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FINAL REPORT FOR THE SAMPLES RECEIVED IN MARCH, 2010 FOR SAF W10-003

Document No.: 20100263
SDG: 222S20100263

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Date Published
May 3, 2010

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05/03/10
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222-S LABORATORY

FINAL REPORT FOR THE SAMPLES RECEIVED IN MARCH, 2010 FOR SAF W10-003

1.0 INTRODUCTION

This final report presents the results for two ground water samples taken on March 9, 2010. The samples were analyzed in accordance with Sampling Authorization Form I10-023; and ATL-MP-1011; *ATL Quality Assurance Project Plan for 222-S Laboratory* (QAPP). The following attachments are included in this report:

Attachment 1	Data Summary Report
Attachment 2	Holding Time Report
Attachment 3	Receipt Paperwork
Attachment 4	Issue Resolution Forms
Attachment 5	Original Analysis Results/Analysis Time

2.0 SAMPLE RECEIPT AND HANDLING

Samples were received on March 9, 2010 with adequate paperwork. The measured temperature of the outside of the sample container was 15 °C. This was reported to the client on the laboratory's sample receipt check list (see Attachment 3).

3.0 ANALYTICAL RESULTS SUMMARY

The Data Summary Report (Attachment 1) presents the final analytical result. The "Det Limit" column in Attachment 1 contains the method detection limit (MDL). In order to demonstrate batch precision and accuracy, Attachment 1 also contains the matrix spikes and duplicates associated with the analysis of the samples in this SDG, even if they were from a different SDG

In Attachment 1, the column labeled "A#" indicates the aliquot class or the method used for sample preparation before analysis. For analysis without a preparation step, this column is left blank.

The "Qual Flags" column in Attachment 1 contains data qualifier flags that are defined as follows:

- "U" indicates that the reported result is less than the calculated method detection limit.
- "B" indicates that the reported result is greater than the method detection limit (MDL), but less than the quantitation limit.

Manual calculations using rounded results from the Data Summary Report or result calculation forms may differ slightly from the actual results derived from the raw data.

3.1 ANALYSES

3.1.1 Anions by Ion Chromatography

The ion chromatography analysis for anions was performed by preparing several dilutions of the samples. All requirements in the SAF and QAPP were met. Holding time requirement of 48 hours was met for nitrite, nitrate, and phosphate; however; detection limit for bromide was not achieved on the first run. Samples were reanalyzed, but the analysis lapse time was outside of the holding time period (see Attachment 4).

4.0 PROCEDURES

Table 1 lists the analytical procedures used for analysis of these samples.

Table 1. Analytical Procedures.

Analysis	Preparation Method	Analysis Procedure
Anions by Ion Chromatography	NA	SW846-9056A

5.0 REFERENCES

ATL-MP-1011, 2009, *ATL Quality Assurance Project Plan for 222-S Laboratory*, Rev. 9, Applied Technologies and Laboratories International, Inc., Richland, Washington.

Sampling Authorization Form W10-003; CH2M Hill, Plateau Remediation Company, Richland, Washington.

Attachment 1

DATA SUMMARY REPORT

03 - May - 2010 8:30:28
DSRHardcopyWOLimits 2.7.26a
DSR.Jar v. 2.7.26c

WSCF - Anions & HexCr
Data Summary of All Results

Sample Group: 20100263

Customer Group or SDG Number: 222S20100263

Customer Sample ID: B24CV0

Customer Sample ID: B24CV0

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S10M000158			16984-48-8	Fluoride	ug/mL	104	<1.61E-03	0.0465	n/a	n/a	n/a	n/a	0.0177	n/a	B
S10M000158			16887-00-6	Chloride	ug/mL	103	<9.98E-03	28.4	n/a	n/a	n/a	n/a	0.110	n/a	
S10M000158			14797-65-0	Nitrite	ug/mL	95.6	<0.0192	<0.211	n/a	n/a	n/a	n/a	0.211	n/a	U
S10M000158			14808-79-8	Sulfate	ug/mL	104	<0.0187	113	n/a	n/a	n/a	n/a	0.206	n/a	
S10M000158			24959-67-9	Bromide	ug/mL	107	<0.0580	0.283	n/a	n/a	n/a	n/a	0.0580	n/a	
S10M000158			14797-55-8	Nitrate	ug/mL	101	<0.0208	109	n/a	n/a	n/a	n/a	0.229	n/a	
S10M000158			14265-44-2	Phosphate	ug/mL	102	<0.0167	<0.184	n/a	n/a	n/a	n/a	0.184	n/a	U

