REVIEW COMMENT RECORD (RCR)

1. Date 04/24/06	2. Review No.
3. Project No. 200-UW-1`	4. Page 1 of 1

5. Document Number(s)/Title(s)	6. Program/Project/Building Number	7. Reviewer	8. Organization/Group	9. Location/Phone
Validation Package for SDG WSCF20060178	Trench between 216-U-8 & 216-U-12	RL Weiss	WCH - S&DM	Sigma 1 372-9631

17. Comment Submittal Approval:	10. Agreement with indicated comment disposition(s)	11. Closed
Organization Manager (Optional)	R. L. Weiss Reviewer/Point of Contract	Reviewer/Point of Contact
	04/24/06 Date	4-26-06 Date
	R. L. Weiss Author/Originator	Author/Originator

12. Item	13. Comment(s)/Discrepancy(s) (Provide technical justification for the comment and detailed recommendation of the action required to correct/resolve the discrepancy/problem indicated.)	14. Reviewer Concurrence Required	15. Disposition (Provide justification if NOT accepted.)	16. Status
1	Inorganics, Page 5: Minor Deficiencies section should also note no MS performed.			OK RLW 4-26-06
2	Inorganics, Pages 12, 13, 15, & 16: Results for Bi, Si, & Ag need "R" qualifier applied.			OK RLW 4-26-06
3	Wet Chemistry – No Comments.			
4	Volatiles, Page 10: Hexane is missing from the table (just above THF).			OK RLW 4-26-06
5	Semivolatile , Pages 18 & 21: Diethylphthalate results for B1HVM8 & B1HVN0 need to be corrected to 660.			OK RLW 4-26-06
6	Radiochemistry, Pages 11 &12: Typos. The second listing for Cerium-144 should be Cerium/Praseodymium-144. Pu-238 (aea) result for B1HVM8 should be -0.0088. U-235 (aea) result for B1HVM6 should not be flagged "U".			OK RLW 4-26-06
7	Radiochemistry, Pages 50 & 51 are reversed.			OK RLW 4-26-06

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REVIEW COMMENT RECORD (RCR)

1. Date 04/24/06	2. Review No.
3. Project No. 200-UW-1`	4. Page 1 of 1

5. Document Number(s)/Title(s)	6. Program/Project/Building Number	7. Reviewer	8. Organization/Group	9. Location/Phone
Validation Package for SDG W04885	Trench between 216-U-8 & 216-U-12	RL Weiss	WCH - S&DM	Sigma 1 372-9631

17. Comment Submittal Approval:	10. Agreement with indicated comment disposition(s)	11. Closed
Organization Manager (Optional)	04/24/06 Date R. L. Weiss Reviewer/Point of Contract R. L. Weiss Author/Originator	4-26-06 Date Reviewer/Point of Contact Author/Originator

12. Item	13. Comment(s)/Discrepancy(s) (Provide technical justification for the comment and detailed recommendation of the action required to correct/resolve the discrepancy/problem indicated.)	14. Reviewer Concurrence Required	15. Disposition (Provide justification if NOT accepted.)	16. Status
1	Radiochemistry, Pages 3 & 24: All results missed CRDL.			

206-013 pcl

ORP-114 (02/02)

ORP - REVIEW COMMENT RECORD (RCR)

1. Date	2. Review No.
04/25/2006	N/A
3. Project No. 200-UW-1	4. Page 1 of 2

5. Document Number(s)/Title(s)	6. Program/Project/Building Number	7. Reviewer	8. Organization/Group	9. Location/Phone
WSCF20060178 & W04885-ST	200-UW-1/soil from trench between 216-U-8 & 216-U-12 Cribs	WR Thackaberry	FH QA	E6-35 372-0742

17. Comment Submittal Approval	10. Agreement with indicated comment disposition(s)	11. CLOSED
Organization Manager (optional)	4/26/06 Date; WR Thackaberry Reviewer/Point of Contact; Requester	4/26/06 Date; WR Thackaberry Reviewer/Point of Contact; Requester

12. Item	13a. Comment(s)/Discrepancy(s). (Provide technical justification for the comment and detailed recommendation of the action required to correct/resolve the discrepancy/problem indicated.)	14. Reviewer Concurrence Required	15. Disposition (Provide justification if NOT accepted). Provide separate attachments if necessary.	16. Status
1	60178 Inorganics - Pg 3, section on LCS, paragraphs 3 & 4. Based upon the 3rd sentence in the first paragraph, it appears that silicon and silver results should be flagged UR, not R.		~~The sample was [illegible] flagged by the lab.~~ Concur	C
2	60178 Inorganics - Pg 4 Major deficiencies, same comment as above.		↓	C
3	60178 Inorganics - Pg 10, Metals Data Qualification Summary, bismuth, silicon & silver should be UR.		↓	C
4	60178 Inorganics - Pg 12, bismuth, silicon & silver should be UR, not J or UJ.		Concur	C
5	60178 Inorganics - pgs 13-17, bismuth, silicon & silver should be UR.		Concur	C
6	60178 Inorganics - pg 33, section 4, ACCURACY, the answers to the 4th, 5th & 6th questions appear to be erroneous. Should be N/A, Yes, No.		Concur	C
7	60178 Inorganics - pg 36, section 8, HOLDING TIME, Validator failed to answer 1st question.		Concur	C
8	60178 VOAs - pgs 24-29 are duplicates of pages 18-23.		Concur	C
9	60178 VOAs - pg 34, section 7, HOLDING TIMES, Validator failed to answer 1st question.		Concur	C
10	60178 SemiVOAs, RadChem, Wet Chem, W04885-ST RadChem - No Comment			

Date: 20 April2006
To: Fluor Hanford Inc. (technical representative)
From: TechLaw, Inc.
Project: 200-UW-1 Operable Unit, Soil from Trench Between 216-U-8 and 216-U-12 Cribs
Subject: Semivolatile - Data Package No.WSCF20060178 (60178)

INTRODUCTION

This memo presents the results of data validation on Data Package No. 60718 prepared by WSCF Analytical Laboratories (WSCF). A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample Date	Media	Validation	Date
B1HVM6	3/14/06	Soil	C	See note 1
B1HVM8	3/14/06	Soil	C	See note 1
B1HVN0	3/14/06	Soil	C	See note 1

1 - Semivolatiles by 8270 and TPH-D (diesel and kerosene).

Data validation was conducted in accordance with the FHI validation statement of work and the Sampling and Analysis Plan for Support Activities to the 200-UW-1 Operable Unit, DOE/RL-2005-75, Rev. 0. Appendices 1 through 6 provide the following information as indicated below:

Appendix 1. Glossary of Data Reporting Qualifiers
Appendix 2. Summary of Data Qualification
Appendix 3. Qualified Data Summary and Annotated Laboratory Reports
Appendix 4. Laboratory Narrative and Chain-of-Custody Documentation
Appendix 5. Data Validation Supporting Documentation
Appendix 6. Additional Documentation Requested by Client

DATA QUALITY OBJECTIVES

- **Holding Times/Sample Preservation**

Analytical holding times were assessed to ascertain whether the holding time requirements were met by the laboratory. The holding time requirement for semivolatile organics are extraction within 14 days of the date of sample collection and analysis within 40 days from the date of extraction. TPH-D requires analysis within 14 days.

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If holding times are exceeded, but not by greater than two times the limit, all associated sample results are qualified as estimates and flagged "J" for detects and "UJ" for non-detects. If holding times are exceeded by greater than two times the limit, all associated detectable sample results are qualified as estimates and flagged "J" and all non-detects are rejected and flagged "UR".

All holding times were met.

- **Method Blanks**

Method blank analyses are conducted to determine the extent of laboratory contamination introduced through sampling, sample preparation and analysis. At least one acceptable method blank analysis must be conducted for every 20 samples. No contaminants should be present in the method blank. Analytical results for analytes present in any sample at less than five times the concentration of that analyte found in the associated blank are qualified as non-detects and flagged "U". Common laboratory contaminants present in samples at less than ten times the concentration of that analyte found in the associated blank are qualified as non-detects. If a sample result is less than the CRQL and is less than five times (or less than ten times for lab contaminants) the highest associated blank result, the sample result value is raised to the CRQL level and qualified as undetected "U".

Due to method blank contamination, all diethylphthalate result in samples B1HVM8 and B1HVN0 were raised to the RQL and qualified as undetected.

Due to method blank contamination, the diethylphthalate result in sample B1HVM6 was qualified as undetected and flagged "U".

All other method blank results were acceptable.

Field Blanks

No field blanks were submitted for analysis.

- **Accuracy**

Matrix Spike/Matrix Spike Duplicate & Blank Spike

Matrix spike/matrix spike duplicate and blank spike sample analyses are used to assess the analytical accuracy of the reported data. Matrix spike/matrix duplicate results are used to assess the effect of the matrix on the ability to accurately quantify sample concentrations. Matrix spike/matrix spike duplicate analyses are

performed in duplicate using five compounds for which percent recoveries must be within a range of 50-150% or within laboratory control limits. If spike recoveries are outside control limits, detected sample results less than five times the spike concentration are qualified as estimates and flagged "J". Undetected sample results with spike recoveries outside control limits are qualified as estimates and flagged "UJ". Sample results greater than five times the spike concentration require no qualification.

Due to the lack of a matrix spike/matrix spike duplicate analysis, all results were qualified as estimates and flagged "J".

Surrogate Recovery

The analyses of surrogate compounds provide a measure of performance for individual samples. Matrix-specific surrogate compound recovery control windows have been established by the EPA CLP program. If two surrogates of the same class of compounds (base/neutral or acid) are out of control limits, all associated sample results greater than the contract required quantitation limit (CRQL) are qualified as estimates and flagged "J". Sample results less than the CRQL and below the lower control limit are qualified as estimates and flagged "UJ". Sample results less than the CRQL with recoveries above the upper control limit require no qualification. If a surrogate recovery is less than 10%, detects are qualified as estimates and flagged "J" and nondetects are rejected and flagged "UR".

All surrogate results were acceptable.

- **Precision**

Matrix Spike/Matrix Spike Duplicate Samples

Matrix spike (MS)/matrix spike duplicate (MSD) results provide matrix-specific information on the precision of the method for specific target compound classes. Precision is expressed by the relative percent difference (RPD) between the recoveries of duplicate matrix spike analyses performed on a sample. Samples results must be within RPD limits of +/-35%. If RPD values are out of specification and the sample concentration is less than five times the spike concentration, all associated detected sample results are qualified as estimates and flagged "J". If RPD values are out of specification and the sample concentration is greater than five times the spike concentration, no qualification is required.

Due to the lack of a matrix spike/matrix spike duplicate analysis, all results were qualified as estimates and flagged "J".

Field Duplicate Samples

No field duplicates were submitted for analysis.

· **Analytical Detection Levels**

Reported analytical detection levels are compared against the required target quantitation limits (RTQL's) to ensure that laboratory detection levels meet the required criteria. All analytes met the RTQL.

· **Completeness**

Data package No. 60178 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 100%.

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

The following minor deficiencies were noted:

- Due to method blank contamination, all diethylphthalate result in samples B1HVM8 and B1HVN0 were raised to the RQL and qualified as undetected.
- Due to method blank contamination, the diethylphthalate result in sample B1HVM6 was qualified as undetected and flagged "U".
- Due to the lack of a matrix spike/matrix spike duplicate analysis, all results were qualified as estimates and flagged "J".

Data flagged "J" is an estimate, but under the FHI validation SOW, the data may be usable for decision-making purposes. All other validated results are considered accurate within the standard error associated with the methods.

REFERENCES

FHI, Contract #20266, *Validation Statement of Work*, Fluor Hanford Incorporated, July 7, 2003.

DOE/RL-2005-75, Rev. 0, *Sampling and Analysis Plan for Support Activities to the 200-UW-1 Operable Unit*, December 2005.

Appendix 1

Glossary of Data Reporting Qualifiers

Qualifiers which may be applied by data validators in compliance with the FHI validation SOW are as follows:

U - Indicates the compound or analyte was analyzed for and not detected in the sample. The value reported is the same quantitation limit corrected for sample dilution and moisture content by the laboratory.

UJ - Indicates the compound or analyte was analyzed for and not detected in the sample. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.

J - Indicates the compound or analyte was analyzed for and detected. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.

R - Indicates the compound or analyte was analyzed for, detected, and due to an identified major QC deficiency, the data are unusable.

UR - Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified major QC deficiency.

NJ - Indicates presumptive evidence of a compound at an estimated value. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

N - Indicates presumptive evidence of a compound. The data may not be valid for some specific applications usable for decision-making purposes).

Appendix 2

Summary of Data Qualification

SEMIVOLATILE DATA QUALIFICATION SUMMARY*

SDG: 60178	REVIEWER: TLI	Project: 200-UW-1	PAGE 1 OF 1
COMMENTS:			
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
All	J	All	No MS or MSD analysis
Diethylphthalate	U at RTQL	B1HVM8, B1HVN0	Blank contamination
Diethylphthalate	U	B1HVM6	Blank contamination

* - The Qualified Data Summary Table includes laboratory applied "U" qualifiers not specifically identified here. The laboratory applied "U" qualifiers are included to minimize misinterpretation of results contained in the table.

Appendix 3

Qualified Data Sumrnary and Annotated Laboratory Reports

SEMIVOLATILE/TPH ANALYSIS, SOIL MATRIX, (UG/KG)

Project: FLUOR-HANFORD							
Laboratory: WSCF							
SDG: WSCF20060178							
Sample Number		B1HVM6		B1HVM8		B1HVN0	
Remarks							
Sample Date		3/14/06		3/14/06		3/14/06	
Analysis Date		3/20/06		3/20/06		3/20/06	
Semivolatile (8270B)	RTQL	Result	Q	Result	Q	Result	Q
4-Nitrophenol		<310	UJ	<290	UJ	<300	UJ
1,4-Dichlorobenzene		<480	UJ	<440	UJ	<460	UJ
Phenol	330	<250	UJ	<230	UJ	<240	UJ
1,2,4-Trichlorobenzene		<320	UJ	<300	UJ	<310	UJ
2,4-Dinitrotoluene		<200	UJ	<180	UJ	<190	UJ
Pyrene		<1400	UJ	<1200	UJ	<1300	UJ
4-Chloro-3-methylphenol		<170	UJ	<160	UJ	<160	UJ
N-Nitroso-di-n-propylamine		<270	UJ	<250	UJ	<260	UJ
Acenaphthene		<250	UJ	<230	UJ	<240	UJ
Pentachlorophenol	330	<260	UJ	<240	UJ	<250	UJ
2-Chlorophenol		<280	UJ	<250	UJ	<260	UJ
4-Nitroaniline		<320	UJ	<290	UJ	<300	UJ
4-Bromophenyl-phenyl ether		<190	UJ	<170	UJ	<180	UJ
2,4-Dimethylphenol		<320	UJ	<300	UJ	<310	UJ
4-Chloroanaline		<540	UJ	<500	UJ	<510	UJ
bis(2-chloro-1-methylethyl)ether		<320	UJ	<290	UJ	<300	UJ
bis(2-choroethyl)ether		<360	UJ	<330	UJ	<340	UJ
bis(2-chloroethoxy)methane		<220	UJ	<200	UJ	<210	UJ
bis(2-Ethylhexyl)phthalate	330	<180	UJ	<170	UJ	<170	UJ
Di-n-octylphthalate		<300	UJ	<280	UJ	<290	UJ
Hexachlorobenzene		<250	UJ	<230	UJ	<240	UJ
Anthracene		<280	UJ	<260	UJ	<260	UJ
2,4-Dichlorophenol		<160	UJ	<150	UJ	<150	UJ
Dimethylphthalate		<230	UJ	<210	UJ	<220	UJ
Dibenzofuran		<220	UJ	<200	UJ	<210	UJ
Benzo(g,h,i)perylene		<280	UJ	<260	UJ	<260	UJ
Indeno(1,2,3-cd)pyrene		<300	UJ	<270	UJ	<280	UJ
Benzo(b)fluoranthene*		<270	UJ	<250	UJ	<250	UJ
Fluoranthene		<290	UJ	<270	UJ	<270	UJ
Benzo(k)fluoranthene*		<200	UJ	<180	UJ	<190	UJ
Acenapthylene		<270	UJ	<240	UJ	<250	UJ
Chrysene		<260	UJ	<240	UJ	<240	UJ

000011

* - The reported detection limit is above the RTQL

Laboratory applied non-detect qualifiers "U" have been included in this table to minimize miss-interpretation of results. All other qualifiers shown were applied during validation.

SEMIVOLATILE/TPH ANALYSIS, SOIL MATRIX, (UG/KG)

Project: FLUOR-HANFORD							
Laboratory: WSCF							
SDG: WSCF20060178							
Sample Number		B1HVM6		B1HVM8		B1HVN0	
Remarks							
Sample Date		3/14/06		3/14/06		3/14/06	
Analysis Date		3/20/06		3/20/06		3/20/06	
Semivolatile (8270B)	RTQL	Result	Q	Result	Q	Result	Q
Benzo-a-pyrene		<220	UJ	<200	UJ	<210	UJ
2,4-Dinitrophenol		<640	UJ	<590	UJ	<610	UJ
Dibenz(a,h)anthracene		<340	UJ	<310	UJ	<320	UJ
4,6-Dinitro-2-methylphenol		<460	UJ	<420	UJ	<430	UJ
1,3-Dichlorobenzene		<580	UJ	<530	UJ	<540	UJ
Benzo-a-anthracene		<230	UJ	<210	UJ	<220	UJ
2,6-Dinitrotoluene		<250	UJ	<230	UJ	<240	UJ
4-Chlorophenyl-phenyl ether		<190	UJ	<170	UJ	<180	UJ
Hexachlorocyclopentadiene		<590	UJ	<540	UJ	<560	UJ
Isopherone		<300	UJ	<280	UJ	<290	UJ
Diethylphthalate	660	710	UJ	660	UJ	660	UJ
Di-n-butylphthalate		<590	UJ	<540	UJ	<550	UJ
Phenanthrene		<260	UJ	<240	UJ	<240	UJ
Butylbenzylphthalate		<150	UJ	<140	UJ	<140	UJ
N-Nitrosodiphenylamine		<260	UJ	<240	UJ	<250	UJ
Fluorene		<250	UJ	<230	UJ	<230	UJ
Carbazole		<280	UJ	<260	UJ	<270	UJ
Hexachlorobutadiene		<300	UJ	<280	UJ	<290	UJ
2-Nitroaniline		<190	UJ	<170	UJ	<180	UJ
2-Nitrophenol		<330	UJ	<300	UJ	<310	UJ
Naphthalene		<300	UJ	<270	UJ	<280	UJ
2-Methylnaphthalene		<270	UJ	<250	UJ	<260	UJ
2-Chloronaphthalene		<240	UJ	<220	UJ	<220	UJ
3,3-Dichlorobenzidine		<130	UJ	<120	UJ	<120	UJ
2-Methylphenol (cresol, o-)		<300	UJ	<270	UJ	<280	UJ
1,2-Dichlorobenzene		<460	UJ	<420	UJ	<430	UJ
2,4,5-Trichlorophenol		<160	UJ	<150	UJ	<160	UJ
Nitrobenzene		<300	UJ	<280	UJ	<290	UJ
3-Nitroaniline		<210	UJ	<190	UJ	<200	UJ
3 & 4-Methylphenol (total)		<380	UJ	<350	UJ	<360	UJ
Hexachloroethane		<440	UJ	<400	UJ	<410	UJ
2,4,6-Trichlorophenol		<150	UJ	<140	UJ	<140	UJ
Decane		<200	UJ	<180	UJ	<190	UJ
Dodecane		<140	UJ	<130	UJ	<130	UJ
Benzyl alcohol		<210	UJ	<190	UJ	<190	UJ
2-Butoxyethanol		<300	UJ	<280	UJ	<280	UJ
Tributylphosphate		<99.0	UJ	<91.0	UJ	<94.0	UJ

* - The reported detection limit is above the RTQL

Laboratory applied non-detect qualifiers "U" have been included in this table to minimize miss-interpretation of results. All other qualifiers shown were applied during validation.

Project: FLUOR-HANFORD							
Laboratory: WSCF							
SDG: WSCF20060178							
Sample Number		B1HVM6		B1HVM8		B1HVN0	
Remarks							
Sample Date		3/14/06		3/14/06		3/14/06	
Analysis Date		3/20/06		3/20/06		3/20/06	
Semivolatile (8270B)	**RTQL**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**
2-Naphthylamine		<480	UJ	<440	UJ	<460	UJ
Cyclohexanone		<140	UJ	<130	UJ	<130	UJ
Pyridine	**330**	<340	UJ	<320	UJ	<320	UJ
1,2,4-Trimethylbenzene		<130	UJ	<120	UJ	<120	UJ
Benzoic acid		<600	UJ	<560	UJ	<570	UJ
TPH-Diesel		<3600	UJ	<3500	UJ	<3300	UJ
Kerosene		<3600	UJ	<3500	UJ	<3300	UJ

000013

*** - The reported detection limit is above the RTQL**

Laboratory applied non-detect qualifiers "U" have been included in this table to minimize miss-interpretation of results. All other qualifiers shown were applied during validation.

WSCF
ANALYTICAL RESULTS REPORT

Attention: Deanna Klages H8-40 **Group #:** 20060178

Sample #	Client ID		CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
Organic														
W060000452	B1HVM6	K	100-02-7	4-Nitrophenol	SOLID	LA-523-456	U J	< 310	ug/kg	1.00	3.1e+02	03/20/06	03/14/06	03/14/06
W060000452	B1HVM6	K	106-46-7	1,4-Dichlorobenzene (SV)	SOLID	LA-523-456	U	< 480	ug/kg	1.00	4.8e+02	03/20/06	03/14/06	03/14/06
W060000452	B1HVM6	K	108-95-2	Phenol	SOLID	LA-523-456	U	< 250	ug/kg	1.00	2.5e+02	03/20/06	03/14/06	03/14/06
W060000452	B1HVM6	K	120-82-1	1,2,4-Trichlorobenzene	SOLID	LA-523-456	U	< 320	ug/kg	1.00	3.2e+02	03/20/06	03/14/06	03/14/06
W060000452	B1HVM6	K	121-14-2	2,4-Dinitrotoluene	SOLID	LA-523-456	U	< 200	ug/kg	1.00	2.0e+02	03/20/06	03/14/06	03/14/06
W060000452	B1HVM6	K	129-00-0	Pyrene	SOLID	LA-523-456	U	< 1.40e+03	ug/kg	1.00	1.4e+03	03/20/06	03/14/06	03/14/06
W060000452	B1HVM6	K	59-50-7	4-Chloro-3-methylphenol	SOLID	LA-523-456	U	< 170	ug/kg	1.00	1.7e+02	03/20/06	03/14/06	03/14/06
W060000452	B1HVM6	K	621-64-7	N-Nitroso-di-n-propylamine	SOLID	LA-523-456	U	< 270	ug/kg	1.00	2.7e+02	03/20/06	03/14/06	03/14/06
W060000452	B1HVM6	K	83-32-9	Acenaphthene	SOLID	LA-523-456	U	< 250	ug/kg	1.00	2.5e+02	03/20/06	03/14/06	03/14/06
W060000452	B1HVM6	K	87-86-5	Pentachlorophenol	SOLID	LA-523-456	U	< 260	ug/kg	1.00	2.6e+02	03/20/06	03/14/06	03/14/06
W060000452	B1HVM6	K	95-57-8	2-Chlorophenol	SOLID	LA-523-456	U	< 280	ug/kg	1.00	2.8e+02	03/20/06	03/14/06	03/14/06
W060000452	B1HVM6	K	100-01-6	4-Nitroaniline	SOLID	LA-523-456	U	< 320	ug/kg	1.00	3.2e+02	03/20/06	03/14/06	03/14/06
W060000452	B1HVM6	K	101-55-3	4-Bromophenyl-phenylether	SOLID	LA-523-456	U	< 190	ug/kg	1.00	1.9e+02	03/20/06	03/14/06	03/14/06
W060000452	B1HVM6	K	105-67-9	2,4-Dimethylphenol	SOLID	LA-523-456	U	< 320	ug/kg	1.00	3.2e+02	03/20/06	03/14/06	03/14/06
W060000452	B1HVM6	K	106-47-8	4-Chloroaniline	SOLID	LA-523-456	U	< 540	ug/kg	1.00	5.4e+02	03/20/06	03/14/06	03/14/06
W060000452	B1HVM6	K	108-60-1	Bis(2-Chloro-1-methylene)	SOLID	LA-523-456	U	< 320	ug/kg	1.00	3.2e+02	03/20/06	03/14/06	03/14/06
W060000452	B1HVM6	K	111-44-4	bis(-2-Chloroethyl)Eth	SOLID	LA-523-456	U	< 360	ug/kg	1.00	3.6e+02	03/20/06	03/14/06	03/14/06
W060000452	B1HVM6	K	111-91-1	bis(2-Chloroethoxy)methane	SOLID	LA-523-456	U	< 220	ug/kg	1.00	2.2e+02	03/20/06	03/14/06	03/14/06
W060000452	B1HVM6	K	117-81-7	Bis (2-Ethylhexyl) phthalate	SOLID	LA-523-456	U	< 180	ug/kg	1.00	1.8e+02	03/20/06	03/14/06	03/14/06
W060000452	B1HVM6	K	117-84-0	Di-n-octylphthalate	SOLID	LA-523-456	U	< 300	ug/kg	1.00	3.0e+02	03/20/06	03/14/06	03/14/06
W060000452	B1HVM6	K	118-74-1	Hexachlorobenzene	SOLID	LA-523-456	U	< 250	ug/kg	1.00	2.5e+02	03/20/06	03/14/06	03/14/06
W060000452	B1HVM6	K	120-12-7	Anthracene	SOLID	LA-523-456	U	< 280	ug/kg	1.00	2.8e+02	03/20/06	03/14/06	03/14/06
W060000452	B1HVM6	K	120-83-2	2,4-Dichlorophenol	SOLID	LA-523-456	U	< 160	ug/kg	1.00	1.6e+02	03/20/06	03/14/06	03/14/06
W060000452	B1HVM6	K	131-11-3	Dimethylphthalate	SOLID	LA-523-456	U	< 230	ug/kg	1.00	2.3e+02	03/20/06	03/14/06	03/14/06
W060000452	B1HVM6	K	132-64-9	Dibenzofuran	SOLID	LA-523-456	U	< 220	ug/kg	1.00	2.2e+02	03/20/06	03/14/06	03/14/06
W060000452	B1HVM6	K	191-24-2	Benzo(g,h,i)perylene	SOLID	LA-523-456	U	< 280	ug/kg	1.00	2.8e+02	03/20/06	03/14/06	03/14/06

000014

MDL = Minimum Detection Limit
RQ = Result Qualifier

B - The Analyte detected in both the BLANK and the SAMPLE (org.)
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B - The analyte < the RDL but > = the IDL/MDL (inorganic)
U - Analyzed for but not detected above limiting criteria.

DF = Dilution Factor

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4/18/06

WSCF
ANALYTICAL RESULTS REPORT

Attention: Deanna Klages H8-40 **Group #:** 20060178

Sample #	Client ID		CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W060000452	B1HVM6	K	193-39-5	Indeno(1,2,3-cd)pyrene	SOLID	LA-523-456	U J	< 300	ug/kg	1.00	3.0e+02	03/20/06	03/14/06	03/14/06
W060000452	B1HVM6	K	205-99-2	Benzo(b)fluoranthene	SOLID	LA-523-456	U	< 270	ug/kg	1.00	2.7e+02	03/20/06	03/14/06	03/14/06
W060000452	B1HVM6	K	206-44-0	Fluoranthene	SOLID	LA-523-456	U	< 290	ug/kg	1.00	2.9e+02	03/20/06	03/14/06	03/14/06
W060000452	B1HVM6	K	207-08-9	Benzo(k)fluoranthene	SOLID	LA-523-456	U	< 200	ug/kg	1.00	2.0e+02	03/20/06	03/14/06	03/14/06
W060000452	B1HVM6	K	208-96-8	Acenaphthylene	SOLID	LA-523-456	U	< 270	ug/kg	1.00	2.7e+02	03/20/06	03/14/06	03/14/06
W060000452	B1HVM6	K	218-01-9	Chrysene	SOLID	LA-523-456	U	< 260	ug/kg	1.00	2.6e+02	03/20/06	03/14/06	03/14/06
W060000452	B1HVM6	K	50-32-8	Benzo(a)pyrene	SOLID	LA-523-456	U	< 220	ug/kg	1.00	2.2e+02	03/20/06	03/14/06	03/14/06
W060000452	B1HVM6	K	51-28-5	2,4-Dinitrophenol	SOLID	LA-523-456	U	< 640	ug/kg	1.00	6.4e+02	03/20/06	03/14/06	03/14/06
W060000452	B1HVM6	K	53-70-3	Dibenz(a,h)anthracene	SOLID	LA-523-456	U	< 340	ug/kg	1.00	3.4e+02	03/20/06	03/14/06	03/14/06
W060000452	B1HVM6	K	534-52-1	4,6-Dinitro-2-methylphenol	SOLID	LA-523-456	U	< 460	ug/kg	1.00	4.6e+02	03/20/06	03/14/06	03/14/06
W060000452	B1HVM6	K	541-73-1	1,3-Dichlorobenzene	SOLID	LA-523-456	U	< 580	ug/kg	1.00	5.8e+02	03/20/06	03/14/06	03/14/06
W060000452	B1HVM6	K	56-55-3	Benzo(a)anthracene	SOLID	LA-523-456	U	< 230	ug/kg	1.00	2.3e+02	03/20/06	03/14/06	03/14/06
W060000452	B1HVM6	K	606-20-2	2,6-Dinitrotoluene	SOLID	LA-523-456	U	< 250	ug/kg	1.00	2.5e+02	03/20/06	03/14/06	03/14/06
W060000452	B1HVM6	K	7005-72-3	4-Chlorophenyl-phenylether	SOLID	LA-523-456	U	< 190	ug/kg	1.00	1.9e+02	03/20/06	03/14/06	03/14/06
W060000452	B1HVM6	K	77-47-4	Hexachlorocyclopentadiene	SOLID	LA-523-456	U	< 590	ug/kg	1.00	5.9e+02	03/20/06	03/14/06	03/14/06
W060000452	B1HVM6	K	78-59-1	Isophorone	SOLID	LA-523-456	U	< 300	ug/kg	1.00	3.0e+02	03/20/06	03/14/06	03/14/06
W060000452	B1HVM6	K	84-66-2	Diethylphthalate	SOLID	LA-523-456	B U	710	ug/kg	1.00	4.8e+02	03/20/06	03/14/06	03/14/06
W060000452	B1HVM6	K	84-74-2	Di-n-butylphthalate	SOLID	LA-523-456	U	< 590	ug/kg	1.00	5.9e+02	03/20/06	03/14/06	03/14/06
W060000452	B1HVM6	K	85-01-8	Phenanthrene	SOLID	LA-523-456	U	< 260	ug/kg	1.00	2.6e+02	03/20/06	03/14/06	03/14/06
W060000452	B1HVM6	K	85-68-7	Butylbenzylphthalate	SOLID	LA-523-456	U	< 150	ug/kg	1.00	1.5e+02	03/20/06	03/14/06	03/14/06
W060000452	B1HVM6	K	86-30-6	N-Nitrosodiphenylamine	SOLID	LA-523-456	U	< 260	ug/kg	1.00	2.6e+02	03/20/06	03/14/06	03/14/06
W060000452	B1HVM6	K	86-73-7	Fluorene	SOLID	LA-523-456	U	< 250	ug/kg	1.00	2.5e+02	03/20/06	03/14/06	03/14/06
W060000452	B1HVM6	K	86-74-8	Carbazole	SOLID	LA-523-456	U	< 280	ug/kg	1.00	2.8e+02	03/20/06	03/14/06	03/14/06
W060000452	B1HVM6	K	87-68-3	Hexachlorobutadiene	SOLID	LA-523-456	U	< 300	ug/kg	1.00	3.0e+02	03/20/06	03/14/06	03/14/06
W060000452	B1HVM6	K	88-74-4	2-Nitroaniline	SOLID	LA-523-456	U	< 190	ug/kg	1.00	1.9e+02	03/20/06	03/14/06	03/14/06
W060000452	B1HVM6	K	88-75-5	2-Nitrophenol	SOLID	LA-523-456	U	< 330	ug/kg	1.00	3.3e+02	03/20/06	03/14/06	03/14/06
W060000452	B1HVM6	K	91-20-3	Naphthalene	SOLID	LA-523-456	U	< 300	ug/kg	1.00	3.0e+02	03/20/06	03/14/06	03/14/06

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E - Analyte is an estimate, has potentially larger errors
X - Other flags and notes described in the comments/narrative.
B - The analyte < the RDL but > = the IDL/MDL (inorganic)
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4/18/06

000015

WSCF
ANALYTICAL RESULTS REPORT

Attention: Deanna Klages H8-40 **Group #:** 20060178

Sample #	Client ID		CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W060000452	B1HVM6	K	91-57-6	2-Methylnaphthalene	SOLID	LA-523-456	U	< 270	ug/kg	1.00	2.7e+02	03/20/06	03/14/06	03/14/06
W060000452	B1HVM6	K	91-58-7	2-Chloronaphthalene	SOLID	LA-523-456	U	< 240	ug/kg	1.00	2.4e+02	03/20/06	03/14/06	03/14/06
W060000452	B1HVM6	K	91-94-1	3,3'-Dichlorobenzidine	SOLID	LA-523-456	U	< 130	ug/kg	1.00	1.3e+02	03/20/06	03/14/06	03/14/06
W060000452	B1HVM6	K	95-48-7	2-Methylphenol	SOLID	LA-523-456	U	< 300	ug/kg	1.00	3.0e+02	03/20/06	03/14/06	03/14/06
W060000452	B1HVM6	K	95-50-1	1,2-Dichlorobenzene (SV)	SOLID	LA-523-456	U	< 460	ug/kg	1.00	4.6e+02	03/20/06	03/14/06	03/14/06
W060000452	B1HVM6	K	95-95-4	2,4,5-Trichlorophenol	SOLID	LA-523-456	U	< 160	ug/kg	1.00	1.6e+02	03/20/06	03/14/06	03/14/06
W060000452	B1HVM6	K	98-95-3	Nitrobenzene	SOLID	LA-523-456	U	< 300	ug/kg	1.00	3.0e+02	03/20/06	03/14/06	03/14/06
W060000452	B1HVM6	K	99-09-2	3-Nitroaniline	SOLID	LA-523-456	U	< 210	ug/kg	1.00	2.1e+02	03/20/06	03/14/06	03/14/06
W060000452	B1HVM6	K	65794-96-9	3 & 4 Methylphenol Total	SOLID	LA-523-456	U	< 380	ug/kg	1.00	3.8e+02	03/20/06	03/14/06	03/14/06
W060000452	B1HVM6	K	67-72-1	Hexachloroethane	SOLID	LA-523-456	U	< 440	ug/kg	1.00	4.4e+02	03/20/06	03/14/06	03/14/06
W060000452	B1HVM6	K	88-06-2	2,4,6-Trichlorophenol	SOLID	LA-523-456	U	< 150	ug/kg	1.00	1.5e+02	03/20/06	03/14/06	03/14/06
W060000452	B1HVM6	K	124-18-5	Decane	SOLID	LA-523-456	U	< 200	ug/kg	1.00	2.0e+02	03/20/06	03/14/06	03/14/06
W060000452	B1HVM6	K	112-40-3	Dodecane	SOLID	LA-523-456	U	< 140	ug/kg	1.00	1.4e+02	03/20/06	03/14/06	03/14/06
W060000452	B1HVM6	K	100-51-6	Benzyl alcohol	SOLID	LA-523-456	U	< 210	ug/kg	1.00	2.1e+02	03/20/06	03/14/06	03/14/06
W060000452	B1HVM6	K	111-76-2	2-Butoxyethanol	SOLID	LA-523-456	U	< 300	ug/kg	1.00	3.0e+02	03/20/06	03/14/06	03/14/06
W060000452	B1HVM6	K	126-73-8	Tri-n-butylphosphate	SOLID	LA-523-456	U	< 99.0	ug/kg	1.00	99	03/20/06	03/14/06	03/14/06
W060000452	B1HVM6	K	91-59-8	2-Naphthylamine	SOLID	LA-523-456	U	< 480	ug/kg	1.00	4.8e+02	03/20/06	03/14/06	03/14/06
W060000452	B1HVM6	K	108-94-1	Cyclohexanone	SOLID	LA-523-456	U	< 140	ug/kg	1.00	1.4e+02	03/20/06	03/14/06	03/14/06
W060000452	B1HVM6	K	110-86-1	Pyridine	SOLID	LA-523-456	U	< 340	ug/kg	1.00	3.4e+02	03/20/06	03/14/06	03/14/06
W060000452	B1HVM6	K	95-63-6	1,2,4-Trimethylbenzene	SOLID	LA-523-456	U	< 130	ug/kg	1.00	1.3e+02	03/20/06	03/14/06	03/14/06
W060000452	B1HVM6	K	65-85-0	Benzoic acid	SOLID	LA-523-456	U	< 600	ug/kg	1.00	600	03/20/06	03/14/06	03/14/06
W060000452	B1HVM6	K	TPHDIESEL	Total Pet. Hydrocarbons Diesel	SOLID	NWTPH	U	< 3.60e+03	ug/kg	1.00	3.6e+03	03/21/06	03/14/06	03/14/06
W060000452	B1HVM6	K	TPHKEROSENE	Kerosene	SOLID	NWTPH	U	< 3.60e+03	ug/kg	1.00	3.6e+03	03/21/06	03/14/06	03/14/06
W060000453	B1HVM8	K	100-02-7	4-Nitrophenol	SOLID	LA-523-456	U	< 290	ug/kg	1.00	2.9e+02	03/20/06	03/14/06	03/14/06
W060000453	B1HVM8	K	106-46-7	1,4-Dichlorobenzene (SV)	SOLID	LA-523-456	U	< 440	ug/kg	1.00	4.4e+02	03/20/06	03/14/06	03/14/06
W060000453	B1HVM8	K	108-95-2	Phenol	SOLID	LA-523-456	U	< 230	ug/kg	1.00	2.3e+02	03/20/06	03/14/06	03/14/06
W060000453	B1HVM8	K	120-82-1	1,2,4-Trichlorobenzene	SOLID	LA-523-456	U	< 300	ug/kg	1.00	3.0e+02	03/20/06	03/14/06	03/14/06

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E - Analyte is an estimate, has potentially larger errors
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4/18/06

000019

WSCF
ANALYTICAL RESULTS REPORT

Attention: Deanna Klages H8-40 **Group #:** 20060178

Sample #	Client ID		CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W060000453	B1HVM8	K	121-14-2	2,4-Dinitrotoluene	SOLID	LA-523-456	U	< 180	ug/kg	1.00	1.8e+02	03/20/06	03/14/06	03/14/06
W060000453	B1HVM8	K	129-00-0	Pyrene	SOLID	LA-523-456	U	< 1.20e+03	ug/kg	1.00	1.2e+03	03/20/06	03/14/06	03/14/06
W060000453	B1HVM8	K	59-50-7	4-Chloro-3-methylphenol	SOLID	LA-523-456	U	< 160	ug/kg	1.00	1.6e+02	03/20/06	03/14/06	03/14/06
W060000453	B1HVM8	K	621-64-7	N-Nitroso-di-n-propylamine	SOLID	LA-523-456	U	< 250	ug/kg	1.00	2.5e+02	03/20/06	03/14/06	03/14/06
W060000453	B1HVM8	K	83-32-9	Acenaphthene	SOLID	LA-523-456	U	< 230	ug/kg	1.00	2.3e+02	03/20/06	03/14/06	03/14/06
W060000453	B1HVM8	K	87-86-5	Pentachlorophenol	SOLID	LA-523-456	U	< 240	ug/kg	1.00	2.4e+02	03/20/06	03/14/06	03/14/06
W060000453	B1HVM8	K	95-57-8	2-Chlorophenol	SOLID	LA-523-456	U	< 250	ug/kg	1.00	2.5e+02	03/20/06	03/14/06	03/14/06
W060000453	B1HVM8	K	100-01-6	4-Nitroaniline	SOLID	LA-523-456	U	< 290	ug/kg	1.00	2.9e+02	03/20/06	03/14/06	03/14/06
W060000453	B1HVM8	K	101-55-3	4-Bromophenyl-phenylether	SOLID	LA-523-456	U	< 170	ug/kg	1.00	1.7e+02	03/20/06	03/14/06	03/14/06
W060000453	B1HVM8	K	105-67-9	2,4-Dimethylphenol	SOLID	LA-523-456	U	< 300	ug/kg	1.00	3.0e+02	03/20/06	03/14/06	03/14/06
W060000453	B1HVM8	K	106-47-8	4-Chloroaniline	SOLID	LA-523-456	U	< 500	ug/kg	1.00	5.0e+02	03/20/06	03/14/06	03/14/06
W060000453	B1HVM8	K	108-60-1	Bis(2-Chloro-1-methylene)	SOLID	LA-523-456	U	< 290	ug/kg	1.00	2.9e+02	03/20/06	03/14/06	03/14/06
W060000453	B1HVM8	K	111-44-4	bis(-2-Chloroethyl)Eth	SOLID	LA-523-456	U	< 330	ug/kg	1.00	3.3e+02	03/20/06	03/14/06	03/14/06
W060000453	B1HVM8	K	111-91-1	bis(2-Chloroethoxy)methane	SOLID	LA-523-456	U	< 200	ug/kg	1.00	2.0e+02	03/20/06	03/14/06	03/14/06
W060000453	B1HVM8	K	117-81-7	Bis (2-Ethylhexyl) phthalate	SOLID	LA-523-456	U	< 170	ug/kg	1.00	1.7e+02	03/20/06	03/14/06	03/14/06
W060000453	B1HVM8	K	117-84-0	Di-n-octylphthalate	SOLID	LA-523-456	U	< 280	ug/kg	1.00	2.8e+02	03/20/06	03/14/06	03/14/06
W060000453	B1HVM8	K	118-74-1	Hexachlorobenzene	SOLID	LA-523-456	U	< 230	ug/kg	1.00	2.3e+02	03/20/06	03/14/06	03/14/06
W060000453	B1HVM8	K	120-12-7	Anthracene	SOLID	LA-523-456	U	< 260	ug/kg	1.00	2.6e+02	03/20/06	03/14/06	03/14/06
W060000453	B1HVM8	K	120-83-2	2,4-Dichlorophenol	SOLID	LA-523-456	U	< 150	ug/kg	1.00	1.5e+02	03/20/06	03/14/06	03/14/06
W060000453	B1HVM8	K	131-11-3	Dimethylphthalate	SOLID	LA-523-456	U	< 210	ug/kg	1.00	2.1e+02	03/20/06	03/14/06	03/14/06
W060000453	B1HVM8	K	132-64-9	Dibenzofuran	SOLID	LA-523-456	U	< 200	ug/kg	1.00	2.0e+02	03/20/06	03/14/06	03/14/06
W060000453	B1HVM8	K	191-24-2	Benzo(g,h,i)perylene	SOLID	LA-523-456	U	< 260	ug/kg	1.00	2.6e+02	03/20/06	03/14/06	03/14/06
W060000453	B1HVM8	K	193-39-5	Indeno(1,2,3-cd)pyrene	SOLID	LA-523-456	U	< 270	ug/kg	1.00	2.7e+02	03/20/06	03/14/06	03/14/06
W060000453	B1HVM8	K	205-99-2	Benzo(b)fluoranthene	SOLID	LA-523-456	U	< 250	ug/kg	1.00	2.5e+02	03/20/06	03/14/06	03/14/06
W060000453	B1HVM8	K	206-44-0	Fluoranthene	SOLID	LA-523-456	U	< 270	ug/kg	1.00	2.7e+02	03/20/06	03/14/06	03/14/06
W060000453	B1HVM8	K	207-08-9	Benzo(k)fluoranthene	SOLID	LA-523-456	U	< 180	ug/kg	1.00	1.8e+02	03/20/06	03/14/06	03/14/06
W060000453	B1HVM8	K	208-96-8	Acenaphthylene	SOLID	LA-523-456	U	< 240	ug/kg	1.00	2.4e+02	03/20/06	03/14/06	03/14/06

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r 6/18/06

000017

WSCF
ANALYTICAL RESULTS REPORT

Attention: Deanna Klages H8-40 **Group #:** 20060178

Sample #	Client ID		CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W060000453	B1HVM8	K	218-01-9	Chrysene	SOLID	LA-523-456	U J	< 240	ug/kg	1.00	2.4e+02	03/20/06	03/14/06	03/14/06
W060000453	B1HVM8	K	50-32-8	Benzo(a)pyrene	SOLID	LA-523-456	U	< 200	ug/kg	1.00	2.0e+02	03/20/06	03/14/06	03/14/06
W060000453	B1HVM8	K	51-28-5	2,4-Dinitrophenol	SOLID	LA-523-456	U	< 590	ug/kg	1.00	5.9e+02	03/20/06	03/14/06	03/14/06
W060000453	B1HVM8	K	53-70-3	Dibenz(a,h)anthracene	SOLID	LA-523-456	U	< 310	ug/kg	1.00	3.1e+02	03/20/06	03/14/06	03/14/06
W060000453	B1HVM8	K	534-52-1	4,6-Dinitro-2-methylphenol	SOLID	LA-523-456	U	< 420	ug/kg	1.00	4.2e+02	03/20/06	03/14/06	03/14/06
W060000453	B1HVM8	K	541-73-1	1,3-Dichlorobenzene	SOLID	LA-523-456	U	< 530	ug/kg	1.00	5.3e+02	03/20/06	03/14/06	03/14/06
W060000453	B1HVM8	K	56-55-3	Benzo(a)anthracene	SOLID	LA-523-456	U	< 210	ug/kg	1.00	2.1e+02	03/20/06	03/14/06	03/14/06
W060000453	B1HVM8	K	606-20-2	2,6-Dinitrotoluene	SOLID	LA-523-456	U	< 230	ug/kg	1.00	2.3e+02	03/20/06	03/14/06	03/14/06
W060000453	B1HVM8	K	7005-72-3	4-Chlorophenyl-phenylether	SOLID	LA-523-456	U	< 170	ug/kg	1.00	1.7e+02	03/20/06	03/14/06	03/14/06
W060000453	B1HVM8	K	77-47-4	Hexachlorocyclopentadiene	SOLID	LA-523-456	U	< 540	ug/kg	1.00	5.4e+02	03/20/06	03/14/06	03/14/06
W060000453	B1HVM8	K	78-59-1	Isophorone	SOLID	LA-523-456	U	< 280	ug/kg	1.00	2.8e+02	03/20/06	03/14/06	03/14/06
W060000453	B1HVM8	K	84-66-2	Diethylphthalate	SOLID	LA-523-456	U J	440	ug/kg	1.00	4.4e+02	03/20/06	03/14/06	03/14/06
W060000453	B1HVM8	K	84-74-2	Di-n-butylphthalate	SOLID	LA-523-456	U J	< 540	ug/kg	1.00	5.4e+02	03/20/06	03/14/06	03/14/06
W060000453	B1HVM8	K	85-01-8	Phenanthrene	SOLID	LA-523-456	U	< 240	ug/kg	1.00	2.4e+02	03/20/06	03/14/06	03/14/06
W060000453	B1HVM8	K	85-68-7	Butylbenzylphthalate	SOLID	LA-523-456	U	< 140	ug/kg	1.00	1.4e+02	03/20/06	03/14/06	03/14/06
W060000453	B1HVM8	K	86-30-6	N-Nitrosodiphenylamine	SOLID	LA-523-456	U	< 240	ug/kg	1.00	2.4e+02	03/20/06	03/14/06	03/14/06
W060000453	B1HVM8	K	86-73-7	Fluorene	SOLID	LA-523-456	U	< 230	ug/kg	1.00	2.3e+02	03/20/06	03/14/06	03/14/06
W060000453	B1HVM8	K	86-74-8	Carbazole	SOLID	LA-523-456	U	< 260	ug/kg	1.00	2.6e+02	03/20/06	03/14/06	03/14/06
W060000453	B1HVM8	K	87-68-3	Hexachlorobutadiene	SOLID	LA-523-456	U	< 280	ug/kg	1.00	2.8e+02	03/20/06	03/14/06	03/14/06
W060000453	B1HVM8	K	88-74-4	2-Nitroaniline	SOLID	LA-523-456	U	< 170	ug/kg	1.00	1.7e+02	03/20/06	03/14/06	03/14/06
W060000453	B1HVM8	K	88-75-5	2-Nitrophenol	SOLID	LA-523-456	U	< 300	ug/kg	1.00	3.0e+02	03/20/06	03/14/06	03/14/06
W060000453	B1HVM8	K	91-20-3	Naphthalene	SOLID	LA-523-456	U	< 270	ug/kg	1.00	2.7e+02	03/20/06	03/14/06	03/14/06
W060000453	B1HVM8	K	91-57-6	2-Methylnaphthalene	SOLID	LA-523-456	U	< 250	ug/kg	1.00	2.5e+02	03/20/06	03/14/06	03/14/06
W060000453	B1HVM8	K	91-58-7	2-Chloronaphthalene	SOLID	LA-523-456	U	< 220	ug/kg	1.00	2.2e+02	03/20/06	03/14/06	03/14/06
W060000453	B1HVM8	K	91-94-1	3,3'-Dichlorobenzidine	SOLID	LA-523-456	U	< 120	ug/kg	1.00	1.2e+02	03/20/06	03/14/06	03/14/06
W060000453	B1HVM8	K	95-48-7	2-Methylphenol	SOLID	LA-523-456	U	< 270	ug/kg	1.00	2.7e+02	03/20/06	03/14/06	03/14/06
W060000453	B1HVM8	K	95-50-1	1,2-Dichlorobenzene (SV)	SOLID	LA-523-456	U	< 420	ug/kg	1.00	4.2e+02	03/20/06	03/14/06	03/14/06

000018

MDL=Minimum Detection Limit
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B - The Analyte detected in both the BLANK and the SAMPLE (org.)
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B - The analyte < the RDL but >= the IDL/MDL (inorganic)
U - Analyzed for but not detected above limiting criteria.

