WSCF Laboratory

PO Box 650 S3-30
Richland, WA 99352

RECEIVED DECEMBER 30, 2010

0097424

December 29, 2010

Michael Neely
CH2M-HILL PRC
PO Box 1600
Richland, WA 99352

Dear Michael Neely,

FINAL RESULT FOR SAMPLE DELIVERY GROUP WSCF103124

Reference: (1) SOW, Mod 2, #36587, Release 3
(2) HNF-SD-CD-QAPP-017, current version, Waste Sampling & Characterization Facility Quality Assurance Plan

This letter contains the following information for sample delivery group WSCF103124

* Cover Sheet (Attachment 1)
* Narrative (Attachment 2)
* Analytical Results (Attachment 3)
* Sample Receipt Information (Attachment 4)

Very truly yours,

Electronically signed by Joseph Hale
For Lab Manager
WSCF Analytical Lab
(509) 373-7495

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Attachments 4

CC: w/Attachments

File/LB

ATTACHMENT 1

COVER SHEET

Consisting of 2 pages
Including cover page

WSCF SAF Number Cross Reference

Group # WSCF103124
Data Deliverable Date 12/29/10

SAF #	Sample ID	Sample #	Matrix	Sampled	Received
X11-004	B28MN5	103124001	WATER	11/29/10	11/29/10
X11-004	B28373	103124002	WATER	11/29/10	11/29/10
X11-004	B28MN1	103124003	WATER	11/29/10	11/29/10
X11-004	B27T93	103124004	WATER	11/29/10	11/29/10
X11-004	B28MN2	103124005	WATER	11/29/10	11/29/10
X11-004	B27T94	103124006	WATER	11/29/10	11/29/10

ATTACHMENT 2

NARRATIVE

Consisting of 6 pages
Including cover page

Attachment 2
Narrative
WSCF103124

Introduction

Six (6) groundwater samples were received at the WSCF Laboratory on November 29, 2010. The samples were analyzed for the analytes indicated on the attached copy of the chain of custody (COC) form in accordance with the *Statement of Work (SOW), Modification No. 2 to Agreement 36587, Release 3, "FH WSCF ANALYTICAL SERVICES FOR GROUNDWATER."*

The narrative (Attachment 2) will address sample characteristics, analyses requested and general information in performance of the analytical methods. A Data Summary Report (Attachment 3) includes analytical results, a comment report detailing method abnormalities, tentatively identified peaks if applicable, method references, and Laboratory QC information as applicable. Copies of the chain of custody and sample receipt documentation are included as Attachment 4. Also is attached an Issue Resolution Form (IRF) pertaining to plutonium LCS percent recovery failure.

It should be noted that the attached chain of custody was not stamped "ICED" by the WSCF Laboratory Sample Custodian during sample receiving. However, based on procedure LO-090-403 form "NOTICE OF IMPROPER SAMPLE SUBMITTAL" was not submitted and was not stamped "NOT ICED". No anomaly was noted during sample receipt.

The following generic data qualifiers (i.e., B, D, U and J) may be applicable to this report, as appropriate

- **B** – Sample results with a concentration greater than the MDL but less than the PQL are B flagged (applies to inorganic and wet chemical analyses), as appropriate.
- **D** – Sample results are D flagged if dilution(s) were required, as appropriate.
- **J** – Sample results with a concentration greater than the MDL but less than the PQL are J flagged (applies to organic analyses), as appropriate.
- **U** – Analyzed for but not detected above limiting criteria. Relative Percent Difference (RPD) values associated with an analyte qualified with a "U" are not applicable.

Analytical Methodology for Requested Analyses

Refer to *WSCF Method References Report* for a complete listing of approved analytical methods.

Inorganic Comments

Anions – Hold time requirements for this analysis were met. A Duplicate, Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group. Analytical Note(s):

- Batch QC 170448 analyzed on sample# B28MN5 (103124001)

All applicable QC controls are within the established limits.

Attachment 2
Narrative
WSCF103124

ICP-AES Metals – The hold time requirements for this analysis were met. A Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group. Analytical Note(s):

- Batch QC 170451 analyzed on sample# B28MN1 (103124003)
  - Magnesium and Sodium was detected in the Blank and was evaluated. Affected sample results in this batch were "C" Flagged.
  - Recovery of Potassium in the Laboratory Control Sample (LCS) was flagged as being outside established laboratory limits. However, a new standard was used with the actual spike concentration being 1ppm, not 10ppm. Taking into account the correct concentration of potassium in the LCS, Potassium was recovered at 102%. The 1 ppm concentration also applies to the Matrix Spike (MS) and Matrix Spike Duplicate (MSD). Taking this into account the MS and MSD percent recoveries were both within acceptable levels at 98%.
  - All other applicable QC controls are within the established limits.

ICP-MS Metals – The hold time requirements for this analysis were met. A Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group. Analytical Note(s):

- Batch QC 170908 analyzed on sample# B24J99 (103089001)

All applicable QC controls are within the established limits.

Total Alkalinity – The hold time requirement for this analysis was met. A Duplicate and Laboratory Control Sample were analyzed with this delivery group. Analytical Note(s):

- Batch QC 170742 analyzed on sample# B28MN2 (103124005)

All applicable QC controls are within the established limits.

Radiochemistry Comments

Rad Chem – The hold time requirement for this analysis was met. A Duplicate, Matrix Spike (Matrix Spikes apply only to Technetium & Tritium), Blank and Laboratory Control Sample were analyzed with this delivery group. Analytical Note(s):

Tracers are used to determine chemical yield. RPD is monitored in sample duplicate and is not required for tracer recovery per SOW.

- Technetium-99:
  - Batch QC 170375 analyzed on sample# B281P9 (103098017)
    - All applicable QC controls are within the established limits.

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Attachment 2
Narrative
WSCF103124

- Tritium:
  - Batch QC 170452 analyzed on sample# B281Y9 (103101006)
    - All applicable QC controls are within the established limits.
- Gross Alpha / Gross Beta:
  - Batch QC 170549 analyzed on sample# B27C50 (103065002)
    - Gross Beta - Duplicate Relative Percent Difference(s) (RPD) did not meet the established laboratory limits. Duplicate Relative Percent Difference (RPD) does not apply to results below 5X the minimum detectable activity. No flags issued.
    - All other applicable QC controls are within the established limits.
- Americium-241:
  - Batch QC 170466 analyzed on sample# B27T40 (102930010)
    - All applicable QC controls are within the established limits.
- Isotopic Plutonium analysis:
  - Batch QC 170466 analyzed on sample# B27T40 (102930010)
    - The LCS failed for Plutonium-239/240. IRF CHPRC TRACKING NUMBER: 10-281 was generated. Please see attached IRF. The data was accepted as is.
    - All other applicable QC controls are within the established limits.
- Strontium-89/90:
  - Batch QC 170486 analyzed on sample# B28MN2 (103124005)
    - All applicable QC controls are within the established limits.

We certify that this data package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this data package has been authorized by the Analytical Laboratory Manager (or designee) and the Client Services representative as verified by electronic signatures shown on the WSCF ANALYTICAL RESULTS REPORT.

Attachment 2
Narrative
WSCF103124

ISSUE RESOLUTION FORM

CHPRC TRACKING NUMBER: 10-281

Date: 12/9/10 SAF No. X11-004

SDG: 102930, 102967, 103124 TEST: Iso Pu **DUE DATE: 12/11, 12/14, 12/29**

LOGIN No.: 102930010, 102930014, 102930016, 102967002, 103124005, 103124006

Sample No.(s): B27T40, B27T20, B27T30, B27T74, B28MN2, B27T94

Submitted By: H Medley
Phone No.: 372-1488
Fax. No.:

Submitted To: S. Champoux
Phone No.: 373-5290
Fax No.:

ISSUE	PROPOSED RESOLUTION
The Pu LCS recovery was slightly above the SOW control limits (70-130%) at 134%. See table below with current results.	Report the data as-is and note in the narrative. OR Reprep and reanalyze the batch. If this is chosen, work orders 102930 and 102967 will be reported around 12/20.

CHPRC/BHI/WMH/PNNL COMMENTS

Accept the data as is with a note in the narrative.

Sara Champoux 12/13/2010
Signature and Date

Sample ID	Result	TPU	MDC	Unit
B27T40	3.22E-2	3.78E-2	2.91E-2	pCi/L
B27T20	7.76E-2	6.11E-2	3.01E-2	pCi/L
B27T30	3.91E-2	4.00E-2	2.65E-2	pCi/L
B27T74	4.13E-2	4.23E-2	2.80E-2	pCi/L
B28MN2	9.69E-2	6.78E-2	2.92E-2	pCi/L
B27T94	6.42E-2	5.42E-2	2.90E-2	pCi/L

Attachment 2
Narrative
WSCF103124

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ATTACHMENT 3

ANALYTICAL RESULTS

Consisting of 49 pages
Including cover page

WSCF ANALYTICAL RESULTS REPORT

For

CH2M Hill Plateau Remediation

PO Box 1600
Richland, WA 99352

Attention: Michael Neely

Contract # MOA-FH-CHPRC-2008
Group # WSCF103124
Report Date December 29, 2010

Analytical: Electronically signed by Joseph Hale

Client Services: Electronically signed by Susan Kon

Solid samples results that have a 'Percent Solid' test are reported on a "dry weight basis", except results of TCLP, Percent Solid, and Total Activity. If no `Percent Solid' test is reported then the results are reported on an "as received" basis.

This information is intended for the use of the addressee only. If the reader of this report is not the intended recipient or is not authorized by the recipient to receive the report, you are hereby notified that any dissemination, distribution or copying of this report is strictly prohibited. If you have received this report in error, please notify WSCF Laboratory immediately by telephone at (509) 373-7020 or (509) 531-8004. Information designation of this report is the responsibility of the customer.

Batch QC List

Attention Michael Neely
Department Inorganic

Group # WSCF103124

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
170448	170448	2	BLANK	42828	BLANK		Anions by Ion Chromatography (Water)
170448	170448	3	LCS	42829	LCS		Anions by Ion Chromatography (Water)
170448	170448	4	DUP	42830	B28MN5(103124001DUP)	103124001	Anions by Ion Chromatography (Water)
170448	170448	5	MS	42831	B28MN5(103124001MS)	103124001	Anions by Ion Chromatography (Water)
170448	170448	6	MSD	42832	B28MN5(103124001MSD	103124001	Anions by Ion Chromatography (Water)
170448	170448	8	SAMPLE	103124001	B28MN5		Anions by Ion Chromatography (Water)
170448	170448	12	SAMPLE	103124002	B28373		Anions by Ion Chromatography (Water)
170451	170559	1	BLANK	42841	BLANK		ICP-6010 - All possible metals
170451	170559	2	LCS	42842	LCS		ICP-6010 - All possible metals
170451	170559	3	MS	42843	B28MN1(103124003MS)	103124003	ICP-6010 - All possible metals
170451	170559	4	MSD	42844	B28MN1(103124003MSD	103124003	ICP-6010 - All possible metals
170451	170559	5	SAMPLE	103124003	B28MN1		ICP-6010 - All possible metals
170451	170559	6	SAMPLE	103124004	B27T93		ICP-6010 - All possible metals
170451	170559	7	SAMPLE	103124005	B28MN2		ICP-6010 - All possible metals
170451	170559	8	SAMPLE	103124006	B27T94		ICP-6010 - All possible metals
170908	170909	4	BLANK	43708	BLANK		ICP-2008 MS All possible metal
170908	170909	5	LCS	43709	LCS		ICP-2008 MS All possible metal
170908	170909	6	MS	43710	B24J99(103089001MS)	103089001	ICP-2008 MS All possible metal
170908	170909	7	MSD	43711	B24J99(103089001MSD)	103089001	ICP-2008 MS All possible metal
170908	170909	20	SAMPLE	103124003	B28MN1		ICP-2008 MS All possible metal
170908	170909	21	SAMPLE	103124004	B27T93		ICP-2008 MS All possible metal
170908	170909	22	SAMPLE	103124005	B28MN2		ICP-2008 MS All possible metal
170908	170909	23	SAMPLE	103124006	B27T94		ICP-2008 MS All possible metal

