REVIEW COMMENT RECORD (RCR)

1. Date	2. Review No.
09/19/2011	
3. Project No.	Page 1 of 1

5. Document Number(s)/Title(s)	6. Program/Project/Building Number	7. Reviewer	8. Organization/Group	9. Location/Phone
Data Validation Report for CH2M Hill Plateau Remediation Company: VSR11-056, Project KW Floodplain	100K Area, Waste Site 100-K-63	D. L. Klages	100-K Soil Remediation	(509)942-3947

17. Comment Submittal Approval	10. Agreement With Indicated Comment Disposition(s)	11. CLOSED
Date / Organization Manager (optional) (print and sign)	Deanna L. Klages Reviewer/Point of Contact (print and sign) 09/19/2011 Date Deanna L. Klages Author/Originator (print and sign)	Deanna L. Klages Reviewer/Point of Contact (print and sign) 09/19/2011 Date Deanna L. Klages Author/Originator (print and sign)

12. Item	13a. Comments	13b. Basis	13c. Recommendation	14. Reviewer Concurrence Required (Y or N)	15. Disposition (provide justification if **NOT** accepted)	16. Status
1	Title: please change title to "100-K Project, Waste Site 100-K-63, Excavation Area" and carry this throughout the validation in the reports.	This sampling activity was only for the waste site 100-K-63 excavation area, rather than the whole area which has samples that still remain to be analyzed.	Title: please change title to "100-K Project, Waste Site 100-K-63, Excavation Area" and carry this throughout the validation in the reports.	Y	Change made	CLOSED.

REVIEW COMMENT RECORD (RCR)	1. Date 09/13/2011	2. Review No.
	3. Project No.	Page 1 of 1

5. Document Number(s)/Title(s)	6. Program/Project/Building Number	7. Reviewer	8. Organization/Group	9. Location/Phone
VSR11-056, Data Validation Report for CHPRC - Project KW Floodplain, Chemical & Radiochemical Validation - Level C	S&GRP Sample Data Group (SDG); WSCF112993, WSCF113002 and WSCF113017	JA Edwards	Environmental Quality Assurance (EQA)	2420 Stevens Rm. 345 376-4324

17. Comment Submittal Approval	10. Agreement With Indicated Comment Disposition(s)	11. CLOSED
Date: ____ Organization Manager (optional) (print and sign): ____	JA Edwards (Reviewer/Point of Contact (print and sign))	JA Edwards (Reviewer/Point of Contact (print and sign))
	Date: 09/13/2011	Date: 09/13/2011
	Author/Originator (print and sign): ____	Author/Originator (print and sign): ____

12. Item	13a. Comments	13b. Basis	13c. Recommendation	14. Reviewer Concurrence Required (Y or N)	15. Disposition (provide justification if **NOT** accepted)	16. Status
1	There were no issues found in this review	N/A	No additional items found	N	N/A	Closed

Documents:

DOE/RL-96-22, Rev. 5, *100 Area Remedial Action Sampling and Analysis Plan*, September 2009
GRP-GD-002, Rev. 0, Change 0, *Data Validation for Radiochemical Analyses*, August 2010
GRP-GD-003, Rev. 0, Change 0, *Data Validation for Chemical Analyses*, August 2010

CHPRC - REVIEW COMMENT RECORD (RCR)

1. Date	09/13/2011
2. Review No.	
3. Project No.	
	Page 1 of 1

5. Document Number(s)/Title(s)	6. Program/Project/Building Number	7. Reviewer	8. Organization/Group	9. Location/Phone
VSR11-056		Scot Fitzgerald	Analytical Support Group	2753/373-7495

17. Comment Submittal Approval	10. Agreement With Indicated Comment Disposition(s)	11. CLOSED
Date: _____ Organization Manager (optional) (print and sign): _____	Scot Fitzgerald Reviewer/Point of Contact (print and sign) Date: 09/13/2011 Author/Originator (print and sign):	Scot Fitzgerald Reviewer/Point of Contact (print and sign) Date: 09/13/2011 Author/Originator (print and sign):

12. Item	13a. Comments	13b. Basis	13c. Recommendation	14. Reviewer Concurrence Required (Y or N)	15. Disposition (provide justification if **NOT** accepted)	16. Status
1	No issues Noted					

ANALYTICAL QUALITY ASSOCIATES, INC.
616 Maxine NE
Albuquerque, NM 87123
505-299-5201
www.aqainc.net

Data Validation Report for CH2M Hill
Plateau Remediation Company

VSR11-056
100-K Project, Waste Site 100-K-63, Excavation Area

Chemical & Radiochemical Validation - Level C

Validation Performed By: Carl Schlosser **Date:** 9-12-2011

TABLE OF CONTENTS

Inorganics

Memorandum	3
Appendix 1 – Glossary of Data Reporting Qualifiers	7
Appendix 2 – Summary of Data Qualification	9
Appendix 3 – Annotated Laboratory Reports	11
Appendix 4 – Laboratory Narrative and Chain-of-Custody Documentation	56
Appendix 5 – Data Validation Supporting Documentation	109
Appendix 6 – Additional Documentation Requested By Client	116

General Chemistry

Memorandum	132
Appendix 1 – Glossary of Data Reporting Qualifiers	136
Appendix 2 – Summary of Data Qualification	138
Appendix 3 – Annotated Laboratory Reports	140
Appendix 4 – Laboratory Narrative and Chain-of-Custody Documentation	163
Appendix 5 – Data Validation Supporting Documentation	216
Appendix 6 – Additional Documentation Requested By Client	222

Radiochemical

Memorandum	229
Appendix 1 – Glossary of Data Reporting Qualifiers	233
Appendix 2 – Summary of Data Qualification	235
Appendix 3 – Annotated Laboratory Reports	237
Appendix 4 – Laboratory Narrative and Chain-of-Custody Documentation	260
Appendix 5 – Data Validation Supporting Documentation	313
Appendix 6 – Additional Documentation Requested By Client	321

Date: 12 September 2011
To: CH2M Hill (technical representative)
From: Analytical Quality Associates, Inc.
Project: 100-K Project, Waste Site 100-K-63, Excavation Area
Subject: Inorganics - Sample Data Groups (SDGs) WSCF112993, WSCF113002 and WSCF113017

INTRODUCTION

This memorandum presents the results of data validation for SDGs WSCF112993, WSCF113002 and WSCF113017 prepared by WSCF Analytical Laboratories. A list of samples validated along with the analytical method is provided in the following table.

Sample ID	Sample Date	Media	Validation Level	Analytical Method
B2FX82	8/17/2011	Soil	C	200.8
B2FX93	8/17/2011	Soil	C	200.8
B2FX96	8/17/2011	Soil	C	200.8
B2FX97	8/17/2011	Soil	C	200.8
B2FX98	8/17/2011	Soil	C	200.8
B2FXB0	8/18/2011	Soil	C	200.8
B2FXB1	8/18/2011	Soil	C	200.8
B2FXB2	8/18/2011	Soil	C	200.8
B2FXB3	8/18/2011	Soil	C	200.8
B2FX83	8/18/2011	Soil	C	200.8
B2FX84	8/18/2011	Soil	C	200.8
B2FX85	8/18/2011	Soil	C	200.8
B2FX95	8/18/2011	Soil	C	200.8
B2FX99	8/18/2011	Soil	C	200.8
B2FX86	8/19/2011	Soil	C	200.8
B2FX87	8/19/2011	Soil	C	200.8
B2FX88	8/19/2011	Soil	C	200.8
B2FX89	8/19/2011	Soil	C	200.8
B2FX90	8/19/2011	Soil	C	200.8
B2FX91	8/19/2011	Soil	C	200.8
B2FX92	8/19/2011	Soil	C	200.8
B2FX94	8/19/2011	Soil	C	200.8

Data validation was conducted in accordance with the CHPRC validation statement of work and the 100 Area Remedial Action Sampling and Analysis Plan, DOE/RL-96-22, Rev. 5 (SAP). 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 and Sample Preservation**

Holding times are calculated from Chain-of-Custody forms to determine the validity of the results. The holding time requirement for ICP metals are analysis within 180 days of sample collection, and the holding time requirement for mercury is analysis within 28 days of sample collection. Sample preservation requires chilling to 4 degrees Celsius.

The samples were analyzed within the prescribed holding times and properly preserved.

- **Blanks**

The blank data results are reviewed to assess the extent of contamination introduced through sampling, sample preparation, and analysis.

Laboratory Blanks

All laboratory blank results were acceptable.

Trip Blanks

No trip blanks were submitted for validation.

Field Blanks

No field blanks were submitted for validation.

Equipment Blanks

All equipment blank results were acceptable with the following exceptions. For SDG WSCF112993, Mn, Ba, V, Zn, Pb, Sr and As were detected in equipment blank B2FX96.

- **Accuracy**

Accuracy is evaluated by reviewing matrix spike sample results and laboratory control sample results. According to the SAP, the matrix spike sample accuracy limits are 70% to 130% and the laboratory control sample accuracy limits are ones specified by the DV procedure. The limits for reported analytes not listed in the SAP are specified by the DV procedure.

Matrix Spike/Matrix Spike Duplicate (MS/MSD) Samples

All MS/MSD recoveries were acceptable.

Laboratory Control Samples (LCSs)

All LCS recoveries were acceptable.

- **Precision**

Precision is evaluated by reviewing MS/MSD results, field duplicate sample results and field split sample results. These QC results provide information on the laboratory reproducibility and whether sampling activities are adequate to acquire consistent sample results. According to the SAP, the relative percent difference (RPD) limits are ±30%. The limits for reported analytes not listed in the SAP are specified by the DV procedure. When duplicate RPDs exceed the limits and have associated results <5X the reporting limits with differences <2X the reporting limits no precision infraction occurred.

MS/MSD Samples

All MS/MSD RPD values were acceptable with the following exception. For SDGs WSCF113002 and WSCF113017, the Mn RPD was above the acceptance limit. All associated Mn sample results were detects and should be qualified as estimates and flagged "J." See the table in Appendix 2 for a listing of all affected sample results.

Field Duplicate Samples

All field duplicate results were acceptable with the following exception. For SDG WSCF113002, samples B2FX95 and B2FX99 had a Pb RPD = 62%.

Field Split Samples

No field splits were submitted for validation.

- **Detection Limits**

Reported MDLs are compared against the contractually required detection limits (CRDLs) to ensure that laboratory detection limits meet the required criteria.

All reported sample MDLs with associated non-detected sample results were below the CRDLs.

- **Completeness**

SDGs WSCF112993, WSCF113002 and WSCF113017 were 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

A minor deficiency leading to qualification of Mn sample results as estimates was due to an MS/MSD RPD infraction. See the table in Appendix 2 for a listing of all affected sample results.

REFERENCES

GRP-GD-003, Rev. 0, Change 0, *Data Validation for Chemical Analyses*, August 2010.

DOE/RL-96-22, Rev. 5, *100 Area Remedial Action Sampling and Analysis Plan*, September 2009

Appendix 1

Glossary of Data Reporting Qualifiers

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

- **U** — The constituent was analyzed for, but was not detected. The data should be considered usable for decision-making purposes.

- **UJ** — The constituent was analyzed for and was not detected. Due to a quality control deficiency identified during data validation the value reported may not accurately reflect the RL. The data should be considered usable for decision-making purposes.

- **J** — Indicates the constituent was analyzed for and detected. The associated value is estimated due to a quality control deficiency identified during data validation. The data should be considered usable for decision-making purposes.

- **J+** — Indicates the constituent was analyzed for and detected. The associated value is estimated with a suspected positive bias due to a quality control deficiency identified during data validation. The data should be considered usable for decision-making purposes.

- **J-** — Indicates the constituent was analyzed for and detected. The associated value is estimated with a suspected negative bias due to a quality control deficiency identified during data validation. The data should be considered usable for decision-making purposes.

- **N** — The analysis indicates the presence of an analyte that has been tentatively identified.

- **NJ** — The analysis indicates the presence of an analyte that has been tentatively identified and the associated numerical value represents its approximate concentration.

- **NJ+** — The analysis indicates the presence of an analyte that has been tentatively identified. The associated value is estimated with a suspected positive bias due to a quality control deficiency identified during data validation.

- **NJ-** — The analysis indicates the presence of an analyte that has been tentatively identified. The associated value is estimated with a suspected negative bias due to a quality control deficiency identified during data validation.

- **UR** — Indicates the constituent was analyzed for and not detected; however, due to an identified quality control deficiency the data should be considered unusable for decision-making purposes.

- **R** — Indicates the constituent was analyzed for and detected; however, due to an identified quality control deficiency the data should be considered unusable for decision-making purposes.

Appendix 2

Summary of Data Qualification

Inorganic Data Qualification Summary			
SDGs: WSCF112993, WSCF113002 & WSCF113017	Reviewer: AQA	Project: 100-K Project, Waste Site 100-K-63, Excavation Area	Page 1 of 1
Analyte(s)	**DV Flag**	**Samples Affected**	**Reason**
Mn	J	B2FXB0, B2FXB1, B2FXB2, B2FXB3, B2FX83, B2FX84, B2FX85, B2FX95, B2FX99, B2FX86, B2FX87, B2FX88, B2FX89, B2FX90, B2FX91, B2FX92, B2FX94	Poor MS/MSD precision

Comments: None

Appendix 3

Annotated Laboratory Reports

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF112993

Sample # 112993001
SAF# F11-159
Sample ID B2FX82

Matrix SOIL
Sampled 08/17/11
Received 08/17/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
~~**Cr(VI) Prep**~~										~~**08/23/11**~~
~~**Cr(VI)**~~										
~~Hexavalent chromium~~	~~18540-29-9~~	~~LA-265-403~~	~~UN~~	~~<0.10~~		~~ug/g~~	~~1~~	~~0.10~~	~~0.51~~	~~08/24/11~~
ICPMS Prep										**08/22/11**
ICP-MS										
Manganese	7439-96-5	LA-505-412		333		mg/kg	1	0.098	0.98	08/23/11
Nickel	7440-02-0	LA-505-412		15.8		mg/kg	1	0.20	2.0	08/23/11
Silver	7440-22-4	LA-505-412	U	<0.098		mg/kg	1	0.098	0.98	08/23/11
Antimony	7440-36-0	LA-505-412	U	<0.29		mg/kg	1	0.29	2.9	08/23/11
Barium	7440-39-3	LA-505-412		86.4		mg/kg	1	0.20	2.0	08/23/11
Beryllium	7440-41-7	LA-505-412	B	0.298		mg/kg	1	0.098	0.49	08/23/11
Boron	7440-42-8	LA-505-412	B	2.06		mg/kg	1	0.49	4.9	08/23/11
Cadmium	7440-43-9	LA-505-412	B	0.232		mg/kg	1	0.098	0.98	08/23/11
Chromium	7440-47-3	LA-505-412		17.8		mg/kg	1	0.49	4.9	08/23/11
Cobalt	7440-48-4	LA-505-412		7.88		mg/kg	1	0.098	0.49	08/23/11
Copper	7440-50-8	LA-505-412		16.9		mg/kg	1	0.098	0.98	08/23/11
Vanadium	7440-62-2	LA-505-412		51.2		mg/kg	1	0.20	2.0	08/23/11
Zinc	7440-66-6	LA-505-412		73.1		mg/kg	1	0.78	4.9	08/23/11
Lead	7439-92-1	LA-505-412		11.5		mg/kg	1	0.098	0.98	08/23/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

LS
9-12-2011

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF112993

Sample # 112993001
SAF# F11-159
Sample ID B2FX82

Matrix SOIL
Sampled 08/17/11
Received 08/17/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Mercury	7439-97-6	LA-505-412	U	<0.049		mg/kg	1	0.049	0.20	08/23/11
Molybdenum	7439-98-7	LA-505-412	B	0.464		mg/kg	1	0.098	0.98	08/23/11
Strontium	7440-24-6	LA-505-412		43.2		mg/kg	1	0.098	0.98	08/23/11
Tin	7440-31-5	LA-505-412		0.498		mg/kg	1	0.098	0.49	08/23/11
Uranium	7440-61-1	LA-505-412		0.603		mg/kg	1	0.098	0.49	08/23/11
Arsenic	7440-38-2	LA-505-412	B	3.66		mg/kg	1	0.39	3.9	08/23/11
Selenium	7782-49-2	LA-505-412	B	0.565		mg/kg	1	0.29	2.9	08/23/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF112993

Sample # 112993002
SAF# F11-159
Sample ID B2FX93

Matrix SOIL
Sampled 08/17/11
Received 08/17/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
~~**Cr(VI) Prep**~~										~~**08/23/11**~~
Cr(VI)										
~~Hexavalent chromium~~	~~18540-29-9~~	~~LA-265-403~~	~~UN~~	~~<0.10~~		~~ug/g~~	~~1~~	~~0.10~~	~~0.50~~	~~08/24/11~~
ICPMS Prep										**08/22/11**
ICP-MS										
Manganese	7439-96-5	LA-505-412		279		mg/kg	1	0.10	1.0	08/23/11
Nickel	7440-02-0	LA-505-412		19.2		mg/kg	1	0.20	2.0	08/23/11
Silver	7440-22-4	LA-505-412	U	<0.10		mg/kg	1	0.10	1.0	08/23/11
Antimony	7440-36-0	LA-505-412	U	<0.31		mg/kg	1	0.31	3.1	08/23/11
Barium	7440-39-3	LA-505-412		90.1		mg/kg	1	0.20	2.0	08/23/11
Beryllium	7440-41-7	LA-505-412	B	0.191		mg/kg	1	0.10	0.51	08/23/11
Boron	7440-42-8	LA-505-412	B	1.84		mg/kg	1	0.51	5.1	08/23/11
Cadmium	7440-43-9	LA-505-412	B	0.193		mg/kg	1	0.10	1.0	08/23/11
Chromium	7440-47-3	LA-505-412		20.4		mg/kg	1	0.51	5.1	08/23/11
Cobalt	7440-48-4	LA-505-412		6.85		mg/kg	1	0.10	0.51	08/23/11
Copper	7440-50-8	LA-505-412		15.0		mg/kg	1	0.10	1.0	08/23/11
Vanadium	7440-62-2	LA-505-412		36.7		mg/kg	1	0.20	2.0	08/23/11
Zinc	7440-66-6	LA-505-412		71.1		mg/kg	1	0.81	5.1	08/23/11
Lead	7439-92-1	LA-505-412		11.8		mg/kg	1	0.10	1.0	08/23/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

LS
9-12-2011

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF112993

Sample # 112993002
SAF# F11-159
Sample ID B2FX93

Matrix SOIL
Sampled 08/17/11
Received 08/17/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Mercury	7439-97-6	LA-505-412	U	<0.051		mg/kg	1	0.051	0.20	08/23/11
Molybdenum	7439-98-7	LA-505-412	B	0.616		mg/kg	1	0.10	1.0	08/23/11
Strontium	7440-24-6	LA-505-412		44.2		mg/kg	1	0.10	1.0	08/23/11
Tin	7440-31-5	LA-505-412	B	0.406		mg/kg	1	0.10	0.51	08/23/11
Uranium	7440-61-1	LA-505-412		0.955		mg/kg	1	0.10	0.51	08/23/11
Arsenic	7440-38-2	LA-505-412	B	3.74		mg/kg	1	0.41	4.1	08/23/11
Selenium	7782-49-2	LA-505-412	B	0.521		mg/kg	1	0.31	3.1	08/23/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF112993

Sample # 112993003
SAF# F11-159
Sample ID B2FX96

Matrix SOIL
Sampled 08/17/11
Received 08/17/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
~~**Cr(VI) Prep**~~										~~**08/23/11**~~
Cr(VI)										
~~Hexavalent chromium~~	~~18540-29-9~~	~~LA-265-403~~	~~UN~~	~~<0.10~~		~~ug/g~~	~~1~~	~~0.10~~	~~0.50~~	~~08/24/11~~
ICPMS Prep										**08/22/11**
ICP-MS										
Manganese	7439-96-5	LA-505-412		3.33		mg/kg	1	0.093	0.93	08/23/11
Nickel	7440-02-0	LA-505-412	U	<0.19		mg/kg	1	0.19	1.9	08/23/11
Silver	7440-22-4	LA-505-412	U	<0.093		mg/kg	1	0.093	0.93	08/23/11
Antimony	7440-36-0	LA-505-412	U	<0.28		mg/kg	1	0.28	2.8	08/23/11
Barium	7440-39-3	LA-505-412	B	1.41		mg/kg	1	0.19	1.9	08/23/11
Beryllium	7440-41-7	LA-505-412	U	<0.093		mg/kg	1	0.093	0.47	08/23/11
Boron	7440-42-8	LA-505-412	U	<0.47		mg/kg	1	0.47	4.7	08/23/11
Cadmium	7440-43-9	LA-505-412	U	<0.093		mg/kg	1	0.093	0.93	08/23/11
Chromium	7440-47-3	LA-505-412	U	<0.47		mg/kg	1	0.47	4.7	08/23/11
Cobalt	7440-48-4	LA-505-412	U	<0.093		mg/kg	1	0.093	0.47	08/23/11
Copper	7440-50-8	LA-505-412	U	<0.093		mg/kg	1	0.093	0.93	08/23/11
Vanadium	7440-62-2	LA-505-412	B	0.557		mg/kg	1	0.19	1.9	08/23/11
Zinc	7440-66-6	LA-505-412	B	1.17		mg/kg	1	0.75	4.7	08/23/11
Lead	7439-92-1	LA-505-412	B	0.267		mg/kg	1	0.093	0.93	08/23/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

