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FINAL REPORT FOR THE SAMPLES RECEIVED IN MARCH, 2010 FOR SAF F10-065-0012

Document No.: 20100241 Reissue 1
SDG: 222S20100241

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5/26/10
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REVISION 1

222-S LABORATORY

FINAL REPORT FOR THE SAMPLES RECEIVED IN MARCH, 2010 FOR SAF F10-065-012

1.0 INTRODUCTION

This report has been reissued in order to discuss the presence of acetone in the blank, as required per customer (see Attachment 4). In addition, an explanation about the quality control limits for recoveries in Volatile Organic Analysis (VOA) was included in this narrative in section 3.1.2.

This final report presents the results for one ground water sample taken on March 8, 2010. The sample was analyzed in accordance with Sampling Authorization Form F10-065-012; *ARRA 200 ZP-1 Remedial Action Wells Sampling and Analysis - Water* (SAF) 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	Project Correspondence
Attachment 5	VOA Surrogates, MS-MSD Recoveries, and RPDs

2.0 SAMPLE RECEIPT AND HANDLING

The sample (B23C74) was received on March 9, 2010, with adequate paperwork and instructions to be analyzed for anions. The measured temperature of the outside of the sample container was 8 °C. On March 10, 2010, another portion of sample (B23C74) was received with instructions to be analyzed for VOA. The measured temperature of the outside of the sample was 2 °C. The temperatures of the samples were 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 results for those analytes requested in the SAF. The "Det Limit" column in Attachment 1 contains the method detection limit (MDL).

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.

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 on direct aliquots of the sample. All requirements in the SAF and QAPP were met, except the holding time requirement of 48 hours for Nitrate, Nitrite, and Phosphate. This was due to the following reasons:

- Partially expired holding time upon receipt of samples by the laboratory
- Two dilutions of the sample were prepared on 03/10/2010; Only NO3 was reported from this run. Another run was performed on 03/12/2010 to reach detection limits for NO2 (see Attachment 2).

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

3.1.2 Volatile Organic Analysis

The VOA analysis was performed on direct aliquots of the sample. All requirements in the SAF and QAPP were met.

At the time this analysis was performed, the laboratory was transitioning to a new set of Statistical Process Control (SPC) limits (see Attachment 5). On the original report, it was mentioned that one of the surrogate compounds, dibromofluoromethane, had a high recovery (127 %). However, after processing the analytical results with the new SPC limits, recoveries of all surrogate compounds are within control limits.

Acetone was detected in the blank at a concentration above the quantitation limits. However, the laboratory considered that reanalysis was not necessary due to two reasons:

1- Acetone was not detected in the sample and

2- Acetone was not an analyte of interest (not requested by customer).

The SAF only requested chloroform, trichloroethene, and carbon tetrachloride. Additional compounds have been reported to provide analytical QC parameters.

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
VOC-GC/MS	N/A	SW846-8260B

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 F10-065-012; *ARRA200-ZP-1 Remedial Action Wells Sampling and Analysis - Water*, CH2M Hill, Plateau Remediation Company, Richland, Washington.