Batch QC List

Attention Michael Neely
Department Radiochemistry

Group # WSCF103124

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
170375	170440	1	BLANK	42806	BLANK		TC99 by Liquid Scintillation
170375	170440	2	LCS	42807	LCS		TC99 by Liquid Scintillation
170375	170440	4	DUP	42808	B281P9(103098017DUP)	103098017	TC99 by Liquid Scintillation
170375	170440	5	MS	42809	B281P9(103098017MS)	103098017	TC99 by Liquid Scintillation
170375	170440	16	SAMPLE	103124005	B28MN2		TC99 by Liquid Scintillation
170375	170440	17	SAMPLE	103124006	B27T94		TC99 by Liquid Scintillation
170452	170661	1	BLANK	42845	BLANK		Tritium by LSC
170452	170661	2	LCS	42846	LCS		Tritium by LSC
170452	170661	4	DUP	42847	B281Y9(103101006DUP)	103101006	Tritium by LSC
170452	170661	5	MS	42848	B281Y9(103101006MS)	103101006	Tritium by LSC
170452	170661	11	SAMPLE	103124005	B28MN2		Tritium by LSC
170452	170661	12	SAMPLE	103124006	B27T94		Tritium by LSC
170466	170701	1	BLANK	42882	BLANK		Plutonium (AEA)
170466	170701	2	LCS	42883	LCS		Plutonium (AEA)
170466	170701	4	DUP	42884	B27T40(102930010DUP)	102930010	Plutonium (AEA)
170466	170701	8	SAMPLE	103124005	B28MN2		Plutonium (AEA)
170466	170701	9	SAMPLE	103124006	B27T94		Plutonium (AEA)
170466	170702	1	DUP	42884	B27T40(102930010DUP)	102930010	Americium/Curium (AEA)
170466	170702	6	SAMPLE	103124005	B28MN2		Americium/Curium (AEA)
170466	170702	7	SAMPLE	103124006	B27T94		Americium/Curium (AEA)
170466	170702	8	BLANK	42882	BLANK		Americium/Curium (AEA)
170466	170702	9	LCS	42883	LCS		Americium/Curium (AEA)
170486	172487	1	BLANK	42946	BLANK		Strontium 89/90 (GPC/GEA)

Batch QC List

Attention Michael Neely
Department Radiochemistry

Group # WSCF103124

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
170486	172487	2	LCS	42947	LCS		Strontium 89/90 (GPC/GEA)
170486	172487	3	DUP	42948	B28MN2(103124005DUP)	103124005	Strontium 89/90 (GPC/GEA)
170486	172487	4	SAMPLE	103124005	B28MN2		Strontium 89/90 (GPC/GEA)
170486	172487	5	SAMPLE	103124006	B27T94		Strontium 89/90 (GPC/GEA)
170549	170671	1	BLANK	43023	BLANK		Gross Alpha/Gross Beta
170549	170671	2	LCS	43024	LCS		Gross Alpha/Gross Beta
170549	170671	5	DUP	43025	B27C50(103065002DUP)	103065002	Gross Alpha/Gross Beta
170549	170671	10	SAMPLE	103124005	B28MN2		Gross Alpha/Gross Beta
170549	170671	11	SAMPLE	103124005	B28MN2		Gross Alpha/Gross Beta
170549	170671	12	SAMPLE	103124006	B27T94		Gross Alpha/Gross Beta
170549	170671	13	SAMPLE	103124006	B27T94		Gross Alpha/Gross Beta

Batch QC List

Attention Michael Neely
Department Wet Chemistry

Group # WSCF103124

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
170742	170742	1	LCS	43394	LCS		Total Alkalinity as mg/L CaCO3 (Water)
170742	170742	2	DUP	43395	B28MN2(103124005DUP)	103124005	Total Alkalinity as mg/L CaCO3 (Water)
170742	170742	3	SAMPLE	103124005	B28MN2		Total Alkalinity as mg/L CaCO3 (Water)
170742	170742	4	SAMPLE	103124006	B27T94		Total Alkalinity as mg/L CaCO3 (Water)

Method Reference

Attention Michael Neely
Department Inorganic

Group # WSCF103124

The results provided in this report were generated using the following WSCF Laboratory procedures. For your convenience, this table provides a listing of the regulatory, industry methods or HEIS methods that are referenced by each of these WSCF procedures. Please note that the most recent version of the regulatory or industry method is listed here even though WSCF procedure may reference an older version of the method. Also, a reference to a regulatory or industry method here does not necessarily indicate a verbatim implementation of that method.

LA-505-411	Elemental Analysis by ICP Atomic Emission Spectroscopy (ICP-AES)		
	EPA SW-846	6010C	Inductively Coupled Plasma-Atomic Emmision Spectrometry
	HEIS	6010_METALS_ICP	Inductively Coupled Plasma-Atomic Emmision Spectrometry
LA-505-412	Determination of Trace Elements in Waters & Wastes by ICP-Mass Spectrometry		
	EPA-600/R-94-111	200.8	Determination of Trace Elements in Waters and Waste by Inductively Coupled Plasma
	HEIS	200.8_METALS_ICPMS	Determination of Trace Elements in Waters and Waste by Inductively Coupled Plasma, Mass Spec.
LA-533-410	Anion Analysis by Ion Chromatography		
	EPA-600/R-94-111	300.0	Determination of Inorganic Anions by Ion Chromatography
	HEIS	300.0_ANIONS_IC	Determination of Inorganic Anions by Ion Chromatography

Note: A complete list of WSCF analytical procedures and reference regulatory or industry methods is available online at http://www7.rl.gov/rapidweb/AS-DOL/index.cfm

Method Reference

Attention Michael Neely
Department Radiochemistry

Group # WSCF103124

The results provided in this report were generated using the following WSCF Laboratory procedures. For your convenience, this table provides a listing of the regulatory, industry methods or HEIS methods that are referenced by each of these WSCF procedures. Please note that the most recent version of the regulatory or industry method is listed here even though WSCF procedure may reference an older version of the method. Also, a reference to a regulatory or industry method here does not necessarily indicate a verbatim implementation of that method.

LA-220-406	Strontium-89 and 90 in Aqueous Samples by SR-SPEC Separation		
	HEIS	SRTOT_SEP_PRECIP_GPC	Strontium 89/90, by Sr-Spec Sep.
LA-508-471	Thorium, Neptunium, Plutonium, Americium, and Uranium In Soil and Water Using Eichrom Column Separation (Prep)		
	HEIS	PUISO_IE_PRECIP_AEA	Isotopic Plutonium, Alpha Spec
LA-508-471	Determination Of Uranium, Plutonium, And Americium		
	HEIS	AMCMISO_IE_PREC_AEA	Americium/Curium Iso, Alpha Spec
LA-508-421	Operation of the Tri-Carb Model 2500TR Liquid Scintillation Analyzer		
	HEIS	ALPHA_LSC	A/B Liquid Scintillation
	HEIS	BETA_LSC	A/B Liquid Scintillation
	HEIS	TC99_3MDSK_LSC	TC99 by Liquid Scintillation
	HEIS	TRITIUM_EIE_LSC	Tritium, by Eichrome ion exchange, LSC
LA-508-415	Operation Of The Protean 2-Inch Alpha/Beta Counting System For Gross Alpha/ Beta Samples		
	HEIS	ALPHA_GPC	Gross Alpha by GPC
	HEIS	BETA_GPC	Gross Beta by GPC
	HEIS	SRTOT_SEP_PRECIP_GPC	Strontium beta isotopic, GPC

Note: A complete list of WSCF analytical procedures and reference regulatory or industry methods is available online at http://www7.rl.gov/rapidweb/AS-DOL/index.cfm

Method Reference

Attention Michael Neely
Department Wet Chemistry

Group # WSCF103124

The results provided in this report were generated using the following WSCF Laboratory procedures. For your convenience, this table provides a listing of the regulatory, industry methods or HEIS methods that are referenced by each of these WSCF procedures. Please note that the most recent version of the regulatory or industry method is listed here even though WSCF procedure may reference an older version of the method. Also, a reference to a regulatory or industry method here does not necessarily indicate a verbatim implementation of that method.

LA-531-411	Alkalinity		
	EPA-600/4-79-020	310.1	Alkalinity
	HEIS	2320_ALKALINITY	Alkalinity

Note: A complete list of WSCF analytical procedures and reference regulatory or industry methods is available online at http://www7.rl.gov/rapidweb/AS-DOL/index.cfm

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF103124

Sample # 103124001
SAF# X11-004
Sample ID B28MN5

Matrix WATER
Sampled 11/29/10
Received 11/29/10

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Anions by IC										**11/29/10**
Anions by IC										
Fluoride	16984-48-8	LA-533-410	UD	<0.088		ug/mL	2	0.088	0.40	11/29/10
Chloride	16887-00-6	LA-533-410	UD	<0.084		ug/mL	2	0.084	0.80	11/29/10
Nitrite-N	NO2-N	LA-533-410	UD	<0.036		ug/mL	2	0.036	0.20	11/29/10
Bromide	24959-67-9	LA-533-410	UD	<0.11		ug/mL	2	0.11	1.0	11/29/10
Nitrate-N	NO3-N	LA-533-410	UD	<0.019		ug/mL	2	0.019	0.20	11/29/10
Phosphate-P	PO4-P	LA-533-410	UD	<0.14		ug/mL	2	0.14	0.80	11/29/10
Sulfate	14808-79-8	LA-533-410	UD	<0.17		ug/mL	2	0.17	2.0	11/29/10

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF103124

Sample # 103124002
SAF# X11-004
Sample ID B28373

Matrix WATER
Sampled 11/29/10
Received 11/29/10

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Anions by IC										**11/29/10**
Anions by IC										
Fluoride	16984-48-8	LA-533-410	D	0.517		ug/mL	2	0.088	0.40	11/29/10
Chloride	16887-00-6	LA-533-410	D	20.9		ug/mL	2	0.084	0.80	11/29/10
Nitrite-N	NO2-N	LA-533-410	UD	<0.036		ug/mL	2	0.036	0.20	11/29/10
Bromide	24959-67-9	LA-533-410	BD	0.218		ug/mL	2	0.11	1.0	11/29/10
Nitrate-N	NO3-N	LA-533-410	D	7.48		ug/mL	2	0.019	0.20	11/29/10
Phosphate-P	PO4-P	LA-533-410	UD	<0.14		ug/mL	2	0.14	0.80	11/29/10
Sulfate	14808-79-8	LA-533-410	D	70.3		ug/mL	2	0.17	2.0	11/29/10

