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(509) 373-7005
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Memorandum

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

Date: June 5, 2009

From: WSCF Laboratory
WSCF Analytical Chemistry

CC:

Subject: FINAL RESULT FOR SAMPLE DELIVERY GROUP WSCF90387

Reference: (1) SOW, Mod 2, #36587, Release 3
(2) HNF-SD-CD-QAPP-017, Rev 9, Waste Sampling & Characterization Facility Quality Assurance Plan

This letter contains the following information for sample delivery group WSCF90387

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

Electronically signed by Scot Fitzgerald
For Lab Manager

Attachments 4

ATTACHMENT 1

COVER SHEET

Consisting of 2 pages
Including cover page

WSCF SAF Number Cross Reference

Group # WSCF90387
Data Deliverable Date 06/05/09

SAF #	Sample ID	Sample #	Matrix	Sampled	Received
F09-009	B1YCY4	90387001	WATER	04/21/09	04/21/09

ATTACHMENT 2

NARRATIVE

Consisting of 3 pages
Including cover page

Introduction

One S&GRP sample was received at the WSCF Laboratory on April 22, 2009. 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.

It should be noted that the attached chain of custody was stamped "ICED" by the WSCF Laboratory Sample Custodian during sample receiving, indicating the presence of ice in the transport container.

The following generic data qualifiers (i.e., B, D, 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 wetchem 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.

Analytical Methodology for Requested Analyses

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

Inorganic Comments

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.

All QC controls are within the established limits.

Organic Comments

VOA – 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.

All QC controls are within the established limits.

Radiochemistry Comments

Rad Chem – There are no hold times associated with WSCF’s radiochemical methods. A Duplicate, Matrix Spike, Blank and Laboratory Control Sample were analyzed with this delivery group. Analytical Note(s):

- GEA – Duplicate Relative Percent Difference(s) (RPD) exceeded established laboratory limits. The RPD criterion does not apply to results near or below the minimum detectable activity.

All other 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 3

ANALYTICAL RESULTS

Consisting of 20 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 # WSCF90387
Report Date June 5, 2009

Analytical: Electronically signed by Scot Fitzgerald

Client Services: Electronically signed by Pauline Mix

All radiochemistry 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 # WSCF90387
Project Number F09-009

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
25930	25936	4	BLANK	8103	BLANK		ICP-2008 MS All possible metal
25930	25936	5	LCS	8104	LCS		ICP-2008 MS All possible metal
25930	25936	7	MS	8105	B1YM72(90328001MS)	90328001	ICP-2008 MS All possible metal
25930	25936	8	MSD	8106	B1YM72(90328001MSD)	90328001	ICP-2008 MS All possible metal
25930	25936	16	SAMPLE	90387001	B1YCY4		ICP-2008 MS All possible metal

Batch QC List

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF90387
Project Number F09-009

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
24112	24113	1	BLANK	7661	BLANK		SW-846 8260B Volatiles, separate prep
24112	24113	2	LCS	7662	LCS		SW-846 8260B Volatiles, separate prep
24112	24113	7	MS	7663	B202M5(90381005MS)	90381005	SW-846 8260B Volatiles, separate prep
24112	24113	10	SAMPLE	90387001	B1YCY4		SW-846 8260B Volatiles, separate prep
24112	24113	16	SAMPLE	90387001	B1YCY4		SW-846 8260B Volatiles, separate prep
24112	24113	17	MSD	7664	B202M5(90381005MSD)	90381005	SW-846 8260B Volatiles, separate prep

Batch QC List

Attention Michael Neely
Department Radiochemistry

Group # WSCF90387
Project Number F09-009

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
24058	24082	1	BLANK	7501	BLANK		Tritium by LSC
24058	24082	2	LCS	7502	LCS		Tritium by LSC
24058	24082	4	DUP	7503	B203W3(90379026DUP)	90379026	Tritium by LSC
24058	24082	5	MS	7504	B203W3(90379026MS)	90379026	Tritium by LSC
24058	24082	15	SAMPLE	90387001	B1YCY4		Tritium by LSC
25961	26232	1	IBLANK	8168	IBLANK		Gamma Energy Analysis-general
25961	26232	2	LCS	8169	LCS		Gamma Energy Analysis-general
25961	26232	4	DUP	8936	B1YMD9(90359001DUP)	90359001	Gamma Energy Analysis-general
25961	26232	7	SAMPLE	90387001	B1YCY4		Gamma Energy Analysis-general

