Project Hanford Management System
COMMENT RESOLUTION SHEET

Document Number: WSCF20060934 | **Revision Number** N/A | **Date:** Sept 27, 2006

Document Title:
Data Validation 200-UW-1 OU, Soil from Trench between 216-U-8 & 216-U-12 Cribs

Reviewer:
Bill Thackaberry

Reviewers, if other than original:

Project/Organization:
EE/GRP/QA

Responsible Manager:
Dana Farwick

COMMENT(S)

Initials (If other than listed reviewer)	Section/ Step	Comments/Discrepancies	Basis	Recommendation	Resolution
	Rad Chem	Page 8, Regarding Ra226, Ra228, Actinium 228 and U233/234. The sample affected number is erroneous. It says B1JB51. It should say B1KB51.			
			Comment Resolved	WL Thackaberry	9/29/06

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MAY 29 2012
EDMC

1214254

REVIEW COMMENT RECORD (RCR)

1. Date 09/27/06	2. Review No.
3. Project No. 200-UW-I	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 WSCF20060934	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)	09/27/06 Date R. L. Weiss Reviewer/Point of Contact R. L. Weiss Author/Originator	9-27-06 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 2, 4, & 8; Use of "Uranium-234" should be "Uranium-233/234" for consistency sake..		Cor	OK RLW 9-27-06
2	Radiochemistry, Page16; Uranium-238 result should not be flagged "J" for B1KB51.		Cor	OK RLW 9-27-06

REVIEW COMMENT RECORD (RCR)

1. Date 09/03/06	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 WSCF20060934	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 09/03/06 Reviewer/Point of Contract Date R. L. Weiss Author/Originator	9-12-06 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, Volatile, & Semivolatile – Np Comment			
2	Inorganics, Pages 13 & 14: Results for B1KB50 & B1KB51 for Si, need "J" qualifier applied.		Cancel	OK RLW 9-12-06
3	Inorganics, Pages2, 4, 9, 16, & 34; Zinc result for B1KB51 is 1.11 mg/Kg. Assuming 1g to 100mL solids preparation, analytical solution for zinc should have been approximately 0.001 mg/L = 10 ug/L. Blank contamination for zinc was 0.34 ug/L. No "UJ" qualification should have been applied.		rejected – the blank results ~~was~~ were compared using WSCF instructions.	Accept RLW 9-12-06

Project Hanford Management System
COMMENT RESOLUTION SHEET

Document Number: 60934 | **Revision Number** N/A | **Date:** Sept 1, 2006

Document Title:
Data Validation 200-UW-1 OU, Soil from Trench between 216-U-8 and 216-U-12 Cribs

Reviewer:
Bill Thackaberry

Reviewers, if other than original:

Project/Organization:
FH/GRP/QA

Responsible Manager:
Dana Farwick

COMMENT(S)

Initials (If other than listed reviewer)	Section/ Step	Comments/Discrepancies	Basis	Recommendation	Resolution
	Inorganic	pg 13, Silicon was not flagged J. This is contrary to comment in LCS section on pg 3.	Cara		corrected
	Inorganic	pg 14 Silicon was not flagged J. This is contrary to comment in LCS section on pg 3.	Cara		corrected
	Rad Chem	pg 36, checklist item 5 is incomplete.	Corrected		corrected
	Rad Chem	pg 37, checklist item 9 is incomplete.	~~rejected - item # 9 is marked N/A on page 36~~ Corrected WRS 9.14.06		corrected
	Rad Chem	pg 38, checklist item 11 was not filled out.	Cara		corrected
	Semi VOA & VOA	No Comment			

Corrections completed WR Thackaberry 9/14/06

A-6002-913 (10/01)

Christian, Bruce

From: Trent, Stephen J [Stephen_J_Trent@RL.gov] **Sent:** Fri 8/4/2006 8:22 AM
To: Christian, Bruce
Cc: Lynch, Sherry A
Subject: IR#1 and IR#2 WSCF20060733
Attachments:

Bruce,

See labs response below for evaluating the units reported in ug/L. For those reported in PPM, that is equivalent to mg/kg. The sample results reported in ug/g is equivalent to mg/kg.

Steve

From: Mix, Pauline D
Sent: Friday, August 04, 2006 8:14 AM
To: Trent, Stephen J
Cc: Dale, Troy F
Subject: FW: Metals: Units for ICP-AES & ICP-MS

Steve

See Bill's explanation below. Call if you have any questions, thx

Pauline D. Mix
WSCF Client Services
Phone 372-1488
Cell 947-0751
FAX 372-0456
MSIN S3-30
Pauline_D_@rl.gov

From: Baird, William W (Bill)
Sent: Thursday, August 03, 2006 4:03 PM
To: Mix, Pauline D
Subject: Metals: Units for ICP-AES & ICP-MS

Pauline: See me re this Friday morning before sending to Steve
Bill

Re: WSCF 20060733 SAF R06-013

Because blanks are run in a clean water matrix, the natural or raw units are typically ug/L (ppb), ug/mL (ppm) or mg/L (also ppm). All of these units are the weight of the analyte per unit volume of the sample.

However, when solid samples are analyzed the sample results are typically reported in ug/g (ppm), mg/Kg (ppm) or ug/Kg (ppb). These units are the weight of the analyte per unit weight of the sample.

Two schools of thought regarding reporting of blanks: Either the raw weight/volume units or after first converting the raw units to weight/weight units.

In this particular case (SAF) we have done both. The BLANK data for the ICP-AES shows units of ppm whereas the same data for the ICP-MS shows units of ug/L (ppb).

Here is the guideline for comparing the BLANK data to the SAMPLE data for both ICP-AES and ICP-MS on this report.

Divide the SAMPLE result by the DF and compare directly to the BLANK result. Disregard units.

Date: 27 September 2006
To: Fluor Hanford Inc. (technical representative)
From: TechLaw, Inc.
Project: 200-UW-1 Operable Unit, Soil from Trench between 216-U-8 & 216-U-12 Cribs
Subject: Radiochemistry - Data Package No. WSCF20060934 (60934)

INTRODUCTION

This memo presents the results of data validation on Data Package No. 60934 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
B1KB49	8/16/06	Soil	C	See note 1
B1KB50	8/16/06	Soil	C	See note 1
B1KB51	8/16/06	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. 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.

- **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 radium-226, radium-228, actinium-228 and uranium-233/234 results in sample B1KB51 were qualified as estimates and flagged "J".

Due to method blank contamination, the plutonium-239/240 results in sample B1KB49 was qualified as an estimate 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-233/234 and uranium-235 results were qualified as estimates and flagged "J".

Due to a matrix spike recovery outside QC limits (47%), all technetium-99 results were qualified as estimates and flagged "J".

Due to radiochemical yields outside QC limits, all detected alpha spectroscopy uranium results in samples B1KB49 (121%) and B1KB50 (131%) 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.

All 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. Seven analytes exceeded the RTQL. Under the FHI statement of work, no qualification is required.

- **Completeness**

Data package SDG No. 60934 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 radium-226, radium-228, actinium-228 and uranium-233/234 results in sample B1KB51 were qualified as estimates and flagged "J".

- Due to method blank contamination, the plutonium-239/240 results in sample B1KB49 was qualified as an estimate and flagged "J".

- Due to the lack of an LCS analysis, the plutonium-238, uranium-233/234 and uranium-235 results were qualified as estimates and flagged "J".

- Due to a matrix spike recovery outside QC limits (47%), all technetium-99 results were qualified as estimates and flagged "J".

- Due to radiochemical yields outside QC limits, all detected alpha spectroscopy uranium results in samples B1KB49 (121%) and B1KB50 (131%) 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.

Seven analytes 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 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: 60934	REVIEWER: TLI	Project: 200-UW-1	PAGE 1 OF 1
COMMENTS:			
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Radium-226 Radium-228 Actinium-228 Uranium-233/234	J	B1KB51	Method blank contamination
Plutonium-239/240	J	B1KB49	Method blank contamination
Uranium-233/234 (aspec) Uranium-235 (aspec) Uranium-238 (aspec)	J	All detected analytes in samples B1KB49 & B1KB50	Radiochemical yield
Uranium-233/234 (aspec) Uranium-235 (aspec) Plutonium-238	J	All	No LCS analysis
Technetium-99	J	All	MS 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

Annotated Laboratory Reports

WSCF
ANALYTICAL RESULTS REPORT

Attention: D.L KLAGES H8-40 **Group #:** 20060934

Sample #	Client ID		CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
Radiochemistry														
W060002493	B1KB49	KLAGES	14596-10-2	Americium-241	SOIL	LA-508-471	U	0.0280	pCi/g	1.00	0.056	08/18/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	E,T,C	Am-241 by AEA Total Cntg Error	SOIL	LA-508-471		+- 0.034	pCi/g	1.00	0.0	08/18/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	14596-10-2	Americium-241	SOIL	LA-508-481	U	0.0583	pCi/g	1.00	0.17	08/29/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	E,T,C	Am-241 Rel Count Error (GEA)	SOIL	LA-508-481		+- 0.11	pCi/g	1.00	0.0	08/29/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	14234-35-6	Antimony-125	SOIL	LA-508-481	U	4.72e-03	pCi/g	1.00	0.11	08/29/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	E,T,C	Sb-125 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 0.047	pCi/g	1.00	0.0	08/29/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	13981-41-4	Ba-133 by GEA	SOIL	LA-508-481	U	0.0174	pCi/g	1.00	0.045	08/29/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	E,T,C	Ba-133 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 0.031	pCi/g	1.00	0.0	08/29/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	14762-78-8	Cerium-144	SOIL	LA-508-481	U	-0.107	pCi/g	1.00	0.22	08/29/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	E,T,C	Ce-144 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 0.14	pCi/g	1.00	0.0	08/29/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	CE/PR-144	Cerium/Praseodymium-144	SOIL	LA-508-481	U	0.214	pCi/g	1.00	0.44	08/29/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	E,T,C	CePr-144 Rel. Count Error	SOIL	LA-508-481		+- 0.27	pCi/g	1.00	0.0	08/29/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	10198-40-0	Cobalt-60	SOIL	LA-508-481	U	1.26e-03	pCi/g	1.00	0.012	08/29/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	E,T,C	Co-60 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 6.6e-03	pCi/g	1.00	0.0	08/29/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	13967-70-9	Cesium-134	SOIL	LA-508-481	U	0.0382	pCi/g	1.00	0.040	08/29/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	E,T,C	Cs-134 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 0.015	pCi/g	1.00	0.0	08/29/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	10045-97-3	Cesium-137	SOIL	LA-508-481		37.6	pCi/g	1.00	0.022	08/29/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	E,T,C	Cs-137 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 4.6	pCi/g	1.00	0.0	08/29/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	14683-23-9	Europium-152	SOIL	LA-508-481	U	-0.0130	pCi/g	1.00	0.10	08/29/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	E,T,C	Eu-152 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 0.064	pCi/g	1.00	0.0	08/29/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	15585-10-1	Europium-154	SOIL	LA-508-481	U	-1.70e-03	pCi/g	1.00	0.035	08/29/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	E,T,C	Eu-154 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 0.017	pCi/g	1.00	0.0	08/29/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	14391-16-3	Europium-155	SOIL	LA-508-481	U	0.0230	pCi/g	1.00	0.11	08/29/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	E,T,C	Eu-155 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 0.070	pCi/g	1.00	0.0	08/29/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	13966-00-2	Potassium-40	SOIL	LA-508-481		14.4	pCi/g	1.00	0.087	08/29/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	E,T,C	K-40 Rel.% Count Error (GEA)	SOIL	LA-508-481		+- 1.3	pCi/g	1.00	0.0	08/29/06	08/16/06	08/16/06

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

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

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

9/26/06

WSCF
ANALYTICAL RESULTS REPORT

Attention: D.L KLAGES H8-40 **Group #:** 20060934

Sample #	Client ID		CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W060002493	B1KB49	KLAGES	14681-63-1	Niobium-94	SOIL	LA-508-481	U	2.93e-03	pCi/g	1.00	0.011	08/29/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	E,T,C	Nb-94 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 6.5e-03	pCi/g	1.00	0.0	08/29/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	13982-63-3	Radium-226	SOIL	LA-508-481		0.628	pCi/g	1.00	0.050	08/29/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	E,T,C	Ra-226 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 0.094	pCi/g	1.00	0.0	08/29/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	15262-20-1	Radium-228	SOIL	LA-508-481		0.730	pCi/g	1.00	0.036	08/29/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	E,T,C	Ra-228 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 0.10	pCi/g	1.00	0.0	08/29/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	13967-48-1	Ruthenium-106	SOIL	LA-508-481	U	0.0650	pCi/g	1.00	0.24	08/29/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	E,T,C	Ru-106 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 0.14	pCi/g	1.00	0.0	08/29/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	15832-50-5	Tin-126	SOIL	LA-508-481	U	0.113	pCi/g	1.00	0.20	08/29/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	E,T,C	Sn-126 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 0.054	pCi/g	1.00	0.0	08/29/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	15117-96-1	Uranium-235	SOIL	LA-508-481		0.296	pCi/g	1.00	0.23	08/29/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	E,T,C	U-235 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 0.081	pCi/g	1.00	0.0	08/29/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	13982-39-3	Zinc-65	SOIL	LA-508-481	U	-4.56e-03	pCi/g	1.00	0.024	08/29/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	E,T,C	Zn-65 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 0.017	pCi/g	1.00	0.0	08/29/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	14331-83-0	Actinium-228	SOIL	LA-508-481		0.730	pCi/g	1.00	0.036	08/29/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	E,T,C	Ac-228 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 0.10	pCi/g	1.00	0.0	08/29/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	13968-53-1	Ruthenium-103	SOIL	LA-508-481	U	-5.01e-03	pCi/g	1.00	0.034	08/29/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	E,T,C	Ru-103 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 0.021	pCi/g	1.00	0.0	08/29/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	13966-06-8	Tin-113	SOIL	LA-508-481	U	0.0172	pCi/g	1.00	0.048	08/29/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	E,T,C	Sn-113 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 0.029	pCi/g	1.00	0.0	08/29/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	13994-20-2	Neptunium-237	SOIL	LA-508-471		0.0410	pCi/g	1.00	0.013	09/13/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	E,T,C	Np-237 by AEA Total Ctng Error	SOIL	LA-508-471		+- 0.020	pCi/g	1.00	0.0	09/13/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	13981-16-3	Plutonium-238	SOIL	LA-508-471	U J	0.0140	pCi/g	1.00	0.019	08/18/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	E,T,C	Pu-238 by AEA Total Cntg Error	SOIL	LA-508-471		+- 0.014	pCi/g	1.00	0.0	08/18/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	PU-239/240	Pu-239/240 by AEA	SOIL	LA-508-471	J	0.0220	pCi/g	1.00	5.4e-03	08/18/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	E,T,C	Pu-239/240 AEA Total Cntg Err	SOIL	LA-508-471		+- 0.014	pCi/g	1.00	0.0	08/18/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	SR-RAD	Strontium-89/90	SOIL	LA-508-415		4.45	pCi/g	1.00	0.098	08/18/06	08/16/06	08/16/06

MDL = Minimum Detection Limit
RQ = Result Qualifier

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

DF = Dilution Factor

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9/26/06

WSCF
ANALYTICAL RESULTS REPORT

Attention: D.L KLAGES H8-40 **Group #:** 20060934

Sample #	Client ID		CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W060002493	B1KB49	KLAGES	E,T,C	Sr-89/90 Rel. Count Error	SOIL	LA-508-415		+- 0.89	pCi/g	1.00	0.0	08/18/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	14133-76-7	Technetium-99	SOIL	LA-508-421	U J	-0.0410	pCi/g	1.00	0.28	08/18/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	E,T,C	Tc-99 Counting Error	SOIL	LA-508-421		+- 0.041	pCi/g	1.00	0.0	08/18/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	U-233/234	Uranium-233/234	SOIL	LA-508-471	J	2.20	pCi/g	1.00	0.015	08/21/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	E,T,C	U-233/234 AEA Total Cntg Error	SOIL	LA-508-471		+- 0.57	pCi/g	1.00	0.0	08/21/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	15117-96-1	Uranium-235	SOIL	LA-508-471	J	0.220	pCi/g	1.00	6.2e-03	08/21/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	E,T,C	U-235 by AEA Total Cntg Error	SOIL	LA-508-471		+- 0.073	pCi/g	1.00	0.0	08/21/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	U-238	Uranium-238	SOIL	LA-508-471	J	2.00	pCi/g	1.00	5.7e-03	08/21/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	E,T,C	U-238 by AEA Total Cntg Error	SOIL	LA-508-471		+- 0.52	pCi/g	1.00	0.10	08/21/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	14596-10-2	Americium-241	SOIL	LA-508-471	U	6.60e-03	pCi/g	1.00	0.040	08/18/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	E,T,C	Am-241 by AEA Total Cntg Error	SOIL	LA-508-471		+- 0.022	pCi/g	1.00	0.0	08/18/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	14596-10-2	Americium-241	SOIL	LA-508-481	U	0.0842	pCi/g	1.00	0.29	08/30/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	E,T,C	Am-241 Rel Count Error (GEA)	SOIL	LA-508-481		+- 0.20	pCi/g	1.00	0.0	08/30/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	14234-35-6	Antimony-125	SOIL	LA-508-481	U	-0.0185	pCi/g	1.00	0.15	08/30/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	E,T,C	Sb-125 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 0.089	pCi/g	1.00	0.0	08/30/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	13981-41-4	Ba-133 by GEA	SOIL	LA-508-481	U	-1.95e-03	pCi/g	1.00	0.060	08/30/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	E,T,C	Ba-133 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 0.020	pCi/g	1.00	0.0	08/30/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	14762-78-8	Cerium-144	SOIL	LA-508-481	U	0.0949	pCi/g	1.00	0.31	08/30/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	E,T,C	Ce-144 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 0.22	pCi/g	1.00	0.0	08/30/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	CE/PR-144	Cerium/Praseodymium-144	SOIL	LA-508-481	U	0.190	pCi/g	1.00	0.63	08/30/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	E,T,C	CePr-144 Rel. Count Error	SOIL	LA-508-481		+- 0.44	pCi/g	1.00	0.0	08/30/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	10198-40-0	Cobalt-60	SOIL	LA-508-481	U	-4.12e-03	pCi/g	1.00	9.8e-03	08/30/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	E,T,C	Co-60 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 7.0e-03	pCi/g	1.00	0.0	08/30/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	13967-70-9	Cesium-134	SOIL	LA-508-481	U	0.0492	pCi/g	1.00	0.050	08/30/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	E,T,C	Cs-134 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 0.014	pCi/g	1.00	0.0	08/30/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	10045-97-3	Cesium-137	SOIL	LA-508-481		69.4	pCi/g	1.00	0.029	08/30/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	E,T,C	Cs-137 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 12	pCi/g	1.00	0.0	08/30/06	08/16/06	08/16/06

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E - Analyte is an estimate, has potentially larger errors
U - Analyzed for but not detected above limiting criteria.
C - The Analyte was found in the Associated Blank.
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R 9/26/06

WSCF
ANALYTICAL RESULTS REPORT

Attention: D.L KLAGES H8-40 **Group #:** 20060934

Sample #	Client ID		CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W060002494	B1KB50	KLAGES	14683-23-9	Europium-152	SOIL	LA-508-481	U	0.0211	pCi/g	1.00	0.14	08/30/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	E,T,C	Eu-152 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 0.086	pCi/g	1.00	0.0	08/30/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	15585-10-1	Europium-154	SOIL	LA-508-481	U	-0.0182	pCi/g	1.00	0.033	08/30/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	E,T,C	Eu-154 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 0.020	pCi/g	1.00	0.0	08/30/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	14391-16-3	Europium-155	SOIL	LA-508-481	U	-0.0452	pCi/g	1.00	0.17	08/30/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	E,T,C	Eu-155 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 0.10	pCi/g	1.00	0.0	08/30/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	13966-00-2	Potassium-40	SOIL	LA-508-481		15.5	pCi/g	1.00	0.082	08/30/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	E,T,C	K-40 Rel.% Count Error (GEA)	SOIL	LA-508-481		+- 2.1	pCi/g	1.00	0.0	08/30/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	14681-63-1	Niobium-94	SOIL	LA-508-481	U	4.63e-03	pCi/g	1.00	0.011	08/30/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	E,T,C	Nb-94 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 6.7e-03	pCi/g	1.00	0.0	08/30/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	13982-63-3	Radium-226	SOIL	LA-508-481		0.593	pCi/g	1.00	0.065	08/30/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	E,T,C	Ra-226 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 0.12	pCi/g	1.00	0.0	08/30/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	15262-20-1	Radium-228	SOIL	LA-508-481		0.740	pCi/g	1.00	0.037	08/30/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	E,T,C	Ra-228 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 0.13	pCi/g	1.00	0.0	08/30/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	13967-48-1	Ruthenium-106	SOIL	LA-508-481	U	-0.138	pCi/g	1.00	0.30	08/30/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	E,T,C	Ru-106 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 0.19	pCi/g	1.00	0.0	08/30/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	15832-50-5	Tin-126	SOIL	LA-508-481	U	0.154	pCi/g	1.00	0.20	08/30/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	E,T,C	Sn-126 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 0.081	pCi/g	1.00	0.0	08/30/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	15117-96-1	Uranium-235	SOIL	LA-508-481	U	0.311	pCi/g	1.00	0.32	08/30/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	E,T,C	U-235 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 0.078	pCi/g	1.00	0.0	08/30/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	13982-39-3	Zinc-65	SOIL	LA-508-481	U	-0.0107	pCi/g	1.00	0.024	08/30/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	E,T,C	Zn-65 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 0.017	pCi/g	1.00	0.0	08/30/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	14331-83-0	Actinium-228	SOIL	LA-508-481		0.740	pCi/g	1.00	0.037	08/30/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	E,T,C	Ac-228 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 0.13	pCi/g	1.00	0.0	08/30/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	13968-53-1	Ruthenium-103	SOIL	LA-508-481	U	-0.0176	pCi/g	1.00	0.045	08/30/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	E,T,C	Ru-103 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 0.028	pCi/g	1.00	0.0	08/30/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	13966-06-8	Tin-113	SOIL	LA-508-481	U	-0.0189	pCi/g	1.00	0.062	08/30/06	08/16/06	08/16/06

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Report WGPP/ver. 1.3.1
PROJECT HANFORD MANAGEMENT COMPANY

pr 9/21/06

WSCF
ANALYTICAL RESULTS REPORT

Attention: D.L KLAGES H8-40 **Group #:** 20060934

Sample #	Client ID		CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W060002494	B1KB50	KLAGES	E,T,C	Sn-113 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 0.037	pCi/g	1.00	0.0	08/30/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	13994-20-2	Neptunium-237	SOIL	LA-508-471		0.0590	pCi/g	1.00	0.023	09/13/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	E,T,C	Np-237 by AEA Total Ctng Error	SOIL	LA-508-471		+- 0.030	pCi/g	1.00	0.0	09/13/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	13981-16-3	Plutonium-238	SOIL	LA-508-471	J	0.0160	pCi/g	1.00	0.015	08/18/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	E,T,C	Pu-238 by AEA Total Cntg Error	SOIL	LA-508-471		+- 0.013	pCi/g	1.00	0.0	08/18/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	PU-239/240	Pu-239/240 by AEA	SOIL	LA-508-471	U	9.90e-03	pCi/g	1.00	0.015	08/18/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	E,T,C	Pu-239/240 AEA Total Cntg Err	SOIL	LA-508-471		+- 0.011	pCi/g	1.00	0.0	08/18/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	SR-RAD	Strontium-89/90	SOIL	LA-508-415		6.40	pCi/g	1.00	0.097	08/18/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	E,T,C	Sr-89/90 Rel. Count Error	SOIL	LA-508-415		+- 0.96	pCi/g	1.00	0.0	08/18/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	14133-76-7	Technetium-99	SOIL	LA-508-421	U J	0.0960	pCi/g	1.00	0.28	08/18/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	E,T,C	Tc-99 Counting Error	SOIL	LA-508-421		+- 0.96	pCi/g	1.00	0.0	08/18/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	U-233/234	Uranium-233/234	SOIL	LA-508-471	J	3.30	pCi/g	1.00	4.6e-03	08/21/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	E,T,C	U-233/234 AEA Total Cntg Error	SOIL	LA-508-471		+- 0.86	pCi/g	1.00	0.0	08/21/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	15117-96-1	Uranium-235	SOIL	LA-508-471	J	0.240	pCi/g	1.00	0.014	08/21/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	E,T,C	U-235 by AEA Total Cntg Error	SOIL	LA-508-471		+- 0.074	pCi/g	1.00	0.0	08/21/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	U-238	Uranium-238	SOIL	LA-508-471	J	3.50	pCi/g	1.00	0.016	08/21/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	E,T,C	U-238 by AEA Total Cntg Error	SOIL	LA-508-471		+- 0.91	pCi/g	1.00	0.10	08/21/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	14596-10-2	Americium-241	SOIL	LA-508-471	U	6.60e-03	pCi/g	1.00	0.044	08/18/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	E,T,C	Am-241 by AEA Total Cntg Error	SOIL	LA-508-471		+- 0.024	pCi/g	1.00	0.0	08/18/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	14596-10-2	Americium-241	SOIL	LA-508-481	U	-0.114	pCi/g	1.00	0.073	08/19/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	E,T,C	Am-241 Rel Count Error (GEA)	SOIL	LA-508-481		+- 0.11	pCi/g	1.00	0.0	08/19/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	14234-35-6	Antimony-125	SOIL	LA-508-481	U	5.98e-03	pCi/g	1.00	0.023	08/19/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	E,T,C	Sb-125 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 0.013	pCi/g	1.00	0.0	08/19/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	13981-41-4	Ba-133 by GEA	SOIL	LA-508-481	U	-1.38e-03	pCi/g	1.00	0.011	08/19/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	E,T,C	Ba-133 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 7.1e-03	pCi/g	1.00	0.0	08/19/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	14762-78-8	Cerium-144	SOIL	LA-508-481	U	5.48e-03	pCi/g	1.00	0.066	08/19/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	E,T,C	Ce-144 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 0.054	pCi/g	1.00	0.0	08/19/06	08/16/06	08/16/06

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DF = Dilution Factor

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K 9/26/06

WSCF
ANALYTICAL RESULTS REPORT

Attention: D.L KLAGES H8-40 **Group #:** 20060934

Sample #	Client ID		CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W060002495	B1KB51	KLAGES	CE/PR-144	Cerium/Praseodymium-144	SOIL	LA-508-481	U	0.0110	pCi/g	1.00	0.13	08/19/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	E,T,C	CePr-144 Rel. Count Error	SOIL	LA-508-481		+- 0.11	pCi/g	1.00	0.0	08/19/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	10198-40-0	Cobalt-60	SOIL	LA-508-481	U	-2.78e-03	pCi/g	1.00	7.6e-03	08/19/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	E,T,C	Co-60 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 4.5e-03	pCi/g	1.00	0.0	08/19/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	13967-70-9	Cesium-134	SOIL	LA-508-481	U	8.50e-03	pCi/g	1.00	0.010	08/19/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	E,T,C	Cs-134 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 5.7e-03	pCi/g	1.00	0.0	08/19/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	10045-97-3	Cesium-137	SOIL	LA-508-481	U	2.53e-03	pCi/g	1.00	8.9e-03	08/19/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	E,T,C	Cs-137 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 5.1e-03	pCi/g	1.00	0.0	08/19/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	14683-23-9	Europium-152	SOIL	LA-508-481	U	-4.55e-03	pCi/g	1.00	0.025	08/19/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	E,T,C	Eu-152 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 0.018	pCi/g	1.00	0.0	08/19/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	15585-10-1	Europium-154	SOIL	LA-508-481	U	0.0101	pCi/g	1.00	0.022	08/19/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	E,T,C	Eu-154 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 0.014	pCi/g	1.00	0.0	08/19/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	14391-16-3	Europium-155	SOIL	LA-508-481	U	0.0160	pCi/g	1.00	0.038	08/19/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	E,T,C	Eu-155 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 0.022	pCi/g	1.00	0.0	08/19/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	13966-00-2	Potassium-40	SOIL	LA-508-481		0.844	pCi/g	1.00	0.075	08/19/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	E,T,C	K-40 Rel.% Count Error (GEA)	SOIL	LA-508-481		+- 0.17	pCi/g	1.00	0.0	08/19/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	14681-63-1	Niobium-94	SOIL	LA-508-481	U	-3.78e-03	pCi/g	1.00	7.7e-03	08/19/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	E,T,C	Nb-94 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 4.8e-03	pCi/g	1.00	0.0	08/19/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	13982-63-3	Radium-226	SOIL	LA-508-481	J	0.156	pCi/g	1.00	0.017	08/19/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	E,T,C	Ra-226 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 0.035	pCi/g	1.00	0.0	08/19/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	15262-20-1	Radium-228	SOIL	LA-508-481	J	0.182	pCi/g	1.00	0.025	08/19/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	E,T,C	Ra-228 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 0.043	pCi/g	1.00	0.0	08/19/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	13967-48-1	Ruthenium-106	SOIL	LA-508-481	U	5.64e-03	pCi/g	1.00	0.075	08/19/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	E,T,C	Ru-106 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 0.044	pCi/g	1.00	0.0	08/19/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	15832-50-5	Tin-126	SOIL	LA-508-481	U	0.0390	pCi/g	1.00	0.040	08/19/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	E,T,C	Sn-126 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 0.019	pCi/g	1.00	0.0	08/19/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	15117-96-1	Uranium-235	SOIL	LA-508-481	U	0.0383	pCi/g	1.00	0.066	08/19/06	08/16/06	08/16/06

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

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

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

K 9/26/06

WSCF
ANALYTICAL RESULTS REPORT

Attention: D.L KLAGES H8-40 **Group #:** 20060934

Sample #	Client ID		CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W060002495	B1KB51	KLAGES	E,T,C	U-235 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 0.048	pCi/g	1.00	0.0	08/19/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	13982-39-3	Zinc-65	SOIL	LA-508-481	U	-0.0116	pCi/g	1.00	0.016	08/19/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	E,T,C	Zn-65 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 0.013	pCi/g	1.00	0.0	08/19/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	14331-83-0	Actinium-228	SOIL	LA-508-481	J	0.182	pCi/g	1.00	0.025	08/19/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	E,T,C	Ac-228 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 0.043	pCi/g	1.00	0.0	08/19/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	13968-53-1	Ruthenium-103	SOIL	LA-508-481	U	-2.27e-03	pCi/g	1.00	8.3e-03	08/19/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	E,T,C	Ru-103 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 5.0e-03	pCi/g	1.00	0.0	08/19/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	13966-06-8	Tin-113	SOIL	LA-508-481	U	-4.88e-04	pCi/g	1.00	0.011	08/19/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	E,T,C	Sn-113 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 4.9e-03	pCi/g	1.00	0.0	08/19/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	13994-20-2	Neptunium-237	SOIL	LA-508-471	U	4.10e-03	pCi/g	1.00	0.019	09/13/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	E,T,C	Np-237 by AEA Total Ctng Error	SOIL	LA-508-471		+- 0.012	pCi/g	1.00	0.0	09/13/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	13981-16-3	Plutonium-238	SOIL	LA-508-471	U J	1.80e-03	pCi/g	1.00	0.022	08/18/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	E,T,C	Pu-238 by AEA Total Cntg Error	SOIL	LA-508-471		+- 1.8e-03	pCi/g	1.00	0.0	08/18/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	PU-239/240	Pu-239/240 by AEA	SOIL	LA-508-471	U	1.80e-03	pCi/g	1.00	5.0e-03	08/18/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	E,T,C	Pu-239/240 AEA Total Cntg Err	SOIL	LA-508-471		+- 3.6e-03	pCi/g	1.00	0.0	08/18/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	SR-RAD	Strontium-89/90	SOIL	LA-508-415	U	0.0850	pCi/g	1.00	0.10	08/18/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	E,T,C	Sr-89/90 Rel. Count Error	SOIL	LA-508-415		+- 0.11	pCi/g	1.00	0.0	08/18/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	14133-76-7	Technetium-99	SOIL	LA-508-421	U J	-0.320	pCi/g	1.00	0.29	08/18/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	E,T,C	Tc-99 Counting Error	SOIL	LA-508-421		+- 0.32	pCi/g	1.00	0.0	08/18/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	U-233/234	Uranium-233/234	SOIL	LA-508-471	J	0.0260	pCi/g	1.00	0.013	08/21/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	E,T,C	U-233/234 AEA Total Cntg Error	SOIL	LA-508-471		+- 0.016	pCi/g	1.00	0.0	08/21/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	15117-96-1	Uranium-235	SOIL	LA-508-471	J	0.0150	pCi/g	1.00	5.2e-03	08/21/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	E,T,C	U-235 by AEA Total Cntg Error	SOIL	LA-508-471		+- 0.011	pCi/g	1.00	0.0	08/21/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	U-238	Uranium-238	SOIL	LA-508-471	U	0.0160	pCi/g	1.00	0.019	08/21/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	E,T,C	U-238 by AEA Total Cntg Error	SOIL	LA-508-471		+- 0.014	pCi/g	1.00	0.10	08/21/06	08/16/06	08/16/06

9/26/06

MDL = Minimum Detection Limit
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DF = Dilution Factor

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

* - 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	**WSCF20060934, Rev. 1**
Sample Matrix	**SOLID**
Sample Visual	**N/A**
SAF Number	**R06-013**
Data Deliverable	**Summary Report**

Introduction

Six (6) 200-UW-1 Operable Unit soil samples (B1KB49, B1KB50, B1KB51, B1KB75, B1KB76 and B1KB77) from the trench between 216-U-8 and 216-U-12 were received at the WSCF Laboratory on August 16, 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.

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, 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 70 through 71 for a complete listing of approved analytical methods used.

Inorganic Comments

Anions - The hold time requirements were met. A Blank, Duplicate, Laboratory Control Sample, Matrix Spike and Matrix Spike Duplicate were analyzed with this delivery group. See pages 16 through 17 for QC details. Analytical Notes:

- Preparation Date: 21-aug-2006.
- Chloride and Sulfate – Sample results for B1KB49 and B1KB50 were B-flagged; the analytes were less than the reportable detection limit, but greater than or equal to the method detection limit.
- Phosphate – Matrix Spike and Matrix Spike Duplicate recoveries were below established laboratory limits. Sample results were less than detection limits and U flagged.

All other QC controls are within the established limits.

ICP-AES Metals – The holding time for this analysis was met. A Blank, Laboratory Control Sample (LCS), Matrix Spike and Matrix Spike Duplicate were analyzed with this delivery group of less than 20 samples. See pages 18 through 20 for QC details. Analytical Notes:

- Preparation Date: 21-aug-2006.

- Aluminum, Calcium, Iron, Magnesium and Titanium – insufficient spike (Matrix Spike and Matrix Spike Duplicate) concentrations. Sample concentrations were greater than four times the spike concentration.

- Aluminum – Analyte detected in the associated preparation Blank sample was evaluated and sample result for B1KB51 was C flagged.

- Calcium – The Laboratory Control Sample recovery exceeded established laboratory limits. Calcium results for B1KB49, B1KB50 and B1KB51 were E flagged.

- Lithium – Although the Laboratory Control Sample recovery exceeded established laboratory limits, the Matrix Spike and Matrix Spike Duplicate recoveries were within established laboratory limits. Sample results were not E flagged.

- Silicon – Matrix Spike, Matrix Spike Duplicate and Laboratory Control Sample recoveries were outside established laboratory limits. B1KB49, B1KB50 and B1KB51 were E flagged.

All other QC controls are within the established limits.

ICP-MS Metals – The holding time for this analysis was met, with the exception of mercury. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spike Duplicate were analyzed with this deliver group of less than 20 samples. See pages 21 through 24 for QC details Analytical Notes:

- Preparation Date: 21-aug-2006.

- Thorium results listed in the report represent Th-232 exclusively.

- Zinc – Analyte detected in the associated preparation Blank sample was evaluated and sample B1KB51 was C flagged.

- Beryllium (samples B1KB49 and B1KB50), Thallium (samples B1KB49 and B1KB50), Manganese (sample B1KB51), Thorium (sample B1KB51) and Uranium (sample B1KB51) – Negative preparation blank results may have potential affect on sample results. Sample results were X flagged.

All other QC controls are within the established limits.

Percent Solids – analyzed for organic moisture correction.

<u>Organic Comments</u>

- 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, Matrix Spike and Matrix Spiked Duplicate were analyzed with this delivery group. See pages 39 through 45 for QC details. Analytical Notes:

- Preparation Date: 17-aug-2006.
- Bis (2-Ethylhexyl) phthalate - sample B1KB49 result was J flagged; result was less than the lowest calibration standard but greater than the detection limit.
- Di-n-octylphthalate - sample B1KB50 result was J flagged; result was less than the lowest calibration standard but greater than the detection limit.
- Diethylphthalate - samples results for B1KB50 and B1KB51 were J flagged; results were less than the lowest calibration standard but greater than the detection limit.
- Matrix Spike and Matrix Spike Duplicate QC samples were analyzed on sample# B1KB52 (SDG# 20060935, SAF# F06-013).

All QC controls are within the established limits.

TPHD-WA - The hold time for this analysis were met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with this delivery group. See page 46 for QC details. Analytical Notes:

- Preparation Date: 17-aug-2006.
- Matrix Spike and Matrix Spike Duplicate QC samples were analyzed on sample# B1KB52 (SDG# 20060935, SAF# F06-013).

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. See pages 47 through 50 for QC details. Analytical Note:

- 4-Bromofluorobenzene – Matrix Spike and Matrix Spike Duplicate QC exceeded established laboratory limits.

All other QC controls are within the established limits.

Radiochemistry Comments

RadChem – There are no hold times associated with WSCF radiochemical methods. A Blank, Laboratory Control Sample, Matrix Spike (Technetium only), and Duplicate were analyzed with this delivery group. See pages 58 through 65 for QC details. Analytical Notes:

- Pu-239/240 – Duplicate QC Relative Percent Difference (RPD) exceeded established laboratory limits due to low sample activity.

- Strontium-90 – Duplicate QC RPD exceeded established laboratory limits due to sample homogeneity issues.

- Technetium-99 – Matrix Spike QC RPD exceeded established laboratory limits due to low sample activity.

- Uranium Isotopic (233/234, 235 and 238) – Duplicate QC RPD exceeded established laboratory limits due to sample homogeneity issues.

All other QC controls are within the established limits.

Americium-243, Plutonium-242, Strontium-85 and Uranium-232 – Radiochemical Tracer Recovery Data and Neptunium-237 Matrix Spike Data are summarized below:

Radiochemical Tracer Percent Recovery			
Sample Number	**Lab Sample ID**	**Isotope**	**Tracer Recovery (Percent)**
Americium-243			
BLANK		Am-243	79.9%
LCS		Am-243	93.0%
B1KB49	W060002493	Am-243	85.8%
DUPLICATE	W060002493	Am-243	89.2%
B1KB50	W060002494	Am-243	95.5%
B1KB51	W060002495	Am-243	90.7%
Plutonium-242			
BLANK		Pu-242	84.0%
LCS		Pu-242	85.0%
B1KB49	W060002493	Pu-242	81.8%
DUPLICATE	W060002493	Pu-242	86.7%
B1KB50	W060002494	Pu-242	99.4%
B1KB51	W060002495	Pu-242	88.3%
Strontium-85			
BLANK		Sr-85	98.9%
LCS		Sr-85	83.4%
B1KB49	W060002493	Sr-85	86.0%
DUPLICATE	W060002493	Sr-85	88.2%
B1KB50	W060002494	Sr-85	95.9%

Radiochemical Tracer Percent Recovery			
Sample Number	**Lab Sample ID**	**Isotope**	**Tracer Recovery (Percent)**
B1KB51	W060002495	Sr-85	85.4%
Uranium-232			
BLANK		U-232	79.8%
LCS		U-232	75.6%
B1KB49	W060002493	U-232	121.6%
DUPLICATE	W060002493	U-232	93.0%
B1KB50	W060002494	U-232	131.7%
B1KB51	W060002495	U-232	103.6%

Neptunium-237 Matrix Spike Recovery			
Sample Number	**Lab Sample ID**	**Isotope**	**Matrix Spike Recovery (Percent)**
Neptunium-237			
B1KB53	W060002493	Np-237	98.5
B1KB53 Dup	W060002493 Dup	Np-237	95.1
B1KB54	W060002494	Np-237	96.1
B1KJ40	W060002495	Np-237	92.9

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

8/23/06

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			R06-013-011	PAGE 1 OF 4
COLLECTOR HOGAN, JG	COMPANY CONTACT TRECHTER, JE	TELEPHONE NO. 373-7046	PROJECT COORDINATOR TRECHTER, JE	PRICE CODE 8C	DATA TURNAROUND
SAMPLING LOCATION 200-W-42	PROJECT DESIGNATION 200-UW-1 Operable Unit, Soil from Trench between 216-U-8 and 216-U-12		SAF NO. R06-013	AIR QUALITY ☐	7 DAYS ~~15 Days~~ 8-16-06 7 DAYS ~~15 Days~~
ICE CHEST NO.	FIELD LOGBOOK NO. DTS-SAWS-4	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: 20060934

POSSIBLE SAMPLE HAZARDS/ REMARKS

ICED ✓ Initial
8/16/06 Date

SAMPLE NO.	LAB ID	MATRIX*	SAMPLE DATE	SAMPLE TIME	NO./TYPE CONTAINER(S)	ANALYSIS	PRESERVATION
B1KB49	W06000 2493	S	8-16-06	1530	4X60mL aG	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Cool 4C
B1KB49		S			4X60mL G	TPH-Diesel Range - WTPH-D {TPHKEROSEN}	Cool 4C
B1KB49		S			1X500mL Square Bottle - Poly	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	None
B1KB49		S			4X60mL G/P	Isotopic Plutonium {Pu-238, Pu-239/240} Isotopic Uranium {U-233/234, U-235, U-238} Americium-241 {Am-241}	None
B1KB49		S			4X60mL G/P	Strontium-89,90 -- Sr-90 {Sr-90}	None
B1KB49		S			4X60mL G/P	Technetium-99 {Tc-99}	None
B1KB49		S			4X60mL G/P	Neptunium-237 {Np-237}	None

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS
JG HOGAN JG Hogan	1920 8-16-06	Victor Pinus	8/16/06 1920	
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	

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			R06-013-011	PAGE 2 OF 4
COLLECTOR HOGAN, JG	**COMPANY CONTACT** TRECHTER, JE	**TELEPHONE NO.** 373-7046	**PROJECT COORDINATOR** TRECHTER, JE	**PRICE CODE** 8C	**DATA TURNAROUND** ~~15 Days~~ 7 DAYS 8-16-06
SAMPLING LOCATION 200-W-42	**PROJECT DESIGNATION** 200-UW-1 Operable Unit, Soil from Trench between 216-U-8 and 216-U-12		**SAF NO.** R06-013	**AIR QUALITY** ☐	
ICE CHEST NO.	**FIELD LOGBOOK NO.** DTS-SAWS-H	**COA** 121600ES20	**METHOD OF SHIPMENT** GOVERNMENT VEHICLE	ICED ✓ Initial 8/16/06 Date	
SHIPPED TO Waste Sampling & Characterization	**OFFSITE PROPERTY NO.** N/A		**BILL OF LADING/AIR BILL NO.** N/A		

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, BENZOPY, BIS2CHE, BIS2CHM, BIS2EPH, BNZKFLU, BROPHEN, BUTBENP, CHLANIL, CHLCRES, CHLNAPH, CHLPHEN, CHRYSENE, DIBAHAN, DIBENFR, DIBPHTH, DICHBEN, DIEPHTH, DIMPHTH, DINPHEN, DIOPHTH, DIPRNIT, FLUORAN, FLUORENE, HEXCBEN, HEXCBUT, HEXCCYC, HEXCETH, INDENOP, ISOPHORONE, NAPHTHA, NITBENZ, NITPHENOL, NITRANILIN, NNDIPHA, PENTCHP, PHENANT, PHENOL, PYRENE, TRICHLB}

(2)Gamma Spec - Add-on {Ac-228, Ba-133, Ce-144, Cs/Pr-144, Cm-244, Cs-134, K-40, Nb-94, Ra-228, Ru-103, Sb-125, Sn-113, Sn-125, Sn-126, Th-228, Th-232, U-235, U-238, Zn-65} Gamma Spectroscopy {Am-241, Co-58, Co-60, Cs-137, Eu-152, Eu-154, Eu-155, Fe-59, Ra-226, Ru-106}

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A-6001-774

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			R06-013-011	PAGE 3 OF 4
COLLECTOR HOGAN, JG	COMPANY CONTACT TRECHTER, JE	TELEPHONE NO. 373-7046	PROJECT COORDINATOR TRECHTER, JE	PRICE CODE 8C	DATA TURNAROUND
SAMPLING LOCATION 200-W-42	PROJECT DESIGNATION 200-UW-1 Operable Unit, Soil from Trench between 216-U-8 and 216-U-12		SAF NO. R06-013	AIR QUALITY ☐	7 DAYS ~~15 Days~~ 1/14 7 DAYS ~~15 Days~~ 8-16-06
ICE CHEST NO.	FIELD LOGBOOK NO. DTS-SAWS-H	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		

ICED
Initial
8/16/06 Date

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
B1KB49		S	8-16-06	1530	4X60mL G/P	IC Anions - 300.0 {BROMIDE, CHLORIDE, FLUORIDE, NO2-N, NO3-N, PO4-P, SULFATE}	None
B1KB49		S			4X60mL G/P	ICP Metals - 6010A (Add-on) {~~B, Be, La, Li, Sc, Sm, Ti~~} ICP Metals - 6010A (TAL) {~~Al, Ca, Fe, K, Mg, Na~~}	Cool 4C
B1KB49		S			4X60mL G/P	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	None
B1KB75	W06000249~~6~~	S			1X40mL G	SEE ITEM (4) IN SPECIAL INSTRUCTIONS	Cool 4C
B1KB76	2497	S			1X40mL G	SEE ITEM (4) IN SPECIAL INSTRUCTIONS	Cool 4C
B1KB77	2498	S			1X40mL G	SEE ITEM (4) IN SPECIAL INSTRUCTIONS	Cool 4C

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS
RELINQUISHED BY/REMOVED FROM JG Hogan	DATE/TIME 1920 8-16-06	RECEIVED BY/STORED IN Victor Bin	DATE/TIME 19:20 8/16/06	SEE PAGE 4 FOR ALL SPECIAL INSTRUCTIONS
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	

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

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Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		R06-013-011	PAGE 4 OF 4
COLLECTOR HOGAN, JG	**COMPANY CONTACT** TRECHTER, JE	**TELEPHONE NO.** 373-7046	**PROJECT COORDINATOR** TRECHTER, JE	**PRICE CODE** 8C **DATA TURNAROUND** ~~15 Days~~ 14 8-16-06 30 Days
SAMPLING LOCATION 200-W-42	**PROJECT DESIGNATION** 200-UW-1 Operable Unit, Soil from Trench between 216-U-8 and 216-U-12		**SAF NO.** R06-013	**AIR QUALITY** ☐
ICE CHEST NO.	**FIELD LOGBOOK NO.** DTS-SAWS-44	**COA** 121600ES20	**METHOD OF SHIPMENT** GOVERNMENT VEHICLE	RECEIVED Initial 8/16/06 Date
SHIPPED TO Waste Sampling & Characterization	**OFFSITE PROPERTY NO.** N/A		**BILL OF LADING/AIR BILL NO.** N/A	