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF103124

Sample # 103124003
SAF# X11-004
Sample ID B28MN1

Matrix WATER
Sampled 11/29/10
Received 11/29/10

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
ICP Prep										**11/30/10**
ICP-AES										
Aluminum	7429-90-5	LA-505-411	U	<19		ug/L	1	19	95	12/02/10
Iron	7439-89-6	LA-505-411	U	<38		ug/L	1	38	190	12/02/10
Magnesium	7439-95-4	LA-505-411	U	<14		ug/L	1	14	70	12/02/10
Manganese	7439-96-5	LA-505-411	U	<6.0		ug/L	1	6.0	30	12/02/10
Nickel	7440-02-0	LA-505-411	U	<4.0		ug/L	1	4.0	20	12/02/10
Potassium	7440-09-7	LA-505-411	UX	<73		ug/L	1	73	360	12/02/10
Silver	7440-22-4	LA-505-411	U	<7.0		ug/L	1	7.0	35	12/02/10
Sodium	7440-23-5	LA-505-411	BC	21.0		ug/L	1	11	55	12/02/10
Antimony	7440-36-0	LA-505-411	U	<47		ug/L	1	47	240	12/02/10
Barium	7440-39-3	LA-505-411	U	<4.0		ug/L	1	4.0	20	12/02/10
Cadrnium	7440-43-9	LA-505-411	U	<4.0		ug/L	1	4.0	20	12/02/10
Chromium	7440-47-3	LA-505-411	U	<14		ug/L	1	14	70	12/02/10
Cobalt	7440-48-4	LA-505-411	U	<4.0		ug/L	1	4.0	20	12/02/10
Copper	7440-50-8	LA-505-411	U	<5.0		ug/L	1	5.0	25	12/02/10
Vanadium	7440-62-2	LA-505-411	U	<17		ug/L	1	17	85	12/02/10
Zinc	7440-66-6	LA-505-411	U	<4.0		ug/L	1	4.0	20	12/02/10
Calcium	7440-70-2	LA-505-411	B	31.0		ug/L	1	28	140	12/02/10

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF103124

Sample # 103124003
SAF# X11-004
Sample ID B28MN1

Matrix WATER
Sampled 11/29/10
Received 11/29/10

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Lead	7439-92-1	LA-505-411	U	<42		ug/L	1	42	210	12/02/10
Lithium	7439-93-2	LA-505-411	U	<4.0		ug/L	1	4.0	20	12/02/10
Molybdenum	7439-98-7	LA-505-411	U	<4.0		ug/L	1	4.0	20	12/02/10
Strontium	7440-24-6	LA-505-411	U	<4.0		ug/L	1	4.0	20	12/02/10
Thallium	7440-28-0	LA-505-411	U	<49		ug/L	1	49	240	12/02/10
Tin	7440-31-5	LA-505-411	U	<49		ug/L	1	49	240	12/02/10
Arsenic	7440-38-2	LA-505-411	U	<50		ug/L	1	50	250	12/02/10
Beryllium	7440-41-7	LA-505-411	U	<4.0		ug/L	1	4.0	20	12/02/10
Boron	7440-42-8	LA-505-411	U	<41		ug/L	1	41	200	12/02/10
Bismuth	7440-69-9	LA-505-411	U	<37		ug/L	1	37	180	12/02/10
Silicon	7440-21-3	LA-505-411	U	<25		ug/L	1	25	120	12/02/10
Phosphorus	7723-14-0	LA-505-411	U	<72		ug/L	1	72	360	12/02/10
Selenium	7782-49-2	LA-505-411	U	<47		ug/L	1	47	240	12/02/10
ICPMS Prep										**12/09/10**
ICP-MS										
Aluminum	7429-90-5	LA-505-412	UD	<10		ug/L	2	10	200	12/13/10
Silver	7440-22-4	LA-505-412	UD	<0.20		ug/L	2	0.20	2.0	12/13/10
Antimony	7440-36-0	LA-505-412	UD	<0.60		ug/L	2	0.60	6.0	12/13/10
Barium	7440-39-3	LA-505-412	UD	<0.40		ug/L	2	0.40	4.0	12/13/10

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF103124

Sample # 103124003
SAF# X11-004
Sample ID B28MN1

Matrix WATER
Sampled 11/29/10
Received 11/29/10

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Beryllium	7440-41-7	LA-505-412	UD	<0.10		ug/L	2	0.10	1.0	12/13/10
Cadmium	7440-43-9	LA-505-412	UD	<0.20		ug/L	2	0.20	2.0	12/13/10
Chromium	7440-47-3	LA-505-412	UD	<1.0		ug/L	2	1.0	10	12/13/10
Cobalt	7440-48-4	LA-505-412	UD	<0.10		ug/L	2	0.10	0.50	12/13/10
Copper	7440-50-8	LA-505-412	BD	1.36		ug/L	2	0.20	2.0	12/13/10
Lead	7439-92-1	LA-505-412	UD	<0.20		ug/L	2	0.20	2.0	12/13/10
Mercury	7439-97-6	LA-505-412	UD	<0.10		ug/L	2	0.10	0.40	12/13/10
Molybdenum	7439-98-7	LA-505-412	UD	<0.10		ug/L	2	0.10	1.0	12/13/10
Thallium	7440-28-0	LA-505-412	UD	<0.10		ug/L	2	0.10	1.0	12/13/10
Tin	7440-31-5	LA-505-412	UD	<0.10		ug/L	2	0.10	1.0	12/13/10
Arsenic	7440-38-2	LA-505-412	UD	<0.80		ug/L	2	0.80	8.0	12/13/10
Selenium	7782-49-2	LA-505-412	UD	<0.60		ug/L	2	0.60	6.0	12/13/10

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

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C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF103124

Sample # 103124004
SAF# X11-004
Sample ID B27T93

Matrix WATER
Sampled 11/29/10
Received 11/29/10

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
ICP Prep										**11/30/10**
ICP-AES										
Aluminum	7429-90-5	LA-505-411	U	<19		ug/L	1	19	95	12/02/10
Iron	7439-89-6	LA-505-411	U	<38		ug/L	1	38	190	12/02/10
Magnesium	7439-95-4	LA-505-411		14400		ug/L	1	14	70	12/02/10
Manganese	7439-96-5	LA-505-411	U	<6.0		ug/L	1	6.0	30	12/02/10
Nickel	7440-02-0	LA-505-411	U	<4.0		ug/L	1	4.0	20	12/02/10
Potassium	7440-09-7	LA-505-411	X	4960		ug/L	1	73	360	12/02/10
Silver	7440-22-4	LA-505-411	U	<7.0		ug/L	1	7.0	35	12/02/10
Sodium	7440-23-5	LA-505-411		53900		ug/L	1	11	55	12/02/10
Antimony	7440-36-0	LA-505-411	U	<47		ug/L	1	47	240	12/02/10
Barium	7440-39-3	LA-505-411		41.0		ug/L	1	4.0	20	12/02/10
Cadmium	7440-43-9	LA-505-411	U	<4.0		ug/L	1	4.0	20	12/02/10
Chromium	7440-47-3	LA-505-411	U	<14		ug/L	1	14	70	12/02/10
Cobalt	7440-48-4	LA-505-411	U	<4.0		ug/L	1	4.0	20	12/02/10
Copper	7440-50-8	LA-505-411	U	<5.0		ug/L	1	5.0	25	12/02/10
Vanadium	7440-62-2	LA-505-411	U	<17		ug/L	1	17	85	12/02/10
Zinc	7440-66-6	LA-505-411	U	<4.0		ug/L	1	4.0	20	12/02/10
Calcium	7440-70-2	LA-505-411		51600		ug/L	1	28	140	12/02/10

MDL = Minimum Detection
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C - Analyte was found in the Associated Blank. (Inorganic)
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E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF103124

Sample # 103124004
SAF# X11-004
Sample ID B27T93

Matrix WATER
Sampled 11/29/10
Received 11/29/10

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Lead	7439-92-1	LA-505-411	B	44.0		ug/L	1	42	210	12/02/10
Lithium	7439-93-2	LA-505-411	B	4.00		ug/L	1	4.0	20	12/02/10
Molybdenum	7439-98-7	LA-505-411	U	<4.0		ug/L	1	4.0	20	12/02/10
Strontium	7440-24-6	LA-505-411		433		ug/L	1	4.0	20	12/02/10
Thallium	7440-28-0	LA-505-411	B	54.0		ug/L	1	49	240	12/02/10
Tin	7440-31-5	LA-505-411	U	<49		ug/L	1	49	240	12/02/10
Arsenic	7440-38-2	LA-505-411	U	<50		ug/L	1	50	250	12/02/10
Beryllium	7440-41-7	LA-505-411	U	<4.0		ug/L	1	4.0	20	12/02/10
Boron	7440-42-8	LA-505-411	B	101		ug/L	1	41	200	12/02/10
Bismuth	7440-69-9	LA-505-411	U	<37		ug/L	1	37	180	12/02/10
Silicon	7440-21-3	LA-505-411		17800		ug/L	1	25	120	12/02/10
Phosphorus	7723-14-0	LA-505-411	U	<72		ug/L	1	72	360	12/02/10
Selenium	7782-49-2	LA-505-411	U	<47		ug/L	1	47	240	12/02/10
ICPMS Prep										**12/09/10**
ICP-MS										
Aluminum	7429-90-5	LA-505-412	UD	<10		ug/L	2	10	200	12/13/10
Silver	7440-22-4	LA-505-412	UD	<0.20		ug/L	2	0.20	2.0	12/13/10
Antimony	7440-36-0	LA-505-412	UD	<0.60		ug/L	2	0.60	6.0	12/13/10
Barium	7440-39-3	LA-505-412	D	41.9		ug/L	2	0.40	4.0	12/13/10

MDL = Minimum Detection
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TP Err = Total Propagated
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+ - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
C - Analyte was found in the Associated Blank. (Inorganic)
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E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF103124

Sample # 103124004
SAF# X11-004
Sample ID B27T93

Matrix WATER
Sampled 11/29/10
Received 11/29/10

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Beryllium	7440-41-7	LA-505-412	UD	<0.10		ug/L	2	0.10	1.0	12/13/10
Cadmium	7440-43-9	LA-505-412	UD	<0.20		ug/L	2	0.20	2.0	12/13/10
Chromium	7440-47-3	LA-505-412	BD	4.50		ug/L	2	1.0	10	12/13/10
Cobalt	7440-48-4	LA-505-412	UD	<0.10		ug/L	2	0.10	0.50	12/13/10
Copper	7440-50-8	LA-505-412	BD	0.532		ug/L	2	0.20	2.0	12/13/10
Lead	7439-92-1	LA-505-412	UD	<0.20		ug/L	2	0.20	2.0	12/13/10
Mercury	7439-97-6	LA-505-412	UD	<0.10		ug/L	2	0.10	0.40	12/13/10
Molybdenum	7439-98-7	LA-505-412	D	7.43		ug/L	2	0.10	1.0	12/13/10
Thallium	7440-28-0	LA-505-412	UD	<0.10		ug/L	2	0.10	1.0	12/13/10
Tin	7440-31-5	LA-505-412	UD	<0.10		ug/L	2	0.10	1.0	12/13/10
Arsenic	7440-38-2	LA-505-412	BD	7.90		ug/L	2	0.80	8.0	12/13/10
Selenium	7782-49-2	LA-505-412	BD	3.04		ug/L	2	0.60	6.0	12/13/10

MDL = Minimum Detection
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N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF103124