Method Reference

Attention Michael Neely
Department Inorganic

Group # WSCF90387
Project Number F09-009

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-505-412	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 Organic, Volatiles

Group # WSCF90387
Project Number F09-009

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-523-455	Volatile Sample Analysis by SW-846 Method 8260B		
	EPA SW-846	8000B	Determinative Chromographic Separations
	EPA SW-846	8260B	Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)
	HEIS	8260_VOA_GCMS	Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

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 # WSCF90387
Project Number F09-009

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-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
LA-508-481	HEIS	TRITIUM_EIE_LSC	Tritium, by Eichrome ion exchange, LSC
	Gamma Energy Analysis using the Canberra Genie Ssystem		
	HEIS	GAMMA_GS	Gamma Energy Analysis

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 # WSCF90387
 Project Number F09-009

Sample # 90387001
 SAF# F09-009
 Sample ID B1YCY4

Matrix WATER
 Sampled 04/21/09
 Received 04/21/09

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
ICPMS Prep										05/04/09
ICP-MS										
Chromium	7440-47-3	LA-505-412		12.5		ug/L	1	0.50	5.0	05/05/09
Uranium	7440-61-1	LA-505-412		1.20		ug/L	1	0.050	0.20	05/05/09

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

U - Analyzed for but not detected above limiting criteria.
 X,Y or Z - See comment detail and/or narrative.

WSCF Analytical Results Report

Attention Michael Neely
 Department Organic, Volatiles

Group # WSCF90387
 Project Number F09-009

Sample # 90387001
 SAF# F09-009
 Sample ID B1YCY4

Matrix WATER
 Sampled 04/21/09
 Received 04/21/09

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
8260 Prep										04/22/09
SW-846 8260B										
1,1-Dichloroethene	75-35-4	LA-523-455	U	<1		ug/L	1	1	5	04/22/09
Trichloroethene	79-01-6	LA-523-455		6.4		ug/L	1	1	5	04/22/09
Benzene	71-43-2	LA-523-455	U	<1		ug/L	1	1	5	04/22/09
Toluene	108-88-3	LA-523-455	U	<1		ug/L	1	1	5	04/22/09
Chlorobenzene	108-90-7	LA-523-455	U	<1		ug/L	1	1	5	04/22/09
1,1-Dichloroethane	75-34-3	LA-523-455	U	<1		ug/L	1	1	5	04/22/09
Ethylbenzene	100-41-4	LA-523-455	U	<1		ug/L	1	1	5	04/22/09
Styrene	100-42-5	LA-523-455	U	<1		ug/L	1	1	5	04/22/09
cis-1,3-Dichloropropene	10061-01-5	LA-523-455	U	<1		ug/L	1	1	5	04/22/09
trans-1,3-Dichloropropene	10061-02-6	LA-523-455	U	<1		ug/L	1	1	5	04/22/09
1,2-Dichloroethane	107-06-2	LA-523-455	U	<1		ug/L	1	1	5	04/22/09
Methyl isobutyl ketone	108-10-1	LA-523-455	U	<1		ug/L	1	1	5	04/22/09
Dibromochloromethane	124-48-1	LA-523-455	U	<1		ug/L	1	1	5	04/22/09
Tetrachloroethene	127-18-4	LA-523-455	U	<1		ug/L	1	1	5	04/22/09
Total Xylenes	1330-20-7	LA-523-455	U	<1		ug/L	1	1	5	04/22/09
Total 1,2-Dichloroethene	540-59-0	LA-523-455	U	<1		ug/L	1	1	5	04/22/09

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
 D - Analyte was reported at a secondary dilution factor.
 E - The calibration exceeds the calibration range (GC/MS).
 J - Analyte < lowest calibration but >= MDL.
 N - Presumptive compound based on MS Library search.

T - MS and/or MSD sample recovery outside control limits.
 U - Analyzed for but not detected above limiting criteria.
 X,Y or Z - See comment detail and/or narrative.