REVISION 1

Attachment 1

DATA SUMMARY REPORT

WSCF - Anions & HexCr
Data Summary of All Results

Sample Group: 20100241

Customer Group or SDG Number: 222S20100241

Customer Sample ID: B23C74

Customer Sample ID: B23C74

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S10M000127			16984-48-8	Fluoride	ug/mL	94.6	<6.16E-03	0.361	n/a	n/a	n/a	n/a	6.16E-03	n/a	
S10M000127			16887-00-6	Chloride	ug/mL	99.6	<3.10E-03	21.5	21.0	21.2	2.40	90.2	0.0341	n/a	
S10M000127			14797-65-0	Nitrite	ug/mL	91.2	<0.0400	<0.0400	n/a	n/a	n/a	n/a	0.0400	n/a	U
S10M000127			24959-67-9	Bromide	ug/mL	93.3	<0.0237	0.243	n/a	n/a	n/a	n/a	0.0237	n/a	
S10M000127			14797-55-8	Nitrate	ug/mL	91.9	<0.0162	128	133	n/a	n/a	94.8	1.64	n/a	
S10M000127			14265-44-2	Phosphate	ug/mL	95.1	<0.0381	<0.0381	n/a	n/a	n/a	n/a	0.0381	n/a	U
S10M000127			14808-79-8	Sulfate	ug/mL	91.7	<0.0219	32.2	32.0	32.1	0.672	96.5	0.241	n/a	
S10M000162			75-35-4	1,1-Dichloroethene	ug/L	96.3	<0.172	<0.191	n/a	n/a	n/a	91.2	0.191	n/a	U
S10M000162			67-64-1	Acetone	ug/L	110	6.18	<0.637	n/a	n/a	n/a	92.0	0.637	n/a	U
S10M000162			78-93-3	2-Butanone	ug/L	95.2	<0.458	<0.509	n/a	n/a	n/a	95.4	0.509	n/a	U
S10M000162			67-66-3	Chloroform	ug/L	n/a	<0.0414	41.2	n/a	n/a	n/a	n/a	0.0460	n/a	
S10M000162			56-23-5	Carbon tetrachloride	ug/L	n/a	<0.0479	1.63E+03	n/a	n/a	n/a	n/a	1.92	n/a	
S10M000162			71-36-3	1-Butanol	ug/L	88.8	<1.15	<1.28	n/a	n/a	n/a	85.0	1.28	n/a	U
S10M000162			71-43-2	Benzene	ug/L	92.8	<0.0163	<0.0181	n/a	n/a	n/a	89.6	0.0181	n/a	U
S10M000162			79-01-6	Trichloroethene	ug/L	90.1	<0.0378	16.5	n/a	n/a	n/a	90.0	0.0420	n/a	
S10M000162			108-10-1	Hexone	ug/L	109	<0.453	<0.503	n/a	n/a	n/a	103	0.503	n/a	U
S10M000162			108-88-3	Toluene	ug/L	95.8	<0.0522	<0.0580	n/a	n/a	n/a	89.5	0.0580	n/a	U
S10M000162			591-78-6	2-Hexanone	ug/L	104	<0.454	<0.505	n/a	n/a	n/a	101	0.505	n/a	U
S10M000162			108-90-7	Chlorobenzene	ug/L	96.6	<0.0320	<0.0356	n/a	n/a	n/a	91.3	0.0356	n/a	U
S10M000162			1868-53-7	Dibromofluoromethane	ug/L	91.6	10.2	14.1	n/a	n/a	n/a	117	0.0592	n/a	
S10M000162			17060-07-0	1,2-Dichloroethane-d4	ug/L	96.5	10.2	11.5	n/a	n/a	n/a	90.7	0.166	n/a	
S10M000162			2037-26-5	Toluene-d8	ug/L	102	11.1	11.8	n/a	n/a	n/a	94.8	0.0774	n/a	
S10M000162			460-00-4	4-Bromofluorobenzene	ug/L	94.8	10.8	11.2	n/a	n/a	n/a	96.2	0.0906	n/a	

NA = Not Analyzed, ND = Not Detectec

U - < Det Limit

REVISION 1

Attachment 2

HOLDING TIME REPORT

REVISION 1

Hold Time Report SDG 222S20100241

Client Sample ID	Sample Group	Laboratory Sample ID	Method	Sample Date	Received Date	Analysis Date	Analysis Time lapse	Missed Holding Time
B23C74	20100241	S10M000127	SW846-9056A	03/08/10 09:16	03/09/10 09:30	03/10/10 17:05	56 hours	**Yes,** for NO3
B23C74	20100241	S10M000127	SW846-9056A	03/08/10 09:16	03/09/10 09:30	03/12/10 05:30	92 hours	**Yes,** for NO2, PO4
B23C74	20100241	S10M000162	SW846-8260B	03/08/10 09:16	03/10/10 11:00	03/10/10 14:43	2 days	**N**
B23C74	20100241	S10M000162	SW846-8260B	03/08/10 09:16	03/10/10 11:00	03/10/10 16:12	2 days	**N**

REVISION 1

Attachment 3

RECEIPT PAPERWORK

REVISION 1

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

Date Samples Received: 3.9.10 Group #: 20100 238, 239, 240, 241, 242, 243, 244, 245, 246, 247

Number of Samples: 31

Sample Custodian: [signature]

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	8°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 RS Date 3.9.10

If No, comment on communication and resolution: For J.R. Ritenour

Other Comments:

A-6005-342 (REV 0)