Sample # 103124005
SAF# X11-004
Sample ID B28MN2

Matrix WATER
Sampled 11/29/10
Received 11/29/10

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
ICP Prep										**11/30/10**
ICP-AES										
Aluminum	7429-90-5	LA-505-411	U	<19		ug/L	1	19	95	12/02/10
Iron	7439-89-6	LA-505-411	U	<38		ug/L	1	38	190	12/02/10
Magnesium	7439-95-4	LA-505-411	U	<14		ug/L	1	14	70	12/02/10
Manganese	7439-96-5	LA-505-411	U	<6.0		ug/L	1	6.0	30	12/02/10
Nickel	7440-02-0	LA-505-411	U	<4.0		ug/L	1	4.0	20	12/02/10
Potassium	7440-09-7	LA-505-411	UX	<73		ug/L	1	73	360	12/02/10
Silver	7440-22-4	LA-505-411	U	<7.0		ug/L	1	7.0	35	12/02/10
Sodium	7440-23-5	LA-505-411	BC	44.0		ug/L	1	11	55	12/02/10
Antimony	7440-36-0	LA-505-411	U	<47		ug/L	1	47	240	12/02/10
Barium	7440-39-3	LA-505-411	U	<4.0		ug/L	1	4.0	20	12/02/10
Cadmium	7440-43-9	LA-505-411	U	<4.0		ug/L	1	4.0	20	12/02/10
Chromium	7440-47-3	LA-505-411	U	<14		ug/L	1	14	70	12/02/10
Cobalt	7440-48-4	LA-505-411	U	<4.0		ug/L	1	4.0	20	12/02/10
Copper	7440-50-8	LA-505-411	B	5.00		ug/L	1	5.0	25	12/02/10
Vanadium	7440-62-2	LA-505-411	U	<17		ug/L	1	17	85	12/02/10
Zinc	7440-66-6	LA-505-411	U	<4.0		ug/L	1	4.0	20	12/02/10
Calcium	7440-70-2	LA-505-411	B	33.0		ug/L	1	28	140	12/02/10

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E - Analyte is an estimate, see comment section.
N - MS and/cr MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF103124

Sample # 103124005
SAF# X11-004
Sample ID B28MN2

Matrix WATER
Sampled 11/29/10
Received 11/29/10

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Lead	7439-92-1	LA-505-411	U	<42		ug/L	1	42	210	12/02/10
Lithium	7439-93-2	LA-505-411	U	<4.0		ug/L	1	4.0	20	12/02/10
Molybdenum	7439-98-7	LA-505-411	U	<4.0		ug/L	1	4.0	20	12/02/10
Strontium	7440-24-6	LA-505-411	U	<4.0		ug/L	1	4.0	20	12/02/10
Thallium	7440-28-0	LA-505-411	U	<49		ug/L	1	49	240	12/02/10
Tin	7440-31-5	LA-505-411	U	<49		ug/L	1	49	240	12/02/10
Arsenic	7440-38-2	LA-505-411	U	<50		ug/L	1	50	250	12/02/10
Beryllium	7440-41-7	LA-505-411	U	<4.0		ug/L	1	4.0	20	12/02/10
Boron	7440-42-8	LA-505-411	U	<41		ug/L	1	41	200	12/02/10
Bismuth	7440-69-9	LA-505-411	U	<37		ug/L	1	37	180	12/02/10
Silicon	7440-21-3	LA-505-411	U	<25		ug/L	1	25	120	12/02/10
Phosphorus	7723-14-0	LA-505-411	U	<72		ug/L	1	72	360	12/02/10
Selenium	7782-49-2	LA-505-411	U	<47		ug/L	1	47	240	12/02/10
ICPMS Prep										**12/09/10**
ICP-MS										
Aluminum	7429-90-5	LA-505-412	UD	<10		ug/L	2	10	200	12/13/10
Silver	7440-22-4	LA-505-412	UD	<0.20		ug/L	2	0.20	2.0	12/13/10
Antimony	7440-36-0	LA-505-412	UD	<0.60		ug/L	2	0.60	6.0	12/13/10
Barium	7440-39-3	LA-505-412	UD	<0.40		ug/L	2	0.40	4.0	12/13/10

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X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF103124

Sample # 103124005
SAF# X11-004
Sample ID B28MN2

Matrix WATER
Sampled 11/29/10
Received 11/29/10

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Beryllium	7440-41-7	LA-505-412	UD	<0.10		ug/L	2	0.10	1.0	12/13/10
Cadmium	7440-43-9	LA-505-412	UD	<0.20		ug/L	2	0.20	2.0	12/13/10
Chromium	7440-47-3	LA-505-412	UD	<1.0		ug/L	2	1.0	10	12/13/10
Cobalt	7440-48-4	LA-505-412	UD	<0.10		ug/L	2	0.10	0.50	12/13/10
Copper	7440-50-8	LA-505-412	D	3.38		ug/L	2	0.20	2.0	12/13/10
Lead	7439-92-1	LA-505-412	UD	<0.20		ug/L	2	0.20	2.0	12/13/10
Mercury	7439-97-6	LA-505-412	UD	<0.10		ug/L	2	0.10	0.40	12/13/10
Molybdenum	7439-98-7	LA-505-412	UD	<0.10		ug/L	2	0.10	1.0	12/13/10
Thallium	7440-28-0	LA-505-412	UD	<0.10		ug/L	2	0.10	1.0	12/13/10
Tin	7440-31-5	LA-505-412	UD	<0.10		ug/L	2	0.10	1.0	12/13/10
Arsenic	7440-38-2	LA-505-412	UD	<0.80		ug/L	2	0.80	8.0	12/13/10
Selenium	7782-49-2	LA-505-412	UD	<0.60		ug/L	2	0.60	6.0	12/13/10

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

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C - Analyte was found in the Associated Blank. (Inorganic)
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U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF103124

Sample # 103124006
SAF# X11-004
Sample ID B27T94

Matrix WATER
Sampled 11/29/10
Received 11/29/10

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
ICP Prep										**11/30/10**
ICP-AES										
Aluminum	7429-90-5	LA-505-411	U	<19		ug/L	1	19	95	12/02/10
Iron	7439-89-6	LA-505-411	U	<38		ug/L	1	38	190	12/02/10
Magnesium	7439-95-4	LA-505-411		13700		ug/L	1	14	70	12/02/10
Manganese	7439-96-5	LA-505-411	U	<6.0		ug/L	1	6.0	30	12/02/10
Nickel	7440-02-0	LA-505-411	U	<4.0		ug/L	1	4.0	20	12/02/10
Potassium	7440-09-7	LA-505-411	X	4770		ug/L	1	73	360	12/02/10
Silver	7440-22-4	LA-505-411	U	<7.0		ug/L	1	7.0	35	12/02/10
Sodium	7440-23-5	LA-505-411		52600		ug/L	1	11	55	12/02/10
Antimony	7440-36-0	LA-505-411	U	<47		ug/L	1	47	240	12/02/10
Barium	7440-39-3	LA-505-411		39.0		ug/L	1	4.0	20	12/02/10
Cadmium	7440-43-9	LA-505-411	U	<4.0		ug/L	1	4.0	20	12/02/10
Chromium	7440-47-3	LA-505-411	U	<14		ug/L	1	14	70	12/02/10
Cobalt	7440-48-4	LA-505-411	U	<4.0		ug/L	1	4.0	20	12/02/10
Copper	7440-50-8	LA-505-411	U	<5.0		ug/L	1	5.0	25	12/02/10
Vanadium	7440-62-2	LA-505-411	U	<17		ug/L	1	17	85	12/02/10
Zinc	7440-66-6	LA-505-411	U	<4.0		ug/L	1	4.0	20	12/02/10
Calcium	7440-70-2	LA-505-411		49500		ug/L	1	28	140	12/02/10

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF103124

Sample # 103124006
SAF# X11-004
Sample ID B27T94

Matrix WATER
Sampled 11/29/10
Received 11/29/10

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Lead	7439-92-1	LA-505-411	U	<42		ug/L	1	42	210	12/02/10
Lithium	7439-93-2	LA-505-411	B	4.00		ug/L	1	4.0	20	12/02/10
Molybdenum	7439-98-7	LA-505-411	U	<4.0		ug/L	1	4.0	20	12/02/10
Strontium	7440-24-6	LA-505-411		409		ug/L	1	4.0	20	12/02/10
Thallium	7440-28-0	LA-505-411	U	<49		ug/L	1	49	240	12/02/10
Tin	7440-31-5	LA-505-411	U	<49		ug/L	1	49	240	12/02/10
Arsenic	7440-38-2	LA-505-411	U	<50		ug/L	1	50	250	12/02/10
Beryllium	7440-41-7	LA-505-411	U	<4.0		ug/L	1	4.0	20	12/02/10
Boron	7440-42-8	LA-505-411	B	95.0		ug/L	1	41	200	12/02/10
Bismuth	7440-69-9	LA-505-411	U	<37		ug/L	1	37	180	12/02/10
Silicon	7440-21-3	LA-505-411		16900		ug/L	1	25	120	12/02/10
Phosphorus	7723-14-0	LA-505-411	U	<72		ug/L	1	72	360	12/02/10
Selenium	7782-49-2	LA-505-411	U	<47		ug/L	1	47	240	12/02/10
ICPMS Prep										**12/09/10**
ICP-MS										
Aluminum	7429-90-5	LA-505-412	UD	<10		ug/L	2	10	200	12/13/10
Silver	7440-22-4	LA-505-412	UD	<0.20		ug/L	2	0.20	2.0	12/13/10
Antimony	7440-36-0	LA-505-412	UD	<0.60		ug/L	2	0.60	6.0	12/13/10
Barium	7440-39-3	LA-505-412	D	39.3		ug/L	2	0.40	4.0	12/13/10

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF103124

Sample # 103124006
SAF# X11-004
Sample ID B27T94

Matrix WATER
Sampled 11/29/10
Received 11/29/10

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Beryllium	7440-41-7	LA-505-412	UD	<0.10		ug/L	2	0.10	1.0	12/13/10
Cadmium	7440-43-9	LA-505-412	UD	<0.20		ug/L	2	0.20	2.0	12/13/10
Chromium	7440-47-3	LA-505-412	BD	3.99		ug/L	2	1.0	10	12/13/10
Cobalt	7440-48-4	LA-505-412	BD	0.101		ug/L	2	0.10	0.50	12/13/10
Copper	7440-50-8	LA-505-412	BD	0.876		ug/L	2	0.20	2.0	12/13/10
Lead	7439-92-1	LA-505-412	UD	<0.20		ug/L	2	0.20	2.0	12/13/10
Mercury	7439-97-6	LA-505-412	UD	<0.10		ug/L	2	0.10	0.40	12/13/10
Molybdenum	7439-98-7	LA-505-412	D	6.84		ug/L	2	0.10	1.0	12/13/10
Thallium	7440-28-0	LA-505-412	UD	<0.10		ug/L	2	0.10	1.0	12/13/10
Tin	7440-31-5	LA-505-412	UD	<0.10		ug/L	2	0.10	1.0	12/13/10
Arsenic	7440-38-2	LA-505-412	BD	7.76		ug/L	2	0.80	8.0	12/13/10
Selenium	7782-49-2	LA-505-412	BD	2.56		ug/L	2	0.60	6.0	12/13/10

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF103124

Sample # 103124005
SAF# X11-004
Sample ID B28MN2

Matrix WATER
Sampled 11/29/10
Received 11/29/10

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Alpha/Beta Prep										**12/03/10**
Gross Alpha/Beta										
Gross Alpha	12587-46-1	LA-508-415		2.5	1	pCi/L	1	0.66		12/14/10
Gross Beta	12587-47-2	LA-508-415	U	0.97	1.9	pCi/L	1	3.2		12/14/10
H3 EICHROM										**11/30/10**
TRI-CARB LSC										
Tritium	10028-17-8	LA-508-421	U	120	130	pCi/L	1	210		12/13/10
SR-89/90										**12/17/10**
SR-89/90										
Strontium-89/90	SR-RAD	LA-220-406	U	-1.6	3.5	pCi/L	1	1.7		12/21/10
Tc-99										**11/29/10**
TRI-CARB LSC										
Technetium-99	14133-76-7	LA-508-421	U	-5.0	3.9	pCi/L	1	6.4		12/02/10
Th/Pu/Am/U Teva										**12/05/10**
AEA Am-U-Pu										
Americium-241	14596-10-2	LA-508-471	U	-0.13	.15	pCi/L	1	0.30		12/06/10
AEA Pu-Np										
Plutonium-238	13981-16-3	LA-508-471	U	0.032	.057	pCi/L	1	0.10		12/06/10
Plutonium-239/240	PU-239/240	LA-508-471		0.097	.068	pCi/L	1	0.070		12/06/10

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte was detected in both the BLANK and SAMPLE
U - Analyzed for but not detected above limiting criteria.
N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.

