0093392

WSCF Laboratory

RECEIVED OCTOBER 31, 2010 REVISION 1

PO Box 650 S3-30
Richland, WA 99352

October 29, 2010

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

Dear Michael Neely,

REVISED100487 - 343547 [Report ID: 100487]

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 WSCF100487

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

Very truly yours,

Electronically signed by Bill Baird
For Lab Manager
WSCF Analytical Lab
(509) 373-7495

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JAN 10 2011
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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 # WSCF100487
Data Deliverable Date 04/02/10

SAF #	Sample ID	Sample #	Matrix	Sampled	Received
F10-119	B243V3	100487001	WATER	03/08/10	03/09/10

ATTACHMENT 2

NARRATIVE

Consisting of 7 pages
Including cover page

Attachment 2
Narrative Rev1
WSCF100487

P&D Correction – Case Narrative Replaces The Prior Submittal in its Entirety

Introduction

One (1) S&GRP sample was received at the WSCF Laboratory on March 9th, 2010. The sample was 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 limited amount of samples received for radiological analysis. Additionally, a copy of the completed P&D # WSCF100487 is included with this case narrative.

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,* pages for a complete listing of approved analytical methods.

Inorganic Comments

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

Attachment 2
Narrative Rev1
WSCF100487

- Batch QC 102177 analyzed on sample# B23V61 (100503007)

All QC controls are within the established limits.

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 102080 analyzed on sample# B23W59 (100555007)
    - Magnesium, Calcium and Sodium – exceeded spiking levels by a factor of 4. Spike recoveries are not valid.

All other 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 99489 analyzed on sample# B23R83 (100438010)
    - Vanadium contamination was detected in the Blank and was evaluated. Affected sample results in this batch were "C" Flagged.
    - Strontium – exceeded spiking levels by a factor of 4. Spike recoveries are not valid.

All other QC controls are within the established limits.

Radiochemistry Comments

Rad Chem – The hold time requirement for this analysis was met. A Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group with the exclusion of isotopic analysis. Please refer to attached IRF10-057 regarding limited QC being analyzed for isotopic analysis and the cancellation of the Technetium-99 analysis. Analytical Note(s):

- Technetium-99 was cancelled according to IRF 10-056, please see attached document.
- Rad Chem requested to be performed included: Americium-241 by AEA, Gamma Energy Analysis, Plutonium Isotopic and Uranium Isotopic by AEA, Strontium-89/90.
- Tracers are used to determine chemical yield. RPD is monitored in sample duplicate and is not required for tracer recovery per SOW.
- Americium-241:
    - Batch QC 101395

Attachment 2
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WSCF100487

- Duplicate was not analyzed - refer to IRF 10-057.
- Contamination was detected in the Blank at less than 2 times the MDC. No flags issued.
- All other QC controls are within the established limits.

- Gamma Energy Analysis:
  - Batch QC 102075 analyzed on sample# B243V3 (100487001)
  - Cesium-137 and Europium-154– 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 QC controls are within the established limits.
- Isotopic Plutonium analysis:
  - Batch QC 101395
  - Duplicate was not analyzed - refer to IRF 10-057.
  - All other QC controls are within the established limits.
- Isotopic Uranium analysis:
  - Batch QC 101395
  - Duplicate was not analyzed - refer to IRF 10-057.
  - Contamination was detected in the Blank at less than 2 times the MDC. No flags issued.
  - All other QC controls are within the established limits.
- Strontium-89/90:
  - Batch QC 104175 analyzed on sample# B243V3 (100487001)
  - 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 QC controls are within the established limits.

Attachment 2
Narrative Rev1
WSCF100487

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 Rev1
WSCF100487

ISSUE RESOLUTION FORM

CHPRC TRACKING NUMBER: 10-057

Date: 3-11-2010 SAF No. F10-119

SDG: 100487 LOGIN No.: TEST: GEA, AEA-Am 241, AEA-PU, AEA-U, Tc-99 by LSC

Sample No. B243V3

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

Submitted To: H Hampt
Phone No.: 376-4319
Fax No.:

ISSUE	PROPOSED RESOLUTION
The sample was received at WSCF on March 10, 2010. A 1-liter container was received to perform the rad analyses. There are 2 issues: 1. Normally, a 500ml is received just for the GEA analysis. 2. The Tc-99 LSC is normally preserved with HCl.	Provide guidance on which rad analyses to perform due to the limited volume.

CHPRC COMMENTS

Cancel the Tc-99 analysis. Run GEA, then isotopic with limited QC. Start the TAT when this direction is received with the understanding that preliminary data will be provided in 10 days and the final data will be provided in 15 days.

Heidi Hampt 3/17/10
Signature and Date

Attachment 2
Narrative Rev1
WSCF100487

6/2/2010

Problem and Discrepancy Report

WSCF

SDG WSCF100487

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1. The EDD has the following issues:

a) 6010 metals results are listed as "0" non-detects. The MDL should be provided, and not 0.

