0076543

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Memorandum

M8141-SLF-06-197

To: D. L. Klages H8-40 Date: July 27, 2006

From: S. L. Fitzgerald, Manager
WSCF Analytical Chemistry M. Stauffer for SLF 7/27/06

cc:

S. J. Trent (FH)	A0-21
T. F. Dale	S3-30
H. K. Meznarich	S3-30
P. D. Mix	S3-30
J. E. Trechter	S3-30
File/LB	
(Above w/attachments)	

Subject: FINAL RESULTS FOR 200-UW-1 OPERABLE UNIT TRENCH – SAMPLE DELIVERY GROUP WSCF20060733 – SAF NUMBER R06-013

Reference:
(1) 200-UW-1 Operable Unit Support Activities Sampling – Letter of Instruction, D&D-27876, Rev. 0, dated December 14, 2005

(2) HNF-SD-CD-QAPP-017, Rev. 7, Waste Sampling & Characterization Facility Quality Assurance Plan

This letter contains a narrative (Attachment 1) for sample delivery group WSCF20060733, the analytical results (Attachment 2), and the sample receipt information (Attachment 3).

SLF/grf

Attachments 3

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M8141-SLF-06-197

ATTACHMENT 1

NARRATIVE

Consisting of 3 pages
Including cover page

Sample Delivery Group	**WSCF20060733**
Sample Matrix	**SOLID**
Sample Visual	**N/A**
SAF Number	**R06-013**
Data Deliverable	**Summary Report**

Introduction

Three (3) soil samples (B1HVM6-A, B1HVM8-A and B1HVN0-A) from the 200-UW-1 Operable Unit Trench were received at the WSCF Laboratory on April 12, 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.

All samples were taken using the Multi-Increment Sampling Program, which requires the entire sample submitted to be analyzed.

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,* page 27, for a complete listing of approved analytical methods used.

Inorganic Comments

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 14 through 19 for QC details. Analytical Notes:

- Lithium LCS, Matrix Spike and Matrix Spike Duplicate were biased high which resulted in an "E" flag.
- Potassium and Sodium Matrix Spike and Matrix Spike Duplicate were biased high resulting in an "E" flag.
- Silicon Matrix Spike and Matrix Spike Duplicate were low, resulting in an "E" flag.
- Zirconium LCS was biased low resulting in an "E" flag.
- Iron, Calcium, Magnesium, Phosphorous and Titanium sample results were above effective spike range which resulted in "NA" being reported.

Note: Analytes analyzed by both ICP- AES and ICP – MS were not reported for both methods. Data generated by ICP-MS was reported in these cases.

All other QC controls are within the established limits.

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

- Thorium results listed in the report represent Th-232 exclusively.
- Beryllium and Uranium preparation blanks yielded negative values with greater than an absolute value of 5% on the sample result, resulting in "C" flags.

All other QC controls are within the established limits.

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
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

M8141-SLF-06-197

ATTACHMENT 2

ANALYTICAL RESULTS

Consisting of 24 pages
Including cover page

WSCF
ANALYTICAL RESULTS REPORT

for

PROJECT HANFORD MANAGEMENT COMPANY
RICHLAND, WA 99354

Attention: D KLAGES

Analytical: WW Baird 7/27/06

Client Services: John Troechter

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

CONTROLLED USE INFORMATION: The recipient of this report has the responsibility to protect and safeguard the requested information from unauthorized disclosure or misuse. This information is intended for the use of the addressee only. If the reader of this report is not the intended recipient or is not authorized by the recipient to receive the report, you are hereby notified that any dissemination, distribution or copying of this report is strictly prohibited. If you have received this report in error, please notify WSCF Laboratory immediately by telephone at (509) 373-7020 or (509) 531-8004. WSCF will not identify analytical reports as Official Use Only (OUO) or Sensitive. This classification must be determined by the owner of the report.

Report#: 20060733
Report Date: 27-jul-2006
Report W005/ver. 1.2
PROJECT HANFORD MANAGEMENT COMPANY

WSCF
ANALYTICAL RESULTS REPORT

Attention: D KLAGES **Group #:** 20060733

Sample #	Client ID		CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
Inorganic														
W060001923	B1HVM6-A	KLAGES	7429-90-5	Aluminum by ICP	SOLID	LA-505-411		see ICP-MS	ug/g	1.04e+003	38	07/25/06	03/14/06	07/10/06
W060001923	B1HVM6-A	KLAGES	7439-89-6	Iron by ICP	SOLID	LA-505-411		3.27e+04	ug/g	1.04e+003	34	07/25/06	03/14/06	07/10/06
W060001923	B1HVM6-A	KLAGES	7439-95-4	Magnesium by ICP	SOLID	LA-505-411		6.28e+03	ug/g	1.04e+003	16	07/25/06	03/14/06	07/10/06
W060001923	B1HVM6-A	KLAGES	7439-96-5	Manganese by ICP	SOLID	LA-505-411		see ICP-MS	ug/g	1.04e+003	3.1	07/25/06	03/14/06	07/10/06
W060001923	B1HVM6-A	KLAGES	7440-02-0	Nickel by ICP	SOLID	LA-505-411		see ICP-MS	ug/g	1.04e+003	5.2	07/25/06	03/14/06	07/10/06
W060001923	B1HVM6-A	KLAGES	7440-09-7	Potassium by ICP	SOLID	LA-505-411	E	1.00e+03	ug/g	1.04e+003	2.3e+02	07/25/06	03/14/06	07/10/06
W060001923	B1HVM6-A	KLAGES	7440-22-4	Silver by ICP	SOLID	LA-505-411		see ICP-MS	ug/g	1.04e+003	11	07/25/06	03/14/06	07/10/06
W060001923	B1HVM6-A	KLAGES	7440-23-5	Sodium by ICP	SOLID	LA-505-411	E	319	ug/g	1.04e+003	1.2e+02	07/25/06	03/14/06	07/10/06
W060001923	B1HVM6-A	KLAGES	7440-36-0	Antimony by ICP	SOLID	LA-505-411		see ICP-MS	ug/g	1.04e+003	75	07/25/06	03/14/06	07/10/06
W060001923	B1HVM6-A	KLAGES	7440-39-3	Barium by ICP	SOLID	LA-505-411		see ICP-MS	ug/g	1.04e+003	1.0	07/25/06	03/14/06	07/10/06
W060001923	B1HVM6-A	KLAGES	7440-43-9	Cadmium by ICP	SOLID	LA-505-411		see ICP-MS	ug/g	1.04e+003	3.1	07/25/06	03/14/06	07/10/06
W060001923	B1HVM6-A	KLAGES	7440-47-3	Chromium by ICP	SOLID	LA-505-411		see ICP-MS	ug/g	1.04e+003	7.3	07/25/06	03/14/06	07/10/06
W060001923	B1HVM6-A	KLAGES	7440-48-4	Cobalt by ICP	SOLID	LA-505-411		see ICP-MS	ug/g	1.04e+003	7.3	07/25/06	03/14/06	07/10/06
W060001923	B1HVM6-A	KLAGES	7440-50-8	Copper by ICP	SOLID	LA-505-411		see ICP-MS	ug/g	1.04e+003	7.3	07/25/06	03/14/06	07/10/06
W060001923	B1HVM6-A	KLAGES	7440-62-2	Vanadium by ICP	SOLID	LA-505-411		see ICP-MS	ug/g	1.04e+003	15	07/25/06	03/14/06	07/10/06
W060001923	B1HVM6-A	KLAGES	7440-66-6	Zinc by ICP	SOLID	LA-505-411		see ICP-MS	ug/g	1.04e+003	2.1	07/25/06	03/14/06	07/10/06
W060001923	B1HVM6-A	KLAGES	7440-70-2	Calcium by ICP	SOLID	LA-505-411		9.27e+03	ug/g	1.04e+003	32	07/25/06	03/14/06	07/10/06
W060001923	B1HVM6-A	KLAGES	7439-92-1	Lead by ICP	SOLID	LA-505-411		see ICP-MS	ug/g	1.04e+003	49	07/25/06	03/14/06	07/10/06
W060001923	B1HVM6-A	KLAGES	7439-93-2	Lithium by ICP	SOLID	LA-505-411	E	7.93	ug/g	1.04e+003	6.2	07/25/06	03/14/06	07/10/06
W060001923	B1HVM6-A	KLAGES	7439-98-7	Molybdenum, ICP	SOLID	LA-505-411		see ICP-MS	ug/g	1.04e+003	11	07/25/06	03/14/06	07/10/06
W060001923	B1HVM6-A	KLAGES	7440-24-6	Strontium by ICP	SOLID	LA-505-411		see ICP-MS	ug/g	1.04e+003	1.0	07/25/06	03/14/06	07/10/06
W060001923	B1HVM6-A	KLAGES	7440-28-0	Thallium by ICP	SOLID	LA-505-411		see ICP-MS	ug/g	1.04e+003	78	07/25/06	03/14/06	07/10/06
W060001923	B1HVM6-A	KLAGES	7440-31-5	Tin	SOLID	LA-505-411		see ICP-MS	ug/g	1.04e+003	59	07/25/06	03/14/06	07/10/06
W060001923	B1HVM6-A	KLAGES	7440-32-6	Titanium by ICP	SOLID	LA-505-411		1.87e+03	ug/g	1.04e+003	4.2	07/25/06	03/14/06	07/10/06
W060001923	B1HVM6-A	KLAGES	7440-38-2	Arsenic by ICP	SOLID	LA-505-411		see ICP-MS	ug/g	1.04e+003	82	07/25/06	03/14/06	07/10/06
W060001923	B1HVM6-A	KLAGES	7440-41-7	Beryllium by ICP	SOLID	LA-505-411		see ICP-MS	ug/g	1.04e+003	1.0	07/25/06	03/14/06	07/10/06

MDL = Minimum Detection Limit
RQ = Result Qualifier

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

DF = Dilution Factor

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: D KLAGES **Group #:** 20060733