LS
9-12-2011

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF112993

Sample # 112993003
SAF# F11-159
Sample ID B2FX96

Matrix SOIL
Sampled 08/17/11
Received 08/17/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Mercury	7439-97-6	LA-505-412	U	<0.047		mg/kg	1	0.047	0.19	08/23/11
Molybdenum	7439-98-7	LA-505-412	U	<0.093		mg/kg	1	0.093	0.93	08/23/11
Strontium	7440-24-6	LA-505-412	B	0.381		mg/kg	1	0.093	0.93	08/23/11
Tin	7440-31-5	LA-505-412	U	<0.093		mg/kg	1	0.093	0.47	08/23/11
Uranium	7440-61-1	LA-505-412	U	<0.093		mg/kg	1	0.093	0.47	08/23/11
Arsenic	7440-38-2	LA-505-412	B	0.642		mg/kg	1	0.37	3.7	08/23/11
Selenium	7782-49-2	LA-505-412	U	<0.28		mg/kg	1	0.28	2.8	08/23/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF112993

Sample # 112993004
SAF# F11-159
Sample ID B2FX97

Matrix SOIL
Sampled 08/17/11
Received 08/17/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
~~**Cr(VI) Prep**~~										~~**08/23/11**~~
~~**Cr(VI)**~~										
~~Hexavalent chromium~~	~~18540-29-9~~	~~LA-265-403~~	~~UN~~	~~<0.10~~		~~ug/g~~	~~1~~	~~0.10~~	~~0.51~~	~~08/24/11~~
ICPMS Prep										**08/22/11**
ICP-MS										
Manganese	7439-96-5	LA-505-412		301		mg/kg	1	0.10	1.0	08/23/11
Nickel	7440-02-0	LA-505-412		16.1		mg/kg	1	0.21	2.1	08/23/11
Silver	7440-22-4	LA-505-412	U	<0.10		mg/kg	1	0.10	1.0	08/23/11
Antimony	7440-36-0	LA-505-412	U	<0.31		mg/kg	1	0.31	3.1	08/23/11
Barium	7440-39-3	LA-505-412		82.8		mg/kg	1	0.21	2.1	08/23/11
Beryllium	7440-41-7	LA-505-412	B	0.337		mg/kg	1	0.10	0.52	08/23/11
Boron	7440-42-8	LA-505-412	B	3.51		mg/kg	1	0.52	5.2	08/23/11
Cadmium	7440-43-9	LA-505-412	B	0.162		mg/kg	1	0.10	1.0	08/23/11
Chromium	7440-47-3	LA-505-412		17.5		mg/kg	1	0.52	5.2	08/23/11
Cobalt	7440-48-4	LA-505-412		7.71		mg/kg	1	0.10	0.52	08/23/11
Copper	7440-50-8	LA-505-412		16.4		mg/kg	1	0.10	1.0	08/23/11
Vanadium	7440-62-2	LA-505-412		45.5		mg/kg	1	0.21	2.1	08/23/11
Zinc	7440-66-6	LA-505-412		58.7		mg/kg	1	0.84	5.2	08/23/11
Lead	7439-92-1	LA-505-412		13.5		mg/kg	1	0.10	1.0	08/23/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

LS
9-12-2011

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF112993

Sample # 112993004
SAF# F11-159
Sample ID B2FX97

Matrix SOIL
Sampled 08/17/11
Received 08/17/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Mercury	7439-97-6	LA-505-412	U	<0.052		mg/kg	1	0.052	0.21	08/23/11
Molybdenum	7439-98-7	LA-505-412		1.29		mg/kg	1	0.10	1.0	08/23/11
Strontium	7440-24-6	LA-505-412		52.4		mg/kg	1	0.10	1.0	08/23/11
Tin	7440-31-5	LA-505-412	B	0.407		mg/kg	1	0.10	0.52	08/23/11
Uranium	7440-61-1	LA-505-412		0.686		mg/kg	1	0.10	0.52	08/23/11
Arsenic	7440-38-2	LA-505-412	B	3.79		mg/kg	1	0.42	4.2	08/23/11
Selenium	7782-49-2	LA-505-412	B	0.526		mg/kg	1	0.31	3.1	08/23/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF112993

Sample # 112993005
SAF# F11-159
Sample ID B2FX98

Matrix SOIL
Sampled 08/17/11
Received 08/17/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
~~**Cr(VI) Prep**~~										~~**08/23/11**~~
Cr(VI)										
~~Hexavalent chromium~~	~~18540-29-9~~	~~LA-265-403~~	~~UN~~	~~<0.10~~		~~ug/g~~	~~1~~	~~0.10~~	~~0.51~~	~~08/24/11~~
ICPMS Prep										**08/22/11**
ICP-MS										
Manganese	7439-96-5	LA-505-412		297		mg/kg	1	0.098	0.98	08/23/11
Nickel	7440-02-0	LA-505-412		18.9		mg/kg	1	0.20	2.0	08/23/11
Silver	7440-22-4	LA-505-412	U	<0.098		mg/kg	1	0.098	0.98	08/23/11
Antimony	7440-36-0	LA-505-412	U	<0.29		mg/kg	1	0.29	2.9	08/23/11
Barium	7440-39-3	LA-505-412		91.8		mg/kg	1	0.20	2.0	08/23/11
Beryllium	7440-41-7	LA-505-412	B	0.404		mg/kg	1	0.098	0.49	08/23/11
Boron	7440-42-8	LA-505-412	B	1.81		mg/kg	1	0.49	4.9	08/23/11
Cadmium	7440-43-9	LA-505-412	B	0.170		mg/kg	1	0.098	0.98	08/23/11
Chromium	7440-47-3	LA-505-412		20.6		mg/kg	1	0.49	4.9	08/23/11
Cobalt	7440-48-4	LA-505-412		7.07		mg/kg	1	0.098	0.49	08/23/11
Copper	7440-50-8	LA-505-412		14.5		mg/kg	1	0.098	0.98	08/23/11
Vanadium	7440-62-2	LA-505-412		38.0		mg/kg	1	0.20	2.0	08/23/11
Zinc	7440-66-6	LA-505-412		54.2		mg/kg	1	0.79	4.9	08/23/11
Lead	7439-92-1	LA-505-412		7.46		mg/kg	1	0.098	0.98	08/23/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

LS
9-12-2011

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF112993

Sample # 112993005
SAF# F11-159
Sample ID B2FX98

Matrix SOIL
Sampled 08/17/11
Received 08/17/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Mercury	7439-97-6	LA-505-412	U	<0.049		mg/kg	1	0.049	0.20	08/23/11
Molybdenum	7439-98-7	LA-505-412	B	0.787		mg/kg	1	0.098	0.98	08/23/11
Strontium	7440-24-6	LA-505-412		71.5		mg/kg	1	0.098	0.98	08/23/11
Tin	7440-31-5	LA-505-412	B	0.392		mg/kg	1	0.098	0.49	08/23/11
Uranium	7440-61-1	LA-505-412		0.868		mg/kg	1	0.098	0.49	08/23/11
Arsenic	7440-38-2	LA-505-412		4.26		mg/kg	1	0.39	3.9	08/23/11
Selenium	7782-49-2	LA-505-412	B	0.339		mg/kg	1	0.29	2.9	08/23/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF113002

Sample # 113002001
SAF# F11-159
Sample ID B2FXB0

Matrix SOIL
Sampled 08/18/11
Received 08/18/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
~~**Cr(VI) Prep**~~										~~**08/23/11**~~
Cr(VI)										
~~Hexavalent chromium~~	~~18540-29-9~~	~~LA-265-403~~	~~UN~~	~~<0.10~~		~~ug/g~~	~~1~~	~~0.10~~	~~0.51~~	~~08/24/11~~
ICPMS Prep										**08/24/11**
ICP-MS										
Manganese	7439-96-5	LA-505-412		279 J		mg/kg	1	0.099	0.99	08/25/11
Nickel	7440-02-0	LA-505-412		15.4		mg/kg	1	0.20	2.0	08/25/11
Silver	7440-22-4	LA-505-412	U	<0.099		mg/kg	1	0.099	0.99	08/25/11
Antimony	7440-36-0	LA-505-412	U	<0.30		mg/kg	1	0.30	3.0	08/25/11
Barium	7440-39-3	LA-505-412		76.8		mg/kg	1	0.20	2.0	08/25/11
Beryllium	7440-41-7	LA-505-412	B	0.291		mg/kg	1	0.099	0.50	08/25/11
Boron	7440-42-8	LA-505-412	B	2.42		mg/kg	1	0.50	5.0	08/25/11
Cadmium	7440-43-9	LA-505-412	B	0.225		mg/kg	1	0.099	0.99	08/25/11
Chromium	7440-47-3	LA-505-412		17.7		mg/kg	1	0.50	5.0	08/25/11
Cobalt	7440-48-4	LA-505-412		5.95		mg/kg	1	0.099	0.50	08/25/11
Copper	7440-50-8	LA-505-412		13.7		mg/kg	1	0.099	0.99	08/25/11
Vanadium	7440-62-2	LA-505-412		31.4		mg/kg	1	0.20	2.0	08/25/11
Zinc	7440-66-6	LA-505-412		49.6		mg/kg	1	0.79	5.0	08/25/11
Lead	7439-92-1	LA-505-412		7.14		mg/kg	1	0.099	0.99	08/25/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

LS
9-12-2011

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF113002

Sample # 113002001
SAF# F11-159
Sample ID B2FXB0

Matrix SOIL
Sampled 08/18/11
Received 08/18/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Mercury	7439-97-6	LA-505-412	U	<0.050		mg/kg	1	0.050	0.20	08/25/11
Molybdenum	7439-98-7	LA-505-412	B	0.389		mg/kg	1	0.099	0.99	08/25/11
Strontium	7440-24-6	LA-505-412		133		mg/kg	1	0.099	0.99	08/25/11
Tin	7440-31-5	LA-505-412	B	0.382		mg/kg	1	0.099	0.50	08/25/11
Uranium	7440-61-1	LA-505-412		0.845		mg/kg	1	0.099	0.50	08/25/11
Arsenic	7440-38-2	LA-505-412		4.07		mg/kg	1	0.40	4.0	08/25/11
Selenium	7782-49-2	LA-505-412	B	0.595		mg/kg	1	0.30	3.0	08/25/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF113002

Sample # 113002002
SAF# F11-159
Sample ID B2FXB1

Matrix SOIL
Sampled 08/18/11
Received 08/18/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
~~Cr(VI) Prep~~										**~~08/23/11~~**
Cr(VI)										
~~Hexavalent chromium~~	~~18540-29-9~~	~~LA-265-403~~	~~UN~~	~~<0.10~~		~~ug/g~~	~~1~~	~~0.10~~	~~0.50~~	~~08/24/11~~
ICPMS Prep										**08/24/11**
ICP-MS										
Manganese	7439-96-5	LA-505-412		267 J		mg/kg	1	0.10	1.0	08/25/11
Nickel	7440-02-0	LA-505-412		12.6		mg/kg	1	0.20	2.0	08/25/11
Silver	7440-22-4	LA-505-412	U	<0.10		mg/kg	1	0.10	1.0	08/25/11
Antimony	7440-36-0	LA-505-412	U	<0.30		mg/kg	1	0.30	3.0	08/25/11
Barium	7440-39-3	LA-505-412		62.2		mg/kg	1	0.20	2.0	08/25/11
Beryllium	7440-41-7	LA-505-412	B	0.308		mg/kg	1	0.10	0.50	08/25/11
Boron	7440-42-8	LA-505-412	B	1.78		mg/kg	1	0.50	5.0	08/25/11
Cadmium	7440-43-9	LA-505-412	B	0.158		mg/kg	1	0.10	1.0	08/25/11
Chromium	7440-47-3	LA-505-412		13.2		mg/kg	1	0.50	5.0	08/25/11
Cobalt	7440-48-4	LA-505-412		6.43		mg/kg	1	0.10	0.50	08/25/11
Copper	7440-50-8	LA-505-412		13.8		mg/kg	1	0.10	1.0	08/25/11
Vanadium	7440-62-2	LA-505-412		37.4		mg/kg	1	0.20	2.0	08/25/11
Zinc	7440-66-6	LA-505-412		42.5		mg/kg	1	0.81	5.0	08/25/11
Lead	7439-92-1	LA-505-412		6.31		mg/kg	1	0.10	1.0	08/25/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

LS
9-12-2011

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF113002

Sample # 113002002
SAF# F11-159
Sample ID B2FXB1

Matrix SOIL
Sampled 08/18/11
Received 08/18/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Mercury	7439-97-6	LA-505-412	U	<0.050		mg/kg	1	0.050	0.20	08/25/11
Molybdenum	7439-98-7	LA-505-412	B	0.365		mg/kg	1	0.10	1.0	08/25/11
Strontium	7440-24-6	LA-505-412		47.8		mg/kg	1	0.10	1.0	08/25/11
Tin	7440-31-5	LA-505-412	B	0.373		mg/kg	1	0.10	0.50	08/25/11
Uranium	7440-61-1	LA-505-412		0.531		mg/kg	1	0.10	0.50	08/25/11
Arsenic	7440-38-2	LA-505-412	B	3.21		mg/kg	1	0.40	4.0	08/25/11
Selenium	7782-49-2	LA-505-412	B	0.791		mg/kg	1	0.30	3.0	08/25/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF113002

Sample # 113002003
SAF# F11-159
Sample ID B2FXB2

Matrix SOIL
Sampled 08/18/11
Received 08/18/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI) Prep										**08/23/11**
Cr(VI)										
Hexavalent chromium	18540-29-9	LA-265-403	UN	<0.10		ug/g	1	0.10	0.50	08/24/11
ICPMS Prep										**08/24/11**
ICP-MS										
Manganese	7439-96-5	LA-505-412		266	J	mg/kg	1	0.099	0.99	08/25/11
Nickel	7440-02-0	LA-505-412		14.9		mg/kg	1	0.20	2.0	08/25/11
Silver	7440-22-4	LA-505-412	U	<0.099		mg/kg	1	0.099	0.99	08/25/11
Antimony	7440-36-0	LA-505-412	U	<0.30		mg/kg	1	0.30	3.0	08/25/11
Barium	7440-39-3	LA-505-412		71.3		mg/kg	1	0.20	2.0	08/25/11
Beryllium	7440-41-7	LA-505-412	B	0.253		mg/kg	1	0.099	0.49	08/25/11
Boron	7440-42-8	LA-505-412	B	1.36		mg/kg	1	0.49	4.9	08/25/11
Cadmium	7440-43-9	LA-505-412	B	0.155		mg/kg	1	0.099	0.99	08/25/11
Chromium	7440-47-3	LA-505-412		16.7		mg/kg	1	0.49	4.9	08/25/11
Cobalt	7440-48-4	LA-505-412		6.05		mg/kg	1	0.099	0.49	08/25/11
Copper	7440-50-8	LA-505-412		12.7		mg/kg	1	0.099	0.99	08/25/11
Vanadium	7440-62-2	LA-505-412		34.1		mg/kg	1	0.20	2.0	08/25/11
Zinc	7440-66-6	LA-505-412		51.3		mg/kg	1	0.79	4.9	08/25/11
Lead	7439-92-1	LA-505-412		7.43		mg/kg	1	0.099	0.99	08/25/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

LS
9-12-2011

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF113002

Sample # 113002003
SAF# F11-159
Sample ID B2FXB2

Matrix SOIL
Sampled 08/18/11
Received 08/18/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Mercury	7439-97-6	LA-505-412	U	<0.049		mg/kg	1	0.049	0.20	08/25/11
Molybdenum	7439-98-7	LA-505-412	B	0.336		mg/kg	1	0.099	0.99	08/25/11
Strontium	7440-24-6	LA-505-412		37.6		mg/kg	1	0.099	0.99	08/25/11
Tin	7440-31-5	LA-505-412	B	0.333		mg/kg	1	0.099	0.49	08/25/11
Uranium	7440-61-1	LA-505-412		0.556		mg/kg	1	0.099	0.49	08/25/11
Arsenic	7440-38-2	LA-505-412		3.92		mg/kg	1	0.39	3.9	08/25/11
Selenium	7782-49-2	LA-505-412	B	0.602		mg/kg	1	0.30	3.0	08/25/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF113002

Sample # 113002004
SAF# F11-159
Sample ID B2FXB3

Matrix SOIL
Sampled 08/18/11
Received 08/18/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
~~**Cr(VI) Prep**~~										~~**08/23/11**~~
Cr(VI)										
~~Hexavalent chromium~~	~~18540-29-9~~	~~LA-265-403~~	~~UN~~	~~<0.10~~		~~ug/g~~	~~1~~	~~0.10~~	~~0.50~~	~~08/24/11~~
ICPMS Prep										**08/24/11**
ICP-MS										
Manganese	7439-96-5	LA-505-412		348	J	mg/kg	1	0.098	0.98	08/25/11
Nickel	7440-02-0	LA-505-412		14.1		mg/kg	1	0.20	2.0	08/25/11
Silver	7440-22-4	LA-505-412	U	<0.098		mg/kg	1	0.098	0.98	08/25/11
Antimony	7440-36-0	LA-505-412	U	<0.29		mg/kg	1	0.29	2.9	08/25/11
Barium	7440-39-3	LA-505-412		68.0		mg/kg	1	0.20	2.0	08/25/11
Beryllium	7440-41-7	LA-505-412	B	0.314		mg/kg	1	0.098	0.49	08/25/11
Boron	7440-42-8	LA-505-412	B	2.58		mg/kg	1	0.49	4.9	08/25/11
Cadmium	7440-43-9	LA-505-412	B	0.173		mg/kg	1	0.098	0.98	08/25/11
Chromium	7440-47-3	LA-505-412		13.1		mg/kg	1	0.49	4.9	08/25/11
Cobalt	7440-48-4	LA-505-412		8.39		mg/kg	1	0.098	0.49	08/25/11
Copper	7440-50-8	LA-505-412		19.5		mg/kg	1	0.098	0.98	08/25/11
Vanadium	7440-62-2	LA-505-412		53.7		mg/kg	1	0.20	2.0	08/25/11
Zinc	7440-66-6	LA-505-412		87.3		mg/kg	1	0.79	4.9	08/25/11
Lead	7439-92-1	LA-505-412		18.8		mg/kg	1	0.098	0.98	08/25/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

LS
9-12-2011

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF113002

Sample # 113002004
SAF# F11-159
Sample ID B2FXB3

Matrix SOIL
Sampled 08/18/11
Received 08/18/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Mercury	7439-97-6	LA-505-412	U	<0.049		mg/kg	1	0.049	0.20	08/25/11
Molybdenum	7439-98-7	LA-505-412	B	0.700		mg/kg	1	0.098	0.98	08/25/11
Strontium	7440-24-6	LA-505-412		32.4		mg/kg	1	0.098	0.98	08/25/11
Tin	7440-31-5	LA-505-412		0.581		mg/kg	1	0.098	0.49	08/25/11
Uranium	7440-61-1	LA-505-412		0.525		mg/kg	1	0.098	0.49	08/25/11
Arsenic	7440-38-2	LA-505-412	B	3.58		mg/kg	1	0.39	3.9	08/25/11
Selenium	7782-49-2	LA-505-412	B	0.941		mg/kg	1	0.29	2.9	08/25/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF113002

Sample # 113002005
SAF# F11-159
Sample ID B2FX83

Matrix SOIL
Sampled 08/18/11
Received 08/18/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
~~**Cr(VI) Prep**~~										~~**08/23/11**~~
Cr(VI)										
~~Hexavalent chromium~~	~~18540-29-9~~	~~LA-265-403~~	~~UN~~	~~<0.10~~		~~ug/g~~	~~1~~	~~0.10~~	~~0.50~~	~~08/24/11~~
ICPMS Prep										**08/24/11**
ICP-MS										
Manganese	7439-96-5	LA-505-412		326	J	mg/kg	1	0.096	0.96	08/25/11
Nickel	7440-02-0	LA-505-412		12.9		mg/kg	1	0.19	1.9	08/25/11
Silver	7440-22-4	LA-505-412	U	<0.096		mg/kg	1	0.096	0.96	08/25/11
Antimony	7440-36-0	LA-505-412	U	<0.29		mg/kg	1	0.29	2.9	08/25/11
Barium	7440-39-3	LA-505-412		65.9		mg/kg	1	0.19	1.9	08/25/11
Beryllium	7440-41-7	LA-505-412	B	0.343		mg/kg	1	0.096	0.48	08/25/11
Boron	7440-42-8	LA-505-412	B	1.43		mg/kg	1	0.48	4.8	08/25/11
Cadmium	7440-43-9	LA-505-412	B	0.162		mg/kg	1	0.096	0.96	08/25/11
Chromium	7440-47-3	LA-505-412		13.2		mg/kg	1	0.48	4.8	08/25/11
Cobalt	7440-48-4	LA-505-412		7.96		mg/kg	1	0.096	0.48	08/25/11
Copper	7440-50-8	LA-505-412		15.8		mg/kg	1	0.096	0.96	08/25/11
Vanadium	7440-62-2	LA-505-412		51.0		mg/kg	1	0.19	1.9	08/25/11
Zinc	7440-66-6	LA-505-412		60.2		mg/kg	1	0.77	4.8	08/25/11
Lead	7439-92-1	LA-505-412		8.64		mg/kg	1	0.096	0.96	08/25/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

