

Fluor Hanford, Inc.
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0060750

FLUOR

Memorandum

To: S. J. Trent Date: T4180-03-SLF-035
September 17, 2003

From: S. L. Fitzgerald, Manager *[Signature]* Telephone: 373-7495
WSCF Analytical Services

cc: W/Attachments W/O Attachments

T. F. Dale	S3-28	D. M. Thornton	S3-30
S. L. Fitzgerald	S3-30	D. Hart	S3-30
H. K. Meznarich	S3-30	L. C. Swanson	E6-35
J. E. Trechter	S3-30	File/LB	
M. Neely	S3-30		

Subject: SAMPLE RERUN RESULTS FOR 200-PW-2/200-PW-4 OU- BOREHOLE SOIL SAMPLING- SAMPLE DELIVERY GROUP WSCF20031236 (ORIGINAL SAMPLE DELIVERY GROUP-WSCF20030757)- SAF NUMBER F03-006

- References: (1) Groundwater Protection Program-Letter of Instruction, FH-EIS-2003-MEN-001, October 31, 2002
- (2) HNF-SD-CD-QAPP-017, Rev. 5, Waste Sampling and Characterization Facility Quality Assurance Plan

This letter contains a narrative (Attachment 1) for the sample delivery group (WSCF20031236), the analytical results (Attachment 2) and the sample receipt information (Attachment 3).

slf/ddw

Attachments 3

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T4180-03-SLF-035

ATTACHMENT 1

NARRATIVE

Consisting of 2 pages
Cover page not included

Sample Delivery Group	WSCF20031236
Sample Matrix	Soil
Sample Visual	Brown
SAF Number	F03-006
Data Deliverable	Summary Report

Introduction

GPP requested WSCF to rerun sample B171B9 for Methylene Chloride. This sample was received at the WSCF Laboratory on June 3, 2003. The sample was analyzed in accordance with the *Groundwater Protection Program- Letter of Instruction*, referenced in the cover letter.

The narrative (Attachment 1) will address sample characteristics, analyses requested and general information in performance of the analytical methods. A Data Summary Report (Attachment 2) includes analytical results, a comment report detailing method abnormalities, tentatively identified peaks if applicable, method references, and Laboratory QC information. Copies of the chain of custody and Request for Sample Analysis forms are included as Attachment 3.

Analytical Methodology for Requested Analyses

- VOA's by EPA SW-846 Method 8260A. Analytical work was performed with no deviations to the approved method.

Comments

VOA's – A Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with this assigned group. GPP requested this rerun because of high Methylene Chloride value reported, see page(s) 3-1, 3-2, and 3-3. See page(s) 2-7 for QC details. The rerun of this compound was less than the detection limit. WSCF also ran a blank (B171B9-BLANK) with the sample to detect possible contamination and it too recorded less than the detection limit. Possible explanation for the elevated result in the first run could be contributed to 1) high radiological activity required a reduced sample size, 2) the first run did not use boiled water in the preparation step, and 3) the sample is prepared in a different location because of the radiological activity. All these factors could have contributed to the possibility of the first sample becoming contaminated and the increased dilution factor multiplying that result.

This Summary Report is in compliance with the SOW, both technically and for completeness. Release of the data contained in this hard copy report has been authorized by the WSCF Laboratory Analytical Manager and Client Services, as verified by the following signature.



Troy Dale
WSCF Production Control

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 2

ANALYTICAL RESULTS

Consisting of 7 pages
Cover page not included

WSCF
ANALYTICAL RESULTS REPORT

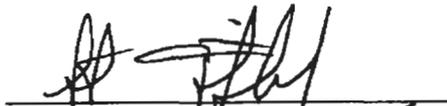
for

Ground Water Protection Program

Richland, WA 99352

Attention: Steve Trent

Analytical:



Client Services:



All results are reported on an "as received" basis unless otherwise noted in the comment section.