Sample #	Client ID		CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receiv
W060001923	B1HVM6-A	KLAGES	7440-42-8	Boron by ICP	SOLID	LA-505-411	U	< 21.8	ug/g	1.04e+003	22	07/25/06	03/14/06	07/10/06
W060001923	B1HVM6-A	KLAGES	7440-67-7	Zirconium by ICP	SOLID	LA-505-411	U	< 8.31	ug/g	1.04e+003	8.3	07/25/06	03/14/06	07/10/06
W060001923	B1HVM6-A	KLAGES	7440-69-9	Bismuth by ICP	SOLID	LA-505-411	U	< 55.1	ug/g	1.04e+003	55	07/25/06	03/14/06	07/10/06
W060001923	B1HVM6-A	KLAGES	7440-21-3	Silicon by ICP	SOLID	LA-505-411	E	127	ug/g	1.04e+003	78	07/25/06	03/14/06	07/10/06
W060001923	B1HVM6-A	KLAGES	7704-34-9	Sulfur by ICP	SOLID	LA-505-411		NA	ug/g	1.00	0.0	07/25/06	03/14/06	07/10/06
W060001923	B1HVM6-A	KLAGES	7723-14-0	Phosphorus by ICP	SOLID	LA-505-411		1.03e+03	ug/g	1.04e+003	98	07/25/06	03/14/06	07/10/06
W060001923	B1HVM6-A	KLAGES	7782-49-2	Selenium by ICP	SOLID	LA-505-411		see ICP-MS	ug/g	1.04e+003	53	07/25/06	03/14/06	07/10/06
W060001923	B1HVM6-A	KLAGES	7429-90-5	Aluminum by ICP-MS	SOLID	LA-505-412		5.36e+03	ug/g	1.03	2.06	07/18/06	03/14/06	07/10/06
W060001923	B1HVM6-A	KLAGES	7439-96-5	Manganese by ICP-MS	SOLID	LA-505-412		360	ug/g	1.03	0.0206	07/18/06	03/14/06	07/10/06
W060001923	B1HVM6-A	KLAGES	7440-02-0	Nickel by ICP-MS	SOLID	LA-505-412		8.39	ug/g	1.03	0.0619	07/18/06	03/14/06	07/10/06
W060001923	B1HVM6-A	KLAGES	7440-22-4	Silver by ICP-MS	SOLID	LA-505-412	U	< 0.0413	ug/g	1.03	0.0413	07/18/06	03/14/06	07/10/06
W060001923	B1HVM6-A	KLAGES	7440-36-0	Antimony by ICP-MS	SOLID	LA-505-412	U	< 0.310	ug/g	1.03	0.310	07/18/06	03/14/06	07/10/06
W060001923	B1HVM6-A	KLAGES	7440-39-3	Barium by ICP-MS	SOLID	LA-505-412		81.8	ug/g	1.03	0.206	07/18/06	03/14/06	07/10/06
W060001923	B1HVM6-A	KLAGES	7440-41-7	Beryllium by ICP-MS	SOLID	LA-505-412	C	0.216	ug/g	1.03	0.0206	07/18/06	03/14/06	07/10/06
W060001923	B1HVM6-A	KLAGES	7440-43-9	Cadmium by ICP-MS	SOLID	LA-505-412		0.0597	ug/g	1.03	0.0413	07/18/06	03/14/06	07/10/06
W060001923	B1HVM6-A	KLAGES	7440-47-3	Chromium by ICP-MS	SOLID	LA-505-412		6.01	ug/g	1.03	0.722	07/18/06	03/14/06	07/10/06
W060001923	B1HVM6-A	KLAGES	7440-48-4	Cobalt by ICP-MS	SOLID	LA-505-412		8.97	ug/g	1.03	0.0206	07/18/06	03/14/06	07/10/06
W060001923	B1HVM6-A	KLAGES	7440-50-8	Copper by ICP-MS	SOLID	LA-505-412		12.7	ug/g	1.03	0.206	07/18/06	03/14/06	07/10/06
W060001923	B1HVM6-A	KLAGES	7440-62-2	Vanadium by ICP-MS	SOLID	LA-505-412		53.2	ug/g	1.03	0.516	07/18/06	03/14/06	07/10/06
W060001923	B1HVM6-A	KLAGES	7440-66-6	Zinc by ICP-MS	SOLID	LA-505-412		42.0	ug/g	1.03	0.310	07/18/06	03/14/06	07/10/06
W060001923	B1HVM6-A	KLAGES	7439-92-1	Lead by ICP-MS	SOLID	LA-505-412		4.30	ug/g	1.03	0.0516	07/18/06	03/14/06	07/10/06
W060001923	B1HVM6-A	KLAGES	7439-97-6	Mercury by ICP-MS	SOLID	LA-505-412	U	< 0.0413	ug/g	1.03	0.0413	07/18/06	03/14/06	07/10/06
W060001923	B1HVM6-A	KLAGES	7439-98-7	Molybdenum by ICP-MS	SOLID	LA-505-412		0.224	ug/g	1.03	0.103	07/18/06	03/14/06	07/10/06
W060001923	B1HVM6-A	KLAGES	7440-29-1	Thorium by ICP-MS	SOLID	LA-505-412		2.78	ug/g	1.03	0.0516	07/18/06	03/14/06	07/10/06
W060001923	B1HVM6-A	KLAGES	7440-61-1	Uranium by ICP-MS	SOLID	LA-505-412	C	0.692	ug/g	1.03	0.0206	07/18/06	03/14/06	07/10/06
W060001923	B1HVM6-A	KLAGES	7440-38-2	Arsenic by ICP-MS	SOLID	LA-505-412		3.01	ug/g	1.03	1.03	07/18/06	03/14/06	07/10/06
W060001923	B1HVM6-A	KLAGES	7782-49-2	Selenium by ICP-MS	SOLID	LA-505-412	U	< 0.413	ug/g	1.03	0.413	07/18/06	03/14/06	07/10/06

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WSCF
ANALYTICAL RESULTS REPORT

Attention: D KLAGES **Group #:** 20060733

Sample #	Client ID		CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W060001923	B1HVM6-A	KLAGES	7440-28-0	Thallium by ICP-MS	SOLID	LA-505-412		0.0315	ug/g	1.03	0.0310	07/18/06	03/14/06	07/10/06
W060001923	B1HVM6-A	KLAGES	7440-24-6	Strontium by ICP-MS	SOLID	LA-505-412		21.6	ug/g	1.03	0.0310	07/18/06	03/14/06	07/10/06
W060001923	B1HVM6-A	KLAGES	7440-31-5	Tin	SOLID	LA-505-412		0.330	ug/g	1.03	0.0516	07/18/06	03/14/06	07/10/06
W060001924	B1HVM8-A	KLAGES	7429-90-5	Aluminum by ICP	SOLID	LA-505-411		see ICP-MS	ug/g	1.02e+003	38	07/25/06	03/14/06	07/10/06
W060001924	B1HVM8-A	KLAGES	7439-89-6	Iron by ICP	SOLID	LA-505-411		3.46e+04	ug/g	1.02e+003	34	07/25/06	03/14/06	07/10/06
W060001924	B1HVM8-A	KLAGES	7439-95-4	Magnesium by ICP	SOLID	LA-505-411		6.64e+03	ug/g	1.02e+003	15	07/25/06	03/14/06	07/10/06
W060001924	B1HVM8-A	KLAGES	7439-96-5	Manganese by ICP	SOLID	LA-505-411		see ICP-MS	ug/g	1.02e+003	3.1	07/25/06	03/14/06	07/10/06
W060001924	B1HVM8-A	KLAGES	7440-02-0	Nickel by ICP	SOLID	LA-505-411		see ICP-MS	ug/g	1.02e+003	5.1	07/25/06	03/14/06	07/10/06
W060001924	B1HVM8-A	KLAGES	7440-09-7	Potassium by ICP	SOLID	LA-505-411	E	1.07e+03	ug/g	1.02e+003	2.2e+02	07/25/06	03/14/06	07/10/06
W060001924	B1HVM8-A	KLAGES	7440-22-4	Silver by ICP	SOLID	LA-505-411		see ICP-MS	ug/g	1.02e+003	11	07/25/06	03/14/06	07/10/06
W060001924	B1HVM8-A	KLAGES	7440-23-5	Sodium by ICP	SOLID	LA-505-411	E	341	ug/g	1.02e+003	1.2e+02	07/25/06	03/14/06	07/10/06
W060001924	B1HVM8-A	KLAGES	7440-36-0	Antimony by ICP	SOLID	LA-505-411		see ICP-MS	ug/g	1.02e+003	74	07/25/06	03/14/06	07/10/06
W060001924	B1HVM8-A	KLAGES	7440-39-3	Barium by ICP	SOLID	LA-505-411		see ICP-MS	ug/g	1.02e+003	1.0	07/25/06	03/14/06	07/10/06
W060001924	B1HVM8-A	KLAGES	7440-43-9	Cadmium by ICP	SOLID	LA-505-411		see ICP-MS	ug/g	1.02e+003	3.1	07/25/06	03/14/06	07/10/06
W060001924	B1HVM8-A	KLAGES	7440-47-3	Chromium by ICP	SOLID	LA-505-411		see ICP-MS	ug/g	1.02e+003	7.1	07/25/06	03/14/06	07/10/06
W060001924	B1HVM8-A	KLAGES	7440-48-4	Cobalt by ICP	SOLID	LA-505-411		see ICP-MS	ug/g	1.02e+003	7.1	07/25/06	03/14/06	07/10/06
W060001924	B1HVM8-A	KLAGES	7440-50-8	Copper by ICP	SOLID	LA-505-411		see ICP-MS	ug/g	1.02e+003	7.1	07/25/06	03/14/06	07/10/06
W060001924	B1HVM8-A	KLAGES	7440-62-2	Vanadium by ICP	SOLID	LA-505-411		see ICP-MS	ug/g	1.02e+003	14	07/25/06	03/14/06	07/10/06
W060001924	B1HVM8-A	KLAGES	7440-66-6	Zinc by ICP	SOLID	LA-505-411		see ICP-MS	ug/g	1.02e+003	2.0	07/25/06	03/14/06	07/10/06
W060001924	B1HVM8-A	KLAGES	7440-70-2	Calcium by ICP	SOLID	LA-505-411		9.74e+03	ug/g	1.02e+003	32	07/25/06	03/14/06	07/10/06
W060001924	B1HVM8-A	KLAGES	7439-92-1	Lead by ICP	SOLID	LA-505-411		see ICP-MS	ug/g	1.02e+003	48	07/25/06	03/14/06	07/10/06
W060001924	B1HVM8-A	KLAGES	7439-93-2	Lithium by ICP	SOLID	LA-505-411	E	10.9	ug/g	1.02e+003	6.1	07/25/06	03/14/06	07/10/06
W060001924	B1HVM8-A	KLAGES	7439-98-7	Molybdenum, ICP	SOLID	LA-505-411		see ICP-MS	ug/g	1.02e+003	11	07/25/06	03/14/06	07/10/06
W060001924	B1HVM8-A	KLAGES	7440-24-6	Strontium by ICP	SOLID	LA-505-411		see ICP-MS	ug/g	1.02e+003	1.0	07/25/06	03/14/06	07/10/06
W060001924	B1HVM8-A	KLAGES	7440-28-0	Thallium by ICP	SOLID	LA-505-411		see ICP-MS	ug/g	1.02e+003	77	07/25/06	03/14/06	07/10/06
W060001924	B1HVM8-A	KLAGES	7440-31-5	Tin	SOLID	LA-505-411		see ICP-MS	ug/g	1.02e+003	58	07/25/06	03/14/06	07/10/06
W060001924	B1HVM8-A	KLAGES	7440-32-6	Titanium by ICP	SOLID	LA-505-411		2.04e+03	ug/g	1.02e+003	4.1	07/25/06	03/14/06	07/10/06