WSCF Analytical Results Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF103124

Sample # 103124006
SAF# X11-004
Sample ID B27T94

Matrix WATER
Sampled 11/29/10
Received 11/29/10

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Alpha/Beta Prep										**12/03/10**
Gross Alpha/Beta										
Gross Alpha	12587-46-1	LA-508-415		5.7	1.9	pCi/L	1	1.0		12/14/10
Gross Beta	12587-47-2	LA-508-415		5.8	2.5	pCi/L	1	3.6		12/14/10
H3 EICHROM										**11/30/10**
TRI-CARB LSC										
Tritium	10028-17-8	LA-508-421	U	24	84	pCi/L	1	200		12/13/10
SR-89/90										**12/17/10**
SR-89/90										
Strontium-89/90	SR-RAD	LA-220-406	U	-1.1	3.4	pCi/L	1	1.6		12/21/10
Tc-99										**11/29/10**
TRI-CARB LSC										
Technetium-99	14133-76-7	LA-508-421	U	-4.7	3.8	pCi/L	1	6.4		12/02/10
Th/Pu/Am/U Teva										**12/05/10**
AEA Am-U-Pu										
Americium-241	14596-10-2	LA-508-471	U	0.089	.15	pCi/L	1	0.24		12/06/10
AEA Pu-Np										
Plutonium-238	13981-16-3	LA-508-471	U	-0.021	.053	pCi/L	1	0.13		12/06/10
Plutonium-239/240	PU-239/240	LA-508-471	U	0.064	.054	pCi/L	1	0.080		12/06/10

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte was detected in both the BLANK and SAMPLE
U - Analyzed for but not detected above limiting criteria.
N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.

WSCF Analytical Results Report

Attention Michael Neely
Department Wet Chemistry

Group # WSCF103124

Sample # 103124005
SAF# X11-004
Sample ID B28MN2

Matrix WATER
Sampled 11/29/10
Received 11/29/10

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Alkalinity										**12/03/10**
Alkalinity										
Total Alkalinity as CaCO3	ALKALINITY	LA-531-411	U	<1		mg/L	1	1	10	12/03/10

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the RDL but >= the IDL/MDL.
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
N - MS and/or MSD sample recovery outside control limits.
U - Analyzed for but not detected above limiting criteria.

N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Wet Chemistry

Group # WSCF103124

Sample # 103124006
SAF# X11-004
Sample ID B27T94

Matrix WATER
Sampled 11/29/10
Received 11/29/10

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Alkalinity										**12/03/10**
Alkalinity										
Total Alkalinity as CaCO3	ALKALINITY	LA-531-411		190		mg/L	1	1	10	12/03/10

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the RDL but >= the IDL/MDL.
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
N - MS and/or MSD sample recovery outside control limits.
U - Analyzed for but not detected above limiting criteria.

N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF103124

QC Batch 170448
Associated Samples 103124001, 103124002

Test Anions by Ion Chromatography (Water)

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #42828**							
Fluoride	16984-48-8		<0.044	ug/mL					U	11/29/10
Chloride	16887-00-6		<0.042	ug/mL					U	11/29/10
Nitrite-N	NO2-N		<0.018	ug/mL					U	11/29/10
Bromide	24959-67-9		<0.054	ug/mL					U	11/29/10
Nitrate-N	NO3-N		<9.7E-3	ug/mL					U	11/29/10
Phosphate-P	PO4-P		<0.072	ug/mL					U	11/29/10
Sulfate	14808-79-8		<0.083	ug/mL					U	11/29/10
LCS			**QC Sample #42829**							
Fluoride	16984-48-8		0.921	ug/mL	93	90 - 110				11/29/10
Chloride	16887-00-6		2.01	ug/mL	101.6	90 - 110				11/29/10
Nitrite-N	NO2-N		0.948	ug/mL	96.9	90 - 110				11/29/10
Bromide	24959-67-9		3.95	ug/mL	100.8	90 - 110				11/29/10
Nitrate-N	NO3-N		0.918	ug/mL	103.7	90 - 110				11/29/10
Phosphate-P	PO4-P		1.98	ug/mL	103.6	90 - 110				11/29/10
Sulfate	14808-79-8		4.02	ug/mL	102.6	90 - 110				11/29/10
DUP			**QC Sample #42830**							
			Original 103124001							
Fluoride	16984-48-8	<0.088	<0.088	ug/mL			0.00	20	UD	11/29/10

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF103124

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit		RQ	Analyzed
Chloride	16887-00-6	<0.084	<0.084	ug/mL			16.90	20		UD	11/29/10
Nitrite-N	NO2-N	<0.036	<0.036	ug/mL			0.00	20		UD	11/29/10
Bromide	24959-67-9	<0.11	<0.11	ug/mL			0.00	20		UD	11/29/10
Nitrate-N	NO3-N	<0.019	<0.019	ug/mL			200.00	20	*	UXD	11/29/10
Phosphate-P	PO4-P	<0.14	<0.14	ug/mL			0.00	20		UD	11/29/10
Sulfate	14808-79-8	<0.17	<0.17	ug/mL			0.00	20		UD	11/29/10
MS			**QC Sample #42831**								
			Original 103124001								
Fluoride	16984-48-8	<0.088	0.886	ug/mL	88.6	80 - 120				D	11/29/10
Chloride	16887-00-6	<0.084	2.06	ug/mL	103.2	80 - 120				D	11/29/10
Nitrite-N	NO2-N	<0.036	0.995	ug/mL	100.7	80 - 120				D	11/29/10
Bromide	24959-67-9	<0.11	4.04	ug/mL	102.1	80 - 120				D	11/29/10
Nitrate-N	NO3-N	<0.019	0.925	ug/mL	103.4	80 - 120				D	11/29/10
Phosphate-P	PO4-P	<0.14	1.99	ug/mL	103.1	80 - 120				D	11/29/10
Sulfate	14808-79-8	<0.17	4.08	ug/mL	102.9	80 - 120				D	11/29/10
MSD			**QC Sample #42832**								
			Original 103124001					**Paired**		**42831**	
Fluoride	16984-48-8	<0.088	0.911	ug/mL	91.1	80 - 120	2.80	20		D	11/29/10
Chloride	16887-00-6	<0.084	2.08	ug/mL	103.9	80 - 120	0.70	20		D	11/29/10
Nitrite-N	NO2-N	<0.036	1.03	ug/mL	104.7	80 - 120	3.90	20		D	11/29/10
Bromide	24959-67-9	<0.11	4.15	ug/mL	104.7	80 - 120	2.50	20		D	11/29/10
Nitrate-N	NO3-N	<0.019	0.965	ug/mL	108	80 - 120	4.40	20		D	11/29/10
Phosphate-P	PO4-P	<0.14	2.01	ug/mL	104.3	80 - 120	1.20	20		D	11/29/10
Sulfate	14808-79-8	<0.17	4.10	ug/mL	103.5	80 - 120	0.60	20		D	11/29/10

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF103124

QC Batch 170451
Associated Samples 103124003, 103124004, 103124005, 103124006

Test ICP-6010 - All possible metals

Analyte	CAS #	Original Found	QC Found	Units	% Recov Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #42841**						
Aluminum	7429-90-5		<19	ug/L				U	12/02/10
Iron	7439-89-6		<38	ug/L				U	12/02/10
Magnesium	7439-95-4		<14	ug/L				U	12/02/10
Manganese	7439-96-5		<6.0	ug/L				U	12/02/10
Nickel	7440-02-0		<4.0	ug/L				U	12/02/10
Potassium	7440-09-7		<73	ug/L				U	12/02/10
Silver	7440-22-4		<7.0	ug/L				U	12/02/10
Sodium	7440-23-5		12.0	ug/L				B	12/02/10
Antimony	7440-36-0		<47	ug/L				U	12/02/10
Barium	7440-39-3		<4.0	ug/L				U	12/02/10
Cadmium	7440-43-9		<4.0	ug/L				U	12/02/10
Chromium	7440-47-3		<14	ug/L				U	12/02/10
Cobalt	7440-48-4		<4.0	ug/L				U	12/02/10
Copper	7440-50-8		<5.0	ug/L				U	12/02/10
Vanadium	7440-62-2		<17	ug/L				U	12/02/10
Zinc	7440-66-6		<4.0	ug/L				U	12/02/10
Calcium	7440-70-2		<28	ug/L				U	12/02/10
Lead	7439-92-1		<42	ug/L				U	12/02/10
Lithium	7439-93-2		<4.0	ug/L				U	12/02/10

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF103124

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Molybdenum	7439-98-7		<4.0	ug/L					U	12/02/10
Strontium	7440-24-6		<4.0	ug/L					U	12/02/10
Thallium	7440-28-0		<49	ug/L					U	12/02/10
Tin	7440-31-5		<49	ug/L					U	12/02/10
Arsenic	7440-38-2		<50	ug/L					U	12/02/10
Beryllium	7440-41-7		<4.0	ug/L					U	12/02/10
Boron	7440-42-8		<41	ug/L					U	12/02/10
Bismuth	7440-69-9		<37	ug/L					U	12/02/10
Silicon	7440-21-3		<25	ug/L					U	12/02/10
Phosphorus	7723-14-0		<72	ug/L					U	12/02/10
Selenium	7782-49-2		<47	ug/L					U	12/02/10
LCS			**QC Sample #42842**							
Aluminum	7429-90-5		992	ug/L	99.2	80 - 120				12/02/10
Iron	7439-89-6		998	ug/L	99.8	80 - 120				12/02/10
Magnesium	7439-95-4		983	ug/L	98.3	80 - 120				12/02/10
Manganese	7439-96-5		1010	ug/L	101	80 - 120				12/02/10
Nickel	7440-02-0		985	ug/L	98.5	80 - 120				12/02/10
Potassium	7440-09-7		1020	ug/L	10.2	80 - 120			X	12/02/10
Silver	7440-22-4		958	ug/L	95.8	80 - 120				12/02/10
Sodium	7440-23-5		1010	ug/L	101	80 - 120				12/02/10
Antimony	7440-36-0		1020	ug/L	102	80 - 120				12/02/10
Barium	7440-39-3		485	ug/L	97	80 - 120				12/02/10
Cadmium	7440-43-9		994	ug/L	99.4	80 - 120				12/02/10
Chromium	7440-47-3		969	ug/L	96.9	80 - 120				12/02/10

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF103124

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Cobalt	7440-48-4		970	ug/L	97	80 - 120				12/02/10
Copper	7440-50-8		994	ug/L	99.4	80 - 120				12/02/10
Vanadium	7440-62-2		984	ug/L	98.4	80 - 120				12/02/10
Zinc	7440-66-6		982	ug/L	98.2	80 - 120				12/02/10
Calcium	7440-70-2		1020	ug/L	102	80 - 120				12/02/10
Lead	7439-92-1		1050	ug/L	105	80 - 120				12/02/10
Lithium	7439-93-2		486	ug/L	97.2	80 - 120				12/02/10
Molybdenum	7439-98-7		981	ug/L	98.1	80 - 120				12/02/10
Strontium	7440-24-6		505	ug/L	101	80 - 120				12/02/10
Thallium	7440-28-0		963	ug/L	96.3	80 - 120				12/02/10
Tin	7440-31-5		1030	ug/L	103	80 - 120				12/02/10
Arsenic	7440-38-2		1020	ug/L	102	80 - 120				12/02/10
Beryllium	7440-41-7		516	ug/L	103.2	80 - 120				12/02/10
Boron	7440-42-8		970	ug/L	97	80 - 120				12/02/10
Bismuth	7440-69-9		944	ug/L	94.4	80 - 120				12/02/10
Silicon	7440-21-3		1020	ug/L	102	80 - 120				12/02/10
Phosphorus	7723-14-0		1010	ug/L	101	80 - 120				12/02/10
Selenium	7782-49-2		992	ug/L	99.2	80 - 120				12/02/10
MS			**QC Sample #42843**							
			Original 103124003							
Aluminum	7429-90-5	<19	965	ug/L	96.5	75 - 125				12/02/10
Iron	7439-89-6	<38	996	ug/L	99.6	75 - 125				12/02/10
Magnesium	7439-95-4	<14	961	ug/L	96.1	75 - 125				12/02/10
Manganese	7439-96-5	<6.0	1000	ug/L	100	75 - 125				12/02/10
Nickel	7440-02-0	<4.0	992	ug/L	99.2	75 - 125				12/02/10