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Contract#: F03-006
Report#: WSCF20031236
Report Date: 16-sep-2003
Report WGPP/ver. 1
Ground Water Protection Program

WSCF ANALYTICAL RESULTS REPORT

Attention:
Project:

Steve Trent
F03-006: 200-PW-2/PW-4

Group #: WSCF20031236

Sample #	Client ID	CAS #	Test Performed	Matrix	WSCF		Result	Unit	DF	MDL	Analyze	Sample	Receive
					Method	RQ							
W030000809	B171B9	GPP TRENT 75-35-4	1,1-Dichloroethene	SOIL	LA-523-455	U	< 20.0	ug/kg	1.00	20	09/11/03	09/09/03	09/09/03
W030000809	B171B9	GPP TRENT 79-01-6	Trichloroethene	SOIL	LA-523-455	U	< 20.0	ug/kg	1.00	20	09/11/03	09/09/03	09/09/03
W030000809	B171B9	GPP TRENT 71-43-2	Benzene	SOIL	LA-523-455	U	< 20.0	ug/kg	1.00	20	09/11/03	09/09/03	09/09/03
W030000809	B171B9	GPP TRENT 108-88-3	Toluene	SOIL	LA-523-455	U	< 20.0	ug/kg	1.00	20	09/11/03	09/09/03	09/09/03
W030000809	B171B9	GPP TRENT 108-90-7	Chlorobenzene	SOIL	LA-523-455	U	< 20.0	ug/kg	1.00	20	09/11/03	09/09/03	09/09/03
W030000809	B171B9	GPP TRENT 75-09-2	Methylenechloride	SOIL	LA-523-455	U	< 20.0	ug/kg	1.00	20	09/11/03	09/09/03	09/09/03
W030000810	B171B9-BLANK	GPP TRENT 75-35-4	1,1-Dichloroethene	SOIL	LA-523-455	U	< 20.0	ug/kg	1.00	20	09/11/03	09/09/03	09/09/03
W030000810	B171B9-BLANK	GPP TRENT 79-01-6	Trichloroethene	SOIL	LA-523-455	U	< 20.0	ug/kg	1.00	20	09/11/03	09/09/03	09/09/03
W030000810	B171B9-BLANK	GPP TRENT 71-43-2	Benzene	SOIL	LA-523-455	U	< 20.0	ug/kg	1.00	20	09/11/03	09/09/03	09/09/03
W030000810	B171B9-BLANK	GPP TRENT 108-88-3	Toluene	SOIL	LA-523-455	U	< 20.0	ug/kg	1.00	20	09/11/03	09/09/03	09/09/03
W030000810	B171B9-BLANK	GPP TRENT 108-90-7	Chlorobenzene	SOIL	LA-523-455	U	< 20.0	ug/kg	1.00	20	09/11/03	09/09/03	09/09/03
W030000810	B171B9-BLANK	GPP TRENT 75-09-2	Methylenechloride	SOIL	LA-523-455	U	< 20.0	ug/kg	1.00	20	09/11/03	09/09/03	09/09/03

MDL=Minimum Detection Limit

U - Analyzed for but no detected above limiting criteria.

RQ=Result Qualifier

DF=Dilution Factor

* - Indicates results that have NOT been validated; + - Indicates more than six qualifier symbols

Report WGPP/ver. 1

Ground Water Protection Program

WSCF ANALYTICAL COMMENT REPORT

Attention:
Project Number

Group #: 20031236

Sample #	Client ID	Lab Area	Test	Comment
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Lab Areas: VALGROUP - Group Validation
LOGSAMP - Login for Sample

VALTEST - Test Validation
LOGTEST - Login for Tests

TESTDATA - Test Data Entry

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WSCF
TENTATIVELY IDENTIFIED PEAK REPORT

Attention:
Project Number :

Group #: 20031236

Sample #	Client ID	Test Name	Peak Name	CAS#	RT	RQ	Result	Units
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RQ=Result Qualifier

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WSCF

METHOD REFERENCES REPORT

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-523-455	LA-523-455: VOLATILE SAMPLE ANALYSIS BY SW-846
EPA SW-846 8000B	DETERMINATIVE CHROMATOGRAPHIC SEPARATIONS
EPA SW-846 8260B	VOLATILE ORGANIC COMPOUNDS BY GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)

Note: A complete list of WSCF analytical procedures and referenced regulatory or industry methods is available online at <http://apweb02/asponlinedocs/wscf/sample%20mgmt/ProcedureMethodCrossReference.pdf>. This document includes on-line links to full-text versions of the procedures and methods, where available.