NA = Not Analyzed, ND = Not Detected

B - Estimated

U - < Det Limit

WSCF - Anions & HexCr
Data Summary of All Results

Sample Group: 20100263

Customer Group or SDG Number: 222S20100263

Customer Sample ID: B24CV6

Customer Sample ID: B24CV6

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S10M000159			16984-48-8	Fluoride	ug/mL	104	<1.61E-03	0.784	n/a	n/a	n/a	n/a	0.0177	n/a	
S10M000159			16887-00-6	Chloride	ug/mL	103	<9.98E-03	23.8	n/a	n/a	n/a	n/a	0.110	n/a	
S10M000159			14797-65-0	Nitrite	ug/mL	95.6	<0.0192	<0.211	n/a	n/a	n/a	n/a	0.211	n/a	U
S10M000159			14808-79-8	Sulfate	ug/mL	104	<0.0187	184	n/a	n/a	n/a	n/a	0.206	n/a	
S10M000159			24959-67-9	Bromide	ug/mL	107	<0.0580	0.131	n/a	n/a	n/a	n/a	0.0580	n/a	
S10M000159			14797-55-8	Nitrate	ug/mL	101	<0.0208	27.7	n/a	n/a	n/a	n/a	0.229	n/a	
S10M000159			14265-44-2	Phosphate	ug/mL	102	<0.0167	<0.184	n/a	n/a	n/a	n/a	0.184	n/a	U

NA = Not Analyzed, ND = Not Detected

B - Estimated

U - < Det Limit

29 - Apr - 2010 10:56:46
DSRHardcopyWOLimits 2.7.26a
DSR.Jar v. 2.7.26c

WSCF - Anions & HexCr
Data Summary of All Results

Sample Group: 20100242

Customer Group or SDG Number: 222S20100242

Customer Sample ID: B243V4

Customer Sample ID: B243V4

Sample# R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S10M000153		24959-67-9	Bromide	ug/mL	98.6	<0.0237	<0.0237	n/a	n/a	n/a	n/a	0.0237	n/a	U
S10M000153		16984-48-8	Fluoride	ug/mL	104	<1.61E-03	<0.0177	<0.0177	n/a	n/a	105	0.0177	n/a	U
S10M000153		16887-00-6	Chloride	ug/mL	103	<9.98E-03	<0.110	<0.110	n/a	n/a	103	0.110	n/a	U
S10M000153		14797-65-0	Nitrite	ug/mL	95.6	<0.0192	<0.211	<0.211	n/a	n/a	98.0	0.211	n/a	U
S10M000153		14808-79-8	Sulfate	ug/mL	104	<0.0187	<0.206	<0.206	n/a	n/a	105	0.206	n/a	U
S10M000153		14797-55-8	Nitrate	ug/mL	101	<0.0208	<0.229	<0.229	n/a	n/a	102	0.229	n/a	U
S10M000153		14265-44-2	Phosphate	ug/mL	102	<0.0167	<0.184	<0.184	n/a	n/a	103	0.184	n/a	U

NA = Not Analyzed, ND = Not Detected

U - < Det Limit

29 - Apr - 2010 10:47:13
DSRHardcopyWOLimits 2.7.26a
DSR.Jar v. 2.7.26c

WSCF - Anions & HexCr
Data Summary of All Results

Sample Group: 20100247
Customer Group or SDG Number: 222S20100247
Customer Sample ID: B24B34
Customer Sample ID: B24B34

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S10M000173			16984-48-8	Fluoride	ug/mL	101	<1.61E-03	0.124	0.124	0.124	0.202	103	1.61E-03	n/a	
S10M000173			14797-65-0	Nitrite	ug/mL	94.8	<0.0192	<0.0192	<0.0192	n/a	n/a	97.3	0.0192	n/a	U
S10M000173			14808-79-8	Sulfate	ug/mL	103	<0.0187	73.6	74.0	73.8	0.532	75.6	0.0187	n/a	
S10M000173			24959-67-9	Bromide	ug/mL	107	<0.0580	0.185	0.186	0.186	0.630	99.0	0.0580	n/a	
S10M000173			14797-55-8	Nitrate	ug/mL	100	<0.0208	21.8	21.9	21.9	0.259	90.1	0.0208	n/a	
S10M000173			14265-44-2	Phosphate	ug/mL	97.0	<0.0167	0.0734	0.0626	0.0680	15.9	95.7	0.0167	n/a	B