CH2MHill Plateau Remediation Company

20100241 Reissue 1

REVISION 1

COLLECTOR Helms, Bates	COMPANY CONTACT DYEKMAN, DL	TELEPHONE NO. 373-2530	PROJECT COORD. DYEKMAN, DL	PRICE CODE
SAMPLING LOCATION EW-7 (C7022, 299-W11-90); 1-011	PROJECT DESIGNATION ARRA 200-ZP-1 Remedial Action Wells Sampling and Analysis - Water		SAF NO. F10-065	AIR QUALITY ☐ 24 Hours / 15 Days
ICE CHEST NO.	FIELD LOGBOOK NO. HNF-N-585-8 Page 99	ACTUAL SAMPLE DEPTH 508'	COA 300194ES10	METHOD OF SHIPMENT GOVERNMENT VEHICLE
SHIPPED TO ~~Waste Sampling & Characterization~~ 222-S	OFFSITE PROPERTY NO. N/A		BILL OF LADING/AIR BILL NO. N/A	

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)

100480

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	HCl to pH <2/Cool~4C	Cool~4C	HNO3 to pH <2(ULTREX)
TYPE OF CONTAINER	aGs*	P	Nalgene
NO. OF CONTAINER(S)	3	1	1
VOLUME	40mL	500mL	500mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	Tc-99 by ICPMS (Technetium 99)

VB 3/9/10 VB 3/9/10

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME			
B23C74	WATER	3-8-10	0916	—	—	—
S10M000127						
GRP# 20100241						

CHAIN OF POSSESSION / **SIGN/ PRINT NAMES**

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
Dale Bates / Dale Bates 3-8-10	1010	MD Kessler MD Kessler 3-8-10	1010
[illegible]	3/9/10 0830	L.D. Wall L.D. Wall	3/9/10 0830
L.D. Wall CHPRC L.D. Wall	MAR 09 2010 930	[illegible]	MAR 09 2010 930

SPECIAL INSTRUCTIONS

** The CACN for all analytical work at WSCF laboratory is 401648ES20.☐** All requests for Tc-99, Nitrate, TCE, CHCl3, Cr+6, and CCL4 by Field GC will require a 24 hour turnaround time.☐** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1)VOLATILE ORGANICS BY FIELD GC {Chloroform, Trichloroethene, Carbon tetrachloride}
(2)IC Anions - 300.0 {Nitrate, Chloride, Bromide, Phosphate, Fluoride, Nitrogen in Nitrate}

ORIGINAL

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

A-6003-618(01/06)

CHAIN OF CUSTODY/SA...

PROJECT COORDINATOR | PRICE CODE 1A | TURNAROUND

REVISION 1

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

Date Samples Received: 5/10/10 Group #: 20100241

Number of Samples: 6

Sample Custodian: Cheryl Edwards

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	✓		☐ Check if no cooler and/or no ice 2°C
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)	✓		

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 JSB Date 3/10/10

If No, comment on communication and resolution: For JR Ritenour

Other Comments:

ISPOSITION

20100241 Reissue 1

REVISION 1

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			
ECTOR Helms, Bates	COMPANY CONTACT: DYEKMAN, DL	TELEPHONE NO.: 373-2530	PROJECT COORDINATOR: DYEKMAN, DL	PRICE CODE: 1A; AIR QUALITY ☐; DATA TURNAROUND: 24 Hours / 15 Days
LING LOCATION: (C7022, 299-W11-90); I-011	PROJECT DESIGNATION: ARRA 200-ZP-1 Remedial Action Wells Sampling and Analysis - Water		SAF NO.: F10-065	
HEST NO.	FIELD LOGBOOK NO.: HNF-N-585-8 Page 89	ACTUAL SAMPLE DEPTH: 508'	COA: 300194ES10	METHOD OF SHIPMENT: GOVERNMENT VEHICLE
PED TO: e Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A	

TRIX*	POSSIBLE SAMPLE HAZARDS/ REMARKS	PRESERVATION	HCl to pH <2/Cool~4C	Cool~4C	HNO3 to pH <2(ULTREX)
um	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)	TYPE OF CONTAINER	aGs*	P	Nalgene
um		NO. OF CONTAINER(S)	3	1	1
iid	100480	VOLUME	40mL	500mL	500mL
diment, sue, jetation, ater, ipe, ier	SPECIAL HANDLING AND/OR STORAGE	SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	Tc-99 by ICPMS (Technetium-99)

Shipped 2 to 222S 3/10/10 — Shipped to 222S 3/9/10

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME			
74	WATER	3-8-10	0916	—	—	—