Report Date: 16-sep-2003

Report#: WSCF20031236

Report WGPPM/O

w13qlog v1 16-sep-2003 12:45:43

W13q Worklist/Batch/QC Report for Group# WSCF20031236

WL#	S#	Batch	QC#	Tray Type	Sample#	Test
			23541	BLANK		VOA Ground Water Protection
			23541	SAMPLE	W030000809	VOA Ground Water Protection
			23541	SURR	W030000809	VOA Ground Water Protection
			23541	SAMPLE	W030000810	VOA Ground Water Protection
			23541	SURR	W030000810	VOA Ground Water Protection

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20031236
 Matrix: SOLID
 Test: VOA Ground Water Protection

SAF Number: F03-006
 Sample Date: 09/09/03
 Receive Date: 09/09/03

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
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Lab ID: W030000809
 BATCH QC ASSOCIATED WITH SAMPLE

SURR	4-Bromofluorobenzene	460-00-4	830.00	83.000	% Recov	09/11/03	71.000	125.000	
SURR	1,2-Dichloroethane-d4	17060-07-0	920.00	92.000	% Recov	09/11/03	80.000	134.000	
SURR	Toluene-d8	2037-26-5	970.00	97.000	% Recov	09/11/03	80.000	126.000	

Lab ID: W030000810
 BATCH QC ASSOCIATED WITH SAMPLE

SURR	4-Bromofluorobenzene	460-00-4	870.00	87.000	% Recov	09/11/03	71.000	125.000	
SURR	1,2-Dichloroethane-d4	17060-07-0	930.00	93.000	% Recov	09/11/03	80.000	134.000	
SURR	Toluene-d8	2037-26-5	980.00	98.000	% Recov	09/11/03	80.000	126.000	

BATCH QC

BLANK	1,1-Dichloroethene	75-35-4	< 2.0	n/a	ug/Kg	09/11/03			U
BLANK	Benzene	71-43-2	< 2.0	n/a	ug/Kg	09/11/03			U
BLANK	4-Bromofluorobenzene	460-00-4	98.000	98.000	% Recov	09/11/03	71.000	125.000	
BLANK	Chlorobenzene	108-90-7	< 2.0	n/a	ug/Kg	09/11/03			U
BLANK	1,2-Dichloroethane-d4	17060-07-0	100.000	100.000	% Recov	09/11/03	80.000	134.000	
BLANK	Methylenechloride	75-09-2	< 2.0	n/a	ug/Kg	09/11/03			U
BLANK	Toluene-d8	2037-26-5	100.000	100.000	% Recov	09/11/03	80.000	126.000	
BLANK	Toluene	108-88-3	< 2.0	n/a	ug/Kg	09/11/03			U
BLANK	Trichloroethene	79-01-6	< 2.0	n/a	ug/Kg	09/11/03			U

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ATTACHMENT 3

SAMPLE RECEIPT INFORMATION

Consisting of 3 pages
Cover page not included

Dale, Troy F

From: Neely, Michael
Sent: Thursday, September 04, 2003 9:15 AM
To: Dale, Troy F.; Fitzgerald, Scot L
Cc: Trechter, John E Jr.; Beebe, Kevin L; Sims, Vic T; Ross, Gerald A
Subject: Re-Run Requested - GPP SDG 20030757 - Methylene Chloride Issue

Importance: High

Troy/Scot:

In the first paragraph of Steve Trent's below e-mail message, he is requesting a re-run of WSCF sample number W030000533 (GPP sample number B171B9) associated with sample delivery group (SDG) 20030757 due to the high methylene chloride result (please see the details in the below e-mail thread). Also, are we going to process a laboratory "trip" blank that will "follow" the sample through the laboratory process to help identify any possible laboratory contamination issues?

Please provide me with a schedule for the completion of this sample re-run so that I can forward it to Steve. Thanks for your help with this.

Thanks,
Mike Neely

-----Original Message-----

From: Trent, Stephen J
Sent: Thursday, September 04, 2003 9:00 AM
To: Neely, Michael
Subject: Reruns needed...

Mike,

I've discussed the lab's responses to the data questions the GPP posed w/r/t the high methylene chloride value and the detection limits for certain ICP-MS metals. The GPP would like to the lab to rerun the VOA on SDG WSCF20030757. I believe that they want to confirm the high methylene chloride, but I'm not sure what they will do if the result comes back low or ND... Anyway, we know the holding time is out the window, but they still want a rerun. Please schedule the rerun to be performed as soon as possible.