Resolution: *Provide MDL as result.*
Lab Response: **The MDL has been added.**

ATTACHMENT 3

ANALYTICAL RESULTS

Consisting of 26 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 #	WSCF100487
Report Date	October 29, 2010

Analytical: Electronically signed by Bill Baird

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 # WSCF100487

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
99489	99490	4	BLANK	24748	BLANK		ICP-2008 MS All possible metal
99489	99490	5	LCS	24749	LCS		ICP-2008 MS All possible metal
99489	99490	7	MS	24750	B23R83(100438010MS)	100438010	ICP-2008 MS All possible metal
99489	99490	8	MSD	24751	B23R83(100438010MSD)	100438010	ICP-2008 MS All possible metal
99489	99490	28	SAMPLE	100487001	B243V3		ICP-2008 MS All possible metal
102080	107010	1	BLANK	25037	BLANK		ICP-6010 - All possible metals
102080	107010	2	LCS	25038	LCS		ICP-6010 - All possible metals
102080	107010	3	MS	25039	B23W59(100555007MS)	100555007	ICP-6010 - All possible metals
102080	107010	4	MSD	25040	B23W59(100555007MSD	100555007	ICP-6010 - All possible metals
102080	107010	14	SAMPLE	100487001	B243V3		ICP-6010 - All possible metals

Batch QC List

Attention Michael Neely
Department Radiochemistry

Group # WSCF100487

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
101395	105578	1	SAMPLE	100487001	B243V3		Uranium (AEA)
101395	105578	7	BLANK	24945	BLANK		Uranium (AEA)
101395	105578	8	LCS	24946	LCS		Uranium (AEA)
101395	105580	1	SAMPLE	100487001	B243V3		Plutonium (AEA)
101395	105580	7	BLANK	24945	BLANK		Plutonium (AEA)
101395	105580	8	LCS	24946	LCS		Plutonium (AEA)
101395	105582	1	SAMPLE	100487001	B243V3		Americium/Curium (AEA)
101395	105582	7	BLANK	24945	BLANK		Americium/Curium (AEA)
101395	105582	8	LCS	24946	LCS		Americium/Curium (AEA)
102075	102578	1	IBLANK	25019	IBLANK		Gamma Energy Analysis-general
102075	102578	2	LCS	25020	LCS		Gamma Energy Analysis-general
102075	102578	3	DUP	25021	B243V3(100487001DUP)	100487001	Gamma Energy Analysis-general
102075	102578	4	SAMPLE	100487001	B243V3		Gamma Energy Analysis-general
104175	106876	1	BLANK	25372	BLANK		Strontium 89/90 (GPC/GEA)
104175	106876	2	LCS	25373	LCS		Strontium 89/90 (GPC/GEA)
104175	106876	3	DUP	25374	B243V3(100487001DUP)	100487001	Strontium 89/90 (GPC/GEA)
104175	106876	4	SAMPLE	100487001	B243V3		Strontium 89/90 (GPC/GEA)

Batch QC List

Attention Michael Neely
Department Wet Chemistry

Group # WSCF100487

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
102177	102178	3	BLANK	25043	BLANK		Cyanide by Midi/Spectrophotometer
102177	102178	4	LCS	25045	LCS		Cyanide by Midi/Spectrophotometer
102177	102178	9	SAMPLE	100487001	B243V3		Cyanide by Midi/Spectrophotometer
102177	102178	18	MS	25048	B23V61(100503007MS)	100503007	Cyanide by Midi/Spectrophotometer
102177	102178	19	MSD	25049	B23V61(100503007MSD)	100503007	Cyanide by Midi/Spectrophotometer

Method Reference

Attention Michael Neely
Department Inorganic

Group # WSCF100487

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.

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 # WSCF100487

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-508-481	Gamma Energy Analysis using the Canberra Genie Ssystem		
	HEIS	GAMMA_GS	Gamma Energy Analysis
LA-508-471	Determination Of Uranium, Plutonium, And Americium		
	HEIS	UISO_IE_PRECIP_AEA	Uranium Iso, Alpha Spec

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 # WSCF100487

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-695-402	Determination of Cyanide by Mididistillation and		
	EPA	SW-846 Method 9014/9010	Determination of Cyanide by Midi-Distillation and Spectrophotometric Analysis
	SM	4500 CNE	Cyanide, Total
	HEIS	335.2_CYANIDE	Cyanide, Total