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WSCF
ANALYTICAL RESULTS REPORT

Attention: D KLAGES **Group #:** 20060733

Sample #	Client ID		CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W060001924	B1HVM8-A	KLAGES	7440-38-2	Arsenic by ICP	SOLID	LA-505-411		see ICP-MS	ug/g	1.02e+003	81	07/25/06	03/14/06	07/10/06
W060001924	B1HVM8-A	KLAGES	7440-41-7	Beryllium by ICP	SOLID	LA-505-411		see ICP-MS	ug/g	1.02e+003	1.0	07/25/06	03/14/06	07/10/06
W060001924	B1HVM8-A	KLAGES	7440-42-8	Boron by ICP	SOLID	LA-505-411	U	< 21.4	ug/g	1.02e+003	21	07/25/06	03/14/06	07/10/06
W060001924	B1HVM8-A	KLAGES	7440-67-7	Zirconium by ICP	SOLID	LA-505-411	U	< 8.17	ug/g	1.02e+003	8.2	07/25/06	03/14/06	07/10/06
W060001924	B1HVM8-A	KLAGES	7440-69-9	Bismuth by ICP	SOLID	LA-505-411	U	< 54.1	ug/g	1.02e+003	54	07/25/06	03/14/06	07/10/06
W060001924	B1HVM8-A	KLAGES	7440-21-3	Silicon by ICP	SOLID	LA-505-411	E	94.8	ug/g	1.02e+003	77	07/25/06	03/14/06	07/10/06
W060001924	B1HVM8-A	KLAGES	7704-34-9	Sulfur by ICP	SOLID	LA-505-411		NA	ug/g	1.00	0.0	07/25/06	03/14/06	07/10/06
W060001924	B1HVM8-A	KLAGES	7723-14-0	Phosphorus by ICP	SOLID	LA-505-411		1.09e+03	ug/g	1.02e+003	96	07/25/06	03/14/06	07/10/06
W060001924	B1HVM8-A	KLAGES	7782-49-2	Selenium by ICP	SOLID	LA-505-411		see ICP-MS	ug/g	1.02e+003	52	07/25/06	03/14/06	07/10/06
W060001924	B1HVM8-A	KLAGES	7429-90-5	Aluminum by ICP-MS	SOLID	LA-505-412		5.70e+03	ug/g	1.03	2.07	07/18/06	03/14/06	07/10/06
W060001924	B1HVM8-A	KLAGES	7439-96-5	Manganese by ICP-MS	SOLID	LA-505-412		378	ug/g	1.03	0.0207	07/18/06	03/14/06	07/10/06
W060001924	B1HVM8-A	KLAGES	7440-02-0	Nickel by ICP-MS	SOLID	LA-505-412		9.52	ug/g	1.03	0.0620	07/18/06	03/14/06	07/10/06
W060001924	B1HVM8-A	KLAGES	7440-22-4	Silver by ICP-MS	SOLID	LA-505-412	U	< 0.0414	ug/g	1.03	0.0414	07/18/06	03/14/06	07/10/06
W060001924	B1HVM8-A	KLAGES	7440-36-0	Antimony by ICP-MS	SOLID	LA-505-412	U	< 0.310	ug/g	1.03	0.310	07/18/06	03/14/06	07/10/06
W060001924	B1HVM8-A	KLAGES	7440-39-3	Barium by ICP-MS	SOLID	LA-505-412		85.2	ug/g	1.03	0.207	07/18/06	03/14/06	07/10/06
W060001924	B1HVM8-A	KLAGES	7440-41-7	Beryllium by ICP-MS	SOLID	LA-505-412	C	0.262	ug/g	1.03	0.0207	07/18/06	03/14/06	07/10/06
W060001924	B1HVM8-A	KLAGES	7440-43-9	Cadmium by ICP-MS	SOLID	LA-505-412		0.0986	ug/g	1.03	0.0414	07/18/06	03/14/06	07/10/06
W060001924	B1HVM8-A	KLAGES	7440-47-3	Chromium by ICP-MS	SOLID	LA-505-412		6.37	ug/g	1.03	0.724	07/18/06	03/14/06	07/10/06
W060001924	B1HVM8-A	KLAGES	7440-48-4	Cobalt by ICP-MS	SOLID	LA-505-412		9.51	ug/g	1.03	0.0207	07/18/06	03/14/06	07/10/06
W060001924	B1HVM8-A	KLAGES	7440-50-8	Copper by ICP-MS	SOLID	LA-505-412		14.0	ug/g	1.03	0.207	07/18/06	03/14/06	07/10/06
W060001924	B1HVM8-A	KLAGES	7440-62-2	Vanadium by ICP-MS	SOLID	LA-505-412		57.7	ug/g	1.03	0.517	07/18/06	03/14/06	07/10/06
W060001924	B1HVM8-A	KLAGES	7440-66-6	Zinc by ICP-MS	SOLID	LA-505-412		46.1	ug/g	1.03	0.310	07/18/06	03/14/06	07/10/06
W060001924	B1HVM8-A	KLAGES	7439-92-1	Lead by ICP-MS	SOLID	LA-505-412		4.84	ug/g	1.03	0.0517	07/18/06	03/14/06	07/10/06
W060001924	B1HVM8-A	KLAGES	7439-97-6	Mercury by ICP-MS	SOLID	LA-505-412	U	< 0.0414	ug/g	1.03	0.0414	07/18/06	03/14/06	07/10/06
W060001924	B1HVM8-A	KLAGES	7439-98-7	Molybdenum by ICP-MS	SOLID	LA-505-412		0.353	ug/g	1.03	0.103	07/18/06	03/14/06	07/10/06
W060001924	B1HVM8-A	KLAGES	7440-29-1	Thorium by ICP-MS	SOLID	LA-505-412		3.38	ug/g	1.03	0.0517	07/18/06	03/14/06	07/10/06
W060001924	B1HVM8-A	KLAGES	7440-61-1	Uranium by ICP-MS	SOLID	LA-505-412	C	0.900	ug/g	1.03	0.0207	07/18/06	03/14/06	07/10/06

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WSCF
ANALYTICAL RESULTS REPORT

Attention: D KLAGES **Group #:** 20060733

Sample #	Client ID		CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W060001924	B1HVM8-A	KLAGES	7440-38-2	Arsenic by ICP-MS	SOLID	LA-505-412		3.52	ug/g	1.03	1.03	07/18/06	03/14/06	07/10/06
W060001924	B1HVM8-A	KLAGES	7782-49-2	Selenium by ICP-MS	SOLID	LA-505-412	U	< 0.414	ug/g	1.03	0.414	07/18/06	03/14/06	07/10/06
W060001924	B1HVM8-A	KLAGES	7440-28-0	Thallium by ICP-MS	SOLID	LA-505-412		0.424	ug/g	1.03	0.0310	07/18/06	03/14/06	07/10/06
W060001924	B1HVM8-A	KLAGES	7440-24-6	Strontium by ICP-MS	SOLID	LA-505-412		22.7	ug/g	1.03	0.0310	07/18/06	03/14/06	07/10/06
W060001924	B1HVM8-A	KLAGES	7440-31-5	Tin	SOLID	LA-505-412		0.430	ug/g	1.03	0.0517	07/18/06	03/14/06	07/10/06
W060001925	B1HVN0-A	KLAGES	7429-90-5	Aluminum by ICP	SOLID	LA-505-411		see ICP-MS	ug/g	1.02e+003	38	07/25/06	03/14/06	07/10/06
W060001925	B1HVN0-A	KLAGES	7439-89-6	Iron by ICP	SOLID	LA-505-411		3.43e+04	ug/g	1.02e+003	34	07/25/06	03/14/06	07/10/06
W060001925	B1HVN0-A	KLAGES	7439-95-4	Magnesium by ICP	SOLID	LA-505-411		6.47e+03	ug/g	1.02e+003	15	07/25/06	03/14/06	07/10/06
W060001925	B1HVN0-A	KLAGES	7439-96-5	Manganese by ICP	SOLID	LA-505-411		see ICP-MS	ug/g	1.02e+003	3.1	07/25/06	03/14/06	07/10/06
W060001925	B1HVN0-A	KLAGES	7440-02-0	Nickel by ICP	SOLID	LA-505-411		see ICP-MS	ug/g	1.02e+003	5.1	07/25/06	03/14/06	07/10/06
W060001925	B1HVN0-A	KLAGES	7440-09-7	Potassium by ICP	SOLID	LA-505-411	E	892	ug/g	1.02e+003	2.2e+02	07/25/06	03/14/06	07/10/06
W060001925	B1HVN0-A	KLAGES	7440-22-4	Silver by ICP	SOLID	LA-505-411		see ICP-MS	ug/g	1.02e+003	11	07/25/06	03/14/06	07/10/06
W060001925	B1HVN0-A	KLAGES	7440-23-5	Sodium by ICP	SOLID	LA-505-411	E	317	ug/g	1.02e+003	1.2e+02	07/25/06	03/14/06	07/10/06
W060001925	B1HVN0-A	KLAGES	7440-36-0	Antimony by ICP	SOLID	LA-505-411		see ICP-MS	ug/g	1.02e+003	74	07/25/06	03/14/06	07/10/06
W060001925	B1HVN0-A	KLAGES	7440-39-3	Barium by ICP	SOLID	LA-505-411		see ICP-MS	ug/g	1.02e+003	1.0	07/25/06	03/14/06	07/10/06
W060001925	B1HVN0-A	KLAGES	7440-43-9	Cadmium by ICP	SOLID	LA-505-411		see ICP-MS	ug/g	1.02e+003	3.1	07/25/06	03/14/06	07/10/06
W060001925	B1HVN0-A	KLAGES	7440-47-3	Chromium by ICP	SOLID	LA-505-411		see ICP-MS	ug/g	1.02e+003	7.2	07/25/06	03/14/06	07/10/06
W060001925	B1HVN0-A	KLAGES	7440-48-4	Cobalt by ICP	SOLID	LA-505-411		see ICP-MS	ug/g	1.02e+003	7.2	07/25/06	03/14/06	07/10/06
W060001925	B1HVN0-A	KLAGES	7440-50-8	Copper by ICP	SOLID	LA-505-411		see ICP-MS	ug/g	1.02e+003	7.2	07/25/06	03/14/06	07/10/06
W060001925	B1HVN0-A	KLAGES	7440-62-2	Vanadium by ICP	SOLID	LA-505-411		see ICP-MS	ug/g	1.02e+003	14	07/25/06	03/14/06	07/10/06
W060001925	B1HVN0-A	KLAGES	7440-66-6	Zinc by ICP	SOLID	LA-505-411		see ICP-MS	ug/g	1.02e+003	2.0	07/25/06	03/14/06	07/10/06
W060001925	B1HVN0-A	KLAGES	7440-70-2	Calcium by ICP	SOLID	LA-505-411		9.26e+03	ug/g	1.02e+003	32	07/25/06	03/14/06	07/10/06
W060001925	B1HVN0-A	KLAGES	7439-92-1	Lead by ICP	SOLID	LA-505-411		see ICP-MS	ug/g	1.02e+003	48	07/25/06	03/14/06	07/10/06
W060001925	B1HVN0-A	KLAGES	7439-93-2	Lithium by ICP	SOLID	LA-505-411	E	11.2	ug/g	1.02e+003	6.1	07/25/06	03/14/06	07/10/06
W060001925	B1HVN0-A	KLAGES	7439-98-7	Molybdenum, ICP	SOLID	LA-505-411		see ICP-MS	ug/g	1.02e+003	11	07/25/06	03/14/06	07/10/06
W060001925	B1HVN0-A	KLAGES	7440-24-6	Strontium by ICP	SOLID	LA-505-411		see ICP-MS	ug/g	1.02e+003	1.0	07/25/06	03/14/06	07/10/06
W060001925	B1HVN0-A	KLAGES	7440-28-0	Thallium by ICP	SOLID	LA-505-411		see ICP-MS	ug/g	1.02e+003	77	07/25/06	03/14/06	07/10/06

