	40.51	0.25	20	
63 Cu	72	1	39.84	ppb	0.75	40.33	1.22	20	
66 Zn	72	1	45.71	ppb	0.89	43.73	4.43	20	
75 As	72	1	38.82	ppb	1.02	39.44	1.58	20	
78 Se	72	1	40.11	ppb	4.36	37.96	5.51	20	
95 Mo	72	1	40.26	ppb	1.88	40.49	0.57	20	
107 Ag	115	1	38.62	ppb	1.93	39.21	1.52	20	
111 Cd	115	1	38.87	ppb	0.86	39.97	2.79	20	
118 Sn	115	1	0.13	ppb	27.64	0.33	84.33	20	
121 Sb	115	1	39.46	ppb	1.19	40.58	2.80	20	
137 Ba	115	1	41.06	ppb	0.36	41.73	1.62	20	
205 Tl	165	1	42.53	ppb	1.14	43.06	1.24	20	
208 Pb	165	1	41.19	ppb	1.33	41.75	1.35	20	
232 Th	165	1	41.44	ppb	0.75	41.70	0.63	20	
238 U	165	1	41.42	ppb	1.47	42.15	1.75	20	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	331287	0.11	364209	91.0	30 - 120	
45 Sc	1	1014554	0.63	1163848	87.2	30 - 120	
72 Ge	1	453284	1.05	535322	84.7	30 - 120	
115 In	1	1377380	0.54	1515637	90.9	30 - 120	
165 Ho	1	2387753	0.12	2559530	93.3	30 - 120	

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

ISTD Ref. File :C:\ICPCHEM\1\DATA\AG110909A.B\220CALB.D\220CALB.D#

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

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\262SMPL.D\262SMPL.D#
Date Acquired: Nov 10 2009 08:33 am
Acq. Method: NormISIS.M
Operator: LRD
Sample Name: LNQ0R
Misc Info: D9J240206
Vial Number: 2208
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal. Update: Nov 10 2009 06:40 am
Sample Type: SA
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	6	1	0.03	0.03	ppb	65.75	3600	
51 V	72	1	116.90	116.90	ppb	0.16	3600	
52 Cr	72	1	157.30	157.30	ppb	3.15	3600	
55 Mn	72	1	38.42	38.42	ppb	1.45	3600	
59 Co	72	1	1.03	1.03	ppb	1.71	3600	
60 Ni	72	1	6.88	6.88	ppb	1.76	3600	
63 Cu	72	1	1.92	1.92	ppb	22.82	3600	
66 Zn	72	1	14.00	14.00	ppb	2.38	3600	
75 As	72	1	174.80	174.80	ppb	0.63	3600	
78 Se	72	1	7.27	7.27	ppb	11.88	3600	
95 Mo	72	1	57.36	57.36	ppb	0.56	3600	
107 Ag	115	1	0.14	0.14	ppb	3.88	3600	
111 Cd	115	1	0.09	0.09	ppb	38.69	3600	
118 Sn	115	1	0.14	0.14	ppb	21.54	3600	
121 Sb	115	1	0.22	0.22	ppb	9.29	3600	
137 Ba	115	1	19.20	19.20	ppb	0.99	3600	
205 Tl	165	1	0.08	0.08	ppb	10.94	3600	
208 Pb	165	1	0.24	0.24	ppb	1.30	3600	
232 Th	165	1	0.12	0.12	ppb	8.32	1000	
238 U	165	1	53.79	53.79	ppb	1.39	3600	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	256634	1.19	364209	70.5	30 - 120	
45 Sc	1	909941	1.28	1163848	78.2	30 - 120	
72 Ge	1	356786	0.62	535322	66.6	30 - 120	
115 In	1	1061552	1.64	1515637	70.0	30 - 120	
165 Ho	1	1865611	0.54	2559530	72.9	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\220CALB.D\220CALB.D#

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

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\263SMPL.D\263SMPL.D#
Date Acquired: Nov 10 2009 08:36 am
Acq. Method: NormISIS.M
Operator: LRD
Sample Name: LNQ0T
Misc Info: D9J240206
Vial Number: 2209
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal. Update: Nov 10 2009 06:40 am
Sample Type: SA
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	6	1	0.02	0.02	ppb	183.96	3600	
51 V	72	1	116.80	116.80	ppb	0.67	3600	
52 Cr	72	1	156.70	156.70	ppb	0.64	3600	
55 Mn	72	1	38.14	38.14	ppb	0.54	3600	
59 Co	72	1	1.42	1.42	ppb	0.82	3600	
60 Ni	72	1	7.41	7.41	ppb	3.93	3600	
63 Cu	72	1	2.60	2.60	ppb	7.57	3600	
66 Zn	72	1	17.45	17.45	ppb	0.73	3600	
75 As	72	1	179.90	179.90	ppb	0.43	3600	
78 Se	72	1	7.80	7.80	ppb	8.53	3600	
95 Mo	72	1	60.98	60.98	ppb	0.93	3600	
107 Ag	115	1	0.14	0.14	ppb	11.95	3600	
111 Cd	115	1	0.09	0.09	ppb	19.13	3600	
118 Sn	115	1	0.14	0.14	ppb	20.74	3600	
121 Sb	115	1	0.33	0.33	ppb	10.53	3600	
137 Ba	115	1	19.55	19.55	ppb	1.53	3600	
205 Tl	165	1	0.05	0.05	ppb	2.67	3600	
208 Pb	165	1	0.18	0.18	ppb	2.11	3600	
232 Th	165	1	0.05	0.05	ppb	12.99	1000	
238 U	165	1	55.25	55.25	ppb	0.31	3600	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	249914	1.07	364209	68.6	30 - 120	
45 Sc	1	906892	1.19	1163848	77.9	30 - 120	
72 Ge	1	361565	0.33	535322	67.5	30 - 120	
115 In	1	1074309	1.29	1515637	70.9	30 - 120	
165 Ho	1	1877514	0.15	2559530	73.4	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\220CALB.D\220CALB.D#

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

Continuing Calibration Verification (CCV) QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\264 CCV.D\264 CCV.D#
Date Acquired: Nov 10 2009 08:39 am
Operator: LRD
Sample Name: CCV
Misc Info:
Vial Number: 1105
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal Update: Nov 10 2009 06:40 am
Sample Type: CCV
Total Dil Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Conc.		RSD(%)	Expected	Rec(%)	QC Range(%)	Flag
9 Be	6	1	49.31	ppb	2.58	50	98.6	90 - 110	
51 V	72	1	50.51	ppb	0.95	50	101.0	90 - 110	
52 Cr	72	1	51.73	ppb	0.81	50	103.5	90 - 110	
55 Mn	72	1	50.55	ppb	0.51	50	101.1	90 - 110	
59 Co	72	1	50.66	ppb	0.21	50	101.3	90 - 110	
60 Ni	72	1	51.19	ppb	0.28	50	102.4	90 - 110	
63 Cu	72	1	50.97	ppb	0.23	50	101.9	90 - 110	
66 Zn	72	1	50.74	ppb	0.67	50	101.5	90 - 110	
75 As	72	1	51.26	ppb	0.14	50	102.5	90 - 110	
78 Se	72	1	50.57	ppb	2.58	50	101.1	90 - 110	
95 Mo	72	1	52.12	ppb	2.05	50	104.2	90 - 110	
107 Ag	115	1	51.00	ppb	0.12	50	102.0	90 - 110	
111 Cd	115	1	51.78	ppb	0.97	50	103.6	90 - 110	
118 Sn	115	1	51.41	ppb	1.31	50	102.8	90 - 110	
121 Sb	115	1	51.55	ppb	0.31	50	103.1	90 - 110	
137 Ba	115	1	51.88	ppb	0.09	50	103.8	90 - 110	
205 Tl	165	1	51.77	ppb	0.73	50	103.5	90 - 110	
208 Pb	165	1	52.07	ppb	1.92	50	104.1	90 - 110	
232 Th	165	1	51.57	ppb	2.67	50	103.1	90 - 110	
238 U	165	1	51.60	ppb	0.55	50	103.2	90 - 110	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	348289	0.74	364209	95.6	30 - 120	
45 Sc	1	1130721	1.30	1163848	97.2	30 - 120	
72 Ge	1	508155	1.60	535322	94.9	30 - 120	
115 In	1	1499854	0.81	1515637	99.0	30 - 120	
165 Ho	1	2580441	1.28	2559530	100.8	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\220CALB.D\220CALB.D#

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

Continuing Calibration Blank (CCB) QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\265 CCB.D\265 CCB.D#
Date Acquired: Nov 10 2009 08:41 am
Operator: LRD
Sample Name: CCB
Misc Info:
Vial Number: 1305
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal Update: Nov 10 2009 06:40 am
Sample Type: CCB
Total Dil Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Conc.		RSD(%)	High Limit	Flag
9 Be	6	1	-0.015	ppb	0.00	1.00	
51 V	72	1	-0.194	ppb	5.19	1.00	
52 Cr	72	1	0.008	ppb	298.37	1.00	
55 Mn	72	1	0.022	ppb	42.07	1.00	
59 Co	72	1	0.013	ppb	32.45	1.00	
60 Ni	72	1	0.033	ppb	68.94	1.00	
63 Cu	72	1	-0.103	ppb	24.62	1.00	
66 Zn	72	1	-0.029	ppb	94.72	1.00	
75 As	72	1	0.017	ppb	65.92	1.00	
78 Se	72	1	-1.652	ppb	9.24	1.00	
95 Mo	72	1	-0.046	ppb	42.66	1.00	
107 Ag	115	1	0.014	ppb	16.51	1.00	
111 Cd	115	1	0.016	ppb	63.91	1.00	
118 Sn	115	1	0.096	ppb	40.76	1.00	
121 Sb	115	1	0.154	ppb	15.82	1.00	
137 Ba	115	1	0.019	ppb	33.91	1.00	
205 Tl	165	1	0.025	ppb	28.49	1.00	
208 Pb	165	1	0.009	ppb	6.15	1.00	
232 Th	165	1	0.061	ppb	11.59	1.00	
238 U	165	1	0.021	ppb	22.55	1.00	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	348489	1.15	364209	95.7	30 - 120	
45 Sc	1	1122413	1.00	1163848	96.4	30 - 120	
72 Ge	1	516361	0.30	535322	96.5	30 - 120	
115 In	1	1502887	0.96	1515637	99.2	30 - 120	
165 Ho	1	2551415	0.79	2559530	99.7	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\220CALB.D\220CALB.D#

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

Wash QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\266WASH.D\266WASH.D#
Date Acquired: Nov 10 2009 08:44 am
Operator: LRD
Sample Name: RLCV
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal Update: Nov 10 2009 06:40 am
Sample Type: WASH
Total Dil Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Conc.	RSD(%)	High Limit	Flag
9 Be	6	1	0.983 ppb	29.15	1.30	
51 V	72	1	4.895 ppb	0.77	6.50	
52 Cr	72	1	2.097 ppb	4.34	2.60	
55 Mn	72	1	1.028 ppb	5.25	1.30	
59 Co	72	1	1.014 ppb	6.56	1.30	
60 Ni	72	1	2.074 ppb	1.89	2.60	
63 Cu	72	1	1.885 ppb	2.63	2.60	
66 Zn	72	1	10.270 ppb	0.44	13.00	
75 As	72	1	5.167 ppb	1.93	6.50	
78 Se	72	1	3.719 ppb	3.37	6.50	
95 Mo	72	1	2.051 ppb	1.47	2.60	
107 Ag	115	1	5.300 ppb	0.75	6.50	
111 Cd	115	1	1.121 ppb	1.40	1.30	
118 Sn	115	1	10.470 ppb	1.10	13.00	
121 Sb	115	1	2.104 ppb	2.61	2.60	
137 Ba	115	1	1.084 ppb	2.86	1.30	
205 Tl	165	1	1.129 ppb	2.87	1.30	
208 Pb	165	1	1.075 ppb	0.47	1.30	
232 Th	165	1	2.211 ppb	0.48	2.60	
238 U	165	1	1.107 ppb	0.46	1.30	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	347907	0.75	364209	95.5	30 - 120	
45 Sc	1	1117466	1.37	1163848	96.0	30 - 120	
72 Ge	1	508084	0.73	535322	94.9	30 - 120	
115 In	1	1475645	0.81	1515637	97.4	30 - 120	
165 Ho	1	2526188	0.30	2559530	98.7	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\220CALB.D\220CALB.D#

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

Metals

Supporting Documentation

Sample Sequence, Instrument Printouts

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Lot ID: D9K030554

Client: Northgate Env

Batch(es) #: 9308149

Associated Samples: 1-2

I certify that, to the best of my knowledge, the attached package represents a complete and accurate copy of the original data.

Signature/Date: LRD 11/10/2009

Metals Raw Data RoadMap

LotID		*Metal*	*WorkOrder*	*Anal Date*	*TestDesc*	*Batch*	*File Id*	*Instr*
D9K030554	1	SE	LNQ0R1AC	20091110	6020TOTA	9308149	AG110909A	024
D9K030554	1	AS	LNQ0R1AA	20091110	6020TOTA	9308149	AG110909A	024
D9K030554	2	SE	LNQ0T1AC	20091110	6020TOTA	9308149	AG110909A	024
D9K030554	2	AS	LNQ0T1AA	20091110	6020TOTA	9308149	AG110909A	024

METALS
PREPARATION LOGS
ICP-MS

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Batch Number: **9308149**

TestAmerica Laboratories, Inc.
Metals Prep Log/ Batch Summary

Prepared By: Katie Stoltz

Prep Date: 11/05/09
Due Date: 11/16/09

Lot	Work Order			Initial Weight/Volume
D9K040000 Water	**LNRQV**	B	Due Date: SDG:	50 mL
D9K040000 Water	**LNRQV**	C	Due Date: SDG:	50 mL
D9K030552 Water	**LNQ0L** Total		Due Date: 11/16/09 SDG:	50 mL
D9K030552 Water	**LNQ0L** Total	S	Due Date: 11/16/09 SDG:	50 mL
D9K030552 Water	**LNQ0L** Total	D	Due Date: 11/16/09 SDG:	50 mL
D9K030554 Water	**LNQ0R** Total		Due Date: 11/16/09 SDG:	50 mL
D9K030554 Water	**LNQ0T** Total		Due Date: 11/16/09 SDG:	50 mL

Comments:

B-BLANK; C-CHECK SAMPLE; L-CHECK SAMPLE DUPLICATE; P-SERIAL DILUTION; S-MATRIX SPIKE SAMPLE; D-MATRIX SPIKE DUPLICATE SAMPLE

ICPMS ELEMENTS WITHIN THE BATCH:

AS SE

LRP 11/10/09

METALS PREP SHEET
SOP: DEN-IP-0014

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
TestAmerica Denver

TOTAL WATER DIGESTION FOR ICPMS (Prep code MS)

BATCH # 9308149 **ALLIQUOTTED BY:** JRW
PREP DATE: 11.5.2009 **DIGESTED BY:** KS

CONSUMABLES USED

Digestion Cups: **Manufacturer:** Environmental Express **Lot #:** A901LS268

One or more samples were filtered prior to analysis at the instrument. ☐ Yes ☑ No

If "yes", then the method blank and the LCS were also filtered in the same manner using the same type of filter.

Analyst(s) Initials:

STANDARDS USED

Standard ID	Verification #	Exp. Date	Spike Amount	Pipette ID
2008Cal-1	STD-6471-09	11/1/10	100uL	15
2008Cal-2	STD-5356-09	1/10/10	100uL	15

REAGENTS USED

Reagent	Manufacturer	Lot #	Volume Used (mL)
HNO_3	JT Baker	H14024	3

TEMPERATURE CYCLES

Thermometer ID: 4110 Block & Cup # : 2, 2

Cycle	Start Time	Temperature (°C)	End Time	Temperature (°C)
HNO3	700	94	1120	95
HNO3	1130	95	1200	96
HNO3				

Samples and QC revolumed to: 50 mL Analyst's Initials KS

COMMENTS:

LPD 11/10/09

I certify that all information above is correct and complete.

Signature: Katie St ***Date:*** 11.5.09

METALS
SAMPLE DATA
ICP-MS

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ICP-MS Standard and Spike True Values

Element	Cal. Std. 100 ppb	Initial Calibration Standard	Continuing Calibration Standard	Interference Check Sample A	Interference Check Sample AB	Laboratory Control Sample and Duplicate	Matrix Spike Sample and Duplicate	Post Digestion Spike
Aluminum	100	40	50	100,000 Aluminum	--	40	40	200
Antimony	100	40	50	100,000 Calcium	100	40	40	200
Arsenic	100	40	50	100,000 Iron	100	40	40	200
Barium	100	40	50	100,000 Magnesium	100	40	40	200
Beryllium	100	40	50	100,000 Sodium	100	40	40	200
Cadmium	100	40	50	100,000 Phosphorus	100	40	40	200
Chromium	100	40	50	100,000 Potassium	100	40	40	200
Cobalt	100	40	50	100,000 Sulfur	100	40	40	200
Copper	100	40	50	200,000 Carbon	100	40	40	200
Lead	100	40	50	1,000,000 Chloride	100	40	40	200
Manganese	100	40	50	2000 Molybdenum	--	40	40	200
Molybdenum	100	40	50	2000 Titanium	100	40	40	200
Nickel	100	40	50		100	40	40	200
Selenium	100	40	50		100	40	40	200
Silver	100	40	50		100	40	40	50
Thallium	100	40	50		100	40	40	200
Tin	100	40	50		100	40	40	200
Uranium	100	40	50		100	40	40	200
Vanadium	100	40	50		100	40	40	200
Zinc	100	40	50		100	40	40	200

All units are ug/L.

Due to the presence of trace contaminants in the ICSA solution, the % recovery for the ICSAB solution is calculated by subtracting the levels in the ICSA from the ICSAB.

Quality Control Standards

ICV = Initial Calibration Verification (Second Source)
CCV = Continuing Calibration Verification

ICB = Initial Calibration Blank
CCB = Continuing Calibration Blank

Denver

RUN SUMMARY

Method: 6020 (ICP/MS) | ICPMS_024 (024) | Reported: 11/10/09 12:39:51

File ID: AG110909A **Analyst: LRD**

#	Sample ID	Lot No.	Batch		DF	Analyzed Date	Comment	Q
3	Cal Blank				1.0	11/09/09 20:32		☐
4	100 ppb				1.0	11/09/09 20:35		☐
5	ICV				1.0	11/09/09 20:37		☐
6	RLIV				1.0	11/09/09 20:40		☐
7	ICB				1.0	11/09/09 20:43		☐
8	RL STD				1.0	11/09/09 20:46		☐
9	AFCEE RL				1.0	11/09/09 20:48		☐
10	ALTSe				1.0	11/09/09 20:51		☐
11	ICSA				1.0	11/09/09 20:54		☐
12	ICSAB				1.0	11/09/09 20:57		☐
13	RINSE				1.0	11/09/09 20:59		☐
14	LR1				1.0	11/09/09 21:02		☐
15	RINSE				1.0	11/09/09 21:05		☐
16	CCV				1.0	11/09/09 21:08		☐
17	CCB				1.0	11/09/09 21:10		☐
18	RLCV				1.0	11/09/09 21:13		☐
19	LNNP6B	D9K020000	9306276	MS	1.0	11/09/09 21:16		☐
20	LNNP6C	D9K020000	9306276	MS	1.0	11/09/09 21:19		☐
21	LNLN9 2X	D9J300353-1	9306276	MS	2.0	11/09/09 21:21		☐
22	LNLR4 2X	D9J300356-1	9306276	MS	2.0	11/09/09 21:24		☐
23	LNME4	D9J310138-1	9306276	MS	1.0	11/09/09 21:27		☐
24	LNME4P5	D9J310138	9306276		5.0	11/09/09 21:30		☐
25	LNME4Z	D9J310138-1	9306276		1.0	11/09/09 21:32		☐
26	LNME4S	D9J310138-1	9306276	MS	1.0	11/09/09 21:35		☐
27	LNME4D	D9J310138-1	9306276	MS	1.0	11/09/09 21:38		☐
28	CCV				1.0	11/09/09 21:41		☐
29	CCB				1.0	11/09/09 21:43		☐
30	RLCV				1.0	11/09/09 21:50		☐
31	LM900B	D9J260000	9299244	MS	1.0	11/09/09 21:52		☐
32	LM900C	D9J260000	9299244	MS	1.0	11/09/09 21:55		☐
33	LM900L	D9J260000	9299244	MS	1.0	11/09/09 21:58		☐
34	LM9J9	D9J240206-1	9299244	MS	1.0	11/09/09 22:01		☐
35	~~LM9KA 2X~~	~~D9J240206-2~~	~~9299244~~	~~MS~~	~~2.0~~	~~11/09/09 22:03~~		☐
36	~~LM9KC 2X~~	~~D9J240206-3~~	~~9299244~~	~~MS~~	~~2.0~~	~~11/09/09 22:06~~	DNU LRD 11-10-09	☐
37	LM9KD	D9J240206-4	9299244	MS	1.0	11/09/09 22:09		☐
38	~~LM9KE 2X~~	~~D9J240206-5~~	~~9299244~~	~~MS~~	~~2.0~~	~~11/09/09 22:12~~		☐
39	~~LM9KF 2X~~	~~D9J240206-6~~	~~9299244~~	~~MS~~	~~2.0~~	~~11/09/09 22:14~~		☐
40	LM9KG	D9J240206-7	9299244	MS	1.0	11/09/09 22:17		☐
41	CCV				1.0	11/09/09 22:20		☐
42	CCB				1.0	11/09/09 22:23		☐
43	RLCV				1.0	11/09/09 22:26		☐
44	LM9KH	D9J240206-8	9299244	MS	1.0	11/09/09 22:28		☐
45	LM9KJ	D9J240206-9	9299244	MS	1.0	11/09/09 22:31		☐
46	LM9KK	D9J240206-10	9299244	MS	1.0	11/09/09 22:34		☐
47	LM9KL	D9J240206-11	9299244	MS	1.0	11/09/09 22:37		☐
48	LM9KP	D9J240206-13	9299244	MS	1.0	11/09/09 22:39		☐

Denver

RUN SUMMARY

Method: 6020 (ICP/MS) ICPMS_024 (024) Reported: 11/10/09 12:39:51

File ID: AG110909A **Analyst: LRD**

#	Sample ID	Lot No.	Batch		DF	Analyzed Date	Comment	Q
49	LM9KPP5	D9J240206	9299244		5.0	11/09/09 22:42		☐
50	LM9KPZ	D9J240206-13	9299244		1.0	11/09/09 22:45		☐
51	LM9KPS	D9J240206-13	9299244	MS	1.0	11/09/09 22:48		☐
52	LM9KPD	D9J240206-13	9299244	MS	1.0	11/09/09 22:50		☐
53	CCV				1.0	11/09/09 22:53		☐
54	CCB				1.0	11/09/09 22:56		☐
55	RLCV				1.0	11/09/09 22:59		☐
56	LM9KA	D9J240206-2	9299244	MS	1.0	11/09/09 23:01		☐
57	LM9KC	D9J240206-3	9299244	MS	1.0	11/09/09 23:04		☐
58	LM9KE	D9J240206-5	9299244	MS	1.0	11/09/09 23:07		☐
59	LM9KF	D9J240206-6	9299244	MS	1.0	11/09/09 23:10		☐
60	CCV				1.0	11/09/09 23:12		☐
61	CCB				1.0	11/09/09 23:15		☐
62	RLCV				1.0	11/09/09 23:18		☐
64	Cal Blank				1.0	11/09/09 23:23		☐
65	100 ppb				1.0	11/09/09 23:26		☐
66	CCV				1.0	11/09/09 23:29		☐
67	CCB				1.0	11/09/09 23:32		☐
68	RLCV				1.0	11/09/09 23:34		☐
69	ICSA				1.0	11/09/09 23:37		☐
70	ICSAB				1.0	11/09/09 23:40		☐
71	WASH				1.0	11/09/09 23:43		☐
72	CCV				1.0	11/09/09 23:45		☐
73	CCB				1.0	11/09/09 23:48		☐
74	RLCV				1.0	11/09/09 23:51		☐
75	LN04NB	D9K060000	9310238	04	1.0	11/09/09 23:54		☐
76	LN04NC	D9K060000	9310238	04	1.0	11/09/09 23:57		☐
77	LNEA7	D9J280172-1	9310238	04	1.0	11/10/09 00:00		☐
78	LNEA7P5	D9J280172	9310238		5.0	11/10/09 00:02		☐
79	LNEA7Z	D9J280172-1	9310238		1.0	11/10/09 00:05		☐
80	LNEA7S	D9J280172-1	9310238	04	1.0	11/10/09 00:08		☐
81	LNEA7D	D9J280172-1	9310238	04	1.0	11/10/09 00:11		☐
82	LNECN	D9J280172-2	9310238	04	1.0	11/10/09 00:13		☐
83	CCV				1.0	11/10/09 00:16		☐
84	CCB				1.0	11/10/09 00:20		☐
85	RLCV				1.0	11/10/09 00:22		☐
86	LNECV	D9J280172-3	9310238	04	1.0	11/10/09 00:25		☐
87	LNECX	D9J280172-4	9310238	04	1.0	11/10/09 00:28		☐
88	LNEC0	D9J280172-5	9310238	04	1.0	11/10/09 00:31		☐
89	LNEC1	D9J280172-6	9310238	04	1.0	11/10/09 00:34		☐
90	LNEC3	D9J280172-7	9310238	04	1.0	11/10/09 00:36		☐
91	LNEC5	D9J280172-8	9310238	04	1.0	11/10/09 00:39		☐
92	CCV				1.0	11/10/09 00:42		☐
93	CCB				1.0	11/10/09 00:45		☐
94	RLCV				1.0	11/10/09 00:48		☐
95	LNKFHB	D9J300000	9303368	04	1.0	11/10/09 00:51		☐

Denver

RUN SUMMARY

Method: 6020 (ICP/MS) ICPMS_024 (024) Reported: 11/10/09 12:39:51

File ID: AG110909A **Analyst: LRD**

#	Sample ID	Lot No.	Batch		DF	Analyzed Date	Comment	Q
96	LNKFHC	D9J300000	9303368	04	1.0	11/10/09 00:53		☐
97	LNC5C	D9J270250-1	9303368	04	1.0	11/10/09 00:56		☐
98	LNC5E	D9J270250-2	9303368	04	1.0	11/10/09 00:59		☐
99	LNC5F	D9J270250-3	9303368	04	1.0	11/10/09 01:02		☐
100	LNEHJ	D9J280192-1	9303368	04	1.0	11/10/09 01:05		☐
101	LNEHJP5	D9J280192	9303368		5.0	11/10/09 01:07		☐
102	LNEHJZ	D9J280192-1	9303368		1.0	11/10/09 01:10		☐
103	LNEHJS	D9J280192-1	9303368	04	1.0	11/10/09 01:13		☐
104	CCV				1.0	11/10/09 01:16		☐
105	CCB				1.0	11/10/09 01:18		☐
106	RLCV				1.0	11/10/09 01:21		☐
107	LNEHJD	D9J280192-1	9303368	04	1.0	11/10/09 01:24		☐
108	LNGXD 5X	D9J290182-1	9303368	04	5.0	11/10/09 01:27		☐
109	LNGXG 5X	D9J290182-2	9303368	04	5.0	11/10/09 01:29		☐
110	LNG17	D9J290192-1	9303368	04	1.0	11/10/09 01:32		☐
111	LNG2D	D9J290192-2	9303368	04	1.0	11/10/09 01:35		☐
112	~~LNH27 2X~~	~~D9J290314-1~~	~~9303368~~	~~04~~	~~2.0~~	~~11/10/09 01:38~~	DNU LRD 11/10/09	☐
113	~~LNH29 2X~~	~~D9J290314-2~~	~~9303368~~	~~04~~	~~2.0~~	~~11/10/09 01:40~~		☐
114	LNH3A	D9J290314-3	9303368	04	1.0	11/10/09 01:43		☐
115	CCV				1.0	11/10/09 01:46		☐
116	CCB				1.0	11/10/09 01:49		☐
117	RLCV				1.0	11/10/09 01:52		☐
118	RINSE				1.0	11/10/09 01:54		☐
119	RINSE				1.0	11/10/09 01:57		☐
121	Cal Blank				1.0	11/10/09 02:03		☐
122	100 ppb				1.0	11/10/09 02:05		☐
123	CCV				1.0	11/10/09 02:08		☐
124	CCB				1.0	11/10/09 02:11		☐
125	RLCV				1.0	11/10/09 02:14		☐
126	LNNPLBF	D9K020000	9306272	MD	1.0	11/10/09 02:16		☐
127	LNNPLCF	D9K020000	9306272	MD	1.0	11/10/09 02:19		☐
128	LNLPFF	D9J300353-2	9306272	MD	1.0	11/10/09 02:22		☐
129	LNLPFP5F	D9J300353	9306272		5.0	11/10/09 02:25		☐
130	LNLPFZF	D9J300353-2	9306272		1.0	11/10/09 02:27		☐
131	LNLPFSF	D9J300353-2	9306272	MD	1.0	11/10/09 02:30		☐
132	LNLPFDF	D9J300353-2	9306272	MD	1.0	11/10/09 02:33		☐
133	CCV				1.0	11/10/09 02:36		☐
134	CCB				1.0	11/10/09 02:38		☐
135	RLCV				1.0	11/10/09 02:41		☐
136	LNNQ5BF	D9K020000	9306285	MD	1.0	11/10/09 02:44		☐
137	LNNQ5CF	D9K020000	9306285	MD	1.0	11/10/09 02:47		☐
138	LNLGXF 2X	D9J300326-1	9306285	MD	2.0	11/10/09 02:50		☐
139	LNLG3F	D9J300326-2	9306285	MD	1.0	11/10/09 02:52		☐
140	LNLG4F	D9J300326-3	9306285	MD	1.0	11/10/09 02:55		☐
141	LNLHHF	D9J300329-1	9306285	MD	1.0	11/10/09 02:58		☐
142	LNLHMF	D9J300329-2	9306285	MD	1.0	11/10/09 03:01		☐