WSCF Analytical Results Report

Attention Michael Neely
 Department Organic, Volatiles

Group # WSCF90387
 Project Number F09-009

Sample # 90387001
 SAF# F09-009
 Sample ID B1YCY4

Matrix WATER
 Sampled 04/21/09
 Received 04/21/09

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Carbon tetrachloride	56-23-5	LA-523-455		2200		ug/L	1	20	100	04/24/09
2-Hexanone	591-78-6	LA-523-455	U	<1		ug/L	1	1	5	04/22/09
Acetone	67-64-1	LA-523-455	U	<1		ug/L	1	1	5	04/22/09
Chloroform	67-66-3	LA-523-455		18		ug/L	1	1	5	04/22/09
1,1,1-Trichloroethane	71-55-6	LA-523-455	U	<1		ug/L	1	1	5	04/22/09
Bromomethane	74-83-9	LA-523-455	U	<1		ug/L	1	1	5	04/22/09
Chloromethane	74-87-3	LA-523-455	U	<1		ug/L	1	1	5	04/22/09
Chloroethane	75-00-3	LA-523-455	U	<1		ug/L	1	1	5	04/22/09
Vinyl chloride	75-01-4	LA-523-455	U	<1		ug/L	1	1	5	04/22/09
Methylene chloride	75-09-2	LA-523-455	J	1.8		ug/L	1	1	5	04/22/09
Carbon disulfide	75-15-0	LA-523-455	U	<1		ug/L	1	1	5	04/22/09
Bromoform	75-25-2	LA-523-455	U	<1		ug/L	1	1	5	04/22/09
Bromodichloromethane	75-27-4	LA-523-455	U	<1		ug/L	1	1	5	04/22/09
1,2-Dichloropropane	78-87-5	LA-523-455	U	<1		ug/L	1	1	5	04/22/09
Methyl ethyl ketone	78-93-3	LA-523-455	U	<1		ug/L	1	1	5	04/22/09
1,1,2-Trichloroethane	79-00-5	LA-523-455	U	<1		ug/L	1	1	5	04/22/09
1,1,2,2-Tetrachloroethane	79-34-5	LA-523-455	U	<1		ug/L	1	1	5	04/22/09

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
 D - Analyte was reported at a secondary dilution factor.
 E - The calibration exceeds the calibration range (GC/MS).
 J - Analyte < lowest calibration but >= MDL.
 N - Presumptive compound based on MS Library search.

T - MS and/or MSD sample recovery outside control limits.
 U - Analyzed for but not detected above limiting criteria.
 X, Y or Z - See comment detail and/or narrative.

WSCF Analytical Results Report

Attention Michael Neely
 Department Radiochemistry

Group # WSCF90387
 Project Number F09-009

Sample # 90387001
 SAF# F09-009
 Sample ID B1YCY4

Matrix WATER
 Sampled 04/21/09
 Received 04/21/09

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
GEA Prep										05/05/09
GEA										
Cesium-137	10045-97-3	LA-508-481	U	-2.6	5.9	pCi/L	1	10		05/06/09
Cobalt-60	10198-40-0	LA-508-481	U	1.2	6.3	pCi/L	1	11		05/06/09
Europium-152	14683-23-9	LA-508-481	U	-0.45	18	pCi/L	1	29		05/06/09
Europium-154	15585-10-1	LA-508-481	U	1.5	16	pCi/L	1	28		05/06/09
Europium-155	14391-16-3	LA-508-481	U	4.2	21	pCi/L	1	32		05/06/09
H3 EICHROM										04/22/09
TRI-CARB LSC										
Tritium	10028-17-8	LA-508-421		540	190	pCi/L	1	230		04/22/09

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.

Quality Control Report

Attention Michael Neely
 Department Organic, Volatiles

Group # WSCF90387
 Project Number F09-009

QC Batch 24112 Test SW-846 8260B Volatiles, separate prep
 Associated Samples 90387001

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK		QC Sample #7661								
1,1-Dichloroethene	75-35-4	<1		ug/L					U	04/22/09
Trichloroethene	79-01-6	<1		ug/L					U	04/22/09
Benzene	71-43-2	<1		ug/L					U	04/22/09
Toluene	108-88-3	<1		ug/L					U	04/22/09
Chlorobenzene	108-90-7	<1		ug/L					U	04/22/09
1,1-Dichloroethane	75-34-3	<1		ug/L					U	04/22/09
Ethylbenzene	100-41-4	<1		ug/L					U	04/22/09
Styrene	100-42-5	<1		ug/L					U	04/22/09
cis-1,3-Dichloropropene	10061-01-5	<1		ug/L					U	04/22/09
trans-1,3-Dichloropropene	10061-02-6	<1		ug/L					U	04/22/09
1,2-Dichloroethane	107-06-2	<1		ug/L					U	04/22/09
Methyl isobutyl ketone	108-10-1	<1		ug/L					U	04/22/09
Dibromochloromethane	124-48-1	<1		ug/L					U	04/22/09
Tetrachloroethene	127-18-4	<1		ug/L					U	04/22/09
Total Xylenes	1330-20-7	<1		ug/L					U	04/22/09
Total	540-59-0	<1		ug/L					U	04/22/09
Carbon tetrachloride	56-23-5	<1		ug/L					U	04/22/09
2-Hexanone	591-78-6	<1		ug/L					U	04/22/09
Acetone	67-64-1	<1		ug/L					U	04/22/09
Chloroform	67-66-3	<1		ug/L					U	04/22/09
1,1,1-Trichloroethane	71-55-6	<1		ug/L					U	04/22/09

Quality Control Report

Attention Michael Neely
 Department Organic, Volatiles

Group # WSCF90387
 Project Number F09-009

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Bromomethane	74-83-9		<1	ug/L					U	04/22/09
Chloromethane	74-87-3		<1	ug/L					U	04/22/09
Chloroethane	75-00-3		<1	ug/L					U	04/22/09
Vinyl chloride	75-01-4		<1	ug/L					U	04/22/09
Methylene chloride	75-09-2		<1	ug/L					U	04/22/09
Carbon disulfide	75-15-0		<1	ug/L					U	04/22/09
Bromoform	75-25-2		<1	ug/L					U	04/22/09
Bromodichloromethane	75-27-4		<1	ug/L					U	04/22/09
1,2-Dichloropropane	78-87-5		<1	ug/L					U	04/22/09
Methyl ethyl ketone	78-93-3		<1	ug/L					U	04/22/09
1,1,2-Trichloroethane	79-00-5		<1	ug/L					U	04/22/09
1,1,1,2-Tetrachloroethane	79-34-5		<1	ug/L					U	04/22/09
LCS										
										QC Sample #7662
1,1-Dichloroethene	75-35-4		24	ug/L	94.1	75 - 125				04/22/09
Trichloroethene	79-01-6		25	ug/L	101.6	75 - 125				04/22/09
Benzene	71-43-2		25	ug/L	99.1	75 - 125				04/22/09
Toluene	108-88-3		25	ug/L	99.9	75 - 125				04/22/09
Chlorobenzene	108-90-7		25	ug/L	101.3	75 - 125				04/22/09
MS										
										QC Sample #7663
										Original 90381005
1,1-Dichloroethene	75-35-4		27	ug/L	106.2	75 - 125				04/22/09
Trichloroethene	79-01-6		22	ug/L	87	75 - 125				04/22/09
Benzene	71-43-2		25	ug/L	101.4	75 - 125				04/22/09
Toluene	108-88-3		26	ug/L	103.8	75 - 125				04/22/09
Chlorobenzene	108-90-7		26	ug/L	104.7	75 - 125				04/22/09
MSD										
										QC Sample #7664
										Original 90381005
										Paired 7663

Quality Control Report

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF90387
Project Number F09-009

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
1,1-Dichloroethene	75-35-4		24	ug/L	96.2	75 - 125	9.90	20		04/22/09
Trichloroethene	79-01-6		20	ug/L	81.9	75 - 125	6.00	20		04/22/09
Benzene	71-43-2		25	ug/L	101.5	75 - 125	0.10	20		04/22/09
Toluene	108-88-3		26	ug/L	103.1	75 - 125	0.70	20		04/22/09
Chlorobenzene	108-90-7		26	ug/L	104.6	75 - 125	0.10	20		04/22/09

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF90387
Project Number F09-009

QC Batch 25930
Associated Samples 90387001

Test ICP-2008 MS All possible metal

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK		QC Sample #8103								
Chromium	7440-47-3		<0.50	ug/L					U	05/05/09
Uranium	7440-61-1		<0.050	ug/L					U	05/05/09
LCS		QC Sample #8104								
Chromium	7440-47-3		40.9	ug/L	102.2	85 - 115				05/05/09
Uranium	7440-61-1		41.8	ug/L	104.6	85 - 115				05/05/09
MS		QC Sample #8105								
		Original 90328001								
Chromium	7440-47-3		40.4	ug/L	101.1	70 - 130				05/05/09
Uranium	7440-61-1		41.7	ug/L	104.2	70 - 130				05/05/09
MSD		QC Sample #8106								
		Original 90328001								
		Paired 8105								
Chromium	7440-47-3		39.7	ug/L	99.2	70 - 130	1.90	20		05/05/09
Uranium	7440-61-1		41.4	ug/L	103.4	70 - 130	0.80	20		05/05/09

Quality Control Report

Attention Michael Neely
 Department Radiochemistry

Group # WSCF90387
 Project Number F09-009

QC Batch 24058
 Associated Samples 90387001

Test Tritium by LSC

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK										
			QC Sample #7501							
Tritium LCS	10028-17-8	6.3		pCi/L					U	04/22/09
			QC Sample #7502							
Tritium DUP	10028-17-8	3200		pCi/L	98.7	80 - 120				04/22/09
			QC Sample #7503							
			Original 90379026							
Tritium MS	10028-17-8	4300		pCi/L			2.40	-20 - 20		04/22/09
			QC Sample #7504							
			Original 90379026							
Tritium	10028-17-8	23000		pCi/L	96	75 - 125				04/22/09

Quality Control Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF90387
Project Number F09-009

QC Batch 25961 **Test** Gamma Energy Analysis-general
Associated Samples 90387001

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
IBLANK		QC Sample #8168								
Cesium-137	10045-97-3		-0.20	pCi/L					U	05/07/09
Cobalt-60	10198-40-0		-2.8	pCi/L					U	05/07/09
Europium-152	14683-23-9		-1.8	pCi/L					U	05/07/09
Europium-154	15585-10-1		3.0	pCi/L					U	05/07/09
Europium-155	14391-16-3		1.6	pCi/L					U	05/07/09
LCS		QC Sample #8169								
Cesium-137	10045-97-3		6300000	pCi/Sample	104.8	80 - 120				05/07/09
Cobalt-60	10198-40-0		10000000	pCi/Sample	104.5	80 - 120				05/07/09
DUP		QC Sample #8936								
		Original 90359001								
Cesium-137	10045-97-3		-6.6	pCi/L			-118.10	-20 - 20	* U	05/20/09
Cobalt-60	10198-40-0		1.6	pCi/L			-382.90	-20 - 20	* U	05/20/09
Europium-152	14683-23-9		1.5	pCi/L			-661.50	-20 - 20	* U	05/20/09
Europium-154	15585-10-1		-7.0	pCi/L			-141.50	-20 - 20	* U	05/20/09
Europium-155	14391-16-3		14	pCi/L			173.30	-20 - 20	* U	05/20/09

Quality Control Report

Attention Michael Neely
 Department Organic, Volatiles

Group # WSCF90387
 Project Number F09-009

QC Batch 24112 Test SW-846 8260B Volatiles, separate prep
 Associated Samples 90387001

