WSCF Laboratory

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: January 27, 2010

From: WSCF Laboratory
WSCF Analytical Chemistry

CC:

Subject: FINAL RESULT FOR SAMPLE DELIVERY GROUP WSCF100086

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 WSCF100086

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

Electronically signed by Scot Fitzgerald
For Lab Manager

Attachments 4

ATTACHMENT 1

COVER SHEET

Consisting of 2 pages
Including cover page

WSCF SAF Number Cross Reference

Group # WSCF100086
Data Deliverable Date 02/27/10

SAF #	Sample ID	Sample #	Matrix	Sampled	Received
X10-010	B22W91	100086001	WATER	01/13/10	01/13/10
X10-010	B22W94	100086002	WATER	01/13/10	01/13/10

ATTACHMENT 2

NARRATIVE

Consisting of 2 pages
Including cover page

Attachment 2
Narrative
WSCF100086

Introduction

Two (2) groundwater samples were received at the WSCF Laboratory on January 13th, 2010. 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 not stamped "ICED" by the WSCF Laboratory Sample Custodian during sample receiving. However, based on procedure LO-090-403 form "NOTICE OF IMPROPER SAMPLE SUBMITTAL" was not submitted and was not stamped "NOT ICED". No anomaly was noted during sample receipt.

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 wet chemical 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

Anions – Hold time requirements for this analysis were met. A Duplicate, Matrix Spike, Matrix Spike Duplicate, 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.

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ATTACHMENT 3

ANALYTICAL RESULTS

Consisting of 8 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 # WSCF100086
Report Date January 27, 2010

Analytical: Electronically signed by Scot Fitzgerald

Client Services: Electronically signed by Susan Kon

All radiochemistry results are reported on an "as received" basis.

Batch QC List

Attention Michael Neely
Department Inorganic

Group # WSCF100086

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
83286	83286	2	BLANK	22117	BLANK		Anions by Ion Chromatography (Water)
83286	83286	3	LCS	22118	LCS		Anions by Ion Chromatography (Water)
83286	83286	4	DUP	22119	B22FC6(100082001DUP)	100082001	Anions by Ion Chromatography (Water)
83286	83286	5	MS	22120	B22FC6(100082001MS)	100082001	Anions by Ion Chromatography (Water)
83286	83286	6	MSD	22121	B22FC6(100082001MSD)	100082001	Anions by Ion Chromatography (Water)
83286	83286	10	SAMPLE	100086002	B22W94		Anions by Ion Chromatography (Water)
83286	83286	13	SAMPLE	100086001	B22W91		Anions by Ion Chromatography (Water)

Method Reference

Attention Michael Neely
Department Inorganic

Group # WSCF100086

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-533-410	Anion Analysis by Ion Chromatography		
	EPA-600/R-94-111	300.0	Determination of Inorganic Anions by Ion Chromatography
	HEIS	300.0_ANIONS_IC	Determination of Inorganic Anions by Ion Chromatography

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 # WSCF100086

Sample # 100086001
SAF# X10-010
Sample ID B22W91

Matrix WATER
Sampled 01/13/10
Received 01/13/10

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Anions by IC										**01/13/10**
Anions by IC										
Fluoride	16984-48-8	LA-533-410	BD	0.184		ug/mL	2	0.060	0.40	01/13/10
Chloride	16887-00-6	LA-533-410	D	17.7		ug/mL	2	0.086	0.80	01/13/10
Nitrite-N	NO2-N	LA-533-410	UD	<0.036		ug/mL	2	0.036	0.20	01/13/10
Nitrate-N	NO3-N	LA-533-410	D	7.10		ug/mL	2	0.062	0.20	01/13/10
Sulfate	14808-79-8	LA-533-410	D	119		ug/mL	2	0.13	2.0	01/13/10

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 diltution 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 # WSCF100086

Sample # 100086002
SAF# X10-010
Sample ID B22W94

Matrix WATER
Sampled 01/13/10
Received 01/13/10

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Anions by IC										**01/13/10**
Anions by IC										
Fluoride	16984-48-8	LA-533-410	UD	<0.060		ug/mL	2	0.060	0.40	01/13/10
Chloride	16887-00-6	LA-533-410	UD	<0.086		ug/mL	2	0.086	0.80	01/13/10
Nitrite-N	NO2-N	LA-533-410	UD	<0.036		ug/mL	2	0.036	0.20	01/13/10
Nitrate-N	NO3-N	LA-533-410	UD	<0.062		ug/mL	2	0.062	0.20	01/13/10
Sulfate	14808-79-8	LA-533-410	UD	<0.13		ug/mL	2	0.13	2.0	01/13/10

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 diltution 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 # WSCF100086

QC Batch 83286
Associated Samples 100086001, 100086002

Test Anions by Ion Chromatography (Water)

