

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: October 26, 2009

From: WSCF Laboratory
WSCF Analytical Chemistry

CC:

Subject: FINAL RESULT FOR SAMPLE DELIVERY GROUP WSCF91396

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 WSCF91396

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

Electronically signed by Bill Baird
For Lab Manager

Attachments 4

ATTACHMENT 1

COVER SHEET

Consisting of 2 pages
Including cover page

WSCF SAF Number Cross Reference

Group # WSCF91396
Data Deliverable Date 11/05/09

SAF #	Sample ID	Sample #	Matrix	Sampled	Received
F09-067	B226C1	91396001	WATER	10/21/09	10/21/09
F09-067	B226C2	91396002	WATER	10/21/09	10/21/09

ATTACHMENT 2

NARRATIVE

Consisting of 2 pages
Including cover page

Introduction

Two (2) S&GRP samples were received at the WSCF Laboratory on October 21, 2009. 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.

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*, pages 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):

All 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 7 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 # WSCF91396
Report Date October 26, 2009

Analytical: Electronically signed by Bill Baird

Client Services: Electronically signed by Richard Barker

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 # WSCF91396

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
67861	67861	1	BLANK	17819	BLANK		Hexavalent chromium Discrete Analyzer
67861	67861	3	LCS	17821	LCS		Hexavalent chromium Discrete Analyzer
67861	67861	4	DUP	17822	B226C1(91396001DUP)	91396001	Hexavalent chromium Discrete Analyzer
67861	67861	5	MS	17823	B226C1(91396001MS)	91396001	Hexavalent chromium Discrete Analyzer
67861	67861	6	SAMPLE	91396001	B226C1		Hexavalent chromium Discrete Analyzer
67861	67861	7	SAMPLE	91396002	B226C2		Hexavalent chromium Discrete Analyzer

Method Reference

Attention Michael Neely
Department Inorganic

Group # WSCF91396

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 # WSCF91396

Sample # 91396001
 SAF# F09-067
 Sample ID B226C1

Matrix WATER
 Sampled 10/21/09
 Received 10/21/09

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI)										10/21/09
Cr(VI)										
Hexavalent chromium	18540-29-9	LA-265-403		0.00690		mg/L	1	0.0020	0.0050	10/21/09

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 # WSCF91396

Sample # 91396002
 SAF# F09-067
 Sample ID B226C2

Matrix WATER
 Sampled 10/21/09
 Received 10/21/09

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI)										10/21/09
Cr(VI)										
Hexavalent chromium	18540-29-9	LA-265-403		0.00690		mg/L	1	0.0020	0.0050	10/21/09

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 # WSCF91396

QC Batch 67861 Test Hexavalent chromium Discrete Analyzer
 Associated Samples 91396001, 91396002

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK										
			QC Sample #17819							
Hexavalent chromium LCS	18540-29-9	<0.0020		mg/L					U	10/21/09
			QC Sample #17821							
Hexavalent chromium DUP	18540-29-9	0.0523		mg/L	104.2	90 - 110				10/21/09
			QC Sample #17822							
			Original 91396001							
Hexavalent chromium MS	18540-29-9	0.00690	0.00640	mg/L			7.50	20		10/21/09
			QC Sample #17823							
			Original 91396001							
Hexavalent chromium	18540-29-9	0.00690	0.0421	mg/L	105.2	85 - 115				10/21/09

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 #: 300080/ES10
 Work Order #: 91396
 Profile #: F09-067-097
 Proj. Mgr.:
 Phone:

The following samples were received from you on 10/21/2009 12:00:00 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				
91396001	B226C1	WATER CR6DA-W	10/21/2009 10:30	10/21/2009 12:00
91396002	B226C2	WATER CR6DA-W	10/21/2009 10:30	10/21/2009 12:00

Test Acronym Description

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

Sample Receipt

PAGE 1 OF 1

F09-067-097

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

CH2M Hill Plateau Remediation Company

COMPANY CONTACT
 DYSKMAN, DL
 TELEPHONE NO. 373-2530
PROJECT COORDINATOR
 DYSKMAN, DL
PRICE CODE 1A
DATA TURNAROUND 24 Hours / 15 Days
PROJECT DESIGNATION
 100-BC Decision Unit-Groundwater
SAF NO. F09-067
AIR QUALITY
METHOD OF SHIPMENT GOVERNMENT VEHICLE
FIELD LOGBOOK NO. HNF-N-585-13
ACTUAL SAMPLE DEPTH 97'
COA 300060ES10
BILL OF LADING/AIR BILL NO. N/A
OFFSITE PROPERTY NO. N/A

COLLECTOR
 BAILEY/WEBB
SAMPLING LOCATION
 C7506-1009
ICE CHEST NO.