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

REVISION 1

Attention Michael Neely
Department Inorganic

Group # WSCF100487

Sample # 100487001
SAF# F10-119
Sample ID B243V3

Matrix WATER
Sampled 03/08/10
Received 03/09/10

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
ICP Prep										**03/23/10**
ICP-AES										
Iron	7439-89-6	LA-505-411	U	<18		ug/L	1	18	90	03/29/10
Magnesium	7439-95-4	LA-505-411	U	<16		ug/L	1	16	80	03/29/10
Potassium	7440-09-7	LA-505-411	U	<55		ug/L	1	55	280	03/29/10
Sodium	7440-23-5	LA-505-411	B	41.8		ug/L	1	23	120	03/29/10
Calcium	7440-70-2	LA-505-411	B	64.6		ug/L	1	39	200	03/29/10
Lithium	7439-93-2	LA-505-411	U	<4.0		ug/L	1	4.0	20	03/29/10
Titanium	7440-32-6	LA-505-411	U	<4.0		ug/L	1	4.0	20	03/29/10
Boron	7440-42-8	LA-505-411	U	<19		ug/L	1	19	95	03/29/10
Bismuth	7440-69-9	LA-505-411	U	<23		ug/L	1	23	120	03/29/10
ICPMS Prep										**03/16/10**
ICP-MS										
Aluminum	7429-90-5	LA-505-412	UD	<10		ug/L	2	10	200	03/16/10
Manganese	7439-96-5	LA-505-412	BD	1.76		ug/L	2	0.20	2.0	03/16/10
Nickel	7440-02-0	LA-505-412	UD	<0.40		ug/L	2	0.40	4.0	03/16/10
Silver	7440-22-4	LA-505-412	UD	<0.20		ug/L	2	0.20	2.0	03/16/10
Antimony	7440-36-0	LA-505-412	UD	<0.60		ug/L	2	0.60	6.0	03/16/10
Barium	7440-39-3	LA-505-412	UD	<0.40		ug/L	2	0.40	4.0	03/16/10

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)

REVISED100487 -

WSCF Analytical Results Report

REVISION 1

Attention Michael Neely
Department Inorganic

Group # WSCF100487

Sample # 100487001
SAF# F10-119
Sample ID B243V3

Matrix WATER
Sampled 03/08/10
Received 03/09/10

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	03/16/10
Cadmium	7440-43-9	LA-505-412	UD	<0.20		ug/L	2	0.20	2.0	03/16/10
Chromium	7440-47-3	LA-505-412	UD	<1.0		ug/L	2	1.0	10	03/16/10
Cobalt	7440-48-4	LA-505-412	UD	<0.10		ug/L	2	0.10	0.50	03/16/10
Copper	7440-50-8	LA-505-412	BD	0.912		ug/L	2	0.20	2.0	03/16/10
Vanadium	7440-62-2	LA-505-412	BDC	0.552		ug/L	2	0.40	4.0	03/16/10
Zinc	7440-66-6	LA-505-412	BD	9.22		ug/L	2	1.6	10	03/16/10
Lead	7439-92-1	LA-505-412	UD	<0.20		ug/L	2	0.20	2.0	03/16/10
Mercury	7439-97-6	LA-505-412	UD	<0.10		ug/L	2	0.10	0.40	03/16/10
Molybdenum	7439-98-7	LA-505-412	UD	<0.10		ug/L	2	0.10	1.0	03/16/10
Strontium	7440-24-6	LA-505-412	UD	<0.20		ug/L	2	0.20	2.0	03/16/10
Thallium	7440-28-0	LA-505-412	UD	<0.10		ug/L	2	0.10	1.0	03/16/10
Uranium	7440-61-1	LA-505-412	UD	<0.10		ug/L	2	0.10	0.40	03/16/10
Arsenic	7440-38-2	LA-505-412	UD	<0.80		ug/L	2	0.80	8.0	03/16/10
Selenium	7782-49-2	LA-505-412	UD	<0.60		ug/L	2	0.60	6.0	03/16/10

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RQ = Result Qualifier
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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)

REVISED100487 -

WSCF Analytical Results Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF100487

Sample # 100487001
SAF# F10-119
Sample ID B243V3

Matrix WATER
Sampled 03/08/10
Received 03/09/10

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
GEA Prep										**03/21/10**
GEA										
Cesium-137	10045-97-3	LA-508-481	U	-6.1	11	pCi/L	1	19		03/24/10
Europium-154	15585-10-1	LA-508-481	U	-16	28	pCi/L	1	47		03/24/10
SR-89/90										**03/25/10**
SR-89/90										
Strontium-89/90	SR-RAD	LA-220-406	U	-1.6	3.4	pCi/L	1	2.0		03/31/10
Th/Pu/Am/U Teva										**03/24/10**
AEA Am-U-Pu										
Americium-241	14596-10-2	LA-508-471		0.14	.072	pCi/L	1	0.056		03/25/10
AEA Pu-Np										
Plutonium-238	13981-16-3	LA-508-471	U	0.22	.17	pCi/L	1	0.24		03/26/10
Plutonium-239/240	PU-239/240	LA-508-471	U	9.8E-3	.052	pCi/L	1	0.11		03/26/10
Uranium Iso										
Uranium-234	U-233/234	LA-508-471	U	0.062	.055	pCi/L	1	0.065		03/25/10
Uranium-235	15117-96-1	LA-508-471	U	8.8E-3	.047	pCi/L	1	0.10		03/25/10
Uranium-238	U-238	LA-508-471	U	0.080	.067	pCi/L	1	0.082		03/25/10

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.