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF103124

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Potassium	7440-09-7	<73	980	ug/L	9.8	75 - 125			X	12/02/10
Silver	7440-22-4	<7.0	967	ug/L	96.7	75 - 125				12/02/10
Sodium	7440-23-5	21.0	974	ug/L	97.4	75 - 125				12/02/10
Antimony	7440-36-0	<47	1020	ug/L	102	75 - 125				12/02/10
Barium	7440-39-3	<4.0	483	ug/L	96.6	75 - 125				12/02/10
Cadmium	7440-43-9	<4.0	996	ug/L	99.6	75 - 125				12/02/10
Chromium	7440-47-3	<14	971	ug/L	97.1	75 - 125				12/02/10
Cobalt	7440-48-4	<4.0	979	ug/L	97.9	75 - 125				12/02/10
Copper	7440-50-8	<5.0	987	ug/L	98.7	75 - 125				12/02/10
Vanadium	7440-62-2	<17	971	ug/L	97.1	75 - 125				12/02/10
Zinc	7440-66-6	<4.0	990	ug/L	99	75 - 125				12/02/10
Calcium	7440-70-2	31.0	1030	ug/L	102.9	75 - 125				12/02/10
Lead	7439-92-1	<42	1020	ug/L	102	75 - 125				12/02/10
Lithium	7439-93-2	<4.0	474	ug/L	94.8	75 - 125				12/02/10
Molybdenum	7439-98-7	<4.0	993	ug/L	99.3	75 - 125				12/02/10
Strontium	7440-24-6	<4.0	501	ug/L	100.2	75 - 125				12/02/10
Thallium	7440-28-0	<49	910	ug/L	91	75 - 125				12/02/10
Tin	7440-31-5	<49	1030	ug/L	103	75 - 125				12/02/10
Arsenic	7440-38-2	<50	1020	ug/L	102	75 - 125				12/02/10
Beryllium	7440-41-7	<4.0	514	ug/L	102.8	75 - 125				12/02/10
Boron	7440-42-8	<41	988	ug/L	98.8	75 - 125				12/02/10
Bismuth	7440-69-9	<37	926	ug/L	92.6	75 - 125				12/02/10
Silicon	7440-21-3	<25	1030	ug/L	103	75 - 125				12/02/10
Phosphorus	7723-14-0	<72	1050	ug/L	105	75 - 125				12/02/10
Selenium	7782-49-2	<47	965	ug/L	96.5	75 - 125				12/02/10

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF103124

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
MSD			**QC Sample #42844**							
			Original	**103124003**				**Paired**	**42843**	
Aluminum	7429-90-5	<19	961	ug/L	96.1	75 - 125	0.40	20		12/02/10
Iron	7439-89-6	<38	1010	ug/L	101	75 - 125	1.40	20		12/02/10
Magnesium	7439-95-4	<14	966	ug/L	96.6	75 - 125	0.50	20		12/02/10
Manganese	7439-96-5	<6.0	995	ug/L	99.5	75 - 125	0.50	20		12/02/10
Nickel	7440-02-0	<4.0	984	ug/L	98.4	75 - 125	0.80	20		12/02/10
Potassium	7440-09-7	<73	984	ug/L	9.8	75 - 125	0.00	20	X	12/02/10
Silver	7440-22-4	<7.0	964	ug/L	96.4	75 - 125	0.30	20		12/02/10
Sodium	7440-23-5	21.0	968	ug/L	96.8	75 - 125	0.60	20		12/02/10
Antimony	7440-36-0	<47	1040	ug/L	104	75 - 125	1.90	20		12/02/10
Barium	7440-39-3	<4.0	479	ug/L	95.8	75 - 125	0.80	20		12/02/10
Cadmium	7440-43-9	<4.0	991	ug/L	99.1	75 - 125	0.50	20		12/02/10
Chromium	7440-47-3	<14	957	ug/L	95.7	75 - 125	1.50	20		12/02/10
Cobalt	7440-48-4	<4.0	971	ug/L	97.1	75 - 125	0.80	20		12/02/10
Copper	7440-50-8	<5.0	980	ug/L	98	75 - 125	0.70	20		12/02/10
Vanadium	7440-62-2	<17	969	ug/L	96.9	75 - 125	0.20	20		12/02/10
Zinc	7440-66-6	<4.0	979	ug/L	97.9	75 - 125	1.10	20		12/02/10
Calcium	7440-70-2	31.0	1030	ug/L	102.9	75 - 125	0.00	20		12/02/10
Lead	7439-92-1	<42	1050	ug/L	105	75 - 125	2.90	20		12/02/10
Lithium	7439-93-2	<4.0	475	ug/L	95	75 - 125	0.20	20		12/02/10
Molybdenum	7439-98-7	<4.0	984	ug/L	98.4	75 - 125	0.90	20		12/02/10
Strontium	7440-24-6	<4.0	497	ug/L	99.4	75 - 125	0.80	20		12/02/10
Thallium	7440-28-0	<49	922	ug/L	92.2	75 - 125	1.30	20		12/02/10
Tin	7440-31-5	<49	1030	ug/L	103	75 - 125	0.00	20		12/02/10

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF103124

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Arsenic	7440-38-2	<50	1000	ug/L	100	75 - 125	2.00	20		12/02/10
Beryllium	7440-41-7	<4.0	512	ug/L	102.4	75 - 125	0.40	20		12/02/10
Boron	7440-42-8	<41	967	ug/L	96.7	75 - 125	2.10	20		12/02/10
Bismuth	7440-69-9	<37	925	ug/L	92.5	75 - 125	0.10	20		12/02/10
Silicon	7440-21-3	<25	1020	ug/L	102	75 - 125	1.00	20		12/02/10
Phosphorus	7723-14-0	<72	1040	ug/L	104	75 - 125	1.00	20		12/02/10
Selenium	7782-49-2	<47	998	ug/L	99.8	75 - 125	3.40	20		12/02/10

Quality Control Report

Attention Michael Neely
Department Wet Chemistry

Group # WSCF103124

QC Batch 170742
Associated Samples 103124005, 103124006

Test Total Alkalinity as mg/L CaCO3 (Water)

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit		RQ	Analyzed
LCS			**QC Sample #43394**								
Total Alkalinity as CaCO3	ALKALINITY		100	mg/L	101.5	80 - 120					12/03/10
DUP			**QC Sample #43395**								
			Original 103124005								
Total Alkalinity as CaCO3	ALKALINITY	<1	<1	mg/L			120.00	20	*	U	12/03/10

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF103124

QC Batch 170908
Associated Samples 103124003, 103124004, 103124005, 103124006

Test ICP-2008 MS All possible metal

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #43708**							
Aluminum	7429-90-5		<5.0	ug/L					U	12/13/10
Silver	7440-22-4		<0.10	ug/L					U	12/13/10
Antimony	7440-36-0		<0.30	ug/L					U	12/13/10
Barium	7440-39-3		<0.20	ug/L					U	12/13/10
Beryllium	7440-41-7		<0.050	ug/L					U	12/13/10
Cadmium	7440-43-9		<0.10	ug/L					U	12/13/10
Chromium	7440-47-3		<0.50	ug/L					U	12/13/10
Cobalt	7440-48-4		<0.050	ug/L					U	12/13/10
Copper	7440-50-8		<0.10	ug/L					U	12/13/10
Lead	7439-92-1		<0.10	ug/L					U	12/13/10
Mercury	7439-97-6		<0.050	ug/L					U	12/13/10
Molybdenum	7439-98-7		<0.050	ug/L					U	12/13/10
Thallium	7440-28-0		<0.050	ug/L					U	12/13/10
Tin	7440-31-5		<0.050	ug/L					U	12/13/10
Arsenic	7440-38-2		<0.40	ug/L					U	12/13/10
Selenium	7782-49-2		<0.30	ug/L					U	12/13/10
LCS			**QC Sample #43709**							
Aluminum	7429-90-5		375	ug/L	93.7	85 - 115				12/13/10

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF103124

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Silver	7440-22-4		39.7	ug/L	99.2	85 - 115				12/13/10
Antimony	7440-36-0		38.2	ug/L	95.6	85 - 115				12/13/10
Barium	7440-39-3		38.4	ug/L	96	85 - 115				12/13/10
Beryllium	7440-41-7		38.3	ug/L	95.8	85 - 115				12/13/10
Cadmium	7440-43-9		38.0	ug/L	94.9	85 - 115				12/13/10
Chromium	7440-47-3		38.8	ug/L	97	85 - 115				12/13/10
Cobalt	7440-48-4		38.5	ug/L	96.3	85 - 115				12/13/10
Copper	7440-50-8		38.4	ug/L	95.9	85 - 115				12/13/10
Lead	7439-92-1		40.3	ug/L	100.8	85 - 115				12/13/10
Mercury	7439-97-6		1.90	ug/L	94.8	85 - 115				12/13/10
Molybdenum	7439-98-7		38.8	ug/L	96.9	85 - 115				12/13/10
Thallium	7440-28-0		40.0	ug/L	100	85 - 115				12/13/10
Tin	7440-31-5		38.7	ug/L	96.8	85 - 115				12/13/10
Arsenic	7440-38-2		37.6	ug/L	93.9	85 - 115				12/13/10
Selenium	7782-49-2		36.1	ug/L	90.2	85 - 115				12/13/10
MS			**QC Sample #43710**							
			Original 103089001							
Aluminum	7429-90-5		376	ug/L	93.9	70 - 130				12/13/10
Silver	7440-22-4		37.7	ug/L	94.2	70 - 130				12/13/10
Antimony	7440-36-0		38.8	ug/L	96.9	70 - 130				12/13/10
Barium	7440-39-3		39.6	ug/L	98.9	70 - 130				12/13/10
Beryllium	7440-41-7		37.7	ug/L	94.2	70 - 130				12/13/10
Cadmium	7440-43-9		37.7	ug/L	94.2	70 - 130				12/13/10
Chromium	7440-47-3		39.2	ug/L	97.9	70 - 130				12/13/10
Cobalt	7440-48-4		37.5	ug/L	93.7	70 - 130				12/13/10