Denver

RUN SUMMARY

Method: 6020 (ICP/MS) | ICPMS_024 (024) | Reported: 11/10/09 12:39:51

File ID: AG110909A **Analyst: LRD**

#	Sample ID	Lot No.	Batch		DF	Analyzed Date	Comment	Q
143	CCV				1.0	11/10/09 03:03		☐
144	CCB				1.0	11/10/09 03:06		☐
145	RLCV				1.0	11/10/09 03:09		☐
146	LNLHPF	D9J300329-3	9306285	MD	1.0	11/10/09 03:12		☐
147	LNLJJF	D9J300340-1	9306285	MD	1.0	11/10/09 03:15		☐
148	LNLJJP5F	D9J300340	9306285		5.0	11/10/09 03:17		☐
149	LNLJJZF	D9J300340-1	9306285		1.0	11/10/09 03:20		☐
150	LNLJJSF	D9J300340-1	9306285	MD	1.0	11/10/09 03:23		☐
151	LNLJJDF	D9J300340-1	9306285	MD	1.0	11/10/09 03:25		☐
152	LNLJMF	D9J300340-2	9306285	MD	1.0	11/10/09 03:28		☐
153	CCV				1.0	11/10/09 03:31		☐
154	CCB				1.0	11/10/09 03:34		☐
155	RLCV				1.0	11/10/09 03:37		☐
156	LN0Q4BF	D9K060000	9310095	MD	1.0	11/10/09 03:39		☐
157	LN0Q4CF	D9K060000	9310095	MD	1.0	11/10/09 03:42		☐
158	LN0Q4LF	D9K060000	9310095	MD	1.0	11/10/09 03:45		☐
159	LNR5CF	D9K040450-3	9310095	MD	1.0	11/10/09 03:48		☐
160	LNR5CP5F	D9K040450	9310095		5.0	11/10/09 03:50		☐
161	LNR5CZF	D9K040450-3	9310095		1.0	11/10/09 03:53		☐
162	CCV				1.0	11/10/09 03:56		☐
163	CCB				1.0	11/10/09 03:59		☐
164	RLCV				1.0	11/10/09 04:01		☐
165	RINSE				1.0	11/10/09 04:04		☐
166	RINSE				1.0	11/10/09 04:07		☐
168	Cal Blank				1.0	11/10/09 04:12		☐
169	100 ppb				1.0	11/10/09 04:15		☐
170	CCV				1.0	11/10/09 04:18		☐
171	CCB				1.0	11/10/09 04:21		☐
172	RLCV				1.0	11/10/09 04:23		☐
173	LN16EB	D9K060000	9310417	04	2.5	11/10/09 04:26		☐
174	LN16EC	D9K060000	9310417	04	2.5	11/10/09 04:29		☐
175	LN1FW	D9K060478-7	9310417	04	2.5	11/10/09 04:32		☐
176	LN1LX	D9K060478-17	9310417	04	2.5	11/10/09 04:35		☐
177	LN1MD	D9K060478-19	9310417	04	2.5	11/10/09 04:37		☐
178	LN1MH	D9K060478-21	9310417	04	2.5	11/10/09 04:40		☐
179	LN1MHS	D9K060478-21	9310417	04	2.5	11/10/09 04:43		☐
180	LN1MHD	D9K060478-21	9310417	04	2.5	11/10/09 04:46		☐
181	CCV				1.0	11/10/09 04:48		☐
182	CCB				1.0	11/10/09 04:51		☐
183	RLCV				1.0	11/10/09 04:54		☐
184	LN1T6BF	D9K060000	9310368	87	2.5	11/10/09 04:57		☐
185	LN1T6CF	D9K060000	9310368	87	2.5	11/10/09 05:00		☐
186	LNVQWF	D9K040610-1	9310368	87	2.5	11/10/09 05:02		☐
187	LNVRHF	D9K040610-3	9310368	87	2.5	11/10/09 05:05		☐
188	LNVRLF	D9K040610-5	9310368	87	2.5	11/10/09 05:08		☐
189	LNVRLSF	D9K040610-5	9310368	87	2.5	11/10/09 05:11		☐

Denver

RUN SUMMARY

Method: 6020 (ICP/MS) | ICPMS_024 (024) | Reported: 11/10/09 12:39:51

File ID: AG110909A **Analyst:** LRD

#	Sample ID	Lot No.	Batch		DF	Analyzed Date	Comment	Q
190	LNVRLDF	D9K040610-5	9310368	87	2.5	11/10/09 05:14		
191	LNX48F	D9K050627-2	9310368	87	2.5	11/10/09 05:16		
192	LNX5JF	D9K050627-6	9310368	87	2.5	11/10/09 05:19		
193	CCV				1.0	11/10/09 05:22		
194	CCB				1.0	11/10/09 05:25		
195	RLCV				1.0	11/10/09 05:27		
196	LN4QNB	D9K090000	9313106	04	2.5	11/10/09 05:30		
197	LN4QNC	D9K090000	9313106	04	2.5	11/10/09 05:33		
198	LN314	D9K070460-2	9313106	04	2.5	11/10/09 05:36		
199	LN3L7 2X	D9K070423-1	9313106	04	5.0	11/10/09 05:39		
200	LN3L7S 2X	D9K070423-1	9313106	04	5.0	11/10/09 05:41		
201	LN3L7D 2X	D9K070423-1	9313106	04	5.0	11/10/09 05:44		
202	CCV				1.0	11/10/09 05:47		
203	CCB				1.0	11/10/09 05:50		
204	RLCV				1.0	11/10/09 05:52		
205	LN0PDBF	D9K060000	9310068	PD	2.5	11/10/09 05:55		
206	LN0PDCF	D9K060000	9310068	PD	2.5	11/10/09 05:58		
207	LNT1RF	D9K040539-2	9310068	PD	2.5	11/10/09 06:01		
208	LNT15F	D9K040539-3	9310068	PD	2.5	11/10/09 06:04	DNU	
209	LNT15SF	D9K040539-3	9310068	PD	2.5	11/10/09 06:06		
210	LNT15DF	D9K040539-3	9310068	PD	2.5	11/10/09 06:09	LRD	
211	LNT2CF	D9K040539-4	9310068	PD	2.5	11/10/09 06:12	11-10-2009	
212	LNPC2F	D9K020476-1	9310068	PD	2.5	11/10/09 06:15		
213	LNPC4F	D9K020476-2	9310068	PD	2.5	11/10/09 06:18		
214	CCV				1.0	11/10/09 06:20		
215	CCB				1.0	11/10/09 06:23		
216	RLCV				1.0	11/10/09 06:26		
217	RINSE				1.0	11/10/09 06:29		
218	RINSE				1.0	11/10/09 06:31		
220	Cal Blank				1.0	11/10/09 06:37		
221	100 ppb				1.0	11/10/09 06:40		
222	CCV				1.0	11/10/09 06:42		
223	CCB				1.0	11/10/09 06:45		
224	RLCV				1.0	11/10/09 06:48		
225	LNW1QB	D9K050000	9309222	MS	1.0	11/10/09 06:51		
226	LNW1QC	D9K050000	9309222	MS	1.0	11/10/09 06:53		
227	LNR42	D9K040449-1	9309222	MS	1.0	11/10/09 06:56		
228	LNR42P5	D9K040449	9309222		5.0	11/10/09 06:59		
229	LNR42Z	D9K040449-1	9309222		1.0	11/10/09 07:02		
230	LNR42S	D9K040449-1	9309222	MS	1.0	11/10/09 07:04		
231	LNR42D	D9K040449-1	9309222	MS	1.0	11/10/09 07:07		
232	CCV				1.0	11/10/09 07:10		
233	CCB				1.0	11/10/09 07:13		
234	RLCV				1.0	11/10/09 07:16		
235	LNR48	D9K040449-2	9309222	MS	1.0	11/10/09 07:18		
236	LNR5E	D9K040449-3	9309222	MS	1.0	11/10/09 07:21		

Denver

RUN SUMMARY

Method: 6020 (ICP/MS) ICPMS_024 (024) Reported: 11/10/09 12:39:51

File ID: AG110909A **Analyst: LRD**

#	Sample ID	Lot No.	Batch		DF	Analyzed Date	Comment	Q
237	LNR5G	D9K040449-4	9309222	MS	1.0	11/10/09 07:24		☐
238	LNP8M	D9K030460-1	9309222	MS	1.0	11/10/09 07:27		☐
239	LNP8X	D9K030460-2	9309222	MS	1.0	11/10/09 07:30		☐
240	LNP81	D9K030460-3	9309222	MS	1.0	11/10/09 07:32		☐
241	CCV				1.0	11/10/09 07:35		☐
242	CCB				1.0	11/10/09 07:38		☐
243	RLCV				1.0	11/10/09 07:41		☐
244	LNN6NB	D9K020000	9306426	MS	1.0	11/10/09 07:44		☐
245	LNN6NC	D9K020000	9306426	MS	1.0	11/10/09 07:46		☐
246	LNN6NL	D9K020000	9306426	MS	1.0	11/10/09 07:49		☐
247	LNM4D	D9J310189-1	9306426	MS	1.0	11/10/09 07:52		☐
248	LNM4DP5	D9J310189	9306426		5.0	11/10/09 07:55		☐
249	LNM4DZ	D9J310189-1	9306426		1.0	11/10/09 07:58		☐
250	LNM4E	D9J310189-2	9306426	MS	1.0	11/10/09 08:00		☐
251	LNM5E	D9J310191-14	9306426	MS	1.0	11/10/09 08:03		☐
252	CCV				1.0	11/10/09 08:06		☐
253	CCB				1.0	11/10/09 08:09		☐
254	RLCV				1.0	11/10/09 08:11		☐
255	LNRQVB	D9K040000	9308149	MS	1.0	11/10/09 08:14		☐
256	LNRQVC	D9K040000	9308149	MS	1.0	11/10/09 08:17		☐
257	LNQ0L	D9K030552-1	9308149	MS	1.0	11/10/09 08:20		☐
258	LNQ0LP5	D9K030552	9308149		5.0	11/10/09 08:22		☐
259	LNQ0LZ	D9K030552-1	9308149		1.0	11/10/09 08:25		☐
260	LNQ0LS	D9K030552-1	9308149	MS	1.0	11/10/09 08:28		☐
261	LNQ0LD	D9K030552-1	9308149	MS	1.0	11/10/09 08:30		☐
262	LNQ0R	D9K030554-1	9308149	MS	1.0	11/10/09 08:33		☐
263	LNQ0T	D9K030554-2	9308149	MS	1.0	11/10/09 08:36		☐
264	CCV				1.0	11/10/09 08:39		☐
265	CCB				1.0	11/10/09 08:41		☐
266	RLCV				1.0	11/10/09 08:44		☐
267	LNWG5BF	D9K050000	9309184	87	2.5	11/10/09 08:47		☐
268	LNWG5CF	D9K050000	9309184	87	2.5	11/10/09 08:50		☐
269	LNT4AF	D9K040553-1	9309184	87	2.5	11/10/09 08:52		☐
270	LNT42F	D9K040553-2	9309184	87	2.5	11/10/09 08:55		☐
271	LNT42SF	D9K040553-2	9309184	87	2.5	11/10/09 08:58		☐
272	LNT42DF	D9K040553-2	9309184	87	2.5	11/10/09 09:01		☐
273	LNT5HF	D9K040553-3	9309184	87	2.5	11/10/09 09:03		☐
274	CCV				1.0	11/10/09 09:06		☐
275	CCB				1.0	11/10/09 09:09		☐
276	RLCV				1.0	11/10/09 09:12		☐
277	LNT5LF	D9K040553-4	9309184	87	2.5	11/10/09 09:14		☐
278	LNT5VF	D9K040553-5	9309184	87	2.5	11/10/09 09:17		☐
279	LNT51F	D9K040553-6	9309184	87	2.5	11/10/09 09:20		☐
280	LNT55F	D9K040553-7	9309184	87	2.5	11/10/09 09:23		☐
281	LNT57F	D9K040553-8	9309184	87	2.5	11/10/09 09:26		☐
282	LNT58F	D9K040553-9	9309184	87	2.5	11/10/09 09:28		☐

Denver

RUN SUMMARY

Method: 6020 (ICP/MS) ICPMS_024 (024) Reported: 11/10/09 12:39:51

File ID: AG110909A **Analyst: LRD**

#	Sample ID	Lot No.	Batch		DF	Analyzed Date	Comment	Q
283	LNT59F	D9K040553-10	9309184	87	2.5	11/10/09 09:31		☐
284	CCV				1.0	11/10/09 09:34		☐
285	CCB				1.0	11/10/09 09:37		☐
286	RLCV				1.0	11/10/09 09:39		☐
287	D9J270274-0				1.0	11/10/09 09:42		☐
288	CCV				1.0	11/10/09 09:45		☐
289	CCB				1.0	11/10/09 09:48		☐
290	RLCV				1.0	11/10/09 09:50		☐

TestAmerica Denver

Standards Preparation Logbook Record

Nov-10-2009

Logbook: \\Densvr06\StdsLog\metals.std

STD6653-08, 1000 Se

Analyst: trudelll

Vendor: Inorganic Ventures Lot No.: B2-SE02003 Vendor's Expiration Date: 12-01-2009
Solvent: 2% HNO3
Date Prep./Opened: 11-25-2008 Date Received: 11-25-2008
Date Expires(1): 12-01-2009 (None)
Date Expires(2): 12-01-2009 (None)
(METALS)-Inventory ID: 803

Component	Initial Conc (mg/L)	Final Conc (mg/L)
Se	1,000.0	1,000.0

STD1198-09, 1000 mg/L Sn

Analyst: trudelll

Vendor: Inorganic Ventures Lot No.: B2-SN02016 Vendor's Expiration Date: 03-01-2010
Solvent: 1% HNO3
Date Prep./Opened: 03-02-2009 Date Received: 03-02-2009
Date Expires(1): 03-01-2010 (None)
Date Expires(2): 03-01-2010 (None)
(METALS)-Inventory ID: 833

Component	Initial Conc (mg/L)	Final Conc (mg/L)
Sn	1,000.0	1,000.0

STD1853-09, 1 mg/l Se

Analyst: DIAZL

Solvent: 5% HN03 Lot No.: H02026 Volume (ml): 100.00
Date Prep./Opened: 04-01-2009
Date Expires(1): 12-01-2009 (1 Year)
pipette: Met 21

Parent Std No.: STD6653-08, 1000 Se Aliquot Amount (ml): 0.1000
Parent Date Expires(1): 12-01-2009 Parent Date Expires(2): 12-01-2009

Component	Initial Conc (mg/L)	Final Conc (mg/L)
Se	1,000.0	1.0000

STD2483-09, 1000 Zn (Inorganic Ventures)

Analyst: trudelll

Vendor: Inorganic Ventures Lot No.: C2-ZN02051 Vendor's Expiration Date: 05-01-2010
Solvent: 2% HNO3
Date Prep./Opened: 04-28-2009 Date Received: 04-28-2009
Date Expires(1): 05-01-2010 (None)
Date Expires(2): 05-01-2010 (None)
(METALS)-Inventory ID: 856

Component	Initial Conc (mg/L)	Final Conc (mg/L)
1000 Zn	1,000.0	1,000.0

STD6662-09, ICP-MS (024) INT STD BRC

Analyst: DIAZL

Solvent: 5% HNO3 Lot No.: H14024 Volume (ml): 250.00
Date Prep./Opened: 10-30-2009
Date Expires(1): 03-16-2010 (1 Year)
Date Verified: 12-31--4714 by - (Verification ID: 0)
pipettes: Met 20

Parent Std No.: STD1469-09, Germanium Stock Aliquot Amount (ml): 0.7500
Parent Date Expires(1): 03-16-2010 Parent Date Expires(2): 04-01-2010

Component	Initial Conc (mg/L)	Final Conc (ug/L)
Ge	1,000.0	3,000.0

Parent Std No.: STD1972-09, Lithium 6 Stock Aliquot Amount (ml): 1.0000
Parent Date Expires(1): 04-07-2010 Parent Date Expires(2): 05-01-2010

Component	Initial Conc (mg/L)	Final Conc (ug/L)
Lithium6	1,000.0	4,000.0

Parent Std No.: STD1973-09, Indium Stock Aliquot Amount (ml): 0.2500
Parent Date Expires(1): 04-07-2010 Parent Date Expires(2): 05-01-2010

Component	Initial Conc (mg/L)	Final Conc (ug/L)
In	1,000.0	1,000.0

Parent Std No.: STD6531-09, Scandium stock Aliquot Amount (ml): 0.5000
Parent Date Expires(1): 10-26-2010 Parent Date Expires(2): 11-01-2010

Component	Initial Conc (mg/L)	Final Conc (ug/L)
Sc	1,000.0	2,000.0

Parent Std No.: STD6532-09, Holmium stock Aliquot Amount (ml): 0.2500
Parent Date Expires(1): 10-26-2010 Parent Date Expires(2): 11-01-2010

Component	Initial Conc (mg/L)	Final Conc (ug/L)
Ho	1,000.0	1,000.0

STD6674-09, ICP-MS 1ppm Sn/Zn

Analyst: DIAZL

Solvent: 5% HNO3 Lot No.: H14024 Volume (ml): 50.000
Date Prep./Opened: 10-31-2009
Date Expires(1): 03-01-2010 (1 Year)
Date Expires(2): 03-01-2010 (None)

Parent Std No.: STD1198-09, 1000 mg/L Sn Aliquot Amount (ml): 0.0500
Parent Date Expires(1): 03-01-2010 Parent Date Expires(2): 03-01-2010

Component	Initial Conc (mg/L)	Final Conc (mg/L)
Sn	1,000.0	1.0000

Parent Std No.: STD2483-09, 1000 Zn (Inorganic Ventures) Aliquot Amount (ml): 0.0500
Parent Date Expires(1): 05-01-2010 Parent Date Expires(2): 05-01-2010

Component	Initial Conc (mg/L)	Final Conc (mg/L)
1000 Zn	1,000.0	1.0000

STD6795-09, ICP-MS ICSA

Analyst: DIAZL

Solvent: 5% HNO3 Lot No.: H14024 Volume (ml): 50.000
Date Prep./Opened: 11-05-2009
Date Expires(1): 12-05-2009 (1 Month)
Date Expires(2): 11-01-2010 (None)
pipettes: Met 8

Parent Std No.: STD6475-09, ICPMS Interferent Check Standard Aliquot Amount (ml): 5.0000
Parent Date Expires(1): 10-23-2010 Parent Date Expires(2): 11-01-2010

Component	Initial Conc (ug/ml)	Final Conc (ug/L)
Al	1,000.0	100,000
C	2,000.0	200,000
Ca	1,000.0	100,000
Cl	10,000	1,000,000
Fe	1,000.0	100,000
K	1,000.0	100,000
Mg	1,000.0	100,000
Mo	20.000	2,000.0
Na	1,000.0	100,000
P	1,000.0	100,000
S	1,000.0	100,000
Ti	20.000	2,000.0

STD6858-09, ICP-MS BLANK

Analyst: DIAZL

Solvent: Water Volume (ml): 1,000.0
Date Prep./Opened: 11-09-2009
Date Expires(1): 05-09-2010 (6 Months)
Date Expires(2): 05-09-2010 (6 Months)
Date Verified: 12-31--4714 by - (Verification ID: 0)

Parent Std No.: STD6857-09, NITRIC ACID — Aliquot Amount (ml): 50.000

Component	Initial Conc (%)	Final Conc (%)
HNO3	100.00	5.0000

STD6859-09, ICP-MS CAL STD

Analyst: DIAZL

Solvent: 5% HNO3 — Lot No.: H14024 — Volume (ml): 100.00
Date Prep./Opened: 11-09-2009
Date Expires(1): 11-10-2009 (1 Day)

Parent Std No.: STD3109-09, ICP-MS CALSTD 1 — Aliquot Amount (ml): 0.5000

Component	Initial Conc (mg/L)	Final Conc (mg/L)
Ag	20.000	0.1000
As	20.000	0.1000
Ba	20.000	0.1000
Be	20.000	0.1000
Cd	20.000	0.1000
Co	20.000	0.1000
Cr	20.000	0.1000
Cu	20.000	0.1000
Mn	20.000	0.1000
Ni	20.000	0.1000
Pb	20.000	0.1000
Se	20.000	0.1000
Th	20.000	0.1000
Tl	20.000	0.1000
U	20.000	0.1000
V	20.000	0.1000
Zn	20.000	0.1000

Parent Std No.: STD3110-09, ICP-MS CALSTD 2 — Aliquot Amount (ml): 0.5000

Component	Initial Conc (mg/L)	Final Conc (mg/L)
Mo	20.000	0.1000
Sb	20.000	0.1000
Sn	20.000	0.1000

STD6860-09, ICP-MS CCV STD

Analyst: DIAZL

Solvent: 5% HNO3 — Lot No.: H14024 — Volume (ml): 100.00
Date Prep./Opened: 11-09-2009
Date Expires(1): 11-10-2009 (1 Day)

Parent Std No.: STD3109-09, ICP-MS CALSTD 1 — Aliquot Amount (ml): 0.2500

Component	Initial Conc (mg/L)	Final Conc (mg/L)
Ag	20.000	0.0500
As	20.000	0.0500

Ba	20.000	0.0500
Be	20.000	0.0500
Cd	20.000	0.0500
Co	20.000	0.0500
Cr	20.000	0.0500
Cu	20.000	0.0500
Mn	20.000	0.0500
Ni	20.000	0.0500
Pb	20.000	0.0500
Se	20.000	0.0500
Th	20.000	0.0500
Tl	20.000	0.0500
U	20.000	0.0500
V	20.000	0.0500
Zn	20.000	0.0500

Parent Std No.: STD3110-09, ICP-MS CALSTD 2 Aliquot Amount (ml): 0.2500

Component	Initial Conc (mg/L)	Final Conc (mg/L)
Mo	20.000	0.0500
Sb	20.000	0.0500
Sn	20.000	0.0500

STD6861-09, ICP-MS RL STD

Analyst: DIAZL

Solvent: 5% HNO3 Lot No.: H14024 Volume (ml): 10.000
Date Prep./Opened: 11-09-2009
Date Expires(1): 11-10-2009 (1 Day)

Parent Std No.: STD6674-09, ICP-MS 1ppm Sn/Zn Aliquot Amount (ml): 0.0900
Parent Date Expires(1): 03-01-2010 Parent Date Expires(2): 03-01-2010

Component	Initial Conc (mg/L)	Final Conc (mg/L)
Sn	1.0000	0.0090
1000 Zn	1.0000	0.0090

Parent Std No.: STD6859-09, ICP-MS CAL STD Aliquot Amount (ml): 0.1000

Component	Initial Conc (mg/L)	Final Conc (mg/L)
Ag	0.1000	0.0010
As	0.1000	0.0010
Ba	0.1000	0.0010
Be	0.1000	0.0010
Cd	0.1000	0.0010
Co	0.1000	0.0010
Cr	0.1000	0.0010
Cu	0.1000	0.0010
Mn	0.1000	0.0010
Ni	0.1000	0.0010
Pb	0.1000	0.0010
Se	0.1000	0.0010
Th	0.1000	0.0010

Tl	0.1000	0.0010
U	0.1000	0.0010
V	0.1000	0.0010
Zn	0.1000	0.0010
Mo	0.1000	0.0010
Sb	0.1000	0.0010
Sn	0.1000	0.0010

STD6862-09, ICP-MS AFCEE RL STD

Analyst: DIAZL

Solvent: 5% HNO3 Lot No.: H14024 Volume (ml): 10.000
Date Prep./Opened: 11-09-2009
Date Expires(1): 11-10-2009 (1 Day)

Parent Std No.: STD6861-09, ICP-MS RL STD Aliquot Amount (ml): 2.0000

Component	Initial Conc (mg/L)	Final Conc (mg/L)
Sn	0.0090	0.0018
1000 Zn	0.0090	0.0018
Ag	0.0010	0.0002
As	0.0010	0.0002
Ba	0.0010	0.0002
Be	0.0010	0.0002
Cd	0.0010	0.0002
Co	0.0010	0.0002
Cr	0.0010	0.0002
Cu	0.0010	0.0002
Mn	0.0010	0.0002
Ni	0.0010	0.0002
Pb	0.0010	0.0002
Se	0.0010	0.0002
Th	0.0010	0.0002
Tl	0.0010	0.0002
U	0.0010	0.0002
V	0.0010	0.0002
Zn	0.0010	0.0002
Mo	0.0010	0.0002
Sb	0.0010	0.0002
Sn	0.0010	0.0002

STD6863-09, ICP-MS ICSAB

Analyst: DIAZL

Solvent: 5% HNO3 Lot No.: H14024 Volume (ml): 10.000
Date Prep./Opened: 11-09-2009
Date Expires(1): 11-10-2009 (1 Day)

Parent Std No.: STD3109-09, ICP-MS CALSTD 1 Aliquot Amount (ml): 0.0500

Component	Initial Conc (mg/L)	Final Conc (mg/L)
Ag	20.000	0.1000

As	20.000	0.1000
Ba	20.000	0.1000
Be	20.000	0.1000
Cd	20.000	0.1000
Co	20.000	0.1000
Cr	20.000	0.1000
Cu	20.000	0.1000
Mn	20.000	0.1000
Ni	20.000	0.1000
Pb	20.000	0.1000
Se	20.000	0.1000
Th	20.000	0.1000
Tl	20.000	0.1000
U	20.000	0.1000
V	20.000	0.1000
Zn	20.000	0.1000

Parent Std No.: STD3110-09, ICP-MS CALSTD 2 Aliquot Amount (ml): 0.0500

Component	Initial Conc (mg/L)	Final Conc (mg/L)
Mo	20.000	0.1000
Sb	20.000	0.1000
Sn	20.000	0.1000

Parent Std No.: STD4542-09, ICPMS Interferent Check Standard Aliquot Amount (ml): 1.0000
Parent Date Expires(1): 07-31-2010 Parent Date Expires(2): 08-01-2010

Component	Initial Conc (ug/ml)	Final Conc (mg/L)
Al	1,000.0	100.00
C	2,000.0	200.00
Ca	1,000.0	100.00
Cl	10,000	1,000.0
Fe	1,000.0	100.00
K	1,000.0	100.00
Mg	1,000.0	100.00
Mo	20.000	2.0000
Na	1,000.0	100.00
P	1,000.0	100.00
S	1,000.0	100.00
Ti	20.000	2.0000

STD6864-09, ICP-MS LR STD Analyst: DIAZL

Solvent: 5% HNO3 Lot No.: H14024 Volume (ml): 10.000
Date Prep./Opened: 11-09-2009
Date Expires(1): 11-10-2009 (1 Day)

Parent Std No.: STD3109-09, ICP-MS CALSTD 1 Aliquot Amount (ml): 0.5000

Component	Initial Conc (mg/L)	Final Conc (mg/L)
Ag	20.000	1.0000
As	20.000	1.0000

Ba	20.000	1.0000
Be	20.000	1.0000
Cd	20.000	1.0000
Co	20.000	1.0000
Cr	20.000	1.0000
Cu	20.000	1.0000
Mn	20.000	1.0000
Ni	20.000	1.0000
Pb	20.000	1.0000
Se	20.000	1.0000
Th	20.000	1.0000
Tl	20.000	1.0000
U	20.000	1.0000
V	20.000	1.0000
Zn	20.000	1.0000

Parent Std No.: STD3110-09, ICP-MS CALSTD 2 Aliquot Amount (ml): 0.5000

Component	Initial Conc (mg/L)	Final Conc (mg/L)
Mo	20.000	1.0000
Sb	20.000	1.0000
Sn	20.000	1.0000

STD6865-09, ICP-MS ICV STD

Analyst: DIAZL

Solvent: 5% HNO3 Lot No.: H14024 Volume (ml): 50.000
Date Prep./Opened: 11-09-2009
Date Expires(1): 11-10-2009 (1 Day)

Parent Std No.: STD3113-09, ICP-MS TA ICV A Aliquot Amount (ml): 0.1000
Parent Date Expires(1): 04-21-2010 Parent Date Expires(2): 04-21-2010

Component	Initial Conc (mg/L)	Final Conc (mg/L)
As	20.000	0.0400
Ba	20.000	0.0400
Be	20.000	0.0400
Cd	20.000	0.0400
Co	20.000	0.0400
Cr	20.000	0.0400
Cu	20.000	0.0400
Mn	20.000	0.0400
Ni	20.000	0.0400
Pb	20.000	0.0400
Se	20.000	0.0400
Th	20.000	0.0400
Tl	20.000	0.0400
U	20.000	0.0400
V	20.000	0.0400
Zn	20.000	0.0400

Parent Std No.: STD3114-09, ICP-MS TA ICV B Aliquot Amount (ml): 0.1000
Parent Date Expires(1): 04-21-2010 Parent Date Expires(2): 04-21-2010

Component	Initial Conc (mg/L)	Final Conc (mg/L)
Ag	20.000	0.0400
Mo	20.000	0.0400
Sb	20.000	0.0400
Sn	20.000	0.0400

STD6866-09, ALTSe

Analyst: DIAZL

Solvent: 5% HNO3 Lot No.: H14024 Volume (ml): 50.000
Date Prep./Opened: 11-09-2009
Date Expires(1): 11-10-2009 (1 Day)
pipettes: Met 21 and Met 8

Parent Std No.: STD1853-09, 1 mg/l Se Aliquot Amount (ml): 0.1000

Component	Initial Conc (mg/L)	Final Conc (mg/L)
Se	1.0000	0.0020

STD6867-09, LLCCV/RLICV

Analyst: DIAZL

Solvent: 5% HNO3 Lot No.: H14024 Volume (ml): 100.00
Date Prep./Opened: 11-09-2009
Date Expires(1): 11-10-2009 (1 Day)
pipettes: Met 20

Parent Std No.: STD6469-09, ICP-MS LLCCV 1 Aliquot Amount (ml): 1.0000
Parent Date Expires(1): 10-20-2010 Parent Date Expires(2): 11-01-2010