LS
9-12-2011

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF113002

Sample # 113002005
SAF# F11-159
Sample ID B2FX83

Matrix SOIL
Sampled 08/18/11
Received 08/18/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Mercury	7439-97-6	LA-505-412	U	<0.048		mg/kg	1	0.048	0.19	08/25/11
Molybdenum	7439-98-7	LA-505-412	B	0.440		mg/kg	1	0.096	0.96	08/25/11
Strontium	7440-24-6	LA-505-412		32.7		mg/kg	1	0.096	0.96	08/25/11
Tin	7440-31-5	LA-505-412	B	0.432		mg/kg	1	0.096	0.48	08/25/11
Uranium	7440-61-1	LA-505-412		0.492		mg/kg	1	0.096	0.48	08/25/11
Arsenic	7440-38-2	LA-505-412		3.84		mg/kg	1	0.38	3.8	08/25/11
Selenium	7782-49-2	LA-505-412	B	1.02		mg/kg	1	0.29	2.9	08/25/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF113002

Sample # 113002006
SAF# F11-159
Sample ID B2FX84

Matrix SOIL
Sampled 08/18/11
Received 08/18/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
~~**Cr(VI) Prep**~~										~~**08/23/11**~~
~~**Cr(VI)**~~										
~~Hexavalent chromium~~	~~18540-29-9~~	~~LA-265-403~~	~~UN~~	~~<0.10~~		~~ug/g~~	~~1~~	~~0.10~~	~~0.50~~	~~08/24/11~~
ICPMS Prep										**08/24/11**
ICP-MS										
Manganese	7439-96-5	LA-505-412		301 J		mg/kg	1	0.096	0.96	08/25/11
Nickel	7440-02-0	LA-505-412		11.7		mg/kg	1	0.19	1.9	08/25/11
Silver	7440-22-4	LA-505-412	U	<0.096		mg/kg	1	0.096	0.96	08/25/11
Antimony	7440-36-0	LA-505-412	U	<0.29		mg/kg	1	0.29	2.9	08/25/11
Barium	7440-39-3	LA-505-412		69.1		mg/kg	1	0.19	1.9	08/25/11
Beryllium	7440-41-7	LA-505-412	B	0.318		mg/kg	1	0.096	0.48	08/25/11
Boron	7440-42-8	LA-505-412	B	1.08		mg/kg	1	0.48	4.8	08/25/11
Cadmium	7440-43-9	LA-505-412	B	0.105		mg/kg	1	0.096	0.96	08/25/11
Chromium	7440-47-3	LA-505-412		15.7		mg/kg	1	0.48	4.8	08/25/11
Cobalt	7440-48-4	LA-505-412		7.30		mg/kg	1	0.096	0.48	08/25/11
Copper	7440-50-8	LA-505-412		14.9		mg/kg	1	0.096	0.96	08/25/11
Vanadium	7440-62-2	LA-505-412		45.9		mg/kg	1	0.19	1.9	08/25/11
Zinc	7440-66-6	LA-505-412		46.7		mg/kg	1	0.77	4.8	08/25/11
Lead	7439-92-1	LA-505-412		6.15		mg/kg	1	0.096	0.96	08/25/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

LS
9-12-2011

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF113002

Sample # 113002006
SAF# F11-159
Sample ID B2FX84

Matrix SOIL
Sampled 08/18/11
Received 08/18/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Mercury	7439-97-6	LA-505-412	U	<0.048		mg/kg	1	0.048	0.19	08/25/11
Molybdenum	7439-98-7	LA-505-412	B	0.407		mg/kg	1	0.096	0.96	08/25/11
Strontium	7440-24-6	LA-505-412		28.4		mg/kg	1	0.096	0.96	08/25/11
Tin	7440-31-5	LA-505-412	B	0.406		mg/kg	1	0.096	0.48	08/25/11
Uranium	7440-61-1	LA-505-412		0.515		mg/kg	1	0.096	0.48	08/25/11
Arsenic	7440-38-2	LA-505-412	B	3.13		mg/kg	1	0.39	3.9	08/25/11
Selenium	7782-49-2	LA-505-412	B	0.741		mg/kg	1	0.29	2.9	08/25/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF113002

Sample # 113002007
SAF# F11-159
Sample ID B2FX85

Matrix SOIL
Sampled 08/18/11
Received 08/18/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI) Prep										**08/25/11**
Cr(VI)										
Hexavalent chromium	18540-29-9	LA-265-403	UN	<0.094		ug/g	1	0.094	0.47	08/26/11
ICPMS Prep										**08/24/11**
ICP-MS										
Manganese	7439-96-5	LA-505-412		352	J	mg/kg	1	0.096	0.96	08/25/11
Nickel	7440-02-0	LA-505-412		15.5		mg/kg	1	0.19	1.9	08/25/11
Silver	7440-22-4	LA-505-412	U	<0.096		mg/kg	1	0.096	0.96	08/25/11
Antimony	7440-36-0	LA-505-412	U	<0.29		mg/kg	1	0.29	2.9	08/25/11
Barium	7440-39-3	LA-505-412		80.0		mg/kg	1	0.19	1.9	08/25/11
Beryllium	7440-41-7	LA-505-412	B	0.368		mg/kg	1	0.096	0.48	08/25/11
Boron	7440-42-8	LA-505-412	B	1.16		mg/kg	1	0.48	4.8	08/25/11
Cadmium	7440-43-9	LA-505-412	B	0.114		mg/kg	1	0.096	0.96	08/25/11
Chromium	7440-47-3	LA-505-412		23.8		mg/kg	1	0.48	4.8	08/25/11
Cobalt	7440-48-4	LA-505-412		9.06		mg/kg	1	0.096	0.48	08/25/11
Copper	7440-50-8	LA-505-412		20.1		mg/kg	1	0.096	0.96	08/25/11
Vanadium	7440-62-2	LA-505-412		51.0		mg/kg	1	0.19	1.9	08/25/11
Zinc	7440-66-6	LA-505-412		52.4		mg/kg	1	0.77	4.8	08/25/11
Lead	7439-92-1	LA-505-412		6.91		mg/kg	1	0.096	0.96	08/25/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

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C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

LS
9-12-2011

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF113002

Sample # 113002007
SAF# F11-159
Sample ID B2FX85

Matrix SOIL
Sampled 08/18/11
Received 08/18/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Mercury	7439-97-6	LA-505-412	U	<0.048		mg/kg	1	0.048	0.19	08/25/11
Molybdenum	7439-98-7	LA-505-412	B	0.437		mg/kg	1	0.096	0.96	08/25/11
Strontium	7440-24-6	LA-505-412		36.4		mg/kg	1	0.096	0.96	08/25/11
Tin	7440-31-5	LA-505-412	B	0.472		mg/kg	1	0.096	0.48	08/25/11
Uranium	7440-61-1	LA-505-412		0.723		mg/kg	1	0.096	0.48	08/25/11
Arsenic	7440-38-2	LA-505-412		4.30		mg/kg	1	0.38	3.8	08/25/11
Selenium	7782-49-2	LA-505-412	B	1.11		mg/kg	1	0.29	2.9	08/25/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF113002

Sample # 113002008
SAF# F11-159
Sample ID B2FX95

Matrix SOIL
Sampled 08/18/11
Received 08/18/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
~~**Cr(VI) Prep**~~										~~**08/25/11**~~
Cr(VI)										
~~Hexavalent chromium~~	~~18540-29-9~~	~~LA-265-403~~	~~UN~~	~~<0.10~~		~~ug/g~~	~~1~~	~~0.10~~	~~0.50~~	~~08/26/11~~
ICPMS Prep										**08/24/11**
ICP-MS										
Manganese	7439-96-5	LA-505-412		325	J	mg/kg	1	0.10	1.0	08/25/11
Nickel	7440-02-0	LA-505-412		16.9		mg/kg	1	0.21	2.1	08/25/11
Silver	7440-22-4	LA-505-412	U	<0.10		mg/kg	1	0.10	1.0	08/25/11
Antimony	7440-36-0	LA-505-412	B	0.316		mg/kg	1	0.31	3.1	08/25/11
Barium	7440-39-3	LA-505-412		85.9		mg/kg	1	0.21	2.1	08/25/11
Beryllium	7440-41-7	LA-505-412	B	0.428		mg/kg	1	0.10	0.51	08/25/11
Boron	7440-42-8	LA-505-412	B	2.30		mg/kg	1	0.51	5.1	08/25/11
Cadmium	7440-43-9	LA-505-412	B	0.173		mg/kg	1	0.10	1.0	08/25/11
Chromium	7440-47-3	LA-505-412		19.7		mg/kg	1	0.51	5.1	08/25/11
Cobalt	7440-48-4	LA-505-412		7.35		mg/kg	1	0.10	0.51	08/25/11
Copper	7440-50-8	LA-505-412		17.4		mg/kg	1	0.10	1.0	08/25/11
Vanadium	7440-62-2	LA-505-412		40.4		mg/kg	1	0.21	2.1	08/25/11
Zinc	7440-66-6	LA-505-412		58.8		mg/kg	1	0.82	5.1	08/25/11
Lead	7439-92-1	LA-505-412		12.1		mg/kg	1	0.10	1.0	08/25/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

LS
9-12-2011

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF113002

Sample # 113002008
SAF# F11-159
Sample ID B2FX95

Matrix SOIL
Sampled 08/18/11
Received 08/18/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Mercury	7439-97-6	LA-505-412	U	<0.051		mg/kg	1	0.051	0.21	08/25/11
Molybdenum	7439-98-7	LA-505-412		1.38		mg/kg	1	0.10	1.0	08/25/11
Strontium	7440-24-6	LA-505-412		90.1		mg/kg	1	0.10	1.0	08/25/11
Tin	7440-31-5	LA-505-412	B	0.415		mg/kg	1	0.10	0.51	08/25/11
Uranium	7440-61-1	LA-505-412		0.825		mg/kg	1	0.10	0.51	08/25/11
Arsenic	7440-38-2	LA-505-412		4.62		mg/kg	1	0.41	4.1	08/25/11
Selenium	7782-49-2	LA-505-412	B	0.838		mg/kg	1	0.31	3.1	08/25/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF113002

Sample # 113002009
SAF# F11-159
Sample ID B2FX99

Matrix SOIL
Sampled 08/18/11
Received 08/18/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
~~**Cr(VI) Prep**~~										~~**08/25/11**~~
~~**Cr(VI)**~~										
~~Hexavalent chromium~~	~~18540-29-9~~	~~LA-265-403~~	~~UN~~	~~<0.099~~		~~ug/g~~	~~1~~	~~0.099~~	~~0.49~~	~~08/26/11~~
ICPMS Prep										**08/24/11**
ICP-MS										
Manganese	7439-96-5	LA-505-412		294	J	mg/kg	1	0.097	0.97	08/25/11
Nickel	7440-02-0	LA-505-412		14.8		mg/kg	1	0.19	1.9	08/25/11
Silver	7440-22-4	LA-505-412	U	<0.097		mg/kg	1	0.097	0.97	08/25/11
Antimony	7440-36-0	LA-505-412	U	<0.29		mg/kg	1	0.29	2.9	08/25/11
Barium	7440-39-3	LA-505-412		72.7		mg/kg	1	0.19	1.9	08/25/11
Beryllium	7440-41-7	LA-505-412	B	0.348		mg/kg	1	0.097	0.49	08/25/11
Boron	7440-42-8	LA-505-412	B	2.41		mg/kg	1	0.49	4.9	08/25/11
Cadmium	7440-43-9	LA-505-412	B	0.124		mg/kg	1	0.097	0.97	08/25/11
Chromium	7440-47-3	LA-505-412		16.5		mg/kg	1	0.49	4.9	08/25/11
Cobalt	7440-48-4	LA-505-412		6.75		mg/kg	1	0.097	0.49	08/25/11
Copper	7440-50-8	LA-505-412		16.1		mg/kg	1	0.097	0.97	08/25/11
Vanadium	7440-62-2	LA-505-412		37.2		mg/kg	1	0.19	1.9	08/25/11
Zinc	7440-66-6	LA-505-412		58.3		mg/kg	1	0.78	4.9	08/25/11
Lead	7439-92-1	LA-505-412		23.0		mg/kg	1	0.097	0.97	08/25/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

LS
9-12-2011

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF113002

Sample # 113002009
SAF# F11-159
Sample ID B2FX99

Matrix SOIL
Sampled 08/18/11
Received 08/18/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Mercury	7439-97-6	LA-505-412	U	<0.049		mg/kg	1	0.049	0.19	08/25/11
Molybdenum	7439-98-7	LA-505-412		1.01		mg/kg	1	0.097	0.97	08/25/11
Strontium	7440-24-6	LA-505-412		73.9		mg/kg	1	0.097	0.97	08/25/11
Tin	7440-31-5	LA-505-412	B	0.410		mg/kg	1	0.097	0.49	08/25/11
Uranium	7440-61-1	LA-505-412		0.798		mg/kg	1	0.097	0.49	08/25/11
Arsenic	7440-38-2	LA-505-412	B	3.70		mg/kg	1	0.39	3.9	08/25/11
Selenium	7782-49-2	LA-505-412	B	0.695		mg/kg	1	0.29	2.9	08/25/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF113017

Sample # 113017001
SAF# F11-159
Sample ID B2FX86

Matrix SOIL
Sampled 08/19/11
Received 08/23/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI) Prep										**08/25/11**
Cr(VI)										
Hexavalent chromium	18540-29-9	LA-265-403	UN	<0.099		ug/g	1	0.099	0.50	08/26/11
ICPMS Prep										**08/24/11**
ICP-MS										
Manganese	7439-96-5	LA-505-412		351	J	mg/kg	1	0.096	0.96	08/25/11
Nickel	7440-02-0	LA-505-412		12.5		mg/kg	1	0.19	1.9	08/25/11
Silver	7440-22-4	LA-505-412	U	<0.096		mg/kg	1	0.096	0.96	08/25/11
Antimony	7440-36-0	LA-505-412	U	<0.29		mg/kg	1	0.29	2.9	08/25/11
Barium	7440-39-3	LA-505-412		67.0		mg/kg	1	0.19	1.9	08/25/11
Beryllium	7440-41-7	LA-505-412	B	0.412		mg/kg	1	0.096	0.48	08/25/11
Boron	7440-42-8	LA-505-412	B	1.29		mg/kg	1	0.48	4.8	08/25/11
Cadmium	7440-43-9	LA-505-412	B	0.0969		mg/kg	1	0.096	0.96	08/25/11
Chromium	7440-47-3	LA-505-412		12.2		mg/kg	1	0.48	4.8	08/25/11
Cobalt	7440-48-4	LA-505-412		8.75		mg/kg	1	0.096	0.48	08/25/11
Copper	7440-50-8	LA-505-412		17.0		mg/kg	1	0.096	0.96	08/25/11
Vanadium	7440-62-2	LA-505-412		50.6		mg/kg	1	0.19	1.9	08/25/11
Zinc	7440-66-6	LA-505-412		55.4		mg/kg	1	0.77	4.8	08/25/11
Lead	7439-92-1	LA-505-412		7.84		mg/kg	1	0.096	0.96	08/25/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

LS
9-12-2011

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF113017

Sample # 113017001
SAF# F11-159
Sample ID B2FX86

Matrix SOIL
Sampled 08/19/11
Received 08/23/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Mercury	7439-97-6	LA-505-412	U	<0.048		mg/kg	1	0.048	0.19	08/25/11
Molybdenum	7439-98-7	LA-505-412	B	0.447		mg/kg	1	0.096	0.96	08/25/11
Strontium	7440-24-6	LA-505-412		35.6		mg/kg	1	0.096	0.96	08/25/11
Tin	7440-31-5	LA-505-412	B	0.466		mg/kg	1	0.096	0.48	08/25/11
Uranium	7440-61-1	LA-505-412		0.523		mg/kg	1	0.096	0.48	08/25/11
Arsenic	7440-38-2	LA-505-412	B	3.68		mg/kg	1	0.38	3.8	08/25/11
Selenium	7782-49-2	LA-505-412	B	1.04		mg/kg	1	0.29	2.9	08/25/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF113017

Sample # 113017002
SAF# F11-159
Sample ID B2FX87

Matrix SOIL
Sampled 08/19/11
Received 08/23/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
~~**Cr(VI) Prep**~~										~~**08/25/11**~~
Cr(VI)										
~~Hexavalent chromium~~	~~18540-29-9~~	~~LA-265-403~~	~~UN~~	~~<0.098~~		~~ug/g~~	~~1~~	~~0.098~~	~~0.49~~	~~08/26/11~~
ICPMS Prep										**08/24/11**
ICP-MS										
Manganese	7439-96-5	LA-505-412		318	J	mg/kg	1	0.097	0.97	08/25/11
Nickel	7440-02-0	LA-505-412		10.1		mg/kg	1	0.19	1.9	08/25/11
Silver	7440-22-4	LA-505-412	U	<0.097		mg/kg	1	0.097	0.97	08/25/11
Antimony	7440-36-0	LA-505-412	U	<0.29		mg/kg	1	0.29	2.9	08/25/11
Barium	7440-39-3	LA-505-412		58.5		mg/kg	1	0.19	1.9	08/25/11
Beryllium	7440-41-7	LA-505-412	B	0.357		mg/kg	1	0.097	0.49	08/25/11
Boron	7440-42-8	LA-505-412	B	1.51		mg/kg	1	0.49	4.9	08/25/11
Cadmium	7440-43-9	LA-505-412	B	0.111		mg/kg	1	0.097	0.97	08/25/11
Chromium	7440-47-3	LA-505-412		9.75		mg/kg	1	0.49	4.9	08/25/11
Cobalt	7440-48-4	LA-505-412		8.00		mg/kg	1	0.097	0.49	08/25/11
Copper	7440-50-8	LA-505-412		15.3		mg/kg	1	0.097	0.97	08/25/11
Vanadium	7440-62-2	LA-505-412		54.1		mg/kg	1	0.19	1.9	08/25/11
Zinc	7440-66-6	LA-505-412		57.4		mg/kg	1	0.78	4.9	08/25/11
Lead	7439-92-1	LA-505-412		8.53		mg/kg	1	0.097	0.97	08/25/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

LS
9-12-2011

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF113017

Sample # 113017002
SAF# F11-159
Sample ID B2FX87

Matrix SOIL
Sampled 08/19/11
Received 08/23/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Mercury	7439-97-6	LA-505-412	U	<0.049		mg/kg	1	0.049	0.19	08/25/11
Molybdenum	7439-98-7	LA-505-412	B	0.516		mg/kg	1	0.097	0.97	08/25/11
Strontium	7440-24-6	LA-505-412		27.7		mg/kg	1	0.097	0.97	08/25/11
Tin	7440-31-5	LA-505-412	B	0.456		mg/kg	1	0.097	0.49	08/25/11
Uranium	7440-61-1	LA-505-412		0.581		mg/kg	1	0.097	0.49	08/25/11
Arsenic	7440-38-2	LA-505-412	B	2.83		mg/kg	1	0.39	3.9	08/25/11
Selenium	7782-49-2	LA-505-412	B	0.931		mg/kg	1	0.29	2.9	08/25/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF113017

Sample # 113017003
SAF# F11-159
Sample ID B2FX88

Matrix SOIL
Sampled 08/19/11
Received 08/23/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
~~**Cr(VI) Prep**~~										~~**08/25/11**~~
Cr(VI)										
~~Hexavalent chromium~~	~~18540-29-9~~	~~LA-265-403~~	~~UN~~	~~<0.10~~		~~ug/g~~	~~1~~	~~0.10~~	~~0.51~~	~~08/26/11~~
ICPMS Prep										**08/24/11**
ICP-MS										
Manganese	7439-96-5	LA-505-412		307	J	mg/kg	1	0.10	1.0	08/25/11
Nickel	7440-02-0	LA-505-412		13.2		mg/kg	1	0.20	2.0	08/25/11
Silver	7440-22-4	LA-505-412	U	<0.10		mg/kg	1	0.10	1.0	08/25/11
Antimony	7440-36-0	LA-505-412	U	<0.30		mg/kg	1	0.30	3.0	08/25/11
Barium	7440-39-3	LA-505-412		68.8		mg/kg	1	0.20	2.0	08/25/11
Beryllium	7440-41-7	LA-505-412	B	0.340		mg/kg	1	0.10	0.50	08/25/11
Boron	7440-42-8	LA-505-412	B	1.59		mg/kg	1	0.50	5.0	08/25/11
Cadmium	7440-43-9	LA-505-412	U	<0.10		mg/kg	1	0.10	1.0	08/25/11
Chromium	7440-47-3	LA-505-412		14.8		mg/kg	1	0.50	5.0	08/25/11
Cobalt	7440-48-4	LA-505-412		7.23		mg/kg	1	0.10	0.50	08/25/11
Copper	7440-50-8	LA-505-412		13.8		mg/kg	1	0.10	1.0	08/25/11
Vanadium	7440-62-2	LA-505-412		43.7		mg/kg	1	0.20	2.0	08/25/11
Zinc	7440-66-6	LA-505-412		45.9		mg/kg	1	0.80	5.0	08/25/11
Lead	7439-92-1	LA-505-412		6.43		mg/kg	1	0.10	1.0	08/25/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

