

Fluor Hanford
WSCF Analytical Lab
P.O. Box 1000
Richland, Washington 99352
Telephone 373-7495
Telefax 372-0456



M4W41-SLF-08-1244

November 18, 2008

Mr. M. A. Neely, Manager
CH2M HILL
Plateau Remediation Contract
1933 Jadwin MSIN B6-06
Richland, WA 99352

Dear Mike:

PROBLEM & DISCREPANCY FOR SAMPLE DELIVERY GROUP WSCF20082115 (11/17/08)

- Reference:
- (1) Letter, SL Fitzgerald (FH) to MA Neely (PRC), Final Results for SDG WSCF20082115 (M4W41-SLF-08-1215), dated November 5, 2008
 - (2) Memorandum of Agreement #MOA-FH-CHPRC-2008, Rev. 0, for the Performance & Payment of Services, dated October 1, 2008
 - (3) HNF-SD-CD-QAPP-017, Rev. 9, Waste Sampling & Characterization Facility Quality Assurance Plan

F08-140

This letter contains the following completed P&D for sample delivery group WSCF20082115:

- Narrative, Page 5 of 22

Please accept our apology for any inconvenience this may have created. If you have any questions, don't hesitate to call on Andy Kopriva, telephone 373-1613, for assistance.

Very truly yours,

S. L. Fitzgerald
WSCF Analytical Lab

SLF/grf

Attachments 2

cc: w/Attachments

T. F. Dale	S3-30
A. J. Kopriva	S3-30
H. K. Meznarich	S3-30
P. D. Mix	S3-30

J. E. Trechter	S3-30
S. J. Trent	B6-06
File/LB	

RECEIVED
FEB 03 2009

EDMC

M4W41-SLF-08-1215

ATTACHMENT 1

COVER SHEET

Consisting of 2 pages
Including cover page

WSCF SAF NUMBER CROSS REFERENCE

Group#: WSCF20082115
Data Deliverable Date: 17-nov-2008
Data Deliverable: Cover Sheet

SAF#	Sample ID	WSCF#	Matrix
F08-140	B1WXC7	W08GR03961	SOIL
	B1WXC9	W08GR03962	SOIL

M4W41-SLF-08-1215

ATTACHMENT 2

NARRATIVE

**Consisting of 3 pages
Including cover page**

Introduction

Two S&GRP samples were received at the WSCF Laboratory on October 3, 2008. Samples were analyzed for the analytes 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 copy of a Draft Issue Resolution Form addressing the cancellation of the Cr+6 analysis on two soil samples is included as Attachment 3. A Data Summary Report (Attachment 4) 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 5.

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*, page 12, for a complete listing of approved analytical methods.

Inorganic Comments

Hexavalent Chromium – The holding time requirement for this analysis was met. A Sample Duplicate, Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group. See page 15 for QC details. Analytical Result(s):

- Sample Duplicate, Matrix Spike and Matrix Spike Duplicate analyzed on sample B1WXD5 (SDG# 20082122, SAF# F08-140).
- The spike recovery for two Matrix Spikes and the Matrix Spike Duplicate was below the laboratory established limit of 75% at 73.0%, 68.5%, and 65.6% respectively.

All other QC controls are within the established limits.

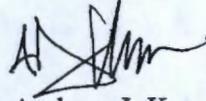
- **ICP-MS Metals (Chromium)** – The holding time requirement for this analysis was met. A Matrix Spike and Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group. See page 16 for QC details.

All 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



Andrew J. Kopriva
WSCF Client Services

Problems and Discrepancies

SDG WSCF20082115
WSCF

1. The data package received is missing the cover sheet. The data package contained two copies of the second page. Please resubmit the package in hardcopy format.

Responded on 11/18/08 with completed P&D. ajk, 11/18/08

M4W41-SLF-08-1215

ATTACHMENT 3

ISSUE RESOLUTION FORM

Consisting of 2 pages
Including cover page

ISSUE RESOLUTION FORM

FH TRACKING NUMBER: 08-XXX

DRAFT

Date : 11-4-2008 SAF No. F08-140

SDG: WSCF20082115, WSCF20082122, and WSCF20082128

LOGIN No.: TEST: Cr+6

Sample No.(s) B1WXC8, B1WXD0, B1WXD2, B1WXD4, B1WXD6, B1WXF0, B1WXF2, and B1WXF8

W08GR03963, -3964, -3965, -3966, -3967, -3973, 3974, and 3975

Submitted By: WW Baird Submitted To: H Hampt
Phone No. 373-7178 Phone No. 376-4319
Fax No. 372-0456 Fax No

ISSUE

PROPOSED RESOLUTION

Special instructions were provided on the COCs to centrifuge these soil samples and decant off the liquid. The liquid was then to be analyzed for Cr+6.

Since there was insufficient liquid available to perform a Cr+6 analysis on these samples we will not report Cr+6 results for liquid and document the cancelled test in the case narrative.

Samples were collected in the field on October 3, 2008 and submitted to the WSCF Laboratory on October 3, 2008. There was not sufficient liquid in the soil to be able to obtain a liquid fraction for Cr+6 analysis.

Per authorization from the client on October 8, 2008, the Cr+6 analysis on the liquid portion of these samples was cancelled.

GRP COMMENTS

Signature and Date

M4W41-SLF-08-1215

ATTACHMENT 4

ANALYTICAL RESULTS

Consisting of 8 pages
Including cover page

**WSCF
ANALYTICAL RESULTS REPORT**

for

Groundwater Remediation Program

Richland, WA 99354

Attention: Steve Trent

Analytical:

~~S. Fitzgerald~~ S. Fitzgerald 11/05/08

Client Services:

~~A. Kopriva~~ A. Kopriva 11/4/08

All results are reported on an "as received" basis unless otherwise noted in the comment section.

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.

Contract#: FH-EIS-2003-MEM-001
Report#: WSCF20082115
Report Date: 29-oct-2008
Report WGPP/ver. 5.2

Groundwater Remediation Program

Department: Inorganic

W13q Worklist/Batch/QC Report for Group# WSCF20082115

WL#	S#	Batch	QC#	Tray Type	Sample#	Test
38413	1	38835	43312	BLANK		ICP-200.8 MS All possible meta
38413	2	38835	43312	LCS		ICP-200.8 MS All possible meta
38413	4	38835	43312	MS	W08GR03961	ICP-200.8 MS All possible meta
38413	5	38835	43312	MSD	W08GR03961	ICP-200.8 MS All possible meta
38413	3	38835	43312	SAMPLE	W08GR03961	ICP-200.8 MS All possible meta
38413	5	38835	43312	SPK-RPD	W08GR03961	ICP-200.8 MS All possible meta
38413	6	38835	43312	SAMPLE	W08GR03962	ICP-200.8 MS All possible meta
38416	2	38838	43314	BLNK-PREP		Hexavalent chromium
38416	3	38838	43314	LCS		Hexavalent chromium
38416	10	38838	43314	SAMPLE	W08GR03961	Hexavalent chromium
38416	11	38838	43314	SAMPLE	W08GR03962	Hexavalent chromium
38416	5	38838	43314	DUP	W08GR03970	Hexavalent chromium
38416	6	38838	43314	MS	W08GR03970	Hexavalent chromium
38416	7	38838	43314	MSD	W08GR03970	Hexavalent chromium
38416	9	38838	43314	SPK-POST	W08GR03970	Hexavalent chromium
38416	7	38838	43314	SPK-RPD	W08GR03970	Hexavalent chromium

WSCF

METHOD REFERENCES REPORT

Department: Inorganic

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 or industry 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 the 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	LA-265-403: Hexavalent Chromium analysis by Spectrophotometer EPA SW-846 7196A HEXAVALENT CHROMIUM HEIS 7196_CR6 Hexavalent Chromium
LA-505-412	LA-505-412: DETERMINATION OF TRACE ELEMENTS IN WATERS AND WASTES BY INDUCTIVELY EPA-600/R-94-111 200.8 DETERMINATION OF TRACE ELEMENTS IN WATERS AND WASTES BY INDUCTIVELY COUPLED PLAS HEIS 200.8_METALS_ICPMS Inductively Coupled Plasma - Mass Spectrometry HEIS RADISOTOPES_ICPMS Radioisotopes by ICP/MS

Note: A complete list of WSCF analytical procedures and referenced regulatory or industry methods is available online at <http://www2.rl.gov/phmc/as-dol>.

Report Date: 29-oct-2008
Report#: WSCF20082115
Report WGPPM/5.2

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WSCF ANALYTICAL RESULTS REPORT

Attention: Steve Trent
SAF Number: F08-140
Sample # W08GR03961
Client ID: B1WXC7

GPP TRENT
WSCF

Matrix: SOIL

Group #: WSCF20082115
Department: Inorganic
Sampled: 10/03/08
Received: 10/03/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Hexavalent Chromium Prep											10/15/08
Hexavalent Chromium											
Hexavalent Chromium	18540-29-9	LA-265-403	U	< 0.300	mg/kg			1.00	0.30		10/15/08
ICP-200.8 MS All possible meta Prep											10/14/08
ICP-200.8 MS All possible meta											
Chromium	7440-47-3	LA-505-412		11.3	mg/kg			1.00	0.498		10/15/08

MDL = Minimum Detection Limit U - Analyzed for but not detected above limiting criteria (inorg)
RQ = Result Qualifier
TP Err = Total Propagated Error
DF = Dilution Factor

* - Indicates results that have NOT been validated; + - Indicates more than six qualifier symbols

Report WGPP/ver. 5.2
 Groundwater Remediation Program

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WSCF ANALYTICAL RESULTS REPORT

Attention: Steve Trent
SAF Number: F08-140
Sample # W08GR03962
Client ID: B1WXC9

GPP TRENT
WSCF

Matrix: SOIL

Group #: WSCF20082115
Department: Inorganic
Sampled: 10/03/08
Received: 10/03/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Hexavalent Chromium Prep											
Hexavalent Chromium											
Hexavalent Chromium	18540-29-9	LA-265-403	U	< 0.300	mg/kg			1.00	0.30		10/15/08
ICP-200.8 MS All possible meta Prep											
ICP-200.8 MS All possible meta											
Chromium	7440-47-3	LA-505-412		15.8	mg/kg			0.97	0.483		10/15/08

MDL=Minimum Detection Limit U - Analyzed for but not detected above limiting criteria(Inorg)
RQ=Result Qualifier
TP Err=Total Propagated Error
DF=Dilution Factor

* - Indicates results that have NOT been validated; + - Indicates more than six qualifier symbols

Report WGPP/ver. 5.2
 Groundwater Remediation Program

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WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20082115
 Matrix: SOLID
 Test: Hexavalent chromium

Sample Date: 10/06/08
 Receive Date: 10/06/08

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
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Lab ID: W08GR03970
BATCH QC ASSOCIATED WITH SAMPLE

DUP	Hexavalent chromium	18540-29-9	< 0.3			RPD		n/a	15.000	U	10/15/08
MS	Hexavalent chromium	18540-29-9	263	73.056	% Recov	75.000	125.000				10/15/08
MS	Hexavalent chromium	18540-29-9	11.1	68.519	% Recov	75.000	125.000				10/15/08
MSD	Hexavalent chromium	18540-29-9	10.5	65.625	% Recov	75.000	125.000				10/15/08
SPK-POST	Hexavalent chromium	18540-29-9	0.0520	97.378	% Recov	75.000	125.000				10/15/08
SPK-RPD	Hexavalent chromium	18540-29-9	65.625		RPD			4.315	20.000		10/15/08

BATCH QC

BLNK-PREP	Hexavalent chromium	18540-29-9	< 0.3	n/a	ug/g	0.000	2.000			U	10/15/08
LCS	Hexavalent chromium	18540-29-9	16.8	87.958	% Recov	80.000	120.000				10/15/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20082115
 Matrix: SOLID
 Test: ICP-200.8 MS All possible meta

Sample Date: 10/03/08
 Receive Date: 10/03/08

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
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Lab ID: W08GR03961
BATCH QC ASSOCIATED WITH SAMPLE

MS	Chromium	7440-47-3	193.01	96.505	% Recov	70.000	130.000				10/15/08
MSD	Chromium	7440-47-3	191.41	95.705	% Recov	70.000	130.000				10/15/08
SPK-RPD	Chromium	7440-47-3	95.705		RPD			0.832	20.000		10/15/08

BATCH QC

BLANK	Chromium	7440-47-3	<0.5	n/a	ug/L					U	10/15/08
LCS	Chromium	7440-47-3	75.98	104.225	% Recov	77.000	125.000				10/15/08

M4W41-SLF-08-1215

ATTACHMENT 5

SAMPLE RECEIPT INFORMATION

Consisting of 6 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

File
MB
11/17/08

ACKNOWLEDGMENT OF SAMPLES RECEIVED

Groundwater Remediation Program

Richland, WA 99354
Attn: Steve Trent

Customer Code: GPP
PO#: 123445/ES10
Group#: 20082115
Project#: F08-140
Proj Mgr: Steve Trent E6-35
Phone: 373-5869

The following samples were received from you on 10/03/08. 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	Tests Scheduled	Matrix	Sample Date
W08GR03961	BIWXC7	GPP @2008	TRENT Solid, or handle as if solid CR+6	10/03/08
W08GR03962	BIWXC9 ✓	GPP @2008	TRENT Solid, or handle as if solid CR+6	10/03/08
W08GR03963	BIWXC8 ✓	GPP CR+6	TRENT Solid, or handle as if solid	10/03/08
W08GR03964	BIWXD0 ✓	GPP CR+6	TRENT Solid, or handle as if solid	10/03/08

Test Acronym Description

Test Acronym	Description
@2008 CR+6	ICP-200.8 MS All possible meta Hexavalent chromium

COLLECTOR <i>ROSANE, M^cINTYRE</i>		COMPANY CONTACT TRENT, SJ	TELEPHONE NO. 373-5869	PROJECT COORDINATOR WIDRIG, DL	PRICE CODE 8N	DATA TURNAROUND 45 Days / 45 Days
SAMPLING LOCATION C6387 I-018		PROJECT DESIGNATION Chromium Source Investigation - North Plume		SAF NO. F08-140	AIR QUALITY <input type="checkbox"/>	
ICE CHEST NO.		FIELD LOGBOOK NO. <i>HNF-N-576-3 p.14</i>	ACTUAL SAMPLE DEPTH <i>87.9' - 89.0'</i>	COA 123445ES10	METHOD OF SHIPMENT GOVERNMENT VEHICLE	
SHIPPED TO Waste Sampling & Characterization		OFFSITE PROPERTY NO. SEE PTR		BILL OF LADING/AIR BILL NO. SEE PTR		

MATRIX* A=Air DL=Drum L=Liquids 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 releasable per DOE Order 5400.5 (1990/1993)	PRESERVATION	Cool-4C								
		TYPE OF CONTAINER	G/P								
		NO. OF CONTAINER(S)	1								
		VOLUME	120mL								
SPECIAL HANDLING AND/OR STORAGE <i>20082115</i>		SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS								

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME							
B1WXCT	SOIL	10-3-08	0815	<i>Lot #</i>						

ICED

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	(1)ICP/MS - 200.8 (TAL) (Chromium) Chromium Hex - 7196;	
<i>L.J. Rosane</i>	<i>10-3-08/12:35</i>	<i>V. J. ...</i>	<i>10/3/08 12:35</i>		
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		

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

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COLLECTOR <i>ROSANE, MAINTYRE</i>		COMPANY CONTACT TRENT, SJ	TELEPHONE NO. 373-5869	PROJECT COORDINATOR WIDRIG, DL	PRICE CODE 8N	DATA TURNAROUND 45 Days / 45 Days
SAMPLING LOCATION C6387 1-019		PROJECT DESIGNATION Chromium Source Investigation - North Plume		SAF NO. F08-140	AIR QUALITY <input type="checkbox"/>	
ICE CHEST NO.		FIELD LOGBOOK NO. <i>HNF-N-576-3 0914</i>	ACTUAL SAMPLE DEPTH <i>89.5'</i>	COA 123445E10	METHOD OF SHIPMENT GOVERNMENT VEHICLE	
SHIPPED TO Waste Sampling & Characterization		OFFSITE PROPERTY NO. SEE PTR		BILL OF LADING/AIR BILL NO. SEE PTR		

MATRIX* A=Air DL=Drum Liquids 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 releasable per DOE Order 5400.5 (1990/1993)	PRESERVATION Cool-4C																			
		TYPE OF CONTAINER G/P																			
		NO. OF CONTAINER(S) 1																			
		VOLUME 120ml.																			
SPECIAL HANDLING AND/OR STORAGE		SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS																		

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME																	
B1WXC9 <i>W-562-3962</i>	SOIL	10-3-08	1035	✓																
	LOT #																			

OLD

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS	
RELINQUISHED BY/REMOVED FROM <i>L.J. Rosane</i>	DATE/TIME <i>10-3-08 12:35</i>	RECEIVED BY/STORED IN <i>Victor Sims</i>	DATE/TIME <i>10/3/08 12:35</i>	(1)ICP/MS - 200.8 (TAL) {Chromium} Chromium Hex - 7196;	
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		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		

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

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