REVISED100487 -

WSCF Analytical Results Report

REVISION 1

Attention Michael Neely
Department Wet Chemistry

Group # WSCF100487

Sample # 100487001
SAF# F10-119
Sample ID B243V3

Matrix WATER
Sampled 03/08/10
Received 03/09/10

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cyanide Prep										**03/17/10**
Cyanide										
Cyanide	57-12-5	LA-695-402	U	<4.0		ug/L	1	4.0	20	03/18/10

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)

REVISED100487 -

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF100487

QC Batch 99489
Associated Samples 100487001

Test ICP-2008 MS All possible metal

Analyte	CAS #	Original Found	QC Found	Units	% Recov Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #24748**						
Aluminum	7429-90-5		<5.0	ug/L				U	03/16/10
Manganese	7439-96-5		<0.10	ug/L				U	03/16/10
Nickel	7440-02-0		<0.20	ug/L				U	03/16/10
Silver	7440-22-4		<0.10	ug/L				U	03/16/10
Antimony	7440-36-0		<0.30	ug/L				U	03/16/10
Barium	7440-39-3		<0.20	ug/L				U	03/16/10
Beryllium	7440-41-7		<0.050	ug/L				U	03/16/10
Cadmium	7440-43-9		<0.10	ug/L				U	03/16/10
Chromium	7440-47-3		<0.50	ug/L				U	03/16/10
Cobalt	7440-48-4		<0.050	ug/L				U	03/16/10
Copper	7440-50-8		<0.10	ug/L				U	03/16/10
Vanadium	7440-62-2		0.335	ug/L				B	03/16/10
Zinc	7440-66-6		<0.80	ug/L				U	03/16/10
Lead	7439-92-1		<0.10	ug/L				U	03/16/10
Mercury	7439-97-6		<0.050	ug/L				U	03/16/10
Molybdenum	7439-98-7		<0.050	ug/L				U	03/16/10
Strontium	7440-24-6		<0.10	ug/L				U	03/16/10
Thallium	7440-28-0		<0.050	ug/L				U	03/16/10
Uranium	7440-61-1		<0.050	ug/L				U	03/16/10

REVISED100487 -

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF100487

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Arsenic	7440-38-2		<0.40	ug/L					U	03/16/10
Selenium	7782-49-2		<0.30	ug/L					U	03/16/10
LCS			**QC Sample #24749**							
Aluminum	7429-90-5		421	ug/L	105.3	85 - 115				03/16/10
Manganese	7439-96-5		40.8	ug/L	102.1	85 - 115				03/16/10
Nickel	7440-02-0		38.8	ug/L	96.9	85 - 115				03/16/10
Silver	7440-22-4		38.9	ug/L	97.3	85 - 115				03/16/10
Antimony	7440-36-0		41.4	ug/L	103.6	85 - 115				03/16/10
Barium	7440-39-3		40.7	ug/L	101.8	85 - 115				03/16/10
Beryllium	7440-41-7		40.2	ug/L	100.6	85 - 115				03/16/10
Cadmium	7440-43-9		39.7	ug/L	99.2	85 - 115				03/16/10
Chromium	7440-47-3		39.6	ug/L	99	85 - 115				03/16/10
Cobalt	7440-48-4		38.3	ug/L	95.8	85 - 115				03/16/10
Copper	7440-50-8		38.8	ug/L	97.1	85 - 115				03/16/10
Vanadium	7440-62-2		40.0	ug/L	99.9	85 - 115				03/16/10
Zinc	7440-66-6		38.0	ug/L	94.9	85 - 115				03/16/10
Lead	7439-92-1		41.0	ug/L	102.6	85 - 115				03/16/10
Mercury	7439-97-6		1.93	ug/L	96.4	85 - 115				03/16/10
Molybdenum	7439-98-7		39.6	ug/L	99.1	85 - 115				03/16/10
Strontium	7440-24-6		41.4	ug/L	103.4	85 - 115				03/16/10
Thallium	7440-28-0		40.5	ug/L	101.2	85 - 115				03/16/10
Uranium	7440-61-1		41.9	ug/L	104.8	85 - 115				03/16/10
Arsenic	7440-38-2		38.5	ug/L	96.3	85 - 115				03/16/10
Selenium	7782-49-2		39.1	ug/L	97.8	85 - 115				03/16/10

