

RECEIVED AUGUST 11, 2008

Fluor Hanford  
 WSCF Analytical Lab  
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 Telephone 373-7495  
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**FLUOR****Memorandum**

M4W41-SLF-08-806

To: H. Hampt E6-35 Date: August 11, 2008

From: S. L. Fitzgerald, Manager  
 WSCF Analytical Lab 

cc: w/Attachments

T. F. Dale	S3-30	J. E. Trechter	S3-30
A. J. Kopriva	S3-30	S. J. Trent	E6-35
H. K. Meznarich	S3-30	File/LB	
P. D. Mix	S3-30		

Subject: FINAL RESULTS FOR SAMPLE DELIVERY GROUP WSCF20081603 – SAF NUMBER F08-145

Reference: (1) Groundwater Protection Program-Letter of Instruction, FH-EIS-2003-MEM-001, October 31, 2002

(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 WSCF20081603:

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

SLF/grf

Attachments 4

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M4W41-SLF-08-806

ATTACHMENT 1

**COVER SHEET**

Consisting of 2 pages  
Including cover page

## WSCF SAF NUMBER CROSS REFERENCE

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Group#: WSCF20081603  
Data Deliverable Date: 29-aug-2008  
Data Deliverable: Cover Sheet

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SAF#	Sample ID	WSCF#	Matrix
F08-145	B1WBP0	W08GR03085	WATER
	B1WBP1	W08GR03086	WATER
	B1WBP2	W08GR03087	WATER

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ATTACHMENT 2

**NARRATIVE**

Consisting of 2 pages  
Including cover page

### Introduction

Three S&GRP samples were received at the WSCF Laboratory on July 31, 2008. These samples were analyzed for the analyte indicated on the attached copy of the chain of custody (COC) form in accordance with the *Groundwater Remediation Program – Letter of Instruction*, 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.

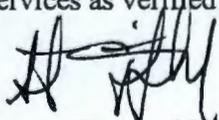
### Inorganic Comments

**Hexavalent Chromium** – The 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 per the GRP Letter of Instruction. See page 13 for QC details. Analytical Result(s):

- Sample Duplicate, Matrix Spike and Matrix Spike Duplicate analyzed on sample B1W9R4 (SDG 20081599, SAF F08-002).

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

  
Andrew J. Kopriva  
WSCF Client Services

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ATTACHMENT 3

**ANALYTICAL RESULTS**

Consisting of 8 pages  
Including cover page

**WSCF  
ANALYTICAL RESULTS REPORT**

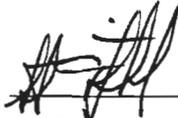
for

**Groundwater Remediation Program**

**Richland, WA 99354**

**Attention: Steve Trent**

Analytical:

 S. Fitzgerald 8-11-08

Client Services:

 A. Kopriva 8-8-08

*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#: WSCF20081603

Report Date: 6-aug-2008

Report WGPP/ver. 5.2

Groundwater Remediation Program

W13q Worklist/Batch/QC Report for Group# WSCF20081603

WL#	S#	Batch	QC#	Tray Type	Sample#	Test
37379	3	37804	42180	BLANK		Hexavalent chromium
37379	12	37804	42180	BLANK		Hexavalent chromium
37379	4	37804	42180	LCS		Hexavalent chromium
37379	6	37804	42180	DUP	W08GR03067	Hexavalent chromium
37379	7	37804	42180	MS	W08GR03067	Hexavalent chromium
37379	8	37804	42180	MSD	W08GR03067	Hexavalent chromium
37379	8	37804	42180	SPK-RPD	W08GR03067	Hexavalent chromium
37379	9	37804	42180	SAMPLE	W08GR03085	Hexavalent chromium
37379	10	37804	42180	SAMPLE	W08GR03086	Hexavalent chromium
37379	11	37804	42180	SAMPLE	W08GR03087	Hexavalent chromium

# WSCF METHOD REFERENCES REPORT

Department: Inorganic

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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.