DF=Dilution Factor

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

4/18/06

WSCF
ANALYTICAL RESULTS REPORT

Attention: Deanna Klages H8-40 **Group #:** 20060178

Sample #	Client ID		CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W060000453	B1HVM8	K	95-95-4	2,4,5-Trichlorophenol	SOLID	LA-523-456	U	< 150	ug/kg	1.00	1.5e+02	03/20/06	03/14/06	03/14/06
W060000453	B1HVM8	K	98-95-3	Nitrobenzene	SOLID	LA-523-456	U	< 280	ug/kg	1.00	2.8e+02	03/20/06	03/14/06	03/14/06
W060000453	B1HVM8	K	99-09-2	3-Nitroaniline	SOLID	LA-523-456	U	< 190	ug/kg	1.00	1.9e+02	03/20/06	03/14/06	03/14/06
W060000453	B1HVM8	K	65794-96-9	3 & 4 Methylphenol Total	SOLID	LA-523-456	U	< 350	ug/kg	1.00	3.5e+02	03/20/06	03/14/06	03/14/06
W060000453	B1HVM8	K	67-72-1	Hexachloroethane	SOLID	LA-523-456	U	< 400	ug/kg	1.00	4.0e+02	03/20/06	03/14/06	03/14/06
W060000453	B1HVM8	K	88-06-2	2,4,6-Trichlorophenol	SOLID	LA-523-456	U	< 140	ug/kg	1.00	1.4e+02	03/20/06	03/14/06	03/14/06
W060000453	B1HVM8	K	124-18-5	Decane	SOLID	LA-523-456	U	< 180	ug/kg	1.00	1.8e+02	03/20/06	03/14/06	03/14/06
W060000453	B1HVM8	K	112-40-3	Dodecane	SOLID	LA-523-456	U	< 130	ug/kg	1.00	1.3e+02	03/20/06	03/14/06	03/14/06
W060000453	B1HVM8	K	100-51-6	Benzyl alcohol	SOLID	LA-523-456	U	< 190	ug/kg	1.00	1.9e+02	03/20/06	03/14/06	03/14/06
W060000453	B1HVM8	K	111-76-2	2-Butoxyethanol	SOLID	LA-523-456	U	< 280	ug/kg	1.00	2.8e+02	03/20/06	03/14/06	03/14/06
W060000453	B1HVM8	K	126-73-8	Tri-n-butylphosphate	SOLID	LA-523-456	U	< 91.0	ug/kg	1.00	91	03/20/06	03/14/06	03/14/06
W060000453	B1HVM8	K	91-59-8	2-Naphthylamine	SOLID	LA-523-456	U	< 440	ug/kg	1.00	4.4e+02	03/20/06	03/14/06	03/14/06
W060000453	B1HVM8	K	108-94-1	Cyclohexanone	SOLID	LA-523-456	U	< 130	ug/kg	1.00	1.3e+02	03/20/06	03/14/06	03/14/06
W060000453	B1HVM8	K	110-86-1	Pyridine	SOLID	LA-523-456	U	< 320	ug/kg	1.00	3.2e+02	03/20/06	03/14/06	03/14/06
W060000453	B1HVM8	K	95-63-6	1,2,4-Trimethylbenzene	SOLID	LA-523-456	U	< 120	ug/kg	1.00	1.2e+02	03/20/06	03/14/06	03/14/06
W060000453	B1HVM8	K	65-85-0	Benzoic acid	SOLID	LA-523-456	U	< 560	ug/kg	1.00	560	03/20/06	03/14/06	03/14/06
W060000453	B1HVM8	K	TPHDIESEL	Total Pet. Hydrocarbons Diesel	SOLID	NWTPH	U	< 3.50e+03	ug/kg	1.00	3.5e+03	03/21/06	03/14/06	03/14/06
W060000453	B1HVM8	K	TPHKEROSENE	Kerosene	SOLID	NWTPH	U	< 3.50e+03	ug/kg	1.00	3.5e+03	03/21/06	03/14/06	03/14/06
W060000454	B1HVN0	K	100-02-7	4-Nitrophenol	SOLID	LA-523-456	U	< 300	ug/kg	1.00	3.0e+02	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	106-46-7	1,4-Dichlorobenzene (SV)	SOLID	LA-523-456	U	< 460	ug/kg	1.00	4.6e+02	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	108-95-2	Phenol	SOLID	LA-523-456	U	< 240	ug/kg	1.00	2.4e+02	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	120-82-1	1,2,4-Trichlorobenzene	SOLID	LA-523-456	U	< 310	ug/kg	1.00	3.1e+02	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	121-14-2	2,4-Dinitrotoluene	SOLID	LA-523-456	U	< 190	ug/kg	1.00	1.9e+02	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	129-00-0	Pyrene	SOLID	LA-523-456	U	< 1.30e+03	ug/kg	1.00	1.3e+03	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	59-50-7	4-Chloro-3-methylphenol	SOLID	LA-523-456	U	< 160	ug/kg	1.00	1.6e+02	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	621-64-7	N-Nitroso-di-n-propylamine	SOLID	LA-523-456	U	< 260	ug/kg	1.00	2.6e+02	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	83-32-9	Acenaphthene	SOLID	LA-523-456	U	< 240	ug/kg	1.00	2.4e+02	03/20/06	03/14/06	03/14/06

000019

MDL=Minimum Detection Limit
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B - The Analyte detected in both the BLANK and the SAMPLE (org.)
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B - The analyte < the RDL but > = the IDL/MDL (inorganic)
U - Analyzed for but not detected above limiting criteria.

DF=Dilution Factor

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

4/14/06

WSCF
ANALYTICAL RESULTS REPORT

Attention: Deanna Klages H8-40 **Group #:** 20060178

Sample #	Client ID		CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W060000454	B1HVN0	K	87-86-5	Pentachlorophenol	SOLID	LA-523-456	U	< 250	ug/kg	1.00	2.5e+02	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	95-57-8	2-Chlorophenol	SOLID	LA-523-456	U	< 260	ug/kg	1.00	2.6e+02	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	100-01-6	4-Nitroaniline	SOLID	LA-523-456	U	< 300	ug/kg	1.00	3.0e+02	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	101-55-3	4-Bromophenyl-phenylether	SOLID	LA-523-456	U	< 180	ug/kg	1.00	1.8e+02	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	105-67-9	2,4-Dimethylphenol	SOLID	LA-523-456	U	< 310	ug/kg	1.00	3.1e+02	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	106-47-8	4-Chloroaniline	SOLID	LA-523-456	U	< 510	ug/kg	1.00	5.1e+02	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	108-60-1	Bis(2-Chloro-1-methylene)	SOLID	LA-523-456	U	< 300	ug/kg	1.00	3.0e+02	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	111-44-4	bis(-2-Chloroethyl)Eth	SOLID	LA-523-456	U	< 340	ug/kg	1.00	3.4e+02	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	111-91-1	bis(2-Chloroethoxy)methane	SOLID	LA-523-456	U	< 210	ug/kg	1.00	2.1e+02	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	117-81-7	Bis (2-Ethylhexyl) phthalate	SOLID	LA-523-456	U	< 170	ug/kg	1.00	1.7e+02	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	117-84-0	Di-n-octylphthalate	SOLID	LA-523-456	U	< 290	ug/kg	1.00	2.9e+02	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	118-74-1	Hexachlorobenzene	SOLID	LA-523-456	U	< 240	ug/kg	1.00	2.4e+02	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	120-12-7	Anthracene	SOLID	LA-523-456	U	< 260	ug/kg	1.00	2.6e+02	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	120-83-2	2,4-Dichlorophenol	SOLID	LA-523-456	U	< 150	ug/kg	1.00	1.5e+02	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	131-11-3	Dimethylphthalate	SOLID	LA-523-456	U	< 220	ug/kg	1.00	2.2e+02	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	132-64-9	Dibenzofuran	SOLID	LA-523-456	U	< 210	ug/kg	1.00	2.1e+02	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	191-24-2	Benzo(g,h,i)perylene	SOLID	LA-523-456	U	< 260	ug/kg	1.00	2.6e+02	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	193-39-5	Indeno(1,2,3-cd)pyrene	SOLID	LA-523-456	U	< 280	ug/kg	1.00	2.8e+02	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	205-99-2	Benzo(b)fluoranthene	SOLID	LA-523-456	U	< 250	ug/kg	1.00	2.5e+02	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	206-44-0	Fluoranthene	SOLID	LA-523-456	U	< 270	ug/kg	1.00	2.7e+02	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	207-08-9	Benzo(k)fluoranthene	SOLID	LA-523-456	U	< 190	ug/kg	1.00	1.9e+02	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	208-96-8	Acenaphthylene	SOLID	LA-523-456	U	< 250	ug/kg	1.00	2.5e+02	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	218-01-9	Chrysene	SOLID	LA-523-456	U	< 240	ug/kg	1.00	2.4e+02	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	50-32-8	Benzo(a)pyrene	SOLID	LA-523-456	U	< 210	ug/kg	1.00	2.1e+02	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	51-28-5	2,4-Dinitrophenol	SOLID	LA-523-456	U	< 610	ug/kg	1.00	6.1e+02	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	53-70-3	Dibenz(a,h)anthracene	SOLID	LA-523-456	U	< 320	ug/kg	1.00	3.2e+02	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	534-52-1	4,6-Dinitro-2-methylphenol	SOLID	LA-523-456	U	< 430	ug/kg	1.00	4.3e+02	03/20/06	03/14/06	03/14/06

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4/18/06

020000

WSCF
ANALYTICAL RESULTS REPORT

Attention: Deanna Klages H8-40 **Group #:** 20060178

Sample #	Client ID		CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W060000454	B1HVN0	K	541-73-1	1,3-Dichlorobenzene	SOLID	LA-523-456	U	< 540	ug/kg	1.00	5.4e+02	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	56-55-3	Benzo(a)anthracene	SOLID	LA-523-456	U	< 220	ug/kg	1.00	2.2e+02	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	606-20-2	2,6-Dinitrotoluene	SOLID	LA-523-456	U	< 240	ug/kg	1.00	2.4e+02	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	7005-72-3	4-Chlorophenyl-phenylether	SOLID	LA-523-456	U	< 180	ug/kg	1.00	1.8e+02	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	77-47-4	Hexachlorocyclopentadiene	SOLID	LA-523-456	U	< 560	ug/kg	1.00	5.6e+02	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	78-59-1	Isophorone	SOLID	LA-523-456	U	< 290	ug/kg	1.00	2.9e+02	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	84-66-2	Diethylphthalate	SOLID	LA-523-456	U	< 450	ug/kg	1.00	4.5e+02	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	84-74-2	Di-n-butylphthalate	SOLID	LA-523-456	U	< 550	ug/kg	1.00	5.5e+02	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	85-01-8	Phenanthrene	SOLID	LA-523-456	U	< 240	ug/kg	1.00	2.4e+02	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	85-68-7	Butylbenzylphthalate	SOLID	LA-523-456	U	< 140	ug/kg	1.00	1.4e+02	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	86-30-6	N-Nitrosodiphenylamine	SOLID	LA-523-456	U	< 250	ug/kg	1.00	2.5e+02	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	86-73-7	Fluorene	SOLID	LA-523-456	U	< 230	ug/kg	1.00	2.3e+02	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	86-74-8	Carbazole	SOLID	LA-523-456	U	< 270	ug/kg	1.00	2.7e+02	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	87-68-3	Hexachlorobutadiene	SOLID	LA-523-456	U	< 290	ug/kg	1.00	2.9e+02	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	88-74-4	2-Nitroaniline	SOLID	LA-523-456	U	< 180	ug/kg	1.00	1.8e+02	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	88-75-5	2-Nitrophenol	SOLID	LA-523-456	U	< 310	ug/kg	1.00	3.1e+02	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	91-20-3	Naphthalene	SOLID	LA-523-456	U	< 280	ug/kg	1.00	2.8e+02	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	91-57-6	2-Methylnaphthalene	SOLID	LA-523-456	U	< 260	ug/kg	1.00	2.6e+02	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	91-58-7	2-Chloronaphthalene	SOLID	LA-523-456	U	< 220	ug/kg	1.00	2.2e+02	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	91-94-1	3,3'-Dichlorobenzidine	SOLID	LA-523-456	U	< 120	ug/kg	1.00	1.2e+02	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	95-48-7	2-Methylphenol	SOLID	LA-523-456	U	< 280	ug/kg	1.00	2.8e+02	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	95-50-1	1,2-Dichlorobenzene (SV)	SOLID	LA-523-456	U	< 430	ug/kg	1.00	4.3e+02	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	95-95-4	2,4,5-Trichlorophenol	SOLID	LA-523-456	U	< 160	ug/kg	1.00	1.6e+02	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	98-95-3	Nitrobenzene	SOLID	LA-523-456	U	< 290	ug/kg	1.00	2.9e+02	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	99-09-2	3-Nitroaniline	SOLID	LA-523-456	U	< 200	ug/kg	1.00	2.0e+02	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	65794-96-9	3 & 4 Methylphenol Total	SOLID	LA-523-456	U	< 360	ug/kg	1.00	3.6e+02	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	67-72-1	Hexachloroethane	SOLID	LA-523-456	U	< 410	ug/kg	1.00	4.1e+02	03/20/06	03/14/06	03/14/06

MDL=Minimum Detection Limit
RQ=Result Qualifier

B - The Analyte detected in both the BLANK and the SAMPLE (org.)
E - Analyte is an estimate, has potentially larger errors
X - Other flags and notes described in the comments/narrative.

B - The analyte < the RDL but > = the IDL/MDL (inorganic)
U - Analyzed for but not detected above limiting criteria.

DF=Dilution Factor

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

4/18/06

0000021

WSCF
ANALYTICAL RESULTS REPORT

Attention: Deanna Klages H8-40 **Group #:** 20060178

Sample #	Client ID		CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W060000454	B1HVN0	K	88-06-2	2,4,6-Trichlorophenol	SOLID	LA-523-456	U	< 140 J	ug/kg	1.00	1.4e+02	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	124-18-5	Decane	SOLID	LA-523-456	U	< 190	ug/kg	1.00	1.9e+02	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	112-40-3	Dodecane	SOLID	LA-523-456	U	< 130	ug/kg	1.00	1.3e+02	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	100-51-6	Benzyl alcohol	SOLID	LA-523-456	U	< 190	ug/kg	1.00	1.9e+02	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	111-76-2	2-Butoxyethanol	SOLID	LA-523-456	U	< 280	ug/kg	1.00	2.8e+02	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	126-73-8	Tri-n-butylphosphate	SOLID	LA-523-456	U	< 94.0	ug/kg	1.00	94	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	91-59-8	2-Naphthylamine	SOLID	LA-523-456	U	< 460	ug/kg	1.00	4.6e+02	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	108-94-1	Cyclohexanone	SOLID	LA-523-456	U	< 130	ug/kg	1.00	1.3e+02	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	110-86-1	Pyridine	SOLID	LA-523-456	U	< 320	ug/kg	1.00	3.2e+02	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	95-63-6	1,2,4-Trimethylbenzene	SOLID	LA-523-456	U	< 120	ug/kg	1.00	1.2e+02	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	65-85-0	Benzoic acid	SOLID	LA-523-456	U	< 570	ug/kg	1.00	570	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	TPHDIESEL	Total Pet. Hydrocarbons Diesel	SOLID	NWTPH	U	< 3.30e+03	ug/kg	1.00	3.3e+03	03/21/06	03/14/06	03/14/06
W060000454	B1HVN0	K	TPHKEROSENE	Kerosene	SOLID	NWTPH	U	< 3.30e+03	ug/kg	1.00	3.3e+03	03/21/06	03/14/06	03/14/06
W060000455	B1HVN2	K	75-35-4	1,1-Dichloroethene	SOLID	LA-523-455	U	< 2.00	ug/kg	1.00	2.0	03/23/06	03/14/06	03/14/06
W060000455	B1HVN2	K	79-01-6	Trichloroethene	SOLID	LA-523-455	U	< 2.00	ug/kg	1.00	2.0	03/23/06	03/14/06	03/14/06
W060000455	B1HVN2	K	71-43-2	Benzene	SOLID	LA-523-455	U	< 2.00	ug/kg	1.00	2.0	03/23/06	03/14/06	03/14/06
W060000455	B1HVN2	K	108-88-3	Toluene	SOLID	LA-523-455	U	< 2.00	ug/kg	1.00	2.0	03/23/06	03/14/06	03/14/06
W060000455	B1HVN2	K	108-90-7	Chlorobenzene	SOLID	LA-523-455	U	< 2.00	ug/kg	1.00	2.0	03/23/06	03/14/06	03/14/06
W060000455	B1HVN2	K	75-34-3	1,1-Dichloroethane	SOLID	LA-523-455	U	< 2.00	ug/kg	1.00	2.0	03/23/06	03/14/06	03/14/06
W060000455	B1HVN2	K	100-41-4	Ethylbenzene	SOLID	LA-523-455	U	< 2.00	ug/kg	1.00	2.0	03/23/06	03/14/06	03/14/06
W060000455	B1HVN2	K	100-42-5	Styrene	SOLID	LA-523-455	U	< 2.00	ug/kg	1.00	2.0	03/23/06	03/14/06	03/14/06
W060000455	B1HVN2	K	10061-01-5	cis-1,3-Dichloropropene	SOLID	LA-523-455	U	< 2.00	ug/kg	1.00	2.0	03/23/06	03/14/06	03/14/06
W060000455	B1HVN2	K	10061-02-6	trans-1,3-Dichloropropene	SOLID	LA-523-455	U	< 2.00	ug/kg	1.00	2.0	03/23/06	03/14/06	03/14/06
W060000455	B1HVN2	K	107-06-2	1,2-Dichloroethane	SOLID	LA-523-455	U	< 2.00	ug/kg	1.00	2.0	03/23/06	03/14/06	03/14/06
W060000455	B1HVN2	K	108-10-1	4-Methyl-2-pentanone	SOLID	LA-523-455	U	< 2.00	ug/kg	1.00	2.0	03/23/06	03/14/06	03/14/06
W060000455	B1HVN2	K	124-48-1	Dibromochloromethane	SOLID	LA-523-455	U	< 2.00	ug/kg	1.00	2.0	03/23/06	03/14/06	03/14/06
W060000455	B1HVN2	K	127-18-4	Tetrachloroethene	SOLID	LA-523-455	U	< 2.00	ug/kg	1.00	2.0	03/23/06	03/14/06	03/14/06

MDL=Minimum Detection Limit
RQ=Result Qualifier

B - The Analyte detected in both the BLANK and the SAMPLE (org.)
E - Analyte is an estimate, has potentially larger errors
X - Other flags and notes described in the comments/narrative.
B - The analyte < the RDL but >= the IDL/MDL (inorganic)
U - Analyzed for but not detected above limiting criteria.

DF=Dilution Factor

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

Report W005/ver. 1.2
PROJECT HANFORD MANAGEMENT COMPANY

4/18/06

000222

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

Sample Delivery Group	**WSCF20060178**
Sample Matrix	**SOLID**
Sample Visual	**N/A**
SAF Number	**R06-013**
Data Deliverable	**Summary Report**

Introduction

Six soil samples (B1HVM6, B1HVM8, B1HVN0, B1HVN2, B3HVN3 and B1HVN4) from the 200-UW-1 Operable Unit Trench were received at the WSCF Laboratory on March 14, 2006. The samples were received in a cool condition with ice present in the coolers. The samples were analyzed for the analytes indicated on the attached copy of the chain of custody (COC) form in accordance with the *200-UW-1 Operable Unit Letter of Instruction*, referenced in the cover letter.

With the exception of VOA, all samples were taken using the Multi-Increment Sampling Program, which requires the entire sample submitted to be analyzed. This does not allow for laboratory sample duplicates or matrix spikes.

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 sample receipt are included as Attachment 3.

Analytical Methodology for Requested Analyses

Refer to *WSCF Method References Report,* pages 43 through 44, for a complete listing of approved analytical methods used.

Inorganic Comments

Anions - The hold times for this analysis were met. A Blank and Laboratory Control Sample were analyzed with this batch of less than 20 samples. See page 67 for QC details. All QC controls are within the established limits.

ICP-AES Metals – The hold time for this analysis was met. A Blank and Laboratory Control Sample were analyzed with this delivery group of less than 20 samples. See page 48 for QC details. Analytical Notes:

- Sample results are reported in ug/g while blank values are reported as ug/L.
- Bismuth, Magnesium, Lithium and Silicon were detected in the associated preparation Blank sample, but none of the samples were affected.
- Iron and Potassium yielded high Laboratory Control Sample recoveries, resulting in an "E" flag.

- Titanium, Bismuth and Silicon yielded low Laboratory Control Sample recoveries, resulting in an "X" flag.

All other QC controls are within the established limits.

ICP-MS Metals – The hold time for this analysis was met. A Blank and Laboratory Control Sample were analyzed with this batch of less than 20 samples. See pages 68 through 69. Analytical Notes:

- Aluminum and Nickel were detected in the associated preparation Blank, however there was no impact to the sample results.
- Silver and Antimony yielded low Laboratory Control Sample recoveries due to an apparent digestion problem, resulting in an "X" flag.
- Thorium results listed in the report represent Th-232 exclusively.

All other QC controls are within the established limits.

pH - Laboratory QC control is within the established limits. See page 24 for QC detail.

Percent Solids – analyzed for organic moisture correction.

Organic Comments

- Sample results are moisture corrected and reported on dry weight basis.

Semi-VOA – The hold time for this analysis was met. A Blank, Laboratory Control Sample, and Laboratory Control Sample Duplicate were analyzed with this delivery group of less than 20 samples. See pages 53 through 57 for QC details. Analytical Notes;

Since there was no Matrix Spike or Matrix Spike Duplicate run with this batch, the Relative Percent Difference (RPD) percentages are summarized below using LCS and LCS Duplicate QC Yields:

Additional Batch QC Data - SVOAs

QC Type	Analyte	CAS#	QC	
			Yield	RPD%
LCS	1,2,4-Trichlorobenzene	120-82-1	94.5%	
LCS – Duplicate	1,2,4-Trichlorobenzene	120-82-1	101.0%	6.650%
LCS	1,4-Dichlorobenzene	106-46-7	89.9%	

Additional Batch QC Data - SVOAs

QC Type	Analyte	CAS#	QC	
			Recovery	RPD %
LCS - Duplicate	1,4-Dichlorobenzene	106-46-7	97.8%	8.418%
LCS	2,4-Dinitrotoluene	121-14-2	85.9%	
LCS - Duplicate	2,4-Dinitrotoluene	121-14-2	93.9%	8.899%
LCS	2-Fluorophenol	367-12-4	96.4%	
LCS - Duplicate	2-Fluorophenol	367-12-4	104.0%	7.585%
LCS	Acenaphthene	83-32-9	96.9%	
LCS - Duplicate	Acenaphthene	83-32-9	104.0%	7.068%
LCS	4-Chloro-3-methylphenol	59-50-7	94.6%	
LCS - Duplicate	4-Chloro-3-methylphenol	59-50-7	101.0%	6.544%
LCS	2-Chlorophenol	95-57-8	93.1%	
LCS - Duplicate	2-Chlorophenol	95-57-8	101.0%	8.140%
LCS	N-Nitrosodi-n-dipropylamine	621-64-7	94.3%	
LCS - Duplicate	N-Nitrosodi-n-dipropylamine	621-64-7	102.0%	7.845%
LCS	2-Fluorobiphenyl	321-60-8	97.7%	
LCS – Duplicate	2-Fluorobiphenyl	321-60-8	107.0%	9.086%
LCS	Phenol	108.95-2	93.4%	
LCS -	Phenol	108.95-2	101.0%	7.819%

Additional Batch QC Data - SVOAs				
QC Type	Analyte	CASN	QC	
			Value	RPD %
Duplicate				
LCS	Nitrobenzene-d5	4165-60-0	98.5%	
LCS - Duplicate	Nitrobenzene-d5	4165-60-0	107.0%	8.273%
LCS	4-Nitrophenol	100-02-7	101.0%	
LCS - Duplicate	4-Nitrophenol	100-02-7	100.0%	0.995%
LCS	Pentachlorophenol	87-86-5	102.0%	
LCS - Duplicate	Pentachlorophenol	87-86-5	104.0%	1.942%
LCS	Phenol-d5	4165-62-2	98.0%	
LCS - Duplicate	Phenol-d5	4165-62-2	105.0%	6.897%
LCS	Pyrene	129-00-0	94.8%	
LCS - Duplicate	Pyrene	129-00-0	102.0%	7.317%
LCS	2,4,6-Tribromophenol	118-79-6	88.3%	
LCS - Duplicate	2,4,6-Tribromophenol	118-79-6	94.8%	7.100%
LCS	Terphenyl-d14	98904-43-9	96.4%	
LCS - Duplicate	Terphenyl-d14	98904-43-9	105.0%	8.540%

TPHD-WA - The hold time for this analysis was met. A Blank, Laboratory Control Sample, and Laboratory Control Sample Duplicate were analyzed with this delivery group of less than 20 samples. See page 59 for QC details. Analytical Note:

Since there was no Matrix Spike or Matrix Spike Duplicate run with this batch, the Relative Percent Difference (RPD) percentages are summarized below using LCS and LCS Duplicate QC Yields:

Batch QC Data				
QC Type	Analyte	CAS#	QC	
			Yield	RPD %
LCS	ortho-Terphenyl (surr)	84-15-1	102.0%	
LCS - Duplicate	ortho-Terphenyl (surr)	84-15-1	102.0%	2.740%
LCS	TOTAL Pet. Hydrocarbons Diesel	TPHDIESEL	98.8%	
LCS - Duplicate	TOTAL Pet. Hydrocarbons Diesel	TPHDIESEL	99.6%	0.806%

All QC controls are within the established limits.

VOA – The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with this delivery group of less than 20 samples. See pages 63 through 66 for QC details. All QC controls are within the established limits.

Radiochemistry Comments

There are no hold times associated with WSCF radiochemical methods.

Tecnicium-99 - A Blank, Laboratory Control Sample, Post Digestion Spike and Post Digestion Duplicate were analyzed with this delivery group of less than 20 samples. See pages 47 for QC details. All QC controls are within the established limits.

Strontium – 89/90 – A Blank and Laboratory Control Sample were analyzed with this batch of less than 20 samples. See page 49 for QC details. All QC controls are within the established limits.

Gamma Energy Analysis (GEA) – A Blank, Laboratory Control Sample and Sample Duplicate were analyzed with this batch of less than 20 samples. See page 50 through 52 for QC details. All QC controls are within the established limits.

Neptunium-237 – A Blank and Laboratory Control Sample were analyzed with this batch of less than 20 samples. See page 58 for QC details. All QC controls are within the established limits.

Uranium Isotopic – A Blank and Laboratory Control Sample were analyzed with this batch of less than 20 samples. See page 60 for QC details. All QC controls are within the established limits.

Plutonium Isotopic - A Blank and Laboratory Control Sample were analyzed with this batch of less than 20 samples. See page 61 for QC details. All QC controls are within the established limits.

Amercium-241 – A Blank and Laboratory Control Sample were analyzed with this batch of less than 20 samples. See page 62 for QC details. All QC controls are within the established limits.

Radiochemical Matrix Spike Recovery

Sample Number	Lab Sample ID	Isotope	Spike Recovery (Percent)
Neptunium-237			
B1HVM6	W060000452	Np-237	94.0%
B1HVM8	W060000453	Np-237	94.7%
B1HVN0	W060000454	Np-237	92.6%

Radiochemical Tracer Percent Recovery

Sample Number	Lab Sample ID	Isotope	Tracer Recovery (Percent)
Americium-243			
BLANK		Am-243	84.5%
LCS		Am-243	86.2%
B1HVM6	W060000452	Am-243	72.3%
B1HVM8	W060000453	Am-243	92.8%
B1HVN0	W060000454	Am-243	70.9%
Plutonium-242			
BLANK		Pu-242	85.3%
LCS		Pu-242	90.9%
B1HVM6	W060000452	Pu-242	79.4%

Radiochemical Tracer Percent Recovery			
Sample Number	Lab Sample ID	Isotope	Tracer Recovery in Percent
B1HVM8	W060000453	Pu-242	99.0%
B1HVN0	W060000454	Pu-242	87.9%
Strontium-85			
BLANK		Sr-85	89.0%
LCS		Sr-85	80.5%
B1HVM6	W060000452	Sr-85	67.4%
B1HVM8	W060000453	Sr-85	89.6%
B1HVN0	W060000454	Sr-85	90.3%
Uranium-232			
BLANK		U-232	85.1%
LCS		U-232	72.9%
B1HVM6	W060000452	U-232	89.9%
B1HVM8	W060000453	U-232	85.7%
B1HVN0	W060000454	U-232	84.0%

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.

John E. Trechter

John E. Trechter
WSCF Client Services

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	R06-013-002	PAGE 1 OF 2

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 9C	DATA TURNAROUND
KB Hulse 3/29/06	TRECHTER, JE	373-7046	TRECHTER, JE		
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**	**AIR QUALITY** ☐	15 Days / 15 Days
200-UW-1	200-UW-1 Operable Unit, Soil from Trench between 216-U-8 and 216-U-12		R06-013		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA**	**METHOD OF SHIPMENT**		
SESP	DTS-SAWS-H100	121600ES20	GOVERNMENT VEHICLE		
SHIPPED TO	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		
Waste Sampling & Characterization	N/A		N/A		

MATRIX*
OL = OTHER LIQUID
OS = OTHER SOLID
S = SOIL
W = WATER

SPECIAL HANDLING AND/OR STORAGE: 20060178

POSSIBLE SAMPLE HAZARDS/ REMARKS

SAMPLE NO.	LAB ID	MATRIX*	SAMPLE DATE	SAMPLE TIME	NO./TYPE CONTAINER(S)	ANALYSIS	PRESERVATION
B1HVM6	W0600004S2	S	3-14-06	0950	1X60mL aG 23.6 grams	SEE ITEM (1) IN SPECIAL INSTRUCTIONS See SAF R06-013 JET	Cool 4C
B1HVM6		S			1X60mL G 23.4 grams	TPH-Diesel Range - WTPH-D {TPHKEROSEN}	Cool 4C
B1HVM6		S			1X500mL Square Bottle - Poly 647 grams	SEE ITEM (2) IN SPECIAL INSTRUCTIONS See SAF R06-013 JET for GEA	None
B1HVM6		S			1X60mL G/P 24.4 grams	Isotopic Plutonium {Pu-238, Pu-239/240} Isotopic Uranium {U-233/234, U-235, U-238} Americium-241 {Am-241}	None
B1HVM6		S			1X60mL G/P 23.6 grams	Strontium-89,90 -- Sr-90 {Sr-90}	None
B1HVM6		S			1X60mL G/P 23.8 grams	Technetium-99 {Tc-99}	None
B1HVM6		S			1X60mL G/P 23.3 grams	Neptunium-237 {Np-237}	None

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
K.B. HULSE KB Hulse	3/14/06 1355	TA FRAZIER Tina Frazier	3/14/06 1355
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS

Reporting format the same as GPP, including QC. All samples, except VOAs, have been taken using the multiple-increment sampling program. This requires the entire sample provided in each bottle to be used in analysis. VOAs will be analyzed as usual.
(1)Semi-VOA -- 8270A (Add-On) {124TRMEBEN, 2-NAPHTHAM, 2BUTOXETOL, BENZALC, CYCHEXN, DECANE, MCRESOL, METHYLPHEN, PYRIDINE, TRIBUPH} Semi-VOA - 8270A (TCL) {12DICLBENZ, 13DICLBENZ, 14DICLBENZ, 245TRCLPHN, 246TRCLPHN, 24DICLPHEN, 24DIMET, 24DINITOLU, 26DINITOLU, 2CLMEETHER, 2MENAPH, 2METHPH, 2NITRAN, 2NITRPH, 3NITRAN, 46DINIT, 4CHLOET, 9H-CARB, ACENAPH, ACENATL, ANTHRACENE, BENZAAN, BENZBFL, BENZOPE,

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

000031

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	R06-013-002	PAGE 2 OF 2

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 9C	DATA TURNAROUND
KG Hulse	TRECHTER, JE	373-7046	TRECHTER, JE	AIR QUALITY ☐	15 Days / 15 Days

SAMPLING LOCATION	PROJECT DESIGNATION	SAF NO.
200-UW-1	200-UW-1 Operable Unit, Soil from Trench between 216-U-8 and 216-U-12	R06-013

ICE CHEST NO.	FIELD LOGBOOK NO.	COA	METHOD OF SHIPMENT
SESP	DTS-SAWS-H100	121600ES20	GOVERNMENT VEHICLE

SHIPPED TO	OFFSITE PROPERTY NO.	BILL OF LADING/AIR BILL NO.
Waste Sampling & Characterization	N/A	N/A

MATRIX*
OL = OTHER LIQUID
OS = OTHER SOLID
S = SOIL
W = WATER

SPECIAL HANDLING AND/OR STORAGE

POSSIBLE SAMPLE HAZARDS/ REMARKS

SAMPLE NO.	LAB ID	MATRIX*	SAMPLE DATE	SAMPLE TIME	NO./TYPE CONTAINER(S)	ANALYSIS	PRESERVATION
B1HVM6		S	3-14-06	0950	1X60mL G/P 21.9 grams	IC Anions - 300.0 {BROMIDE, CHLORIDE, FLUORIDE, NO2-N, NO3-N, PO4-P, SULFATE}	None
B1HVM6		S			1X60mL G/P 23 grams	ICP Metals - 6010A (Add-on) {B, Bi, La, Li, Si, Sm, Ti} ICP Metals - 6010A (TAL) {Al, Ca, Fe, K, Mg, Na}	Cool 4C
B1HVM6		S			1X60mL G/P 21.2 grams	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	None

000032

CHAIN OF POSSESSION — SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
KG Hulse [signature]	3-14-06 1355	TA FRAZIER [signature]	3-14-06 1355

SPECIAL INSTRUCTIONS

Reporting format the same as GPP, including QC. All samples, except VOAs, have been taken using the multiple-increment sampling program. This requires the entire sample provided in each bottle to be used in analysis. VOAs will be analyzed as usual.
(3)ICP/MS - 200.8 (Add-on) {As, Be, Mo, Pb, Se, Sn, Sr, Tl, U} ICP/MS - 200.8 (TAL) {Ag, Ba, Cd, Co, Cr, Cu, Mn, Ni, Sb, V, Zn} ICP/MS - 200.8 (Hg) {Hg} Isotopic Thorium {Th-232}

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

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	R06-013-003	PAGE 1 OF 2

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 9C	DATA TURNAROUND
KB Hulse	TRECHTER, JE	373-7046	TRECHTER, JE		
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**	**AIR QUALITY**	15 Days / 15 Days
200-UW-1	200-UW-1 Operable Unit, Soil from Trench between 216-U-8 and 216-U-12		R06-013		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA**	**METHOD OF SHIPMENT**		
SESP	DTS-SAWS-H100	121600ES20	GOVERNMENT VEHICLE		
SHIPPED TO	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		
Waste Sampling & Charactertzation	N/A		N/A		

MATRIX*
OL = OTHER LIQUID
OS = OTHER SOLID
S = SOIL
W = WATER

SPECIAL HANDLING AND/OR STORAGE

POSSIBLE SAMPLE HAZARDS/ REMARKS

SAMPLE NO.	LAB ID	MATRIX*	SAMPLE DATE	SAMPLE TIME	NO./TYPE CONTAINER(S)	ANALYSIS	PRESERVATION
B1HVM8	WCG 0000453	S	3/14/06	1010	1X60mL aG 24.2 grams	SEE ITEM (1) IN SPECIAL INSTRUCTIONS See SAF R06-013 JET	Cool 4C
B1HVM8		S			1X60mL G 23.2 grams	TPH-Diesel Range - WTPH-D {TPHKEROSEN}	Cool 4C
B1HVM8		S			1X500mL Square Bottle - Poly 491 grams	SEE ITEM (2) IN SPECIAL INSTRUCTIONS See SAF R06-013 JET for GEA	None
B1HVM8		S			1X60mL G/P 22.6 grams	Isotopic Plutonium {Pu-238, Pu-239/240} Isotopic Uranium {U-233/234, U-235, U-238} Americium-241 {Am-241}	None
B1HVM8		S			1X60mL G/P 23.1 grams	Strontium-89,90 -- Sr-90 {Sr-90}	None
B1HVM8		S			1X60mL G/P 24.2 grams	Technetium-99 {Tc-99}	None
B1HVM8		S			1X60mL G/P 24.7 grams	Neptunium-237 {Np-237}	None

000033

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
K. B. HULSE KB Hulse	3/14/06 1355	TA FRAZIER Teresa Frazier	3/14/06 1355
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS

Reporting format the same as GPP, including QC. All samples, except VOAs, have been taken using the multiple-increment sampling program. This requires the entire sample provided in each bottle to be used in analysis. VOAs will be analyzed as usual.
(1)Semi-VOA -- 8270A (Add-On) {124TRMEBEN, 2-NAPHTHAM, 2BUTOXETOL, BENZALC, CYCHEXN, DECANE, MCRESOL, METHYLPHEN, PYRIDINE, TRIBUPH} Semi-VOA - 8270A (TCL) {12DICLBENZ, 13DICLBENZ, 14DICLBENZ, 245TRCLPHN, 246TRCLPHN, 24DICLPHEN, 24DIMET, 24DINITOLU, 26DINITOLU, 2CLMEETHER, 2MENAPH, 2METHPH, 2NITRAN, 2NITRPH, 3NITRAN, 46DINIT, 4CHLOET, 9H-CARB, ACENAPH, ACENATL, ANTHRACENE, BENZAAN, BENZBFL, BENZOPE,

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

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	R06-013-003	PAGE 2 OF 2

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 9C	DATA TURNAROUND
KB Hulse	TRECHTER, JE	373-7046	TRECHTER, JE	AIR QUALITY ☐	15 Days / 15 Days
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**		
200-UW-1	200-UW-1 Operable Unit, Soil from Trench between 216-U-8 and 216-U-12		R06-013		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA**	**METHOD OF SHIPMENT**		
SESP	DTS-SAWS-H100	121600ES20	GOVERNMENT VEHICLE		
SHIPPED TO	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		
Waste Sampling & Characterization	N/A		N/A		

MATRIX*
OL = OTHER LIQUID
OS = OTHER SOLID
S = SOIL
W = WATER

SPECIAL HANDLING AND/OR STORAGE

POSSIBLE SAMPLE HAZARDS/ REMARKS

SAMPLE NO.	LAB ID	MATRIX*	SAMPLE DATE	SAMPLE TIME	NO./TYPE CONTAINER(S)	ANALYSIS	PRESERVATION
B1HVM8		S	3/14/06	1010	1X60mL G/P 23.0 grams	IC Anions - 300.0 {BROMIDE, CHLORIDE, FLUORIDE, NO2-N, NO3-N, PO4-P, SULFATE}	None
B1HVM8		S	↓	↓	1X60mL G/P 23.9 grams	ICP Metals - 6010A (Add-on) {B, Bi, La, Li, Si, Sm, Tl} ICP Metals - 6010A (TAL) {Al, Ca, Fe, K, Mg, Na}	Cool 4C
B1HVM8		S	↓	↓	1X60mL G/P 25.0 grams	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	None

000034

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
K.B. HULSE KB Hulse	3-14-06 1355	TA BAZIRE	3/14/06 1355

SPECIAL INSTRUCTIONS

Reporting format the same as GPP, including QC. All samples, except VOAs, have been taken using the multiple-increment sampling program. This requires the entire sample provided in each bottle to be used in analysis. VOAs will be analyzed as usual.
(3)ICP/MS - 200.8 (Add-on) {As, Be, Mo, Pb, Se, Sn, Sr, Tl, U} ICP/MS - 200.8 (TAL) {Ag, Ba, Cd, Co, Cr, Cu, Mn, Ni, Sb, V, Zn} ICP/MS - 200.8 (Hg) {Hg} Isotopic Thorium {Th-232}

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

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	R06-013-004	PAGE 1 OF 2

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 9C	DATA TURNAROUND
KB Hulse	TRECHTER, JE	373-7046	TRECHTER, JE	AIR QUALITY ☐	15 Days / 15 Days

SAMPLING LOCATION	PROJECT DESIGNATION	SAF NO.
200-UW-1	200-UW-1 Operable Unit, Soil from Trench between 216-U-8 and 216-U-12	R06-013

ICE CHEST NO.	FIELD LOGBOOK NO.	COA	METHOD OF SHIPMENT
SESP	DTS-SAWS-H100	121600ES20	GOVERNMENT VEHICLE

SHIPPED TO	OFFSITE PROPERTY NO.	BILL OF LADING/AIR BILL NO.
Waste Sampling & Charactertzation	N/A	N/A

MATRIX*
OL = OTHER LIQUID
OS = OTHER SOLID
S = SOIL
W = WATER

SPECIAL HANDLING AND/OR STORAGE

POSSIBLE SAMPLE HAZARDS/ REMARKS

SAMPLE NO.	LAB ID	MATRIX*	SAMPLE DATE	SAMPLE TIME	NO./TYPE CONTAINER(S)	ANALYSIS	PRESERVATION
B1HVN0	954	S	3-14-06	1020	1X60mL aG 23.7 grams	SEE ITEM (1) IN SPECIAL INSTRUCTIONS See SAF R06-013 JET	Cool 4C
B1HVN0		S			1X60mL G 24.7 grams	TPH-Diesel Range - WTPH-D {TPHKEROSEN}	Cool 4C
B1HVN0		S			1X500mL Square Bottle - Poly 621 grams	SEE ITEM (2) IN SPECIAL INSTRUCTIONS See SAF R06-013 for GEA JET	None
B1HVN0		S			1X60mL G/P 24.4 grams	Isotopic Plutonium {Pu-238, Pu-239/240} Isotopic Uranium {U-233/234, U-235, U-238} Americium-241 {Am-241}	None
B1HVN0		S			1X60mL G/P 24.1 grams	Strontium-89,90 -- Sr-90 {Sr-90}	None
B1HVN0		S			1X60mL G/P 23.6 grams	Technetium-99 {Tc-99}	None
B1HVN0		S			1X60mL G/P 23.6 grams	Neptunium-237 {Np-237}	None

000035

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
R. B. HULSE	3/14/06 1355	TA FRAZIER	3/14/06 1355
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
R. B. HULSE			
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS

Reporting format the same as GPP, including QC. All samples, except VOAs, have been taken using the multiple-increment sampling program. This requires the entire sample provided in each bottle to be used in analysis. VOAs will be analyzed as usual.
(1)Semi-VOA -- 8270A (Add-On) {124TRMEBEN, 2-NAPHTHAM, 2BUTOXETOL, BENZALC, CYCHEXN, DECANE, MCRESOL, METHYLPHEN, PYRIDINE, TRIBUPH} Semi-VOA - 8270A (TCL) {12DICLBENZ, 13DICLBENZ, 14DICLBENZ, 245TRCLPHN, 246TRCLPHN, 24DICLPHEN, 24DIMET, 24DINITOLU, 26DINITOLU, 2CLMEETHER, 2MENAPH, 2METHPH, 2NITRAN, 2NITRPH, 3NITRAN, 46DINIT, 4CHLOET, 9H-CARB, ACENAPH, ACENATL, ANTHRACENE, BENZAAN, BENZBFL, BENZOPE,

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

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			R06-013-004	PAGE 2 OF 2
COLLECTOR KB Hulse	COMPANY CONTACT TRECHTER, JE	TELEPHONE NO. 373-7046	PROJECT COORDINATOR TRECHTER, JE	PRICE CODE 9C	DATA TURNAROUND
SAMPLING LOCATION 200-UW-1	PROJECT DESIGNATION 200-UW-1 Operable Unit, Soil from Trench between 216-U-8 and 216-U-12		SAF NO. R06-013	AIR QUALITY ☐	15 Days / 15 Days
ICE CHEST NO. SESP	FIELD LOGBOOK NO. DTS-SAWS-H100	COA 121600ES20	METHOD OF SHIPMENT GOVERNMENT VEHICLE		
SHIPPED TO Waste Sampling & Characterization	OFFSITE PROPERTY NO. N/A		BILL OF LADING/AIR BILL NO. N/A		

MATRIX*
OL = OTHER LIQUID
OS = OTHER SOLID
S = SOIL
W = WATER

SPECIAL HANDLING AND/OR STORAGE

POSSIBLE SAMPLE HAZARDS/ REMARKS

SAMPLE NO.	LAB ID	MATRIX*	SAMPLE DATE	SAMPLE TIME	NO./TYPE CONTAINER(S)	ANALYSIS	PRESERVATION
B1HVN0		S	3-14-06	1020	1X60mL G/P 24.6 grams	IC Anions - 300.0 {BROMIDE, CHLORIDE, FLUORIDE, NO2-N, NO3-N, PO4-P, SULFATE}	None
B1HVN0		S			1X60mL G/P 23.8 grams	ICP Metals - 6010A (Add-on) {B, Bi, La, Li, Si, Sm, Ti} ICP Metals - 6010A (TAL) {Al, Ca, Fe, K, Mg, Na}	Cool 4C
B1HVN0		S			1X60mL G/P 24.9 grams	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	None

000036

CHAIN OF POSSESSION — SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
K. B. HULSE KB Hulse	3/14/06 1355	TA FIRAZIER Tarix Frazier	3/14/06 1355

SPECIAL INSTRUCTIONS

Reporting format the same as GPP, including QC. All samples, except VOAs, have been taken using the multiple-increment sampling program. This requires the entire sample provided in each bottle to be used in analysis. VOAs will be analyzed as usual.
(3)ICP/MS - 200.8 (Add-on) {As, Be, Mo, Pb, Se, Sn, Sr, Tl, U} ICP/MS - 200.8 (TAL) {Ag, Ba, Cd, Co, Cr, Cu, Mn, Ni, Sb, V, Zn} ICP/MS - 200.8 (Hg) {Hg} Isotopic Thorium {Th-232}

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

Appendix 5

Data Validation Supporting Documentation

GC/MS ORGANIC DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	C	D	E
PROJECT: 200-UW-1			DATA PACKAGE: 60178		
VALIDATOR: TLI		LAB: WSCF		DATE: 4/16/06	
			SDG: 60178		
ANALYSES PERFORMED					
SW-846 8260		SW-846 8260 (TCLP)	SW-846 8270	TPH	SW-846 8270 (TCLP)
SAMPLES/MATRIX					
B1HVM4		B1HVM8	B1HVN0		
					Soil

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

Technical verification documentation present? ..... Yes No N/A

Comments:

2. INSTRUMENT TUNING AND CALIBRATION (Levels D and E)

GC/MS tuning/performance check acceptable? ..... Yes No N/A

Initial calibrations acceptable? ..... Yes No N/A

Continuing calibrations acceptable? ..... Yes No N/A

Standards traceable? ..... Yes No N/A

Standards expired? ..... Yes No N/A

Calculation check acceptable? ..... Yes No N/A

Comments:

GC/MS ORGANIC DATA VALIDATION CHECKLIST

3. BLANKS (Levels B, C, D, and E)

Calibration blanks analyzed? (Levels D, E) ..... Yes No N/A

Calibration blank results acceptable? (Levels D, E) ..... Yes No N/A

Laboratory blanks analyzed? ..... Yes No N/A

Laboratory blank results acceptable? ..... Yes No N/A

Field/trip blanks analyzed? (Levels C, D, E) ..... Yes No N/A

Field/trip blank results acceptable? (Levels C, D, E) ..... Yes No N/A

Transcription/calculation errors? (Levels D, E) ..... Yes No N/A

Comments: diethylphthalate – U at RQL 5 to U – 4 no FB

4. ACCURACY (Levels C, D, and E)

Surrogates/system monitoring compounds analyzed? ..... Yes No N/A

Surrogate/system monitoring compound recoveries acceptable? ..... Yes No N/A

Surrogates traceable? (Levels D, E) ..... Yes No N/A

Surrogates expired? (Levels D, E) ..... Yes No N/A

MS/MSD samples analyzed? ..... Yes No N/A

MS/MSD results acceptable? ..... Yes No N/A

MS/MSD standards NIST traceable? (Levels D, E) ..... Yes No N/A

MS/MSD standards? (Levels D, E) ..... Yes No N/A

LCS/BSS samples analyzed? ..... Yes No N/A

LCS/BSS results acceptable? ..... Yes No N/A

Standards traceable? (Levels D, E) ..... Yes No N/A

Standards expired? (Levels D, E) ..... Yes No N/A

Transcription/calculation errors? (Levels D, E) ..... Yes No N/A

Performance audit sample(s) analyzed? ..... Yes No N/A

Performance audit sample results acceptable? ..... Yes No N/A

Comments: no MS – Jall no PA

GC/MS ORGANIC DATA VALIDATION CHECKLIST

5. PRECISION (Levels C, D, and E)

MS/MSD samples analyzed? ..... Yes No N/A

MS/MSD RPD values acceptable? ..... Yes No N/A

MS/MSD standards NIST traceable? (Levels D, E) ..... Yes No N/A

MS/MSD standards expired? (Levels D, E) ..... Yes No N/A

Field duplicate RPD values acceptable? ..... Yes No N/A

Field split RPD values acceptable? ..... Yes No N/A

Transcription/calculation errors? (Levels D, E) ..... Yes No N/A

Comments: no dup - J all

6. SYSTEM PERFORMANCE (Levels D and E)

Internal standards analyzed? ..... Yes No N/A

Iinternal standard areas acceptable? ..... Yes No N/A

Internal standard retention times acceptable? ..... Yes No N/A

Standards traceable? ..... Yes No N/A

Standards expired? ..... Yes No N/A

Transcription/calculation errors? ..... Yes No N/A

Comments:

7. HOLDING TIMES (all levels)

Samples properly preserved? ..... Yes No N/A

Sample holding times acceptable? ..... Yes No N/A

Comments:

GC/MS ORGANIC DATA VALIDATION CHECKLIST

8. COMPOUND IDENTIFICATION, QUANTITATION, AND DETECTION LIMITS (all levels)

Compound identification acceptable? (Levels D, E) ..... Yes No N/A

Compound quantitation acceptable? (Levels D, E) ..... Yes No N/A

Results reported for all requested analyses? ..... Yes No N/A

Results supported in the raw data? (Levels D, E) ..... Yes No N/A

Samples properly prepared? (Levels D, E) ..... Yes No N/A

Laboratory properly identified and coded all TIC? (Levels D, E) ..... Yes No N/A

Detection limits meet RDL? ..... Yes No N/A

Transcription/calculation errors? (Levels D, E) ..... Yes No N/A

Comments:

9. SAMPLE CLEANUP (Levels D and E)

GPC cleanup performed? ..... Yes No N/A

GPC check performed? ..... Yes No N/A

GPC check recoveries acceptable? ..... Yes No N/A

GPC calibration performed? ..... Yes No N/A

GPC calibration check performed? ..... Yes No N/A

GPC calibration check retention times acceptable? ..... Yes No N/A

Check/calibration materials traceable? ..... Yes No N/A

Check/calibration materials Expired? ..... Yes No N/A

Analytical batch QC given similar cleanup? ..... Yes No N/A

Transcription/Calculation Errors? ..... Yes No N/A

Comments:

Appendix 6

Additional Documentation Requested by Client

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: 20060178
Matrix: SOLID
Test: SW-846 8270C Semi-Vols

SAF Number: R06-013
Sample Date: 03/14/06
Receive Date:03/14/06

QC Type	Analyte		CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
Lab ID: W060000452										
BATCH QC ASSOCIATED WITH SAMPLE										
SURR	2-Fluorophenol	Surr	367-12-4	2341.1	96.800	% Recov	03/20/06	42.000	105.000	
SURR	2-Fluorobiphenyl	Surr	321-60-8	2431.0	100.000	% Recov	03/20/06	56.000	122.000	
SURR	Nitrobenzene-d5	Surr	4165-60-0	2445.4	101.000	% Recov	03/20/06	64.000	111.000	
SURR	Phenol-d5	Surr	4165-62-2	2398.5	99.100	% Recov	03/20/06	54.000	120.000	
SURR	2,4,6-Tribromophenol	Surr	118-79-6	1751.9	72.400	% Recov	03/20/06	24.000	122.000	
SURR	Terphenyl-d14	Surr	98904-43-9	2550.3	105.000	% Recov	03/20/06	35.000	150.000	
Lab ID: W060000453										
BATCH QC ASSOCIATED WITH SAMPLE										
SURR	2-Fluorophenol	Surr	367-12-4	1855.4	83.400	% Recov	03/20/06	42.000	105.000	
SURR	2-Fluorobiphenyl	Surr	321-60-8	1888.2	84.900	% Recov	03/20/06	56.000	122.000	
SURR	Nitrobenzene-d5	Surr	4165-60-0	2003.3	90.100	% Recov	03/20/06	64.000	111.000	
SURR	Phenol-d5	Surr	4165-62-2	1892.6	85.100	% Recov	03/20/06	54.000	120.000	
SURR	2,4,6-Tribromophenol	Surr	118-79-6	1522.3	68.400	% Recov	03/20/06	24.000	122.000	
SURR	Terphenyl-d14	Surr	98904-43-9	2158.4	97.000	% Recov	03/20/06	35.000	150.000	
Lab ID: W060000454										
BATCH QC ASSOCIATED WITH SAMPLE										
SURR	2-Fluorophenol	Surr	367-12-4	1935.1	84.600	% Recov	03/20/06	42.000	105.000	
SURR	2-Fluorobiphenyl	Surr	321-60-8	2000.4	87.500	% Recov	03/20/06	56.000	122.000	
SURR	Nitrobenzene-d5	Surr	4165-60-0	2085.5	91.200	% Recov	03/20/06	64.000	111.000	
SURR	Phenol-d5	Surr	4165-62-2	2020.5	88.300	% Recov	03/20/06	54.000	120.000	
SURR	2,4,6-Tribromophenol	Surr	118-79-6	1490.1	65.100	% Recov	03/20/06	24.000	122.000	
SURR	Terphenyl-d14	Surr	98904-43-9	2120.3	92.700	% Recov	03/20/06	35.000	150.000	

42a pol 5-26-06

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: 20060178
Matrix: SOLID
Test: SW-846 8270C Semi-Vols

SAF Number: R06-013
Sample Date:
Receive Date:

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
BATCH QC									
BLANK	1,2-Dichlorobenzene (SV)	95-50-1	< 380	n/a	ug/Kg	03/20/06			U
BLANK	1,2,4-Trimethylbenzene	95-63-6	< 100	n/a	ug/Kg	03/20/06			U
BLANK	1,2,4-Trichlorobenzene	120-82-1	< 270	n/a	ug/Kg	03/20/06			U
BLANK	1,3-Dichlorobenzene	541-73-1	< 480	n/a	ug/Kg	03/20/06			U
BLANK	1,4-Dichlorobenzene (SV)	106-46-7	< 400	n/a	ug/Kg	03/20/06			U
BLANK	2-Naphthylamine	91-59-8	< 400	n/a	ug/Kg	03/20/06			U
BLANK	2,4-Dichlorophenol	120-83-2	< 130	n/a	ug/Kg	03/20/06			U
BLANK	2,4-Dinitrotoluene	121-14-2	< 160	n/a	ug/Kg	03/20/06			U
BLANK	2,4,5-Trichlorophenol	95-95-4	< 140	n/a	ug/Kg	03/20/06			U
BLANK	2,4,6-Trichlorophenol	88-06-2	< 130	n/a	ug/Kg	03/20/06			U
BLANK	2,4-Dimethylphenol	105-67-9	< 270	n/a	ug/Kg	03/20/06			U
BLANK	2,6-Dinitrotoluene	606-20-2	< 210	n/a	ug/Kg	03/20/06			U
BLANK	2-Butoxyethanol	111-76-2	< 250	n/a	ug/Kg	03/20/06			U
BLANK	2-Chloronaphthalene	91-58-7	< 200	n/a	ug/Kg	03/20/06			U
BLANK	2-Fluorophenol Surr	367-12-4	1962.1	98.100	% Recov	03/20/06	42.000	105.000	
BLANK	2-Methylnaphthalene	91-57-6	< 220	n/a	ug/Kg	03/20/06			U
BLANK	2-Methylphenol	95-48-7	< 240	n/a	ug/Kg	03/20/06			U
BLANK	2-Nitroaniline	88-74-4	< 150	n/a	ug/Kg	03/20/06			U
BLANK	2-Nitrophenol	88-75-5	< 270	n/a	ug/Kg	03/20/06			U
BLANK	3 & 4 Methylphenol Total	65794-96-9	< 310	n/a	ug/Kg	03/20/06			U
BLANK	3-Nitroaniline	99-09-2	< 170	n/a	ug/Kg	03/20/06			U
BLANK	4,6-Dinitro-2-methylphenol	534-52-1	< 380	n/a	ug/Kg	03/20/06			U
BLANK	4-Bromophenyl-phenylether	101-55-3	< 150	n/a	ug/Kg	03/20/06			U
BLANK	4-Chlorophenyl-phenylether	7005-72-3	< 150	n/a	ug/Kg	03/20/06			U
BLANK	Acenaphthene	83-32-9	< 210	n/a	ug/Kg	03/20/06			U
BLANK	Acenaphthylene	208-96-8	< 220	n/a	ug/Kg	03/20/06			U
BLANK	Anthracene	120-12-7	< 230	n/a	ug/Kg	03/20/06			U
BLANK	bis(-2-Chloroethyl)Eth	111-44-4	< 300	n/a	ug/Kg	03/20/06			U

000043

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: 20060178
Matrix: SOLID
Test: SW-846 8270C Semi-Vols

SAF Number: R06-013
Sample Date:
Receive Date:

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
BLANK	Benzo(a)anthracene	56-55-3	< 190	n/a	ug/Kg	03/20/06			U
BLANK	Benzo(b)fluoranthene	205-99-2	< 220	n/a	ug/Kg	03/20/06			U
BLANK	Benzoic acid	65-85-0	< 500	n/a	ug/Kg	03/20/06	0.000		U
BLANK	Benzo(g,h,i)perylene	191-24-2	< 230	n/a	ug/Kg	03/20/06			U
BLANK	Benzo(a)pyrene	50-32-8	< 180	n/a	ug/Kg	03/20/06			U
BLANK	bis(2-Chloroethoxy)methane	111-91-1	< 180	n/a	ug/Kg	03/20/06			U
BLANK	Bis (2-Ethylhexyl) phthalate	117-81-7	< 150	n/a	ug/Kg	03/20/06			U
BLANK	Benzyl alcohol	100-51-6	< 170	n/a	ug/Kg	03/20/06			U
BLANK	Benzo(k)fluoranthene	207-08-9	< 160	n/a	ug/Kg	03/20/06			U
BLANK	Butylbenzylphthalate	85-68-7	< 130	n/a	ug/Kg	03/20/06			U
BLANK	Carbazole	86-74-8	< 230	n/a	ug/Kg	03/20/06			U
BLANK	4-Chloroaniline	106-47-8	< 450	n/a	ug/Kg	03/20/06			U
BLANK	4-Chloro-3-methylphenol	59-50-7	< 140	n/a	ug/Kg	03/20/06			U
BLANK	2-Chlorophenol	95-57-8	< 230	n/a	ug/Kg	03/20/06			U
BLANK	Chrysene	218-01-9	< 210	n/a	ug/Kg	03/20/06			U
BLANK	Cyclohexanone	108-94-1	< 110	n/a	ug/Kg	03/20/06			U
BLANK	3,3'-Dichlorobenzidine	91-94-1	< 100	n/a	ug/Kg	03/20/06			U
BLANK	Decane	124-18-5	< 160	n/a	ug/Kg	03/20/06			U
BLANK	Dibenz(a,h)anthracene	53-70-3	< 280	n/a	ug/Kg	03/20/06			U
BLANK	Dibenzofuran	132-64-9	< 180	n/a	ug/Kg	03/20/06			U
BLANK	Di-n-butylphthalate	84-74-2	< 480	n/a	ug/Kg	03/20/06			U
BLANK	Diethylphthalate	84-66-2	430	430.000	ug/Kg	03/20/06			
BLANK	Dimethylphthalate	131-11-3	< 190	n/a	ug/Kg	03/20/06			U
BLANK	2,4-Dinitrophenol	51-28-5	< 530	n/a	ug/Kg	03/20/06			U
BLANK	Di-n-octylphthalate	117-84-0	< 250	n/a	ug/Kg	03/20/06			U
BLANK	N-Nitroso-di-n-propylamine	621-64-7	< 220	n/a	ug/Kg	03/20/06			U
BLANK	Dodecane	112-40-3	< 110	n/a	ug/Kg	03/20/06	-999.000	999.000	U
BLANK	2-Fluorobiphenyl Surr	321-60-8	1968.2	98.400	% Recov	03/20/06	56.000	122.000	
BLANK	Fluorene	86-73-7	< 200	n/a	ug/Kg	03/20/06			U
BLANK	Fluoranthene	206-44-0	< 240	n/a	ug/Kg	03/20/06			U

000044

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: 20060178
Matrix: SOLID
Test: SW-846 8270C Semi-Vols

SAF Number: R06-013
Sample Date:
Receive Date:

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
BLANK	Hexachlorobenzene	118-74-1	< 210	n/a	ug/Kg	03/20/06			U
BLANK	Hexachlorobutadiene	87-68-3	< 250	n/a	ug/Kg	03/20/06			U
BLANK	Hexachlorocyclopentadiene	77-47-4	< 490	n/a	ug/Kg	03/20/06			U
BLANK	Hexachloroethane	67-72-1	< 360	n/a	ug/Kg	03/20/06			U
BLANK	Indeno(1,2,3-cd)pyrene	193-39-5	< 250	n/a	ug/Kg	03/20/06			U
BLANK	Isophorone	78-59-1	< 250	n/a	ug/Kg	03/20/06			U
BLANK	Phenol	108-95-2	< 210	n/a	ug/Kg	03/20/06			U
BLANK	Naphthalene	91-20-3	< 250	n/a	ug/Kg	03/20/06			U
BLANK	Nitrobenzene-d5 Surr	4165-60-0	1976.9	98.800	% Recov	03/20/06	64.000	111.000	
BLANK	Nitrobenzene	98-95-3	< 250	n/a	ug/Kg	03/20/06			U
BLANK	4-Nitrophenol	100-02-7	< 260	n/a	ug/Kg	03/20/06			U
BLANK	4-Nitroaniline	100-01-6	< 260	n/a	ug/Kg	03/20/06			U
BLANK	N-Nitrosodiphenylamine	86-30-6	< 220	n/a	ug/Kg	03/20/06			U
BLANK	Pentachlorophenol	87-86-5	< 220	n/a	ug/Kg	03/20/06			U
BLANK	Phenanthrene	85-01-8	< 210	n/a	ug/Kg	03/20/06			U
BLANK	Phenol-d5 Surr	4165-62-2	2014.0	101.000	% Recov	03/20/06	54.000	120.000	
BLANK	Pyrene	129-00-0	< 1100	n/a	ug/Kg	03/20/06			U
BLANK	Pyridine	110-86-1	< 280	n/a	ug/Kg	03/20/06			U
BLANK	Tri-n-butylphosphate	126-73-8	< 82	n/a	ug/Kg	03/20/06			U
BLANK	2,4,6-Tribromophenol Surr	118-79-6	1391.0	69.600	% Recov	03/20/06	24.000	122.000	
BLANK	Terphenyl-d14 Surr	98904-43-9	2047.4	102.000	% Recov	03/20/06	35.000	150.000	
LCS	1,2,4-Trichlorobenzene	120-82-1	1889.2	94.500	% Recov	03/20/06	46.000	107.000	
LCS	1,4-Dichlorobenzene (SV)	106-46-7	1798.0	89.900	% Recov	03/20/06	42.000	111.000	
LCS	2,4-Dinitrotoluene	121-14-2	1718.9	85.900	% Recov	03/20/06	59.000	106.000	
LCS	2-Fluorophenol Surr	367-12-4	1928.1	96.400	% Recov	03/20/06	50.000	110.000	
LCS	Acenaphthene	83-32-9	1937.3	96.900	% Recov	03/20/06	61.000	116.000	
LCS	4-Chloro-3-methylphenol	59-50-7	2838.5	94.600	% Recov	03/20/06	61.000	106.000	
LCS	2-Chlorophenol	95-57-8	2793.4	93.100	% Recov	03/20/06	66.000	106.000	
LCS	N-Nitroso-di-n-propylamine	621-64-7	1885.8	94.300	% Recov	03/20/06	71.000	114.000	
LCS	2-Fluorobiphenyl Surr	321-60-8	1954.5	97.700	% Recov	03/20/06	58.000	109.000	

000045

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: 20060178
Matrix: SOLID
Test: SW-846 8270C Semi-Vols

SAF Number: R06-013
Sample Date:
Receive Date:

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
LCS	Phenol	108-95-2	2802.5	93.400	% Recov	03/20/06	67.000	105.000	
LCS	Nitrobenzene-d5 Surr	4165-60-0	1970.6	98.500	% Recov	03/20/06	60.000	118.000	
LCS	4-Nitrophenol	100-02-7	3040.4	101.000	% Recov	03/20/06	32.000	118.000	
LCS	Pentachlorophenol	87-86-5	3060.4	102.000	% Recov	03/20/06	62.000	114.000	
LCS	Phenol-d5 Surr	4165-62-2	1960.6	98.000	% Recov	03/20/06	59.000	116.000	
LCS	Pyrene	129-00-0	1896.0	94.800	% Recov	03/20/06	66.000	118.000	
LCS	2,4,6-Tribromophenol Surr	118-79-6	1766.0	88.300	% Recov	03/20/06	60.000	120.000	
LCS	Terphenyl-d14 Surr	98904-43-9	1927.8	96.400	% Recov	03/20/06	60.000	120.000	
LCS-DUP	1,2,4-Trichlorobenzene	120-82-1	2021.6	101.000	% Recov	03/20/06	46.000	107.000	
LCS-DUP	1,4-Dichlorobenzene (SV)	106-46-7	1956.9	97.800	% Recov	03/20/06	42.000	111.000	
LCS-DUP	2,4-Dinitrotoluene	121-14-2	1877.6	93.900	% Recov	03/20/06	59.000	105.000	
LCS-DUP	2-Fluorophenol Surr	367-12-4	2075.7	104.000	% Recov	03/20/06	50.000	110.000	
LCS-DUP	Acenaphthene	83-32-9	2089.6	104.000	% Recov	03/20/06	61.000	116.000	
LCS-DUP	4-Chloro-3-methylphenol	59-50-7	3037.4	101.000	% Recov	03/20/06	61.000	106.000	
LCS-DUP	2-Chlorophenol	95-57-8	3020.4	101.000	% Recov	03/20/06	66.000	106.000	
LCS-DUP	N-Nitroso-di-n-propylamine	621-64-7	2036.1	102.000	% Recov	03/20/06	71.000	114.000	
LCS-DUP	2-Fluorobiphenyl Surr	321-60-8	2131.6	107.000	% Recov	03/20/06	58.000	109.000	
LCS-DUP	Phenol	108-95-2	3026.6	101.000	% Recov	03/20/06	67.000	105.000	
LCS-DUP	Nitrobenzene-d5 Surr	4165-60-0	2135.6	107.000	% Recov	03/20/06	60.000	118.000	
LCS-DUP	4-Nitrophenol	100-02-7	3014.2	100.000	% Recov	03/20/06	32.000	118.000	
LCS-DUP	Pentachlorophenol	87-86-5	3130.8	104.000	% Recov	03/20/06	62.000	114.000	
LCS-DUP	Phenol-d5 Surr	4165-62-2	2099.3	105.000	% Recov	03/20/06	59.000	116.000	
LCS-DUP	Pyrene	129-00-0	2032.1	102.000	% Recov	03/20/06	66.000	118.000	
LCS-DUP	2,4,6-Tribromophenol Surr	118-79-6	1896.6	94.800	% Recov	03/20/06	60.000	120.000	
LCS-DUP	Terphenyl-d14 Surr	98904-43-9	2109.0	105.000	% Recov	03/20/06	60.000	120.000	

000046

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: 20060178
Matrix: SOLID
Test: WTPH-D TPH Diesel Range (Wa)

SAF Number: R06-013
Sample Date: 03/14/06
Receive Date:03/14/06

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
Lab ID: W060000452									
BATCH QC ASSOCIATED WITH SAMPLE									
SURR	ortho-Terphenyl Surr	84-15-1	25984	107.000	% Recov	03/21/06	70.000	130.000	
Lab ID: W060000453									
BATCH QC ASSOCIATED WITH SAMPLE									
SURR	ortho-Terphenyl Surr	84-15-1	23192	98.800	% Recov	03/21/06	70.000	130.000	
Lab ID: W060000454									
BATCH QC ASSOCIATED WITH SAMPLE									
SURR	ortho-Terphenyl Surr	84-15-1	23223	105.000	% Recov	03/21/06	70.000	130.000	
BATCH QC									
BLANK	Kerosene	TPHKEROSENE	< 3000	n/a	ug/Kg	03/21/06			U
BLANK	ortho-Terphenyl Surr	84-15-1	19505	97.500	% Recov	03/21/06	70.000	130.000	
BLANK	Total Pet. Hydrocarbons Diesel	TPHDIESEL	< 3000	n/a	ug/Kg	03/21/06			U
LCS	ortho-Terphenyl Surr	84-15-1	20348	102.000	% Recov	03/21/06	70.000	130.000	
LCS	Total Pet. Hydrocarbons Diesel	TPHDIESEL	98807	98.800	% Recov	03/21/06	80.000	120.000	
LCS-DUP	ortho-Terphenyl Surr	84-15-1	20466	102.000	% Recov	03/21/06	70.000	130.000	
LCS-DUP	Total Pet. Hydrocarbons Diesel	TPHDIESEL	99622	99.600	% Recov	03/21/06	80.000	120.000	
LCS-RPD	Total Pet. Hydrocarbons Diesel	TPHDIESEL	99.600	0.806	RPD	03/21/06	0.000	20.000	

000047

Date: 21 April 2006
To: Fluor Hanford Inc. (technical representative)
From: TechLaw, Inc.
Project: 200-UW-1 Operable Unit, Soil from Trench Between 216-U-8 and 216-U-12 Cribs
Subject: Wet Chemistry - Data Package No.WSCF20060178 (60178)

INTRODUCTION

This memo presents the results of data validation on Data Package No. 60178 prepared by WSCF Analytical Laboratories (WSCF). A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample Date	Media	Validation	Date
B1HVM6	3/14/06	Soil	C	See note 1*
B1HVM8	3/14/06	Soil	C	See note 1*
B1HVN0	3/14/06	Soil	C	See note 1*

1 - Anions by 300.0.
* - Nitrate, nitrite and phosphate not validated or reported per FHI.

Data validation was conducted in accordance with the FHI validation statement of work and the Sampling and Analysis Plan for Support Activities to the 200-UW-1 Operable Unit, DOE/RL-2005-75, Rev. 0. Appendices 1 through 6 provide the following information as indicated below:

Appendix 1. Glossary of Data Reporting Qualifiers
Appendix 2. Summary of Data Qualification
Appendix 3. Qualified Data Summary and Annotated Laboratory Report
Appendix 4. Laboratory Narrative and Chain-of-Custody Documentation
Appendix 5. Data Validation Supporting Documentation
Appendix 6. Additional Documentation Requested by Client

MAY 2006
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DATA QUALITY PARAMETERS

- **Holding Times/Sample Preservation**

Analytical holding times are assessed to ascertain whether the holding time requirements were met by the laboratory. The holding time requirements are as follows: Soil samples must be analyzed within 28 days for sulfate, fluoride and chloride.

If holding times are exceeded, but not by greater than two times the limit, all associated sample results are qualified as estimates and flagged "J" for detects and "UJ" for non-detects. If holding times are exceeded by greater than two times the

limit, all associated detectable sample results are qualified as estimates and flagged "J" and all non-detects are rejected and flagged "UR".

All holding times were acceptable.

- **Method Blanks**

Method Blanks

Method blank analyses are performed to determine the extent of laboratory contamination introduced through sampling, sample preparation and analysis. At least one acceptable method blank analysis must be conducted for every 20 samples. No contaminants should be present in the method blank. All blank results must fall below the contract required detection limit (CRQL) to be acceptable.

All method blank results were acceptable.

Field (Equipment) Blank

No equipment blanks were submitted for analysis.

- **Accuracy**

Matrix Spike

Matrix spike (MS) and matrix spike duplicate (MSD) analyses are used to assess the analytical accuracy of the reported data. The matrix spike is used to assess effect of the matrix on the ability to accurately quantify sample concentrations. Recoveries must fall within the range of 70% to 130%. Samples with a spike recovery of less than 30% and a sample result below the IDL are rejected and flagged "UR". Samples with a spike recovery of 30% to 69% and a sample result less than the IDL are qualified "UJ". Samples with a spike recovery of greater than 130% or less than 69% and a sample result greater than the IDL are qualified as estimates and flagged "J". Finally, for samples with a spike recovery greater than 130% and a sample result less than the IDL, no qualification is required.

Due to the lack of a matrix spike analysis, all anion results were qualified as estimates and flagged "J".

Laboratory Control Sample

The LCS is used to monitor the overall performance of all steps in the analysis. Recoveries must fall within the range of 70% to 130% for LCS analysis. Samples with a recovery of less than 50% are rejected and flagged "UR". Samples with a

recovery of 50% to 69% and a sample recovery below the IDL are qualified "UJ". Samples with a recovery of greater than 130% or less than 70% and a sample result greater than the IDL are qualified as estimates and flagged "J". Finally, for samples with a recovery greater than 130% and a sample result less than the IDL, no qualification is required.

All LCS results were acceptable.

- **Precision**

Laboratory Duplicate Samples

Analytical precision is expressed by the relative percent differences (RPD) between the recoveries of matrix spike duplicate (MSD) analyses performed on a sample in the analytical batch. Precision may alternatively be assessed using unspiked duplicate analyses performed on a sample in the analytical batch. If both sample and replicate activities (concentrations) are greater than five times the CRDL and the RPD is less than 30%, no qualification is required. If either activity (concentration) is less than five times the CRDL, the RPD control limit is less than or equal to two times the CRDL. If the RPD is outside the applicable control limit, associated results are qualified as estimated detects or estimated non-detects.

Due to the lack of a duplicate analysis, all anion results were qualified as estimates and flagged "J".

All other laboratory duplicate results were acceptable.

Field Duplicate

No field duplicates were submitted for analysis.

- **Analytical Detection Levels**

Reported analytical detection levels are compared against the required target quantitation limits (RTQLs) to ensure that laboratory detection levels meet the required criteria. All fluoride results exceeded the RTQL. Under the FHI statement of work, no qualification is required.

- **Completeness**

Data package 60178 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 100%.

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

Due to the lack of a matrix spike analysis, all anion results were qualified as estimates and flagged "J". Due to the lack of a duplicate analysis, all anion results were qualified as estimates and flagged "J". Data flagged "J" is an estimate, but under the FHI validation SOW, the data may be usable for decision-making purposes. All other validated results are considered accurate within the standard error associated with the methods.

All fluoride results exceeded the RTQL. Under the FHI statement of work, no qualification is required.

REFERENCES

FHI, Contract #20266, *Validation Statement of Work*, Fluor Hanford Incorporated, July 7, 2003.

DOE/RL-2005-75, Rev. 0, *Sampling and Analysis Plan for Support Activities to the 200-UW-1 Operable Unit*, December 2005.

Appendix 1

Glossary of Data Reporting Qualifiers

Qualifiers which may be applied by data validators in compliance with FHI validation SOW are as follows:

U - Indicates the compound or analyte was analyzed for and not detected in the sample. The value reported is the sample quantitation limit corrected for sample dilution and moisture content by the laboratory.

UJ - Indicates the compound or analyte was analyzed for and not detected in the sample. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.

J - Indicates the compound or analyte was analyzed for and detected. Due to a minor QC deficiency identified during the data validation, the associated concentration is an estimate, but the data are usable for decision-making purposes.

BJ - Applied to inorganic analyses only. Indicates the analyte concentration was greater than the IDL but less than the CRDL and is considered an estimated value.

R - Indicates the compound or analyte was analyzed for, detected, and due to an identified major QC deficiency, the data are unusable.

UR - Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified major QC deficiency.

NJ - Indicates presumptive evidence of a compound at an estimated value. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

N - Indicates presumptive evidence of a compound. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

Appendix 2

Summary of Data Qualification

WET CHEMISTRY DATA QUALIFICATION SUMMARY*

SDG: 60178	REVIEWER: TLI	Project: 200-UW-1	PAGE 1 OF 1
COMMENTS:			
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
All	J	All	No MS or duplicate analysis

* - The Qualified Data Summary Table includes laboratory applied "U" qualifiers not specifically identified here. The laboratory applied "U" qualifiers are included to minimize misinterpretation of results contained in the table.

Appendix 3

Qualified Data Summary and Annotated Laboratory Reports

GENERAL CHEMISTRY ANALYSIS, SOIL MATRIX, (MG/KG)

Project: FLUOR-HANFORD							
Laboratory: WSCF							
Case	**SDG: WSCF20060178**						
Sample Number		B1HVM6		B1HVM8		B1HVN0	
Remarks							
Sample Date		3/14/06		3/14/06		3/14/06	
General Chemistry	**RTQL**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**
Fluoride	**0.5**	<2.00	UJ	<2.00	UJ	<2.00	UJ
Chloride	**2**	6.52	J	3.64	J	3.88	J
Bromide		<4.65	UJ	<4.65	UJ	<4.65	UJ
Sulfate	**7**	26.2	J	30.0	J	17.1	J

000010

Laboratory applied non-detect qualifiers "U" have been included in this table to minimize miss-interpretation of results. All other qualifiers shown were applied during validation.

WSCF
ANALYTICAL RESULTS REPORT

Attention: Deanna Klages H8-40 **Group #:** 20060178

Sample #	Client ID		CAS #	Test Performed	Matrix	WSCF Method	RQ		Result	Unit	DF	MDL	Analyze	Sample	Receive
Inorganic															
W060000452	B1HVM6	K	TS	Percent Solids	SOLID	LA-519-412			89.7	%	1.00	0.0	03/17/06	03/14/06	03/14/06
W060000452	B1HVM6	K	16984-48-8	Fluoride (F) by IC	SOLID	LA-533-410	U J	<	2.00	ug/g	50.00	2.0	03/20/06	03/14/06	03/14/06
W060000452	B1HVM6	K	16887-00-6	Chloride (Cl) by IC	SOLID	LA-533-410	B J		6.52	ug/g	50.00	1.7	03/20/06	03/14/06	03/14/06
W060000452	B1HVM6	K	NO2-N	Nitrite (N) by IC	SOLID	LA-533-410	U	<	0.490	ug/g	50.00	0.49	03/20/06	03/14/06	03/14/06
W060000452	B1HVM6	K	24959-67-9	Bromide (Br) by IC	SOLID	LA-533-410	U J	<	4.65	ug/g	50.00	4.6	03/20/06	03/14/06	03/14/06
W060000452	B1HVM6	K	NO3-N	Nitrate (N) by IC	SOLID	LA-533-410			5.55	ug/g	50.00	0.90	03/20/06	03/14/06	03/14/06
W060000452	B1HVM6	K	PO4-P	Phosphate (P) by IC	SOLID	LA-533-410	U	<	3.90	ug/g	50.00	3.9	03/20/06	03/14/06	03/14/06
W060000452	B1HVM6	K	14808-79-8	Sulfate (SO4) by IC	SOLID	LA-533-410	B J		26.2	ug/g	50.00	6.5	03/20/06	03/14/06	03/14/06
W060000452	B1HVM6	K	7429-90-5	Aluminum by ICP	SOLID	LA-505-411			1.16e+03	ug/g	98.47	2.7	03/20/06	03/14/06	03/14/06
W060000452	B1HVM6	K	7439-89-6	Iron by ICP	SOLID	LA-505-411	E		4.95e+03	ug/g	9.85e+002	21	03/20/06	03/14/06	03/14/06
W060000452	B1HVM6	K	7439-95-4	Magnesium by ICP	SOLID	LA-505-411			1.03e+03	ug/g	98.47	1.9	03/20/06	03/14/06	03/14/06
W060000452	B1HVM6	K	7440-09-7	Potassium by ICP	SOLID	LA-505-411	E		204	ug/g	98.47	11	03/20/06	03/14/06	03/14/06
W060000452	B1HVM6	K	7440-23-5	Sodium by ICP	SOLID	LA-505-411			64.5	ug/g	98.47	20	03/20/06	03/14/06	03/14/06
W060000452	B1HVM6	K	7440-70-2	Calcium by ICP	SOLID	LA-505-411			1.62e+03	ug/g	98.47	1.6	03/20/06	03/14/06	03/14/06
W060000452	B1HVM6	K	7439-93-2	Lithium by ICP	SOLID	LA-505-411			1.32	ug/g	98.47	0.098	03/20/06	03/14/06	03/14/06
W060000452	B1HVM6	K	7440-32-6	Titanium by ICP	SOLID	LA-505-411	X		202	ug/g	98.47	0.098	03/20/06	03/14/06	03/14/06
W060000452	B1HVM6	K	7440-42-8	Boron by ICP	SOLID	LA-505-411	U	<	2.56	ug/g	98.47	2.6	03/20/06	03/14/06	03/14/06
W060000452	B1HVM6	K	7440-69-9	Bismuth by ICP	SOLID	LA-505-411	UX	<	2.17	ug/g	98.47	2.2	03/20/06	03/14/06	03/14/06
W060000452	B1HVM6	K	7440-21-3	Silicon by ICP	SOLID	LA-505-411	X		16.6	ug/g	98.47	1.7	03/20/06	03/14/06	03/14/06
W060000452	B1HVM6	K	7439-96-5	Manganese by ICP-MS	SOLID	LA-505-412			364	ug/g	6.05	0.12	03/21/06	03/14/06	03/14/06
W060000452	B1HVM6	K	7440-02-0	Nickel by ICP-MS	SOLID	LA-505-412			9.13	ug/g	6.05	0.36	03/21/06	03/14/06	03/14/06
W060000452	B1HVM6	K	7440-22-4	Silver by ICP-MS	SOLID	LA-505-412	UX	<	0.242	ug/g	6.05	0.24	03/21/06	03/14/06	03/14/06
W060000452	B1HVM6	K	7440-36-0	Antimony by ICP-MS	SOLID	LA-505-412	UX	<	1.82	ug/g	6.05	1.8	03/21/06	03/14/06	03/14/06
W060000452	B1HVM6	K	7440-39-3	Barium by ICP-MS	SOLID	LA-505-412			87.4	ug/g	6.05	1.2	03/21/06	03/14/06	03/14/06
W060000452	B1HVM6	K	7440-41-7	Beryllium by ICP-MS	SOLID	LA-505-412			0.281	ug/g	6.05	0.12	03/21/06	03/14/06	03/14/06
W060000452	B1HVM6	K	7440-43-9	Cadmium by ICP-MS	SOLID	LA-505-412	U	<	0.242	ug/g	6.05	0.24	03/21/06	03/14/06	03/14/06

MDL = Minimum Detection Limit
RQ = Result Qualifier

B - The Analyte detected in both the BLANK and the SAMPLE (org.)
E - Analyte is an estimate, has potentially larger errors
X - Other flags and notes described in the comments/narrative.
B - The analyte < the RDL but > = the IDL/MDL (inorganic)
U - Analyzed for but not detected above limiting criteria.

DF = Dilution Factor

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

4/12/06

0000011

WSCF
ANALYTICAL RESULTS REPORT

Attention: Deanna Klages H8-40 **Group #:** 20060178

Sample #	Client ID		CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W060000452	B1HVM6	K	7440-47-3	Chromium by ICP-MS	SOLID	LA-505-412		5.48	ug/g	6.05	4.2	03/21/06	03/14/06	03/14/06
W060000452	B1HVM6	K	7440-48-4	Cobalt by ICP-MS	SOLID	LA-505-412		9.23	ug/g	6.05	0.12	03/21/06	03/14/06	03/14/06
W060000452	B1HVM6	K	7440-50-8	Copper by ICP-MS	SOLID	LA-505-412		14.7	ug/g	6.05	1.2	03/21/06	03/14/06	03/14/06
W060000452	B1HVM6	K	7440-62-2	Vanadium by ICP-MS	SOLID	LA-505-412		41.6	ug/g	6.05	3.0	03/21/06	03/14/06	03/14/06
W060000452	B1HVM6	K	7440-66-6	Zinc by ICP-MS	SOLID	LA-505-412		42.3	ug/g	6.05	1.8	03/21/06	03/14/06	03/14/06
W060000452	B1HVM6	K	7439-92-1	Lead by ICP-MS	SOLID	LA-505-412		4.57	ug/g	6.05	0.30	03/21/06	03/14/06	03/14/06
W060000452	B1HVM6	K	7439-97-6	Mercury by ICP-MS	SOLID	LA-505-412		1.35	ug/g	6.05	0.24	03/21/06	03/14/06	03/14/06
W060000452	B1HVM6	K	7439-98-7	Molybdenum by ICP-MS	SOLID	LA-505-412	U	< 0.605	ug/g	6.05	0.60	03/21/06	03/14/06	03/14/06
W060000452	B1HVM6	K	7440-29-1	Thorium by ICP-MS	SOLID	LA-505-412		2.73	ug/g	6.05	0.30	03/21/06	03/14/06	03/14/06
W060000452	B1HVM6	K	7440-61-1	Uranium by ICP-MS	SOLID	LA-505-412		0.825	ug/g	6.05	0.12	03/21/06	03/14/06	03/14/06
W060000452	B1HVM6	K	7440-38-2	Arsenic by ICP-MS	SOLID	LA-505-412	U	< 6.05	ug/g	6.05	6.0	03/21/06	03/14/06	03/14/06
W060000452	B1HVM6	K	7782-49-2	Selenium by ICP-MS	SOLID	LA-505-412	U	< 2.42	ug/g	6.05	2.4	03/21/06	03/14/06	03/14/06
W060000452	B1HVM6	K	7440-28-0	Thallium by ICP-MS	SOLID	LA-505-412		0.585	ug/g	6.05	0.18	03/21/06	03/14/06	03/14/06
W060000452	B1HVM6	K	7440-24-6	Strontium by ICP-MS	SOLID	LA-505-412		26.1	ug/g	6.05	0.18	03/21/06	03/14/06	03/14/06
W060000452	B1HVM6	K	7440-31-5	Tin	SOLID	LA-505-412	U	< 0.302	ug/g	6.05	0.30	03/21/06	03/14/06	03/14/06
W060000453	B1HVM8	K	TS	Percent Solids	SOLID	LA-519-412		93.3	%	1.00	0.1	03/17/06	03/14/06	03/14/06
W060000453	B1HVM8	K	16984-48-8	Fluoride (F) by IC	SOLID	LA-533-410	U J	< 2.00	ug/g	50.00	2.0	03/20/06	03/14/06	03/14/06
W060000453	B1HVM8	K	16887-00-6	Chloride (Cl) by IC	SOLID	LA-533-410	J	3.64	ug/g	50.00	1.7	03/20/06	03/14/06	03/14/06
W060000453	B1HVM8	K	NO2-N	Nitrite (N) by IC	SOLID	LA-533-410	U	< 0.480	ug/g	50.00	0.48	03/20/06	03/14/06	03/14/06
W060000453	B1HVM8	K	24959-67-9	Bromide (Br) by IC	SOLID	LA-533-410	U J	< 4.65	ug/g	50.00	4.6	03/20/06	03/14/06	03/14/06
W060000453	B1HVM8	K	NO3-N	Nitrate (N) by IC	SOLID	LA-533-410	B	3.58	ug/g	50.00	0.80	03/20/06	03/14/06	03/14/06
W060000453	B1HVM8	K	PO4-P	Phosphate (P) by IC	SOLID	LA-533-410	U	< 3.90	ug/g	50.00	3.9	03/20/06	03/14/06	03/14/06
W060000453	B1HVM8	K	14808-79-8	Sulfate (SO4) by IC	SOLID	LA-533-410	J	30.0	ug/g	50.00	6.5	03/20/06	03/14/06	03/14/06
W060000453	B1HVM8	K	7429-90-5	Aluminum by ICP	SOLID	LA-505-411		1.16e+03	ug/g	86.37	2.3	03/20/06	03/14/06	03/14/06
W060000453	B1HVM8	K	7439-89-6	Iron by ICP	SOLID	LA-505-411	E	4.91e+03	ug/g	8.64e+002	18	03/20/06	03/14/06	03/14/06
W060000453	B1HVM8	K	7439-95-4	Magnesium by ICP	SOLID	LA-505-411		1.02e+03	ug/g	86.37	1.6	03/20/06	03/14/06	03/14/06
W060000453	B1HVM8	K	7440-09-7	Potassium by ICP	SOLID	LA-505-411	E	211	ug/g	86.37	9.9	03/20/06	03/14/06	03/14/06

MDL=Minimum Detection Limit
RQ=Result Qualifier

B - The Analyte detected in both the BLANK and the SAMPLE (org.)
E - Analyte is an estimate, has potentially larger errors
X - Other flags and notes described in the comments/narrative.

B - The analyte < the RDL but > = the IDL/MDL (inorganic)
U - Analyzed for but not detected above limiting criteria.

DF=Dilution Factor

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

4/19/06

0000012

WSCF
ANALYTICAL RESULTS REPORT

Attention: Deanna Klages H8-40 **Group #:** 20060178

Sample #	Client ID		CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W060000453	B1HVM8	K	7440-24-6	Strontium by ICP-MS	SOLID	LA-505-412		25.8	ug/g	5.14	0.15	03/21/06	03/14/06	03/14/06
W060000453	B1HVM8	K	7440-31-5	Tin	SOLID	LA-505-412	U	< 0.257	ug/g	5.14	0.26	03/21/06	03/14/06	03/14/06
W060000454	B1HVN0	K	TS	Percent Solids	SOLID	LA-513-412		93.3	%	1.00	0.0	03/17/06	03/14/06	03/14/06
W060000454	B1HVN0	K	16984-48-8	Fluoride (F) by IC	SOLID	LA-533-410	U J	< 2.00	ug/g	50.00	2.0	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	16887-00-6	Chloride (Cl) by IC	SOLID	LA-533-410	B J	3.88	ug/g	50.00	1.7	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	NO2-N	Nitrite (N) by IC	SOLID	LA-533-410	U	< 0.490	ug/g	50.00	0.49	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	24959-67-9	Bromide (Br) by IC	SOLID	LA-533-410	U J	< 4.65	ug/g	50.00	4.6	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	NO3-N	Nitrate (N) by IC	SOLID	LA-533-410	B	3.67	ug/g	50.00	0.90	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	PO4-P	Phosphate (P) by IC	SOLID	LA-533-410	U	< 3.90	ug/g	50.00	3.9	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	14808-79-8	Sulfate (SO4) by IC	SOLID	LA-533-410	B J	17.1	ug/g	50.00	6.5	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	7429-90-5	Aluminum by ICP	SOLID	LA-505-411		1.13e+03	ug/g	81.38	2.2	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	7439-89-6	Iron by ICP	SOLID	LA-505-411	E	4.80e+03	ug/g	8.14e+002	17	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	7439-95-4	Magnesium by ICP	SOLID	LA-505-411		1.02e+03	ug/g	81.38	1.5	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	7440-09-7	Potassium by ICP	SOLID	LA-505-411	E	189	ug/g	81.38	9.4	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	7440-23-5	Sodium by ICP	SOLID	LA-505-411		61.3	ug/g	81.38	16	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	7440-70-2	Calcium by ICP	SOLID	LA-505-411		1.60e+03	ug/g	81.38	1.3	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	7439-93-2	Lithium by ICP	SOLID	LA-505-411		1.28	ug/g	81.38	0.081	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	7440-32-6	Titanium by ICP	SOLID	LA-505-411	X	182	ug/g	81.38	0.081	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	7440-42-8	Boron by ICP	SOLID	LA-505-411	U	< 2.12	ug/g	81.38	2.1	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	7440-69-9	Bismuth by ICP	SOLID	LA-505-411	UX	< 1.79	ug/g	81.38	1.8	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	7440-21-3	Silicon by ICP	SOLID	LA-505-411	X	5.65	ug/g	81.38	1.4	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	7439-96-5	Manganese by ICP-MS	SOLID	LA-505-412		344	ug/g	5.35	0.11	03/21/06	03/14/06	03/14/06
W060000454	B1HVN0	K	7440-02-0	Nickel by ICP-MS	SOLID	LA-505-412		9.18	ug/g	5.35	0.32	03/21/06	03/14/06	03/14/06
W060000454	B1HVN0	K	7440-22-4	Silver by ICP-MS	SOLID	LA-505-412	UX	< 0.214	ug/g	5.35	0.21	03/21/06	03/14/06	03/14/06
W060000454	B1HVN0	K	7440-36-0	Antimony by ICP-MS	SOLID	LA-505-412	UX	< 1.60	ug/g	5.35	1.6	03/21/06	03/14/06	03/14/06
W060000454	B1HVN0	K	7440-39-3	Barium by ICP-MS	SOLID	LA-505-412		83.3	ug/g	5.35	1.1	03/21/06	03/14/06	03/14/06
W060000454	B1HVN0	K	7440-41-7	Beryllium by ICP-MS	SOLID	LA-505-412		0.196	ug/g	5.35	0.11	03/21/06	03/14/06	03/14/06

MDL=Minimum Detection Limit
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E - Analyte is an estimate, has potentially larger errors
X - Other flags and notes described in the comments/narrative.

B - The analyte < the RDL but >= the IDL/MDL (inorganic)
U - Analyzed for but not detected above limiting criteria.

DF=Dilution Factor

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

4/19/06

0000013

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

Sample Delivery Group	**WSCF20060178**
Sample Matrix	**SOLID**
Sample Visual	**N/A**
SAF Number	**R06-013**
Data Deliverable	**Summary Report**

Introduction

Six soil samples (B1HVM6, B1HVM8, B1HVN0, B1HVN2, B3HVN3 and B1HVN4) from the 200-UW-1 Operable Unit Trench were received at the WSCF Laboratory on March 14, 2006. The samples were received in a cool condition with ice present in the coolers. The samples were analyzed for the analytes indicated on the attached copy of the chain of custody (COC) form in accordance with the *200-UW-1 Operable Unit Letter of Instruction*, referenced in the cover letter.

With the exception of VOA, all samples were taken using the Multi-Increment Sampling Program, which requires the entire sample submitted to be analyzed. This does not allow for laboratory sample duplicates or matrix spikes.

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 sample receipt are included as Attachment 3.

Analytical Methodology for Requested Analyses

Refer to *WSCF Method References Report,* pages 43 through 44, for a complete listing of approved analytical methods used.

Inorganic Comments

Anions - The hold times for this analysis were met. A Blank and Laboratory Control Sample were analyzed with this batch of less than 20 samples. See page 67 for QC details. All QC controls are within the established limits.

ICP-AES Metals – The hold time for this analysis was met. A Blank and Laboratory Control Sample were analyzed with this delivery group of less than 20 samples. See page 48 for QC details. Analytical Notes:

- Sample results are reported in ug/g while blank values are reported as ug/L.
- Bismuth, Magnesium, Lithium and Silicon were detected in the associated preparation Blank sample, but none of the samples were affected.
- Iron and Potassium yielded high Laboratory Control Sample recoveries, resulting in an "E" flag.

- Titanium, Bismuth and Silicon yielded low Laboratory Control Sample recoveries, resulting in an "X" flag.

All other QC controls are within the established limits.

ICP-MS Metals – The hold time for this analysis was met. A Blank and Laboratory Control Sample were analyzed with this batch of less than 20 samples. See pages 68 through 69. Analytical Notes:

- Aluminum and Nickel were detected in the associated preparation Blank, however there was no impact to the sample results.
- Silver and Antimony yielded low Laboratory Control Sample recoveries due to an apparent digestion problem, resulting in an "X" flag.
- Thorium results listed in the report represent Th-232 exclusively.

All other QC controls are within the established limits.

pH - Laboratory QC control is within the established limits. See page 24 for QC detail.

Percent Solids – analyzed for organic moisture correction.

Organic Comments

- Sample results are moisture corrected and reported on dry weight basis.

Semi-VOA – The hold time for this analysis was met. A Blank, Laboratory Control Sample, and Laboratory Control Sample Duplicate were analyzed with this delivery group of less than 20 samples. See pages 53 through 57 for QC details. Analytical Notes;

Since there was no Matrix Spike or Matrix Spike Duplicate run with this batch, the Relative Percent Difference (RPD) percentages are summarized below using LCS and LCS Duplicate QC Yields:

Additional Batch QC Data - SVOAs

QC Type	Analyte	CAS	QC Yield	RPD%
LCS	1,2,4-Trichlorobenzene	120-82-1	94.5%	
LCS – Duplicate	1,2,4-Trichlorobenzene	120-82-1	101.0%	6.650%
LCS	1,4-Dichlorobenzene	106-46-7	89.9%	

Additional Batch QC Data - SVOAs				
QC Type	Analyte	CAS#	[illegible]	[illegible]
LCS - Duplicate	1,4-Dichlorobenzene	106-46-7	97.8%	8.418%
LCS	2,4-Dinitrotoluene	121-14-2	85.9%	
LCS - Duplicate	2,4-Dinitrotoluene	121-14-2	93.9%	8.899%
LCS	2-Fluorophenol	367-12-4	96.4%	
LCS - Duplicate	2-Fluorophenol	367-12-4	104.0%	7.585%
LCS	Acenaphthene	83-32-9	96.9%	
LCS - Duplicate	Acenaphthene	83-32-9	104.0%	7.068%
LCS	4-Chloro-3-methylphenol	59-50-7	94.6%	
LCS - Duplicate	4-Chloro-3-methylphenol	59-50-7	101.0%	6.544%
LCS	2-Chlorophenol	95-57-8	93.1%	
LCS - Duplicate	2-Chlorophenol	95-57-8	101.0%	8.140%
LCS	N-Nitrosodi-n-dipropylamine	621-64-7	94.3%	
LCS - Duplicate	N-Nitrosodi-n-dipropylamine	621-64-7	102.0%	7.845%
LCS	2-Fluorobiphenyl	321-60-8	97.7%	
LCS – Duplicate	2-Fluorobiphenyl	321-60-8	107.0%	9.086%
LCS	Phenol	108.95-2	93.4%	
LCS -	Phenol	108.95-2	101.0%	7.819%

Additional Batch QC Data - SVOAs				
QC Type	Analyte	CAS#	QC	
			Yield	RPD %
Duplicate				
LCS	Nitrobenzene-d5	4165-60-0	98.5%	
LCS - Duplicate	Nitrobenzene-d5	4165-60-0	107.0%	8.273%
LCS	4-Nitrophenol	100-02-7	101.0%	
LCS - Duplicate	4-Nitrophenol	100-02-7	100.0%	0.995%
LCS	Pentachlorophenol	87-86-5	102.0%	
LCS - Duplicate	Pentachlorophenol	87-86-5	104.0%	1.942%
LCS	Phenol-d5	4165-62-2	98.0%	
LCS - Duplicate	Phenol-d5	4165-62-2	105.0%	6.897%
LCS	Pyrene	129-00-0	94.8%	
LCS - Duplicate	Pyrene	129-00-0	102.0%	7.317%
LCS	2,4,6-Tribromophenol	118-79-6	88.3%	
LCS - Duplicate	2,4,6-Tribromophenol	118-79-6	94.8%	7.100%
LCS	Terphenyl-d14	98904-43-9	96.4%	
LCS - Duplicate	Terphenyl-d14	98904-43-9	105.0%	8.540%

TPHD-WA - The hold time for this analysis was met. A Blank, Laboratory Control Sample, and Laboratory Control Sample Duplicate were analyzed with this delivery group of less than 20 samples. See page 59 for QC details. Analytical Note:

Since there was no Matrix Spike or Matrix Spike Duplicate run with this batch, the Relative Percent Difference (RPD) percentages are summarized below using LCS and LCS Duplicate QC Yields:

Batch QC Data				
QC Type	Analyte	CAS#	QC	
			Yield	RPD %
LCS	ortho-Terphenyl (surr)	84-15-1	102.0%	
LCS - Duplicate	ortho-Terphenyl (surr)	84-15-1	102.0%	2.740%
LCS	TOTAL Pet. Hydrocarbons Diesel	TPHDIESEL	98.8%	
LCS - Duplicate	TOTAL Pet. Hydrocarbons Diesel	TPHDIESEL	99.6%	0.806%

All QC controls are within the established limits.

VOA – The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with this delivery group of less than 20 samples. See pages 63 through 66 for QC details. All QC controls are within the established limits.

Radiochemistry Comments

There are no hold times associated with WSCF radiochemical methods.

Tecnicium-99 - A Blank, Laboratory Control Sample, Post Digestion Spike and Post Digestion Duplicate were analyzed with this delivery group of less than 20 samples. See pages 47 for QC details. All QC controls are within the established limits.

Strontium – 89/90 – A Blank and Laboratory Control Sample were analyzed with this batch of less than 20 samples. See page 49 for QC details. All QC controls are within the established limits.

Gamma Energy Analysis (GEA) – A Blank, Laboratory Control Sample and Sample Duplicate were analyzed with this batch of less than 20 samples. See page 50 through 52 for QC details. All QC controls are within the established limits.

Neptunium-237 – A Blank and Laboratory Control Sample were analyzed with this batch of less than 20 samples. See page 58 for QC details. All QC controls are within the established limits.

Uranium Isotopic – A Blank and Laboratory Control Sample were analyzed with this batch of less than 20 samples. See page 60 for QC details. All QC controls are within the established limits.

Plutonium Isotopic - A Blank and Laboratory Control Sample were analyzed with this batch of less than 20 samples. See page 61 for QC details. All QC controls are within the established limits.

Amercium-241 – A Blank and Laboratory Control Sample were analyzed with this batch of less than 20 samples. See page 62 for QC details. All QC controls are within the established limits.

Radiochemical Matrix Spike Recovery

Sample Number	Lab Sample ID	Isotope	Spike Recovery (Percent)
Neptunium-237			
B1HVM6	W060000452	Np-237	94.0%
B1HVM8	W060000453	Np-237	94.7%
B1HVN0	W060000454	Np-237	92.6%

Radiochemical Tracer Percent Recovery

Sample Number	Lab Sample ID	Isotope	Tracer Recovery (Percent)
Americium-243			
BLANK		Am-243	84.5%
LCS		Am-243	86.2%
B1HVM6	W060000452	Am-243	72.3%
B1HVM8	W060000453	Am-243	92.8%
B1HVN0	W060000454	Am-243	70.9%
Plutonium-242			
BLANK		Pu-242	85.3%
LCS		Pu-242	90.9%
B1HVM6	W060000452	Pu-242	79.4%

Radiochemical Tracer Percent Recovery			
Sample Number	Lab Sample ID	Isotope	Tracer Recovery (Percent)
B1HVM8	W060000453	Pu-242	99.0%
B1HVN0	W060000454	Pu-242	87.9%
Strontium-85			
BLANK		Sr-85	89.0%
LCS		Sr-85	80.5%
B1HVM6	W060000452	Sr-85	67.4%
B1HVM8	W060000453	Sr-85	89.6%
B1HVN0	W060000454	Sr-85	90.3%
Uranium-232			
BLANK		U-232	85.1%
LCS		U-232	72.9%
B1HVM6	W060000452	U-232	89.9%
B1HVM8	W060000453	U-232	85.7%
B1HVN0	W060000454	U-232	84.0%

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.

John E. Trechter

John E. Trechter
WSCF Client Services

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	R06-013-002	PAGE 1 OF 2

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 9C	DATA TURNAROUND
KB Hulse 3/29/06	TRECHTER, JE	373-7046	TRECHTER, JE	AIR QUALITY ☐	15 Days / 15 Days
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**		
200-UW-1	200-UW-1 Operable Unit, Soil from Trench between 216-U-8 and 216-U-12		R06-013		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA**	**METHOD OF SHIPMENT**		
SESP	DTS-SAWS-H100	121600ES20	GOVERNMENT VEHICLE		
SHIPPED TO	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		
Waste Sampling & Characterization	N/A		N/A		

MATRIX*
OL = OTHER LIQUID
OS = OTHER SOLID
S = SOIL
W = WATER

SPECIAL HANDLING AND/OR STORAGE: 20060178

POSSIBLE SAMPLE HAZARDS/ REMARKS:

SAMPLE NO.	LAB ID	MATRIX*	SAMPLE DATE	SAMPLE TIME	NO./TYPE CONTAINER(S)	ANALYSIS	PRESERVATION
B1HVM6	W0600004S2	S	3-14-06	0950	1X60mL aG 23.6 grams	SEE ITEM (1) IN SPECIAL INSTRUCTIONS See SAF R06-013 JET	Cool 4C
B1HVM6		S			1X60mL G 23.4 grams	TPH-Diesel Range - WTPH-D {TPHKEROSEN}	Cool 4C
B1HVM6		S			1X500mL Square Bottle - Poly 647 grams	SEE ITEM (2) IN SPECIAL INSTRUCTIONS See SAF R06-013 JET for GEA	None
B1HVM6		S			1X60mL G/P 24.4 grams	Isotopic Plutonium {Pu-238, Pu-239/240} Isotopic Uranium {U-233/234, U-235, U-238} Americium-241 {Am-241}	None
B1HVM6		S			1X60mL G/P 23.6 grams	Strontium-89,90 -- Sr-90 {Sr-90}	None
B1HVM6		S			1X60mL G/P 23.8 grams	Technetium-99 {Tc-99}	None
B1HVM6		S			1X60mL G/P 23.3 grams	Neptunium-237 {Np-237}	None

220000

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
K.B. HULSE K.B. HULSE	3/14/06 1355	TA FRAZIER	3/14/06 1355
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS

Reporting format the same as GPP, including QC. All samples, except VOAs, have been taken using the multiple-increment sampling program. This requires the entire sample provided in each bottle to be used in analysis. VOAs will be analyzed as usual.

(1)Semi-VOA -- 8270A (Add-On) {124TRMEBEN, 2-NAPHTHAM, 2BUTOXETOL, BENZALC, CYCHEXN, DECANE, MCRESOL, METHYLPHEN, PYRIDINE, TRIBUPH} Semi-VOA - 8270A (TCL) {12DICLBENZ, 13DICLBENZ, 14DICLBENZ, 245TRCLPHN, 246TRCLPHN, 24DICLPHEN, 24DIMET, 24DINITOLU, 26DINITOLU, 2CLMEETHER, 2MENAPH, 2METHPH, 2NITRAN, 2NITRPH, 3NITRAN, 46DINIT, 4CHLOET, 9H-CARB, ACENAPH, ACENATL, ANTHRACENE, BENZAAN, BENZBFL, BENZOPE,

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

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	R06-013-002	PAGE 2 OF 2

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 9C	DATA TURNAROUND
KG Hulse	TRECHTER, JE	373-7046	TRECHTER, JE		
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**	**AIR QUALITY** ☐	15 Days / 15 Days
200-UW-1	200-UW-1 Operable Unit, Soil from Trench between 216-U-8 and 216-U-12		R06-013		

ICE CHEST NO.	FIELD LOGBOOK NO.	COA	METHOD OF SHIPMENT
SESP	OTS-SAWS-H100	121600ES20	GOVERNMENT VEHICLE

SHIPPED TO	OFFSITE PROPERTY NO.	BILL OF LADING/AIR BILL NO.
Waste Sampling & Characterization	N/A	N/A

MATRIX*
OL = OTHER LIQUID
OS = OTHER SOLID
S = SOIL
W = WATER

SPECIAL HANDLING AND/OR STORAGE

POSSIBLE SAMPLE HAZARDS/ REMARKS

SAMPLE NO.	LAB ID	MATRIX*	SAMPLE DATE	SAMPLE TIME	NO./TYPE CONTAINER(S)	ANALYSIS	PRESERVATION
B1HVM6		S	3-14-06	0950	1X60mL G/P 21.9 grams	IC Anions - 300.0 {BROMIDE, CHLORIDE, FLUORIDE, NO2-N, NO3-N, PO4-P, SULFATE}	None
B1HVM6		S			1X60mL G/P 23 grams	ICP Metals - 6010A (Add-on) {B, Bi, La, Li, Si, Sm, Ti} ICP Metals - 6010A (TAL) {Al, Ca, Fe, K, Mg, Na}	Cool 4C
B1HVM6		S			1X60mL G/P 21.2 grams	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	None

0000023

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
KG Hulse [signature]	3-14-06 1355	TA FRAZIER [signature]	3-14-06 1355
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS

Reporting format the same as GPP, including QC. All samples, except VOAs, have been taken using the multiple-increment sampling program. This requires the entire sample provided in each bottle to be used in analysis. VOAs will be analyzed as usual.
(3)ICP/MS - 200.8 (Add-on) {As, Be, Mo, Pb, Se, Sn, Sr, Tl, U} ICP/MS - 200.8 (TAL) {Ag, Ba, Cd, Co, Cr, Cu, Mn, Ni, Sb, V, Zn} ICP/MS - 200.8 (Hg) {Hg} Isotopic Thorium {Th-232}

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

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	R06-013-003	PAGE 1 OF 2

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 9C	DATA TURNAROUND
KB Hulse	TRECHTER, JE	373-7046	TRECHTER, JE	AIR QUALITY —	15 Days / 15 Days
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**		
200-UW-1	200-UW-1 Operable Unit, Soil from Trench between 216-U-8 and 216-U-12		R06-013		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA**	**METHOD OF SHIPMENT**		
SESP	DTS-SAWS-H100	121600ES20	GOVERNMENT VEHICLE		
SHIPPED TO	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		
Waste Sampling & Characterization	N/A		N/A		

MATRIX*
OL = OTHER LIQUID
OS = OTHER SOLID
S = SOIL
W = WATER

SPECIAL HANDLING AND/OR STORAGE

POSSIBLE SAMPLE HAZARDS/ REMARKS

SAMPLE NO.	LAB ID	MATRIX*	SAMPLE DATE	SAMPLE TIME	NO./TYPE CONTAINER(S)	ANALYSIS	PRESERVATION
B1HVM8	WCG 0000453	S	3/14/06	1010	1X60mL aG 24.2 grams	SEE ITEM (1) IN SPECIAL INSTRUCTIONS See SAF R06-013	Cool 4C
B1HVM8		S			1X60mL G 23.2 grams	TPH-Diesel Range - WTPH-D {TPHKEROSEN}	Cool 4C
B1HVM8		S			1X500mL Square Bottle - Poly 491 grams	SEE ITEM (2) IN SPECIAL INSTRUCTIONS See SAF R06-013 for GEA	None
B1HVM8		S			1X60mL G/P 22.6 grams	Isotopic Plutonium {Pu-238, Pu-239/240} Isotopic Uranium {U-233/234, U-235, U-238} Americium-241 {Am-241}	None
B1HVM8		S			1X60mL G/P 23.1 grams	Strontium-89,90 -- Sr-90 {Sr-90}	None
B1HVM8		S			1X60mL G/P 24.2 grams	Technetium-99 {Tc-99}	None
B1HVM8		S			1X60mL G/P 24.7 grams	Neptunium-237 {Np-237}	None

000024

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
K. B. HULSE	3/14/06 1355	TA FRAZIER	3/14/06 1355

SPECIAL INSTRUCTIONS

Reporting format the same as GPP, including QC. All samples, except VOAs, have been taken using the multiple-increment sampling program. This requires the entire sample provided in each bottle to be used in analysis. VOAs will be analyzed as usual.
(1)Semi-VOA -- 8270A (Add-On) {124TRMEBEN, 2-NAPHTHAM, 2BUTOXETOL, BENZALC, CYCHEXN, DECANE, MCRESOL, METHYLPHEN, PYRIDINE, TRIBUPH} Semi-VOA - 8270A (TCL) {12DICLBENZ, 13DICLBENZ, 14DICLBENZ, 245TRCLPHN, 246TRCLPHN, 24DICLPHEN, 24DIMET, 24DINITOLU, 26DINITOLU, 2CLMEETHER, 2MENAPH, 2METHPH, 2NITRAN, 2NITRPH, 3NITRAN, 46DINIT, 4CHLOET, 9H-CARB, ACENAPH, ACENATL, ANTHRACENE, BENZAAN, BENZBFL, BENZOPE,

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

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	R06-013-003	PAGE 2 OF 2

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 9C	DATA TURNAROUND
KB Hulse	TRECHTER, JE	373-7046	TRECHTER, JE		
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**	**AIR QUALITY** ☐	15 Days / 15 Days
200-UW-1	200-UW-1 Operable Unit, Soil from Trench between 216-U-8 and 216-U-12		R06-013		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA**	**METHOD OF SHIPMENT**		
SESP	DTS-SAWS-H100	121600ES20	GOVERNMENT VEHICLE		
SHIPPED TO	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		
Waste Sampling & Characterization	N/A		N/A		

MATRIX*
OL = OTHER LIQUID
OS = OTHER SOLID
S = SOIL
W = WATER

SPECIAL HANDLING AND/OR STORAGE

POSSIBLE SAMPLE HAZARDS/ REMARKS

SAMPLE NO.	LAB ID	MATRIX*	SAMPLE DATE	SAMPLE TIME	NO./TYPE CONTAINER(S)	ANALYSIS	PRESERVATION
B1HVM8		S	3/14/06	1010	1X60mL G/P 23.0 grams	IC Anions - 300.0 {BROMIDE, CHLORIDE, FLUORIDE, NO2-N, NO3-N, PO4-P, SULFATE}	None
B1HVM8		S	↓	↓	1X60mL G/P 23.9 grams	ICP Metals - 6010A (Add-on) {B, Bi, La, Li, Si, Sm, Tl} ICP Metals - 6010A (TAL) {Al, Ca, Fe, K, Mg, Na}	Cool 4C
B1HVM8		S	↓	↓	1X60mL G/P 25.0 grams	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	None

000025

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
K.B. HULSE KB Hulse	3-14-06 1355	TABRAZIER Tabrazier	3/14/06 1355
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS

Reporting format the same as GPP, including QC. All samples, except VOAs, have been taken using the multiple-increment sampling program. This requires the entire sample provided in each bottle to be used in analysis. VOAs will be analyzed as usual.
(3)ICP/MS - 200.8 (Add-on) {As, Be, Mo, Pb, Se, Sn, Sr, Tl, U} ICP/MS - 200.8 (TAL) {Ag, Ba, Cd, Co, Cr, Cu, Mn, Ni, Sb, V, Zn} ICP/MS - 200.8 (Hg) {Hg} Isotopic Thorium {Th-232}

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

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	R06-013-004	PAGE 1 OF 2

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 9C	DATA TURNAROUND
KB Hulse	TRECHTER, JE	373-7046	TRECHTER, JE		
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**	**AIR QUALITY** ☐	15 Days / 15 Days
200-UW-1	200-UW-1 Operable Unit, Soil from Trench between 216-U-8 and 216-U-12		R06-013		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA**	**METHOD OF SHIPMENT**		
SESP	DTS-SAWS-H100	121600ES20	GOVERNMENT VEHICLE		
SHIPPED TO	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		
Waste Sampling & Characterization	N/A		N/A		

MATRIX*
OL = OTHER LIQUID
OS = OTHER SOLID
S = SOIL
W = WATER

SPECIAL HANDLING AND/OR STORAGE

POSSIBLE SAMPLE HAZARDS/ REMARKS

SAMPLE NO.	LAB ID	MATRIX*	SAMPLE DATE	SAMPLE TIME	NO./TYPE CONTAINER(S)	ANALYSIS	PRESERVATION
B1HVN0	954	S	3-14-06	1020	1X60mL aG 23.7 grams	SEE ITEM (1) IN SPECIAL INSTRUCTIONS See SAF R06-013 JET	Cool 4C
B1HVN0		S			1X60mL G 24.7 grams	TPH-Diesel Range - WTPH-D {TPHKEROSEN}	Cool 4C
B1HVN0		S			1X500mL Square Bottle - Poly 621 grams	SEE ITEM (2) IN SPECIAL INSTRUCTIONS See SAF R06-013 for GEA JET	None
B1HVN0		S			1X60mL G/P 24.4 grams	Isotopic Plutonium {Pu-238, Pu-239/240} Isotopic Uranium {U-233/234, U-235, U-238} Americium-241 {Am-241}	None
B1HVN0		S			1X60mL G/P 24.1 grams	Strontium-89,90 -- Sr-90 {Sr-90}	None
B1HVN0		S			1X60mL G/P 23.6 grams	Technetium-99 {Tc-99}	None
B1HVN0		S			1X60mL G/P 23.6 grams	Neptunium-237 {Np-237}	None

920000

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
K. B. HULSE	3/14/06 1355	TA FRAZIER	3/14/06 1355
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
K. B. HULSE			
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS

Reporting format the same as GPP, including QC. All samples, except VOAs, have been taken using the multiple-increment sampling program. This requires the entire sample provided in each bottle to be used in analysis. VOAs will be analyzed as usual.
(1)Semi-VOA -- 8270A (Add-On) {124TRMEBEN, 2-NAPHTHAM, 2BUTOXETOL, BENZALC, CYCHEXN, DECANE, MCRESOL, METHYLPHEN, PYRIDINE, TRIBUPH} Semi-VOA - 8270A (TCL) {12DICLBENZ, 13DICLBENZ, 14DICLBENZ, 245TRCLPHN, 246TRCLPHN, 24DICLPHEN, 24DIMET, 24DINITOLU, 26DINITOLU, 2CLMEETHER, 2MENAPH, 2METHPH, 2NITRAN, 2NITRPH, 3NITRAN, 46DINIT, 4CHLOET, 9H-CARB, ACENAPH, ACENATL, ANTHRACENE, BENZAAN, BENZBFL, BENZOPE,

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

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			R06-013-004	PAGE 2 OF 2
COLLECTOR KB Hulse	COMPANY CONTACT TRECHTER, JE	TELEPHONE NO. 373-7046	PROJECT COORDINATOR TRECHTER, JE	PRICE CODE 9C AIR QUALITY ☐	DATA TURNAROUND 15 Days / 15 Days
SAMPLING LOCATION 200-UW-1	PROJECT DESIGNATION 200-UW-1 Operable Unit, Soil from Trench between 216-U-8 and 216-U-12		SAF NO. R06-013		
ICE CHEST NO. SESP	FIELD LOGBOOK NO. DTS-SAWS-H100	COA 121600ES20	METHOD OF SHIPMENT GOVERNMENT VEHICLE		
SHIPPED TO Waste Sampling & Characterization	OFFSITE PROPERTY NO. N/A		BILL OF LADING/AIR BILL NO. N/A		

MATRIX*
OL = OTHER LIQUID
OS = OTHER SOLID
S = SOIL
W = WATER

SPECIAL HANDLING AND/OR STORAGE

POSSIBLE SAMPLE HAZARDS/ REMARKS

SAMPLE NO.	LAB ID	MATRIX*	SAMPLE DATE	SAMPLE TIME	NO./TYPE CONTAINER(S)	ANALYSIS	PRESERVATION
B1HVN0		S	3-14-06	1020	1X60mL G/P 24.6 grams	IC Anions - 300.0 {BROMIDE, CHLORIDE, FLUORIDE, NO2-N, NO3-N, PO4-P, SULFATE}	None
B1HVN0		S	↓	↓	1X60mL G/P 23.8 grams	ICP Metals - 6010A (Add-on) {B, Bi, La, Li, Si, Sm, Ti} ICP Metals - 6010A (TAL) {Al, Ca, Fe, K, Mg, Na}	Cool 4C
B1HVN0		S	↓	↓	1X60mL G/P 24.9 grams	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	None

000027

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
K. B. HULSE KB Hulse	3/14/06 1355	TA FRAZIER Tania Frazier	3/14/06 1355
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS

Reporting format the same as GPP, including QC. All samples, except VOAs, have been taken using the multiple-increment sampling program. This requires the entire sample provided in each bottle to be used in analysis. VOAs will be analyzed as usual.
(3)ICP/MS - 200.8 (Add-on) {As, Be, Mo, Pb, Se, Sn, Sr, Tl, U} ICP/MS - 200.8 (TAL) {Ag, Ba, Cd, Co, Cr, Cu, Mn, Ni, Sb, V, Zn} ICP/MS - 200.8 (Hg) {Hg} Isotopic Thorium {Th-232}

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

Appendix 5

Data Validation Supporting Documentation

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	C	D	E
PROJECT: 200-UW-1			DATA PACKAGE: ~~60178~~ 60178		
VALIDATOR: TCJ		LAB: WSCF		DATE: 4/13/06	
			SDG: ~~60178~~ 60178		

ANALYSES PERFORMED					
~~Anions/IC~~	TOC	TOX	TPH-418.1	Oil and Grease	Alkalinity
Ammonia	BOD/COD	Chloride	Chromium-VI	pH	NO_3/NO_2
Sulfate	TDS	TKN	Phosphate		

SAMPLES/MATRIX
B1HVMU B1HVM8 B1HVN0
nitrate, nitrite + phosphate not validated or reported per FHI
Soil

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

Technical verification documentation present? ..... Yes (No) N/A

Comments: _____

2. INSTRUMENT PERFORMANCE AND CALIBRATIONS (Levels D and E)

Initial calibrations performed on all instruments? ..... Yes No (N/A)

Initial calibrations acceptable? ..... Yes No (N/A)

ICV and CCV checks performed on all instruments? ..... Yes No (N/A)

ICV and CCV checks acceptable? ..... Yes No (N/A)

Standards traceable? ..... Yes No (N/A)

Standards expired? ..... Yes No (N/A)

Calculation check acceptable? ..... Yes No (N/A)

Comments: _____

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

3. BLANKS (Levels B, C, D, and E)

ICB and CCB checks performed for all applicable analyses? (Levels D, E) ..... Yes No N/A

ICB and CCB results acceptable? (Levels D, E) ..... Yes No N/A

Laboratory blanks analyzed? ..... Yes No N/A

Laboratory blank results acceptable? ..... Yes No N/A

Field blanks analyzed? (Levels C, D, E) ..... Yes No N/A

Field blank results acceptable? (Levels C, D, E) ..... Yes No N/A

Transcription/calculation errors? (Levels D, E) ..... Yes No N/A

Comments: no FB

4. ACCURACY (Levels C, D, and E)

Spike samples analyzed? ..... Yes No N/A

Spike recoveries acceptable? ..... Yes No N/A

Sike standards NIST traceable? (Levels D, E) ..... Yes No N/A

Spike standards expired? (Levels D, E) ..... Yes No N/A

LCS/BSS samples analyzed? ..... Yes No N/A

LCS/BSS results acceptable? ..... Yes No N/A

Standards traceable? (Levels D, E) ..... Yes No N/A

Standards expired? (Levels D, E) ..... Yes No N/A

Transcription/calculation errors? (Levels D, E) ..... Yes No N/A

Performance audit sample(s) analyzed? ..... Yes No N/A

Performance audit sample results acceptable? ..... Yes No N/A

Comments: no MS- J all no PAS

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

5. PRECISION (Levels C, D, and E)

Duplicate RPD values acceptable? ..... Yes (No) N/A

Duplicate results acceptable? ..... Yes (No) N/A

MS/MSD standards NIST traceable? (Levels D, E) ..... Yes No (N/A)

MS/MSD standards expired? (Levels D, E) ..... Yes No (N/A)

Field duplicate RPD values acceptable? ..... Yes No (N/A)

Field split RPD values acceptable? ..... Yes No (N/A)

Transcription/calculation errors? (Levels D, E) ..... Yes No (N/A)

Comments: no duplicate analysis J all

6. HOLDING TIMES (all levels)

Samples properly preserved? ..... (Yes) No N/A

Sample holding times acceptable? ..... (Yes) No N/A

Comments:

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

7. RESULT QUANTITATION AND DETECTION LIMITS (all levels)

Results reported for all requested analyses? ..... Yes No N/A

Results supported in the raw data? (Levels D, E) ..... Yes No N/A

Samples properly prepared? (Levels D, E) ..... Yes No N/A

Detection limits meet RDL? ..... Yes No N/A

Transcription/calculation errors? (Levels D, E) ..... Yes No N/A

Comments: all fluoride ons

Appendix 6

Additional Documentation Requested by Client

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: 20060178
Matrix: SOLID
Test: Anions by Ion Chromatography

SAF Number: R06-013
Sample Date:
Receive Date:

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
BATCH QC									
BLANK	Bromide (Br) by IC	24959-67-9	<9.30e-2	n/a	mg/L	03/20/06	0.000	300.000	U
BLANK	Bromide (Br) by IC	24959-67-9	<9.30e-2	n/a	mg/L	03/20/06	0.000	300.000	U
BLANK	Chloride (Cl) by IC	16887-00-6	<3.40e-2	n/a	mg/L	03/20/06	0.000	300.000	U
BLANK	Chloride (Cl) by IC	16887-00-6	<3.40e-2	n/a	mg/L	03/20/06	0.000	300.000	U
BLANK	Fluoride (F) by IC	16984-48-8	<4.00e-2	n/a	mg/L	03/20/06	0.000	300.000	U
BLANK	Fluoride (F) by IC	16984-48-8	<4.00e-2	n/a	mg/L	03/20/06	0.000	300.000	U
BLANK	Nitrite (N) by IC	NO2-N	<9.80e-3	n/a	mg/L	03/20/06	0.000	300.000	U
BLANK	Nitrite (N) by IC	NO2-N	<9.80e-3	n/a	mg/L	03/20/06	0.000	300.000	U
BLANK	Nitrate (N) by IC	NO3-N	<1.80e-2	n/a	mg/L	03/20/06	0.000	300.000	U
BLANK	Nitrate (N) by IC	NO3-N	<1.80e-2	n/a	mg/L	03/20/06	0.000	300.000	U
BLANK	Phosphate (P) by IC	PO4-P	<7.80e-2	n/a	mg/L	03/20/06	0.000	300.000	U
BLANK	Phosphate (P) by IC	PO4-P	<7.80e-2	n/a	mg/L	03/20/06	0.000	300.000	U
BLANK	Sulfate (SO4) by IC	14808-79-8	<1.30e-1	n/a	mg/L	03/20/06	0.000	300.000	U
BLANK	Sulfate (SO4) by IC	14808-79-8	<1.30e-1	n/a	mg/L	03/20/06	0.000	300.000	U
LCS	Bromide (Br) by IC	24959-67-9	3.93e+02	98.250	% Recov	03/20/06	80.000	120.000	
LCS	Chloride (Cl) by IC	16887-00-6	1.99e+02	101.531	% Recov	03/20/06	80.000	120.000	
LCS	Fluoride (F) by IC	16984-48-8	9.05e+01	90.500	% Recov	03/20/06	80.000	120.000	
LCS	Nitrite (N) by IC	NO2-N	9.41e+01	94.478	% Recov	03/20/06	80.000	120.000	
LCS	Nitrate (N) by IC	NO3-N	8.55e+01	97.270	% Recov	03/20/06	80.000	120.000	
LCS	Phosphate (P) by IC	PO4-P	1.92e+02	99.740	% Recov	03/20/06	80.000	120.000	
LCS	Sulfate (SO4) by IC	14808-79-8	3.82e+02	95.500	% Recov	03/20/06	80.000	120.000	

000034

Date: 20 April 2006
To: Fluor Hanford Inc. (technical representative)
From: TechLaw, Inc.
Project: 200-UW-1 Operable Unit, Soil from Trench Between 216-U-8 and 216-U-12 Cribs
Subject: Inorganics - Data Package No. WSCF20060178 (60178)

INTRODUCTION

This memo presents the results of data validation on Data Package No. 60178 prepared by WSCF Analytical Laboratories (WSCF). A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample Date	Media	Validation	Date
B1HVM6	3/14/06	Soil	C	See note 1
B1HVM8	3/14/06	Soil	C	See note 1
B1HVN0	3/14/06	Soil	C	See note 1

1 - ICP metals by 6010B and 200.8

Data validation was conducted in accordance with the FHI validation statement of work and the Sampling and Analysis Plan for Support Activities to the 200-UW-1 Operable Unit, DOE/RL-2005-75, Rev. 0. Appendices 1 through 6 provide the following information as indicated below:

Appendix 1. Glossary of Data Reporting Qualifiers
Appendix 2. Summary of Data Qualification
Appendix 3. Qualified Data Summary and Annotated Laboratory Reports
Appendix 4. Laboratory Narrative and Chain-of-Custody Documentation
Appendix 5. Data Validation Supporting Documentation
Appendix 6. Additional Documentation Requested by Client

DATA QUALITY PARAMETERS

- **Holding Times**

Analytical holding times for metals are assessed to ascertain whether the holding time requirements were met by the laboratory. The holding time requirements are as follows: Soil samples must be analyzed within 6 months for ICP metals.

All holding times were met.

RECEIVED MAY 2006

- **Preparation (Method) Blanks**

Preparation Blanks

At least one preparation blank, consisting of deionized distilled water processed through each sample preparation and analysis procedure, must be prepared and analyzed with every sample delivery group. In the case of positive blank results, samples with digestate concentrations less than five times the preparation blank value have had their associated values qualified as non-detected and flagged "U". Samples with concentrations of greater than five times the highest blank concentration do not require qualification.

In the case of negative blank results, if the absolute value exceeds the contract required detection limit (CRDL), all nondetects are rejected and flagged "UR" and all detects that are less than ten times the absolute value of the associated preparation blank result are qualified as estimates and flagged "J". If the absolute value of the negative preparation blank is greater than the instrument detection limit (IDL) and less than or equal to the CRDL, all nondetects are qualified as estimates and flagged "UJ" and all detects less than ten times the absolute value of the blank are qualified as estimates and flagged "J". If the sample results are greater than ten times the absolute value of the preparation blank, no qualification is necessary.

All preparation blank results were acceptable.

Field (Equipment) Blank

No field blanks were submitted for analysis.

- **Accuracy**

Matrix Spike & Matrix Spike Duplicate

Matrix spike (MS), matrix spike duplicate (MSD) and laboratory control sample (LCS) analyses are used to assess the analytical accuracy of the reported data. The matrix spike is used to assess effect of the matrix on the ability to accurately quantify sample concentrations. Recoveries must fall within the range of 70% to 130%. Samples with a spike recovery of less than 30% and a sample result below the IDL are rejected and flagged "UR". Samples with a spike recovery of 30% to 69% and a sample result less than the IDL are qualified "UJ". Samples with a spike recovery of greater than 130% or less than 69% and a sample result greater than the IDL are qualified as estimates and flagged "J". Finally, for samples with a spike recovery greater than 130% and a sample result less than the IDL, no qualification is required.

Due to the lack of a matrix spike or matrix spike duplicate analysis, all analytes were qualified as estimates and flagged "J".

Laboratory Control Sample

The LCS is used to monitor the overall performance of all steps in the analysis. Recoveries must fall within the range of 70% to 130% for LCS analysis. Samples with a recovery of less than 50% are rejected and flagged "UR". Samples with a recovery of 50% to 69% and a sample recovery below the IDL are qualified "UJ". Samples with a recovery of greater than 130% or less than 70% and a sample result greater than the IDL are qualified as estimates and flagged "J". Finally, for samples with a recovery greater than 130% and a sample result less than the IDL, no qualification is required.

Due to an LCS recovery outside QC limits (4%), all bismuth results were rejected and flagged "UR".

Due to an LCS recovery outside QC limits (20%), all silicon results were rejected and flagged "UR".

Due to an LCS recovery outside QC limits (21%), all silver results were rejected and flagged "UR".

Due to an LCS recovery outside QC limits (56%), all antimony results were qualified as estimates and flagged "J".

Due to an LCS recovery outside QC limits (141%), all iron results were qualified as estimates and flagged "J".

Due to an LCS recovery outside QC limits (135%), all potassium results were qualified as estimates and flagged "J".

Due to an LCS recovery outside QC limits (60%), all titanium results were qualified as estimates and flagged "J".

All other LCS results were acceptable.

- **Precision**

Laboratory Duplicate Samples

Analytical precision is expressed by the relative percent differences (RPD) between the recoveries of matrix spike and matrix spike duplicate (MSD) analyses performed on a sample in the analytical batch. Precision may alternatively be assessed using

unspiked duplicate analyses performed on a sample in the analytical batch. If both sample and replicate activities (concentrations) are greater than five times the CRDL and the RPD is less than +/- 30%, no qualification is required. If either activity (concentration) is less than five times the CRDL, the RPD control limit is less than or equal to two times the CRDL. If the RPD is outside the applicable control limit, associated results are qualified as estimated detects or estimated non-detects.

Due to the lack of a duplicate analysis, all analytes were qualified as estimates and flagged "J".

Field Duplicate

No field duplicates were submitted for analysis.

- **Analytical Detection Limits**

Reported analytical detection levels are compared against the required target quanitiation limits (RTQLs) to ensure that laboratory detection levels meet the required criteria. All silver, antimony, arsenic, and selenium results exceeded RTQL. Under the FHI statement of work, no qualification is required.

- **Completeness**

Data package No. 60178 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 91%.

MAJOR DEFICIENCIES

The following major deficiencies were noted:

- Due to an LCS recovery outside QC limits (4%), all bismuth results were rejected and flagged "UR".
- Due to an LCS recovery outside QC limits (20%), all silicon results were rejected and flagged "UR".
- Due to an LCS recovery outside QC limits (21%), all silver results were rejected and flagged "UR".

Rejected data is unusable and should not be reported.

MINOR DEFICIENCIES

The following minor deficiencies were noted:

- Due to an LCS recovery outside QC limits (56%), all antimony results were qualified as estimates and flagged "J".
- Due to an LCS recovery outside QC limits (141%), all iron results were qualified as estimates and flagged "J".
- Due to an LCS recovery outside QC limits (135%), all potassium results were qualified as estimates and flagged "J".
- Due to an LCS recovery outside QC limits (60%), all titanium results were qualified as estimates and flagged "J".
- Due to the lack of a duplicate or MS analysis, all analytes were qualified as estimates and flagged "J".

Data flagged "J" is an estimate, but under the FHI validation SOW, the data may be usable for decision-making purposes. All other validated results are considered accurate within the standard error associated with the methods.

REFERENCES

FHI, Contract #20266, *Validation Statement of Work*, Fluor Hanford Incorporated, July 7, 2003.

DOE/RL-2005-75, Rev. 0, *Sampling and Analysis Plan for Support Activities to the 200-UW-1 Operable Unit*, December 2005.

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Appendix 1

Glossary of Data Reporting Qualifiers

Qualifiers which may be applied by data validators in compliance with FHI validation SOW are as follows:

U - Indicates the compound or analyte was analyzed for and not detected in the sample. The value reported is the sample quantitation limit corrected for sample dilution and moisture content by the laboratory.

UJ - Indicates the compound or analyte was analyzed for and not detected in the sample. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.

J - Indicates the compound or analyte was analyzed for and detected. Due to a minor QC deficiency identified during the data validation, the associated concentration is an estimate, but the data are usable for decision-making purposes.

BJ - Applied to inorganic analyses only. Indicates the analyte concentration was greater than the IDL but less than the CRDL and is considered an estimated value.

R - Indicates the compound or analyte was analyzed for, detected, and due to an identified major QC deficiency, the data are unusable.

UR - Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified major QC deficiency.

NJ - Indicates presumptive evidence of a compound at an estimated value. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

N - Indicates presumptive evidence of a compound. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

Appendix 2

Summary of Data Qualification

METALS DATA QUALIFICATION SUMMARY*

SDG: 60178	REVIEWER: TLI	Project: 200-UW-1	PAGE 1 OF 1
COMMENTS:			
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
All	J	All	No MS or duplicate analysis
Bismuth Silicon Silver	UR	All	LCS recovery
Iron Potassium Titanium	J	All	LCS recovery

* - The Qualified Data Summary Table includes laboratory applied "U" qualifiers not specifically identified here. The laboratory applied "U" qualifiers are included to minimize misinterpretation of results contained in the table.

Appendix 3

Qualified Data Summary and Annotated Laboratory Reports

Project: FLUOR HANFORD							
Laboratory: LLI	SDG: WSCF20060178						
Sample Number		B1HVM6		B1HVM8		B1HVN0	
Remarks							
Sample Date		3/14/06		3/14/06		3/14/06	
Inorganics	RTQL	Result	Q	Result	Q	Result	Q
Aluminum		1160	J	1160	J	1130	J
Iron		4950	J	4910	J	4800	J
Magnesium		1030	J	1020	J	1020	J
Potassium		204	J	211	J	189	J
Sodium		64.5	J	63.9	J	61.3	J
Calcium		1620	J	1590	J	1600	J
Lithium		1.32	J	1.09	J	1.28	J
Titanium	1	202	J	185	J	182	J
Boron		<2.56	UJ	<2.25	UJ	<2.12	UJ
Bismuth		<2.17	UR	<1.90	UR	<1.79	UR
Silicon		16.6	UR	12.5	UR	5.65	UR
Manganese		364	J	359	J	344	J
Nickel		9.13	J	9.19	J	9.18	J
Silver	0.2	<0.242	UR	<0.206	UR	<0.214	UR
Antimony	0.6	<1.82	UJ	<1.54	UJ	<1.60	UJ
Barium		87.4	J	84.1	J	83.3	J
Beryllium		0.281	J	0.219	J	0.196	J
Cadmium		<0.242	UJ	<0.206	UJ	<0.214	UJ
Chromium	1	5.48	J	5.17	J	5.15	J
Cobalt		9.23	J	8.85	J	8.76	J
Copper		14.7	J	14.1	J	14.0	J
Vanadium		41.6	J	37.1	J	33.6	J
Zinc		42.3	J	40.2	J	42.1	J
Lead		4.57	J	4.19	J	4.11	J
Mercury	0.2	1.35	J	0.843	J	0.580	J
Molybdenum		<0.605	UJ	<0.514	UJ	<0.535	UJ
Thorium		2.73	J	2.35	J	2.25	J
Uranium	1	0.825	J	0.689	J	0.629	J
Arsenic	2.2	<6.05	UJ	<5.14	UJ	<5.35	UJ
Selenium	1	<2.42	UJ	<2.06	UJ	<2.14	UJ
Thallium	0.5	0.585	J	<0.154	UJ	<0.160	UJ
Strontium		26.1	J	25.8	J	27.0	J
Tin		<0.302	UJ	<0.257	UJ	<0.268	UJ

Laboratory applied non-detect qualifiers "U" have been included in this table to minimize miss-interpretation of results. All other qualifiers shown were applied during validation.

000042

WSCF
ANALYTICAL RESULTS REPORT

Attention: Deanna Klages H8-40 **Group #:** 20060178

Sample #	Client ID		CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
Inorganic														
W060000452	B1HVM6	K	TS	Percent Solids	SOLID	LA-519-412		89.7	%	1.00	0.0	03/17/06	03/14/06	03/14/06
W060000452	B1HVM6	K	16984-48-8	Fluoride (F) by IC	SOLID	LA-533-410	U	< 2.00	ug/g	50.00	2.0	03/20/06	03/14/06	03/14/06
W060000452	B1HVM6	K	16887-00-6	Chloride (Cl) by IC	SOLID	LA-533-410	B	6.52	ug/g	50.00	1.7	03/20/06	03/14/06	03/14/06
W060000452	B1HVM6	K	NO2-N	Nitrite (N) by IC	SOLID	LA-533-410	U	< 0.490	ug/g	50.00	0.49	03/20/06	03/14/06	03/14/06
W060000452	B1HVM6	K	24959-67-9	Bromide (Br) by IC	SOLID	LA-533-410	U	< 4.65	ug/g	50.00	4.6	03/20/06	03/14/06	03/14/06
W060000452	B1HVM6	K	NO3-N	Nitrate (N) by IC	SOLID	LA-533-410		5.55	ug/g	50.00	0.90	03/20/06	03/14/06	03/14/06
W060000452	B1HVM6	K	PO4-P	Phosphate (P) by IC	SOLID	LA-533-410	U	< 3.90	ug/g	50.00	3.9	03/20/06	03/14/06	03/14/06
W060000452	B1HVM6	K	14808-79-8	Sulfate (SO4) by IC	SOLID	LA-533-410	B	26.2	ug/g	50.00	6.5	03/20/06	03/14/06	03/14/06
W060000452	B1HVM6	K	7429-90-5	Aluminum by ICP	SOLID	LA-505-411		1.16e+03	ug/g	98.47	2.7	03/20/06	03/14/06	03/14/06
W060000452	B1HVM6	K	7439-89-6	Iron by ICP	SOLID	LA-505-411	E J	4.95e+03	ug/g	9.85e+002	21	03/20/06	03/14/06	03/14/06
W060000452	B1HVM6	K	7439-95-4	Magnesium by ICP	SOLID	LA-505-411		1.03e+03	ug/g	98.47	1.9	03/20/06	03/14/06	03/14/06
W060000452	B1HVM6	K	7440-09-7	Potassium by ICP	SOLID	LA-505-411	E	204	ug/g	98.47	11	03/20/06	03/14/06	03/14/06
W060000452	B1HVM6	K	7440-23-5	Sodium by ICP	SOLID	LA-505-411		64.5	ug/g	98.47	20	03/20/06	03/14/06	03/14/06
W060000452	B1HVM6	K	7440-70-2	Calcium by ICP	SOLID	LA-505-411		1.62e+03	ug/g	98.47	1.6	03/20/06	03/14/06	03/14/06
W060000452	B1HVM6	K	7439-93-2	Lithium by ICP	SOLID	LA-505-411		1.32	ug/g	98.47	0.098	03/20/06	03/14/06	03/14/06
W060000452	B1HVM6	K	7440-32-6	Titanium by ICP	SOLID	LA-505-411		202	ug/g	98.47	0.098	03/20/06	03/14/06	03/14/06
W060000452	B1HVM6	K	7440-42-8	Boron by ICP	SOLID	LA-505-411	U	< 2.56	ug/g	98.47	2.6	03/20/06	03/14/06	03/14/06
W060000452	B1HVM6	K	7440-69-9	Bismuth by ICP	SOLID	LA-505-411	U R	< 2.17	ug/g	98.47	2.2	03/20/06	03/14/06	03/14/06
W060000452	B1HVM6	K	7440-21-3	Silicon by ICP	SOLID	LA-505-411	U R	16.6	ug/g	98.47	1.7	03/20/06	03/14/06	03/14/06
W060000452	B1HVM6	K	7439-96-5	Manganese by ICP-MS	SOLID	LA-505-412	J	364	ug/g	6.05	0.12	03/21/06	03/14/06	03/14/06
W060000452	B1HVM6	K	7440-02-0	Nickel by ICP-MS	SOLID	LA-505-412	J	9.13	ug/g	6.05	0.36	03/21/06	03/14/06	03/14/06
W060000452	B1HVM6	K	7440-22-4	Silver by ICP-MS	SOLID	LA-505-412	U R	< 0.242	ug/g	6.05	0.24	03/21/06	03/14/06	03/14/06
W060000452	B1HVM6	K	7440-36-0	Antimony by ICP-MS	SOLID	LA-505-412	U J	< 1.82	ug/g	6.05	1.8	03/21/06	03/14/06	03/14/06
W060000452	B1HVM6	K	7440-39-3	Barium by ICP-MS	SOLID	LA-505-412		87.4	ug/g	6.05	1.2	03/21/06	03/14/06	03/14/06
W060000452	B1HVM6	K	7440-41-7	Beryllium by ICP-MS	SOLID	LA-505-412		0.281	ug/g	6.05	0.12	03/21/06	03/14/06	03/14/06
W060000452	B1HVM6	K	7440-43-9	Cadmium by ICP-MS	SOLID	LA-505-412	U	< 0.242	ug/g	6.05	0.24	03/21/06	03/14/06	03/14/06

MDL = Minimum Detection Limit
RQ = Result Qualifier
DF = Dilution Factor

B - The Analyte detected in both the BLANK and the SAMPLE (org.)
E - Analyte is an estimate, has potentially larger errors
X - Other flags and notes described in the comments/narrative.

B - The analyte < the RDL but > = the IDL/MDL (inorganic)
U - Analyzed for but not detected above limiting criteria.

4/25/06

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Deanna Klages H8-40 **Group #:** 20060178

Sample #	Client ID		CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W060000452	B1HVM6	K	7440-47-3	Chromium by ICP-MS	SOLID	LA-505-412		5.48	ug/g	6.05	4.2	03/21/06	03/14/06	03/14/06
W060000452	B1HVM6	K	7440-48-4	Cobalt by ICP-MS	SOLID	LA-505-412		9.23	ug/g	6.05	0.12	03/21/06	03/14/06	03/14/06
W060000452	B1HVM6	K	7440-50-8	Copper by ICP-MS	SOLID	LA-505-412		14.7	ug/g	6.05	1.2	03/21/06	03/14/06	03/14/06
W060000452	B1HVM6	K	7440-62-2	Vanadium by ICP-MS	SOLID	LA-505-412		41.6	ug/g	6.05	3.0	03/21/06	03/14/06	03/14/06
W060000452	B1HVM6	K	7440-66-6	Zinc by ICP-MS	SOLID	LA-505-412		42.3	ug/g	6.05	1.8	03/21/06	03/14/06	03/14/06
W060000452	B1HVM6	K	7439-92-1	Lead by ICP-MS	SOLID	LA-505-412		4.57	ug/g	6.05	0.30	03/21/06	03/14/06	03/14/06
W060000452	B1HVM6	K	7439-97-6	Mercury by ICP-MS	SOLID	LA-505-412		1.35	ug/g	6.05	0.24	03/21/06	03/14/06	03/14/06
W060000452	B1HVM6	K	7439-98-7	Molybdenum by ICP-MS	SOLID	LA-505-412	U	< 0.605	ug/g	6.05	0.60	03/21/06	03/14/06	03/14/06
W060000452	B1HVM6	K	7440-29-1	Thorium by ICP-MS	SOLID	LA-505-412		2.73	ug/g	6.05	0.30	03/21/06	03/14/06	03/14/06
W060000452	B1HVM6	K	7440-61-1	Uranium by ICP-MS	SOLID	LA-505-412		0.825	ug/g	6.05	0.12	03/21/06	03/14/06	03/14/06
W060000452	B1HVM6	K	7440-38-2	Arsenic by ICP-MS	SOLID	LA-505-412	U	< 6.05	ug/g	6.05	6.0	03/21/06	03/14/06	03/14/06
W060000452	B1HVM6	K	7782-49-2	Selenium by ICP-MS	SOLID	LA-505-412	U	< 2.42	ug/g	6.05	2.4	03/21/06	03/14/06	03/14/06
W060000452	B1HVM6	K	7440-28-0	Thallium by ICP-MS	SOLID	LA-505-412		0.585	ug/g	6.05	0.18	03/21/06	03/14/06	03/14/06
W060000452	B1HVM6	K	7440-24-6	Strontium by ICP-MS	SOLID	LA-505-412		26.1	ug/g	6.05	0.18	03/21/06	03/14/06	03/14/06
W060000452	B1HVM6	K	7440-31-5	Tin	SOLID	LA-505-412	U	< 0.302	ug/g	6.05	0.30	03/21/06	03/14/06	03/14/06
~~W060000453~~	~~B1HVM8~~	~~K~~	~~TS~~	~~Percent Solids~~	~~SOLID~~	~~LA-519-412~~		~~93.3~~	~~%~~	~~1.00~~	~~0.0~~	~~03/17/06~~	~~03/14/06~~	~~03/14/06~~
W060000453	B1HVM8	K	16984-48-8	Fluoride (F) by IC	SDLID	LA-533-410	U	< 2.00	ug/g	50.00	2.0	03/20/06	03/14/06	03/14/06
W060000453	B1HVM8	K	16887-00-6	Chloride (Cl) by IC	SOLID	LA-533-410	B	3.64	ug/g	50.00	1.7	03/20/06	03/14/06	03/14/06
W060000453	B1HVM8	K	NO2-N	Nitrite (N) by IC	SOLID	LA-533-410	U	< 0.490	ug/g	50.00	0.49	03/20/06	03/14/06	03/14/06
W060000453	B1HVM8	K	24959-67-9	Bromide (Br) by IC	SOLID	LA-533-410	U	< 4.65	ug/g	50.00	4.6	03/20/06	03/14/06	03/14/06
W060000453	B1HVM8	K	NO3-N	Nitrate (N) by IC	SOLID	LA-533-410	B	3.58	ug/g	50.00	0.90	03/20/06	03/14/06	03/14/06
W060000453	B1HVM8	K	PO4-P	Phosphate (P) by IC	SOLID	LA-533-410	U	< 3.90	ug/g	50.00	3.9	03/20/06	03/14/06	03/14/06
~~W060000453~~	~~B1HVM8~~	~~K~~	~~14808-79-8~~	~~Sulfate (SO4) by IC~~	~~SOLID~~	~~LA-533-410~~	~~B~~	~~30.0~~	~~ug/g~~	~~50.00~~	~~6.5~~	~~03/20/06~~	~~03/14/06~~	~~03/14/06~~
W060000453	B1HVM8	K	7429-90-5	Aluminum by ICP	SOLID	LA-505-411		1.16e+03	ug/g	86.37	2.3	03/20/06	03/14/06	03/14/06
W060000453	B1HVM8	K	7439-89-6	Iron by ICP	SOLID	LA-505-411	E	4.91e+03	ug/g	8.64e+002	18	03/20/06	03/14/06	03/14/06
W060000453	B1HVM8	K	7439-95-4	Magnesium by ICP	SOLID	LA-505-411		1.02e+03	ug/g	86.37	1.6	03/20/06	03/14/06	03/14/06
W060000453	B1HVM8	K	7440-09-7	Potassium by ICP	SOLID	LA-505-411	E	211	ug/g	86.37	9.9	03/20/06	03/14/06	03/14/06

MDL=Minimum Detection Limit
RQ=Result Qualifier

B - The Analyte detected in both the BLANK and the SAMPLE (org.)
E - Analyte is an estimate, has potentially larger errors
X - Other flags and notes described in the comments/narrative.

B - The analyte < the RDL but > = the IDL/MDL (inorganic)
U - Analyzed for but not detected above limiting criteria.

DF=Dilution Factor

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

4/28/06

000014

WSCF
ANALYTICAL RESULTS REPORT

Attention: Deanna Klages H8-40 **Group #:** 20060178

Sample #	Client ID		CAS #	Test Performed	Matrix	WSCF Method	RQ		Result	Unit	DF	MDL	Analyze	Sample	Receive
W060000453	B1HVM8	K	7440-23-5	Sodium by ICP	SOLID	LA-505-411	J		63.9	ug/g	86.37	17	03/20/06	03/14/06	03/14/06
W060000453	B1HVM8	K	7440-70-2	Calcium by ICP	SOLID	LA-505-411			1.59e+03	ug/g	86.37	1.4	03/20/06	03/14/06	03/14/06
W060000453	B1HVM8	K	7439-93-2	Lithium by ICP	SOLID	LA-505-411			1.09	ug/g	86.37	0.086	03/20/06	03/14/06	03/14/06
W060000453	B1HVM8	K	7440-32-6	Titanium by ICP	SOLID	LA-505-411	X		185	ug/g	86.37	0.086	03/20/06	03/14/06	03/14/06
W060000453	B1HVM8	K	7440-42-8	Boron by ICP	SOLID	LA-505-411	U	<	2.25	ug/g	86.37	2.2	03/20/06	03/14/06	03/14/06
W060000453	B1HVM8	K	7440-69-9	Bismuth by ICP	SOLID	LA-505-411	UX R	<	1.90	ug/g	86.37	1.9	03/20/06	03/14/06	03/14/06
W060000453	B1HVM8	K	7440-21-3	Silicon by ICP	SOLID	LA-505-411	UR		12.5	ug/g	86.37	1.5	03/20/06	03/14/06	03/14/06
W060000453	B1HVM8	K	7439-96-5	Manganese by ICP-MS	SOLID	LA-505-412	J		359	ug/g	5.14	0.10	03/21/06	03/14/06	03/14/06
W060000453	B1HVM8	K	7440-02-0	Nickel by ICP-MS	SOLID	LA-505-412	J		9.19	ug/g	5.14	0.31	03/21/06	03/14/06	03/14/06
W060000453	B1HVM8	K	7440-22-4	Silver by ICP-MS	SOLID	LA-505-412	UX R	<	0.206	ug/g	5.14	0.21	03/21/06	03/14/06	03/14/06
W060000453	B1HVM8	K	7440-36-0	Antimony by ICP-MS	SOLID	LA-505-412	UX J	<	1.54	ug/g	5.14	1.5	03/21/06	03/14/06	03/14/06
W060000453	B1HVM8	K	7440-39-3	Barium by ICP-MS	SOLID	LA-505-412			84.1	ug/g	5.14	1.0	03/21/06	03/14/06	03/14/06
W060000453	B1HVM8	K	7440-41-7	Beryllium by ICP-MS	SOLID	LA-505-412			0.219	ug/g	5.14	0.10	03/21/06	03/14/06	03/14/06
W060000453	B1HVM8	K	7440-43-9	Cadmium by ICP-MS	SOLID	LA-505-412	U	<	0.206	ug/g	5.14	0.21	03/21/06	03/14/06	03/14/06
W060000453	B1HVM8	K	7440-47-3	Chromium by ICP-MS	SOLID	LA-505-412			5.17	ug/g	5.14	3.6	03/21/06	03/14/06	03/14/06
W060000453	B1HVM8	K	7440-48-4	Cobalt by ICP-MS	SOLID	LA-505-412			8.85	ug/g	5.14	0.10	03/21/06	03/14/06	03/14/06
W060000453	B1HVM8	K	7440-50-8	Copper by ICP-MS	SOLID	LA-505-412			14.1	ug/g	5.14	1.0	03/21/06	03/14/06	03/14/06
W060000453	B1HVM8	K	7440-62-2	Vanadium by ICP-MS	SOLID	LA-505-412			37.1	ug/g	5.14	2.6	03/21/06	03/14/06	03/14/06
W060000453	B1HVM8	K	7440-66-6	Zinc by ICP-MS	SOLID	LA-505-412			40.2	ug/g	5.14	1.5	03/21/06	03/14/06	03/14/06
W060000453	B1HVM8	K	7439-92-1	Lead by ICP-MS	SOLID	LA-505-412			4.19	ug/g	5.14	0.26	03/21/06	03/14/06	03/14/06
W060000453	B1HVM8	K	7439-97-6	Mercury by ICP-MS	SOLID	LA-505-412			0.843	ug/g	5.14	0.21	03/21/06	03/14/06	03/14/06
W060000453	B1HVM8	K	7439-98-7	Molybdenum by ICP-MS	SOLID	LA-505-412	U	<	0.514	ug/g	5.14	0.51	03/21/06	03/14/06	03/14/06
W060000453	B1HVM8	K	7440-29-1	Thorium by ICP-MS	SOLID	LA-505-412			2.35	ug/g	5.14	0.26	03/21/06	03/14/06	03/14/06
W060000453	B1HVM8	K	7440-61-1	Uranium by ICP-MS	SOLID	LA-505-412			0.689	ug/g	5.14	0.10	03/21/06	03/14/06	03/14/06
W060000453	B1HVM8	K	7440-38-2	Arsenic by ICP-MS	SOLID	LA-505-412	U	<	5.14	ug/g	5.14	5.1	03/21/06	03/14/06	03/14/06
W060000453	B1HVM8	K	7782-49-2	Selenium by ICP-MS	SOLID	LA-505-412	U	<	2.06	ug/g	5.14	2.1	03/21/06	03/14/06	03/14/06
W060000453	B1HVM8	K	7440-28-0	Thallium by ICP-MS	SOLID	LA-505-412	U	<	0.154	ug/g	5.14	0.15	03/21/06	03/14/06	03/14/06

MDL=Minimum Detection Limit
RQ=Result Qualifier

B - The Analyte detected in both the BLANK and the SAMPLE (org.)
E - Analyte is an estimate, has potentially larger errors
X - Other flags and notes described in the comments/narrative.

B - The analyte < the RDL but > = the IDL/MDL (inorganic)
U - Analyzed for but not detected above limiting criteria.

DF=Dilution Factor

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

4/25/06

WSCF
ANALYTICAL RESULTS REPORT

Attention: Deanna Klages H8-40 **Group #:** 20060178

Sample #	Client ID		CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W060000453	B1HVM8	K	7440-24-6	Strontium by ICP-MS	SOLID	LA-505-412	J	25.8	ug/g	5.14	0.15	03/21/06	03/14/06	03/14/06
W060000453	B1HVM8	K	7440-31-5	Tin	SOLID	LA-505-412	U J	< 0.257	ug/g	5.14	0.26	03/21/06	03/14/06	03/14/06
~~W060000454~~	~~B1HVN0~~	~~K~~	~~TS~~	~~Percent Solids~~	~~SOLID~~	~~LA-519-412~~		~~93.9~~	~~%~~	~~1.00~~	~~0.0~~	~~03/17/06~~	~~03/14/06~~	~~03/14/06~~
W060000454	B1HVN0	K	16984-48-8	Fluoride (F) by IC	SOLID	LA-533-410	U	< 2.00	ug/g	50.00	2.0	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	16887-00-6	Chloride (Cl) by IC	SOLID	LA-533-410	B	3.88	ug/g	50.00	1.7	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	NO2-N	Nitrite (N) by IC	SOLID	LA-533-410	U	< 0.490	ug/g	50.00	0.49	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	24959-67-9	Bromide (Br) by IC	SOLID	LA-533-410	U	< 4.65	ug/g	50.00	4.6	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	NO3-N	Nitrate (N) by IC	SOLID	LA-533-410	B	3.67	ug/g	50.00	0.90	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	PO4-P	Phosphate (P) by IC	SOLID	LA-533-410	U	< 3.90	ug/g	50.00	3.9	03/20/06	03/14/06	03/14/06
~~W060000454~~	~~B1HVN0~~	~~K~~	~~14808-79-8~~	~~Sulfate (SO4) by IC~~	~~SOLID~~	~~LA-533-410~~	~~B~~	~~17.1~~	~~ug/g~~	~~50.00~~	~~6.5~~	~~03/20/06~~	~~03/14/06~~	~~03/14/06~~
W060000454	B1HVN0	K	7429-90-5	Aluminum by ICP	SOLID	LA-505-411	J	1.13e+03	ug/g	81.38	2.2	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	7439-89-6	Iron by ICP	SOLID	LA-505-411	E	4.80e+03	ug/g	8.14e+002	17	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	7439-95-4	Magnesium by ICP	SOLID	LA-505-411		1.02e+03	ug/g	81.38	1.5	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	7440-09-7	Potassium by ICP	SOLID	LA-505-411	E	189	ug/g	81.38	9.4	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	7440-23-5	Sodium by ICP	SOLID	LA-505-411		61.3	ug/g	81.38	16	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	7440-70-2	Calcium by ICP	SOLID	LA-505-411		1.60e+03	ug/g	81.38	1.3	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	7439-93-2	Lithium by ICP	SOLID	LA-505-411		1.28	ug/g	81.38	0.081	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	7440-32-6	Titanium by ICP	SOLID	LA-505-411	X	182	ug/g	81.38	0.081	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	7440-42-8	Boron by ICP	SOLID	LA-505-411	U	< 2.12	ug/g	81.38	2.1	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	7440-69-9	Bismuth by ICP	SOLID	LA-505-411	UX R	< 1.79	ug/g	81.38	1.8	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	7440-21-3	Silicon by ICP	SOLID	LA-505-411	UX R	5.65	ug/g	81.38	1.4	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	7439-96-5	Manganese by ICP-MS	SOLID	LA-505-412	J	344	ug/g	5.35	0.11	03/21/06	03/14/06	03/14/06
W060000454	B1HVN0	K	7440-02-0	Nickel by ICP-MS	SOLID	LA-505-412	J	9.18	ug/g	5.35	0.32	03/21/06	03/14/06	03/14/06
W060000454	B1HVN0	K	7440-22-4	Silver by ICP-MS	SOLID	LA-505-412	UX R	< 0.214	ug/g	5.35	0.21	03/21/06	03/14/06	03/14/06
W060000454	B1HVN0	K	7440-36-0	Antimony by ICP-MS	SOLID	LA-505-412	UX J	< 1.60	ug/g	5.35	1.6	03/21/06	03/14/06	03/14/06
W060000454	B1HVN0	K	7440-39-3	Barium by ICP-MS	SOLID	LA-505-412		83.3	ug/g	5.35	1.1	03/21/06	03/14/06	03/14/06
W060000454	B1HVN0	K	7440-41-7	Beryllium by ICP-MS	SOLID	LA-505-412		0.196	ug/g	5.35	0.11	03/21/06	03/14/06	03/14/06

MDL = Minimum Detection Limit
RQ = Result Qualifier

B - The Analyte detected in both the BLANK and the SAMPLE (org.)
E - Analyte is an estimate, has potentially larger errors
X - Other flags and notes described in the comments/narrative.
B - The analyte < the RDL but >= the IDL/MDL (inorganic)
U - Analyzed for but not detected above limiting criteria.

DF = Dilution Factor

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4/25/06

000016

WSCF
ANALYTICAL RESULTS REPORT

Attention: Deanna Klages H8-40 **Group #:** 20060178

Sample #	Client ID		CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W060000454	B1HVN0	K	7440-43-9	Cadmium by ICP-MS	SOLID	LA-505-412	U	< 0.214	ug/g	5.35	0.21	03/21/06	03/14/06	03/14/06
W060000454	B1HVN0	K	7440-47-3	Chromium by ICP-MS	SOLID	LA-505-412		5.15	ug/g	5.35	3.7	03/21/06	03/14/06	03/14/06
W060000454	B1HVN0	K	7440-48-4	Cobalt by ICP-MS	SOLID	LA-505-412		8.76	ug/g	5.35	0.11	03/21/06	03/14/06	03/14/06
W060000454	B1HVN0	K	7440-50-8	Copper by ICP-MS	SOLID	LA-505-412		14.0	ug/g	5.35	1.1	03/21/06	03/14/06	03/14/06
W060000454	B1HVN0	K	7440-62-2	Vanadium by ICP-MS	SOLID	LA-505-412		33.6	ug/g	5.35	2.7	03/21/06	03/14/06	03/14/06
W060000454	B1HVN0	K	7440-66-6	Zinc by ICP-MS	SOLID	LA-505-412		42.1	ug/g	5.35	1.6	03/21/06	03/14/06	03/14/06
W060000454	B1HVN0	K	7439-92-1	Lead by ICP-MS	SOLID	LA-505-412		4.11	ug/g	5.35	0.27	03/21/06	03/14/06	03/14/06
W060000454	B1HVN0	K	7439-97-6	Mercury by ICP-MS	SOLID	LA-505-412		0.580	ug/g	5.35	0.21	03/21/06	03/14/06	03/14/06
W060000454	B1HVN0	K	7439-98-7	Molybdenum by ICP-MS	SOLID	LA-505-412	U	< 0.535	ug/g	5.35	0.54	03/21/06	03/14/06	03/14/06
W060000454	B1HVN0	K	7440-29-1	Thorium by ICP-MS	SOLID	LA-505-412		2.25	ug/g	5.35	0.27	03/21/06	03/14/06	03/14/06
W060000454	B1HVN0	K	7440-61-1	Uranium by ICP-MS	SOLID	LA-505-412		0.629	ug/g	5.35	0.11	03/21/06	03/14/06	03/14/06
W060000454	B1HVN0	K	7440-38-2	Arsenic by ICP-MS	SOLID	LA-505-412	U	< 5.35	ug/g	5.35	5.4	03/21/06	03/14/06	03/14/06
W060000454	B1HVN0	K	7782-49-2	Selenium by ICP-MS	SOLID	LA-505-412	U	< 2.14	ug/g	5.35	2.1	03/21/06	03/14/06	03/14/06
W060000454	B1HVN0	K	7440-28-0	Thallium by ICP-MS	SOLID	LA-505-412	U	< 0.160	ug/g	5.35	0.16	03/21/06	03/14/06	03/14/06
W060000454	B1HVN0	K	7440-24-6	Strontium by ICP-MS	SOLID	LA-505-412		27.0	ug/g	5.35	0.16	03/21/06	03/14/06	03/14/06
W060000454	B1HVN0	K	7440-31-5	Tin	SOLID	LA-505-412	U	< 0.268	ug/g	5.35	0.27	03/21/06	03/14/06	03/14/06
~~W060000455~~	~~B1HVN2~~	~~K~~	~~TS~~	~~Percent Solids~~	~~SOLID~~	~~LA-519-412~~		~~>99.5~~	~~%~~	~~1.00~~	~~0.0~~	~~03/28/06~~	~~03/14/06~~	~~03/14/06~~
W060000456	B1HVN3	K	TS	Percent Solids	SOLID	LA-519-412		93.7	%	1.00	0.0	03/28/06	03/14/06	03/14/06
~~W060000457~~	~~B1HVN4~~	~~K~~	~~TS~~	~~Percent Solids~~	~~SOLID~~	~~LA-519-412~~		~~93.1~~	~~%~~	~~1.00~~	~~0.0~~	~~03/28/06~~	~~03/14/06~~	~~03/14/06~~

000017

MDL = Minimum Detection Limit
RQ = Result Qualifier

B - The Analyte detected in both the BLANK and the SAMPLE (org.)
E - Analyte is an estimate, has potentially larger errors
X - Other flags and notes described in the comments/narrative.
B - The analyte < the RDL but > = the IDL/MDL (inorganic)
U - Analyzed for but not detected above limiting criteria.

DF = Dilution Factor

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

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

Sample Delivery Group	**WSCF20060178**
Sample Matrix	**SOLID**
Sample Visual	**N/A**
SAF Number	**R06-013**
Data Deliverable	**Summary Report**

Introduction

Six soil samples (B1HVM6, B1HVM8, B1HVN0, B1HVN2, B3HVN3 and B1HVN4) from the 200-UW-1 Operable Unit Trench were received at the WSCF Laboratory on March 14, 2006. The samples were received in a cool condition with ice present in the coolers. The samples were analyzed for the analytes indicated on the attached copy of the chain of custody (COC) form in accordance with the *200-UW-1 Operable Unit Letter of Instruction*, referenced in the cover letter.

With the exception of VOA, all samples were taken using the Multi-Increment Sampling Program, which requires the entire sample submitted to be analyzed. This does not allow for laboratory sample duplicates or matrix spikes.

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 sample receipt are included as Attachment 3.

Analytical Methodology for Requested Analyses

Refer to *WSCF Method References Report,* pages 43 through 44, for a complete listing of approved analytical methods used.

Inorganic Comments

Anions - The hold times for this analysis were met. A Blank and Laboratory Control Sample were analyzed with this batch of less than 20 samples. See page 67 for QC details. All QC controls are within the established limits.

ICP-AES Metals – The hold time for this analysis was met. A Blank and Laboratory Control Sample were analyzed with this delivery group of less than 20 samples. See page 48 for QC details. Analytical Notes:

- Sample results are reported in ug/g while blank values are reported as ug/L.
- Bismuth, Magnesium, Lithium and Silicon were detected in the associated preparation Blank sample, but none of the samples were affected.
- Iron and Potassium yielded high Laboratory Control Sample recoveries, resulting in an "E" flag.

- Titanium, Bismuth and Silicon yielded low Laboratory Control Sample recoveries, resulting in an "X" flag.

All other QC controls are within the established limits.

ICP-MS Metals – The hold time for this analysis was met. A Blank and Laboratory Control Sample were analyzed with this batch of less than 20 samples. See pages 68 through 69. Analytical Notes:

- Aluminum and Nickel were detected in the associated preparation Blank, however there was no impact to the sample results.
- Silver and Antimony yielded low Laboratory Control Sample recoveries due to an apparent digestion problem, resulting in an "X" flag.
- Thorium results listed in the report represent Th-232 exclusively.

All other QC controls are within the established limits.

pH - Laboratory QC control is within the established limits. See page 24 for QC detail.

Percent Solids – analyzed for organic moisture correction.

Organic Comments

- Sample results are moisture corrected and reported on dry weight basis.

Semi-VOA – The hold time for this analysis was met. A Blank, Laboratory Control Sample, and Laboratory Control Sample Duplicate were analyzed with this delivery group of less than 20 samples. See pages 53 through 57 for QC details. Analytical Notes;

Since there was no Matrix Spike or Matrix Spike Duplicate run with this batch, the Relative Percent Difference (RPD) percentages are summarized below using LCS and LCS Duplicate QC Yields:

Additional Batch QC Data - SVOAs

QC Type	Analyte	CAS#	QC Yield	RPD%
LCS	1,2,4-Trichlorobenzene	120-82-1	94.5%	
LCS – Duplicate	1,2,4-Trichlorobenzene	120-82-1	101.0%	6.650%
LCS	1,4-Dichlorobenzene	106-46-7	89.9%	

Additional Batch QC Data - SVOAs				
QC Type	Analyte	CAS#	QC	
			Value	RPD %
LCS - Duplicate	1,4-Dichlorobenzene	106-46-7	97.8%	8.418%
LCS	2,4-Dinitrotoluene	121-14-2	85.9%	
LCS - Duplicate	2,4-Dinitrotoluene	121-14-2	93.9%	8.899%
LCS	2-Fluorophenol	367-12-4	96.4%	
LCS - Duplicate	2-Fluorophenol	367-12-4	104.0%	7.585%
LCS	Acenaphthene	83-32-9	96.9%	
LCS - Duplicate	Acenaphthene	83-32-9	104.0%	7.068%
LCS	4-Chloro-3-methylphenol	59-50-7	94.6%	
LCS - Duplicate	4-Chloro-3-methylphenol	59-50-7	101.0%	6.544%
LCS	2-Chlorophenol	95-57-8	93.1%	
LCS - Duplicate	2-Chlorophenol	95-57-8	101.0%	8.140%
LCS	N-Nitrosodi-n-dipropylamine	621-64-7	94.3%	
LCS - Duplicate	N-Nitrosodi-n-dipropylamine	621-64-7	102.0%	7.845%
LCS	2-Fluorobiphenyl	321-60-8	97.7%	
LCS – Duplicate	2-Fluorobiphenyl	321-60-8	107.0%	9.086%
LCS	Phenol	108.95-2	93.4%	
LCS -	Phenol	108.95-2	101.0%	7.819%

Additional Batch QC Data - SVOAs				
QC Type	Analyte	CAS#	QC	
			%Rec	RPD %
Duplicate				
LCS	Nitrobenzene-d5	4165-60-0	98.5%	
LCS - Duplicate	Nitrobenzene-d5	4165-60-0	107.0%	8.273%
LCS	4-Nitrophenol	100-02-7	101.0%	
LCS - Duplicate	4-Nitrophenol	100-02-7	100.0%	0.995%
LCS	Pentachlorophenol	87-86-5	102.0%	
LCS - Duplicate	Pentachlorophenol	87-86-5	104.0%	1.942%
LCS	Phenol-d5	4165-62-2	98.0%	
LCS - Duplicate	Phenol-d5	4165-62-2	105.0%	6.897%
LCS	Pyrene	129-00-0	94.8%	
LCS - Duplicate	Pyrene	129-00-0	102.0%	7.317%
LCS	2,4,6-Tribromophenol	118-79-6	88.3%	
LCS - Duplicate	2,4,6-Tribromophenol	118-79-6	94.8%	7.100%
LCS	Terphenyl-d14	98904-43-9	96.4%	
LCS - Duplicate	Terphenyl-d14	98904-43-9	105.0%	8.540%

TPHD-WA - The hold time for this analysis was met. A Blank, Laboratory Control Sample, and Laboratory Control Sample Duplicate were analyzed with this delivery group of less than 20 samples. See page 59 for QC details. Analytical Note:

Since there was no Matrix Spike or Matrix Spike Duplicate run with this batch, the Relative Percent Difference (RPD) percentages are summarized below using LCS and LCS Duplicate QC Yields:

Batch QC Data				
QC Type	Analyte	CAS#	QC	
			Yield	RPD %
LCS	ortho-Terphenyl (surr)	84-15-1	102.0%	
LCS - Duplicate	ortho-Terphenyl (surr)	84-15-1	102.0%	2.740%
LCS	TOTAL Pet. Hydrocarbons Diesel	TPHDIESEL	98.8%	
LCS - Duplicate	TOTAL Pet. Hydrocarbons Diesel	TPHDIESEL	99.6%	0.806%

All QC controls are within the established limits.

VOA – The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with this delivery group of less than 20 samples. See pages 63 through 66 for QC details. All QC controls are within the established limits.

Radiochemistry Comments

There are no hold times associated with WSCF radiochemical methods.

Tecnicium-99 - A Blank, Laboratory Control Sample, Post Digestion Spike and Post Digestion Duplicate were analyzed with this delivery group of less than 20 samples. See pages 47 for QC details. All QC controls are within the established limits.

Strontium – 89/90 – A Blank and Laboratory Control Sample were analyzed with this batch of less than 20 samples. See page 49 for QC details. All QC controls are within the established limits.

Gamma Energy Analysis (GEA) – A Blank, Laboratory Control Sample and Sample Duplicate were analyzed with this batch of less than 20 samples. See page 50 through 52 for QC details. All QC controls are within the established limits.

Neptunium-237 – A Blank and Laboratory Control Sample were analyzed with this batch of less than 20 samples. See page 58 for QC details. All QC controls are within the established limits.

Radiochemical Tracer Percent Recovery			
Sample Number	Lab Sample ID	Isotope	Tracer Recovery (Percent)
B1HVM8	W060000453	Pu-242	99.0%
B1HVN0	W060000454	Pu-242	87.9%
Strontium-85			
BLANK		Sr-85	89.0%
LCS		Sr-85	80.5%
B1HVM6	W060000452	Sr-85	67.4%
B1HVM8	W060000453	Sr-85	89.6%
B1HVN0	W060000454	Sr-85	90.3%
Uranium-232			
BLANK		U-232	85.1%
LCS		U-232	72.9%
B1HVM6	W060000452	U-232	89.9%
B1HVM8	W060000453	U-232	85.7%
B1HVN0	W060000454	U-232	84.0%

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.

John E. Trechter

John E. Trechter
WSCF Client Services

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	R06-013-002	PAGE 1 OF 2

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 9C	DATA TURNAROUND
KB Hulse 3/29/06	TRECHTER, JE	373-7046	TRECHTER, JE		
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**	**AIR QUALITY** ☐	15 Days / 15 Days
200-UW-1	200-UW-1 Operable Unit, Soil from Trench between 216-U-8 and 216-U-12		R06-013		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA**	**METHOD OF SHIPMENT**		
SESP	DTS-SAWS-H100	121600ES20	GOVERNMENT VEHICLE		
SHIPPED TO	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		
Waste Sampling & Characterization	N/A		N/A		

MATRIX*
OL = OTHER LIQUID
OS = OTHER SOLID
S = SOIL
W = WATER

SPECIAL HANDLING AND/OR STORAGE
20060178

POSSIBLE SAMPLE HAZARDS/ REMARKS

SAMPLE NO.	LAB ID	MATRIX*	SAMPLE DATE	SAMPLE TIME	NO./TYPE CONTAINER(S)	ANALYSIS	PRESERVATION
B1HVM6	W060000452	S	3-14-06	0950	1X60mL aG 23.6 grams	SEE ITEM (1) IN SPECIAL INSTRUCTIONS See SAF R06-013 JET	Cool 4C
B1HVM6		S			1X60mL G 23.4 grams	TPH-Diesel Range - WTPH-D {TPHKEROSEN}	Cool 4C
B1HVM6		S			1X500mL Square Bottle - Poly 647 grams	SEE ITEM (2) IN SPECIAL INSTRUCTIONS See SAF R06-013 JET for GEA	None
B1HVM6		S			1X60mL G/P 24.4 grams	Isotopic Plutonium {Pu-238, Pu-239/240} Isotopic Uranium {U-233/234, U-235, U-238} Americium-241 {Am-241}	None
B1HVM6		S			1X60mL G/P 23.6 grams	Strontium-89,90 -- Sr-90 {Sr-90}	None
B1HVM6		S			1X60mL G/P 23.8 grams	Technetium-99 {Tc-99}	None
B1HVM6		S			1X60mL G/P 23.3 grams	Neptunium-237 {Np-237}	None

0000025

CHAIN OF POSSESSION

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
K.B. HULSE	3/14/06 1355	TA FRAZIER	3/14/06 1355

SPECIAL INSTRUCTIONS

Reporting format the same as GPP, including QC. All samples, except VOAs, have been taken using the multiple-increment sampling program. This requires the entire sample provided in each bottle to be used in analysis. VOAs will be analyzed as usual.
(1)Semi-VOA -- 8270A (Add-On) {124TRMEBEN, 2-NAPHTHAM, 2BUTOXETOL, BENZALC, CYCHEXN, DECANE, MCRESOL, METHYLPHEN, PYRIDINE, TRIBUPH} Semi-VOA - 8270A (TCL) {12DICLBENZ, 13DICLBENZ, 14DICLBENZ, 245TRCLPHN, 246TRCLPHN, 24DICLPHEN, 24DIMET, 24DINITOLU, 26DINITOLU, 2CLMEETHER, 2MENAPH, 2METHPH, 2NITRAN, 2NITRPH, 3NITRAN, 46DINIT, 4CHLOET, 9H-CARB, ACENAPH, ACENATL, ANTHRACENE, BENZAAN, BENZBFL, BENZOPE,

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

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	R06-013-002	PAGE 2 OF 2

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 9C	DATA TURNAROUND
KG Hulse	TRECHTER, JE	373-7046	TRECHTER, JE		
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**	**AIR QUALITY** ☐	15 Days / 15 Days
200-UW-1	200-UW-1 Operable Unit, Soil from Trench between 216-U-8 and 216-U-12		R06-013		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA**	**METHOD OF SHIPMENT**		
SESP	OTS-SAWS-H100	121600ES20	GOVERNMENT VEHICLE		
SHIPPED TO	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		
Waste Sampling & Characterization	N/A		N/A		

MATRIX*
OL = OTHER LIQUID
OS = OTHER SOLID
S = SOIL
W = WATER

SPECIAL HANDLING AND/OR STORAGE

POSSIBLE SAMPLE HAZARDS/ REMARKS

SAMPLE NO.	LAB ID	MATRIX*	SAMPLE DATE	SAMPLE TIME	NO./TYPE CONTAINER(S)	ANALYSIS	PRESERVATION
B1HVM6		S	3-14-06	0950	1X60mL G/P 21.9 grams	IC Anions - 300.0 {BROMIDE, CHLORIDE, FLUORIDE, NO2-N, NO3-N, PO4-P, SULFATE}	None
B1HVM6		S			1X60mL G/P 23 grams	ICP Metals - 6010A (Add-on) {B, Bi, La, Li, Si, Sm, Ti} ICP Metals - 6010A (TAL) {Al, Ca, Fe, K, Mg, Na}	Cool 4C
B1HVM6		S			1X60mL G/P 21.2 grams	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	None

920026

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
KG Hulse KG Hulse	3-14-06 1355	TA FRAZIER Teresa Frazier	3-14-06 1355

SPECIAL INSTRUCTIONS

Reporting format the same as GPP, including QC. All samples, except VOAs, have been taken using the multiple-increment sampling program. This requires the entire sample provided in each bottle to be used in analysis. VOAs will be analyzed as usual.
(3)ICP/MS - 200.8 (Add-on) {As, Be, Mo, Pb, Se, Sn, Sr, Tl, U} ICP/MS - 200.8 (TAL) {Ag, Ba, Cd, Co, Cr, Cu, Mn, Ni, Sb, V, Zn} ICP/MS - 200.8 (Hg) {Hg} Isotopic Thorium {Th-232}

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

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	R06-013-003	PAGE 1 OF 2

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 9C	DATA TURNAROUND
KB Hulse	TRECHTER, JE	373-7046	TRECHTER, JE		
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**	**AIR QUALITY**	15 Days / 15 Days
200-UW-1	200-UW-1 Operable Unit, Soil from Trench between 216-U-8 and 216-U-12		R06-013		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA**	**METHOD OF SHIPMENT**		
SESP	DTS-SAWS-H100	121600ES20	GOVERNMENT VEHICLE		
SHIPPED TO	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		
Waste Sampling & Characterization	N/A		N/A		

MATRIX*
OL = OTHER LIQUID
OS = OTHER SOLID
S = SOIL
W = WATER

SPECIAL HANDLING AND/OR STORAGE

POSSIBLE SAMPLE HAZARDS/ REMARKS

SAMPLE NO.	LAB ID	MATRIX*	SAMPLE DATE	SAMPLE TIME	NO./TYPE CONTAINER(S)	ANALYSIS	PRESERVATION
B1HVM8	WCC 0000453	S	3/14/06	1010	1X60mL aG 24.2 grams	SEE ITEM (1) IN SPECIAL INSTRUCTIONS See SAF R06-013	Cool 4C
B1HVM8		S			1X60mL G 23.2 grams	TPH-Diesel Range - WTPH-D {TPHKEROSEN}	Cool 4C
B1HVM8		S			1X500mL Square Bottle - Poly 491 grams	SEE ITEM (2) IN SPECIAL INSTRUCTIONS See SAF R06-013 for GEA	None
B1HVM8		S			1X60mL G/P 22.6 grams	Isotopic Plutonium {Pu-238, Pu-239/240} Isotopic Uranium {U-233/234, U-235, U-238} Americium-241 {Am-241}	None
B1HVM8		S			1X60mL G/P 23.1 grams	Strontium-89,90 -- Sr-90 {Sr-90}	None
B1HVM8		S			1X60mL G/P 24.2 grams	Technetium-99 {Tc-99}	None
B1HVM8		S			1X60mL G/P 24.7 grams	Neptunium-237 {Np-237}	None

0000027

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
K.B. HULSE	3/14/06 1355	TA FRAZIER	3/14/06 1355

SPECIAL INSTRUCTIONS

Reporting format the same as GPP, including QC. All samples, except VOAs, have been taken using the multiple-increment sampling program. This requires the entire sample provided in each bottle to be used in analysis. VOAs will be analyzed as usual.
(1)Semi-VOA -- 8270A (Add-On) {124TRMEBEN, 2-NAPHTHAM, 2BUTOXETOL, BENZALC, CYCHEXN, DECANE, MCRESOL, METHYLPHEN, PYRIDINE, TRIBUPH} Semi-VOA - 8270A (TCL) {12DICLBENZ, 13DICLBENZ, 14DICLBENZ, 245TRCLPHN, 246TRCLPHN, 24DICLPHEN, 24DIMET, 24DINITOLU, 26DINITOLU, 2CLMEETHER, 2MENAPH, 2METHPH, 2NITRAN, 2NITRPH, 3NITRAN, 46DINIT, 4CHLOET, 9H-CARB, ACENAPH, ACENATL, ANTHRACENE, BENZAAN, BENZBFL, BENZOPE,

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

Fluor Hanford Inc.

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

R06-013-003

COLLECTOR: KB Hulse	COMPANY CONTACT: TRECHTER, JE	TELEPHONE NO.: 373-7046	PROJECT COORDINATOR: TRECHTER, JE
PRICE CODE: 9C	DATA TURNAROUND: 15 Days / 15 Days	AIR QUALITY: ☐	
SAMPLING LOCATION: 200-UW-1	PROJECT DESIGNATION: 200-UW-1 Operable Unit, Soil from Trench between 216-U-8 and 216-U-12	SAF NO.: R06-013	
ICE CHEST NO.: SESP	FIELD LOGBOOK NO.: DTS-SAWS-H100	COA: 121600ES20	METHOD OF SHIPMENT: GOVERNMENT VEHICLE
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A

MATRIX*
OL = OTHER LIQUID
OS = OTHER SOLID
S = SOIL
W = WATER

SPECIAL HANDLING AND/OR STORAGE

POSSIBLE SAMPLE HAZARDS/ REMARKS

SAMPLE NO.	LAB ID	MATRIX*	SAMPLE DATE	SAMPLE TIME	NO./TYPE CONTAINER(S)	ANALYSIS	PRESERVATION
B1HVM8		S	3/14/06	1010	1X60mL G/P 23.0 grams	IC Anions - 300.0 {BROMIDE, CHLORIDE, FLUORIDE, NO2-N, NO3-N, PO4-P, SULFATE}	None
B1HVM8		S	↓	↓	1X60mL G/P 23.9 grams	ICP Metals - 6010A (Add-on) {B, Bi, La, Li, Si, Sm, Ti} ICP Metals - 6010A (TAL) {Al, Ca, Fe, K, Mg, Na}	Cool 4C
B1HVM8		S	↓	↓	1X60mL G/P 25.0 grams	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	None

000028

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
K.B. HULSE KB Hulse	3-14-06 1355	TA BRAZIER	3/14/06 1355
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS

Reporting format the same as GPP, including QC. All samples, except VOAs, have been taken using the multiple-increment sampling program. This requires the entire sample provided in each bottle to be used in analysis. VOAs will be analyzed as usual.
(3)ICP/MS - 200.8 (Add-on) {As, Be, Mo, Pb, Se, Sn, Sr, Tl, U} ICP/MS - 200.8 (TAL) {Ag, Ba, Cd, Co, Cr, Cu, Mn, Ni, Sb, V, Zn} ICP/MS - 200.8 (Hg) {Hg} Isotopic Thorium {Th-232}

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

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	R06-013-004	PAGE 1 OF 2

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 9C	DATA TURNAROUND
KB Hulse	TRECHTER, JE	373-7046	TRECHTER, JE	AIR QUALITY ☐	15 Days / 15 Days

SAMPLING LOCATION	PROJECT DESIGNATION	SAF NO.
200-UW-1	200-UW-1 Operable Unit, Soil from Trench between 216-U-8 and 216-U-12	R06-013

ICE CHEST NO.	FIELD LOGBOOK NO.	COA	METHOD OF SHIPMENT
SESP	DTS-SAWS-H100	121600ES20	GOVERNMENT VEHICLE

SHIPPED TO	OFFSITE PROPERTY NO.	BILL OF LADING/AIR BILL NO.
Waste Sampling & Characterization	N/A	N/A

MATRIX*
OL = OTHER LIQUID
OS = OTHER SOLID
S = SOIL
W = WATER

SPECIAL HANDLING AND/OR STORAGE

POSSIBLE SAMPLE HAZARDS/ REMARKS

SAMPLE NO.	LAB ID	MATRIX*	SAMPLE DATE	SAMPLE TIME	NO./TYPE CONTAINER(S)	ANALYSIS	PRESERVATION
B1HVN0	954	S	3-14-06	1020	1X60mL aG 23.7 grams	SEE ITEM (1) IN SPECIAL INSTRUCTIONS See SAF R06-013 JET	Cool 4C
B1HVN0		S			1X60mL G 24.7 grams	TPH-Diesel Range - WTPH-D {TPHKEROSEN}	Cool 4C
B1HVN0		S			1X500mL Square Bottle - Poly 621 grams	SEE ITEM (2) IN SPECIAL INSTRUCTIONS See SAF R06-013 for GEA JET	None
B1HVN0		S			1X60mL G/P 24.4 grams	Isotopic Plutonium {Pu-238, Pu-239/240} Isotopic Uranium {U-233/234, U-235, U-238} Americium-241 {Am-241}	None
B1HVN0		S			1X60mL G/P 24.1 grams	Strontium-89,90 -- Sr-90 {Sr-90}	None
B1HVN0		S			1X60mL G/P 23.6 grams	Technetium-99 {Tc-99}	None
B1HVN0		S			1X60mL G/P 23.6 grams	Neptunium-237 {Np-237}	None

0000029

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
R. B. HULSE [signature]	3/14/06 1355	TA FRAZIER [signature]	3/14/06 1355
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
K. B. HULSE			
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS

Reporting format the same as GPP, including QC. All samples, except VOAs, have been taken using the multiple-increment sampling program. This requires the entire sample provided in each bottle to be used in analysis. VOAs will be analyzed as usual.
(1)Semi-VOA -- 8270A (Add-On) {124TRMEBEN, 2-NAPHTHAM, 2BUTOXETOL, BENZALC, CYCHEXN, DECANE, MCRESOL, METHYLPHEN, PYRIDINE, TRIBUPH} Semi-VOA - 8270A (TCL) {12DICLBENZ, 13DICLBENZ, 14DICLBENZ, 245TRCLPHN, 246TRCLPHN, 24DICLPHEN, 24DIMET, 24DINITOLU, 26DINITOLU, 2CLMEETHER, 2MENAPH, 2METHPH, 2NITRAN, 2NITRPH, 3NITRAN, 46DINIT, 4CHLOET, 9H-CARB, ACENAPH, ACENATL, ANTHRACENE, BENZAAN, BENZBFL, BENZOPE,

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

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	R06-013-004	PAGE 2 OF 2

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 9C	DATA TURNAROUND
K.B. Hulse	TRECHTER, JE	373-7046	TRECHTER, JE		
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**	**AIR QUALITY** ☐	15 Days / 15 Days
200-UW-1	200-UW-1 Operable Unit, Soil from Trench between 216-U-8 and 216-U-12		R06-013		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA**	**METHOD OF SHIPMENT**		
SESP	DTS-SAWS-H100	121600ES20	GOVERNMENT VEHICLE		
SHIPPED TO	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		
Waste Sampling & Characterization	N/A		N/A		

MATRIX*
OL = OTHER LIQUID
OS = OTHER SOLID
S = SOIL
W = WATER

SPECIAL HANDLING AND/OR STORAGE

POSSIBLE SAMPLE HAZARDS/ REMARKS

SAMPLE NO.	LAB ID	MATRIX*	SAMPLE DATE	SAMPLE TIME	NO./TYPE CONTAINER(S)	ANALYSIS	PRESERVATION
B1HVN0		S	3-14-06	1020	1X60mL G/P 24.6 grams	IC Anions - 300.0 {BROMIDE, CHLORIDE, FLUORIDE, NO2-N, NO3-N, PO4-P, SULFATE}	None
B1HVN0		S	↓	↓	1X60mL G/P 23.8 grams	ICP Metals - 6010A (Add-on) {B, Bi, La, Li, Si, Sm, Tl} ICP Metals - 6010A (TAL) {Al, Ca, Fe, K, Mg, Na}	Cool 4C
B1HVN0		S	↓	↓	1X60mL G/P 24.9 grams	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	None

000030

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
K. B. HULSE K.B. Hulse	3/14/06 1355	TA FRAZIER Tara Frazier	3/14/06 1355

SPECIAL INSTRUCTIONS

Reporting format the same as GPP, including QC. All samples, except VOAs, have been taken using the multiple-increment sampling program. This requires the entire sample provided in each bottle to be used in analysis. VOAs will be analyzed as usual.
(3)ICP/MS - 200.8 (Add-on) {As, Be, Mo, Pb, Se, Sn, Sr, Tl, U} ICP/MS - 200.8 (TAL) {Ag, Ba, Cd, Co, Cr, Cu, Mn, Ni, Sb, V, Zn} ICP/MS - 200.8 (Hg) {Hg} Isotopic Thorium {Th-232}

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

Appendix 5

Data Validation Supporting Documentation

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	C	D	E
PROJECT: 200-UW-1			DATA PACKAGE: 60718		
VALIDATOR: TLJ		LAB: WSCF		DATE: 4/15/08	
			SDG: 60718		
ANALYSES PERFORMED					
SW-846/ICP	SW-846/GFAA	SW-846/Hg	SW-846 Cyanide		

SAMPLES/MATRIX
B1HVMC B1HVM8 B1HVN0
Soil

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

Technical verification documentation present? ..... Yes No N/A

Comments:

2. INSTRUMENT PERFORMANCE AND CALIBRATIONS (Levels D and E)

Initial calibrations performed on all instruments? ..... Yes No N/A

Initial calibrations acceptable? ..... Yes No N/A

ICP interference checks acceptable? ..... Yes No N/A

ICV and CCV checks performed on all instruments? ..... Yes No N/A

ICV and CCV checks acceptable? ..... Yes No N/A

Standards traceable? ..... Yes No N/A

Standards expired? ..... Yes No N/A

Calculation check acceptable? ..... Yes No N/A

Comments:

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

3. BLANKS (Levels B, C, D, and E)

ICB and CCB checks performed for all applicable analyses? (Levels D, E) ..... Yes No N/A

ICB and CCB results acceptable? (Levels D, E) ..... Yes No N/A

Laboratory blanks analyzed? ..... Yes No N/A

Laboratory blank results acceptable? ..... Yes No N/A

Field blanks analyzed? (Levels C, D, E) ..... Yes No N/A

Field blank results acceptable? (Levels C, D, E) ..... Yes No N/A

Transcription/calculation errors? (Levels D, E) ..... Yes No N/A

Comments: no J's

4. ACCURACY (Levels C, D, and E)

MS/MSD samples analyzed? ..... Yes No N/A

MS/MSD results acceptable? ..... Yes No N/A

MS/MSD standards NIST traceable? (Levels D, E) ..... Yes No N/A

MS/MSD standards expired? (Levels D, E) ..... Yes No N/A

LCS/BSS samples analyzed? ..... Yes No N/A

LCS/BSS results acceptable? ..... Yes No N/A

Standards traceable? (Levels D, E) ..... Yes No N/A

Standards expired? (Levels D, E) ..... Yes No N/A

Transcription/calculation errors? (Levels D, E) ..... Yes No N/A

Performance audit sample(s) analyzed? ..... Yes No N/A

Performance audit sample results acceptable? ..... Yes No N/A

Comments: No MS - J all

LCS → bismuth - 47% - UR iron 141% - J

silicon - 20% - UR potassium 135% - J

silver - 21% - UR titanium - 60% - J

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

5. PRECISION (Levels C, D, and E)

Duplicate RPD values acceptable? ..... Yes No N/A

Duplicate results acceptable? ..... Yes No N/A

MS/MSD standards NIST traceable? (Levels D, E) ..... Yes No N/A

MS/MSD standards expired? (Levels D, E) ..... Yes No N/A

Field duplicate RPD values acceptable? ..... Yes No N/A

Field split RPD values acceptable? ..... Yes No N/A

Transcription/calculation errors? (Levels D, E) ..... Yes No N/A

Comments: no duplicate - J all

6. ICP QUALITY CONTROL (Levels D and E)

ICP serial dilution samples analyzed? ..... Yes No N/A

ICP serial dilution %D values acceptable? ..... Yes No N/A

ICP post digestion spike required? ..... Yes No N/A

ICP post digestion spike values acceptable? ..... Yes No N/A

Standards traceable? ..... Yes No N/A

Standards expired? ..... Yes No N/A

Transcription/calculation errors? ..... Yes No N/A

Comments:

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

9. RESULT QUANTITATION AND DETECTION LIMITS (all levels)

Results reported for all requested analyses? ..... Yes No N/A

Results supported in the raw data? (Levels D, E) ..... Yes No N/A

Samples properly prepared? (Levels D, E) ..... Yes No N/A

Detection limits meet RDL? ..... Yes No N/A

Transcription/calculation errors? (Levels D, E) ..... Yes No N/A

Comments: Silver - all ovr
antimony - all ovr
arsenic - all ovr
selenium - all ovr
thallium - all ovr
4/15/04

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

7. FURNACE AA QUALITY CONTROL (Levels D and E)

Duplicate injections performed as required? ..... Yes No N/A

Duplicate injection %RSD values acceptable? ..... Yes No N/A

Analytical spikes performed as required? ..... Yes No N/A

Analytical spike recoveries acceptable? ..... Yes No N/A

Standards traceable? ..... Yes No N/A

Standards expired? ..... Yes No N/A

MSA performed as required? ..... Yes No N/A

MSA results acceptable? ..... Yes No N/A

Transcription/calculation errors? ..... Yes No N/A

Comments:

8. HOLDING TIMES (all levels)

Samples properly preserved? ..... Yes No N/A

Sample holding times acceptable? ..... Yes No N/A

Comments:

Appendix 6

Additional Documentation Requested by Client

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: 20060178
Matrix: SOLID
Test: ICP Metals Analysis, Grd H20 P

SAF Number: R06-013
Sample Date:
Receive Date:

BATCH QC

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit		RQ
BLANK	Aluminum by ICP	7429-90-5	<2.7e-2	n/a	ug/L	03/20/06				U
BLANK	Boron by ICP	7440-42-8	<2.6e-2	n/a	ug/L	03/20/06				U
BLANK	Bismuth by ICP	7440-69-9	3e-2	0.030	ug/L	03/20/06				
BLANK	Calcium by ICP	7440-70-2	<1.6e-2	n/a	ug/L	03/20/06				U
BLANK	Iron by ICP	7439-89-6	<2.1e-2	n/a	ug/L	03/20/06				U
BLANK	Potassium by ICP	7440-09-7	<0.115	n/a	ug/L	03/20/06				U
BLANK	Lithium by ICP	7439-93-2	2e-3	0.002	ug/L	03/20/06				
BLANK	Magnesium by ICP	7439-95-4	3.2e-2	0.032	ug/L	03/20/06				
BLANK	Sodium by ICP	7440-23-5	<0.198	n/a	ug/L	03/20/06				U
BLANK	Silicon by ICP	7440-21-3	5.3e-2	0.053	ug/L	03/20/06				
BLANK	Titanium by ICP	7440-32-6	<1e-3	n/a	ug/L	03/20/06				U
LCS	Aluminum by ICP	7429-90-5	6169	97.611	% Recov	03/20/06	44.000	157.000		
LCS	Boron by ICP	7440-42-8	83.9	86.140	% Recov	03/20/06	45.000	156.000		
LCS	Bismuth by ICP	7440-69-9	21.1	4.170	% Recov	03/20/06	80.000	120.000	*	
LCS	Calcium by ICP	7440-70-2	3427	103.223	% Recov	03/20/06	76.000	124.000		
LCS	Iron by ICP	7439-89-6	15830	141.339	% Recov	03/20/06	47.000	152.000		
LCS	Potassium by ICP	7440-09-7	2608	135.833	% Recov	03/20/06	64.000	136.000		
LCS	Lithium by ICP	7439-93-2	6.18	103.691	% Recov	03/20/06	80.000	120.000		
LCS	Magnesium by ICP	7439-95-4	2045	100.245	% Recov	03/20/06	71.000	129.000		
LCS	Sodium by ICP	7440-23-5	421	94.607	% Recov	03/20/06	51.000	149.000		
LCS	Silicon by ICP	7440-21-3	152	20.850	% Recov	03/20/06	80.000	120.000	*	
LCS	Titanium by ICP	7440-32-6	187	60.323	% Recov	03/20/06	9.000	191.000		

000038

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: 20060178
Matrix: SOLID
Test: ICP-2008 MS All possible metal

SAF Number: R06-013
Sample Date:
Receive Date:

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
BATCH QC									
BLANK	Silver by ICP-MS	7440-22-4	<4e-2	n/a	ug/L	03/21/06			U
BLANK	Arsenic by ICP-MS	7440-38-2	<1	n/a	ug/L	03/21/06			U
BLANK	Barium by ICP-MS	7440-39-3	<0.2	n/a	ug/L	03/21/06			U
BLANK	Beryllium by ICP-MS	7440-41-7	<2e-2	n/a	ug/L	03/21/06			U
BLANK	Cadmium by ICP-MS	7440-43-9	<4e-2	n/a	ug/L	03/21/06			U
BLANK	Cobalt by ICP-MS	7440-48-4	<2e-2	n/a	ug/L	03/21/06			U
BLANK	Chromium by ICP-MS	7440-47-3	<0.7	n/a	ug/L	03/21/06			U
BLANK	Copper by ICP-MS	7440-50-8	<0.2	n/a	ug/L	03/21/06			U
BLANK	Mercury by ICP-MS	7439-97-6	<4e-2	n/a	ug/L	03/21/06			U
BLANK	Manganese by ICP-MS	7439-96-5	<2e-2	n/a	ug/L	03/21/06			U
BLANK	Molybdenum by ICP-MS	7439-98-7	<0.1	n/a	ug/L	03/21/06			U
BLANK	Nickel by ICP-MS	7440-02-0	<6e-2	n/a	ug/L	03/21/06			U
BLANK	Lead by ICP-MS	7439-92-1	<5e-2	n/a	ug/L	03/21/06			U
BLANK	Antimony by ICP-MS	7440-36-0	<0.3	n/a	ug/L	03/21/06			U
BLANK	Selenium by ICP-MS	7782-49-2	<0.4	n/a	ug/L	03/21/06			U
BLANK	Tin	7440-31-5	<5e-2	n/a	ug/L	03/21/06			U
BLANK	Strontium by ICP-MS	7440-24-6	<3e-2	n/a	ug/L	03/21/06			U
BLANK	Thorium by ICP-MS	7440-29-1	<5e-2	n/a	ug/L	03/21/06			U
BLANK	Thallium by ICP-MS	7440-28-0	<3e-2	n/a	ug/L	03/21/06			U
BLANK	Uranium by ICP-MS	7440-61-1	<2e-2	n/a	ug/L	03/21/06			U
BLANK	Vanadium by ICP-MS	7440-62-2	<0.5	n/a	ug/L	03/21/06			U
BLANK	Zinc by ICP-MS	7440-66-6	<0.3	n/a	ug/L	03/21/06			U
LCS	Silver by ICP-MS	7440-22-4	28.27	21.746	% Recov	03/21/06	98.000	134.000	
LCS	Arsenic by ICP-MS	7440-38-2	147.5	91.615	% Recov	03/21/06	75.000	134.000	
LCS	Barium by ICP-MS	7440-39-3	251.5	99.802	% Recov	03/21/06	87.000	121.000	
LCS	Beryllium by ICP-MS	7440-41-7	104.4	110.593	% Recov	03/21/06	70.000	153.000	
LCS	Cadmium by ICP-MS	7440-43-9	140.6	109.844	% Recov	03/21/06	95.000	124.000	

000039

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: 20060178
Matrix: SOLID
Test: ICP-2008 MS All possible metal

SAF Number: R06-013
Sample Date:
Receive Date:

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
LCS	Cobalt by ICP-MS	7440-48-4	36.35	103.267	% Recov	03/21/06	88.000	119.000	
LCS	Chromium by ICP-MS	7440-47-3	68	97.842	% Recov	03/21/06	77.000	125.000	
LCS	Copper by ICP-MS	7440-50-8	148.7	100.473	% Recov	03/21/06	84.000	122.000	
LCS	Mercury by ICP-MS	7439-97-6	20.36	120.473	% Recov	03/21/06	71.000	132.000	
LCS	Manganese by ICP-MS	7439-96-5	397.3	97.377	% Recov	03/21/06	83.000	118.000	
LCS	Molybdenum by ICP-MS	7439-98-7	72.42	86.112	% Recov	03/21/06	71.000	130.000	
LCS	Nickel by ICP-MS	7440-02-0	152.4	103.673	% Recov	03/21/06	90.000	121.000	
LCS	Lead by ICP-MS	7439-92-1	151	106.338	% Recov	03/21/06	92.000	123.000	
LCS	Antimony by ICP-MS	7440-36-0	34.52	56.683	% Recov	03/21/06	114.000	260.000	*
LCS	Selenium by ICP-MS	7782-49-2	60.67	94.502	% Recov	03/21/06	52.000	157.000	
LCS	Tin	7440-31-5	64.27	105.361	% Recov	03/21/06	86.000	123.000	
LCS	Strontium by ICP-MS	7440-24-6	69.46	82.690	% Recov	03/21/06	68.000	123.000	
LCS	Thorium by ICP-MS	7440-29-1	385.2	96.300	% Recov	03/21/06	77.000	121.000	
LCS	Thallium by ICP-MS	7440-28-0	88.18	104.976	% Recov	03/21/06	92.000	123.000	
LCS	Uranium by ICP-MS	7440-61-1	407.9	101.975	% Recov	03/21/06	81.000	125.000	
LCS	Vanadium by ICP-MS	7440-62-2	92.32	94.882	% Recov	03/21/06	81.000	122.000	
LCS	Zinc by ICP-MS	7440-66-6	173.8	105.333	% Recov	03/21/06	85.000	130.000	

000040

Date: 20 April 2006
To: Fluor Hanford Inc. (technical representative)
From: TechLaw, Inc.
Project: 200-UW-1 Operable Unit, Soil from Trench Between 216-U-8 and 216-U-12 Cribs
Subject: Radiochemistry - Data Package No. WSCF20060178 (60178)

INTRODUCTION

This memo presents the results of data validation on Data Package No. 60178 prepared by WSCF Analytical Laboratories (WSCF). A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample Date	Media	Validation	Date
B1HVM6	3/14/06	Soil	C	See note 1
B1HVM8	3/14/06	Soil	C	See note 1
B1HVN0	3/14/06	Soil	C	See note 1

1 – Alpha spectroscopy, gamma spectroscopy, technetium-99 and strontium-89/90.

Data validation was conducted in accordance with the FHI validation statement of work and the Sampling and Analysis Plan for Support Activities to the 200-UW-1 Operable Unit, DOE/RL-2005-75, Rev. 0. Appendices 1 through 6 provide the following information as indicated below:

Appendix 1. Glossary of Data Reporting Qualifiers
Appendix 2. Summary of Data Qualification
Appendix 3. Qualified Data Summary and Annotated Laboratory Reports
Appendix 4. Laboratory Narrative and Chain-of-Custody Documentation
Appendix 5. Data Validation Supporting Documentation
Appendix 6. Additional Documentation Requested by Client

DATA QUALITY OBJECTIVES

- **Holding Times**

Holding times are calculated from Chain-of-Custody forms to determine the validity of the results. The maximum holding time for radiochemical analysis is 6 months.

All holding times were acceptable.

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- **Laboratory (Method) Blanks**

Laboratory Blanks

Blank samples are analyzed to determine if positive results are due to laboratory reagent, sample container, or detector contamination. If blank analysis results indicate the presence of an analyte above the required detection limit (RDL), the following qualifiers are applied: All positive sample results less than five times the highest blank concentration are qualified as estimates and flagged "J"; sample results below the minimum detectable activity (MDA) are qualified as undetected and flagged "U"; sample results above the MDA and greater than five times the highest blank concentration are not qualified.

Due to method blank contamination, the plutonium-239 result in samples B1HVM6 and B1HVM8 were qualified as estimates and flagged "J".

Due to method blank contamination, the uranium-235 result in sample B1HVM6 was qualified as an estimate and flagged "J".

Due to method blank contamination, all strontium-89/90 results were qualified as estimates and flagged "J".

All other laboratory blank results were acceptable.

Field Blanks

No field blanks were submitted for analysis.

- **Accuracy**

Accuracy is evaluated by analyzing distilled water or field samples spiked with known amounts of radionuclides. The sample activity as determined by analysis is compared to the known activity to assess accuracy. The acceptable laboratory control sample (LCS) and matrix spike (MS) recovery range is either 65-135% or 70-130%, depending on the analyte. In addition, samples may be spiked with a radiochemical tracer to assist in isolating the radioisotope of interest with the yield of the tracer being used in calculating sample activity. The acceptable range for tracer recovery is 20% to 105%. Spike sample results outside the above ranges result in associated sample results being qualified as estimates, rejected, or not qualified, depending on the activity of the individual sample.

Due to the lack of an LCS analysis, the plutonium-238, uranium-234 and uranium-235 results were qualified as estimates and flagged "J".

All other accuracy results were acceptable.

- **Precision**

Analytical precision is expressed by the relative percent difference (RPD) between the recoveries of duplicate matrix spike analyses performed on a sample. Precision may also be assessed using unspiked duplicate sample analyses. If both sample and replicate activities are greater than five times the contract required detection limit (CRDL) and the RPD is less than +/- 35 percent, the results are acceptable. If either activities are less then five times the CRDL, a control limit of less than or equal to two times the CRDL is used for soil samples and less than or equal to the CRDL for water samples. If either the original or replicate value is below the CRDL, the applicable control limits are less than or equal to the CRDL for water samples and less than or equal to two times the CRDL for soil samples. If the RPD is outside the applicable control limit, associated results are qualified as estimated detects or estimated non-detects.

Due to the lack of a duplicate analysis, the strontium-89/90, plutonium-238, plutonium-239/240, uranium-234, uranium-235, uranium-238, americium-241(aea) and neptunium-237 results were qualified as estimates and flagged "J".

All other duplicate results were acceptable.

Field Duplicate Samples

No field duplicates were submitted for analysis.

- **Detection Levels**

Reported analytical detection levels are compared against the required target quanitation limits (RTQLs) to ensure that laboratory detection levels meet the required criteria. All analytes met the RTQL.

- **Completeness**

Data package SDG No. 60718 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 100%.

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

The following minor deficiencies were noted:

- Due to method blank contamination, the plutonium-239 result in samples B1HVM6 and B1HVM8 were qualified as estimates and flagged "J".
- Due to method blank contamination, the uranium-235 result in sample B1HVM6 was qualified as an estimate and flagged "J".
- Due to method blank contamination, all strontium-89/90 results were qualified as estimates and flagged "J".
- Due to the lack of an LCS analysis, the plutonium-238, uranium-234 and uranium-235 results were qualified as estimates and flagged "J".
- Due to the lack of a duplicate analysis, the strontium-89/90, plutonium-238, plutonium-239/240, uranium-234, uranium-235, uranium-238, americium-241(aea) and neptunium-237 results were qualified as estimates and flagged "J".

Data flagged "J" is an estimate, but under the FHI validation SOW, the data may be usable for decision-making purposes. All other validated results are considered accurate within the standard error associated with the methods.

REFERENCES

FHI, Contract #20266, *Validation Statement of Work*, Fluor Hanford Incorporated, July 7, 2003.

DOE/RL-2005-75, Rev. 0, *Sampling and Analysis Plan for Support Activities to the 200-UW-1 Operable Unit*, December 2005.

Appendix 1

Glossary of Data Reporting Qualifiers

Qualifiers which may be applied by data validators in compliance with the FHI statement of work are as follows:

U - Indicates the compound or analyte was analyzed for and not detected above the minimum detectable activity (MDA) in the sample. The value reported is the sample result corrected for sample dilution and moisture content by the laboratory. The data is usable for decision making purposes.

UJ - Indicates the compound or analyte was analyzed for and not detected at concentrations above the minimum detectable activity (MDA) in the sample. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate, but is usable for decision making purposes.

J - Indicates the compound or analyte was analyzed for and detected. Due to a minor QC deficiency identified during the data validation, the associated concentration is an estimate, but the data are usable for decision-making purposes.

R - Indicates the compound or analyte was analyzed for, detected, and due to an identified major QC deficiency, the data are unusable.

UR - Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified major QC deficiency.

Appendix 2

Summary of Data Qualification

RADIOCHEMISTRY DATA QUALIFICATION SUMMARY*

SDG: 60178	REVIEWER: TLI	Project: 200-UW-1	PAGE 1 OF 1
COMMENTS:			
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Plutonium-239	J	J1HVM6, J1HVM8	Blank contamination
Uranium-235	J	J1HVM6	Blank contamination
Strontium-89/90	J	All	Blank contamination
Plutonium-238 Uranium-234 Uranium-235	J	All	No LCS analysis
Uranium-234 Uranium-235 Uranium-238 Plutonium-238 Plutonium-239/240 Neptunium-237 Americium-241(aea) Strontium-89/90	J	All	No duplicate analysis

* - The Qualified Data Summary Table includes laboratory applied "U" qualifiers not specifically identified here. The laboratory applied "U" qualifiers are included to minimize misinterpretation of results contained in the table.

Appendix 3

Qualified Data Summary and Annotated Laboratory Reports

Project: FLUOR-HANFORD							
Laboratory: WSCF							
SDG: WSCF20060178							
Sample Number		B1HVM6		B1HVM8		B1HVN0	
Remarks							
Sample Date		3/14/06		3/14/06		3/14/06	
Radiochemistry	**RQL**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**
Americium-241(aea)	**1**	0.00840	UJ	0.00580	UJ	0.0140	UJ
Americium-241(gea)	**1**	-0.00615	U	0.0337	U	-0.111	U
Antimony-125		0.00252	U	-0.0256	U	0.0129	U
Barium-133		0.0120	U	0.00306	U	-0.00112	U
Cerium-144		-0.0723	U	-0.0463	U	-0.0798	U
Cerium-144/Praseodymium		-0.145	U	-0.0926	U	-0.160	U
Cobalt-60		-0.00437	U	0.0114	U	0.000302	U
Cesium-134	**0.1**	0.0312	U	0.0520	U	0.0311	U
Cesium-137	**0.1**	0.0248		0.254		0.0141	U
Europium 152	**0.1**	-0.0183	U	0.0218	U	0.000965	U
Europium 154	**0.1**	0.00152	U	-0.0264	U	0.00451	U
Europium 155		0.0569		0.0849		0.0625	
Potassium-40		13.2		15.3		15.0	
Niobium-94		0.00275	U	0.00410	U	-0.000454	U
Radium-226	**0.1**	0.518		0.602		0.492	
Radium-228	**0.2**	0.664		0.854		0.727	
Ruthenium-106		-0.0227	U	0.00118	U	-0.0400	U
Tin-126		0.129	U	0.224	U	0.138	U
Thorium-234		1.03		0.733		0.738	U
Uranium-235(gea)		0.0926		0.0932	U	0.0946	U
Zinc-65		-0.00554	U	0.0230	U	0.0101	U
Actinium-228		0.664		0.854		0.727	
Bismuth-212		0.417		0.666		0.425	
Bismuth-214		0.518		0.602		0.492	
Lead-212		0.669		0.908		0.710	
Lead-214		0.567		0.691		0.562	

000071

* - TDL exceeded

Laboratory applied non-detect qualifiers "U" have been included in this table to minimize potential miss-interpretation of results. All other qualifiers shown were applied during validation.

Laboratory: WSCF							
SDG: WSCF20060178							
Sample Number		B1HVM6		B1HVM8		B1HVN0	
Remarks							
Sample Date		3/14/06		3/14/06		3/14/06	
Radiochemistry	RQL	Result	Q	Result	Q	Result	Q
Ruthenium-103		0.00529	U	0.0119	U	-0.000395	U
Tin-113		0.000482	U	-0.000799	U	0.000874	U
Thallium-208		0.212		0.298		0.216	
Neptunium-237(aea)	1	0.0110	J	0.00220	UJ	0.00460	J
Plutonium-238(aea)	1	0.00110	UJ	-0.000880	UJ	-0.00300	UJ
Plutonium-239/240(aea)	1	0.0200	J	0.00530	J	0.000980	UJ
Strontium-89/90	1	0.520	J	0.700	J	0.520	J
Technetium-99	1	-0.500	U	-0.500	U	-0.300	U
Uranium-234(aea)	1	0.280	J	0.280	J	0.210	J
Uranium-235(aea)	1	0.0220	J	0.0320	J	0.0340	J
Uranium-238(aea)	1	0.300	J	0.260	J	0.200	J

000012

* - TDL exceeded

Laboratory applied non-detect qualifiers "U" have been included in this table to minimize potential miss-interpretation of results. All other qualifiers shown were applied during validation.

WSCF
ANALYTICAL RESULTS REPORT

Attention: Deanna Klages H8-40 **Group #:** 20060178

Sample #	Client ID		CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
Radiochemistry														
W060000452	B1HVM6	K	14596-10-2	Am-241 by AEA	SOLID	LA-508-471	U J	8.40e-03	pCi/g	1.00	0.26	03/27/06	03/14/06	03/14/06
W060000452	B1HVM6	K	E,T,C	Am-241 by AEA Total Cntg Error	SOLID	LA-508-471		110	%	1.00	0.0	03/27/06	03/14/06	03/14/06
W060000452	B1HVM6	K	14596-10-2	Am-241 by GEA	SOLID	LA-508-481	U	-6.15e-03	pCi/g	1.00	0.074	03/15/06	03/14/06	03/14/06
W060000452	B1HVM6	K	E,T,C	Am-241 Rel Count Error (GEA)	SOLID	LA-508-481		714	%	1.00	0.0	03/15/06	03/14/06	03/14/06
W060000452	B1HVM6	K	14234-35-6	Sb-125 by GEA	SOLID	LA-508-481	U	2.52e-03	pCi/g	1.00	0.029	03/15/06	03/14/06	03/14/06
W060000452	B1HVM6	K	E,T,C	Sb-125 Rel. Count Error (GEA)	SOLID	LA-508-481		679	%	1.00	0.0	03/15/06	03/14/06	03/14/06
W060000452	B1HVM6	K	13981-41-4	Ba-133 by GEA	SOLID	LA-508-481	U	0.0120	pCi/g	1.00	0.014	03/15/06	03/14/06	03/14/06
W060000452	B1HVM6	K	E,T,C	Ba-133 Rel. Count Error (GEA)	SOLID	LA-508-481		75.0	%	1.00	0.0	03/15/06	03/14/06	03/14/06
W060000452	B1HVM6	K	14762-78-8	Ce-144 by GEA	SOLID	LA-508-481	U	-0.0723	pCi/g	1.00	0.086	03/15/06	03/14/06	03/14/06
W060000452	B1HVM6	K	E,T,C	Ce-144 Rel. Count Error (GEA)	SOLID	LA-508-481		100	%	1.00	0.0	03/15/06	03/14/06	03/14/06
W060000452	B1HVM6	K	CE/PR-144	CePr-144 by GEA	SOLID	LA-508-481	U	-0.145	pCi/g	1.00	0.17	03/15/06	03/14/06	03/14/06
W060000452	B1HVM6	K	E,T,C	CePr-144 Rel. Count Error	SOLID	LA-508-481		100	%	1.00	0.0	03/15/06	03/14/06	03/14/06
W060000452	B1HVM6	K	10198-40-0	Co-60 by GEA	SOLID	LA-508-481	U	-4.37e-03	pCi/g	1.00	9.8e-03	03/15/06	03/14/06	03/14/06
W060000452	B1HVM6	K	E,T,C	Co-60 Rel. Count Error (GEA)	SOLID	LA-508-481		134	%	1.00	0.0	03/15/06	03/14/06	03/14/06
W060000452	B1HVM6	K	13967-70-9	Cs-134 by GEA	SOLID	LA-508-481	U	0.0312	pCi/g	1.00	0.040	03/15/06	03/14/06	03/14/06
W060000452	B1HVM6	K	E,T,C	Cs-134 Rel. Count Error (GEA)	SOLID	LA-508-481		100	%	1.00	0.0	03/15/06	03/14/06	03/14/06
W060000452	B1HVM6	K	10045-97-3	Cs-137 by GEA	SOLID	LA-508-481		0.0248	pCi/g	1.00	0.011	03/15/06	03/14/06	03/14/06
W060000452	B1HVM6	K	E,T,C	Cs-137 Rel. Count Error (GEA)	SOLID	LA-508-481		41.4	%	1.00	0.0	03/15/06	03/14/06	03/14/06
W060000452	B1HVM6	K	14683-23-9	Eu-152 by GEA	SOLID	LA-508-481	U	-0.0183	pCi/g	1.00	0.031	03/15/06	03/14/06	03/14/06
W060000452	B1HVM6	K	E,T,C	Eu-152 Rel. Count Error (GEA)	SOLID	LA-508-481		127	%	1.00	0.0	03/15/06	03/14/06	03/14/06
W060000452	B1HVM6	K	15585-10-1	Eu-154 by GEA	SOLID	LA-508-481	U	1.52e-03	pCi/g	1.00	0.032	03/15/06	03/14/06	03/14/06
W060000452	B1HVM6	K	E,T,C	Eu-154 Rel. Count Error (GEA)	SOLID	LA-508-481		1.00e+03	%	1.00	0.0	03/15/06	03/14/06	03/14/06
W060000452	B1HVM6	K	14391-16-3	Eu-155 by GEA	SOLID	LA-508-481		0.0569	pCi/g	1.00	0.046	03/15/06	03/14/06	03/14/06
W060000452	B1HVM6	K	E,T,C	Eu-155 Rel. Count Error (GEA)	SOLID	LA-508-481		60.4	%	1.00	0.0	03/15/06	03/14/06	03/14/06
W060000452	B1HVM6	K	13966-00-2	K-40 by GEA	SOLID	LA-508-481		13.2	pCi/g	1.00	0.079	03/15/06	03/14/06	03/14/06
W060000452	B1HVM6	K	E,T,C	K-40 Rel.% Count Error (GEA)	SOLID	LA-508-481		13.5	%	1.00	0.0	03/15/06	03/14/06	03/14/06

MDL=Minimum Detection Limit
RQ=Result Qualifier

B - The Analyte detected in both the BLANK and the SAMPLE (org.)
E - Analyte is an estimate, has potentially larger errors
X - Other flags and notes described in the comments/narrative.

B - The analyte < the RDL but >= the IDL/MDL (inorganic)
U - Analyzed for but not detected above limiting criteria.

DF=Dilution Factor

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

4/19/06

0000013

WSCF
ANALYTICAL RESULTS REPORT

Attention: Deanna Klages H8-40 **Group #:** 20060178

Sample #	Client ID		CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W060000452	B1HVM6	K	14681-63-1	Nb-94 by GEA	SOLID	LA-508-481	U	2.75e-03	pCi/g	1.00	9.9e-03	03/15/06	03/14/06	03/14/06
W060000452	B1HVM6	K	E,T,C	Nb-94 Rel. Count Error (GEA)	SOLID	LA-508-481		208	%	1.00	0.0	03/15/06	03/14/06	03/14/06
W060000452	B1HVM6	K	13982-63-3	Ra-226 by GEA	SOLID	LA-508-481		0.518	pCi/g	1.00	0.019	03/15/06	03/14/06	03/14/06
W060000452	B1HVM6	K	E,T,C	Ra-226 Rel. Count Error (GEA)	SOLID	LA-508-481		16.3	%	1.00	0.0	03/15/06	03/14/06	03/14/06
W060000452	B1HVM6	K	15262-20-1	Ra-228 by GEA	SOLID	LA-508-481		0.664	pCi/g	1.00	0.035	03/15/06	03/14/06	03/14/06
W060000452	B1HVM6	K	E,T,C	Ra-228 Rel. Count Error (GEA)	SOLID	LA-508-481		17.5	%	1.00	0.0	03/15/06	03/14/06	03/14/06
W060000452	B1HVM6	K	13967-48-1	Ru-106 by GEA	SOLID	LA-508-481	U	-0.0227	pCi/g	1.00	0.089	03/15/06	03/14/06	03/14/06
W060000452	B1HVM6	K	E,T,C	Ru-106 Rel. Count Error (GEA)	SOLID	LA-508-481		230	%	1.00	0.0	03/15/06	03/14/06	03/14/06
W060000452	B1HVM6	K	15832-50-5	Sn-126 by GEA	SOLID	LA-508-481	U	0.129	pCi/g	1.00	0.13	03/15/06	03/14/06	03/14/06
W060000452	B1HVM6	K	E,T,C	Sn-126 Rel. Count Error (GEA)	SOLID	LA-508-481		27.4	%	1.00	0.0	03/15/06	03/14/06	03/14/06
W060000452	B1HVM6	K	15065-10-8	Th-234 by GEA	SOLID	LA-508-481		1.03	pCi/g	1.00	0.62	03/15/06	03/14/06	03/14/06
W060000452	B1HVM6	K	E,T,C	Th-234 Rel. Count Error (GEA)	SOLID	LA-508-481		26.0	%	1.00	0.0	03/15/06	03/14/06	03/14/06
W060000452	B1HVM6	K	15117-96-1	U-235 by GEA	SOLID	LA-508-481		0.0926	pCi/g	1.00	0.088	03/15/06	03/14/06	03/14/06
W060000452	B1HVM6	K	E,T,C	U-235 Rel. Count Error (GEA)	SOLID	LA-508-481		78.4	%	1.00	0.0	03/15/06	03/14/06	03/14/06
W060000452	B1HVM6	K	13982-39-3	Zn-65 by GEA	SOLID	LA-508-481	U	-5.54e-03	pCi/g	1.00	0.023	03/15/06	03/14/06	03/14/06
W060000452	B1HVM6	K	E,T,C	Zn-65 Rel. Count Error (GEA)	SOLID	LA-508-481		290	%	1.00	0.0	03/15/06	03/14/06	03/14/06
W060000452	B1HVM6	K	14331-83-0	Ac-228 by GEA	SOLID	LA-508-481		0.664	pCi/g	1.00	0.035	03/15/06	03/14/06	03/14/06
W060000452	B1HVM6	K	E,T,C	Ac-228 Rel. Count Error (GEA)	SOLID	LA-508-481		17.5	%	1.00	0.0	03/15/06	03/14/06	03/14/06
W060000452	B1HVM6	K	14913-49-6	Bi-212 by GEA	SOLID	LA-508-481		0.417	pCi/g	1.00	0.079	03/15/06	03/14/06	03/14/06
W060000452	B1HVM6	K	E,T,C	Bi-212 Rel. Count Error (GEA)	SOLID	LA-508-481		27.0	%	1.00	0.0	03/15/06	03/14/06	03/14/06
W060000452	B1HVM6	K	14733-03-0	Bi-214 by GEA	SOLID	LA-508-481		0.518	pCi/g	1.00	0.019	03/15/06	03/14/06	03/14/06
W060000452	B1HVM6	K	E,T,C	Bi-214 Rel. Count Error (GEA)	SOLID	LA-508-481		16.3	%	1.00	0.0	03/15/06	03/14/06	03/14/06
W060000452	B1HVM6	K	15092-94-1	Pb-212 by GEA	SOLID	LA-508-481		0.669	pCi/g	1.00	0.022	03/15/06	03/14/06	03/14/06
W060000452	B1HVM6	K	E,T,C	Pb-212 Rel. Count Error (GEA)	SOLID	LA-508-481		13.5	%	1.00	0.0	03/15/06	03/14/06	03/14/06
W060000452	B1HVM6	K	15067-28-4	Pb-214 by GEA	SOLID	LA-508-481		0.567	pCi/g	1.00	0.023	03/15/06	03/14/06	03/14/06
W060000452	B1HVM6	K	E,T,C	Pb-214 Rel. Count Error (GEA)	SOLID	LA-508-481		14.3	%	1.00	0.0	03/15/06	03/14/06	03/14/06
W060000452	B1HVM6	K	13968-53-1	Ru-103 by GEA	SOLID	LA-508-481	U	5.29e-03	pCi/g	1.00	0.010	03/15/06	03/14/06	03/14/06

00014

MDL = Minimum Detection Limit
RQ = Result Qualifier

B - The Analyte detected in both the BLANK and the SAMPLE (org.)
E - Analyte is an estimate, has potentially larger errors
X - Other flags and notes described in the comments/narrative.
B - The analyte < the RDL but > = the IDL/MDL (inorganic)
U - Analyzed for but not detected above limiting criteria.

DF = Dilution Factor

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

4/19/06

WSCF
ANALYTICAL RESULTS REPORT

Attention: Deanna Klages H8-40 **Group #:** 20060178

Sample #	Client ID		CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W060000452	B1HVM6	K	E,T,C	Ru-103 Rel. Count Error (GEA)	SOLID	LA-508-481		114	%	1.00	0.0	03/15/06	03/14/06	03/14/06
W060000452	B1HVM6	K	13966-06-8	Sn-113 by GEA	SOLID	LA-508-481	U	4.82e-04	pCi/g	1.00	0.013	03/15/06	03/14/06	03/14/06
W060000452	B1HVM6	K	E,T,C	Sn-113 Rel. Count Error (GEA)	SOLID	LA-508-481		1.00e+03	%	1.00	0.0	03/15/06	03/14/06	03/14/06
W060000452	B1HVM6	K	14913-50-9	Tl-208 by GEA	SOLID	LA-508-481		0.212	pCi/g	1.00	0.010	03/15/06	03/14/06	03/14/06
W060000452	B1HVM6	K	E,T,C	Tl-208 Rel. Count Error (GEA)	SOLID	LA-508-481		16.5	%	1.00	0.0	03/15/06	03/14/06	03/14/06
W060000452	B1HVM6	K	13994-20-2	Np-237 by AEA	SOLID	LA-508-471		0.0110	pCi/g	1.00	2.1e-03	03/22/06	03/14/06	03/14/06
W060000452	B1HVM6	K	E,T,C	Np-237 by AEA Total Ctng Error	SOLID	LA-508-471		60.0	%	1.00	0.0	03/22/06	03/14/06	03/14/06
W060000452	B1HVM6	K	13981-16-3	Pu-238 by AEA	SOLID	LA-508-471	U	1.10e-03	pCi/g	1.00	0.026	03/27/06	03/14/06	03/14/06
W060000452	B1HVM6	K	E,T,C	Pu-238 by AEA Total Cntg Error	SOLID	LA-508-471		1.00e+03	%	1.00	0.0	03/27/06	03/14/06	03/14/06
W060000452	B1HVM6	K	PU-239/240	Pu-239/240 by AEA	SOLID	LA-508-471		0.0200	pCi/g	1.00	0.013	03/27/06	03/14/06	03/14/06
W060000452	B1HVM6	K	E,T,C	Pu-239/240 AEA Total Cntg Err	SOLID	LA-508-471		62.0	%	1.00	0.0	03/27/06	03/14/06	03/14/06
W060000452	B1HVM6	K	10098-97-2	Sr-89/90 by Beta Counting	SOLID	LA-508-415		0.520	pCi/g	1.00	0.28	03/20/06	03/14/06	03/14/06
W060000452	B1HVM6	K	E,T,C	Sr-89/90 Rel. Count Error	SOLID	LA-508-415		61.0	%	1.00	0.0	03/20/06	03/14/06	03/14/06
W060000452	B1HVM6	K	14133-76-7	Tc-99 by Liquid Scin.	SOLID	LA-508-421	U	-0.500	pCi/g	1.00	0.50	03/18/06	03/14/06	03/14/06
W060000452	B1HVM6	K	E,T,C	Tc-99 Counting Error	SOLID	LA-508-421		100	%	1.00	0.0	03/18/06	03/14/06	03/14/06
W060000452	B1HVM6	K	13966-29-5	U-234 by AEA	SOLID	LA-508-471		0.280	pCi/g	1.00	2.8e-03	03/27/06	03/14/06	03/14/06
W060000452	B1HVM6	K	E,T,C	U-233/234 AEA Total Cntg Error	SOLID	LA-508-471		28.0	%	1.00	0.0	03/27/06	03/14/06	03/14/06
W060000452	B1HVM6	K	15117-96-1	U-235 by AEA	SOLID	LA-508-471		0.0220	pCi/g	1.00	3.0e-03	03/27/06	03/14/06	03/14/06
W060000452	B1HVM6	K	E,T,C	U-235 by AEA Total Cntg Error	SOLID	LA-508-471		52.0	%	1.00	0.0	03/27/06	03/14/06	03/14/06
W060000452	B1HVM6	K	24678-82-8	U-238 by AEA	SOLID	LA-508-471		0.300	pCi/g	1.00	2.8e-03	03/27/06	03/14/06	03/14/06
W060000452	B1HVM6	K	E,T,C	U-238 by AEA Total Cntg Error	SOLID	LA-508-471		28.0	%	1.00	0.10	03/27/06	03/14/06	03/14/06
W060000453	B1HVM8	K	14596-10-2	Am-241 by AEA	SOLID	LA-508-471	U	5.80e-03	pCi/g	1.00	0.21	03/27/06	03/14/06	03/14/06
W060000453	B1HVM8	K	E,T,C	Am-241 by AEA Total Cntg Error	SOLID	LA-508-471		130	%	1.00	0.0	03/27/06	03/14/06	03/14/06
W060000453	B1HVM8	K	14596-10-2	Am-241 by GEA	SOLID	LA-508-481	U	0.0337	pCi/g	1.00	0.071	03/15/06	03/14/06	03/14/06
W060000453	B1HVM8	K	E,T,C	Am-241 Rel Count Error (GEA)	SOLID	LA-508-481		142	%	1.00	0.0	03/15/06	03/14/06	03/14/06
W060000453	B1HVM8	K	14234-35-6	Sb-125 by GEA	SOLID	LA-508-481	U	-0.0256	pCi/g	1.00	0.067	03/15/06	03/14/06	03/14/06
W060000453	B1HVM8	K	E,T,C	Sb-125 Rel. Count Error (GEA)	SOLID	LA-508-481		160	%	1.00	0.0	03/15/06	03/14/06	03/14/06

J

000015

MDL = Minimum Detection Limit
RQ = Result Qualifier

B - The Analyte detected in both the BLANK and the SAMPLE (org.)
E - Analyte is an estimate, has potentially larger errors
X - Other flags and notes described in the comments/narrative.
B - The analyte < the RDL but >= the IDL/MDL (inorganic)
U - Analyzed for but not detected above limiting criteria.

DF = Dilution Factor

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

Report W005/ver. 1.2
PROJECT HANFORD MANAGEMENT COMPANY

K 4/19/06

WSCF
ANALYTICAL RESULTS REPORT

Attention: Deanna Klages H8-40 **Group #:** 20060178

Sample #	Client ID		CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W060000453	B1HVM8	K	13981-41-4	Ba-133 by GEA	SOLID	LA-508-481	U	3.06e-03	pCi/g	1.00	0.030	03/15/06	03/14/06	03/14/06
W060000453	B1HVM8	K	E,T,C	Ba-133 Rel. Count Error (GEA)	SOLID	LA-508-481		100	%	1.00	0.0	03/15/06	03/14/06	03/14/06
W060000453	B1HVM8	K	14762-78-8	Ce-144 by GEA	SOLID	LA-508-481	U	-0.0463	pCi/g	1.00	0.16	03/15/06	03/14/06	03/14/06
W060000453	B1HVM8	K	E,T,C	Ce-144 Rel. Count Error (GEA)	SOLID	LA-508-481		251	%	1.00	0.0	03/15/06	03/14/06	03/14/06
W060000453	B1HVM8	K	CE/PR-144	CePr-144 by GEA	SOLID	LA-508-481	U	-0.0926	pCi/g	1.00	0.33	03/15/06	03/14/06	03/14/06
W060000453	B1HVM8	K	E,T,C	CePr-144 Rel. Count Error	SOLID	LA-508-481		100	%	1.00	0.0	03/15/06	03/14/06	03/14/06
W060000453	B1HVM8	K	10198-40-0	Co-60 by GEA	SOLID	LA-508-481	U	0.0114	pCi/g	1.00	0.025	03/15/06	03/14/06	03/14/06
W060000453	B1HVM8	K	E,T,C	Co-60 Rel. Count Error (GEA)	SOLID	LA-508-481		125	%	1.00	0.0	03/15/06	03/14/06	03/14/06
W060000453	B1HVM8	K	13967-70-9	Cs-134 by GEA	SOLID	LA-508-481	U	0.0520	pCi/g	1.00	0.052	03/15/06	03/14/06	03/14/06
W060000453	B1HVM8	K	E,T,C	Cs-134 Rel. Count Error (GEA)	SOLID	LA-508-481		100	%	1.00	0.0	03/15/06	03/14/06	03/14/06
W060000453	B1HVM8	K	10045-97-3	Cs-137 by GEA	SOLID	LA-508-481		0.254	pCi/g	1.00	0.027	03/15/06	03/14/06	03/14/06
W060000453	B1HVM8	K	E,T,C	Cs-137 Rel. Count Error (GEA)	SOLID	LA-508-481		19.6	%	1.00	0.0	03/15/06	03/14/06	03/14/06
W060000453	B1HVM8	K	14683-23-9	Eu-152 by GEA	SOLID	LA-508-481	U	0.0218	pCi/g	1.00	0.071	03/15/06	03/14/06	03/14/06
W060000453	B1HVM8	K	E,T,C	Eu-152 Rel. Count Error (GEA)	SOLID	LA-508-481		220	%	1.00	0.0	03/15/06	03/14/06	03/14/06
W060000453	B1HVM8	K	15585-10-1	Eu-154 by GEA	SOLID	LA-508-481	U	-0.0264	pCi/g	1.00	0.075	03/15/06	03/14/06	03/14/06
W060000453	B1HVM8	K	E,T,C	Eu-154 Rel. Count Error (GEA)	SOLID	LA-508-481		173	%	1.00	0.0	03/15/06	03/14/06	03/14/06
W060000453	B1HVM8	K	14391-16-3	Eu-155 by GEA	SOLID	LA-508-481		0.0849	pCi/g	1.00	0.081	03/15/06	03/14/06	03/14/06
W060000453	B1HVM8	K	E,T,C	Eu-155 Rel. Count Error (GEA)	SOLID	LA-508-481		70.9	%	1.00	0.0	03/15/06	03/14/06	03/14/06
W060000453	B1HVM8	K	13966-00-2	K-40 by GEA	SOLID	LA-508-481		15.3	pCi/g	1.00	0.19	03/15/06	03/14/06	03/14/06
W060000453	B1HVM8	K	E,T,C	K-40 Rel.% Count Error (GEA)	SOLID	LA-508-481		13.6	%	1.00	0.0	03/15/06	03/14/06	03/14/06
W060000453	B1HVM8	K	14681-63-1	Nb-94 by GEA	SOLID	LA-508-481	U	4.10e-03	pCi/g	1.00	0.024	03/15/06	03/14/06	03/14/06
W060000453	B1HVM8	K	E,T,C	Nb-94 Rel. Count Error (GEA)	SOLID	LA-508-481		333	%	1.00	0.0	03/15/06	03/14/06	03/14/06
W060000453	B1HVM8	K	13982-63-3	Ra-226 by GEA	SOLID	LA-508-481		0.602	pCi/g	1.00	0.047	03/15/06	03/14/06	03/14/06
W060000453	B1HVM8	K	E,T,C	Ra-226 Rel. Count Error (GEA)	SOLID	LA-508-481		17.8	%	1.00	0.0	03/15/06	03/14/06	03/14/06
W060000453	B1HVM8	K	15262-20-1	Ra-228 by GEA	SOLID	LA-508-481		0.854	pCi/g	1.00	0.084	03/15/06	03/14/06	03/14/06
W060000453	B1HVM8	K	E,T,C	Ra-228 Rel. Count Error (GEA)	SOLID	LA-508-481		21.0	%	1.00	0.0	03/15/06	03/14/06	03/14/06
W060000453	B1HVM8	K	13967-48-1	Ru-106 by GEA	SOLID	LA-508-481	U	1.18e-03	pCi/g	1.00	0.22	03/15/06	03/14/06	03/14/06

MDL = Minimum Detection Limit
RQ = Result Qualifier

B - The Analyte detected in both the BLANK and the SAMPLE (org.)
E - Analyte is an estimate, has potentially larger errors
X - Other flags and notes described in the comments/narrative.
B - The analyte < the RDL but > = the IDL/MDL (inorganic)
U - Analyzed for but not detected above limiting criteria.

DF = Dilution Factor

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

4/19/06

0000019

WSCF
ANALYTICAL RESULTS REPORT

Attention: Deanna Klages H8-40 **Group #:** 20060178

Sample #	Client ID		CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W060000453	B1HVM8	K	E,T,C	Ru-106 Rel. Count Error (GEA)	SOLID	LA-508-481		1.00e+03	%	1.00	0.0	03/15/06	03/14/06	03/14/06
W060000453	B1HVM8	K	15832-50-5	Sn-126 by GEA	SOLID	LA-508-481	U	0.224	pCi/g	1.00	0.022	03/15/06	03/14/06	03/14/06
W060000453	B1HVM8	K	E,T,C	Sn-126 Rel. Count Error (GEA)	SOLID	LA-508-481		26.5	%	1.00	0.0	03/15/06	03/14/06	03/14/06
W060000453	B1HVM8	K	15065-10-8	Th-234 by GEA	SOLID	LA-508-481		0.733	pCi/g	1.00	0.65	03/15/06	03/14/06	03/14/06
W060000453	B1HVM8	K	E,T,C	Th-234 Rel. Count Error (GEA)	SOLID	LA-508-481		80.1	%	1.00	0.0	03/15/06	03/14/06	03/14/06
W060000453	B1HVM8	K	15117-96-1	U-235 by GEA	SOLID	LA-508-481	U	0.0932	pCi/g	1.00	0.17	03/15/06	03/14/06	03/14/06
W060000453	B1HVM8	K	E,T,C	U-235 Rel. Count Error (GEA)	SOLID	LA-508-481		41.1	%	1.00	0.0	03/15/06	03/14/06	03/14/06
W060000453	B1HVM8	K	13982-39-3	Zn-65 by GEA	SOLID	LA-508-481	U	0.0230	pCi/g	1.00	0.053	03/15/06	03/14/06	03/14/06
W060000453	B1HVM8	K	E,T,C	Zn-65 Rel. Count Error (GEA)	SOLID	LA-508-481		241	%	1.00	0.0	03/15/06	03/14/06	03/14/06
W060000453	B1HVM8	K	14331-83-0	Ac-228 by GEA	SOLID	LA-508-481		0.854	pCi/g	1.00	0.084	03/15/06	03/14/06	03/14/06
W060000453	B1HVM8	K	E,T,C	Ac-228 Rel. Count Error (GEA)	SOLID	LA-508-481		21.0	%	1.00	0.0	03/15/06	03/14/06	03/14/06
W060000453	B1HVM8	K	14913-49-6	Bi-212 by GEA	SOLID	LA-508-481		0.666	pCi/g	1.00	0.19	03/15/06	03/14/06	03/14/06
W060000453	B1HVM8	K	E,T,C	Bi-212 Rel. Count Error (GEA)	SOLID	LA-508-481		33.4	%	1.00	0.0	03/15/06	03/14/06	03/14/06
W060000453	B1HVM8	K	14733-03-0	Bi-214 by GEA	SOLID	LA-508-481		0.602	pCi/g	1.00	0.047	03/15/06	03/14/06	03/14/06
W060000453	B1HVM8	K	E,T,C	Bi-214 Rel. Count Error (GEA)	SOLID	LA-508-481		17.8	%	1.00	0.0	03/15/06	03/14/06	03/14/06
W060000453	B1HVM8	K	15092-94-1	Pb-212 by GEA	SOLID	LA-508-481		0.908	pCi/g	1.00	0.044	03/15/06	03/14/06	03/14/06
W060000453	B1HVM8	K	E,T,C	Pb-212 Rel. Count Error (GEA)	SOLID	LA-508-481		20.7	%	1.00	0.0	03/15/06	03/14/06	03/14/06
W060000453	B1HVM8	K	15067-28-4	Pb-214 by GEA	SOLID	LA-508-481		0.691	pCi/g	1.00	0.051	03/15/06	03/14/06	03/14/06
W060000453	B1HVM8	K	E,T,C	Pb-214 Rel. Count Error (GEA)	SOLID	LA-508-481		19.9	%	1.00	0.0	03/15/06	03/14/06	03/14/06
W060000453	B1HVM8	K	13968-53-1	Ru-103 by GEA	SOLID	LA-508-481	U	0.0119	pCi/g	1.00	0.025	03/15/06	03/14/06	03/14/06
W060000453	B1HVM8	K	E,T,C	Ru-103 Rel. Count Error (GEA)	SOLID	LA-508-481		124	%	1.00	0.0	03/15/06	03/14/06	03/14/06
W060000453	B1HVM8	K	13966-06-8	Sn-113 by GEA	SOLID	LA-508-481	U	-7.99e-04	pCi/g	1.00	0.031	03/15/06	03/14/06	03/14/06
W060000453	B1HVM8	K	E,T,C	Sn-113 Rel. Count Error (GEA)	SOLID	LA-508-481		1.00e+03	%	1.00	0.0	03/15/06	03/14/06	03/14/06
W060000453	B1HVM8	K	14913-50-9	Tl-208 by GEA	SOLID	LA-508-481		0.298	pCi/g	1.00	0.024	03/15/06	03/14/06	03/14/06
W060000453	B1HVM8	K	E,T,C	Tl-208 Rel. Count Error (GEA)	SOLID	LA-508-481		18.9	%	1.00	0.0	03/15/06	03/14/06	03/14/06
W060000453	B1HVM8	K	13994-20-2	Np-237 by AEA	SOLID	LA-508-471	U J	2.20e-03	pCi/g	1.00	0.11	03/22/06	03/14/06	03/14/06
W060000453	B1HVM8	K	E,T,C	Np-237 by AEA Total Ctng Error	SOLID	LA-508-471		180	%	1.00	0.0	03/22/06	03/14/06	03/14/06

MDL=Minimum Detection Limit
RQ=Result Qualifier

B - The Analyte detected in both the BLANK and the SAMPLE (org.)
E - Analyte is an estimate, has potentially larger errors
X - Other flags and notes described in the comments/narrative.
B - The analyte < the RDL but >= the IDL/MDL (inorganic)
U - Analyzed for but not detected above limiting criteria.

DF=Dilution Factor

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JL 4/19/06

000017

WSCF
ANALYTICAL RESULTS REPORT

Attention: Deanna Klages H8-40 **Group #:** 20060178

Sample #	Client ID		CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W060000453	B1HVM8	K	13981-16-3	Pu-238 by AEA	SOLID	LA-508-471	U	-8.80e-04	pCi/g	1.00	0.20	03/27/06	03/14/06	03/14/06
W060000453	B1HVM8	K	E,T,C	Pu-238 by AEA Total Cntg Error	SOLID	LA-508-471		600	%	1.00	0.0	03/27/06	03/14/06	03/14/06
W060000453	B1HVM8	K	PU-239/240	Pu-239/240 by AEA	SOLID	LA-508-471		5.30e-03	pCi/g	1.00	2.4e-03	03/27/06	03/14/06	03/14/06
W060000453	B1HVM8	K	E,T,C	Pu-239/240 AEA Total Cntg Err	SOLID	LA-508-471		85.0	%	1.00	0.0	03/27/06	03/14/06	03/14/06
W060000453	B1HVM8	K	10098-97-2	Sr-89/90 by Beta Counting	SOLID	LA-508-415		0.700	pCi/g	1.00	0.22	03/20/06	03/14/06	03/14/06
W060000453	B1HVM8	K	E,T,C	Sr-89/90 Rel. Count Error	SOLID	LA-508-415		45.0	%	1.00	0.0	03/20/06	03/14/06	03/14/06
W060000453	B1HVM8	K	14133-76-7	Tc-99 by Liquid Scin.	SOLID	LA-508-421	U	-0.500	pCi/g	1.00	0.50	03/18/06	03/14/06	03/14/06
W060000453	B1HVM8	K	E,T,C	Tc-99 Counting Error	SOLID	LA-508-421		100	%	1.00	0.0	03/18/06	03/14/06	03/14/06
W060000453	B1HVM8	K	13966-29-5	U-234 by AEA	SOLID	LA-508-471		0.280	pCi/g	1.00	7.1e-03	03/27/06	03/14/06	03/14/06
W060000453	B1HVM8	K	E,T,C	U-233/234 AEA Total Cntg Error	SOLID	LA-508-471		28.0	%	1.00	0.0	03/27/06	03/14/06	03/14/06
W060000453	B1HVM8	K	15117-96-1	U-235 by AEA	SOLID	LA-508-471		0.0320	pCi/g	1.00	2.9e-03	03/27/06	03/14/06	03/14/06
W060000453	B1HVM8	K	E,T,C	U-235 by AEA Total Cntg Error	SOLID	LA-508-471		44.0	%	1.00	0.0	03/27/06	03/14/06	03/14/06
W060000453	B1HVM8	K	24678-82-8	U-238 by AEA	SOLID	LA-508-471		0.260	pCi/g	1.00	2.6e-03	03/27/06	03/14/06	03/14/06
W060000453	B1HVM8	K	E,T,C	U-238 by AEA Total Cntg Error	SOLID	LA-508-471		28.0	%	1.00	0.10	03/27/06	03/14/06	03/14/06
W060000454	B1HVN0	K	14596-10-2	Am-241 by AEA	SOLID	LA-508-471	U	0.0140	pCi/g	1.00	0.20	03/27/06	03/14/06	03/14/06
W060000454	B1HVN0	K	E,T,C	Am-241 by AEA Total Cntg Error	SOLID	LA-508-471		68.0	%	1.00	0.0	03/27/06	03/14/06	03/14/06
W060000454	B1HVN0	K	14596-10-2	Am-241 by GEA	SOLID	LA-508-481	U	-0.111	pCi/g	1.00	0.098	03/15/06	03/14/06	03/14/06
W060000454	B1HVN0	K	E,T,C	Am-241 Rel Count Error (GEA)	SOLID	LA-508-481		55.6	%	1.00	0.0	03/15/06	03/14/06	03/14/06
W060000454	B1HVN0	K	14234-35-6	Sb-125 by GEA	SOLID	LA-508-481	U	0.0129	pCi/g	1.00	0.035	03/15/06	03/14/06	03/14/06
W060000454	B1HVN0	K	E,T,C	Sb-125 Rel. Count Error (GEA)	SOLID	LA-508-481		159	%	1.00	0.0	03/15/06	03/14/06	03/14/06
W060000454	B1HVN0	K	13981-41-4	Ba-133 by GEA	SOLID	LA-508-481	U	-1.12e-03	pCi/g	1.00	0.016	03/15/06	03/14/06	03/14/06
W060000454	B1HVN0	K	E,T,C	Ba-133 Rel. Count Error (GEA)	SOLID	LA-508-481		100	%	1.00	0.0	03/15/06	03/14/06	03/14/06
W060000454	B1HVN0	K	14762-78-8	Ce-144 by GEA	SOLID	LA-508-481	U	-0.0798	pCi/g	1.00	0.11	03/15/06	03/14/06	03/14/06
W060000454	B1HVN0	K	E,T,C	Ce-144 Rel. Count Error (GEA)	SOLID	LA-508-481		100	%	1.00	0.0	03/15/06	03/14/06	03/14/06
W060000454	B1HVN0	K	CE/PR-144	CePr-144 by GEA	SOLID	LA-508-481	U	-0.160	pCi/g	1.00	0.21	03/15/06	03/14/06	03/14/06
W060000454	B1HVN0	K	E,T,C	CePr-144 Rel. Count Error	SOLID	LA-508-481		100	%	1.00	0.0	03/15/06	03/14/06	03/14/06
W060000454	B1HVN0	K	10198-40-0	Co-60 by GEA	SOLID	LA-508-481	U	3.02e-04	pCi/g	1.00	0.013	03/15/06	03/14/06	03/14/06

MDL=Minimum Detection Limit
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X - Other flags and notes described in the comments/narrative.
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4/19/06

000018

WSCF
ANALYTICAL RESULTS REPORT

Attention: Deanna Klages H8-40 **Group #:** 20060178

Sample #	Client ID		CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W060000454	B1HVN0	K	E,T,C	Co-60 Rel. Count Error (GEA)	SOLID	LA-508-481		1.00e+03	%	1.00	0.0	03/15/06	03/14/06	03/14/06
W060000454	B1HVN0	K	13967-70-9	Cs-134 by GEA	SOLID	LA-508-481	U	0.0311	pCi/g	1.00	0.031	03/15/06	03/14/06	03/14/06
W060000454	B1HVN0	K	E,T,C	Cs-134 Rel. Count Error (GEA)	SOLID	LA-508-481		36.8	%	1.00	0.0	03/15/06	03/14/06	03/14/06
W060000454	B1HVN0	K	10045-97-3	Cs-137 by GEA	SOLID	LA-508-481	U	0.0141	pCi/g	1.00	0.015	03/15/06	03/14/06	03/14/06
W060000454	B1HVN0	K	E,T,C	Cs-137 Rel. Count Error (GEA)	SOLID	LA-508-481		64.5	%	1.00	0.0	03/15/06	03/14/06	03/14/06
W060000454	B1HVN0	K	14683-23-9	Eu-152 by GEA	SOLID	LA-508-481	U	9.65e-04	pCi/g	1.00	0.039	03/15/06	03/14/06	03/14/06
W060000454	B1HVN0	K	E,T,C	Eu-152 Rel. Count Error (GEA)	SOLID	LA-508-481		1.00e+03	%	1.00	0.0	03/15/06	03/14/06	03/14/06
W060000454	B1HVN0	K	15585-10-1	Eu-154 by GEA	SOLID	LA-508-481	U	4.51e-03	pCi/g	1.00	0.044	03/15/06	03/14/06	03/14/06
W060000454	B1HVN0	K	E,T,C	Eu-154 Rel. Count Error (GEA)	SOLID	LA-508-481		577	%	1.00	0.0	03/15/06	03/14/06	03/14/06
W060000454	B1HVN0	K	14391-16-3	Eu-155 by GEA	SOLID	LA-508-481		0.0625	pCi/g	1.00	0.056	03/15/06	03/14/06	03/14/06
W060000454	B1HVN0	K	E,T,C	Eu-155 Rel. Count Error (GEA)	SOLID	LA-508-481		68.5	%	1.00	0.0	03/15/06	03/14/06	03/14/06
W060000454	B1HVN0	K	13966-00-2	K-40 by GEA	SOLID	LA-508-481		15.0	pCi/g	1.00	0.10	03/15/06	03/14/06	03/14/06
W060000454	B1HVN0	K	E,T,C	K-40 Rel.% Count Error (GEA)	SOLID	LA-508-481		13.3	%	1.00	0.0	03/15/06	03/14/06	03/14/06
W060000454	B1HVN0	K	14681-63-1	Nb-94 by GEA	SOLID	LA-508-481	U	-4.54e-04	pCi/g	1.00	0.012	03/15/06	03/14/06	03/14/06
W060000454	B1HVN0	K	E,T,C	Nb-94 Rel. Count Error (GEA)	SOLID	LA-508-481		1.00e+03	%	1.00	0.0	03/15/06	03/14/06	03/14/06
W060000454	B1HVN0	K	13982-63-3	Ra-226 by GEA	SOLID	LA-508-481		0.492	pCi/g	1.00	0.024	03/15/06	03/14/06	03/14/06
W060000454	B1HVN0	K	E,T,C	Ra-226 Rel. Count Error (GEA)	SOLID	LA-508-481		18.3	%	1.00	0.0	03/15/06	03/14/06	03/14/06
W060000454	B1HVN0	K	15262-20-1	Ra-228 by GEA	SOLID	LA-508-481		0.727	pCi/g	1.00	0.042	03/15/06	03/14/06	03/14/06
W060000454	B1HVN0	K	E,T,C	Ra-228 Rel. Count Error (GEA)	SOLID	LA-508-481		17.5	%	1.00	0.0	03/15/06	03/14/06	03/14/06
W060000454	B1HVN0	K	13967-48-1	Ru-106 by GEA	SOLID	LA-508-481	U	-0.0400	pCi/g	1.00	0.11	03/15/06	03/14/06	03/14/06
W060000454	B1HVN0	K	E,T,C	Ru-106 Rel. Count Error (GEA)	SOLID	LA-508-481		166	%	1.00	0.0	03/15/06	03/14/06	03/14/06
W060000454	B1HVN0	K	15832-50-5	Sn-126 by GEA	SOLID	LA-508-481	U	0.138	pCi/g	1.00	0.14	03/15/06	03/14/06	03/14/06
W060000454	B1HVN0	K	E,T,C	Sn-126 Rel. Count Error (GEA)	SOLID	LA-508-481		30.6	%	1.00	0.0	03/15/06	03/14/06	03/14/06
W060000454	B1HVN0	K	15065-10-8	Th-234 by GEA	SOLID	LA-508-481	U	0.738	pCi/g	1.00	0.83	03/15/06	03/14/06	03/14/06
W060000454	B1HVN0	K	E,T,C	Th-234 Rel. Count Error (GEA)	SOLID	LA-508-481		36.5	%	1.00	0.0	03/15/06	03/14/06	03/14/06
W060000454	B1HVN0	K	15117-96-1	U-235 by GEA	SOLID	LA-508-481	U	0.0946	pCi/g	1.00	0.11	03/15/06	03/14/06	03/14/06
W060000454	B1HVN0	K	E,T,C	U-235 Rel. Count Error (GEA)	SOLID	LA-508-481		27.6	%	1.00	0.0	03/15/06	03/14/06	03/14/06

MDL=Minimum Detection Limit
RQ=Result Qualifier

B - The Analyte detected in both the BLANK and the SAMPLE (org.)
E - Analyte is an estimate, has potentially larger errors
X - Other flags and notes described in the comments/narrative.
B - The analyte < the RDL but > = the IDL/MDL (inorganic)
U - Analyzed for but not detected above limiting criteria.

DF=Dilution Factor

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

4/19/06

0000019

WSCF
ANALYTICAL RESULTS REPORT

Attention: Deanna Klages H8-40 **Group #:** 20060178

Sample #	Client ID		CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W060000454	B1HVN0	K	13982-39-3	Zn-65 by GEA	SOLID	LA-508-481	U	0.0101	pCi/g	1.00	0.030	03/15/06	03/14/06	03/14/06
W060000454	B1HVN0	K	E,T,C	Zn-65 Rel. Count Error (GEA)	SOLID	LA-508-481		199	%	1.00	0.0	03/15/06	03/14/06	03/14/06
W060000454	B1HVN0	K	14331-83-0	Ac-228 by GEA	SOLID	LA-508-481		0.727	pCi/g	1.00	0.042	03/15/06	03/14/06	03/14/06
W060000454	B1HVN0	K	E,T,C	Ac-228 Rel. Count Error (GEA)	SOLID	LA-508-481		17.5	%	1.00	0.0	03/15/06	03/14/06	03/14/06
W060000454	B1HVN0	K	14913-49-6	Bi-212 by GEA	SOLID	LA-508-481		0.425	pCi/g	1.00	0.096	03/15/06	03/14/06	03/14/06
W060000454	B1HVN0	K	E,T,C	Bi-212 Rel. Count Error (GEA)	SOLID	LA-508-481		28.5	%	1.00	0.0	03/15/06	03/14/06	03/14/06
W060000454	B1HVN0	K	14733-03-0	Bi-214 by GEA	SOLID	LA-508-481		0.492	pCi/g	1.00	0.024	03/15/06	03/14/06	03/14/06
W060000454	B1HVN0	K	E,T,C	Bi-214 Rel. Count Error (GEA)	SOLID	LA-508-481		18.3	%	1.00	0.0	03/15/06	03/14/06	03/14/06
W060000454	B1HVN0	K	15092-94-1	Pb-212 by GEA	SOLID	LA-508-481		0.710	pCi/g	1.00	0.026	03/15/06	03/14/06	03/14/06
W060000454	B1HVN0	K	E,T,C	Pb-212 Rel. Count Error (GEA)	SOLID	LA-508-481		13.7	%	1.00	0.0	03/15/06	03/14/06	03/14/06
W060000454	B1HVN0	K	15067-28-4	Pb-214 by GEA	SOLID	LA-508-481		0.562	pCi/g	1.00	0.027	03/15/06	03/14/06	03/14/06
W060000454	B1HVN0	K	E,T,C	Pb-214 Rel. Count Error (GEA)	SOLID	LA-508-481		14.8	%	1.00	0.0	03/15/06	03/14/06	03/14/06
W060000454	B1HVN0	K	13968-53-1	Ru-103 by GEA	SOLID	LA-508-481	U	-3.95e-04	pCi/g	1.00	0.012	03/15/06	03/14/06	03/14/06
W060000454	B1HVN0	K	E,T,C	Ru-103 Rel. Count Error (GEA)	SOLID	LA-508-481		1.00e+03	%	1.00	0.0	03/15/06	03/14/06	03/14/06
W060000454	B1HVN0	K	13966-06-8	Sn-113 by GEA	SOLID	LA-508-481	U	8.74e-04	pCi/g	1.00	0.017	03/15/06	03/14/06	03/14/06
W060000454	B1HVN0	K	E,T,C	Sn-113 Rel. Count Error (GEA)	SOLID	LA-508-481		1.00e+03	%	1.00	0.0	03/15/06	03/14/06	03/14/06
W060000454	B1HVN0	K	14913-50-9	Tl-208 by GEA	SOLID	LA-508-481		0.216	pCi/g	1.00	0.013	03/15/06	03/14/06	03/14/06
W060000454	B1HVN0	K	E,T,C	Tl-208 Rel. Count Error (GEA)	SOLID	LA-508-481		18.1	%	1.00	0.0	03/15/06	03/14/06	03/14/06
W060000454	B1HVN0	K	13994-20-2	Np-237 by AEA	SOLID	LA-508-471	J	4.60e-03	pCi/g	1.00	2.1e-03	03/22/06	03/14/06	03/14/06
W060000454	B1HVN0	K	E,T,C	Np-237 by AEA Total Ctng Error	SOLID	LA-508-471		80.0	%	1.00	0.0	03/22/06	03/14/06	03/14/06
W060000454	B1HVN0	K	13981-16-3	Pu-238 by AEA	SOLID	LA-508-471	U	-3.00e-03	pCi/g	1.00	0.026	03/27/06	03/14/06	03/14/06
W060000454	B1HVN0	K	E,T,C	Pu-238 by AEA Total Cntg Error	SOLID	LA-508-471		470	%	1.00	0.0	03/27/06	03/14/06	03/14/06
W060000454	B1HVN0	K	PU-239/240	Pu-239/240 by AEA	SOLID	LA-508-471	U	9.80e-04	pCi/g	1.00	2.7e-03	03/27/06	03/14/06	03/14/06
W060000454	B1HVN0	K	E,T,C	Pu-239/240 AEA Total Cntg Err	SOLID	LA-508-471		200	%	1.00	0.0	03/27/06	03/14/06	03/14/06
W060000454	B1HVN0	K	10098-97-2	Sr-89/90 by Beta Counting	SOLID	LA-508-415		0.520	pCi/g	1.00	0.20	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	E,T,C	Sr-89/90 Rel. Count Error	SOLID	LA-508-415		55.0	%	1.00	0.0	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	14133-76-7	Tc-99 by Liquid Scin.	SOLID	LA-508-421	U	-0.300	pCi/g	1.00	0.50	03/18/06	03/14/06	03/14/06

MDL = Minimum Detection Limit
RQ = Result Qualifier

B - The Analyte detected in both the BLANK and the SAMPLE (org.)
E - Analyte is an estimate, has potentially larger errors
X - Other flags and notes described in the comments/narrative.
B - The analyte < the RDL but > = the IDL/MDL (inorganic)
U - Analyzed for but not detected above limiting criteria.

DF = Dilution Factor

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

4/19/06

020000

WSCF
ANALYTICAL RESULTS REPORT

Attention: Deanna Klages H8-40 **Group #:** 20060178

Sample #	Client ID		CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W060000454	B1HVN0	K	E,T,C	Tc-99 Counting Error	SOLID	LA-508-421		100	%	1.00	0.0	03/18/06	03/14/06	03/14/06
W060000454	B1HVN0	K	13966-29-5	U-234 by AEA	SOLID	LA-508-471	J	0.210	pCi/g	1.00	6.9e-03	03/27/06	03/14/06	03/14/06
W060000454	B1HVN0	K	E,T,C	U-233/234 AEA Total Cntg Error	SOLID	LA-508-471		29.0	%	1.00	0.0	03/27/06	03/14/06	03/14/06
W060000454	B1HVN0	K	15117-96-1	U-235 by AEA	SOLID	LA-508-471		0.0340	pCi/g	1.00	0.011	03/27/06	03/14/06	03/14/06
W060000454	B1HVN0	K	E,T,C	U-235 by AEA Total Cntg Error	SOLID	LA-508-471		46.0	%	1.00	0.0	03/27/06	03/14/06	03/14/06
W060000454	B1HVN0	K	24678-82-8	U-238 by AEA	SOLID	LA-508-471		0.200	pCi/g	1.00	2.6e-03	03/27/06	03/14/06	03/14/06
W060000454	B1HVN0	K	E,T,C	U-238 by AEA Total Cntg Error	SOLID	LA-508-471		29.0	%	1.00	0.10	03/27/06	03/14/06	03/14/06

000021

4/14/06

MDL=Minimum Detection Limit
RQ=Result Qualifier

B - The Analyte detected in both the BLANK and the SAMPLE (org.)
E - Analyte is an estimate, has potentially larger errors
X - Other flags and notes described in the comments/narrative.

B - The analyte < the RDL but > = the IDL/MDL (inorganic)
U - Analyzed for but not detected above limiting criteria.

DF=Dilution Factor

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

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

Sample Delivery Group	**WSCF20060178**
Sample Matrix	**SOLID**
Sample Visual	**N/A**
SAF Number	**R06-013**
Data Deliverable	**Summary Report**

Introduction

Six soil samples (B1HVM6, B1HVM8, B1HVN0, B1HVN2, B3HVN3 and B1HVN4) from the 200-UW-1 Operable Unit Trench were received at the WSCF Laboratory on March 14, 2006. The samples were received in a cool condition with ice present in the coolers. The samples were analyzed for the analytes indicated on the attached copy of the chain of custody (COC) form in accordance with the *200-UW-1 Operable Unit Letter of Instruction*, referenced in the cover letter.

With the exception of VOA, all samples were taken using the Multi-Increment Sampling Program, which requires the entire sample submitted to be analyzed. This does not allow for laboratory sample duplicates or matrix spikes.

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 sample receipt are included as Attachment 3.

Analytical Methodology for Requested Analyses

Refer to *WSCF Method References Report,* pages 43 through 44, for a complete listing of approved analytical methods used.

Inorganic Comments

Anions - The hold times for this analysis were met. A Blank and Laboratory Control Sample were analyzed with this batch of less than 20 samples. See page 67 for QC details. All QC controls are within the established limits.

ICP-AES Metals – The hold time for this analysis was met. A Blank and Laboratory Control Sample were analyzed with this delivery group of less than 20 samples. See page 48 for QC details. Analytical Notes:

- Sample results are reported in ug/g while blank values are reported as ug/L.
- Bismuth, Magnesium, Lithium and Silicon were detected in the associated preparation Blank sample, but none of the samples were affected.
- Iron and Potassium yielded high Laboratory Control Sample recoveries, resulting in an "E" flag.

- Titanium, Bismuth and Silicon yielded low Laboratory Control Sample recoveries, resulting in an "X" flag.

All other QC controls are within the established limits.

ICP-MS Metals – The hold time for this analysis was met. A Blank and Laboratory Control Sample were analyzed with this batch of less than 20 samples. See pages 68 through 69. Analytical Notes:

- Aluminum and Nickel were detected in the associated preparation Blank, however there was no impact to the sample results.
- Silver and Antimony yielded low Laboratory Control Sample recoveries due to an apparent digestion problem, resulting in an "X" flag.
- Thorium results listed in the report represent Th-232 exclusively.

All other QC controls are within the established limits.

pH - Laboratory QC control is within the established limits. See page 24 for QC detail.

Percent Solids – analyzed for organic moisture correction.

Organic Comments

- Sample results are moisture corrected and reported on dry weight basis.

Semi-VOA – The hold time for this analysis was met. A Blank, Laboratory Control Sample, and Laboratory Control Sample Duplicate were analyzed with this delivery group of less than 20 samples. See pages 53 through 57 for QC details. Analytical Notes;

Since there was no Matrix Spike or Matrix Spike Duplicate run with this batch, the Relative Percent Difference (RPD) percentages are summarized below using LCS and LCS Duplicate QC Yields:

Additional Batch QC Data - SVOAs

QC Type	Analyte	CAS#	QC Yield %	RPD %
LCS	1,2,4-Trichlorobenzene	120-82-1	94.5%	
LCS – Duplicate	1,2,4-Trichlorobenzene	120-82-1	101.0%	6.650%
LCS	1,4-Dichlorobenzene	106-46-7	89.9%	

Additional Batch QC Data - SVOAs

QC Type	Analyte	CAS#	QC Yield	RPD %
LCS - Duplicate	1,4-Dichlorobenzene	106-46-7	97.8%	8.418%
LCS	2,4-Dinitrotoluene	121-14-2	85.9%	
LCS - Duplicate	2,4-Dinitrotoluene	121-14-2	93.9%	8.899%
LCS	2-Fluorophenol	367-12-4	96.4%	
LCS - Duplicate	2-Fluorophenol	367-12-4	104.0%	7.585%
LCS	Acenaphthene	83-32-9	96.9%	
LCS - Duplicate	Acenaphthene	83-32-9	104.0%	7.068%
LCS	4-Chloro-3-methylphenol	59-50-7	94.6%	
LCS - Duplicate	4-Chloro-3-methylphenol	59-50-7	101.0%	6.544%
LCS	2-Chlorophenol	95-57-8	93.1%	
LCS - Duplicate	2-Chlorophenol	95-57-8	101.0%	8.140%
LCS	N-Nitrosodi-n-dipropylamine	621-64-7	94.3%	
LCS - Duplicate	N-Nitrosodi-n-dipropylamine	621-64-7	102.0%	7.845%
LCS	2-Fluorobiphenyl	321-60-8	97.7%	
LCS – Duplicate	2-Fluorobiphenyl	321-60-8	107.0%	9.086%
LCS	Phenol	108.95-2	93.4%	
LCS -	Phenol	108.95-2	101.0%	7.819%

Additional Batch QC Data - SVOAs				
QC Type	Analyte	CAS#	QC Value	RPD %
Duplicate				
LCS	Nitrobenzene-d5	4165-60-0	98.5%	
LCS - Duplicate	Nitrobenzene-d5	4165-60-0	107.0%	8.273%
LCS	4-Nitrophenol	100-02-7	101.0%	
LCS - Duplicate	4-Nitrophenol	100-02-7	100.0%	0.995%
LCS	Pentachlorophenol	87-86-5	102.0%	
LCS - Duplicate	Pentachlorophenol	87-86-5	104.0%	1.942%
LCS	Phenol-d5	4165-62-2	98.0%	
LCS - Duplicate	Phenol-d5	4165-62-2	105.0%	6.897%
LCS	Pyrene	129-00-0	94.8%	
LCS - Duplicate	Pyrene	129-00-0	102.0%	7.317%
LCS	2,4,6-Tribromophenol	118-79-6	88.3%	
LCS - Duplicate	2,4,6-Tribromophenol	118-79-6	94.8%	7.100%
LCS	Terphenyl-d14	98904-43-9	96.4%	
LCS - Duplicate	Terphenyl-d14	98904-43-9	105.0%	8.540%

TPHD-WA - The hold time for this analysis was met. A Blank, Laboratory Control Sample, and Laboratory Control Sample Duplicate were analyzed with this delivery group of less than 20 samples. See page 59 for QC details. Analytical Note:

Since there was no Matrix Spike or Matrix Spike Duplicate run with this batch, the Relative Percent Difference (RPD) percentages are summarized below using LCS and LCS Duplicate QC Yields:

Batch QC Data				
QC Type	**Analyte**	**CAS#**	**QC**	
			Yield	**RPD %**
LCS	ortho-Terphenyl (surr)	84-15-1	102.0%	
LCS - Duplicate	ortho-Terphenyl (surr)	84-15-1	102.0%	2.740%
LCS	TOTAL Pet. Hydrocarbons Diesel	TPHDIESEL	98.8%	
LCS - Duplicate	TOTAL Pet. Hydrocarbons Diesel	TPHDIESEL	99.6%	0.806%

All QC controls are within the established limits.

VOA – The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with this delivery group of less than 20 samples. See pages 63 through 66 for QC details. All QC controls are within the established limits.

Radiochemistry Comments

There are no hold times associated with WSCF radiochemical methods.

Tecnicium-99 - A Blank, Laboratory Control Sample, Post Digestion Spike and Post Digestion Duplicate were analyzed with this delivery group of less than 20 samples. See pages 47 for QC details. All QC controls are within the established limits.

Strontium – 89/90 – A Blank and Laboratory Control Sample were analyzed with this batch of less than 20 samples. See page 49 for QC details. All QC controls are within the established limits.

Gamma Energy Analysis (GEA) – A Blank, Laboratory Control Sample and Sample Duplicate were analyzed with this batch of less than 20 samples. See page 50 through 52 for QC details. All QC controls are within the established limits.

Neptunium-237 – A Blank and Laboratory Control Sample were analyzed with this batch of less than 20 samples. See page 58 for QC details. All QC controls are within the established limits.

Uranium Isotopic – A Blank and Laboratory Control Sample were analyzed with this batch of less than 20 samples. See page 60 for QC details. All QC controls are within the established limits.

Plutonium Isotopic - A Blank and Laboratory Control Sample were analyzed with this batch of less than 20 samples. See page 61 for QC details. All QC controls are within the established limits.

Amercium-241 – A Blank and Laboratory Control Sample were analyzed with this batch of less than 20 samples. See page 62 for QC details. All QC controls are within the established limits.

Radiochemical Matrix Spike Recovery

Sample Number	Lab Sample ID	Isotope	Spike Recovery (Percent)
Neptunium-237			
B1HVM6	W060000452	Np-237	94.0%
B1HVM8	W060000453	Np-237	94.7%
B1HVN0	W060000454	Np-237	92.6%

Radiochemical Tracer Percent Recovery

Sample Number	Lab Sample ID	Isotope	Tracer Recovery (Percent)
Americium-243			
BLANK		Am-243	84.5%
LCS		Am-243	86.2%
B1HVM6	W060000452	Am-243	72.3%
B1HVM8	W060000453	Am-243	92.8%
B1HVN0	W060000454	Am-243	70.9%
Plutonium-242			
BLANK		Pu-242	85.3%
LCS		Pu-242	90.9%
B1HVM6	W060000452	Pu-242	79.4%

Radiochemical Tracer Percent Recovery			
Sample Number	Lab Sample ID	Isotope	Tracer Recovery (Percent)
B1HVM8	W060000453	Pu-242	99.0%
B1HVN0	W060000454	Pu-242	87.9%
Strontium-85			
BLANK		Sr-85	89.0%
LCS		Sr-85	80.5%
B1HVM6	W060000452	Sr-85	67.4%
B1HVM8	W060000453	Sr-85	89.6%
B1HVN0	W060000454	Sr-85	90.3%
Uranium-232			
BLANK		U-232	85.1%
LCS		U-232	72.9%
B1HVM6	W060000452	U-232	89.9%
B1HVM8	W060000453	U-232	85.7%
B1HVN0	W060000454	U-232	84.0%

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.

John E. Trechter

John E. Trechter
WSCF Client Services

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	R06-013-002	PAGE 1 OF 2

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 9C	DATA TURNAROUND
KB Hulse 3/29/06	TRECHTER, JE	373-7046	TRECHTER, JE	AIR QUALITY ☐	15 Days / 15 Days
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**		
200-UW-1	200-UW-1 Operable Unit, Soil from Trench between 216-U-8 and 216-U-12		R06-013		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA**	**METHOD OF SHIPMENT**		
SESP	DTS-SAWS-H100	121600ES20	GOVERNMENT VEHICLE		
SHIPPED TO	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		
Waste Sampling & Characterization	N/A		N/A		

MATRIX*
OL = OTHER LIQUID
OS = OTHER SOLID
S = SOIL
W = WATER

SPECIAL HANDLING AND/OR STORAGE: 20060178

POSSIBLE SAMPLE HAZARDS/ REMARKS

SAMPLE NO.	LAB ID	MATRIX*	SAMPLE DATE	SAMPLE TIME	NO./TYPE CONTAINER(S)	ANALYSIS	PRESERVATION
B1HVM6	W060000452	S	3-14-06	0950	1X60mL aG 23.6 grams	SEE ITEM (1) IN SPECIAL INSTRUCTIONS See SAF R06-013 JET	Cool 4C
B1HVM6		S			1X60mL G 23.4 grams	TPH-Diesel Range - WTPH-D {TPHKEROSEN}	Cool 4C
B1HVM6		S			1X500mL Square Bottle - Poly 647 grams	SEE ITEM (2) IN SPECIAL INSTRUCTIONS See SAF R06-013 JET for GEA	None
B1HVM6		S			1X60mL G/P 24.4 grams	Isotopic Plutonium {Pu-238, Pu-239/240} Isotopic Uranium {U-233/234, U-235, U-238} Americium-241 {Am-241}	None
B1HVM6		S			1X60mL G/P 23.6 grams	Strontium-89,90 -- Sr-90 {Sr-90}	None
B1HVM6		S			1X60mL G/P 23.8 grams	Technetium-99 {Tc-99}	None
B1HVM6		S			1X60mL G/P 23.3 grams	Neptunium-237 {Np-237}	None

000030

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
K.B. HULSE K.B. Hulse	3/14/06 1355	TA FRAZIER Tina Frazier	3/14/06 1355
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS

Reporting format the same as GPP, including QC. All samples, except VOAs, have been taken using the multiple-increment sampling program. This requires the entire sample provided in each bottle to be used in analysis. VOAs will be analyzed as usual.

(1)Semi-VOA -- 8270A (Add-On) {124TRMEBEN, 2-NAPHTHAM, 2BUTOXETOL, BENZALC, CYCHEXN, DECANE, MCRESOL, METHYLPHEN, PYRIDINE, TRIBUPH} Semi-VOA - 8270A (TCL) {12DICLBENZ, 13DICLBENZ, 14DICLBENZ, 245TRCLPHN, 246TRCLPHN, 24DICLPHEN, 24DIMET, 24DINITOLU, 26DINITOLU, 2CLMEETHER, 2MENAPH, 2METHPH, 2NITRAN, 2NITRPH, 3NITRAN, 46DINIT, 4CHLOET, 9H-CARB, ACENAPH, ACENATL, ANTHRACENE, BENZAAN, BENZBFL, BENZOPE,

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

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	R06-013-002	PAGE 2 OF 2

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 9C	DATA TURNAROUND
KG Hulse	TRECHTER, JE	373-7046	TRECHTER, JE	AIR QUALITY ☐	15 Days / 15 Days
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**		
200-UW-1	200-UW-1 Operable Unit, Soil from Trench between 216-U-8 and 216-U-12		R06-013		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA**	**METHOD OF SHIPMENT**		
SESP	OTS-SAWS-H100	121600ES20	GOVERNMENT VEHICLE		
SHIPPED TO	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		
Waste Sampling & Characterization	N/A		N/A		

MATRIX*
OL = OTHER LIQUID
OS = OTHER SOLID
S = SOIL
W = WATER

SPECIAL HANDLING AND/OR STORAGE

POSSIBLE SAMPLE HAZARDS/ REMARKS

SAMPLE NO.	LAB ID	MATRIX*	SAMPLE DATE	SAMPLE TIME	NO./TYPE CONTAINER(S)	ANALYSIS	PRESERVATION
B1HVM6		S	3-14-06	0950	1X60mL G/P 21.9 grams	IC Anions - 300.0 {BROMIDE, CHLORIDE, FLUORIDE, NO2-N, NO3-N, PO4-P, SULFATE}	None
B1HVM6		S			1X60mL G/P 23 grams	ICP Metals - 6010A (Add-on) {B, Bi, La, Li, Si, Sm, Ti} ICP Metals - 6010A (TAL) {Al, Ca, Fe, K, Mg, Na}	Cool 4C
B1HVM6		S			1X60mL G/P 21.2 grams	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	None

000031

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
KG Hulse	3-14-06 1355	TA FRAZIER Teresa Frazier	3-14-06 1355
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS

Reporting format the same as GPP, including QC. All samples, except VOAs, have been taken using the multiple-increment sampling program. This requires the entire sample provided in each bottle to be used in analysis. VOAs will be analyzed as usual.
(3)ICP/MS - 200.8 (Add-on) {As, Be, Mo, Pb, Se, Sn, Sr, Tl, U} ICP/MS - 200.8 (TAL) {Ag, Ba, Cd, Co, Cr, Cu, Mn, Ni, Sb, V, Zn} ICP/MS - 200.8 (Hg) {Hg} Isotopic Thorium {Th-232}

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

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	R06-013-003	PAGE 1 OF 2

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 9C	DATA TURNAROUND
KB Hulse	TRECHTER, JE	373-7046	TRECHTER, JE	AIR QUALITY —	15 Days / 15 Days
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**		
200-UW-1	200-UW-1 Operable Unit, Soil from Trench between 216-U-8 and 216-U-12		R06-013		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA**	**METHOD OF SHIPMENT**		
SESP	DTS-SAWS-H100	121600ES20	GOVERNMENT VEHICLE		
SHIPPED TO	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		
Waste Sampling & Characterization	N/A		N/A		

MATRIX*
OL = OTHER LIQUID
OS = OTHER SOLID
S = SOIL
W = WATER

SPECIAL HANDLING AND/OR STORAGE

POSSIBLE SAMPLE HAZARDS/ REMARKS

SAMPLE NO.	LAB ID	MATRIX*	SAMPLE DATE	SAMPLE TIME	NO./TYPE CONTAINER(S)	ANALYSIS	PRESERVATION
B1HVM8	WCG 0000453	S	3/14/06	1010	1X60mL aG 24.2 grams	SEE ITEM (1) IN SPECIAL INSTRUCTIONS See SAF R06-013	Cool 4C
B1HVM8		S			1X60mL G 23.2 grams	TPH-Diesel Range - WTPH-D {TPHKEROSEN}	Cool 4C
B1HVM8		S			1X500mL Square Bottle - Poly 491 grams	SEE ITEM (2) IN SPECIAL INSTRUCTIONS See SAF R06-013 for GEA	None
B1HVM8		S			1X60mL G/P 22.6 grams	Isotopic Plutonium {Pu-238, Pu-239/240} Isotopic Uranium {U-233/234, U-235, U-238} Americium-241 {Am-241}	None
B1HVM8		S			1X60mL G/P 23.1 grams	Strontium-89,90 -- Sr-90 {Sr-90}	None
B1HVM8		S			1X60mL G/P 24.2 grams	Technetium-99 {Tc-99}	None
B1HVM8		S			1X60mL G/P 24.7 grams	Neptunium-237 {Np-237}	None

0000032

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
K.B. HULSE KB Hulse	3/14/06 1355	TA FRAZIER Teresa Frazier	3/14/06 1355
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS

Reporting format the same as GPP, including QC. All samples, except VOAs, have been taken using the multiple-increment sampling program. This requires the entire sample provided in each bottle to be used in analysis. VOAs will be analyzed as usual.
(1)Semi-VOA -- 8270A (Add-On) {124TRMEBEN, 2-NAPHTHAM, 2BUTOXETOL, BENZALC, CYCHEXN, DECANE, MCRESOL, METHYLPHEN, PYRIDINE, TRIBUPH} Semi-VOA - 8270A (TCL) {12DICLBENZ, 13DICLBENZ, 14DICLBENZ, 245TRCLPHN, 246TRCLPHN, 24DICLPHEN, 24DIMET, 24DINITOLU, 26DINITOLU, 2CLMEETHER, 2MENAPH, 2METHPH, 2NITRAN, 2NITRPH, 3NITRAN, 46DINIT, 4CHLOET, 9H-CARB, ACENAPH, ACENATL, ANTHRACENE, BENZAAN, BENZBFL, BENZOPE,

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

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	R06-013-003	PAGE 2 OF 2

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 9C	DATA TURNAROUND
KB Hulse	TRECHTER, JE	373-7046	TRECHTER, JE		
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**	**AIR QUALITY** ☐	15 Days / 15 Days
200-UW-1	200-UW-1 Operable Unit, Soil from Trench between 216-U-8 and 216-U-12		R06-013		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA**	**METHOD OF SHIPMENT**		
SESP	DTS-SAWS-H100	121600ES20	GOVERNMENT VEHICLE		
SHIPPED TO	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		
Waste Sampling & Characterization	N/A		N/A		

MATRIX*
OL = OTHER LIQUID
OS = OTHER SOLID
S = SOIL
W = WATER

SPECIAL HANDLING AND/OR STORAGE

POSSIBLE SAMPLE HAZARDS/ REMARKS

SAMPLE NO.	LAB ID	MATRIX*	SAMPLE DATE	SAMPLE TIME	NO./TYPE CONTAINER(S)	ANALYSIS	PRESERVATION
B1HVM8		S	3/14/06	1010	1X60mL G/P 23.0 grams	IC Anions - 300.0 {BROMIDE, CHLORIDE, FLUORIDE, NO2-N, NO3-N, PO4-P, SULFATE}	None
B1HVM8		S	↓	↓	1X60mL G/P 23.9 grams	ICP Metals - 6010A (Add-on) {B, Bi, La, Li, Si, Sm, Tl} ICP Metals - 6010A (TAL) {Al, Ca, Fe, K, Mg, Na}	Cool 4C
B1HVM8		S	↓	↓	1X60mL G/P 25.0 grams	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	None

000033

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
K.B. HULSE KB Hulse	3-14-06 1355	TABRAZIRA Tabrazira	3/14/06 1355
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS

Reporting format the same as GPP, including QC. All samples, except VOAs, have been taken using the multiple-increment sampling program. This requires the entire sample provided in each bottle to be used in analysis. VOAs will be analyzed as usual.
(3)ICP/MS - 200.8 (Add-on) {As, Be, Mo, Pb, Se, Sn, Sr, Tl, U} ICP/MS - 200.8 (TAL) {Ag, Ba, Cd, Co, Cr, Cu, Mn, Ni, Sb, V, Zn} ICP/MS - 200.8 (Hg) {Hg} Isotopic Thorium {Th-232}

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

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	R06-013-004	PAGE 1 OF 2

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 9C	DATA TURNAROUND
KB Hulse	TRECHTER, JE	373-7046	TRECHTER, JE	AIR QUALITY ☐	15 Days / 15 Days
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**		
200-UW-1	200-UW-1 Operable Unit, Soil from Trench between 216-U-8 and 216-U-12		R06-013		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA**	**METHOD OF SHIPMENT**		
SESP	DTS-SAWS-H100	121600ES20	GOVERNMENT VEHICLE		
SHIPPED TO	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		
Waste Sampling & Characterization	N/A		N/A		

MATRIX*
OL = OTHER LIQUID
OS = OTHER SOLID
S = SOIL
W = WATER

SPECIAL HANDLING AND/OR STORAGE

POSSIBLE SAMPLE HAZARDS/ REMARKS

SAMPLE NO.	LAB ID	MATRIX*	SAMPLE DATE	SAMPLE TIME	NO./TYPE CONTAINER(S)	ANALYSIS	PRESERVATION
B1HVN0	954	S	3-14-06	1020	1X60mL aG 23.7 grams	SEE ITEM (1) IN SPECIAL INSTRUCTIONS See SAF R06-013 JET	Cool 4C
B1HVN0		S			1X60mL G 24.7 grams	TPH-Diesel Range - WTPH-D {TPHKEROSEN}	Cool 4C
B1HVN0		S			1X500mL Square Bottle - Poly 621 grams	SEE ITEM (2) IN SPECIAL INSTRUCTIONS See SAF R06-013 for GEA JET	None
B1HVN0		S			1X60mL G/P 34.4 grams	Isotopic Plutonium {Pu-238, Pu-239/240} Isotopic Uranium {U-233/234, U-235, U-238} Americium-241 {Am-241}	None
B1HVN0		S			1X60mL G/P 24.1 grams	Strontium-89,90 -- Sr-90 {Sr-90}	None
B1HVN0		S			1X60mL G/P 23.6 grams	Technetium-99 {Tc-99}	None
B1HVN0		S			1X60mL G/P 23.6 grams	Neptunium-237 {Np-237}	None

000034

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
K.B. HULSE [signature]	3/14/06 1355	TA FRAZIER [signature]	3/14/06 1355
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
K.B. HULSE			
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS

Reporting format the same as GPP, including QC. All samples, except VOAs, have been taken using the multiple-increment sampling program. This requires the entire sample provided in each bottle to be used in analysis. VOAs will be analyzed as usual.
(1)Semi-VOA -- 8270A (Add-On) {124TRMEBEN, 2-NAPHTHAM, 2BUTOXETOL, BENZALC, CYCHEXN, DECANE, MCRESOL, METHYLPHEN, PYRIDINE, TRIBUPH} Semi-VOA - 8270A (TCL) {12DICLBENZ, 13DICLBENZ, 14DICLBENZ, 245TRCLPHN, 246TRCLPHN, 24DICLPHEN, 24DIMET, 24DINITOLU, 26DINITOLU, 2CLMEETHER, 2MENAPH, 2METHPH, 2NITRAN, 2NITRPH, 3NITRAN, 46DINIT, 4CHLOET, 9H-CARB, ACENAPH, ACENATL, ANTHRACENE, BENZAAN, BENZBFL, BENZOPE,

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

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	R06-013-004	PAGE 2 OF 2

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 9C	DATA TURNAROUND
KB Hulse	TRECHTER, JE	373-7046	TRECHTER, JE		
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**	**AIR QUALITY** ☐	15 Days / 15 Days
200-UW-1	200-UW-1 Operable Unit, Soil from Trench between 216-U-8 and 216-U-12		R06-013		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA**	**METHOD OF SHIPMENT**		
SESP	DTS-SAWS-H100	121600ES20	GOVERNMENT VEHICLE		
SHIPPED TO	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		
Waste Sampling & Characterization	N/A		N/A		

MATRIX*
OL = OTHER LIQUID
OS = OTHER SOLID
S = SOIL
W = WATER

SPECIAL HANDLING AND/OR STORAGE

POSSIBLE SAMPLE HAZARDS/ REMARKS

SAMPLE NO.	LAB ID	MATRIX*	SAMPLE DATE	SAMPLE TIME	NO./TYPE CONTAINER(S)	ANALYSIS	PRESERVATION
B1HVN0		S	3-14-06	1020	1X60mL G/P 24.6 grams	IC Anions - 300.0 {BROMIDE, CHLORIDE, FLUORIDE, NO2-N, NO3-N, PO4-P, SULFATE}	None
B1HVN0		S	↓	↓	1X60mL G/P 23.8 grams	ICP Metals - 6010A (Add-on) {B, Bi, La, Li, Si, Sm, Ti} ICP Metals - 6010A (TAL) {Al, Ca, Fe, K, Mg, Na}	Cool 4C
B1HVN0		S	↓	↓	1X60mL G/P 24.9 grams	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	None

000035

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
K. B. HULSE KB Hulse	3/14/06 1355	TA FIRAZIER	3/14/06 1355
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS

Reporting format the same as GPP, including QC. All samples, except VOAs, have been taken using the multiple-increment sampling program. This requires the entire sample provided in each bottle to be used in analysis. VOAs will be analyzed as usual.
(3)ICP/MS - 200.8 (Add-on) {As, Be, Mo, Pb, Se, Sn, Sr, Tl, U} ICP/MS - 200.8 (TAL) {Ag, Ba, Cd, Co, Cr, Cu, Mn, Ni, Sb, V, Zn} ICP/MS - 200.8 (Hg) {Hg} Isotopic Thorium {Th-232}

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

Appendix 5

Data Validation Supporting Documentation

APPENDIX A

RADIOCHEMICAL DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	C	D	E
PROJECT: 200-UW-1			DATA PACKAGE: 60718		
VALIDATOR: TLI		LAB: WSCF		DATE: 4/15/00	
			SDG: 60718		
ANALYSES PERFORMED					
Gross Alpha/Beta	Strontium-90	Technetium-99	Alpha Spectroscopy	Gamma Spectroscopy	
Total Uranium	Radium-22	Tritium			
SAMPLES/MATRIX					
B18VM6	B18VM8	B18VN0			
					Soil

1. Completeness ..... ☐ N/A

Technical verification forms present? ..... Yes No N/A

Comments: _____

2. Initial Calibration (Levels D, E) ..... ☒ N/A

Instruments/detectors calibrated? ..... Yes No N/A

Initial calibration acceptable? ..... Yes No N/A

Standards NIST traceable? ..... Yes No N/A

Standards Expired? ..... Yes No N/A

Calculation check acceptable? ..... Yes No N/A

Comments: _____

3. Continuing Calibration (Levels D, E) ☒ N/A

Calibration checked within required frequency? ..... Yes No N/A

Calibration check acceptable? ..... Yes No N/A

Calibration check standards traceable? ..... Yes No N/A

Calibration check standards expired? ..... Yes No N/A

Calculation check acceptable? ..... Yes No N/A

Comments: _____

_____

_____

_____

_____

4. Background Counts (Levels D, E) ..... ☒ N/A

Background Counts checked within required frequency? ..... Yes No N/A

Background Counts acceptable? ..... Yes No N/A

Calculation check acceptable? ..... Yes No N/A

Comments: _____

_____

_____

_____

_____

5. Blanks (Levels B, C, D, E) ..... ☐ N/A

Method blank analyzed within required frequency? ..... Yes No N/A

Method blank results acceptable? ..... Yes No N/A

Analytes detected in method blank? ..... Yes No N/A

Field blank(s) analyzed? ..... Yes No N/A

Field blank results acceptable? ..... Yes No N/A

Analytes detected in field blank(s)? ..... Yes No N/A

Transcription/Calculation Errors? (Levels D, E) ..... Yes No N/A

Comments: pu-239 6+8 - J no FB

U-235 - 06 - J

SR-90 - all - J

6. Laboratory Control Samples or Blank Spike Samples (Levels C, D, E) ..... ☐ N/A

LCS /BSS analyzed within required frequency? ..... Yes No N/A

LCS/BSS recoveries acceptable? ..... Yes No N/A

LCS/BSS traceable? (Levels D,E) ..... Yes No N/A

LCS/BSS expired? (Levels D,E) ..... Yes No N/A

LCS/BSS levels correct? (Levels D,E) ..... Yes No N/A

Transcription/Calculation Errors? (Levels D, E) ..... Yes No N/A

Comments: no pu-238, U-234 + U235 LCS - J all

7. Chemical Carrier Recovery (Levels C, D, E) ..... ☒ N/A

Chemical carrier added? ..... Yes No N/A

Chemical recovery acceptable? ..... Yes No N/A

Chemical carrier traceable? (Levels D, E) ..... Yes No N/A

Chemical carrier expired? (Levels D, E) ..... Yes No N/A

Transcription/Calculation errors? (Levels D, E) ..... Yes No N/A

Comments: _____

8. Tracer Recovery (Levels C, D, E) ..... ☐ N/A

Tracer added? ..... Yes No N/A

Tracer recovery acceptable? ..... Yes No N/A

Tracer traceable? (Levels D, E) ..... Yes No N/A

Tracer expired? (Levels D, E) ..... Yes No N/A

Transcription/Calculation errors? (Levels D, E) ..... Yes No N/A

Comments: no tracer added

9. Matrix Spikes (Levels C, D, E) ..... ☐ N/A

Matrix spike analyzed? ..... Yes No N/A

Spike recoveries acceptable? ..... Yes No N/A

Spike source traceable? (Levels D, E) ..... Yes No N/A

Spike source expired? Levels D, E) ..... Yes No N/A

Transcription/Calculation Errors? (Levels D, E) ..... Yes No N/A

Comments: _____

10. Duplicates (Levels C, D, E) ..... ☐ N/A

Duplicates Analyzed at required frequency? ..... Yes (No) N/A

RPD Values Acceptable? ..... (Yes) No N/A

Transcription/Calculation Errors? (Levels D, E) ..... Yes No (N/A)

Comments: no dup for all but gea - J
+ Tc99

11. Field QC Samples (Levels C, D E) ..... ☐ N/A

Field duplicate sample(s) analyzed? ..... Yes (No) N/A

Field duplicate RPD values acceptable? ..... Yes No (N/A)

Field split sample(s) analyzed? ..... Yes (No) N/A

Field split RPD values acceptable? ..... Yes No (N/A)

Performance audit sample(s) analyzed? ..... Yes (No) N/A

Performance audit sample results acceptable? ..... Yes No (N/A)

Comments: no Field QC

12. Holding Times (All levels)

Are sample holding times acceptable? ..... (Yes) No N/A

Comments:

13. Results and Detection Limits (All Levels) ☐ N/A

Results reported for all required sample analyses? Yes No N/A

Results supported in raw data?(Levels D, E) Yes No N/A

Results Acceptable? (Levels D, E) Yes No N/A

Transcription/Calculation errors? (Levels D, E) Yes No N/A

MDA's meet required detection limits? Yes No N/A

Transcription/calculation errors? (Levels D, E) Yes No N/A

Comments:

Appendix 6

Additional Documentation Requested by Client

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: 20060178
Matrix: SOLID
Test: Plutonium Isotopics by AEA

SAF Number: R06-013
Sample Date:
Receive Date:

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
BATCH QC									
BLANK	Pu-238 by AEA	13981-16-3	U1.2e-03	n/a	pCi/g	03/27/06	-10.000	1000.000	
BLANK	Pu-239/240 by AEA	PU-239/240	5.8e-03	0.006	pCi/g	03/27/06	-10.000	1000.000	
LCS	Pu-239/240 by AEA	PU-239/240	1.2e+01	93.422	% Recov	03/27/06	75.000	125.000	

000044

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: 20060178
Matrix: SOLID
Test: Americium by AEA

SAF Number: R06-013
Sample Date:
Receive Date:

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
BATCH QC									
BLANK	Am-241 by AEA	14596-10-2	U4.3e-03	n/a	pCi/g	03/27/06	-10.000	1000.000	
LCS	Am-241 by AEA	14596-10-2	1.2e+01	99.792	% Recov	03/27/06	75.000	125.000	

000045

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: 20060178
Matrix: SOLID
Test: Uranium Isotopics by AEA

SAF Number: R06-013
Sample Date:
Receive Date:

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
BATCH QC									
BLANK	U-234 by AEA	13966-29-5	U7.9e-03	n/a	pCi/g	03/27/06	-10.000	1000.000	
BLANK	U-235 by AEA	15117-96-1	4.9e-03	0.005	pCi/g	03/27/06	-10.000	1000.000	
BLANK	U-238 by AEA	24678-82-8	1.1E-03	0.001	pCi/g	03/27/06	-10.000	1000.000	
LCS	U-238 by AEA	24678-82-8	1.9e+01	100.237	% Recov	03/27/06	75.000	125.000	

000046

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: 20060178
Matrix: SOLID
Test: TC99 by Liquid Scin.

SAF Number: R06-013
Sample Date: 03/14/06
Receive Date:03/14/06

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
Lab ID: W060000452									
BATCH QC ASSOCIATED WITH SAMPLE									
DUP	Tc-99 by Liquid Scin.	14133-76-7	U-0.7	n/a	RPD	03/18/06	0.000	20.000	
MS	Tc-99 by Liquid Scin.	14133-76-7	86.0	86.000	% Recov	03/18/06	75.000	125.000	
BATCH QC									
BLANK	Tc-99 by Liquid Scin.	14133-76-7	-0.2	-0.200	pCi/g	03/18/06	-10.000	1000.000	
LCS	Tc-99 by Liquid Scin.	14133-76-7	10.1	89.381	% Recov	03/18/06	75.000	125.000	

000047

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: 20060178
Matrix: SOLID
Test: Neptunium by AEA

SAF Number: R06-013
Sample Date:
Receive Date:

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
BATCH QC									
BLANK	Np-237 by AEA	13994-20-2	U7.8e-04	n/a	pCi/g	03/22/06	-10.000	1000.000	
LCS	Np-237 by AEA	13994-20-2	8.4e+01	84.000	% Recov	03/22/06	75.000	125.000	

000048

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: 20060178
Matrix: SOLID
Test: Strontium 89/90

SAF Number: R06-013
Sample Date:
Receive Date:

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
BATCH QC									
BLANK	Sr-89/90 by Beta Counting	10098-97-2	1.7	1.700	pCi/g	03/20/06	-10.000	300.000	
LCS	Sr-89/90 by Beta Counting	10098-97-2	76.7	107.952	% Recov	03/20/06	80.000	120.000	

000049

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: 20060178
Matrix: SOLID
Test: Gamma Energy Analysis-grd H2O

SAF Number: R06-013
Sample Date: 03/14/06
Receive Date:03/14/06

Lab ID: W060000452
BATCH QC ASSOCIATED WITH SAMPLE

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
DUP	Ac-228 by GEA	14331-83-0	6.51e-01	1.977	RPD	03/15/06	0.000	20.000	
DUP	Am-241 by GEA	14596-10-2	U1.85e-02	n/a	RPD	03/15/06	0.000	20.000	
DUP	Ba-133 by GEA	13981-41-4	U-1.8E-03	n/a	RPD	03/15/06	0.000	20.000	
DUP	Bi-212 by GEA	14913-49-6	4.16e-01	0.240	RPD	03/15/06	0.000	20.000	
DUP	Bi-214 by GEA	14733-03-0	4.50e-01	14.050	RPD	03/15/06	0.000	20.000	
DUP	Ce-144 by GEA	14762-78-8	U-4.27e-2	n/a	RPD	03/15/06	0.000	20.000	
DUP	CePr-144 by GEA	CE/PR-144	U-1.8E-03	n/a	RPD	03/15/06	0.000	20.000	
DUP	Co-60 by GEA	10198-40-0	U4.52e-03	n/a	RPD	03/15/06	0.000	20.000	
DUP	Cs-134 by GEA	13967-70-9	U3.17e-02	n/a	RPD	03/15/06	0.000	20.000	
DUP	Cs-137 by GEA	10045-97-3	2.71e-02	8.863	RPD	03/15/06	0.000	20.000	
DUP	Eu-152 by GEA	14683-23-9	U-7.85e-3	n/a	RPD	03/15/06	0.000	20.000	
DUP	Eu-154 by GEA	15585-10-1	U1.13e-02	n/a	RPD	03/15/06	0.000	20.000	
DUP	Eu-155 by GEA	14391-16-3	6.79e-02	17.628	RPD	03/15/06	0.000	20.000	
DUP	K-40 by GEA	13966-00-2	1.34e+01	1.504	RPD	03/15/06	0.000	20.000	
DUP	Nb-94 by GEA	14681-63-1	U7.18e-03	n/a	RPD	03/15/06	0.000	20.000	
DUP	Pb-212 by GEA	15092-94-1	6.89e-01	2.946	RPD	03/15/06	0.000	20.000	
DUP	Pb-214 by GEA	15067-28-4	4.86e-01	15.385	RPD	03/15/06	0.000	20.000	
DUP	Ra-226 by GEA	13982-63-3	4.50e-01	14.050	RPD	03/15/06	0.000	20.000	
DUP	Ra-228 by GEA	15262-20-1	6.51e-01	1.977	RPD	03/15/06	0.000	20.000	
DUP	Ru-103 by GEA	13968-53-1	U-3.28e-3	n/a	RPD	03/15/06	0.000	20.000	
DUP	Ru-106 by GEA	13967-48-1	U1.30e-02	n/a	RPD	03/15/06	0.000	20.000	
DUP	Sb-125 by GEA	14234-35-6	U-1.15e-2	n/a	RPD	03/15/06	0.000	20.000	
DUP	Sn-113 by GEA	13966-06-8	U-7.03e-3	n/a	RPD	03/15/06	0.000	20.000	
DUP	Sn-126 by GEA	15832-50-5	U1.49e-01	n/a	RPD	03/15/06	0.000	20.000	
DUP	Th-234 by GEA	15065-10-8	U4.37e-01	n/a	RPD	03/15/06	0.000	20.000	
DUP	Tl-208 by GEA	14913-50-9	2.05e-01	3.357	RPD	03/15/06	0.000	20.000	

000050

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: 20060178
Matrix: SOLID
Test: Gamma Energy Analysis-grd H2O

SAF Number: R06-013
Sample Date: 03/14/06
Receive Date:03/14/06

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
DUP	U-235 by GEA	15117-96-1	U6.37e-02	n/a	RPD	03/15/06	0.000	20.000	
DUP	Zn-65 by GEA	13982-39-3	U-1.09e-2	n/a	RPD	03/15/06	0.000	20.000	

BATCH QC

BLANK	Ac-228 by GEA	14331-83-0	5.17e-02	0.052	pCi/g	03/16/06	-10.000	1000.000	
BLANK	Am-241 by GEA	14596-10-2	U-1.08e-2	n/a	pCi/g	03/16/06	-10.000	1000.000	
BLANK	Ba-133 by GEA	13981-41-4	U2.3E-03	n/a	pCi/g	03/16/06	-10.000	1000.000	
BLANK	Bi-212 by GEA	14913-49-6	6.59e-02	0.066	pCi/g	03/16/06	-10.000	1000.000	
BLANK	Bi-214 by GEA	14733-03-0	7.80e-02	0.078	pCi/g	03/16/06	-10.000	1000.000	
BLANK	Ce-144 by GEA	14762-78-8	U7.38e-03	n/a	pCi/g	03/16/06	-10.000	1000.000	
BLANK	CePr-144 by GEA	CE/PR-144	U1.5E-02	n/a	pCi/g	03/16/06	-10.000	1000.000	
BLANK	Co-60 by GEA	10198-40-0	U2.55e-04	n/a	pCi/g	03/16/06	-10.000	1000.000	
BLANK	Cs-134 by GEA	13967-70-9	U4.07e-03	n/a	pCi/g	03/16/06	-10.000	1000.000	
BLANK	Cs-137 by GEA	10045-97-3	U-1.73e-3	n/a	pCi/g	03/16/06	-10.000	1000.000	
BLANK	Eu-152 by GEA	14683-23-9	U-1.24e-3	n/a	pCi/g	03/16/06	-10.000	1000.000	
BLANK	Eu-154 by GEA	15585-10-1	U-3.73e-3	n/a	pCi/g	03/16/06	-10.000	1000.000	
BLANK	Eu-155 by GEA	14391-16-3	U1.31e-02	n/a	pCi/g	03/16/06	-10.000	1000.000	
BLANK	K-40 by GEA	13966-00-2	7.69e-02	0.077	pCi/g	03/16/06	-10.000	1000.000	
BLANK	Nb-94 by GEA	14681-63-1	U2.76e-03	n/a	pCi/g	03/16/06	-10.000	1000.000	
BLANK	Pb-212 by GEA	15092-94-1	4.71e-02	0.047	pCi/g	03/16/06	-10.000	1000.000	
BLANK	Pb-214 by GEA	15067-28-4	8.27e-02	0.083	pCi/g	03/16/06	-10.000	1000.000	
BLANK	Ra-226 by GEA	13982-63-3	7.80e-02	0.078	pCi/g	03/16/06	-10.000	1000.000	
BLANK	Ra-228 by GEA	15262-20-1	5.17e-02	0.052	pCi/g	03/16/06	-10.000	1000.000	
BLANK	Ru-103 by GEA	13968-53-1	U3.79e-04	n/a	pCi/g	03/16/06	-10.000	1000.000	
BLANK	Ru-106 by GEA	13967-48-1	U-1.79e-2	n/a	pCi/g	03/16/06	-10.000	1000.000	
BLANK	Sb-125 by GEA	14234-35-6	U-5.43e-3	n/a	pCi/g	03/16/06	-10.000	1000.000	
BLANK	Sn-113 by GEA	13966-06-8	U1.20e-03	n/a	pCi/g	03/16/06	-10.000	1000.000	
BLANK	Sn-126 by GEA	15832-50-5	U1.08e-02	n/a	pCi/g	03/16/06	-10.000	1000.000	
BLANK	Th-234 by GEA	15065-10-8	U1.19e-01	n/a	pCi/g	03/16/06	-10.000	1000.000	
BLANK	Tl-208 by GEA	14913-50-9	1.54e-02	0.015	pCi/g	03/16/06	-10.000	1000.000	

000051

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: 20060178
Matrix: SOLID
Test: Gamma Energy Analysis-grd H2O

SAF Number: R06-013
Sample Date:
Receive Date:

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
BLANK	U-235 by GEA	15117-96-1	U1.64e-02	n/a	pCi/g	03/16/06	-10.000	1000.000	
BLANK	Zn-65 by GEA	13982-39-3	U5.43e-03	n/a	pCi/g	03/16/06	-10.000	1000.000	
LCS	Am-241 by GEA	14596-10-2	4.14e+03	105.612	% Recov	03/17/06	80.000	120.000	
LCS	Co-60 by GEA	10198-40-0	4.35e+03	103.819	% Recov	03/17/06	80.000	120.000	
LCS	Cs-137 by GEA	10045-97-3	3.95e+03	110.335	% Recov	03/17/06	80.000	120.000	

000052

Date: 20 April 2006
To: Fluor Hanford Inc. (technical representative)
From: TechLaw, Inc.
Project: 200-UW-1 Operable Unit, Soil from Trench Between 216-U-8 and 216-U-12 Cribs
Subject: Volatile Organics- Data Package No.WSCF20060178 (60178)

INTRODUCTION

This memo presents the results of data validation on Data Package No. 60178 prepared by WSCF Analytical Laboratories (WSCF). A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample Date	Media	Validation	Date
B1HVN2	3/14/06	Soil	C	VOA by 8260B
B1HVN3	3/14/06	Soil	C	VOA by 8260B
B1HVN4	3/14/06	Soil	C	VOA by 8260B

Data validation was conducted in accordance with the FHI validation statement of work and the Sampling and Analysis Plan for Support Activities to the 200-UW-1 Operable Unit, DOE/RL-2005-75, Rev. 0. Appendices 1 through 6 provide the following information as indicated below:

Appendix 1. Glossary of Data Reporting Qualifiers
Appendix 2. Summary of Data Qualification
Appendix 3. Qualified Data Summary and Annotated Laboratory Reports
Appendix 4. Laboratory Narrative and Chain-of-Custody Documentation
Appendix 5. Data Validation Supporting Documentation
Appendix 6. Additional Documentation Requested by Client

MAY 2006 RECEIVED

DATA QUALITY OBJECTIVES

- **Holding Times/Sample Preservation**

Analytical holding times were assessed to ascertain whether the holding time requirements were met by the laboratory. The holding time requirements are as follows: Soil samples must be analyzed within 14 days of the date of sample collection.

If holding times are exceeded, but not by greater than two times the limit, all associated sample results are qualified as estimates and flagged "J" for detects and "UJ" for non-detects. If holding times are exceeded by greater than two times the

limit, all associated detectable sample results are qualified as estimates and flagged "J" and all non-detects are rejected and flagged "UR".

All holding times were acceptable.

- **Blanks**

Method blank analyses are conducted to determine the extent of laboratory contamination introduced through sampling, sample preparation and analysis. At least one acceptable method blank analysis must be conducted for every 20 samples of a given matrix. No contaminants should be present in the method blank. Analytical results for analytes present in any sample at less than five times the concentration of that analyte found in the associated blank are qualified as non-detects and flagged "U". Common laboratory contaminants present in samples at less than ten times the concentration of that analyte found in the associated blank are qualified as non-detects. If a sample result is less than the project quantitation limit (MDL) and is less than five times (or less than ten times for laboratory contaminants) the highest associated blank result, the sample result value is raised to the MDL, qualified as undetected and flagged "U".

All method blank results were acceptable.

Field Blanks

No field blanks were submitted for analysis.

- **Accuracy**

Matrix Spike/Matrix Spike Duplicate & Blank Spike

Matrix spike/matrix spike duplicate and blank spike analyses are used to assess the analytical accuracy of the reported data. The matrix spike/matrix spike duplicate are used to assess the effect of the matrix on the ability to accurately quantify sample concentrations. Matrix spike/matrix spike duplicate analyses are performed in duplicate using the target compounds for which percent recoveries must be within 50-150%. If spike recoveries are outside control limits, detected sample results less than five times the spike concentration are qualified as estimates and flagged "J". Undetected sample results with spike recoveries outside control limits are qualified as estimates and flagged "UJ". Sample results greater than five times the spike concentration require no qualification.

All accuracy and blank spike results were acceptable.

Surrogate Recovery

The analysis of surrogate compounds provides a measure of system performance for individual samples. Matrix-specific surrogate compound recovery control windows have been established by the laboratory program. When a surrogate compound recovery is out of the control window, all positively identified target compounds associated with the unacceptable surrogate recoveries are qualified as estimates and flagged "J". Undetected compounds with surrogate recoveries less than the lower control limit are qualified as having an estimated detection limit and flagged "UJ". Samples with surrogate recoveries less than ten percent are qualified as estimates and flagged "J" for detects, and rejected and flagged "UR" for nondetects. Undetected compounds with surrogate recoveries greater than the upper control limit require no qualification. Surrogates are not required for formaldehyde analysis.

All surrogate recovery results were acceptable.

- **Precision**

Matrix Spike/Matrix Spike Duplicate Samples

Matrix spike/matrix spike duplicate results provide matrix-specific information on the precision of the method for specific target compound classes. Precision is expressed by the relative percent difference (RPD) between the recoveries of duplicate matrix spike analyses performed on a sample. Sample results must be within RPD limits of +/- 35%. If RPD values are out of specification and the sample concentration is less than five times the spike concentration, all associated sample results are qualified as estimates and flagged "J" for detects and "UJ" for non-detects. If RPD values are out of specification and the sample concentration is greater than five times the spike concentration, no qualification is required.

All MS/MSD RPD results were acceptable.

Field Duplicate Samples

No field duplicates were submitted for analysis.

- **Detection Limits**

Reported analytical detection levels are compared against the required target quantitation limits (RTQLs) to ensure that laboratory detection levels meet the required criteria. All analytes met the RTQL.

- **Completeness**

Data package No. 60178 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 100%.

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

None found.

REFERENCES

FHI, Contract #20266, *Validation Statement of Work*, Fluor Hanford Incorporated, July 7, 2003.

DOE/RL-2005-75, Rev. 0, *Sampling and Analysis Plan for Support Activities to the 200-UW-1 Operable Unit*, December 2005.

Appendix 1

Glossary of Data Reporting Qualifiers

Qualifiers which may be applied by data validator in compliance with the BHI validation SOW are as follows:

U - Indicates the compound or analyte was analyzed for and not detected in the sample. The value reported is the sample quantitation limit corrected for dilution and moisture content by the laboratory.

UJ - Indicates the compound or analyte was analyzed for and not detected in the sample. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.

J - Indicates the compound or analyte was analyzed for and detected. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.

R - Indicates the compound or analyte was analyzed for, detected, and due to an identified major QC deficiency, the data are unusable.

UR - Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified major QC deficiency.

NJ - Indicates presumptive evidence of a compound at an estimated value. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

N - Indicates presumptive evidence of a compound. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

Appendix 2

Summary of Data Qualification

VOLATILE ORGANIC DATA QUALIFICATION SUMMARY*

SDG: 60178	REVIEWER: TLI	PROJECT: 200-UW-1	PAGE 1 OF 1
COMMENTS: No qualifiers assigned			

* - The Qualified Data Summary Table includes laboratory applied "U" qualifiers not specifically identified here. The laboratory applied "U" qualifiers are included to minimize misinterpretation of results contained in the table.

Appendix 3

Qualified Data Summary and Annotated Laboratory Reports

VOLATILE ORGANIC ANALYSIS, SOIL MATRIX, (UG/KG)

Project: FLUOR-HANFORD							
Laboratory: WSCF	SDG: WSCF20060178						
Sample Number		B1HVN2		B1HVN3		B1HVN4	
Sample Date		3/14/06		3/14/06		3/14/06	
VOA	RTQL	Result	Q	Result	Q	Result	Q
1,1-Dichloroethene		<2.00	U	<2.10	U	<2.10	U
Trichloroethene		<2.00	U	<2.10	U	<2.10	U
Benzene		<2.00	U	<2.10	U	<2.10	U
Toluene	5	<2.00	U	<2.10	U	<2.10	U
Chlorobenzene		<2.00	U	<2.10	U	<2.10	U
1,1-Dichloroethane		<2.00	U	<2.10	U	<2.10	U
Ethylbenzene		<2.00	U	<2.10	U	<2.10	U
Styrene		<2.00	U	<2.10	U	<2.10	U
cis-1,3-Dichloropropene		<2.00	U	<2.10	U	<2.10	U
trans-1,3-Dichloropropene		<2.00	U	<2.10	U	<2.10	U
1,2-Dichloroethane		<2.00	U	<2.10	U	<2.10	U
4-Methyl-2-pentanone		<2.00	U	<2.10	U	<2.10	U
Dibromochloromethane		<2.00	U	<2.10	U	<2.10	U
Tetrachloroethene		<2.00	U	<2.10	U	<2.10	U
Xylenes (total)		<2.00	U	<2.10	U	<2.10	U
1,2-Dichloroethene (total)		<2.00	U	<2.10	U	<2.10	U
Carbon Tetrachloride		<2.00	U	<2.10	U	<2.10	U
2-Hexanone		<2.00	U	<2.10	U	<2.10	U
Acetone	20	<2.00	U	<2.10	U	<2.10	U
Chloroform		<2.00	U	<2.10	U	<2.10	U
1,1,1-Trichloroethane		<2.00	U	<2.10	U	<2.10	U
Bromomethane	10	<2.00	U	<2.10	U	<2.10	U
Chloromethane	10	<2.00	U	<2.10	U	<2.10	U
Chloroethane		<2.00	U	<2.10	U	<2.10	U
Vinyl Chloride		<2.00	U	<2.10	U	<2.10	U
Methylene Chloride	5	<2.00	U	<2.10	U	<2.10	U
Carbon Disulfide		<2.00	U	<2.10	U	<2.10	U
Bromoform		<2.00	U	<2.10	U	<2.10	U
Bromodichloromethane		<2.00	U	<2.10	U	<2.10	U
1,2-Dichloropropane		<2.00	U	<2.10	U	<2.10	U
2-Butanone		<2.00	U	<2.10	U	<2.10	U
1,1,2-Trichloroethane		<2.00	U	<2.10	U	<2.10	U
1,1,2,2-Tetrachloroethane		<2.00	U	<2.10	U	<2.10	U
1-Butanol		<40.0	U	<43.0	U	<43.0	U
2-Pentanone		<2.00	U	<2.10	U	<2.10	U
Cyclohexane		<2.00	U	<2.10	U	<2.10	U
Hexane		<2.00	U	<2.10	U	<2.10	U
Tetrahydrofuran		<4.00	U	<4.30	U	<4.30	U
Trichlorofluormethane		<2.00	U	<2.10	U	<2.10	U
n-Butylbenzene		<2.00	U	<2.10	U	<2.10	U
trans-1,2-Dichloroethylene		<2.00	U	<2.10	U	<2.10	U
Acetonitrile		<4.00	U	<4.30	U	<4.30	U
cis-1,2-Dichloroethylene		<2.00	U	<2.10	U	<2.10	U

Laboratory applied non-detect qualifiers "U" have been included in this table to minimize mis-interpretation of results. All other qualifiers shown were applied during validation.