Component	Initial Conc (mg/L)	Final Conc (ug/L)
Ag	0.5000	5.0000
Al	3.0000	30.000
As	0.5000	5.0000
Ba	0.1000	1.0000
Be	0.1000	1.0000
Ca	5.0000	50.000
Cd	0.1000	1.0000
Co	0.1000	1.0000
Cr	0.2000	2.0000
Cu	0.2000	2.0000
Fe	5.0000	50.000
K	10.000	100.00
Mg	5.0000	50.000
Mn	0.1000	1.0000
Na	5.0000	50.000
Ni	0.2000	2.0000
Pb	0.1000	1.0000
Se	0.5000	5.0000
Th	0.2000	2.0000

Tl	0.1000	1.0000
U	0.1000	1.0000
V	0.5000	5.0000
Zn	1.0000	10.000

Parent Std No.: STD6470-09, ICP-MS LLCCV 2 Aliquot Amount (ml): 1.0000

Parent Date Expires(1): 10-20-2010 Parent Date Expires(2): 11-01-2010

Component	Initial Conc (mg/L)	Final Conc (ug/L)
Mo	0.2000	2.0000
Sb	0.2000	2.0000
Sn	1.0000	10.000

File AG1109094

Reviewed By: LRD 11/10/2009

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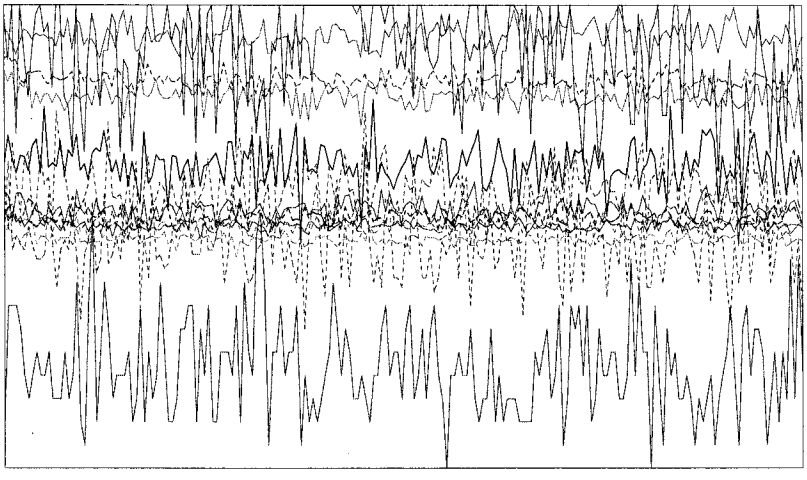
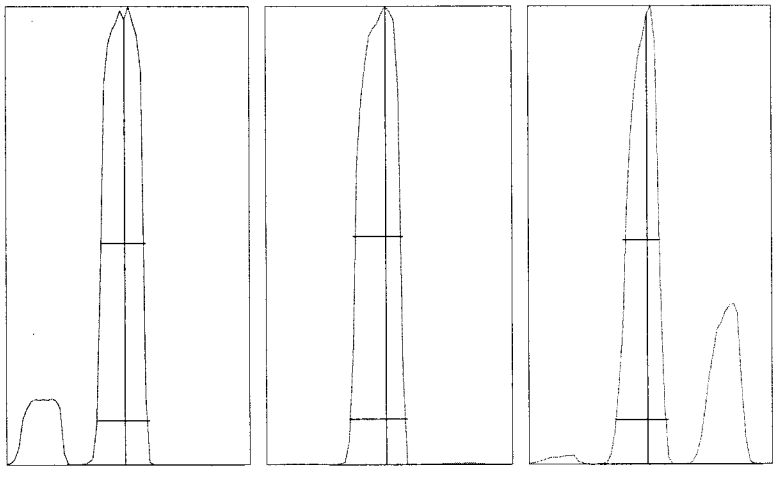
Tune Report

Tune File : NORM.U
Comment : AG110909



Integration Time:	0.1000 sec	
Sampling Period:	1.5300 sec	
n:	200	
Oxide:	156/140	1.475%
Doubly Charged:	70/140	1.275%

m/z	Range	Count	Mean	RSD%	Background
6	5,000	2614.0	2789.3	3.67	0.80
7	20,000	18632.0	18633.8	3.00	0.50
59	20,000	15677.0	16033.1	2.87	1.00
63	50	35.0	45.6	15.88	0.70
70	500	313.0	327.1	7.08	0.40
75	20	4.0	4.4	46.88	0.60
78	200	109.0	120.3	9.42	0.60
89	50,000	26589.0	26185.6	2.22	1.00
115	50,000	24518.0	24639.8	1.99	1.10
118	100	33.0	48.4	15.31	0.80
137	5,000	2637.0	2712.3	2.91	1.20
205	20,000	16431.0	16723.1	2.17	1.70
238	50,000	25920.0	26106.3	1.87	2.50
156/140	2	1.499%	1.485%	7.38	
70/140	2	1.311%	1.332%	7.11	



m/z:	7	89	205
Height:	18,699	26,853	17,221
Axis:	7.00	89.00	205.00
W-50%:	0.55	0.60	0.45
W-10%:	0.6500	0.700	0.6500

Integration Time:	0.1000 sec
Acquisition Time:	22.7600 sec

Y axis : Linear

Generated : Nov 09, 2009 18:55:12
Printed : Nov 09, 2009 18:55:15

Tune Report

Tune File : NORM.U
Comment : AG110909

Tuning Parameters

===Plasma Condition===			===Ion Lenses===			===Q-Pole Parameters===		
RF Power	:	1600 W	Extract 1	:	0 V	AMU Gain	:	134
RF Matching	:	1.7 V	Extract 2	:	-170 V	AMU Offset	:	125
Smpl Depth	:	8 mm	Omega Bias-ce	:	-30 V	Axis Gain	:	1.0007
Torch-H	:	-0.8 mm	Omega Lens-ce	:	1.4 V	Axis Offset	:	-0.03
Torch-V	:	-0.3 mm	Cell Entrance	:	-30 V	QP Bias	:	-3 V
Carrier Gas	:	0.81 L/min	QP Focus	:	7 V			
Makeup Gas	:	0.23 L/min	Cell Exit	:	-30 V	===Detector Parameters===		
Optional Gas	:	--- %				Discriminator	:	8 mV
Nebulizer Pump	:	0.1 rps	===Octopole Parameters===			Analog HV	:	1770 V
Sample Pump	:	--- rps	OctP RF	:	180 V	Pulse HV	:	1480 V
S/C Temp	:	2 degC	OctP Bias	:	-18 V			

===Reaction Cell===

Reaction Mode	:	OFF						
H2 Gas	:	0 mL/min	He Gas	:	0 mL/min	Optional Gas	:	--- %

Generated : Nov 09, 2009 18:55:12
Printed : Nov 09, 2009 18:55:18

P/A Factor Tuning Report

Acquired:Nov 9 2009 08:15 pm

Mass[amu]	Element	P/A Factor
6	Li	Sensitivity too high
7	(Li)	0.055201
9	Be	0.058738
23	Na	0.063579
24	Mg	0.064637
27	Al	0.065724
39	K	0.065936
43	Ca	Sensitivity too low
45	Sc	0.065581
51	V	0.066938
52	Cr	0.068029
53	(Cr)	Sensitivity too low
55	Mn	0.069052
57	Fe	Sensitivity too low
59	Co	0.070056
60	Ni	Sensitivity too low
63	Cu	Sensitivity too low
66	Zn	Sensitivity too low
72	Ge	0.069902
75	As	Sensitivity too low
77	(Se)	Sensitivity too low
78	Se	Sensitivity too low
82	(Se)	Sensitivity too low
83	(Se)	Sensitivity too low
93	Nb	Sensitivity too low
95	Mo	Sensitivity too low
98	(Mo)	0.071630
99	(Mo)	Sensitivity too low
105	Pd	Sensitivity too low
106	(Cd)	0.071534
107	Ag	Sensitivity too low
108	(Cd)	0.071984
111	Cd	Sensitivity too low
115	In	0.068812
118	Sn	0.070115
121	Sb	0.070721
137	Ba	Sensitivity too low
165	Ho	0.069269
182	W	Sensitivity too low
195	Pt	Sensitivity too low
205	Tl	0.071349
206	(Pb)	0.070737
207	(Pb)	0.071002
208	Pb	0.070189
232	Th	0.070155
238	U	0.070301

===Detector Parameters===
Discriminator: 8.0 mV
Analog HV: 1770 V
Pulse HV: 1480 V

P/A Factor Tuning Report

Acquired:Nov 9 2009 08:21 pm

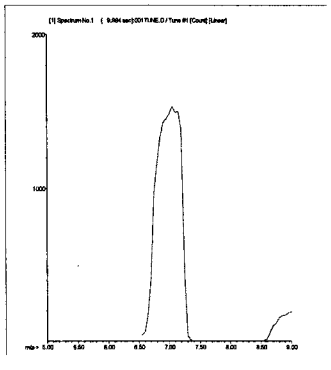
Mass[amu]	Element	P/A Factor
6	Li	Sensitivity too high
7	(Li)	0.055259
9	Be	0.058421
23	Na	0.062917
24	Mg	0.063700
27	Al	0.064930
39	K	0.065662
43	Ca	Sensitivity too low
45	Sc	0.065581
51	V	0.066016
52	Cr	0.066969
53	(Cr)	Sensitivity too low
55	Mn	0.067116
57	Fe	Sensitivity too low
59	Co	0.068255
60	Ni	0.068756
63	Cu	0.069073
66	Zn	0.068997
72	Ge	0.068697
75	As	0.069000
77	(Se)	Sensitivity too low
78	Se	Sensitivity too low
82	(Se)	Sensitivity too low
83	(Se)	Sensitivity too low
93	Nb	Sensitivity too low
95	Mo	0.071094
98	(Mo)	0.069583
99	(Mo)	0.069992
105	Pd	0.069782
106	(Cd)	0.069206
107	Ag	Sensitivity too low
108	(Cd)	0.069821
111	Cd	0.069450
115	In	0.068812
118	Sn	0.068484
121	Sb	0.068561
137	Ba	0.070024
165	Ho	0.068599
182	W	Sensitivity too low
195	Pt	Sensitivity too low
205	Tl	0.068219
206	(Pb)	0.067897
207	(Pb)	0.068227
208	Pb	0.070189
232	Th	0.070155
238	U	0.070301

===Detector Parameters===
Discriminator: 8.0 mV
Analog HV: 1770 V
Pulse HV: 1480 V

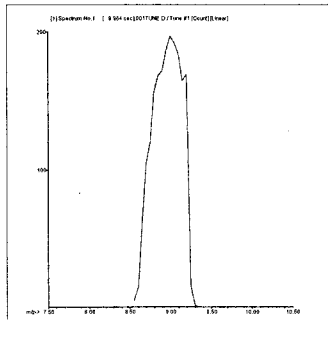
200.8 QC Tune Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\001TUNE.D
Date Acquired: Nov 9 2009 08:26 pm
Acq. Method: tun_isis.M
Operator: LRD
Sample Name: 200.8 TUNE
Misc Info:
Vial Number: 4
Current Method: C:\ICPCHEM\1\METHODS\tun_isis.M

Element	CPS Mean	Rep1	Rep2	Rep3	Rep4	Rep5	%RSD	Required	Flag
7 Li	14906	14929	14975	14838	14916	14868	**0.36**	5.00	
9 Be	1915	1908	1914	1983	1809	1957	**3.47**	5.00	RSD~~fail~~ Pass LRD 11-04-09
24 Mg	8679	8669	8688	8662	8744	8633	**0.48**	5.00	
59 Co	35756	36567	35777	35985	34517	35933	**2.11**	5.00	
115 In	692825	688204	694293	692146	693236	696245	**0.43**	5.00	
208 Pb	51450	52572	50561	51250	51590	51275	**1.42**	5.00	
238 U	109376	111991	110522	109499	107788	107079	**1.83**	5.00	

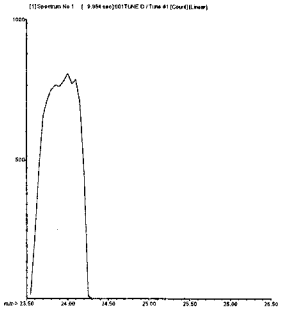


7 Li
Mass Calib.
Actual: 7.05
Required: 6.90 - 7.10
Flag:
Peak Width
Actual: 0.60
Required: 0.90
Flag:

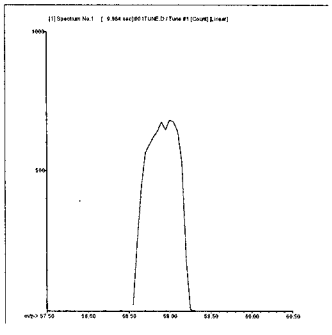


9 Be
Mass Calib.
Actual: 9.00
Required: 8.90 - 9.10
Flag:
Peak Width
Actual: 0.55
Required: 0.90
Flag:

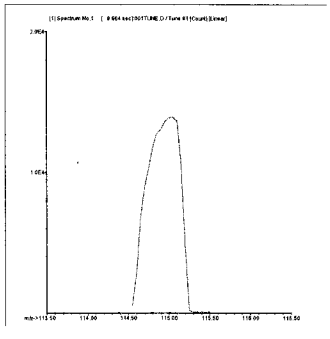
C:\ICPCHEM\1\DATA\AG110909A.B\001TUNE.D



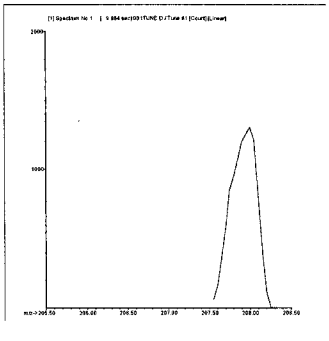
24 Mg
Mass Calib.
Actual: 24.00
Required: 23.90 - 24.10
Flag:
Peak Width
Actual: 0.60
Required: 0.90
Flag:



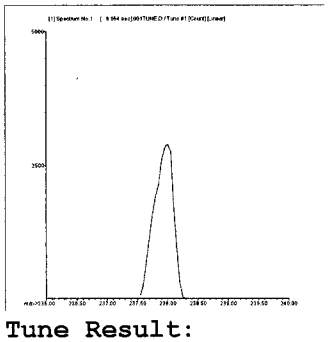
59 Co
Mass Calib.
Actual: 59.00
Required: 58.90 - 59.10
Flag:
Peak Width
Actual: 0.60
Required: 0.90
Flag:



115 In
Mass Calib.
Actual: 115.00
Required: 114.90 - 115.10
Flag:
Peak Width
Actual: 0.60
Required: 0.90
Flag:



208 Pb
Mass Calib.
Actual: 207.95
Required: 207.90 - 208.10
Flag:
Peak Width
Actual: 0.55
Required: 0.90
Flag:



238 U
Mass Calib.
Actual: 237.95
Required: 237.90 - 238.10
Flag:
Peak Width
Actual: 0.50
Required: 0.90
Flag:

Tune Result: ~~Fail~~ Pass

LRD 11/09/09

Calibration Blank QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\002CALB.D\002CALB.D#
Date Acquired: Nov 9 2009 08:29 pm
Acq. Method: NormISIS.M
Operator: LRD
Sample Name: Cal Blank
Misc Info:
Vial Number: 1101
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal. Update: Nov 09 2009 08:30 pm
Sample Type: CalBlk

D6/11/11/09

QC Elements

Element		IS Ref	Tune	CPS Mean	RSD(%)
9	Be	6	1	0	0.00
51	V	72	1	577	3.61
52	Cr	72	1	1697	4.80
55	Mn	72	1	263	10.96
59	Co	72	1	17	34.64
60	Ni	72	1	63	32.87
63	Cu	72	1	100	43.59
66	Zn	72	1	131	19.98
75	As	72	1	31	32.13
78	Se	72	1	153	20.97
95	Mo	72	1	23	24.74
107	Ag	115	1	7	86.60
111	Cd	115	1	-4	15.03
118	Sn	115	1	123	26.06
121	Sb	115	1	43	42.83
137	Ba	115	1	10	33.33
205	Tl	165	1	341	20.90
208	Pb	165	1	206	7.66
232	Th	165	1	130	26.65
238	U	165	1	97	23.89

Internal Standard Elements

Element		Tune	CPS Mean	RSD(%)
6	Li	1	307725	0.62
45	Sc	1	863740	1.75
72	Ge	1	419764	0.40
115	In	1	1321877	2.10
165	Ho	1	2596118	0.41

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

Calibration Blank QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\003CALB.D\003CALB.D#
Date Acquired: Nov 9 2009 08:32 pm
Acq. Method: NormISIS.M
Operator: LRD
Sample Name: Cal Blank
Misc Info:
Vial Number: 2101
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal. Update: Nov 09 2009 08:30 pm
Sample Type: CalBlk

QC Elements

Element		IS Ref	Tune	CPS Mean	RSD(%)
9	Be	6	1	0	0.00
51	V	72	1	513	5.95
52	Cr	72	1	1570	2.30
55	Mn	72	1	337	11.25
59	Co	72	1	20	50.00
60	Ni	72	1	63	48.24
63	Cu	72	1	120	44.10
66	Zn	72	1	137	9.29
75	As	72	1	35	18.20
78	Se	72	1	97	23.89
95	Mo	72	1	20	50.00
107	Ag	115	1	3	173.21
111	Cd	115	1	-4	393.57
118	Sn	115	1	297	22.95
121	Sb	115	1	39	26.19
137	Ba	115	1	12	41.66
205	Tl	165	1	221	20.47
208	Pb	165	1	199	12.35
232	Th	165	1	113	22.21
238	U	165	1	77	26.09

Internal Standard Elements

Element		Tune	CPS Mean	RSD(%)
6	Li	1	316659	2.14
45	Sc	1	888972	0.50
72	Ge	1	425816	0.47
115	In	1	1335258	0.87
165	Ho	1	2617754	0.65

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

Calibration Standard QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\004ICAL.D\004ICAL.D#
Date Acquired: Nov 9 2009 08:35 pm
Acq. Method: NormISIS.M
Operator: LRD
Sample Name: 100 ppb
Misc Info:
Vial Number: 2102
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal. Update: Nov 09 2009 08:33 pm
Sample Type: ICAL

QC Elements

Element		IS Ref	Tune	CPS Mean	RSD(%)
9	Be	6	1	38609	1.25
51	V	72	1	510366	0.88
52	Cr	72	1	524956	1.26
55	Mn	72	1	613525	1.41
59	Co	72	1	633231	0.83
60	Ni	72	1	140397	0.74
63	Cu	72	1	332088	1.69
66	Zn	72	1	83275	0.84
75	As	72	1	64491	1.06
78	Se	72	1	13670	3.37
95	Mo	72	1	194872	1.16
107	Ag	115	1	568219	1.98
111	Cd	115	1	121298	1.44
118	Sn	115	1	331811	1.14
121	Sb	115	1	398020	0.91
137	Ba	115	1	158724	1.91
205	Tl	165	1	1472389	1.01
208	Pb	165	1	2154560	0.36
232	Th	165	1	2284596	1.76
238	U	165	1	2432923	0.19

ISTD Elements

Element		Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	1	317523	0.04	316659	100.3	30 - 120	
45	Sc	1	902480	1.79	888972	101.5	30 - 120	
72	Ge	1	417361	1.39	425816	98.0	30 - 120	
115	In	1	1332995	0.81	1335258	99.8	30 - 120	
165	Ho	1	2606293	0.43	2617754	99.6	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\003CALB.D\003CALB.D#

0 :Element Failures 0
0 :ISTD Failures 0

Initial Calibration Verification (ICV) QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\005 ICV.D\005 ICV.D#
Date Acquired: Nov 9 2009 08:37 pm
Operator: LRD
Sample Name: ICV
Misc Info:
Vial Number: 2103
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal Update: Nov 09 2009 08:35 pm
Sample Type: ICV
Total Dil Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Conc.		RSD(%)	Expected	Rec(%)	QC Range(%)	Flag
9 Be	6	1	39.82	ppb	0.59	40	99.6	90 - 110	
51 V	72	1	40.01	ppb	0.57	40	100.0	90 - 110	
52 Cr	72	1	40.10	ppb	1.04	40	100.3	90 - 110	
55 Mn	72	1	40.83	ppb	1.35	40	102.1	90 - 110	
59 Co	72	1	39.98	ppb	2.35	40	100.0	90 - 110	
60 Ni	72	1	39.48	ppb	1.75	40	98.7	90 - 110	
63 Cu	72	1	39.44	ppb	0.71	40	98.6	90 - 110	
66 Zn	72	1	40.87	ppb	1.27	40	102.2	90 - 110	
75 As	72	1	40.05	ppb	0.47	40	100.1	90 - 110	
78 Se	72	1	40.20	ppb	7.43	40	100.5	90 - 110	
95 Mo	72	1	39.50	ppb	1.39	40	98.8	90 - 110	
107 Ag	115	1	40.28	ppb	1.09	40	100.7	90 - 110	
111 Cd	115	1	40.39	ppb	2.54	40	101.0	90 - 110	
118 Sn	115	1	39.95	ppb	2.27	40	99.9	90 - 110	
121 Sb	115	1	40.57	ppb	2.67	40	101.4	90 - 110	
137 Ba	115	1	40.04	ppb	2.19	40	100.1	90 - 110	
205 Tl	165	1	40.86	ppb	1.20	40	102.2	90 - 110	
208 Pb	165	1	40.91	ppb	0.95	40	102.3	90 - 110	
232 Th	165	1	41.04	ppb	0.97	40	102.6	90 - 110	
238 U	165	1	40.74	ppb	0.82	40	101.9	90 - 110	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	320321	1.05	316659	101.2	30 - 120	
45 Sc	1	893394	1.16	888972	100.5	30 - 120	
72 Ge	1	421619	1.04	425816	99.0	30 - 120	
115 In	1	1339730	1.68	1335258	100.3	30 - 120	
165 Ho	1	2633489	0.36	2617754	100.6	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\003CALB.D\003CALB.D#

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

Wash QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\006WASH.D\006WASH.D#
Date Acquired: Nov 9 2009 08:40 pm
Operator: LRD
Sample Name: RLIV
Misc Info:
Vial Number: 1204
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal Update: Nov 09 2009 08:35 pm
Sample Type: WASH
Total Dil Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Conc.	RSD(%)	High Limit	Flag
9 Be	6	1	0.977 ppb	23.08	1.30	
51 V	72	1	5.088 ppb	3.63	6.50	
52 Cr	72	1	2.010 ppb	2.80	2.60	
55 Mn	72	1	1.052 ppb	2.54	1.30	
59 Co	72	1	1.026 ppb	2.82	1.30	
60 Ni	72	1	2.053 ppb	3.73	2.60	
63 Cu	72	1	1.949 ppb	1.86	2.60	
66 Zn	72	1	10.200 ppb	0.76	13.00	
75 As	72	1	4.975 ppb	1.56	6.50	
78 Se	72	1	5.397 ppb	12.87	6.50	
95 Mo	72	1	2.077 ppb	3.08	2.60	
107 Ag	115	1	5.417 ppb	1.62	6.50	
111 Cd	115	1	0.994 ppb	8.21	1.30	
118 Sn	115	1	10.400 ppb	2.50	13.00	
121 Sb	115	1	2.182 ppb	1.55	2.60	
137 Ba	115	1	1.043 ppb	2.05	1.30	
205 Tl	165	1	1.340 ppb	3.63	1.30	
208 Pb	165	1	1.058 ppb	2.34	1.30	
232 Th	165	1	2.228 ppb	2.96	2.60	
238 U	165	1	1.119 ppb	1.48	1.30	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	327943	1.12	316659	103.6	30 - 120	
45 Sc	1	927967	1.66	888972	104.4	30 - 120	
72 Ge	1	437192	0.23	425816	102.7	30 - 120	
115 In	1	1360935	0.96	1335258	101.9	30 - 120	
165 Ho	1	2638135	1.11	2617754	100.8	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\003CALB.D\003CALB.D#

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

Initial Calibration Blank (ICB) QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\007 ICB.D\007 ICB.D#
Date Acquired: Nov 9 2009 08:43 pm
Operator: LRD
Sample Name: ICB
Misc Info:
Vial Number: 2104
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal Update: Nov 09 2009 08:35 pm
Sample Type: ICB
Total Dil Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Conc.		RSD(%)	High Limit	Flag
9 Be	6	1	0.00	ppb	0.00	1.00	
51 V	72	1	-0.03	ppb	24.58	1.00	
52 Cr	72	1	0.01	ppb	375.24	1.00	
55 Mn	72	1	0.01	ppb	99.37	1.00	
59 Co	72	1	0.00	ppb	102.49	1.00	
60 Ni	72	1	0.06	ppb	11.55	1.00	
63 Cu	72	1	0.03	ppb	95.69	1.00	
66 Zn	72	1	0.75	ppb	6.06	1.00	
75 As	72	1	-0.01	ppb	401.95	1.00	
78 Se	72	1	0.14	ppb	223.63	1.00	
95 Mo	72	1	0.01	ppb	53.61	1.00	
107 Ag	115	1	0.01	ppb	41.41	1.00	
111 Cd	115	1	0.01	ppb	115.64	1.00	
118 Sn	115	1	0.25	ppb	23.38	1.00	
121 Sb	115	1	0.07	ppb	21.20	1.00	
137 Ba	115	1	0.06	ppb	14.45	1.00	
205 Tl	165	1	0.04	ppb	19.24	1.00	
208 Pb	165	1	0.01	ppb	22.30	1.00	
232 Th	165	1	0.02	ppb	1.72	1.00	
238 U	165	1	0.00	ppb	21.71	1.00	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	331180	1.57	316659	104.6	30 - 120	
45 Sc	1	905311	1.15	888972	101.8	30 - 120	
72 Ge	1	441723	1.46	425816	103.7	30 - 120	
115 In	1	1364402	1.70	1335258	102.2	30 - 120	
165 Ho	1	2652248	1.61	2617754	101.3	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\003CALB.D\003CALB.D#

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

RL STD QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\008RLST.D\008RLST.D#
Date Acquired: Nov 9 2009 08:46 pm
Operator: LRD
Sample Name: RL STD
Misc Info:
Vial Number: 2105
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal Update: Nov 09 2009 08:35 pm
Sample Type: RLSTD
Total Dil Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Conc.		RSD(%)	Expected	Rec(%)	QC Range(%)	Flag
9 Be	6	1	0.99	ppb	9.34	1	99.0	50 - 150	
51 V	72	1	0.92	ppb	9.25	1	91.9	50 - 150	
52 Cr	72	1	1.00	ppb	9.84	1	99.9	50 - 150	
55 Mn	72	1	1.01	ppb	0.70	1	100.8	50 - 150	
59 Co	72	1	0.98	ppb	2.45	1	97.7	50 - 150	
60 Ni	72	1	1.03	ppb	5.51	1	103.0	50 - 150	
63 Cu	72	1	1.05	ppb	5.54	1	104.6	50 - 150	
66 Zn	72	1	10.39	ppb	0.48	10	103.9	50 - 150	
75 As	72	1	1.05	ppb	4.38	1	105.1	50 - 150	
78 Se	72	1	1.23	ppb	32.18	1	123.2	50 - 150	
95 Mo	72	1	1.01	ppb	7.94	1	101.0	50 - 150	
107 Ag	115	1	1.01	ppb	4.94	1	101.1	50 - 150	
111 Cd	115	1	1.05	ppb	5.12	1	104.5	50 - 150	
118 Sn	115	1	10.46	ppb	2.14	10	104.6	50 - 150	
121 Sb	115	1	1.03	ppb	4.27	1	103.4	50 - 150	
137 Ba	115	1	1.04	ppb	2.63	1	104.3	50 - 150	
205 Tl	165	1	1.11	ppb	1.97	1	110.8	50 - 150	
208 Pb	165	1	1.05	ppb	1.92	1	105.4	50 - 150	
232 Th	165	1	1.04	ppb	1.88	1	103.6	50 - 150	
238 U	165	1	1.07	ppb	2.22	1	107.2	50 - 150	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	332529	1.31	316659	105.0	30 - 120	
45 Sc	1	924723	1.34	888972	104.0	30 - 120	
72 Ge	1	440304	0.81	425816	103.4	30 - 120	
115 In	1	1361149	0.37	1335258	101.9	30 - 120	
165 Ho	1	2647952	0.34	2617754	101.2	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\003CALB.D\003CALB.D#

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

AFCEE RL QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\009AFCE.D\009AFCE.D#
Date Acquired: Nov 9 2009 08:48 pm
Operator: LRD
Sample Name: AFCEE RL
Misc Info:
Vial Number: 2106
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal Update: Nov 09 2009 08:35 pm
Sample Type: AFCEERL
Total Dil Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Conc.		RSD(%)	Expected	Rec(%)	QC Range(%)	Flag
9 Be	6	1	0.16	ppb	9.52	0	82.7	80 - 120	
51 V	72	1	0.15	ppb	12.92	0	84.2	80 - 120	
52 Cr	72	1	0.17	ppb	11.54	0	87.5	80 - 120	
55 Mn	72	1	0.19	ppb	4.01	0	92.3	80 - 120	
59 Co	72	1	0.20	ppb	10.00	0	101.6	80 - 120	
60 Ni	72	1	0.17	ppb	39.79	0	82.5	80 - 120	
63 Cu	72	1	0.21	ppb	8.40	0	98.5	80 - 120	
66 Zn	72	1	1.88	ppb	3.20	2	90.5	80 - 120	
75 As	72	1	0.18	ppb	4.43	0	84.9	80 - 120	
78 Se	72	1	0.34	ppb	52.18	0	137.7	80 - 120	
95 Mo	72	1	0.20	ppb	20.48	0	97.8	80 - 120	
107 Ag	115	1	0.19	ppb	11.02	0	95.4	80 - 120	
111 Cd	115	1	0.18	ppb	8.60	0	87.8	80 - 120	
118 Sn	115	1	2.07	ppb	1.60	2	98.7	80 - 120	
121 Sb	115	1	0.24	ppb	8.81	0	117.2	80 - 120	
137 Ba	115	1	0.17	ppb	15.49	0	82.0	80 - 120	
205 Tl	165	1	0.21	ppb	3.14	0	95.1	80 - 120	
208 Pb	165	1	0.21	ppb	4.91	0	97.5	80 - 120	
232 Th	165	1	0.21	ppb	2.80	0	102.7	80 - 120	
238 U	165	1	0.21	ppb	1.79	0	97.4	80 - 120	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	334891	0.91	316659	105.8	30 - 120	
45 Sc	1	926450	1.15	888972	104.2	30 - 120	
72 Ge	1	444347	1.22	425816	104.4	30 - 120	
115 In	1	1347595	1.10	1335258	100.9	30 - 120	
165 Ho	1	2645674	1.06	2617754	101.1	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\003CALB.D\003CALB.D#