Regarding the elevated metal detection limits, we will need the lab to rerun the ICP-MS analysis for sample B177C5 to push down the DLs for Se and Hg. We need to achieve a DL of at least 1 mg/kg for Se and 0.300 mg/kg for Hg. Again, please schedule to have the ICP-MS rerun performed as soon as possible.

Note that we need the laboratory to achieve our DLs whenever it is technically feasible. Most of our soil samples are typically going to be high in aluminum, iron, calcium, etc. If this is detrimental to the instrumentation, then we can talk about alternative methods to avoid damaging the instrumentation.

Regards,

Steve Trent
Sample Management Project Coordinator
Fluor Hanford - Central Plateau Project
Ph: (509) 373-5869
Cell: (509) 528-1172
EFax: (866) 252-5816
Site Pager: 85-7344

-----Original Message-----

From: Trent, Stephen J
Sent: Wednesday, September 03, 2003 2:56 PM
To: Neely, Michael
Subject: RE: GPP SDG 20030757 Re-Check Request

Mike,

Thanks for the response. I'll forward this to the GPP for their review.

Steve

-----Original Message-----

From: Neely, Michael
Sent: Wednesday, September 03, 2003 2:52 PM
To: Trent, Stephen J
Cc: Fitzgerald, Scot L; Meznarich, Huel K; Trechter, John E Jr.; Dale, Troy F
Subject: RE: GPP SDG 20030757 Re-Check Request

Steve:

In reference to your request pertaining to the methylene chloride result associated with sample delivery group (SDG) 20030757, the WSCF Lab has performed an investigation of this issue. What the Lab has determined is briefly summarized below:

- We have checked the analytical results and the raw data, and there are no calculation errors - methylene chloride is present at a concentration of 1,600 ppb (i.e. ug/kg).
- We have evaluated other samples that were analyzed at the same time as the sample in question, and methylene chloride was not detected in any of the other samples, nor was it detected in the blank.
- Although always a remote possibility, the likelihood of laboratory contamination of the sample is not known, can not be quantified, and can not be totally ruled out.
- This was one of the "hottest" samples in this SDG, therefore, a very small sample size was used (i.e., 0.25 grams, as compared to the normal 5 grams, which resulted in a 20-fold dilution), which has a tendency to exacerbate any potential contamination issues.

Therefore, if GPP is still questioning the data, then WSCF recommends that a "re-run" of this sample be performed in an attempt to resolve the methylene chloride issue. To this end, WSCF suggests that we also process a laboratory "trip" blank that will "follow" the sample through the laboratory process, and help to identify any possible laboratory contamination issues. Please advise me on how you would like WSCF to proceed on this matter.

Please do not hesitate to contact me if you have any questions, or if you require any additional information.

Thanks,

Mike Neely

WSCF (MO-280/B-103/600)

Fluor Hanford, Mail Stop S3-30

Phone: 509-373-0654

Cell: 509-528-2666

Pager: 509-373-PAGE, Extension 6730

FAX: 509-372-0456

E-Mail: michael_neely@rl.gov

-----Original Message-----

From: Neely, Michael

Sent: Wednesday, September 03, 2003 7:01 AM
To: Dale, Troy F
Cc: Fitzgerald, Scot L; Meznarich, Huei K; Trechter, John E Jr.; Trent, Stephen J
Subject: GPP SDG 20030757 Re-Check Request
Importance: High

Troy:

Yesterday (09-02-03) afternoon I received a telephone call from Steve Trent. Steve mentioned that for the Groundwater Protection Program (GPP) sample delivery group (SDG) 20030757 (WSCF sample number W030000533, GPP sample number B171B9), the result for methylene chloride was reported as 1,600 ppb (ug/kg). There were no other volatile organic analyses (VOA) compounds detected above the detection limit, and the level of methylene chloride in the QC (i.e., blank) was also less than the detection limit. Steve is requesting that WSCF take a look at this methylene chloride value and verify its validity. Can you please have someone initiate this activity? Thanks for your help with this.

Thanks,
Mike Neely
WSCF (MO-280/B-103/600)
Fluor Hanford, Mail Stop S3-30
Phone: 509-373-0654
Cell: 509-528-2666
Pager: 509-373-PAGE, Extension 6730
FAX: 509-372-0456
E-Mail: michael_neely@rl.gov