Group # 20100241
Sample # S10M000162

IN OF POSSESSION		SIGN/ PRINT NAMES	
NQUISHED BY/REMOVED FROM: Bates/Dak Bates 3-8-10	DATE/TIME: 1010	RECEIVED BY/STORED IN: MD Kessler MD Kessler 3-8-10	DATE/TIME: 1010
NQUISHED BY/REMOVED FROM: D Kessler MD Kessler 3/10/10	DATE/TIME: 1040	RECEIVED BY/STORED IN: KB Hulse KB Hulse 3/10/10	DATE/TIME: 1040
NQUISHED BY/REMOVED FROM: S Hulse KB Hulse 3-10-10	DATE/TIME: 1100	RECEIVED BY/STORED IN: [signature] 5/10/10	DATE/TIME: 1100
NQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
NQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
NQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
NQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS

** The CACN for all analytical work at WSCF laboratory is 401648ES20.☐** All requests for Tc-99, Nitrate, TCE, CHCl3, Cr+6, and CCL4 by Field GC will require a 24 hour turnaround time.☐** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1)VOLATILE ORGANICS BY FIELD GC {Chloroform, Trichloroethene, Carbon tetrachloride}
(2)IC Anions - 300.0 {Nitrate, Chloride, Bromide, Phosphate, Fluoride, Nitrogen in Nitrate}

ORIGINAL COPY

ABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
NAL SAMPLE	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

A-6003-618(01/06)

REVISION 1

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:
200 Area 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		◉ 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	WP01:	○ Yes	◉ No	○ Unknown
WT02:	○ Yes	◉ No	○ Unknown	WP02:	○ Yes	◉ No	○ Unknown
W001:	○ Yes	◉ No	○ Unknown	WP03:	○ Yes	◉ No	○ Unknown
				F003:*	○ Yes	◉ No	○ Unknown

(*State mixture rule for ignitability)

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 SJ TRENT / [signature] Date 12/3/07

A-6002-990 (08/03)

REVISION 1

Attachment 4

PROJECT CORRESPONDENCE

REVISION 1

ISSUE RESOLUTION FORM

CHPRC TRACKING NUMBER: 10-091

Date : **3/14/10** SAF No.: **See table**

SDG: **See table**
LOGIN No.: **See attached table**
TEST: **IC Anion: Nitrate, Nitrite,Phosphate**
Sample No.(s) **See table**

Submitted By: G. P. Ritenour
Phone No: 372-2742
Fax No.: 373-4884

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

ISSUE	PROPOSED RESOLUTION
The table below displays the samples for which the holding time for NO3, NO2, and PO4 were missed. This was due to an instrument failure, limited capacity, and partially expired holding times upon receipt. The instrument column was replaced and calibrated and the analysis was completed	Analyze and note in narrative.

CHPRC/BHI/WMH/PNNL COMMENTS
Accept proposed resolution.

Heidi Hampt 4/8/10
Signature and Date

SDG	SAF	Lab ID	Client ID	Analysis	Sample Date/Time	Analysis Time Lapse	Anion
20100241	F10-065	S10M000127	B23C74	IC - ANIONS	3/8/2010 9:16	56	NO3
20100241	F10-065	S10M000127	B23C74	IC - ANIONS	3/8/2010 9:16	92	NO2, PO4
20100242	F10-119	S10M000128	B243V3	IC - ANIONS	3/8/2010 10:15	91	**NO3,NO2,PO4**
20100243	W10-002	S10M000129	B23X10	IC - ANIONS	3/8/2010 11:34	61	NO3,NO2,PO4
20100244	X10-033	S10M000130	B24CJ1	IC - ANIONS	3/8/2010 8:59	63	NO3,NO2,PO4
20100244	X10-033	S10M000131	B24CJ5	IC - ANIONS	3/8/2010 11:19	91	**NO3,NO2,PO4**
20100244	X10-033	S10M000132	B24CJ7	IC - ANIONS	3/8/2010 11:59	91	**NO3,NO2,PO4**
20100245	S10-002	S10M000133	B23WJ8	IC - ANIONS	3/8/2010 13:00	90	**NO3,NO2,PO4**
20100246	L10-008	S10M000134	B24942	IC - ANIONS	3/7/2010 23:41	74	**NO3,NO2,PO4**
20100247	X10-034	S10M000135	B248T7	IC - ANIONS	3/8/2010 13:56	60	NO3,NO2,PO4
20100247	X10-034	S10M000136	B248R8	IC - ANIONS	3/8/2010 13:56	60	NO3,NO2,PO4
20100247	X10-034	S10M000137	B249H9	IC - ANIONS	3/8/2010 10:37	64	NO3,NO2,PO4
20100247	X10-034	S10M000138	B24B04	IC - ANIONS	3/8/2010 9:28	65	NO3,NO2,PO4
20100247	X10-034	S10M000139	B24B14	IC - ANIONS	3/8/2010 13:52	61	NO3,NO2,PO4
20100247	X10-034	S10M000140	B24B17	IC - ANIONS	3/8/2010 12:14	63	NO3,NO2,PO4
20100247	X10-034	S10M000141	B24B20	IC - ANIONS	3/8/2010 10:23	65	NO3,NO2,PO4
20100247	X10-034	S10M000142	B24B23	IC - ANIONS	3/8/2010 7:55	95	**NO3,NO2,PO4**
20100247	X10-034	S10M000143	B24B47	IC - ANIONS	3/8/2010 12:23	64	NO3,NO2,PO4
20100244	X10-033	S10M000144	B24CJ9	IC - ANIONS	3/8/2010 10:55	66	NO3,NO2,PO4