REVISED100487 -

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF100487

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
MS			**QC Sample #24750**							
			Original 100438010							
Aluminum	7429-90-5		419	ug/L	104.8	70 - 130				03/16/10
Manganese	7439-96-5		40.0	ug/L	100.1	70 - 130				03/16/10
Nickel	7440-02-0		37.1	ug/L	92.6	70 - 130				03/16/10
Silver	7440-22-4		37.5	ug/L	93.7	70 - 130				03/16/10
Antimony	7440-36-0		42.3	ug/L	105.8	70 - 130				03/16/10
Barium	7440-39-3		41.4	ug/L	103.4	70 - 130				03/16/10
Beryllium	7440-41-7		39.4	ug/L	98.5	70 - 130				03/16/10
Cadmium	7440-43-9		38.7	ug/L	96.7	70 - 130				03/16/10
Chromium	7440-47-3		38.8	ug/L	97.1	70 - 130				03/16/10
Cobalt	7440-48-4		36.8	ug/L	92.1	70 - 130				03/16/10
Copper	7440-50-8		36.3	ug/L	90.8	70 - 130				03/16/10
Vanadium	7440-62-2		40.0	ug/L	100.1	70 - 130				03/16/10
Zinc	7440-66-6		36.2	ug/L	90.5	70 - 130				03/16/10
Lead	7439-92-1		41.5	ug/L	103.8	70 - 130				03/16/10
Mercury	7439-97-6		1.94	ug/L	96.9	70 - 130				03/16/10
Molybdenum	7439-98-7		40.5	ug/L	101.2	70 - 130				03/16/10
Strontium	7440-24-6		44.0	ug/L	110	70 - 130			X	03/16/10
Thallium	7440-28-0		41.3	ug/L	103.1	70 - 130				03/16/10
Uranium	7440-61-1		42.4	ug/L	105.9	70 - 130				03/16/10
Arsenic	7440-38-2		39.1	ug/L	97.8	70 - 130				03/16/10
Selenium	7782-49-2		37.6	ug/L	94	70 - 130				03/16/10
MSD			**QC Sample #24751**							
			Original 100438010				**Paired**	**24750**		

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Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF100487

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Aluminum	7429-90-5		396	ug/L	99.1	70 - 130	5.60	20		03/16/10
Manganese	7439-96-5		37.4	ug/L	93.4	70 - 130	6.90	20		03/16/10
Nickel	7440-02-0		35.0	ug/L	87.5	70 - 130	5.70	20		03/16/10
Silver	7440-22-4		36.0	ug/L	90	70 - 130	4.00	20		03/16/10
Antimony	7440-36-0		40.9	ug/L	102.2	70 - 130	3.50	20		03/16/10
Barium	7440-39-3		38.0	ug/L	95	70 - 130	8.50	20		03/16/10
Beryllium	7440-41-7		37.0	ug/L	92.6	70 - 130	6.20	20		03/16/10
Cadmium	7440-43-9		36.9	ug/L	92.2	70 - 130	4.80	20		03/16/10
Chromium	7440-47-3		36.5	ug/L	91.3	70 - 130	6.20	20		03/16/10
Cobalt	7440-48-4		35.2	ug/L	88.1	70 - 130	4.40	20		03/16/10
Copper	7440-50-8		34.7	ug/L	86.8	70 - 130	4.50	20		03/16/10
Vanadium	7440-62-2		36.9	ug/L	92.2	70 - 130	8.20	20		03/16/10
Zinc	7440-66-6		34.6	ug/L	86.4	70 - 130	4.60	20		03/16/10
Lead	7439-92-1		39.4	ug/L	98.5	70 - 130	5.20	20		03/16/10
Mercury	7439-97-6		1.90	ug/L	95	70 - 130	2.00	20		03/16/10
Molybdenum	7439-98-7		38.6	ug/L	96.4	70 - 130	4.90	20		03/16/10
Strontium	7440-24-6		37.6	ug/L	94	70 - 130	15.70	20	X	03/16/10
Thallium	7440-28-0		39.3	ug/L	98.2	70 - 130	4.90	20		03/16/10
Uranium	7440-61-1		36.7	ug/L	91.6	70 - 130	14.50	20		03/16/10
Arsenic	7440-38-2		36.5	ug/L	91.4	70 - 130	6.80	20		03/16/10
Selenium	7782-49-2		38.9	ug/L	97.1	70 - 130	3.20	20		03/16/10