NA = Not Analyzed, ND = Not Detected

U - < Det Limit

B - Estimated

Attachment 2

HOLDING TIME REPORT

Hold Time Report **SDG222S20100263**

Customer Sample ID	Sample Group	Laboratory Sample ID	Method	Sample Date	Received Date	Analysis Date	Analysis Lapse Time	Missed Holding
B24CV0	20100263	S10M000158	SW846-9056A	03/09/10 13:04	03/09/10 15:15	03/11/10 06:42	42 hours	N
B24CV0	20100263	S10M000158	SW846-9056A	03/09/10 13:04	03/09/10 15:15	04/08/10 06:54	30 days	**Yes, for Br**
B24CV6	20100263	S10M000159	SW846-9056A	03/09/10 14:27	03/09/10 15:15	03/11/10 07:14	41 hours	N
B24CV6	20100263	S10M000159	SW846-9056A	03/09/10 14:27	03/09/10 15:15	04/08/10 07:26	30 days	**Yes, for Br**

Attachment 3

RECEIPT PAPERWORK

ATL	SAMPLE RECEIPT AND CHAIN OF CUSTODY VERIFICATION CHECKLIST	LO-090-101 Rev D.D.1

Date Samples Received: 3.9.10 Group #: 20100262 (263)

Number of Samples: 4

Sample Custodian: [illegible]

Sample Custodian to Complete:

Action	OK? (Y/N)	N/A	Comments
RSA/COC provided?	✓		
RSR provided?		✓	
Verify GKI is complete		✓	
Check that outer custody seal is intact, if present		✓	
Record cooler temperature in centigrade, as appropriate	15°C		☐ Check if no cooler and/or no ice
Samples are intact and in good condition	✓		If No, provide comments on back
Verify that COC or RSA is accurate and complete, containing the following information:			
• Client name and client sample number	✓		
• Date and time of sampling	✓		
• Sampling location or origin	✓		
• Container type, size, and number	✓		
• Analysis request is clear	✓		
• Signature of persons relinquishing and receiving samples	✓		
• Date and/or time of sample custody exchange	✓		
Verify that sample numbers on containers match the COC and/or RSA	✓		
Samples stored properly (e.g., refrigeration)	✓		2B - Ref # 4

Notify the PM immediately if any problems are noted. (A "No" answer requires Project Manager resolution.)

PM to Complete:

Samples acceptable for release? yes PM Initials [illegible] Date 3-9-10

If No, comment on communication and resolution: for TA Riteway

Other Comments:

A-6005-342 (REV 0)

20100263

CHPRC

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # W10-003-351

Page 1 of 1

Collector: KE Hamilton, CHPRC	Contact/Requester: Karen Waters-Husted	Telephone No.
SAF No.: W10-003	Sampling Origin: Hanford Site	Purchase Order/Charge Code: 300071ES20
Project Title: RCRA, MARCH 2010	Logbook No: HNF-N-506 26177	Ice Chest No.: N/A
Shipped To (Lab): ~~Waste Sampling & Characterization~~ KEH 3/4/10 222-S Lab	Method of Shipment: Government Vehicle	Bill of Lading/Air Bill No.: N/A
Protocol: RCRA	Priority: 45 Days	Offsite Property No.: N/A

POSSIBLE SAMPLE HAZARDS/REMARKS
** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)

CAM# 20100263 15°C
S10M000158

SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes ☑ No ☐

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B24CV0	N	W	3/9/10	1304	1x500-mL P	300.0_ANIONS_IC: List-1 (5)	28 Days/48 Hours	Cool~4C

BB 3/9/10

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
KE Hamilton, CHPRC			MAR 09 2010	RA Steele			1515 MAR 09 2010
Relinquished By			Date/Time	Received By			Date/Time
Relinquished By			Date/Time	Received By			Date/Time
Relinquished By			Date/Time	Received By			Date/Time

Matrix *

S = Soil		DS = Drum Solid	
SE = Sediment		DL = Drum Liqui	
SO = Solid		T = Tissue	
SL = Sludge		WI = Wipe	
W = Water		L = Liquid	
O = Oil		V = Vegetation	
A = Air		X = Other	

FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process)	Disposed By	Date/Time

20100263

CHPRC	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	C.O.C. # W10-003-357 Page 1 of 1