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

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\010SMPL.D\010SMPL.D#
Date Acquired: Nov 9 2009 08:51 pm
Acq. Method: NormISIS.M
Operator: LRD
Sample Name: ALTSe
Misc Info: 2 ppb
Vial Number: 2107
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal. Update: Nov 09 2009 08:35 pm
Sample Type: SA
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	6	1	0.01	0.01	ppb	173.18	3600	
51 V	72	1	-0.05	-0.05	ppb	4.45	3600	
52 Cr	72	1	0.03	0.03	ppb	21.71	3600	
55 Mn	72	1	-0.01	-0.01	ppb	107.83	3600	
59 Co	72	1	0.00	0.00	ppb	91.53	3600	
60 Ni	72	1	-0.01	-0.01	ppb	120.90	3600	
63 Cu	72	1	0.00	0.00	ppb	249.88	3600	
66 Zn	72	1	0.21	0.21	ppb	4.91	3600	
75 As	72	1	-0.01	-0.01	ppb	276.53	3600	
78 Se	72	1	2.30	2.30	ppb	3.47	3600	
95 Mo	72	1	0.00	0.00	ppb	270.91	3600	
107 Ag	115	1	0.01	0.01	ppb	12.59	3600	
111 Cd	115	1	0.01	0.01	ppb	40.90	3600	
118 Sn	115	1	0.03	0.03	ppb	42.36	3600	
121 Sb	115	1	0.02	0.02	ppb	52.41	3600	
137 Ba	115	1	0.00	0.00	ppb	159.45	3600	
205 Tl	165	1	0.00	0.00	ppb	223.71	3600	
208 Pb	165	1	0.00	0.00	ppb	93.52	3600	
232 Th	165	1	0.01	0.01	ppb	41.10	1000	
238 U	165	1	0.00	0.00	ppb	39.39	3600	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	336598	0.66	316659	106.3	30 - 120	
45 Sc	1	916084	0.54	888972	103.0	30 - 120	
72 Ge	1	444955	0.00	425816	104.5	30 - 120	
115 In	1	1367875	0.83	1335258	102.4	30 - 120	
165 Ho	1	2646991	0.40	2617754	101.1	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\003CALB.D\003CALB.D#

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

Interference Check Solution A (ICS-A) QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\011ICSA.D\011ICSA.D#
Date Acquired: Nov 9 2009 08:54 pm
Acq. Method: NormISIS.M
Operator: LRD
Sample Name: ICSA
Misc Info:
Vial Number: 2108
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal. Update: Nov 09 2009 08:35 pm
Sample Type: ICSA
Dilution Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Conc.	RSD(%)	High Limit ppb	Flag
9 Be	6	1	0.00 ppb	0.00	1.00	
51 V	72	1	2.09 ppb	3.15	1.00	
52 Cr	72	1	1.97 ppb	9.78	1.00	
55 Mn	72	1	2.81 ppb	1.66	1.00	
59 Co	72	1	0.10 ppb	6.63	1.00	
60 Ni	72	1	1.02 ppb	13.74	1.00	
63 Cu	72	1	0.53 ppb	7.97	1.00	
66 Zn	72	1	3.94 ppb	2.38	10.00	
75 As	72	1	0.28 ppb	11.27	1.00	
78 Se	72	1	0.38 ppb	63.23	1.00	
95 Mo	72	1	1936.00 ppb	0.91	2000.00	
107 Ag	115	1	0.03 ppb	12.20	1.00	
111 Cd	115	1	0.30 ppb	66.71	1.00	
118 Sn	115	1	0.12 ppb	33.50	10.00	
121 Sb	115	1	0.92 ppb	2.59	1.00	
137 Ba	115	1	0.03 ppb	33.26	1.00	
205 Tl	165	1	0.03 ppb	11.11	1.00	
208 Pb	165	1	1.00 ppb	2.07	1.00	
232 Th	165	1	0.02 ppb	12.13	1.00	
238 U	165	1	0.00 ppb	5.79	1.00	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	239339	0.28	316659	75.6	30 - 120	
45 Sc	1	700629	1.42	888972	78.8	30 - 120	
72 Ge	1	343237	0.37	425816	80.6	30 - 120	
115 In	1	1048448	1.55	1335258	78.5	30 - 120	
165 Ho	1	2104424	0.97	2617754	80.4	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\003CALB.D\003CALB.D#

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

Interference Check Solution AB (ICS-AB) QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\012ICSB.D\012ICSB.D#
Date Acquired: Nov 9 2009 08:57 pm
Acq. Method: NormISIS.M
Operator: LRD
Sample Name: ICSAB
Misc Info:
Vial Number: 2109
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal. Update: Nov 09 2009 08:35 pm
Sample Type: ICSAB
Dilution Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Conc. ppb	RSD(%)	Expected	%Recovery	QC Range(%)	Flag
9 Be	6	1	109.40	3.64	100	109.4	80 - 120	
51 V	72	1	99.64	0.20	100	99.6	80 - 120	
52 Cr	72	1	97.24	0.93	100	97.2	80 - 120	
55 Mn	72	1	98.22	0.64	100	98.2	80 - 120	
59 Co	72	1	92.77	2.10	100	92.8	80 - 120	
60 Ni	72	1	89.04	1.65	100	89.0	80 - 120	
63 Cu	72	1	86.53	0.30	100	86.5	80 - 120	
66 Zn	72	1	96.58	0.54	100	96.6	80 - 120	
75 As	72	1	101.00	1.32	100	101.0	80 - 120	
78 Se	72	1	100.00	0.62	100	100.0	80 - 120	
95 Mo	72	1	2093.00	0.96	2100	99.7	80 - 120	
107 Ag	115	1	89.66	3.28	100	89.7	80 - 120	
111 Cd	115	1	95.05	1.99	100	95.1	80 - 120	
118 Sn	115	1	100.40	1.69	100	100.4	80 - 120	
121 Sb	115	1	103.00	1.30	100	103.0	80 - 120	
137 Ba	115	1	101.30	1.03	100	101.3	80 - 120	
205 Tl	165	1	94.31	0.93	100	94.3	80 - 120	
208 Pb	165	1	93.76	0.89	100	93.8	80 - 120	
232 Th	165	1	101.30	1.54	100	101.3	80 - 120	
238 U	165	1	99.94	0.63	100	99.9	80 - 120	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	233202	3.01	316659	73.6	30 - 120	
45 Sc	1	711798	0.20	888972	80.1	30 - 120	
72 Ge	1	338298	0.97	425816	79.4	30 - 120	
115 In	1	1075320	0.68	1335258	80.5	30 - 120	
165 Ho	1	2161438	0.51	2617754	82.6	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\003CALB.D\003CALB.D#

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

AFCEE RL QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\013AFCE.D\013AFCE.D#
Date Acquired: Nov 9 2009 08:59 pm
Operator: LRD
Sample Name: RINSE
Misc Info:
Vial Number: 1101
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal Update: Nov 09 2009 08:35 pm
Sample Type: AFCEERL
Total Dil Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Conc.		RSD(%)	Expected	Rec(%)	QC Range(%)	Flag
9 Be	6	1	0.01	ppb	173.15	0	4.2	80 - 120	
51 V	72	1	0.02	ppb	35.98	0	10.9	80 - 120	
52 Cr	72	1	0.03	ppb	89.50	0	13.7	80 - 120	
55 Mn	72	1	-0.01	ppb	113.19	0	-3.4	80 - 120	
59 Co	72	1	0.00	ppb	1352.30	0	-0.1	80 - 120	
60 Ni	72	1	-0.02	ppb	102.45	0	-9.9	80 - 120	
63 Cu	72	1	0.00	ppb	649.06	0	0.6	80 - 120	
66 Zn	72	1	0.04	ppb	63.69	2	1.7	80 - 120	
75 As	72	1	-0.01	ppb	61.99	0	-3.9	80 - 120	
78 Se	72	1	0.39	ppb	99.84	0	156.3	80 - 120	
95 Mo	72	1	0.80	ppb	31.54	0	396.5	80 - 120	
107 Ag	115	1	0.01	ppb	53.68	0	3.6	80 - 120	
111 Cd	115	1	0.00	ppb	41.35	0	1.7	80 - 120	
118 Sn	115	1	0.00	ppb	#######	2	0.0	80 - 120	
121 Sb	115	1	0.11	ppb	20.17	0	52.7	80 - 120	
137 Ba	115	1	0.00	ppb	105.76	0	-0.5	80 - 120	
205 Tl	165	1	-0.01	ppb	3.09	0	-2.6	80 - 120	
208 Pb	165	1	0.00	ppb	49.94	0	0.7	80 - 120	
232 Th	165	1	0.03	ppb	6.82	0	13.2	80 - 120	
238 U	165	1	0.01	ppb	15.94	0	6.9	80 - 120	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	331840	0.43	316659	104.8	30 - 120	
45 Sc	1	927075	1.00	888972	104.3	30 - 120	
72 Ge	1	454961	0.83	425816	106.8	30 - 120	
115 In	1	1407675	0.48	1335258	105.4	30 - 120	
165 Ho	1	2715373	0.43	2617754	103.7	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\003CALB.D\003CALB.D#

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

Linear Dynamic Range Sample QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\014 LR.D\014 LR.D#
Date Acquired: Nov 9 2009 09:02 pm
Acq. Method: NormISIS.M
Operator: LRD
Sample Name: LR1
Misc Info:
Vial Number: 2110
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal. Update: Nov 09 2009 08:35 pm
Sample Type: LR
Prep Dil. Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

Analyte Elements

Element	IS Ref	Tune	Conc.	RSD(%)	Expected	Rec(%)	QC Range(%)	Flag
9 Be	6	1	989.70 ppb	1.24	1000	99.0	90 - 110	
51 V	72	1	962.50 ppb	1.62	1000	96.3	90 - 110	
52 Cr	72	1	955.40 ppb	1.40	1000	95.5	90 - 110	
55 Mn	72	1	950.30 ppb	1.50	1000	95.0	90 - 110	
59 Co	72	1	955.50 ppb	1.19	1000	95.6	90 - 110	
60 Ni	72	1	979.40 ppb	1.79	1000	97.9	90 - 110	
63 Cu	72	1	966.20 ppb	0.98	1000	96.6	90 - 110	
66 Zn	72	1	974.60 ppb	0.75	1000	97.5	90 - 110	
75 As	72	1	1009.00 ppb	0.73	1000	100.9	90 - 110	
78 Se	72	1	988.90 ppb	0.77	1000	98.9	90 - 110	
95 Mo	72	1	987.40 ppb	1.52	1000	98.7	90 - 110	
107 Ag	115	1	932.40 ppb	1.41	1000	93.2	90 - 110	
111 Cd	115	1	967.10 ppb	0.44	1000	96.7	90 - 110	
118 Sn	115	1	933.80 ppb	0.50	1000	93.4	90 - 110	
121 Sb	115	1	927.90 ppb	0.18	1000	92.8	90 - 110	
137 Ba	115	1	972.50 ppb	0.87	1000	97.3	90 - 110	
205 Tl	165	1	947.60 ppb	0.99	1000	94.8	90 - 110	
208 Pb	165	1	915.00 ppb	0.94	1000	91.5	90 - 110	
232 Th	165	1	966.60 ppb	0.64	1000	96.7	90 - 110	
238 U	165	1	963.20 ppb	1.88	1000	96.3	90 - 110	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	328068	1.06	316659	103.6	30 - 120	
45 Sc	1	922726	2.01	888972	103.8	30 - 120	
72 Ge	1	430093	1.37	425816	101.0	30 - 120	
115 In	1	1364755	0.41	1335258	102.2	30 - 120	
165 Ho	1	2644039	0.70	2617754	101.0	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\003CALB.D\003CALB.D#

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

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\015SMPL.D\015SMPL.D#
Date Acquired: Nov 9 2009 09:05 pm
Acq. Method: NormISIS.M
Operator: LRD
Sample Name: RINSE
Misc Info:
Vial Number: 1101
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal. Update: Nov 09 2009 08:35 pm
Sample Type: SA
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	6	1	0.02	0.02	ppb	173.25	3600	
51 V	72	1	-0.02	-0.02	ppb	88.49	3600	
52 Cr	72	1	0.05	0.05	ppb	36.35	3600	
55 Mn	72	1	-0.01	-0.01	ppb	183.98	3600	
59 Co	72	1	0.01	0.01	ppb	88.77	3600	
60 Ni	72	1	0.02	0.02	ppb	167.72	3600	
63 Cu	72	1	0.03	0.03	ppb	35.08	3600	
66 Zn	72	1	0.05	0.05	ppb	19.57	3600	
75 As	72	1	0.02	0.02	ppb	85.94	3600	
78 Se	72	1	0.69	0.69	ppb	46.45	3600	
95 Mo	72	1	0.53	0.53	ppb	26.09	3600	
107 Ag	115	1	0.03	0.03	ppb	35.34	3600	
111 Cd	115	1	0.02	0.02	ppb	21.52	3600	
118 Sn	115	1	1.11	1.11	ppb	27.74	3600	
121 Sb	115	1	1.31	1.31	ppb	17.77	3600	
137 Ba	115	1	0.02	0.02	ppb	70.23	3600	
205 Tl	165	1	0.06	0.06	ppb	21.10	3600	
208 Pb	165	1	0.02	0.02	ppb	25.81	3600	
232 Th	165	1	0.13	0.13	ppb	10.54	1000	
238 U	165	1	0.13	0.13	ppb	15.65	3600	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	341210	2.06	316659	107.8	30 - 120	
45 Sc	1	953002	0.82	888972	107.2	30 - 120	
72 Ge	1	451794	0.58	425816	106.1	30 - 120	
115 In	1	1384812	1.01	1335258	103.7	30 - 120	
165 Ho	1	2634408	0.76	2617754	100.6	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\003CALB.D\003CALB.D#

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

Continuing Calibration Verification (CCV) QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\016 CCV.D\016 CCV.D#
Date Acquired: Nov 9 2009 09:08 pm
Operator: LRD
Sample Name: CCV
Misc Info:
Vial Number: 1107
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal Update: Nov 09 2009 08:35 pm
Sample Type: CCV
Total Dil Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Conc.		RSD(%)	Expected	Rec(%)	QC Range(%)	Flag
9 Be	6	1	49.36	ppb	2.54	50	98.7	90 - 110	
51 V	72	1	50.77	ppb	1.34	50	101.5	90 - 110	
52 Cr	72	1	50.82	ppb	0.60	50	101.6	90 - 110	
55 Mn	72	1	50.95	ppb	1.41	50	101.9	90 - 110	
59 Co	72	1	50.68	ppb	1.40	50	101.4	90 - 110	
60 Ni	72	1	49.56	ppb	1.57	50	99.1	90 - 110	
63 Cu	72	1	49.68	ppb	0.10	50	99.4	90 - 110	
66 Zn	72	1	49.76	ppb	0.33	50	99.5	90 - 110	
75 As	72	1	50.93	ppb	0.82	50	101.9	90 - 110	
78 Se	72	1	51.94	ppb	5.89	50	103.9	90 - 110	
95 Mo	72	1	48.88	ppb	1.24	50	97.8	90 - 110	
107 Ag	115	1	50.11	ppb	0.43	50	100.2	90 - 110	
111 Cd	115	1	50.35	ppb	0.26	50	100.7	90 - 110	
118 Sn	115	1	50.40	ppb	1.11	50	100.8	90 - 110	
121 Sb	115	1	50.58	ppb	0.97	50	101.2	90 - 110	
137 Ba	115	1	50.03	ppb	0.58	50	100.1	90 - 110	
205 Tl	165	1	50.31	ppb	0.12	50	100.6	90 - 110	
208 Pb	165	1	50.77	ppb	1.01	50	101.5	90 - 110	
232 Th	165	1	50.58	ppb	2.06	50	101.2	90 - 110	
238 U	165	1	50.76	ppb	2.06	50	101.5	90 - 110	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	339265	1.56	316659	107.1	30 - 120	
45 Sc	1	947544	0.15	888972	106.6	30 - 120	
72 Ge	1	441263	0.72	425816	103.6	30 - 120	
115 In	1	1386188	0.72	1335258	103.8	30 - 120	
165 Ho	1	2649982	0.75	2617754	101.2	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\003CALB.D\003CALB.D#

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

Continuing Calibration Blank (CCB) QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\017 CCB.D\017 CCB.D#
Date Acquired: Nov 9 2009 09:10 pm
Operator: LRD
Sample Name: CCB
Misc Info:
Vial Number: 1307
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal Update: Nov 09 2009 08:35 pm
Sample Type: CCB
Total Dil Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Conc.		RSD(%)	High Limit	Flag
9 Be	6	1	0.008	ppb	173.22	1.00	
51 V	72	1	-0.046	ppb	29.01	1.00	
52 Cr	72	1	0.000	ppb	12322.00	1.00	
55 Mn	72	1	-0.007	ppb	43.73	1.00	
59 Co	72	1	0.001	ppb	393.70	1.00	
60 Ni	72	1	-0.005	ppb	329.15	1.00	
63 Cu	72	1	0.007	ppb	98.78	1.00	
66 Zn	72	1	0.040	ppb	14.37	1.00	
75 As	72	1	-0.008	ppb	123.42	1.00	
78 Se	72	1	0.405	ppb	68.29	1.00	
95 Mo	72	1	0.105	ppb	49.03	1.00	
107 Ag	115	1	0.009	ppb	76.77	1.00	
111 Cd	115	1	0.002	ppb	275.78	1.00	
118 Sn	115	1	0.252	ppb	28.94	1.00	
121 Sb	115	1	0.323	ppb	22.12	1.00	
137 Ba	115	1	0.000	ppb	357.00	1.00	
205 Tl	165	1	0.012	ppb	22.43	1.00	
208 Pb	165	1	0.003	ppb	36.91	1.00	
232 Th	165	1	0.060	ppb	22.01	1.00	
238 U	165	1	0.020	ppb	26.01	1.00	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	347509	1.01	316659	109.7	30 - 120	
45 Sc	1	955495	2.12	888972	107.5	30 - 120	
72 Ge	1	455532	0.79	425816	107.0	30 - 120	
115 In	1	1386791	1.63	1335258	103.9	30 - 120	
165 Ho	1	2651802	0.80	2617754	101.3	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\003CALB.D\003CALB.D#

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

Wash QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\018WASH.D\018WASH.D#
Date Acquired: Nov 9 2009 09:13 pm
Operator: LRD
Sample Name: RLCV
Misc Info:
Vial Number: 1204
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal Update: Nov 09 2009 08:35 pm
Sample Type: WASH
Total Dil Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Conc.	RSD(%)	High Limit	Flag
9 Be	6	1	1.024 ppb	7.78	1.30	
51 V	72	1	5.126 ppb	1.88	6.50	
52 Cr	72	1	2.083 ppb	6.13	2.60	
55 Mn	72	1	1.010 ppb	2.87	1.30	
59 Co	72	1	1.062 ppb	1.70	1.30	
60 Ni	72	1	2.095 ppb	2.27	2.60	
63 Cu	72	1	2.060 ppb	2.82	2.60	
66 Zn	72	1	10.130 ppb	1.17	13.00	
75 As	72	1	5.125 ppb	4.68	6.50	
78 Se	72	1	5.045 ppb	5.92	6.50	
95 Mo	72	1	1.951 ppb	3.60	2.60	
107 Ag	115	1	5.311 ppb	0.48	6.50	
111 Cd	115	1	1.030 ppb	11.33	1.30	
118 Sn	115	1	10.360 ppb	1.60	13.00	
121 Sb	115	1	2.190 ppb	4.18	2.60	
137 Ba	115	1	1.055 ppb	3.38	1.30	
205 Tl	165	1	1.095 ppb	1.41	1.30	
208 Pb	165	1	1.069 ppb	0.47	1.30	
232 Th	165	1	2.172 ppb	3.24	2.60	
238 U	165	1	1.103 ppb	1.52	1.30	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	350643	0.28	316659	110.7	30 - 120	
45 Sc	1	970129	1.19	888972	109.1	30 - 120	
72 Ge	1	456907	0.32	425816	107.3	30 - 120	
115 In	1	1395760	1.56	1335258	104.5	30 - 120	
165 Ho	1	2660739	0.79	2617754	101.6	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\003CALB.D\003CALB.D#

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

Continuing Calibration Verification (CCV) QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\060 CCV.D\060 CCV.D#
Date Acquired: Nov 9 2009 11:12 pm
Operator: LRD
Sample Name: CCV
Misc Info:
Vial Number: 1107
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal Update: Nov 09 2009 08:35 pm
Sample Type: CCV
Total Dil Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Conc.		RSD(%)	Expected	Rec(%)	QC Range(%)	Flag
9 Be	6	1	47.76	ppb	2.01	50	95.5	90 - 110	
51 V	72	1	53.33	ppb	0.36	50	106.7	90 - 110	
52 Cr	72	1	52.02	ppb	0.91	50	104.0	90 - 110	
55 Mn	72	1	50.55	ppb	1.03	50	101.1	90 - 110	
59 Co	72	1	51.60	ppb	1.26	50	103.2	90 - 110	
60 Ni	72	1	51.77	ppb	1.81	50	103.5	90 - 110	
63 Cu	72	1	51.63	ppb	0.61	50	103.3	90 - 110	
66 Zn	72	1	48.55	ppb	1.53	50	97.1	90 - 110	
75 As	72	1	52.15	ppb	0.82	50	104.3	90 - 110	
78 Se	72	1	49.57	ppb	2.57	50	99.1	90 - 110	
95 Mo	72	1	47.79	ppb	1.06	50	95.6	90 - 110	
107 Ag	115	1	50.33	ppb	2.15	50	100.7	90 - 110	
111 Cd	115	1	48.29	ppb	2.01	50	96.6	90 - 110	
118 Sn	115	1	48.91	ppb	3.81	50	97.8	90 - 110	
121 Sb	115	1	48.67	ppb	1.99	50	97.3	90 - 110	
137 Ba	115	1	50.76	ppb	0.77	50	101.5	90 - 110	
205 Tl	165	1	51.23	ppb	4.59	50	102.5	90 - 110	
208 Pb	165	1	49.88	ppb	2.00	50	99.8	90 - 110	
232 Th	165	1	49.71	ppb	2.61	50	99.4	90 - 110	
238 U	165	1	49.08	ppb	0.86	50	98.2	90 - 110	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	371239	0.44	316659	117.2	30 - 120	
45 Sc	1	996118	0.60	888972	112.1	30 - 120	
72 Ge	1	449415	1.43	425816	105.5	30 - 120	
115 In	1	1358249	0.76	1335258	101.7	30 - 120	
165 Ho	1	2424776	0.66	2617754	92.6	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\003CALB.D\003CALB.D#

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

Continuing Calibration Blank (CCB) QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\061 CCB.D\061 CCB.D#
Date Acquired: Nov 9 2009 11:15 pm
Operator: LRD
Sample Name: CCB
Misc Info:
Vial Number: 1307
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal Update: Nov 09 2009 08:35 pm
Sample Type: CCB
Total Dil Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Conc.		RSD(%)	High Limit	Flag
9 Be	6	1	0.007	ppb	173.25	1.00	
51 V	72	1	-0.033	ppb	15.18	1.00	
52 Cr	72	1	0.027	ppb	19.92	1.00	
55 Mn	72	1	0.057	ppb	24.29	1.00	
59 Co	72	1	0.002	ppb	40.00	1.00	
60 Ni	72	1	-0.008	ppb	174.20	1.00	
63 Cu	72	1	0.033	ppb	81.15	1.00	
66 Zn	72	1	0.057	ppb	34.92	1.00	
75 As	72	1	-0.012	ppb	116.84	1.00	
78 Se	72	1	0.544	ppb	106.14	1.00	
95 Mo	72	1	0.025	ppb	55.86	1.00	
107 Ag	115	1	0.006	ppb	0.78	1.00	
111 Cd	115	1	0.011	ppb	84.87	1.00	
118 Sn	115	1	0.063	ppb	27.95	1.00	
121 Sb	115	1	0.170	ppb	15.64	1.00	
137 Ba	115	1	0.021	ppb	35.77	1.00	
205 Tl	165	1	0.004	ppb	85.40	1.00	
208 Pb	165	1	0.006	ppb	13.99	1.00	
232 Th	165	1	0.047	ppb	18.57	1.00	
238 U	165	1	0.010	ppb	26.90	1.00	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	375737	0.86	316659	118.7	30 - 120	
45 Sc	1	1005396	1.10	888972	113.1	30 - 120	
72 Ge	1	462662	0.61	425816	108.7	30 - 120	
115 In	1	1347936	0.72	1335258	100.9	30 - 120	
165 Ho	1	2437556	0.89	2617754	93.1	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\003CALB.D\003CALB.D#

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

Wash QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\062WASH.D\062WASH.D#
Date Acquired: Nov 9 2009 11:18 pm
Operator: LRD
Sample Name: RLCV
Misc Info:
Vial Number: 1204
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal Update: Nov 09 2009 08:35 pm
Sample Type: WASH
Total Dil Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Conc.	RSD(%)	High Limit	Flag
9 Be	6	1	0.988 ppb	13.49	1.30	
51 V	72	1	5.317 ppb	1.85	6.50	
52 Cr	72	1	2.215 ppb	1.75	2.60	
55 Mn	72	1	1.081 ppb	2.43	1.30	
59 Co	72	1	1.073 ppb	4.20	1.30	
60 Ni	72	1	2.102 ppb	1.66	2.60	
63 Cu	72	1	2.102 ppb	1.56	2.60	
66 Zn	72	1	10.000 ppb	2.32	13.00	
75 As	72	1	5.122 ppb	1.19	6.50	
78 Se	72	1	5.883 ppb	5.54	6.50	
95 Mo	72	1	1.969 ppb	1.32	2.60	
107 Ag	115	1	5.324 ppb	0.46	6.50	
111 Cd	115	1	0.960 ppb	12.77	1.30	
118 Sn	115	1	10.230 ppb	2.10	13.00	
121 Sb	115	1	2.053 ppb	1.15	2.60	
137 Ba	115	1	1.068 ppb	9.25	1.30	
205 Tl	165	1	1.085 ppb	2.24	1.30	
208 Pb	165	1	1.017 ppb	0.46	1.30	
232 Th	165	1	2.117 ppb	2.07	2.60	
238 U	165	1	1.040 ppb	1.77	1.30	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	377304	1.01	316659	119.2	30 - 120	
45 Sc	1	1005985	1.51	888972	113.2	30 - 120	
72 Ge	1	461018	0.47	425816	108.3	30 - 120	
115 In	1	1347706	0.37	1335258	100.9	30 - 120	
165 Ho	1	2446876	0.21	2617754	93.5	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\003CALB.D\003CALB.D#

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

Calibration Blank QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\063CALB.D\063CALB.D#
Date Acquired: Nov 9 2009 11:21 pm
Acq. Method: NormISIS.M
Operator: LRD
Sample Name: Cal Blank
Misc Info:
Vial Number: 1101
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal. Update: Nov 09 2009 08:35 pm
Sample Type: CalBlk

DNW
LRD
11/09/2009

QC Elements

Element		IS Ref	Tune	CPS Mean	RSD(%)
9	Be	6	1	3	173.23
51	V	72	1	377	2.88
52	Cr	72	1	1847	11.91
55	Mn	72	1	490	7.02
59	Co	72	1	27	43.08
60	Ni	72	1	90	38.28
63	Cu	72	1	207	26.41
66	Zn	72	1	224	7.60
75	As	72	1	37	2.96
78	Se	72	1	180	14.95
95	Mo	72	1	70	0.37
107	Ag	115	1	37	102.75
111	Cd	115	1	1	1018.80
118	Sn	115	1	230	7.23
121	Sb	115	1	168	17.49
137	Ba	115	1	30	19.55
205	Tl	165	1	118	2.17
208	Pb	165	1	187	13.74
232	Th	165	1	340	3.31
238	U	165	1	107	28.05

Internal Standard Elements

Element		Tune	CPS Mean	RSD(%)
6	Li	1	381407	0.74
45	Sc	1	1012136	1.26
72	Ge	1	467118	0.37
115	In	1	1351742	0.80
165	Ho	1	2415684	0.57

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

Reslope Before Continuing Analytical Run

Corrective action was taken as stated in method 6020 section 7.8

…"During the course of an analytical run, the instrument may be "resloped" or recalibrated to correct for instrument drift. A recalibration must then be followed immediately by a new analysis of a CCV and CCB before any further samples are analyzed."