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF103124

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Copper	7440-50-8		36.5	ug/L	91.4	70 - 130				12/13/10
Lead	7439-92-1		39.8	ug/L	99.5	70 - 130				12/13/10
Mercury	7439-97-6		1.95	ug/L	97.4	70 - 130				12/13/10
Molybdenum	7439-98-7		39.4	ug/L	98.5	70 - 130				12/13/10
Thallium	7440-28-0		40.0	ug/L	100.1	70 - 130				12/13/10
Tin	7440-31-5		38.7	ug/L	96.8	70 - 130				12/13/10
Arsenic	7440-38-2		38.3	ug/L	95.6	70 - 130				12/13/10
Selenium	7782-49-2		33.8	ug/L	84.6	70 - 130				12/13/10
MSD			**QC Sample #43711**							
			Original 103089001						**Paired 43710**	
Aluminum	7429-90-5		363	ug/L	90.8	70 - 130	3.40	20		12/13/10
Silver	7440-22-4		37.2	ug/L	93	70 - 130	1.30	20		12/13/10
Antimony	7440-36-0		37.8	ug/L	94.5	70 - 130	2.50	20		12/13/10
Barium	7440-39-3		37.6	ug/L	93.9	70 - 130	5.20	20		12/13/10
Beryllium	7440-41-7		36.5	ug/L	91.2	70 - 130	3.20	20		12/13/10
Cadmium	7440-43-9		36.7	ug/L	91.8	70 - 130	2.60	20		12/13/10
Chromium	7440-47-3		38.2	ug/L	95.6	70 - 130	2.40	20		12/13/10
Cobalt	7440-48-4		36.7	ug/L	91.8	70 - 130	2.00	20		12/13/10
Copper	7440-50-8		35.5	ug/L	88.7	70 - 130	3.00	20		12/13/10
Lead	7439-92-1		39.2	ug/L	98	70 - 130	1.50	20		12/13/10
Mercury	7439-97-6		1.90	ug/L	95.2	70 - 130	2.30	20		12/13/10
Molybdenum	7439-98-7		38.6	ug/L	96.6	70 - 130	1.90	20		12/13/10
Thallium	7440-28-0		39.5	ug/L	98.8	70 - 130	1.30	20		12/13/10
Tin	7440-31-5		38.2	ug/L	95.4	70 - 130	1.50	20		12/13/10
Arsenic	7440-38-2		36.4	ug/L	91	70 - 130	4.90	20		12/13/10

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF103124

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Selenium	7782-49-2		34.0	ug/L	85.1	70 - 130	0.60	20		12/13/10

Quality Control Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF103124

QC Batch 170375
Associated Samples 103124005, 103124006

Test TC99 by Liquid Scintillation

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #42806**							
Technetium-99	14133-76-7		-1.2	pCi/L					U	12/02/10
LCS			**QC Sample #42807**							
Technetium-99	14133-76-7		280	pCi/L	110.8	80 - 120				12/02/10
DUP			**QC Sample #42808**							
			Original 103098017							
Technetium-99	14133-76-7		33	pCi/L			5.90	20		12/02/10
MS			**QC Sample #42809**							
			Original 103098017							
Technetium-99	14133-76-7		1000	pCi/L	102.2	75 - 125				12/02/10

Quality Control Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF103124

QC Batch 170452
Associated Samples 103124005, 103124006

Test Tritium by LSC

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #42845**							
Tritium	10028-17-8		28	pCi/L					U	12/13/10
LCS			**QC Sample #42846**							
Tritium	10028-17-8		3100	pCi/L	97.6	80 - 120				12/13/10
DUP			**QC Sample #42847**							
			Original 103101006							
Tritium	10028-17-8		2300	pCi/L			8.30	20		12/13/10
MS			**QC Sample #42848**							
			Original 103101006							
Tritium	10028-17-8		19000	pCi/L	90	75 - 125				12/13/10

Quality Control Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF103124

QC Batch 170466
Associated Samples 103124005, 103124006

Test Plutonium (AEA)

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit		RQ	Analyzed
BLANK			**QC Sample #42882**								
Plutonium-238	13981-16-3		0.068	pCi/L						U	12/06/10
Americium-241	14596-10-2		-9.1E-3	pCi/L						U	12/06/10
Plutonium-239/240	PU-239/240		0.014	pCi/L						U	12/06/10
LCS			**QC Sample #42883**								
Americium-241	14596-10-2		5.9	pCi/sample	107.2	80 - 120					12/06/10
Plutonium-239/240	PU-239/240		7.7	pCi/sample	134.5	80 - 120				X	12/07/10
DUP			**QC Sample #42884**								
			Original 102930010								
Plutonium-238	13981-16-3		-0.045	pCi/L			-1184.60	20	*	U	12/06/10
Americium-241	14596-10-2		-0.056	pCi/L			-277.60	20	*	U	12/06/10
Plutonium-239/240	PU-239/240		0.054	pCi/L			51.20	20	*	U	12/06/10

Quality Control Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF103124

QC Batch 170486
Associated Samples 103124005, 103124006

Test Strontium 89/90 (GPC/GEA)

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit		RQ	Analyzed
BLANK			**QC Sample #42946**								
Strontium-89/90	SR-RAD		-2.6	pCi/L						U	12/21/10
LCS			**QC Sample #42947**								
Strontium-89/90	SR-RAD		99	pCi/L	106.5	80 - 120					12/21/10
DUP			**QC Sample #42948**								
			Original 103124005								
Strontium-89/90	SR-RAD	-1.6	-0.86	pCi/L			-60.20	20	*	U	12/21/10

Quality Control Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF103124

QC Batch 170549
Associated Samples 103124005, 103124006

Test Gross Alpha/Gross Beta

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit		RQ	Analyzed
BLANK			**QC Sample #43023**								
Gross Alpha	12587-46-1		0.36	pCi/L						U	12/14/10
Gross Beta	12587-47-2		0.62	pCi/L						U	12/14/10
LCS			**QC Sample #43024**								
Gross Alpha	12587-46-1		75	pCi/L	92.5	80 - 120					12/14/10
Gross Beta	12587-47-2		250	pCi/L	116	80 - 120					12/14/10
DUP			**QC Sample #43025**								
			Original 103065002								
Gross Alpha	12587-46-1		3.3	pCi/L			20.00	20			12/14/10
Gross Beta	12587-47-2		5.5	pCi/L			47.20	20	*	X	12/14/10

Quality Control Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF103124

QC Batch 170466
Associated Samples 103124005, 103124006

Test Americium/Curium (AEA)

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
SAMPLE			**Sample #103124005**							
Americium-243 Tracer	14993-75-0				91.9	25 - 105				12/06/10
Plutonium-242 Tracer	13982-10-0				70.3	25 - 105				12/06/10
SAMPLE			**Sample #103124006**							
Americium-243 Tracer	14993-75-0				93.5	25 - 105				12/06/10
Plutonium-242 Tracer	13982-10-0				63.1	25 - 105				12/06/10
BLANK			**QC Sample #42882**							
Americium-243 Tracer	14993-75-0				92.1	25 - 105				12/06/10
Plutonium-242 Tracer	13982-10-0				63.6	25 - 105				12/06/10
LCS			**QC Sample #42883**							
Americium-243 Tracer	14993-75-0				92.1	25 - 105				12/06/10
Plutonium-242 Tracer	13982-10-0				67.6	25 - 105				12/07/10
DUP			**QC Sample #42884**							
			Original 102930010							
Americium-243 Tracer	14993-75-0				88.5	25 - 105	0.00			12/06/10
Plutonium-242 Tracer	13982-10-0				80.7	25 - 105	0.00			12/06/10

Quality Control Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF103124

QC Batch 170486
Associated Samples 103124005, 103124006

Test Strontium 89/90 (GPC/GEA)

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
SAMPLE			**Sample #103124005**							
Strontium-85	13967-73-2				83.1	25 - 105				12/21/10
SAMPLE			**Sample #103124006**							
Strontium-85	13967-73-2				85.1	25 - 105				12/21/10
BLANK			**QC Sample #42946**							
Strontium-85	13967-73-2				87.3	25 - 105				12/21/10
LCS			**QC Sample #42947**							
Strontium-85	13967-73-2				85.2	25 - 105				12/21/10
DUP			**QC Sample #42948**							
			Original 103124005							
Strontium-85	13967-73-2				84.1	25 - 105	0.00			12/21/10

Analytical Comment Report

Attention: Michael Neely **Group #** WSCF103124

103124003	**B28MN1**
Department	Inorganic
Analyte	Potassium - ICP-6010 - All possible metals [1] X: Used new standard. Spike amount is 1 ppm, not 10 ppm.

103124004	**B27T93**
Department	Inorganic
Analyte	Potassium - ICP-6010 - All possible metals [1] X: Used new standard. Spike amount is 1 ppm, not 10 ppm.

103124005	**B28MN2**
Department	Inorganic
Analyte	Potassium - ICP-6010 - All possible metals [1] X: Used new standard. Spike amount is 1 ppm, not 10 ppm.

103124006	**B27T94**
Department	Inorganic
Analyte	Potassium - ICP-6010 - All possible metals [1] X: Used new standard. Spike amount is 1 ppm, not 10 ppm.

Quality Control Comments

Department Inorganic

42830 B28MN5(103124001DUP)

Analyte Nitrate-N - Anions by Ion Chromatography (Water)

[1] Duplicate is flagged for RPD out-of-limits. RPD does not apply to samples concentrations below the calibration range. RPD is calculated on measured values and not applicable for a result below the RDL.

42842 LCS for HBN 170451 [INOG/2936]

Analyte Potassium - ICP-6010 - All possible metals

[1] Used New Standard. Spike amount is 1ppm not 10 ppm.

42843 B28MN1(103124003MS)

Analyte Potassium - ICP-6010 - All possible metals

[1] X: Used new standard. Spike amount is 1 ppm, not 10 ppm.

42844 B28MN1(103124003MSD)

Analyte Potassium - ICP-6010 - All possible metals

[1] X: Used new standard. Spike amount is 1 ppm, not 10 ppm.

Attention: Michael Neely

Group # WSCF103124

Quality Control Comments

Department Radiochemistry

42883 LCS for HBN 170466 [RADP/4265]

Analyte Plutonium-239/240 - Plutonium (AEA)

[1] The LCS is high and the client was notified. The results for this batch have been entered and approved as per scientist instruction. LMK

43025 B27C50(103065002DUP)

Analyte Gross Beta - Gross Alpha/Gross Beta

[1] Duplicate RPD out-of-limits. RPD limit does not apply to results near the Minimum Detectable Concentration.

ATTACHMENT4

SAMPLE RECEIPT

Consisting of 7 pages
Including cover page

Waste Sampling and Characterization Facility
P.O. Box 1970 S3-30, Richland WA 99352
Phone: (509) 373-7004/FAX: (509) 373-7134

ACKNOWLEDGEMENT OF SAMPLES RECEIVED

WSCF Laboratory
PO Box 650 S3-30
Richland, WA 99352

ATTN: Michael Neely

Customer Code: CHPRC
PO #: 401922
Work Order #: 103124
Profile #: X11-004-148
Proj. Mgr.:
Phone:

The following samples were received from you on 11/29/2010 2:00:00 PM. They have been scheduled for the tests listed beside each sample. If this information is incorrect, please contact your service representative. Thank you for using Waste Sampling and Characterization Facility.