Collector: S.J. Southerland CHPRC	Contact/Requester	Telephone No.
SAF No. W10-003	Sampling Origin	Purchase Order/Charge Code 300071ES20
Project Title RCRA MARCH 2010	Logbook No: HNF-N-506 31 / 22	Ice Chest No. N/A
Shipped To (Lab) ~~Waste Sampling & Characterization~~ 3/9/10	Method of Shipment Government Vehicle	Bill of Lading/Air Bill No. N/A
Protocol RCRA 2225	Priority: 45 Days	Offsite Property No. N/A

POSSIBLE SAMPLE HAZARDS/REMARKS
** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)
GRP# 20100263
510M000159

SPECIAL INSTRUCTIONS Hold Time
9°C

Total Activity Exemption: Yes ☑ No ☐

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B24CV6	N	W	3/9/10	1427	1x500-mL P	300.0_ANIONS_IC: List-1 (5)	28 Days/48 Hours	Cool~4C

N/A 3/9/10

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
S.J. Southerland CHPRC			MAR 09 2010 1515	R.F. Stegle			MAR 09 2010 1515
Relinquished By			Date/Time	Received By			Date/Time
Relinquished By			Date/Time	Received By			Date/Time
Relinquished By			Date/Time	Received By			Date/Time

Matrix *

S = Soil		DS = Drum Solid	
SE = Sediment		DL = Drum Liquid	
SO = Solid		T = Tissue	
SL = Sludge		WI = Wire	
W = Water		L = Liquid	
O = Oil		V = Vegetation	
A = Air		X = Other	

FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process)	Disposed By	Date/Time

GENERATOR KNOWLEDGE INFORMATION

1. Chain of Custody Number NA CACN/COA NA Customer Identification Number NA

2. List generator knowledge or description of process that produced sample. Or list description of sample source:
Sitewide S&GRP Characterization and Monitoring Sampling and Analysis

MSDS Available? (●) No ( ) Yes Hanford MSDS No. _____

3. List all waste codes and constituents associated with the waste or media that was sampled, regardless of CERCLA status.

a) Does the sample contain any of the following listed waste codes?
By checking "unknown" the customer understands that no knowledge is available following a careful search.

	List Federal Waste Code(s):	List Constituent(s):			
P Codes:			( ) Yes	(●) No	( ) Unknown
U Codes:			( ) Yes	(●) No	( ) Unknown
K Codes:			( ) Yes	(●) No	( ) Unknown
F Codes:	F001 - F005; F039		(●) Yes	( ) No	( ) Unknown

b) List applicable characteristic waste codes, flash point, pH, constituents, and concentrations as appropriate.

D001:	☐ FP <100°F	☐ FP ≥100 <140°F	☐ DOT Oxidizer	( ) Yes	(●) No	( ) Unknown
D002:	☐ pH ≤2	☐ pH ≥12.5	☐ Solid Corrosive (WSC2)	( ) Yes	(●) No	( ) Unknown
D003:	☐ Cyanide	☐ Sulfide	☐ Water Reactive ☐ Other _____ (i.e., peroxide former, explosive, air reactive)	( ) Yes	(●) No	( ) Unknown
D004-D043 (Identify applicable waste codes and concentrations):				( ) Yes	(●) No	( ) Unknown

N/A

c) If characteristic, list any known underlying hazardous constituents (UHCs) reasonably expected to be present, and their concentrations that may be present above the LDR treatment standard (40 CFR 268.48):
N/A

d) List any known Land Disposal Restrictions (LDR) subcategories, if applicable (40 CFR 268.40):
N/A

e) List any applicable Washington State dangerous waste codes: (not required if federally regulated)

WT01:	( ) Yes	(●) No	( ) Unknown
WT02:	( ) Yes	(●) No	( ) Unknown
W001:	( ) Yes	(●) No	( ) Unknown

(*State mixture rule for ignitability)

WP01:	( ) Yes	(●) No	( ) Unknown
WP02:	( ) Yes	(●) No	( ) Unknown
WP03:	( ) Yes	(●) No	( ) Unknown
F003:*	( ) Yes	(●) No	( ) Unknown

List constituents and concentrations:
N/A

4. Is this material TSCA regulated for PCBs? ( ) Yes (●) No ( ) Unknown ( ) Analysis Requested

List concentration if applicable: _____

If yes, what is the source of the PCBs? (see TSCA PCB Hanford Site User Guide, DOE/RL-2001-50)

☐ PCB Liquid Waste ☐ PCB Bulk Product Waste ☐ PCB Transformer ≥500 ppm ☐ Unknown
☐ PCB Remediation Waste ☐ PCB R&D Waste ☐ PCB contaminated electrical equipment (capacitor/ballast) <500 ppm
☐ PCB Spill Material ☐ PCB Item ☐ Other PCB Waste (list) _____

5. Is this material TRU? ( ) Yes (●) No ( ) Unknown

6. ACCURACY OF INFORMATION
Based on my inquiry of those individuals immediately responsible for obtaining this information, that to the best of my knowledge, the information entered in this document is true, accurate, and complete.