Analyst: LRD

Date: 11/09/2009

Calibration Blank QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\064CALB.D\064CALB.D#
Date Acquired: Nov 9 2009 11:23 pm
Acq. Method: NormISIS.M
Operator: LRD
Sample Name: Cal Blank
Misc Info:
Vial Number: 2101
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal. Update: Nov 09 2009 11:21 pm
Sample Type: CalBlk

QC Elements

Element		IS Ref	Tune	CPS Mean	RSD(%)
9	Be	6	1	3	173.21
51	V	72	1	330	13.77
52	Cr	72	1	2014	3.51
55	Mn	72	1	663	10.90
59	Co	72	1	33	75.74
60	Ni	72	1	80	50.41
63	Cu	72	1	197	11.45
66	Zn	72	1	343	6.91
75	As	72	1	34	14.74
78	Se	72	1	173	12.49
95	Mo	72	1	40	49.31
107	Ag	115	1	10	99.72
111	Cd	115	1	5	690.53
118	Sn	115	1	340	20.42
121	Sb	115	1	100	28.11
137	Ba	115	1	23	24.93
205	Tl	165	1	98	12.19
208	Pb	165	1	236	9.19
232	Th	165	1	170	15.62
238	U	165	1	78	28.11

Internal Standard Elements

Element		Tune	CPS Mean	RSD(%)
6	Li	1	380157	0.54
45	Sc	1	1002329	1.13
72	Ge	1	466393	0.79
115	In	1	1358080	0.44
165	Ho	1	2422153	0.33

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

Calibration Standard QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\065ICAL.D\065ICAL.D#
Date Acquired: Nov 9 2009 11:26 pm
Acq. Method: NormISIS.M
Operator: LRD
Sample Name: 100 ppb
Misc Info:
Vial Number: 2102
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal. Update: Nov 09 2009 11:24 pm
Sample Type: ICAL

QC Elements

Element		IS Ref	Tune	CPS Mean	RSD(%)
9	Be	6	1	43479	0.71
51	V	72	1	576998	0.10
52	Cr	72	1	580585	0.35
55	Mn	72	1	647521	2.20
59	Co	72	1	696629	1.39
60	Ni	72	1	153810	1.14
63	Cu	72	1	367490	0.55
66	Zn	72	1	85809	0.55
75	As	72	1	71337	0.80
78	Se	72	1	14168	2.89
95	Mo	72	1	198709	1.88
107	Ag	115	1	570960	1.47
111	Cd	115	1	117474	1.83
118	Sn	115	1	325069	1.28
121	Sb	115	1	387694	1.11
137	Ba	115	1	161998	1.24
205	Tl	165	1	1342275	1.10
208	Pb	165	1	1942480	0.67
232	Th	165	1	2057394	0.68
238	U	165	1	2166904	0.49

ISTD Elements

Element		Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	1	365465	0.26	380157	96.1	30 - 120	
45	Sc	1	986653	1.27	1002329	98.4	30 - 120	
72	Ge	1	442828	1.10	466393	94.9	30 - 120	
115	In	1	1328586	0.28	1358080	97.8	30 - 120	
165	Ho	1	2432710	0.17	2422153	100.4	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\064CALB.D\064CALB.D#

0 :Element Failures 0
0 :ISTD Failures 0

Continuing Calibration Verification (CCV) QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\066 CCV.D\066 CCV.D#
Date Acquired: Nov 9 2009 11:29 pm
Operator: LRD
Sample Name: CCV
Misc Info:
Vial Number: 1107
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal Update: Nov 09 2009 11:27 pm
Sample Type: CCV
Total Dil Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Conc.		RSD(%)	Expected	Rec(%)	QC Range(%)	Flag
9 Be	6	1	46.93	ppb	3.91	50	93.9	90 - 110	
51 V	72	1	49.96	ppb	0.87	50	99.9	90 - 110	
52 Cr	72	1	49.84	ppb	0.96	50	99.7	90 - 110	
55 Mn	72	1	51.01	ppb	0.50	50	102.0	90 - 110	
59 Co	72	1	50.30	ppb	0.45	50	100.6	90 - 110	
60 Ni	72	1	50.29	ppb	1.97	50	100.6	90 - 110	
63 Cu	72	1	49.99	ppb	0.18	50	100.0	90 - 110	
66 Zn	72	1	50.01	ppb	0.68	50	100.0	90 - 110	
75 As	72	1	50.48	ppb	0.16	50	101.0	90 - 110	
78 Se	72	1	49.48	ppb	2.05	50	99.0	90 - 110	
95 Mo	72	1	49.81	ppb	0.18	50	99.6	90 - 110	
107 Ag	115	1	49.81	ppb	2.30	50	99.6	90 - 110	
111 Cd	115	1	50.05	ppb	1.51	50	100.1	90 - 110	
118 Sn	115	1	50.31	ppb	2.81	50	100.6	90 - 110	
121 Sb	115	1	50.29	ppb	2.80	50	100.6	90 - 110	
137 Ba	115	1	49.63	ppb	3.25	50	99.3	90 - 110	
205 Tl	165	1	52.26	ppb	4.30	50	104.5	90 - 110	
208 Pb	165	1	51.13	ppb	1.50	50	102.3	90 - 110	
232 Th	165	1	51.46	ppb	0.54	50	102.9	90 - 110	
238 U	165	1	51.98	ppb	0.56	50	104.0	90 - 110	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	367332	1.49	380157	96.6	30 - 120	
45 Sc	1	986000	0.43	1002329	98.4	30 - 120	
72 Ge	1	439576	1.54	466393	94.3	30 - 120	
115 In	1	1323940	1.40	1358080	97.5	30 - 120	
165 Ho	1	2412483	0.54	2422153	99.6	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\064CALB.D\064CALB.D#

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

Continuing Calibration Blank (CCB) QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\067 CCB.D\067 CCB.D#
Date Acquired: Nov 9 2009 11:32 pm
Operator: LRD
Sample Name: CCB
Misc Info:
Vial Number: 1307
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal Update: Nov 09 2009 11:27 pm
Sample Type: CCB
Total Dil Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Conc.		RSD(%)	High Limit	Flag
9 Be	6	1	0.000	ppb	7714.50	1.00	
51 V	72	1	0.007	ppb	88.19	1.00	
52 Cr	72	1	-0.013	ppb	132.92	1.00	
55 Mn	72	1	0.016	ppb	41.75	1.00	
59 Co	72	1	-0.002	ppb	220.37	1.00	
60 Ni	72	1	-0.013	ppb	101.75	1.00	
63 Cu	72	1	0.005	ppb	237.12	1.00	
66 Zn	72	1	-0.125	ppb	6.55	1.00	
75 As	72	1	-0.003	ppb	254.46	1.00	
78 Se	72	1	0.068	ppb	820.68	1.00	
95 Mo	72	1	0.036	ppb	12.78	1.00	
107 Ag	115	1	0.013	ppb	34.78	1.00	
111 Cd	115	1	-0.004	ppb	335.65	1.00	
118 Sn	115	1	0.114	ppb	40.09	1.00	
121 Sb	115	1	0.218	ppb	17.21	1.00	
137 Ba	115	1	0.020	ppb	38.49	1.00	
205 Tl	165	1	0.017	ppb	13.22	1.00	
208 Pb	165	1	0.004	ppb	41.00	1.00	
232 Th	165	1	0.058	ppb	8.27	1.00	
238 U	165	1	0.015	ppb	19.36	1.00	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	370403	0.21	380157	97.4	30 - 120	
45 Sc	1	986390	1.51	1002329	98.4	30 - 120	
72 Ge	1	448979	0.79	466393	96.3	30 - 120	
115 In	1	1330065	0.95	1358080	97.9	30 - 120	
165 Ho	1	2397227	1.01	2422153	99.0	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\064CALB.D\064CALB.D#

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

Wash QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\068WASH.D\068WASH.D#
Date Acquired: Nov 9 2009 11:34 pm
Operator: LRD
Sample Name: RLCV
Misc Info:
Vial Number: 1204
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal Update: Nov 09 2009 11:27 pm
Sample Type: WASH
Total Dil Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Conc.	RSD(%)	High Limit	Flag
9 Be	6	1	0.846 ppb	15.54	1.30	
51 V	72	1	5.105 ppb	1.52	6.50	
52 Cr	72	1	1.946 ppb	5.53	2.60	
55 Mn	72	1	1.034 ppb	8.27	1.30	
59 Co	72	1	1.006 ppb	1.60	1.30	
60 Ni	72	1	2.032 ppb	5.86	2.60	
63 Cu	72	1	2.022 ppb	3.80	2.60	
66 Zn	72	1	10.060 ppb	2.89	13.00	
75 As	72	1	5.074 ppb	1.10	6.50	
78 Se	72	1	5.789 ppb	19.52	6.50	
95 Mo	72	1	2.059 ppb	3.74	2.60	
107 Ag	115	1	5.439 ppb	1.68	6.50	
111 Cd	115	1	1.029 ppb	3.65	1.30	
118 Sn	115	1	10.700 ppb	3.27	13.00	
121 Sb	115	1	2.106 ppb	1.70	2.60	
137 Ba	115	1	1.052 ppb	6.93	1.30	
205 Tl	165	1	1.129 ppb	1.04	1.30	
208 Pb	165	1	1.059 ppb	0.98	1.30	
232 Th	165	1	2.213 ppb	1.62	2.60	
238 U	165	1	1.097 ppb	1.65	1.30	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	371066	0.42	380157	97.6	30 - 120	
45 Sc	1	964688	0.29	1002329	96.2	30 - 120	
72 Ge	1	445105	0.41	466393	95.4	30 - 120	
115 In	1	1302898	1.20	1358080	95.9	30 - 120	
165 Ho	1	2377516	0.60	2422153	98.2	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\064CALB.D\064CALB.D#

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

Interference Check Solution A (ICS-A) QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\069ICSA.D\069ICSA.D#
Date Acquired: Nov 9 2009 11:37 pm
Acq. Method: NormISIS.M
Operator: LRD
Sample Name: ICSA
Misc Info:
Vial Number: 2108
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal. Update: Nov 09 2009 11:27 pm
Sample Type: ICSA
Dilution Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

QC Elements

Element		IS Ref	Tune	Conc.	RSD(%)	High Limit ppb	Flag
9	Be	6	1	-0.01 ppb	0.00	1.00	
51	V	72	1	3.14 ppb	3.11	1.00	
52	Cr	72	1	1.87 ppb	2.39	1.00	
55	Mn	72	1	3.00 ppb	3.46	1.00	
59	Co	72	1	0.12 ppb	14.06	1.00	
60	Ni	72	1	1.18 ppb	6.20	1.00	
63	Cu	72	1	0.57 ppb	5.88	1.00	
66	Zn	72	1	4.08 ppb	4.97	10.00	
75	As	72	1	0.40 ppb	5.91	1.00	
78	Se	72	1	0.25 ppb	58.42	1.00	
95	Mo	72	1	1968.00 ppb	1.40	2000.00	
107	Ag	115	1	0.05 ppb	11.35	1.00	
111	Cd	115	1	0.47 ppb	58.03	1.00	
118	Sn	115	1	0.17 ppb	23.23	10.00	
121	Sb	115	1	0.97 ppb	1.38	1.00	
137	Ba	115	1	0.04 ppb	20.16	1.00	
205	Tl	165	1	0.04 ppb	30.89	1.00	
208	Pb	165	1	1.00 ppb	1.65	1.00	
232	Th	165	1	0.03 ppb	24.22	1.00	
238	U	165	1	0.01 ppb	11.29	1.00	

ISTD Elements

Element		Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	1	291637	0.61	380157	76.7	30 - 120	
45	Sc	1	784216	1.43	1002329	78.2	30 - 120	
72	Ge	1	362840	1.19	466393	77.8	30 - 120	
115	In	1	1050065	1.20	1358080	77.3	30 - 120	
165	Ho	1	2003482	0.67	2422153	82.7	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\064CALB.D\064CALB.D#

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

Interference Check Solution AB (ICS-AB) QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\070ICSB.D\070ICSB.D#
Date Acquired: Nov 9 2009 11:40 pm
Acq. Method: NormISIS.M
Operator: LRD
Sample Name: ICSAB
Misc Info:
Vial Number: 2109
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal. Update: Nov 09 2009 11:27 pm
Sample Type: ICSAB
Dilution Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Conc. ppb	RSD(%)	Expected	%Recovery	QC Range(%)	Flag
9 Be	6	1	98.69	0.29	100	98.7	80 - 120	
51 V	72	1	100.10	0.51	100	100.1	80 - 120	
52 Cr	72	1	96.39	1.13	100	96.4	80 - 120	
55 Mn	72	1	100.10	0.37	100	100.1	80 - 120	
59 Co	72	1	92.34	0.82	100	92.3	80 - 120	
60 Ni	72	1	90.79	1.30	100	90.8	80 - 120	
63 Cu	72	1	86.68	0.74	100	86.7	80 - 120	
66 Zn	72	1	97.33	0.89	100	97.3	80 - 120	
75 As	72	1	98.23	0.81	100	98.2	80 - 120	
78 Se	72	1	104.70	2.41	100	104.7	80 - 120	
95 Mo	72	1	2087.00	0.34	2100	99.4	80 - 120	
107 Ag	115	1	85.94	0.48	100	85.9	80 - 120	
111 Cd	115	1	94.98	1.32	100	95.0	80 - 120	
118 Sn	115	1	99.84	0.78	100	99.8	80 - 120	
121 Sb	115	1	102.50	0.96	100	102.5	80 - 120	
137 Ba	115	1	99.50	0.68	100	99.5	80 - 120	
205 Tl	165	1	94.70	0.86	100	94.7	80 - 120	
208 Pb	165	1	94.59	1.37	100	94.6	80 - 120	
232 Th	165	1	101.60	1.79	100	101.6	80 - 120	
238 U	165	1	101.00	1.69	100	101.0	80 - 120	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	284581	0.95	380157	74.9	30 - 120	
45 Sc	1	773360	0.68	1002329	77.2	30 - 120	
72 Ge	1	354105	0.59	466393	75.9	30 - 120	
115 In	1	1057991	0.87	1358080	77.9	30 - 120	
165 Ho	1	2026193	0.86	2422153	83.7	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\064CALB.D\064CALB.D#

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

Wash QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\071WASH.D\071WASH.D#
Date Acquired: Nov 9 2009 11:43 pm
Operator: LRD
Sample Name: WASH
Misc Info:
Vial Number: 1101
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal Update: Nov 09 2009 11:27 pm
Sample Type: WASH
Total Dil Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Conc.	RSD(%)	High Limit	Flag
9 Be	6	1	-0.007 ppb	0.00	1.30	
51 V	72	1	0.175 ppb	10.68	6.50	
52 Cr	72	1	-0.015 ppb	224.26	2.60	
55 Mn	72	1	-0.011 ppb	101.02	1.30	
59 Co	72	1	0.002 ppb	273.67	1.30	
60 Ni	72	1	-0.002 ppb	1290.40	2.60	
63 Cu	72	1	0.012 ppb	163.09	2.60	
66 Zn	72	1	-0.119 ppb	10.41	13.00	
75 As	72	1	0.016 ppb	84.22	6.50	
78 Se	72	1	0.333 ppb	141.71	6.50	
95 Mo	72	1	0.839 ppb	19.14	2.60	
107 Ag	115	1	0.007 ppb	41.41	6.50	
111 Cd	115	1	0.003 ppb	77.60	1.30	
118 Sn	115	1	0.020 ppb	132.11	13.00	
121 Sb	115	1	0.104 ppb	5.43	2.60	
137 Ba	115	1	0.013 ppb	14.03	1.30	
205 Tl	165	1	0.006 ppb	22.65	1.30	
208 Pb	165	1	0.002 ppb	44.35	1.30	
232 Th	165	1	0.032 ppb	26.02	2.60	
238 U	165	1	0.022 ppb	3.15	1.30	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	346070	0.78	380157	91.0	30 - 120	
45 Sc	1	934865	1.04	1002329	93.3	30 - 120	
72 Ge	1	440586	0.16	466393	94.5	30 - 120	
115 In	1	1292185	0.88	1358080	95.1	30 - 120	
165 Ho	1	2424319	0.81	2422153	100.1	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\064CALB.D\064CALB.D#

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

Continuing Calibration Verification (CCV) QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\072 CCV.D\072 CCV.D#
Date Acquired: Nov 9 2009 11:45 pm
Operator: LRD
Sample Name: CCV
Misc Info:
Vial Number: 1107
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal Update: Nov 09 2009 11:27 pm
Sample Type: CCV
Total Dil Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Conc.	RSD(%)	Expected	Rec(%)	QC Range(%)	Flag
9 Be	6	1	49.64 ppb	0.29	50	99.3	90 - 110	
51 V	72	1	49.05 ppb	0.51	50	98.1	90 - 110	
52 Cr	72	1	49.17 ppb	1.20	50	98.3	90 - 110	
55 Mn	72	1	50.37 ppb	0.69	50	100.7	90 - 110	
59 Co	72	1	49.63 ppb	1.02	50	99.3	90 - 110	
60 Ni	72	1	50.09 ppb	0.34	50	100.2	90 - 110	
63 Cu	72	1	49.59 ppb	0.85	50	99.2	90 - 110	
66 Zn	72	1	49.99 ppb	1.41	50	100.0	90 - 110	
75 As	72	1	49.85 ppb	0.63	50	99.7	90 - 110	
78 Se	72	1	50.96 ppb	3.57	50	101.9	90 - 110	
95 Mo	72	1	50.33 ppb	1.11	50	100.7	90 - 110	
107 Ag	115	1	49.87 ppb	2.11	50	99.7	90 - 110	
111 Cd	115	1	49.47 ppb	1.27	50	98.9	90 - 110	
118 Sn	115	1	49.40 ppb	0.99	50	98.8	90 - 110	
121 Sb	115	1	49.90 ppb	1.97	50	99.8	90 - 110	
137 Ba	115	1	49.24 ppb	1.59	50	98.5	90 - 110	
205 Tl	165	1	52.17 ppb	4.22	50	104.3	90 - 110	
208 Pb	165	1	51.29 ppb	1.50	50	102.6	90 - 110	
232 Th	165	1	51.54 ppb	0.75	50	103.1	90 - 110	
238 U	165	1	51.49 ppb	1.24	50	103.0	90 - 110	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	344840	0.36	380157	90.7	30 - 120	
45 Sc	1	960040	0.97	1002329	95.8	30 - 120	
72 Ge	1	435616	0.46	466393	93.4	30 - 120	
115 In	1	1327656	0.92	1358080	97.8	30 - 120	
165 Ho	1	2430200	0.49	2422153	100.3	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\064CALB.D\064CALB.D#

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

Continuing Calibration Blank (CCB) QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\073 CCB.D\073 CCB.D#
Date Acquired: Nov 9 2009 11:48 pm
Operator: LRD
Sample Name: CCB
Misc Info:
Vial Number: 1307
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal Update: Nov 09 2009 11:27 pm
Sample Type: CCB
Total Dil Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Conc.		RSD(%)	High Limit	Flag
9 Be	6	1	0.001	ppb	2466.00	1.00	
51 V	72	1	0.058	ppb	15.57	1.00	
52 Cr	72	1	-0.012	ppb	231.32	1.00	
55 Mn	72	1	0.017	ppb	109.77	1.00	
59 Co	72	1	0.003	ppb	86.96	1.00	
60 Ni	72	1	-0.007	ppb	180.98	1.00	
63 Cu	72	1	-0.002	ppb	619.28	1.00	
66 Zn	72	1	-0.062	ppb	46.64	1.00	
75 As	72	1	0.009	ppb	16.14	1.00	
78 Se	72	1	0.083	ppb	474.84	1.00	
95 Mo	72	1	0.119	ppb	13.01	1.00	
107 Ag	115	1	0.012	ppb	51.78	1.00	
111 Cd	115	1	0.015	ppb	63.58	1.00	
118 Sn	115	1	0.055	ppb	78.86	1.00	
121 Sb	115	1	0.163	ppb	17.84	1.00	
137 Ba	115	1	0.017	ppb	13.64	1.00	
205 Tl	165	1	0.018	ppb	11.16	1.00	
208 Pb	165	1	0.005	ppb	21.07	1.00	
232 Th	165	1	0.054	ppb	24.52	1.00	
238 U	165	1	0.015	ppb	17.65	1.00	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	354004	0.85	380157	93.1	30 - 120	
45 Sc	1	982510	1.03	1002329	98.0	30 - 120	
72 Ge	1	452984	0.53	466393	97.1	30 - 120	
115 In	1	1333424	0.83	1358080	98.2	30 - 120	
165 Ho	1	2422993	0.32	2422153	100.0	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\064CALB.D\064CALB.D#

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

Wash QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\074WASH.D\074WASH.D#
Date Acquired: Nov 9 2009 11:51 pm
Operator: LRD
Sample Name: RLCV
Misc Info:
Vial Number: 1204
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal Update: Nov 09 2009 11:27 pm
Sample Type: WASH
Total Dil Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Conc.	RSD(%)	High Limit	Flag
9 Be	6	1	0.952 ppb	11.71	1.30	
51 V	72	1	4.966 ppb	1.97	6.50	
52 Cr	72	1	1.993 ppb	3.95	2.60	
55 Mn	72	1	1.097 ppb	4.84	1.30	
59 Co	72	1	1.021 ppb	2.48	1.30	
60 Ni	72	1	2.009 ppb	4.37	2.60	
63 Cu	72	1	2.060 ppb	6.37	2.60	
66 Zn	72	1	11.960 ppb	1.85	13.00	
75 As	72	1	4.930 ppb	2.64	6.50	
78 Se	72	1	5.436 ppb	4.49	6.50	
95 Mo	72	1	2.193 ppb	2.61	2.60	
107 Ag	115	1	5.282 ppb	1.22	6.50	
111 Cd	115	1	0.986 ppb	2.05	1.30	
118 Sn	115	1	10.340 ppb	1.29	13.00	
121 Sb	115	1	2.115 ppb	3.91	2.60	
137 Ba	115	1	1.056 ppb	4.52	1.30	
205 Tl	165	1	1.119 ppb	1.07	1.30	
208 Pb	165	1	1.065 ppb	1.09	1.30	
232 Th	165	1	2.185 ppb	3.45	2.60	
238 U	165	1	1.104 ppb	0.87	1.30	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	356450	1.14	380157	93.8	30 - 120	
45 Sc	1	964047	0.67	1002329	96.2	30 - 120	
72 Ge	1	452729	0.90	466393	97.1	30 - 120	
115 In	1	1319982	1.15	1358080	97.2	30 - 120	
165 Ho	1	2426292	0.34	2422153	100.2	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\064CALB.D\064CALB.D#

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

Continuing Calibration Verification (CCV) QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\115 CCV.D\115 CCV.D#
Date Acquired: Nov 10 2009 01:46 am
Operator: LRD
Sample Name: CCV
Misc Info:
Vial Number: 1107
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal Update: Nov 09 2009 11:27 pm
Sample Type: CCV
Total Dil Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Conc.	RSD(%)	Expected	Rec(%)	QC Range(%)	Flag
9 Be	6	1	49.47 ppb	2.23	50	98.9	90 - 110	
51 V	72	1	50.56 ppb	0.37	50	101.1	90 - 110	
52 Cr	72	1	50.65 ppb	0.47	50	101.3	90 - 110	
55 Mn	72	1	50.77 ppb	1.14	50	101.5	90 - 110	
59 Co	72	1	50.40 ppb	0.87	50	100.8	90 - 110	
60 Ni	72	1	49.84 ppb	0.41	50	99.7	90 - 110	
63 Cu	72	1	50.51 ppb	0.76	50	101.0	90 - 110	
66 Zn	72	1	49.77 ppb	0.09	50	99.5	90 - 110	
75 As	72	1	50.26 ppb	0.16	50	100.5	90 - 110	
78 Se	72	1	49.87 ppb	2.78	50	99.7	90 - 110	
95 Mo	72	1	49.39 ppb	0.94	50	98.8	90 - 110	
107 Ag	115	1	50.12 ppb	2.41	50	100.2	90 - 110	
111 Cd	115	1	49.40 ppb	2.86	50	98.8	90 - 110	
118 Sn	115	1	49.66 ppb	2.32	50	99.3	90 - 110	
121 Sb	115	1	49.95 ppb	2.09	50	99.9	90 - 110	
137 Ba	115	1	49.37 ppb	3.54	50	98.7	90 - 110	
205 Tl	165	1	52.74 ppb	1.97	50	105.5	90 - 110	
208 Pb	165	1	51.04 ppb	1.99	50	102.1	90 - 110	
232 Th	165	1	50.20 ppb	0.81	50	100.4	90 - 110	
238 U	165	1	50.45 ppb	0.19	50	100.9	90 - 110	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	369807	1.50	380157	97.3	30 - 120	
45 Sc	1	1018477	0.34	1002329	101.6	30 - 120	
72 Ge	1	453154	1.41	466393	97.2	30 - 120	
115 In	1	1349823	1.36	1358080	99.4	30 - 120	
165 Ho	1	2413896	0.92	2422153	99.7	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\064CALB.D\064CALB.D#

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

Continuing Calibration Blank (CCB) QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\116 CCB.D\116 CCB.D#
Date Acquired: Nov 10 2009 01:49 am
Operator: LRD
Sample Name: CCB
Misc Info:
Vial Number: 1307
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal Update: Nov 09 2009 11:27 pm
Sample Type: CCB
Total Dil Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Conc.		RSD(%)	High Limit	Flag
9 Be	6	1	0.008	ppb	169.87	1.00	
51 V	72	1	0.084	ppb	16.99	1.00	
52 Cr	72	1	-0.004	ppb	232.14	1.00	
55 Mn	72	1	-0.012	ppb	86.50	1.00	
59 Co	72	1	0.002	ppb	114.75	1.00	
60 Ni	72	1	0.010	ppb	269.98	1.00	
63 Cu	72	1	0.021	ppb	60.58	1.00	
66 Zn	72	1	0.020	ppb	111.79	1.00	
75 As	72	1	0.011	ppb	110.07	1.00	
78 Se	72	1	-0.018	ppb	805.68	1.00	
95 Mo	72	1	0.019	ppb	66.39	1.00	
107 Ag	115	1	0.013	ppb	61.58	1.00	
111 Cd	115	1	-0.003	ppb	256.84	1.00	
118 Sn	115	1	0.069	ppb	66.41	1.00	
121 Sb	115	1	0.152	ppb	15.07	1.00	
137 Ba	115	1	0.009	ppb	26.07	1.00	
205 Tl	165	1	0.013	ppb	9.99	1.00	
208 Pb	165	1	0.002	ppb	100.06	1.00	
232 Th	165	1	0.053	ppb	19.40	1.00	
238 U	165	1	0.012	ppb	14.27	1.00	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	372110	0.64	380157	97.9	30 - 120	
45 Sc	1	1022224	0.42	1002329	102.0	30 - 120	
72 Ge	1	464891	0.56	466393	99.7	30 - 120	
115 In	1	1352890	0.37	1358080	99.6	30 - 120	
165 Ho	1	2419064	1.22	2422153	99.9	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\064CALB.D\064CALB.D#

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

Wash QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\117WASH.D\117WASH.D#
Date Acquired: Nov 10 2009 01:52 am
Operator: LRD
Sample Name: RLCV
Misc Info:
Vial Number: 1204
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal Update: Nov 09 2009 11:27 pm
Sample Type: WASH
Total Dil Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Conc.	RSD(%)	High Limit	Flag
9 Be	6	1	1.035 ppb	2.74	1.30	
51 V	72	1	5.187 ppb	0.57	6.50	
52 Cr	72	1	2.031 ppb	0.75	2.60	
55 Mn	72	1	1.067 ppb	2.38	1.30	
59 Co	72	1	0.970 ppb	1.63	1.30	
60 Ni	72	1	2.058 ppb	2.00	2.60	
63 Cu	72	1	2.068 ppb	3.91	2.60	
66 Zn	72	1	11.900 ppb	1.49	13.00	
75 As	72	1	5.068 ppb	3.34	6.50	
78 Se	72	1	5.362 ppb	14.08	6.50	
95 Mo	72	1	2.047 ppb	1.20	2.60	
107 Ag	115	1	5.331 ppb	2.52	6.50	
111 Cd	115	1	1.046 ppb	1.94	1.30	
118 Sn	115	1	10.310 ppb	1.17	13.00	
121 Sb	115	1	2.073 ppb	0.88	2.60	
137 Ba	115	1	1.049 ppb	2.40	1.30	
205 Tl	165	1	1.100 ppb	1.48	1.30	
208 Pb	165	1	1.054 ppb	0.90	1.30	
232 Th	165	1	2.156 ppb	2.05	2.60	
238 U	165	1	1.079 ppb	1.97	1.30	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	368170	0.68	380157	96.8	30 - 120	
45 Sc	1	1000230	0.23	1002329	99.8	30 - 120	
72 Ge	1	456074	0.97	466393	97.8	30 - 120	
115 In	1	1327112	0.29	1358080	97.7	30 - 120	
165 Ho	1	2402449	0.69	2422153	99.2	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\064CALB.D\064CALB.D#

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

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\118SMPL.D\118SMPL.D#
Date Acquired: Nov 10 2009 01:54 am
Acq. Method: NormISIS.M
Operator: LRD
Sample Name: RINSE
Misc Info:
Vial Number: 1301
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal. Update: Nov 09 2009 11:27 pm
Sample Type: SA
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

DNW LRD 11/10/09

QC Elements

Element	IS Ref	Tune	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	6	1	18.76	18.76	ppb	0.54	3600	
51 V	72	1	23.38	23.38	ppb	1.45	3600	
52 Cr	72	1	20.11	20.11	ppb	1.09	3600	
55 Mn	72	1	22.39	22.39	ppb	1.28	3600	
59 Co	72	1	18.57	18.57	ppb	0.84	3600	
60 Ni	72	1	18.78	18.78	ppb	3.80	3600	
63 Cu	72	1	17.78	17.78	ppb	1.66	3600	
66 Zn	72	1	22.05	22.05	ppb	1.64	3600	
75 As	72	1	19.60	19.60	ppb	1.50	3600	
78 Se	72	1	20.84	20.84	ppb	12.31	3600	
95 Mo	72	1	2,115.00	2115.00	ppb	0.39	3600	
107 Ag	115	1	16.62	16.62	ppb	3.07	3600	
111 Cd	115	1	16.24	16.24	ppb	1.06	3600	
118 Sn	115	1	40.85	40.85	ppb	1.86	3600	
121 Sb	115	1	42.03	42.03	ppb	1.54	3600	
137 Ba	115	1	19.75	19.75	ppb	1.56	3600	
205 Tl	165	1	19.50	19.50	ppb	2.07	3600	
208 Pb	165	1	19.31	19.31	ppb	2.03	3600	
232 Th	165	1	20.35	20.35	ppb	1.43	1000	
238 U	165	1	20.19	20.19	ppb	1.38	3600	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	285150	0.98	380157	75.0	30 - 120	
45 Sc	1	779494	1.35	1002329	77.8	30 - 120	
72 Ge	1	350892	0.50	466393	75.2	30 - 120	
115 In	1	1024662	0.55	1358080	75.4	30 - 120	
165 Ho	1	1912062	0.40	2422153	78.9	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\064CALB.D\064CALB.D#

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

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\119SMPL.D\119SMPL.D#
Date Acquired: Nov 10 2009 01:57 am
Acq. Method: NormISIS.M
Operator: LRD
Sample Name: RINSE
Misc Info:
Vial Number: 1101
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal. Update: Nov 09 2009 11:27 pm
Sample Type: SA
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

JNW (RD 11/10/09

QC Elements

Element	IS Ref	Tune	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	6	1	0.01	0.01	ppb	313.89	3600	
51 V	72	1	0.16	0.16	ppb	20.44	3600	
52 Cr	72	1	0.00	0.00	ppb	701.08	3600	
55 Mn	72	1	-0.03	-0.03	ppb	34.36	3600	
59 Co	72	1	0.00	0.00	ppb	2064.30	3600	
60 Ni	72	1	-0.02	-0.02	ppb	39.77	3600	
63 Cu	72	1	-0.01	-0.01	ppb	79.63	3600	
66 Zn	72	1	0.10	0.10	ppb	21.02	3600	
75 As	72	1	-0.01	-0.01	ppb	155.04	3600	
78 Se	72	1	0.58	0.58	ppb	54.66	3600	
95 Mo	72	1	0.71	0.71	ppb	20.97	3600	
107 Ag	115	1	0.01	0.01	ppb	34.30	3600	
111 Cd	115	1	0.00	0.00	ppb	292.93	3600	
118 Sn	115	1	-0.03	-0.03	ppb	81.68	3600	
121 Sb	115	1	0.01	0.01	ppb	74.05	3600	
137 Ba	115	1	0.00	0.00	ppb	64.23	3600	
205 Tl	165	1	0.00	0.00	ppb	52.33	3600	
208 Pb	165	1	0.00	0.00	ppb	34.79	3600	
232 Th	165	1	0.01	0.01	ppb	12.23	1000	
238 U	165	1	0.00	0.00	ppb	63.73	3600	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	339194	1.35	380157	89.2	30 - 120	
45 Sc	1	935735	0.87	1002329	93.4	30 - 120	
72 Ge	1	437417	0.42	466393	93.8	30 - 120	
115 In	1	1299039	0.24	1358080	95.7	30 - 120	
165 Ho	1	2306804	0.65	2422153	95.2	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\064CALB.D\064CALB.D#

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

Calibration Blank QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\120CALB.D\120CALB.D#
Date Acquired: Nov 10 2009 02:00 am
Acq. Method: NormISIS.M
Operator: LRD
Sample Name: Cal Blank
Misc Info:
Vial Number: 1101
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal. Update: Nov 09 2009 11:27 pm
Sample Type: CalBlk

DNO
LRD
11-10-09

QC Elements

Element		IS Ref	Tune	CPS Mean	RSD(%)
9	Be	6	1	0	0.00
51	V	72	1	897	5.64
52	Cr	72	1	1794	15.11
55	Mn	72	1	377	11.82
59	Co	72	1	27	78.54
60	Ni	72	1	60	33.98
63	Cu	72	1	160	5.50
66	Zn	72	1	389	5.28
75	As	72	1	38	9.69
78	Se	72	1	183	14.07
95	Mo	72	1	390	15.00
107	Ag	115	1	23	89.28
111	Cd	115	1	9	30.03
118	Sn	115	1	200	52.50
121	Sb	115	1	96	23.66
137	Ba	115	1	22	52.67
205	Tl	165	1	41	13.17
208	Pb	165	1	174	3.68
232	Th	165	1	167	27.85
238	U	165	1	68	20.50

Internal Standard Elements

Element		Tune	CPS Mean	RSD(%)
6	Li	1	346465	1.01
45	Sc	1	965226	0.47
72	Ge	1	449173	0.78
115	In	1	1321554	0.64
165	Ho	1	2347213	0.78

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

Reslope Before Continuing Analytical Run

Corrective action was taken as stated in method 6020 section 7.8

…"During the course of an analytical run, the instrument may be "resloped" or recalibrated to correct for instrument drift. A recalibration must then be followed immediately by a new analysis of a CCV and CCB before any further samples are analyzed."