LS
9-12-2011

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF113017

Sample # 113017003
SAF# F11-159
Sample ID B2FX88

Matrix SOIL
Sampled 08/19/11
Received 08/23/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Mercury	7439-97-6	LA-505-412	U	<0.050		mg/kg	1	0.050	0.20	08/25/11
Molybdenum	7439-98-7	LA-505-412	B	0.357		mg/kg	1	0.10	1.0	08/25/11
Strontium	7440-24-6	LA-505-412		32.6		mg/kg	1	0.10	1.0	08/25/11
Tin	7440-31-5	LA-505-412	B	0.356		mg/kg	1	0.10	0.50	08/25/11
Uranium	7440-61-1	LA-505-412	B	0.493		mg/kg	1	0.10	0.50	08/25/11
Arsenic	7440-38-2	LA-505-412	B	3.40		mg/kg	1	0.40	4.0	08/25/11
Selenium	7782-49-2	LA-505-412	B	0.802		mg/kg	1	0.30	3.0	08/25/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF113017

Sample # 113017004
SAF# F11-159
Sample ID B2FX89

Matrix SOIL
Sampled 08/19/11
Received 08/23/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
~~**Cr(VI) Prep**~~										~~**08/25/11**~~
Cr(VI)										
~~Hexavalent chromium~~	~~18540-29-9~~	~~LA-265-403~~	~~UN~~	~~<0.10~~		~~ug/g~~	~~1~~	~~0.10~~	~~0.50~~	~~08/26/11~~
ICPMS Prep										**08/24/11**
ICP-MS										
Manganese	7439-96-5	LA-505-412		316	J	mg/kg	1	0.092	0.92	08/25/11
Nickel	7440-02-0	LA-505-412		10.1		mg/kg	1	0.18	1.8	08/25/11
Silver	7440-22-4	LA-505-412	U	<0.092		mg/kg	1	0.092	0.92	08/25/11
Antimony	7440-36-0	LA-505-412	U	<0.28		mg/kg	1	0.28	2.8	08/25/11
Barium	7440-39-3	LA-505-412		61.5		mg/kg	1	0.18	1.8	08/25/11
Beryllium	7440-41-7	LA-505-412	B	0.312		mg/kg	1	0.092	0.46	08/25/11
Boron	7440-42-8	LA-505-412	B	1.22		mg/kg	1	0.46	4.6	08/25/11
Cadmium	7440-43-9	LA-505-412	U	<0.092		mg/kg	1	0.092	0.92	08/25/11
Chromium	7440-47-3	LA-505-412		9.66		mg/kg	1	0.46	4.6	08/25/11
Cobalt	7440-48-4	LA-505-412		7.54		mg/kg	1	0.092	0.46	08/25/11
Copper	7440-50-8	LA-505-412		14.0		mg/kg	1	0.092	0.92	08/25/11
Vanadium	7440-62-2	LA-505-412		50.1		mg/kg	1	0.18	1.8	08/25/11
Zinc	7440-66-6	LA-505-412		41.1		mg/kg	1	0.74	4.6	08/25/11
Lead	7439-92-1	LA-505-412		4.90		mg/kg	1	0.092	0.92	08/25/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

LS
9-12-2011

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF113017

Sample # 113017004
SAF# F11-159
Sample ID B2FX89

Matrix SOIL
Sampled 08/19/11
Received 08/23/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Mercury	7439-97-6	LA-505-412	U	<0.046		mg/kg	1	0.046	0.18	08/25/11
Molybdenum	7439-98-7	LA-505-412	B	0.381		mg/kg	1	0.092	0.92	08/25/11
Strontium	7440-24-6	LA-505-412		29.9		mg/kg	1	0.092	0.92	08/25/11
Tin	7440-31-5	LA-505-412	B	0.392		mg/kg	1	0.092	0.46	08/25/11
Uranium	7440-61-1	LA-505-412	B	0.429		mg/kg	1	0.092	0.46	08/25/11
Arsenic	7440-38-2	LA-505-412	B	2.67		mg/kg	1	0.37	3.7	08/25/11
Selenium	7782-49-2	LA-505-412	B	0.973		mg/kg	1	0.28	2.8	08/25/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF113017

Sample # 113017005
SAF# F11-159
Sample ID B2FX90

Matrix SOIL
Sampled 08/19/11
Received 08/23/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI) Prep										**08/25/11**
Cr(VI)										
Hexavalent chromium	18540-29-9	LA-265-403	UN	<0.10		ug/g	1	0.10	0.51	08/26/11
ICPMS Prep										**08/24/11**
ICP-MS										
Manganese	7439-96-5	LA-505-412		302	J	mg/kg	1	0.099	0.99	08/25/11
Nickel	7440-02-0	LA-505-412		12.4		mg/kg	1	0.20	2.0	08/25/11
Silver	7440-22-4	LA-505-412	U	<0.099		mg/kg	1	0.099	0.99	08/25/11
Antimony	7440-36-0	LA-505-412	U	<0.30		mg/kg	1	0.30	3.0	08/25/11
Barium	7440-39-3	LA-505-412		65.5		mg/kg	1	0.20	2.0	08/25/11
Beryllium	7440-41-7	LA-505-412	B	0.309		mg/kg	1	0.099	0.50	08/25/11
Boron	7440-42-8	LA-505-412	B	1.66		mg/kg	1	0.50	5.0	08/25/11
Cadmium	7440-43-9	LA-505-412	B	0.248		mg/kg	1	0.099	0.99	08/25/11
Chromium	7440-47-3	LA-505-412		14.5		mg/kg	1	0.50	5.0	08/25/11
Cobalt	7440-48-4	LA-505-412		7.33		mg/kg	1	0.099	0.50	08/25/11
Copper	7440-50-8	LA-505-412		19.5		mg/kg	1	0.099	0.99	08/25/11
Vanadium	7440-62-2	LA-505-412		43.3		mg/kg	1	0.20	2.0	08/25/11
Zinc	7440-66-6	LA-505-412		124		mg/kg	1	0.79	5.0	08/25/11
Lead	7439-92-1	LA-505-412		24.4		mg/kg	1	0.099	0.99	08/25/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

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9-12-2011

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF113017

Sample # 113017005
SAF# F11-159
Sample ID B2FX90

Matrix SOIL
Sampled 08/19/11
Received 08/23/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Mercury	7439-97-6	LA-505-412	U	<0.050		mg/kg	1	0.050	0.20	08/25/11
Molybdenum	7439-98-7	LA-505-412	B	0.501		mg/kg	1	0.099	0.99	08/25/11
Strontium	7440-24-6	LA-505-412		33.2		mg/kg	1	0.099	0.99	08/25/11
Tin	7440-31-5	LA-505-412		0.589		mg/kg	1	0.099	0.50	08/25/11
Uranium	7440-61-1	LA-505-412		0.607		mg/kg	1	0.099	0.50	08/25/11
Arsenic	7440-38-2	LA-505-412		4.16		mg/kg	1	0.40	4.0	08/25/11
Selenium	7782-49-2	LA-505-412	B	0.862		mg/kg	1	0.30	3.0	08/25/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF113017

Sample # 113017006
SAF# F11-159
Sample ID B2FX91

Matrix SOIL
Sampled 08/19/11
Received 08/23/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
~~**Cr(VI) Prep**~~										~~**08/25/11**~~
Cr(VI)										
~~Hexavalent chromium~~	~~18540-29-9~~	~~LA-265-403~~	~~UN~~	~~<0.098~~		~~ug/g~~	~~1~~	~~0.098~~	~~0.49~~	~~08/26/11~~
ICPMS Prep										**08/24/11**
ICP-MS										
Manganese	7439-96-5	LA-505-412		331	J	mg/kg	1	0.095	0.95	08/25/11
Nickel	7440-02-0	LA-505-412		13.4		mg/kg	1	0.19	1.9	08/25/11
Silver	7440-22-4	LA-505-412	U	<0.095		mg/kg	1	0.095	0.95	08/25/11
Antimony	7440-36-0	LA-505-412	U	<0.29		mg/kg	1	0.29	2.9	08/25/11
Barium	7440-39-3	LA-505-412		75.6		mg/kg	1	0.19	1.9	08/25/11
Beryllium	7440-41-7	LA-505-412	B	0.358		mg/kg	1	0.095	0.48	08/25/11
Boron	7440-42-8	LA-505-412	B	1.35		mg/kg	1	0.48	4.8	08/25/11
Cadmium	7440-43-9	LA-505-412	B	0.220		mg/kg	1	0.095	0.95	08/25/11
Chromium	7440-47-3	LA-505-412		16.4		mg/kg	1	0.48	4.8	08/25/11
Cobalt	7440-48-4	LA-505-412		7.59		mg/kg	1	0.095	0.48	08/25/11
Copper	7440-50-8	LA-505-412		17.8		mg/kg	1	0.095	0.95	08/25/11
Vanadium	7440-62-2	LA-505-412		45.9		mg/kg	1	0.19	1.9	08/25/11
Zinc	7440-66-6	LA-505-412		96.4		mg/kg	1	0.76	4.8	08/25/11
Lead	7439-92-1	LA-505-412		17.9		mg/kg	1	0.095	0.95	08/25/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

LS
9-12-2011

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF113017

Sample # 113017006
SAF# F11-159
Sample ID B2FX91

Matrix SOIL
Sampled 08/19/11
Received 08/23/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Mercury	7439-97-6	LA-505-412	U	<0.048		mg/kg	1	0.048	0.19	08/25/11
Molybdenum	7439-98-7	LA-505-412	B	0.507		mg/kg	1	0.095	0.95	08/25/11
Strontium	7440-24-6	LA-505-412		32.7		mg/kg	1	0.095	0.95	08/25/11
Tin	7440-31-5	LA-505-412		0.556		mg/kg	1	0.095	0.48	08/25/11
Uranium	7440-61-1	LA-505-412		0.621		mg/kg	1	0.095	0.48	08/25/11
Arsenic	7440-38-2	LA-505-412		3.89		mg/kg	1	0.38	3.8	08/25/11
Selenium	7782-49-2	LA-505-412	B	0.941		mg/kg	1	0.29	2.9	08/25/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF113017

Sample # 113017007
SAF# F11-159
Sample ID B2FX92

Matrix SOIL
Sampled 08/19/11
Received 08/23/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
~~**Cr(VI) Prep**~~										~~**08/25/11**~~
Cr(VI)										
~~Hexavalent chromium~~	~~18540-29-9~~	~~LA-265-403~~	~~UN~~	~~<0.10~~		~~ug/g~~	~~1~~	~~0.10~~	~~0.50~~	~~08/26/11~~
ICPMS Prep										**08/24/11**
ICP-MS										
Manganese	7439-96-5	LA-505-412		396	J	mg/kg	1	0.094	0.94	08/25/11
Nickel	7440-02-0	LA-505-412		14.1		mg/kg	1	0.19	1.9	08/25/11
Silver	7440-22-4	LA-505-412	U	<0.094		mg/kg	1	0.094	0.94	08/25/11
Antimony	7440-36-0	LA-505-412	U	<0.28		mg/kg	1	0.28	2.8	08/25/11
Barium	7440-39-3	LA-505-412		83.6		mg/kg	1	0.19	1.9	08/25/11
Beryllium	7440-41-7	LA-505-412	B	0.383		mg/kg	1	0.094	0.47	08/25/11
Boron	7440-42-8	LA-505-412	B	2.09		mg/kg	1	0.47	4.7	08/25/11
Cadmium	7440-43-9	LA-505-412	B	0.137		mg/kg	1	0.094	0.94	08/25/11
Chromium	7440-47-3	LA-505-412		15.4		mg/kg	1	0.47	4.7	08/25/11
Cobalt	7440-48-4	LA-505-412		8.45		mg/kg	1	0.094	0.47	08/25/11
Copper	7440-50-8	LA-505-412		15.2		mg/kg	1	0.094	0.94	08/25/11
Vanadium	7440-62-2	LA-505-412		49.7		mg/kg	1	0.19	1.9	08/25/11
Zinc	7440-66-6	LA-505-412		56.4		mg/kg	1	0.75	4.7	08/25/11
Lead	7439-92-1	LA-505-412		7.23		mg/kg	1	0.094	0.94	08/25/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

LS
9-12-2011

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF113017

Sample # 113017007
SAF# F11-159
Sample ID B2FX92

Matrix SOIL
Sampled 08/19/11
Received 08/23/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Mercury	7439-97-6	LA-505-412	U	<0.047		mg/kg	1	0.047	0.19	08/25/11
Molybdenum	7439-98-7	LA-505-412	B	0.436		mg/kg	1	0.094	0.94	08/25/11
Strontium	7440-24-6	LA-505-412		41.6		mg/kg	1	0.094	0.94	08/25/11
Tin	7440-31-5	LA-505-412	B	0.418		mg/kg	1	0.094	0.47	08/25/11
Uranium	7440-61-1	LA-505-412		0.592		mg/kg	1	0.094	0.47	08/25/11
Arsenic	7440-38-2	LA-505-412	B	3.65		mg/kg	1	0.38	3.8	08/25/11
Selenium	7782-49-2	LA-505-412	B	0.926		mg/kg	1	0.28	2.8	08/25/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF113017

Sample # 113017008
SAF# F11-159
Sample ID B2FX94

Matrix SOIL
Sampled 08/19/11
Received 08/23/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
~~**Cr(VI) Prep**~~										~~**08/25/11**~~
Cr(VI)										
~~Hexavalent chromium~~	~~18540-29-9~~	~~LA-265-403~~	~~UN~~	~~<0.10~~		~~ug/g~~	~~1~~	~~0.10~~	~~0.50~~	~~08/26/11~~
ICPMS Prep										**08/24/11**
ICP-MS										
Manganese	7439-96-5	LA-505-412		332	J	mg/kg	1	0.092	0.92	08/25/11
Nickel	7440-02-0	LA-505-412		13.1		mg/kg	1	0.18	1.8	08/25/11
Silver	7440-22-4	LA-505-412	U	<0.092		mg/kg	1	0.092	0.92	08/25/11
Antimony	7440-36-0	LA-505-412	U	<0.27		mg/kg	1	0.27	2.7	08/25/11
Barium	7440-39-3	LA-505-412		77.9		mg/kg	1	0.18	1.8	08/25/11
Beryllium	7440-41-7	LA-505-412	B	0.321		mg/kg	1	0.092	0.46	08/25/11
Boron	7440-42-8	LA-505-412	B	1.70		mg/kg	1	0.46	4.6	08/25/11
Cadmium	7440-43-9	LA-505-412	B	0.170		mg/kg	1	0.092	0.92	08/25/11
Chromium	7440-47-3	LA-505-412		14.7		mg/kg	1	0.46	4.6	08/25/11
Cobalt	7440-48-4	LA-505-412		7.38		mg/kg	1	0.092	0.46	08/25/11
Copper	7440-50-8	LA-505-412		13.5		mg/kg	1	0.092	0.92	08/25/11
Vanadium	7440-62-2	LA-505-412		42.3		mg/kg	1	0.18	1.8	08/25/11
Zinc	7440-66-6	LA-505-412		57.7		mg/kg	1	0.73	4.6	08/25/11
Lead	7439-92-1	LA-505-412		8.91		mg/kg	1	0.092	0.92	08/25/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

LS
9-12-2011

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF113017

Sample # 113017008
SAF# F11-159
Sample ID B2FX94

Matrix SOIL
Sampled 08/19/11
Received 08/23/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Mercury	7439-97-6	LA-505-412	U	<0.046		mg/kg	1	0.046	0.18	08/25/11
Molybdenum	7439-98-7	LA-505-412	B	0.405		mg/kg	1	0.092	0.92	08/25/11
Strontium	7440-24-6	LA-505-412		30.2		mg/kg	1	0.092	0.92	08/25/11
Tin	7440-31-5	LA-505-412	B	0.454		mg/kg	1	0.092	0.46	08/25/11
Uranium	7440-61-1	LA-505-412		0.593		mg/kg	1	0.092	0.46	08/25/11
Arsenic	7440-38-2	LA-505-412	B	3.31		mg/kg	1	0.37	3.7	08/25/11
Selenium	7782-49-2	LA-505-412	B	0.820		mg/kg	1	0.27	2.7	08/25/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

Attachment 2
Narrative
WSCF112993

Introduction

Samples were received at the WSCF laboratory as referenced on the WSCF SAF Number Cross Reference table included in the final report. The samples were analyzed for the analytes indicated on the attached copy of the chain of custody (COC) form in accordance with the *Statement of Work (SOW), Modification No. 2 to Agreement 36587, Release 3, "FH WSCF ANALYTICAL SERVICES FOR GROUNDWATER."*

The narrative (Attachment 2) will address sample characteristics, analyses requested and general information in performance of the analytical methods. A Data Summary Report (Attachment 3) includes analytical results, a comment report detailing method abnormalities, tentatively identified peaks if applicable, method references, and Laboratory QC information as applicable. Copies of the chain of custody and sample receipt documentation are included as Attachment 4.

It should be noted that the attached chain of custody was not stamped "ICED" by the WSCF Laboratory Sample Custodian during sample receiving. However, based on procedure LO-090-403 form "NOTICE OF IMPROPER SAMPLE SUBMITTAL" was not submitted and was not stamped "NOT ICED". No anomaly was noted during sample receipt.

The following generic data qualifiers (i.e., B, D, U and J) may be applicable to this report, as appropriate

- **B** – Sample results with a concentration greater than the MDL but less than the PQL are B flagged (applies to inorganic and wet chemical analyses), as appropriate.
- **D** – Sample results are D flagged if dilution(s) were required, as appropriate.
- **J** – Sample results with a concentration greater than the MDL but less than the PQL are J flagged (applies to organic analyses), as appropriate.
- **U** – Analyzed for but not detected above limiting criteria. Relative Percent Difference (RPD) values associated with an analyte qualified with a "U" are not applicable.

Analytical Methodology for Requested Analyses

Refer to *WSCF Method References Report* for a complete listing of approved analytical methods.

Inorganic Comments

Hexavalent Chromium – The hold time requirement for this analysis was met. A Duplicate, Matrix Spike, Blank and Laboratory Control Sample were analyzed with this delivery group. Analytical Note(s):

- Post Spike recovery is outside established laboratory limits. Affected sample results in this batch were "N" flagged.
- All other applicable QC controls are within the established limits.

Attachment 2
Narrative
WSCF112993

ICP-MS Metals – The hold time requirements for this analysis were met. A Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group. Analytical Note(s):

- Manganese – Exceeded spiking levels by a factor of 4. Spike recoveries and associated RPDs are not valid.
- All other applicable QC controls are within the established limits.

Radiochemistry Comments

Rad Chem – The hold time requirement for this analysis was met. A Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group. Analytical Note(s):

Tracers are used to determine chemical yield. RPD is monitored in sample duplicate and is not required for tracer recovery per SOW.

- Gamma Energy Analysis:
  - All applicable QC controls are within the established limits.
- Gross Alpha / Gross Beta:
  - Gross Beta – Duplicate Relative Percent Difference(s) (RPD) did not meet the established laboratory limits. Duplicate Relative Percent Difference (RPD) does not apply to results below 5X the minimum detectable activity. No flags issued.
  - All other applicable QC controls are within the established limits.
- Strontium-89/90:
  - Batch QC 188476
    - Duplicate Relative Percent Difference(s) (RPD) did not meet the established laboratory limits. Duplicate Relative Percent Difference (RPD) does not apply to results below 5X the minimum detectable activity. No flags issued.
    - The LCS recovery was outside laboratory acceptance limits, but within the 70 – 130% range allowed in the SOW.
  - Batch QC 188661
    - The LCS recovery was outside laboratory acceptance limits, but within the 70 – 130% range allowed in the SOW.
    - All other applicable QC controls are within the established limits.

Narrative

Attachment 2
Narrative
WSCF112993

We certify that this data package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this data package has been authorized by the Analytical Laboratory Manager (or designee) and the Client Services representative as verified by electronic signatures shown on the WSCF ANALYTICAL RESULTS REPORT.