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}

(4)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, STYRENE, TOLUENE, TRANS13, TRICELN, VINYIDE, XYLENES}

A-6001-774

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		R06-013-013	PAGE 1 OF 3
COLLECTOR HOGAN, JG	COMPANY CONTACT TRECHTER, JE	TELEPHONE NO. 373-7046	PROJECT COORDINATOR TRECHTER, JE	PRICE CODE 8C DATA TURNAROUND AIR QUALITY ☐ 7DAYS ~~15 Days~~ / ~~14~~ ~~7DAYS 25 Days~~ 8-16-06
SAMPLING LOCATION 200-W-42	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.	FIELD LOGBOOK NO. DTS-SAWS-H	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	

RECEIVED 8/16/06 Initial Date

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
B1KB50	WO 60002494	S	8-16-06	1530	4X60mL aG	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Cool 4C
B1KB50		S			4X60mL G	TPH-Diesel Range - WTPH-D {TPHKEROSEN}	Cool 4C
B1KB50		S			1X500mL Square Bottle - Poly	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	None
B1KB50		S			4X60mL G/P	Isotopic Plutonium {Pu-238, Pu-239/240} Isotopic Uranium {U-233/234, U-235, U-238} Americium-241 {Am-241}	None
B1KB50		S			4X60mL G/P	Strontium-89,90 -- Sr-90 {Sr-90}	None
B1KB50		S			4X60mL G/P	Technetium-99 {Tc-99}	None
B1KB50		S			4X60mL G/P	Neptunium-237 {Np-237}	None

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS
JG Hogan J Hogan	8-16-06 1920	Victor Jones	8/16/06 1920	
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	

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

220000

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			R06-013-013	PAGE 2 OF 3
COLLECTOR HOGAN, JG	COMPANY CONTACT TRECHTER, JE	TELEPHONE NO. 373-7046	PROJECT COORDINATOR TRECHTER, JE	PRICE CODE 8C AIR QUALITY ☐	DATA TURNAROUND 7 DAYS ~~15 Days~~ ~~5-16-06~~
SAMPLING LOCATION 200-W-42	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.	FIELD LOGBOOK NO. DTS-SAWS-4	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		

Initial
Date

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, BENZOPY, BIS2CHE, BIS2CHM, BIS2EPH, BNZKFLU, BROPHEN, BUTBENP, CHLANIL, CHLCRES, CHLNAPH, CHLPHEN, CHRYSENE, DIBAHAN, DIBENFR, DIBPHTH, DICHBEN, DIEPHTH, DIMPHTH, DINPHEN, DIOPHTH, DIPRNIT, FLUORAN, FLUORENE, HEXCBEN, HEXCBUT, HEXCCYC, HEXCETH, INDENOP, ISOPHORONE, NAPHTHA, NITBENZ, NITPHENOL, NITRANILIN, NNDIPHA, PENTCHP, PHENANT, PHENOL, PYRENE, TRICHLB}
(2)Gamma Spec - Add-on {Ac-228, Ba-133, Ce-144, Ce/Pr-144, Cm-244, Cs-134, K-40, Nb-94, Ra-228, Ru-103, Sb-125, Sn-113, Sn-125, Sn-126, Th-228, Th-232, U-235, U-238, Zn-65} Gamma Spectroscopy {Am-241, Co-58, Co-60, Cs-137, Eu-152, Eu-154, Eu-155, Fe-59, Ra-226, Ru-106}

A-6001-774

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		R06-013-013	PAGE 3 OF 3
COLLECTOR HOGAN, JG	COMPANY CONTACT TRECHTER, JE	TELEPHONE NO. 373-7046	PROJECT COORDINATOR TRECHTER, JE	PRICE CODE 8C DATA TURNAROUND
SAMPLING LOCATION 200-W-42	PROJECT DESIGNATION 200-UW-1 Operable Unit, Soil from Trench between 216-U-8 and 216-U-12		SAF NO. R06-013	AIR QUALITY ☐ 7DAYS ~~15 Days~~ 7 DAYS ~~15 Days~~ 8-16-06
ICE CHEST NO.	FIELD LOGBOOK NO. DTS-SAWS-H	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	

ICED
Initial
8/16/06 Date

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
B1KB50		S	8-16-06	1530	4X60mL G/P	IC Anions - 300.0 {BROMIDE, CHLORIDE, FLUORIDE, NO2-N, NO3-N, PO4-P, SULFATE}	None
B1KB50		S	↓	↓	4X60mL G/P	ICP Metals - 6010A (Add-on) {B, Bi, La, Li, Si, Sm, Ti} ICP Metals - 6010A (TAL) {Al, Ca, Fe, K, Mg, Na}	Cool 4C
B1KB50		S	↓	↓	4X60mL G/P	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	None

CHAIN OF POSSESSION — SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
JG Hogan	1920 8-16-06	Victor Tsins	8/16/06 1920
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

000029

840187

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			R06-013-015	PAGE 1 OF 3
COLLECTOR HOGAN, JG	COMPANY CONTACT TRECHTER, JE	TELEPHONE NO. 373-7046	PROJECT COORDINATOR TRECHTER, JE	PRICE CODE 8C	DATA TURNAROUND
SAMPLING LOCATION 200-W-42	PROJECT DESIGNATION 200-UW-1 Operable Unit, Soil from Trench between 216-U-8 and 216-U-12		SAF NO. R06-013	AIR QUALITY ☐	7 DAYS ~~15 Days~~ / 14 7 DAYS ~~15 Days~~ 8-16-06
ICE CHEST NO.	FIELD LOGBOOK NO. DTS-SAWS-H	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		

ICED Initial 8/16/06 Date

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
B1KB51	W06000249S	S	8-16-06	1000	4X60mL aG	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Cool 4C
B1KB51		S			4X60mL G	TPH-Diesel Range - WTPH-D {TPHKEROSEN}	Cool 4C
B1KB51		S			1X500mL Square Bottle - Poly	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	None
B1KB51		S			4X60mL G/P	Isotopic Plutonium {Pu-238, Pu-239/240} Isotopic Uranium {U-233/234, U-235, U-238} Americium-241 {Am-241}	None
B1KB51		S			4X60mL G/P	Strontium-89,90 -- Sr-90 {Sr-90}	None
B1KB51		S			4X60mL G/P	Technetium-99 {Tc-99}	None
B1KB51		S			4X60mL G/P	Neptunium-237 {Np-237}	None

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS
RELINQUISHED BY/REMOVED FROM JG HOGAN	DATE/TIME 1920 8-16-06	RECEIVED BY/STORED IN Victor Binns	DATE/TIME 1912 8/16/06	SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS
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	

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

0000030

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Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			R06-013-015	PAGE 2 OF 3
COLLECTOR HOGAN, JG	**COMPANY CONTACT** TRECHTER, JE	**TELEPHONE NO.** 373-7046	**PROJECT COORDINATOR** TRECHTER, JE	**PRICE CODE** 8C	**DATA TURNAROUND** 7 DAYS ~~15 Days~~ MT 8-16-06
SAMPLING LOCATION 200-W-42	**PROJECT DESIGNATION** 200-UW-1 Operable Unit, Soil from Trench between 216-U-8 and 216-U-12		**SAF NO.** R06-013	**AIR QUALITY** ☐	
ICE CHEST NO.	**FIELD LOGBOOK NO.** DTS-SAWS-44	**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		

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, BENZOPY, BIS2CHE, BIS2CHM, BIS2EPH, BNZKFLU, BROPHEN, BUTBENP, CHLANIL, CHLCRES, CHLNAPH, CHLPHEN, CHRYSENE, DIBAHAN, DIBENFR, DIBPHTH, DICHBEN, DIEPHTH, DIMPHTH, DINPHEN, DIOPHTH, DIPRNIT, FLUORAN, FLUORENE, HEXCBEN, HEXCBUT, HEXCCYC, HEXCETH, INDENOP, ISOPHORONE, NAPHTHA, NITBENZ, NITPHENOL, NITRANILIN, NNDIPHA, PENTCHP, PHENANT, PHENOL, PYRENE, TRICHLB}

(2)Gamma Spec - Add-on {Ac-228, Ba-133, Ce-144, Ce/Pr-144, Cm-244, Cs-134, K-40, Nb-94, Ra-228, Ru-103, Sb-125, Sn-113, Sn-125, Sn-126, Th-228, Th-232, U-235, U-238, Zn-65} Gamma Spectroscopy {Am-241, Co-58, Co-60, Cs-137, Eu-152, Eu-154, Eu-155, Fe-59, Ra-226, Ru-106}

RCET
Initial
8/15/06 Date

A-6001-774

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			R06-013-015	PAGE 3 OF 3
COLLECTOR HOGAN, JG	COMPANY CONTACT TRECHTER, JE	TELEPHONE NO. 373-7046	PROJECT COORDINATOR TRECHTER, JE	PRICE CODE 8C	DATA TURNAROUND
SAMPLING LOCATION 200-W-42	PROJECT DESIGNATION 200-UW-1 Operable Unit, Soil from Trench between 216-U-8 and 216-U-12		SAF NO. R06-013	AIR QUALITY ☐	7 DAYS ~~15 Days~~ 14 7 DAYS ~~15 Days~~ 8-16-06
ICE CHEST NO.	FIELD LOGBOOK NO. DTS-SAWS	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		

Initial
8/16/06 Date

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
B1KB51		S	8-16-06	1000	4X60mL G/P	IC Anions - 300.0 {BROMIDE, CHLORIDE, FLUORIDE, NO2-N, NO3-N, PO4-P, SULFATE}	None
B1KB51		S	↓	↓	4X60mL G/P	ICP Metals - 6010A (Add-on) {B, Bi, La, Li, Si, Sm, Ti} ICP Metals - 6010A (TAL) {Al, Ca, Fe, K, Mg, Na}	Cool 4C
B1KB51		S	↓	↓	4X60mL G/P	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	None

CHAIN OF POSSESSION — SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
JG HOGAN J Hogan	8-16-06 1920	Victor Bins	8/16/06 1920
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

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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: 60934		
VALIDATOR: TLT		LAB: WSCF		DATE: 9/21/10	
			SDG: 60934		
ANALYSES PERFORMED					
Gross Alpha/Beta	Strontium-90	Technetium-99	Alpha Spectroscopy	Gamma Spectroscopy	
Total Uranium	Radium-22	Tritium			
SAMPLES/MATRIX					
B1KB49	B1KB50	B1KB51			
					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: mb - actinium 228 - J (S1)
radium - 226 - J (S1)
radium - 228 - J (S1)
pu-239/240 — J (49)
uranium 233/34 - J (S1)

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 LCS - J all
U233 " - J all
U235 " - 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: 49/50 – yield

49 – 121% 50 – 131% – J all detects

Uranium

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: Tc-99 – 47% – J all

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: ~~PO 237/40 = 44%~~ 8/30/94

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: 49 - 152, 155, Ra 226

50 - eu-152, eu-154, eu-155 + ra 226 > over

Appendix 6

Additional Documentation Requested by Client

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: 20060934
Matrix: SOLID
Test: Americium by AEA

SAF Number: R06-013
Sample Date: 08/16/06
Receive Date:08/16/06

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
Lab ID: W060002493									
BATCH QC ASSOCIATED WITH SAMPLE									
DUP	Americium-241	14596-10-2	U1.3e-02	n/a	RPD	08/18/06	0.000	20.000	
BATCH QC									
BLANK	Americium-241	14596-10-2	U4.1e-02	n/a	pCi/g	08/18/06	-10.000	1000.000	
LCS	Americium-241	14596-10-2	1.2e+01	99.792	% Recov	08/18/06	75.000	125.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: 20060934
Matrix: SOLID
Test: Gamma Energy Analysis-grd H2O

SAF Number: R06-013
Sample Date: 08/16/06
Receive Date:08/16/06

Lab ID: W060002493

BATCH QC ASSOCIATED WITH SAMPLE

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
DUP	Actinium-228	14331-83-0	7.44e-01	1.900	RPD	08/29/06	0.000	20.000	
DUP	Americium-241	14596-10-2	U7.67e-02	n/a	RPD	08/29/06	0.000	20.000	
DUP	Ba-133 by GEA	13981-41-4	U-8.55e-3	n/a	RPD	08/29/06	0.000	20.000	
DUP	Cerium-144	14762-78-8	U-1.33e-1	n/a	RPD	08/29/06	0.000	20.000	
DUP	Cerium/Praseodymium-144	CE/PR-144	U-2.66e-1	n/a	RPD	08/29/06	0.000	20.000	
DUP	Cobalt-60	10198-40-0	U2.93e-03	n/a	RPD	08/29/06	0.000	20.000	
DUP	Cesium-134	13967-70-9	U3.76e-02	n/a	RPD	08/29/06	0.000	20.000	
DUP	Cesium-137	10045-97-3	3.77e+01	0.266	RPD	08/29/06	0.000	20.000	
DUP	Europium-152	14683-23-9	U-2.82e-2	n/a	RPD	08/29/06	0.000	20.000	
DUP	Europium-154	15585-10-1	U-3.80e-4	n/a	RPD	08/29/06	0.000	20.000	
DUP	Europium-155	14391-16-3	U7.17e-02	n/a	RPD	08/29/06	0.000	20.000	
DUP	Potassium-40	13966-00-2	1.46e+01	1.379	RPD	08/29/06	0.000	20.000	
DUP	Niobium-94	14681-63-1	U2.30e-03	n/a	RPD	08/29/06	0.000	20.000	
DUP	Radium-226	13982-63-3	6.37e-01	1.423	RPD	08/29/06	0.000	20.000	
DUP	Radium-228	15262-20-1	7.44e-01	1.900	RPD	08/29/06	0.000	20.000	
DUP	Ruthenium-103	13968-53-1	U-1.10e-2	n/a	RPD	08/29/06	0.000	20.000	
DUP	Ruthenium-106	13967-48-1	U1.51e-01	n/a	RPD	08/29/06	0.000	20.000	
DUP	Antimony-125	14234-35-6	U6.90e-02	n/a	RPD	08/29/06	0.000	20.000	
DUP	Tin-113	13966-06-8	U3.96e-03	n/a	RPD	08/29/06	0.000	20.000	
DUP	Tin-126	15832-50-5	U2.36e-01	n/a	RPD	08/29/06	0.000	20.000	
DUP	Uranium-235	15117-96-1	U1.62e-01	n/a	RPD	08/29/06	0.000	20.000	
DUP	Zinc-65	13982-39-3	U-1.21e-3	n/a	RPD	08/29/06	0.000	20.000	

BATCH QC

BLANK	Actinium-228	14331-83-0	5.54e-02	0.055	pCi/g	08/29/06	-10.000	1000.000	
BLANK	Americium-241	14596-10-2	U-5.54e-3	n/a	pCi/g	08/29/06	-10.000	1000.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: 20060934
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	Ba-133 by GEA	13981-41-4	U1.94e-03	n/a	pCi/g	08/29/06	-10.000	1000.000	
BLANK	Cerium-144	14762-78-8	U-2.54e-2	n/a	pCi/g	08/29/06	-10.000	1000.000	
BLANK	Cerium/Praseodymium-144	CE/PR-144	U-5.09e-2	n/a	pCi/g	08/29/06	-10.000	1000.000	
BLANK	Cobalt-60	10198-40-0	U-1.21e-3	n/a	pCi/g	08/29/06	-10.000	1000.000	
BLANK	Cesium-134	13967-70-9	U1.45e-03	n/a	pCi/g	08/29/06	-10.000	1000.000	
BLANK	Cesium-137	10045-97-3	U-1.77e-3	n/a	pCi/g	08/29/06	-10.000	1000.000	
BLANK	Europium-152	14683-23-9	U-4.70e-3	n/a	pCi/g	08/29/06	-10.000	1000.000	
BLANK	Europium-154	15585-10-1	U3.24e-03	n/a	pCi/g	08/29/06	-10.000	1000.000	
BLANK	Europium-155	14391-16-3	U2.67e-03	n/a	pCi/g	08/29/06	-10.000	1000.000	
BLANK	Potassium-40	13966-00-2	5.21e-02	0.052	pCi/g	08/29/06	-10.000	1000.000	
BLANK	Niobium-94	14681-63-1	U-5.80e-4	n/a	pCi/g	08/29/06	-10.000	1000.000	
BLANK	Radium-226	13982-63-3	1.11e-01	0.111	pCi/g	08/29/06	-10.000	1000.000	
BLANK	Radium-228	15262-20-1	5.54e-02	0.055	pCi/g	08/29/06	-10.000	1000.000	
BLANK	Ruthenium-103	13968-53-1	U-1.47e-3	n/a	pCi/g	08/29/06	-10.000	1000.000	
BLANK	Ruthenium-106	13967-48-1	U-9.46e-3	n/a	pCi/g	08/29/06	-10.000	1000.000	
BLANK	Antimony-125	14234-35-6	U3.67e-03	n/a	pCi/g	08/29/06	-10.000	1000.000	
BLANK	Tin-113	13966-06-8	U-2.08e-3	n/a	pCi/g	08/29/06	-10.000	1000.000	
BLANK	Tin-126	15832-50-5	U-9.40e-4	n/a	pCi/g	08/29/06	-10.000	1000.000	
BLANK	Uranium-235	15117-96-1	U1.12e-02	n/a	pCi/g	08/29/06	-10.000	1000.000	
BLANK	Zinc-65	13982-39-3	U1.74e-03	n/a	pCi/g	08/29/06	-10.000	1000.000	
LCS	Americium-241	14596-10-2	4.19e+03	106.888	% Recov	08/30/06	80.000	120.000	
LCS	Cobalt-60	10198-40-0	4.36e+03	104.057	% Recov	08/30/06	80.000	120.000	
LCS	Cesium-137	10045-97-3	4.02e+03	112.291	% Recov	08/30/06	80.000	120.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: 20060934
Matrix: SOLID
Test: Neptunium by AEA

SAF Number: R06-013
Sample Date: 08/16/06
Receive Date:08/16/06

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
Lab ID: W060002493									
BATCH QC ASSOCIATED WITH SAMPLE									
DUP	Neptunium-237	13994-20-2	3.7e-02	10.256	RPD	09/13/06	0.000	25.000	
BATCH QC									
BLANK	Neptunium-237	13994-20-2	U-4.0e-03	n/a	pCi/g	09/13/06	-10.000	1000.000	
LCS	Neptunium-237	13994-20-2	9.6e+01	96.000	% Recov	09/13/06	75.000	125.000	

000044

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: 20060934
Matrix: SOLID
Test: Plutonium Isotopics by AEA

SAF Number: R06-013
Sample Date: 08/16/06
Receive Date:08/16/06

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
Lab ID: W060002493									
BATCH QC ASSOCIATED WITH SAMPLE									
DUP	Plutonium-238	13981-16-3	U3.6e-03	n/a	RPD	08/18/06	0.000	20.000	
DUP	Pu-239/240 by AEA	PU-239/240	1.4e-02	44.444	RPD	08/18/06	0.000	20.000	*
BATCH QC									
BLANK	Plutonium-238	13981-16-3	U-2.0e-03	n/a	pCi/g	08/18/06	-10.000	1000.000	
BLANK	Pu-239/240 by AEA	PU-239/240	1.6e-02	0.016	pCi/g	08/18/06	-10.000	1000.000	
LCS	Pu-239/240 by AEA	PU-239/240	1.4e+01	99.432	% Recov	08/18/06	75.000	125.000	

000045

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: 20060934
Matrix: SOLID
Test: Strontium 89/90

SAF Number: R06-013
Sample Date: 08/16/06
Receive Date:08/16/06

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
Lab ID: W060002493									
BATCH QC ASSOCIATED WITH SAMPLE									
DUP	Strontium-89/90	SR-RAD	3.3	29.677	RPD	08/18/06	0.000	20.000	*
BATCH QC									
BLANK	Strontium-89/90	10098-97-2	-9.1E-02	-0.091	pCi/g	08/18/06	-10.000	300.000	
LCS	Strontium-89/90	10098-97-2	93.4	108.731	% Recov	08/18/06	80.000	120.000	

000046

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: 20060934
Matrix: SOLID
Test: TC99 by Liquid Scin.

SAF Number: R06-013
Sample Date: 08/16/06
Receive Date:08/16/06

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
Lab ID: W060002493									
BATCH QC ASSOCIATED WITH SAMPLE									
DUP	Technetium-99	14133-76-7	U-9.8e-02	n/a	RPD	08/18/06	0.000	20.000	
MS	Technetium-99	14133-76-7	534.8	47.490	% Recov	08/18/06	75.000	125.000	*
BATCH QC									
BLANK	Technetium-99	14133-76-7	U-7.5e-01	n/a	pCi/g	08/18/06	-10.000	1000.000	
LCS	Technetium-99	14133-76-7	11864.4	105.356	% Recov	08/18/06	75.000	125.000	

000042

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: 20060934
Matrix: SOLID
Test: Uranium Isotopics by AEA

SAF Number: R06-013
Sample Date: 08/16/06
Receive Date:08/16/06

Lab ID: W060002493

BATCH QC ASSOCIATED WITH SAMPLE

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
DUP	Uranium-233/234	U-233/234	1.7	25.641	RPD	08/18/06	0.000	20.000	*
DUP	Uranium-235	15117-96-1	1.6e-01	31.579	RPD	08/18/06	0.000	20.000	*
DUP	Uranium-238	U-238	1.5	28.571	RPD	08/18/06	0.000	20.000	*

BATCH QC

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
BLANK	Uranium-233/234	13966-29-5	2.3e-02	0.023	pCi/g	08/18/06	-10.000	1000.000	
BLANK	Uranium-235	15117-96-1	U1.3e-02	n/a	pCi/g	08/18/06	-10.000	1000.000	
BLANK	Uranium-238	24678-82-8	U1.6e-02	n/a	pCi/g	08/18/06	-10.000	1000.000	
LCS	Uranium-238	24678-82-8	2.0e+01	105.513	% Recov	08/18/06	75.000	125.000	

000048

Date: 1 September 2006
To: Fluor Hanford Inc. (technical representative)
From: TechLaw, Inc.
Project: 200-UW-1 Operable Unit, Soil from Trench between 216-U-8 & 216-U-12 Cribs
Subject: Inorganics - Data Package No. WSCF20060934 (60934)

INTRODUCTION

This memo presents the results of data validation on Data Package No. 60934 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
B1KB49	8/16/06	Soil	C	See note 1
B1KB50	8/16/06	Soil	C	See note 1
B1KB51	8/16/06	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. 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.

- **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 "UJ". 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.

Due to method blank contamination, the zinc result in sample B1KB51 was qualified as undetected and flagged "UJ".

All other 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 a matrix spike (378%) and matrix spike duplicate (398%) recoveries outside QC limits, all silicon results were qualified as estimates and flagged "J".

All other matrix spike/matrix spike duplicate results were acceptable.

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 below 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 (23%), all silicon 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 matrix spike and matrix spike duplicate analysis, all aluminum, calcium, iron, magnesium and titanium results were qualified as estimates and flagged "J".

All other duplicate results were acceptable.

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 results met RTQL.

- **Completeness**

Data package No. 60934 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 zinc result in sample B1KB51 was qualified as undetected and flagged "UJ".
- Due to a matrix spike (378%) and matrix spike duplicate (398%) recoveries outside QC limits, all silicon results were qualified as estimates and flagged "J".
- Due to an LCS recovery outside QC limits (23%), all silicon results were qualified as estimates and flagged "J".
- Due to the lack of a matrix spike and matrix spike duplicate analysis, all aluminum, calcium, iron, magnesium and titanium 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 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: 60934	REVIEWER: TLI	Project: 200-UW-1	PAGE 1 OF 1
COMMENTS:			
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Aluminum Calcium Iron Magnesium Titanium	J	All	No MS/MSD
Silicon	J	All	MS, MSD and LCS recoveries
Zinc	UJ	B1KB51	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

Annotated Laboratory Reports

WSCF
ANALYTICAL RESULTS REPORT

Attention: D.L KLAGES H8-40 **Group #:** 20060934

Sample #	Client ID		CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
Inorganic														
W060002493	B1KB49	KLAGES	TS	Total solids	SOIL	LA-519-412		97.3	%	1.00	0.0	08/21/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	16984-48-8	Fluoride	SOIL	LA-533-410	U	< 2.00	mg/kg	50.00	2.0	08/21/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	16887-00-6	Chloride	SOIL	LA-533-410	B	6.88	mg/kg	50.00	1.7	08/21/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	NO2-N	Nitrogen in Nitrite	SOIL	LA-533-410	U	< 0.490	mg/kg	50.00	0.49	08/21/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	24959-67-9	Bromide	SOIL	LA-533-410	U	< 4.65	mg/kg	50.00	4.6	08/21/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	NO3-N	Nitrogen in Nitrate	SOIL	LA-533-410		13.2	mg/kg	50.00	0.90	08/21/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	PO4-P	Phosphate (P) by IC	SOIL	LA-533-410	U	< 3.90	mg/kg	50.00	3.9	08/21/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	14808-79-8	Sulfate	SOIL	LA-533-410	B	28.4	mg/kg	50.00	6.5	08/21/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	7429-90-5	Aluminum	SOIL	LA-505-411	J	6.50e+03	mg/kg	9.68e+002	36	08/22/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	7439-89-6	Iron	SOIL	LA-505-411	J	1.91e+04	mg/kg	9.68e+002	32	08/22/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	7439-95-4	Magnesium	SOIL	LA-505-411	J	5.27e+03	mg/kg	96.77	1.5	08/22/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	7440-09-7	Potassium	SOIL	LA-505-411		1.18e+03	mg/kg	96.77	21	08/22/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	7440-23-5	Sodium	SOIL	LA-505-411		268	mg/kg	96.77	11	08/22/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	7440-70-2	Calcium	SOIL	LA-505-411	J	1.26e+04	mg/kg	9.68e+002	30	08/22/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	7439-93-2	Lithium	SOIL	LA-505-411		8.52	mg/kg	96.77	0.58	08/22/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	7440-32-6	Titanium	SOIL	LA-505-411	J	932	mg/kg	9.68e+002	3.9	08/22/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	7440-42-8	Boron	SOIL	LA-505-411	U	< 2.03	mg/kg	96.77	2.0	08/22/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	7440 69-9	Bismuth	SOIL	LA-505-411	U	< 5.13	mg/kg	96.77	5.1	08/22/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	7440-21-3	Silicon	SOIL	LA-505-411	J	197	mg/kg	96.77	7.3	08/22/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	7439-96-5	Manganese	SOIL	LA-505-412		334	mg/kg	0.97	0.0194	08/22/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	7440-02-0	Nickel	SOIL	LA-505-412		10.2	mg/kg	0.97	0.0583	08/22/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	7440-22-4	Silver	SOIL	LA-505-412	U	< 0.0389	mg/kg	0.97	0.0389	08/22/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	7440-36-0	Antimony	SOIL	LA-505-412	U	< 0.292	mg/kg	0.97	0.292	08/22/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	7440-39-3	Barium	SOIL	LA-505-412		84.3	mg/kg	0.97	0.194	08/22/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	7440-41-7	Beryllium	SOIL	LA-505-412	X	0.282	mg/kg	0.97	0.0194	08/22/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	7440-43-9	Cadmium	SOIL	LA-505-412		0.0950	mg/kg	0.97	0.0389	08/22/06	08/16/06	08/16/06

MDL=Minimum Detection Limit
RQ=Result Qualifier

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

DF=Dilution Factor

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

Report WGPP/ver. 1.3
PROJECT HANFORD MANAGEMENT COMPANY

REVISED DLynes 9/5/06

9/5/06

WSCF
ANALYTICAL RESULTS REPORT

Attention: D.L KLAGES H8-40 **Group #:** 20060934

Sample #	Client ID		CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W060002493	B1KB49	KLAGES	7440-47-3	Chromium	SOIL	LA-505-412		8.25	mg/kg	0.97	0.681	08/22/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	7440-48-4	Cobalt	SOIL	LA-505-412		7.92	mg/kg	0.97	0.0194	08/22/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	7440-50-8	Copper	SOIL	LA-505-412		14.0	mg/kg	0.97	0.194	08/22/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	7440-62-2	Vanadium	SOIL	LA-505-412		45.5	mg/kg	0.97	0.486	08/22/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	7440-66-6	Zinc	SOIL	LA-505-412		41.8	mg/kg	0.97	0.292	08/22/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	7439-92-1	Lead	SOIL	LA-505-412		6.37	mg/kg	0.97	0.0486	08/22/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	7439-97-6	Mercury	SOIL	LA-505-412		0.0432	mg/kg	0.97	0.0389	08/22/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	7439-98-7	Molybdenum	SOIL	LA-505-412		0.245	mg/kg	0.97	0.0972	08/22/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	7440-29-1	Thorium	SOIL	LA-505-412		2.81	mg/kg	0.97	0.0486	08/22/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	7440-61-1	Uranium	SOIL	LA-505-412		5.93	mg/kg	0.97	0.0194	08/22/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	7440-38-2	Arsenic	SOIL	LA-505-412		3.91	mg/kg	0.97	0.972	08/22/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	7782-49-2	Selenium	SOIL	LA-505-412	U	< 0.389	mg/kg	0.97	0.389	08/22/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	7440-28-0	Thallium	SOIL	LA-505-412	X	0.0625	mg/kg	0.97	0.0292	08/22/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	7440-24-6	Strontium	SOIL	LA-505-412		29.9	mg/kg	0.97	0.0292	08/22/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	7440-31-5	Tin	SOIL	LA-505-412		0.360	mg/kg	0.97	0.0486	08/22/06	08/16/06	08/16/06
~~W060002494~~	~~B1KB50~~	~~KLAGES~~	~~TS~~	~~Total solids~~	~~SOIL~~	~~LA-519-412~~		~~99.4~~	~~%~~	~~1.00~~	~~0.0~~	~~08/21/06~~	~~08/16/06~~	~~08/16/06~~
W060002494	B1KB50	KLAGES	16984-48-8	Fluoride	SOIL	LA-533-410	U	< 2.00	mg/kg	50.00	2.0	08/21/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	16887-00-6	Chloride	SOIL	LA-533-410	B	3.06	mg/kg	50.00	1.7	08/21/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	NO2-N	Nitrogen in Nitrite	SOIL	LA-533-410	U	< 0.490	mg/kg	50.00	0.49	08/21/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	24959-67-9	Bromide	SOIL	LA-533-410	U	< 4.65	mg/kg	50.00	4.6	08/21/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	NO3-N	Nitrogen in Nitrate	SOIL	LA-533-410		7.07	mg/kg	50.00	0.90	08/21/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	PO4-P	Phosphate (P) by IC	SOIL	LA-533-410	U	< 3.90	mg/kg	50.00	3.9	08/21/06	08/16/06	08/16/06
~~W060002494~~	~~B1KB50~~	~~KLAGES~~	~~14808-79-8~~	~~Sulfate~~	~~SOIL~~	~~LA-533-410~~	~~B~~	~~27.4~~	~~mg/kg~~	~~50.00~~	~~6.5~~	~~08/21/06~~	~~08/16/06~~	~~08/16/06~~
W060002494	B1KB50	KLAGES	7429-90-5	Aluminum	SOIL	LA-505-411	J	7.92e+03	mg/kg	97.09	3.6	08/22/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	7439-89-6	Iron	SOIL	LA-505-411	J	3.58e+04	mg/kg	9.71e+002	32	08/22/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	7439-95-4	Magnesium	SOIL	LA-505-411	J	5.57e+03	mg/kg	97.09	1.5	08/22/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	7440-09-7	Potassium	SOIL	LA-505-411		1.18e+03	mg/kg	97.09	21	08/22/06	08/16/06	08/16/06

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Report WGPP/ver. 1.3
PROJECT HANFORD MANAGEMENT COMPANY

REVISED
9/5/06

9/5/06

WSCF
ANALYTICAL RESULTS REPORT

Attention: D.L KLAGES H8-40 **Group #:** 20060934

Sample #	Client ID		CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W060002494	B1KB50	KLAGES	7440-23-5	Sodium	SOIL	LA-505-411		274	mg/kg	97.09	11	08/22/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	7440-70-2	Calcium	SOIL	LA-505-411	J	2.69e+04	mg/kg	9.71e+002	30	08/22/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	7439-93-2	Lithium	SOIL	LA-505-411		9.28	mg/kg	97.09	0.58	08/22/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	7440-32-6	Titanium	SOIL	LA-505-411	J	2.00e+03	mg/kg	9.71e+002	3.9	08/22/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	7440-42-8	Boron	SOIL	LA-505-411	U	< 2.04	mg/kg	97.09	2.0	08/22/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	7440-69-9	Bismuth	SOIL	LA-505-411	U	< 5.15	mg/kg	97.09	5.1	08/22/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	7440-21-3	Silicon	SOIL	LA-505-411	J	228	mg/kg	97.09	7.3	08/22/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	7439-96-5	Manganese	SOIL	LA-505-412		335	mg/kg	1.04	0.0208	08/22/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	7440-02-0	Nickel	SOIL	LA-505-412		10.8	mg/kg	1.04	0.0623	08/22/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	7440-22-4	Silver	SOIL	LA-505-412		0.0703	mg/kg	1.04	0.0415	08/22/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	7440-36-0	Antimony	SOIL	LA-505-412	U	< 0.311	mg/kg	1.04	0.311	08/22/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	7440-39-3	Barium	SOIL	LA-505-412		88.2	mg/kg	1.04	0.208	08/22/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	7440-41-7	Beryllium	SOIL	LA-505-412	X	0.339	mg/kg	1.04	0.0208	08/22/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	7440-43-9	Cadmium	SOIL	LA-505-412		0.166	mg/kg	1.04	0.0415	08/22/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	7440-47-3	Chromium	SOIL	LA-505-412		9.12	mg/kg	1.04	0.727	08/22/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	7440-48-4	Cobalt	SOIL	LA-505-412		8.54	mg/kg	1.04	0.0208	08/22/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	7440-50-8	Copper	SOIL	LA-505-412		14.2	mg/kg	1.04	0.208	08/22/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	7440-62-2	Vanadium	SOIL	LA-505-412		47.2	mg/kg	1.04	0.519	08/22/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	7440-66-6	Zinc	SOIL	LA-505-412		44.5	mg/kg	1.04	0.311	08/22/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	7439-92-1	Lead	SOIL	LA-505-412		6.82	mg/kg	1.04	0.0519	08/22/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	7439-97-6	Mercury	SOIL	LA-505-412		0.0459	mg/kg	1.04	0.0415	08/22/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	7439-98-7	Molybdenum	SOIL	LA-505-412		0.331	mg/kg	1.04	0.104	08/22/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	7440-29-1	Thorium	SOIL	LA-505-412		3.26	mg/kg	1.04	0.0519	08/22/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	7440-61-1	Uranium	SOIL	LA-505-412		15.2	mg/kg	1.04	0.0208	08/22/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	7440-38-2	Arsenic	SOIL	LA-505-412		4.03	mg/kg	1.04	1.04	08/22/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	7782-49-2	Selenium	SOIL	LA-505-412	U	< 0.415	mg/kg	1.04	0.415	08/22/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	7440-28-0	Thallium	SOIL	LA-505-412	X	0.0580	mg/kg	1.04	0.0311	08/22/06	08/16/06	08/16/06

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Report WGPP/ver. 1.3
PROJECT HANFORD MANAGEMENT COMPANY

REVISED Dayes 9/5/06

9/5/06

0000183

WSCF
ANALYTICAL RESULTS REPORT

Attention: D.L KLAGES H8-40 **Group #:** 20060934

Sample #	Client ID		CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W060002494	B1KB50	KLAGES	7440-24-6	Strontium	SOIL	LA-505-412		29.9	mg/kg	1.04	0.0311	08/22/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	7440-31-5	Tin	SOIL	LA 505-412		0.420	mg/kg	1.04	0.0519	08/22/06	08/16/06	08/16/06
~~W060002495~~	~~B1KB51~~	~~KLAGES~~	~~TS~~	~~Total solids~~	~~SOIL~~	~~LA-519-412~~		~~>99.5~~	~~%~~	~~1.00~~	~~0.0~~	~~08/21/06~~	~~08/16/06~~	~~08/16/06~~
W060002495	B1KB51	KLAGES	16984-48-8	Fluoride	SOIL	LA-533-410	U	< 2.00	mg/kg	50.00	2.0	08/21/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	16887-00-6	Chloride	SOIL	LA-533-410	U	< 1.70	mg/kg	50.00	1.7	08/21/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	NO2-N	Nitrogen in Nitrite	SOIL	LA-533-410	U	< 0.490	mg/kg	50.00	0.49	08/21/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	24959-67-9	Bromide	SOIL	LA-533-410	U	< 4.65	mg/kg	50.00	4.6	08/21/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	NO3-N	Nitrogen in Nitrate	SOIL	LA-533-410	U	< 0.900	mg/kg	50.00	0.90	08/21/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	PO4-P	Phosphate (P) by IC	SOIL	LA-533-410	U	< 3.90	mg/kg	50.00	3.9	08/21/06	08/16/06	08/16/06
~~W060002495~~	~~B1KB51~~	~~KLAGES~~	~~14808-79-8~~	~~Sulfate~~	~~SOIL~~	~~LA-533-410~~	~~U~~	~~< 6.50~~	~~mg/kg~~	~~50.00~~	~~6.5~~	~~08/21/06~~	~~08/16/06~~	~~08/16/06~~
W060002495	B1KB51	KLAGES	7429-90-5	Aluminum	SOIL	LA-505-411	C J	34.4	mg/kg	93.98	3.5	08/22/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	7439-89-6	Iron	SOIL	LA-505-411	J	285	mg/kg	93.98	3.1	08/22/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	7439-95-4	Magnesium	SOIL	LA-505-411	J	27.5	mg/kg	93.98	1.4	08/22/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	7440-09-7	Potassium	SOIL	LA-505-411	U	< 20.7	mg/kg	93.98	21	08/22/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	7440-23-5	Sodium	SOIL	LA-505-411	U	< 10.8	mg/kg	93.98	11	08/22/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	7440-70-2	Calcium	SOIL	LA-505-411	C J	130	mg/kg	93.98	2.9	08/22/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	7439-93-2	Lithium	SOIL	LA-505-411	U	< 0.564	mg/kg	93.98	0.56	08/22/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	7440-32-6	Titanium	SOIL	LA-505-411		0.702	mg/kg	93.98	0.38	08/22/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	7440-42-8	Boron	SOIL	LA-505-411	U	< 1.97	mg/kg	93.98	2.0	08/22/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	7440-69-9	Bismuth	SOIL	LA-505-411	U	< 4.98	mg/kg	93.98	5.0	08/22/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	7440-21-3	Silicon	SOIL	LA-505-411	C J	18.9	mg/kg	93.98	7.0	08/22/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	7439-96-5	Manganese	SOIL	LA-505-412	X	0.602	mg/kg	0.96	0.0191	08/22/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	7440-02-0	Nickel	SOIL	LA-505-412		0.118	mg/kg	0.96	0.0574	08/22/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	7440-22-4	Silver	SOIL	LA-505-412	U	< 0.0383	mg/kg	0.96	0.0383	08/22/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	7440-36-0	Antimony	SOIL	LA-505-412	U	< 0.287	mg/kg	0.96	0.287	08/22/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	7440-39-3	Barium	SOIL	LA-505-412		0.222	mg/kg	0.96	0.191	08/22/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	7440-41-7	Beryllium	SOIL	LA-505-412	U	< 0.0191	mg/kg	0.96	0.0191	08/22/06	08/16/06	08/16/06

MDL = Minimum Detection Limit
RQ = Result Qualifier

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

DF = Dilution Factor

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

9/5/06

Report WGPP/ver. 1.3
PROJECT HANFORD MANAGEMENT COMPANY

REVISED
9/5/06

WSCF
ANALYTICAL RESULTS REPORT

Attention: D.L KLAGES H8-40 **Group #:** 20060934

Sample #	Client ID		CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W060002495	B1KB51	KLAGES	7440-43-9	Cadmium	SOIL	LA-505-412	U	< 0.0383	mg/kg	0.96	0.0383	08/22/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	7440-47-3	Chromium	SOIL	LA-505-412	U	< 0.670	mg/kg	0.96	0.670	08/22/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	7440-48-4	Cobalt	SOIL	LA-505-412	X	0.0306	mg/kg	0.96	0.0191	08/22/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	7440-50-8	Copper	SOIL	LA-505-412		1.49	mg/kg	0.96	0.191	08/22/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	7440-62-2	Vanadium	SOIL	LA-505-412	U	< 0.478	mg/kg	0.96	0.478	08/22/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	7440-66-6	Zinc	SOIL	LA-505-412	~~X~~ UJ	1.11	mg/kg	0.96	0.287	08/22/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	7439-92-1	Lead	SOIL	LA-505-412		0.143	mg/kg	0.96	0.0478	08/22/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	7439-97-6	Mercury	SOIL	LA-505-412	U	< 0.0383	mg/kg	0.96	0.0383	08/22/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	7439-98-7	Molybdenum	SOIL	LA-505-412	U	< 0.0957	mg/kg	0.96	0.0957	08/22/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	7440-29-1	Thorium	SOIL	LA-505-412	X	0.269	mg/kg	0.96	0.0478	08/22/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	7440-61-1	Uranium	SOIL	LA-505-412	X	0.0369	mg/kg	0.96	0.0191	08/22/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	7440-38-2	Arsenic	SOIL	LA-505-412	U	< 0.957	mg/kg	0.96	0.957	08/22/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	7782-49-2	Selenium	SOIL	LA-505-412	U	< 0.383	mg/kg	0.96	0.383	08/22/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	7440-28-0	Thallium	SOIL	LA-505-412		< 0.0300	mg/kg	0.96	0.0287	08/22/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	7440-24-6	Strontium	SOIL	LA-505-412		0.155	mg/kg	0.96	0.0287	08/22/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	7440-31-5	Tin	SOIL	LA-505-412	U	< 0.0478	mg/kg	0.96	0.0478	08/22/06	08/16/06	08/16/06
W060002496	B1KB75	KLAGES	TS	Total solids	SOIL	LA-519-412		88.9	%	1.00	0.0	08/21/06	08/16/06	08/16/06
W060002497	B1KB76	KLAGES	TS	Total solids	SOIL	LA-519-412		90.2	%	1.00	0.0	08/21/06	08/16/06	08/16/06
W060002498	B1KB77	KLAGES	TS	Total solids	SOIL	LA-519-412		>99.5	%	1.00	0.0	08/21/06	08/16/06	08/16/06

000015

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

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

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

REVISED
Mayes
9/5/06

9/5/06

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

Sample Delivery Group	**WSCF20060934**
Sample Matrix	**SOLID**
Sample Visual	**N/A**
SAF Number	**R06-013**
Data Deliverable	**Summary Report**

Introduction

Five (5) 200-UW-1 Operable Unit soil samples (B1KB49, B1KB50, B1KB51, B1KB75, B1KB76 and B1KB77) from the trench between 216-U-8 and 216-U-12 were received at the WSCF Laboratory on August 16, 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.

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, 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 69 through 70, for a complete listing of approved analytical methods used.

Inorganic Comments

Anions - The hold time requirements were met. A Blank, Duplicate, Laboratory Control Sample, Matrix Spike and Matrix Spike Duplicate were analyzed with this delivery group. See pages 15 through 16 for QC details. Analytical Notes:

- Preparation Date: 21-aug-2006.
- Chloride and Sulfate – Sample results for B1KB49 and B1KB50 were B-flagged; the analytes were less than the reportable detection limit, but greater than or equal to the method detection limit.
- Phosphate – Matrix Spike and Matrix Spike Duplicate recoveries were below established laboratory limits. Sample results were less than detection limits and U flagged.

All other QC controls are within the established limits.

ICP-AES Metals – The holding time for this analysis was met. A Blank, Laboratory Control Sample (LCS), Matrix Spike and Matrix Spike Duplicate were analyzed with this delivery group of less than 20 samples. See pages 17 through 19 for QC details. Analytical Notes:

- Preparation Date: 21-aug-2006.

- Aluminum, Calcium, Iron, Magnesium and Titanium – insufficient spike (Matrix Spike and Matrix Spike Duplicate) concentrations. Sample concentrations were greater than four times the spike concentration.

- Aluminum – Analyte detected in the associated preparation Blank sample was evaluated and sample result for B1KB51 was C flagged.

- Calcium – The Laboratory Control Sample recovery exceeded established laboratory limits. Calcium results for B1KB49, B1KB50 and B1KB51 were E flagged.

- Lithium – Although the Laboratory Control Sample recovery exceeded established laboratory limits, the Matrix Spike and Matrix Spike Duplicate recoveries were within established laboratory limits. Sample results were not E flagged.

- Silicon – Matrix Spike, Matrix Spike Duplicate and Laboratory Control Sample recoveries were outside established laboratory limits. B1KB49, B1KB50 and B1KB51 were E flagged.

All other QC controls are within the established limits.

ICP-MS Metals – The holding time for this analysis was met, with the exception of mercury. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spike Duplicate were analyzed with this deliver group of less than 20 samples. See pages 20 through 23 for QC details Analytical Notes:

- Preparation Date: 21-aug-2006.

- Thorium results listed in the report represent Th-232 exclusively.

- Zinc – Analyte detected in the associated preparation Blank sample was evaluated and sample B1KB51 was C flagged.

- Beryllium (samples B1KB49 and B1KB50), Thallium (samples B1KB49 and B1KB50), Manganese (sample B1KB51), Thorium (sample B1KB51) and Uranium (sample B1KB51) – Negative preparation blank results may have potential affect on sample results. Sample results were X flagged.

All other QC controls are within the established limits.

Percent Solids – analyzed for organic moisture correction.

<u>Organic Comments</u>

- 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, Matrix Spike and Matrix Spiked Duplicate were analyzed with this delivery group. See pages 38 through 44 for QC details. Analytical Notes:

- Preparation Date: 17-aug-2006.
- Bis (2-Ethylhexyl) phthalate - sample B1KB49 result was J flagged; result was less than the lowest calibration standard but greater than the detection limit.
- Di-n-octylphthalate - sample B1KB50 result was J flagged; result was less than the lowest calibration standard but greater than the detection limit.
- Diethylphthalate - samples results for B1KB50 and B1KB51 were J flagged; results were less than the lowest calibration standard but greater than the detection limit.
- Matrix Spike and Matrix Spike Duplicate QC samples were analyzed on sample# B1KB52 (SDG# 20060935, SAF# F06-013).

All QC controls are within the established limits.

TPHD-WA - The hold time for this analysis were met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with this delivery group. See page 45 for QC details. Analytical Notes:

- Preparation Date: 17-aug-2006.
- Matrix Spike and Matrix Spike Duplicate QC samples were analyzed on sample# B1KB52 (SDG# 20060935, SAF# F06-013).

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. See pages 46 through 49 for QC details. Analytical Note:

- 4-Bromofluorobenzene – Matrix Spike and Matrix Spike Duplicate QC exceeded established laboratory limits.