Analyst: LRD

Date: 11/10/2025

Calibration Blank QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\121CALB.D\121CALB.D#
Date Acquired: Nov 10 2009 02:03 am
Acq. Method: NormISIS.M
Operator: LRD
Sample Name: Cal Blank
Misc Info:
Vial Number: 2101
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal. Update: Nov 10 2009 02:01 am
Sample Type: CalBlk

QC Elements

Element		IS Ref	Tune	CPS Mean	RSD(%)
9	Be	6	1	0	0.00
51	V	72	1	730	18.51
52	Cr	72	1	1797	5.23
55	Mn	72	1	380	20.15
59	Co	72	1	23	65.65
60	Ni	72	1	80	12.92
63	Cu	72	1	177	12.30
66	Zn	72	1	295	3.34
75	As	72	1	29	28.60
78	Se	72	1	180	31.25
95	Mo	72	1	177	34.62
107	Ag	115	1	10	100.23
111	Cd	115	1	2	77.88
118	Sn	115	1	250	7.37
121	Sb	115	1	63	13.14
137	Ba	115	1	26	26.02
205	Tl	165	1	46	23.48
208	Pb	165	1	193	5.70
232	Th	165	1	160	44.04
238	U	165	1	51	14.32

Internal Standard Elements

Element		Tune	CPS Mean	RSD(%)
6	Li	1	350699	0.51
45	Sc	1	975170	1.39
72	Ge	1	456352	0.62
115	In	1	1314315	1.31
165	Ho	1	2357107	0.71

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

Calibration Standard QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\122ICAL.D\122ICAL.D#
Date Acquired: Nov 10 2009 02:05 am
Acq. Method: NormISIS.M
Operator: LRD
Sample Name: 100 ppb
Misc Info:
Vial Number: 2102
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal. Update: Nov 10 2009 02:03 am
Sample Type: ICAL

QC Elements

Element		IS Ref	Tune	CPS Mean	RSD(%)
9	Be	6	1	40216	1.15
51	V	72	1	565936	0.42
52	Cr	72	1	564690	0.33
55	Mn	72	1	641392	0.30
59	Co	72	1	668817	1.09
60	Ni	72	1	151107	0.73
63	Cu	72	1	358263	0.61
66	Zn	72	1	82902	0.25
75	As	72	1	70507	0.36
78	Se	72	1	14505	2.61
95	Mo	72	1	194487	0.27
107	Ag	115	1	559008	2.42
111	Cd	115	1	115153	2.20
118	Sn	115	1	321843	1.50
121	Sb	115	1	379416	1.53
137	Ba	115	1	159256	1.48
205	Tl	165	1	1303983	2.38
208	Pb	165	1	1889337	1.40
232	Th	165	1	2003367	1.08
238	U	165	1	2096675	0.62

ISTD Elements

Element		Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	1	338335	1.13	350699	96.5	30 - 120	
45	Sc	1	958735	1.30	975170	98.3	30 - 120	
72	Ge	1	428707	1.21	456352	93.9	30 - 120	
115	In	1	1296877	0.96	1314315	98.7	30 - 120	
165	Ho	1	2326407	0.76	2357107	98.7	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\121CALB.D\121CALB.D#

0 :Element Failures 0
0 :ISTD Failures 0

Continuing Calibration Verification (CCV) QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\123 CCV.D\123 CCV.D#
Date Acquired: Nov 10 2009 02:08 am
Operator: LRD
Sample Name: CCV
Misc Info:
Vial Number: 1107
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal Update: Nov 10 2009 02:06 am
Sample Type: CCV
Total Dil Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Conc.		RSD(%)	Expected	Rec(%)	QC Range(%)	Flag
9 Be	6	1	49.91	ppb	2.75	50	99.8	90 - 110	
51 V	72	1	49.24	ppb	0.23	50	98.5	90 - 110	
52 Cr	72	1	49.45	ppb	0.29	50	98.9	90 - 110	
55 Mn	72	1	49.86	ppb	0.27	50	99.7	90 - 110	
59 Co	72	1	50.04	ppb	0.73	50	100.1	90 - 110	
60 Ni	72	1	49.40	ppb	1.02	50	98.8	90 - 110	
63 Cu	72	1	49.26	ppb	0.55	50	98.5	90 - 110	
66 Zn	72	1	49.37	ppb	0.57	50	98.7	90 - 110	
75 As	72	1	49.47	ppb	0.63	50	98.9	90 - 110	
78 Se	72	1	47.86	ppb	3.12	50	95.7	90 - 110	
95 Mo	72	1	49.27	ppb	1.81	50	98.5	90 - 110	
107 Ag	115	1	49.54	ppb	2.30	50	99.1	90 - 110	
111 Cd	115	1	49.21	ppb	1.38	50	98.4	90 - 110	
118 Sn	115	1	48.98	ppb	1.17	50	98.0	90 - 110	
121 Sb	115	1	49.67	ppb	0.57	50	99.3	90 - 110	
137 Ba	115	1	49.45	ppb	0.45	50	98.9	90 - 110	
205 Tl	165	1	52.26	ppb	1.95	50	104.5	90 - 110	
208 Pb	165	1	50.46	ppb	2.07	50	100.9	90 - 110	
232 Th	165	1	51.10	ppb	1.01	50	102.2	90 - 110	
238 U	165	1	50.56	ppb	2.70	50	101.1	90 - 110	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	339355	0.90	350699	96.8	30 - 120	
45 Sc	1	953700	0.62	975170	97.8	30 - 120	
72 Ge	1	425622	0.78	456352	93.3	30 - 120	
115 In	1	1290326	0.89	1314315	98.2	30 - 120	
165 Ho	1	2316506	0.95	2357107	98.3	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\121CALB.D\121CALB.D#

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

Continuing Calibration Blank (CCB) QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\124 CCB.D\124 CCB.D#
Date Acquired: Nov 10 2009 02:11 am
Operator: LRD
Sample Name: CCB
Misc Info:
Vial Number: 1307
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal Update: Nov 10 2009 02:06 am
Sample Type: CCB
Total Dil Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Conc.		RSD(%)	High Limit	Flag
9 Be	6	1	0.000	ppb	0.00	1.00	
51 V	72	1	-0.043	ppb	3.53	1.00	
52 Cr	72	1	0.018	ppb	155.75	1.00	
55 Mn	72	1	0.020	ppb	32.27	1.00	
59 Co	72	1	0.006	ppb	60.80	1.00	
60 Ni	72	1	-0.011	ppb	58.90	1.00	
63 Cu	72	1	-0.008	ppb	59.29	1.00	
66 Zn	72	1	0.060	ppb	53.66	1.00	
75 As	72	1	0.016	ppb	150.06	1.00	
78 Se	72	1	-0.177	ppb	77.78	1.00	
95 Mo	72	1	-0.001	ppb	3159.70	1.00	
107 Ag	115	1	0.011	ppb	29.33	1.00	
111 Cd	115	1	0.017	ppb	45.14	1.00	
118 Sn	115	1	0.139	ppb	49.06	1.00	
121 Sb	115	1	0.222	ppb	11.27	1.00	
137 Ba	115	1	0.004	ppb	98.08	1.00	
205 Tl	165	1	0.025	ppb	20.85	1.00	
208 Pb	165	1	0.005	ppb	19.31	1.00	
232 Th	165	1	0.066	ppb	20.41	1.00	
238 U	165	1	0.016	ppb	18.15	1.00	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	344141	0.34	350699	98.1	30 - 120	
45 Sc	1	943043	0.60	975170	96.7	30 - 120	
72 Ge	1	437268	0.59	456352	95.8	30 - 120	
115 In	1	1299591	0.93	1314315	98.9	30 - 120	
165 Ho	1	2322442	0.24	2357107	98.5	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\121CALB.D\121CALB.D#

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

Wash QC Report

Data File:	C:\ICPCHEM\1\DATA\AG110909A.B\125WASH.D\125WASH.D#
Date Acquired:	Nov 10 2009 02:14 am
Operator:	LRD
Sample Name:	RLCV
Misc Info:	
Vial Number:	1204
Current Method:	C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File:	C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal Update:	Nov 10 2009 02:06 am
Sample Type:	WASH
Total Dil Factor:	1.00

QC Summary:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Conc.	RSD(%)	High Limit	Flag
9 Be	6	1	0.915 ppb	26.94	1.30	
51 V	72	1	4.853 ppb	1.04	6.50	
52 Cr	72	1	2.109 ppb	4.44	2.60	
55 Mn	72	1	0.986 ppb	3.94	1.30	
59 Co	72	1	1.067 ppb	3.16	1.30	
60 Ni	72	1	2.030 ppb	2.53	2.60	
63 Cu	72	1	2.033 ppb	2.52	2.60	
66 Zn	72	1	11.810 ppb	0.98	13.00	
75 As	72	1	5.019 ppb	1.79	6.50	
78 Se	72	1	5.516 ppb	15.59	6.50	
95 Mo	72	1	1.978 ppb	4.60	2.60	
107 Ag	115	1	5.258 ppb	1.36	6.50	
111 Cd	115	1	1.018 ppb	4.53	1.30	
118 Sn	115	1	10.530 ppb	2.41	13.00	
121 Sb	115	1	2.096 ppb	2.55	2.60	
137 Ba	115	1	1.042 ppb	4.12	1.30	
205 Tl	165	1	1.095 ppb	0.66	1.30	
208 Pb	165	1	1.059 ppb	2.54	1.30	
232 Th	165	1	2.173 ppb	2.30	2.60	
238 U	165	1	1.093 ppb	2.96	1.30	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	343734	1.06	350699	98.0	30 - 120	
45 Sc	1	947887	0.88	975170	97.2	30 - 120	
72 Ge	1	434228	1.12	456352	95.2	30 - 120	
115 In	1	1279175	0.95	1314315	97.3	30 - 120	
165 Ho	1	2318596	0.84	2357107	98.4	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\121CALB.D\121CALB.D#

0 :Element Failures
0 :ISTD Failures

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

Denver

SAMPLE SPIKE

Method: 6020 (ICP/MS) | ICPMS_024 | Reported: 11/10/09 21:12:21

Department: 090 (Metals)

Source: Spreadsheet

Sample: **LNR5CZF**

Spike Dilution: **1.00** Sample Dilution: **1.00**

Instrument: **Agilent7500**
File: AG110909A # 161
Acquired: 11/10/2009 03:53:00
Calibrated: 11/10/2009 02:03:00

Channel 272
Method 6020_
ICPMS_024

Matrix: AQUEOUS
Units: ug/L

CASN	Analyte Name	M/S	Area	Amount	Sample	%Rec.	Spike	Flag	Q
7440-41-7	Beryllium	9	70359	198.70	0.00941	99.3	200		☑
7440-62-2	Vanadium	51	990931	200.70	2.2630	99.2	200		☑
7440-47-3	Chromium	52	969468	196.90	0.18720	98.4	200		☑
7439-96-5	Manganese	55	1799890	321.60	136.90	92.4	200		☐
7440-48-4	Cobalt	59	1109460	190.00	0.56900	94.7	200		☐
7440-02-0	Nickel	60	236220	179.10	2.4070	88.3	200		☑
7440-50-8	Copper	63	545370	174.40	0.63770	86.9	200		☐
7440-66-6	Zinc	66	140569	194.50	6.9590	93.8	200		☑
7440-38-2	Arsenic	75	123534	200.70	4.1530	98.3	200		☑
7782-49-2	Selenium	78	24669	195.90	0.16940	97.9	200		☑
7439-98-7	Molybdenum	95	361753	213.10	12.380	100	200		☐
7440-22-4	Silver	107	210428	43.200	0.01205	86.4	50.0		☐
7440-43-9	Cadmium	111	188097	187.40	0.20330	93.6	200		☑
7440-31-5	Tin	118	491653	175.40	0.27240	87.6	200		☐
7440-36-0	Antimony	121	648473	196.10	0.35850	97.9	200		☑
7440-39-3	Barium	137	292363	210.70	16.840	96.9	200		☑
7440-28-0	Thallium	205	2091910	173.90	0.03680	86.9	200		☑
7439-92-1	Lead	208	2973200	170.60	0.05501	85.3	200		☐
7440-61-1	Uranium	238	4048820	209.30	31.950	88.7	200		☐
7440-29-1	Thorium	232	610	0.02511	0.07622				
7439-93-2	Lithium	6			0				
7440-20-2	Scandium	45			0				
7440-74-6	Indium	115			0				
7440-56-4	Germanium	72			0				
7440-60-0	Holmium	165			0				

Reviewed by: LRD Date: 11/10/09

Continuing Calibration Verification (CCV) QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\162 CCV.D\162 CCV.D#
Date Acquired: Nov 10 2009 03:56 am
Operator: LRD
Sample Name: CCV
Misc Info:
Vial Number: 1107
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal Update: Nov 10 2009 02:06 am
Sample Type: CCV
Total Dil Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Conc.		RSD(%)	Expected	Rec(%)	QC Range(%)	Flag
9 Be	6	1	49.14	ppb	1.54	50	98.3	90 - 110	
51 V	72	1	49.98	ppb	0.38	50	100.0	90 - 110	
52 Cr	72	1	50.06	ppb	0.20	50	100.1	90 - 110	
55 Mn	72	1	50.50	ppb	0.45	50	101.0	90 - 110	
59 Co	72	1	50.94	ppb	0.53	50	101.9	90 - 110	
60 Ni	72	1	50.18	ppb	0.53	50	100.4	90 - 110	
63 Cu	72	1	49.87	ppb	0.68	50	99.7	90 - 110	
66 Zn	72	1	50.11	ppb	0.75	50	100.2	90 - 110	
75 As	72	1	49.25	ppb	1.16	50	98.5	90 - 110	
78 Se	72	1	48.42	ppb	0.76	50	96.8	90 - 110	
95 Mo	72	1	50.11	ppb	0.46	50	100.2	90 - 110	
107 Ag	115	1	50.24	ppb	2.24	50	100.5	90 - 110	
111 Cd	115	1	49.98	ppb	1.72	50	100.0	90 - 110	
118 Sn	115	1	50.13	ppb	1.39	50	100.3	90 - 110	
121 Sb	115	1	49.17	ppb	1.55	50	98.3	90 - 110	
137 Ba	115	1	49.59	ppb	2.33	50	99.2	90 - 110	
205 Tl	165	1	52.50	ppb	0.99	50	105.0	90 - 110	
208 Pb	165	1	50.59	ppb	1.11	50	101.2	90 - 110	
232 Th	165	1	50.04	ppb	1.35	50	100.1	90 - 110	
238 U	165	1	50.86	ppb	1.21	50	101.7	90 - 110	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	347591	0.09	350699	99.1	30 - 120	
45 Sc	1	985512	0.74	975170	101.1	30 - 120	
72 Ge	1	438985	0.98	456352	96.2	30 - 120	
115 In	1	1327077	0.71	1314315	101.0	30 - 120	
165 Ho	1	2367409	0.84	2357107	100.4	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\121CALB.D\121CALB.D#

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

Continuing Calibration Blank (CCB) QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\163 CCB.D\163 CCB.D#
Date Acquired: Nov 10 2009 03:59 am
Operator: LRD
Sample Name: CCB
Misc Info:
Vial Number: 1307
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal Update: Nov 10 2009 02:06 am
Sample Type: CCB
Total Dil Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Conc.		RSD(%)	High Limit	Flag
9 Be	6	1	0.000	ppb	0.00	1.00	
51 V	72	1	-0.068	ppb	10.36	1.00	
52 Cr	72	1	0.056	ppb	42.07	1.00	
55 Mn	72	1	0.018	ppb	21.12	1.00	
59 Co	72	1	0.008	ppb	45.64	1.00	
60 Ni	72	1	-0.006	ppb	344.27	1.00	
63 Cu	72	1	0.015	ppb	69.30	1.00	
66 Zn	72	1	0.031	ppb	121.06	1.00	
75 As	72	1	0.010	ppb	183.70	1.00	
78 Se	72	1	0.149	ppb	70.44	1.00	
95 Mo	72	1	-0.009	ppb	434.05	1.00	
107 Ag	115	1	0.012	ppb	24.62	1.00	
111 Cd	115	1	0.001	ppb	529.73	1.00	
118 Sn	115	1	0.210	ppb	20.95	1.00	
121 Sb	115	1	0.191	ppb	18.75	1.00	
137 Ba	115	1	0.007	ppb	60.79	1.00	
205 Tl	165	1	0.024	ppb	18.34	1.00	
208 Pb	165	1	0.008	ppb	23.89	1.00	
232 Th	165	1	0.054	ppb	20.74	1.00	
238 U	165	1	0.024	ppb	19.21	1.00	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	351264	0.16	350699	100.2	30 - 120	
45 Sc	1	989371	0.85	975170	101.5	30 - 120	
72 Ge	1	449966	1.04	456352	98.6	30 - 120	
115 In	1	1316003	0.47	1314315	100.1	30 - 120	
165 Ho	1	2374784	0.82	2357107	100.7	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\121CALB.D\121CALB.D#

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

Wash QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\164WASH.D\164WASH.D#
Date Acquired: Nov 10 2009 04:01 am
Operator: LRD
Sample Name: RLCV
Misc Info:
Vial Number: 1204
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal Update: Nov 10 2009 02:06 am
Sample Type: WASH
Total Dil Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Conc.	RSD(%)	High Limit	Flag
9 Be	6	1	0.883 ppb	20.26	1.30	
51 V	72	1	4.985 ppb	1.67	6.50	
52 Cr	72	1	2.102 ppb	3.49	2.60	
55 Mn	72	1	1.007 ppb	1.98	1.30	
59 Co	72	1	0.993 ppb	0.49	1.30	
60 Ni	72	1	2.145 ppb	6.11	2.60	
63 Cu	72	1	2.015 ppb	4.43	2.60	
66 Zn	72	1	12.050 ppb	1.22	13.00	
75 As	72	1	4.962 ppb	2.28	6.50	
78 Se	72	1	4.279 ppb	3.14	6.50	
95 Mo	72	1	1.986 ppb	5.22	2.60	
107 Ag	115	1	5.288 ppb	3.07	6.50	
111 Cd	115	1	1.004 ppb	6.21	1.30	
118 Sn	115	1	10.380 ppb	2.77	13.00	
121 Sb	115	1	2.090 ppb	0.62	2.60	
137 Ba	115	1	1.015 ppb	4.60	1.30	
205 Tl	165	1	1.115 ppb	1.61	1.30	
208 Pb	165	1	1.044 ppb	2.86	1.30	
232 Th	165	1	2.176 ppb	0.73	2.60	
238 U	165	1	1.083 ppb	1.17	1.30	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	346060	0.49	350699	98.7	30 - 120	
45 Sc	1	960806	0.86	975170	98.5	30 - 120	
72 Ge	1	440039	1.15	456352	96.4	30 - 120	
115 In	1	1304767	0.27	1314315	99.3	30 - 120	
165 Ho	1	2323183	0.86	2357107	98.6	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\121CALB.D\121CALB.D#

0 :Element Failures
0 :ISTD Failures

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

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\165SMPL.D\165SMPL.D#
Date Acquired: Nov 10 2009 04:04 am
Acq. Method: NormISIS.M
Operator: LRD
Sample Name: RINSE
Misc Info:
Vial Number: 1301
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal. Update: Nov 10 2009 02:06 am
Sample Type: SA
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

DNW LRD 11-10-09

QC Elements

Element	IS Ref	Tune	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	6	1	18.73	18.73	ppb	2.09	3600	
51 V	72	1	22.54	22.54	ppb	1.72	3600	
52 Cr	72	1	19.86	19.86	ppb	2.70	3600	
55 Mn	72	1	21.89	21.89	ppb	1.78	3600	
59 Co	72	1	18.77	18.77	ppb	1.16	3600	
60 Ni	72	1	19.02	19.02	ppb	1.78	3600	
63 Cu	72	1	17.83	17.83	ppb	0.82	3600	
66 Zn	72	1	22.31	22.31	ppb	0.84	3600	
75 As	72	1	19.33	19.33	ppb	1.04	3600	
78 Se	72	1	17.88	17.88	ppb	10.24	3600	
95 Mo	72	1	2,128.00	2128.00	ppb	0.90	3600	
107 Ag	115	1	16.32	16.32	ppb	1.76	3600	
111 Cd	115	1	16.10	16.10	ppb	5.07	3600	
118 Sn	115	1	40.89	40.89	ppb	1.16	3600	
121 Sb	115	1	42.04	42.04	ppb	1.73	3600	
137 Ba	115	1	19.64	19.64	ppb	1.67	3600	
205 Tl	165	1	19.40	19.40	ppb	1.04	3600	
208 Pb	165	1	18.98	18.98	ppb	1.21	3600	
232 Th	165	1	20.25	20.25	ppb	1.42	1000	
238 U	165	1	20.00	20.00	ppb	1.51	3600	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	266814	0.52	350699	76.1	30 - 120	
45 Sc	1	762856	0.31	975170	78.2	30 - 120	
72 Ge	1	348103	1.14	456352	76.3	30 - 120	
115 In	1	1022663	1.01	1314315	77.8	30 - 120	
165 Ho	1	1912332	0.21	2357107	81.1	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\121CALB.D\121CALB.D#

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

Sample QC Report

Data File:	C:\ICPCHEM\1\DATA\AG110909A.B\166SMPL.D\166SMPL.D#
Date Acquired:	Nov 10 2009 04:07 am
Acq. Method:	NormISIS.M
Operator:	LRD
Sample Name:	RINSE
Misc Info:	
Vial Number:	1101
Current Method:	C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File:	C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal. Update:	Nov 10 2009 02:06 am
Sample Type:	SA
Dilution Factor:	1.00
Autodil Factor:	Undiluted
Final Dil Factor:	1.00

QC Summary:
Analytes: Pass
ISTD: Pass

DJW LRD 11/10/09

QC Elements

Element	IS Ref	Tune	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	6	1	0.00	0.00	ppb	0.00	3600	
51 V	72	1	0.04	0.04	ppb	27.50	3600	
52 Cr	72	1	0.03	0.03	ppb	73.66	3600	
55 Mn	72	1	-0.01	-0.01	ppb	70.68	3600	
59 Co	72	1	0.00	0.00	ppb	119.30	3600	
60 Ni	72	1	-0.02	-0.02	ppb	48.95	3600	
63 Cu	72	1	0.01	0.01	ppb	176.84	3600	
66 Zn	72	1	0.11	0.11	ppb	24.51	3600	
75 As	72	1	0.01	0.01	ppb	16.79	3600	
78 Se	72	1	0.27	0.27	ppb	60.38	3600	
95 Mo	72	1	0.74	0.74	ppb	11.93	3600	
107 Ag	115	1	0.01	0.01	ppb	40.61	3600	
111 Cd	115	1	0.00	0.00	ppb	228.34	3600	
118 Sn	115	1	0.03	0.03	ppb	36.60	3600	
121 Sb	115	1	0.02	0.02	ppb	12.69	3600	
137 Ba	115	1	0.00	0.00	ppb	28.78	3600	
205 Tl	165	1	0.00	0.00	ppb	51.08	3600	
208 Pb	165	1	0.00	0.00	ppb	114.67	3600	
232 Th	165	1	0.01	0.01	ppb	51.03	1000	
238 U	165	1	0.01	0.01	ppb	35.69	3600	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	322179	0.60	350699	91.9	30 - 120	
45 Sc	1	916911	0.48	975170	94.0	30 - 120	
72 Ge	1	427622	0.35	456352	93.7	30 - 120	
115 In	1	1267601	0.22	1314315	96.4	30 - 120	
165 Ho	1	2288070	1.08	2357107	97.1	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\121CALB.D\121CALB.D#

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

Calibration Blank QC Report

Data File:	C:\ICPCHEM\1\DATA\AG110909A.B\167CALB.D\167CALB.D#
Date Acquired:	Nov 10 2009 04:10 am
Acq. Method:	NormISIS.M
Operator:	LRD
Sample Name:	Cal Blank
Misc Info:	
Vial Number:	1101
Current Method:	C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File:	C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal. Update:	Nov 10 2009 02:06 am
Sample Type:	CalBlk

DNU
LRD
11-10-09

QC Elements

Element		IS Ref	Tune	CPS Mean	RSD(%)
9	Be	6	1	0	0.00
51	V	72	1	623	5.36
52	Cr	72	1	1907	8.36
55	Mn	72	1	297	31.81
59	Co	72	1	13	43.79
60	Ni	72	1	90	21.75
63	Cu	72	1	187	13.96
66	Zn	72	1	381	9.40
75	As	72	1	33	3.98
78	Se	72	1	237	34.02
95	Mo	72	1	333	13.72
107	Ag	115	1	27	21.34
111	Cd	115	1	0	4036.20
118	Sn	115	1	247	31.15
121	Sb	115	1	77	16.27
137	Ba	115	1	17	52.78
205	Tl	165	1	54	27.12
208	Pb	165	1	180	13.82
232	Th	165	1	183	17.65
238	U	165	1	80	44.17

Internal Standard Elements

Element		Tune	CPS Mean	RSD(%)
6	Li	1	328514	0.74
45	Sc	1	943505	0.53
72	Ge	1	436667	0.49
115	In	1	1277330	1.17
165	Ho	1	2304323	0.71

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

Reslope Before Continuing Analytical Run

Corrective action was taken as stated in method 6020 section 7.8

..."During the course of an analytical run, the instrument may be "resloped" or recalibrated to correct for instrument drift. A recalibration must then be followed immediately by a new analysis of a CCV and CCB before any further samples are analyzed."