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-159-001 | PAGE 1 OF 2

COLLECTOR	FM Hall CHPRC
SAMPLING LOCATION	100-K-63 Excavation Area Sample #1
ICE CHEST NO.	6WS-023
SHIPPED TO	Waste Sampling & Characterization
COMPANY CONTACT	LUKE, SN
TELEPHONE NO.	372-1667
PROJECT DESIGNATION	100-K-63 KW Floodplain Verification Sampling (Waste Area AJ)- Soil
FIELD LOGBOOK NO.	HNF-N-507-23
ACTUAL SAMPLE DEPTH	0 - 1'
OFFSITE PROPERTY NO.	N/A
PROJECT COORDINATOR	LUKE, SN
SAF NO.	F11-159
COA	302676ES10
BILL OF LADING/AIR BILL NO.	N/A
PRICE CODE	C01
AIR QUALITY	
DATA TURNAROUND	12 Days / 12 Days
METHOD OF SHIPMENT	GOVERNMENT VEHICLE

ORIGINAL

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS
Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

112993

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool<4C	None	None
HOLDING TIME	6 Months	6 Months	6 Months
TYPE OF CONTAINER	G/P	P	G/P
NO. OF CONTAINER(S)	1	1	1
VOLUME	250mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME			
B2FX82	SOIL	8/17/11	1312	✓	✓	✓

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	8/17/11 1440		8/17/11 1440

SPECIAL INSTRUCTIONS
SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

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

PRINTED ON 7/25/2011

A-6003-618 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-159-001	PAGE 2 OF 2
COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-1667	PROJECT COORDINATOR: LUKE, SN	PRICE CODE: C01	DATA TURNAROUND: 12 Days / 12 Days
SAMPLING LOCATION: 100-K-63 Excavation Area Sample #1	PROJECT DESIGNATION: 100-K-63 KW Floodplain Verification Sampling (Waste Area A)- Soil		SAF NO.: F11-159	AIR QUALITY: ☐	
ICE CHEST NO.: GWS-023	FIELD LOGBOOK NO.: HNF-N-607-23	ACTUAL SAMPLE DEPTH: 0-1'	COA: 302676ES10	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402579ES20.☐☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Silver, Vanadium, Zinc}; ICP/MS - 200.8 (Add-on) {Arsenic, Beryllium, Boron, Lead, Molybdenum, Selenium, Strontium, Tin, Uranium}; 200.8_HG - ICPMS {Mercury}; Chromium Hex - 7196;
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta}; Strontium-89,90 -- Total Sr;

PRINTED ON 7/25/2011 A-6003-618 (REV 2)

Chain of Custody

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-159-012

PAGE 1 OF 2

COLLECTOR: FM Hall CHPRC

COMPANY CONTACT: LUKE, SN

TELEPHONE NO.: 372-1667

PROJECT COORDINATOR: LUKE, SN

PRICE CODE: C01

DATA TURNAROUND: 12 Days / 12 Days

SAMPLING LOCATION: 100-K-63 Excavation Area Sample #2

PROJECT DESIGNATION: 100-K-63 KW Floodplain Verification Sampling (Waste Area A)- Soil

SAF NO.: F11-159

AIR QUALITY: ☐

ICE CHEST NO.: 6WS-023

FIELD LOGBOOK NO.: HNF-N-507-23

ACTUAL SAMPLE DEPTH: 0-1'

COA: 302676ES10

METHOD OF SHIPMENT: GOVERNMENT VEHICLE

ORIGINAL

SHIPPED TO: Waste Sampling & Characterization

OFFSITE PROPERTY NO.: N/A

BILL OF LADING/AIR BILL NO.: N/A

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool~4C	None	None
HOLDING TIME	6 Months	6 Months	6 Months
TYPE OF CONTAINER	G/P	P	G/P
NO. OF CONTAINER(S)	1	1	1
VOLUME	250mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.		MATRIX*	SAMPLE DATE	SAMPLE TIME			
B2FX93	2	SOIL	8/17/11	1325	✓	✓	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: FM Hall CHPRC	DATE/TIME: 8/17/11 1440	RECEIVED BY/STORED IN: [signature]	DATE/TIME: 8/17/11 1440
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
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 DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

PRINTED ON 7/25/2011

A-6003-618 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-159-012	PAGE 2 OF 2
COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-1667	PROJECT COORDINATOR: LUKE, SN	PRICE CODE: C01	DATA TURNAROUND: 12 Days / 12 Days
SAMPLING LOCATION: 100-K-63 Excavation Area Sample #2	PROJECT DESIGNATION: 100-K-63 KW Floodplain Verification Sampling (Waste Area A1)- Soil		SAF NO.: F11-159	AIR QUALITY: ☐	
ICE CHEST NO.: 6WS-023	FIELD LOGBOOK NO.: HNF-N-807-23.	ACTUAL SAMPLE DEPTH: 0-6'	COA: 302676ES10	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402579ES20.□□** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Silver, Vanadium, Zinc}; ICP/MS - 200.8 (Add-on) {Arsenic, Beryllium, Boron, Lead, Molybdenum, Selenium, Strontium, Tin, Uranium}; 200.8_HG - ICPMS {Mercury}; Chromium Hex - 7196;
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta}; Strontium-89,90 -- Total Sr;

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CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-159-015 — PAGE 1 OF 2

COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-1667	PROJECT COORDINATOR: LUKE, SN
PRICE CODE: C01	DATA TURNAROUND: 12 Days / 12 Days		
SAMPLING LOCATION: 100-K-63 Excavation Area Sample #22	PROJECT DESIGNATION: 100-K-63 KW Floodplain Verification Sampling (Waste Area AJ)- Soil	SAF NO.: F11-159	AIR QUALITY: ☐
ICE CHEST NO.: GWS-023	FIELD LOGBOOK NO.: HNF-N-507-23	ACTUAL SAMPLE DEPTH: 0-1'	COA: 302676ES10
METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL		
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A	BILL OF LADING/AIR BILL NO.: N/A	

MATRIX*: A=Air, DI=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool<4C	None	None
HOLDING TIME	6 Months	6 Months	6 Months
TYPE OF CONTAINER	G/P	P	G/P
NO. OF CONTAINER(S)	1	1	1
VOLUME	250mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME			
B2FX96 3	SOIL	8/17/11	1302	✓	✓	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: FM Hall CHPRC	DATE/TIME: 8/17/11 1440	RECEIVED BY/STORED IN: [signature]	DATE/TIME: 8/17/11 1440
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
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 DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

PRINTED ON 7/25/2011 — A-6003-618 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-159-015	PAGE 2 OF 2
COLLECTOR	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-1667	PROJECT COORDINATOR: LUKE, SN	PRICE CODE: C01	DATA TURNAROUND: 12 Days / 12 Days
SAMPLING LOCATION: 100 K 63 Excavation Area Sample #22	PROJECT DESIGNATION: 100 K 63 KW Floodplain Verification Sampling (Waste Area A) - Soil		SAF NO.: F11-159	AIR QUALITY: ☐	
ICE CHEST NO.: 6WS-023	FIELD LOGBOOK NO.: HNF-N-507-23	ACTUAL SAMPLE DEPTH: 0-1'	COA: 302676ES10	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402579ES20.□□** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Silver, Vanadium, Zinc}; ICP/MS - 200.8 (Add-on) {Arsenic, Beryllium, Boron, Lead, Molybdenum, Selenium, Strontium, Tin, Uranium}; 200.8_HG - ICPMS {Mercury}; Chromium Hex - 7196;
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta}; Strontium-89,90 -- Total Sr;

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A-6003-618 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-159-016 | PAGE 1 OF 2

COLLECTOR	FM Hall CHPRC
SAMPLING LOCATION	100-K-63 Excavation Area Sample #3
ICE CHEST NO.	GWS-023
SHIPPED TO	Waste Sampling & Characterization
COMPANY CONTACT	LUKE, SN
TELEPHONE NO.	372-1667
PROJECT COORDINATOR	LUKE, SN
PRICE CODE	C01
DATA TURNAROUND	12 Days / 12 Days
PROJECT DESIGNATION	100-K-63 KW Floodplain Verification Sampling (Waste Area A1)-Soil
SAF NO.	F11-159
AIR QUALITY	☐
FIELD LOGBOOK NO.	HNF-N-507-23
ACTUAL SAMPLE DEPTH	0-1'
COA	302676ES10
METHOD OF SHIPMENT	GOVERNMENT VEHICLE
ORIGINAL	
OFFSITE PROPERTY NO.	N/A
BILL OF LADING/AIR BILL NO.	N/A

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool-4C	None	None
HOLDING TIME	6 Months	6 Months	6 Months
TYPE OF CONTAINER	G/P	P	G/P
NO. OF CONTAINER(S)	1	1	1
VOLUME	250mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.		MATRIX*	SAMPLE DATE	SAMPLE TIME			
B2FX97	4	SOIL	8/17/11	1330	✓	✓	✓

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	8/17/11 1440	[illegible]	8/17/11 1440

SPECIAL INSTRUCTIONS

SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

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

PRINTED ON 7/25/2011

A-6003-618 (REV 2)

Chain of Custody

CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**

F11-159-016 — PAGE 2 OF 2

COLLECTOR FM Hall CHPRC	**COMPANY CONTACT** LUKE, SN	**TELEPHONE NO.** 372-1667	**PROJECT COORDINATOR** LUKE, SN
SAMPLING LOCATION 100-K-63 Excavation Area Sample #3	**PROJECT DESIGNATION** 100-K-63 KW Floodplain Verification Sampling (Waste Area AJ)- Soil		**SAF NO.** F11-159
ICE CHEST NO. 6WS-023	**FIELD LOGBOOK NO.** HNF-N-507-23.	**ACTUAL SAMPLE DEPTH** 0-1'	**COA** 302676ES10
SHIPPED TO Waste Sampling & Characterization	**OFFSITE PROPERTY NO.** N/A		**BILL OF LADING/AIR BILL NO.** N/A

PRICE CODE C01 — **DATA TURNAROUND** 12 Days / 12 Days

AIR QUALITY ☐

METHOD OF SHIPMENT GOVERNMENT VEHICLE

ORIGINAL

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402579ES20.☐☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Silver, Vanadium, Zinc}; ICP/MS - 200.8 (Add-on) {Arsenic, Beryllium, Boron, Lead, Molybdenum, Selenium, Strontium, Tin, Uranium}; 200.8_HG - ICPMS {Mercury}; Chromium Hex - 7196;
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta}; Strontium-89,90 -- Total Sr;

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CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**

F11-159-017 — PAGE 1 OF 2

COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-1667	PROJECT COORDINATOR: LUKE, SN
SAMPLING LOCATION: 100-K-63 Excavation Area Sample #4	PROJECT DESIGNATION: 100-K-63 KW Floodplain Verification Sampling (Waste Area A)- Soil		SAF NO.: F11-159
ICE CHEST NO.: GWS-023	FIELD LOGBOOK NO.: HNF-N-507-23	ACTUAL SAMPLE DEPTH: 0-1'	COA: 3026/6ES10
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A

PRICE CODE: C01 — AIR QUALITY: [ ] — DATA TURNAROUND: 12 Days / 12 Days — METHOD OF SHIPMENT: GOVERNMENT VEHICLE — **ORIGINAL**

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, Sd=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool-4C	None	None
HOLDING TIME	6 Months	6 Months	6 Months
TYPE OF CONTAINER	G/P	P	G/P
NO. OF CONTAINER(S)	1	1	1
VOLUME	250mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME			
B2FX98 5	SOIL	8/17/11	1346	✓	✓	✓

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	8/17/11 1440	KBrenzel	8/17/11 1440

SPECIAL INSTRUCTIONS
SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

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

PRINTED ON 7/25/2011 — A-6003-618 (REV 2)

Chain of Custody

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-159-017	PAGE 2 OF 2
COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-1667	PROJECT COORDINATOR: LUKE, SN	PRICE CODE: C01	DATA TURNAROUND: 12 Days / 12 Days
SAMPLING LOCATION: 100-K-63 Excavation Area Sample #4	PROJECT DESIGNATION: 100-K-63 KW Floodplain Verification Sampling (Waste Area A1)- Soil		SAF NO.: F11-159	AIR QUALITY: ☐	ORIGINAL
ICE CHEST NO.: GWS-023	FIELD LOGBOOK NO.: HNF-N-507-23	ACTUAL SAMPLE DEPTH: 0-1'	COA: 302676ES10	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

** The CACN for WSCF Analytical is 402579ES20.□□** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Silver, Vanadium, Zinc}; ICP/MS - 200.8 (Add-on) {Arsenic, Beryllium, Boron, Lead, Molybdenum, Selenium, Strontium, Tin, Uranium}; 200.8_HG - ICPMS {Mercury}; Chromium Hex - 7196;
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta}; Strontium-89,90 -- Total Sr;

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A-6003-618 (REV 2)

Attachment 2
Narrative
WSCF113002

Introduction

Samples were received at the WSCF laboratory as referenced on the WSCF SAF Number Cross Reference table included in the final report. The samples were analyzed for the analytes indicated on the attached copy of the chain of custody (COC) form in accordance with the *Statement of Work (SOW), Modification No. 2 to Agreement 36587, Release 3, "FH WSCF ANALYTICAL SERVICES FOR GROUNDWATER."*

The narrative (Attachment 2) will address sample characteristics, analyses requested and general information in performance of the analytical methods. A Data Summary Report (Attachment 3) includes analytical results, a comment report detailing method abnormalities, tentatively identified peaks if applicable, method references, and Laboratory QC information as applicable. Copies of the chain of custody and sample receipt documentation are included as Attachment 4.

It should be noted that the attached chain of custody was not stamped "ICED" by the WSCF Laboratory Sample Custodian during sample receiving. However, based on procedure LO-090-403 form "NOTICE OF IMPROPER SAMPLE SUBMITTAL" was not submitted and was not stamped "NOT ICED". No anomaly was noted during sample receipt.

The following generic data qualifiers (i.e., B, D, U and J) may be applicable to this report, as appropriate

- **B** – Sample results with a concentration greater than the MDL but less than the PQL are B flagged (applies to inorganic and wet chemical analyses), as appropriate.
- **D** – Sample results are D flagged if dilution(s) were required, as appropriate.
- **J** – Sample results with a concentration greater than the MDL but less than the PQL are J flagged (applies to organic analyses), as appropriate.
- **U** – Analyzed for but not detected above limiting criteria. Relative Percent Difference (RPD) values associated with an analyte qualified with a "U" are not applicable.

Analytical Methodology for Requested Analyses

Refer to *WSCF Method References Report* for a complete listing of approved analytical methods.

Inorganic Comments

Hexavalent Chromium – The hold time requirement for this analysis was met. A Duplicate, Matrix Spike, Blank and Laboratory Control Sample were analyzed with this delivery group. Analytical Note(s):

- Batch QC 188844
- Post Spike recovery is outside established laboratory limits. Affected sample results in this batch were "N" flagged.

- Batch QC 188972
- Matrix Spike and Post Spike recoveries are outside established laboratory limits. Affected sample results in this batch were "N" flagged.
- All other applicable QC controls are within the established limits.

ICP-MS Metals – The hold time requirements for this analysis were met. A Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group. Analytical Note(s):

- Manganese – MS / MSD Relative Percent Difference (RPD) is outside established laboratory limits. The quality control report was flagged for RPD failure.
- All other applicable QC controls are within the established limits.

Radiochemistry Comments

Rad Chem – The hold time requirement for this analysis was met. A Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group. Analytical Note(s):

Tracers are used to determine chemical yield. RPD is monitored in sample duplicate and is not required for tracer recovery per SOW.

- Gamma Energy Analysis:
  - All applicable QC controls are within the established limits.
- Gross Alpha / Gross Beta:
  - Batch QC 188471
    - Gross Beta – Duplicate Relative Percent Difference(s) (RPD) did not meet the established laboratory limits. Duplicate Relative Percent Difference (RPD) does not apply to results below 5X the minimum detectable activity. No flags issued.
  - Batch QC 188472
    - Gross Alpha and Gross Beta – Duplicate Relative Percent Difference(s) (RPD) did not meet the established laboratory limits. Duplicate Relative Percent Difference (RPD) does not apply to results below 5X the minimum detectable activity. No flags issued.
    - All other applicable QC controls are within the established limits.
- Strontium-89/90:
  - Batch QC 188661

- The LCS recovery was outside laboratory acceptance limits, but within the 70 – 130% range allowed in the SOW.
- All other applicable QC controls are within the established limits.

We certify that this data package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this data package has been authorized by the Analytical Laboratory Manager (or designee) and the Client Services representative as verified by electronic signatures shown on the WSCF ANALYTICAL RESULTS REPORT.

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-159-019 | PAGE 1 OF 2

COLLECTOR	FM Hall CHPRC
SAMPLING LOCATION	100-K-63 Excavation Area Sample #6
ICE CHEST NO.	GWS.023
SHIPPED TO	Waste Sampling & Characterization
COMPANY CONTACT	LUKE, SN
TELEPHONE NO.	372-1667
PROJECT DESIGNATION	100-K-63 KW Floodplain Verification Sampling (Waste Area A1)- Soil
FIELD LOGBOOK NO.	HNF-N-607-23
ACTUAL SAMPLE DEPTH	0-1'
OFFSITE PROPERTY NO.	N/A
PROJECT COORDINATOR	LUKE, SN
SAF NO.	F11-159
COA	302676ES10
BILL OF LADING/AIR BILL NO.	N/A
PRICE CODE	C01
AIR QUALITY	☐
DATA TURNAROUND	12 Days / 12 Days
METHOD OF SHIPMENT	GOVERNMENT VEHICLE

ORIGINAL

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS
Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

113002

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool~4C	None	None
HOLDING TIME	6 Months	6 Months	6 Months
TYPE OF CONTAINER	G/P	P	G/P
NO. OF CONTAINER(S)	1	1	1
VOLUME	250mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME			
B2FXB0	SOIL	8/18/11	0934	✓	—	—

CHAIN OF POSSESSION

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	8/18/11 1250	[illegible]	8/18/11 1250

SIGN/ PRINT NAMES

SPECIAL INSTRUCTIONS
SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

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

PRINTED ON 7/25/2011

A-6003-618 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-159-019 — PAGE 2 OF 2

COLLECTOR FM Hall CHPRC	**COMPANY CONTACT** LUKE, SN	**TELEPHONE NO.** 372-1667	**PROJECT COORDINATOR** LUKE, SN
SAMPLING LOCATION 100-K-63 Excavation Area Sample #6	**PROJECT DESIGNATION** 100-K-63 KW Floodplain Verification Sampling (Waste Area A)- Soil		**SAF NO.** F11-159
ICE CHEST NO. GWS-023	**FIELD LOGBOOK NO.** HNF-N-507-23	**ACTUAL SAMPLE DEPTH** 0-1'	**COA** 302676ES10
SHIPPED TO Waste Sampling & Characterization	**OFFSITE PROPERTY NO.** N/A		**BILL OF LADING/AIR BILL NO.** N/A

PRICE CODE C01 — **AIR QUALITY** ☐ — **METHOD OF SHIPMENT** GOVERNMENT VEHICLE — **DATA TURNAROUND** 12 Days / 12 Days — **ORIGINAL**

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402579ES20.☐☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Silver, Vanadium, Zinc}; ICP/MS - 200.8 (Add-on) {Arsenic, Beryllium, Boron, Lead, Molybdenum, Selenium, Strontium, Tin, Uranium}; 200.8_HG - ICPMS {Mercury}; Chromium Hex - 7196;
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta}; Strontium-89,90 -- Total Sr;

PRINTED ON 7/25/2011 — A-6003-518 (REV 2)

Chain of Custody

CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-159-020 — PAGE 1 OF 2

COLLECTOR: FM Hall, CHPRC	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-1667	PROJECT COORDINATOR: LUKE, SN
PRICE CODE: C01	DATA TURNAROUND: 12 Days / 12 Days		
SAMPLING LOCATION: 100-K-63 Excavation Area Sample #7	PROJECT DESIGNATION: 100-K-63 KW Floodplain Verification Sampling (Waste Area AJ)- Soil		SAF NO.: F11-159
AIR QUALITY: ☐			
ICE CHEST NO.: GWS-023	FIELD LOGBOOK NO.: HNF-N-507-23	ACTUAL SAMPLE DEPTH: 0-1'	COA: 302676ES10
METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL		
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool~4C	None	None
HOLDING TIME	6 Months	6 Months	6 Months
TYPE OF CONTAINER	G/P	P	G/P
NO. OF CONTAINER(S)	1	1	1
VOLUME	250mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME			
B2FXB1	SOIL	8/18/11	0942	✓	✓	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: FM Hall, CHPRC	DATE/TIME: 8/18/11 1250	RECEIVED BY/STORED IN: [illegible]	DATE/TIME: 8/18/11 1260
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
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 DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

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Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-159-020	PAGE 2 OF 2
COLLECTOR: FM Hall, CHPRC	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-1667	PROJECT COORDINATOR: LUKE, SN	PRICE CODE: C01	DATA TURNAROUND: 12 Days / 12 Days
SAMPLING LOCATION: 100-K-63 Excavation Area Sample #7	PROJECT DESIGNATION: 100-K-63 KW Floodplain Verification Sampling (Waste Area AJ)- Soil		SAF NO.: F11-159	AIR QUALITY: ☐	
ICE CHEST NO.: GWS-023	FIELD LOGBOOK NO.: HNF-N-507-23	ACTUAL SAMPLE DEPTH: 0-1'	COA: 302676ES10	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402579ES20.□□** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Silver, Vanadium, Zinc}; ICP/MS - 200.8 (Add-on) {Arsenic, Beryllium, Boron, Lead, Molybdenum, Selenium, Strontium, Tin, Uranium}; 200.8_HG - ICPMS {Mercury}; Chromium Hex - 7196;
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta}; Strontium-89,90 -- Total Sr;

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Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-159-021 — PAGE 1 OF 2

COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-1667	PROJECT COORDINATOR: LUKE, SN
PRICE CODE: C01	AIR QUALITY: ☐	DATA TURNAROUND: 12 Days / 12 Days	
SAMPLING LOCATION: 100-K-63 Excavation Area Sample #8	PROJECT DESIGNATION: 100-K-63 KW Floodplain Verification Sampling (Waste Area A1)- Soil	SAF NO.: F11-159	
ICE CHEST NO.: GWS - 023	FIELD LOGBOOK NO.: HNF-N-507-23.	ACTUAL SAMPLE DEPTH: 0-1'	COA: 302676ES10
METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL		
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A	BILL OF LADING/AIR BILL NO.: N/A	