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF100487

QC Batch 102080
Associated Samples 100487001

Test ICP-6010 - All possible metals

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #25037**							
Iron	7439-89-6		<18	ug/L					U	03/29/10
Magnesium	7439-95-4		<16	ug/L					U	03/29/10
Potassium	7440-09-7		<55	ug/L					U	03/29/10
Sodium	7440-23-5		<23	ug/L					U	03/29/10
Calcium	7440-70-2		<39	ug/L					U	03/29/10
Lithium	7439-93-2		<4.0	ug/L					U	03/29/10
Titanium	7440-32-6		<4.0	ug/L					U	03/29/10
Boron	7440-42-8		<19	ug/L					U	03/29/10
Bismuth	7440-69-9		<23	ug/L					U	03/29/10
LCS			**QC Sample #25038**							
Iron	7439-89-6		1020	ug/L	102.5	80 - 120				03/29/10
Magnesium	7439-95-4		1020	ug/L	101.9	80 - 120				03/29/10
Potassium	7440-09-7		10500	ug/L	105.2	80 - 120				03/29/10
Sodium	7440-23-5		1110	ug/L	110.7	80 - 120				03/29/10
Calcium	7440-70-2		1110	ug/L	110.9	80 - 120				03/29/10
Lithium	7439-93-2		531	ug/L	106.1	80 - 120				03/29/10
Titanium	7440-32-6		1040	ug/L	104.2	80 - 120				03/29/10
Boron	7440-42-8		1020	ug/L	101.9	80 - 120				03/29/10

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Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF100487

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Bismuth	7440-69-9		1030	ug/L	102.9	80 - 120				03/29/10
MS			**QC Sample #25039**							
			Original 100555007							
Iron	7439-89-6		1020	ug/L	102.3	75 - 125				03/29/10
Magnesium	7439-95-4		912	ug/L	91.2	75 - 125			X	03/29/10
Potassium	7440-09-7		10400	ug/L	104.4	75 - 125				03/29/10
Sodium	7440-23-5		955	ug/L	95.5	75 - 125			X	03/29/10
Calcium	7440-70-2		440	ug/L	44	75 - 125			X	03/29/10
Lithium	7439-93-2		542	ug/L	108.4	75 - 125				03/29/10
Titanium	7440-32-6		1030	ug/L	103.3	75 - 125				03/29/10
Boron	7440-42-8		1040	ug/L	104	75 - 125				03/29/10
Bismuth	7440-69-9		1040	ug/L	104.3	75 - 125				03/29/10
MSD			**QC Sample #25040**							
			Original 100555007					**Paired**	**25039**	
Iron	7439-89-6		1020	ug/L	101.6	75 - 125	0.70	20		03/29/10
Magnesium	7439-95-4		1020	ug/L	102.3	75 - 125	11.50	20	X	03/29/10
Potassium	7440-09-7		10400	ug/L	104.2	75 - 125	0.20	20		03/29/10
Sodium	7440-23-5		989	ug/L	98.9	75 - 125	3.50	20	X	03/29/10
Calcium	7440-70-2		360	ug/L	36	75 - 125	20.00	20	X	03/29/10
Lithium	7439-93-2		542	ug/L	108.5	75 - 125	0.10	20		03/29/10
Titanium	7440-32-6		1030	ug/L	103.4	75 - 125	0.10	20		03/29/10
Boron	7440-42-8		1040	ug/L	104.5	75 - 125	0.50	20		03/29/10
Bismuth	7440-69-9		1040	ug/L	103.7	75 - 125	0.60	20		03/29/10

Quality Control Report

Attention Michael Neely
Department Wet Chemistry

Group # WSCF100487

QC Batch 102177
Associated Samples 100487001

Test Cyanide by Midi/Spectrophotometer

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #25043**							
Cyanide	57-12-5		<4.0	ug/L					U	03/18/10
LCS			**QC Sample #25045**							
Cyanide	57-12-5		51.7	ug/L	103.4	85 - 115				03/18/10
MS			**QC Sample #25048**							
			Original 100503007							
Cyanide	57-12-5		40.2	ug/L	100.5	75 - 125				03/18/10
MSD			**QC Sample #25049**							
			Original 100503007					**Paired**	**25048**	
Cyanide	57-12-5		38.6	ug/L	96.5	75 - 125	4.10	20		03/18/10

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Quality Control Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF100487

QC Batch 101395
Associated Samples 100487001

Test Plutonium (AEA)

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #24945**							
Plutonium-238	13981-16-3		-0.073	pCi/L					U	03/26/10
Americium-241	14596-10-2		0.069	pCi/L					X	03/25/10
Plutonium-239/240	PU-239/240		9.1E-3	pCi/L					U	03/26/10
Uranium-234	U-233/234		0.091	pCi/L					X	03/25/10
Uranium-235	15117-96-1		0.010	pCi/L					U	03/25/10
Uranium-238	U-238		0.027	pCi/L					X	03/25/10
LCS			**QC Sample #24946**							
Americium-241	14596-10-2		5.7	pCi/sample	103	80 - 120				03/25/10
Plutonium-239/240	PU-239/240		5.7	pCi/sample	99.2	80 - 120				03/26/10
Uranium-238	U-238		8.4	pCi/sample	98.3	80 - 120				03/25/10