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<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>

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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: 6-aug-2008  
Report#: WSCF20081603  
Report WGPPM/5.2

# WSCF ANALYTICAL RESULTS REPORT

**Attention:** Steve Trent  
**SAF Number:** F08-145  
**Sample #** W08GR03085  
**Client ID:** B1WBPO

TRENT  
 WSCF

**Matrix:** WATER

**Group #:** WSCF20081603  
**Department:** Inorganic  
**Sampled:** 07/31/08  
**Received:** 07/31/08

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		0.0766	mg/L			1.00	2.0e-03		07/31/08

**MDL = Minimum Detection Limit**

**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

# WSCF ANALYTICAL RESULTS REPORT

**Attention:** Steve Trent  
**SAF Number:** F08-145  
**Sample #** W08GR03086  
**Client ID:** B1WBP1

TRENT  
 WSCF

**Matrix:** WATER

**Group #:** WSCF20081603  
**Department:** Inorganic  
**Sampled:** 07/31/08  
**Received:** 07/31/08

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		0.0766	mg/L			1.00	2.0e-03		07/31/08

**MDL = Minimum Detection Limit**

**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

# WSCF

## ANALYTICAL RESULTS REPORT

**Attention:** Steve Trent  
**SAF Number:** F08-145  
**Sample #** W08GR03087  
**Client ID:** B1WBP2

TRENT  
 WSCF

**Matrix:** WATER

**Group #:** WSCF20081603  
**Department:** Inorganic  
**Sampled:** 07/31/08  
**Received:** 07/31/08

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		0.0766	mg/L			1.00	2.0e-03		07/31/08

**MDL = Minimum Detection Limit**

**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

# WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20081603  
 Matrix: WATER  
 Test: Hexavalent chromium

Sample Date: 07/31/08  
 Receive Date: 07/31/08

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
<b>Lab ID: W08GR03067</b>											
<b>BATCH QC ASSOCIATED WITH SAMPLE</b>											
DUP	Hexavalent chromium	18540-29-9	0.0038		RPD			0.000	15.000		07/31/08
MS	Hexavalent chromium	18540-29-9	0.0553	103.172	% Recov	85.000	115.000				07/31/08
MSD	Hexavalent chromium	18540-29-9	0.0553	103.172	% Recov	85.000	115.000				07/31/08
SPK-RPD	Hexavalent chromium	18540-29-9	103.172		RPD			0.000	20.000		07/31/08
<b>BATCH QC</b>											
BLANK	Hexavalent chromium	18540-29-9	<0.002	n/a	mg/L	0.000	2.000			U	07/31/08
BLANK	Hexavalent chromium	18540-29-9	<0.002	n/a	mg/L	0.000	2.000			U	07/31/08
LCS	Hexavalent chromium	18540-29-9	0.0523	103.770	% Recov	80.000	120.000				07/31/08

M4W41-SLF-08-806

ATTACHMENT 4

**SAMPLE RECEIPT INFORMATION**

Consisting of 5 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*  
*08/29/08*  
*[Signature]*

ACKNOWLEDGMENT OF SAMPLES RECEIVED

Groundwater Remediation Program

Richland, WA 99354  
Attn: Steve Trent

Customer Code: GPP  
PO#: 122597/ES20  
Group#: 20081603  
Project#: F08-145  
Proj Mgr: Steve Trent E6-35  
Phone: 373-5869

The following samples were received from you on 07/31/08. 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
08GR03085	B1WBPO	TRENT CR+6	Water	07/31/08
08GR03086	B1WBP1	TRENT CR+6	Water	07/31/08
08GR03087	B1WBP2	TRENT CR+6	Water	07/31/08

Test Acronym Description

Test Acronym	Description
CR+6	Hexavalent chromium

Fluor Hanford Inc. 08/29/08

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F08-145-10 PAGE 1 OF 1

<b>COLLECTOR</b> D. Woehle	<b>COMPANY CONTACT</b> Steve Trent	<b>TELEPHONE NO.</b> 509-373-5869	<b>PROJECT COORDINATOR</b> TRENT, SJ	<b>PRICE CODE</b> 7H	<b>DATA TURNAROUND</b> 30 Days / 30 Days
<b>SAMPLING LOCATION</b> 200-ZP-1	<b>PROJECT DESIGNATION</b> 200-ZP-1 Characterization Sampling and Analysis - Special Analysis		<b>SAF NO.</b> F08-145	<b>AIR QUALITY</b> <input type="checkbox"/>	
<b>ICE CHEST NO.</b> GW10	<b>FIELD LOGBOOK NO.</b> HNF-A-506-15	<b>ACTUAL SAMPLE DEPTH</b>	<b>COA</b>	<b>METHOD OF SHIPMENT</b> GOVERNMENT VEHICLE	
<b>SHIPPED TO</b> Waste Sampling & Characterization 20081603	<b>OFFSITE PROPERTY NO.</b>		<b>BILL OF LADING/AIR BILL NO.</b>		

<b>MATRIX*</b> 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	<b>POSSIBLE SAMPLE HAZARDS/ REMARKS</b> 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)	<b>PRESERVATION</b> Cool-4C								
		<b>TYPE OF CONTAINER</b> aG								
		<b>NO. OF CONTAINER(S)</b> 1								
		<b>VOLUME</b> 250mL								
	<b>SPECIAL HANDLING AND/OR STORAGE</b>	<b>SAMPLE ANALYSIS</b> Chromium Hex - 7196;								

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME						
B1WBPO W086203085	WATER	7-31-08	10:00	X					

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS	
RELINQUISHED BY/REMOVED FROM D. Woehle	DATE/TIME 07/21/08	RECEIVED BY/STORED IN JA F NAZIM	DATE/TIME 7-31-08 1350	<b>ICED</b>	
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		

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

Fluor Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F08-145-11	PAGE 1 OF 1
COLLECTOR D. Woehle	COMPANY CONTACT Steve Trent	TELEPHONE NO. 509-373-5869	PROJECT COORDINATOR TRENT, SJ		PRICE CODE 7H	DATA TURNAROUND 30 Days / 30 Days	
SAMPLING LOCATION 200-ZP-1	PROJECT DESIGNATION 200-ZP-1 Characterization Sampling and Analysis - Special Analysis		SAF NO. F08-145		AIR QUALITY <input type="checkbox"/>		
ICE CHEST NO. GW10	FIELD LOGBOOK NO. HNF-N-506-15	ACTUAL SAMPLE DEPTH		COA	METHOD OF SHIPMENT GOVERNMENT VEHICLE		
SHIPPED TO Waste Sampling & Characterization	OFFSITE PROPERTY NO.		BILL OF LADING/AIR BILL NO.				
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 8G	NO. OF CONTAINER(S) 1	VOLUME 250ml.	SPECIAL HANDLING AND/OR STORAGE	
SAMPLE NO. B1WBP1 3086	MATRIX* WATER	SAMPLE DATE 7-31-08	SAMPLE TIME 10:00	X			
CHAIN OF POSSESSION		SIGN / PRINT NAMES		SPECIAL INSTRUCTIONS			
RELINQUISHED BY/REMOVED FROM D. Woehle	DATE/TIME 07/31/08	RECEIVED BY/STORED IN TAPAZIA	DATE/TIME 7-31-08 1750	ICED			
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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Fluor Hanford Inc.

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F08-145-12

PAGE 1 OF 1

COLLECTOR

D. Washie

COMPANY CONTACT

Steve Trent

TELEPHONE NO.

509-373-5869

PROJECT COORDINATOR

TRENT, SJ

PRICE CODE

7H

DATA TURNAROUND

30 Days / 30 Days

SAMPLING LOCATION

200-ZP-1

PROJECT DESIGNATION

200-ZP-1 Characterization Sampling and Analysis - Special Analysis

SAF NO.  
F08-145

ICE CHEST NO.

GN10

FIELD LOGBOOK NO.

HNF-N-506-15

ACTUAL SAMPLE DEPTH

COA

METHOD OF SHIPMENT

GOVERNMENT VEHICLE

SHIPPED TO

Waste Sampling & Characterization

OFFSITE PROPERTY NO.

BILL OF LADING/AIR BILL NO.

MATRIX\*

A=Air  
DL=Drum  
Liquids  
DS=Drum  
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-4C

TYPE OF CONTAINER

aG

NO. OF CONTAINER(S)

1

VOLUME

250mL

SAMPLE ANALYSIS

Chromium Hex-7196;

SPECIAL HANDLING AND/OR STORAGE

SAMPLE NO.

MATRIX\*

SAMPLE DATE

SAMPLE TIME

B1WB2

3087

WATER

7-31-08

10:00

X

CHAIN OF POSSESSION

SIGN/ PRINT NAMES

SPECIAL INSTRUCTIONS

RELINQUISHED BY/REMOVED FROM

DATE/TIME

RECEIVED BY/STORED IN

DATE/TIME

*D. Washie* D. Washie 07/31/08 1350

DATE/TIME

TARAZIM *Jana* 7-31-08 1300

DATE/TIME

RELINQUISHED BY/REMOVED FROM

DATE/TIME

RECEIVED BY/STORED IN

DATE/TIME

ICED

LABORATORY SECTION

RECEIVED BY

TITLE

DATE/TIME

FINAL SAMPLE DISPOSITION

DISPOSAL METHOD

DISPOSED BY

DATE/TIME

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