All other QC controls are within the established limits.

Radiochemistry Comments

RadChem – There are no hold times associated with WSCF radiochemical methods. A Blank, Laboratory Control Sample, Matrix Spike (Technetium only), and Duplicate were analyzed with this delivery group. See pages 57 through 64 for QC details. Analytical Notes:

- Gamma Energy Analysis (GEA) – The GEA results for samples B1KB49 and B1KB50 will be biased high because the 500ml bottles for the GEA test were only partially filled with sample.

- Pu-239/240 – Duplicate QC Relative Percent Difference (RPD) exceeded established laboratory limits due to low sample activity.

- Strontium-90 – Duplicate QC RPD exceeded established laboratory limits due to sample homogeneity issues.

- Technetium-99 – Matrix Spike QC RPD exceeded established laboratory limits due to low sample activity.

- Uranium Isotopic (233/234, 235 and 238) – Duplicate QC RPD exceeded established laboratory limits due to sample homogeneity issues.

All other QC controls are within the established limits.

Americium-243, Plutonium-242, Strontium-85 and Uranium-232 – Radiochemical Tracer Recovery Data are summarized below:

Radiochemical Tracer Percent Recovery			
Sample Number	**Lab Sample ID**	**Isotope**	**Tracer Recovery (Percent)**
Americium-243			
BLANK		Am-243	79.9%
LCS		Am-243	93.0%
B1KB49	W060002493	Am-243	85.8%
DUPLICATE	W060002493	Am-243	89.2%
B1KB50	W060002494	Am-243	95.5%
B1KB51	W060002495	Am-243	90.7%
Plutonium-242			
BLANK		Pu-242	84.0%
LCS		Pu-242	85.0%
B1KB49	W060002493	Pu-242	81.8%
DUPLICATE	W060002493	Pu-242	86.7%
B1KB50	W060002494	Pu-242	99.4%
B1KB51	W060002495	Pu-242	88.3%

Radiochemical Tracer Percent Recovery			
Sample Number	**Lab Sample ID**	**Isotope**	**Tracer Recovery (Percent)**
Strontium-85			
BLANK		Sr-85	98.9%
LCS		Sr-85	83.4%
B1KB49	W060002493	Sr-85	86.0%
DUPLICATE	W060002493	Sr-85	88.2%
B1KB50	W060002494	Sr-85	95.9%
B1KB51	W060002495	Sr-85	85.4%
Uranium-232			
BLANK		U-232	79.8%
LCS		U-232	75.6%
B1KB49	W060002493	U-232	121.6%
DUPLICATE	W060002493	U-232	93.0%
B1KB50	W060002494	U-232	131.7%
B1KB51	W060002495	U-232	103.6%

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.

Pauline D. Mix
WSCF Client Services

Abbreviations
Hg – mercury
IC – ion chromatography
ICP – inductively coupled plasma
ICP/AES – ICP/atomic emission spectroscopy
ICP/MS – ICP/mass spectrometry
Total U – total uranium
AT/TB – total alpha/total beta
AEA – Alpha Energy Analysis
WTPH-G – Total Hydrocarbons-Gasoline
Am – americium
Cm - curium
Pu – plutonium
Np – neptunium
GEA – gamma energy analysis
H3 – Tritium
Sr – Strontium 89, 90
WTPH-D – Total Hydrocarbons-Diesel
TSS – Total Suspended Solids

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	R06-013-011	PAGE 1 OF 4

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 8C	DATA TURNAROUND
HOGAN, JG	TRECHTER, JE	373-7046	TRECHTER, JE	AIR QUALITY	7 DAYS ~~15 Days~~ 7 DAYS ~~15 Days~~ 8-16-06

SAMPLING LOCATION	PROJECT DESIGNATION	SAF NO.
200-W-42	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
	DTS-SAWS-H	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

20060934

ICED Initial ✓ Date 8/16/06

SAMPLE NO.	LAB ID	MATRIX*	SAMPLE DATE	SAMPLE TIME	NO./TYPE CONTAINER(S)	ANALYSIS	PRESERVATION
B1KB49		S			4X60mL aG	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Cool 4C
B1KB49	W06000293	S	8-16-06	1530	4X60mL G	TPH-Diesel Range - WTPH-D {TPHKEROSEN}	Cool 4C
B1KB49		S			1X500mL Square Bottle - Poly	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	None
B1KB49		S			4X60mL G/P	Isotopic Plutonium {Pu-238, Pu-239/240} Isotopic Uranium {U-233/234, U-235, U-238} Americium-241 {Am-241}	None
B1KB49		S			4X60mL G/P	Strontium-89,90 -- Sr-90 {Sr-90}	None
B1KB49		S			4X60mL G/P	Technetium-99 {Tc-99}	None
B1KB49		S			4X60mL G/P	Neptunium-237 {Np-237}	None

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
JG HOGAN	8-16-06 1920	Victor Pinus	8/16/06 19:20
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

SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

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

000022

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			R06-013-011	PAGE 2 OF 4
COLLECTOR HOGAN, JG	COMPANY CONTACT TRECHTER, JE	TELEPHONE NO. 373-7046	PROJECT COORDINATOR TRECHTER, JE	PRICE CODE 8C	DATA TURNAROUND ~~15 Days~~ 8-16-06 7 Days
SAMPLING LOCATION 200-W-42	PROJECT DESIGNATION 200-UW-1 Operable Unit, Soil from Trench between 216-U-8 and 216-U-12		SAF NO. R06-013	AIR QUALITY ☐	ICED ✓ Initial 8/16/06 Date
ICE CHEST NO.	FIELD LOGBOOK NO. DTS-SAWS-H	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		

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, BENZOPY, BIS2CHE, BIS2CHM, BIS2EPH, BNZKFLU, BROPHEN, BUTBENP, CHLANIL, CHLCRES, CHLNAPH, CHLPHEN, CHRYSENE, DIBAHAN, DIBENFR, DIBPHTH, DICHBEN, DIEPHTH, DIMPHTH, DINPHEN, DIOPHTH, DIPRNIT, FLUORAN, FLUORENE, HEXCBEN, HEXCBUT, HEXCCYC, HEXCETH, INDENOP, ISOPHORONE, NAPHTHA, NITBENZ, NITPHENOL, NITRANILIN, NNDIPHA, PENTCHP, PHENANT, PHENOL, PYRENE, TRICHLB}

(2)Gamma Spec - Add-on {Ac-228, Ba-133, Ce-144, Ce/Pr-144, Cm-244, Cs-134, K-40, Nb-94, Ra-228, Ru-103, Sb-125, Sn-113, Sn-125, Sn-126, Th-228, Th-232, U-235, U-238, Zn-65} Gamma Spectroscopy {Am-241, Co-58, Co-60, Cs-137, Eu-152, Eu-154, Eu-155, Fe-59, Ra-226, Ru-106}

000023

A-6001-774

Fluor Hanford Inc.

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

R06-013-011

COLLECTOR: HOGAN, JG

COMPANY CONTACT: TRECHTER, JE

TELEPHONE NO.: 373-7046

PROJECT COORDINATOR: TRECHTER, JE

PRICE CODE: 8C

DATA TURNAROUND: 7 DAYS ~~15 Days~~ 1/14 7 DAYS ~~15 Days~~ 8-16-06

SAMPLING LOCATION: 200-W-42

PROJECT DESIGNATION: 200-UW-1 Operable Unit, Soil from Trench between 216-U-8 and 216-U-12

SAF NO.: R06-013

AIR QUALITY:

ICE CHEST NO.:

FIELD LOGBOOK NO.: DTS-SAWS-H

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

ICED Initial V 8/14/06 Date

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
B1KB49		S	8-16-06	1530	4X60mL G/P	IC Anions - 300.0 (BROMIDE, CHLORIDE, FLUORIDE, NO2-N, NO3-N, PO4-P, SULFATE)	None
B1KB49		S			4X60mL G/P	ICP Metals - 6010A (Add-on) (~~B~~, ~~Ba~~, La, ~~N~~, ~~S~~, Sm, ~~Ti~~) ICP Metals - 6010A (TAL) (~~Al~~, ~~Ca~~, ~~Fe~~, ~~K~~, ~~Mg~~, ~~Na~~)	Cool 4C
B1KB49		S			4X60mL G/P	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	None
B1KB75	W06000249~~6~~	S			1X40mL G	SEE ITEM (4) IN SPECIAL INSTRUCTIONS	Cool 4C
B1KB76	2497	S			1X40mL G	SEE ITEM (4) IN SPECIAL INSTRUCTIONS	Cool 4C
B1KB77	2498	S			1X40mL G	SEE ITEM (4) IN SPECIAL INSTRUCTIONS	Cool 4C

CHAIN OF POSSESSION — SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
JG Hogan	1920 8-16-06	Victor Bins	8/16/06 1920
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

SEE PAGE 4 FOR ALL SPECIAL INSTRUCTIONS

LABORATORY SECTION — RECEIVED BY — TITLE — DATE/TIME

FINAL SAMPLE — DISPOSAL METHOD — DISPOSED BY — DATE/TIME

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			R06-013-011	PAGE 4 OF 4
COLLECTOR HOGAN, JG	COMPANY CONTACT TRECHTER, JE	TELEPHONE NO. 373-7046	PROJECT COORDINATOR TRECHTER, JE	PRICE CODE 8C	DATA TURNAROUND ~~15 Days~~ 14 8-16-06 7 DAYS
SAMPLING LOCATION 200-W-42	PROJECT DESIGNATION 200-UW-1 Operable Unit, Soil from Trench between 216-U-8 and 216-U-12		SAF NO. R06-013	AIR QUALITY ☐	
ICE CHEST NO.	FIELD LOGBOOK NO. DTS-SAWS-44	COA 121600ES20	METHOD OF SHIPMENT GOVERNMENT VEHICLE	VISED Initial 6/16/06 Date	
SHIPPED TO Waste Sampling & Characterization	OFFSITE PROPERTY NO. N/A		BILL OF LADING/AIR BILL NO. N/A		

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~~, ~~Nb~~, ~~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}

(4)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, STYRENE, TOLUENE, TRANS13, TRICELN, VINYIDE, XYLENES}

A-6001-774

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			R06-013-013	PAGE 1 OF 3
COLLECTOR HOGAN, JG	COMPANY CONTACT TRECHTER, JE	TELEPHONE NO. 373-7046	PROJECT COORDINATOR TRECHTER, JE	PRICE CODE 8C	DATA TURNAROUND
SAMPLING LOCATION 200-W-42	PROJECT DESIGNATION 200-UW-1 Operable Unit, Soil from Trench between 216-U-8 and 216-U-12		SAF NO. R06-013	AIR QUALITY	7 Days ~~15 Days~~ / ~~14~~ ~~15 Days~~ 8-16-06
ICE CHEST NO.	FIELD LOGBOOK NO. DTS-SAWS-H	COA 121600ES20	METHOD OF SHIPMENT GOVERNMENT VEHICLE		8/16/06 ED Initial Date
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
B1KB50	WO 6002494	S	8-16-06	1570	4X60mL aG	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Cool 4C
B1KB50		S			4X60mL G	TPH-Diesel Range - WTPH-D {TPHKEROSEN}	Cool 4C
B1KB50		S			1X500mL Square Bottle - Poly	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	None
B1KB50		S			4X60mL G/P	Isotopic Plutonium {Pu-238, Pu-239/240} Isotopic Uranium {U-233/234, U-235, U-238} Americium-241 {Am-241}	None
B1KB50		S			4X60mL G/P	Strontium-89,90 -- Sr-90 {Sr-90}	None
B1KB50		S			4X60mL G/P	Technetium-99 {Tc-99}	None
B1KB50		S			4X60mL G/P	Neptunium-237 {Np-237}	None

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS
JG Hogan J Hogan	1920 8-16-06	Victor Jones	8/16/06 1920	
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	

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

000026

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			R06-013-013	PAGE 2 OF 3
COLLECTOR HOGAN, JG	COMPANY CONTACT TRECHTER, JE	TELEPHONE NO. 373-7046	PROJECT COORDINATOR TRECHTER, JE	PRICE CODE 8C	DATA TURNAROUND 7 DAYS ~~15 Days~~ 5-16-01 M
SAMPLING LOCATION 200-W-42	PROJECT DESIGNATION 200-UW-1 Operable Unit, Soil from Trench between 216-U-8 and 216-U-12		SAF NO. R06-013	AIR QUALITY	
ICE CHEST NO.	FIELD LOGBOOK NO. DTS-SAWS-4	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		

Initial
Date

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, BENZOPY, BIS2CHE, BIS2CHM, BIS2EPH, BNZKFLU, BROPHEN, BUTBENP, CHLANIL, CHLCRES, CHLNAPH, CHLPHEN, CHRYSENE, DIBAHAN, DIBENFR, DIBPHTH, DICHBEN, DIEPHTH, DIMPHTH, DINPHEN, DIOPHTH, DIPRNIT, FLUORAN, FLUORENE, HEXCBEN, HEXCBUT, HEXCCYC, HEXCETH, INDENOP, ISOPHORONE, NAPHTHA, NITBENZ, NITPHENOL, NITRANILIN, NNDIPHA, PENTCHP, PHENANT, PHENOL, PYRENE, TRICHLB}

(2)Gamma Spec - Add-on {Ac-228, Ba-133, Ce-144, Ce/Pr-144, Cm-244, Cs-134, K-40, Nb-94, Ra-228, Ru-103, Sb-125, Sn-113, Sn-125, Sn-126, Th-228, Th-232, U-235, U-238, Zn-65} Gamma Spectroscopy {Am-241, Co-58, Co-60, Cs-137, Eu-152, Eu-154, Eu-155, Fe-59, Ra-226, Ru-106}

A-6001-774

Fluor Hanford Inc.

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

R06-013-013

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 8C	DATA TURNAROUND
HOGAN, JG	TRECHTER, JE	373-7046	TRECHTER, JE		
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**	**AIR QUALITY** ☐	~~7DAY/15 Days~~ 1/A ~~7DAY/15 Days~~ 8-16-06
200-W-42	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**		
	DTS-SAWS-H	121600ES20	GOVERNMENT VEHICLE		
SHIPPED TO	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		
Waste Sampling & Characterization	N/A		N/A		

ICED ✓ Initial 8/16/06 Date

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
B1KB50		S	8-16-06	1530	4X60mL G/P	IC Anions - 300.0 {BROMIDE, CHLORIDE, FLUORIDE, NO2-N, NO3-N, PO4-P, SULFATE}	None
B1KB50		S			4X60mL G/P	ICP Metals - 6010A (Add-on) {B, Bi, La, Li, Si, Sm, Ti} ICP Metals - 6010A (TAL) {Al, Ca, Fe, K, Mg, Na}	Cool 4C
B1KB50		S			4X60mL G/P	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	None

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
JG Hogan	1920 8-16-06	Victor J Sims	8/16/06 1920
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	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

000028

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			R06-013-015	PAGE 1 OF 3
COLLECTOR HOGAN, JG	COMPANY CONTACT TRECHTER, JE	TELEPHONE NO. 373-7046	PROJECT COORDINATOR TRECHTER, JE	PRICE CODE 8C	DATA TURNAROUND
SAMPLING LOCATION 200-W-42	PROJECT DESIGNATION 200-UW-1 Operable Unit, Soil from Trench between 216-U-8 and 216-U-12		SAF NO. R06-013	AIR QUALITY ☐	7 DAYS ~~15 Days~~ / 14 7 DAYS ~~15 Days~~ 8-16-06
ICE CHEST NO.	FIELD LOGBOOK NO. DTS-SAMS-H	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		

ICED Initial Date 8/16/06

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
B1KB51	W06000249S	S	8-16-06	1000	4X60mL aG	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Cool 4C
B1KB51		S			4X60mL G	TPH-Diesel Range - WTPH-D {TPHKEROSEN}	Cool 4C
B1KB51		S			1X500mL Square Bottle - Poly	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	None
B1KB51		S			4X60mL G/P	Isotopic Plutonium {Pu-238, Pu-239/240} Isotopic Uranium {U-233/234, U-235, U-238} Americium-241 {Am-241}	None
B1KB51		S			4X60mL G/P	Strontium-89,90 -- Sr-90 {Sr-90}	None
B1KB51		S			4X60mL G/P	Technetium-99 {Tc-99}	None
B1KB51		S			4X60mL G/P	Neptunium-237 {Np-237}	None

CHAIN OF POSSESSION — SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
JG HOGAN	1920 8-16-06	Victor Binns	1920 8/16/06
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
SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

LABORATORY SECTION — RECEIVED BY — TITLE — DATE/TIME

FINAL SAMPLE — DISPOSAL METHOD — DISPOSED BY — DATE/TIME

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			R06-013-015	PAGE 2 OF 3
COLLECTOR	**COMPANY CONTACT**	**TELEPHONE NO.**	**PROJECT COORDINATOR**	**PRICE CODE** 8C	**DATA TURNAROUND** 7 DAYS ~~15 Days~~
HOGAN, JG	TRECHTER, JE	373-7046	TRECHTER, JE		
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**	**AIR QUALITY**	
200-W-42	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**		
	DTS-SAWS-H	121600ES20	GOVERNMENT VEHICLE		
SHIPPED TO	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		
Waste Sampling & Characterization	N/A		N/A		

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, BENZOPY, BIS2CHE, BIS2CHM, BIS2EPH, BNZKFLU, BROPHEN, BUTBENP, CHLANIL, CHLCRES, CHLNAPH, CHLPHEN, CHRYSENE, DIBAHAN, DIBENFR, DIBPHTH, DICHBEN, DIEPHTH, DIMPHTH, DINPHEN, DIOPHTH, DIPRNIT, FLUORAN, FLUORENE, HEXCBEN, HEXCBUT, HEXCCYC, HEXCETH, INDENOP, ISOPHORONE, NAPHTHA, NITBENZ, NITPHENOL, NITRANILIN, NNDIPHA, PENTCHP, PHENANT, PHENOL, PYRENE, TRICHLB}

(2)Gamma Spec - Add-on {Ac-228, Ba-133, Ce-144, Ce/Pr-144, Cm-244, Cs-134, K-40, Nb-94, Ra-228, Ru-103, Sb-125, Sn-113, Sn-125, Sn-126, Th-228, Th-232, U-235, U-238, Zn-65} Gamma Spectroscopy {Am-241, Co-58, Co-60, Cs-137, Eu-152, Eu-154, Eu-155, Fe-59, Ra-226, Ru-106}

Initial

Date

A-6001-774

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			R06-013-015	PAGE 3 OF 3
COLLECTOR HOGAN, JG	COMPANY CONTACT TRECHTER, JE	TELEPHONE NO. 373-7046	PROJECT COORDINATOR TRECHTER, JE	PRICE CODE 8C	DATA TURNAROUND
SAMPLING LOCATION 200-W-42	PROJECT DESIGNATION 200-UW-1 Operable Unit, Soil from Trench between 216-U-8 and 216-U-12		SAF NO. R06-013	AIR QUALITY	7 DAYS ~~15 Days~~ N/A 7 DAYS ~~15 Days~~ 8-16-06
ICE CHEST NO.	FIELD LOGBOOK NO. DTS-SANS	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		

Initial
8/16/06
Date

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
B1KB51		S	8-16-06	1000	4X60mL G/P	IC Anions - 300.0 {BROMIDE, CHLORIDE, FLUORIDE, NO2-N, NO3-N, PO4-P, SULFATE}	None
B1KB51		S			4X60mL G/P	ICP Metals - 6010A (Add-on) {B, Bi, La, Li, Si, Sm, Ti} ICP Metals - 6010A (TAL) {Al, Ca, Fe, K, Mg, Na}	Cool 4C
B1KB51		S			4X60mL G/P	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	None

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM JG HOGAN	DATE/TIME 8-16-06 1920	RECEIVED BY/STORED IN Victor Bins	DATE/TIME 8/16/06 1920
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	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

000031

Appendix 5

Data Validation Supporting Documentation

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	C	D	E
PROJECT: 200-UW-1			DATA PACKAGE: 60934		
VALIDATOR: TLI		LAB: WSCF		DATE: 8/30/06	
			SDG: 60934		

ANALYSES PERFORMED					
SW-846/ICP	SW-846/GFAA	SW-846/Hg	SW-846 Cyanide		

SAMPLES/MATRIX
B1KB49 B1KB50 B1KB51

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: Zinc - 51 - UJ no FB

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: Silicon MS (378) MSD (398) over - J all

Silicon - LCS 232% - J all

no PAS

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 al, calcium, Fe, magnesium, titanium. MS/MSD - 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

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: _____

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:

Appendix 6

Additional Documentation Requested by Client

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: 20060934
Matrix: SOLID
Test: ICP Metals Analysis, Grd H20 P

SAF Number: R06-013
Sample Date: 08/16/06
Receive Date:08/16/06

Lab ID: W060002493
BATCH QC ASSOCIATED WITH SAMPLE

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
MS	Aluminum	7429-90-5	NA	n/a	% Recov	08/22/06	75.000	125.000	
MS	Boron	7440-42-8	212	109.845	% Recov	08/22/06	75.000	125.000	
MS	Bismuth	7440-69-9	213	110.363	% Recov	08/22/06	75.000	125.000	
MS	Calcium	7440-70-2	NA	n/a	% Recov	08/22/06	75.000	125.000	
MS	Iron	7439-89-6	NA	n/a	% Recov	08/22/06	75.000	125.000	
MS	Potassium	7440-09-7	2088	108.187	% Recov	08/22/06	75.000	125.000	
MS	Lithium	7439-93-2	106.675	110.544	% Recov	08/22/06	70.000	130.000	
MS	Magnesium	7439-95-4	NA	n/a	% Recov	08/22/06	75.000	125.000	
MS	Sodium	7440-23-5	193.9	100.466	% Recov	08/22/06	75.000	125.000	
MS	Silicon	7440-21-3	729.7	378.083	% Recov	08/22/06	70.000	130.000	*
MS	Titanium	7440-32-6	NA	n/a	% Recov	08/22/06	75.000	125.000	
MSD	Aluminum	7429-90-5	NA	n/a	% Recov	08/22/06	75.000	125.000	
MSD	Boron	7440-42-8	214.3	108.782	% Recov	08/22/06	75.000	125.000	
MSD	Bismuth	7440-69-9	225	114.213	% Recov	08/22/06	75.000	125.000	
MSD	Calcium	7440-70-2	NA	n/a	% Recov	08/22/06	75.000	125.000	
MSD	Iron	7439-89-6	NA	n/a	% Recov	08/22/06	75.000	125.000	
MSD	Potassium	7440-09-7	2087	105.939	% Recov	08/22/06	75.000	125.000	
MSD	Lithium	7439-93-2	108.475	110.127	% Recov	08/22/06	75.000	125.000	
MSD	Magnesium	7439-95-4	NA	n/a	% Recov	08/22/06	75.000	125.000	
MSD	Sodium	7440-23-5	194.1	98.528	% Recov	08/22/06	75.000	125.000	
MSD	Silicon	7440-21-3	785.2	398.579	% Recov	08/22/06	75.000	125.000	*
MSD	Titanium	7440-32-6	NA	n/a	% Recov	08/22/06	75.000	125.000	
SPK-RPD	Aluminum	7429-90-5		n/a	RPD	08/22/06	0.000	20.000	
SPK-RPD	Boron	7440-42-8	108.782	0.972	RPD	08/22/06	0.000	20.000	
SPK-RPD	Bismuth	7440-69-9	114.213	3.429	RPD	08/22/06	0.000	20.000	
SPK-RPD	Calcium	7440-70-2		n/a	RPD	08/22/06	0.000	20.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: 20060934
Matrix: SOLID
Test: ICP Metals Analysis, Grd H20 P

SAF Number: R06-013
Sample Date: 08/16/06
Receive Date:08/16/06

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit		RQ
SPK-RPD	Iron	7439-89-6		n/a	RPD	08/22/06	0.000	20.000		
SPK-RPD	Potassium	7440-09-7	105.939	2.100	RPD	08/22/06	0.000	20.000		
SPK-RPD	Lithium	7439-93-2	110.127	0.378	RPD	08/22/06	0.000	20.000		
SPK-RPD	Magnesium	7439-95-4		n/a	RPD	08/22/06	0.000	20.000		
SPK-RPD	Sodium	7440-23-5	98.528	1.948	RPD	08/22/06	0.000	20.000		
SPK-RPD	Silicon	7440-21-3	398.579	5.278	RPD	08/22/06	0.000	20.000		
SPK-RPD	Titanium	7440-32-6		n/a	RPD	08/22/06	0.000	20.000		
BATCH QC										
BLANK	Aluminum	7429-90-5	6.02e-2	0.060	ug/mL	08/22/06				
BLANK	Boron	7440-42-8	<2.1e-2	n/a	ug/mL	08/22/06				U
BLANK	Bismuth	7440-69-9	<5.3e-2	n/a	ug/mL	08/22/06				U
BLANK	Calcium	7440-70-2	<3.1e-2	n/a	ug/mL	08/22/06				U
BLANK	Iron	7439-89-6	<3.3e-2	n/a	ug/mL	08/22/06				U
BLANK	Potassium	7440-09-7	<0.22	n/a	ug/mL	08/22/06				U
BLANK	Lithium	7439-93-2	<6e-3	n/a	ug/mL	08/22/06				U
BLANK	Magnesium	7439-95-4	<1.5e-2	n/a	ug/mL	08/22/06				U
BLANK	Sodium	7440-23-5	<0.115	n/a	ug/mL	08/22/06				U
BLANK	Silicon	7440-21-3	<7.5e-2	n/a	ug/mL	08/22/06				U
BLANK	Titanium	7440-32-6	<4e-3	n/a	ug/mL	08/22/06				U
LCS	Aluminum	7429-90-5	7143	113.022	% Recov	08/22/06	44.000	157.000		
LCS	Boron	7440-42-8	107.4	110.267	% Recov	08/22/06	45.000	156.000		
LCS	Bismuth	7440-69-9	236.2	119.052	% Recov	08/22/06	80.000	120.000		
LCS	Calcium	7440-70-2	4197	126.416	% Recov	08/22/06	76.000	124.000	•	
LCS	Iron	7439-89-6	12920	115.357	% Recov	08/22/06	47.000	152.000		
LCS	Potassium	7440-09-7	2176	113.333	% Recov	08/22/06	64.000	136.000		
LCS	Lithium	7439-93-2	7.524	126.242	% Recov	08/22/06	80.000	120.000	•	
LCS	Magnesium	7439-95-4	2348	115.098	% Recov	08/22/06	71.000	129.000		
LCS	Sodium	7440-23-5	509.5	114.494	% Recov	08/22/06	51.000	149.000		
LCS	Silicon	7440-21-3	169.2	23.210	% Recov	08/22/06	80.000	120.000	•	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: 20060934
Matrix: SOLID
Test: ICP Metals Analysis, Grd H20 P

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	Titanium	7440-32-6	291.4	94.000	% Recov	08/22/06	9.000	191.000	

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WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: 20060934
Matrix: SOLID
Test: ICP-2008 MS All possible metal

SAF Number: R06-013
Sample Date: 08/16/06
Receive Date:08/16/06

Lab ID: W060002493
BATCH QC ASSOCIATED WITH SAMPLE

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
MS	Silver	7440-22-4	195.1	97.550	% Recov	08/22/06	70.000	130.000	
MS	Arsenic	7440-38-2	168.39	84.195	% Recov	08/22/06	70.000	130.000	
MS	Barium	7440-39-3	195.42	97.710	% Recov	08/22/06	70.000	130.000	
MS	Beryllium	7440-41-7	200.5175	100.259	% Recov	08/22/06	70.000	130.000	
MS	Cadmium	7440-43-9	207.60505	103.803	% Recov	08/22/06	70.000	130.000	
MS	Cobalt	7440-48-4	187.382	93.691	% Recov	08/22/06	70.000	130.000	
MS	Chromium	7440-47-3	192.848	96.424	% Recov	08/22/06	70.000	130.000	
MS	Copper	7440-50-8	184	92.000	% Recov	08/22/06	70.000	130.000	
MS	Mercury	7439-97-6	2.1878	109.390	% Recov	08/22/06	70.000	130.000	
MS	Manganese	7439-96-5	163.4	81.700	% Recov	08/22/06	70.000	130.000	
MS	Molybdenum	7439-98-7	173.7549	86.877	% Recov	08/22/06	70.000	130.000	
MS	Nickel	7440-02-0	189.91	94.955	% Recov	08/22/06	70.000	130.000	
MS	Lead	7439-92-1	203.126	101.563	% Recov	08/22/06	70.000	130.000	
MS	Antimony	7440-36-0	190.8	95.400	% Recov	08/22/06	70.000	130.000	
MS	Selenium	7782-49-2	168	84.000	% Recov	08/22/06	70.000	130.000	
MS	Tin	7440-31-5	204.54	102.270	% Recov	08/22/06	70.000	130.000	
MS	Strontium	7440-24-6	165.13	82.565	% Recov	08/22/06	70.000	130.000	
MS	Thorium	7440-29-1	197.993	98.996	% Recov	08/22/06	70.000	130.000	
MS	Thallium	7440-28-0	198.93748	99.469	% Recov	08/22/06	70.000	130.000	
MS	Uranium	7440-61-1	201.272	100.636	% Recov	08/22/06	70.000	130.000	
MS	Vanadium	7440-62-2	173.2	86.600	% Recov	08/22/06	70.000	130.000	
MS	Zinc	7440-66-6	186.34	93.170	% Recov	08/22/06	70.000	130.000	
MSD	Silver	7440-22-4	186.4	93.200	% Recov	08/22/06	70.000	130.000	
MSD	Arsenic	7440-38-2	158.89	79.445	% Recov	08/22/06	70.000	130.000	
MSD	Barium	7440-39-3	186.22	93.110	% Recov	08/22/06	70.000	130.000	
MSD	Beryllium	7440-41-7	192.2175	96.109	% Recov	08/22/06	70.000	130.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: 20060934
Matrix: SOLID
Test: ICP-2008 MS All possible metal

SAF Number: R06-013
Sample Date: 08/16/06
Receive Date:08/16/06

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
MSD	Cadmium	7440-43-9	195.10505	97.553	% Recov	08/22/06	70.000	130.000	
MSD	Cobalt	7440-48-4	175.782	87.891	% Recov	08/22/06	70.000	130.000	
MSD	Chromium	7440-47-3	184.048	92.024	% Recov	08/22/06	70.000	130.000	
MSD	Copper	7440-50-8	179.1	89.550	% Recov	08/22/06	70.000	130.000	
MSD	Mercury	7439-97-6	2.0908	104.540	% Recov	08/22/06	70.000	130.000	
MSD	Manganese	7439-96-5	152.4	76.200	% Recov	08/22/06	70.000	130.000	
MSD	Molybdenum	7439-98-7	159.7549	79.877	% Recov	08/22/06	70.000	130.000	
MSD	Nickel	7440-02-0	179.71	89.855	% Recov	08/22/06	70.000	130.000	
MSD	Lead	7439-92-1	198.526	99.263	% Recov	08/22/06	70.000	130.000	
MSD	Antimony	7440-36-0	185.1	92.550	% Recov	08/22/06	70.000	130.000	
MSD	Selenium	7782-49-2	155.4	77.700	% Recov	08/22/06	70.000	130.000	
MSD	Tin	7440-31-5	195.54	97.770	% Recov	08/22/06	70.000	130.000	
MSD	Strontium	7440-24-6	156.53	78.265	% Recov	08/22/06	70.000	130.000	
MSD	Thorium	7440-29-1	188.393	94.197	% Recov	08/22/06	70.000	130.000	
MSD	Thallium	7440-28-0	193.53748	96.769	% Recov	08/22/06	70.000	130.000	
MSD	Uranium	7440-61-1	189.472	94.736	% Recov	08/22/06	70.000	130.000	
MSD	Vanadium	7440-62-2	165.7	82.850	% Recov	08/22/06	70.000	130.000	
MSD	Zinc	7440-66-6	179.64	89.820	% Recov	08/22/06	70.000	130.000	
SPK-RPD	Silver	7440-22-4	93.200	4.561	RPD	08/22/06	0.000	20.000	
SPK-RPD	Arsenic	7440-38-2	79.445	5.805	RPD	08/22/06	0.000	20.000	
SPK-RPD	Barium	7440-39-3	93.110	4.821	RPD	08/22/06	0.000	20.000	
SPK-RPD	Beryllium	7440-41-7	96.109	4.227	RPD	08/22/06	0.000	20.000	
SPK-RPD	Cadmium	7440-43-9	97.553	6.208	RPD	08/22/06	0.000	20.000	
SPK-RPD	Cobalt	7440-48-4	87.891	6.388	RPD	08/22/06	0.000	20.000	
SPK-RPD	Chromium	7440-47-3	92.024	4.670	RPD	08/22/06	0.000	20.000	
SPK-RPD	Copper	7440-50-8	89.550	2.699	RPD	08/22/06	0.000	20.000	
SPK-RPD	Mercury	7439-97-6	104.540	4.534	RPD	08/22/06	0.000	20.000	
SPK-RPD	Manganese	7439-96-5	76.200	6.966	RPD	08/22/06	0.000	20.000	
SPK-RPD	Molybdenum	7439-98-7	79.877	8.396	RPD	08/22/06	0.000	20.000	
SPK-RPD	Nickel	7440-02-0	89.855	5.519	RPD	08/22/06	0.000	20.000	

EPORT

SAF Number: R06-013
Sample Date: 08/16/06
Receive Date:08/16/06

Lower Limit	Upper Limit	RQ
0.000	20.000	
0.000	20.000	
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WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: 20060934
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
BLANK	Thallium	7440-28-0	<3e-2	n/a	ug/L	08/22/06			U
BLANK	Uranium	7440-61-1	<2e-2	n/a	ug/L	08/22/06			U
BLANK	Vanadium	7440-62-2	<0.5	n/a	ug/L	08/22/06			U
BLANK	Zinc	7440-66-6	0.3413	0.341	ug/L	08/22/06			
LCS	Silver	7440-22-4	145.6	112.000	% Recov	08/22/06	98.000	134.000	
LCS	Arsenic	7440-38-2	160.3	99.565	% Recov	08/22/06	75.000	134.000	
LCS	Barium	7440-39-3	253.6	100.635	% Recov	08/22/06	87.000	121.000	
LCS	Beryllium	7440-41-7	98.22	104.047	% Recov	08/22/06	70.000	153.000	
LCS	Cadmium	7440-43-9	128.3	100.234	% Recov	08/22/06	95.000	124.000	
LCS	Cobalt	7440-48-4	36.52	103.750	% Recov	08/22/06	88.000	119.000	
LCS	Chromium	7440-47-3	70.03	100.763	% Recov	08/22/06	77.000	125.000	
LCS	Copper	7440-50-8	151.1	102.095	% Recov	08/22/06	84.000	122.000	
LCS	Mercury	7439-97-6	16.93	100.178	% Recov	08/22/06	71.000	132.000	
LCS	Manganese	7439-96-5	424.9	104.142	% Recov	08/22/06	83.000	118.000	
LCS	Molybdenum	7439-98-7	88.47	105.196	% Recov	08/22/06	71.000	130.000	
LCS	Nickel	7440-02-0	155.8	105.986	% Recov	08/22/06	90.000	121.000	
LCS	Lead	7439-92-1	149.6	105.352	% Recov	08/22/06	92.000	123.000	
LCS	Antimony	7440-36-0	100.7	165.353	% Recov	08/22/06	114.000	260.000	
LCS	Selenium	7782-49-2	68.67	106.963	% Recov	08/22/06	52.000	157.000	
LCS	Tin	7440-31-5	61.44	100.721	% Recov	08/22/06	86.000	123.000	
LCS	Strontium	7440-24-6	84.12	100.143	% Recov	08/22/06	68.000	123.000	
LCS	Thorium	7440-29-1	378.1	94.525	% Recov	08/22/06	77.000	121.000	
LCS	Thallium	7440-28-0	86.99	103.560	% Recov	08/22/06	92.000	123.000	
LCS	Uranium	7440-61-1	390.4	97.600	% Recov	08/22/06	81.000	125.000	
LCS	Vanadium	7440-62-2	102.6	105.447	% Recov	08/22/06	81.000	122.000	
LCS	Zinc	7440-66-6	175.7	106.485	% Recov	08/22/06	85.000	130.000	

Date: 1 September 2006
To: Fluor Hanford Inc. (technical representative)
From: TechLaw, Inc.
Project: 200-UW-1 Operable Unit, Soil from Trench between 216-U-8 & 216-U-12 Cribs
Subject: Semivolatile - Data Package No. WSCF20060934 (60934)

INTRODUCTION

This memo presents the results of data validation on Data Package No. 60934 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
B1KB49	8/16/06	Soil	C	See note 1
B1KB50	8/16/06	Soil	C	See note 1
B1KB51	8/16/06	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. 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 requirements 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.

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".

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 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.

All accuracy results were acceptable.

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.

All duplicate results were acceptable.

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. 60934 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 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: 60934	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

Annotated Laboratory Reports

WSCF
ANALYTICAL RESULTS REPORT

Attention: D.L KLAGES H8-40 **Group #:** 20060934

Sample #	Client ID		CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
Organic														
W060002493	B1KB49	KLAGES	100-02-7	4-Nitrophenol	SOIL	LA-523-456	U	< 240	ug/kg	1.00	2.4e+02	08/18/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	106-46-7	1,4-Dichlorobenzene	SOIL	LA-523-456	U	< 290	ug/kg	1.00	2.9e+02	08/18/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	108-95-2	Phenol	SOIL	LA-523-456	U	< 170	ug/kg	1.00	1.7e+02	08/18/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	120-82-1	1,2,4-Trichlorobenzene	SOIL	LA-523-456	U	< 170	ug/kg	1.00	1.7e+02	08/18/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	121-14-2	2,4-Dinitrotoluene	SOIL	LA-523-456	U	< 170	ug/kg	1.00	1.7e+02	08/18/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	129-00-0	Pyrene	SOIL	LA-523-456	U	< 170	ug/kg	1.00	1.7e+02	08/18/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	59-50-7	4-Chloro-3-methylphenol	SOIL	LA-523-456	U	< 170	ug/kg	1.00	1.7e+02	08/18/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	621-64-7	N Nitrosodi-n-dipropylamine	SOIL	LA-523-456	U	< 170	ug/kg	1.00	1.7e+02	08/18/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	83-32-9	Acenaphthene	SOIL	LA-523-456	U	< 170	ug/kg	1.00	1.7e+02	08/18/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	87-86-5	Pentachlorophenol	SOIL	LA-523-456	U	< 240	ug/kg	1.00	2.4e+02	08/18/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	95-57-8	2-Chlorophenol	SOIL	LA-523-456	U	< 170	ug/kg	1.00	1.7e+02	08/18/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	100-01-6	4-Nitroaniline	SOIL	LA-523-456	U	< 240	ug/kg	1.00	2.4e+02	08/18/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	101-55-3	4-Bromophenylphenyl ether	SOIL	LA-523-456	U	< 170	ug/kg	1.00	1.7e+02	08/18/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	105-67-9	2,4-Dimethylphenol	SOIL	LA-523-456	U	< 270	ug/kg	1.00	2.7e+02	08/18/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	106-47-8	4-Chloroaniline	SOIL	LA-523-456	U	< 360	ug/kg	1.00	3.6e+02	08/18/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	108-60-1	Bis(2-chloro-1-methylethyl)eth	SOIL	LA-523-456	U	< 170	ug/kg	1.00	1.7e+02	08/18/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	111-44-4	Bis(2-chloroethyl) ether	SOIL	LA-523-456	U	< 170	ug/kg	1.00	1.7e+02	08/18/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	111-91-1	Bis(2-Chloroethoxy)methane	SOIL	LA-523-456	U	< 170	ug/kg	1.00	1.7e+02	08/18/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	117-81-7	Bis(2-ethylhexyl) phthalate	SOIL	LA-523-456	J	230	ug/kg	1.00	1.7e+02	08/18/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	117-84-0	Di-n-octylphthalate	SOIL	LA-523-456	U	< 240	ug/kg	1.00	2.4e+02	08/18/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	118-74-1	Hexachlorobenzene	SOIL	LA-523-456	U	< 170	ug/kg	1.00	1.7e+02	08/18/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	120-12-7	Anthracene	SOIL	LA-523-456	U	< 170	ug/kg	1.00	1.7e+02	08/18/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	120-83-2	2,4-Dichlorophenol	SOIL	LA-523-456	U	< 170	ug/kg	1.00	1.7e+02	08/18/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	131-11-3	Dimethyl phthalate	SOIL	LA-523-456	U	< 170	ug/kg	1.00	1.7e+02	08/18/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	132-64-9	Dibenzofuran	SOIL	LA-523-456	U	< 170	ug/kg	1.00	1.7e+02	08/18/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	191-24-2	Benzo(ghi)perylene	SOIL	LA-523-456	U	< 270	ug/kg	1.00	2.7e+02	08/18/06	08/16/06	08/16/06

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Report WGPP/ver. 1.3
PROJECT HANFORD MANAGEMENT COMPANY

P 9/5/06

REVISED
9/5/06

WSCF
ANALYTICAL RESULTS REPORT

Attention: D.L KLAGES H8-40 **Group #:** 20060934

Sample #	Client ID		CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W060002493	B1KB49	KLAGES	193-39-5	Indeno(1,2,3-cd)pyrene	SOIL	LA-523-456	U	< 290	ug/kg	1.00	2.9e+02	08/18/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	205-99-2	Benzo(b)fluoranthene	SOIL	LA-523-456	U	< 210	ug/kg	1.00	2.1e+02	08/18/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	206-44-0	Fluoranthene	SOIL	LA-523-456	U	< 170	ug/kg	1.00	1.7e+02	08/18/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	207-08-9	Benzo(k)fluoranthene	SOIL	LA-523-456	U	< 210	ug/kg	1.00	2.1e+02	08/18/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	208-96-8	Acenaphthylene	SOIL	LA-523-456	U	< 170	ug/kg	1.00	1.7e+02	08/18/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	218-01-9	Chrysene	SOIL	LA-523-456	U	< 170	ug/kg	1.00	1.7e+02	08/18/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	50-32-8	Benzo(a)pyrene	SOIL	LA-523-456	U	< 240	ug/kg	1.00	2.4e+02	08/18/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	51-28-5	2,4-Dinitrophenol	SOIL	LA-523-456	U	< 720	ug/kg	1.00	7.2e+02	08/18/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	53-70-3	Dibenz(a,h)anthracene	SOIL	LA-523-456	U	< 310	ug/kg	1.00	3.1e+02	08/18/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	534-52-1	4,6-Dinitro-2-methylphenol	SOIL	LA-523-456	U	< 270	ug/kg	1.00	2.7e+02	08/18/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	541-73-1	1,3-Dichlorobenzene	SOIL	LA-523-456	U	< 310	ug/kg	1.00	3.1e+02	08/18/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	56-55-3	Benzo(a)anthracene	SOIL	LA-523-456	U	< 170	ug/kg	1.00	1.7e+02	08/18/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	606-20-2	2,6-Dinitrotoluene	SOIL	LA-523-456	U	< 170	ug/kg	1.00	1.7e+02	08/18/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	7005-72-3	4-Chlorophenylphenyl ether	SOIL	LA-523-456	U	< 170	ug/kg	1.00	1.7e+02	08/18/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	77-47-4	Hexachlorocyclopentadiene	SOIL	LA-523-456	U	< 190	ug/kg	1.00	1.9e+02	08/18/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	78-59-1	Isophorone	SOIL	LA-523-456	U	< 170	ug/kg	1.00	1.7e+02	08/18/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	84-66-2	Diethylphthalate	SOIL	LA-523-456	U	< 250	ug/kg	1.00	2.5e+02	08/18/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	84-74-2	Di-n-butylphthalate	SOIL	LA-523-456	U	< 170	ug/kg	1.00	1.7e+02	08/18/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	85-01-8	Phenanthrene	SOIL	LA-523-456	U	< 170	ug/kg	1.00	1.7e+02	08/18/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	85-68-7	Butylbenzylphthalate	SOIL	LA-523-456	U	< 170	ug/kg	1.00	1.7e+02	08/18/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	86-30-6	N-Nitrosodiphenylamine	SOIL	LA-523-456	U	< 190	ug/kg	1.00	1.9e+02	08/18/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	86-73-7	Fluorene	SOIL	LA-523-456	U	< 170	ug/kg	1.00	1.7e+02	08/18/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	86-74-8	Carbazole	SOIL	LA-523-456	U	< 170	ug/kg	1.00	1.7e+02	08/18/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	87-68-3	Hexachlorobutadiene	SOIL	LA-523-456	U	< 170	ug/kg	1.00	1.7e+02	08/18/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	88-74-4	2-Nitroaniline	SOIL	LA-523-456	U	< 170	ug/kg	1.00	1.7e+02	08/18/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	88-75-5	2-Nitrophenol	SOIL	LA-523-456	U	< 170	ug/kg	1.00	1.7e+02	08/18/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	91-20-3	Naphthalene	SOIL	LA-523-456	U	< 170	ug/kg	1.00	1.7e+02	08/18/06	08/16/06	08/16/06

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REVISED
9/5/06

9/5/06

WSCF
ANALYTICAL RESULTS REPORT

Attention: D.L KLAGES H8-40 **Group #:** 20060934

Sample #	Client ID		CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W060002493	B1KB49	KLAGES	91-57-6	2-Methylnaphthalene	SOIL	LA-523-456	U	< 170	ug/kg	1.00	1.7e+02	08/18/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	91-58-7	2-Chloronaphthalene	SOIL	LA-523-456	U	< 170	ug/kg	1.00	1.7e+02	08/18/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	91-94-1	3,3' Dichlorobenzidine	SOIL	LA-523-456	U	< 310	ug/kg	1.00	3.1e+02	08/18/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	95-48-7	2-Methylphenol (cresol, o-)	SOIL	LA-523-456	U	< 170	ug/kg	1.00	1.7e+02	08/18/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	95-50-1	1,2-Dichlorobenzene	SOIL	LA-523-456	U	< 290	ug/kg	1.00	2.9e+02	08/18/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	95-95-4	2,4,5-Trichlorophenol	SOIL	LA-523-456	U	< 170	ug/kg	1.00	1.7e+02	08/18/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	98-95-3	Nitrobenzene	SOIL	LA-523-456	U	< 170	ug/kg	1.00	1.7e+02	08/18/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	99-09-2	3-Nitroaniline	SOIL	LA-523-456	U	< 170	ug/kg	1.00	1.7e+02	08/18/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	65794-96-9	3 & 4 Methylphenol Total	SOIL	LA-523-456	U	< 170	ug/kg	1.00	1.7e+02	08/18/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	67-72-1	Hexachloroethane	SOIL	LA-523-456	U	< 270	ug/kg	1.00	2.7e+02	08/18/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	88-06-2	2,4,6-Trichlorophenol	SOIL	LA-523-456	U	< 170	ug/kg	1.00	1.7e+02	08/18/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	124-18-5	Decane	SOIL	LA-523-456	U	< 240	ug/kg	1.00	2.4e+02	08/18/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	112-40-3	Dodecane	SOIL	LA-523-456	U	< 170	ug/kg	1.00	1.7e+02	08/18/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	100-51-6	Benzyl alcohol	SOIL	LA-523-456	U	< 170	ug/kg	1.00	1.7e+02	08/18/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	111-76-2	2-Butoxyethanol	SOIL	LA-523-456	U	< 240	ug/kg	1.00	2.4e+02	08/18/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	126-73-8	Tributyl phosphate	SOIL	LA-523-456	U	< 170	ug/kg	1.00	1.7e+02	08/18/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	91-59-8	2 Naphthylamine	SOIL	LA-523-456	U	< 460	ug/kg	1.00	4.6e+02	08/18/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	108-94-1	Cyclohexanone	SOIL	LA-523-456	U	< 170	ug/kg	1.00	1.7e+02	08/18/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	110-86-1	Pyridine	SOIL	LA-523-456	U	< 170	ug/kg	1.00	1.7e+02	08/18/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	95-63-6	1,2,4 Trimethylbenzene	SOIL	LA-523-456	U	< 220	ug/kg	1.00	2.2e+02	08/18/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	65-85-0	Benzoic acid	SOIL	LA-523-456	U	< 480	ug/kg	1.00	480	08/18/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	78-46-6	Dibutyl butylphosphonate	SOIL	LA-523-456	U	< 1.7e+02	ug/kg	1.00	1.7e+02	08/18/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	TPHDIESEL	Total Pet. Hydrocarbons Diesel	SOIL	NWTPH	U	< 3.10e+03	ug/kg	1.00	3.1e+03	08/21/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	TPHKEROSENE	Kerosene	SOIL	NWTPH	U	< 3.10e+03	ug/kg	1.00	3.1e+03	08/21/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	100-02-7	4-Nitrophenol	SOIL	LA-523-456	U	< 240	ug/kg	1.00	2.4e+02	08/18/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	106 46-7	1,4-Dichlorobenzene	SOIL	LA-523-456	U	< 290	ug/kg	1.00	2.9e+02	08/18/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	108-95-2	Phenol	SOIL	LA-523-456	U	< 170	ug/kg	1.00	1.7e+02	08/18/06	08/16/06	08/16/06

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Report WGPP/ver. 1.3
PROJECT HANFORD MANAGEMENT COMPANY

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Dhynes
9/5/06

9/5/06

WSCF
ANALYTICAL RESULTS REPORT

Attention: D.L KLAGES H8-40 **Group #:** 20060934

Sample #	Client ID		CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W060002494	B1KB50	KLAGES	120-82-1	1,2,4-Trichlorobenzene	SOIL	LA-523-456	U	< 170	ug/kg	1.00	1.7e+02	08/18/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	121-14-2	2,4-Dinitrotoluene	SOIL	LA-523-456	U	< 170	ug/kg	1.00	1.7e+02	08/18/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	129-00-0	Pyrene	SOIL	LA-523-456	U	< 170	ug/kg	1.00	1.7e+02	08/18/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	59-50-7	4-Chloro-3-methylphenol	SOIL	LA-523-456	U	< 170	ug/kg	1.00	1.7e+02	08/18/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	621-64-7	N-Nitrosodi-n-dipropylamine	SOIL	LA-523-456	U	< 170	ug/kg	1.00	1.7e+02	08/18/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	83-32-9	Acenaphthene	SOIL	LA-523-456	U	< 170	ug/kg	1.00	1.7e+02	08/18/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	87-86-5	Pentachlorophenol	SOIL	LA-523-456	U	< 240	ug/kg	1.00	2.4e+02	08/18/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	95-57-8	2-Chlorophenol	SOIL	LA-523-456	U	< 170	ug/kg	1.00	1.7e+02	08/18/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	100-01-6	4-Nitroaniline	SOIL	LA-523-456	U	< 240	ug/kg	1.00	2.4e+02	08/18/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	101-55-3	4-Bromophenylphenyl ether	SOIL	LA-523-456	U	< 170	ug/kg	1.00	1.7e+02	08/18/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	105-67-9	2,4-Dimethylphenol	SOIL	LA-523-456	U	< 260	ug/kg	1.00	2.6e+02	08/18/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	106-47-8	4-Chloroaniline	SOIL	LA-523-456	U	< 360	ug/kg	1.00	3.6e+02	08/18/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	108-60-1	Bis(2-chloro-1-methylethyl)eth	SOIL	LA-523-456	U	< 170	ug/kg	1.00	1.7e+02	08/18/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	111-44-4	Bis(2 chloroethyl) ether	SOIL	LA-523-456	U	< 170	ug/kg	1.00	1.7e+02	08/18/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	111-91-1	Bis(2-Chloroethoxy)methane	SOIL	LA-523-456	U	< 170	ug/kg	1.00	1.7e+02	08/18/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	117-81-7	Bis(2-ethylhexyl) phthalate	SOIL	LA-523-456	U	< 170	ug/kg	1.00	1.7e+02	08/18/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	117-84-0	Di-n-octylphthalate	SOIL	LA-523-456	J	420	ug/kg	1.00	2.4e+02	08/18/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	118-74-1	Hexachlorobenzene	SOIL	LA-523-456	U	< 170	ug/kg	1.00	1.7e+02	08/18/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	120-12-7	Anthracene	SOIL	LA-523-456	U	< 170	ug/kg	1.00	1.7e+02	08/18/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	120-83-2	2,4-Dichlorophenol	SOIL	LA-523-456	U	< 170	ug/kg	1.00	1.7e+02	08/18/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	131-11-3	Dimethyl phthalate	SOIL	LA-523-456	U	< 170	ug/kg	1.00	1.7e+02	08/18/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	132-64-9	Dibenzofuran	SOIL	LA-523-456	U	< 170	ug/kg	1.00	1.7e+02	08/18/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	191-24-2	Benzo(ghi)perylene	SOIL	LA-523-456	U	< 260	ug/kg	1.00	2.6e+02	08/18/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	193-39-5	Indeno(1,2,3-cd)pyrene	SOIL	LA-523-456	U	< 290	ug/kg	1.00	2.9e+02	08/18/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	205-99-2	Benzo(b)fluoranthene	SOIL	LA-523-456	U	< 200	ug/kg	1.00	2.0e+02	08/18/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	206-44-0	Fluoranthene	SOIL	LA-523-456	U	< 170	ug/kg	1.00	1.7e+02	08/18/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	207-08-9	Benzo(k)fluoranthene	SOIL	LA-523-456	U	< 200	ug/kg	1.00	2.0e+02	08/18/06	08/16/06	08/16/06

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Report WGPP/ver. 1.3
PROJECT HANFORD MANAGEMENT COMPANY

REVISED Myers 9/5/06

9/5/06

WSCF
ANALYTICAL RESULTS REPORT

Attention: D.L KLAGES H8-40 **Group #:** 20060934

Sample #	Client ID		CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W060002494	B1KB50	KLAGES	208-96-8	Acenaphthylene	SOIL	LA-523-456	U	< 170	ug/kg	1.00	1.7e+02	08/18/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	218-01-9	Chrysene	SOIL	LA-523-456	U	< 170	ug/kg	1.00	1.7e+02	08/18/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	50-32-8	Benzo(a)pyrene	SOIL	LA-523-456	U	< 240	ug/kg	1.00	2.4e+02	08/18/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	51-28-5	2,4-Dinitrophenol	SOIL	LA-523-456	U	< 720	ug/kg	1.00	7.2e+02	08/18/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	53-70-3	Dibenz[a,h]anthracene	SOIL	LA-523-456	U	< 310	ug/kg	1.00	3.1e+02	08/18/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	534-52-1	4,6-Dinitro-2-methylphenol	SOIL	LA-523-456	U	< 260	ug/kg	1.00	2.6e+02	08/18/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	541-73-1	1,3-Dichlorobenzene	SOIL	LA-523-456	U	< 310	ug/kg	1.00	3.1e+02	08/18/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	56-55-3	Benzo(a)anthracene	SOIL	LA-523-456	U	< 170	ug/kg	1.00	1.7e+02	08/18/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	606-20-2	2,6-Dinitrotoluene	SOIL	LA-523-456	U	< 170	ug/kg	1.00	1.7e+02	08/18/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	7005-72-3	4-Chlorophenylphenyl ether	SOIL	LA-523-456	U	< 170	ug/kg	1.00	1.7e+02	08/18/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	77-47-4	Hexachlorocyclopentadiene	SOIL	LA-523-456	U	< 190	ug/kg	1.00	1.9e+02	08/18/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	78-59-1	Isophorone	SOIL	LA-523-456	U	< 170	ug/kg	1.00	1.7e+02	08/18/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	84-66-2	Diethylphthalate	SOIL	LA-523-456	J	270	ug/kg	1.00	2.5e+02	08/18/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	84-74-2	Di-n-butylphthalate	SOIL	LA-523-456	U	< 170	ug/kg	1.00	1.7e+02	08/18/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	85-01-8	Phenanthrene	SOIL	LA-523-456	U	< 170	ug/kg	1.00	1.7e+02	08/18/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	85-68-7	Butylbenzylphthalate	SOIL	LA-523-456	U	< 170	ug/kg	1.00	1.7e+02	08/18/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	86-30-6	N-Nitrosodiphenylamine	SOIL	LA-523-456	U	< 190	ug/kg	1.00	1.9e+02	08/18/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	86-73-7	Fluorene	SOIL	LA-523-456	U	< 170	ug/kg	1.00	1.7e+02	08/18/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	86-74-8	Carbazole	SOIL	LA-523-456	U	< 170	ug/kg	1.00	1.7e+02	08/18/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	87-68-3	Hexachlorobutadiene	SOIL	LA-523-456	U	< 170	ug/kg	1.00	1.7e+02	08/18/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	88-74-4	2-Nitroaniline	SOIL	LA-523-456	U	< 170	ug/kg	1.00	1.7e+02	08/18/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	88-75-5	2-Nitrophenol	SOIL	LA-523-456	U	< 170	ug/kg	1.00	1.7e+02	08/18/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	91-20-3	Naphthalene	SOIL	LA-523-456	U	< 170	ug/kg	1.00	1.7e+02	08/18/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	91-57-6	2-Methylnaphthalene	SOIL	LA-523-456	U	< 170	ug/kg	1.00	1.7e+02	08/18/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	91-58-7	2-Chloronaphthalene	SOIL	LA-523-456	U	< 170	ug/kg	1.00	1.7e+02	08/18/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	91-94-1	3,3'-Dichlorobenzidine	SOIL	LA-523-456	U	< 310	ug/kg	1.00	3.1e+02	08/18/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	95-48-7	2-Methylphenol (cresol, o-)	SOIL	LA-523-456	U	< 170	ug/kg	1.00	1.7e+02	08/18/06	08/16/06	08/16/06

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Report WGPP/ver. 1.3
PROJECT HANFORD MANAGEMENT COMPANY

REVISED Dayes 9/5/06

9/5/06

WSCF
ANALYTICAL RESULTS REPORT

Attention: D.L KLAGES H8-40 **Group #:** 20060934

Sample #	Client ID		CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W060002494	B1KB50	KLAGES	95-50-1	1,2-Dichlorobenzene	SOIL	LA-523-456	U	< 290	ug/kg	1.00	2.9e+02	08/18/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	95-95-4	2,4,5-Trichlorophenol	SOIL	LA-523-456	U	< 170	ug/kg	1.00	1.7e+02	08/18/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	98-95-3	Nitrobenzene	SOIL	LA-523-456	U	< 170	ug/kg	1.00	1.7e+02	08/18/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	99-09-2	3-Nitroaniline	SOIL	LA-523-456	U	< 170	ug/kg	1.00	1.7e+02	08/18/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	65794-96-9	3 & 4 Methylphenol Total	SOIL	LA-523-456	U	< 170	ug/kg	1.00	1.7e+02	08/18/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	67-72-1	Hexachloroethane	SOIL	LA-523-456	U	< 270	ug/kg	1.00	2.7e+02	08/18/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	88-06-2	2,4,6-Trichlorophenol	SOIL	LA-523-456	U	< 170	ug/kg	1.00	1.7e+02	08/18/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	124-18-5	Decane	SOIL	LA-523-456	U	< 240	ug/kg	1.00	2.4e+02	08/18/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	112-40-3	Dodecane	SOIL	LA-523-456	U	< 170	ug/kg	1.00	1.7e+02	08/18/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	100-51-6	Benzyl alcohol	SOIL	LA-523-456	U	< 170	ug/kg	1.00	1.7e+02	08/18/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	111-76-2	2-Butoxyethanol	SOIL	LA-523-456	U	< 240	ug/kg	1.00	2.4e+02	08/18/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	126-73-8	Tributyl phosphate	SOIL	LA-523-456	U	< 170	ug/kg	1.00	1.7e+02	08/18/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	91-59-8	2-Naphthylamine	SOIL	LA-523-456	U	< 460	ug/kg	1.00	4.6e+02	08/18/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	108-94-1	Cyclohexanone	SOIL	LA-523-456	U	< 170	ug/kg	1.00	1.7e+02	08/18/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	110-86-1	Pyridine	SOIL	LA-523-456	U	< 170	ug/kg	1.00	1.7e+02	08/18/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	95-63-6	1,2,4-Trimethylbenzene	SOIL	LA-523-456	U	< 220	ug/kg	1.00	2.2e+02	08/18/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	65-85-0	Benzoic acid	SOIL	LA-523-456	U	< 480	ug/kg	1.00	480	08/18/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	78-46-6	Dibutyl butylphosphonate	SOIL	LA-523-456	U	< 1.7e+02	ug/kg	1.00	1.7e+02	08/18/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	TPHDIESEL	Total Pet. Hydrocarbons Diesel	SOIL	NWTPH	U	< 3.40e+03	ug/kg	1.00	3.4e+03	08/21/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	TPHKEROSENE	Kerosene	SOIL	NWTPH	U	< 3.40e+03	ug/kg	1.00	3.4e+03	08/21/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	100-02-7	4-Nitrophenol	SOIL	LA-523-456	U	< 230	ug/kg	1.00	2.3e+02	08/18/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	106-46-7	1,4-Dichlorobenzene	SOIL	LA-523-456	U	< 280	ug/kg	1.00	2.8e+02	08/18/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	108-95-2	Phenol	SOIL	LA-523-456	U	< 160	ug/kg	1.00	1.6e+02	08/18/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	120-82-1	1,2,4-Trichlorobenzene	SOIL	LA-523-456	U	< 160	ug/kg	1.00	1.6e+02	08/18/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	121-14-2	2,4-Dinitrotoluene	SOIL	LA-523-456	U	< 160	ug/kg	1.00	1.6e+02	08/18/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	129-00-0	Pyrene	SOIL	LA-523-456	U	< 160	ug/kg	1.00	1.6e+02	08/18/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	59-50-7	4-Chloro-3-methylphenol	SOIL	LA-523-456	U	< 160	ug/kg	1.00	1.6e+02	08/18/06	08/16/06	08/16/06

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Report WGPP/ver. 1.3
PROJECT HANFORD MANAGEMENT COMPANY

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9/5/06

WSCF
ANALYTICAL RESULTS REPORT

Attention: D.L KLAGES H8-40 **Group #:** 20060934

Sample #	Client ID		CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W060002495	B1KB51	KLAGES	621-64-7	N-Nitrosodi-n-dipropylamine	SOIL	LA-523-456	U	< 160	ug/kg	1.00	1.6e+02	08/18/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	83-32-9	Acenaphthene	SOIL	LA-523-456	U	< 160	ug/kg	1.00	1.6e+02	08/18/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	87-86-5	Pentachlorophenol	SOIL	LA-523-456	U	< 230	ug/kg	1.00	2.3e+02	08/18/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	95-57-8	2-Chlorophenol	SOIL	LA-523-456	U	< 160	ug/kg	1.00	1.6e+02	08/18/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	100-01-6	4-Nitroaniline	SOIL	LA-523-456	U	< 230	ug/kg	1.00	2.3e+02	08/18/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	101-55-3	4-Bromophenylphenyl ether	SOIL	LA-523-456	U	< 160	ug/kg	1.00	1.6e+02	08/18/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	105-67-9	2,4-Dimethylphenol	SOIL	LA-523-456	U	< 250	ug/kg	1.00	2.5e+02	08/18/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	106-47-8	4-Chloroaniline	SOIL	LA-523-456	U	< 350	ug/kg	1.00	3.5e+02	08/18/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	108-60-1	Bis(2-chloro-1-methylethyl)eth	SOIL	LA-523-456	U	< 160	ug/kg	1.00	1.6e+02	08/18/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	111-44-4	Bis(2-chloroethyl) ether	SOIL	LA-523-456	U	< 160	ug/kg	1.00	1.6e+02	08/18/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	111-91-1	Bis(2-Chloroethoxy)methane	SOIL	LA-523-456	U	< 160	ug/kg	1.00	1.6e+02	08/18/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	117-81-7	Bis(2-ethylhexyl) phthalate	SOIL	LA-523-456	U	< 160	ug/kg	1.00	1.6e+02	08/18/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	117-84-0	Di-n-octylphthalate	SOIL	LA-523-456	U	< 230	ug/kg	1.00	2.3e+02	08/18/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	118-74-1	Hexachlorobenzene	SOIL	LA-523-456	U	< 160	ug/kg	1.00	1.6e+02	08/18/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	120-12-7	Anthracene	SOIL	LA-523-456	U	< 160	ug/kg	1.00	1.6e+02	08/18/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	120-83-2	2,4-Dichlorophenol	SOIL	LA-523-456	U	< 160	ug/kg	1.00	1.6e+02	08/18/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	131-11-3	Dimethyl phthalate	SOIL	LA-523-456	U	< 160	ug/kg	1.00	1.6e+02	08/18/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	132-64-9	Dibenzofuran	SOIL	LA-523-456	U	< 160	ug/kg	1.00	1.6e+02	08/18/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	191-24-2	Benzo(ghi)perylene	SOIL	LA-523-456	U	< 250	ug/kg	1.00	2.5e+02	08/18/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	193-39-5	Indeno(1,2,3-cd)pyrene	SOIL	LA-523-456	U	< 280	ug/kg	1.00	2.8e+02	08/18/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	205-99-2	Benzo(b)fluoranthene	SOIL	LA-523-456	U	< 200	ug/kg	1.00	2.0e+02	08/18/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	206-44-0	Fluoranthene	SOIL	LA-523-456	U	< 160	ug/kg	1.00	1.6e+02	08/18/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	207-08-9	Benzo(k)fluoranthene	SOIL	LA-523-456	U	< 200	ug/kg	1.00	2.0e+02	08/18/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	208-96-8	Acenaphthylene	SOIL	LA-523-456	U	< 160	ug/kg	1.00	1.6e+02	08/18/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	218-01-9	Chrysene	SOIL	LA-523-456	U	< 160	ug/kg	1.00	1.6e+02	08/18/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	50-32-8	Benzo(a)pyrene	SOIL	LA-523-456	U	< 230	ug/kg	1.00	2.3e+02	08/18/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	51-28-5	2,4-Dinitrophenol	SOIL	LA-523-456	U	< 690	ug/kg	1.00	6.9e+02	08/18/06	08/16/06	08/16/06

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Report WGPP/ver. 1.3
PROJECT HANFORD MANAGEMENT COMPANY

REVISED Dayes 9/5/06

9/5/06

WSCF
ANALYTICAL RESULTS REPORT

Attention: D.L KLAGES H8-40 **Group #:** 20060934

Sample #	Client ID		CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W060002495	B1KB51	KLAGES	53-70-3	Dibenz[a,h]anthracene	SOIL	LA-523-456	U	< 300	ug/kg	1.00	3.0e+02	08/18/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	534-52-1	4,6-Dinitro-2-methylphenol	SOIL	LA-523-456	U	< 250	ug/kg	1.00	2.5e+02	08/18/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	541-73-1	1,3-Dichlorobenzene	SOIL	LA-523-456	U	< 300	ug/kg	1.00	3.0e+02	08/18/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	56-55-3	Benzo[a]anthracene	SOIL	LA-523-456	U	< 160	ug/kg	1.00	1.6e+02	08/18/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	606-20-2	2,6-Dinitrotoluene	SOIL	LA-523-456	U	< 160	ug/kg	1.00	1.6e+02	08/18/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	7005-72-3	4-Chlorophenylphenyl ether	SOIL	LA-523-456	U	< 160	ug/kg	1.00	1.6e+02	08/18/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	77-47-4	Hexachlorocyclopentadiene	SOIL	LA-523-456	U	< 190	ug/kg	1.00	1.9e+02	08/18/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	78-59-1	Isophorone	SOIL	LA-523-456	U	< 160	ug/kg	1.00	1.6e+02	08/18/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	84-66-2	Diethylphthalate	SOIL	LA-523-456	J	320	ug/kg	1.00	2.4e+02	08/18/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	84-74-2	Di-n-butylphthalate	SOIL	LA-523-456	U	< 160	ug/kg	1.00	1.6e+02	08/18/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	85-01-8	Phenanthrene	SOIL	LA-523-456	U	< 160	ug/kg	1.00	1.6e+02	08/18/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	85-68-7	Butylbenzylphthalate	SOIL	LA-523-456	U	< 160	ug/kg	1.00	1.6e+02	08/18/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	86-30-6	N-Nitrosodiphenylamine	SOIL	LA-523-456	U	< 190	ug/kg	1.00	1.9e+02	08/18/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	86-73-7	Fluorene	SOIL	LA-523-456	U	< 160	ug/kg	1.00	1.6e+02	08/18/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	86-74-8	Carbazole	SOIL	LA-523-456	U	< 160	ug/kg	1.00	1.6e+02	08/18/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	87-68-3	Hexachlorobutadiene	SOIL	LA-523-456	U	< 160	ug/kg	1.00	1.6e+02	08/18/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	88-74-4	2-Nitroaniline	SOIL	LA-523-456	U	< 160	ug/kg	1.00	1.6e+02	08/18/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	88-75-5	2-Nitrophenol	SOIL	LA-523-456	U	< 160	ug/kg	1.00	1.6e+02	08/18/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	91-20-3	Naphthalene	SOIL	LA-523-456	U	< 160	ug/kg	1.00	1.6e+02	08/18/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	91-57-6	2-Methylnaphthalene	SOIL	LA-523-456	U	< 160	ug/kg	1.00	1.6e+02	08/18/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	91-58-7	2-Chloronaphthalene	SOIL	LA-523-456	U	< 160	ug/kg	1.00	1.6e+02	08/18/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	91-94-1	3,3'-Dichlorobenzidine	SOIL	LA-523-456	U	< 300	ug/kg	1.00	3.0e+02	08/18/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	95-48-7	2-Methylphenol (cresol, o-)	SOIL	LA-523-456	U	< 160	ug/kg	1.00	1.6e+02	08/18/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	95-50-1	1,2-Dichlorobenzene	SOIL	LA-523-456	U	< 280	ug/kg	1.00	2.8e+02	08/18/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	95-95-4	2,4,5-Trichlorophenol	SOIL	LA-523-456	U	< 160	ug/kg	1.00	1.6e+02	08/18/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	98-95-3	Nitrobenzene	SOIL	LA-523-456	U	< 160	ug/kg	1.00	1.6e+02	08/18/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	99-09-2	3-Nitroaniline	SOIL	LA-523-456	U	< 160	ug/kg	1.00	1.6e+02	08/18/06	08/16/06	08/16/06

MDL = Minimum Detection Limit
RQ = Result Qualifier

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

DF = Dilution Factor

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

Report WGPP/ver. 1.3
PROJECT HANFORD MANAGEMENT COMPANY

REVISED
9/5/06

9/5/06

WSCF
ANALYTICAL RESULTS REPORT

Attention: D.L KLAGES H8-40 **Group #:** 20060934

Sample #	Client ID		CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W060002495	B1KB51	KLAGES	65794-96-9	3 & 4 Methylphenol Total	SOIL	LA-523-456	U	< 160	ug/kg	1.00	1.6e+02	08/18/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	67-72-1	Hexachloroethane	SOIL	LA-523-456	U	< 260	ug/kg	1.00	2.6e+02	08/18/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	88-06-2	2,4,6-Trichlorophenol	SOIL	LA-523-456	U	< 160	ug/kg	1.00	1.6e+02	08/18/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	124-18-5	Decane	SOIL	LA-523-456	U	< 230	ug/kg	1.00	2.3e+02	08/18/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	112-40-3	Dodecane	SOIL	LA-523-456	U	< 160	ug/kg	1.00	1.6e+02	08/18/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	100-51-6	Benzyl alcohol	SOIL	LA-523-456	U	< 160	ug/kg	1.00	1.6e+02	08/18/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	111-76-2	2-Butoxyethanol	SOIL	LA-523-456	U	< 230	ug/kg	1.00	2.3e+02	08/18/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	126-73-8	Tributyl phosphate	SOIL	LA-523-456	U	< 160	ug/kg	1.00	1.6e+02	08/18/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	91-59-8	2-Naphthylamine	SOIL	LA-523-456	U	< 440	ug/kg	1.00	4.4e+02	08/18/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	108-94-1	Cyclohexanone	SOIL	LA-523-456	U	< 160	ug/kg	1.00	1.6e+02	08/18/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	110-86-1	Pyridine	SOIL	LA-523-456	U	< 160	ug/kg	1.00	1.6e+02	08/18/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	95-63-6	1,2,4-Trimethylbenzene	SOIL	LA-523-456	U	< 210	ug/kg	1.00	2.1e+02	08/18/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	65-85-0	Benzoic acid	SOIL	LA-523-456	U	< 460	ug/kg	1.00	460	08/18/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	78-46-6	Dibutyl butylphosphonate	SOIL	LA-523-456	U	< 1.6e+02	ug/kg	1.00	1.6e+02	08/18/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	TPHDIESEL	Total Pet. Hydrocarbons Diesel	SOIL	NWTPH	U	< 3.40e+03	ug/kg	1.00	3.4e+03	08/21/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	TPHKEROSENE	Kerosene	SOIL	NWTPH	U	< 3.40e+03	ug/kg	1.00	3.4e+03	08/21/06	08/16/06	08/16/06
W060002496	B1KB75	KLAGES	75-35-4	1,1-Dichloroethene	SOIL	LA-523-455	U	< 1.10	ug/kg	1.00	1.1	08/21/06	08/16/06	08/16/06
W060002496	B1KB75	KLAGES	79-01-6	Trichloroethene	SOIL	LA-523-455	U	< 1.10	ug/kg	1.00	1.1	08/21/06	08/16/06	08/16/06
W060002496	B1KB75	KLAGES	71-43-2	Benzene	SOIL	LA-523-455	U	< 1.10	ug/kg	1.00	1.1	08/21/06	08/16/06	08/16/06
W060002496	B1KB75	KLAGES	108-88-3	Toluene	SOIL	LA-523-455	U	< 1.10	ug/kg	1.00	1.1	08/21/06	08/16/06	08/16/06
W060002496	B1KB75	KLAGES	108-90-7	Chlorobenzene	SOIL	LA-523-455	U	< 1.10	ug/kg	1.00	1.1	08/21/06	08/16/06	08/16/06
W060002496	B1KB75	KLAGES	75-34-3	1,1-Dichloroethane	SOIL	LA-523-455	U	< 1.10	ug/kg	1.00	1.1	08/21/06	08/16/06	08/16/06
W060002496	B1KB75	KLAGES	100-41-4	Ethylbenzene	SOIL	LA-523-455	U	< 1.10	ug/kg	1.00	1.1	08/21/06	08/16/06	08/16/06
W060002496	B1KB75	KLAGES	100-42-5	Styrene	SOIL	LA-523-455	U	< 1.10	ug/kg	1.00	1.1	08/21/06	08/16/06	08/16/06
W060002496	B1KB75	KLAGES	10061-01-5	cis-1,3-Dichloropropene	SOIL	LA-523-455	U	< 1.10	ug/kg	1.00	1.1	08/21/06	08/16/06	08/16/06
W060002496	B1KB75	KLAGES	10061-02-6	trans-1,3-Dichloropropene	SOIL	LA-523-455	U	< 1.10	ug/kg	1.00	1.1	08/21/06	08/16/06	08/16/06
W060002496	B1KB75	KLAGES	107-06-2	1,2-Dichloroethane	SOIL	LA-523-455	U	< 1.10	ug/kg	1.00	1.1	08/21/06	08/16/06	08/16/06

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

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

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

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Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

Sample Delivery Group	**WSCF20060934**
Sample Matrix	**SOLID**
Sample Visual	**N/A**
SAF Number	**R06-013**
Data Deliverable	**Summary Report**

Introduction

Five (5) 200-UW-1 Operable Unit soil samples (B1KB49, B1KB50, B1KB51, B1KB75, B1KB76 and B1KB77) from the trench between 216-U-8 and 216-U-12 were received at the WSCF Laboratory on August 16, 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.

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, 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 69 through 70, for a complete listing of approved analytical methods used.

Inorganic Comments

Anions - The hold time requirements were met. A Blank, Duplicate, Laboratory Control Sample, Matrix Spike and Matrix Spike Duplicate were analyzed with this delivery group. See pages 15 through 16 for QC details. Analytical Notes:

- Preparation Date: 21-aug-2006.
- Chloride and Sulfate – Sample results for B1KB49 and B1KB50 were B-flagged; the analytes were less than the reportable detection limit, but greater than or equal to the method detection limit.
- Phosphate – Matrix Spike and Matrix Spike Duplicate recoveries were below established laboratory limits. Sample results were less than detection limits and U flagged.

All other QC controls are within the established limits.

ICP-AES Metals – The holding time for this analysis was met. A Blank, Laboratory Control Sample (LCS), Matrix Spike and Matrix Spike Duplicate were analyzed with this delivery group of less than 20 samples. See pages 17 through 19 for QC details. Analytical Notes:

- Preparation Date: 21-aug-2006.

- Aluminum, Calcium, Iron, Magnesium and Titanium – insufficient spike (Matrix Spike and Matrix Spike Duplicate) concentrations. Sample concentrations were greater than four times the spike concentration.

- Aluminum – Analyte detected in the associated preparation Blank sample was evaluated and sample result for B1KB51 was C flagged.

- Calcium – The Laboratory Control Sample recovery exceeded established laboratory limits. Calcium results for B1KB49, B1KB50 and B1KB51 were E flagged.

- Lithium – Although the Laboratory Control Sample recovery exceeded established laboratory limits, the Matrix Spike and Matrix Spike Duplicate recoveries were within established laboratory limits. Sample results were not E flagged.

- Silicon – Matrix Spike, Matrix Spike Duplicate and Laboratory Control Sample recoveries were outside established laboratory limits. B1KB49, B1KB50 and B1KB51 were E flagged.

All other QC controls are within the established limits.

ICP-MS Metals – The holding time for this analysis was met, with the exception of mercury. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spike Duplicate were analyzed with this deliver group of less than 20 samples. See pages 20 through 23 for QC details Analytical Notes:

- Preparation Date: 21-aug-2006.

- Thorium results listed in the report represent Th-232 exclusively.

- Zinc – Analyte detected in the associated preparation Blank sample was evaluated and sample B1KB51 was C flagged.

- Beryllium (samples B1KB49 and B1KB50), Thallium (samples B1KB49 and B1KB50), Manganese (sample B1KB51), Thorium (sample B1KB51) and Uranium (sample B1KB51) – Negative preparation blank results may have potential affect on sample results. Sample results were X flagged.

All other QC controls are within the established limits.

Percent Solids – analyzed for organic moisture correction.

<u>Organic Comments</u>

- 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, Matrix Spike and Matrix Spiked Duplicate were analyzed with this delivery group. See pages 38 through 44 for QC details. Analytical Notes:

- Preparation Date: 17-aug-2006.
- Bis (2-Ethylhexyl) phthalate - sample B1KB49 result was J flagged; result was less than the lowest calibration standard but greater than the detection limit.
- Di-n-octylphthalate - sample B1KB50 result was J flagged; result was less than the lowest calibration standard but greater than the detection limit.
- Diethylphthalate - samples results for B1KB50 and B1KB51 were J flagged; results were less than the lowest calibration standard but greater than the detection limit.
- Matrix Spike and Matrix Spike Duplicate QC samples were analyzed on sample# B1KB52 (SDG# 20060935, SAF# F06-013).

All QC controls are within the established limits.

TPHD-WA - The hold time for this analysis were met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with this delivery group. See page 45 for QC details. Analytical Notes:

- Preparation Date: 17-aug-2006.
- Matrix Spike and Matrix Spike Duplicate QC samples were analyzed on sample# B1KB52 (SDG# 20060935, SAF# F06-013).

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. See pages 46 through 49 for QC details. Analytical Note:

- 4-Bromofluorobenzene – Matrix Spike and Matrix Spike Duplicate QC exceeded established laboratory limits.

All other QC controls are within the established limits.

Radiochemistry Comments

RadChem – There are no hold times associated with WSCF radiochemical methods. A Blank, Laboratory Control Sample, Matrix Spike (Technetium only), and Duplicate were analyzed with this delivery group. See pages 57 through 64 for QC details. Analytical Notes:

- Gamma Energy Analysis (GEA) – The GEA results for samples B1KB49 and B1KB50 will be biased high because the 500ml bottles for the GEA test were only partially filled with sample.

- Pu-239/240 – Duplicate QC Relative Percent Difference (RPD) exceeded established laboratory limits due to low sample activity.

- Strontium-90 – Duplicate QC RPD exceeded established laboratory limits due to sample homogeneity issues.

- Technetium-99 – Matrix Spike QC RPD exceeded established laboratory limits due to low sample activity.

- Uranium Isotopic (233/234, 235 and 238) – Duplicate QC RPD exceeded established laboratory limits due to sample homogeneity issues.

All other QC controls are within the established limits.

Americium-243, Plutonium-242, Strontium-85 and Uranium-232 – Radiochemical Tracer Recovery Data are summarized below:

Radiochemical Tracer Percent Recovery			
Sample Number	**Lab Sample ID**	**Isotope**	**Tracer Recovery (Percent)**
Americium-243			
BLANK		Am-243	79.9%
LCS		Am-243	93.0%
B1KB49	W060002493	Am-243	85.8%
DUPLICATE	W060002493	Am-243	89.2%
B1KB50	W060002494	Am-243	95.5%
B1KB51	W060002495	Am-243	90.7%
Plutonium-242			
BLANK		Pu-242	84.0%
LCS		Pu-242	85.0%
B1KB49	W060002493	Pu-242	81.8%
DUPLICATE	W060002493	Pu-242	86.7%
B1KB50	W060002494	Pu-242	99.4%
B1KB51	W060002495	Pu-242	88.3%

Radiochemical Tracer Percent Recovery			
Sample Number	**Lab Sample ID**	**Isotope**	**Tracer Recovery (Percent)**
Strontium-85			
BLANK		Sr-85	98.9%
LCS		Sr-85	83.4%
B1KB49	W060002493	Sr-85	86.0%
DUPLICATE	W060002493	Sr-85	88.2%
B1KB50	W060002494	Sr-85	95.9%
B1KB51	W060002495	Sr-85	85.4%
Uranium-232			
BLANK		U-232	79.8%
LCS		U-232	75.6%
B1KB49	W060002493	U-232	121.6%
DUPLICATE	W060002493	U-232	93.0%
B1KB50	W060002494	U-232	131.7%
B1KB51	W060002495	U-232	103.6%

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.

Pauline D. Mix
WSCF Client Services

Abbreviations
Hg – mercury
IC – ion chromatography
ICP – inductively coupled plasma
ICP/AES – ICP/atomic emission spectroscopy
ICP/MS – ICP/mass spectrometry
Total U – total uranium
AT/TB – total alpha/total beta
AEA – Alpha Energy Analysis
WTPH-G – Total Hydrocarbons-Gasoline
Am – americium
Cm - curium
Pu – plutonium
Np – neptunium
GEA – gamma energy analysis
H3 – Tritium
Sr – Strontium 89, 90
WTPH-D – Total Hydrocarbons-Diesel
TSS – Total Suspended Solids

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	R06-013-011	PAGE 1 OF 4

COLLECTOR HOGAN, JG	**COMPANY CONTACT** TRECHTER, JE	**TELEPHONE NO.** 373-7046	**PROJECT COORDINATOR** TRECHTER, JE
PRICE CODE 8C	**DATA TURNAROUND**		
AIR QUALITY	7 DAYS ~~15 Days~~ 8-16-06		
SAMPLING LOCATION 200-W-42	**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.	**FIELD LOGBOOK NO.** DTS-SAWS-H	**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

20060934

POSSIBLE SAMPLE HAZARDS/ REMARKS

ICED Initial
8/16/06 Date

SAMPLE NO.	LAB ID	MATRIX*	SAMPLE DATE	SAMPLE TIME	NO./TYPE CONTAINER(S)	ANALYSIS	PRESERVATION
B1KB49	W06000293	S	8-16-06	1530	4X60mL aG	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Cool 4C
B1KB49		S			4X60mL G	TPH-Diesel Range - WTPH-D {TPHKEROSEN}	Cool 4C
B1KB49		S			1X500mL Square Bottle - Poly	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	None
B1KB49		S			4X60mL G/P	Isotopic Plutonium {Pu-238, Pu-239/240} Isotopic Uranium {U-233/234, U-235, U-238} Americium-241 {Am-241}	None
B1KB49		S			4X60mL G/P	Strontium-89,90 -- Sr-90 {Sr-90}	None
B1KB49		S			4X60mL G/P	Technetium-99 {Tc-99}	None
B1KB49		S			4X60mL G/P	Neptunium-237 {Np-237}	None

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
JG Hogan	1920 8-16-06	Victor Pinas	19:20 8/16/06
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
SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

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

000025

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			R06-013-011	PAGE 2 OF 4
COLLECTOR HOGAN, JG	COMPANY CONTACT TRECHTER, JE	TELEPHONE NO. 373-7046	PROJECT COORDINATOR TRECHTER, JE	PRICE CODE 8C	DATA TURNAROUND ~~15 Days~~ 7 DAYS 8-16-06
SAMPLING LOCATION 200-W-42	PROJECT DESIGNATION 200-UW-1 Operable Unit, Soil from Trench between 216-U-8 and 216-U-12		SAF NO. R06-013	AIR QUALITY ☐	
ICE CHEST NO.	FIELD LOGBOOK NO. DTS-SAW5-H	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		

ICED
Initial
8/16/06 Date

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, BENZOPY, BIS2CHE, BIS2CHM, BIS2EPH, BNZKFLU, BROPHEN, BUTBENP, CHLANIL, CHLCRES, CHLNAPH, CHLPHEN, CHRYSENE, DIBAHAN, DIBENFR, DIBPHTH, DICHBEN, DIEPHTH, DIMPHTH, DINPHEN, DIOPHTH, DIPRNIT, FLUORAN, FLUORENE, HEXCBEN, HEXCBUT, HEXCCYC, HEXCETH, INDENOP, ISOPHORONE, NAPHTHA, NITBENZ, NITPHENOL, NITRANILIN, NNDIPHA, PENTCHP, PHENANT, PHENOL, PYRENE, TRICHLB}

(2)Gamma Spec - Add-on {Ac-228, Ba-133, Ce-144, Cs/Pr-144, Cm-244, Cs-134, K-40, Nb-94, Ra-228, Ru-103, Sb-125, Sn-113, Sn-125, Sn-126, Th-228, Th-232, U-235, U-238, Zn-65} Gamma Spectroscopy {Am-241, Co-58, Co-60, Cs-137, Eu-152, Eu-154, Eu-155, Fe-59, Ra-226, Ru-106}

000026

A-6001-774

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			R06-013-011	PAGE 3 OF 4
COLLECTOR HOGAN, JG	COMPANY CONTACT TRECHTER, JE	TELEPHONE NO. 373-7046	PROJECT COORDINATOR TRECHTER, JE	PRICE CODE 8C	DATA TURNAROUND
SAMPLING LOCATION 200-W-42	PROJECT DESIGNATION 200-UW-1 Operable Unit, Soil from Trench between 216-U-8 and 216-U-12		SAF NO. R06-013	AIR QUALITY	7 DAYS ~~15 Days~~ 1/4 7 DAYS ~~15 Days~~ 8-16-06
ICE CHEST NO.	FIELD LOGBOOK NO. DTS-SAWS-H	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		

ISED
Initial
8/14/06 Date

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
B1KB49		S			4X60mL G/P	IC Anions - 300.0 {BROMIDE, CHLORIDE, FLUORIDE, NO2-N, NO3-N, PO4-P, SULFATE}	None
B1KB49		S	8-16-06	1530	4X60mL G/P	ICP Metals - 6010A (Add-on) {~~B~~, ~~Ba~~, La, ~~Li~~, ~~Si~~, Sm, ~~Ti~~} ICP Metals - 6010A (TAL) {~~Al~~, ~~Ca~~, ~~Fe~~, ~~K~~, ~~Mg~~, ~~Na~~}	Cool 4C
B1KB49		S			4X60mL G/P	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	None
B1KB75	W06000249~~6~~	S			1X40mL G	SEE ITEM (4) IN SPECIAL INSTRUCTIONS	Cool 4C
B1KB76	2497	S			1X40mL G	SEE ITEM (4) IN SPECIAL INSTRUCTIONS	Cool 4C
B1KB77	2498	S			1X40mL G	SEE ITEM (4) IN SPECIAL INSTRUCTIONS	Cool 4C

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS
RELINQUISHED BY/REMOVED FROM JG Hogan	DATE/TIME 1920 8-16-06	RECEIVED BY/STORED IN Victor Bin	DATE/TIME 19:20 8/16/06	SEE PAGE 4 FOR ALL SPECIAL INSTRUCTIONS
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	

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

000027

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			R06-013-011	PAGE 4 OF 4
COLLECTOR HOGAN, JG	**COMPANY CONTACT** TRECHTER, JE	**TELEPHONE NO.** 373-7046	**PROJECT COORDINATOR** TRECHTER, JE	**PRICE CODE** 8C	**DATA TURNAROUND** ~~15 Days~~ 8-16-06 14 DAYS
SAMPLING LOCATION 200-W-42	**PROJECT DESIGNATION** 200-UW-1 Operable Unit, Soil from Trench between 216-U-8 and 216-U-12		**SAF NO.** R06-013	**AIR QUALITY** ☐	
ICE CHEST NO.	**FIELD LOGBOOK NO.** DTS-SAWS-4	**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		

VISED Initial
8/16/06 Date

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~~, ~~Ni~~, ~~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}

(4)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, STYRENE, TOLUENE, TRANS13, TRICELN, VINYIDE, XYLENES}

000028

A-6001-774

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			R06-013-013	PAGE 1 OF 3
COLLECTOR HOGAN, JG	COMPANY CONTACT TRECHTER, JE	TELEPHONE NO. 373-7046	PROJECT COORDINATOR TRECHTER, JE	PRICE CODE 8C	DATA TURNAROUND
SAMPLING LOCATION 200-W-42	PROJECT DESIGNATION 200-UW-1 Operable Unit, Soil from Trench between 216-U-8 and 216-U-12		SAF NO. R06-013	AIR QUALITY ☐	7 Days / ~~15 Days~~ / ~~25 Days~~ 8-16-06
ICE CHEST NO.	FIELD LOGBOOK NO. DTS-SAWS-H	COA 121600ES20	METHOD OF SHIPMENT GOVERNMENT VEHICLE	8/16/06 Initial Date	
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
B1KB50		S			4X60mL aG	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Cool 4C
	WO6002494		8-16-06	1570			
B1KB50		S			4X60mL G	TPH-Diesel Range - WTPH-D {TPHKEROSEN}	Cool 4C
B1KB50		S			1X500mL Square Bottle - Poly	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	None
B1KB50		S			4X60mL G/P	Isotopic Plutonium {Pu-238, Pu-239/240} Isotopic Uranium {U-233/234, U-235, U-238} Americium-241 {Am-241}	None
B1KB50		S			4X60mL G/P	Strontium-89,90 -- Sr-90 {Sr-90}	None
B1KB50		S			4X60mL G/P	Technetium-99 {Tc-99}	None
B1KB50		S			4X60mL G/P	Neptunium-237 {Np-237}	None

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS
JG Hogan J G Hogan	8-16-06 1920	Victor Jones	8/16/06 19:20	
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	

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

620029

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			R06-013-013	PAGE 2 OF 3
COLLECTOR HOGAN, JG	COMPANY CONTACT TRECHTER, JE	TELEPHONE NO. 373-7046	PROJECT COORDINATOR TRECHTER, JE	PRICE CODE 8C	DATA TURNAROUND 7 DAYS ~~15 Days~~ 5-16-06 M
SAMPLING LOCATION 200-W-42	PROJECT DESIGNATION 200-UW-1 Operable Unit, Soil from Trench between 216-U-8 and 216-U-12		SAF NO. R06-013	AIR QUALITY	
ICE CHEST NO.	FIELD LOGBOOK NO. DTS-SAWS-H	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		

Initial
Date

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, BENZOPY, BIS2CHE, BIS2CHM, BIS2EPH, BNZKFLU, BROPHEN, BUTBENP, CHLANIL, CHLCRES, CHLNAPH, CHLPHEN, CHRYSENE, DIBAHAN, DIBENFR, DIBPHTH, DICHBEN, DIEPHTH, DIMPHTH, DINPHEN, DIOPHTH, DIPRNIT, FLUORAN, FLUORENE, HEXCBEN, HEXCBUT, HEXCCYC, HEXCETH, INDENOP, ISOPHORONE, NAPHTHA, NITBENZ, NITPHENOL, NITRANILIN, NNDIPHA, PENTCHP, PHENANT, PHENOL, PYRENE, TRICHLB}
(2)Gamma Spec - Add-on {Ac-228, Ba-133, Ce-144, Ce/Pr-144, Cm-244, Cs-134, K-40, Nb-94, Ra-228, Ru-103, Sb-125, Sn-113, Sn-125, Sn-126, Th-228, Th-232, U-235, U-238, Zn-65} Gamma Spectroscopy {Am-241, Co-58, Co-60, Cs-137, Eu-152, Eu-154, Eu-155, Fe-59, Ra-226, Ru-106}

000030

A-6001-774

Fluor Hanford Inc.

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

R06-013-013

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE	DATA TURNAROUND
HOGAN, JG	TRECHTER, JE	373-7046	TRECHTER, JE	8C	

SAMPLING LOCATION	PROJECT DESIGNATION	SAF NO.	AIR QUALITY
200-W-42	200-UW-1 Operable Unit, Soil from Trench between 216-U-8 and 216-U-12	R06-013	☐ 7DAYS ~~15 Days~~ 1/A 7DAYS ~~15 Days~~ 8-16-06

ICE CHEST NO.	FIELD LOGBOOK NO.	COA	METHOD OF SHIPMENT
	DTS-SAWS-4	121600ES20	GOVERNMENT VEHICLE

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

ICED
Initial
8/16/06 Date

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
B1KB50		S	8-16-06	1530	4X60mL G/P	IC Anions - 300.0 {BROMIDE, CHLORIDE, FLUORIDE, NO2-N, NO3-N, PO4-P, SULFATE}	None
B1KB50		S			4X60mL G/P	ICP Metals - 6010A (Add-on) {B, Bi, La, Li, Si, Sm, Ti} ICP Metals - 6010A (TAL) {Al, Ca, Fe, K, Mg, Na}	Cool 4C
B1KB50		S			4X60mL G/P	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	None

0000031

CHAIN OF POSSESSION

SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
JG HOGAN	1920 8-16-06	Victor Jones	8/16/06 19:20
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	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			R06-013-015	PAGE 1 OF 3
COLLECTOR HOGAN, JG	COMPANY CONTACT TRECHTER, JE	TELEPHONE NO. 373-7046	PROJECT COORDINATOR TRECHTER, JE	PRICE CODE 8C	DATA TURNAROUND
SAMPLING LOCATION 200-W-42	PROJECT DESIGNATION 200-UW-1 Operable Unit, Soil from Trench between 216-U-8 and 216-U-12		SAF NO. R06-013	AIR QUALITY ☐	7 DAYS ~~15 Days~~ / 14 7 DAYS ~~15 Days~~ 8-16-06
ICE CHEST NO.	FIELD LOGBOOK NO. DTS-SAMS-H	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		

ICED
Initial
8/16/06 Date

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
B1KB51	W06000249S	S	8-16-06	1000	4X60mL aG	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Cool 4C
B1KB51		S			4X60mL G	TPH-Diesel Range - WTPH-D {TPHKEROSEN}	Cool 4C
B1KB51		S			1X500mL Square Bottle - Poly	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	None
B1KB51		S			4X60mL G/P	Isotopic Plutonium {Pu-238, Pu-239/240} Isotopic Uranium {U-233/234, U-235, U-238} Americium-241 {Am-241}	None
B1KB51		S			4X60mL G/P	Strontium-89,90 -- Sr-90 {Sr-90}	None
B1KB51		S			4X60mL G/P	Technetium-99 {Tc-99}	None
B1KB51		S			4X60mL G/P	Neptunium-237 {Np-237}	None

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS
JG HOGAN	1920 8-16-06	Victor Binns	8/16/06 1912D	
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	

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

0000032

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			R06-013-015	PAGE 2 OF 3
COLLECTOR	**COMPANY CONTACT**	**TELEPHONE NO.**	**PROJECT COORDINATOR**	**PRICE CODE** 8C	**DATA TURNAROUND** 7 DAYS ~~15 DAYS~~
HOGAN, JG	TRECHTER, JE	373-7046	TRECHTER, JE		
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**	**AIR QUALITY**	
200-W-42	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**		
	DTS-SAWS-H	121600ES20	GOVERNMENT VEHICLE		
SHIPPED TO	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		
Waste Sampling & Characterization	N/A		N/A		

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, BENZOPY, BIS2CHE, BIS2CHM, BIS2EPH, BNZKFLU, BROPHEN, BUTBENP, CHLANIL, CHLCRES, CHLNAPH, CHLPHEN, CHRYSENE, DIBAHAN, DIBENFR, DIBPHTH, DICHBEN, DIEPHTH, DIMPHTH, DINPHEN, DIOPHTH, DIPRNIT, FLUORAN, FLUORENE, HEXCBEN, HEXCBUT, HEXCCYC, HEXCETH, INDENOP, ISOPHORONE, NAPHTHA, NITBENZ, NITPHENOL, NITRANILIN, NNDIPHA, PENTCHP, PHENANT, PHENOL, PYRENE, TRICHLB}

(2)Gamma Spec - Add-on {Ac-228, Ba-133, Ce-144, Ce/Pr-144, Cm-244, Cs-134, K-40, Nb-94, Ra-228, Ru-103, Sb-125, Sn-113, Sn-125, Sn-126, Th-228, Th-232, U-235, U-238, Zn-65} Gamma Spectroscopy {Am-241, Co-58, Co-60, Cs-137, Eu-152, Eu-154, Eu-155, Fe-59, Ra-226, Ru-106}

000033

A-6001-774

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			R06-013-015	PAGE 3 OF 3
COLLECTOR HOGAN, JG	COMPANY CONTACT TRECHTER, JE	TELEPHONE NO. 373-7046	PROJECT COORDINATOR TRECHTER, JE	PRICE CODE 8C	DATA TURNAROUND
SAMPLING LOCATION 200-W-42	PROJECT DESIGNATION 200-UW-1 Operable Unit, Soil from Trench between 216-U-8 and 216-U-12		SAF NO. R06-013	AIR QUALITY	~~7 DAYS 15 Days~~ N/A 7 DAYS ~~15 Days~~ 8-16-06
ICE CHEST NO.	FIELD LOGBOOK NO. DTS-SANS	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		

Initial 8/16/06 Date

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
B1KB51		S	8-16-06	1000	4X60mL G/P	IC Anions - 300.0 {BROMIDE, CHLORIDE, FLUORIDE, NO2-N, NO3-N, PO4-P, SULFATE}	None
B1KB51		S			4X60mL G/P	ICP Metals - 6010A (Add-on) {B, Bi, La, Li, Si, Sm, Ti} ICP Metals - 6010A (TAL) {Al, Ca, Fe, K, Mg, Na}	Cool 4C
B1KB51		S			4X60mL G/P	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	None

0000034

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
JG HOGAN J Hogan	8-16-06 1920	Victor Binns	8/16/06 1920
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	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: 60934		
VALIDATOR: TLI		LAB: WSCF		DATE: 8/30/06	
			SDG: 60934		
ANALYSES PERFORMED					
SW-846 8260		SW-846 8260 (TCLP)	SW-846 8270	TPH-D	SW-846 8270 (TCLP)
SAMPLES/MATRIX					
B1KB49		B1KB50	B1KB51		
					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: 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: 20060934
Matrix: SOLID
Test: SW-846 8270C Semi-Vols

SAF Number: R06-013
Sample Date: 08/16/06
Receive Date:08/16/06

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
Lab ID: W060002493									
BATCH QC ASSOCIATED WITH SAMPLE									
SURR	2-Fluorophenol	367-12-4	4887.6	101.000	% Recov	08/18/06	42.000	105.000	
SURR	2-Fluorobiphenyl	321-60-8	5031.3	104.000	% Recov	08/18/06	56.000	122.000	
SURR	Nitrobenzene-d5	4165-60-0	5184.6	107.279	% Recov	08/18/06	64.000	111.000	
SURR	Phenol-d5	4165-62-2	5122.7	106.000	% Recov	08/18/06	54.000	120.000	
SURR	2,4,6-Tribromophenol	118-79-6	4728.3	97.800	% Recov	08/18/06	24.000	122.000	
SURR	Terphenyl-d14 (7Cl)	98904-43-9	5249.3	109.000	% Recov	08/18/06	35.000	150.000	
Lab ID: W060002494									
BATCH QC ASSOCIATED WITH SAMPLE									
SURR	2-Fluorophenol	367-12-4	5065.2	105.000	% Recov	08/18/06	42.000	105.000	
SURR	2-Fluorobiphenyl	321-60-8	4972.5	104.000	% Recov	08/18/06	56.000	122.000	
SURR	Nitrobenzene-d5	4165-60-0	5036.3	105.000	% Recov	08/18/06	64.000	111.000	
SURR	Phenol-d5	4165-62-2	5061.5	105.000	% Recov	08/18/06	54.000	120.000	
SURR	2,4,6-Tribromophenol	118-79-6	4211.1	87.700	% Recov	08/18/06	24.000	122.000	
SURR	Terphenyl-d14 (7Cl)	98904-43-9	5024.2	105.000	% Recov	08/18/06	35.000	150.000	
Lab ID: W060002495									
BATCH QC ASSOCIATED WITH SAMPLE									
SURR	2-Fluorophenol	367-12-4	4669.4	101.000	% Recov	08/18/06	42.000	105.000	
SURR	2-Fluorobiphenyl	321-60-8	4850.0	105.000	% Recov	08/18/06	56.000	122.000	
SURR	Nitrobenzene-d5	4165-60-0	4991.9	108.000	% Recov	08/18/06	64.000	111.000	
SURR	Phenol-d5	4165-62-2	4819.4	104.000	% Recov	08/18/06	54.000	120.000	
SURR	2,4,6-Tribromophenol	118-79-6	5041.3	109.000	% Recov	08/18/06	24.000	122.000	
SURR	Terphenyl-d14 (7Cl)	98904-43-9	5094.0	110.000	% Recov	08/18/06	35.000	150.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: 20060934
Matrix: SOLID
Test: SW-846 8270C Semi-Vols

SAF Number: R06-013
Sample Date: 08/16/06
Receive Date:08/17/06

Lab ID: W060002500
BATCH QC ASSOCIATED WITH SAMPLE

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
MS	1,2,4-Trichlorobenzene	120-82-1	4404.7	103.000	% Recov	08/21/06	46.000	107.000	
MS	1,4-Dichlorobenzene	106-46-7	4014.8	93.858	% Recov	08/21/06	30.000	96.000	
MS	2,4-Dinitrotoluene	121-14-2	3733.3	87.300	% Recov	08/21/06	59.000	106.000	
MS	2-Fluorophenol	367-12-4	4453.4	104.000	% Recov	08/21/06	42.000	105.000	
MS	Acenaphthene	83-32-9	4359.8	102.000	% Recov	08/21/06	61.000	116.000	
MS	4-Chloro-3-methylphenol	59-50-7	6341.9	98.800	% Recov	08/21/06	61.000	106.000	
MS	2-Chlorophenol	95-57-8	6448.0	100.000	% Recov	08/21/06	66.000	106.000	
MS	N-Nitrosodi-n-dipropylamine	621-64-7	4481.8	105.000	% Recov	08/21/06	71.000	114.000	
MS	2-Fluorobiphenyl	321-60-8	4550.1	106.000	% Recov	08/21/06	56.000	122.000	
MS	Phenol	108-95-2	6463.4	101.000	% Recov	08/21/06	42.000	111.000	
MS	Nitrobenzene-d5	4165-60-0	4364.3	102.000	% Recov	08/21/06	64.000	111.000	
MS	4-Nitrophenol	100-02-7	5579.1	87.000	% Recov	08/21/06	32.000	118.000	
MS	Pentachlorophenol	87-86-5	6387.4	99.500	% Recov	08/21/06	62.000	114.000	
MS	Phenol-d5	4165-62-2	4429.3	104.000	% Recov	08/21/06	54.000	120.000	
MS	Pyrene	129-00-0	4261.2	99.600	% Recov	08/21/06	66.000	118.000	
MS	2,4,6-Tribromophenol	118-79-6	3898.6	91.100	% Recov	08/21/06	24.000	122.000	
MS	Terphenyl-d14 (7Cl)	98904-43-9	4521.8	106.000	% Recov	08/21/06	35.000	150.000	
MSD	1,2,4-Trichlorobenzene	120-82-1	4850.6	105.000	% Recov	08/21/06	46.000	107.000	
MSD	1,4-Dichlorobenzene	106-46-7	4326.5	93.846	% Recov	08/21/06	30.000	96.000	
MSD	2,4-Dinitrotoluene	121-14-2	4605.5	99.900	% Recov	08/21/06	59.000	106.000	
MSD	2-Fluorophenol	367-12-4	4690.8	102.000	% Recov	08/21/06	42.000	105.000	
MSD	Acenaphthene	83-32-9	4697.2	102.000	% Recov	08/21/06	61.000	116.000	
MSD	4-Chloro-3-methylphenol	59-50-7	6635.5	96.000	% Recov	08/21/06	61.000	106.000	
MSD	2-Chlorophenol	95-57-8	6930.1	100.000	% Recov	08/21/06	66.000	106.000	
MSD	N-Nitrosodi-n-dipropylamine	621-64-7	4638.9	101.000	% Recov	08/21/06	71.000	114.000	
MSD	2-Fluorobiphenyl	321-60-8	5014.2	109.000	% Recov	08/21/06	56.000	122.000	
MSD	Phenol	108-95-2	7065.7	102.000	% Recov	08/21/06	42.000	111.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: 20060934
Matrix: SOLID
Test: SW-846 8270C Semi-Vols

SAF Number: R06-013
Sample Date: 08/16/06
Receive Date:08/17/06

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
MSD	Nitrobenzene-d5	4165-60-0	4825.2	105.000	% Recov	08/21/06	64.000	111.000	
MSD	4-Nitrophenol	100-02-7	6511.2	94.200	% Recov	08/21/06	32.000	118.000	
MSD	Pentachlorophenol	87-86-5	6792.8	98.200	% Recov	08/21/06	62.000	114.000	
MSD	Phenol-d5	4165-62-2	5000.9	108.000	% Recov	08/21/06	54.000	120.000	
MSD	Pyrene	129-00-0	4771.2	103.000	% Recov	08/21/06	66.000	118.000	
MSD	2,4,6-Tribromophenol	118-79-6	4447.6	96.500	% Recov	08/21/06	24.000	122.000	
MSD	Terphenyl-d14 (7Cl)	98904-43-9	4998.6	108.000	% Recov	08/21/06	35.000	150.000	
SPK-RPD	1,2,4-Trichlorobenzene	120-82-1	105.000	1.923	RPD	08/18/06	0.000	20.000	
SPK-RPD	1,4-Dichlorobenzene	106-46-7	93.846	0.013	RPD	08/21/06	0.000	20.000	
SPK-RPD	2,4-Dinitrotoluene	121-14-2	99.900	13.462	RPD	08/18/06	0.000	20.000	
SPK-RPD	2-Fluorophenol	367-12-4	102.000	1.942	RPD	08/18/06	0.000	20.000	
SPK-RPD	Acenaphthene	83-32-9	102.000	0.000	RPD	08/18/06	0.000	20.000	
SPK-RPD	4-Chloro-3-methylphenol	59-50-7	96.000	2.875	RPD	08/18/06	0.000	20.000	
SPK-RPD	2-Chlorophenol	95-57-8	100.000	0.000	RPD	08/18/06	0.000	20.000	
SPK-RPD	N-Nitrosodi-n-dipropylamine	621-64-7	101.000	3.883	RPD	08/18/06	0.000	20.000	
SPK-RPD	2-Fluorobiphenyl	321-60-8	109.000	2.791	RPD	08/18/06	0.000	20.000	
SPK-RPD	Phenol	108-95-2	102.000	0.985	RPD	08/18/06	0.000	20.000	
SPK-RPD	Nitrobenzene-d5	4165-60-0	105.000	2.899	RPD	08/18/06	0.000	20.000	
SPK-RPD	4-Nitrophenol	100-02-7	94.200	7.947	RPD	08/18/06	0.000	20.000	
SPK-RPD	Pentachlorophenol	87-86-5	98.200	1.315	RPD	08/18/06	0.000	20.000	
SPK-RPD	Phenol-d5	4165-62-2	108.000	3.774	RPD	08/18/06	0.000	20.000	
SPK-RPD	Pyrene	129-00-0	103.000	3.356	RPD	08/18/06	0.000	20.000	
SPK-RPD	2,4,6-Tribromophenol	118-79-6	96.500	5.757	RPD	08/18/06	0.000	20.000	
SPK-RPD	Terphenyl-d14 (7Cl)	98904-43-9	108.000	1.869	RPD	08/18/06	0.000	20.000	

BATCH QC

BLANK	1,2-Dichlorobenzene	95-50-1	< 240	n/a	ug/Kg	08/18/06			U
BLANK	1,2,4-Trimethylbenzene	95-63-6	< 180	n/a	ug/Kg	08/18/06			U
BLANK	1,2,4-Trichlorobenzene	120-82-1	< 140	n/a	ug/Kg	08/18/06			U
BLANK	1,3-Dichlorobenzene	541-73-1	< 260	n/a	ug/Kg	08/18/06			U

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: 20060934
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	1,4-Dichlorobenzene	106-46-7	< 240	n/a	ug/Kg	08/18/06			U
BLANK	2-Naphthylamine	91-59-8	< 380	n/a	ug/Kg	08/18/06			U
BLANK	2,4-Dichlorophenol	120-83-2	< 140	n/a	ug/Kg	08/18/06			U
BLANK	2,4-Dinitrotoluene	121-14-2	< 140	n/a	ug/Kg	08/18/06			U
BLANK	2,4,5-Trichlorophenol	95-95-4	< 140	n/a	ug/Kg	08/18/06			U
BLANK	2,4,6-Trichlorophenol	88-06-2	< 140	n/a	ug/Kg	08/18/06			U
BLANK	2,4-Dimethylphenol	105-67-9	< 220	n/a	ug/Kg	08/18/06			U
BLANK	2,6-Dinitrotoluene	606-20-2	< 140	n/a	ug/Kg	08/18/06			U
BLANK	2-Butoxyethanol	111-76-2	< 200	n/a	ug/Kg	08/18/06			U
BLANK	2-Chloronaphthalene	91-58-7	< 140	n/a	ug/Kg	08/18/06			U
BLANK	2-Fluorophenol	367-12-4	4129.6	103.240	% Recov	08/18/06	42.000	105.000	
BLANK	2-Methylnaphthalene	91-57-6	< 140	n/a	ug/Kg	08/18/06			U
BLANK	2-Methylphenol (cresol, o-)	95-48-7	< 140	n/a	ug/Kg	08/18/06			U
BLANK	2-Nitroaniline	88-74-4	< 140	n/a	ug/Kg	08/18/06			U
BLANK	2-Nitrophenol	88-75-5	< 140	n/a	ug/Kg	08/18/06			U
BLANK	3 & 4 Methylphenol Total	65794-96-9	< 140	n/a	ug/Kg	08/18/06			U
BLANK	3-Nitroaniline	99-09-2	< 140	n/a	ug/Kg	08/18/06			U
BLANK	4,6-Dinitro-2-methylphenol	534-52-1	< 220	n/a	ug/Kg	08/18/06			U
BLANK	4-Bromophenylphenyl ether	101-55-3	< 140	n/a	ug/Kg	08/18/06			U
BLANK	4-Chlorophenylphenyl ether	7005-72-3	< 140	n/a	ug/Kg	08/18/06			U
BLANK	Acenaphthene	83-32-9	< 140	n/a	ug/Kg	08/18/06			U
BLANK	Acenaphthylene	208-96-8	< 140	n/a	ug/Kg	08/18/06			U
BLANK	Anthracene	120-12-7	< 140	n/a	ug/Kg	08/18/06			U
BLANK	Bis(2-chloroethyl) ether	111-44-4	< 140	n/a	ug/Kg	08/18/06			U
BLANK	Benzo(a)anthracene	56-55-3	< 140	n/a	ug/Kg	08/18/06			U
BLANK	Benzo(b)fluoranthene	205-99-2	< 170	n/a	ug/Kg	08/18/06			U
BLANK	Benzoic acid	65-85-0	< 400	n/a	ug/Kg	08/18/06	0.000		U
BLANK	Benzo(ghi)perylene	191-24-2	< 220	n/a	ug/Kg	08/18/06			U
BLANK	Benzo(a)pyrene	50-32-8	< 200	n/a	ug/Kg	08/18/06			U
BLANK	Bis(2-Chloroethoxy)methane	111-91-1	< 140	n/a	ug/Kg	08/18/06			U

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: 20060934
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	Bis(2-ethylhexyl) phthalate	117-81-7	< 140	n/a	ug/Kg	08/18/06			U
BLANK	Bis(2-chloro-1-methylethyl)eth	108-60-1	< 140	n/a	ug/Kg	08/18/06			U
BLANK	Benzyl alcohol	100-51-6	< 140	n/a	ug/Kg	08/18/06			U
BLANK	Benzo(k)fluoranthene	207-08-9	< 170	n/a	ug/Kg	08/18/06			U
BLANK	Butylbenzylphthalate	85-68-7	< 140	n/a	ug/Kg	08/18/06			U
BLANK	Carbazole	86-74-8	< 140	n/a	ug/Kg	08/18/06			U
BLANK	4-Chloroaniline	106-47-8	< 300	n/a	ug/Kg	08/18/06			U
BLANK	4-Chloro-3-methylphenol	59-50-7	< 140	n/a	ug/Kg	08/18/06			U
BLANK	2-Chlorophenol	95-57-8	< 140	n/a	ug/Kg	08/18/06			U
BLANK	Chrysene	218-01-9	< 140	n/a	ug/Kg	08/18/06			U
BLANK	Cyclohexanone	108-94-1	< 140	n/a	ug/Kg	08/18/06			U
BLANK	3,3'-Dichlorobenzidine	91-94-1	< 260	n/a	ug/Kg	08/18/06			U
BLANK	Decane	124-18-5	< 200	n/a	ug/Kg	08/18/06			U
BLANK	Dibenz[a,h]anthracene	53-70-3	< 260	n/a	ug/Kg	08/18/06			U
BLANK	Dibutyl butylphosphonate	78-46-6	< 140	n/a	ug/kg	08/18/06			U
BLANK	Dibenzofuran	132-64-9	< 140	n/a	ug/Kg	08/18/06			U
BLANK	Di-n-butylphthalate	84-74-2	< 140	n/a	ug/Kg	08/18/06			U
BLANK	Diethylphthalate	84-66-2	< 210	n/a	ug/Kg	08/18/06			U
BLANK	Dimethyl phthalate	131-11-3	< 140	n/a	ug/Kg	08/18/06			U
BLANK	2,4-Dinitrophenol	51-28-5	< 600	n/a	ug/Kg	08/18/06			U
BLANK	Di-n-octylphthalate	117-84-0	< 200	n/a	ug/Kg	08/18/06			U
BLANK	N-Nitrosodi-n-dipropylamine	621-64-7	< 140	n/a	ug/Kg	08/18/06			U
BLANK	Dodecane	112-40-3	< 140	n/a	ug/Kg	08/18/06	-999.000	999.000	U
BLANK	2-Fluorobiphenyl	321-60-8	4053.9	101.000	% Recov	08/18/06	56.000	122.000	
BLANK	Fluorene	86-73-7	< 140	n/a	ug/Kg	08/18/06			U
BLANK	Fluoranthene	206-44-0	< 140	n/a	ug/Kg	08/18/06			U
BLANK	Hexachlorobenzene	118-74-1	< 140	n/a	ug/Kg	08/18/06			U
BLANK	Hexachlorobutadiene	87-68-3	< 140	n/a	ug/Kg	08/18/06			U
BLANK	Hexachlorocyclopentadiene	77-47-4	< 160	n/a	ug/Kg	08/18/06			U
BLANK	Hexachloroethane	67-72-1	< 230	n/a	ug/Kg	08/18/06			U

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: 20060934
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	Indeno(1,2,3-cd)pyrene	193-39-5	< 240	n/a	ug/Kg	08/18/06			U
BLANK	Isophorone	78-59-1	< 140	n/a	ug/Kg	08/18/06			U
BLANK	Phenol	108-95-2	< 140	n/a	ug/Kg	08/18/06			U
BLANK	Naphthalene	91-20-3	< 140	n/a	ug/Kg	08/18/06			U
BLANK	Nitrobenzene-d5	4165-60-0	4151.5	104.000	% Recov	08/18/06	64.000	111.000	
BLANK	Nitrobenzene	98-95-3	< 140	n/a	ug/Kg	08/18/06			U
BLANK	4-Nitrophenol	100-02-7	< 200	n/a	ug/Kg	08/18/06			U
BLANK	4-Nitroaniline	100-01-6	< 200	n/a	ug/Kg	08/18/06			U
BLANK	N-Nitrosodiphenylamine	86-30-6	< 160	n/a	ug/Kg	08/18/06			U
BLANK	Pentachlorophenol	87-86-5	< 200	n/a	ug/Kg	08/18/06			U
BLANK	Phenanthrene	85-01-8	< 140	n/a	ug/Kg	08/18/06			U
BLANK	Phenol-d5	4165-62-2	4267.2	107.000	% Recov	08/18/06	54.000	120.000	
BLANK	Pyrene	129-00-0	< 140	n/a	ug/Kg	08/18/06			U
BLANK	Pyridine	110-86-1	< 140	n/a	ug/Kg	08/18/06			U
BLANK	Tributyl phosphate	126-73-8	< 140	n/a	ug/Kg	08/18/06			U
BLANK	2,4,6-Tribromophenol	118-79-6	3877.3	96.900	% Recov	08/18/06	24.000	122.000	
BLANK	Terphenyl-d14 (7Cl)	98904-43-9	4111.2	103.000	% Recov	08/18/06	35.000	150.000	
LCS	1,2,4-Trichlorobenzene	120-82-1	4238.8	106.000	% Recov	08/21/06	46.000	107.000	
LCS	1,4-Dichlorobenzene	106-46-7	4369.5	109.000	% Recov	08/21/06	42.000	111.000	
LCS	2,4-Dinitrotoluene	121-14-2	3906.3	97.700	% Recov	08/21/06	59.000	106.000	
LCS	2-Fluorophenol	367-12-4	4113.2	103.000	% Recov	08/21/06	50.000	110.000	
LCS	Acenaphthene	83-32-9	4378.9	109.000	% Recov	08/21/06	61.000	116.000	
LCS	4-Chloro-3-methylphenol	59-50-7	4107.6	68.500	% Recov	08/21/06	61.000	106.000	
LCS	2-Chlorophenol	95-57-8	6161.8	103.000	% Recov	08/21/06	66.000	106.000	
LCS	N-Nitrosodi-n-dipropylamine	621-64-7	4123.0	103.000	% Recov	08/21/06	71.000	114.000	
LCS	2-Fluorobiphenyl	321-60-8	4201.5	105.000	% Recov	08/21/06	58.000	109.000	
LCS	Phenol	108-95-2	6060.9	101.000	% Recov	08/21/06	67.000	105.000	
LCS	Nitrobenzene-d5	4165-60-0	4528.6	113.000	% Recov	08/21/06	60.000	118.000	
LCS	4-Nitrophenol	100-02-7	5813.3	96.900	% Recov	08/21/06	32.000	118.000	
LCS	Pentachlorophenol	87-86-5	5785.1	96.400	% Recov	08/21/06	62.000	114.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: 20060934
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-d5	4165-62-2	4162.6	104.000	% Recov	08/21/06	59.000	116.000	
LCS	Pyrene	129-00-0	4349.8	109.000	% Recov	08/21/06	66.000	118.000	
LCS	2,4,6-Tribromophenol	118-79-6	3900.2	97.500	% Recov	08/21/06	60.000	120.000	
LCS	Terphenyl-d14 (7Cl)	98904-43-9	4349.9	109.000	% Recov	08/21/06	60.000	120.000	

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WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: 20060934
Matrix: SOLID
Test: WTPH-D TPH Diesel Range (Wa)

SAF Number: R06-013
Sample Date: 08/16/06
Receive Date:08/16/06

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
Lab ID: W060002493									
BATCH QC ASSOCIATED WITH SAMPLE									
SURR	ortho-Terphenyl Surr	84-15-1	19212	93.800	% Recov	08/21/06	70.000	130.000	
Lab ID: W060002494									
BATCH QC ASSOCIATED WITH SAMPLE									
SURR	ortho-Terphenyl Surr	84-15-1	16782	74.300	% Recov	08/21/06	70.000	130.000	
Lab ID: W060002495									
BATCH QC ASSOCIATED WITH SAMPLE									
SURR	ortho-Terphenyl Surr	84-15-1	19882	88.600	% Recov	08/21/06	70.000	130.000	
Lab ID: W060002500									
BATCH QC ASSOCIATED WITH SAMPLE									
MS	ortho-Terphenyl Surr	84-15-1	21567	101.000	% Recov	08/21/06	70.000	130.000	
MS	Total Pet. Hydrocarbons Diesel	TPHDIESEL	107450	101.000	% Recov	08/21/06	75.000	125.000	
MSD	ortho-Terphenyl Surr	84-15-1	22027	91.800	% Recov	08/21/06	70.000	130.000	
MSD	Total Pet. Hydrocarbons Diesel	TPHDIESEL	109000	90.900	% Recov	08/21/06	75.000	125.000	
SPK-RPD	ortho-Terphenyl Surr	84-15-1	91.800	9.544	RPD	08/21/06	0.000	20.000	
SPK-RPD	Total Pet. Hydrocarbons Diesel	TPHDIESEL	90.900	10.526	RPD	08/21/06	0.000	20.000	
BATCH QC									
BLANK	Kerosene	TPHKEROSENE	< 3000	n/a	ug/Kg	08/21/06			U
BLANK	ortho-Terphenyl Surr	84-15-1	18525	92.600	% Recov	08/21/06	70.000	130.000	
BLANK	Total Pet. Hydrocarbons Diesel	TPHDIESEL	< 3000	n/a	ug/Kg	08/21/06			U
LCS	ortho-Terphenyl Surr	84-15-1	20009	100.000	% Recov	08/21/06	70.000	130.000	
LCS	Total Pet. Hydrocarbons Diesel	TPHDIESEL	100020	100.000	% Recov	08/21/06	80.000	120.000	

Date: 1 September 2006
To: Fluor Hanford Inc. (technical representative)
From: TechLaw, Inc.
Project: 200-UW-1 Operable Unit, Soil from Trench between 216-U-8 & 216-U-12 Cribs
Subject: Volatile Organics- Data Package No.WSCF20060934 (60934)

INTRODUCTION

This memo presents the results of data validation on Data Package No. 60934 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
B1KB75	8/16/06	Soil	C	VOAs by 8260B
B1KB76	8/16/06	Soil	C	VOAs by 8260B
B1KB77	8/16/06	Soil	C	VOAs 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. 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 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. 60934 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 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 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 DATA QUALIFICATION SUMMARY*

SDG: 60934	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

Annotated Laboratory Reports

WSCF
ANALYTICAL RESULTS REPORT

Attention: D.L KLAGES H8-40 **Group #:** 20060934

Sample #	Client ID		CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W060002495	B1KB51	KLAGES	65794-96-9	3 & 4 Methylphenol Total	SOIL	LA-523-456	U	< 160	ug/kg	1.00	1.6e+02	08/18/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	67-72-1	Hexachloroethane	SOIL	LA-523-456	U	< 260	ug/kg	1.00	2.6e+02	08/18/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	88-06-2	2,4,6-Trichlorophenol	SOIL	LA-523-456	U	< 160	ug/kg	1.00	1.6e+02	08/18/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	124-18-5	Decane	SOIL	LA-523-456	U	< 230	ug/kg	1.00	2.3e+02	08/18/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	112-40-3	Dodecane	SOIL	LA-523-456	U	< 160	ug/kg	1.00	1.6e+02	08/18/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	100-51-6	Benzyl alcohol	SOIL	LA-523-456	U	< 160	ug/kg	1.00	1.6e+02	08/18/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	111-76-2	2-Butoxyethanol	SOIL	LA-523-456	U	< 230	ug/kg	1.00	2.3e+02	08/18/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	126-73-8	Tributyl phosphate	SOIL	LA-523-456	U	< 160	ug/kg	1.00	1.6e+02	08/18/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	91-59-8	2-Naphthylamine	SOIL	LA-523-456	U	< 440	ug/kg	1.00	4.4e+02	08/18/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	108-94-1	Cyclohexanone	SOIL	LA-523-456	U	< 160	ug/kg	1.00	1.6e+02	08/18/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	110-86-1	Pyridine	SOIL	LA-523-456	U	< 160	ug/kg	1.00	1.6e+02	08/18/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	95-63-6	1,2,4-Trimethylbenzene	SOIL	LA-523-456	U	< 210	ug/kg	1.00	2.1e+02	08/18/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	65-85-0	Benzoic acid	SOIL	LA-523-456	U	< 460	ug/kg	1.00	460	08/18/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	78-46-6	Dibutyl butylphosphonate	SOIL	LA-523-456	U	< 1.6e+02	ug/kg	1.00	1.6e+02	08/18/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	TPHDIESEL	Total Pet. Hydrocarbons Diesel	SOIL	NWTPH	U	< 3.40e+03	ug/kg	1.00	3.4e+03	08/21/06	08/16/06	08/16/06
~~W060002495~~	~~B1KB51~~	~~KLAGES~~	~~TPHKEROSENE~~	~~Kerosene~~	~~SOIL~~	~~NWTPH~~	~~U~~	~~< 3.40e+03~~	~~ug/kg~~	~~1.00~~	~~3.4e+03~~	~~08/21/06~~	~~08/16/06~~	~~08/16/06~~
W060002496	B1KB75	KLAGES	75-35-4	1,1-Dichloroethene	SOIL	LA-523-455	U	< 1.10	ug/kg	1.00	1.1	08/21/06	08/16/06	08/16/06
W060002496	B1KB75	KLAGES	79-01-6	Trichloroethene	SOIL	LA-523-455	U	< 1.10	ug/kg	1.00	1.1	08/21/06	08/16/06	08/16/06
W060002496	B1KB75	KLAGES	71-43-2	Benzene	SOIL	LA-523-455	U	< 1.10	ug/kg	1.00	1.1	08/21/06	08/16/06	08/16/06
W060002496	B1KB75	KLAGES	108-88-3	Toluene	SOIL	LA-523-455	U	< 1.10	ug/kg	1.00	1.1	08/21/06	08/16/06	08/16/06
W060002496	B1KB75	KLAGES	108-90-7	Chlorobenzene	SOIL	LA-523-455	U	< 1.10	ug/kg	1.00	1.1	08/21/06	08/16/06	08/16/06
W060002496	B1KB75	KLAGES	75-34-3	1,1-Dichloroethane	SOIL	LA-523-455	U	< 1.10	ug/kg	1.00	1.1	08/21/06	08/16/06	08/16/06
W060002496	B1KB75	KLAGES	100-41-4	Ethylbenzene	SOIL	LA-523-455	U	< 1.10	ug/kg	1.00	1.1	08/21/06	08/16/06	08/16/06
W060002496	B1KB75	KLAGES	100-42-5	Styrene	SOIL	LA-523-455	U	< 1.10	ug/kg	1.00	1.1	08/21/06	08/16/06	08/16/06
W060002496	B1KB75	KLAGES	10061-01-5	cis-1,3-Dichloropropene	SOIL	LA-523-455	U	< 1.10	ug/kg	1.00	1.1	08/21/06	08/16/06	08/16/06
W060002496	B1KB75	KLAGES	10061-02-6	trans-1,3-Dichloropropene	SOIL	LA-523-455	U	< 1.10	ug/kg	1.00	1.1	08/21/06	08/16/06	08/16/06
W060002496	B1KB75	KLAGES	107-06-2	1,2 Dichloroethane	SOIL	LA-523-455	U	< 1.10	ug/kg	1.00	1.1	08/21/06	08/16/06	08/16/06

MDL=Minimum Detection Limit
RQ=Result Qualifier

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

DF=Dilution Factor

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

Report WGPP/ver. 1.3
PROJECT HANFORD MANAGEMENT COMPANY

REVISED
9/5/06

WSCF
ANALYTICAL RESULTS REPORT

Attention: D.L KLAGES H8-40 **Group #:** 20060934

Sample #	Client ID		CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W060002496	B1KB75	KLAGES	108-10-1	4-Methyl-2-Pentanone	SOIL	LA-523-455	U	< 1.10	ug/kg	1.00	1.1	08/21/06	08/16/06	08/16/06
W060002496	B1KB75	KLAGES	124-48-1	Dibromochloromethane	SOIL	LA-523-455	U	< 1.10	ug/kg	1.00	1.1	08/21/06	08/16/06	08/16/06
W060002496	B1KB75	KLAGES	127-18-4	Tetrachloroethene	SOIL	LA-523-455	U	< 1.10	ug/kg	1.00	1.1	08/21/06	08/16/06	08/16/06
W060002496	B1KB75	KLAGES	1330-20-7	Xylenes (total)	SOIL	LA-523-455	U	< 1.10	ug/kg	1.00	1.1	08/21/06	08/16/06	08/16/06
W060002496	B1KB75	KLAGES	540-59-0	1,2-Dichloroethene(Total)	SOIL	LA-523-455	U	< 1.10	ug/kg	1.00	1.1	08/21/06	08/16/06	08/16/06
W060002496	B1KB75	KLAGES	56-23-5	Carbon tetrachloride	SOIL	LA-523-455	U	< 1.10	ug/kg	1.00	1.1	08/21/06	08/16/06	08/16/06
W060002496	B1KB75	KLAGES	591-78-6	2-Hexanone	SOIL	LA-523-455	U	< 1.10	ug/kg	1.00	1.1	08/21/06	08/16/06	08/16/06
W060002496	B1KB75	KLAGES	67-64-1	Acetone	SOIL	LA-523-455	U	< 1.10	ug/kg	1.00	1.1	08/21/06	08/16/06	08/16/06
W060002496	B1KB75	KLAGES	67-66-3	Chloroform	SOIL	LA-523-455	U	< 1.10	ug/kg	1.00	1.1	08/21/06	08/16/06	08/16/06
W060002496	B1KB75	KLAGES	71-55-6	1,1,1-Trichloroethane	SOIL	LA-523-455	U	< 1.10	ug/kg	1.00	1.1	08/21/06	08/16/06	08/16/06
W060002496	B1KB75	KLAGES	74-83-9	Bromomethane	SOIL	LA-523-455	U	< 1.10	ug/kg	1.00	1.1	08/21/06	08/16/06	08/16/06
W060002496	B1KB75	KLAGES	74-87-3	Chloromethane	SOIL	LA-523-455	U	< 1.10	ug/kg	1.00	1.1	08/21/06	08/16/06	08/16/06
W060002496	B1KB75	KLAGES	75-00-3	Chloroethane	SOIL	LA-523-455	U	< 1.10	ug/kg	1.00	1.1	08/21/06	08/16/06	08/16/06
W060002496	B1KB75	KLAGES	75-01-4	Vinyl chloride	SOIL	LA-523-455	U	< 1.10	ug/kg	1.00	1.1	08/21/06	08/16/06	08/16/06
W060002496	B1KB75	KLAGES	75-09-2	Methylenechloride	SOIL	LA-523-455	U	< 1.10	ug/kg	1.00	1.1	08/21/06	08/16/06	08/16/06
W060002496	B1KB75	KLAGES	75-15-0	Carbon disulfide	SOIL	LA-523-455	U	< 1.10	ug/kg	1.00	1.1	08/21/06	08/16/06	08/16/06
W060002496	B1KB75	KLAGES	75-25-2	Bromoform	SOIL	LA-523-455	U	< 1.10	ug/kg	1.00	1.1	08/21/06	08/16/06	08/16/06
W060002496	B1KB75	KLAGES	75-27-4	Bromodichloromethane	SOIL	LA-523-455	U	< 1.10	ug/kg	1.00	1.1	08/21/06	08/16/06	08/16/06
W060002496	B1KB75	KLAGES	78-87-5	1,2-Dichloropropane	SOIL	LA-523-455	U	< 1.10	ug/kg	1.00	1.1	08/21/06	08/16/06	08/16/06
W060002496	B1KB75	KLAGES	78-93-3	2-Butanone	SOIL	LA-523-455	U	< 1.10	ug/kg	1.00	1.1	08/21/06	08/16/06	08/16/06
W060002496	B1KB75	KLAGES	79-00-5	1,1,2-Trichloroethane	SOIL	LA-523-455	U	< 1.10	ug/kg	1.00	1.1	08/21/06	08/16/06	08/16/06
W060002496	B1KB75	KLAGES	79-34-5	1,1,2,2-Tetrachloroethane	SOIL	LA-523-455	U	< 1.10	ug/kg	1.00	1.1	08/21/06	08/16/06	08/16/06
W060002496	B1KB75	KLAGES	71-36-3	1-Butanol	SOIL	LA-523-455	U	< 23.0	ug/kg	1.00	23	08/21/06	08/16/06	08/16/06
W060002496	B1KB75	KLAGES	107-87-9	2-Pentanone	SOIL	LA-523-455	U	< 1.10	ug/kg	1.00	1.1	08/21/06	08/16/06	08/16/06
W060002496	B1KB75	KLAGES	110-82-7	Cyclohexane	SOIL	LA-523-455	U	< 1.10	ug/kg	1.00	1.1	08/21/06	08/16/06	08/16/06
W060002496	B1KB75	KLAGES	110-54-3	Hexane	SOIL	LA-523-455	U	< 1.10	ug/kg	1.00	1.1	08/21/06	08/16/06	08/16/06
W060002496	B1KB75	KLAGES	109-99-9	Tetrahydrofuran	SOIL	LA-523-455	U	< 2.30	ug/kg	1.00	2.3	08/21/06	08/16/06	08/16/06

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W 9/5/06

REVISED Dayes 9/5/06

WSCF
ANALYTICAL RESULTS REPORT

Attention: D.L KLAGES H8-40 **Group #:** 20060934

Sample #	Client ID		CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W060002496	B1KB75	KLAGES	75-69-4	Trichloromonofluoromethane	SOIL	LA-523-455	U	< 1.10	ug/kg	1.00	1.1	08/21/06	08/16/06	08/16/06
W060002496	B1KB75	KLAGES	104-51-8	n-Butylbenzene	SOIL	LA-523-455	U	< 1.10	ug/kg	1.00	1.1	08/21/06	08/16/06	08/16/06
W060002496	B1KB75	KLAGES	156-60-5	trans-1,2-Dichloroethylene	SOIL	LA-523-455	U	< 1.10	ug/kg	1.00	1.1	08/21/06	08/16/06	08/16/06
W060002496	B1KB75	KLAGES	75-05-8	Acetonitrile	SOIL	LA-523-455	U	< 2.30	ug/kg	1.00	2.3	08/21/06	08/16/06	08/16/06
W060002496	B1KB75	KLAGES	156-59-2	cis-1,2-Dichloroethylene	SOIL	LA-523-455	U	< 1.10	ug/kg	1.00	1.1	08/21/06	08/16/06	08/16/06
W060002497	B1KB76	KLAGES	75-35-4	1,1-Dichloroethene	SOIL	LA-523-455	U	< 1.10	ug/kg	1.00	1.1	08/21/06	08/16/06	08/16/06
W060002497	B1KB76	KLAGES	79-01-6	Trichloroethene	SOIL	LA-523-455	U	< 1.10	ug/kg	1.00	1.1	08/21/06	08/16/06	08/16/06
W060002497	B1KB76	KLAGES	71-43-2	Benzene	SOIL	LA-523-455	U	< 1.10	ug/kg	1.00	1.1	08/21/06	08/16/06	08/16/06
W060002497	B1KB76	KLAGES	108-88-3	Toluene	SOIL	LA-523-455	U	< 1.10	ug/kg	1.00	1.1	08/21/06	08/16/06	08/16/06
W060002497	B1KB76	KLAGES	108-90-7	Chlorobenzene	SOIL	LA-523-455	U	< 1.10	ug/kg	1.00	1.1	08/21/06	08/16/06	08/16/06
W060002497	B1KB76	KLAGES	75-34-3	1,1-Dichloroethane	SOIL	LA-523-455	U	< 1.10	ug/kg	1.00	1.1	08/21/06	08/16/06	08/16/06
W060002497	B1KB76	KLAGES	100-41-4	Ethylbenzene	SOIL	LA-523-455	U	< 1.10	ug/kg	1.00	1.1	08/21/06	08/16/06	08/16/06
W060002497	B1KB76	KLAGES	100-42-5	Styrene	SOIL	LA-523-455	U	< 1.10	ug/kg	1.00	1.1	08/21/06	08/16/06	08/16/06
W060002497	B1KB76	KLAGES	10061-01-5	cis-1,3-Dichloropropene	SOIL	LA-523-455	U	< 1.10	ug/kg	1.00	1.1	08/21/06	08/16/06	08/16/06
W060002497	B1KB76	KLAGES	10061-02-6	trans-1,3-Dichloropropene	SOIL	LA-523-455	U	< 1.10	ug/kg	1.00	1.1	08/21/06	08/16/06	08/16/06
W060002497	B1KB76	KLAGES	107-06-2	1,2-Dichloroethane	SOIL	LA-523-455	U	< 1.10	ug/kg	1.00	1.1	08/21/06	08/16/06	08/16/06
W060002497	B1KB76	KLAGES	108-10-1	4-Methyl-2-Pentanone	SOIL	LA-523-455	U	< 1.10	ug/kg	1.00	1.1	08/21/06	08/16/06	08/16/06
W060002497	B1KB76	KLAGES	124-48-1	Dibromochloromethane	SOIL	LA-523-455	U	< 1.10	ug/kg	1.00	1.1	08/21/06	08/16/06	08/16/06
W060002497	B1KB76	KLAGES	127-18-4	Tetrachloroethene	SOIL	LA-523-455	U	< 1.10	ug/kg	1.00	1.1	08/21/06	08/16/06	08/16/06
W060002497	B1KB76	KLAGES	1330-20-7	Xylenes (total)	SOIL	LA-523-455	U	< 1.10	ug/kg	1.00	1.1	08/21/06	08/16/06	08/16/06
W060002497	B1KB76	KLAGES	540-59-0	1,2-Dichloroethene(Total)	SOIL	LA-523-455	U	< 1.10	ug/kg	1.00	1.1	08/21/06	08/16/06	08/16/06
W060002497	B1KB76	KLAGES	56-23-5	Carbon tetrachloride	SOIL	LA-523-455	U	< 1.10	ug/kg	1.00	1.1	08/21/06	08/16/06	08/16/06
W060002497	B1KB76	KLAGES	591-78-6	2-Hexanone	SOIL	LA-523-455	U	< 1.10	ug/kg	1.00	1.1	08/21/06	08/16/06	08/16/06
W060002497	B1KB76	KLAGES	67-64-1	Acetone	SOIL	LA-523-455	U	< 1.10	ug/kg	1.00	1.1	08/21/06	08/16/06	08/16/06
W060002497	B1KB76	KLAGES	67-66-3	Chloroform	SOIL	LA-523-455	U	< 1.10	ug/kg	1.00	1.1	08/21/06	08/16/06	08/16/06
W060002497	B1KB76	KLAGES	71-55-6	1,1,1-Trichloroethane	SOIL	LA-523-455	U	< 1.10	ug/kg	1.00	1.1	08/21/06	08/16/06	08/16/06
W060002497	B1KB76	KLAGES	74-83-9	Bromomethane	SOIL	LA-523-455	U	< 1.10	ug/kg	1.00	1.1	08/21/06	08/16/06	08/16/06

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Report WGPP/ver. 1.3
PROJECT HANFORD MANAGEMENT COMPANY

REVISED R Hayes 9/5/06

9/5/06

WSCF
ANALYTICAL RESULTS REPORT

Attention: D.L KLAGES H8-40 **Group #:** 20060934

Sample #	Client ID		CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W060002497	B1KB76	KLAGES	74-87-3	Chloromethane	SOIL	LA-523-455	U	< 1.10	ug/kg	1.00	1.1	08/21/06	08/16/06	08/16/06
W060002497	B1KB76	KLAGES	75-00-3	Chloroethane	SOIL	LA-523-455	U	< 1.10	ug/kg	1.00	1.1	08/21/06	08/16/06	08/16/06
W060002497	B1KB76	KLAGES	75-01-4	Vinyl chloride	SOIL	LA-523-455	U	< 1.10	ug/kg	1.00	1.1	08/21/06	08/16/06	08/16/06
W060002497	B1KB76	KLAGES	75-09-2	Methylenechloride	SOIL	LA-523-455	U	< 1.10	ug/kg	1.00	1.1	08/21/06	08/16/06	08/16/06
W060002497	B1KB76	KLAGES	75-15-0	Carbon disulfide	SOIL	LA-523-455	U	< 1.10	ug/kg	1.00	1.1	08/21/06	08/16/06	08/16/06
W060002497	B1KB76	KLAGES	75-25-2	Bromoform	SOIL	LA-523-455	U	< 1.10	ug/kg	1.00	1.1	08/21/06	08/16/06	08/16/06
W060002497	B1KB76	KLAGES	75-27-4	Bromodichloromethane	SOIL	LA-523-455	U	< 1.10	ug/kg	1.00	1.1	08/21/06	08/16/06	08/16/06
W060002497	B1KB76	KLAGES	78-87-5	1,2-Dichloropropane	SOIL	LA-523-455	U	< 1.10	ug/kg	1.00	1.1	08/21/06	08/16/06	08/16/06
W060002497	B1KB76	KLAGES	78-93-3	2-Butanone	SOIL	LA-523-455	U	< 1.10	ug/kg	1.00	1.1	08/21/06	08/16/06	08/16/06
W060002497	B1KB76	KLAGES	79-00-5	1,1,2-Trichloroethane	SOIL	LA-523-455	U	< 1.10	ug/kg	1.00	1.1	08/21/06	08/16/06	08/16/06
W060002497	B1KB76	KLAGES	79-34-5	1,1,2,2-Tetrachloroethane	SOIL	LA-523-455	U	< 1.10	ug/kg	1.00	1.1	08/21/06	08/16/06	08/16/06
W060002497	B1KB76	KLAGES	71-36-3	1-Butanol	SOIL	LA-523-455	U	< 21.0	ug/kg	1.00	21	08/21/06	08/16/06	08/16/06
W060002497	B1KB76	KLAGES	107-87-9	2-Pentanone	SOIL	LA-523-455	U	< 1.10	ug/kg	1.00	1.1	08/21/06	08/16/06	08/16/06
W060002497	B1KB76	KLAGES	110-82-7	Cyclohexane	SOIL	LA-523-455	U	< 1.10	ug/kg	1.00	1.1	08/21/06	08/16/06	08/16/06
W060002497	B1KB76	KLAGES	110-54-3	Hexane	SOIL	LA-523-455	U	< 1.10	ug/kg	1.00	1.1	08/21/06	08/16/06	08/16/06
W060002497	B1KB76	KLAGES	109-99-9	Tetrahydrofuran	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	08/21/06	08/16/06	08/16/06
W060002497	B1KB76	KLAGES	75-69-4	Trichloromonofluoromethane	SOIL	LA-523-455	U	< 1.10	ug/kg	1.00	1.1	08/21/06	08/16/06	08/16/06
W060002497	B1KB76	KLAGES	104-51-8	n-Butylbenzene	SOIL	LA-523-455	U	< 1.10	ug/kg	1.00	1.1	08/21/06	08/16/06	08/16/06
W060002497	B1KB76	KLAGES	156-60-5	trans-1,2-Dichloroethylene	SOIL	LA-523-455	U	< 1.10	ug/kg	1.00	1.1	08/21/06	08/16/06	08/16/06
W060002497	B1KB76	KLAGES	75-05-8	Acetonitrile	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	08/21/06	08/16/06	08/16/06
W060002497	B1KB76	KLAGES	156-59-2	cis-1,2-Dichloroethylene	SOIL	LA-523-455	U	< 1.10	ug/kg	1.00	1.1	08/21/06	08/16/06	08/16/06
W060002498	B1KB77	KLAGES	75-35-4	1,1-Dichloroethene	SOIL	LA-523-455	U	< 1.00	ug/kg	1.00	1.0	08/21/06	08/16/06	08/16/06
W060002498	B1KB77	KLAGES	79-01-6	Trichloroethene	SOIL	LA-523-455	U	< 1.00	ug/kg	1.00	1.0	08/21/06	08/16/06	08/16/06
W060002498	B1KB77	KLAGES	71-43-2	Benzene	SOIL	LA-523-455	U	< 1.00	ug/kg	1.00	1.0	08/21/06	08/16/06	08/16/06
W060002498	B1KB77	KLAGES	108-88-3	Toluene	SOIL	LA-523-455	U	< 1.00	ug/kg	1.00	1.0	08/21/06	08/16/06	08/16/06
W060002498	B1KB77	KLAGES	108-90-7	Chlorobenzene	SOIL	LA-523-455	U	< 1.00	ug/kg	1.00	1.0	08/21/06	08/16/06	08/16/06
W060002498	B1KB77	KLAGES	75-34-3	1,1-Dichloroethane	SOIL	LA-523-455	U	< 1.00	ug/kg	1.00	1.0	08/21/06	08/16/06	08/16/06

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Report WGPP/ver. 1.3
PROJECT HANFORD MANAGEMENT COMPANY

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WSCF
ANALYTICAL RESULTS REPORT

Attention: D.L KLAGES H8-40 **Group #:** 20060934

Sample #	Client ID		CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W060002498	B1KB77	KLAGES	100-41-4	Ethylbenzene	SOIL	LA-523-455	U	< 1.00	ug/kg	1.00	1.0	08/21/06	08/16/06	08/16/06
W060002498	B1KB77	KLAGES	100-42-5	Styrene	SOIL	LA-523-455	U	< 1.00	ug/kg	1.00	1.0	08/21/06	08/16/06	08/16/06
W060002498	B1KB77	KLAGES	10061-01-5	cis-1,3-Dichloropropene	SOIL	LA-523-455	U	< 1.00	ug/kg	1.00	1.0	08/21/06	08/16/06	08/16/06
W060002498	B1KB77	KLAGES	10061-02-6	trans-1,3-Dichloropropene	SOIL	LA-523-455	U	< 1.00	ug/kg	1.00	1.0	08/21/06	08/16/06	08/16/06
W060002498	B1KB77	KLAGES	107-06-2	1,2-Dichloroethane	SOIL	LA-523-455	U	< 1.00	ug/kg	1.00	1.0	08/21/06	08/16/06	08/16/06
W060002498	B1KB77	KLAGES	108-10-1	4-Methyl-2-Pentanone	SOIL	LA-523-455	U	< 1.00	ug/kg	1.00	1.0	08/21/06	08/16/06	08/16/06
W060002498	B1KB77	KLAGES	124-48-1	Dibromochloromethane	SOIL	LA-523-455	U	< 1.00	ug/kg	1.00	1.0	08/21/06	08/16/06	08/16/06
W060002498	B1KB77	KLAGES	127-18-4	Tetrachloroethene	SOIL	LA-523-455	U	< 1.00	ug/kg	1.00	1.0	08/21/06	08/16/06	08/16/06
W060002498	B1KB77	KLAGES	1330-20-7	Xylenes (total)	SOIL	LA-523-455	U	< 1.00	ug/kg	1.00	1.0	08/21/06	08/16/06	08/16/06
W060002498	B1KB77	KLAGES	540-59-0	1,2-Dichloroethene(Total)	SOIL	LA-523-455	U	< 1.00	ug/kg	1.00	1.0	08/21/06	08/16/06	08/16/06
W060002498	B1KB77	KLAGES	56-23-5	Carbon tetrachloride	SOIL	LA-523-455	U	< 1.00	ug/kg	1.00	1.0	08/21/06	08/16/06	08/16/06
W060002498	B1KB77	KLAGES	591-78-6	2-Hexanone	SOIL	LA-523-455	U	< 1.00	ug/kg	1.00	1.0	08/21/06	08/16/06	08/16/06
W060002498	B1KB77	KLAGES	67-64-1	Acetone	SOIL	LA-523-455	U	< 1.00	ug/kg	1.00	1.0	08/21/06	08/16/06	08/16/06
W060002498	B1KB77	KLAGES	67-66-3	Chloroform	SOIL	LA-523-455	U	< 1.00	ug/kg	1.00	1.0	08/21/06	08/16/06	08/16/06
W060002498	B1KB77	KLAGES	71-55-6	1,1,1-Trichloroethane	SOIL	LA-523-455	U	< 1.00	ug/kg	1.00	1.0	08/21/06	08/16/06	08/16/06
W060002498	B1KB77	KLAGES	74-83-9	Bromomethane	SOIL	LA-523-455	U	< 1.00	ug/kg	1.00	1.0	08/21/06	08/16/06	08/16/06
W060002498	B1KB77	KLAGES	74-87-3	Chloromethane	SOIL	LA-523-455	U	< 1.00	ug/kg	1.00	1.0	08/21/06	08/16/06	08/16/06
W060002498	B1KB77	KLAGES	75-00-3	Chloroethane	SOIL	LA-523-455	U	< 1.00	ug/kg	1.00	1.0	08/21/06	08/16/06	08/16/06
W060002498	B1KB77	KLAGES	75-01-4	Vinyl chloride	SOIL	LA-523-455	U	< 1.00	ug/kg	1.00	1.0	08/21/06	08/16/06	08/16/06
W060002498	B1KB77	KLAGES	75-09-2	Methylenechloride	SOIL	LA-523-455	U	< 1.00	ug/kg	1.00	1.0	08/21/06	08/16/06	08/16/06
W060002498	B1KB77	KLAGES	75-15-0	Carbon disulfide	SOIL	LA-523-455	U	< 1.00	ug/kg	1.00	1.0	08/21/06	08/16/06	08/16/06
W060002498	B1KB77	KLAGES	75-25-2	Bromoform	SOIL	LA-523-455	U	< 1.00	ug/kg	1.00	1.0	08/21/06	08/16/06	08/16/06
W060002498	B1KB77	KLAGES	75-27-4	Bromodichloromethane	SOIL	LA-523-455	U	< 1.00	ug/kg	1.00	1.0	08/21/06	08/16/06	08/16/06
W060002498	B1KB77	KLAGES	78-87-5	1,2-Dichloropropane	SOIL	LA-523-455	U	< 1.00	ug/kg	1.00	1.0	08/21/06	08/16/06	08/16/06
W060002498	B1KB77	KLAGES	78-93-3	2-Butanone	SOIL	LA-523-455	U	< 1.00	ug/kg	1.00	1.0	08/21/06	08/16/06	08/16/06
W060002498	B1KB77	KLAGES	79-00-5	1,1,2-Trichloroethane	SOIL	LA-523-455	U	< 1.00	ug/kg	1.00	1.0	08/21/06	08/16/06	08/16/06
W060002498	B1KB77	KLAGES	79-34-5	1,1,2,2-Tetrachloroethane	SOIL	LA-523-455	U	< 1.00	ug/kg	1.00	1.0	08/21/06	08/16/06	08/16/06

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Report WGPP/ver. 1.3
PROJECT HANFORD MANAGEMENT COMPANY

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WSCF
ANALYTICAL RESULTS REPORT

Attention: D.L KLAGES H8-40

Group #: 20060934

Sample #	Client ID		CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W060002498	B1KB77	KLAGES	71-36-3	1-Butanol	SOIL	LA-523-455	U	< 20.0	ug/kg	1.00	20	08/21/06	08/16/06	08/16/06
W060002498	B1KB77	KLAGES	107-87-9	2-Pentanone	SOIL	LA-523-455	U	< 1.00	ug/kg	1.00	1.0	08/21/06	08/16/06	08/16/06
W060002498	B1KB77	KLAGES	110-82-7	Cyclohexane	SOIL	LA-523-455	U	< 1.00	ug/kg	1.00	1.0	08/21/06	08/16/06	08/16/06
W060002498	B1KB77	KLAGES	110-54-3	Hexane	SOIL	LA-523-455	U	< 1.00	ug/kg	1.00	1.0	08/21/06	08/16/06	08/16/06
W060002498	B1KB77	KLAGES	109-99-9	Tetrahydrofuran	SOIL	LA-523-455	U	< 2.00	ug/kg	1.00	2.0	08/21/06	08/16/06	08/16/06
W060002498	B1KB77	KLAGES	75-69-4	Trichloromonofluoromethane	SOIL	LA-523-455	U	< 1.00	ug/kg	1.00	1.0	08/21/06	08/16/06	08/16/06
W060002498	B1KB77	KLAGES	104-51-8	n-Butylbenzene	SOIL	LA-523-455	U	< 1.00	ug/kg	1.00	1.0	08/21/06	08/16/06	08/16/06
W060002498	B1KB77	KLAGES	156-60-5	trans-1,2-Dichloroethylene	SOIL	LA-523-455	U	< 1.00	ug/kg	1.00	1.0	08/21/06	08/16/06	08/16/06
W060002498	B1KB77	KLAGES	75-05-8	Acetonitrile	SOIL	LA-523-455	U	< 2.00	ug/kg	1.00	2.0	08/21/06	08/16/06	08/16/06
W060002498	B1KB77	KLAGES	156-59-2	cis-1,2-Dichloroethylene	SOIL	LA-523-455	U	< 1.00	ug/kg	1.00	1.0	08/21/06	08/16/06	08/16/06

000015

MDL=Minimum Detection Limit
RQ=Result Qualifier

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

DF=Dilution Factor

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

Report WGPP/ver. 1.3
PROJECT HANFORD MANAGEMENT COMPANY

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9/5/06

REVISED Dayes 9/5/06

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

Sample Delivery Group	**WSCF20060934**
Sample Matrix	**SOLID**
Sample Visual	**N/A**
SAF Number	**R06-013**
Data Deliverable	**Summary Report**

Introduction

Five (5) 200-UW-1 Operable Unit soil samples (B1KB49, B1KB50, B1KB51, B1KB75, B1KB76 and B1KB77) from the trench between 216-U-8 and 216-U-12 were received at the WSCF Laboratory on August 16, 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.

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, 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 69 through 70, for a complete listing of approved analytical methods used.

Inorganic Comments

Anions - The hold time requirements were met. A Blank, Duplicate, Laboratory Control Sample, Matrix Spike and Matrix Spike Duplicate were analyzed with this delivery group. See pages 15 through 16 for QC details. Analytical Notes:

- Preparation Date: 21-aug-2006.
- Chloride and Sulfate – Sample results for B1KB49 and B1KB50 were B-flagged; the analytes were less than the reportable detection limit, but greater than or equal to the method detection limit.
- Phosphate – Matrix Spike and Matrix Spike Duplicate recoveries were below established laboratory limits. Sample results were less than detection limits and U flagged.

All other QC controls are within the established limits.

ICP-AES Metals – The holding time for this analysis was met. A Blank, Laboratory Control Sample (LCS), Matrix Spike and Matrix Spike Duplicate were analyzed with this delivery group of less than 20 samples. See pages 17 through 19 for QC details. Analytical Notes:

- Preparation Date: 21-aug-2006.

- Aluminum, Calcium, Iron, Magnesium and Titanium – insufficient spike (Matrix Spike and Matrix Spike Duplicate) concentrations. Sample concentrations were greater than four times the spike concentration.

- Aluminum – Analyte detected in the associated preparation Blank sample was evaluated and sample result for B1KB51 was C flagged.

- Calcium – The Laboratory Control Sample recovery exceeded established laboratory limits. Calcium results for B1KB49, B1KB50 and B1KB51 were E flagged.

- Lithium – Although the Laboratory Control Sample recovery exceeded established laboratory limits, the Matrix Spike and Matrix Spike Duplicate recoveries were within established laboratory limits. Sample results were not E flagged.

- Silicon – Matrix Spike, Matrix Spike Duplicate and Laboratory Control Sample recoveries were outside established laboratory limits. B1KB49, B1KB50 and B1KB51 were E flagged.

All other QC controls are within the established limits.

ICP-MS Metals – The holding time for this analysis was met, with the exception of mercury. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spike Duplicate were analyzed with this deliver group of less than 20 samples. See pages 20 through 23 for QC details Analytical Notes:

- Preparation Date: 21-aug-2006.

- Thorium results listed in the report represent Th-232 exclusively.

- Zinc – Analyte detected in the associated preparation Blank sample was evaluated and sample B1KB51 was C flagged.

- Beryllium (samples B1KB49 and B1KB50), Thallium (samples B1KB49 and B1KB50), Manganese (sample B1KB51), Thorium (sample B1KB51) and Uranium (sample B1KB51) – Negative preparation blank results may have potential affect on sample results. Sample results were X flagged.

All other QC controls are within the established limits.

Percent Solids – analyzed for organic moisture correction.

<u>Organic Comments</u>

- 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, Matrix Spike and Matrix Spiked Duplicate were analyzed with this delivery group. See pages 38 through 44 for QC details. Analytical Notes:

- Preparation Date: 17-aug-2006.
- Bis (2-Ethylhexyl) phthalate - sample B1KB49 result was J flagged; result was less than the lowest calibration standard but greater than the detection limit.
- Di-n-octylphthalate - sample B1KB50 result was J flagged; result was less than the lowest calibration standard but greater than the detection limit.
- Diethylphthalate - samples results for B1KB50 and B1KB51 were J flagged; results were less than the lowest calibration standard but greater than the detection limit.
- Matrix Spike and Matrix Spike Duplicate QC samples were analyzed on sample# B1KB52 (SDG# 20060935, SAF# F06-013).

All QC controls are within the established limits.

TPHD-WA - The hold time for this analysis were met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with this delivery group. See page 45 for QC details. Analytical Notes:

- Preparation Date: 17-aug-2006.
- Matrix Spike and Matrix Spike Duplicate QC samples were analyzed on sample# B1KB52 (SDG# 20060935, SAF# F06-013).

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. See pages 46 through 49 for QC details. Analytical Note:

- 4-Bromofluorobenzene – Matrix Spike and Matrix Spike Duplicate QC exceeded established laboratory limits.

All other QC controls are within the established limits.

Radiochemistry Comments

RadChem – There are no hold times associated with WSCF radiochemical methods. A Blank, Laboratory Control Sample, Matrix Spike (Technetium only), and Duplicate were analyzed with this delivery group. See pages 57 through 64 for QC details. Analytical Notes:

- Gamma Energy Analysis (GEA) – The GEA results for samples B1KB49 and B1KB50 will be biased high because the 500ml bottles for the GEA test were only partially filled with sample.

- Pu-239/240 – Duplicate QC Relative Percent Difference (RPD) exceeded established laboratory limits due to low sample activity.

- Strontium-90 – Duplicate QC RPD exceeded established laboratory limits due to sample homogeneity issues.

- Technetium-99 – Matrix Spike QC RPD exceeded established laboratory limits due to low sample activity.

- Uranium Isotopic (233/234, 235 and 238) – Duplicate QC RPD exceeded established laboratory limits due to sample homogeneity issues.

All other QC controls are within the established limits.

Americium-243, Plutonium-242, Strontium-85 and Uranium-232 – Radiochemical Tracer Recovery Data are summarized below:

Radiochemical Tracer Percent Recovery			
Sample Number	**Lab Sample ID**	**Isotope**	**Tracer Recovery (Percent)**
Americium-243			
BLANK		Am-243	79.9%
LCS		Am-243	93.0%
B1KB49	W060002493	Am-243	85.8%
DUPLICATE	W060002493	Am-243	89.2%
B1KB50	W060002494	Am-243	95.5%
B1KB51	W060002495	Am-243	90.7%
Plutonium-242			
BLANK		Pu-242	84.0%
LCS		Pu-242	85.0%
B1KB49	W060002493	Pu-242	81.8%
DUPLICATE	W060002493	Pu-242	86.7%
B1KB50	W060002494	Pu-242	99.4%
B1KB51	W060002495	Pu-242	88.3%

Radiochemical Tracer Percent Recovery			
Sample Number	**Lab Sample ID**	**Isotope**	**Tracer Recovery (Percent)**
Strontium-85			
BLANK		Sr-85	98.9%
LCS		Sr-85	83.4%
B1KB49	W060002493	Sr-85	86.0%
DUPLICATE	W060002493	Sr-85	88.2%
B1KB50	W060002494	Sr-85	95.9%
B1KB51	W060002495	Sr-85	85.4%
Uranium-232			
BLANK		U-232	79.8%
LCS		U-232	75.6%
B1KB49	W060002493	U-232	121.6%
DUPLICATE	W060002493	U-232	93.0%
B1KB50	W060002494	U-232	131.7%
B1KB51	W060002495	U-232	103.6%

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.

Pauline D. Mix
WSCF Client Services

Abbreviations

Hg – mercury
IC – ion chromatography
ICP – inductively coupled plasma
ICP/AES – ICP/atomic emission spectroscopy
ICP/MS – ICP/mass spectrometry
Total U – total uranium
AT/TB – total alpha/total beta
AEA – Alpha Energy Analysis
WTPH-G – Total Hydrocarbons-Gasoline
Am – americium
Cm - curium
Pu – plutonium
Np – neptunium
GEA – gamma energy analysis
H3 – Tritium
Sr – Strontium 89, 90
WTPH-D – Total Hydrocarbons-Diesel
TSS – Total Suspended Solids

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			R06-013-011	PAGE 3 OF 4
COLLECTOR HOGAN, JG	COMPANY CONTACT TRECHTER, JE	TELEPHONE NO. 373-7046	PROJECT COORDINATOR TRECHTER, JE	PRICE CODE 8C	DATA TURNAROUND
SAMPLING LOCATION 200-W-42	PROJECT DESIGNATION 200-UW-1 Operable Unit, Soil from Trench between 216-U-8 and 216-U-12		SAF NO. R06-013	AIR QUALITY	7 DAYS ~~15 Days~~ 1/4 7 DAYS ~~15 Days~~ 8-16-06
ICE CHEST NO.	FIELD LOGBOOK NO. DTS-SAWS-4	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		

ICED
Initial
8/16/06 Date

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
B1KB49		S			4X60mL G/P	IC Anions - 300.0 {BROMIDE, CHLORIDE, FLUORIDE, NO2-N, NO3-N, PO4-P, SULFATE}	None
B1KB49		S	8-16-06	1530	4X60mL G/P	ICP Metals - 6010A (Add-on) {~~B, Be~~, La, ~~Li~~, Sm, ~~Ti~~} ICP Metals - 6010A (TAL) {~~Al, Ca, Fe, K, Mg, Na~~}	Cool 4C
B1KB49		S			4X60mL G/P	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	None
B1KB75	W06000249~~6~~	S			1X40mL G	SEE ITEM (4) IN SPECIAL INSTRUCTIONS	Cool 4C
B1KB76	2497	S			1X40mL G	SEE ITEM (4) IN SPECIAL INSTRUCTIONS	Cool 4C
B1KB77	2498	S			1X40mL G	SEE ITEM (4) IN SPECIAL INSTRUCTIONS	Cool 4C

CHAIN OF POSSESSION — SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
JG Hogan	1920 8-16-06	Victor Bin	8/16/06 19:20
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
SEE PAGE 4 FOR ALL SPECIAL INSTRUCTIONS

LABORATORY SECTION — RECEIVED BY — TITLE — DATE/TIME

FINAL SAMPLE — DISPOSAL METHOD — DISPOSED BY — DATE/TIME

000022

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			R06-013-011	PAGE 4 OF 4
COLLECTOR HOGAN, JG	**COMPANY CONTACT** TRECHTER, JE	**TELEPHONE NO.** 373-7046	**PROJECT COORDINATOR** TRECHTER, JE	**PRICE CODE** 8C	**DATA TURNAROUND** ~~15 Days~~ 14 8-16-06 7 DAYS
SAMPLING LOCATION 200-W-42	**PROJECT DESIGNATION** 200-UW-1 Operable Unit, Soil from Trench between 216-U-8 and 216-U-12		**SAF NO.** R06-013	**AIR QUALITY** ☐	
ICE CHEST NO.	**FIELD LOGBOOK NO.** DTS-SAWS-44	**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		

VERIFIED Initial
8/16/06 Date

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, Nb, 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}

(4)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, STYRENE, TOLUENE, TRANS13, TRICELN, VINYIDE, XYLENES}

000023

A-6001-774

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: 60934		
VALIDATOR: TLJ		LAB: WSCF		DATE: 8/30/06	
			SDG: 60934		
ANALYSES PERFORMED					
SW-846 8260		SW-846 8260 (TCLP)	SW-846 8270		SW-846 8270 (TCLP)
SAMPLES/MATRIX					
B1KB75		B1KB7C	B1KB77		
					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: 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 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: _____

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: 20060934
Matrix: SOLID
Test: VOA Ground Water Protection

SAF Number: R06-013
Sample Date: 08/16/06
Receive Date:08/16/06

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
Lab ID: W060002496									
BATCH QC ASSOCIATED WITH SAMPLE									
SURR	4-Bromofluorobenzene	460-00-4	65.640	116.000	% Recov	08/21/06	71.000	125.000	
SURR	1,2-Dichloroethane-d4	17060-07-0	61.720	109.000	% Recov	08/21/06	80.000	134.000	
SURR	Toluene-d8	2037-26-5	61.360	109.000	% Recov	08/21/06	80.000	126.000	
Lab ID: W060002497									
BATCH QC ASSOCIATED WITH SAMPLE									
SURR	4-Bromofluorobenzene	460-00-4	60.540	115.000	% Recov	08/21/06	71.000	125.000	
SURR	1,2-Dichloroethane-d4	17060-07-0	57.940	110.000	% Recov	08/21/06	80.000	134.000	
SURR	Toluene-d8	2037-26-5	56.610	107.000	% Recov	08/21/06	80.000	126.000	
Lab ID: W060002498									
BATCH QC ASSOCIATED WITH SAMPLE									
MS	1,1-Dichloroethene	75-35-4	27.420	110.000	% Recov	08/21/06	63.000	117.000	
MS	Benzene	71-43-2	26.680	107.000	% Recov	08/21/06	75.000	129.000	
MS	4-Bromofluorobenzene	460-00-4	58.700	117.000	% Recov	08/21/06	84.000	116.000	*
MS	Chlorobenzene	108-90-7	27.180	109.000	% Recov	08/21/06	79.000	119.000	
MS	1,2-Dichloroethane-d4	17060-07-0	53.080	106.000	% Recov	08/21/06	82.000	136.000	
MS	Toluene-d8	2037-26-5	54.510	109.000	% Recov	08/21/06	89.000	119.000	
MS	Toluene	108-88-3	27.430	110.000	% Recov	08/21/06	76.000	120.000	
MS	Trichloroethene	79-01-6	25.840	103.000	% Recov	08/21/06	73.000	123.000	
MSD	1,1-Dichloroethene	75-35-4	25.390	101.000	% Recov	08/21/06	63.000	117.000	
MSD	Benzene	71-43-2	26.690	107.000	% Recov	08/21/06	75.000	129.000	
MSD	4-Bromofluorobenzene	460-00-4	58.640	117.000	% Recov	08/21/06	84.000	116.000	*
MSD	Chlorobenzene	108-90-7	26.730	107.000	% Recov	08/21/06	79.000	119.000	
MSD	1,2-Dichloroethane-d4	17060-07-0	52.590	105.000	% Recov	08/21/06	82.000	136.000	
MSD	Toluene-d8	2037-26-5	54.540	109.000	% Recov	08/21/06	89.000	119.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: 20060934
Matrix: SOLID
Test: VOA Ground Water Protection

SAF Number: R06-013
Sample Date: 08/16/06
Receive Date:08/16/06

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
MSD	Toluene	108-88-3	27.670	110.000	% Recov	08/21/06	76.000	120.000	
MSD	Trichloroethene	79-01-6	25.610	102.000	% Recov	08/21/06	73.000	123.000	
SPK-RPD	1,1-Dichloroethene	75-35-4	101.000	8.531	RPD	08/21/06	0.000	20.000	
SPK-RPD	Benzene	71-43-2	107.000	0.000	RPD	08/21/06	0.000	20.000	
SPK-RPD	4-Bromofluorobenzene	460-00-4	117.000	0.000	RPD	08/21/06	0.000	20.000	
SPK-RPD	Chlorobenzene	108-90-7	107.000	1.852	RPD	08/21/06	0.000	20.000	
SPK-RPD	1,2-Dichloroethane-d4	17060-07-0	105.000	0.948	RPD	08/21/06	0.000	20.000	
SPK-RPD	Toluene-d8	2037-26-5	109.000	0.000	RPD	08/21/06	0.000	20.000	
SPK-RPD	Toluene	108-88-3	110.000	0.000	RPD	08/21/06	0.000	20.000	
SPK-RPD	Trichloroethene	79-01-6	102.000	0.976	RPD	08/21/06	0.000	20.000	
SURR	4-Bromofluorobenzene	460-00-4	59.050	117.000	% Recov	08/21/06	71.000	125.000	
SURR	1,2-Dichloroethane-d4	17060-07-0	54.410	108.000	% Recov	08/21/06	80.000	134.000	
SURR	Toluene-d8	2037-26-5	56.060	111.000	% Recov	08/21/06	80.000	126.000	
BATCH QC									
BLANK	1,1-Dichloroethane	75-34-3	< 2.0	n/a	ug/Kg	08/21/06			U
BLANK	1,1,1-Trichloroethane	71-55-6	< 2.0	n/a	ug/Kg	08/21/06			U
BLANK	1,1,2-Trichloroethane	79-00-5	< 2.0	n/a	ug/Kg	08/21/06			U
BLANK	1,1,2,2-Tetrachloroethane	79-34-5	< 2.0	n/a	ug/Kg	08/21/06			U
BLANK	1,1-Dichloroethene	75-35-4	< 2.0	n/a	ug/Kg	08/21/06			U
BLANK	1,2-Dichloroethane	107-06-2	< 2.0	n/a	ug/Kg	08/21/06			U
BLANK	1,2-Dichloroethene(Total)	540-59-0	< 2.0	n/a	ug/Kg	08/21/06			U
BLANK	1-Butanol	71-36-3	< 40	n/a	ug/Kg	08/21/06			U
BLANK	2-Hexanone	591-78-6	< 2.0	n/a	ug/Kg	08/21/06			U
BLANK	2-Pentanone	107-87-9	< 2.0	n/a	ug/Kg	08/21/06			U
BLANK	4-Methyl-2-Pentanone	108-10-1	< 2.0	n/a	ug/Kg	08/21/06			U
BLANK	Acetone	67-64-1	< 2.0	n/a	ug/Kg	08/21/06			U
BLANK	Bromodichloromethane	75-27-4	< 2.0	n/a	ug/Kg	08/21/06			U
BLANK	Benzene	71-43-2	< 2.0	n/a	ug/Kg	08/21/06			U
BLANK	4-Bromofluorobenzene	460-00-4	117.00	117.000	% Recov	08/21/06	71.000	125.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: 20060934
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	08/21/06			U
BLANK	n-Butylbenzene	104-51-8	< 2.0	n/a	ug/Kg	08/21/06			U
BLANK	Carbon disulfide	75-15-0	< 2.0	n/a	ug/Kg	08/21/06			U
BLANK	Carbon tetrachloride	56-23-5	< 2.0	n/a	ug/Kg	08/21/06			U
BLANK	Dibromochloromethane	124-48-1	< 2.0	n/a	ug/Kg	08/21/06			U
BLANK	Cyclohexane	110-82-7	< 2.0	n/a	ug/Kg	08/21/06			U
BLANK	Chloroform	67-66-3	< 2.0	n/a	ug/Kg	08/21/06			U
BLANK	Chlorobenzene	108-90-7	< 2.0	n/a	ug/Kg	08/21/06			U
BLANK	cis-1,2-Dichloroethylene	156-59-2	< 2.0	n/a	ug/Kg	08/21/06			U
BLANK	cis-1,3-Dichloropropene	10061-01-5	< 2.0	n/a	ug/Kg	08/21/06			U
BLANK	Chloroethane	75-00-3	< 2.0	n/a	ug/Kg	08/21/06			U
BLANK	1,2-Dichloroethane-d4	17060-07-0	108.60	109.000	% Recov	08/21/06	80.000	134.000	
BLANK	trans-1,2-Dichloroethylene	156-60-5	< 2.0	n/a	ug/Kg	08/21/06			U
BLANK	1,2-Dichloropropane	78-87-5	< 2.0	n/a	ug/Kg	08/21/06			U
BLANK	Ethylbenzene	100-41-4	< 2.0	n/a	ug/Kg	08/21/06			U
BLANK	Hexane	110-54-3	< 2.0	n/a	ug/Kg	08/21/06			U
BLANK	Bromomethane	74-83-9	< 2.0	n/a	ug/Kg	08/21/06			U
BLANK	Chloromethane	74-87-3	< 2.0	n/a	ug/Kg	08/21/06			U
BLANK	2-Butanone	78-93-3	< 2.0	n/a	ug/Kg	08/21/06			U
BLANK	Methylenechloride	75-09-2	< 2.0	n/a	ug/Kg	08/21/06			U
BLANK	Tetrachloroethene	127-18-4	< 2.0	n/a	ug/Kg	08/21/06			U
BLANK	Styrene	100-42-5	< 2.0	n/a	ug/Kg	08/21/06			U
BLANK	Xylenes (total)	1330-20-7	< 2.0	n/a	ug/Kg	08/21/06			U
BLANK	Tetrahydrofuran	109-99-9	< 4.0	n/a	ug/Kg	08/21/06			U
BLANK	Toluene-d8	2037-26-5	108.70	109.000	% Recov	08/21/06	80.000	126.000	
BLANK	Toluene	108-88-3	< 2.0	n/a	ug/Kg	08/21/06			U
BLANK	trans-1,3-Dichloropropene	10061-02-6	< 2.0	n/a	ug/Kg	08/21/06			U
BLANK	Trichloromonofluoromethane	75-69-4	< 2.0	n/a	ug/Kg	08/21/06	0.000	5.000	U
BLANK	Trichloroethene	79-01-6	< 2.0	n/a	ug/Kg	08/21/06			U
BLANK	Vinyl chloride	75-01-4	< 2.0	n/a	ug/Kg	08/21/06			U

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: 20060934
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	50.210	100.000	% Recov	08/21/06	70.000	130.000	
LCS	Benzene	71-43-2	51.860	104.000	% Recov	08/21/06	70.000	130.000	
LCS	4-Bromofluorobenzene	460-00-4	115.20	115.000	% Recov	08/21/06	71.000	125.000	
LCS	Chlorobenzene	108-90-7	52.470	105.000	% Recov	08/21/06	70.000	130.000	
LCS	1,2-Dichloroethane-d4	17060-07-0	108.20	108.000	% Recov	08/21/06	80.000	134.000	
LCS	Toluene-d8	2037-26-5	108.50	108.000	% Recov	08/21/06	80.000	126.000	
LCS	Toluene	108-88-3	52.930	106.000	% Recov	08/21/06	70.000	130.000	
LCS	Trichloroethene	79-01-6	49.350	98.700	% Recov	08/21/06	70.000	130.000	

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Date: 1 September 2006
To: Fluor Hanford Inc. (technical representative)
From: TechLaw, Inc.
Project: 200-UW-1 Operable Unit, Soil from Trench between 216-U-8 & 216-U-12 Cribs
Subject: Wet Chemistry - Data Package No.WSCF20060934 (60934)

INTRODUCTION

This memo presents the results of data validation on Data Package No. 60934 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
B1KB49	8/16/06	Soil	C	See note 1
B1KB50	8/16/06	Soil	C	See note 1
B1KB51	8/16/06	Soil	C	See note 1

1 - Anions by 300.0.

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. 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/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 fluoride, chloride, sulfate and bromide; and 48 hours for nitrate, nitrite and phosphate.

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 matrix spike (58%) and matrix spike duplicate (60%) recoveries outside QC limits, all phosphate results were qualified as an estimate and flagged "J".

All matrix spike/matrix spike duplicate results were acceptable.

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.

All 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 60934 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 matrix spike (58%) and matrix spike duplicate (60%) recoveries outside QC limits, all phosphate results were qualified as an estimate 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: 60934	REVIEWER: TLI	Project: 200-UW-1	PAGE 1 OF 1
COMMENTS:			
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Phosphate	J	All	MS/MSD 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

Annotated Laboratory Reports

WSCF
ANALYTICAL RESULTS REPORT

Attention: D.L KLAGES H8-40 **Group #:** 20060934

Sample #	Client ID		CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W060002494	B1KB50	KLAGES	7440-24-6	Strontium	SOIL	LA-505-412		29.9	mg/kg	1.04	0.0311	08/22/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	7440-31-5	Tin	SOIL	LA-505-412		0.420	mg/kg	1.04	0.0519	08/22/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	TS	Total solids	SOIL	LA-519-412		>99.5	%	1.00	0.0	08/21/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	16984-48-8	Fluoride	SOIL	LA-533-410	U	< 2.00	mg/kg	50.00	2.0	08/21/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	16887-00-6	Chloride	SOIL	LA-533-410	U	< 1.70	mg/kg	50.00	1.7	08/21/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	NO2-N	Nitrogen in Nitrite	SOIL	LA-533-410	U	< 0.490	mg/kg	50.00	0.49	08/21/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	24959-67-9	Bromide	SOIL	LA-533-410	U	< 4.65	mg/kg	50.00	4.6	08/21/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	NO3-N	Nitrogen in Nitrate	SOIL	LA-533-410	U	< 0.900	mg/kg	50.00	0.90	08/21/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	PO4-P	Phosphate (P) by IC	SOIL	LA-533-410	U	< 3.90	mg/kg	50.00	3.9	08/21/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	14808-79-8	Sulfate	SOIL	LA-533-410	U	< 6.50	mg/kg	50.00	6.5	08/21/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	7429-90-5	Aluminum	SOIL	LA-505-411	C	34.4	mg/kg	93.98	3.5	08/22/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	7439-89-6	Iron	SOIL	LA-505-411		285	mg/kg	93.98	3.1	08/22/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	7439-95-4	Magnesium	SOIL	LA-505-411		27.5	mg/kg	93.98	1.4	08/22/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	7440-09-7	Potassium	SOIL	LA-505-411	U	< 20.7	mg/kg	93.98	21	08/22/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	7440-23-5	Sodium	SOIL	LA-505-411	U	< 10.8	mg/kg	93.98	11	08/22/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	7440-70-2	Calcium	SOIL	LA-505-411	E	130	mg/kg	93.98	2.9	08/22/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	7439-93-2	Lithium	SOIL	LA-505-411	U	< 0.564	mg/kg	93.98	0.56	08/22/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	7440-32-6	Titanium	SOIL	LA-505-411		0.702	mg/kg	93.98	0.38	08/22/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	7440-42-8	Boron	SOIL	LA-505-411	U	< 1.97	mg/kg	93.98	2.0	08/22/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	7440-69-9	Bismuth	SOIL	LA-505-411	U	< 4.98	mg/kg	93.98	5.0	08/22/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	7440-21-3	Silicon	SOIL	LA-505-411	E	18.9	mg/kg	93.98	7.0	08/22/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	7439-96-5	Manganese	SOIL	LA-505-412	X	0.802	mg/kg	0.96	0.0191	08/22/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	7440-02-0	Nickel	SOIL	LA-505-412		0.118	mg/kg	0.96	0.0574	08/22/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	7440-22-4	Silver	SOIL	LA-505-412	U	< 0.0383	mg/kg	0.96	0.0383	08/22/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	7440-36-0	Antimony	SOIL	LA-505-412	U	< 0.287	mg/kg	0.96	0.287	08/22/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	7440-39-3	Barium	SOIL	LA-505-412		0.222	mg/kg	0.96	0.191	08/22/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	7440-41-7	Beryllium	SOIL	LA-505-412	U	< 0.0191	mg/kg	0.96	0.0191	08/22/06	08/16/06	08/16/06

MDL=Minimum Detection Limit
RQ=Result Qualifier

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

DF=Dilution Factor

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

9/5/06

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WSCF
ANALYTICAL RESULTS REPORT

Attention: D.L KLAGES H8-40 **Group #:** 20060934

Sample #	Client ID		CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
Inorganic														
W060002493	B1KB49	KLAGES	TS	Total solids	SOIL	LA-519-412		97.3	%	1.00	0.0	08/21/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	16984-48-8	Fluoride	SOIL	LA-533-410	U	< 2.00	mg/kg	50.00	2.0	08/21/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	16887-00-6	Chloride	SOIL	LA-533-410	B	6.88	mg/kg	50.00	1.7	08/21/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	NO2-N	Nitrogen in Nitrite	SOIL	LA-533-410	U	< 0.490	mg/kg	50.00	0.49	08/21/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	24959-67-9	Bromide	SOIL	LA-533-410	U	< 4.65	mg/kg	50.00	4.6	08/21/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	NO3-N	Nitrogen in Nitrate	SOIL	LA-533-410		13.2	mg/kg	50.00	0.90	08/21/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	PO4-P	Phosphate (P) by IC	SOIL	LA-533-410	U J	< 3.90	mg/kg	50.00	3.9	08/21/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	14808-79-8	Sulfate	SOIL	LA-533-410	B	28.4	mg/kg	50.00	6.5	08/21/06	08/16/06	08/16/06
~~W060002493~~	~~B1KB49~~	~~KLAGES~~	~~7429-90-5~~	~~Aluminum~~	~~SOIL~~	~~LA-505-411~~		~~6.50e+03~~	~~mg/kg~~	~~9.68e+002~~	~~36~~	~~08/22/06~~	~~08/16/06~~	~~08/16/06~~
W060002493	B1KB49	KLAGES	7439-89-6	Iron	SOIL	LA-505-411		1.91e+04	mg/kg	9.68e+002	32	08/22/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	7439-95-4	Magnesium	SOIL	LA-505-411		5.27e+03	mg/kg	96.77	1.5	08/22/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	7440-09-7	Potassium	SOIL	LA-505-411		1.18e+03	mg/kg	96.77	21	08/22/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	7440-23-5	Sodium	SOIL	LA-505-411		268	mg/kg	96.77	11	08/22/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	7440-70-2	Calcium	SOIL	LA-505-411	E	1.26e+04	mg/kg	9.68e+002	30	08/22/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	7439-93-2	Lithium	SOIL	LA-505-411		8.52	mg/kg	96.77	0.58	08/22/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	7440-32-6	Titanium	SOIL	LA-505-411		932	mg/kg	9.68e+002	3.9	08/22/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	7440-42-8	Boron	SOIL	LA-505-411	U	< 2.03	mg/kg	96.77	2.0	08/22/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	7440-69-9	Bismuth	SOIL	LA-505-411	U	< 5.13	mg/kg	96.77	5.1	08/22/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	7440-21-3	Silicon	SOIL	LA-505-411	E	197	mg/kg	96.77	7.3	08/22/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	7439-96-5	Manganese	SOIL	LA-505-412		334	mg/kg	0.97	0.0194	08/22/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	7440-02-0	Nickel	SOIL	LA-505-412		10.2	mg/kg	0.97	0.0583	08/22/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	7440-22-4	Silver	SOIL	LA-505-412	U	< 0.0389	mg/kg	0.97	0.0389	08/22/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	7440-36-0	Antimony	SOIL	LA-505-412	U	< 0.292	mg/kg	0.97	0.292	08/22/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	7440-39-3	Barium	SOIL	LA-505-412		84.3	mg/kg	0.97	0.194	08/22/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	7440-41-7	Beryllium	SOIL	LA-505-412	X	0.282	mg/kg	0.97	0.0194	08/22/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	7440-43-9	Cadmium	SOIL	LA-505-412		0.0950	mg/kg	0.97	0.0389	08/22/06	08/16/06	08/16/06

MDL=Minimum Detection Limit
RQ=Result Qualifier

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

DF=Dilution Factor

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

Report WGPP/ver. 1.3
PROJECT HANFORD MANAGEMENT COMPANY

REVISED Dayes 9/5/06

9/5/06

WSCF
ANALYTICAL RESULTS REPORT

Attention: D.L KLAGES H8-40 **Group #:** 20060934

Sample #	Client ID		CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W060002493	B1KB49	KLAGES	7440-47-3	Chromium	SOIL	LA-505-412		8.25	mg/kg	0.97	0.681	08/22/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	7440-48-4	Cobalt	SOIL	LA-505-412		7.92	mg/kg	0.97	0.0194	08/22/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	7440-50-8	Copper	SOIL	LA-505-412		14.0	mg/kg	0.97	0.194	08/22/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	7440-62-2	Vanadium	SOIL	LA-505-412		45.5	mg/kg	0.97	0.486	08/22/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	7440-66-6	Zinc	SOIL	LA-505-412		41.8	mg/kg	0.97	0.292	08/22/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	7439-92-1	Lead	SOIL	LA-505-412		6.37	mg/kg	0.97	0.0486	08/22/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	7439-97-6	Mercury	SOIL	LA-505-412		0.0432	mg/kg	0.97	0.0389	08/22/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	7439-98-7	Molybdenum	SOIL	LA-505-412		0.245	mg/kg	0.97	0.0972	08/22/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	7440-29-1	Thorium	SOIL	LA-505-412		2.81	mg/kg	0.97	0.0486	08/22/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	7440-61-1	Uranium	SOIL	LA-505-412		5.93	mg/kg	0.97	0.0194	08/22/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	7440-38-2	Arsenic	SOIL	LA-505-412		3.91	mg/kg	0.97	0.972	08/22/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	7782-49-2	Selenium	SOIL	LA-505-412	U	< 0.389	mg/kg	0.97	0.389	08/22/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	7440-28-0	Thallium	SOIL	LA-505-412	X	0.0625	mg/kg	0.97	0.0292	08/22/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	7440-24-6	Strontium	SOIL	LA-505-412		29.9	mg/kg	0.97	0.0292	08/22/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	7440-31-5	Tin	SOIL	LA-505-412		0.300	mg/kg	0.97	0.0486	08/22/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	TS	Total solids	SOIL	LA-519-412		99.4	%	1.00	0.0	08/21/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	16984-48-8	Fluoride	SOIL	LA-533-410	U	< 2.00	mg/kg	50.00	2.0	08/21/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	16887-00-6	Chloride	SOIL	LA-533-410	B	3.06	mg/kg	50.00	1.7	08/21/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	NO2-N	Nitrogen in Nitrite	SOIL	LA-533-410	U	< 0.490	mg/kg	50.00	0.49	08/21/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	24959-67-9	Bromide	SOIL	LA-533-410	U	< 4.65	mg/kg	50.00	4.6	08/21/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	NO3-N	Nitrogen in Nitrate	SOIL	LA-533-410		7.07	mg/kg	50.00	0.90	08/21/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	PO4-P	Phosphate (P) by IC	SOIL	LA-533-410	U J	< 3.90	mg/kg	50.00	3.9	08/21/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	14808-79-8	Sulfate	SOIL	LA-533-410	B	27.4	mg/kg	50.00	6.5	08/21/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	7429-90-5	Aluminum	SOIL	LA-505-411		7.92e+03	mg/kg	97.09	3.6	08/22/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	7439-89-6	Iron	SOIL	LA-505-411		3.58e+04	mg/kg	9.71e+002	32	08/22/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	7439-95-4	Magnesium	SOIL	LA-505-411		5.51e+03	mg/kg	97.09	1.5	08/22/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	7440-09-7	Potassium	SOIL	LA-505-411		1.18e+03	mg/kg	97.09	21	08/22/06	08/16/06	08/16/06

MDL=Minimum Detection Limit
RQ=Result Qualifier

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

DF=Dilution Factor

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

9/5/06

Report WGPP/ver. 1.3
PROJECT HANFORD MANAGEMENT COMPANY

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9/5/06

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

Sample Delivery Group	**WSCF20060934**
Sample Matrix	**SOLID**
Sample Visual	**N/A**
SAF Number	**R06-013**
Data Deliverable	**Summary Report**

Introduction

Five (5) 200-UW-1 Operable Unit soil samples (B1KB49, B1KB50, B1KB51, B1KB75, B1KB76 and B1KB77) from the trench between 216-U-8 and 216-U-12 were received at the WSCF Laboratory on August 16, 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.

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, 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 69 through 70, for a complete listing of approved analytical methods used.

Inorganic Comments

Anions - The hold time requirements were met. A Blank, Duplicate, Laboratory Control Sample, Matrix Spike and Matrix Spike Duplicate were analyzed with this delivery group. See pages 15 through 16 for QC details. Analytical Notes:

- Preparation Date: 21-aug-2006.
- Chloride and Sulfate – Sample results for B1KB49 and B1KB50 were B-flagged; the analytes were less than the reportable detection limit, but greater than or equal to the method detection limit.
- Phosphate – Matrix Spike and Matrix Spike Duplicate recoveries were below established laboratory limits. Sample results were less than detection limits and U flagged.

All other QC controls are within the established limits.

ICP-AES Metals – The holding time for this analysis was met. A Blank, Laboratory Control Sample (LCS), Matrix Spike and Matrix Spike Duplicate were analyzed with this delivery group of less than 20 samples. See pages 17 through 19 for QC details. Analytical Notes:

- Preparation Date: 21-aug-2006.

- Aluminum, Calcium, Iron, Magnesium and Titanium – insufficient spike (Matrix Spike and Matrix Spike Duplicate) concentrations. Sample concentrations were greater than four times the spike concentration.

- Aluminum – Analyte detected in the associated preparation Blank sample was evaluated and sample result for B1KB51 was C flagged.

- Calcium – The Laboratory Control Sample recovery exceeded established laboratory limits. Calcium results for B1KB49, B1KB50 and B1KB51 were E flagged.

- Lithium – Although the Laboratory Control Sample recovery exceeded established laboratory limits, the Matrix Spike and Matrix Spike Duplicate recoveries were within established laboratory limits. Sample results were not E flagged.

- Silicon – Matrix Spike, Matrix Spike Duplicate and Laboratory Control Sample recoveries were outside established laboratory limits. B1KB49, B1KB50 and B1KB51 were E flagged.

All other QC controls are within the established limits.

ICP-MS Metals – The holding time for this analysis was met, with the exception of mercury. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spike Duplicate were analyzed with this deliver group of less than 20 samples. See pages 20 through 23 for QC details Analytical Notes:

- Preparation Date: 21-aug-2006.

- Thorium results listed in the report represent Th-232 exclusively.

- Zinc – Analyte detected in the associated preparation Blank sample was evaluated and sample B1KB51 was C flagged.

- Beryllium (samples B1KB49 and B1KB50), Thallium (samples B1KB49 and B1KB50), Manganese (sample B1KB51), Thorium (sample B1KB51) and Uranium (sample B1KB51) – Negative preparation blank results may have potential affect on sample results. Sample results were X flagged.

All other QC controls are within the established limits.

Percent Solids – analyzed for organic moisture correction.

<u>Organic Comments</u>

- 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, Matrix Spike and Matrix Spiked Duplicate were analyzed with this delivery group. See pages 38 through 44 for QC details. Analytical Notes:

- Preparation Date: 17-aug-2006.
- Bis (2-Ethylhexyl) phthalate - sample B1KB49 result was J flagged; result was less than the lowest calibration standard but greater than the detection limit.
- Di-n-octylphthalate - sample B1KB50 result was J flagged; result was less than the lowest calibration standard but greater than the detection limit.
- Diethylphthalate - samples results for B1KB50 and B1KB51 were J flagged; results were less than the lowest calibration standard but greater than the detection limit.
- Matrix Spike and Matrix Spike Duplicate QC samples were analyzed on sample# B1KB52 (SDG# 20060935, SAF# F06-013).

All QC controls are within the established limits.

TPHD-WA - The hold time for this analysis were met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with this delivery group. See page 45 for QC details. Analytical Notes:

- Preparation Date: 17-aug-2006.
- Matrix Spike and Matrix Spike Duplicate QC samples were analyzed on sample# B1KB52 (SDG# 20060935, SAF# F06-013).

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. See pages 46 through 49 for QC details. Analytical Note:

- 4-Bromofluorobenzene – Matrix Spike and Matrix Spike Duplicate QC exceeded established laboratory limits.

All other QC controls are within the established limits.

Radiochemistry Comments

RadChem – There are no hold times associated with WSCF radiochemical methods. A Blank, Laboratory Control Sample, Matrix Spike (Technetium only), and Duplicate were analyzed with this delivery group. See pages 57 through 64 for QC details. Analytical Notes:

- Gamma Energy Analysis (GEA) – The GEA results for samples B1KB49 and B1KB50 will be biased high because the 500ml bottles for the GEA test were only partially filled with sample.

- Pu-239/240 – Duplicate QC Relative Percent Difference (RPD) exceeded established laboratory limits due to low sample activity.

- Strontium-90 – Duplicate QC RPD exceeded established laboratory limits due to sample homogeneity issues.

- Technetium-99 – Matrix Spike QC RPD exceeded established laboratory limits due to low sample activity.

- Uranium Isotopic (233/234, 235 and 238) – Duplicate QC RPD exceeded established laboratory limits due to sample homogeneity issues.

All other QC controls are within the established limits.

Americium-243, Plutonium-242, Strontium-85 and Uranium-232 – Radiochemical Tracer Recovery Data are summarized below:

Radiochemical Tracer Percent Recovery			
Sample Number	**Lab Sample ID**	**Isotope**	**Tracer Recovery (Percent)**
Americium-243			
BLANK		Am-243	79.9%
LCS		Am-243	93.0%
B1KB49	W060002493	Am-243	85.8%
DUPLICATE	W060002493	Am-243	89.2%
B1KB50	W060002494	Am-243	95.5%
B1KB51	W060002495	Am-243	90.7%
Plutonium-242			
BLANK		Pu-242	84.0%
LCS		Pu-242	85.0%
B1KB49	W060002493	Pu-242	81.8%
DUPLICATE	W060002493	Pu-242	86.7%
B1KB50	W060002494	Pu-242	99.4%
B1KB51	W060002495	Pu-242	88.3%

Radiochemical Tracer Percent Recovery			
Sample Number	**Lab Sample ID**	**Isotope**	**Tracer Recovery (Percent)**
Strontium-85			
BLANK		Sr-85	98.9%
LCS		Sr-85	83.4%
B1KB49	W060002493	Sr-85	86.0%
DUPLICATE	W060002493	Sr-85	88.2%
B1KB50	W060002494	Sr-85	95.9%
B1KB51	W060002495	Sr-85	85.4%
Uranium-232			
BLANK		U-232	79.8%
LCS		U-232	75.6%
B1KB49	W060002493	U-232	121.6%
DUPLICATE	W060002493	U-232	93.0%
B1KB50	W060002494	U-232	131.7%
B1KB51	W060002495	U-232	103.6%

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.

Pauline D. Mix
WSCF Client Services

Abbreviations
Hg – mercury
IC – ion chromatography
ICP – inductively coupled plasma
ICP/AES – ICP/atomic emission spectroscopy
ICP/MS – ICP/mass spectrometry
Total U – total uranium
AT/TB – total alpha/total beta
AEA – Alpha Energy Analysis
WTPH-G – Total Hydrocarbons-Gasoline
Am – americium
Cm - curium
Pu – plutonium
Np – neptunium
GEA – gamma energy analysis
H3 – Tritium
Sr – Strontium 89, 90
WTPH-D – Total Hydrocarbons-Diesel
TSS – Total Suspended Solids

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			R06-013-011	PAGE 1 OF 4
COLLECTOR: HOGAN, JG	COMPANY CONTACT: TRECHTER, JE	TELEPHONE NO.: 373-7046	PROJECT COORDINATOR: TRECHTER, JE	PRICE CODE: 8C	DATA TURNAROUND
SAMPLING LOCATION: 200-W-42	PROJECT DESIGNATION: 200-UW-1 Operable Unit, Soil from Trench between 216-U-8 and 216-U-12		SAF NO.: R06-013	AIR QUALITY	7 DAYS ~~15 Days~~ 8-16-06
ICE CHEST NO.	FIELD LOGBOOK NO.: DTS-SAWS-4	COA: 121600ES20	METHOD OF SHIPMENT: GOVERNMENT VEHICLE		7 DAYS ~~15 Days~~
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

20060934

ICED Initial 8/16/06 Date

SAMPLE NO.	LAB ID	MATRIX*	SAMPLE DATE	SAMPLE TIME	NO./TYPE CONTAINER(S)	ANALYSIS	PRESERVATION
B1KB49		S			4X60mL aG	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Cool 4C
	W06000 2493		8-16-06	1530			
B1KB49		S			4X60mL G	TPH-Diesel Range - WTPH-D {TPHKEROSEN}	Cool 4C
B1KB49		S			1X500mL Square Bottle - Poly	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	None
B1KB49		S			4X60mL G/P	Isotopic Plutonium {Pu-238, Pu-239/240} Isotopic Uranium {U-233/234, U-235, U-238} Americium-241 {Am-241}	None
B1KB49		S			4X60mL G/P	Strontium-89,90 -- Sr-90 {Sr-90}	None
B1KB49		S			4X60mL G/P	Technetium-99 {Tc-99}	None
B1KB49		S			4X60mL G/P	Neptunium-237 {Np-237}	None

CHAIN OF POSSESSION — SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
JG HOGAN	1920 8-16-06	Victor Pinus	19:20 8/16/06
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

SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

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

000019

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			R06-013-011	PAGE 2 OF 4
COLLECTOR HOGAN, JG	**COMPANY CONTACT** TRECHTER, JE	**TELEPHONE NO.** 373-7046	**PROJECT COORDINATOR** TRECHTER, JE	**PRICE CODE** 8C	**DATA TURNAROUND** ~~15 Days~~ 7 DAYS 8-16-06
SAMPLING LOCATION 200-W-42	**PROJECT DESIGNATION** 200-UW-1 Operable Unit, Soil from Trench between 216-U-8 and 216-U-12		**SAF NO.** R06-013	**AIR QUALITY** ☐	
ICE CHEST NO.	**FIELD LOGBOOK NO.** DTS-SAMS-H	**COA** 121600ES20	**METHOD OF SHIPMENT** GOVERNMENT VEHICLE	ICED ✓ Initial 8/16/06 Date	
SHIPPED TO Waste Sampling & Characterization	**OFFSITE PROPERTY NO.** N/A		**BILL OF LADING/AIR BILL NO.** N/A		

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, BENZOPY, BIS2CHE, BIS2CHM, BIS2EPH, BNZKFLU, BROPHEN, BUTBENP, CHLANIL, CHLCRES, CHLNAPH, CHLPHEN, CHRYSENE, DIBAHAN, DIBENFR, DIBPHTH, DICHBEN, DIEPHTH, DIMPHTH, DINPHEN, DIOPHTH, DIPRNIT, FLUORAN, FLUORENE, HEXCBEN, HEXCBUT, HEXCCYC, HEXCETH, INDENOP, ISOPHORONE, NAPHTHA, NITBENZ, NITPHENOL, NITRANILIN, NNDIPHA, PENTCHP, PHENANT, PHENOL, PYRENE, TRICHLB}

(2)Gamma Spec - Add-on {Ac-228, Ba-133, Ce-144, Cs/Pr-144, Cm-244, Cs-134, K-40, Nb-94, Ra-228, Ru-103, Sb-125, Sn-113, Sn-125, Sn-126, Th-228, Th-232, U-235, U-238, Zn-65} Gamma Spectroscopy {Am-241, Co-58, Co-60, Cs-137, Eu-152, Eu-154, Eu-155, Fe-59, Ra-226, Ru-106}

000020

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A-6001-774

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			R06-013-011	PAGE 3 OF 4
COLLECTOR HOGAN, JG	COMPANY CONTACT TRECHTER, JE	TELEPHONE NO. 373-7046	PROJECT COORDINATOR TRECHTER, JE	PRICE CODE 8C	DATA TURNAROUND
SAMPLING LOCATION 200-W-42	PROJECT DESIGNATION 200-UW-1 Operable Unit, Soil from Trench between 216-U-8 and 216-U-12		SAF NO. R06-013	AIR QUALITY —	7 DAYS ~~15 Days~~ 1/4 7 DAYS ~~15 Days~~ 8-16-06
ICE CHEST NO.	FIELD LOGBOOK NO. DTS-SAWS-4	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		

KGED
Initial
8/14/06 Date

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
B1KB49		S			4X60mL G/P	IC Anions - 300.0 (BROMIDE, CHLORIDE, FLUORIDE, NO2-N, NO3-N, PO4-P, SULFATE)	None
B1KB49		S	8-16-06	1530	4X60mL G/P	ICP Metals - 6010A (Add-on) (~~B~~, ~~Ba~~, La, ~~Li~~, ~~Si~~, Sm, ~~Ti~~) ICP Metals - 6010A (TAL) (~~Al~~, ~~Ca~~, ~~Fe~~, ~~K~~, ~~Mg~~, ~~Na~~)	Cool 4C
B1KB49		S			4X60mL G/P	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	None
B1KB75	W06000249~~6~~	S			1X40mL G	SEE ITEM (4) IN SPECIAL INSTRUCTIONS	Cool 4C
B1KB76	2497	S			1X40mL G	SEE ITEM (4) IN SPECIAL INSTRUCTIONS	Cool 4C
B1KB77	2498	S			1X40mL G	SEE ITEM (4) IN SPECIAL INSTRUCTIONS	Cool 4C

CHAIN OF POSSESSION — SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
JG Hogan	1920 8-16-06	Victor Bins	1920 8/16/06
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

SEE PAGE 4 FOR ALL SPECIAL INSTRUCTIONS

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

000021

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			R06-013-011	PAGE 4 OF 4
COLLECTOR HOGAN, JG	**COMPANY CONTACT** TRECHTER, JE	**TELEPHONE NO.** 373-7046	**PROJECT COORDINATOR** TRECHTER, JE	**PRICE CODE** 8C	**DATA TURNAROUND** ~~15 Days~~ 8-16-06 30 DAYS
SAMPLING LOCATION 200-W-42	**PROJECT DESIGNATION** 200-UW-1 Operable Unit, Soil from Trench between 216-U-8 and 216-U-12		**SAF NO.** R06-013	**AIR QUALITY** ☐	
ICE CHEST NO.	**FIELD LOGBOOK NO.** DTS-SAWS-64	**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		

VISED
Initial
8/16/06 Date

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) {~~Ag, Be, Mo, Pb, Se, Tl, Sr, V, 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}
(4)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, STYRENE, TOLUENE, TRANS13, TRICELN, VINYIDE, XYLENES}

A-6001-774

Fluor Hanford Inc.

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

R06-013-013 | PAGE 1 OF 3

COLLECTOR: HOGAN, JG	COMPANY CONTACT: TRECHTER, JE	TELEPHONE NO.: 373-7046	PROJECT COORDINATOR: TRECHTER, JE
SAMPLING LOCATION: 200-W-42	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.:	FIELD LOGBOOK NO.: DTS-SAWS-H	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

PRICE CODE: 8C

DATA TURNAROUND: 7 Days / ~~15 Days~~ / ~~25 Days~~ 8-16-06

AIR QUALITY: ☐

ED 8/16/06 Initial Date

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
B1KB50	WU6002494	S	8-16-06	1530	4X60mL aG	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Cool 4C
B1KB50		S			4X60mL G	TPH-Diesel Range - WTPH-D {TPHKEROSEN}	Cool 4C
B1KB50		S			1X500mL Square Bottle - Poly	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	None
B1KB50		S			4X60mL G/P	Isotopic Plutonium {Pu-238, Pu-239/240} Isotopic Uranium {U-233/234, U-235, U-238} Americium-241 {Am-241}	None
B1KB50		S			4X60mL G/P	Strontium-89,90 -- Sr-90 {Sr-90}	None
B1KB50		S			4X60mL G/P	Technetium-99 {Tc-99}	None
B1KB50		S			4X60mL G/P	Neptunium-237 {Np-237}	None

CHAIN OF POSSESSION — SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
JG Hogan / J Hogan	1920 8-16-06	Victor Jones / [signature]	8/16/06 1920

SPECIAL INSTRUCTIONS

SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

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

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			R06-013-013	PAGE 2 OF 3
COLLECTOR HOGAN, JG	COMPANY CONTACT TRECHTER, JE	TELEPHONE NO. 373-7046	PROJECT COORDINATOR TRECHTER, JE	PRICE CODE 8C	DATA TURNAROUND 7 DAYS ~~15 Days~~ 5-16-01 M
SAMPLING LOCATION 200-W-42	PROJECT DESIGNATION 200-UW-1 Operable Unit, Soil from Trench between 216-U-8 and 216-U-12		SAF NO. R06-013	AIR QUALITY ☐	
ICE CHEST NO.	FIELD LOGBOOK NO. DTS-SAWS-H	COA 121600ES20	METHOD OF SHIPMENT GOVERNMENT VEHICLE	Initial Date	
SHIPPED TO Waste Sampling & Characterization	OFFSITE PROPERTY NO. N/A		BILL OF LADING/AIR BILL NO. N/A		

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, BENZOPY, BIS2CHE, BIS2CHM, BIS2EPH, BNZKFLU, BROPHEN, BUTBENP, CHLANIL, CHLCRES, CHLNAPH, CHLPHEN, CHRYSENE, DIBAHAN, DIBENFR, DIBPHTH, DICHBEN, DIEPHTH, DIMPHTH, DINPHEN, DIOPHTH, DIPRNIT, FLUORAN, FLUORENE, HEXCBEN, HEXCBUT, HEXCCYC, HEXCETH, INDENOP, ISOPHORONE, NAPHTHA, NITBENZ, NITPHENOL, NITRANILIN, NNDIPHA, PENTCHP, PHENANT, PHENOL, PYRENE, TRICHLB}

(2)Gamma Spec - Add-on {Ac-228, Ba-133, Ce-144, Ce/Pr-144, Cm-244, Cs-134, K-40, Nb-94, Ra-228, Ru-103, Sb-125, Sn-113, Sn-125, Sn-126, Th-228, Th-232, U-235, U-238, Zn-65} Gamma Spectroscopy {Am-241, Co-58, Co-60, Cs-137, Eu-152, Eu-154, Eu-155, Fe-59, Ra-226, Ru-106}

A-6001-774

Fluor Hanford Inc.

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

R06-013-013

COLLECTOR: HOGAN, JG	COMPANY CONTACT: TRECHTER, JE	TELEPHONE NO.: 373-7046	PROJECT COORDINATOR: TRECHTER, JE
PRICE CODE: 8C	DATA TURNAROUND: ~~7DAY/15 Days~~ 1/A ~~7DAY/15 Days~~ 8.16.06		
SAMPLING LOCATION: 200-W-42	PROJECT DESIGNATION: 200-UW-1 Operable Unit, Soil from Trench between 216-U-8 and 216-U-12	SAF NO.: R06-013	AIR QUALITY: ☐
ICE CHEST NO.	FIELD LOGBOOK NO.: DTS-SAWS-4	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	

IQED Initial 8/16/06 Date

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
B1KB50		S	8-16-06	1530	4X60mL G/P	IC Anions - 300.0 {BROMIDE, CHLORIDE, FLUORIDE, NO2-N, NO3-N, PO4-P, SULFATE}	None
B1KB50		S			4X60mL G/P	ICP Metals - 6010A (Add-on) {B, Bi, La, Li, Si, Sm, Ti} ICP Metals - 6010A (TAL) {Al, Ca, Fe, K, Mg, Na}	Cool 4C
B1KB50		S			4X60mL G/P	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	None

CHAIN OF POSSESSION — SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
JG Hogan	1920 8-16-06	Victor Tsing	8/16/06 19:20
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 — DISPOSAL METHOD — DISPOSED BY — DATE/TIME

000025

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			R06-013-015	PAGE 1 OF 3
COLLECTOR HOGAN, JG	COMPANY CONTACT TRECHTER, JE	TELEPHONE NO. 373-7046	PROJECT COORDINATOR TRECHTER, JE	PRICE CODE 8C	DATA TURNAROUND
SAMPLING LOCATION 200-W-42	PROJECT DESIGNATION 200-UW-1 Operable Unit, Soil from Trench between 216-U-8 and 216-U-12		SAF NO. R06-013	AIR QUALITY ☐	7 DAYS ~~15 Days~~ / 14 7 DAYS ~~15 Days~~ 8-16-06
ICE CHEST NO.	FIELD LOGBOOK NO. DTS-SAWS-H	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		

ICED
Initial
8/16/06 Date

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
B1KB51	W06000249S	S	8-16-06	1000	4X60mL aG	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Cool 4C
B1KB51		S			4X60mL G	TPH-Diesel Range - WTPH-D {TPHKEROSEN}	Cool 4C
B1KB51		S			1X500mL Square Bottle - Poly	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	None
B1KB51		S			4X60mL G/P	Isotopic Plutonium {Pu-238, Pu-239/240} Isotopic Uranium {U-233/234, U-235, U-238} Americium-241 {Am-241}	None
B1KB51		S			4X60mL G/P	Strontium-89,90 -- Sr-90 {Sr-90}	None
B1KB51		S			4X60mL G/P	Technetium-99 {Tc-99}	None
B1KB51		S			4X60mL G/P	Neptunium-237 {Np-237}	None

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS
RELINQUISHED BY/REMOVED FROM JG HOGAN	DATE/TIME 1920 8-16-06	RECEIVED BY/STORED IN Victor Binns	DATE/TIME 8/16/06 1920	SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS
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	

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

000026

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			R06-013-015	PAGE 2 OF 3
COLLECTOR HOGAN, JG	**COMPANY CONTACT** TRECHTER, JE	**TELEPHONE NO.** 373-7046	**PROJECT COORDINATOR** TRECHTER, JE	**PRICE CODE** 8C	**DATA TURNAROUND** 7 DAYS ~~15 Days~~
SAMPLING LOCATION 200-W-42	**PROJECT DESIGNATION** 200-UW-1 Operable Unit, Soil from Trench between 216-U-8 and 216-U-12		**SAF NO.** R06-013	**AIR QUALITY**	
ICE CHEST NO.	**FIELD LOGBOOK NO.** DTS-SAWS-H	**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		

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, BENZOPY, BIS2CHE, BIS2CHM, BIS2EPH, BNZKFLU, BROPHEN, BUTBENP, CHLANIL, CHLCRES, CHLNAPH, CHLPHEN, CHRYSENE, DIBAHAN, DIBENFR, DIBPHTH, DICHBEN, DIEPHTH, DIMPHTH, DINPHEN, DIOPHTH, DIPRNIT, FLUORAN, FLUORENE, HEXCBEN, HEXCBUT, HEXCCYC, HEXCETH, INDENOP, ISOPHORONE, NAPHTHA, NITBENZ, NITPHENOL, NITRANILIN, NNDIPHA, PENTCHP, PHENANT, PHENOL, PYRENE, TRICHLB}

(2)Gamma Spec - Add-on {Ac-228, Ba-133, Ce-144, Ce/Pr-144, Cm-244, Cs-134, K-40, Nb-94, Ra-228, Ru-103, Sb-125, Sn-113, Sn-125, Sn-126, Th-228, Th-232, U-235, U-238, Zn-65} Gamma Spectroscopy {Am-241, Co-58, Co-60, Cs-137, Eu-152, Eu-154, Eu-155, Fe-59, Ra-226, Ru-106}

A-6001-774

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			R06-013-015	PAGE 3 OF 3
COLLECTOR HOGAN, JG	COMPANY CONTACT TRECHTER, JE	TELEPHONE NO. 373-7046	PROJECT COORDINATOR TRECHTER, JE	PRICE CODE 8C	DATA TURNAROUND
SAMPLING LOCATION 200-W-42	PROJECT DESIGNATION 200-UW-1 Operable Unit, Soil from Trench between 216-U-8 and 216-U-12		SAF NO. R06-013	AIR QUALITY	7 DAYS ~~15 Days~~ N/A 7 DAYS ~~15 Days~~ 8-16-06
ICE CHEST NO.	FIELD LOGBOOK NO. DTS-SANS	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		

Initial
8/16/06 Date

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
B1KB51		S	8-16-06	1000	4X60mL G/P	IC Anions - 300.0 {BROMIDE, CHLORIDE, FLUORIDE, NO2-N, NO3-N, PO4-P, SULFATE}	None
B1KB51		S			4X60mL G/P	ICP Metals - 6010A (Add-on) {B, Bi, La, Li, Si, Sm, Ti} ICP Metals - 6010A (TAL) {Al, Ca, Fe, K, Mg, Na}	Cool 4C
B1KB51		S			4X60mL G/P	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	None

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM JG HOGAN J Hogan	DATE/TIME 1920 8-16-06	RECEIVED BY/STORED IN Victor Bins	DATE/TIME 8/16/06 1920
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	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

000028

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: 60934		
VALIDATOR: TLI		LAB: WSCF		DATE: 8/30/06	
			SDG: 60934		

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
BIKB49 BIKB50 BIKB51
~~Nitrate, nitrite or phosphate not validated per~~ FHI 8/3/06
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? ..... no 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: ~~phosphate MS (57%) MSD (60%) - [illegible]~~ 8/30/04 no PAT

phosphate MS 57% MSD 60% - Jack

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:

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 blank ok

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: 20060934
Matrix: SOLID
Test: Anions by Ion Chromatography

SAF Number: R06-013
Sample Date: 08/16/06
Receive Date:08/16/06

Lab ID: W060002493

BATCH QC ASSOCIATED WITH SAMPLE

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
DUP	Bromide	24959-67-9	<4.65	n/a	RPD	08/21/06	0.000	20.000	U
DUP	Chloride	16887-00-6	7.5314	9.110	RPD	08/21/06	0.000	20.000	
DUP	Fluoride	16984-48-8	<2	n/a	RPD	08/21/06	0.000	20.000	U
DUP	Nitrogen in Nitrite	NO2-N	<0.49	n/a	RPD	08/21/06	0.000	20.000	U
DUP	Nitrogen in Nitrate	NO3-N	13.4643	2.025	RPD	08/21/06	0.000	20.000	
DUP	Phosphate (P) by IC	PO4-P	<3.9	n/a	RPD	08/21/06	0.000	20.000	U
DUP	Sulfate	14808-79-8	29.0249	2.346	RPD	08/21/06	0.000	20.000	
MS	Bromide	24959-67-9	1.69307	84.654	% Recov	08/21/06	75.000	125.000	
MS	Chloride	16887-00-6	0.894452	91.271	% Recov	08/21/06	75.000	125.000	
MS	Fluoride	16984-48-8	0.42702	85.404	% Recov	08/21/06	75.000	125.000	
MS	Nitrogen in Nitrite	NO2-N	0.44588	89.534	% Recov	08/21/06	75.000	125.000	
MS	Nitrogen in Nitrate	NO3-N	0.407006	92.501	% Recov	08/21/06	75.000	125.000	
MS	Phosphate (P) by IC	PO4-P	0.55435	57.625	% Recov	08/21/06	75.000	125.000	*
MS	Sulfate	14808-79-8	1.775156	88.758	% Recov	08/21/06	75.000	125.000	
MSD	Bromide	24959-67-9	1.694338	84.717	% Recov	08/21/06	75.000	125.000	
MSD	Chloride	16887-00-6	0.90542	92.390	% Recov	08/21/06	75.000	125.000	
MSD	Fluoride	16984-48-8	0.434964	86.993	% Recov	08/21/06	75.000	125.000	
MSD	Nitrogen in Nitrite	NO2-N	0.438152	87.982	% Recov	08/21/06	75.000	125.000	
MSD	Nitrogen in Nitrate	NO3-N	0.425402	96.682	% Recov	08/21/06	75.000	125.000	
MSD	Phosphate (P) by IC	PO4-P	0.578926	60.179	% Recov	08/21/06	75.000	125.000	*
MSD	Sulfate	14808-79-8	1.764856	88.243	% Recov	08/21/06	75.000	125.000	

BATCH QC

BLANK	Bromide	24959-67-9	<9.3e-2	n/a	mg/L	08/21/06	0.000	300.000	U
BLANK	Bromide	24959-67-9	<9.3e-2	n/a	mg/L	08/21/06	0.000	300.000	U
BLANK	Chloride	16887-00-6	<3.4e-2	n/a	mg/L	08/21/06	0.000	300.000	U

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: 20060934
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
BLANK	Chloride	16887-00-6	<3.4e-2	n/a	mg/L	08/21/06	0.000	300.000	U
BLANK	Fluoride	16984-48-8	<4e-2	n/a	mg/L	08/21/06	0.000	300.000	U
BLANK	Fluoride	16984-48-8	<4e-2	n/a	mg/L	08/21/06	0.000	300.000	U
BLANK	Nitrogen in Nitrite	NO2-N	<9.8e-3	n/a	mg/L	08/21/06	0.000	300.000	U
BLANK	Nitrogen in Nitrite	NO2-N	<9.8e-3	n/a	mg/L	08/21/06	0.000	300.000	U
BLANK	Nitrogen in Nitrate	NO3-N	<1.8e-2	n/a	mg/L	08/21/06	0.000	300.000	U
BLANK	Nitrogen in Nitrate	NO3-N	<1.8e-2	n/a	mg/L	08/21/06	0.000	300.000	U
BLANK	Phosphate (P) by IC	PO4-P	<7.8e-2	n/a	mg/L	08/21/06	0.000	300.000	U
BLANK	Phosphate (P) by IC	PO4-P	<7.8e-2	n/a	mg/L	08/21/06	0.000	300.000	U
BLANK	Sulfate	14808-79-8	<0.13	n/a	mg/L	08/21/06	0.000	300.000	U
BLANK	Sulfate	14808-79-8	<0.13	n/a	mg/L	08/21/06	0.000	300.000	U
LCS	Bromide	24959-67-9	390.9538	97.738	% Recov	08/21/06	80.000	120.000	
LCS	Chloride	16887-00-6	203.9548	104.059	% Recov	08/21/06	80.000	120.000	
LCS	Fluoride	16984-48-8	92.1569	92.157	% Recov	08/21/06	80.000	120.000	
LCS	Nitrogen in Nitrite	NO2-N	99.6832	100.084	% Recov	08/21/06	80.000	120.000	
LCS	Nitrogen in Nitrate	NO3-N	87.9705	100.080	% Recov	08/21/06	80.000	120.000	
LCS	Phosphate (P) by IC	PO4-P	189.4201	98.400	% Recov	08/21/06	80.000	120.000	
LCS	Sulfate	14808-79-8	388.5084	97.127	% Recov	08/21/06	80.000	120.000	

000036

See Revalidation 9/27/06 pel 9/27/06

Date: 1 September 2006
To: Fluor Hanford Inc. (technical representative)
From: TechLaw, Inc.
Project: 200-UW-1 Operable Unit, Soil from Trench between 216-U-8 & 216-U-12 Cribs
Subject: Radiochemistry - Data Package No. WSCF20060934 (60934)

INTRODUCTION

This memo presents the results of data validation on Data Package No. 60934 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
B1KB49	8/16/06	Soil	C	See note 1
B1KB50	8/16/06	Soil	C	See note 1
B1KB51	8/16/06	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. 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.

- **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 radium-226, radium-228, actinium-228 and uranium-233/234 results in sample B1KB51 were qualified as estimates and flagged "J".

Due to method blank contamination, the plutonium-239/240 results in sample B1KB49 was qualified as an estimate 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".

Due to a matrix spike recovery outside QC limits (47%), all technetium-99 results were qualified as estimates and flagged "J".

Due to radiochemical yields outside QC limits, all detected alpha spectroscopy uranium results in samples B1KB49 (121%) and B1KB50 (131%) 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.

All 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. Seven analytes exceeded the RTQL. Under the FHI statement of work, no qualification is required.

· **Completeness**

Data package SDG No. 60934 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 radium-226, radium-228, actinium-228 and uranium-233/234 results in sample B1KB51 were qualified as estimates and flagged "J".

- Due to method blank contamination, the plutonium-239/240 results in sample B1KB49 was qualified as an estimate 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 a matrix spike recovery outside QC limits (47%), all technetium-99 results were qualified as estimates and flagged "J".

- Due to radiochemical yields outside QC limits, all detected alpha spectroscopy uranium results in samples B1KB49 (121%) and B1KB50 (131%) 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.

Seven analytes 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 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: 60934	REVIEWER: TLI	Project: 200-UW-1	PAGE 1 OF 1
COMMENTS:			
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Radium-226 Radium-228 Actinium-228 Uranium-233/234	J	B1JB51	Method blank contamination
Plutonium-239/240	J	B1KB49	Method blank contamination
Uranium-233/234 (aspec) Uranium-235 (aspec) Uranium-238 (aspec)	J	All detected analytes in samples B1KB49 & B1KB50	Radiochemical yield
Uranium-234 (aspec) Uranium-235 (aspec) Plutonium-238	J	All	No LCS analysis
Technetium-99	J	All	MS 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

Annotated Laboratory Reports

WSCF
ANALYTICAL RESULTS REPORT

Attention: D.L KLAGES H8-40 **Group #:** 20060934

Sample #	Client ID		CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
Radiochemistry														
W060002493	B1KB49	KLAGES	14596-10-2	Americium-241	SOIL	LA-508-471	U	0.0280	pCi/g	1.00	0.056	08/18/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	E.T.C	Am-241 by AEA Total Cntg Error	SOIL	LA-508-471		+- 0.034	pCi/g	1.00	0.0	08/18/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	14596-10-2	Americium-241	SOIL	LA-508-481	U	-6.41e-03	pCi/g	1.00	0.50	08/19/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	E.T.C	Am-241 Rel Count Error (GEA)	SOIL	LA-508-481		+- 0.064	pCi/g	1.00	0.0	08/19/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	14234-35-6	Antimony-125	SOIL	LA-508-481	U	-0.0216	pCi/g	1.00	0.26	08/19/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	E.T.C	Sb-125 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 0.15	pCi/g	1.00	0.0	08/19/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	13981-41-4	Ba-133 by GEA	SOIL	LA-508-481	U	-0.0573	pCi/g	1.00	0.10	08/19/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	E.T.C	Ba-133 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 0.074	pCi/g	1.00	0.0	08/19/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	14762-78-8	Cerium-144	SOIL	LA-508-481	U	0.0543	pCi/g	1.00	0.47	08/19/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	E.T.C	Ce-144 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 0.33	pCi/g	1.00	0.0	08/19/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	CE/PR-144	Cerium/Praseodymium-144	SOIL	LA-508-481	U	0.109	pCi/g	1.00	0.94	08/19/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	E.T.C	CePr-144 Rel. Count Error	SOIL	LA-508-481		+- 0.66	pCi/g	1.00	0.0	08/19/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	10198-40-0	Cobalt-60	SOIL	LA-508-481	U	2.65e-03	pCi/g	1.00	0.033	08/19/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	E.T.C	Co-60 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 0.019	pCi/g	1.00	0.0	08/19/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	13967-70-9	Cesium-134	SOIL	LA-508-481	U	0.0728	pCi/g	1.00	0.080	08/19/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	E.T.C	Cs-134 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 0.033	pCi/g	1.00	0.0	08/19/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	10045-97-3	Cesium-137	SOIL	LA-508-481		64.3	pCi/g	1.00	0.059	08/19/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	E.T.C	Cs-137 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 10	pCi/g	1.00	0.0	08/19/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	14683-23-9	Europium-152	SOIL	LA-508-481	U	0.0961	pCi/g	1.00	0.24	08/19/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	E.T.C	Eu-152 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 0.15	pCi/g	1.00	0.0	08/19/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	15585-10-1	Europium-154	SOIL	LA-508-481	U	-0.0473	pCi/g	1.00	0.096	08/19/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	E.T.C	Eu-154 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 0.067	pCi/g	1.00	0.0	08/19/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	14391-16-3	Europium-155	SOIL	LA-508-481	U	0.0825	pCi/g	1.00	0.25	08/19/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	E.T.C	Eu-155 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 0.15	pCi/g	1.00	0.0	08/19/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	13966-00-2	Potassium-40	SOIL	LA-508-481		28.4	pCi/g	1.00	0.27	08/19/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	E.T.C	K-40 Rel.% Count Error (GEA)	SOIL	LA-508-481		+- 3.7	pCi/g	1.00	0.0	08/19/06	08/16/06	08/16/06

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

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

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

JL 9/5/06

REVISED Dhynes 9/5/06

WSCF
ANALYTICAL RESULTS REPORT

Attention: D.L KLAGES H8-40 **Group #:** 20060934

Sample #	Client ID		CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W060002493	B1KB49	KLAGES	14681-63-1	Niobium-94	SOIL	LA-508-481	U	-0.0108	pCi/g	1.00	0.030	08/19/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	E.T.C	Nb-94 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 0.018	pCi/g	1.00	0.0	08/19/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	13982-63-3	Radium-226	SOIL	LA-508-481		1.06	pCi/g	1.00	0.12	08/19/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	E.T.C	Ra-226 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 0.21	pCi/g	1.00	0.0	08/19/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	15262-20-1	Radium-228	SOIL	LA-508-481		1.38	pCi/g	1.00	0.11	08/19/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	E.T.C	Ra-228 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 0.25	pCi/g	1.00	0.0	08/19/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	13967-48-1	Ruthenium-106	SOIL	LA-508-481	U	-0.257	pCi/g	1.00	0.55	08/19/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	E.T.C	Ru-106 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 0.34	pCi/g	1.00	0.0	08/19/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	15832-50-5	Tin-126	SOIL	LA-508-481	U	-0.0530	pCi/g	1.00	0.19	08/19/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	E.T.C	Sn-126 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 0.14	pCi/g	1.00	0.0	08/19/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	15117-96-1	Uranium-235	SOIL	LA-508-481	U	0.376	pCi/g	1.00	0.49	08/19/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	E.T.C	U-235 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 0.31	pCi/g	1.00	0.0	08/19/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	13982-39-3	Zinc-65	SOIL	LA-508-481	U	0.0146	pCi/g	1.00	0.076	08/19/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	E.T.C	Zn-65 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 0.051	pCi/g	1.00	0.0	08/19/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	14331-83-0	Actinium-228	SOIL	LA-508-481		1.38	pCi/g	1.00	0.11	08/19/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	E.T.C	Ac-228 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 0.25	pCi/g	1.00	0.0	08/19/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	13968-53-1	Ruthenium-103	SOIL	LA-508-481	U	-0.0188	pCi/g	1.00	0.081	08/19/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	E.T.C	Ru-103 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 0.049	pCi/g	1.00	0.0	08/19/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	13966-06-8	Tin-113	SOIL	LA-508-481	U	8.76e-03	pCi/g	1.00	0.11	08/19/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	E.T.C	Sn-113 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 0.065	pCi/g	1.00	0.0	08/19/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	13994-20-2	Neptunium-237	SOIL	LA-508-471	U	0.430	pCi/g	1.00	1.4	08/18/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	E.T.C	Np-237 by AEA Total Ctng Error	SOIL	LA-508-471		+- 0.086	pCi/g	1.00	0.0	08/18/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	13981-16-3	Plutonium-238	SOIL	LA-508-471	U J	0.0140	pCi/g	1.00	0.019	08/18/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	E.T.C	Pu-238 by AEA Total Cntg Error	SOIL	LA-508-471		+- 0.014	pCi/g	1.00	0.0	08/18/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	PU-239/240	Pu-239/240 by AEA	SOIL	LA-508-471	J	0.0220	pCi/g	1.00	5.4e-03	08/18/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	E.T.C	Pu-239/240 AEA Total Cntg Err	SOIL	LA-508-471		+- 0.014	pCi/g	1.00	0.0	08/18/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	SR-RAD	Strontium-89/90	SOIL	LA-508-415		4.45	pCi/g	1.00	0.098	08/18/06	08/16/06	08/16/06

MDL = Minimum Detection Limit
RQ = Result Qualifier

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

DF = Dilution Factor

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

Report WGPP/ver. 1.3
PROJECT HANFORD MANAGEMENT COMPANY

REVISED Dayer 9/5/06

9/5/06

WSCF
ANALYTICAL RESULTS REPORT

Attention: D.L KLAGES H8-40 **Group #:** 20060934

Sample #	Client ID		CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W060002493	B1KB49	KLAGES	E,T,C	Sr-89/90 Rel. Count Error	SOIL	LA-508-415		+- 0.89	pCi/g	1.00	0.0	08/18/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	14133-76-7	Technetium-99	SOIL	LA-508-421	U J	-0.0410	pCi/g	1.00	0.28	08/18/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	E,T,C	Tc-99 Counting Error	SOIL	LA-508-421		+- 0.041	pCi/g	1.00	0.0	08/18/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	U-233/234	Uranium-233/234	SOIL	LA-508-471	J	2.20	pCi/g	1.00	0.015	08/21/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	E,T,C	U-233/234 AEA Total Cntg Error	SOIL	LA-508-471		+- 0.57	pCi/g	1.00	0.0	08/21/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	15117-96-1	Uranium-235	SOIL	LA-508-471	J	0.220	pCi/g	1.00	6.2e-03	08/21/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	E,T,C	U-235 by AEA Total Cntg Error	SOIL	LA-508-471		+- 0.073	pCi/g	1.00	0.0	08/21/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	U-238	Uranium-238	SOIL	LA-508-471	J	2.00	pCi/g	1.00	5.7e-03	08/21/06	08/16/06	08/16/06
W060002493	B1KB49	KLAGES	E,T,C	U-238 by AEA Total Cntg Error	SOIL	LA-508-471		+- 0.52	pCi/g	1.00	0.10	08/21/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	14596-10-2	Americium-241	SOIL	LA-508-471	U	6.60e-03	pCi/g	1.00	0.040	08/18/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	E,T,C	Am-241 by AEA Total Cntg Error	SOIL	LA-508-471		+- 0.022	pCi/g	1.00	0.0	08/18/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	14596-10-2	Americium-241	SOIL	LA-508-481	U	0.266	pCi/g	1.00	0.52	08/19/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	E,T,C	Am-241 Rel Count Error (GEA)	SOIL	LA-508-481		+- 0.35	pCi/g	1.00	0.0	08/19/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	14234-35-6	Antimony-125	SOIL	LA-508-481	U	-0.114	pCi/g	1.00	0.30	08/19/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	E,T,C	Sb-125 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 0.18	pCi/g	1.00	0.0	08/19/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	13981-41-4	Ba-133 by GEA	SOIL	LA-508-481	U	-0.0242	pCi/g	1.00	0.12	08/19/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	E,T,C	Ba-133 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 0.080	pCi/g	1.00	0.0	08/19/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	14762-78-8	Cerium-144	SOIL	LA-508-481	U	-0.0455	pCi/g	1.00	0.51	08/19/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	E,T,C	Ce-144 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 0.31	pCi/g	1.00	0.0	08/19/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	CE/PR-144	Cerium/Praseodymium-144	SOIL	LA-508-481	U	-0.0910	pCi/g	1.00	1.0	08/19/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	E,T,C	CePr-144 Rel. Count Error	SOIL	LA-508-481		+- 0.61	pCi/g	1.00	0.0	08/19/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	10198-40-0	Cobalt-60	SOIL	LA-508-481	U	-0.0142	pCi/g	1.00	0.033	08/19/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	E,T,C	Co-60 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 0.021	pCi/g	1.00	0.0	08/19/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	13967-70-9	Cesium-134	SOIL	LA-508-481	U	0.0578	pCi/g	1.00	0.060	08/19/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	E,T,C	Cs-134 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 0.026	pCi/g	1.00	0.0	08/19/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	10045-97-3	Cesium-137	SOIL	LA-508-481		85.4	pCi/g	1.00	0.059	08/19/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	E,T,C	Cs-137 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 14	pCi/g	1.00	0.0	08/19/06	08/16/06	08/16/06

MDL=Minimum Detection Limit
RQ=Result Qualifier

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

DF=Dilution Factor

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

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WSCF
ANALYTICAL RESULTS REPORT

Attention: D.L KLAGES H8-40 **Group #:** 20060934

Sample #	Client ID		CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W060002494	B1KB50	KLAGES	14683-23-9	Europium-152	SOIL	LA-508-481	U	0.0205	pCi/g	1.00	0.26	08/19/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	E.T.C	Eu-152 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 0.16	pCi/g	1.00	0.0	08/19/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	15585-10-1	Europium-154	SOIL	LA-508-481	U	-0.0906	pCi/g	1.00	0.11	08/19/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	E.T.C	Eu-154 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 0.091	pCi/g	1.00	0.0	08/19/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	14391-16-3	Europium 155	SOIL	LA-508-481	U	0.0917	pCi/g	1.00	0.27	08/19/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	E.T.C	Eu-155 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 0.16	pCi/g	1.00	0.0	08/19/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	13966-00-2	Potassium-40	SOIL	LA-508-481		29.1	pCi/g	1.00	0.29	08/19/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	E.T.C	K-40 Rel.% Count Error (GEA)	SOIL	LA-508-481		+- 3.8	pCi/g	1.00	0.0	08/19/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	14681-63-1	Niobium-94	SOIL	LA-508-481	U	-0.0126	pCi/g	1.00	0.032	08/19/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	E.T.C	Nb-94 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 0.019	pCi/g	1.00	0.0	08/19/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	13982-63-3	Radium-226	SOIL	LA-508-481		1.19	pCi/g	1.00	0.13	08/19/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	E.T.C	Ra-226 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 0.23	pCi/g	1.00	0.0	08/19/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	15262-20-1	Radium-228	SOIL	LA-508-481		1.26	pCi/g	1.00	0.12	08/19/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	E.T.C	Ra-228 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 0.24	pCi/g	1.00	0.0	08/19/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	13967-48-1	Ruthenium-106	SOIL	LA-508-481	U	-0.290	pCi/g	1.00	0.58	08/19/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	E.T.C	Ru-106 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 0.35	pCi/g	1.00	0.0	08/19/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	15832-50-5	Tin-126	SOIL	LA-508-481	U	0.273	pCi/g	1.00	0.30	08/19/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	E.T.C	Sn-126 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 0.17	pCi/g	1.00	0.0	08/19/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	15117-96-1	Uranium-235	SOIL	LA-508-481		0.520	pCi/g	1.00	0.52	08/19/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	E.T.C	U-235 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 0.42	pCi/g	1.00	0.0	08/19/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	13982-39-3	Zinc-65	SOIL	LA-508-481	U	0.0219	pCi/g	1.00	0.080	08/19/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	E.T.C	Zn-65 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 0.053	pCi/g	1.00	0.0	08/19/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	14331-83-0	Actinium-228	SOIL	LA-508-481		1.26	pCi/g	1.00	0.12	08/19/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	E.T.C	Ac-228 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 0.24	pCi/g	1.00	0.0	08/19/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	13968-53-1	Ruthenium-103	SOIL	LA-508-481	U	-0.0398	pCi/g	1.00	0.092	08/19/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	E.T.C	Ru-103 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 0.057	pCi/g	1.00	0.0	08/19/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	13966-06-8	Tin-113	SOIL	LA-508-481	U	6.28e-03	pCi/g	1.00	0.12	08/19/06	08/16/06	08/16/06

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WSCF
ANALYTICAL RESULTS REPORT

Attention: D.L KLAGES H8-40 **Group #:** 20060934

Sample #	Client ID		CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W060002494	B1KB50	KLAGES	E.T.C	Sn-113 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 0.063	pCi/g	1.00	0.0	08/19/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	13994-20-2	Neptunium 237	SOIL	LA-508-471		27.0	pCi/g	1.00	0.12	08/18/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	E.T.C	Np-237 by AEA Total Ctng Error	SOIL	LA-508-471		+- 3.2	pCi/g	1.00	0.0	08/18/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	13981-16-3	Plutonium-238	SOIL	LA-508-471	J	0.0160	pCi/g	1.00	0.015	08/18/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	E.T.C	Pu-238 by AEA Total Cntg Error	SOIL	LA-508-471		+- 0.013	pCi/g	1.00	0.0	08/18/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	PU-239/240	Pu-239/240 by AEA	SOIL	LA-508-471	U	9.90e-03	pCi/g	1.00	0.015	08/18/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	E.T.C	Pu-239/240 AEA Total Cntg Err	SOIL	LA-508-471		+- 0.011	pCi/g	1.00	0.0	08/18/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	SR-RAD	Strontium-89/90	SOIL	LA-508-415		6.40	pCi/g	1.00	0.097	08/18/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	E.T.C	Sr-89/90 Rel Count Error	SOIL	LA-508-415		+- 0.96	pCi/g	1.00	0.0	08/18/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	14133-76-7	Technetium-99	SOIL	LA-508-421	U J	0.0960	pCi/g	1.00	0.28	08/18/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	E.T.C	Tc-99 Counting Error	SOIL	LA-508-421		+- 0.96	pCi/g	1.00	0.0	08/18/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	U-233/234	Uranium-233/234	SOIL	LA-508-471	J	3.30	pCi/g	1.00	4.6e-03	08/21/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	E.T.C	U-233/234 AEA Total Cntg Error	SOIL	LA-508-471		+- 0.86	pCi/g	1.00	0.0	08/21/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	15117-96-1	Uranium-235	SOIL	LA-508-471	J	0.240	pCi/g	1.00	0.014	08/21/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	E.T.C	U-235 by AEA Total Cntg Error	SOIL	LA-508-471		+- 0.074	pCi/g	1.00	0.0	08/21/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	U-238	Uranium-238	SOIL	LA-508-471	J	3.50	pCi/g	1.00	0.016	08/21/06	08/16/06	08/16/06
W060002494	B1KB50	KLAGES	E.T.C	U-238 by AEA Total Cntg Error	SOIL	LA-508-471		+- 0.91	pCi/g	1.00	0.10	08/21/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	14596-10-2	Americium 241	SOIL	LA-508-471	U	6.60e-03	pCi/g	1.00	0.044	08/18/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	E.T.C	Am-241 by AEA Total Cntg Error	SOIL	LA-508-471		+- 0.024	pCi/g	1.00	0.0	08/18/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	14596-10-2	Americium-241	SOIL	LA-508-481	U	-0.114	pCi/g	1.00	0.073	08/19/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	E.T.C	Am-241 Rel Count Error (GEA)	SOIL	LA-508-481		+- 0.11	pCi/g	1.00	0.0	08/19/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	14234-35-6	Antimony-125	SOIL	LA-508-481	U	5.98e-03	pCi/g	1.00	0.023	08/19/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	E.T.C	Sb-125 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 0.013	pCi/g	1.00	0.0	08/19/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	13981-41-4	Ba-133 by GEA	SOIL	LA-508-481	U	-1.38e-03	pCi/g	1.00	0.011	08/19/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	E.T.C	Ba-133 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 7.1e-03	pCi/g	1.00	0.0	08/19/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	14762-78-8	Cerium-144	SOIL	LA-508-481	U	5.48e-03	pCi/g	1.00	0.066	08/19/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	E.T.C	Ce-144 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 0.054	pCi/g	1.00	0.0	08/19/06	08/16/06	08/16/06

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9/5/06

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9/5/06

WSCF
ANALYTICAL RESULTS REPORT

Attention: D.L KLAGES H8-40 **Group #:** 20060934

Sample #	Client ID		CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W060002495	B1KB51	KLAGES	CE/PR-144	Cerium/Praseodymium-144	SOIL	LA-508-481	U	0.0110	pCi/g	1.00	0.13	08/19/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	E.T.C	CePr-144 Rel. Count Error	SOIL	LA-508-481		+- 0.11	pCi/g	1.00	0.0	08/19/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	10198-40-0	Cobalt-60	SOIL	LA-508-481	U	-2.78e-03	pCi/g	1.00	7.6e-03	08/19/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	E.T.C	Co-60 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 4.5e-03	pCi/g	1.00	0.0	08/19/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	13967-70-9	Cesium-134	SOIL	LA-508-481	U	8.50e-03	pCi/g	1.00	0.010	08/19/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	E.T.C	Cs-134 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 5.7e-03	pCi/g	1.00	0.0	08/19/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	10045-97-3	Cesium-137	SOIL	LA-508-481	U	2.53e-03	pCi/g	1.00	8.9e-03	08/19/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	E.T.C	Cs-137 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 5.1e-03	pCi/g	1.00	0.0	08/19/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	14683-23-9	Europium-152	SOIL	LA-508-481	U	-4.55e-03	pCi/g	1.00	0.025	08/19/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	E.T.C	Eu-152 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 0.018	pCi/g	1.00	0.0	08/19/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	15585-10-1	Europium-154	SOIL	LA-508-481	U	0.0101	pCi/g	1.00	0.022	08/19/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	E.T.C	Eu-154 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 0.014	pCi/g	1.00	0.0	08/19/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	14391-16-3	Europium-155	SOIL	LA-508-481	U	0.0160	pCi/g	1.00	0.038	08/19/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	E.T.C	Eu-155 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 0.022	pCi/g	1.00	0.0	08/19/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	13966-00-2	Potassium-40	SOIL	LA-508-481		0.844	pCi/g	1.00	0.075	08/19/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	E.T.C	K-40 Rel.% Count Error (GEA)	SOIL	LA-508-481		+- 0.17	pCi/g	1.00	0.0	08/19/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	14681-63-1	Niobium-94	SOIL	LA-508-481	U	-3.78e-03	pCi/g	1.00	7.7e-03	08/19/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	E.T.C	Nb-94 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 4.8e-03	pCi/g	1.00	0.0	08/19/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	13982-63-3	Radium-226	SOIL	LA-508-481	J	0.156	pCi/g	1.00	0.017	08/19/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	E.T.C	Ra-226 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 0.035	pCi/g	1.00	0.0	08/19/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	15262-20-1	Radium-228	SOIL	LA-508-481	J	0.182	pCi/g	1.00	0.025	08/19/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	E.T.C	Ra-228 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 0.043	pCi/g	1.00	0.0	08/19/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	13967-48-1	Ruthenium-106	SOIL	LA-508-481	U	5.64e-03	pCi/g	1.00	0.075	08/19/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	E.T.C	Ru-106 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 0.044	pCi/g	1.00	0.0	08/19/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	15832-50-5	Tin-126	SOIL	LA-508-481	U	0.0390	pCi/g	1.00	0.039	08/19/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	E.T.C	Sn-126 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 0.019	pCi/g	1.00	0.0	08/19/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	15117-96-1	Uranium-235	SOIL	LA-508-481	U	0.0383	pCi/g	1.00	0.066	08/19/06	08/16/06	08/16/06

MDL=Minimum Detection Limit
RQ=Result Qualifier

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

DF=Dilution Factor

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

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WSCF
ANALYTICAL RESULTS REPORT

Attention: D.L KLAGES H8-40 **Group #:** 20060934

Sample #	Client ID		CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W060002495	B1KB51	KLAGES	E.T.C	U-235 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 0.048	pCi/g	1.00	0.0	08/19/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	13982-39-3	Zinc-65	SOIL	LA-508-481	U	-0.0116	pCi/g	1.00	0.016	08/19/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	E.T.C	Zn-65 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 0.013	pCi/g	1.00	0.0	08/19/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	14331-83-0	Actinium-228	SOIL	LA-508-481	J	0.182	pCi/g	1.00	0.025	08/19/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	E.T.C	Ac-228 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 0.043	pCi/g	1.00	0.0	08/19/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	13968-53-1	Ruthenium-103	SOIL	LA-508-481	U	-2.27e-03	pCi/g	1.00	8.3e-03	08/19/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	E.T.C	Ru-103 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 5.0e-03	pCi/g	1.00	0.0	08/19/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	13966-06-8	Tin-113	SOIL	LA-508-481	U	-4.88e-04	pCi/g	1.00	0.011	08/19/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	E.T.C	Sn-113 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 4.9e-03	pCi/g	1.00	0.0	08/19/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	13994-20-2	Neptunium-237	SOIL	LA-508-471	U	8.70e-03	pCi/g	1.00	0.016	08/18/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	E.T.C	Np-237 by AEA Total Ctng Error	SOIL	LA-508-471		+- 0.011	pCi/g	1.00	0.0	08/18/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	13981-16-3	Plutonium-238	SOIL	LA-508-471	U J	1.80e-03	pCi/g	1.00	0.022	08/18/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	E.T.C	Pu-238 by AEA Total Cntg Error	SOIL	LA-508-471		+- 1.8e-03	pCi/g	1.00	0.0	08/18/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	PU-239/240	Pu-239/240 by AEA	SOIL	LA-508-471	U	1.80e-03	pCi/g	1.00	5.0e-03	08/18/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	E.T.C	Pu-239/240 AEA Total Cntg Err	SOIL	LA-508-471		+- 3.6e-03	pCi/g	1.00	0.0	08/18/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	SR-RAD	Strontium-89/90	SOIL	LA-508-415	U	0.0850	pCi/g	1.00	0.10	08/18/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	E.T.C	Sr-89/90 Rel. Count Error	SOIL	LA-508-415		+- 0.11	pCi/g	1.00	0.0	08/18/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	14133-76-7	Technetium-99	SOIL	LA-508-421	U J	-0.320	pCi/g	1.00	0.29	08/18/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	E.T.C	Tc-99 Counting Error	SOIL	LA-508-421		+- 0.32	pCi/g	1.00	0.0	08/18/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	U-233/234	Uranium-233/234	SOIL	LA-508-471	J	0.0260	pCi/g	1.00	0.013	08/21/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	E.T.C	U-233/234 AEA Total Cntg Error	SOIL	LA-508-471		+- 0.016	pCi/g	1.00	0.0	08/21/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	15117-96-1	Uranium-235	SOIL	LA-508-471	J	0.0150	pCi/g	1.00	5.2e-03	08/21/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	E.T.C	U-235 by AEA Total Cntg Error	SOIL	LA-508-471		+- 0.011	pCi/g	1.00	0.0	08/21/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	U-238	Uranium-238	SOIL	LA-508-471	U J	0.0160	pCi/g	1.00	0.019	08/21/06	08/16/06	08/16/06
W060002495	B1KB51	KLAGES	E.T.C	U-238 by AEA Total Cntg Error	SOIL	LA-508-471		+- 0.014	pCi/g	1.00	0.10	08/21/06	08/16/06	08/16/06

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

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

* - 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	**WSCF20060934**
Sample Matrix	**SOLID**
Sample Visual	**N/A**
SAF Number	**R06-013**
Data Deliverable	**Summary Report**

Introduction

Five (5) 200-UW-1 Operable Unit soil samples (B1KB49, B1KB50, B1KB51, B1KB75, B1KB76 and B1KB77) from the trench between 216-U-8 and 216-U-12 were received at the WSCF Laboratory on August 16, 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.

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, 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 69 through 70, for a complete listing of approved analytical methods used.

Inorganic Comments

Anions - The hold time requirements were met. A Blank, Duplicate, Laboratory Control Sample, Matrix Spike and Matrix Spike Duplicate were analyzed with this delivery group. See pages 15 through 16 for QC details. Analytical Notes:

- Preparation Date: 21-aug-2006.
- Chloride and Sulfate – Sample results for B1KB49 and B1KB50 were B-flagged; the analytes were less than the reportable detection limit, but greater than or equal to the method detection limit.
- Phosphate – Matrix Spike and Matrix Spike Duplicate recoveries were below established laboratory limits. Sample results were less than detection limits and U flagged.

All other QC controls are within the established limits.

ICP-AES Metals – The holding time for this analysis was met. A Blank, Laboratory Control Sample (LCS), Matrix Spike and Matrix Spike Duplicate were analyzed with this delivery group of less than 20 samples. See pages 17 through 19 for QC details. Analytical Notes:

- Preparation Date: 21-aug-2006.

- Aluminum, Calcium, Iron, Magnesium and Titanium – insufficient spike (Matrix Spike and Matrix Spike Duplicate) concentrations. Sample concentrations were greater than four times the spike concentration.

- Aluminum – Analyte detected in the associated preparation Blank sample was evaluated and sample result for B1KB51 was C flagged.

- Calcium – The Laboratory Control Sample recovery exceeded established laboratory limits. Calcium results for B1KB49, B1KB50 and B1KB51 were E flagged.

- Lithium – Although the Laboratory Control Sample recovery exceeded established laboratory limits, the Matrix Spike and Matrix Spike Duplicate recoveries were within established laboratory limits. Sample results were not E flagged.

- Silicon – Matrix Spike, Matrix Spike Duplicate and Laboratory Control Sample recoveries were outside established laboratory limits. B1KB49, B1KB50 and B1KB51 were E flagged.

All other QC controls are within the established limits.

ICP-MS Metals – The holding time for this analysis was met, with the exception of mercury. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spike Duplicate were analyzed with this deliver group of less than 20 samples. See pages 20 through 23 for QC details Analytical Notes:

- Preparation Date: 21-aug-2006.

- Thorium results listed in the report represent Th-232 exclusively.

- Zinc – Analyte detected in the associated preparation Blank sample was evaluated and sample B1KB51 was C flagged.

- Beryllium (samples B1KB49 and B1KB50), Thallium (samples B1KB49 and B1KB50), Manganese (sample B1KB51), Thorium (sample B1KB51) and Uranium (sample B1KB51) – Negative preparation blank results may have potential affect on sample results. Sample results were X flagged.

All other QC controls are within the established limits.

Percent Solids – analyzed for organic moisture correction.

<u>Organic Comments</u>

- 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, Matrix Spike and Matrix Spiked Duplicate were analyzed with this delivery group. See pages 38 through 44 for QC details. Analytical Notes:

- Preparation Date: 17-aug-2006.
- Bis (2-Ethylhexyl) phthalate - sample B1KB49 result was J flagged; result was less than the lowest calibration standard but greater than the detection limit.
- Di-n-octylphthalate - sample B1KB50 result was J flagged; result was less than the lowest calibration standard but greater than the detection limit.
- Diethylphthalate - samples results for B1KB50 and B1KB51 were J flagged; results were less than the lowest calibration standard but greater than the detection limit.
- Matrix Spike and Matrix Spike Duplicate QC samples were analyzed on sample# B1KB52 (SDG# 20060935, SAF# F06-013).

All QC controls are within the established limits.

TPHD-WA - The hold time for this analysis were met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with this delivery group. See page 45 for QC details. Analytical Notes:

- Preparation Date: 17-aug-2006.
- Matrix Spike and Matrix Spike Duplicate QC samples were analyzed on sample# B1KB52 (SDG# 20060935, SAF# F06-013).

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. See pages 46 through 49 for QC details. Analytical Note:

- 4-Bromofluorobenzene – Matrix Spike and Matrix Spike Duplicate QC exceeded established laboratory limits.

All other QC controls are within the established limits.

Radiochemistry Comments

RadChem – There are no hold times associated with WSCF radiochemical methods. A Blank, Laboratory Control Sample, Matrix Spike (Technetium only), and Duplicate were analyzed with this delivery group. See pages 57 through 64 for QC details. Analytical Notes:

- Gamma Energy Analysis (GEA) – The GEA results for samples B1KB49 and B1KB50 will be biased high because the 500ml bottles for the GEA test were only partially filled with sample.

- Pu-239/240 – Duplicate QC Relative Percent Difference (RPD) exceeded established laboratory limits due to low sample activity.

- Strontium-90 – Duplicate QC RPD exceeded established laboratory limits due to sample homogeneity issues.

- Technetium-99 – Matrix Spike QC RPD exceeded established laboratory limits due to low sample activity.

- Uranium Isotopic (233/234, 235 and 238) – Duplicate QC RPD exceeded established laboratory limits due to sample homogeneity issues.

All other QC controls are within the established limits.

Americium-243, Plutonium-242, Strontium-85 and Uranium-232 – Radiochemical Tracer Recovery Data are summarized below:

Radiochemical Tracer Percent Recovery			
Sample Number	**Lab Sample ID**	**Isotope**	**Tracer Recovery (Percent)**
Americium-243			
BLANK		Am-243	79.9%
LCS		Am-243	93.0%
B1KB49	W060002493	Am-243	85.8%
DUPLICATE	W060002493	Am-243	89.2%
B1KB50	W060002494	Am-243	95.5%
B1KB51	W060002495	Am-243	90.7%
Plutonium-242			
BLANK		Pu-242	84.0%
LCS		Pu-242	85.0%
B1KB49	W060002493	Pu-242	81.8%
DUPLICATE	W060002493	Pu-242	86.7%
B1KB50	W060002494	Pu-242	99.4%
B1KB51	W060002495	Pu-242	88.3%

Radiochemical Tracer Percent Recovery			
Sample Number	**Lab Sample ID**	**Isotope**	**Tracer Recovery (Percent)**
Strontium-85			
BLANK		Sr-85	98.9%
LCS		Sr-85	83.4%
B1KB49	W060002493	Sr-85	86.0%
DUPLICATE	W060002493	Sr-85	88.2%
B1KB50	W060002494	Sr-85	95.9%
B1KB51	W060002495	Sr-85	85.4%
Uranium-232			
BLANK		U-232	79.8%
LCS		U-232	75.6%
B1KB49	W060002493	U-232	121.6%
DUPLICATE	W060002493	U-232	93.0%
B1KB50	W060002494	U-232	131.7%
B1KB51	W060002495	U-232	103.6%

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.

Pauline D. Mix
WSCF Client Services

Abbreviations

Hg – mercury
IC – ion chromatography
ICP – inductively coupled plasma
ICP/AES – ICP/atomic emission spectroscopy
ICP/MS – ICP/mass spectrometry
Total U – total uranium
AT/TB – total alpha/total beta
AEA – Alpha Energy Analysis
WTPH-G – Total Hydrocarbons-Gasoline
Am – americium
Cm - curium
Pu – plutonium
Np – neptunium
GEA – gamma energy analysis
H3 – Tritium
Sr – Strontium 89, 90
WTPH-D – Total Hydrocarbons-Diesel
TSS – Total Suspended Solids

Fluor Hanford Inc.

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

R06-013-011

COLLECTOR
HOGAN, JG

COMPANY CONTACT
TRECHTER, JE

TELEPHONE NO.
373-7046

PROJECT COORDINATOR
TRECHTER, JE

PRICE CODE 8C

DATA TURNAROUND
7 DAYS ~~15 Days~~ 8-16-06
7 DAYS ~~15 Days~~

AIR QUALITY

SAMPLING LOCATION
200-W-42

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.

FIELD LOGBOOK NO.
DTS-SAMS-H

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

20060934

ICED
Initial
8/16/06
Date

SAMPLE NO.	LAB ID	MATRIX*	SAMPLE DATE	SAMPLE TIME	NO./TYPE CONTAINER(S)	ANALYSIS	PRESERVATION
B1KB49	W06000 2493	S	8-16-06	1530	4X60mL aG	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Cool 4C
B1KB49		S			4X60mL G	TPH-Diesel Range - WTPH-D {TPHKEROSEN}	Cool 4C
B1KB49		S			1X500mL Square Bottle - Poly	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	None
B1KB49		S			4X60mL G/P	Isotopic Plutonium {Pu-238, Pu-239/240} Isotopic Uranium {U-233/234, U-235, U-238} Americium-241 {Am-241}	None
B1KB49		S			4X60mL G/P	Strontium-89,90 -- Sr-90 {Sr-90}	None
B1KB49		S			4X60mL G/P	Technetium-99 {Tc-99}	None
B1KB49		S			4X60mL G/P	Neptunium-237 {Np-237}	None

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
JG HOGAN	8-16-06 1920	Victor Pines	8/16/06 19:20
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
SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

LABORATORY SECTION RECEIVED BY — TITLE — DATE/TIME

FINAL SAMPLE DISPOSAL METHOD — DISPOSED BY — DATE/TIME

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			R06-013-011	PAGE 2 OF 4
COLLECTOR HOGAN, JG	**COMPANY CONTACT** TRECHTER, JE	**TELEPHONE NO.** 373-7046	**PROJECT COORDINATOR** TRECHTER, JE	**PRICE CODE** 8C	**DATA TURNAROUND** ~~15 Days~~ 7 DAYS
SAMPLING LOCATION 200-W-42	**PROJECT DESIGNATION** 200-UW-1 Operable Unit, Soil from Trench between 216-U-8 and 216-U-12		**SAF NO.** R06-013	**AIR QUALITY** ☐	
ICE CHEST NO.	**FIELD LOGBOOK NO.** DTS-SAWS-H	**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		

ICED Initial Date

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, BENZOPY, BIS2CHE, BIS2CHM, BIS2EPH, BNZKFLU, BROPHEN, BUTBENP, CHLANIL, CHLCRES, CHLNAPH, CHLPHEN, CHRYSENE, DIBAHAN, DIBENFR, DIBPHTH, DICHBEN, DIEPHTH, DIMPHTH, DINPHEN, DIOPHTH, DIPRNIT, FLUORAN, FLUORENE, HEXCBEN, HEXCBUT, HEXCCYC, HEXCETH, INDENOP, ISOPHORONE, NAPHTHA, NITBENZ, NITPHENOL, NITRANILIN, NNDIPHA, PENTCHP, PHENANT, PHENOL, PYRENE, TRICHLB}
(2)Gamma Spec - Add-on {Ac-228, Ba-133, Ce-144, Cs/Pr-144, Cm-244, Cs-134, K-40, Nb-94, Ra-228, Ru-103, Sb-125, Sn-113, Sn-125, Sn-126, Th-228, Th-232, U-235, U-238, Zn-65} Gamma Spectroscopy {Am-241, Co-58, Co-60, Cs-137, Eu-152, Eu-154, Eu-155, Fe-59, Ra-226, Ru-106}

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A-6001-774

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			R06-013-011	PAGE 3 OF 4
COLLECTOR HOGAN, JG	COMPANY CONTACT TRECHTER, JE	TELEPHONE NO. 373-7046	PROJECT COORDINATOR TRECHTER, JE	PRICE CODE 8C	DATA TURNAROUND
SAMPLING LOCATION 200-W-42	PROJECT DESIGNATION 200-UW-1 Operable Unit, Soil from Trench between 216-U-8 and 216-U-12		SAF NO. R06-013	AIR QUALITY	7 DAYS ~~15 Days~~ 1/H 7 DAYS ~~15 Days~~ 8-16-06
ICE CHEST NO.	FIELD LOGBOOK NO. DTS-SAWS-H	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		

RECEIVED
Initial
8/14/06 Date

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
B1KB49		S	8-16-06	1530	4X60mL G/P	IC Anions - 300.0 {BROMIDE, CHLORIDE, FLUORIDE, NO2-N, NO3-N, PO4-P, SULFATE}	None
B1KB49		S			4X60mL G/P	ICP Metals - 6010A (Add-on) {~~B~~, ~~Be~~, La, ~~Li~~, ~~Sr~~, Sm, ~~Ti~~} ICP Metals - 6010A (TAL) {~~Al~~, ~~Co~~, ~~Fe~~, ~~K~~, ~~Mg~~, ~~Na~~}	Cool 4C
B1KB49		S			4X60mL G/P	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	None
B1KB75	W06000249~~6~~	S			1X40mL G	SEE ITEM (4) IN SPECIAL INSTRUCTIONS	Cool 4C
B1KB76	2497	S			1X40mL G	SEE ITEM (4) IN SPECIAL INSTRUCTIONS	Cool 4C
B1KB77	2498	S			1X40mL G	SEE ITEM (4) IN SPECIAL INSTRUCTIONS	Cool 4C

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS
RELINQUISHED BY/REMOVED FROM JG Hogan	DATE/TIME 1920 8-16-06	RECEIVED BY/STORED IN Victor Bias	DATE/TIME 19:20 8/16/06	SEE PAGE 4 FOR ALL SPECIAL INSTRUCTIONS
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	

LABORATORY SECTION RECEIVED BY | TITLE | DATE/TIME

FINAL SAMPLE DISPOSAL METHOD | DISPOSED BY | DATE/TIME

000025

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			R06-013-011	PAGE 4 OF 4
COLLECTOR HOGAN, JG	**COMPANY CONTACT** TRECHTER, JE	**TELEPHONE NO.** 373-7046	**PROJECT COORDINATOR** TRECHTER, JE	**PRICE CODE** 8C	**DATA TURNAROUND** ~~15 Days~~ 7 DAYS 8-16-06
SAMPLING LOCATION 200-W-42	**PROJECT DESIGNATION** 200-UW-1 Operable Unit, Soil from Trench between 216-U-8 and 216-U-12		**SAF NO.** R06-013	**AIR QUALITY** ☐	
ICE CHEST NO.	**FIELD LOGBOOK NO.** DTS-SAWS-64	**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		

VISED
Initial
8/16/06 Date

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) {~~Ag, Be, Mo, Nb, 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}
(4)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, STYRENE, TOLUENE, TRANS13, TRICELN, VINYIDE, XYLENES}

A-6001-774

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			R06-013-013	PAGE 1 OF 3
COLLECTOR HOGAN, JG	COMPANY CONTACT TRECHTER, JE	TELEPHONE NO. 373-7046	PROJECT COORDINATOR TRECHTER, JE	PRICE CODE 8C	DATA TURNAROUND
SAMPLING LOCATION 200-W-42	PROJECT DESIGNATION 200-UW-1 Operable Unit, Soil from Trench between 216-U-8 and 216-U-12		SAF NO. R06-013	AIR QUALITY ☐	7 Days / ~~15 Days~~ / ~~14 Days~~ 8-16-06
ICE CHEST NO.	FIELD LOGBOOK NO. DTS-SAWS-H	COA 121600ES20	METHOD OF SHIPMENT GOVERNMENT VEHICLE	8/16/06 Initial Date	
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
B1KB50	WO 6002494	S	8-16-06	1570	4X60mL aG	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Cool 4C
B1KB50		S			4X60mL G	TPH-Diesel Range - WTPH-D {TPHKEROSEN}	Cool 4C
B1KB50		S			1X500mL Square Bottle - Poly	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	None
B1KB50		S			4X60mL G/P	Isotopic Plutonium {Pu-238, Pu-239/240} Isotopic Uranium {U-233/234, U-235, U-238} Americium-241 {Am-241}	None
B1KB50		S			4X60mL G/P	Strontium-89,90 -- Sr-90 {Sr-90}	None
B1KB50		S			4X60mL G/P	Technetium-99 {Tc-99}	None
B1KB50		S			4X60mL G/P	Neptunium-237 {Np-237}	None

CHAIN OF POSSESSION — SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
JG Hogan J T Hogan	1920 8-16-06	Victor Jones	8/16/06 1920
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
SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

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

0000027

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			R06-013-013	PAGE 2 OF 3
COLLECTOR HOGAN, JG	COMPANY CONTACT TRECHTER, JE	TELEPHONE NO. 373-7046	PROJECT COORDINATOR TRECHTER, JE	PRICE CODE 8C	DATA TURNAROUND 7 DAYS ~~15 Days~~ 5-16-06
SAMPLING LOCATION 200-W-42	PROJECT DESIGNATION 200-UW-1 Operable Unit, Soil from Trench between 216-U-8 and 216-U-12		SAF NO. R06-013	AIR QUALITY	
ICE CHEST NO.	FIELD LOGBOOK NO. DTS-SAWS-4	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		

Initial
Date

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, BENZOPY, BIS2CHE, BIS2CHM, BIS2EPH, BNZKFLU, BROPHEN, BUTBENP, CHLANIL, CHLCRES, CHLNAPH, CHLPHEN, CHRYSENE, DIBAHAN, DIBENFR, DIBPHTH, DICHBEN, DIEPHTH, DIMPHTH, DINPHEN, DIOPHTH, DIPRNIT, FLUORAN, FLUORENE, HEXCBEN, HEXCBUT, HEXCCYC, HEXCETH, INDENOP, ISOPHORONE, NAPHTHA, NITBENZ, NITPHENOL, NITRANILIN, NNDIPHA, PENTCHP, PHENANT, PHENOL, PYRENE, TRICHLB}

(2)Gamma Spec - Add-on {Ac-228, Ba-133, Ce-144, Ce/Pr-144, Cm-244, Cs-134, K-40, Nb-94, Ra-228, Ru-103, Sb-125, Sn-113, Sn-125, Sn-126, Th-228, Th-232, U-235, U-238, Zn-65} Gamma Spectroscopy {Am-241, Co-58, Co-60, Cs-137, Eu-152, Eu-154, Eu-155, Fe-59, Ra-226, Ru-106}

A-6001-774

Fluor Hanford Inc.

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

R06-013-013 PAGE 3 OF 3

COLLECTOR: HOGAN, JG	COMPANY CONTACT: TRECHTER, JE	TELEPHONE NO.: 373-7046	PROJECT COORDINATOR: TRECHTER, JE
PRICE CODE: 8C	DATA TURNAROUND: ~~7 DAYS~~ ~~15 Days~~ 14 ~~7 days~~ ~~15 Days~~ 8-16-06		
SAMPLING LOCATION: 200-W-42	PROJECT DESIGNATION: 200-UW-1 Operable Unit, Soil from Trench between 216-U-8 and 216-U-12	SAF NO.: R06-013	AIR QUALITY: ☐
ICE CHEST NO.	FIELD LOGBOOK NO.: DTS-SAWS-H	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

RECEIVED Initial 8/16/06 Date

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
B1KB50		S	8-16-06	1530	4X60mL G/P	IC Anions - 300.0 {BROMIDE, CHLORIDE, FLUORIDE, NO2-N, NO3-N, PO4-P, SULFATE}	None
B1KB50		S			4X60mL G/P	ICP Metals - 6010A (Add-on) {B, Bi, La, Li, Si, Sm, Ti} ICP Metals - 6010A (TAL) {Al, Ca, Fe, K, Mg, Na}	Cool 4C
B1KB50		S			4X60mL G/P	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	None

CHAIN OF POSSESSION

SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
JG Hogan	1920 8-16-06	Victor Jones	8/16/06 1920
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 — DISPOSAL METHOD — DISPOSED BY — DATE/TIME

000029

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			R06-013-015	PAGE 1 OF 3
COLLECTOR HOGAN, JG	COMPANY CONTACT TRECHTER, JE	TELEPHONE NO. 373-7046	PROJECT COORDINATOR TRECHTER, JE	PRICE CODE 8C	DATA TURNAROUND
SAMPLING LOCATION 200-W-42	PROJECT DESIGNATION 200-UW-1 Operable Unit, Soil from Trench between 216-U-8 and 216-U-12		SAF NO. R06-013	AIR QUALITY ☐	7 DAYS ~~15 Days~~ / N/A 7 DAYS ~~15 Days~~ 8-16-06
ICE CHEST NO.	FIELD LOGBOOK NO. DTS-SAMS-H	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		

ICED Initial 8/16/06 Date

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
B1KB51	W06000249S	S	8-16-06	1000	4X60mL aG	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Cool 4C
B1KB51		S			4X60mL G	TPH-Diesel Range - WTPH-D {TPHKEROSEN}	Cool 4C
B1KB51		S			1X500mL Square Bottle - Poly	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	None
B1KB51		S			4X60mL G/P	Isotopic Plutonium {Pu-238, Pu-239/240} Isotopic Uranium {U-233/234, U-235, U-238} Americium-241 {Am-241}	None
B1KB51		S			4X60mL G/P	Strontium-89,90 -- Sr-90 {Sr-90}	None
B1KB51		S			4X60mL G/P	Technetium-99 {Tc-99}	None
B1KB51		S			4X60mL G/P	Neptunium-237 {Np-237}	None

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS
RELINQUISHED BY/REMOVED FROM JG Hogan	DATE/TIME 1920 8-16-06	RECEIVED BY/STORED IN Victor Binns	DATE/TIME 1912 8/16/06	SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS
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	

LABORATORY SECTION RECEIVED BY TITLE DATE/TIME

FINAL SAMPLE DISPOSAL METHOD DISPOSED BY DATE/TIME

000030

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			R06-013-015	PAGE 2 OF 3
COLLECTOR HOGAN, JG	**COMPANY CONTACT** TRECHTER, JE	**TELEPHONE NO.** 373-7046	**PROJECT COORDINATOR** TRECHTER, JE	**PRICE CODE** 8C	**DATA TURNAROUND** 7 DAYS ~~15 DAYS~~ M 8-16-00
SAMPLING LOCATION 200-W-42	**PROJECT DESIGNATION** 200-UW-1 Operable Unit, Soil from Trench between 216-U-8 and 216-U-12		**SAF NO.** R06-013	**AIR QUALITY**	
ICE CHEST NO.	**FIELD LOGBOOK NO.** DTS-SAWS-H	**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		

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, BENZOPY, BIS2CHE, BIS2CHM, BIS2EPH, BNZKFLU, BROPHEN, BUTBENP, CHLANIL, CHLCRES, CHLNAPH, CHLPHEN, CHRYSENE, DIBAHAN, DIBENFR, DIBPHTH, DICHBEN, DIEPHTH, DIMPHTH, DINPHEN, DIOPHTH, DIPRNIT, FLUORAN, FLUORENE, HEXCBEN, HEXCBUT, HEXCCYC, HEXCETH, INDENOP, ISOPHORONE, NAPHTHA, NITBENZ, NITPHENOL, NITRANILIN, NNDIPHA, PENTCHP, PHENANT, PHENOL, PYRENE, TRICHLB}

(2)Gamma Spec - Add-on {Ac-228, Ba-133, Ce-144, Ce/Pr-144, Cm-244, Cs-134, K-40, Nb-94, Ra-228, Ru-103, Sb-125, Sn-113, Sn-125, Sn-126, Th-228, Th-232, U-235, U-238, Zn-65} Gamma Spectroscopy {Am-241, Co-58, Co-60, Cs-137, Eu-152, Eu-154, Eu-155, Fe-59, Ra-226, Ru-106}

000031

A-6001-774

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			R06-013-015	PAGE 3 OF 3
COLLECTOR HOGAN, JG	COMPANY CONTACT TRECHTER, JE	TELEPHONE NO. 373-7046	PROJECT COORDINATOR TRECHTER, JE	PRICE CODE 8C	DATA TURNAROUND
SAMPLING LOCATION 200-W-42	PROJECT DESIGNATION 200-UW-1 Operable Unit, Soil from Trench between 216-U-8 and 216-U-12		SAF NO. R06-013	AIR QUALITY	7 DAYS ~~15 Days~~ 7 DAYS ~~15 Days~~ 8-16-06
ICE CHEST NO.	FIELD LOGBOOK NO. DTS-SAWS	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		

Initial
8/16/06 Date

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
B1KB51		S	8-16-06	1000	4X60mL G/P	IC Anions - 300.0 {BROMIDE, CHLORIDE, FLUORIDE, NO2-N, NO3-N, PO4-P, SULFATE}	None
B1KB51		S			4X60mL G/P	ICP Metals - 6010A (Add-on) {B, Bi, La, Li, Si, Sm, Ti} ICP Metals - 6010A (TAL) {Al, Ca, Fe, K, Mg, Na}	Cool 4C
B1KB51		S			4X60mL G/P	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	None

CHAIN OF POSSESSION — SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
JG HOGAN J Hogan	1920 8-16-06	Victor Bins	8/16/06 1920
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	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

000032

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:	60934	
VALIDATOR: TLT		LAB: WSCF		DATE:	
			SDG: 60934		
ANALYSES PERFORMED					
Gross Alpha/Beta	Strontium-90	Technetium-99	Alpha Spectroscopy	Gamma Spectroscopy	
Total Uranium	Radium-22	Tritium			
SAMPLES/MATRIX					
B1KB49	B1KB50	B1KB51			
					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: mb - actinium 228 - J (51)
radium - 226 - J (51)
radium - 228 - J (51)
pu-239/40 — J (49)
uranium 233/34 - J (51)

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 LCS - J all
U233 " - J all
U235 " - 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: 49/50 – yield
49 – 121% 50 – 131% – J all detects
Uranium

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: Tc-99 – 47% – J all

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: ~~po 237/40 = 449~~ 8/30/21

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: 49 - 152, 155, Ra 226
50 - EU-152, EU-154, EU-155 + Ra 226 over

Appendix 6

Additional Documentation Requested by Client

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: 20060934
Matrix: SOLID
Test: Gamma Energy Analysis-grd H2O

SAF Number: R06-013
Sample Date: 08/16/06
Receive Date:08/16/06

Lab ID: W060002493

BATCH QC ASSOCIATED WITH SAMPLE

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
DUP	Actinium-228	14331-83-0	1.46e+00	5.634	RPD	08/21/06	0.000	20.000	
DUP	Americium-241	14596-10-2	U-1.1e-1	n/a	RPD	08/21/06	0.000	20.000	
DUP	Ba-133 by GEA	13981-41-4	U-5.7e-2	n/a	RPD	08/21/06	0.000	20.000	
DUP	Cerium-144	14762-78-8	U6.24e-2	n/a	RPD	08/21/06	0.000	20.000	
DUP	Cerium/Praseodymium-144	CE/PR-144	U1.25e-1	n/a	RPD	08/21/06	0.000	20.000	
DUP	Cobalt-60	10198-40-0	U2.49e-3	n/a	RPD	08/21/06	0.000	20.000	
DUP	Cesium-134	13967-70-9	U8.19e-02	n/a	RPD	08/21/06	0.000	20.000	
DUP	Cesium-137	10045-97-3	6.57e+01	2.154	RPD	08/21/06	0.000	20.000	
DUP	Europium-152	14683-23-9	U1.99e-2	n/a	RPD	08/21/06	0.000	20.000	
DUP	Europium-154	15585-10-1	U-4.5e-2	n/a	RPD	08/21/06	0.000	20.000	
DUP	Europium-155	14391-16-3	U-5.4e-2	n/a	RPD	08/21/06	0.000	20.000	
DUP	Potassium-40	13966-00-2	2.86e+01	0.702	RPD	08/21/06	0.000	20.000	
DUP	Niobium-94	14681-63-1	U-2.3e-3	n/a	RPD	08/21/06	0.000	20.000	
DUP	Radium-226	13982-63-3	1.11e+00	4.608	RPD	08/21/06	0.000	20.000	
DUP	Radium-228	15262-20-1	1.46e+00	5.634	RPD	08/21/06	0.000	20.000	
DUP	Ruthenium-103	13968-53-1	U2.69e-2	n/a	RPD	08/21/06	0.000	20.000	
DUP	Ruthenium-106	13967-48-1	U-2.0e-1	n/a	RPD	08/21/06	0.000	20.000	
DUP	Antimony-125	14234-35-6	U-7.4e-3	n/a	RPD	08/21/06	0.000	20.000	
DUP	Tin-113	13966-06-8	U4.85e-3	n/a	RPD	08/21/06	0.000	20.000	
DUP	Tin-126	15832-50-5	U4.95e-01	n/a	RPD	08/21/06	0.000	20.000	
DUP	Uranium-235	15117-96-1	U4.17e-1	n/a	RPD	08/21/06	0.000	20.000	
DUP	Zinc-65	13982-39-3	U3.72e-2	n/a	RPD	08/21/06	0.000	20.000	

BATCH QC

BLANK	Actinium-228	14331-83-0	4.56e-02	0.046	pCi/g	08/18/06	-10.000	1000.000	
BLANK	Americium-241	14596-10-2	U-3.0e-3	n/a	pCi/g	08/18/06	-10.000	1000.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: 20060934
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	Ba-133 by GEA	13981-41-4	U-6.8e-4	n/a	pCi/g	08/18/06	-10.000	1000.000	
BLANK	Cerium-144	14762-78-8	U2.76e-2	n/a	pCi/g	08/18/06	-10.000	1000.000	
BLANK	Cerium/Praseodymium-144	CE/PR-144	U5.52e-2	n/a	pCi/g	08/18/06	-10.000	1000.000	
BLANK	Cobalt-60	10198-40-0	U1.99e-3	n/a	pCi/g	08/18/06	-10.000	1000.000	
BLANK	Cesium-134	13967-70-9	U5.40e-3	n/a	pCi/g	08/18/06	-10.000	1000.000	
BLANK	Cesium-137	10045-97-3	U-3.2e-3	n/a	pCi/g	08/18/06	-10.000	1000.000	
BLANK	Europium-152	14683-23-9	U4.32e-3	n/a	pCi/g	08/18/06	-10.000	1000.000	
BLANK	Europium-154	15585-10-1	U-5.8e-3	n/a	pCi/g	08/18/06	-10.000	1000.000	
BLANK	Europium-155	14391-16-3	U5.54e-3	n/a	pCi/g	08/18/06	-10.000	1000.000	
BLANK	Potassium-40	13966-00-2	6.17e-02	0.062	pCi/g	08/18/06	-10.000	1000.000	
BLANK	Niobium-94	14681-63-1	U1.54e-3	n/a	pCi/g	08/18/06	-10.000	1000.000	
BLANK	Radium-226	13982-63-3	7.48e-02	0.075	pCi/g	08/18/06	-10.000	1000.000	
BLANK	Radium-228	15262-20-1	4.56e-02	0.046	pCi/g	08/18/06	-10.000	1000.000	
BLANK	Ruthenium-103	13968-53-1	U-1.8e-3	n/a	pCi/g	08/18/06	-10.000	1000.000	
BLANK	Ruthenium-106	13967-48-1	U4.42e-3	n/a	pCi/g	08/18/06	-10.000	1000.000	
BLANK	Antimony-125	14234-35-6	U-8.7e-4	n/a	pCi/g	08/18/06	-10.000	1000.000	
BLANK	Tin-113	13966-06-8	U-1.6e-3	n/a	pCi/g	08/18/06	-10.000	1000.000	
BLANK	Tin-126	15832-50-5	U6.86e-3	n/a	pCi/g	08/18/06	-10.000	1000.000	
BLANK	Uranium-235	15117-96-1	U1.70e-2	n/a	pCi/g	08/18/06	-10.000	1000.000	
BLANK	Zinc-65	13982-39-3	U4.09e-3	n/a	pCi/g	08/18/06	-10.000	1000.000	
LCS	Americium-241	14596-10-2	4.04e+03	103.061	% Recov	08/22/06	80.000	120.000	
LCS	Cobalt-60	10198-40-0	4.52e+03	107.876	% Recov	08/22/06	80.000	120.000	
LCS	Cesium-137	10045-97-3	4.07e+03	113.687	% Recov	08/22/06	80.000	120.000	

000042

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: 20060934
Matrix: SOLID
Test: Americium by AEA

SAF Number: R06-013
Sample Date: 08/16/06
Receive Date:08/16/06

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
Lab ID: W060002493									
BATCH QC ASSOCIATED WITH SAMPLE									
DUP	Americium-241	14596-10-2	U1.3e-02	n/a	RPD	08/18/06	0.000	20.000	
BATCH QC									
BLANK	Americium-241	14596-10-2	U4.1e-02	n/a	pCi/g	08/18/06	-10.000	1000.000	
LCS	Americium-241	14596-10-2	1.2e+01	99.792	% Recov	08/18/06	75.000	125.000	

000043

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: 20060934
Matrix: SOLID
Test: Neptunium by AEA

SAF Number: R06-013
Sample Date: 08/16/06
Receive Date:08/16/06

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
Lab ID: W060002493									
BATCH QC ASSOCIATED WITH SAMPLE									
DUP	Neptunium-237	13994-20-2	1.33	n/a	RPD	08/18/06	0.000	25.000	
BATCH QC									
BLANK	Neptunium-237	13994-20-2	U5.3e-03	n/a	pCi/g	08/18/06	-10.000	1000.000	
LCS	Neptunium-237	13994-20-2	8.8e+01	88.000	% Recov	08/18/06	75.000	125.000	

000044

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: 20060934
Matrix: SOLID
Test: Plutonium Isotopics by AEA

SAF Number: R06-013
Sample Date: 08/16/06
Receive Date:08/16/06

Lab ID: W060002493

BATCH QC ASSOCIATED WITH SAMPLE

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
DUP	Plutonium-238	13981-16-3	U3.6e-03	n/a	RPD	08/18/06	0.000	20.000	
DUP	Pu-239/240 by AEA	PU-239/240	1.4e-02	44.444	RPD	08/18/06	0.000	20.000	*

BATCH QC

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
BLANK	Plutonium-238	13981-16-3	U-2.0e-03	n/a	pCi/g	08/18/06	-10.000	1000.000	
BLANK	Pu-239/240 by AEA	PU-239/240	1.6e-02	0.016	pCi/g	08/18/06	-10.000	1000.000	
LCS	Pu-239/240 by AEA	PU-239/240	1.4e+01	99.432	% Recov	08/18/06	75.000	125.000	

000045

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: 20060934
Matrix: SOLID
Test: Strontium 89/90

SAF Number: R06-013
Sample Date: 08/16/06
Receive Date:08/16/06

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
Lab ID: W060002493									
BATCH QC ASSOCIATED WITH SAMPLE									
DUP	Strontium-89/90	SR-RAD	3.3	29.677	RPD	08/18/06	0.000	20.000	*
BATCH QC									
BLANK	Strontium-89/90	10098-97-2	-9.1E-02	-0.091	pCi/g	08/18/06	-10.000	300.000	
LCS	Strontium-89/90	10098-97-2	93.4	108.731	% Recov	08/18/06	80.000	120.000	

000046

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: 20060934
Matrix: SOLID
Test: TC99 by Liquid Scin.

SAF Number: R06-013
Sample Date: 08/16/06
Receive Date:08/16/06

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
Lab ID: W060002493									
BATCH QC ASSOCIATED WITH SAMPLE									
DUP	Technetium-99	14133-76-7	U-9.8e-02	n/a	RPD	08/18/06	0.000	20.000	
MS	Technetium-99	14133-76-7	534.8	47.490	% Recov	08/18/06	75.000	125.000	•
BATCH QC									
BLANK	Technetium-99	14133-76-7	U-7.5e-01	n/a	pCi/g	08/18/06	-10.000	1000.000	
LCS	Technetium-99	14133-76-7	11864.4	105.356	% Recov	08/18/06	75.000	125.000	

000047

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: 20060934
Matrix: SOLID
Test: Uranium Isotopics by AEA

SAF Number: R06-013
Sample Date: 08/16/06
Receive Date:08/16/06

Lab ID: W060002493

BATCH QC ASSOCIATED WITH SAMPLE

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
DUP	Uranium-233/234	U-233/234	1.7	25.641	RPD	08/18/06	0.000	20.000	*
DUP	Uranium-235	15117-96-1	1.6e-01	31.579	RPD	08/18/06	0.000	20.000	*
DUP	Uranium-238	U-238	1.5	28.571	RPD	08/18/06	0.000	20.000	*

BATCH QC

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
BLANK	Uranium-233/234	13966-29-5	2.3e-02	0.023	pCi/g	08/18/06	-10.000	1000.000	
BLANK	Uranium-235	15117-96-1	U1.3e-02	n/a	pCi/g	08/18/06	-10.000	1000.000	
BLANK	Uranium-238	24678-82-8	U1.6e-02	n/a	pCi/g	08/18/06	-10.000	1000.000	
LCS	Uranium-238	24678-82-8	2.0e+01	105.513	% Recov	08/18/06	75.000	125.000	

000048