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WSCF
ANALYTICAL RESULTS REPORT

Attention: D KLAGES **Group #:** 20060733

Sample #	Client ID		CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W060001925	B1HVN0-A	KLAGES	7440-31-5	Tin	SOLID	LA-505-411		see ICP-MS	ug/g	1.02e+003	58	07/25/06	03/14/06	07/10/06
W060001925	B1HVN0-A	KLAGES	7440-32-6	Titanium by ICP	SOLID	LA-505-411		2.12e+03	ug/g	1.02e+003	4.1	07/25/06	03/14/06	07/10/06
W060001925	B1HVN0-A	KLAGES	7440-38-2	Arsenic by ICP	SOLID	LA-505-411		see ICP-MS	ug/g	1.02e+003	81	07/25/06	03/14/06	07/10/06
W060001925	B1HVN0-A	KLAGES	7440-41-7	Beryllium by ICP	SOLID	LA-505-411		see ICP-MS	ug/g	1.02e+003	1.0	07/25/06	03/14/06	07/10/06
W060001925	B1HVN0-A	KLAGES	7440-42-8	Boron by ICP	SOLID	LA-505-411	U	< 21.5	ug/g	1.02e+003	21	07/25/06	03/14/06	07/10/06
W060001925	B1HVN0-A	KLAGES	7440-67-7	Zirconium by ICP	SOLID	LA-505-411	U	< 8.18	ug/g	1.02e+003	8.2	07/25/06	03/14/06	07/10/06
W060001925	B1HVN0-A	KLAGES	7440-69-9	Bismuth by ICP	SOLID	LA-505-411	U	< 54.2	ug/g	1.02e+003	54	07/25/06	03/14/06	07/10/06
W060001925	B1HVN0-A	KLAGES	7440-21-3	Silicon by ICP	SOLID	LA-505-411	E	83.0	ug/g	1.02e+003	77	07/25/06	03/14/06	07/10/06
W060001925	B1HVN0-A	KLAGES	7704-34-9	Sulfur by ICP	SOLID	LA-505-411		NA	ug/g	1.00	0.0	07/25/06	03/14/06	07/10/06
W060001925	B1HVN0-A	KLAGES	7723-14-0	Phosphorus by ICP	SOLID	LA-505-411		1.10e+03	ug/g	1.02e+003	96	07/25/06	03/14/06	07/10/06
W060001925	B1HVN0-A	KLAGES	7782-49-2	Selenium by ICP	SOLID	LA-505-411		see ICP-MS	ug/g	1.02e+003	52	07/25/06	03/14/06	07/10/06
W060001925	B1HVN0-A	KLAGES	7429-90-5	Aluminum by ICP-MS	SOLID	LA-505-412		5.45e+03	ug/g	1.03	2.07	07/18/06	03/14/06	07/10/06
W060001925	B1HVN0-A	KLAGES	7439-96-5	Manganese by ICP-MS	SOLID	LA-505-412		365	ug/g	1.03	0.0207	07/18/06	03/14/06	07/10/06
W060001925	B1HVN0-A	KLAGES	7440-02-0	Nickel by ICP-MS	SOLID	LA-505-412		9.62	ug/g	1.03	0.0620	07/18/06	03/14/06	07/10/06
W060001925	B1HVN0-A	KLAGES	7440-22-4	Silver by ICP-MS	SOLID	LA-505-412	U	< 0.0413	ug/g	1.03	0.0413	07/18/06	03/14/06	07/10/06
W060001925	B1HVN0-A	KLAGES	7440-36-0	Antimony by ICP-MS	SOLID	LA-505-412	U	< 0.310	ug/g	1.03	0.310	07/18/06	03/14/06	07/10/06
W060001925	B1HVN0-A	KLAGES	7440-39-3	Barium by ICP-MS	SOLID	LA-505-412		81.1	ug/g	1.03	0.207	07/18/06	03/14/06	07/10/06
W060001925	B1HVN0-A	KLAGES	7440 41-7	Beryllium by ICP-MS	SOLID	LA-505-412	C	0.234	ug/g	1.03	0.0207	07/18/06	03/14/06	07/10/06
W060001925	B1HVN0-A	KLAGES	7440-43-9	Cadmium by ICP-MS	SOLID	LA-505-412		0.0869	ug/g	1.03	0.0413	07/18/06	03/14/06	07/10/06
W060001925	B1HVN0-A	KLAGES	7440-47-3	Chromium by ICP-MS	SOLID	LA-505-412		6.14	ug/g	1.03	0.723	07/18/06	03/14/06	07/10/06
W060001925	B1HVN0-A	KLAGES	7440-48-4	Cobalt by ICP-MS	SOLID	LA-505-412		9.45	ug/g	1.03	0.0207	07/18/06	03/14/06	07/10/06
W060001925	B1HVN0-A	KLAGES	7440-50-8	Copper by ICP-MS	SOLID	LA-505-412		13.5	ug/g	1.03	0.207	07/18/06	03/14/06	07/10/06
W060001925	B1HVN0-A	KLAGES	7440-62-2	Vanadium by ICP-MS	SOLID	LA-505-412		57.1	ug/g	1.03	0.516	07/18/06	03/14/06	07/10/06
W060001925	B1HVN0-A	KLAGES	7440-66-6	Zinc by ICP-MS	SOLID	LA-505-412		43.9	ug/g	1.03	0.310	07/18/06	03/14/06	07/10/06
W060001925	B1HVN0-A	KLAGES	7439-92-1	Lead by ICP-MS	SOLID	LA-505-412		4.26	ug/g	1.03	0.0516	07/18/06	03/14/06	07/10/06
W060001925	B1HVN0-A	KLAGES	7439-97-6	Mercury by ICP-MS	SOLID	LA-505-412	U	< 0.0413	ug/g	1.03	0.0413	07/18/06	03/14/06	07/10/06
W060001925	B1HVN0-A	KLAGES	7439-98-7	Molybdenum by ICP-MS	SOLID	LA-505-412		0.262	ug/g	1.03	0.103	07/18/06	03/14/06	07/10/06

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WSCF
ANALYTICAL RESULTS REPORT

Attention: D KLAGES **Group #:** 20060733

Sample #	Client ID		CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receiv
W060001925	B1HVN0-A	KLAGES	7440-29-1	Thorium by ICP-MS	SOLID	LA-505-412		2.43	ug/g	1.03	0.0516	07/18/06	03/14/06	07/10/06
W060001925	B1HVN0-A	KLAGES	7440-61-1	Uranium by ICP-MS	SOLID	LA-505-412	C	0.604	ug/g	1.03	0.0207	07/18/06	03/14/06	07/10/06
W060001925	B1HVN0-A	KLAGES	7440-38-2	Arsenic by ICP-MS	SOLID	LA-505-412		3.08	ug/g	1.03	1.03	07/18/06	03/14/06	07/10/06
W060001925	B1HVN0-A	KLAGES	7782-49-2	Selenium by ICP-MS	SOLID	LA-505-412	U	< 0.413	ug/g	1.03	0.413	07/18/06	03/14/06	07/10/06
W060001925	B1HVN0-A	KLAGES	7440-28-0	Thallium by ICP-MS	SOLID	LA-505-412		0.132	ug/g	1.03	0.0310	07/18/06	03/14/06	07/10/06
W060001925	B1HVN0-A	KLAGES	7440-24-6	Strontium by ICP-MS	SOLID	LA-505-412		22.1	ug/g	1.03	0.0310	07/18/06	03/14/06	07/10/06
W060001925	B1HVN0-A	KLAGES	7440-31-5	Tin	SOLID	LA-505-412		0.380	ug/g	1.03	0.0516	07/18/06	03/14/06	07/10/06