Quality Control Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF100487

QC Batch 102075
Associated Samples 100487001

Test Gamma Energy Analysis-general

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit		RQ	Analyzed
IBLANK			**QC Sample #25019**								
Cesium-137	10045-97-3		4.7	pCi/L						U	03/22/10
Europium-154	15585-10-1		2.1	pCi/L						U	03/22/10
LCS			**QC Sample #25020**								
Cesium-137	10045-97-3		6400	pCi/sample	105.5	80 - 120					03/24/10
DUP			**QC Sample #25021**								
			Original 100487001								
Cesium-137	10045-97-3	-6.1	-4.5	pCi/L			-30.20	-20 - 20	*	U	03/24/10
Europium-154	15585-10-1	-16	-5.7	pCi/L			-94.90	-20 - 20	*	U	03/24/10

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Quality Control Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF100487

QC Batch 104175
Associated Samples 100487001

Test Strontium 89/90 (GPC/GEA)

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit		RQ	Analyzed
BLANK			**QC Sample #25372**								
Strontium-89/90	SR-RAD		-2.6	pCi/L						U	03/31/10
LCS			**QC Sample #25373**								
Strontium-89/90	SR-RAD		100	pCi/L	90.1	80 - 120					03/31/10
DUP			**QC Sample #25374**								
			Original 100487001								
Strontium-89/90	SR-RAD	-1.6	0.47	pCi/L			-366.40	-20 - 20	*	U	03/31/10

REVISED100487 -

Quality Control Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF100487

QC Batch 101395
Associated Samples 100487001

Test Americium/Curium (AEA)

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
SAMPLE			**Sample #100487001**							
Americium-243 Tracer	14993-75-0				90.7	25 - 105				03/25/10
Uranium-232 Tracer	14158-29-3				91.3	25 - 105				03/25/10
Plutonium-242 Tracer	13982-10-0				83	25 - 105				03/26/10
BLANK			**QC Sample #24945**							
Americium-243 Tracer	14993-75-0				89.1	25 - 105				03/25/10
Uranium-232 Tracer	14158-29-3				91.7	25 - 105				03/25/10
Plutonium-242 Tracer	13982-10-0				93	25 - 105				03/26/10
LCS			**QC Sample #24946**							
Americium-243 Tracer	14993-75-0				84.8	25 - 105				03/25/10
Uranium-232 Tracer	14158-29-3				88.8	25 - 105				03/25/10
Plutonium-242 Tracer	13982-10-0				87.4	25 - 105				03/26/10

Quality Control Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF100487

QC Batch 104175
Associated Samples 100487001

Test Strontium 89/90 (GPC/GEA)

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
SAMPLE			**Sample #100487001**							
Strontium-85	13967-73-2				86.3	25 - 105				03/31/10
BLANK			**QC Sample #25372**							
Strontium-85	13967-73-2				91.8	25 - 105				03/31/10
LCS			**QC Sample #25373**							
Strontium-85	13967-73-2				96	25 - 105				03/31/10
DUP			**QC Sample #25374**							
			Original 100487001							
Strontium-85	13967-73-2				76.1	25 - 105	12.50			03/31/10

Attention: Michael Neely **Group #** WSCF100487

Quality Control Comments

Department Inorganic

24750 B23R83(100438010MS)

Analyte Strontium - ICP-2008 MS All possible metal
[1] X-Flag
[2] X5: Sample concentration exceed spiking level by a factor of 4. Spike recoveries are not valid.

24751 B23R83(100438010MSD)

Analyte Strontium - ICP-2008 MS All possible metal
[1] X-Flag
[2] X5: Sample concentration exceed spiking level by a factor of 4. Spike recoveries are not valid.

25039 B23W59(100555007MS)

Analyte Calcium - ICP-6010 - All possible metals
[1] X-Flag
[2] X5: Sample concentration exceed spiking level by a factor of 4. Spike recoveries are not valid.

Analyte Magnesium - ICP-6010 - All possible metals
[1] X-Flag
[2] X5: Sample concentration exceed spiking level by a factor of 4. Spike recoveries are not valid.

Analyte Sodium - ICP-6010 - All possible metals
[1] X5: Sample concentration exceed spiking level by a factor of 4. Spike recoveries are not valid.
[2] X-Flag

25040 B23W59(100555007MSD)

Analyte Calcium - ICP-6010 - All possible metals
[1] X-Flag
[2] X5: Sample concentration exceed spiking level by a factor of 4. Spike recoveries are not valid.

Analyte Magnesium - ICP-6010 - All possible metals
[1] X5: Sample concentration exceed spiking level by a factor of 4. Spike recoveries are not valid.
[2] X-Flag

Analyte Sodium - ICP-6010 - All possible metals
[1] X-Flag
[2] X5: Sample concentration exceed spiking level by a factor of 4. Spike recoveries are not valid.

Attention: Michael Neely **Group #** WSCF100487

Quality Control Comments

Department Radiochemistry

24945 BLANK for HBN 101395 [RADP/278

Analyte Americium-241 - Americium/Curium (AEA)

[1] X-Flag

[2] The blank is less than 2X the MDC and is acceptable.

Analyte Uranium-234 - Uranium (AEA)

[1] The blank is less than 2X the MDC and is acceptable.

[2] X-Flag

Analyte Uranium-238 - Uranium (AEA)

[1] The blank is less than 2X the MDC and is acceptable.

[2] X-Flag

ATTACHMENT4

SAMPLE RECEIPT

Consisting of 4 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 1000 S3-30
Richland, WA 99352

ATTN: Michael Neely

Customer Code: CHPRC
PO #: 401586
Work Order #: 100487
Profile #: F10-119-012
Proj. Mgr.:
Phone:

The following samples were received from you on 3/9/2010 8:15:00 AM. 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		
100487001	B243V3	WATER	3/8/2010 10:15	3/9/2010 08:15
		2008-W; 6010-W; AEA-AM-W; AEA-PU-W; AEA-U-W; CN-W; GEA-W; SR89/90-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)
AEA-U-W	Uranium Isotopic (AEA) (W)
CN-W	Cyanide (Spectroscopy) (W)
GEA-W	Gamma Energy Analysis (W)
SR89/90-W	Strontium 89/90 (GPC) (W)

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F10-119-012 PAGE 1 OF 2

COLLECTOR: Scales	COMPANY CONTACT: BAMBERGER, MA	TELEPHONE NO.: 373-0880	PROJECT COORDINATOR: WIDRIG, DL	PRICE CODE: 7C	DATA TURNAROUND: 15 Days / 16 Days
SAMPLING LOCATION: 216-S-16 Pond; C5727 EB	PROJECT DESIGNATION: 200-CW-1 Mocal Group 5 Sampling - Large Area Ponds - QC		SAF NO.: F10-119	AIR QUALITY: ☐	
ICE CHEST NO.	FIELD LOGBOOK NO.	ACTUAL SAMPLE DEPTH	COA: 302427PS10	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

MATRIX*: A=Air, DL=Drum, LIQUID, DS=Drum, Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not reassible per DOE Order 5400.5 (1990/1993)

100487

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	HNO3 to pH <2/Cool-4C	Cool-4C	NaOH to pH >= 12	HNO3 to pH <2
TYPE OF CONTAINER	G	P	P	G/P
NO. OF CONTAINER(S)	1	1	1	1
VOLUME	500mL	500mL	1000mL	1000mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Cyanide (Total) SPHERE	SEE ITEM (1) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME										
B243V3	WATER	3/8/10	1015	✓	✓	✓	✓						

3-9-10

VS 3/9/10

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
J Sicks	3/8/10 1225	SSU #1	3/8/10 1225
[illegible]	3/9/10 0800	L.D. Wall CHERG [illegible]	3/9/10 0800
L.D. Wall [illegible]	3/9/10 0815	[illegible]	3/9/10 0815

SPECIAL INSTRUCTIONS

SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

☐ ORIGINAL

ANIONS SENT TO 222-S DUE TO WSCF LAB SHUTDOWN

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

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3004.1.1084.3
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Group # WSCF100487

Chain of Custody

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

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COLLECTOR	COMPANY CONTACT: BAMBERGER, HA	TELEPHONE NO.: 373-0880	PROJECT COORDINATOR: WIDRIG, DL	PRICE CODE: 7C	DATA TURNAROUND: 15 Days / 16 Days
SAMPLING LOCATION: 216-S-16 Pond; C5727 EB	PROJECT DESIGNATION: 200-CW-1 Model Group 5 Sampling - Large Area Ponds - QC		SAF NO.: F10-119	AIR QUALITY: ☐	
ICE CHEST NO.	FIELD LOGBOOK NO.	ACTUAL SAMPLE DEPTH	COA: 302427E510	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is currently being determined. Once the CACN is established it will be distributed for use by the laboratory.[JC]** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.

(1)ICP Metals - 6010B (TAL) (Sodium, Iron, Potassium, Calcium, Magnesium) ICP Metals - 6010B (Add-On) (Boron, Bismuth, Titanium, Lithium) ICP/MS - 200.8 (TAL) (Aluminum, Antimony, Barium, Chromium, Cobalt, Cadmium, Copper, Zinc, Manganese, Nickel, Vanadium, Silver) ICP/MS - 200.8 (Add-on) (Arsenic, Lead, Strontium, Thallium, Beryllium, Molybdenum, Uranium, Selenium) 200.8_HG - ICPMS (Mercury)

(2)IC Anions - 300.0 (Phosphorus in phosphate, Chloride, Nitrogen in Nitrite, Fluoride, Nitrogen in Nitrate, Sulfate)

(3)Gamma Spectroscopy (Cesium-137, Europium-154) Americium-241; Isotopic Plutonium (Plutonium-239/240) Isotopic Uranium (Uranium-238) Strontium-89,90 – Total Sr; Technetium-99;

ORIGINAL

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