Print & Sign SA JOBA / S J TRENT Date 12/31/07

A-6002-990 (08/03)

Attachment 4

ISSUE RESOLUTION FORMS

ISSUE RESOLUTION FORM

CHPRC TRACKING NUMBER: 10-118

Date : **04/27/2010** SAF No.: **W10-003**

SDG: **222S20100263**
LOGIN No.: **S10M000158, S10M000159**
TEST: **IC Anions**
Sample No.(s) : **B24CV0, B24CV6**

Submitted By: C.S. Menjivar
Phone No: 372-2525
Fax No.: 373-4884

Submitted To: Heidi Hampt
Phone No. 376-4319
Fax No. 373-1788

ISSUE	PROPOSED RESOLUTION
The required detection limit for bromide was missed. Samples were reanalyzed; however, reanalysis was performed far out of the holding time in order to obtain the required detection limit.	Report the reanalysis with the lower detection limit and provide a table in report with original analysis results and analysis time.

CHPRC/BHI/WMH/PNNL COMMENTS

Accept proposed resolution.

Heidi Hampt 4/28/10
Signature and Date

Attachment 5

ORIGINAL ANALYSIS RESULTS/ ANALYSIS DATE

DATA SUMMARY REPORT-ORIGINAL RESULTS- ANALYSIS DATE - SDG222S20100263

Customer Sample ID	Laboratory Sample ID	A	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec	Det Limit	Qual Flags	Analysis Time
B24CV0	S10M000158		16984-48-8	Fluoride	ug/mL	104	<1.61E-03	0.0465	n/a	n/a	n/a	n/a	0.0177	B	03/11/10 06:42
B24CV0	S10M000158		14808-79-8	Sulfate	ug/mL	104	<0.0187	113	n/a	n/a	n/a	n/a	0.206		03/11/10 06:42
B24CV0	S10M000158		14265-44-2	Phosphate	ug/mL	102	<0.0167	<0.184	n/a	n/a	n/a	n/a	0.184	U	03/11/10 06:42
B24CV0	S10M000158		14797-65-0	Nitrite	ug/mL	95.6	<0.0192	<0.211	n/a	n/a	n/a	n/a	0.211	U	03/11/10 06:42
B24CV0	S10M000158		16887-00-6	Chloride	ug/mL	103	<9.98E-03	28.4	n/a	n/a	n/a	n/a	0.110		03/11/10 06:42
B24CV0	S10M000158		14797-55-8	Nitrate	ug/mL	101	<0.0208	109	n/a	n/a	n/a	n/a	0.229		03/11/10 06:42
B24CV0	S10M000158		24959-67-9	Bromide	ug/mL	102	<0.0580	<0.638	n/a	n/a	n/a	n/a	0.638	U	03/11/10 06:42
B24CV6	S10M000159		16984-48-8	Fluoride	ug/mL	104	<1.61E-03	0.784	n/a	n/a	n/a	n/a	0.0177		03/11/10 07:14
B24CV6	S10M000159		14265-44-2	Phosphate	ug/mL	102	<0.0167	<0.184	n/a	n/a	n/a	n/a	0.184	U	03/11/10 07:14
B24CV6	S10M000159		14797-65-0	Nitrite	ug/mL	95.6	<0.0192	<0.211	n/a	n/a	n/a	n/a	0.211	U	03/11/10 07:14
B24CV6	S10M000159		16887-00-6	Chloride	ug/mL	103	<9.98E-03	23.8	n/a	n/a	n/a	n/a	0.110		03/11/10 07:14
B24CV6	S10M000159		14797-55-8	Nitrate	ug/mL	101	<0.0208	27.7	n/a	n/a	n/a	n/a	0.229		03/11/10 07:14
B24CV6	S10M000159		14808-79-8	Sulfate	ug/mL	104	<0.0187	185	n/a	n/a	n/a	n/a	1.89		03/11/10 07:14
B24CV6	S10M000159		24959-67-9	Bromide	ug/mL	102	<0.0580	<0.638	n/a	n/a	n/a	n/a	0.638	U	03/11/10 07:14