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WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: 20060733
Matrix: SOLID
Test: ICP Metals Analysis, Grd H20 P

SAF Number: R06-013
Sample Date: 03/14/06
Receive Date:07/10/06

Lab ID: W060001923
BATCH QC ASSOCIATED WITH SAMPLE

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
MS	Aluminum by ICP	7429-90-5	NA	n/a	% Recov	07/25/06	75.000	125.000	
MS	Arsenic by ICP	7440-38-2	NA	n/a	% Recov	07/25/06	75.000	125.000	
MS	Boron by ICP	7440-42-8	226.2	110.882	% Recov	07/25/06	75.000	125.000	
MS	Barium by ICP	7440-39-3	NA	n/a	% Recov	07/25/06	75.000	125.000	
MS	Beryllium by ICP	7440-41-7	NA	n/a	% Recov	07/25/06	75.000	125.000	
MS	Bismuth by ICP	7440-69-9	203.1	99.559	% Recov	07/25/06	75.000	125.000	
MS	Calcium by ICP	7440-70-2	NA	n/a	% Recov	07/25/06	75.000	125.000	
MS	Cadmium by ICP	7440-43-9	NA	n/a	% Recov	07/25/06	75.000	125.000	
MS	Cobalt by ICP	7440-48-4	NA	n/a	% Recov	07/25/06	75.000	125.000	
MS	Chromium by ICP	7440-47-3	NA	n/a	% Recov	07/25/06	75.000	125.000	
MS	Copper by ICP	7440-50-8	NA	n/a	% Recov	07/25/06	75.000	125.000	
MS	Iron by ICP	7439-89-6	NA	n/a	% Recov	07/25/06	75.000	125.000	
MS	Potassium by ICP	7440-09-7	2719	133.284	% Recov	07/25/06	75.000	125.000	*
MS	Lithium by ICP	7439-93-2	131.972	129.384	% Recov	07/25/06	70.000	130.000	
MS	Magnesium by ICP	7439-95-4	NA	n/a	% Recov	07/25/06	75.000	125.000	
MS	Manganese by ICP	7439-96-5	NA	n/a	% Recov	07/25/06	75.000	125.000	
MS	Molybdenum, ICP	7439-98-7	NA	n/a	% Recov	07/25/06	75.000	125.000	
MS	Sodium by ICP	7440-23-5	729.3	357.500	% Recov	07/25/06	75.000	125.000	*
MS	Nickel by ICP	7440-02-0	NA	n/a	% Recov	07/25/06	75.000	125.000	
MS	Phosphorus by ICP	7723-14-0	NA	n/a	% Recov	07/25/06	70.000	130.000	
MS	Lead by ICP	7439-92-1	NA	n/a	% Recov	07/25/06	75.000	125.000	
MS	Antimony by ICP	7440-36-0	NA	n/a	% Recov	07/25/06	75.000	125.000	
MS	Selenium by ICP	7782-49-2	NA	n/a	% Recov	07/25/06	75.000	125.000	
MS	Silicon by ICP	7440-21-3	134.6	65.980	% Recov	07/25/06	70.000	130.000	*
MS	Tin	7440-31-5	NA	n/a	% Recov	07/25/06	75.000	125.000	
MS	Strontium by ICP	7440-24-6	NA	n/a	% Recov	07/25/06	70.000	130.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: 20060733
Matrix: SOLID
Test: ICP Metals Analysis, Grd H20 P

SAF Number: R06-013
Sample Date: 03/14/06
Receive Date:07/10/06

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
MS	Titanium by ICP	7440-32-6	NA	n/a	% Recov	07/25/06	75.000	125.000	
MS	Thallium by ICP	7440-28-0	NA	n/a	% Recov	07/25/06	75.000	125.000	
MS	Vanadium by ICP	7440-62-2	NA	n/a	% Recov	07/25/06	75.000	125.000	
MS	Zinc by ICP	7440-66-6	NA	n/a	% Recov	07/25/06	75.000	125.000	
MS	Zirconium by ICP	7440-67-7	206.6	101.275	% Recov	07/25/06	75.000	125.000	
MSD	Aluminum by ICP	7429-90-5	NA	n/a	% Recov	07/25/06	75.000	125.000	
MSD	Arsenic by ICP	7440-38-2	NA	n/a	% Recov	07/25/06	75.000	125.000	
MSD	Boron by ICP	7440-42-8	238.2	113.429	% Recov	07/25/06	75.000	125.000	
MSD	Barium by ICP	7440-39-3	NA	n/a	% Recov	07/25/06	75.000	125.000	
MSD	Beryllium by ICP	7440-41-7	NA	n/a	% Recov	07/25/06	75.000	125.000	
MSD	Bismuth by ICP	7440-69-9	200.7	95.571	% Recov	07/25/06	75.000	125.000	
MSD	Calcium by ICP	7440-70-2	NA	n/a	% Recov	07/25/06	75.000	125.000	
MSD	Cadmium by ICP	7440-43-9	NA	n/a	% Recov	07/25/06	75.000	125.000	
MSD	Cobalt by ICP	7440-48-4	NA	n/a	% Recov	07/25/06	75.000	125.000	
MSD	Chromium by ICP	7440-47-3	NA	n/a	% Recov	07/25/06	75.000	125.000	
MSD	Copper by ICP	7440-50-8	NA	n/a	% Recov	07/25/06	75.000	125.000	
MSD	Iron by ICP	7439-89-6	NA	n/a	% Recov	07/25/06	75.000	125.000	
MSD	Potassium by ICP	7440-09-7	3017	143.667	% Recov	07/25/06	75.000	125.000	•
MSD	Lithium by ICP	7439-93-2	135.272	128.830	% Recov	07/25/06	75.000	125.000	•
MSD	Magnesium by ICP	7439-95-4	NA	n/a	% Recov	07/25/06	75.000	125.000	
MSD	Manganese by ICP	7439-96-5	NA	n/a	% Recov	07/25/06	75.000	125.000	
MSD	Molybdenum, ICP	7439-98-7	NA	n/a	% Recov	07/25/06	75.000	125.000	
MSD	Sodium by ICP	7440-23-5	730.3	347.762	% Recov	07/25/06	75.000	125.000	•
MSD	Nickel by ICP	7440-02-0	NA	n/a	% Recov	07/25/06	75.000	125.000	
MSD	Phosphorus by ICP	7723-14-0	NA	n/a	% Recov	07/25/06	75.000	125.000	
MSD	Lead by ICP	7439-92-1	NA	n/a	% Recov	07/25/06	75.000	125.000	
MSD	Antimony by ICP	7440-36-0	NA	n/a	% Recov	07/25/06	75.000	125.000	
MSD	Selenium by ICP	7782-49-2	NA	n/a	% Recov	07/25/06	75.000	125.000	
MSD	Silicon by ICP	7440-21-3	144.4	68.762	% Recov	07/25/06	75.000	125.000	•
MSD	Tin	7440-31-5	NA	n/a	% Recov	07/25/06	75.000	125.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: 20060733
Matrix: SOLID
Test: ICP Metals Analysis, Grd H20 P

SAF Number: R06-013
Sample Date: 03/14/06
Receive Date:07/10/06

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
MSD	Strontium by ICP	7440-24-6	NA	n/a	% Recov	07/25/06	75.000	125.000	
MSD	Titanium by ICP	7440-32-6	NA	n/a	% Recov	07/25/06	75.000	125.000	
MSD	Thallium by ICP	7440-28-0	NA	n/a	% Recov	07/25/06	75.000	125.000	
MSD	Vanadium by ICP	7440-62-2	NA	n/a	% Recov	07/25/06	75.000	125.000	
MSD	Zinc by ICP	7440-66-6	NA	n/a	% Recov	07/25/06	75.000	125.000	
MSD	Zirconium by ICP	7440-67-7	214.8	102.286	% Recov	07/25/06	75.000	125.000	
SPK-RPD	Aluminum by ICP	7429-90-5		n/a	RPD	07/25/06	0.000	20.000	
SPK-RPD	Arsenic by ICP	7440-38-2	102.095	4.930	RPD	07/25/06	0.000	20.000	
SPK-RPD	Boron by ICP	7440-42-8	113.429	2.271	RPD	07/25/06	0.000	20.000	
SPK-RPD	Barium by ICP	7440-39-3	130.571	1.059	RPD	07/25/06	0.000	20.000	
SPK-RPD	Beryllium by ICP	7440-41-7	118.952	0.522	RPD	07/25/06	0.000	20.000	
SPK-RPD	Bismuth by ICP	7440-69-9	95.571	4.088	RPD	07/25/06	0.000	20.000	
SPK-RPD	Calcium by ICP	7440-70-2		n/a	RPD	07/25/06	0.000	20.000	
SPK-RPD	Cadmium by ICP	7440-43-9	108.190	0.358	RPD	07/25/06	0.000	20.000	
SPK-RPD	Cobalt by ICP	7440-48-4	107.971	1.924	RPD	07/25/06	0.000	20.000	
SPK-RPD	Chromium by ICP	7440-47-3	114.476	1.305	RPD	07/25/06	0.000	20.000	
SPK-RPD	Copper by ICP	7440-50-8	108.733	1.177	RPD	07/25/06	0.000	20.000	
SPK-RPD	Iron by ICP	7439-89-6		n/a	RPD	07/25/06	0.000	20.000	
SPK-RPD	Potassium by ICP	7440-09-7	143.667	7.498	RPD	07/25/06	0.000	20.000	
SPK-RPD	Lithium by ICP	7439-93-2	128.830	0.429	RPD	07/25/06	0.000	20.000	
SPK-RPD	Magnesium by ICP	7439-95-4		n/a	RPD	07/25/06	0.000	20.000	
SPK-RPD	Manganese by ICP	7439-96-5	125.762	0.608	RPD	07/25/06	0.000	20.000	
SPK-RPD	Molybdenum, ICP	7439-98-7	105.667	1.400	RPD	07/25/06	0.000	20.000	
SPK-RPD	Sodium by ICP	7440-23-5	347.762	2.762	RPD	07/25/06	0.000	20.000	
SPK-RPD	Nickel by ICP	7440-02-0	109.845	1.488	RPD	07/25/06	0.000	20.000	
SPK-RPD	Phosphorus by ICP	7723-14-0		n/a	RPD	07/25/06	0.000	20.000	
SPK-RPD	Lead by ICP	7439-92-1	115.286	3.058	RPD	07/25/06	0.000	20.000	
SPK-RPD	Antimony by ICP	7440-36-0	120.381	13.185	RPD	07/25/06	0.000	20.000	
SPK-RPD	Selenium by ICP	7782-49-2	113.143	3.353	RPD	07/25/06	0.000	20.000	
SPK-RPD	Silicon by ICP	7440-21-3	68.762	4.129	RPD	07/25/06	0.000	20.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: 20060733
Matrix: SOLID
Test: ICP Metals Analysis, Grd H20 P