Analyst: LRD

Date: 11/10/2009

Calibration Blank QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\168CALB.D\168CALB.D#
Date Acquired: Nov 10 2009 04:12 am
Acq. Method: NormISIS.M
Operator: LRD
Sample Name: Cal Blank
Misc Info:
Vial Number: 2101
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal. Update: Nov 10 2009 04:10 am
Sample Type: CalBlk

QC Elements

Element		IS Ref	Tune	CPS Mean	RSD(%)
9	Be	6	1	3	173.19
51	V	72	1	430	20.39
52	Cr	72	1	1770	9.94
55	Mn	72	1	347	21.51
59	Co	72	1	33	75.05
60	Ni	72	1	60	50.12
63	Cu	72	1	187	34.96
66	Zn	72	1	286	12.88
75	As	72	1	27	15.13
78	Se	72	1	277	14.05
95	Mo	72	1	223	2.09
107	Ag	115	1	23	108.16
111	Cd	115	1	3	99.84
118	Sn	115	1	267	31.66
121	Sb	115	1	84	40.17
137	Ba	115	1	32	30.32
205	Tl	165	1	39	12.02
208	Pb	165	1	178	14.64
232	Th	165	1	167	15.20
238	U	165	1	77	28.89

Internal Standard Elements

Element		Tune	CPS Mean	RSD(%)
6	Li	1	331510	0.57
45	Sc	1	950514	1.56
72	Ge	1	444072	0.55
115	In	1	1307174	0.43
165	Ho	1	2307209	1.43

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

Calibration Standard QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\169ICAL.D\169ICAL.D#
Date Acquired: Nov 10 2009 04:15 am
Acq. Method: NormISIS.M
Operator: LRD
Sample Name: 100 ppb
Misc Info:
Vial Number: 2102
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal. Update: Nov 10 2009 04:13 am
Sample Type: ICAL

QC Elements

Element		IS Ref	Tune	CPS Mean	RSD(%)
9	Be	6	1	38692	2.12
51	V	72	1	545754	1.79
52	Cr	72	1	551698	0.21
55	Mn	72	1	626206	0.45
59	Co	72	1	664361	0.63
60	Ni	72	1	146860	0.36
63	Cu	72	1	352436	0.19
66	Zn	72	1	81444	0.40
75	As	72	1	69255	0.69
78	Se	72	1	13787	2.63
95	Mo	72	1	192259	1.13
107	Ag	115	1	554555	1.71
111	Cd	115	1	112962	1.30
118	Sn	115	1	315447	1.98
121	Sb	115	1	372367	1.45
137	Ba	115	1	157571	0.95
205	Tl	165	1	1285739	1.22
208	Pb	165	1	1856303	1.04
232	Th	165	1	1978465	1.43
238	U	165	1	2066107	1.25

ISTD Elements

Element		Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	1	321948	0.26	331510	97.1	30 - 120	
45	Sc	1	936724	1.17	950514	98.5	30 - 120	
72	Ge	1	418042	1.36	444072	94.1	30 - 120	
115	In	1	1273420	0.09	1307174	97.4	30 - 120	
165	Ho	1	2283231	0.43	2307209	99.0	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\168CALB.D\168CALB.D#

0 :Element Failures 0
0 :ISTD Failures 0

Continuing Calibration Verification (CCV) QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\170 CCV.D\170 CCV.D#
Date Acquired: Nov 10 2009 04:18 am
Operator: LRD
Sample Name: CCV
Misc Info:
Vial Number: 1107
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal Update: Nov 10 2009 04:16 am
Sample Type: CCV
Total Dil Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Conc.		RSD(%)	Expected	Rec(%)	QC Range(%)	Flag
9 Be	6	1	48.43	ppb	4.05	50	96.9	90 - 110	
51 V	72	1	49.93	ppb	0.68	50	99.9	90 - 110	
52 Cr	72	1	49.22	ppb	0.29	50	98.4	90 - 110	
55 Mn	72	1	49.73	ppb	0.69	50	99.5	90 - 110	
59 Co	72	1	49.33	ppb	0.19	50	98.7	90 - 110	
60 Ni	72	1	49.83	ppb	1.16	50	99.7	90 - 110	
63 Cu	72	1	48.72	ppb	0.60	50	97.4	90 - 110	
66 Zn	72	1	49.42	ppb	0.33	50	98.8	90 - 110	
75 As	72	1	49.46	ppb	0.34	50	98.9	90 - 110	
78 Se	72	1	50.37	ppb	0.72	50	100.7	90 - 110	
95 Mo	72	1	48.96	ppb	1.30	50	97.9	90 - 110	
107 Ag	115	1	48.74	ppb	2.09	50	97.5	90 - 110	
111 Cd	115	1	49.15	ppb	1.05	50	98.3	90 - 110	
118 Sn	115	1	49.69	ppb	2.94	50	99.4	90 - 110	
121 Sb	115	1	49.41	ppb	1.16	50	98.8	90 - 110	
137 Ba	115	1	49.28	ppb	2.02	50	98.6	90 - 110	
205 Tl	165	1	52.00	ppb	1.32	50	104.0	90 - 110	
208 Pb	165	1	50.12	ppb	1.70	50	100.2	90 - 110	
232 Th	165	1	50.13	ppb	0.35	50	100.3	90 - 110	
238 U	165	1	50.62	ppb	0.36	50	101.2	90 - 110	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	321387	1.44	331510	96.9	30 - 120	
45 Sc	1	919553	0.84	950514	96.7	30 - 120	
72 Ge	1	415473	1.26	444072	93.6	30 - 120	
115 In	1	1268904	0.29	1307174	97.1	30 - 120	
165 Ho	1	2288136	0.21	2307209	99.2	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\168CALB.D\168CALB.D#

0 :Element Failures
0 :ISTD Failures

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

Continuing Calibration Blank (CCB) QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\171 CCB.D\171 CCB.D#
Date Acquired: Nov 10 2009 04:21 am
Operator: LRD
Sample Name: CCB
Misc Info:
Vial Number: 1307
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal Update: Nov 10 2009 04:16 am
Sample Type: CCB
Total Dil Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Conc.		RSD(%)	High Limit	Flag
9 Be	6	1	0.008	ppb	345.13	1.00	
51 V	72	1	-0.030	ppb	27.71	1.00	
52 Cr	72	1	0.011	ppb	359.14	1.00	
55 Mn	72	1	0.026	ppb	59.87	1.00	
59 Co	72	1	0.009	ppb	69.21	1.00	
60 Ni	72	1	-0.005	ppb	262.82	1.00	
63 Cu	72	1	0.015	ppb	124.47	1.00	
66 Zn	72	1	0.057	ppb	55.45	1.00	
75 As	72	1	0.007	ppb	158.35	1.00	
78 Se	72	1	-0.354	ppb	24.33	1.00	
95 Mo	72	1	-0.036	ppb	90.23	1.00	
107 Ag	115	1	0.013	ppb	53.73	1.00	
111 Cd	115	1	-0.001	ppb	615.07	1.00	
118 Sn	115	1	0.156	ppb	39.27	1.00	
121 Sb	115	1	0.229	ppb	15.59	1.00	
137 Ba	115	1	0.007	ppb	108.18	1.00	
205 Tl	165	1	0.028	ppb	26.51	1.00	
208 Pb	165	1	0.008	ppb	50.89	1.00	
232 Th	165	1	0.067	ppb	17.50	1.00	
238 U	165	1	0.018	ppb	11.10	1.00	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	326857	0.75	331510	98.6	30 - 120	
45 Sc	1	919441	0.17	950514	96.7	30 - 120	
72 Ge	1	426513	0.32	444072	96.0	30 - 120	
115 In	1	1258252	1.28	1307174	96.3	30 - 120	
165 Ho	1	2278633	0.87	2307209	98.8	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\168CALB.D\168CALB.D#

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

Wash QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\172WASH.D\172WASH.D#
Date Acquired: Nov 10 2009 04:23 am
Operator: LRD
Sample Name: RLCV
Misc Info:
Vial Number: 1204
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal Update: Nov 10 2009 04:16 am
Sample Type: WASH
Total Dil Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Conc.	RSD(%)	High Limit	Flag
9 Be	6	1	1.058 ppb	8.94	1.30	
51 V	72	1	4.957 ppb	0.65	6.50	
52 Cr	72	1	2.087 ppb	1.77	2.60	
55 Mn	72	1	1.034 ppb	2.61	1.30	
59 Co	72	1	1.010 ppb	6.87	1.30	
60 Ni	72	1	1.990 ppb	6.16	2.60	
63 Cu	72	1	1.958 ppb	2.72	2.60	
66 Zn	72	1	12.020 ppb	0.99	13.00	
75 As	72	1	4.981 ppb	4.13	6.50	
78 Se	72	1	4.357 ppb	9.07	6.50	
95 Mo	72	1	2.054 ppb	4.51	2.60	
107 Ag	115	1	5.395 ppb	2.38	6.50	
111 Cd	115	1	0.972 ppb	2.90	1.30	
118 Sn	115	1	10.390 ppb	1.20	13.00	
121 Sb	115	1	2.124 ppb	1.76	2.60	
137 Ba	115	1	1.088 ppb	3.09	1.30	
205 Tl	165	1	1.105 ppb	1.14	1.30	
208 Pb	165	1	1.069 ppb	0.68	1.30	
232 Th	165	1	2.148 ppb	0.91	2.60	
238 U	165	1	1.100 ppb	0.38	1.30	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	325227	0.23	331510	98.1	30 - 120	
45 Sc	1	915220	1.26	950514	96.3	30 - 120	
72 Ge	1	422961	0.75	444072	95.2	30 - 120	
115 In	1	1245164	0.55	1307174	95.3	30 - 120	
165 Ho	1	2249355	0.16	2307209	97.5	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\168CALB.D\168CALB.D#

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

Reslope Before Continuing Analytical Run

Corrective action was taken as stated in method 6020 section 7.8

…"During the course of an analytical run, the instrument may be "resloped" or recalibrated to correct for instrument drift. A recalibration must then be followed immediately by a new analysis of a CCV and CCB before any further samples are analyzed."

Analyst: LRD

Date: 11/10/2009

Calibration Blank QC Report

Data File:	C:\ICPCHEM\1\DATA\AG110909A.B\220CALB.D\220CALB.D#
Date Acquired:	Nov 10 2009 06:37 am
Acq. Method:	NormISIS.M
Operator:	LRD
Sample Name:	Cal Blank
Misc Info:	
Vial Number:	2101
Current Method:	C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File:	C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal. Update:	Nov 10 2009 06:35 am
Sample Type:	CalBlk

QC Elements

Element		IS Ref	Tune	CPS Mean	RSD(%)
9	Be	6	1	7	173.21
51	V	72	1	2004	2.44
52	Cr	72	1	2430	7.26
55	Mn	72	1	360	7.16
59	Co	72	1	13	173.19
60	Ni	72	1	60	43.50
63	Cu	72	1	2637	2.85
66	Zn	72	1	385	12.41
75	As	72	1	32	37.03
78	Se	72	1	653	3.79
95	Mo	72	1	320	32.85
107	Ag	115	1	17	69.43
111	Cd	115	1	1	249.94
118	Sn	115	1	283	25.15
121	Sb	115	1	76	25.21
137	Ba	115	1	32	31.73
205	Tl	165	1	50	13.94
208	Pb	165	1	228	21.30
232	Th	165	1	133	39.32
238	U	165	1	58	19.42

Internal Standard Elements

Element		Tune	CPS Mean	RSD(%)
6	Li	1	364209	0.54
45	Sc	1	1163848	0.93
72	Ge	1	535322	0.55
115	In	1	1515637	0.20
165	Ho	1	2559530	0.96

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

Calibration Standard QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\221ICAL.D\221ICAL.D#
Date Acquired: Nov 10 2009 06:40 am
Acq. Method: NormISIS.M
Operator: LRD
Sample Name: 100 ppb
Misc Info:
Vial Number: 2102
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal. Update: Nov 10 2009 06:38 am
Sample Type: ICAL

QC Elements

Element		IS Ref	Tune	CPS Mean	RSD(%)
9	Be	6	1	42416	1.81
51	V	72	1	672139	1.06
52	Cr	72	1	659574	1.44
55	Mn	72	1	774797	1.06
59	Co	72	1	818826	1.81
60	Ni	72	1	178503	0.85
63	Cu	72	1	428340	0.94
66	Zn	72	1	97488	0.66
75	As	72	1	84133	0.50
78	Se	72	1	17141	0.69
95	Mo	72	1	231551	0.64
107	Ag	115	1	666285	2.14
111	Cd	115	1	131920	2.25
118	Sn	115	1	371553	2.41
121	Sb	115	1	432842	2.02
137	Ba	115	1	184022	1.81
205	Tl	165	1	1381951	1.10
208	Pb	165	1	1982145	1.18
232	Th	165	1	2077430	0.61
238	U	165	1	2162746	1.04

ISTD Elements

Element		Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	1	353326	1.41	364209	97.0	30 - 120	
45	Sc	1	1143344	0.28	1163848	98.2	30 - 120	
72	Ge	1	509057	0.76	535322	95.1	30 - 120	
115	In	1	1490409	1.11	1515637	98.3	30 - 120	
165	Ho	1	2545650	0.70	2559530	99.5	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\220CALB.D\220CALB.D#

0 :Element Failures 0
0 :ISTD Failures 0

Continuing Calibration Verification (CCV) QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\222 CCV.D\222 CCV.D#
Date Acquired: Nov 10 2009 06:42 am
Operator: LRD
Sample Name: CCV
Misc Info:
Vial Number: 1105
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal Update: Nov 10 2009 06:40 am
Sample Type: CCV
Total Dil Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Conc.		RSD(%)	Expected	Rec(%)	QC Range(%)	Flag
9 Be	6	1	50.60	ppb	2.07	50	101.2	90 - 110	
51 V	72	1	50.78	ppb	0.80	50	101.6	90 - 110	
52 Cr	72	1	51.77	ppb	0.83	50	103.5	90 - 110	
55 Mn	72	1	50.64	ppb	0.56	50	101.3	90 - 110	
59 Co	72	1	50.76	ppb	1.10	50	101.5	90 - 110	
60 Ni	72	1	51.24	ppb	1.27	50	102.5	90 - 110	
63 Cu	72	1	51.07	ppb	1.06	50	102.1	90 - 110	
66 Zn	72	1	50.62	ppb	0.29	50	101.2	90 - 110	
75 As	72	1	51.30	ppb	0.67	50	102.6	90 - 110	
78 Se	72	1	51.54	ppb	3.37	50	103.1	90 - 110	
95 Mo	72	1	51.02	ppb	0.24	50	102.0	90 - 110	
107 Ag	115	1	50.85	ppb	0.78	50	101.7	90 - 110	
111 Cd	115	1	51.50	ppb	1.11	50	103.0	90 - 110	
118 Sn	115	1	51.33	ppb	1.89	50	102.7	90 - 110	
121 Sb	115	1	51.31	ppb	1.40	50	102.6	90 - 110	
137 Ba	115	1	51.31	ppb	1.19	50	102.6	90 - 110	
205 Tl	165	1	51.59	ppb	1.22	50	103.2	90 - 110	
208 Pb	165	1	51.49	ppb	1.73	50	103.0	90 - 110	
232 Th	165	1	51.84	ppb	0.78	50	103.7	90 - 110	
238 U	165	1	51.15	ppb	0.42	50	102.3	90 - 110	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	353999	0.17	364209	97.2	30 - 120	
45 Sc	1	1138235	1.19	1163848	97.8	30 - 120	
72 Ge	1	507424	0.78	535322	94.8	30 - 120	
115 In	1	1482389	0.58	1515637	97.8	30 - 120	
165 Ho	1	2558437	0.95	2559530	100.0	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\220CALB.D\220CALB.D#

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

Continuing Calibration Blank (CCB) QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\223 CCB.D\223 CCB.D#
Date Acquired: Nov 10 2009 06:45 am
Operator: LRD
Sample Name: CCB
Misc Info:
Vial Number: 1305
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal Update: Nov 10 2009 06:40 am
Sample Type: CCB
Total Dil Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Conc.		RSD(%)	High Limit	Flag
9 Be	6	1	-0.007	ppb	184.78	1.00	
51 V	72	1	-0.117	ppb	19.65	1.00	
52 Cr	72	1	0.012	ppb	280.31	1.00	
55 Mn	72	1	0.000	ppb	1946.00	1.00	
59 Co	72	1	0.002	ppb	27.62	1.00	
60 Ni	72	1	0.005	ppb	175.59	1.00	
63 Cu	72	1	0.078	ppb	23.29	1.00	
66 Zn	72	1	-0.155	ppb	14.23	1.00	
75 As	72	1	0.010	ppb	29.71	1.00	
78 Se	72	1	0.334	ppb	51.17	1.00	
95 Mo	72	1	-0.051	ppb	15.15	1.00	
107 Ag	115	1	0.011	ppb	32.61	1.00	
111 Cd	115	1	-0.004	ppb	194.86	1.00	
118 Sn	115	1	0.141	ppb	56.46	1.00	
121 Sb	115	1	0.220	ppb	13.59	1.00	
137 Ba	115	1	0.002	ppb	341.19	1.00	
205 Tl	165	1	0.020	ppb	21.44	1.00	
208 Pb	165	1	0.002	ppb	21.77	1.00	
232 Th	165	1	0.056	ppb	19.23	1.00	
238 U	165	1	0.013	ppb	23.71	1.00	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	357737	0.71	364209	98.2	30 - 120	
45 Sc	1	1128439	0.55	1163848	97.0	30 - 120	
72 Ge	1	516804	0.54	535322	96.5	30 - 120	
115 In	1	1488400	1.45	1515637	98.2	30 - 120	
165 Ho	1	2518587	0.57	2559530	98.4	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\220CALB.D\220CALB.D#

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

Wash QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\224WASH.D\224WASH.D#
Date Acquired: Nov 10 2009 06:48 am
Operator: LRD
Sample Name: RLCV
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal Update: Nov 10 2009 06:40 am
Sample Type: WASH
Total Dil Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Conc.	RSD(%)	High Limit	Flag
9 Be	6	1	0.831 ppb	12.89	1.30	
51 V	72	1	4.919 ppb	1.95	6.50	
52 Cr	72	1	2.149 ppb	6.24	2.60	
55 Mn	72	1	1.062 ppb	1.02	1.30	
59 Co	72	1	1.032 ppb	4.01	1.30	
60 Ni	72	1	2.120 ppb	5.42	2.60	
63 Cu	72	1	2.105 ppb	6.06	2.60	
66 Zn	72	1	10.120 ppb	1.02	13.00	
75 As	72	1	5.038 ppb	3.16	6.50	
78 Se	72	1	4.729 ppb	30.66	6.50	
95 Mo	72	1	1.958 ppb	5.38	2.60	
107 Ag	115	1	5.392 ppb	0.75	6.50	
111 Cd	115	1	1.053 ppb	3.90	1.30	
118 Sn	115	1	10.510 ppb	0.78	13.00	
121 Sb	115	1	2.156 ppb	0.96	2.60	
137 Ba	115	1	1.085 ppb	4.04	1.30	
205 Tl	165	1	1.118 ppb	0.53	1.30	
208 Pb	165	1	1.072 ppb	0.88	1.30	
232 Th	165	1	2.213 ppb	1.48	2.60	
238 U	165	1	1.092 ppb	1.07	1.30	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	354401	0.17	364209	97.3	30 - 120	
45 Sc	1	1124522	0.87	1163848	96.6	30 - 120	
72 Ge	1	509218	0.28	535322	95.1	30 - 120	
115 In	1	1464876	0.38	1515637	96.7	30 - 120	
165 Ho	1	2510955	0.27	2559530	98.1	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\220CALB.D\220CALB.D#

0 :Element Failures
0 :ISTD Failures

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

Continuing Calibration Verification (CCV) QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\252 CCV.D\252 CCV.D#
Date Acquired: Nov 10 2009 08:06 am
Operator: LRD
Sample Name: CCV
Misc Info:
Vial Number: 1105
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal Update: Nov 10 2009 06:40 am
Sample Type: CCV
Total Dil Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Conc.	RSD(%)	Expected	Rec(%)	QC Range(%)	Flag
9 Be	6	1	49.76 ppb	2.25	50	99.5	90 - 110	
51 V	72	1	50.29 ppb	0.27	50	100.6	90 - 110	
52 Cr	72	1	51.74 ppb	0.29	50	103.5	90 - 110	
55 Mn	72	1	50.98 ppb	1.06	50	102.0	90 - 110	
59 Co	72	1	50.43 ppb	1.17	50	100.9	90 - 110	
60 Ni	72	1	50.96 ppb	0.54	50	101.9	90 - 110	
63 Cu	72	1	50.60 ppb	0.59	50	101.2	90 - 110	
66 Zn	72	1	50.79 ppb	0.58	50	101.6	90 - 110	
75 As	72	1	51.27 ppb	1.12	50	102.5	90 - 110	
78 Se	72	1	50.26 ppb	6.40	50	100.5	90 - 110	
95 Mo	72	1	51.25 ppb	0.32	50	102.5	90 - 110	
107 Ag	115	1	49.80 ppb	1.00	50	99.6	90 - 110	
111 Cd	115	1	50.73 ppb	0.32	50	101.5	90 - 110	
118 Sn	115	1	50.51 ppb	0.85	50	101.0	90 - 110	
121 Sb	115	1	50.89 ppb	0.44	50	101.8	90 - 110	
137 Ba	115	1	51.32 ppb	1.22	50	102.6	90 - 110	
205 Tl	165	1	51.66 ppb	1.29	50	103.3	90 - 110	
208 Pb	165	1	53.05 ppb	1.61	50	106.1	90 - 110	
232 Th	165	1	53.11 ppb	1.41	50	106.2	90 - 110	
238 U	165	1	53.24 ppb	0.58	50	106.5	90 - 110	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	337057	0.05	364209	92.5	30 - 120	
45 Sc	1	1035951	0.48	1163848	89.0	30 - 120	
72 Ge	1	467404	0.78	535322	87.3	30 - 120	
115 In	1	1410055	1.77	1515637	93.0	30 - 120	
165 Ho	1	2427353	0.78	2559530	94.8	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\220CALB.D\220CALB.D#

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

Continuing Calibration Blank (CCB) QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\253 CCB.D\253 CCB.D#
Date Acquired: Nov 10 2009 08:09 am
Operator: LRD
Sample Name: CCB
Misc Info:
Vial Number: 1305
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal Update: Nov 10 2009 06:40 am
Sample Type: CCB
Total Dil Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Conc.		RSD(%)	High Limit	Flag
9 Be	6	1	-0.007	ppb	197.74	1.00	
51 V	72	1	-0.211	ppb	5.94	1.00	
52 Cr	72	1	0.004	ppb	634.04	1.00	
55 Mn	72	1	0.010	ppb	127.23	1.00	
59 Co	72	1	0.006	ppb	25.34	1.00	
60 Ni	72	1	0.002	ppb	518.32	1.00	
63 Cu	72	1	-0.141	ppb	11.22	1.00	
66 Zn	72	1	-0.125	ppb	2.91	1.00	
75 As	72	1	0.014	ppb	51.54	1.00	
78 Se	72	1	-1.128	ppb	15.75	1.00	
95 Mo	72	1	-0.075	ppb	31.45	1.00	
107 Ag	115	1	0.005	ppb	49.01	1.00	
111 Cd	115	1	0.008	ppb	34.71	1.00	
118 Sn	115	1	0.103	ppb	37.96	1.00	
121 Sb	115	1	0.175	ppb	19.38	1.00	
137 Ba	115	1	0.009	ppb	33.98	1.00	
205 Tl	165	1	0.022	ppb	14.13	1.00	
208 Pb	165	1	0.004	ppb	27.09	1.00	
232 Th	165	1	0.054	ppb	22.40	1.00	
238 U	165	1	0.015	ppb	12.73	1.00	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	342419	0.39	364209	94.0	30 - 120	
45 Sc	1	1043040	0.42	1163848	89.6	30 - 120	
72 Ge	1	479974	0.41	535322	89.7	30 - 120	
115 In	1	1389176	0.31	1515637	91.7	30 - 120	
165 Ho	1	2416963	0.94	2559530	94.4	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\220CALB.D\220CALB.D#

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

Wash QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\254WASH.D\254WASH.D#
Date Acquired: Nov 10 2009 08:11 am
Operator: LRD
Sample Name: RLCV
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal Update: Nov 10 2009 06:40 am
Sample Type: WASH
Total Dil Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Conc.	RSD(%)	High Limit	Flag
9 Be	6	1	0.910 ppb	12.07	1.30	
51 V	72	1	4.862 ppb	1.34	6.50	
52 Cr	72	1	2.078 ppb	1.50	2.60	
55 Mn	72	1	1.069 ppb	4.07	1.30	
59 Co	72	1	1.000 ppb	2.77	1.30	
60 Ni	72	1	1.963 ppb	8.51	2.60	
63 Cu	72	1	1.834 ppb	5.78	2.60	
66 Zn	72	1	10.190 ppb	1.13	13.00	
75 As	72	1	4.974 ppb	2.72	6.50	
78 Se	72	1	3.540 ppb	16.73	6.50	
95 Mo	72	1	1.876 ppb	2.40	2.60	
107 Ag	115	1	5.337 ppb	2.40	6.50	
111 Cd	115	1	1.170 ppb	5.36	1.30	
118 Sn	115	1	10.450 ppb	2.13	13.00	
121 Sb	115	1	2.117 ppb	0.77	2.60	
137 Ba	115	1	1.072 ppb	2.67	1.30	
205 Tl	165	1	1.159 ppb	1.50	1.30	
208 Pb	165	1	1.126 ppb	3.33	1.30	
232 Th	165	1	2.273 ppb	2.31	2.60	
238 U	165	1	1.149 ppb	2.34	1.30	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	339102	0.95	364209	93.1	30 - 120	
45 Sc	1	1029086	1.08	1163848	88.4	30 - 120	
72 Ge	1	474132	0.75	535322	88.6	30 - 120	
115 In	1	1387037	0.47	1515637	91.5	30 - 120	
165 Ho	1	2384076	0.99	2559530	93.1	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\220CALB.D\220CALB.D#

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

Blank QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\255 BLK.D\255 BLK.D#
Date Acquired: Nov 10 2009 08:14 am
Operator: LRD
Sample Name: LNRQVB
Misc Info: BLANK 9308149 6020
Vial Number: 2201
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal Update: Nov 10 2009 06:40 am
Sample Type: BLK
Total Dil Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Conc.	RSD(%)	High Limit	Flag
9 Be	6	1	0.001 ppb	1079.40	2.00	
51 V	72	1	-0.220 ppb	1.91	2.00	
52 Cr	72	1	0.110 ppb	34.78	2.00	
55 Mn	72	1	0.075 ppb	19.71	2.00	
59 Co	72	1	0.006 ppb	36.03	2.00	
60 Ni	72	1	0.013 ppb	272.90	2.00	
63 Cu	72	1	-0.120 ppb	22.88	2.00	
66 Zn	72	1	0.770 ppb	2.91	2.00	
75 As	72	1	0.004 ppb	279.25	2.00	
78 Se	72	1	-1.345 ppb	10.51	2.00	
95 Mo	72	1	-0.076 ppb	19.35	2.00	
107 Ag	115	1	0.007 ppb	35.88	2.00	
111 Cd	115	1	0.001 ppb	630.63	2.00	
118 Sn	115	1	0.101 ppb	22.49	2.00	
121 Sb	115	1	0.043 ppb	50.71	2.00	
137 Ba	115	1	0.022 ppb	18.19	2.00	
205 Tl	165	1	0.017 ppb	15.75	2.00	
208 Pb	165	1	0.005 ppb	20.19	2.00	
232 Th	165	1	0.025 ppb	7.90	2.00	
238 U	165	1	0.004 ppb	14.80	2.00	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	335830	0.81	364209	92.2	30 - 120	
45 Sc	1	1010475	1.28	1163848	86.8	30 - 120	
72 Ge	1	463458	0.50	535322	86.6	30 - 120	
115 In	1	1368292	0.77	1515637	90.3	30 - 120	
165 Ho	1	2375975	1.22	2559530	92.8	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\220CALB.D\220CALB.D#

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

Laboratory Control Spike (LCS) QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\256 LCS.D\256 LCS.D#
Date Acquired: Nov 10 2009 08:17 am
Acq. Method: NormISIS.M
Operator: LRD
Sample Name: LNRQVC
Misc Info: LCS
Vial Number: 2202
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal. Update: Nov 10 2009 06:40 am
Sample Type: LCS
Prep Dil. Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

Analyte Elements

Element	IS Ref	Tune	Conc. ppb	RSD(%)	Expected	Rec(%)	QC Range(%)	Flag
9 Be	6	1	38.04	0.50	40	95.1	80 - 120	
51 V	72	1	39.99	1.47	40	100.0	80 - 120	
52 Cr	72	1	40.93	0.52	40	102.3	80 - 120	
55 Mn	72	1	40.25	1.15	40	100.6	80 - 120	
59 Co	72	1	40.06	0.69	40	100.2	80 - 120	
60 Ni	72	1	40.11	1.18	40	100.3	80 - 120	
63 Cu	72	1	39.88	1.44	40	99.7	80 - 120	
66 Zn	72	1	39.60	2.05	40	99.0	80 - 120	
75 As	72	1	38.64	0.87	40	96.6	80 - 120	
78 Se	72	1	38.30	6.65	40	95.8	80 - 120	
95 Mo	72	1	40.75	1.03	40	101.9	80 - 120	
107 Ag	115	1	39.43	1.65	40	98.6	80 - 120	
111 Cd	115	1	39.24	1.50	40	98.1	80 - 120	
118 Sn	115	1	0.15	13.64	40	0.4	80 - 120	
121 Sb	115	1	39.81	0.14	40	99.5	80 - 120	
137 Ba	115	1	40.45	1.42	40	101.1	80 - 120	
205 Tl	165	1	43.01	0.90	40	107.5	80 - 120	
208 Pb	165	1	41.56	1.29	40	103.9	80 - 120	
232 Th	165	1	41.58	0.43	40	104.0	80 - 120	
238 U	165	1	41.56	1.57	40	103.9	80 - 120	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	334746	0.80	364209	91.9	30 - 120	
45 Sc	1	1019898	1.10	1163848	87.6	30 - 120	
72 Ge	1	456120	1.29	535322	85.2	30 - 120	
115 In	1	1371697	0.52	1515637	90.5	30 - 120	
165 Ho	1	2380578	0.47	2559530	93.0	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\220CALB.D\220CALB.D#