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #22117**							
Fluoride	16984-48-8		<0.030	ug/mL					U	01/13/10
Chloride	16887-00-6		<0.043	ug/mL					U	01/13/10
Nitrite-N	NO2-N		<0.018	ug/mL					U	01/13/10
Nitrate-N	NO3-N		<0.031	ug/mL					U	01/13/10
Sulfate	14808-79-8		<0.066	ug/mL					U	01/13/10
LCS			**QC Sample #22118**							
Fluoride	16984-48-8		0.955	ug/mL	95.5	90 - 110				01/13/10
Chloride	16887-00-6		2.01	ug/mL	102.9	90 - 110				01/13/10
Nitrite-N	NO2-N		1.02	ug/mL	104.7	90 - 110				01/13/10
Nitrate-N	NO3-N		0.912	ug/mL	103.5	90 - 110				01/13/10
Sulfate	14808-79-8		4.06	ug/mL	103.4	90 - 110				01/13/10
DUP			**QC Sample #22119**							
			Original 100082001							
Fluoride	16984-48-8	0.206		ug/mL			1.00	20	BD	01/13/10
Chloride	16887-00-6	9.00		ug/mL			2.40	20	D	01/13/10
Nitrite-N	NO2-N	0.193		ug/mL			0.00	20	BD	01/13/10
Nitrate-N	NO3-N	1.74		ug/mL			0.00	20	D	01/13/10
Sulfate	14808-79-8	41.1		ug/mL			0.50	20	D	01/13/10

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF100086

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
MS			**QC Sample #22120**							
			Original 100082001							
Fluoride	16984-48-8		1.03	ug/mL	102.2	80 - 120			D	01/13/10
Chloride	16887-00-6		1.89	ug/mL	96	80 - 120			D	01/13/10
Nitrite-N	NO2-N		0.967	ug/mL	97.8	80 - 120			D	01/13/10
Nitrate-N	NO3-N		0.917	ug/mL	103.1	80 - 120			D	01/13/10
Sulfate	14808-79-8		3.42	ug/mL	86.2	80 - 120			D	01/13/10
MSD			**QC Sample #22121**							
			Original 100082001					**Paired**	**22120**	
Fluoride	16984-48-8		0.953	ug/mL	94.4	80 - 120	7.90	20	D	01/13/10
Chloride	16887-00-6		1.89	ug/mL	96.1	80 - 120	0.10	20	D	01/13/10
Nitrite-N	NO2-N		0.971	ug/mL	98.2	80 - 120	0.40	20	D	01/13/10
Nitrate-N	NO3-N		0.919	ug/mL	103.3	80 - 120	0.20	20	D	01/13/10
Sulfate	14808-79-8		3.44	ug/mL	86.9	80 - 120	0.80	20	D	01/13/10

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 #: 401647
Work Order #: 100086
Profile #: X10-010-137
Proj. Mgr.:
Phone:

The following samples were received from you on 1/13/2010 1:00:00 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		
100086001	B22W91	WATER	1/13/2010 11:06	1/13/2010 13:00
		IC-W		
100086002	B22W94	WATER	1/13/2010 07:30	1/13/2010 13:00
		IC-W		

Test Acronym Description

Test Acronym	Description
IC-W	Anions by IC (W)

CHPRC	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	C.O.C. # X10-010-137
	100086	Page 1 of 1

Collector: M.S. McCoy CHPRC	Contact/Requestor: DYEKMAN, D	Telephone No.: [illegible]
SAF No.: [illegible]	Sampling Origin: Hanford Site	Purchase Order/Charge Code: [illegible]
Project Title: [illegible]	Logbook No.: HNF-N-506 28 136	Ice Chest No.: N/A
Shipped To (Lab): [illegible]	Method of Shipment: Government Vehicle	Bill of Lading/Air Bill No.: N/A
Protocol: SURV	Priority: 45 Days	Offsite Property No.: N/A

POSSIBLE SAMPLE HAZARDS/REMARKS

[illegible]

SPECIAL INSTRUCTIONS Hold Time [illegible]

[illegible]

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B22A91 001	N	W	1/13/2010	1006	1x125-mL P	300.0_ANIONS_IC List-1 (S) {Chloride}	28 Days/48 Hours	Cool 4C

RA 1/13/2010

Relinquished By	Date/Time	Received By	Date/Time	Matrix *
M.S. McCoy CHPRC [signature]	JAN 13 2010 1300	TA FRAZIER [signature]	JAN 13 2010 1300	[illegible]
Relinquished By	Date/Time	Received By	Date/Time	
Relinquished By	Date/Time	Received By	Date/Time	
Relinquished By	Date/Time	Received By	Date/Time	

FINAL SAMPLE DISPOSITION	Disposal Method [illegible]	Disposed By	Date/Time

Sample Receipt

January 27, 2010 06:01:21

3004.1.1084.3
Report ID: 100086
Group # WSCF100086

Sample Receipt

Chain of Custody