Sample #	Sample ID	Matrix	Collected	Received
		Tests scheduled		
103124001	B28MN5	WATER	11/29/2010 09:00	11/29/2010 14:00
		IC-W		
103124002	B28373	WATER	11/29/2010 11:36	11/29/2010 14:00
		IC-W		
103124003	B28MN1	WATER	11/29/2010 09:00	11/29/2010 14:00
		2008-W; 6010-W		
103124004	B27T93	WATER	11/29/2010 11:36	11/29/2010 14:00
		2008-W; 6010-W		
103124005	B28MN2	WATER	11/29/2010 09:00	11/29/2010 14:00
		2008-W; 6010-W; AEA-AM-W; AEA-PU-W; ALK-W; GAB-AO-W; GAB-BO-W; H3-COL-W; SR89/90-W; TC99-W		
103124006	B27T94	WATER	11/29/2010 11:36	11/29/2010 14:00
		2008-W; 6010-W; AEA-AM-W; AEA-PU-W; ALK-W; GAB-AO-W; GAB-BO-W; H3-COL-W; SR89/90-W; TC99-W		

Test Acronym Description

Test Acronym	Description
2008-W	ICP-MS (W)
6010-W	ICP-AES (W)
AEA-AM-W	Americium (AEA) (W)
AEA-PU-W	Plutonium (AEA) (W)
ALK-W	Total Alkalinity (W)
GAB-AO-W	Gross Alpha/Beta (A only)(W)

Waste Sampling and Characterization Facility
P.O. Box 1970 S3-30, Richland WA 99352
Phone: (509) 373-7004/FAX: (509) 373-7134

GAB-BO-W	Gross Alpha/Beta (B only)(W)
H3-COL-W	Tritium by EICHROM Column (W)
IC-W	Anions by IC (W)
SR89/90-W	Strontium 89/90 (GPC) (W)
TC99-W	Technetium-99 (W)

CHPRC	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	C.O.C # X11-004-148
		Page 1 of 1

Collector: DJ Woehle, CHPRC	Contact/Requester: Karen Waters-Husted	Telephone No.: 376-4650
SAF No.: X11-004	Sampling Origin: Hanford Site	Purchase Order/Charge Code: 300UTRES20
Project Title: HDURA OCTOBER 2010	Logbook No.: HNF-N-506 31 / 125	Ice Chest No.: N/A
Shipped To (Lab): Waste Sampling & Characterization	Method of Shipment: Government Vehicle	Bill of Lading/Air Bill No.: N/A
Protocol: CERCLA	Priority: 30 Days **PRIORITY**	Offsite Property No.: N/A

POSSIBLE SAMPLE HAZARDS/REMARKS
** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (199 & 1993)

103124

SPECIAL INSTRUCTIONS **Hold Time** Total Activity Exemption: Yes ☑ No ☐
Do not combine samples from this SAF with other data sets. Need STG to be standalone
100 Area Groundwater Knowledge Information Form applies
Use CACN for all analytical work at WSCF in 400 East
Please report all TICs

Sample No	Filter *		Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B28MN5	1	N	W	11/29/10	0700	1x500 mL P	300.0_ANIONS_IC: List-1 + Brom_Phosp (7)	48 Hours	Cool-4C

Relinquished By	Date/Time	Received By	Date/Time
DJ Woehle, CHPRC — Print / Sign	NOV 29 2010 1400	Victor — Print / Sign	NOV 29 2010 1400
Relinquished By	Date/Time	Received By	Date/Time
Relinquished By	Date/Time	Received By	Date/Time
Relinquished By	Date/Time	Received By	Date/Time

Matrix *

S	Soil	DS	Drum Solid
SD	Sediment	DL	Drum Liquid
SO	Solid	T	Tissue
SL	Sludge	WI	Wipe
W	Water	L	Liquid
O	Oil	V	Vegetation
A	Air	X	Other

FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process)	Disposed By	Date/Time

A-6004-842 (REV 2)

CHPRC

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # X11-004-137

Page 1 of 1

Collector: DJ Woehle, CHPRC	Contact/Requester: Karen Waters-Husted	Telephone No.: 376-4650
SAF No.: X11-004	Sampling Origin: Hanford Site	Purchase Order/Charge Code: 300HMES20
Project Title: FDURA, OCTOBER 2010	Logbook No: HNF-N-506 31 / 83	Ice Chest No.: N/A
Shipped To (Lab): Waste Sampling & Characterization	Method of Shipment: Government Vehicle	Bill of Lading/Air Bill No.: N/A
Protocol: CERCLA	Priority: 30 Days PRIORITY	Offsite Property No.: N/A

POSSIBLE SAMPLE HAZARDS/REMARKS
** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990 199[illegible])

SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes ✓ No
Do not combine samples from this SAF with other datasets. Need S_IC to be stand alone
HW Area Generator Knowledge documents from entities
The CACN for all analytical work at WSCL is 4C1922.
Please report all TICs

Sample No	Filter *	Matrix	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
628373	2	N W	11/29/10	1132	1x500-mL P	300.0_ANIONS_IC: List-1 + Brom_Phosp (7)	48 Hours	Cool~4C

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
DJ Woehle CHPRC			NOV 29 2010 1400	Victor Bivins			NOV 29 2010 1410
Relinquished By			Date/Time	Received By			Date/Time
Relinquished By			Date/Time	Received By			Date/Time
Relinquished By			Date/Time	Received By			Date/Time

Matrix *

S - Soil	DS	Drum Solid	
SD - Sediment	DL	Drum Liquid	
SO - Solid	T	Tissue	
SL - Sludge	WI	- Wipe	
W - Water	L	- Liquid	
O - Oil	V	Vegetation	
A - Air	X	- Other	

FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer per lab procedure, used in process)	Disposed By	Date/Time

A-6004-842 (05/10)

CHPRC	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	C.O.C. # X11-004-146 Page 1 of 1

Collector: DJ Woehle, CHPRC	Contact/Requester: Karen Waters-Hunter	Telephone No.: 376-4650
SAF No.: X11-004	Sampling Origin: Hanford Site	Purchase Order/Charge Code: 30011RES20
Project Title: FDURA OCTOBER 2010	Logbook No.: HNF-N-506 31 / 83	Ice Chest No.: N/A
Shipped To (Lab): Waste Sampling & Characterization	Method of Shipment: Government Vehicle	Bill of Ladder/Air Bill No.: N/A
Protocol: CERCLA	Priority: 30 Days **PRIORITY**	Offsite Property No.: N/A

POSSIBLE SAMPLE HAZARDS/REMARKS
** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL INSTRUCTIONS **Hold Time** Total Activity Exemption: Yes ☑ No ☐
Do not combine samples from this SAF with other data sets. Need SDG to be stand alone.
100 Area Generator Knowledge Information Form applies.
The CACN for all analytical work at WSCF is 401922.
Please report all TICs.

Sample No	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B28MN1 3	Y	W	11/29/10	09:00	1x500-mL G	200.8_HG - ICPMS	28 Days	HNO3 to pH <2
B28MN1	Y	W			1x500-mL G/P	200.8_METALS_ICPMS: DURA LIST (10)	6 Months	HNO3 to pH <2
B28MN1 ✓	Y	W			1x500-mL G/P	6010_METALS_ICP: DURA LIST (29)	6 Months	HNO3 to pH <2
B28MN2 5	N	W			1x500-mL G	200.8_HG - ICPMS	28 Days	HNO3 to pH <2
B28MN2	N	W			1x500-mL G/P	200.8_METALS_ICPMS: DURA LIST (10)	6 Months	HNO3 to pH <2
B28MN2	N	W			1x500-mL G/P	ALPHABETA_GPC: Alpha discrete + Beta (2); ALPHABETA_GPC: Alpha discrete + Beta (2)	6 Months	HNO3 to pH <2
B28MN2	N	W			1x1000-mL G/P	AMCMISO_IE_PREC_AEA: Am-241 (1)	180 Days	HNO3 to pH <2
B28MN2	N	W			1x1000-mL G/P	PUISO_PLATE_AEA: Pu-238 + 239/240 (2)	6 Months	HNO3 to pH <2
B28MN2	N	W			1x1-L G/P	Strontium-89,90 – Total Sr	6 Months	HNO3 to pH <2
B28MN2	N	W			1x1000-mL G/P	TC99_3MDSK_LSC: Tc-99 (1)	6 Months	HCl to pH <2
B28MN2	N	W			1x250-mL G	TRITIUM_EIE_LSC: Tritium (1)	6 Months	None
B28MN2	N	W			1x500-mL G/P	6010_METALS_ICP: DURA LIST (29)	6 Months	HNO3 to pH <2
B28MN2 ✓	N	W	✓	✓	1x250-mL G/P	2320_ALKALINITY: Alkalinity (1)	14 Days	Cool-4C

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
DJ Woehle CHPRC			NOV 29 2010 1400	Victor			NOV 29 2010 1400
Relinquished By			Date/Time	Received By			Date/Time
Relinquished By			Date/Time	Received By			Date/Time
Relinquished By			Date/Time	Received By			Date/Time

Matrix *
S = Soil, SD = Sludge Solid, SL = Sludge Liquid, O = Oil, T = Tissue, W = Water, WI = Wipe, F = Fluid, D = Drill, V = Vegetation, A = Air, Y = Other

FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used or process)	Disposed By	Date/Time

A-6004-842 (REV 2)

CHPRC

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # X11-004-110

Page 1 of 1

Collector: DJ Woehle, CHPRC	Contact/Requester: Karen Waters Unused	Telephone No.: 376-1650
SAF No.: X11-001	Sampling Origin: Hanford Site	Purchase Order/Charge Code: 300118ES20
Project Title: EDURA, OCTOBER 2010	Logbook No.: HNF-N-506 Tel / 83	Ice Chest No.: N/A
Shipped To (Lab): Waste Sampling & Characterization	Method of Shipment: Government Vehicle	Bill of Lading/Air Bill No.: N/A
Protocol: CERCLA	Priority: 30 Days **PRIORITY**	Offsite Property No.: N/A

POSSIBLE SAMPLE HAZARDS/REMARKS
** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL INSTRUCTIONS Hold Time — Total Activity Exemption: Yes ☑ No
Do not combine samples from this SAF with other data sets. Need SDG to be stand alone
100 Area Generator Knowledge Information Form applies
The LACK list of analytical work at WSCF is 01192
Please report all TICs

Sample No.	Filter *		Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B27T93	Y	W	11/29/10	1134	1x500-mL G	200.8_HG - ICPMS	28 Days	HNO3 to pH <2
B27T93	Y	W			1x500-mL G/P	200.8_METALS_ICPMS: DURA LIST (10)	6 Months	HNO3 to pH <2
B27T93	Y	W			1x500-mL G/P	6010_METALS_ICP: DURA LIST (29)	6 Months	HNO3 to pH <2
B27T94	N	W			1x500-mL G	200.8_HG - ICPMS	28 Days	HNO3 to pH <2
B27T94	N	W			1x500-mL G/P	200.8_METALS_ICPMS: DURA LIST (10)	6 Months	HNO3 to pH <2
B27T94	N	W			1x500-mL G/P	ALPHABETA_GPC: Alpha discrete + Beta (2); ALPHABETA_GPC: Alpha discrete + Beta (2)	6 Months	HNO3 to pH <2
B27T94	N	W			1x1000-mL G/P	AMCMISO_IE_PREC_AEA: Am-241 (1)	180 Days	HNO3 to pH <2
B27T94	N	W			1x1000-mL G/P	PUISO_PLATE_AEA: Pu-238 + 239/240 (2)	6 Months	HNO3 to pH <2
B27T94	N	W			1x1-L G/P	Strontium-89,90 – Total Sr	6 Months	HNO3 to pH <2
B27T94	N	W			1x1000-mL G/P	TC99_3MOSK_LSC: Tc-99 (1)	6 Months	HCl to pH <2
B27T94	N	W			1x250-mL G	TRITIUM_EIE_LSC: Tritium (1)	6 Months	None
B27T94	N	W			1x500-mL G/P	6010_METALS_ICP: DURA LIST (29)	6 Months	HNO3 to pH <2
B27T94	N	W			1x250-mL G/P	2320_ALKALINITY: Alkalinity (1)	14 Days	Cool–4C

Relinquished By	Date/Time	Received By	Date/Time
DJ Woehle, CHPRC (Print / Sign)	NOV 29 2010 1700	(Print / Sign)	NOV 29 2010 1700

Matrix *: S = Soil; SD = Sediment; SL = Sludge; AQ = Qualer; W = Water; O = Oil; A = Air; DS = Drum Solid; DL = Drum Liquid; T = Tissue; WP = Wipe; L = Liquid; V = Vegetation; X = Other

FINAL SAMPLE DISPOSITION — Disposal Method (e.g., Return to customer, per lab procedure, used in process): — Disposed By: — Date/Time:

A-6004-847 (05/10)