0 :Element Failures
0 :ISTD Failures

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

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\257AREF.D\257AREF.D#
Date Acquired: Nov 10 2009 08:20 am
Acq. Method: NormISIS.M
Operator: LRD
Sample Name: LNQ0L
Misc Info: D9K040449
Vial Number: 2203
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal. Update: Nov 10 2009 06:40 am
Sample Type: AllRef
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	6	1	0.00	0.00	ppb	1070.50	3600	
51 V	72	1	-0.14	-0.14	ppb	16.06	3600	
52 Cr	72	1	0.17	0.17	ppb	10.32	3600	
55 Mn	72	1	10.85	10.85	ppb	1.22	3600	
59 Co	72	1	0.20	0.20	ppb	11.79	3600	
60 Ni	72	1	0.22	0.22	ppb	11.80	3600	
63 Cu	72	1	0.05	0.05	ppb	61.17	3600	
66 Zn	72	1	2.67	2.67	ppb	3.77	3600	
75 As	72	1	0.04	0.04	ppb	49.23	3600	
78 Se	72	1	-1.08	-1.08	ppb	29.82	3600	
95 Mo	72	1	0.01	0.01	ppb	338.98	3600	
107 Ag	115	1	0.01	0.01	ppb	26.13	3600	
111 Cd	115	1	0.00	0.00	ppb	16.09	3600	
118 Sn	115	1	0.06	0.06	ppb	35.67	3600	
121 Sb	115	1	0.05	0.05	ppb	25.24	3600	
137 Ba	115	1	1.29	1.29	ppb	4.75	3600	
205 Tl	165	1	0.03	0.03	ppb	9.39	3600	
208 Pb	165	1	0.07	0.07	ppb	1.37	3600	
232 Th	165	1	0.06	0.06	ppb	22.94	1000	
238 U	165	1	0.01	0.01	ppb	21.69	3600	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	337825	0.54	364209	92.8	30 - 120	
45 Sc	1	1020792	1.58	1163848	87.7	30 - 120	
72 Ge	1	467424	0.37	535322	87.3	30 - 120	
115 In	1	1375678	0.28	1515637	90.8	30 - 120	
165 Ho	1	2389893	0.33	2559530	93.4	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\220CALB.D\220CALB.D#

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

Dilution Sample QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\258SDIL.D\258SDIL.D#
Date Acquired: Nov 10 2009 08:22 am
Acq. Method: NormISIS.M
Operator: LRD
Sample Name: LNQ0LP5
Misc Info: SERIAL DILUTION
Vial Number: 2204
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal. Update: Nov 10 2009 06:40 am
Sample Type: SDIL
Dilution Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

Dilution Ref File: C:\ICPCHEM\1\DATA\AG110909A.B\257AREF.D\257AREF.D#

QC elements

Element	IS Ref	Tune	Conc.ppb		RSD(%)	Ref Conc.	Actual(%)	QC Range(%)	Flag
9 Be	6	1	-0.02	ppb	0.00	0.00	-5678.4	90 - 110	
51 V	72	1	-0.20	ppb	5.37	-0.03	711.3	90 - 110	
52 Cr	72	1	0.13	ppb	19.67	0.03	384.4	90 - 110	
55 Mn	72	1	2.19	ppb	2.30	2.17	100.8	90 - 110	
59 Co	72	1	0.05	ppb	9.24	0.04	113.5	90 - 110	
60 Ni	72	1	0.50	ppb	3.58	0.04	1151.2	90 - 110	
63 Cu	72	1	-0.07	ppb	25.79	0.01	-756.7	90 - 110	
66 Zn	72	1	0.45	ppb	3.86	0.53	84.7	90 - 110	
75 As	72	1	0.01	ppb	64.34	0.01	107.3	90 - 110	
78 Se	72	1	-0.86	ppb	107.44	-0.22	397.9	90 - 110	
95 Mo	72	1	-0.08	ppb	12.08	0.00	-3692.2	90 - 110	
107 Ag	115	1	0.00	ppb	41.24	0.00	207.6	90 - 110	
111 Cd	115	1	0.01	ppb	74.50	0.00	1248.5	90 - 110	
118 Sn	115	1	0.16	ppb	17.18	0.01	1443.7	90 - 110	
121 Sb	115	1	0.02	ppb	18.39	0.01	169.2	90 - 110	
137 Ba	115	1	0.27	ppb	4.14	0.26	102.6	90 - 110	
205 Tl	165	1	0.01	ppb	15.37	0.01	134.0	90 - 110	
208 Pb	165	1	0.02	ppb	18.92	0.01	122.7	90 - 110	
232 Th	165	1	0.01	ppb	20.47	0.01	84.4	90 - 110	
238 U	165	1	0.00	ppb	3.00	0.00	201.5	90 - 110	

ISTD elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	342070	1.01	364209	93.9	30 - 120	
45 Sc	1	1032134	0.85	1163848	88.7	30 - 120	
72 Ge	1	477332	0.66	535322	89.2	30 - 120	
115 In	1	1400864	1.17	1515637	92.4	30 - 120	
165 Ho	1	2419284	0.73	2559530	94.5	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\220CALB.D\220CALB.D#

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

Denver

SERIAL DILUTION

Method: 6020 (ICP/MS) | ICPMS_024 | Reported: 11/10/09 21:13:30

Department: 090 (Metals)

Source: Spreadsheet

Sample: **LNQ0LP5**

Serial Dilution: **5.00** Sample Dilution: **1.00**

Instrument: **Agilent7500**
File: AG110909A # 258
Acquired: 11/10/2009 08:22:00
Calibrated: 11/10/2009 06:37:00

Channel 272
Method 6020_
ICPMS_024

Matrix: AQUEOUS
Units: ug/L

CASN	Analyte Name	M/S	Area	Dilution	Sample	%Diff.	MDL	Flag	Q
7440-41-7	Beryllium	9		-0.07575	0.00133	5780		*	
7440-62-2	Vanadium	51	500	-1.0235	-0.14390			*	
7440-47-3	Chromium	52	2977	0.65700	0.17090	284		*	
7439-96-5	Manganese	55	16210	10.940	10.850	0.829		*	
7440-48-4	Cobalt	59	360	0.22675	0.19980	13.5		*	
7440-02-0	Nickel	60	887	2.4900	0.21630	1050		*	
7440-50-8	Copper	63	2070	-0.35135	0.04643	857		*	
7440-66-6	Zinc	66	755	2.2605	2.6680	15.3		*	
7440-38-2	Arsenic	75	35	0.03897	0.03634	7.25	0.21	NC	☑
7782-49-2	Selenium	78	450	-4.2970	-1.0800		0.70	NC	☑
7439-98-7	Molybdenum	95	107	-0.41205	0.01116	3790		*	
7440-22-4	Silver	107	40	0.01964	0.00946	108		*	
7440-43-9	Cadmium	111	16	0.06195	0.00496	1150		*	
7440-31-5	Tin	118	820	0.79850	0.05531	1340		*	
7440-36-0	Antimony	121	136	0.08065	0.04766	69.2		*	
7440-39-3	Barium	137	489	1.3270	1.2930	2.63		*	
7440-28-0	Thallium	205	136	0.03363	0.02509	34.0		*	
7439-92-1	Lead	208	536	0.08495	0.06924	22.7		*	
7440-61-1	Uranium	238	152	0.02374	0.01178	101		*	
7440-29-1	Thorium	232	313	0.04739	0.05614	15.6		*	
7439-93-2	Lithium	6			0			*	
7440-20-2	Scandium	45			0			*	
7440-74-6	Indium	115			0			*	
7440-56-4	Germanium	72			0			*	
7440-60-0	Holmium	165			0			*	

* Analyte not requested for this batch, no MDL

NC : Serial dilution concentration < 100 X MDL

E : Difference greater than Limit (10%)

Reviewed by: LRD Date: 11/10/09

Post Digestion Spiked Sample (PDS) QC Report

Data File:	C:\ICPCHEM\1\DATA\AG110909A.B\259PDS.D\259PDS.D#
Date Acquired:	Nov 10 2009 08:25 am
Acq. Method:	NormISIS.M
Operator:	LRD
Sample Name:	LNQ0LZ
Misc Info:	POST DIGESTION SPIKE
Vial Number:	2205
Current Method:	C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File:	C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal. Update:	Nov 10 2009 06:40 am
Sample Type:	PDS
Prep Dil. Factor:	1.00
Autodil Factor:	Undiluted
Final Dil Factor:	1.00

QC Summary:
Analytes: Pass
ISTD: Pass

Spike Ref. File: ---

QC Elements

Element	IS Ref	Tune	Conc.	Ref Conc		RSD(%)	Spk Amt	Rec(%)	QC Range(%)	QC Flag
9 Be	6	1	181.30	0.00	ppb	0.67	200	90.6	75 - 125	
51 V	72	1	189.00	-0.14	ppb	1.11	200	94.6	75 - 125	
52 Cr	72	1	197.60	0.17	ppb	0.58	200	98.7	75 - 125	
55 Mn	72	1	201.90	10.85	ppb	1.35	200	95.8	75 - 125	
59 Co	72	1	188.10	0.20	ppb	2.04	200	94.0	75 - 125	
60 Ni	72	1	189.70	0.22	ppb	1.08	200	94.7	75 - 125	
63 Cu	72	1	190.00	0.05	ppb	0.31	200	95.0	75 - 125	
66 Zn	72	1	189.20	2.67	ppb	0.66	200	93.4	75 - 125	
75 As	72	1	184.80	0.04	ppb	1.01	200	92.4	75 - 125	
78 Se	72	1	182.80	-1.08	ppb	1.12	200	91.9	75 - 125	
95 Mo	72	1	194.00	0.01	ppb	0.60	200	97.0	75 - 125	
107 Ag	115	1	46.62	0.01	ppb	0.84	50	93.2	75 - 125	
111 Cd	115	1	188.40	0.00	ppb	0.36	200	94.2	75 - 125	
118 Sn	115	1	174.10	0.06	ppb	0.48	200	87.0	75 - 125	
121 Sb	115	1	182.70	0.05	ppb	1.47	200	91.3	75 - 125	
137 Ba	115	1	192.70	1.29	ppb	0.17	200	95.7	75 - 125	
205 Tl	165	1	190.30	0.03	ppb	0.94	200	95.1	75 - 125	
208 Pb	165	1	190.60	0.07	ppb	1.29	200	95.3	75 - 125	
232 Th	165	1	0.03	0.06	ppb	7.72	200	0.0	75 - 125	
238 U	165	1	191.30	0.01	ppb	1.54	200	95.6	75 - 125	

ISTD Elements

Element	Tune	Counts	RSD(%)	Ref. Counts	Rec(%)	QC Range(%)	QC Flag
6 Li	1	331145	1.17	364209	90.9	30 - 120	
45 Sc	1	1013467	0.18	1163848	87.1	30 - 120	
72 Ge	1	455008	0.80	535322	85.0	30 - 120	
115 In	1	1375478	0.92	1515637	90.8	30 - 120	
165 Ho	1	2376594	0.72	2559530	92.9	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\220CALB.D\220CALB.D#

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

Denver

SAMPLE SPIKE

Method: 6020 (ICP/MS) | ICPMS_024 | Reported: 11/10/09 21:13:38

Department: 090 (Metals)

Source: Spreadsheet

Sample: **LNQ0LZ**

Spike Dilution: **1.00**

Sample Dilution: **1.00**

Instrument: **Agilent7500**
File: AG110909A # 259
Acquired: 11/10/2009 08:25:00
Calibrated: 11/10/2009 06:37:00

Channel 272
Method 6020_
ICPMS_024

Matrix: AQUEOUS
Units: ug/L

CASN	Analyte Name	M/S	Area	Amount	Sample	%Rec.	Spike	Flag	Q
7440-41-7	Beryllium	9	72075	181.30	0.00133	90.6	200		☑
7440-62-2	Vanadium	51	1133820	189.00	-0.14390	94.5	200		☑
7440-47-3	Chromium	52	1162930	197.60	0.17090	98.7	200		☑
7439-96-5	Manganese	55	1398240	201.90	10.850	95.5	200		☑
7440-48-4	Cobalt	59	1376780	188.10	0.19980	94.0	200		☐
7440-02-0	Nickel	60	302672	189.70	0.21630	94.7	200		☑
7440-50-8	Copper	63	725336	190.00	0.04643	95.0	200		☑
7440-66-6	Zinc	66	164598	189.20	2.6680	93.3	200		☑
7440-38-2	Arsenic	75	138973	184.80	0.03634	92.4	200		☑
7782-49-2	Selenium	78	27555	182.80	-1.0800	91.4	200		☑
7439-98-7	Molybdenum	95	401318	194.00	0.01116	97.0	200		☐
7440-22-4	Silver	107	286701	46.620	0.00946	93.2	50.0		☑
7440-43-9	Cadmium	111	229402	188.40	0.00496	94.2	200		☑
7440-31-5	Tin	118	596827	174.10	0.05531	87.0	200		☐
7440-36-0	Antimony	121	729828	182.70	0.04766	91.3	200		☑
7440-39-3	Barium	137	327271	192.70	1.2930	95.7	200		☑
7440-28-0	Thallium	205	2455640	190.30	0.02509	95.1	200		☑
7439-92-1	Lead	208	3527770	190.60	0.06924	95.3	200		☑
7440-61-1	Uranium	238	3863170	191.30	0.01178	95.6	200		☐
7440-29-1	Thorium	232	783	0.03400	0.05614				
7439-93-2	Lithium	6			0				
7440-20-2	Scandium	45			0				
7440-74-6	Indium	115			0				
7440-56-4	Germanium	72			0				
7440-60-0	Holmium	165			0				

Reviewed by: LRD Date: 11/10/09

Spiked Sample (MS) QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\260_MS.D\260_MS.D#
Date Acquired: Nov 10 2009 08:28 am
Acq. Method: NormISIS.M
Operator: LRD
Sample Name: LNQ0LS
Misc Info: MATRIX SPIKE
Vial Number: 2206
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal. Update: Nov 10 2009 06:40 am
Sample Type: MS
Prep Dil. Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Spike Ref. File: ---

QC Summary:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Conc.	Ref Conc		RSD(%)	Spk Amt	Rec(%)	QC Range(%)	QC Flag
9 Be	6	1	38.37	0.00	ppb	1.85	40	95.9	50 - 150	
51 V	72	1	39.99	-0.14	ppb	0.89	40	100.3	50 - 150	
52 Cr	72	1	40.78	0.17	ppb	0.87	40	101.5	50 - 150	
55 Mn	72	1	49.45	10.85	ppb	1.58	40	97.2	50 - 150	
59 Co	72	1	39.70	0.20	ppb	0.42	40	98.8	50 - 150	
60 Ni	72	1	40.51	0.22	ppb	0.05	40	100.7	50 - 150	
63 Cu	72	1	40.33	0.05	ppb	1.16	40	100.7	50 - 150	
66 Zn	72	1	43.73	2.67	ppb	1.22	40	102.5	50 - 150	
75 As	72	1	39.44	0.04	ppb	0.71	40	98.5	50 - 150	
78 Se	72	1	37.96	-1.08	ppb	6.43	40	97.5	50 - 150	
95 Mo	72	1	40.49	0.01	ppb	1.50	40	101.2	50 - 150	
107 Ag	115	1	39.21	0.01	ppb	2.03	40	98.0	50 - 150	
111 Cd	115	1	39.97	0.00	ppb	2.37	40	99.9	50 - 150	
118 Sn	115	1	0.33	0.06	ppb	30.76	40	0.8	50 - 150	
121 Sb	115	1	40.58	0.05	ppb	2.79	40	101.3	50 - 150	
137 Ba	115	1	41.73	1.29	ppb	2.01	40	101.1	50 - 150	
205 Tl	165	1	43.06	0.03	ppb	1.27	40	107.6	50 - 150	
208 Pb	165	1	41.75	0.07	ppb	1.41	40	104.2	50 - 150	
232 Th	165	1	41.70	0.06	ppb	0.45	40	104.1	50 - 150	
238 U	165	1	42.15	0.01	ppb	1.05	40	105.3	50 - 150	

ISTD Elements

Element	Tune	Counts	RSD(%)	Ref. Counts	Rec(%)	QC Range(%)	QC Flag
6 Li	1	334090	0.46	364209	91.7	30 - 120	
45 Sc	1	1030199	0.15	1163848	88.5	30 - 120	
72 Ge	1	460031	1.28	535322	85.9	30 - 120	
115 In	1	1386296	0.98	1515637	91.5	30 - 120	
165 Ho	1	2400300	0.60	2559530	93.8	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\220CALB.D\220CALB.D#

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

Duplicate Spike (MSD) QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\261 MSD.D\261 MSD.D#
Date Acquired: Nov 10 2009 08:30 am
Acq. Method: NormISIS.M
Operator: LRD
Sample Name: LNQ0LD
Misc Info: MATRIX SPIKE DUPLICATE
Vial Number: 2207
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal. Update: Nov 10 2009 06:40 am
Sample Type: MSD
Dilution Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

Duplicate Ref File: C:\ICPCHEM\1\DATA\AG110909A.B\260 MS.D\260 MS.D#

QC Elements

Element	IS Ref	Tune	Conc.		RSD(%)	Ref Conc	Differ(%)	High Limit	Flag
9 Be	6	1	38.46	ppb	3.92	38.37	0.23	20	
51 V	72	1	39.52	ppb	1.53	39.99	1.18	20	
52 Cr	72	1	40.51	ppb	0.58	40.78	0.66	20	
55 Mn	72	1	49.35	ppb	1.03	49.45	0.20	20	
59 Co	72	1	39.87	ppb	0.36	39.70	0.43	20	
60 Ni	72	1	40.41	ppb	1.54	40.51	0.25	20	
63 Cu	72	1	39.84	ppb	0.75	40.33	1.22	20	
66 Zn	72	1	45.71	ppb	0.89	43.73	4.43	20	
75 As	72	1	38.82	ppb	1.02	39.44	1.58	20	
78 Se	72	1	40.11	ppb	4.36	37.96	5.51	20	
95 Mo	72	1	40.26	ppb	1.88	40.49	0.57	20	
107 Ag	115	1	38.62	ppb	1.93	39.21	1.52	20	
111 Cd	115	1	38.87	ppb	0.86	39.97	2.79	20	
118 Sn	115	1	0.13	ppb	27.64	0.33	84.33	20	
121 Sb	115	1	39.46	ppb	1.19	40.58	2.80	20	
137 Ba	115	1	41.06	ppb	0.36	41.73	1.62	20	
205 Tl	165	1	42.53	ppb	1.14	43.06	1.24	20	
208 Pb	165	1	41.19	ppb	1.33	41.75	1.35	20	
232 Th	165	1	41.44	ppb	0.75	41.70	0.63	20	
238 U	165	1	41.42	ppb	1.47	42.15	1.75	20	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	331287	0.11	364209	91.0	30 - 120	
45 Sc	1	1014554	0.63	1163848	87.2	30 - 120	
72 Ge	1	453284	1.05	535322	84.7	30 - 120	
115 In	1	1377380	0.54	1515637	90.9	30 - 120	
165 Ho	1	2387753	0.12	2559530	93.3	30 - 120	

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

ISTD Ref. File :C:\ICPCHEM\1\DATA\AG110909A.B\220CALB.D\220CALB.D#

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

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\262SMPL.D\262SMPL.D#
Date Acquired: Nov 10 2009 08:33 am
Acq. Method: NormISIS.M
Operator: LRD
Sample Name: LNQ0R
Misc Info: D9J240206
Vial Number: 2208
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal. Update: Nov 10 2009 06:40 am
Sample Type: SA
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	6	1	0.03	0.03	ppb	65.75	3600	
51 V	72	1	116.90	116.90	ppb	0.16	3600	
52 Cr	72	1	157.30	157.30	ppb	3.15	3600	
55 Mn	72	1	38.42	38.42	ppb	1.45	3600	
59 Co	72	1	1.03	1.03	ppb	1.71	3600	
60 Ni	72	1	6.88	6.88	ppb	1.76	3600	
63 Cu	72	1	1.92	1.92	ppb	22.82	3600	
66 Zn	72	1	14.00	14.00	ppb	2.38	3600	
75 As	72	1	174.80	174.80	ppb	0.63	3600	
78 Se	72	1	7.27	7.27	ppb	11.88	3600	
95 Mo	72	1	57.36	57.36	ppb	0.56	3600	
107 Ag	115	1	0.14	0.14	ppb	3.88	3600	
111 Cd	115	1	0.09	0.09	ppb	38.69	3600	
118 Sn	115	1	0.14	0.14	ppb	21.54	3600	
121 Sb	115	1	0.22	0.22	ppb	9.29	3600	
137 Ba	115	1	19.20	19.20	ppb	0.99	3600	
205 Tl	165	1	0.08	0.08	ppb	10.94	3600	
208 Pb	165	1	0.24	0.24	ppb	1.30	3600	
232 Th	165	1	0.12	0.12	ppb	8.32	1000	
238 U	165	1	53.79	53.79	ppb	1.39	3600	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	256634	1.19	364209	70.5	30 - 120	
45 Sc	1	909941	1.28	1163848	78.2	30 - 120	
72 Ge	1	356786	0.62	535322	66.6	30 - 120	
115 In	1	1061552	1.64	1515637	70.0	30 - 120	
165 Ho	1	1865611	0.54	2559530	72.9	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\220CALB.D\220CALB.D#

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

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\263SMPL.D\263SMPL.D#
Date Acquired: Nov 10 2009 08:36 am
Acq. Method: NormISIS.M
Operator: LRD
Sample Name: LNQ0T
Misc Info: D9J240206
Vial Number: 2209
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal. Update: Nov 10 2009 06:40 am
Sample Type: SA
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	6	1	0.02	0.02	ppb	183.96	3600	
51 V	72	1	116.80	116.80	ppb	0.67	3600	
52 Cr	72	1	156.70	156.70	ppb	0.64	3600	
55 Mn	72	1	38.14	38.14	ppb	0.54	3600	
59 Co	72	1	1.42	1.42	ppb	0.82	3600	
60 Ni	72	1	7.41	7.41	ppb	3.93	3600	
63 Cu	72	1	2.60	2.60	ppb	7.57	3600	
66 Zn	72	1	17.45	17.45	ppb	0.73	3600	
75 As	72	1	179.90	179.90	ppb	0.43	3600	
78 Se	72	1	7.80	7.80	ppb	8.53	3600	
95 Mo	72	1	60.98	60.98	ppb	0.93	3600	
107 Ag	115	1	0.14	0.14	ppb	11.95	3600	
111 Cd	115	1	0.09	0.09	ppb	19.13	3600	
118 Sn	115	1	0.14	0.14	ppb	20.74	3600	
121 Sb	115	1	0.33	0.33	ppb	10.53	3600	
137 Ba	115	1	19.55	19.55	ppb	1.53	3600	
205 Tl	165	1	0.05	0.05	ppb	2.67	3600	
208 Pb	165	1	0.18	0.18	ppb	2.11	3600	
232 Th	165	1	0.05	0.05	ppb	12.99	1000	
238 U	165	1	55.25	55.25	ppb	0.31	3600	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	249914	1.07	364209	68.6	30 - 120	
45 Sc	1	906892	1.19	1163848	77.9	30 - 120	
72 Ge	1	361565	0.33	535322	67.5	30 - 120	
115 In	1	1074309	1.29	1515637	70.9	30 - 120	
165 Ho	1	1877514	0.15	2559530	73.4	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\220CALB.D\220CALB.D#

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

Continuing Calibration Verification (CCV) QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\264 CCV.D\264 CCV.D#
Date Acquired: Nov 10 2009 08:39 am
Operator: LRD
Sample Name: CCV
Misc Info:
Vial Number: 1105
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal Update: Nov 10 2009 06:40 am
Sample Type: CCV
Total Dil Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Conc.		RSD(%)	Expected	Rec(%)	QC Range(%)	Flag
9 Be	6	1	49.31	ppb	2.58	50	98.6	90 - 110	
51 V	72	1	50.51	ppb	0.95	50	101.0	90 - 110	
52 Cr	72	1	51.73	ppb	0.81	50	103.5	90 - 110	
55 Mn	72	1	50.55	ppb	0.51	50	101.1	90 - 110	
59 Co	72	1	50.66	ppb	0.21	50	101.3	90 - 110	
60 Ni	72	1	51.19	ppb	0.28	50	102.4	90 - 110	
63 Cu	72	1	50.97	ppb	0.23	50	101.9	90 - 110	
66 Zn	72	1	50.74	ppb	0.67	50	101.5	90 - 110	
75 As	72	1	51.26	ppb	0.14	50	102.5	90 - 110	
78 Se	72	1	50.57	ppb	2.58	50	101.1	90 - 110	
95 Mo	72	1	52.12	ppb	2.05	50	104.2	90 - 110	
107 Ag	115	1	51.00	ppb	0.12	50	102.0	90 - 110	
111 Cd	115	1	51.78	ppb	0.97	50	103.6	90 - 110	
118 Sn	115	1	51.41	ppb	1.31	50	102.8	90 - 110	
121 Sb	115	1	51.55	ppb	0.31	50	103.1	90 - 110	
137 Ba	115	1	51.88	ppb	0.09	50	103.8	90 - 110	
205 Tl	165	1	51.77	ppb	0.73	50	103.5	90 - 110	
208 Pb	165	1	52.07	ppb	1.92	50	104.1	90 - 110	
232 Th	165	1	51.57	ppb	2.67	50	103.1	90 - 110	
238 U	165	1	51.60	ppb	0.55	50	103.2	90 - 110	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	348289	0.74	364209	95.6	30 - 120	
45 Sc	1	1130721	1.30	1163848	97.2	30 - 120	
72 Ge	1	508155	1.60	535322	94.9	30 - 120	
115 In	1	1499854	0.81	1515637	99.0	30 - 120	
165 Ho	1	2580441	1.28	2559530	100.8	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\220CALB.D\220CALB.D#

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

Continuing Calibration Blank (CCB) QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\265 CCB.D\265 CCB.D#
Date Acquired: Nov 10 2009 08:41 am
Operator: LRD
Sample Name: CCB
Misc Info:
Vial Number: 1305
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal Update: Nov 10 2009 06:40 am
Sample Type: CCB
Total Dil Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Conc.		RSD(%)	High Limit	Flag
9 Be	6	1	-0.015	ppb	0.00	1.00	
51 V	72	1	-0.194	ppb	5.19	1.00	
52 Cr	72	1	0.008	ppb	298.37	1.00	
55 Mn	72	1	0.022	ppb	42.07	1.00	
59 Co	72	1	0.013	ppb	32.45	1.00	
60 Ni	72	1	0.033	ppb	68.94	1.00	
63 Cu	72	1	-0.103	ppb	24.62	1.00	
66 Zn	72	1	-0.029	ppb	94.72	1.00	
75 As	72	1	0.017	ppb	65.92	1.00	
78 Se	72	1	-1.652	ppb	9.24	1.00	
95 Mo	72	1	-0.046	ppb	42.66	1.00	
107 Ag	115	1	0.014	ppb	16.51	1.00	
111 Cd	115	1	0.016	ppb	63.91	1.00	
118 Sn	115	1	0.096	ppb	40.76	1.00	
121 Sb	115	1	0.154	ppb	15.82	1.00	
137 Ba	115	1	0.019	ppb	33.91	1.00	
205 Tl	165	1	0.025	ppb	28.49	1.00	
208 Pb	165	1	0.009	ppb	6.15	1.00	
232 Th	165	1	0.061	ppb	11.59	1.00	
238 U	165	1	0.021	ppb	22.55	1.00	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	348489	1.15	364209	95.7	30 - 120	
45 Sc	1	1122413	1.00	1163848	96.4	30 - 120	
72 Ge	1	516361	0.30	535322	96.5	30 - 120	
115 In	1	1502887	0.96	1515637	99.2	30 - 120	
165 Ho	1	2551415	0.79	2559530	99.7	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\220CALB.D\220CALB.D#

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

Wash QC Report

Data File: C:\ICPCHEM\1\DATA\AG110909A.B\266WASH.D\266WASH.D#
Date Acquired: Nov 10 2009 08:44 am
Operator: LRD
Sample Name: RLCV
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\NormISIS.M
Calibration File: C:\ICPCHEM\1\CALIB\NormISIS.C
Last Cal Update: Nov 10 2009 06:40 am
Sample Type: WASH
Total Dil Factor: 1.00

QC Summary:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Conc.	RSD(%)	High Limit	Flag
9 Be	6	1	0.983 ppb	29.15	1.30	
51 V	72	1	4.895 ppb	0.77	6.50	
52 Cr	72	1	2.097 ppb	4.34	2.60	
55 Mn	72	1	1.028 ppb	5.25	1.30	
59 Co	72	1	1.014 ppb	6.56	1.30	
60 Ni	72	1	2.074 ppb	1.89	2.60	
63 Cu	72	1	1.885 ppb	2.63	2.60	
66 Zn	72	1	10.270 ppb	0.44	13.00	
75 As	72	1	5.167 ppb	1.93	6.50	
78 Se	72	1	3.719 ppb	3.37	6.50	
95 Mo	72	1	2.051 ppb	1.47	2.60	
107 Ag	115	1	5.300 ppb	0.75	6.50	
111 Cd	115	1	1.121 ppb	1.40	1.30	
118 Sn	115	1	10.470 ppb	1.10	13.00	
121 Sb	115	1	2.104 ppb	2.61	2.60	
137 Ba	115	1	1.084 ppb	2.86	1.30	
205 Tl	165	1	1.129 ppb	2.87	1.30	
208 Pb	165	1	1.075 ppb	0.47	1.30	
232 Th	165	1	2.211 ppb	0.48	2.60	
238 U	165	1	1.107 ppb	0.46	1.30	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1	347907	0.75	364209	95.5	30 - 120	
45 Sc	1	1117466	1.37	1163848	96.0	30 - 120	
72 Ge	1	508084	0.73	535322	94.9	30 - 120	
115 In	1	1475645	0.81	1515637	97.4	30 - 120	
165 Ho	1	2526188	0.30	2559530	98.7	30 - 120	

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

ISTD Ref File : C:\ICPCHEM\1\DATA\AG110909A.B\220CALB.D\220CALB.D#

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