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool~4C	None	None
HOLDING TIME	6 Months	6 Months	6 Months
TYPE OF CONTAINER	G/P	P	G/P
NO. OF CONTAINER(S)	1	1	1
VOLUME	250mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME			
B2FXB2 3	SOIL	8/18/11	0954	✓	✓	✓

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	8/18/11 1250	[illegible]	8/18/11 1250

SPECIAL INSTRUCTIONS: SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

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

PRINTED ON 7/25/2011 — A-6003-618 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-159-021	PAGE 2 OF 2
COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-1667	PROJECT COORDINATOR: LUKE, SN	PRICE CODE: C01	DATA TURNAROUND: 12 Days / 12 Days
SAMPLING LOCATION: 100-K-63 Excavation Area Sample #8	PROJECT DESIGNATION: 100-K-63 KW Floodplain Verification Sampling (Waste Area AJ)- Soil		SAF NO.: F11-159	AIR QUALITY: ☐	
ICE CHEST NO.: GWS-023	FIELD LOGBOOK NO.: HNF-N-507-23.	ACTUAL SAMPLE DEPTH: 0-11	COA: 302676ES10	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402579ES20.☐☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Silver, Vanadium, Zinc}; ICP/MS - 200.8 (Add-on) {Arsenic, Beryllium, Boron, Lead, Molybdenum, Selenium, Strontium, Tin, Uranium}; 200.8_HG - ICPMS {Mercury}; Chromium Hex - 7196;
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta}; Strontium-89,90 -- Total Sr;

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Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	F11-159-022	PAGE 1 OF 2
COLLECTOR: FM Hall, CHPRC	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-1667	PROJECT COORDINATOR: LUKE, SN
PRICE CODE: C01	DATA TURNAROUND: 12 Days / 12 Days	SAMPLING LOCATION: 100-K-63 Excavation Area Sample #9	PROJECT DESIGNATION: 100-K-63 KW Floodplain Verification Sampling (Waste Area AJ)- Soil
SAF NO.: F11-159	AIR QUALITY:	ICE CHEST NO.: GW3-023	FIELD LOGBOOK NO.: HNF-N-507-23
ACTUAL SAMPLE DEPTH: 0-1'	COA: 302676ES10	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A	BILL OF LADING/AIR BILL NO.: N/A	

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, Se=Sediment, T=Tissue, V=Vegetation, W=Water, Wi=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool~4C	None	None
HOLDING TIME	6 Months	6 Months	6 Months
TYPE OF CONTAINER	G/P	P	G/P
NO. OF CONTAINER(S)	1	1	1
VOLUME	250mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME			
B2FXB3 4	SOIL	8-18-11	1010	✓	✓	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: FM Hall CHPRC	DATE/TIME: 1250 8-18-11	RECEIVED BY/STORED IN: [signature]	DATE/TIME: 1250 8-18-11
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
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 DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

PRINTED ON 7/25/2011

A-6003-618 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-159-022	PAGE 2 OF 2
COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-1667	PROJECT COORDINATOR: LUKE, SN	PRICE CODE: C01	DATA TURNAROUND: 12 Days / 12 Days
SAMPLING LOCATION: 100-K-63 Excavation Area Sample #9	PROJECT DESIGNATION: 100-K-63 KW Floodplain Verification Sampling (Waste Area A)- Soil		SAF NO.: F11-159	AIR QUALITY: ☐	
ICE CHEST NO.: GWS-023	FIELD LOGBOOK NO.: HNF-N-507-23	ACTUAL SAMPLE DEPTH: G-1'	COA: 302676ES10	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402579ES20.□□** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Silver, Vanadium, Zinc}; ICP/MS - 200.8 (Add-on) {Arsenic, Beryllium, Boron, Lead, Molybdenum, Selenium, Strontium, Tin, Uranium}; 200.8_HG - ICPMS {Mercury}; Chromium Hex - 7196;
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta}; Strontium-89,90 -- Total Sr;

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Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-159-002

PAGE 1 OF 2

COLLECTOR	FM Hall CHPRC
COMPANY CONTACT	LUKE, SN
TELEPHONE NO.	372-1667
PROJECT COORDINATOR	LUKE, SN
PRICE CODE	C01
DATA TURNAROUND	12 Days / 12 Days
SAMPLING LOCATION	100-K-63 Excavation Area Sample #10
PROJECT DESIGNATION	100-K-63 KW Floodplain Verification Sampling (Waste Area AJ)- Soil
SAF NO.	F11-159
AIR QUALITY	☐
ICE CHEST NO.	GWS-023
FIELD LOGBOOK NO.	HNF-N-507-23
ACTUAL SAMPLE DEPTH	0-1'
COA	302676ES10
METHOD OF SHIPMENT	GOVERNMENT VEHICLE
ORIGINAL	
SHIPPED TO	Waste Sampling & Characterization
OFFSITE PROPERTY NO.	N/A
BILL OF LADING/AIR BILL NO.	N/A

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool-4C	None	None
HOLDING TIME	6 Months	6 Months	6 Months
TYPE OF CONTAINER	G/P	P	G/P
NO. OF CONTAINER(S)	1	1	1
VOLUME	250mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME			
B2FX83 5	SOIL	8/18/11	1020	✓	✓	✓

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	8/18/11 1250	[signature]	8/18/11 1250

SPECIAL INSTRUCTIONS

SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

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

PRINTED ON 7/25/2011

A-6003-618 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-159-002	PAGE 2 OF 2
COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-1667	PROJECT COORDINATOR: LUKE, SN	PRICE CODE: C01	DATA TURNAROUND: 12 Days / 12 Days
SAMPLING LOCATION: 100-K-63 Excavation Area Sample #10	PROJECT DESIGNATION: 100-K-63 KW Floodplain Verification Sampling (Waste Area A)- Soil		SAF NO.: F11-159	AIR QUALITY: ☐	
ICE CHEST NO.: GWS-023	FIELD LOGBOOK NO.: HNF-N-507-83	ACTUAL SAMPLE DEPTH: 0-1'	COA: 302676ES10	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402579FS20.☐☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Silver, Vanadium, Zinc}; ICP/MS - 200.8 (Add-on) {Arsenic, Beryllium, Boron, Lead, Molybdenum, Selenium, Strontium, Tin, Uranium}; 200.8_HG - ICPMS {Mercury}; Chromium Hex - 7196;
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta}; Strontium-89,90 -- Total Sr;

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Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-159-003 | PAGE 1 OF 2

COLLECTOR: FM Hall CHPRC

COMPANY CONTACT: LUKE, SN

TELEPHONE NO.: 372-1667

PROJECT COORDINATOR: LUKE, SN

PRICE CODE: C01

DATA TURNAROUND: 12 Days / 12 Days

SAMPLING LOCATION: 100-K-63 Excavation Area Sample #11

PROJECT DESIGNATION: 100-K-63 KW Floodplain Verification Sampling (Waste Area AJ)- Soil

SAF NO.: F11-159

AIR QUALITY: ☐

ICE CHEST NO.: GWS-023

FIELD LOGBOOK NO.: HNF-N-507-23.

ACTUAL SAMPLE DEPTH: C-1'

COA: 302676ES10

METHOD OF SHIPMENT: GOVERNMENT VEHICLE

ORIGINAL

SHIPPED TO: Waste Sampling & Characterization

OFFSITE PROPERTY NO.: N/A

BILL OF LADING/AIR BILL NO.: N/A

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool~4C	None	None
HOLDING TIME	6 Months	6 Months	6 Months
TYPE OF CONTAINER	G/P	P	G/P
NO. OF CONTAINER(S)	1	1	1
VOLUME	250mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME			
B2FX84 6	SOIL	8-18-11	1033	✓	✓	✓

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	1250 8-18-11	[illegible]	1250 8-18-11

SPECIAL INSTRUCTIONS: SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

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

PRINTED ON 7/25/2011

A-6003-618 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-159-003	PAGE 2 OF 2
COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-1667	PROJECT COORDINATOR: LUKE, SN	PRICE CODE: C01	DATA TURNAROUND: 12 Days / 12 Days
SAMPLING LOCATION: 100-K-63 Excavation Area Sample #11	PROJECT DESIGNATION: 100-K-63 KW Floodplain Verification Sampling (Waste Area A1)- Soil		SAF NO.: F11-159	AIR QUALITY: ☐	
ICE CHEST NO.: HNF-N-507-14 8/15/11 GWS-023	FIELD LOGBOOK NO.: HNF-N-507-23	ACTUAL SAMPLE DEPTH: 0-1'	COA: 302676ES10	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402579ES20.□□** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Silver, Vanadium, Zinc}; ICP/MS - 200.8 (Add-on) {Arsenic, Beryllium, Boron, Lead, Molybdenum, Selenium, Strontium, Tin, Uranium}; 200.8_HG - ICPMS {Mercury}; Chromium Hex - 7196;
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta}; Strontium-89,90 -- Total Sr;

PRINTED ON 7/25/2011 A-6003-618 (REV 2)

CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-159-004 — PAGE 1 OF 2

COLLECTOR	FM Hall CHPRC
SAMPLING LOCATION	100-K-63 Excavation Area Sample #12
ICE CHEST NO.	GWS-023
SHIPPED TO	Waste Sampling & Characterization
COMPANY CONTACT	LUKE, SN
TELEPHONE NO.	372-1667
PROJECT DESIGNATION	100-K-63 KW Floodplain Verification Sampling (Waste Area AJ)- Soil
FIELD LOGBOOK NO.	HNF-N-507-23
ACTUAL SAMPLE DEPTH	0-11
OFFSITE PROPERTY NO.	N/A
PROJECT COORDINATOR	LUKE, SN
SAF NO.	F11-159
COA	302676ES10
BILL OF LADING/AIR BILL NO.	N/A
PRICE CODE	C01
AIR QUALITY	☐
METHOD OF SHIPMENT	GOVERNMENT VEHICLE
DATA TURNAROUND	12 Days / 12 Days
	ORIGINAL

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool~4C	None	None
HOLDING TIME	6 Months	6 Months	6 Months
TYPE OF CONTAINER	G/P	P	G/P
NO. OF CONTAINER(S)	1	1	1
VOLUME	250mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME			
B2FX85 7	SOIL	8/18/11	1041	✓	✓	✓

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	8/18/11 1250	[illegible]	8/18/11 1250

SPECIAL INSTRUCTIONS: SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

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

PRINTED ON 7/25/2011 — A-6003-618 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-159-004	PAGE 2 OF 2
COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-1667	PROJECT COORDINATOR: LUKE, SN	PRICE CODE: C01	DATA TURNAROUND: 12 Days / 12 Days
SAMPLING LOCATION: 100-K-63 Excavation Area Sample #12	PROJECT DESIGNATION: 100-K-63 KW Floodplain Verification Sampling (Waste Area AJ)- Soil		SAF NO.: F11-159	AIR QUALITY: ☐	
ICE CHEST NO.: GWS-23	FIELD LOGBOOK NO.: HNF-N-507-23	ACTUAL SAMPLE DEPTH: 0-6"	COA: 302676ES10	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402579ES20.☐☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Silver, Vanadium, Zinc}; ICP/MS - 200.8 (Add-on) {Arsenic, Beryllium, Boron, Lead, Molybdenum, Selenium, Strontium, Tin, Uranium}; 200.8_HG - ICPMS {Mercury}; Chromium Hex - 7196;
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta}; Strontium-89,90 -- Total Sr;

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A-6003-618 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-159-014 | PAGE 1 OF 2

COLLECTOR	FM Hall CHPRC
COMPANY CONTACT	LUKE, SN
TELEPHONE NO.	372-1667
PROJECT COORDINATOR	LUKE, SN
PRICE CODE	C01
DATA TURNAROUND	12 Days / 12 Days
AIR QUALITY	☐
SAMPLING LOCATION	100-K-63 Excavation Area Sample #21
PROJECT DESIGNATION	100-K-63 KW Floodplain Verification Sampling (Waste Area AJ)- Soil
SAF NO.	F11-159
ICE CHEST NO.	GW3-023
FIELD LOGBOOK NO.	HNF-N-507-23
ACTUAL SAMPLE DEPTH	0-1'
COA	302676ES10
METHOD OF SHIPMENT	GOVERNMENT VEHICLE
	ORIGINAL
SHIPPED TO	Waste Sampling & Characterization
OFFSITE PROPERTY NO.	N/A
BILL OF LADING/AIR BILL NO.	N/A

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool~4C	None	None
HOLDING TIME	6 Months	6 Months	6 Months
TYPE OF CONTAINER	G/P	P	G/P
NO. OF CONTAINER(S)	1	1	1
VOLUME	250mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME			
B2FX95	SOIL	8/18/11	0920	✓	✓	✓

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	8/18/11 1250	[illegible]	8/18/11 1250

SPECIAL INSTRUCTIONS

SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

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

PRINTED ON 7/25/2011

A-6003-518 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-159-014	PAGE 2 OF 2
COLLECTOR: FM Hall, CHPRC	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-1667	PROJECT COORDINATOR: LUKE, SN	PRICE CODE: C01	DATA TURNAROUND: 12 Days / 12 Days
SAMPLING LOCATION: 100-K-63 Excavation Area Sample #21	PROJECT DESIGNATION: 100-K-63 KW Floodplain Verification Sampling (Waste Area AJ)- Soil		SAF NO.: F11-159	AIR QUALITY:	
ICE CHEST NO.: GWS-023	FIELD LOGBOOK NO.: HNF-N-507-23	ACTUAL SAMPLE DEPTH: 0-1'	COA: 302676ES10	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402579ES20.□□** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Silver, Vanadium, Zinc}; ICP/MS - 200.8 (Add-on) {Arsenic, Beryllium, Boron, Lead, Molybdenum, Selenium, Strontium, Tin, Uranium}; 200.8_HG - ICPMS {Mercury}; Chromium Hex - 7196;
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta}; Strontium-89,90 -- Total Sr;

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A-6003-618 (REV 2)

CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**

F11-159-018 — PAGE 1 OF 2

COLLECTOR: FM Hall CHPRC

COMPANY CONTACT: LUKE, SN

TELEPHONE NO.: 372-1667

PROJECT COORDINATOR: LUKE, SN

PRICE CODE: C01

DATA TURNAROUND: 12 Days / 12 Days

SAMPLING LOCATION: 100-K-63 Excavation Area Sample #5

PROJECT DESIGNATION: 100-K-63 KW Floodplain Verification Sampling (Waste Area AJ)- Soil

SAF NO.: F11-159

AIR QUALITY: ☐

ICE CHEST NO.: GWS-023

FIELD LOGBOOK NO.: HNF-N-507-23-

ACTUAL SAMPLE DEPTH: 0-1'

COA: 302676ES10

METHOD OF SHIPMENT: GOVERNMENT VEHICLE

ORIGINAL

SHIPPED TO: Waste Sampling & Characterization

OFFSITE PROPERTY NO.: N/A

BILL OF LADING/AIR BILL NO.: N/A

MATRIX*: A=Air, D=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool-4C	None	None
HOLDING TIME	6 Months	6 Months	6 Months
TYPE OF CONTAINER	G/P	P	G/P
NO. OF CONTAINER(S)	1	1	1
VOLUME	250mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME			
B2FX99 9	SOIL	8/18/11	0920	✓	✓	✓

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	8/18/11 1250	CBrazeal-Brazeal	8/18/11 1250

SPECIAL INSTRUCTIONS: SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

LABORATORY SECTION — RECEIVED BY — TITLE — DATE/TIME

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

PRINTED ON 7/25/2011

A-6003-618 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-1S9-018	PAGE 2 OF 2
COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-1667	PROJECT COORDINATOR: LUKE, SN	PRICE CODE: C01	DATA TURNAROUND: 12 Days / 12 Days
SAMPLING LOCATION: 100-K-63 Excavation Area Sample #5	PROJECT DESIGNATION: 100-K-63 KW Floodplain Verification Sampling (Waste Area A1)- Soil		SAF NO.: F11-159	AIR QUALITY: ☐	ORIGINAL
ICE CHEST NO.: GWS-023	FIELD LOGBOOK NO.: HNF-N-507-23	ACTUAL SAMPLE DEPTH: 0-1'	COA: 302676ES10	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

** The CACN for WSCF Analytical is 402579ES20.□□** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Silver, Vanadium, Zinc}; ICP/MS - 200.8 (Add-on) {Arsenic, Beryllium, Boron, Lead, Molybdenum, Selenium, Strontium, Tin, Uranium}; 200.8_HG - ICPMS {Mercury}; Chromium Hex - 7196;
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta}; Strontium-89,90 -- Total Sr;

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Attachment 2
Narrative
WSCF113017

Introduction

Samples were received at the WSCF laboratory as referenced on the WSCF SAF Number Cross Reference table included in the final report. The samples were analyzed for the analytes indicated on the attached copy of the chain of custody (COC) form in accordance with the *Statement of Work (SOW), Modification No. 2 to Agreement 36587, Release 3, "FH WSCF ANALYTICAL SERVICES FOR GROUNDWATER."*

The narrative (Attachment 2) will address sample characteristics, analyses requested and general information in performance of the analytical methods. A Data Summary Report (Attachment 3) includes analytical results, a comment report detailing method abnormalities, tentatively identified peaks if applicable, method references, and Laboratory QC information as applicable. Copies of the chain of custody and sample receipt documentation are included as Attachment 4.

It should be noted that the attached chain of custody was not stamped "ICED" by the WSCF Laboratory Sample Custodian during sample receiving. However, based on procedure LO-090-403 form "NOTICE OF IMPROPER SAMPLE SUBMITTAL" was not submitted and was not stamped "NOT ICED". No anomaly was noted during sample receipt.

The following generic data qualifiers (i.e., B, D, U and J) may be applicable to this report, as appropriate

- **B** – Sample results with a concentration greater than the MDL but less than the PQL are B flagged (applies to inorganic and wet chemical analyses), as appropriate.
- **D** – Sample results are D flagged if dilution(s) were required, as appropriate.
- **J** – Sample results with a concentration greater than the MDL but less than the PQL are J flagged (applies to organic analyses), as appropriate.
- **U** – Analyzed for but not detected above limiting criteria. Relative Percent Difference (RPD) values associated with an analyte qualified with a "U" are not applicable.

Analytical Methodology for Requested Analyses

Refer to *WSCF Method References Report* for a complete listing of approved analytical methods.

Inorganic Comments

Hexavalent Chromium – The hold time requirement for this analysis was met. A Duplicate, Matrix Spike, Blank and Laboratory Control Sample were analyzed with this delivery group. Analytical Note(s):

- Matrix Spike and Post Spike recoveries are outside established laboratory limits. Affected sample results in this batch were "N" flagged.
- All other applicable QC controls are within the established limits.

Attachment 2
Narrative
WSCF113017

ICP-MS Metals – The hold time requirements for this analysis were met. A Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group. Analytical Note(s):

- Manganese – MS / MSD Relative Percent Difference (RPD) is outside established laboratory limits. The quality control report was flagged for RPD failure.
- All other applicable QC controls are within the established limits.

Radiochemistry Comments

Rad Chem – The hold time requirement for this analysis was met. A Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group. Analytical Note(s):

Tracers are used to determine chemical yield. RPD is monitored in sample duplicate and is not required for tracer recovery per SOW.

- Gamma Energy Analysis:
  - Europium-152 – Duplicate Relative Percent Difference(s) (RPD) did not meet the established laboratory limits. Duplicate Relative Percent Difference (RPD) does not apply to results below 5X the minimum detectable activity. No flags issued.
  - All other applicable QC controls are within the established limits.
- Gross Alpha / Gross Beta:
  - All applicable QC controls are within the established limits.
- Strontium-89/90:
  - Duplicate Relative Percent Difference(s) (RPD) did not meet the established laboratory limits. Duplicate Relative Percent Difference (RPD) does not apply to results below 5X the minimum detectable activity. No flags issued.
  - All applicable QC controls are within the established limits.

We certify that this data package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this data package has been authorized by the Analytical Laboratory Manager (or designee) and the Client Services representative as verified by electronic signatures shown on the WSCF ANALYTICAL RESULTS REPORT.