SAF Number: R06-013
Sample Date: 03/14/06
Receive Date:07/10/06

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
SPK-RPD	Tin	7440-31-5	103.762	4.282	RPD	07/25/06	0.000	20.000	
SPK-RPD	Strontium by ICP	7440-24-6	123.000	0.628	RPD	07/25/06	0.000	20.000	
SPK-RPD	Titanium by ICP	7440-32-6		n/a	RPD	07/25/06	0.000	20.000	
SPK-RPD	Thallium by ICP	7440-28-0	69.619	37.141	RPD	07/25/06	0.000	20.000	
SPK-RPD	Vanadium by ICP	7440-62-2	103.538	6.092	RPD	07/25/06	0.000	20.000	
SPK-RPD	Zinc by ICP	7440-66-6	106.938	0.007	RPD	07/25/06	0.000	20.000	
SPK-RPD	Zirconium by ICP	7440-67-7	102.286	0.993	RPD	07/25/06	0.000	20.000	

BATCH QC

BLANK	Silver by ICP	7440-22-4	<1.1e-2	n/a	ppm	07/25/06			U
BLANK	Aluminum by ICP	7429-90-5	<3.7e-2	n/a	ppm	07/25/06			U
BLANK	Arsenic by ICP	7440-38-2	<7.9e-2	n/a	ppm	07/25/06			U
BLANK	Boron by ICP	7440-42-8	<2.1e-2	n/a	ppm	07/25/06			U
BLANK	Barium by ICP	7440-39-3	<1e-3	n/a	ppm	07/25/06			U
BLANK	Beryllium by ICP	7440-41-7	<1e-3	n/a	ppm	07/25/06			U
BLANK	Bismuth by ICP	7440-69-9	<5.3e-2	n/a	ppm	07/25/06			U
BLANK	Calcium by ICP	7440-70-2	<3.1e-2	n/a	ppm	07/25/06			U
BLANK	Cadmium by ICP	7440-43-9	<3e-3	n/a	ppm	07/25/06			U
BLANK	Cobalt by ICP	7440-48-4	<7e-3	n/a	ppm	07/25/06			U
BLANK	Chromium by ICP	7440-47-3	8.3e-3	0.008	ppm	07/25/06			
BLANK	Copper by ICP	7440-50-8	<7e-3	n/a	ppm	07/25/06			U
BLANK	Iron by ICP	7439-89-6	<3.3e-2	n/a	ppm	07/25/06			U
BLANK	Potassium by ICP	7440-09-7	<0.22	n/a	ppm	07/25/06			U
BLANK	Lithium by ICP	7439-93-2	<6e-3	n/a	ppm	07/25/06			U
BLANK	Magnesium by ICP	7439-95-4	<1.5e-2	n/a	ppm	07/25/06			U
BLANK	Manganese by ICP	7439-96-5	<3e-3	n/a	ppm	07/25/06			U
BLANK	Molybdenum, ICP	7439-98-7	<1.1e-2	n/a	ppm	07/25/06			U
BLANK	Sodium by ICP	7440-23-5	<0.115	n/a	ppm	07/25/06			U
BLANK	Nickel by ICP	7440-02-0	<5e-3	n/a	ppm	07/25/06			U
BLANK	Phosphorus by ICP	7723-14-0	<9.4e-2	n/a	ppm	07/25/06			U

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: 20060733
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
BLANK	Lead by ICP	7439-92-1	<4.7e-2	n/a	ppm	07/25/06			U
BLANK	Antimony by ICP	7440-36-0	<7.2e-2	n/a	ppm	07/25/06			U
BLANK	Selenium by ICP	7782-49-2	<5.1e-2	n/a	ppm	07/25/06			U
BLANK	Silicon by ICP	7440-21-3	<7.5e-2	n/a	ppm	07/25/06			U
BLANK	Tin	7440-31-5	<5.7e-2	n/a	ppm	07/25/06			U
BLANK	Strontium by ICP	7440-24-6	<1e-3	n/a	ppm	07/25/06			U
BLANK	Titanium by ICP	7440-32-6	<4e-3	n/a	ppm	07/25/06			U
BLANK	Thallium by ICP	7440-28-0	<7.5e-2	n/a	ppm	07/25/06			U
BLANK	Vanadium by ICP	7440-62-2	<1.4e-2	n/a	ppm	07/25/06			U
BLANK	Zinc by ICP	7440-66-6	3.4e-3	0.003	ppm	07/25/06			
BLANK	Zirconium by ICP	7440-67-7	<8e-3	n/a	ppm	07/25/06			U
LCS	Silver by ICP	7440-22-4	NA	n/a	% Recov	07/25/06	45.000	155.000	
LCS	Aluminum by ICP	7429-90-5	NA	n/a	% Recov	07/25/06	44.000	157.000	
LCS	Arsenic by ICP	7440-38-2	NA	n/a	% Recov	07/25/06	79.000	121.000	
LCS	Boron by ICP	7440-42-8	100.3	102.977	% Recov	07/25/06	45.000	156.000	
LCS	Barium by ICP	7440-39-3	NA	n/a	% Recov	07/25/06	80.000	120.000	
LCS	Beryllium by ICP	7440-41-7	NA	n/a	% Recov	07/25/06	81.000	119.000	
LCS	Bismuth by ICP	7440-69-9	212.2	105.572	% Recov	07/25/06	80.000	120.000	
LCS	Calcium by ICP	7440-70-2	3758	113.193	% Recov	07/25/06	76.000	124.000	
LCS	Cadmium by ICP	7440-43-9	NA	n/a	% Recov	07/25/06	80.000	120.000	
LCS	Cobalt by ICP	7440-48-4	NA	n/a	% Recov	07/25/06	85.000	115.000	
LCS	Chromium by ICP	7440-47-3	NA	n/a	% Recov	07/25/06	77.000	122.000	
LCS	Copper by ICP	7440-50-8	NA	n/a	% Recov	07/25/06	80.000	120.000	
LCS	Iron by ICP	7439-89-6	16290	145.446	% Recov	07/25/06	47.000	152.000	
LCS	Potassium by ICP	7440-09-7	2044	106.458	% Recov	07/25/06	64.000	136.000	
LCS	Lithium by ICP	7439-93-2	7.418	124.463	% Recov	07/25/06	80.000	120.000	
LCS	Magnesium by ICP	7439-95-4	2446	119.902	% Recov	07/25/06	71.000	129.000	
LCS	Manganese by ICP	7439-96-5	NA	n/a	% Recov	07/25/06	76.000	124.000	
LCS	Molybdenum, ICP	7439-98-7	NA	n/a	% Recov	07/25/06	79.000	121.000	
LCS	Sodium by ICP	7440-23-5	520.4	116.944	% Recov	07/25/06	51.000	149.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: 20060733
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	Nickel by ICP	7440-02-0	NA	n/a	% Recov	07/25/06	74.000	121.000	
LCS	Phosphorus by ICP	7723-14-0	427.5	96.719	% Recov	07/25/06	78.000	123.000	
LCS	Lead by ICP	7439-92-1	NA	n/a	% Recov	07/25/06	77.000	123.000	
LCS	Antimony by ICP	7440-36-0	NA	n/a	% Recov	07/25/06	53.000	205.000	
LCS	Selenium by ICP	7782-49-2	NA	n/a	% Recov	07/25/06	74.000	126.000	
LCS	Silicon by ICP	7440-21-3	184.9	25.364	% Recov	07/25/06	80.000	120.000	*
LCS	Tin	7440-31-5	NA	n/a	% Recov	07/25/06	80.000	121.000	
LCS	Strontium by ICP	7440-24-6	NA	n/a	% Recov	07/25/06	74.000	126.000	
LCS	Titanium by ICP	7440-32-6	342.2	110.387	% Recov	07/25/06	9.000	191.000	
LCS	Thallium by ICP	7440-28-0	NA	n/a	% Recov	07/25/06	71.000	128.000	
LCS	Vanadium by ICP	7440-62-2	NA	n/a	% Recov	07/25/06	70.000	129.000	
LCS	Zinc by ICP	7440-66-6	NA	n/a	% Recov	07/25/06	77.000	123.000	
LCS	Zirconium by ICP	7440-67-7	27.87	13.866	% Recov	07/25/06	80.000	120.000	*

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: 20060733
Matrix: SOLID
Test: ICP-2008 MS All possible metal