SHIPPED TO
 Waste Sampling & Characterization
MATRIX*
 A-AK
 D-Datum
 L-Liquid
 DS-Dry
 S-Solids
 O-Oil
 S-Sol
 ST-Sediment
 T-Issue
 V-Vegetation
 W-Water
 W-Water
 W-Water
 X-Other
PRESERVATION Cool-AC
TYPE OF CONTAINER 6G
NO. OF CONTAINER(S) 1
VOLUME 500mL
SAMPLE ANALYSIS Chromium (6)
 (30)
 (Residual)
 (Chromium)

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)

SPECIAL HANDLING AND/OR STORAGE
 91346
SAMPLE NO. BZ2EC1
MATRIX* WATER
SAMPLE DATE 10-21-09
SAMPLE TIME 1030 ✓

ICED

SPECIAL INSTRUCTIONS
 ** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF. □□**. The laboratories must meet prior requested and confirmed turnaround times and RDLs. The laboratories must notify the SM Project Coordinator in writing within 24 hrs of sample receipt if/when this requirement can not be met. □□**. Sample Management will provide copies of data to both the Task Manager, the Requester, and Mary Hartman.

CHAIN OF POSSESSION	RELINQUISHED BY/REMOVED FROM	DATE/TIME	SIGN/PRINT NAMES	RECEIVED BY/STORED IN	DATE/TIME	TITLE	DATE/TIME
RELINQUISHED BY/REMOVED FROM	JP Bailey	10/21/09 12:00	WJ Kossler	WJ Kossler	10/21/09 12:00		
RELINQUISHED BY/REMOVED FROM							
RELINQUISHED BY/REMOVED FROM							
RELINQUISHED BY/REMOVED FROM							
RELINQUISHED BY/REMOVED FROM							
RELINQUISHED BY/REMOVED FROM							
LABORATORY SECTION	RECEIVED BY						
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD						

ORIGINAL

DATE/TIME
DISPOSED BY
 A-4004-F18(01/06)



Sample Receipt

Chain of Custody

CHAIN OF CUSTODY / SAMPLE ANALYSIS REQUEST
 PAGE 1 OF 1
 F09-067-098
 PRICE CODE 1A
 AIR QUALITY
 METHOD OF SHIPMENT
 GOVERNMENT VEHICLE
 BILL OF LADING/AIR BILL NO. N/A
 COA 300080ES1C
 SAF NO. F09-067
 PROJECT COORDINATOR DYERMAN, DI
 TELEPHONE NO. 373-2530
 COMPANY CONTACT DYERMAN, DL
 PROJECT DESIGNATION 100-BC Decision Unit Groundwater
 FIELD LOGBOOK NO. HNF-N-585-13 A.9
 ACTUAL SAMPLE DEPTH 97.0'
 OFFSITE PROPERTY NO. N/A
 SHIPPED TO Waste Sampling & Characterization
 MATRIX* A-All
 D-Drum
 L-Liquid
 S-Solid
 O-Oil
 S-Sediment
 T-Tissue
 V-Vegetation
 W-Water
 X-Other
 PRESERVATION Cool-df
 TYPE OF CONTAINER 96
 NO. OF CONTAINER(S) 1
 VOLUME 500ml
 SAMPLE ANALYSIS Chromium
 7186
 (Hexavalent Chromium)

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME
B278C2	CC2 WATER	10-31-09	10:30 X

ICED

CHAIN OF POSSESSION
 RELINQUISHED BY/REMOVED FROM *Dwight Bennett* DATE/TIME 10-31-09 / 12:40
 RELINQUISHED BY/REMOVED FROM *MAD Ke slyer TAD* DATE/TIME 10-31-09 / 1:00
 RECEIVED BY/STORED IN DATE/TIME
 RECEIVED BY/STORED IN DATE/TIME

ORIGINAL

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

A-603-618(01/05)