REVISION 1

1. The data package has the following issues:

a) Please discuss blank contamination in the narrative even though the sample result was a non-detect.

Resolution: *Provide correction to narrative.*

Lab Response:

Please correct the issues and resubmit the hard copy data package.

REVISION 1

Attachment 5

VOA SURROGATES, MS-MSD RECOVERIES AND RPDs

REVISION 1

3A

WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: 100310_WSCF

Matrix Spike - EPA Sample No.: S10M000162

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC. LIMITS REC.
1,1-Dichloroethene	11.111	0.0000	10.137	91	62-151
Acetone	55.556	0.0000	51.085	92	55-139
2-Butanone	55.556	0.0000	52.996	95	60-146
n-Butanol	111.11	0.0000	94.489	85	73-140
Benzene	11.111	0.0000	9.956	90	86-120
Trichloroethene	11.111	16.518	26.520	90	71-128
Methyl Isobutyl Ketone	55.556	0.0000	57.125	103	75-137
Toluene	11.111	0.0000	9.944	89	83-118
2-Hexanone	55.556	0.0000	56.071	101	71-141
Chlorobenzene	11.111	0.0000	10.142	91	88-113

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
1,1-Dichloroethene	11.111	11.024	99	8	20	62-151
Acetone	55.556	59.004	106	14	20	55-139
2-Butanone	55.556	59.500	107	12	20	60-146
n-Butanol	111.11	109.57	99	15	20	73-140
Benzene	11.111	10.681	96	6	20	86-120
Trichloroethene	11.111	26.582	90	0	20	71-128
Methyl Isobutyl Ketone	55.556	64.877	117	13	20	75-137
Toluene	11.111	10.740	97	9	20	83-118
2-Hexanone	55.556	64.606	116	14	20	71-141
Chlorobenzene	11.111	10.770	97	6	20	88-113

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 10 outside limits
Spike Recovery: 0 out of 20 outside limits

COMMENTS: _____

REVISION 1

FORM 2
WATER VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: 100310_WSCF

	CLIENT SAMPLE NO.	SMC1 #	SMC2 (DCE) #	SMC3 (TOL) #	OTHER (BFB) #	TOT OUT
01	CCB	102	102	110	108	0
02	LCS	92	96	102	95	0
+ 03	S10M000162SA	127*	104	106	101	1
04	S10M000162MS	117	91	95	96	0
05	S10M000162MS	126*	103	103	99	1
D1 06	S10M000162	107	107	112	110	0
07						
08						
09						
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29						
30						

		QC LIMITS (LCS, CCB)	(SAMPLE, MS, MSD) NEW LIMITS
SMC1	= Dibromofluoromethane	(85-123)	(73 - 136)
SMC2 (DCE)	= 1,2-Dichloroethane-d4	(83-123)	(77 - 132)
SMC3 (TOL)	= Toluene-d8	(82-121)	(86 - 119)
OTHER (BFB)	= Bromofluorobenzene	(82-126)	(82 - 128)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D System Monitoring Compound diluted out

+ - none diluted sample-requires review

D1 - Sample was diluted, surr were not diluted.

page 1 of 1 FORM II VOA