SAF Number: R06-013
Sample Date: 03/14/06
Receive Date:07/10/06

Lab ID: W060001923
BATCH QC ASSOCIATED WITH SAMPLE

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
MS	Silver by ICP-MS	7440-22-4	211.7	105.850	% Recov	07/18/06	70.000	130.000	
MS	Aluminum by ICP-MS	7429-90-5	1971	98.550	% Recov	07/18/06	70.000	130.000	
MS	Arsenic by ICP-MS	7440-38-2	187.688	93.844	% Recov	07/18/06	70.000	130.000	
MS	Barium by ICP-MS	7440-39-3	223.07	111.535	% Recov	07/18/06	70.000	130.000	
MS	Beryllium by ICP-MS	7440-41-7	210.7841	105.392	% Recov	07/18/06	70.000	130.000	
MS	Cadmium by ICP-MS	7440-43-9	217.04031	108.520	% Recov	07/18/06	70.000	130.000	
MS	Cobalt by ICP-MS	7440-48-4	202.73	101.365	% Recov	07/18/06	70.000	130.000	
MS	Chromium by ICP-MS	7440-47-3	201.994	100.997	% Recov	07/18/06	70.000	130.000	
MS	Copper by ICP-MS	7440-50-8	204.26	102.130	% Recov	07/18/06	70.000	130.000	
MS	Mercury by ICP-MS	7439-97-6	2.362	118.100	% Recov	07/18/06	70.000	130.000	
MS	Manganese by ICP-MS	7439-96-5	160.8	80.400	% Recov	07/18/06	70.000	130.000	
MS	Molybdenum by ICP-MS	7439-98-7	187.7761	93.888	% Recov	07/18/06	70.000	130.000	
MS	Nickel by ICP-MS	7440-02-0	207.914	103.957	% Recov	07/18/06	70.000	130.000	
MS	Lead by ICP-MS	7439-92-1	217.098	108.549	% Recov	07/18/06	70.000	130.000	
MS	Antimony by ICP-MS	7440-36-0	211.9	105.950	% Recov	07/18/06	70.000	130.000	
MS	Selenium by ICP-MS	7782-49-2	187.5	93.750	% Recov	07/18/06	70.000	130.000	
MS	Tin	7440-31-5	224.37	112.185	% Recov	07/18/06	70.000	130.000	
MS	Strontium by ICP-MS	7440-24-6	181.91	90.955	% Recov	07/18/06	70.000	130.000	
MS	Thorium by ICP-MS	7440-29-1	218.317	109.159	% Recov	07/18/06	70.000	130.000	
MS	Thallium by ICP-MS	7440-28-0	213.26853	106.634	% Recov	07/18/06	70.000	130.000	
MS	Uranium by ICP-MS	7440-61-1	214.8075	107.404	% Recov	07/18/06	70.000	130.000	
MS	Vanadium by ICP-MS	7440-62-2	177.17	88.585	% Recov	07/18/06	70.000	130.000	
MS	Zinc by ICP-MS	7440-66-6	200.78	100.390	% Recov	07/18/06	70.000	130.000	
MSD	Silver by ICP-MS	7440-22-4	198.2	99.100	% Recov	07/18/06	70.000	130.000	
MSD	Aluminum by ICP-MS	7429-90-5	1806	90.300	% Recov	07/18/06	70.000	130.000	
MSD	Arsenic by ICP-MS	7440-38-2	176.688	88.344	% Recov	07/18/06	70.000	130.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: 20060733
Matrix: SOLID
Test: ICP-2008 MS All possible metal

SAF Number: R06-013
Sample Date: 03/14/06
Receive Date:07/10/06

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
MSD	Barium by ICP-MS	7440-39-3	199.57	99.785	% Recov	07/18/06	70.000	130.000	
MSD	Beryllium by ICP-MS	7440-41-7	204.1841	102.092	% Recov	07/18/06	70.000	130.000	
MSD	Cadmium by ICP-MS	7440-43-9	207.04031	103.520	% Recov	07/18/06	70.000	130.000	
MSD	Cobalt by ICP-MS	7440-48-4	197.43	98.715	% Recov	07/18/06	70.000	130.000	
MSD	Chromium by ICP-MS	7440-47-3	195.394	97.697	% Recov	07/18/06	70.000	130.000	
MSD	Copper by ICP-MS	7440-50-8	195.96	97.980	% Recov	07/18/06	70.000	130.000	
MSD	Mercury by ICP-MS	7439-97-6	2.23	111.500	% Recov	07/18/06	70.000	130.000	
MSD	Manganese by ICP-MS	7439-96-5	165.4	82.700	% Recov	07/18/06	70.000	130.000	
MSD	Molybdenum by ICP-MS	7439-98-7	178.7761	89.388	% Recov	07/18/06	70.000	130.000	
MSD	Nickel by ICP-MS	7440-02-0	199.514	99.757	% Recov	07/18/06	70.000	130.000	
MSD	Lead by ICP-MS	7439-92-1	206.698	103.349	% Recov	07/18/06	70.000	130.000	
MSD	Antimony by ICP-MS	7440-36-0	200.7	100.350	% Recov	07/18/06	70.000	130.000	
MSD	Selenium by ICP-MS	7782-49-2	178.9	89.450	% Recov	07/18/06	70.000	130.000	
MSD	Tin	7440-31-5	212.97	106.485	% Recov	07/18/06	70.000	130.000	
MSD	Strontium by ICP-MS	7440-24-6	172.71	86.355	% Recov	07/18/06	70.000	130.000	
MSD	Thorium by ICP-MS	7440-29-1	208.317	104.159	% Recov	07/18/06	70.000	130.000	
MSD	Thallium by ICP-MS	7440-28-0	198.56853	99.284	% Recov	07/18/06	70.000	130.000	
MSD	Uranium by ICP-MS	7440-61-1	202.9075	101.454	% Recov	07/18/06	70.000	130.000	
MSD	Vanadium by ICP-MS	7440-62-2	169.57	84.785	% Recov	07/18/06	70.000	130.000	
MSD	Zinc by ICP-MS	7440-66-6	192.28	96.140	% Recov	07/18/06	70.000	130.000	
SPK-RPD	Silver by ICP-MS	7440-22-4	99.100	6.587	RPD	07/18/06	0.000	20.000	
SPK-RPD	Aluminum by ICP-MS	7429-90-5	90.300	8.737	RPD	07/18/06	0.000	20.000	
SPK-RPD	Arsenic by ICP-MS	7440-38-2	88.344	6.038	RPD	07/18/06	0.000	20.000	
SPK-RPD	Barium by ICP-MS	7440-39-3	99.785	11.121	RPD	07/18/06	0.000	20.000	
SPK-RPD	Beryllium by ICP-MS	7440-41-7	102.092	3.181	RPD	07/18/06	0.000	20.000	
SPK-RPD	Cadmium by ICP-MS	7440-43-9	103.520	4.716	RPD	07/18/06	0.000	20.000	
SPK-RPD	Cobalt by ICP-MS	7440-48-4	98.715	2.649	RPD	07/18/06	0.000	20.000	
SPK-RPD	Chromium by ICP-MS	7440-47-3	97.697	3.322	RPD	07/18/06	0.000	20.000	
SPK-RPD	Copper by ICP-MS	7440-50-8	97.980	4.148	RPD	07/18/06	0.000	20.000	
SPK-RPD	Mercury by ICP-MS	7439-97-6	111.500	5.749	RPD	07/18/06	0.000	20.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: 20060733
Matrix: SOLID
Test: ICP-2008 MS All possible metal

SAF Number: R06-013
Sample Date: 03/14/06
Receive Date:07/10/06

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
SPK-RPD	Manganese by ICP-MS	7439-96-5	82.700	2.820	RPD	07/18/06	0.000	20.000	
SPK-RPD	Molybdenum by ICP-MS	7439-98-7	89.388	4.911	RPD	07/18/06	0.000	20.000	
SPK-RPD	Nickel by ICP-MS	7440-02-0	99.757	4.123	RPD	07/18/06	0.000	20.000	
SPK-RPD	Lead by ICP-MS	7439-92-1	103.349	4.908	RPD	07/18/06	0.000	20.000	
SPK-RPD	Antimony by ICP-MS	7440-36-0	100.350	5.429	RPD	07/18/06	0.000	20.000	
SPK-RPD	Selenium by ICP-MS	7782-49-2	89.450	4.694	RPD	07/18/06	0.000	20.000	
SPK-RPD	Tin	7440-31-5	106.485	5.213	RPD	07/18/06	0.000	20.000	
SPK-RPD	Strontium by ICP-MS	7440-24-6	86.355	5.189	RPD	07/18/06	0.000	20.000	
SPK-RPD	Thorium by ICP-MS	7440-29-1	104.159	4.688	RPD	07/18/06	0.000	20.000	
SPK-RPD	Thallium by ICP-MS	7440-28-0	99.284	7.139	RPD	07/18/06	0.000	20.000	
SPK-RPD	Uranium by ICP-MS	7440-61-1	101.454	5.698	RPD	07/18/06	0.000	20.000	
SPK-RPD	Vanadium by ICP-MS	7440-62-2	84.785	4.384	RPD	07/18/06	0.000	20.000	
SPK-RPD	Zinc by ICP-MS	7440-66-6	96.140	4.325	RPD	07/18/06	0.000	20.000	

BATCH QC

BLANK	Silver by ICP-MS	7440-22-4	<4e-2	n/a	ug/L	07/18/06			U
BLANK	Aluminum by ICP-MS	7429-90-5	6.646	6.646	ug/L	07/18/06			
BLANK	Arsenic by ICP-MS	7440-38-2	<1	n/a	ug/L	07/18/06			U
BLANK	Barium by ICP-MS	7440-39 3	<0.2	n/a	ug/L	07/18/06			U
BLANK	Beryllium by ICP-MS	7440-41-7	<2e-2	n/a	ug/L	07/18/06			U
BLANK	Cadmium by ICP-MS	7440-43-9	<4e-2	n/a	ug/L	07/18/06			U
BLANK	Cobalt by ICP MS	7440-48-4	<2e-2	n/a	ug/L	07/18/06			U
BLANK	Chromium by ICP-MS	7440-47-3	<0.7	n/a	ug/L	07/18/06			U
BLANK	Copper by ICP-MS	7440-50-8	<0.2	n/a	ug/L	07/18/06			U
BLANK	Mercury by ICP-MS	7439-97-6	<4e-2	n/a	ug/L	07/18/06			U
BLANK	Manganese by ICP-MS	7439-96-5	<2e-2	n/a	ug/L	07/18/06			U
BLANK	Molybdenum by ICP-MS	7439-98-7	<0.1	n/a	ug/L	07/18/06			U
BLANK	Nickel by ICP-MS	7440-02-0	<6e-2	n/a	ug/L	07/18/06			U
BLANK	Lead by ICP-MS	7439-92-1	<5e-2	n/a	ug/L	07/18/06			U
BLANK	Antimony by ICP-MS	7440-36-0	<0.3	n/a	ug/L	07/18/06			U