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WSCF
ANALYTICAL RESULTS REPORT

Attention: Deanna Klages H8-40 **Group #:** 20060178

Sample #	Client ID		CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W060000454	B1HVN0	K	88-06-2	2,4,6-Trichlorophenol	SOLID	LA-523-456	U	< 140	ug/kg	1.00	1.4e+02	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	124-18-5	Decane	SOLID	LA-523-456	U	< 190	ug/kg	1.00	1.9e+02	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	112-40-3	Dodecane	SOLID	LA-523-456	U	< 130	ug/kg	1.00	1.3e+02	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	100-51-6	Benzyl alcohol	SOLID	LA-523-456	U	< 190	ug/kg	1.00	1.9e+02	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	111-76-2	2-Butoxyethanol	SOLID	LA-523-456	U	< 280	ug/kg	1.00	2.8e+02	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	126-73-8	Tri-n-butylphosphate	SOLID	LA-523-456	U	< 94.0	ug/kg	1.00	94	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	91-59-8	2-Naphthylamine	SOLID	LA-523-456	U	< 460	ug/kg	1.00	4.6e+02	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	108-94-1	Cyclohexanone	SOLID	LA-523-456	U	< 130	ug/kg	1.00	1.3e+02	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	110-86-1	Pyridine	SOLID	LA-523-456	U	< 320	ug/kg	1.00	3.2e+02	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	95-63-6	1,2,4-Trimethylbenzene	SOLID	LA-523-456	U	< 120	ug/kg	1.00	1.2e+02	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	65-85-0	Benzoic acid	SOLID	LA-523-456	U	< 570	ug/kg	1.00	570	03/20/06	03/14/06	03/14/06
W060000454	B1HVN0	K	TPHDIESEL	Total Pet. Hydrocarbons Diesel	SOLID	NWTPH	U	< 3.30e+03	ug/kg	1.00	3.3e+03	03/21/06	03/14/06	03/14/06
W060000454	B1HVN0	K	TPHKEROSENE	Kerosene	SOLID	NWTPH	U	< 3.30e+03	ug/kg	1.00	3.3e+03	03/21/06	03/14/06	03/14/06
W060000455	B1HVN2	K	75-35-4	1,1-Dichloroethene	SOLID	LA-523-455	U	< 2.00	ug/kg	1.00	2.0	03/23/06	03/14/06	03/14/06
W060000455	B1HVN2	K	79-01-6	Trichloroethene	SOLID	LA-523-455	U	< 2.00	ug/kg	1.00	2.0	03/23/06	03/14/06	03/14/06
W060000455	B1HVN2	K	71-43-2	Benzene	SOLID	LA-523-455	U	< 2.00	ug/kg	1.00	2.0	03/23/06	03/14/06	03/14/06
W060000455	B1HVN2	K	108-88-3	Toluene	SOLID	LA-523-455	U	< 2.00	ug/kg	1.00	2.0	03/23/06	03/14/06	03/14/06
W060000455	B1HVN2	K	108-90-7	Chlorobenzene	SOLID	LA-523-455	U	< 2.00	ug/kg	1.00	2.0	03/23/06	03/14/06	03/14/06
W060000455	B1HVN2	K	75-34-3	1,1-Dichloroethane	SOLID	LA-523-455	U	< 2.00	ug/kg	1.00	2.0	03/23/06	03/14/06	03/14/06
W060000455	B1HVN2	K	100-41-4	Ethylbenzene	SOLID	LA-523-455	U	< 2.00	ug/kg	1.00	2.0	03/23/06	03/14/06	03/14/06
W060000455	B1HVN2	K	100-42-5	Styrene	SOLID	LA-523-455	U	< 2.00	ug/kg	1.00	2.0	03/23/06	03/14/06	03/14/06
W060000455	B1HVN2	K	10061-01-5	cis-1,3-Dichloropropene	SOLID	LA-523-455	U	< 2.00	ug/kg	1.00	2.0	03/23/06	03/14/06	03/14/06
W060000455	B1HVN2	K	10061-02-6	trans-1,3-Dichloropropene	SOLID	LA-523-455	U	< 2.00	ug/kg	1.00	2.0	03/23/06	03/14/06	03/14/06
W060000455	B1HVN2	K	107-06-2	1,2-Dichloroethane	SOLID	LA-523-455	U	< 2.00	ug/kg	1.00	2.0	03/23/06	03/14/06	03/14/06
W060000455	B1HVN2	K	108-10-1	4-Methyl-2-pentanone	SOLID	LA-523-455	U	< 2.00	ug/kg	1.00	2.0	03/23/06	03/14/06	03/14/06
W060000455	B1HVN2	K	124-48-1	Dibromochloromethane	SOLID	LA-523-455	U	< 2.00	ug/kg	1.00	2.0	03/23/06	03/14/06	03/14/06
W060000455	B1HVN2	K	127-18-4	Tetrachloroethene	SOLID	LA-523-455	U	< 2.00	ug/kg	1.00	2.0	03/23/06	03/14/06	03/14/06

4/18/06

MDL = Minimum Detection Limit
RQ = Result Qualifier

B - The Analyte detected in both the BLANK and the SAMPLE (org.)
E - Analyte is an estimate, has potentially larger errors
X - Other flags and notes described in the comments/narrative.
B - The analyte < the RDL but > = the IDL/MDL (inorganic)
U - Analyzed for but not detected above limiting criteria.

DF = Dilution Factor

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4/18/06

000011

WSCF
ANALYTICAL RESULTS REPORT

Attention: Deanna Klages H8-40 **Group #:** 20060178

Sample #	Client ID		CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W060000455	B1HVN2	K	1330-20-7	Total Xylenes	SOLID	LA-523-455	U	< 2.00	ug/kg	1.00	2.0	03/23/06	03/14/06	03/14/06
W060000455	B1HVN2	K	540-59-0	1,2-Dichloroethene (cis & tran	SOLID	LA-523-455	U	< 2.00	ug/kg	1.00	2.0	03/23/06	03/14/06	03/14/06
W060000455	B1HVN2	K	56-23-5	Carbon Tetrachloride	SOLID	LA-523-455	U	< 2.00	ug/kg	1.00	2.0	03/23/06	03/14/06	03/14/06
W060000455	B1HVN2	K	591-78-6	2-Hexanone	SOLID	LA-523-455	U	< 2.00	ug/kg	1.00	2.0	03/23/06	03/14/06	03/14/06
W060000455	B1HVN2	K	67-64-1	Acetone	SOLID	LA-523-455	U	< 2.00	ug/kg	1.00	2.0	03/23/06	03/14/06	03/14/06
W060000455	B1HVN2	K	67-66-3	Chloroform	SOLID	LA-523-455	U	< 2.00	ug/kg	1.00	2.0	03/23/06	03/14/06	03/14/06
W060000455	B1HVN2	K	71-55-6	1,1,1-Trichloroethane	SOLID	LA-523-455	U	< 2.00	ug/kg	1.00	2.0	03/23/06	03/14/06	03/14/06
W060000455	B1HVN2	K	74-83-9	Bromomethane	SOLID	LA-523-455	U	< 2.00	ug/kg	1.00	2.0	03/23/06	03/14/06	03/14/06
W060000455	B1HVN2	K	74-87-3	Chloromethane	SOLID	LA-523-455	U	< 2.00	ug/kg	1.00	2.0	03/23/06	03/14/06	03/14/06
W060000455	B1HVN2	K	75-00-3	Chloroethane	SOLID	LA-523-455	U	< 2.00	ug/kg	1.00	2.0	03/23/06	03/14/06	03/14/06
W060000455	B1HVN2	K	75-01-4	Vinyl Chloride	SOLID	LA-523-455	U	< 2.00	ug/kg	1.00	2.0	03/23/06	03/14/06	03/14/06
W060000455	B1HVN2	K	75-09-2	Methylene Chloride	SOLID	LA-523-455	U	< 2.00	ug/kg	1.00	2.0	03/23/06	03/14/06	03/14/06
W060000455	B1HVN2	K	75-15-0	Carbon Disulfide	SOLID	LA-523-455	U	< 2.00	ug/kg	1.00	2.0	03/23/06	03/14/06	03/14/06
W060000455	B1HVN2	K	75-25-2	Bromoform	SOLID	LA-523-455	U	< 2.00	ug/kg	1.00	2.0	03/23/06	03/14/06	03/14/06
W060000455	B1HVN2	K	75-27-4	Bromodichloromethane	SOLID	LA-523-455	U	< 2.00	ug/kg	1.00	2.0	03/23/06	03/14/06	03/14/06
W060000455	B1HVN2	K	78-87-5	1,2-Dichloropropane	SOLID	LA-523-455	U	< 2.00	ug/kg	1.00	2.0	03/23/06	03/14/06	03/14/06
W060000455	B1HVN2	K	78-93-3	2-Butanone	SOLID	LA-523-455	U	< 2.00	ug/kg	1.00	2.0	03/23/06	03/14/06	03/14/06
W060000455	B1HVN2	K	79-00-5	1,1,2-Trichloroethane	SOLID	LA-523-455	U	< 2.00	ug/kg	1.00	2.0	03/23/06	03/14/06	03/14/06
W060000455	B1HVN2	K	79-34-5	1,1,2,2-Tetrachloroethane	SOLID	LA-523-455	U	< 2.00	ug/kg	1.00	2.0	03/23/06	03/14/06	03/14/06
W060000455	B1HVN2	K	71-36-3	1-Butanol	SOLID	LA-523-455	U	< 40.0	ug/kg	1.00	40	03/23/06	03/14/06	03/14/06
W060000455	B1HVN2	K	107-87-9	2-Pentanone	SOLID	LA-523-455	U	< 2.00	ug/kg	1.00	2.0	03/23/06	03/14/06	03/14/06
W060000455	B1HVN2	K	110-82-7	Cyclohexane	SOLID	LA-523-455	U	< 2.00	ug/kg	1.00	2.0	03/23/06	03/14/06	03/14/06
W060000455	B1HVN2	K	110-54-3	Hexane	SOLID	LA-523-455	U	< 2.00	ug/kg	1.00	2.0	03/23/06	03/14/06	03/14/06
W060000455	B1HVN2	K	109-99-9	Tetrahydrofuran	SOLID	LA-523-455	U	< 4.00	ug/kg	1.00	4.0	03/23/06	03/14/06	03/14/06
W060000455	B1HVN2	K	75-69-4	Trichlorofluoromethane	SOLID	LA-523-455	U	< 2.00	ug/kg	1.00	2.0	03/23/06	03/14/06	03/14/06
W060000455	B1HVN2	K	104-51-8	n-Butylbenzene	SOLID	LA-523-455	U	< 2.00	ug/kg	1.00	2.0	03/23/06	03/14/06	03/14/06
W060000455	B1HVN2	K	156-60-5	trans-1,2-Dichloroethylene	SOLID	LA-523-455	U	< 2.00	ug/kg	1.00	2.0	03/23/06	03/14/06	03/14/06

MDL=Minimum Detection Limit
RQ=Result Qualifier

B - The Analyte detected in both the BLANK and the SAMPLE (org.)
E - Analyte is an estimate, has potentially larger errors
X - Other flags and notes described in the comments/narrative.
B - The analyte < the RDL but > = the IDL/MDL (inorganic)
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DF=Dilution Factor

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000012

WSCF
ANALYTICAL RESULTS REPORT

Attention: Deanna Klages H8-40 **Group #:** 20060178

Sample #	Client ID		CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W060000455	B1HVN2	K	75-05-08	Acetonitrile	SOLID	LA-523-455	U	< 4.00	ug/kg	1.00	4.0	03/23/06	03/14/06	03/14/06
W060000455	B1HVN2	K	156-59-2	cis-1,2-Dichloroethylene	SOLID	LA-523-455	U	< 2.00	ug/kg	1.00	2.0	03/23/06	03/14/06	03/14/06
W060000456	B1HVN3	K	75-35-4	1,1-Dichloroethene	SOLID	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	03/23/06	03/14/06	03/14/06
W060000456	B1HVN3	K	79-01-6	Trichloroethene	SOLID	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	03/23/06	03/14/06	03/14/06
W060000456	B1HVN3	K	71-43-2	Benzene	SOLID	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	03/23/06	03/14/06	03/14/06
W060000456	B1HVN3	K	108-88-3	Toluene	SOLID	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	03/23/06	03/14/06	03/14/06
W060000456	B1HVN3	K	108-90-7	Chlorobenzene	SOLID	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	03/23/06	03/14/06	03/14/06
W060000456	B1HVN3	K	75-34-3	1,1-Dichloroethane	SOLID	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	03/23/06	03/14/06	03/14/06
W060000456	B1HVN3	K	100-41-4	Ethylbenzene	SOLID	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	03/23/06	03/14/06	03/14/06
W060000456	B1HVN3	K	100-42-5	Styrene	SOLID	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	03/23/06	03/14/06	03/14/06
W060000456	B1HVN3	K	10061-01-5	cis-1,3-Dichloropropene	SOLID	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	03/23/06	03/14/06	03/14/06
W060000456	B1HVN3	K	10061-02-6	trans-1,3-Dichloropropene	SOLID	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	03/23/06	03/14/06	03/14/06
W060000456	B1HVN3	K	107-06-2	1,2-Dichloroethane	SOLID	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	03/23/06	03/14/06	03/14/06
W060000456	B1HVN3	K	108-10-1	4-Methyl-2-pentanone	SOLID	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	03/23/06	03/14/06	03/14/06
W060000456	B1HVN3	K	124-48-1	Dibromochloromethane	SOLID	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	03/23/06	03/14/06	03/14/06
W060000456	B1HVN3	K	127-18-4	Tetrachloroethene	SOLID	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	03/23/06	03/14/06	03/14/06
W060000456	B1HVN3	K	1330-20-7	Total Xylenes	SOLID	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	03/23/06	03/14/06	03/14/06
W060000456	B1HVN3	K	540-59-0	1,2-Dichloroethene (cis & tran	SOLID	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	03/23/06	03/14/06	03/14/06
W060000456	B1HVN3	K	56-23-5	Carbon Tetrachloride	SOLID	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	03/23/06	03/14/06	03/14/06
W060000456	B1HVN3	K	591-78-6	2-Hexanone	SOLID	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	03/23/06	03/14/06	03/14/06
W060000456	B1HVN3	K	67-64-1	Acetone	SOLID	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	03/23/06	03/14/06	03/14/06
W060000456	B1HVN3	K	67-66-3	Chloroform	SOLID	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	03/23/06	03/14/06	03/14/06
W060000456	B1HVN3	K	71-55-6	1,1,1-Trichloroethane	SOLID	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	03/23/06	03/14/06	03/14/06
W060000456	B1HVN3	K	74-83-9	Bromomethane	SOLID	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	03/23/06	03/14/06	03/14/06
W060000456	B1HVN3	K	74-87-3	Chloromethane	SOLID	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	03/23/06	03/14/06	03/14/06
W060000456	B1HVN3	K	75-00-3	Chloroethane	SOLID	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	03/23/06	03/14/06	03/14/06
W060000456	B1HVN3	K	75-01-4	Vinyl Chloride	SOLID	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	03/23/06	03/14/06	03/14/06

000013

MDL = Minimum Detection Limit
RQ = Result Qualifier

B - The Analyte detected in both the BLANK and the SAMPLE (org.)
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B - The analyte < the RDL but > = the IDL/MDL (inorganic)
U - Analyzed for but not detected above limiting criteria.

DF = Dilution Factor

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

4/18/06

WSCF
ANALYTICAL RESULTS REPORT

Attention: Deanna Klages H8-40 **Group #:** 20060178

Sample #	Client ID		CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W060000456	B1HVN3	K	75-09-2	Methylene Chloride	SOLID	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	03/23/06	03/14/06	03/14/06
W060000456	B1HVN3	K	75-15-0	Carbon Disulfide	SOLID	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	03/23/06	03/14/06	03/14/06
W060000456	B1HVN3	K	75-25-2	Bromoform	SOLID	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	03/23/06	03/14/06	03/14/06
W060000456	B1HVN3	K	75-27-4	Bromodichloromethane	SOLID	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	03/23/06	03/14/06	03/14/06
W060000456	B1HVN3	K	78-87-5	1,2-Dichloropropane	SOLID	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	03/23/06	03/14/06	03/14/06
W060000456	B1HVN3	K	78-93-3	2-Butanone	SOLID	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	03/23/06	03/14/06	03/14/06
W060000456	B1HVN3	K	79-00-5	1,1,2-Trichloroethane	SOLID	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	03/23/06	03/14/06	03/14/06
W060000456	B1HVN3	K	79-34-5	1,1,2,2-Tetrachloroethane	SOLID	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	03/23/06	03/14/06	03/14/06
W060000456	B1HVN3	K	71-36-3	1-Butanol	SOLID	LA-523-455	U	< 43.0	ug/kg	1.00	43	03/23/06	03/14/06	03/14/06
W060000456	B1HVN3	K	107-87-9	2-Pentanone	SOLID	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	03/23/06	03/14/06	03/14/06
W060000456	B1HVN3	K	110-82-7	Cyclohexane	SOLID	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	03/23/06	03/14/06	03/14/06
W060000456	B1HVN3	K	110-54-3	Hexane	SOLID	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	03/23/06	03/14/06	03/14/06
W060000456	B1HVN3	K	109-99-9	Tetrahydrofuran	SOLID	LA-523-455	U	< 4.30	ug/kg	1.00	4.3	03/23/06	03/14/06	03/14/06
W060000456	B1HVN3	K	75-69-4	Trichlorofluoromethane	SOLID	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	03/23/06	03/14/06	03/14/06
W060000456	B1HVN3	K	104-51-8	n-Butylbenzene	SOLID	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	03/23/06	03/14/06	03/14/06
W060000456	B1HVN3	K	156-60-5	trans-1,2-Dichloroethylene	SOLID	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	03/23/06	03/14/06	03/14/06
W060000456	B1HVN3	K	75-05-08	Acetonitrile	SOLID	LA-523-455	U	< 4.30	ug/kg	1.00	4.3	03/23/06	03/14/06	03/14/06
W060000456	B1HVN3	K	156-59-2	cis-1,2-Dichloroethylene	SOLID	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	03/23/06	03/14/06	03/14/06
W060000457	B1HVN4	K	75-35-4	1,1-Dichloroethene	SOLID	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	03/23/06	03/14/06	03/14/06
W060000457	B1HVN4	K	79-01-6	Trichloroethene	SOLID	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	03/23/06	03/14/06	03/14/06
W060000457	B1HVN4	K	71-43-2	Benzene	SOLID	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	03/23/06	03/14/06	03/14/06
W060000457	B1HVN4	K	108-88-3	Toluene	SOLID	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	03/23/06	03/14/06	03/14/06
W060000457	B1HVN4	K	108-90-7	Chlorobenzene	SOLID	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	03/23/06	03/14/06	03/14/06
W060000457	B1HVN4	K	75-34-3	1,1-Dichloroethane	SOLID	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	03/23/06	03/14/06	03/14/06
W060000457	B1HVN4	K	100-41-4	Ethylbenzene	SOLID	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	03/23/06	03/14/06	03/14/06
W060000457	B1HVN4	K	100-42-5	Styrene	SOLID	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	03/23/06	03/14/06	03/14/06
W060000457	B1HVN4	K	10061-01-5	cis-1,3-Dichloropropene	SOLID	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	03/23/06	03/14/06	03/14/06

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4/14/06

000014

WSCF
ANALYTICAL RESULTS REPORT

Attention: Deanna Klages H8-40 **Group #:** 20060178

Sample #	Client ID		CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W060000457	B1HVN4	K	10061-02-6	trans-1,3-Dichloropropene	SOLID	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	03/23/06	03/14/06	03/14/06
W060000457	B1HVN4	K	107-06-2	1,2-Dichloroethane	SOLID	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	03/23/06	03/14/06	03/14/06
W060000457	B1HVN4	K	108-10-1	4-Methyl-2-pentanone	SOLID	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	03/23/06	03/14/06	03/14/06
W060000457	B1HVN4	K	124-48-1	Dibromochloromethane	SOLID	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	03/23/06	03/14/06	03/14/06
W060000457	B1HVN4	K	127-18-4	Tetrachloroethene	SOLID	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	03/23/06	03/14/06	03/14/06
W060000457	B1HVN4	K	1330-20-7	Total Xylenes	SOLID	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	03/23/06	03/14/06	03/14/06
W060000457	B1HVN4	K	540-59-0	1,2-Dichloroethene (cis & tran	SOLID	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	03/23/06	03/14/06	03/14/06
W060000457	B1HVN4	K	56-23-5	Carbon Tetrachloride	SOLID	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	03/23/06	03/14/06	03/14/06
W060000457	B1HVN4	K	591-78-6	2-Hexanone	SOLID	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	03/23/06	03/14/06	03/14/06
W060000457	B1HVN4	K	67-64-1	Acetone	SOLID	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	03/23/06	03/14/06	03/14/06
W060000457	B1HVN4	K	67-66-3	Chloroform	SOLID	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	03/23/06	03/14/06	03/14/06
W060000457	B1HVN4	K	71-55-6	1,1,1-Trichloroethane	SOLID	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	03/23/06	03/14/06	03/14/06
W060000457	B1HVN4	K	74-83-9	Bromomethane	SOLID	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	03/23/06	03/14/06	03/14/06
W060000457	B1HVN4	K	74-87-3	Chloromethane	SOLID	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	03/23/06	03/14/06	03/14/06
W060000457	B1HVN4	K	75-00-3	Chloroethane	SOLID	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	03/23/06	03/14/06	03/14/06
W060000457	B1HVN4	K	75-01-4	Vinyl Chloride	SOLID	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	03/23/06	03/14/06	03/14/06
W060000457	B1HVN4	K	75-09-2	Methylene Chloride	SOLID	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	03/23/06	03/14/06	03/14/06
W060000457	B1HVN4	K	75-15-0	Carbon Disulfide	SOLID	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	03/23/06	03/14/06	03/14/06
W060000457	B1HVN4	K	75-25-2	Bromoform	SOLID	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	03/23/06	03/14/06	03/14/06
W060000457	B1HVN4	K	75-27-4	Bromodichloromethane	SOLID	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	03/23/06	03/14/06	03/14/06
W060000457	B1HVN4	K	78-87-5	1,2-Dichloropropane	SOLID	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	03/23/06	03/14/06	03/14/06
W060000457	B1HVN4	K	78-93-3	2-Butanone	SOLID	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	03/23/06	03/14/06	03/14/06
W060000457	B1HVN4	K	79-00-5	1,1,2-Trichloroethane	SOLID	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	03/23/06	03/14/06	03/14/06
W060000457	B1HVN4	K	79-34-5	1,1,2,2-Tetrachloroethane	SOLID	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	03/23/06	03/14/06	03/14/06
W060000457	B1HVN4	K	71-36-3	1-Butanol	SOLID	LA-523-455	U	< 43.0	ug/kg	1.00	43	03/23/06	03/14/06	03/14/06
W060000457	B1HVN4	K	107-87-9	2-Pentanone	SOLID	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	03/23/06	03/14/06	03/14/06
W060000457	B1HVN4	K	110-82-7	Cyclohexane	SOLID	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	03/23/06	03/14/06	03/14/06

MDL = Minimum Detection Limit
RQ = Result Qualifier

B - The Analyte detected in both the BLANK and the SAMPLE (org.)
E - Analyte is an estimate, has potentially larger errors
X - Other flags and notes described in the comments/narrative.
B - The analyte < the RDL but > = the IDL/MDL (inorganic)
U - Analyzed for but not detected above limiting criteria.

DF = Dilution Factor

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

4/18/06

G10000

WSCF
ANALYTICAL RESULTS REPORT

Attention: Deanna Klages H8-40 **Group #:** 20060178

Sample #	Client ID		CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W060000457	B1HVN4	K	110-54-3	Hexane	SOLID	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	03/23/06	03/14/06	03/14/06
W060000457	B1HVN4	K	109-99-9	Tetrahydrofuran	SOLID	LA-523-455	U	< 4.30	ug/kg	1.00	4.3	03/23/06	03/14/06	03/14/06
W060000457	B1HVN4	K	75-69-4	Trichlorofluoromethane	SOLID	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	03/23/06	03/14/06	03/14/06
W060000457	B1HVN4	K	104-51-8	n-Butylbenzene	SOLID	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	03/23/06	03/14/06	03/14/06
W060000457	B1HVN4	K	156-60-5	trans-1,2-Dichloroethylene	SOLID	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	03/23/06	03/14/06	03/14/06
W060000457	B1HVN4	K	75-05-08	Acetonitrile	SOLID	LA-523-455	U	< 4.30	ug/kg	1.00	4.3	03/23/06	03/14/06	03/14/06
W060000457	B1HVN4	K	156-59-2	cis-1,2-Dichloroethylene	SOLID	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	03/23/06	03/14/06	03/14/06

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4/18/06

MDL=Minimum Detection Limit
RQ=Result Qualifier

B - The Analyte detected in both the BLANK and the SAMPLE (org.)
E - Analyte is an estimate, has potentially larger errors
X - Other flags and notes described in the comments/narrative.

B - The analyte < the RDL but > = the IDL/MDL (inorganic)
U - Analyzed for but not detected above limiting criteria.

DF=Dilution Factor

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

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

Sample Delivery Group	**WSCF20060178**
Sample Matrix	**SOLID**
Sample Visual	**N/A**
SAF Number	**R06-013**
Data Deliverable	**Summary Report**

Introduction

Six soil samples (B1HVM6, B1HVM8, B1HVN0, B1HVN2, B3HVN3 and B1HVN4) from the 200-UW-1 Operable Unit Trench were received at the WSCF Laboratory on March 14, 2006. The samples were received in a cool condition with ice present in the coolers. The samples were analyzed for the analytes indicated on the attached copy of the chain of custody (COC) form in accordance with the *200-UW-1 Operable Unit Letter of Instruction*, referenced in the cover letter.

With the exception of VOA, all samples were taken using the Multi-Increment Sampling Program, which requires the entire sample submitted to be analyzed. This does not allow for laboratory sample duplicates or matrix spikes.

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 sample receipt are included as Attachment 3.

Analytical Methodology for Requested Analyses

Refer to *WSCF Method References Report,* pages 43 through 44, for a complete listing of approved analytical methods used.

Inorganic Comments

Anions - The hold times for this analysis were met. A Blank and Laboratory Control Sample were analyzed with this batch of less than 20 samples. See page 67 for QC details. All QC controls are within the established limits.

ICP-AES Metals – The hold time for this analysis was met. A Blank and Laboratory Control Sample were analyzed with this delivery group of less than 20 samples. See page 48 for QC details. Analytical Notes:

- Sample results are reported in ug/g while blank values are reported as ug/L.
- Bismuth, Magnesium, Lithium and Silicon were detected in the associated preparation Blank sample, but none of the samples were affected.
- Iron and Potassium yielded high Laboratory Control Sample recoveries, resulting in an "E" flag.

- Titanium, Bismuth and Silicon yielded low Laboratory Control Sample recoveries, resulting in an "X" flag.

All other QC controls are within the established limits.

ICP-MS Metals – The hold time for this analysis was met. A Blank and Laboratory Control Sample were analyzed with this batch of less than 20 samples. See pages 68 through 69. Analytical Notes:

- Aluminum and Nickel were detected in the associated preparation Blank, however there was no impact to the sample results.
- Silver and Antimony yielded low Laboratory Control Sample recoveries due to an apparent digestion problem, resulting in an "X" flag.
- Thorium results listed in the report represent Th-232 exclusively.

All other QC controls are within the established limits.

pH - Laboratory QC control is within the established limits. See page 24 for QC detail.

Percent Solids – analyzed for organic moisture correction.

Organic Comments

- Sample results are moisture corrected and reported on dry weight basis.

Semi-VOA – The hold time for this analysis was met. A Blank, Laboratory Control Sample, and Laboratory Control Sample Duplicate were analyzed with this delivery group of less than 20 samples. See pages 53 through 57 for QC details. Analytical Notes;

Since there was no Matrix Spike or Matrix Spike Duplicate run with this batch, the Relative Percent Difference (RPD) percentages are summarized below using LCS and LCS Duplicate QC Yields:

Additional Batch QC Data - SVOAs

QC Type	Analyte	CAS	QC Yield	RPD%
LCS	1,2,4-Trichlorobenzene	120-82-1	94.5%	
LCS – Duplicate	1,2,4-Trichlorobenzene	120-82-1	101.0%	6.650%
LCS	1,4-Dichlorobenzene	106-46-7	89.9%	

Additional Batch QC Data - SVOAs				
QC Type	Analyte	CAS#	LCS	
			%Rec	RPD %
LCS - Duplicate	1,4-Dichlorobenzene	106-46-7	97.8%	8.418%
LCS	2,4-Dinitrotoluene	121-14-2	85.9%	
LCS - Duplicate	2,4-Dinitrotoluene	121-14-2	93.9%	8.899%
LCS	2-Fluorophenol	367-12-4	96.4%	
LCS - Duplicate	2-Fluorophenol	367-12-4	104.0%	7.585%
LCS	Acenaphthene	83-32-9	96.9%	
LCS - Duplicate	Acenaphthene	83-32-9	104.0%	7.068%
LCS	4-Chloro-3-methylphenol	59-50-7	94.6%	
LCS - Duplicate	4-Chloro-3-methylphenol	59-50-7	101.0%	6.544%
LCS	2-Chlorophenol	95-57-8	93.1%	
LCS - Duplicate	2-Chlorophenol	95-57-8	101.0%	8.140%
LCS	N-Nitrosodi-n-dipropylamine	621-64-7	94.3%	
LCS - Duplicate	N-Nitrosodi-n-dipropylamine	621-64-7	102.0%	7.845%
LCS	2-Fluorobiphenyl	321-60-8	97.7%	
LCS – Duplicate	2-Fluorobiphenyl	321-60-8	107.0%	9.086%
LCS	Phenol	108.95-2	93.4%	
LCS -	Phenol	108.95-2	101.0%	7.819%

Additional Batch QC Data - SVOAs				
QC Type	Analyte	CAS#	QC	
			Yield	RPD %
Duplicate				
LCS	Nitrobenzene-d5	4165-60-0	98.5%	
LCS - Duplicate	Nitrobenzene-d5	4165-60-0	107.0%	8.273%
LCS	4-Nitrophenol	100-02-7	101.0%	
LCS - Duplicate	4-Nitrophenol	100-02-7	100.0%	0.995%
LCS	Pentachlorophenol	87-86-5	102.0%	
LCS - Duplicate	Pentachlorophenol	87-86-5	104.0%	1.942%
LCS	Phenol-d5	4165-62-2	98.0%	
LCS - Duplicate	Phenol-d5	4165-62-2	105.0%	6.897%
LCS	Pyrene	129-00-0	94.8%	
LCS - Duplicate	Pyrene	129-00-0	102.0%	7.317%
LCS	2,4,6-Tribromophenol	118-79-6	88.3%	
LCS - Duplicate	2,4,6-Tribromophenol	118-79-6	94.8%	7.100%
LCS	Terphenyl-d14	98904-43-9	96.4%	
LCS - Duplicate	Terphenyl-d14	98904-43-9	105.0%	8.540%

TPHD-WA - The hold time for this analysis was met. A Blank, Laboratory Control Sample, and Laboratory Control Sample Duplicate were analyzed with this delivery group of less than 20 samples. See page 59 for QC details. Analytical Note:

Since there was no Matrix Spike or Matrix Spike Duplicate run with this batch, the Relative Percent Difference (RPD) percentages are summarized below using LCS and LCS Duplicate QC Yields:

Batch QC Data				
QC Type	Analyte	CAS#	QC	
			Yield	RPD %
LCS	ortho-Terphenyl (surr)	84-15-1	102.0%	
LCS - Duplicate	ortho-Terphenyl (surr)	84-15-1	102.0%	2.740%
LCS	TOTAL Pet. Hydrocarbons Diesel	TPHDIESEL	98.8%	
LCS - Duplicate	TOTAL Pet. Hydrocarbons Diesel	TPHDIESEL	99.6%	0.806%

All QC controls are within the established limits.

VOA – The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with this delivery group of less than 20 samples. See pages 63 through 66 for QC details. All QC controls are within the established limits.

Radiochemistry Comments

There are no hold times associated with WSCF radiochemical methods.

Tecnicium-99 - A Blank, Laboratory Control Sample, Post Digestion Spike and Post Digestion Duplicate were analyzed with this delivery group of less than 20 samples. See pages 47 for QC details. All QC controls are within the established limits.

Strontium – 89/90 – A Blank and Laboratory Control Sample were analyzed with this batch of less than 20 samples. See page 49 for QC details. All QC controls are within the established limits.

Gamma Energy Analysis (GEA) – A Blank, Laboratory Control Sample and Sample Duplicate were analyzed with this batch of less than 20 samples. See page 50 through 52 for QC details. All QC controls are within the established limits.

Neptunium-237 – A Blank and Laboratory Control Sample were analyzed with this batch of less than 20 samples. See page 58 for QC details. All QC controls are within the established limits.

Radiochemical Tracer Percent Recovery			
Sample Number	Lab Sample ID	Isotope	Tracer Recovery (Percent)
B1HVM8	W060000453	Pu-242	99.0%
B1HVN0	W060000454	Pu-242	87.9%
Strontium-85			
BLANK		Sr-85	89.0%
LCS		Sr-85	80.5%
B1HVM6	W060000452	Sr-85	67.4%
B1HVM8	W060000453	Sr-85	89.6%
B1HVN0	W060000454	Sr-85	90.3%
Uranium-232			
BLANK		U-232	85.1%
LCS		U-232	72.9%
B1HVM6	W060000452	U-232	89.9%
B1HVM8	W060000453	U-232	85.7%
B1HVN0	W060000454	U-232	84.0%

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.

John E. Trechter

John E. Trechter
WSCF Client Services

PAGES 24-29 INTENTIONALLY LEFT BLANK

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			R06-013-005	PAGE 1 OF 1
COLLECTOR KG Hulse 3/29/06	COMPANY CONTACT TRECHTER, JE	TELEPHONE NO. 373-7046	PROJECT COORDINATOR TRECHTER, JE	PRICE CODE 9C	DATA TURNAROUND
SAMPLING LOCATION 200-UW-1	PROJECT DESIGNATION 200-UW-1 Operable Unit, Soil from Trench between 216-U-8 and 216-U-12		SAF NO. R06-013	AIR QUALITY ☐	15 Days / 15 Days
ICE CHEST NO. SESP	FIELD LOGBOOK NO. DTS-SAWS-H100	COA 121600ES20	METHOD OF SHIPMENT GOVERNMENT VEHICLE		
SHIPPED TO Waste Sampling & Characterization	OFFSITE PROPERTY NO. N/A		BILL OF LADING/AIR BILL NO. N/A		

MATRIX*
OL = OTHER LIQUID
OS = OTHER SOLID
S = SOIL
W = WATER

SPECIAL HANDLING AND/OR STORAGE: 20060178

POSSIBLE SAMPLE HAZARDS/ REMARKS

SAMPLE NO.	LAB ID	MATRIX*	SAMPLE DATE	SAMPLE TIME	NO./TYPE CONTAINER(S)	ANALYSIS	PRESERVATION
B1HVN2	W060000455	S	3/14/06	0730	1X40mL aGs*	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Cool 4C
B1HVN3	456	S	3/14/06	1000	1X40mL aGs*	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Cool 4C
B1HVN4	457	S	3/14/06	1020	1X40mL aGs*	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Cool 4C

000030

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
K. B. HULSE	3-14-06 1355	TA FRAZIER	3-14-06 1355
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS

Reporting format the same as GPP, including QC. All samples, except VOAs, have been taken using the multiple-increment sampling program. This requires the entire sample provided in each bottle to be used in analysis. VOAs will be analyzed as usual.
(1)VOA - 8260A (Add-On) {1BUTANOL, 1PROPANOL, 2-PENTANON, ACETILE, CISDCE, ETHANOL, HEXANE, N-BUTYL, PROPCYHEXA, TETHYDF, TRANDCE, TRCMFLM} VOA - 5035/8260 (TCL) {1,1,1-T, 1,1,2-T, 1,1-DCL, 1,2-DCL, 1122-TCE, 12DICHL, 2HEXANONE, ACETONE, BDCM, BENZENE, BROMOFORM, CARBIDE, CARBTET, CDBM, CHLOROBENZ, CHLOROFORM, CIS13DI, CLETHAN, DICETHY, DICPANE, ETHBENZENE, HEXONE, METHBRO, METHCHL, METHONE, METHYCH, PERCENE,

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

Appendix 5

Data Validation Supporting Documentation

GC/MS ORGANIC DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	C	D	E
PROJECT: 200-UW-1			DATA PACKAGE: 60178		
VALIDATOR: TCI		LAB: WSCF		DATE:	
			SDG: 60178		
ANALYSES PERFORMED					
SW-846 8260		SW-846 8260 (TCLP)	SW-846 8270		SW-846 8270 (TCLP)
SAMPLES/MATRIX					
B1HVN2	B1HVN3	B1HVN4			
					Sol

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

Technical verification documentation present? ..... Yes (No) N/A

Comments: _____

2. INSTRUMENT TUNING AND CALIBRATION (Levels D and E)

GC/MS tuning/performance check acceptable? ..... Yes No (N/A)

Initial calibrations acceptable? ..... Yes No (N/A)

Continuing calibrations acceptable? ..... Yes No (N/A)

Standards traceable? ..... Yes No (N/A)

Standards expired? ..... Yes No (N/A)

Calculation check acceptable? ..... Yes No (N/A)

Comments: _____

GC/MS ORGANIC DATA VALIDATION CHECKLIST

3. BLANKS (Levels B, C, D, and E)

Calibration blanks analyzed? (Levels D, E) ..... Yes No N/A

Calibration blank results acceptable? (Levels D, E) ..... Yes No N/A

Laboratory blanks analyzed? ..... Yes No N/A

Laboratory blank results acceptable? ..... Yes No N/A

Field/trip blanks analyzed? (Levels C, D, E) ..... Yes No N/A

Field/trip blank results acceptable? (Levels C, D, E) ..... Yes No N/A

Transcription/calculation errors? (Levels D, E) ..... Yes No N/A

Comments: no FB

4. ACCURACY (Levels C, D, and E)

Surrogates/system monitoring compounds analyzed? ..... Yes No N/A

Surrogate/system monitoring compound recoveries acceptable? ..... Yes No N/A

Surrogates traceable? (Levels D, E) ..... Yes No N/A

Surrogates expired? (Levels D, E) ..... Yes No N/A

MS/MSD samples analyzed? ..... Yes No N/A

MS/MSD results acceptable? ..... Yes No N/A

MS/MSD standards NIST traceable? (Levels D, E) ..... Yes No N/A

MS/MSD standards? (Levels D, E) ..... Yes No N/A

LCS/BSS samples analyzed? ..... Yes No N/A

LCS/BSS results acceptable? ..... Yes No N/A

Standards traceable? (Levels D, E) ..... Yes No N/A

Standards expired? (Levels D, E) ..... Yes No N/A

Transcription/calculation errors? (Levels D, E) ..... Yes No N/A

Performance audit sample(s) analyzed? ..... Yes No N/A

Performance audit sample results acceptable? ..... Yes No N/A

Comments: no PAS

GC/MS ORGANIC DATA VALIDATION CHECKLIST

5. PRECISION (Levels C, D, and E)

MS/MSD samples analyzed? ..... Yes No N/A

MS/MSD RPD values acceptable? ..... Yes No N/A

MS/MSD standards NIST traceable? (Levels D, E) ..... Yes No N/A

MS/MSD standards expired? (Levels D, E) ..... Yes No N/A

Field duplicate RPD values acceptable? ..... Yes No N/A

Field split RPD values acceptable? ..... Yes No N/A

Transcription/calculation errors? (Levels D, E) ..... Yes No N/A

Comments:

6. SYSTEM PERFORMANCE (Levels D and E)

Internal standards analyzed? ..... Yes No N/A

Iinternal standard areas acceptable? ..... Yes No N/A

Internal standard retention times acceptable? ..... Yes No N/A

Standards traceable? ..... Yes No N/A

Standards expired? ..... Yes No N/A

Transcription/calculation errors? ..... Yes No N/A

Comments:

7. HOLDING TIMES (all levels)

Samples properly preserved? ..... Yes No N/A

Sample holding times acceptable? ..... Yes No N/A

Comments:

GC/MS ORGANIC DATA VALIDATION CHECKLIST

8. COMPOUND IDENTIFICATION, QUANTITATION, AND DETECTION LIMITS (all levels)

Compound identification acceptable? (Levels D, E) ..... Yes No N/A

Compound quantitation acceptable? (Levels D, E) ..... Yes No N/A

Results reported for all requested analyses? ..... Yes No N/A

Results supported in the raw data? (Levels D, E) ..... Yes No N/A

Samples properly prepared? (Levels D, E) ..... Yes No N/A

Laboratory properly identified and coded all TIC? (Levels D, E) ..... Yes No N/A

Detection limits meet RDL? ..... Yes No N/A

Transcription/calculation errors? (Levels D, E) ..... Yes No N/A

Comments: _____

9. SAMPLE CLEANUP (Levels D and E)

GPC cleanup performed? ..... Yes No N/A

GPC check performed? ..... Yes No N/A

GPC check recoveries acceptable? ..... Yes No N/A

GPC calibration performed? ..... Yes No N/A

GPC calibration check performed? ..... Yes No N/A

GPC calibration check retention times acceptable? ..... Yes No N/A

Check/calibration materials traceable? ..... Yes No N/A

Check/calibration materials Expired? ..... Yes No N/A

Analytical batch QC given similar cleanup? ..... Yes No N/A

Transcription/Calculation Errors? ..... Yes No N/A

Comments: _____

Appendix 6

Additional Documentation Requested by Client

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: 20060178
Matrix: SOLID
Test: VOA Ground Water Protection

SAF Number: R06-013
Sample Date: 03/14/06
Receive Date:03/14/06

Lab ID: W060000455
BATCH QC ASSOCIATED WITH SAMPLE

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
MS	1,1-Dichloroethene	75-35-4	42.850	85.700	% Recov	03/23/06	63.000	117.000	
MS	Benzene	71-43-2	53.120	106.000	% Recov	03/23/06	75.000	129.000	
MS	4-Bromofluorobenzene Surr	460-00-4	94.960	95.000	% Recov	03/23/06	84.000	116.000	
MS	Chlorobenzene	108-90-7	51.520	103.000	% Recov	03/23/06	79.000	119.000	
MS	1,2-Dichloroethane-d4 Surr	17060-07-0	110.50	110.000	% Recov	03/23/06	82.000	136.000	
MS	Toluene-d8 Surr	2037-26-5	100.60	101.000	% Recov	03/23/06	89.000	119.000	
MS	Toluene	108-88-3	51.220	102.000	% Recov	03/23/06	76.000	120.000	
MS	Trichloroethene	79-01-6	49.120	98.200	% Recov	03/23/06	73.000	123.000	
MSD	1,1-Dichloroethene	75-35-4	43.380	86.800	% Recov	03/23/06	63.000	117.000	
MSD	Benzene	71-43-2	53.470	107.000	% Recov	03/23/06	75.000	129.000	
MSD	4-Bromofluorobenzene Surr	460-00-4	92.850	92.800	% Recov	03/23/06	84.000	116.000	
MSD	Chlorobenzene	108-90-7	51.700	103.000	% Recov	03/23/06	79.000	119.000	
MSD	1,2-Dichloroethane-d4 Surr	17060-07-0	108.80	109.000	% Recov	03/23/06	82.000	136.000	
MSD	Toluene-d8 Surr	2037-26-5	101.00	101.000	% Recov	03/23/06	89.000	119.000	
MSD	Toluene	108-88-3	50.570	101.000	% Recov	03/23/06	76.000	120.000	
MSD	Trichloroethene	79-01-6	51.720	103.000	% Recov	03/23/06	73.000	123.000	
SPK-RPD	1,1-Dichloroethene	75-35-4	86.800	1.275	RPD	03/23/06	0.000	20.000	
SPK-RPD	Benzene	71-43-2	107.000	0.939	RPD	03/23/06	0.000	20.000	
SPK-RPD	4-Bromofluorobenzene Surr	460-00-4	92.800	2.343	RPD	03/23/06	0.000	20.000	
SPK-RPD	Chlorobenzene	108-90-7	103.000	0.000	RPD	03/23/06	0.000	20.000	
SPK-RPD	1,2-Dichloroethane-d4 Surr	17060-07-0	109.000	0.913	RPD	03/23/06	0.000	20.000	
SPK-RPD	Toluene-d8 Surr	2037-26-5	101.000	0.000	RPD	03/23/06	0.000	20.000	
SPK-RPD	Toluene	108-88-3	101.000	0.985	RPD	03/23/06	0.000	20.000	
SPK-RPD	Trichloroethene	79-01-6	103.000	4.771	RPD	03/23/06	0.000	20.000	
SURR	4-Bromofluorobenzene Surr	460-00-4	94.310	94.300	% Recov	03/23/06	71.000	125.000	
SURR	1,2-Dichloroethane-d4 Surr	17060-07-0	107.90	108.000	% Recov	03/23/06	80.000	134.000	

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WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: 20060178
Matrix: SOLID
Test: VOA Ground Water Protection

SAF Number: R06-013
Sample Date: 03/14/06
Receive Date:03/14/06

QC Type	Analyte		CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
SURR	Toluene-d8	Surr	2037-26-5	100.90	101.000	% Recov	03/23/06	80.000	126.000	
Lab ID: W060000456										
BATCH QC ASSOCIATED WITH SAMPLE										
SURR	4-Bromofluorobenzene	Surr	460-00-4	93.150	93.200	% Recov	03/23/06	71.000	125.000	
SURR	1,2-Dichloroethane-d4	Surr	17060-07-0	109.50	110.000	% Recov	03/23/06	80.000	134.000	
SURR	Toluene-d8	Surr	2037-26-5	99.690	99.700	% Recov	03/23/06	80.000	126.000	
Lab ID: W060000457										
BATCH QC ASSOCIATED WITH SAMPLE										
SURR	4-Bromofluorobenzene	Surr	460-00-4	93.070	93.100	% Recov	03/23/06	71.000	125.000	
SURR	1,2-Dichloroethane-d4	Surr	17060-07-0	110.70	111.000	% Recov	03/23/06	80.000	134.000	
SURR	Toluene-d8	Surr	2037-26-5	100.50	100.000	% Recov	03/23/06	80.000	126.000	
BATCH QC										
BLANK	1,1-Dichloroethane		75-34-3	< 2.0	n/a	ug/Kg	03/23/06			U
BLANK	1,1,1-Trichloroethane		71-55-6	< 2.0	n/a	ug/Kg	03/23/06			U
BLANK	1,1,2-Trichloroethane		79-00-5	< 2.0	n/a	ug/Kg	03/23/06			U
BLANK	1,1,2,2-Tetrachloroethane		79-34-5	< 2.0	n/a	ug/Kg	03/23/06			U
BLANK	1,1-Dichloroethene		75-35-4	< 2.0	n/a	ug/Kg	03/23/06			U
BLANK	1,2-Dichloroethane		107-06-2	< 2.0	n/a	ug/Kg	03/23/06			U
BLANK	1,2-Dichloroethene (cis & tran		540-59-0	< 2.0	n/a	ug/Kg	03/23/06			U
BLANK	1-Butanol		71-36-3	< 40	n/a	ug/Kg	03/23/06			U
BLANK	2-Hexanone		591-78-6	< 2.0	n/a	ug/Kg	03/23/06			U
BLANK	2-Pentanone		107-87-9	< 2.0	n/a	ug/Kg	03/23/06			U
BLANK	4-Methyl-2-pentanone		108-10-1	< 2.0	n/a	ug/Kg	03/23/06			U
BLANK	Acetone		67-64-1	< 2.0	n/a	ug/Kg	03/23/06			U
BLANK	Bromodichloromethane		75-27-4	< 2.0	n/a	ug/Kg	03/23/06			U
BLANK	Benzene		71-43-2	< 2.0	n/a	ug/Kg	03/23/06			U
BLANK	4-Bromofluorobenzene	Surr	460-00-4	95.800	95.800	% Recov	03/23/06	71.000	125.000	

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WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: 20060178
Matrix: SOLID
Test: VOA Ground Water Protection

SAF Number: R06-013
Sample Date:
Receive Date:

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
BLANK	Bromoform	75-25-2	< 2.0	n/a	ug/Kg	03/23/06			U
BLANK	n-Butylbenzene	104-51-8	< 2.0	n/a	ug/Kg	03/23/06			U
BLANK	Carbon Disulfide	75-15-0	< 2.0	n/a	ug/Kg	03/23/06			U
BLANK	Carbon Tetrachloride	56-23-5	< 2.0	n/a	ug/Kg	03/23/06			U
BLANK	Dibromochloromethane	124-48-1	< 2.0	n/a	ug/Kg	03/23/06			U
BLANK	Cyclohexane	110-82-7	< 2.0	n/a	ug/Kg	03/23/06			U
BLANK	Chloroform	67-66-3	< 2.0	n/a	ug/Kg	03/23/06			U
BLANK	Chlorobenzene	108-90-7	< 2.0	n/a	ug/Kg	03/23/06			U
BLANK	cis-1,2-Dichloroethylene	156-59-2	< 2.0	n/a	ug/Kg	03/23/06			U
BLANK	cis-1,3-Dichloropropene	10061-01-5	< 2.0	n/a	ug/Kg	03/23/06			U
BLANK	Chloroethane	75-00-3	< 2.0	n/a	ug/Kg	03/23/06			U
BLANK	1,2-Dichloroethane-d4 Surr	17060-07-0	109.20	109.000	% Recov	03/23/06	80.000	134.000	
BLANK	trans-1,2-Dichloroethylene	156-60-5	< 2.0	n/a	ug/Kg	03/23/06			U
BLANK	1,2-Dichloropropane	78-87-5	< 2.0	n/a	ug/Kg	03/23/06			U
BLANK	Ethylbenzene	100-41-4	< 2.0	n/a	ug/Kg	03/23/06			U
BLANK	Hexane	110-54-3	< 2.0	n/a	ug/Kg	03/23/06			U
BLANK	Bromomethane	74-83-9	< 2.0	n/a	ug/Kg	03/23/06			U
BLANK	Chloromethane	74-87-3	< 2.0	n/a	ug/Kg	03/23/06			U
BLANK	2-Butanone	78-93-3	< 2.0	n/a	ug/Kg	03/23/06			U
BLANK	Methylene Chloride	75-09-2	< 2.0	n/a	ug/Kg	03/23/06			U
BLANK	Tetrachloroethene	127-18-4	< 2.0	n/a	ug/Kg	03/23/06			U
BLANK	Styrene	100-42-5	< 2.0	n/a	ug/Kg	03/23/06			U
BLANK	Total Xylenes	1330-20-7	< 2.0	n/a	ug/Kg	03/23/06			U
BLANK	Tetrahydrofuran	109-99-9	< 4.0	n/a	ug/Kg	03/23/06			U
BLANK	Toluene-d8 Surr	2037-26-5	99.050	99.000	% Recov	03/23/06	80.000	126.000	
BLANK	Toluene	108-88-3	< 2.0	n/a	ug/Kg	03/23/06			U
BLANK	trans-1,3-Dichloropropene	10061-02-6	< 2.0	n/a	ug/Kg	03/23/06			U
BLANK	Trichlorofluoromethane	75-69-4	< 2.0	n/a	ug/Kg	03/23/06	0.000	5.000	U
BLANK	Trichloroethene	79-01-6	< 2.0	n/a	ug/Kg	03/23/06			U
BLANK	Vinyl Chloride	75-01-4	< 2.0	n/a	ug/Kg	03/23/06			U

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WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: 20060178
Matrix: SOLID
Test: VOA Ground Water Protection

SAF Number: R06-013
Sample Date:
Receive Date:

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
LCS	1,1-Dichloroethene	75-35-4	40.460	80.900	% Recov	03/23/06	70.000	130.000	
LCS	Benzene	71-43-2	53.120	106.000	% Recov	03/23/06	70.000	130.000	
LCS	4-Bromofluorobenzene Surr	460-00-4	94.960	95.000	% Recov	03/23/06	71.000	125.000	
LCS	Chlorobenzene	108-90-7	51.520	103.000	% Recov	03/23/06	70.000	130.000	
LCS	1,2-Dichloroethane-d4 Surr	17060-07-0	110.50	110.000	% Recov	03/23/06	80.000	134.000	
LCS	Toluene-d8 Surr	2037-26-5	100.60	101.000	% Recov	03/23/06	80.000	126.000	
LCS	Toluene	108-88-3	51.220	102.000	% Recov	03/23/06	70.000	130.000	
LCS	Trichloroethene	79-01-6	49.120	98.200	% Recov	03/23/06	70.000	130.000	

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