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-159-005

PAGE 1 OF 2

COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-1667	PROJECT COORDINATOR: LUKE, SN
SAMPLING LOCATION: 100-K-63 Excavation Area Sample #13	PROJECT DESIGNATION: 100-K-63 KW Floodplain Verification Sampling (Waste Area AJ)- Soil		SAF NO.: F11 159
ICE CHEST NO.: GWS-023	FIELD LOGBOOK NO.: HNF-N-507-23	ACTUAL SAMPLE DEPTH: 0-1'	COA: 302676ES10
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A

PRICE CODE: C01

AIR QUALITY: ☐

DATA TURNAROUND: 12 Days / 12 Days

METHOD OF SHIPMENT: GOVERNMENT VEHICLE

ORIGINAL

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

113017

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool<4C	None	None
HOLDING TIME	6 Months	6 Months	6 Months
TYPE OF CONTAINER	G/P	P	G/P
NO. OF CONTAINER(S)	1	1	1
VOLUME	250mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME			
B2FX86	SOIL	8/19/11	0655	✓	✓	✓

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	8/19/11 / 1400	M01109SSU#1	8/19/11 / 1400
M01109SSU#1	8-23-11 0930	FM Hall CHPRC	8-23-11 0930
FM Hall CHPRC	8-23-11 1005	[illegible]	8-23-11 1005

SPECIAL INSTRUCTIONS: SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

LABORATORY SECTION: RECEIVED BY | TITLE | DATE/TIME

FINAL SAMPLE DISPOSITION: DISPOSAL METHOD | DISPOSED BY | DATE/TIME

PRINTED ON 7/25/2011

A-6003-618 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-159-005	PAGE 2 OF 2
COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-1667	PROJECT COORDINATOR: LUKE, SN	PRICE CODE: C01	DATA TURNAROUND: 12 Days / 12 Days
SAMPLING LOCATION: 100-K-63 Excavation Area Sample #13	PROJECT DESIGNATION: 100-K-63 KW Floodplain Verification Sampling (Waste Area AJ)- Soil		SAF NO.: F11-159	AIR QUALITY: ☐	
ICE CHEST NO.: GWS-023	FIELD LOGBOOK NO.: HNF-N-507-23	ACTUAL SAMPLE DEPTH: 0-1'	COA: 302676ES10	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402579ES20.☐☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Silver, Vanadium, Zinc}; ICP/MS - 200.8 (Add-on) {Arsenic, Beryllium, Boron, Lead, Molybdenum, Selenium, Strontium, Tin, Uranium}; 200.8_HG - ICPMS {Mercury}; Chromium Hex - 7196;
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta}; Strontium-89,90 -- Total Sr;

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CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-159-006

PAGE 1 OF 2

COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-1667	PROJECT COORDINATOR: LUKE, SN
SAMPLING LOCATION: 100-K-63 Excavation Area Sample #14	PROJECT DESIGNATION: 100-K-63 KW Floodplain Verification Sampling (Waste Area AJ)- Soil		SAF NO.: F11-159
ICE CHEST NO.: GW3-023	FIELD LOGBOOK NO.: HNF-N-507-23.	ACTUAL SAMPLE DEPTH: 0-1'	COA: 302676ES10
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A

PRICE CODE: C01

AIR QUALITY: ☐

DATA TURNAROUND: 12 Days / 12 Days

METHOD OF SHIPMENT: GOVERNMENT VEHICLE

ORIGINAL

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool~4C	None	None
HOLDING TIME	6 Months	6 Months	6 Months
TYPE OF CONTAINER	G/P	P	G/P
NO. OF CONTAINER(S)	1	1	1
VOLUME	250mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.		MATRIX*	SAMPLE DATE	SAMPLE TIME
B2FX87	2	SOIL	8/19/11	0703

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	8/19/11 1400	M01109 SSU#1	8/19/11 1406
M01109 SSU#1	8-23-11 0930	FM Hall CHPRC	8-23-11 0930
FM Hall CHPRC	8-23-11 0005	Victor Bin	8-23-11 0005

SPECIAL INSTRUCTIONS: SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

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

PRINTED ON 7/25/2011

A-6003-618 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-159-006	PAGE 2 OF 2
COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-1667	PROJECT COORDINATOR: LUKE, SN	PRICE CODE: C01	DATA TURNAROUND: 12 Days / 12 Days
SAMPLING LOCATION: 100-K-63 Excavation Area Sample #14	PROJECT DESIGNATION: 100-K-63 KW Floodplain Verification Sampling (Waste Area A1)- Soil		SAF NO.: F11-159	AIR QUALITY: ☐	
ICE CHEST NO.: GWS-023	FIELD LOGBOOK NO.: HNF-N-507-23	ACTUAL SAMPLE DEPTH: 0-1'	COA: 302676ES10	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402579ES20.☐☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Silver, Vanadium, Zinc}; ICP/MS - 200.8 (Add-on) {Arsenic, Beryllium, Boron, Lead, Molybdenum, Selenium, Strontium, Tin, Uranium}; 200.8_HG - ICPMS {Mercury}; Chromium Hex - 7196;
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta}; Strontium-89,90 -- Total Sr;

PRINTED ON 7/26/2011 A-6003-618 (REV 2)

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-159-007 | PAGE 1 OF 2

COLLECTOR: FM Hall, CHPRC

COMPANY CONTACT: LUKE, SN

TELEPHONE NO.: 372-1667

PROJECT COORDINATOR: LUKE, SN

PRICE CODE: C01

DATA TURNAROUND: 12 Days / 12 Days

SAMPLING LOCATION: 100-K-63 Excavation Area Sample #15

PROJECT DESIGNATION: 100-K-63 KW Floodplain Verification Sampling (Waste Area AJ)- Soil

SAF NO.: F11-159

AIR QUALITY: ☐

ICE CHEST NO.: 6W3-023

FIELD LOGBOOK NO.: HNF-N-807-23

ACTUAL SAMPLE DEPTH: 0-1'

COA: 302676ES10

METHOD OF SHIPMENT: GOVERNMENT VEHICLE

ORIGINAL

SHIPPED TO: Waste Sampling & Characterization

OFFSITE PROPERTY NO.: N/A

BILL OF LADING/AIR BILL NO.: N/A

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool~4C	None	None
HOLDING TIME	6 Months	6 Months	6 Months
TYPE OF CONTAINER	G/P	P	G/P
NO. OF CONTAINER(S)	1	1	1
VOLUME	250mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.		MATRIX*	SAMPLE DATE	SAMPLE TIME			
B2FX88	3	SOIL	8/19/11	0728	✓	✓	✓

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall, CHPRC	8/19/11 1400	M01109SSU#1	8/19/11 1400
M01109SSU#1	8-23-11 0930	FM Hall, CHPRC	8-23-11 0930
FM Hall, CHPRC	8-23-11 1005	Victor Bing	8-23-11 1005

SPECIAL INSTRUCTIONS: SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

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

PRINTED ON 7/25/2011

A-6003-618 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-159-007	PAGE 2 OF 2
COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-1667	PROJECT COORDINATOR: LUKE, SN	PRICE CODE: C01	DATA TURNAROUND: 12 Days / 12 Days
SAMPLING LOCATION: 100-K-63 Excavation Area Sample #15	PROJECT DESIGNATION: 100-K-63 KW Floodplain Verification Sampling (Waste Area AJ)- Soil		SAF NO.: F11-159	AIR QUALITY: [ ]	
ICE CHEST NO.: GWS-023	FIELD LOGBOOK NO.: HNF-N-507-23	ACTUAL SAMPLE DEPTH: 0-6"	COA: 302676ES10	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402579ES20.□□** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Silver, Vanadium, Zinc}; ICP/MS - 200.8 (Add-on) {Arsenic, Beryllium, Boron, Lead, Molybdenum, Selenium, Strontium, Tin, Uranium}; 200.8_HG - ICPMS {Mercury}; Chromium Hex - 7196;
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta}; Strontium-89,90 -- Total Sr;

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CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-159-008 — PAGE 1 OF 2

COLLECTOR: FM Hall, CHPRC	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-166 /	PROJECT COORDINATOR: LUKE, SN
PRICE CODE: C01	DATA TURNAROUND: 12 Days / 12 Days		
SAMPLING LOCATION: 100-K-63 Excavation Area Sample #16	PROJECT DESIGNATION: 100-K-63 KW Floodplain Verification Sampling (Waste Area AJ) Soil		SAF NO.: F11-159
AIR QUALITY: ☐	ICE CHEST NO.: GWS-023	FIELD LOGBOOK NO.: HNF-N-507-23	ACTUAL SAMPLE DEPTH: 0-1'
COA: 302676ES10	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL	
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A	BILL OF LADING/AIR BILL NO.: N/A	

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool~4C	None	None
HOLDING TIME	6 Months	6 Months	6 Months
TYPE OF CONTAINER	G/P	P	G/P
NO. OF CONTAINER(S)	1	1	1
VOLUME	250mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME			
B2FX89 4	SOIL	8/19/11	0738	✓	—	—

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall, CHPRC	8/19/11 1400	MO1109SSU #1	8/19/11 1400
MO1109SSU #1	8-23-11 0930	FM Hall, CHPRC	8-23-11 0930
FM Hall, CHPRC	8-23-11 1005	Victor Sing	8-23-11 1005

SPECIAL INSTRUCTIONS: SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

LABORATORY SECTION — RECEIVED BY — TITLE — DATE/TIME

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

PRINTED ON 7/25/2011 — A-6003-618 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-159-008	PAGE 2 OF 2
COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-1667	PROJECT COORDINATOR: LUKE, SN	PRICE CODE: C01	DATA TURNAROUND: 12 Days / 12 Days
SAMPLING LOCATION: 100-K-63 Excavation Area Sample #16	PROJECT DESIGNATION: 100-K-63 KW Floodplain Verification Sampling (Waste Area A1)- Soil		SAF NO.: F11-159	AIR QUALITY: ☐	
ICE CHEST NO.: GWS-023	FIELD LOGBOOK NO.: HNF-N-507-23	ACTUAL SAMPLE DEPTH: 0-1'	COA: 302676ES10	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402579ES20.□□** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Silver, Vanadium, Zinc}; ICP/MS - 200.8 (Add-on) {Arsenic, Beryllium, Boron, Lead, Molybdenum, Selenium, Strontium, Tin, Uranium}; 200.8_HG - ICPMS {Mercury}; Chromium Hex - 7196;
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta}; Strontium-89,90 -- Total Sr;

PRINTED ON 7/25/2011 A-6003-618 (REV 2)

Chain of Custody

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-159-009

PAGE 1 OF 2

COLLECTOR: FM Hall CHPRC

COMPANY CONTACT: LUKE, SN

TELEPHONE NO.: 372-1667

PROJECT COORDINATOR: LUKE, SN

PRICE CODE: C01

DATA TURNAROUND: 12 Days / 12 Days

SAMPLING LOCATION: 100-K-63 Excavation Area Sample #17

PROJECT DESIGNATION: 100-K-63 KW Floodplain Verification Sampling (Waste Area AJ)- Soil

SAF NO.: F11-159

AIR QUALITY: ☐

ICE CHEST NO.: 6WS-023

FIELD LOGBOOK NO.: HNF-N-807-23

ACTUAL SAMPLE DEPTH: 0-1'

COA: 302676ES10

METHOD OF SHIPMENT: GOVERNMENT VEHICLE

ORIGINAL

SHIPPED TO: Waste Sampling & Characterization

OFFSITE PROPERTY NO.: N/A

BILL OF LADING/AIR BILL NO.: N/A

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool-4C	None	None
HOLDING TIME	6 Months	6 Months	6 Months
TYPE OF CONTAINER	G/P	P	G/P
NO. OF CONTAINER(S)	1	1	1
VOLUME	250mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME			
B2FX90 5	SOIL	8/19/11	0800	✓	✓	✓

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	8/19/11 1400	M0110955U#1	8/19/11 1400
M0110955U#1	8-23-11 0930	FM Hall CHPRC	8-23-11 0930
FM Hall CHPRC	8-23-11 1005	VIL TOV	8-23-11 1005

SPECIAL INSTRUCTIONS: SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

LABORATORY SECTION: RECEIVED BY | TITLE | DATE/TIME

FINAL SAMPLE DISPOSITION: DISPOSAL METHOD | DISPOSED BY | DATE/TIME

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A-6003-618 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-159-009	PAGE 2 OF 2
COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-1667	PROJECT COORDINATOR: LUKE, SN	PRICE CODE: C01	DATA TURNAROUND: 12 Days / 12 Days
SAMPLING LOCATION: 100-K-63 Excavation Area Sample #17	PROJECT DESIGNATION: 100-K-63 KW Floodplain Verification Sampling (Waste Area A1)- Soil		SAF NO.: FI1-159	AIR QUALITY: ☐	
ICE CHEST NO.: 6W5-023	FIELD LOGBOOK NO.: HNF-N-607-23	ACTUAL SAMPLE DEPTH: 0-1'	COA: 302676ES10	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402579ES20.☐☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Silver, Vanadium, Zinc}; ICP/MS - 200.8 (Add-on) {Arsenic, Beryllium, Boron, Lead, Molybdenum, Selenium, Strontium, Tin, Uranium}; 200.8_HG - ICPMS {Mercury}; Chromium Hex - 7196;
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta}; Strontium-89,90 -- Total Sr;

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A-6003-618 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-159-010

PAGE 1 OF 2

COLLECTOR: FM Hall CHPRC

COMPANY CONTACT: LUKE, SN

TELEPHONE NO.: 372-1667

PROJECT COORDINATOR: LUKE, SN

PRICE CODE: C01

DATA TURNAROUND: 12 Days / 12 Days

SAMPLING LOCATION: 100-K-63 Excavation Area Sample #18

PROJECT DESIGNATION: 100-K-63 KW Floodplain Verification Sampling (Waste Area AJ)- Soil

SAF NO.: F11-159

AIR QUALITY: ☐

ICE CHEST NO.: GWS-023

FIELD LOGBOOK NO.: HNF-N-507-23

ACTUAL SAMPLE DEPTH: 0-1

COA: 302676ES10

METHOD OF SHIPMENT: GOVERNMENT VEHICLE

ORIGINAL

SHIPPED TO: Waste Sampling & Characterization

OFFSITE PROPERTY NO.: N/A

BILL OF LADING/AIR BILL NO.: N/A

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE:

PRESERVATION	Cool~4C	None	None
HOLDING TIME	6 Months	6 Months	6 Months
TYPE OF CONTAINER	G/P	P	G/P
NO. OF CONTAINER(S)	1	1	1
VOLUME	250mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.		MATRIX*	SAMPLE DATE	SAMPLE TIME			
B2FX91	LD	SOIL	8/19/11	0806	✓	✓	—

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall	8/19/11 1400	M01109SSU#1	8/19/11 1400
M01109 SSU#1	8-23-11 0930	FM Hall CHPRC	8-23-11 0930
FM Hall CHPRC	8-23-11 1005	Victor Spry	8-23-11 1005

SPECIAL INSTRUCTIONS: SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

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

PRINTED ON 7/25/2011

A-6003-618 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-159-010	PAGE 2 OF 2
COLLECTOR: FM Hall, CHPRC	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-1667	PROJECT COORDINATOR: LUKE, SN	PRICE CODE: C01	DATA TURNAROUND: 12 Days / 12 Days
SAMPLING LOCATION: 100-K-63 Excavation Area Sample #18	PROJECT DESIGNATION: 100-K-63 KW Floodplain Verification Sampling (Waste Area AJ)- Soil		SAF NO.: F11-159	AIR QUALITY: ☐	
ICE CHEST NO.: GW5-023	FIELD LOGBOOK NO.: HNF-N-507-23	ACTUAL SAMPLE DEPTH: 0-1'	COA: 302676E510	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402579ES20.□□** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Silver, Vanadium, Zinc}; ICP/MS - 200.8 (Add-on) {Arsenic, Beryllium, Boron, Lead, Molybdenum, Selenium, Strontium, Tin, Uranium}; 200.8_HG - ICPMS {Mercury}; Chromium Hex - 7196;
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta}; Strontium-89,90 -- Total Sr;

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CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-159-011 — PAGE 1 OF 2

COLLECTOR	FM Hall CHPRC
SAMPLING LOCATION	100-K-63 Excavation Area Sample #19
ICE CHEST NO.	GW3-023
SHIPPED TO	Waste Sampling & Characterization
COMPANY CONTACT	LUKE, SN
TELEPHONE NO.	372-1667
PROJECT DESIGNATION	100-K-63 KW Floodplain Verification Sampling (Waste Area AJ)- Soil
FIELD LOGBOOK NO.	HNF-N-507-23
ACTUAL SAMPLE DEPTH	0-1'
OFFSITE PROPERTY NO.	N/A
PROJECT COORDINATOR	LUKE, SN
SAF NO.	F11-159
COA	302676ES10
BILL OF LADING/AIR BILL NO.	N/A
PRICE CODE	C01
AIR QUALITY	[ ]
METHOD OF SHIPMENT	GOVERNMENT VEHICLE
DATA TURNAROUND	12 Days / 12 Days
	ORIGINAL

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool-4C	None	None
HOLDING TIME	6 Months	6 Months	6 Months
TYPE OF CONTAINER	G/P	P	G/P
NO. OF CONTAINER(S)	1	1	1
VOLUME	250mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME			
B2FX92 7	SOIL	8/19/11	0837	✓	✓	✓

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	8/19/11 1400	M01109SSU #1	8/19/11 1400
M01109SSU #1	8-23-11 0930	FM Hall CHPRC	8-23-11 0930
FM Hall CHPRC	8-23-11 1005	VLC for	8-23-11 1005

SPECIAL INSTRUCTIONS
SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

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

PRINTED ON 7/25/2011 — A-6003-618 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-159-011 — PAGE 2 OF 2

COLLECTOR FM Hall CHPRC	**COMPANY CONTACT** LUKE, SN	**TELEPHONE NO.** 372-1667	**PROJECT COORDINATOR** LUKE, SN
SAMPLING LOCATION 100-K-63 Excavation Area Sample #19	**PROJECT DESIGNATION** 100-K-63 KW Floodplain Verification Sampling (Waste Area A)) Soil		**SAF NO.** F11-159
ICE CHEST NO. GWS-023	**FIELD LOGBOOK NO.** HNF-N-507-23	**ACTUAL SAMPLE DEPTH** 0-1'	**COA** 302676ES10
SHIPPED TO Waste Sampling & Characterization	**OFFSITE PROPERTY NO.** N/A		**BILL OF LADING/AIR BILL NO.** N/A

PRICE CODE C01 — **AIR QUALITY** ☐ — **DATA TURNAROUND** 12 Days / 12 Days — **METHOD OF SHIPMENT** GOVERNMENT VEHICLE — **ORIGINAL**

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402579ES20.☐☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKT applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Silver, Vanadium, Zinc}; ICP/MS - 200.8 (Add-on) {Arsenic, Beryllium, Boron, Lead, Molybdenum, Selenium, Strontium, Tin, Uranium}; 200.8_HG - ICPMS {Mercury}; Chromium Hex - 7196;
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta}; Strontium-89,90 -- Total Sr;

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CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-159-013 | PAGE 1 OF 2

COLLECTOR: FM Hall, CHPRC

COMPANY CONTACT: LUKE, SN

TELEPHONE NO.: 372-1667

PROJECT COORDINATOR: LUKE, SN

PRICE CODE: C01

DATA TURNAROUND: 12 Days / 12 Days

SAMPLING LOCATION: 100-K-63 Excavation Area Sample #20

PROJECT DESIGNATION: 100-K-63 KW Floodplain Verification Sampling (Waste Area A)- Soil

SAF NO.: F11-159

AIR QUALITY: ☐

ICE CHEST NO.: GWS-023

FIELD LOGBOOK NO.: HNF-N-507-23.