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK		QC Sample #7661								
1,2-Dichloroethane-d4	17060-07-0				104.4	75 - 125				04/22/09
Toluene-d8	2037-26-5				101.2	75 - 125				04/22/09
4-Bromofluorobenzene	460-00-4				106.2	75 - 125				04/22/09
LCS		QC Sample #7662								
1,2-Dichloroethane-d4	17060-07-0				107.2	75 - 125				04/22/09
Toluene-d8	2037-26-5				102	75 - 125				04/22/09
4-Bromofluorobenzene	460-00-4				104.4	75 - 125				04/22/09
MS		QC Sample #7663								
		Original 90381005								
1,2-Dichloroethane-d4	17060-07-0				112	75 - 125				04/22/09
Toluene-d8	2037-26-5				102.8	75 - 125				04/22/09
4-Bromofluorobenzene	460-00-4				104.1	75 - 125				04/22/09
MSD		QC Sample #7664								
		Original 90381005								
1,2-Dichloroethane-d4	17060-07-0				107.6	75 - 125	4.00	20		04/22/09
Toluene-d8	2037-26-5				102.3	75 - 125	0.50	20		04/22/09
4-Bromofluorobenzene	460-00-4				104.6	75 - 125	0.50	20		04/22/09
SAMPLE		Sample #90387001								
1,2-Dichloroethane-d4	17060-07-0				110.8	75 - 125				04/22/09

Quality Control Report

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF90387
Project Number F09-009

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Toluene-d8	2037-26-5				104.4	75 - 125				04/22/09
4-Bromofluorobenzene	460-00-4				105.4	75 - 125				04/22/09

ATTACHMENT4

SAMPLE RECEIPT

Consisting of 3 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 #: 131280
Work Order #: 90387
Profile #: F09-009-020
Proj. Mgr.:
Phone:

The following samples were received from you on 4/21/2009 3:05:00 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		
90387001	B1YCY4	WATER	4/21/2009 14:25	4/21/2009 15:00
		2008-W; 8260V-W; GEA-W; H3-COL-W		

Test Acronym Description

Test Acronym	Description
2008-W	ICP-MS (W)
8260V-W	Volatiles by 8260B (W)
GEA-W	Gamma Energy Analysis (W)
H3-COL-W	Tritium by EICHROM Column (W)

Sample Receipt

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		PAGE 1 OF 1	
COLLECTOR Kwan, Helen	COMPANY CONTACT WIDRIG, DL	PROJECT COORDINATOR WIDRIG, DL	PRICE CODE 7N
SAMPLING LOCATION C707; EWI-017	PROJECT DESIGNATION 230-2P-1 Remedial Action Wells Sampling and Analysis - Water	SAF NO. P09-009	AIR QUALITY <input type="checkbox"/>
ICE CHEST NO. 90387	FIELD LOGBOOK NO. 65	COA 300194ES10	METHOD OF SHIPMENT GOVERNMENT VEHICLE
SHIPPED TO Waste Sampling & Characterization	OFFSITE PROPERTY NO. N/A	ACTUAL SAMPLE DEPTH 296	BILL OF LADING/AIR BILL NO. N/A
MATRIX* A=Air DL=Drum L=Liquid DS=Drum S=Soil T=Tissue V=Vegetation W=Water WI=Wipe X=Other	PRESERVATION HCl or H2SO4 to pH <2 (CoCo-AC) x2 G/P G	NO. OF CONTAINER(S) 4	NO. OF CONTAINER(S) 1
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 releasable per DOE Order 5400.5 (1990/1993)	TYPE OF CONTAINER G/P	VOLUME 40mL	VOLUME 250mL
SPECIAL HANDLING AND/OR STORAGE RADIOACTIVE TIE TO: B1VCY3	SAMPLE ANALYSIS VOL - 6828 (TCL)	SAMPLE DATE 4-21-09	SAMPLE TIME 1425
SAMPLE NO. B1VCY4 001	MATRIX* WATER	SPECIAL INSTRUCTIONS SEC 306 ITEM (3)	SPECIAL INSTRUCTIONS ICFD

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM Ed Hahn / [Signature]	DATE/TIME 4-21-09 1505	RECEIVED BY/STORED IN M. Kessler / [Signature]	DATE/TIME 4-21-09 1505
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS
 ** The 200 Area 38GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
 (1)ICP/MS - 200.8 (TAL) (Chromium) ICP/MS - 200.8 (Add-on) (Uranium)
 (2)Gamma Spectroscopy (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155)
 (3) **SPECIAL INSTRUCTIONS: ANALYZE REGARDLESS OF VOA HIGH/LOW RESULTS. DLD 3/19/09**