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: 20060733
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	Selenium by ICP-MS	7782-49-2	<0.4	n/a	ug/L	07/18/06			U
BLANK	Tin	7440-31-5	<5e-2	n/a	ug/L	07/18/06			U
BLANK	Strontium by ICP-MS	7440-24-6	<3e-2	n/a	ug/L	07/18/06			U
BLANK	Thorium by ICP-MS	7440-29-1	<5e-2	n/a	ug/L	07/18/06			U
BLANK	Thallium by ICP-MS	7440-28-0	<3e-2	n/a	ug/L	07/18/06			U
BLANK	Uranium by ICP-MS	7440-61-1	<2e-2	n/a	ug/L	07/18/06			U
BLANK	Vanadium by ICP-MS	7440-62-2	<0.5	n/a	ug/L	07/18/06			U
BLANK	Zinc by ICP-MS	7440-66-6	0.3242	0.324	ug/L	07/18/06			
LCS	Silver by ICP-MS	7440-22-4	152	116.923	% Recov	07/18/06	98.000	134.000	
LCS	Aluminum by ICP-MS	7429-90-5	6230	98.576	% Recov	07/18/06	49.000	125.000	
LCS	Arsenic by ICP-MS	7440-38-2	171.8	106.708	% Recov	07/18/06	75.000	134.000	
LCS	Barium by ICP-MS	7440-39-3	262.7	104.246	% Recov	07/18/06	87.000	121.000	
LCS	Beryllium by ICP-MS	7440-41-7	98.14	103.962	% Recov	07/18/06	70.000	153.000	
LCS	Cadmium by ICP-MS	7440-43-9	137.3	107.266	% Recov	07/18/06	95.000	124.000	
LCS	Cobalt by ICP-MS	7440-48-4	35.85	101.847	% Recov	07/18/06	88.000	119.000	
LCS	Chromium by ICP-MS	7440-47-3	71.07	102.259	% Recov	07/18/06	77.000	125.000	
LCS	Copper by ICP-MS	7440-50-8	150.6	101.757	% Recov	07/18/06	84.000	122.000	
LCS	Mercury by ICP-MS	7439-97-6	17.55	103.846	% Recov	07/18/06	71.000	132.000	
LCS	Manganese by ICP-MS	7439-96-5	419.4	102.794	% Recov	07/18/06	83.000	118.000	
LCS	Molybdenum by ICP-MS	7439-98-7	90.32	107.396	% Recov	07/18/06	71.000	130.000	
LCS	Nickel by ICP-MS	7440-02-0	155.2	105.578	% Recov	07/18/06	90.000	121.000	
LCS	Lead by ICP-MS	7439-92-1	150.5	105.986	% Recov	07/18/06	92.000	123.000	
LCS	Antimony by ICP-MS	7440-36-0	103.6	170.115	% Recov	07/18/06	114.000	260.000	
LCS	Selenium by ICP-MS	7782-49-2	72.69	113.224	% Recov	07/18/06	52.000	157.000	
LCS	Tin	7440-31-5	64.61	105.918	% Recov	07/18/06	86.000	123.000	
LCS	Strontium by ICP-MS	7440-24-6	84.48	100.571	% Recov	07/18/06	68.000	123.000	
LCS	Thorium by ICP-MS	7440-29-1	412.4	103.100	% Recov	07/18/06	77.000	121.000	
LCS	Thallium by ICP-MS	7440-28-0	84.24	100.286	% Recov	07/18/06	92.000	123.000	
LCS	Uranium by ICP-MS	7440-61-1	421.2	105.300	% Recov	07/18/06	81.000	125.000	
LCS	Vanadium by ICP-MS	7440-62-2	102.6	105.447	% Recov	07/18/06	81.000	122.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: 20060733
Matrix: SOLID
Test: ICP-2008 MS All possible metal

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

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
LCS	Zinc by ICP-MS	7440-66-6	183	110.909	% Recov	07/18/06	85.000	130.000	

WSCF
TENTATIVELY IDENTIFIED PEAK REPORT

Attention:
Project Number :

Group #: 20060733

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

RQ=Result Qualifier

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WSCF
ANALYTICAL COMMENT REPORT

Attention: D KLAGES **Group #:** 20060733

Sample #	Client ID	Lab Area	Test	Comment
		VALGROUP		ICP-AES: -lithium, LCS and matrix spikes biased high; E flag -potassium, LCS acceptable, MS/MSD biased high; E flag -silicon, LCS, MS/MSD biased low; E flag -sodium, spike recoveries beyond acceptable range; E flag -zirconium, LCS biased low, MS/MSD acceptable; no flag -sulfur (S), not analyzed (sample result "NA") Iron, calcium, magnesium, phosphorus, and titanium sample results beyond effective spike range (spike results marked "NA"). NOTE: Sample QC results also marked "NA" for analytes listed but which were analyzed by ICP-MS. ICP-MS: Berylium and Uranium prep blanks have negative values that exceed acceptance levels and have an absolute value of more than 5% of the sample result. C-flag Note: Uranium results acceptable by 200.8 criteria.

Lab Areas: VALGROUP - Group Validation; VALTEST - Test Validation; TESTDATA - Test Data Entry; LOGSAMP - Login for Sample; LOGTEST - Login for Tests

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WSCF
METHOD REFERENCES REPORT

The results provided in this report were generated using the following WSCF Laboratory procedures. For your convenience, this table provides a listing of the regulatory or industry methods that are referenced by each of these WSCF procedures. Please note that the most recent version of the regulatory or industry method is listed here even though the WSCF procedure may reference an older version of the method. Also, a reference to a regulatory or industry method here does not necessarily indicate a verbatim implementation of that method.

LA-505-411	LA-505-411: ELEMENTAL ANALYSIS BY INDUCTIVELY COUPLED PLASMA ATOMIC EMISSION SPE	
	EPA SW-846 6010B	INDUCTIVELY COUPLED PLASMA-ATOMIC EMISSION SPECTROMETRY
	HEIS 6010_METALS_ICP	Inductively Coupled Plasma-Atomic Emmision Spectrometry
LA-505-412	LA-505-412: DETERMINATION OF TRACE ELEMENTS IN WATERS AND WASTES BY INDUCTIVELY	
	EPA-600/R-94-111 200.8	DETERMINATION OF TRACE ELEMENTS IN WATERS AND WASTES BY INDUCTIVELY COUPLED PLAS
	HEIS 6010_METALS_ICP	Inductively Coupled Plasma-Atomic Emmision Spectrometry

Note: A complete list of WSCF analytical procedures and referenced regulatory or industry methods is available online at \\ap006\aspdocs\WSCF\Sample Mgmt\ProcedureMethodCrossReference.pdf. This document includes on-line links to full-text versions of the procedures and methods, where available.

w13qlog v1 27-jul-2006 13:27:48

W13q Worklist/Batch/QC Report for Group# 20060733

WL#	S#	Batch	QC#	Tray Type	Sample#	Test
29079	1	29447	33341	BLANK		ICP-2008 MS All possible metal
29079	2	29447	33341	LCS		ICP-2008 MS All possible metal
29079	4	29447	33341	MS	W060001923	ICP-2008 MS All possible metal
29079	5	29447	33341	MSD	W060001923	ICP-2008 MS All possible metal
29079	3	29447	33341	SAMPLE	W060001923	ICP-2008 MS All possible metal
29079	5	29447	33341	SPK-RPD	W060001923	ICP-2008 MS All possible metal
29079	6	29447	33341	SAMPLE	W060001924	ICP-2008 MS All possible metal
29079	7	29447	33341	SAMPLE	W060001925	ICP-2008 MS All possible metal
29171	1	29537	33432	BLANK		ICP Metals Analysis, Grd H20 P
29171	2	29537	33432	LCS		ICP Metals Analysis, Grd H20 P
29171	3	29537	33432	MS	W060001923	ICP Metals Analysis, Grd H20 P
29171	4	29537	33432	MSD	W060001923	ICP Metals Analysis, Grd H20 P
29171	5	29537	33432	SAMPLE	W060001923	ICP Metals Analysis, Grd H20 P
29171	4	29537	33432	SPK-RPD	W060001923	ICP Metals Analysis, Grd H20 P
29171	6	29537	33432	SAMPLE	W060001924	ICP Metals Analysis, Grd H20 P
29171	7	29537	33432	SAMPLE	W060001925	ICP Metals Analysis, Grd H20 P

M8141-SLF-06-197

ATTACHMENT 3

SAMPLE RECEIPT INFORMATION

Consisting of 3 pages
Including cover page

Waste Sampling and Characterization Facility
P.O. BOX 1970 S3-30, Richland, WA 99352
PHONE: (509) 373-7004/FAX: (509) 373-7134

7/24/06
Fl5 ICB

ACKNOWLEDGMENT OF SAMPLES RECEIVED

PROJECT HANFORD MANAGEMENT COMPANY

Customer Code: PHMC-MISC
RICHLAND, WA 99354 PO#: ~~121300/ES20~~ 121600/ES20
Attn: D KLAGES Group#: 20060733

7-10-06

The following samples were received from you on 07/10/06. They have been scheduled for the tests listed beside each sample. If this information is incorrect, please contact your service representative. Thank you for using Waste Sampling and Characterization Facility.

Sample#	Sample Id	Tests Scheduled	Matrix	Sample Date
W060001923	B1HVM6-A	KLAGES @2008 @GPP6010	Solid, or handle as if solid	03/14/06
W060001924	B1HVM8-A	KLAGES @2008 @GPP6010	Solid, or handle as if solid	03/14/06
W060001925	B1HVN0-A	KLAGES @2008 @GPP6010	Solid, or handle as if solid	03/14/06

Test Acronym Description

Test Acronym	Description
@2008	ICP-2008 MS All possible metal
@GPP6010	ICP Metals Analysis, Grd H20 P

Fluor Hanford Inc. 7/24	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	R06-013-010	PAGE 1 OF 1

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 9C	DATA TURNAROUND
HOGAN, JG	TRECHTER, JE	373-7046	TRECHTER, JE		
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**	**AIR QUALITY** ☐	15 Days / 15 Days
200-W-42	200-UW-1 Operable Unit, Soil from Trench between 216-U-8 and 216-U-12		R06-013		
ICE CHEST NO. N/A	**FIELD LOGBOOK NO.** N/A	**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 20060733

POSSIBLE SAMPLE HAZARDS/ REMARKS

SAMPLE NO.	LAB ID	MATRIX*	SAMPLE DATE	SAMPLE TIME	NO./TYPE CONTAINER(S)	ANALYSIS	PRESERVATION
B1HVM6-A	W06000923	S	3-14-06	0950	5X60mL 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
B1HVM6-A		S		0950	5X60mL G/P	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	None
B1HVM8-A	1924	S		1010	5X60mL 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
B1HVM8-A		S		1010	5X60mL G/P	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	None
B1HVN0-A	1925	S		1020	5X60mL 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
B1HVN0-A		S		1020	5X60mL G/P	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	None

CHAIN OF POSSESSION	SIGN/ PRINT NAMES	SPECIAL INSTRUCTIONS
RELINQUISHED BY/REMOVED FROM DURATEK J. G. HOGAN 0715 DATE/TIME 7/10/06	RECEIVED BY/STORED IN 07/ DATE/TIME 07/10/06	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)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}
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 N/A	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME