

RECEIVED NOVEMBER 15, 2007

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FLUOR

Memorandum

M4W41-SLF-07-843

To: H. Hampt E6-35 Date: November 13, 2007

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

cc: w/Attachments

T. F. Dale	S3-30	S. J. Trent	E6-35
D. Felmy (PNNL)	K6-75	D. D. Wright	S3-30
H. K. Meznarich	S3-30	File/LB	
P. D. Mix	S3-30		
J. E. Trechter	S3-30		

Subject: FINAL RESULTS FOR SAMPLE DELIVERY GROUP WSCF20071979

Reference: 1) Letter of Instruction for Analytical Services for the Groundwater Performance Assessment Project and Analytical Laboratory Transition Plan, FH-0602422, September 19, 2006

2) HNF-SD-CD-QAPP-017, Rev. 8, Waste Sampling & Characterization Facility Quality Assurance Plan

This transmittal contains the following information for sample delivery group WSCF20071979:

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

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Attachments 4

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ATTACHMENT 1

COVER SHEET

Consisting of 2 pages
Including cover page

WSCF SAF NUMBER CROSS REFERENCE

Group#: WSCF20071979
Data Deliverable Date: 19-nov-2007
Data Deliverable: Cover Sheet

SAF#	Sample ID	WSCF#	Matrix
I08-005	B1R2M4	W07P002876	WATER
	B1R4J0	W07P002877	WATER
	B1R4J2	W07P002878	WATER
	B1R4J3	W07P002879	WATER

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ATTACHMENT 2

NARRATIVE

Consisting of 2 pages
Including cover page

Introduction

Four (4) groundwater samples were received at the WSCF Laboratory on November 5, 2007. Samples were analyzed for the analytes 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

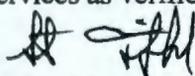
Refer to *WSCF Method References Report*, page 9, for a complete listing of approved analytical methods.

Inorganic Comments

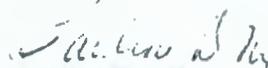
Hexavalent Chromium – The hold time requirement for this analysis was met. A Duplicate, Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group per the GRP Letter of Instruction. See page 14 for QC details.

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

Abbreviations

Hg – mercury
IC – ion chromatography
ICP – inductively coupled plasma
ICP/AES – ICP/atomic emission spectroscopy
ICP/MS – ICP/mass spectrometry
Total U – total uranium
AT/TB – total alpha/total beta
AEA – Alpha Energy Analysis
WTPH-G – Total Hydrocarbons-Gasoline

Am – americium
Cm – curium
Pu – plutonium
Np – neptunium
GEA – gamma energy analysis
H3 – Tritium
Sr – Strontium 89, 90
WTPH-D – Total Hydrocarbons-Diesel
TSS – Total Suspended Solids

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ATTACHMENT 3

ANALYTICAL RESULTS

Consisting of 9 pages
Including cover page

**WSCF
ANALYTICAL RESULTS REPORT**

for

**GPAP
Richland, WA 99352**

Attention: Steve Trent E6-35

Analytical:

S. Fitzgerald 11/13/07

Client Services:

P. D. Mip 11/12/2007

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#: WSCF20071979
Report Date: 12-nov-2007
Report WGPP/ver. 5.2
GPAP

Page 1

W13q Worklist/Batch/QC Report for Group# WSCF20071979

WL#	S#	Batch	QC#	Tray Type	Sample#	Test
33995	2	34397	38571	BLANK		Hexavalent chromium
33995	11	34397	38571	BLANK		Hexavalent chromium
33995	3	34397	38571	LCS		Hexavalent chromium
33995	5	34397	38571	DUP	W07P002876	Hexavalent chromium
33995	6	34397	38571	MS	W07P002876	Hexavalent chromium
33995	7	34397	38571	MSD	W07P002876	Hexavalent chromium
33995	4	34397	38571	SAMPLE	W07P002876	Hexavalent chromium
33995	7	34397	38571	SPK-RPD	W07P002876	Hexavalent chromium
33995	8	34397	38571	SAMPLE	W07P002877	Hexavalent chromium
33995	9	34397	38571	SAMPLE	W07P002878	Hexavalent chromium
33995	10	34397	38571	SAMPLE	W07P002879	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

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: 12-nov-2007
Report#: WSCF20071979
Report WGPPM/5.2

Page 1

WSCF ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: I08-005
Sample # W07P002876
Client ID: B1R2M4 PNNL-GPP
 WSCF

Matrix: WATER

Group #: WSCF20071979
Department: Inorganic
Sampled: 11/05/07
Received: 11/05/07

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		0.0203	mg/L			1.00	2.0e-03		11/06/07

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

WSCF ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: I08-005
Sample # W07P002877
Client ID: B1R4J0

PNNL-GPP
 WSCF

Matrix: WATER

Group #: WSCF20071979
Department: Inorganic
Sampled: 11/05/07
Received: 11/05/07

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		8.80e-03	mg/L			1.00	2.0e-03		11/06/07

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

WSCF ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: I08-005
Sample # W07P002878
Client ID: B1R4J2 PNNL-GPP
 WSCF

Matrix: WATER

Group #: WSCF20071979
Department: Inorganic
Sampled: 11/05/07
Received: 11/05/07

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		0.0152	mg/L			1.00	2.0e-03		11/06/07

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

WSCF ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: I08-005
Sample # W07P002879
Client ID: B1R4J3 PNNL-GPP
 WSCF

Matrix: WATER

Group #: WSCF20071979
Department: Inorganic
Sampled: 11/05/07
Received: 11/05/07

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		11/06/07

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

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20071979
 Matrix: WATER
 Test: Hexavalent chromium

Sample Date: 11/05/07
 Receive Date: 11/05/07

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W07P002876											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Hexavalent chromium	18540-29-9	0.0203		RPD			0.000	15.000		11/06/07
MS	Hexavalent chromium	18540-29-9	0.0599	113.662	% Recov	85.000	115.000				11/06/07
MSD	Hexavalent chromium	18540-29-9	0.0599	113.662	% Recov	85.000	115.000				11/06/07
SPK-RPD	Hexavalent chromium	18540-29-9	113.662		RPD			0.000	20.000		11/06/07
BATCH QC											
BLANK	Hexavalent chromium	18540-29-9	<0.002	n/a	mg/L	0.000	2.000			U	11/06/07
BLANK	Hexavalent chromium	18540-29-9	<0.002	n/a	mg/L	0.000	2.000			U	11/06/07
LCS	Hexavalent chromium	18540-29-9	0.0509	102.828	% Recov	80.000	120.000				11/06/07

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ATTACHMENT 4

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
11/19/07
td

ACKNOWLEDGMENT OF SAMPLES RECEIVED

GPAP

Richland, WA 99352
Attn: Steve Trent E6-35

Customer Code: PNNL-GPP
PO#: 122543
Group#: 20071979



The following samples were received from you on 11/05/07. 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
W07P002876	B1R2M4	PNNL-GPP CR+6	Water	11/05/07
W07P002877	B1R4J0	PNNL-GPP CR+6	Water	11/05/07
W07P002878	B1R4J2	PNNL-GPP CR+6	Water	11/05/07
W07P002879	B1R4J3	PNNL-GPP CR+6	Water	11/05/07

Test Acronym Description

Test Acronym	Description
CR+6	Hexavalent chromium

