

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

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

Date: May 11, 2009

From: WSCF Laboratory
WSCF Analytical Chemistry

CC:

Subject: FINAL RESULT FOR SAMPLE DELIVERY GROUP WSCF90367

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 WSCF90367

- * 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 # WSCF90367
Data Deliverable Date 05/02/09

SAF #	Sample ID	Sample #	Matrix	Sampled	Received
X09-006	B1XNY2	90367001	WATER	04/17/09	04/17/09
X09-006	B1XNY2F	90367002	WATER	04/17/09	04/17/09

ATTACHMENT 2

NARRATIVE

Consisting of 3 pages
Including cover page

Introduction

One groundwater sample was received at the WSCF Laboratory on April 17, 2009. Sample was analyzed for the analyte 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. No anomalies identified during sample receiving.

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

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. Analytical Note(s):

- Per client request, the sample from this sample delivery group was split and filtered by the WSCF Laboratory. The letter "F" (filtered) was added to the HEIS Identification number to differentiate the filtered sample result from the unfiltered sample result. Analytical results for both filtered and unfiltered samples are included in this analytical data package.
- Duplicate Relative Percent Difference (RPD) exceeded established laboratory limits due to low sample concentration. RPD does not apply to sample concentrations near or below the calibration range.

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 8 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 # WSCF90367
Report Date May 11, 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 # WSCF90367
Project Number X09-006

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
	24759	1	BLANK	7818	BLANK		Hexavalent chromium Discrete Analyzer
	24759	2	LCS	7819	LCS		Hexavalent chromium Discrete Analyzer
	24759	4	SAMPLE	90367001	B1XNY2		Hexavalent chromium Discrete Analyzer
	24759	5	DUP	7821	B1XNY2(90367001DUP)	90367001	Hexavalent chromium Discrete Analyzer
	24759	6	MS	7822	B1XNY2(90367001MS)	90367001	Hexavalent chromium Discrete Analyzer
	24759	7	SAMPLE	90367002	B1XNY2F		Hexavalent chromium Discrete Analyzer
	24759	9	LCS	7824	LCS		Hexavalent chromium Discrete Analyzer

Method Reference

Attention Michael Neely
Department Inorganic

Group # WSCF90367
Project Number X09-006

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 # WSCF90367
 Project Number X09-006

Sample # 90367001
 SAF# X09-006
 Sample ID B1XNY2

Matrix WATER
 Sampled 04/17/09
 Received 04/17/09

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI)										
Hexavalent chromium	18540-29-9	LA-265-403	B	0.00280		mg/L	1	0.0020	0.0050	04/17/09

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 Inorganic

Group # WSCF90367
 Project Number X09-006

Sample # 90367002
 SAF# X09-006
 Sample ID B1XNY2F

Matrix WATER
 Sampled 04/17/09
 Received 04/17/09

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI)										
Hexavalent chromium	18540-29-9	LA-265-403	B	0.00410		mg/L	1	0.0020	0.0050	04/17/09

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.

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF90367
Project Number X09-006

QC Batch 24759 **Test** Hexavalent chromium Discrete Analyzer
Associated Samples 90367001, 90367002

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK										
			QC Sample #7818							
Hexavalent chromium LCS	18540-29-9	<0.0020		ug/mL					U	04/17/09
			QC Sample #7819							
Hexavalent chromium DUP	18540-29-9	0.0479		ug/mL	95.4	90 - 110				04/17/09
			QC Sample #7821							
			Original 90367001							
Hexavalent chromium MS	18540-29-9	0.00280	0.00410	mg/L			37.70	20	* B1X	04/17/09
			QC Sample #7822							
			Original 90367001							
Hexavalent chromium LCS	18540-29-9	0.00280	0.0554	mg/L	98.5	85 - 115				04/17/09
			QC Sample #7824							
Hexavalent chromium	18540-29-9		0.0479	ug/mL	95.4	90 - 110				04/17/09

Analytical Comment Report

Attention Michael Neely

Group # WSCF90367

Project Number X09-006

Quality Control Comments

Department Inorganic

7821

B1XNY2(90367001DUP)

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

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 #: 90367
 Profile #: X09-006-531
 Proj. Mgr.:
 Phone:

The following samples were received from you on 4/17/2009 9:30:00 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				
90367001	B1XNY2	WATER	4/17/2009 08:35	4/17/2009 09:30
		CR6DA-W		
90367002	B1XNY2F	WATER	4/17/2009 08:35	4/17/2009 09:30
		CR6DA-W		

Test Acronym Description

Test Acronym	Description
CR6DA-W	Cr6 (W,Discrete analyzer)

