

RECEIVED NOVEMBER 21, 2008

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

0082309

**FLUOR**<sup>®</sup>

M4W41-SLF-08-1245

November 20, 2008

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

Dear Mike:

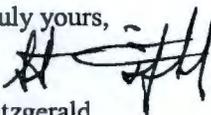
FINAL RESULTS FOR SAMPLE DELIVERY GROUP WSCF20082238

- Reference: (1) Memorandum of Agreement #MOA-FH-CHPRC-2008, Rev. 0, for the Performance & Payment of Services, dated October 1, 2008
- (2) HNF-SD-CD-QAPP-017, Rev. 9, Waste Sampling & Characterization Facility Quality Assurance Plan

This letter contains the following attachments for sample delivery group WSCF20082238:

- Cover Sheet (Attachment 1)
- Narrative (Attachment 2)
- Issue Resolution Form (Attachment 3)
- Analytical Results (Attachment 4)

Very truly yours,

  
S. L. Fitzgerald  
WSCF Analytical Lab

SLF/grf

Attachments 4

cc: w/Attachments

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

J. E. Trechter  
S. J. Trent  
File/LB

S3-30  
B6-06

RECEIVED  
JAN 21 2009

EDMC

1 of 16

**M4W41-SLF-08-1245**

**ATTACHMENT 1**

**COVER SHEET**

**Consisting of 2 pages  
Including cover page**

# WSCF SAF NUMBER CROSS REFERENCE

---

Group#: WSCF20082238  
Data Deliverable Date: 17-nov-2008  
Data Deliverable: Cover Sheet

---

SAF#	Sample ID	WSCF#	Matrix
I09-001	B1X5N8	W08P004756	WATER
	B1X5P7	W08P004759	WATER

---

**M4W41-SLF-08-1245**

**ATTACHMENT 2**

**NARRATIVE**

**Consisting of 2 pages  
Including cover page**

### Introduction

Two groundwater samples were received at the WSCF Laboratory on November 13, 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 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

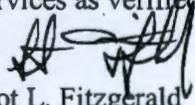
Refer to *WSCF Method References Report*, page 9, for a complete listing of approved analytical methods.

### 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. See page 12 for QC details.

All QC controls are within the established limits.

I certify that this data package is in compliance with the LOI, 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

M4W41-SLF-08-1245

ATTACHMENT 3

**ANALYTICAL RESULTS**

Consisting of 7 pages  
Including cover page

**WSCF  
ANALYTICAL RESULTS REPORT**

for

**GPAP  
Richland, WA 99352**

**Attention: Steve Trent E6-35**

Analytical:

*S. Fitzgerald 11/20/08*

Client Services:

*Subj P.O. Mix 11/19/2008*

*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.

Report#: WSCF20082238  
Report Date: 18-nov-2008  
Report WGPP/ver. 5.2  
GPAP

Page 1

W13q Worklist/Batch/QC Report for Group# WSCF20082238

WL#	S#	Batch	QC#	Tray Type	Sample#	Test
38536	2	38958	43453	BLANK		Hexavalent chromium
38536	8	38958	43453	BLANK		Hexavalent chromium
38536	3	38958	43453	LCS		Hexavalent chromium
38536	5	38958	43453	DUP	W08P004756	Hexavalent chromium
38536	6	38958	43453	MS	W08P004756	Hexavalent chromium
38536	4	38958	43453	SAMPLE	W08P004756	Hexavalent chromium
38536	7	38958	43453	SAMPLE	W08P004759	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.

<b>LA-265-403</b>	<b>LA-265-403: Hexavalent Chromium analysis by Spectrophotometer</b>
<b>EPA SW-846 7196A</b>	<b>HEXAVALENT CHROMIUM</b>
<b>HEIS 7196_CR6</b>	<b>Hexavalent Chromium</b>

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: 18-nov-2008  
Report#: WSCF20082238  
Report WGPPM/5.2

Page 1

# WSCF ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35

SAF Number: I09-001

Sample # W08P004756

Client ID: B1X5N8 GPP-PNNL TRENT

WSCF

Matrix: WATER

Group #: WSCF20082238

Department: Inorganic

Sampled: 11/13/08

Received: 11/13/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Hexavalent Chromium											
Hexavalent Chromium	18540-29-9	LA-265-403	U	< 2.00e-03	mg/L			1.00	2.0e-03		11/13/08

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

GPAP

10 of 16

# WSCF ANALYTICAL RESULTS REPORT

**Attention:** Steve Trent E6-35  
**SAF Number:** I09-001  
**Sample #** W08P004759  
**Client ID:** B1X5P7

**Group #:** WSCF20082238  
**Department:** Inorganic  
**Sampled:** 11/13/08  
**Received:** 11/13/08

GPP-PNNL TRENT  
WSCF

**Matrix:** WATER

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
<b>Hexavalent Chromium</b>											
Hexavalent Chromium	18540-29-9	LA-265-403		0.0435	mg/L			1.00	2.0e-03		11/13/08

**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

GPAP

11 of 16

# WSCF ANALYTICAL LABORATORY QC REPORT

Department: **Inorganic**

SDG Number: WSCF20082238  
 Matrix: WATER  
 Test: Hexavalent chromium

Sample Date: 11/13/08  
 Receive Date: 11/13/08

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
<b>Lab ID: W08P004756</b>											
<b>BATCH QC ASSOCIATED WITH SAMPLE</b>											
DUP	Hexavalent chromium	18540-29-9	<0.002		RPD			n/a	15.000	U	11/13/08
MS	Hexavalent chromium	18540-29-9	0.0390	97.500	% Recov	85.000	115.000				11/13/08
<b>BATCH QC</b>											
BLANK	Hexavalent chromium	18540-29-9	<0.002	n/a	mg/L	0.000	2.000			U	11/13/08
BLANK	Hexavalent chromium	18540-29-9	<0.002	n/a	mg/L	0.000	2.000			U	11/13/08
LCS	Hexavalent chromium	18540-29-9	0.0493	98.600	% Recov	80.000	120.000				11/13/08

M4W41-SLF-08-1245

ATTACHMENT 4

**SAMPLE RECEIPT INFORMATION**

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

516  
V, 3

ACKNOWLEDGMENT OF SAMPLES RECEIVED

11/17/08



GPAP

Richland, WA 99352  
Attn: Steve Trent E6-35

Customer Code: PNNL-GPP  
PO#: 122543  
Group#: 20082238

The following samples were received from you on 11/13/08. 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
W08P004756	B1X5N8	GPP-PNNL CR+6	TRENT Water	11/13/08
W08P004759	B1X5P7	GPP-PNNL CR+6	TRENT Water	11/13/08

Test Acronym Description

Test Acronym	Description
CR+6	Hexavalent chromium



