

WSCF Laboratory

RECEIVED DECEMBER 23, 2008

PO Box 1000 S3-30
Richland, WA 99352
(509) 373-7005
(509) 372-0456

Memorandum

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

Date: December 20, 2008

From: WSCF Laboratory
WSCF Analytical Chemistry

CC:

Subject: FINAL RESULT FOR SAMPLE DELIVERY GROUP WSCF80006

F08-157

Reference: (1) MOA-FH-CHPRC-2008
(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 WSCF80006

- * 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

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ATTACHMENT 1

COVER SHEET

Consisting of 2 pages
Including cover page

WSCF SAF Number Cross Reference

Group # WSCF80006
Data Deliverable Date 11/22/08

SAF #	Sample ID	Sample #	Matrix	Sampled	Received
F08-157	B1X1H5	80006001	WATER	10/08/08	10/08/08

ATTACHMENT 2

NARRATIVE

Consisting of 2 pages
Including cover page

Introduction

One sample was received at the WSCF Laboratory on October 8, 2008. Sample was analyzed for the analyte indicated on the attached copy of the chain of custody (COC) form in accordance with the *Memorandum of Agreement (MOA-FH-CHPRC-2008, Rev.0)*, referenced in the cover letter.

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 sample container.

Analytical Methodology for Requested Analyses

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

Inorganic Comments

Hexavalent Chromium – The hold time requirement for this analysis was met. A Duplicate, Matrix Spike, Blank and Laboratory Control Sample were analyzed with this delivery group.

- 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.

All other QC controls are within the established limits.

I certify that this data package is in compliance with the MOA, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Analytical Manager and Client Services as verified by the following signatures.

Scot L. Fitzgerald
WSCF Analytical Laboratory Manager

Pauline D. Mix
WSCF Client Services

ATTACHMENT 3

ANALYTICAL RESULTS

Consisting of 7 pages
Including cover page

WSCF ANALYTICAL RESULTS REPORT

For

Groundwater Remediation Program

PO Box 1600
Richland, WA 99352

Attention: Michael Neely

Contract # MOA-FH-CHPRC-2008
Group # WSCF80006
Report Date December 20, 2008

Analytical: Electronically signed by Scot Fitzgerald

Client Services: Electronically signed by John Trechter

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 # WSCF80006
Project Number F08-157

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
	3712	1	BLANK	1144	BLANK		Hexavalent chromium Discrete Analyzer
	3712	2	LCS	1145	LCS		Hexavalent chromium Discrete Analyzer
	3712	4	SAMPLE	80006001	B1X1H5		Hexavalent chromium Discrete Analyzer
	3712	5	DUP	1147	B1X1H5(80006001DUP)	80006001	Hexavalent chromium Discrete Analyzer
	3712	6	MS	1148	B1X1H5(80006001MS)	80006001	Hexavalent chromium Discrete Analyzer

Method Reference

Attention Michael Neely
Department Inorganic

Group # WSCF80006
Project Number F08-157

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-265-403	Hexavalent Chromium Analysis		
	EPA SW-846	7196A	Hexavalent Chromium
	HEIS	7196_CR6	Hexavalent Chromium

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 # WSCF80006
Project Number F08-157

Sample # 80006001
SAF# F08-157
Sample ID B1X1H5

Matrix WATER
Sampled 10/08/08
Received 10/08/08

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI)										
Hexavalent chromium	18540-29-9	LA-265-403	U1	<2.E-3		mg/L	1	2.E-3	2.E-3	10/08/08

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.

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

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF80006
Project Number F08-157

QC Batch 3712
Associated Samples 80006001

Test Hexavalent chromium Discrete Analyzer

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			QC Sample #1144							
Hexavalent chromium LCS	18540-29-9		<2.E-3	mg/L					U	10/08/08
			QC Sample #1145							
Hexavalent chromium DUP	18540-29-9		0.0522	mg/L	104	90 - 110				10/08/08
			QC Sample #1147							
			Original 80006001							
Hexavalent chromium MS	18540-29-9	.0004	<2.E-3	mg/L			54.50	20	* U1	10/08/08
			QC Sample #1148							
			Original 80006001							
Hexavalent chromium	18540-29-9	.0004	0.0406	mg/L	101	85 - 115				10/08/08

Analytical Comment Report

Attention Michael Neely

Group # WSCF80006
Project Number F08-157

80006001 **B1X1H5**

Department Inorganic

Analyte Hexavalent chromium - Hexavalent chromium Discrete Analyzer

[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.

Quality Control Comments

Department Inorganic

1147 B1X1H5(80006001DUP)

Analyte Hexavalent chromium - Hexavalent chromium Discrete Analyzer

[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.

ATTACHMENT4

SAMPLE RECEIPT

Consisting of 3 pages
Including cover page

Sample Receipt

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: CPP

Customer Code: GRP
PO #: 123262/ES10
Work Order #: 80006
Profile #: F08-157-005
Proj. Mgr.:
Phone:

The following samples were received from you on 10/8/2008 3:20:00 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		
80006001	B1X1H5	WATER	10/8/2008 10:55	10/8/2008 15:00
		CR6-W		

Test Acronym Description

Test Acronym	Description
CR6-W	Cr6 (W)

Fior Hamford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F08-157-005	PAGE 1 OF 1
COLLECTOR <i>Kauser, McIntyre, Rasave, Rost</i>	COMPANY CONTACT TRENT, SJ	TELEPHONE NO. 373-5869	PROJECT COORDINATOR WDRBG, DL		PRICE CODE 7N	DATA TURNAROUND 45 Days / 45 Days
SAMPLING LOCATION CS387 GW-002	PROJECT DESIGNATION Chromium Source Investigation - North Plume Water		SAF NO. F08-157	AIR QUALITY <input type="checkbox"/>		
ICE CHEST NO.	FIELD LOGBOOK NO. <i>HNF-N-576-3</i>	P317 ACTUAL SAMPLE DEPTH <i>107'</i>	COA 123445E510	METHOD OF SHIPMENT GOVERNMENT VEHICLE		
SHIPPED TO Waste Sampling & Characterization	80006	OFFSITE PROPERTY NO. SEE PTR	BILL OF LADING/AIR BILL NO. SEE PTR			
MATRIX* A=Air DL=Drum L=Liquids DS=Drum S=Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water W1=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 releasable per DOE Order 5400.5 (1990/1993)	PRESERVATION Cool+IC	TYPE OF CONTAINER IC	NO. OF CONTAINER(S) 1	VOLUME 250ml	SAMPLE ANALYSIS Chromium Hex - 71% <i>3160039</i> <i>0247336416408</i>
SPECIAL HANDLING AND/OR STORAGE <i>lot 4</i>						
SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME			
B1X1H5	001 WATER	10-08-08	1055	✓		
CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS		
RELINQUISHED BY/REMOVED FROM <i>Ed Kauser/Ed Kauser</i>	DATE/TIME <i>10-8-08 1520</i>	RECEIVED BY/STORED IN <i>CB [Signature]</i>	DATE/TIME <i>10/8/08 1520</i>	PH - 8.08		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	Temp - 19.9°C		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	Turb - > 1000 ntu		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	Cond - 618		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	D.O - 7.11		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	ICED		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME			