ACTUAL SAMPLE DEPTH: 0-1'

COA: 302676ES10

METHOD OF SHIPMENT: GOVERNMENT VEHICLE

ORIGINAL

SHIPPED TO: Waste Sampling & Characterization

OFFSITE PROPERTY NO.: N/A

BILL OF LADING/AIR BILL NO.: N/A

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool~4C	None	None
HOLDING TIME	6 Months	6 Months	6 Months
TYPE OF CONTAINER	G/P	P	G/P
NO. OF CONTAINER(S)	1	1	1
VOLUME	250mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.		MATRIX*	SAMPLE DATE	SAMPLE TIME			
B2FX94	8	SOIL	8/19/11	0840	✓	✓	✓

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall, CHPRC	8/19/11 1400	M01109SSU#1	8/19/11 1400
M01109SSU#1	8-23-11 0930	FM Hall, CHPRC	8-23-11 0930
FM Hall, CHPRC	8-23-11 1005	Victor Bing	8-23-11 1005

SPECIAL INSTRUCTIONS: SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

LABORATORY SECTION: RECEIVED BY | TITLE | DATE/TIME

FINAL SAMPLE DISPOSITION: DISPOSAL METHOD | DISPOSED BY | DATE/TIME

PRINTED ON 7/25/2011

A-6033-618 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-159-013	PAGE 2 OF 2
COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-1667	PROJECT COORDINATOR: LUKE, SN	PRICE CODE: C01	DATA TURNAROUND: 12 Days / 12 Days
SAMPLING LOCATION: 100-K-63 Excavation Area Sample #20	PROJECT DESIGNATION: 100-K-63 KW Floodplain Verification Sampling (Waste Area A) - Soil		SAF NO.: F11-159	AIR QUALITY: ☐	
ICE CHEST NO.: GWS-023	FIELD LOGBOOK NO.: HNF-N-507-23	ACTUAL SAMPLE DEPTH: 0-1'	COA: 302676ES10	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402579ES20.□□** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Silver, Vanadium, Zinc}; ICP/MS - 200.8 (Add-on) {Arsenic, Beryllium, Boron, Lead, Molybdenum, Selenium, Strontium, Tin, Uranium}; 200.8_HG - ICPMS {Mercury}; Chromium Hex - 7196;
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta}; Strontium-89,90 – Total Sr;

PRINTED ON 7/25/2011

A-6003-610 (REV 2)

Appendix 5

Data Validation Supporting Documentation

VALIDATION LEVEL:	A	B	C	D	E
PROJECT: 100-K Project, Waste Site 100-K-63, Excavation Area			DATA PACKAGE: VSR11-056		
VALIDATOR: Carl Schloesslin		LAB: WSCF		DATE: 9-12-2011	
			SDG: WSCF-112993, -113002, -113017		
ANALYSES PERFORMED					
SW-846/ICP	SW-846/GFAA	SW-846/Hg		EPA 200.8 X	

SAMPLES/MATRIX Soil samples

SDG WSCF112993: B2FX82, B2FX93, B2FX96, B2FX97, B2FX98

SDG WSCF113002: B2FXB0, B2FXB1, B2FXB2, B2FXB3, B2FX83, B2FX84, B2FX85, B2FX95, B2FX99

SDG WSCF113017: B2FX86, B2FX87, B2FX88, B2FX89, B2FX90, B2FX91, B2FX92, B2FX94

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

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

Comments: None

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:

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:

WSCF112993 EB B2FX96 Hits (mg/kg): Mn 3.33, Ba 1.41, V 0.56, Zn 1.17, Pb 0.27, Sr 0.38, As 0.64

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:

None

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:

WSCF113002 & WSCF113017: Mn MS/MSD RPD = 41%

WSCF113002: Field duplicates B2FX95 & B2FX99 Pb RPD = 62%

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:

7. HOLDING TIMES (all levels)

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

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

Comments: None

8. 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: None

Appendix 6

Additional Documentation Requested By Client

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF112993

QC Batch 188550
Associated Samples 112993001, 112993002, 112993003, 112993004, 112993005

Test ICP-2008 MS All possible metal

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
LCS			**QC Sample #63511**							
Manganese	7439-96-5		276	mg/kg	96.6	75 - 121				08/23/11
Nickel	7440-02-0		56.4	mg/kg	95.4	74 - 122				08/23/11
Silver	7440-22-4		30.8	mg/kg	89.4	83 - 127				08/23/11
Antimony	7440-36-0		168	mg/kg	138	62 - 205				08/23/11
Beryllium	7440-41-7		58.3	mg/kg	93.5	77 - 120				08/23/11
Cadmium	7440-43-9		61.5	mg/kg	99.6	76 - 129				08/23/11
Chromium	7440-47-3		66.5	mg/kg	93.2	68 - 119				08/23/11
Cobalt	7440-48-4		97.8	mg/kg	94.9	77 - 122				08/23/11
Copper	7440-50-8		73.5	mg/kg	90.6	67 - 120				08/23/11
Vanadium	7440-62-2		56.6	mg/kg	95.5	67 - 122				08/23/11
Zinc	7440-66-6		133	mg/kg	94	73 - 131				08/23/11
Lead	7439-92-1		89.3	mg/kg	96.6	79 - 124				08/23/11
Mercury	7439-97-6		3.64	mg/kg	96.5	69 - 124				08/23/11
Molybdenum	7439-98-7		46.6	mg/kg	109.5	80 - 125				08/23/11
Strontium	7440-24-6		68.3	mg/kg	94.3	78 - 119				08/23/11
Tin	7440-31-5		107	mg/kg	99.9	84 - 130				08/23/11
Uranium	7440-61-1		364	mg/kg	91	86 - 113				08/23/11
Arsenic	7440-38-2		91.8	mg/kg	99.2	79 - 125				08/23/11
Selenium	7782-49-2		92.9	mg/kg	103.8	82 - 133				08/23/11

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF112993

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit		RQ	Analyzed
MS			**QC Sample #63512**								
			Original	**112982001**							
Manganese	7439-96-5		88.2	mg/kg	91.3	70 - 130				X	08/23/11
Nickel	7440-02-0		92.0	mg/kg	95.3	70 - 130					08/23/11
Silver	7440-22-4		93.8	mg/kg	97.1	70 - 130					08/23/11
Antimony	7440-36-0		96.9	mg/kg	100.4	70 - 130					08/23/11
Beryllium	7440-41-7		95.6	mg/kg	99	70 - 130					08/23/11
Cadmium	7440-43-9		101	mg/kg	104.7	70 - 130					08/23/11
Chromium	7440-47-3		95.8	mg/kg	99.3	70 - 130					08/23/11
Cobalt	7440-48-4		93.0	mg/kg	96.3	70 - 130					08/23/11
Copper	7440-50-8		92.2	mg/kg	95.5	70 - 130					08/23/11
Vanadium	7440-62-2		101	mg/kg	104.1	70 - 130					08/23/11
Zinc	7440-66-6		92.4	mg/kg	95.7	70 - 130					08/23/11
Lead	7439-92-1		101	mg/kg	104.5	70 - 130					08/23/11
Mercury	7439-97-6		1.94	mg/kg	100.5	70 - 130					08/23/11
Molybdenum	7439-98-7		102	mg/kg	105.3	70 - 130					08/23/11
Strontium	7440-24-6		102	mg/kg	106	70 - 130					08/23/11
Tin	7440-31-5		103	mg/kg	106.6	70 - 130					08/23/11
Uranium	7440-61-1		100	mg/kg	103.8	70 - 130					08/23/11
Arsenic	7440-38-2		101	mg/kg	104.8	70 - 130					08/23/11
Selenium	7782-49-2		103	mg/kg	107	70 - 130					08/23/11
MSD			**QC Sample #63513**								
			Original	**112982001**					**Paired**	**63512**	
Manganese	7439-96-5		48.0	mg/kg	50.4	70 - 130	57.70	30	*	X	08/23/11
Nickel	7440-02-0		86.6	mg/kg	90.9	70 - 130	4.70	30			08/23/11

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF112993

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Silver	7440-22-4		89.5	mg/kg	93.9	70 - 130	3.40	30		08/23/11
Antimony	7440-36-0		92.2	mg/kg	96.8	70 - 130	3.70	30		08/23/11
Beryllium	7440-41-7		90.6	mg/kg	95.1	70 - 130	4.00	30		08/23/11
Cadmium	7440-43-9		96.8	mg/kg	101.6	70 - 130	3.00	30		08/23/11
Chromium	7440-47-3		88.6	mg/kg	93	70 - 130	6.60	30		08/23/11
Cobalt	7440-48-4		87.2	mg/kg	91.5	70 - 130	5.10	30		08/23/11
Copper	7440-50-8		87.4	mg/kg	91.7	70 - 130	4.10	30		08/23/11
Vanadium	7440-62-2		88.0	mg/kg	92.4	70 - 130	11.90	30		08/23/11
Zinc	7440-66-6		85.7	mg/kg	90	70 - 130	6.10	30		08/23/11
Lead	7439-92-1		96.2	mg/kg	100.9	70 - 130	3.50	30		08/23/11
Mercury	7439-97-6		1.82	mg/kg	95.5	70 - 130	5.10	30		08/23/11
Molybdenum	7439-98-7		96.5	mg/kg	101.2	70 - 130	4.00	30		08/23/11
Strontium	7440-24-6		100	mg/kg	105.2	70 - 130	0.80	30		08/23/11
Tin	7440-31-5		97.3	mg/kg	102.1	70 - 130	4.30	30		08/23/11
Uranium	7440-61-1		94.4	mg/kg	99	70 - 130	4.70	30		08/23/11
Arsenic	7440-38-2		95.9	mg/kg	100.7	70 - 130	4.00	30		08/23/11
Selenium	7782-49-2		97.7	mg/kg	102.6	70 - 130	4.20	30		08/23/11

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF112993

QC Batch 188550
Associated Samples 112993001, 112993002, 112993003, 112993004, 112993005

Test ICP-2008 MS All possible metal

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #63510**							
Manganese	7439-96-5		<0.10	ug/L					U	08/23/11
Nickel	7440-02-0		<0.20	ug/L					U	08/23/11
Silver	7440-22-4		<0.050	ug/L					U	08/23/11
Antimony	7440-36-0		<0.050	ug/L					U	08/23/11
Barium	7440-39-3		<0.20	ug/L					U	08/23/11
Beryllium	7440-41-7		<0.050	ug/L					U	08/23/11
Boron	7440-42-8		<0.50	ug/L					U	08/23/11
Cadmium	7440-43-9		<0.050	ug/L					U	08/23/11
Chromium	7440-47-3		<0.10	ug/L					U	08/23/11
Cobalt	7440-48-4		<0.10	ug/L					U	08/23/11
Copper	7440-50-8		<0.10	ug/L					U	08/23/11
Vanadium	7440-62-2		<0.20	ug/L					U	08/23/11
Zinc	7440-66-6		<0.80	ug/L					U	08/23/11
Lead	7439-92-1		<0.10	ug/L					U	08/23/11
Mercury	7439-97-6		<0.030	ug/L					U	08/23/11
Molybdenum	7439-98-7		<0.10	ug/L					U	08/23/11
Strontium	7440-24-6		<0.10	ug/L					U	08/23/11
Tin	7440-31-5		<0.10	ug/L					U	08/23/11
Uranium	7440-61-1		<0.10	ug/L					U	08/23/11

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF112993

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Arsenic	7440-38-2		<0.40	ug/L					U	08/23/11
Selenium	7782-49-2		<0.30	ug/L					U	08/23/11
LCS			**QC Sample #63511**							
Barium	7440-39-3		158	mg/kg	93.4	78 - 118				08/23/11
Boron	7440-42-8		111	mg/kg	104.3	64 - 136				08/23/11
MS			**QC Sample #63512**							
			Original 112982001							
Barium	7440-39-3		102	mg/kg	105.2	70 - 130				08/23/11
Boron	7440-42-8		100	mg/kg	103.6	70 - 130				08/23/11
MSD			**QC Sample #63513**							
			Original 112982001					**Paired**	**63512**	
Barium	7440-39-3		92.3	mg/kg	96.9	70 - 130	8.20	30		08/23/11
Boron	7440-42-8		96.0	mg/kg	100.8	70 - 130	2.70	30		08/23/11

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF113002

QC Batch 188860 **Test** ICP-2008 MS All possible metal
Associated Samples 113002001, 113002002, 113002003, 113002004, 113002005, 113002006, 113002007, 113002008, 113002009

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
LCS			**QC Sample #63696**							
Manganese	7439-96-5		254	mg/kg	92.2	75 - 121				08/25/11
Nickel	7440-02-0		50.5	mg/kg	88.8	74 - 122				08/25/11
Silver	7440-22-4		28.9	mg/kg	87.2	83 - 127				08/25/11
Beryllium	7440-41-7		55.6	mg/kg	92.7	77 - 120				08/25/11
Cadmium	7440-43-9		55.0	mg/kg	92.6	76 - 129				08/25/11
Chromium	7440-47-3		61.1	mg/kg	89.1	68 - 119				08/25/11
Cobalt	7440-48-4		89.9	mg/kg	90.8	77 - 122				08/25/11
Copper	7440-50-8		67.4	mg/kg	86.3	67 - 120				08/25/11
Vanadium	7440-62-2		52.0	mg/kg	91.3	67 - 122				08/25/11
Zinc	7440-66-6		125	mg/kg	92.4	73 - 131				08/25/11
Lead	7439-92-1		84.5	mg/kg	95.1	79 - 124				08/25/11
Mercury	7439-97-6		3.45	mg/kg	95.2	69 - 124				08/25/11
Molybdenum	7439-98-7		41.3	mg/kg	100.9	80 - 125				08/25/11
Strontium	7440-24-6		61.8	mg/kg	88.7	78 - 119				08/25/11
Tin	7440-31-5		102	mg/kg	99.2	84 - 130				08/25/11
Uranium	7440-61-1		342	mg/kg	89	86 - 113				08/25/11
Arsenic	7440-38-2		87.7	mg/kg	98.5	79 - 125				08/25/11
Selenium	7782-49-2		85.6	mg/kg	99.5	82 - 133				08/25/11

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF113002

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit		RQ	Analyzed
MS			**QC Sample #63697**								
			Original	**113002001**							
Manganese	7439-96-5	279	77.4	mg/kg	79.1	70 - 130					08/25/11
Nickel	7440-02-0	15.4	79.4	mg/kg	81.1	70 - 130					08/25/11
Silver	7440-22-4	<0.099	79.0	mg/kg	80.7	70 - 130					08/25/11
Beryllium	7440-41-7	0.291	81.7	mg/kg	83.5	70 - 130					08/25/11
Cadmium	7440-43-9	0.225	86.3	mg/kg	88.2	70 - 130					08/25/11
Chromium	7440-47-3	17.7	81.6	mg/kg	83.4	70 - 130					08/25/11
Cobalt	7440-48-4	5.95	80.3	mg/kg	82	70 - 130					08/25/11
Copper	7440-50-8	13.7	78.7	mg/kg	80.5	70 - 130					08/25/11
Vanadium	7440-62-2	31.4	82.9	mg/kg	84.7	70 - 130					08/25/11
Zinc	7440-66-6	49.6	82.7	mg/kg	84.5	70 - 130					08/25/11
Lead	7439-92-1	7.14	86.7	mg/kg	88.6	70 - 130					08/25/11
Mercury	7439-97-6	<0.050	1.74	mg/kg	89	70 - 130					08/25/11
Molybdenum	7439-98-7	0.389	90.0	mg/kg	92	70 - 130					08/25/11
Strontium	7440-24-6	133	94.2	mg/kg	96.3	70 - 130					08/25/11
Tin	7440-31-5	0.382	89.2	mg/kg	91.2	70 - 130					08/25/11
Uranium	7440-61-1	0.845	91.9	mg/kg	93.9	70 - 130					08/25/11
Arsenic	7440-38-2	4.07	89.0	mg/kg	91	70 - 130					08/25/11
Selenium	7782-49-2	0.595	88.3	mg/kg	90.3	70 - 130					08/25/11
MSD			**QC Sample #63698**								
			Original	**113002001**					**Paired**	**63697**	
Manganese	7439-96-5	279	111	mg/kg	119.5	70 - 130	40.70	30	*	X	08/25/11
Nickel	7440-02-0	15.4	86.9	mg/kg	93.2	70 - 130	13.90	30			08/25/11
Silver	7440-22-4	<0.099	86.3	mg/kg	92.5	70 - 130	13.60	30			08/25/11

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF113002

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Beryllium	7440-41-7	0.291	91.8	mg/kg	98.4	70 - 130	16.40	30		08/25/11
Cadmium	7440-43-9	0.225	95.2	mg/kg	102	70 - 130	14.50	30		08/25/11
Chromium	7440-47-3	17.7	94.4	mg/kg	101.2	70 - 130	19.30	30		08/25/11
Cobalt	7440-48-4	5.95	87.4	mg/kg	93.6	70 - 130	13.20	30		08/25/11
Copper	7440-50-8	13.7	87.6	mg/kg	93.8	70 - 130	15.30	30		08/25/11
Vanadium	7440-62-2	31.4	95.2	mg/kg	102	70 - 130	18.50	30		08/25/11
Zinc	7440-66-6	49.6	93.9	mg/kg	100.7	70 - 130	17.50	30		08/25/11
Lead	7439-92-1	7.14	96.8	mg/kg	103.7	70 - 130	15.70	30		08/25/11
Mercury	7439-97-6	<0.050	1.99	mg/kg	106.5	70 - 130	17.90	30		08/25/11
Molybdenum	7439-98-7	0.389	96.3	mg/kg	103.2	70 - 130	11.50	30		08/25/11
Strontium	7440-24-6	133	114	mg/kg	121.6	70 - 130	23.20	30		08/25/11
Tin	7440-31-5	0.382	96.2	mg/kg	103.1	70 - 130	12.20	30		08/25/11
Uranium	7440-61-1	0.845	100	mg/kg	107.1	70 - 130	13.10	30		08/25/11
Arsenic	7440-38-2	4.07	98.7	mg/kg	105.8	70 - 130	15.00	30		08/25/11
Selenium	7782-49-2	0.595	96.2	mg/kg	103.1	70 - 130	13.20	30		08/25/11

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF113002

QC Batch 188860 **Test** ICP-2008 MS All possible metal
Associated Samples 113002001, 113002002, 113002003, 113002004, 113002005, 113002006, 113002007, 113002008, 113002009

Analyte	CAS #	Original Found	QC Found	Units	% Recov Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #63695**						
Manganese	7439-96-5		<0.10	ug/L				U	08/25/11
Nickel	7440-02-0		<0.20	ug/L				U	08/25/11
Silver	7440-22-4		<0.050	ug/L				U	08/25/11
Antimony	7440-36-0		<0.050	ug/L				U	08/25/11
Barium	7440-39-3		<0.20	ug/L				U	08/25/11
Boron	7440-42-8		<0.50	ug/L				U	08/25/11
Beryllium	7440-41-7		<0.050	ug/L				U	08/25/11
Cadmium	7440-43-9		<0.050	ug/L				U	08/25/11
Chromium	7440-47-3		<0.10	ug/L				U	08/25/11
Cobalt	7440-48-4		<0.10	ug/L				U	08/25/11
Copper	7440-50-8		<0.10	ug/L				U	08/25/11
Vanadium	7440-62-2		<0.20	ug/L				U	08/25/11
Zinc	7440-66-6		<0.80	ug/L				U	08/25/11
Lead	7439-92-1		<0.10	ug/L				U	08/25/11
Mercury	7439-97-6		<0.030	ug/L				U	08/25/11
Molybdenum	7439-98-7		<0.10	ug/L				U	08/25/11
Strontium	7440-24-6		<0.10	ug/L				U	08/25/11
Tin	7440-31-5		<0.10	ug/L				U	08/25/11
Uranium	7440-61-1		<0.10	ug/L				U	08/25/11

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF113002

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Arsenic	7440-38-2		<0.40	ug/L					U	08/25/11
Selenium	7782-49-2		<0.30	ug/L					U	08/25/11
LCS			**QC Sample #63696**							
Antimony	7440-36-0		141	mg/kg	120.6	62 - 205				08/25/11
Barium	7440-39-3		149	mg/kg	91.6	78 - 118				08/25/11
Boron	7440-42-8		94.6	mg/kg	92.8	64 - 136				08/25/11
MS			**QC Sample #63697**							
			Original 113002001							
Antimony	7440-36-0	<0.30	84.3	mg/kg	86.2	70 - 130				08/25/11
Barium	7440-39-3	76.8	86.6	mg/kg	88.5	70 - 130				08/25/11
Boron	7440-42-8	2.42	77.1	mg/kg	78.8	70 - 130				08/25/11
MSD			**QC Sample #63698**							
			Original 113002001					**Paired**	**63697**	
Antimony	7440-36-0	<0.30	84.0	mg/kg	90	70 - 130	4.30	30		08/25/11
Barium	7440-39-3	76.8	106	mg/kg	114.1	70 - 130	25.30	30		08/25/11
Boron	7440-42-8	2.42	84.6	mg/kg	90.7	70 - 130	14.00	30		08/25/11

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF113017

QC Batch 188860 **Test** ICP-2008 MS All possible metal
Associated Samples 113017001, 113017002, 113017003, 113017004, 113017005, 113017006, 113017007, 113017008

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
LCS			**QC Sample #63696**							
Manganese	7439-96-5		254	mg/kg	92.2	75 - 121				08/25/11
Nickel	7440-02-0		50.5	mg/kg	88.8	74 - 122				08/25/11
Silver	7440-22-4		28.9	mg/kg	87.2	83 - 127				08/25/11
Beryllium	7440-41-7		55.6	mg/kg	92.7	77 - 120				08/25/11
Cadmium	7440-43-9		55.0	mg/kg	92.6	76 - 129				08/25/11
Chromium	7440-47-3		61.1	mg/kg	89.1	68 - 119				08/25/11
Cobalt	7440-48-4		89.9	mg/kg	90.8	77 - 122				08/25/11
Copper	7440-50-8		67.4	mg/kg	86.3	67 - 120				08/25/11
Vanadium	7440-62-2		52.0	mg/kg	91.3	67 - 122				08/25/11
Zinc	7440-66-6		125	mg/kg	92.4	73 - 131				08/25/11
Lead	7439-92-1		84.5	mg/kg	95.1	79 - 124				08/25/11
Mercury	7439-97-6		3.45	mg/kg	95.2	69 - 124				08/25/11
Molybdenum	7439-98-7		41.3	mg/kg	100.9	80 - 125				08/25/11
Strontium	7440-24-6		61.8	mg/kg	88.7	78 - 119				08/25/11
Tin	7440-31-5		102	mg/kg	99.2	84 - 130				08/25/11
Uranium	7440-61-1		342	mg/kg	89	86 - 113				08/25/11
Arsenic	7440-38-2		87.7	mg/kg	98.5	79 - 125				08/25/11
Selenium	7782-49-2		85.6	mg/kg	99.5	82 - 133				08/25/11

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF113017

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit		RQ	Analyzed
MS			**QC Sample #63697**								
			Original	**113002001**							
Manganese	7439-96-5		77.4	mg/kg	79.1	70 - 130					08/25/11
Nickel	7440-02-0		79.4	mg/kg	81.1	70 - 130					08/25/11
Silver	7440-22-4		79.0	mg/kg	80.7	70 - 130					08/25/11
Beryllium	7440-41-7		81.7	mg/kg	83.5	70 - 130					08/25/11
Cadmium	7440-43-9		86.3	mg/kg	88.2	70 - 130					08/25/11
Chromium	7440-47-3		81.6	mg/kg	83.4	70 - 130					08/25/11
Cobalt	7440-48-4		80.3	mg/kg	82	70 - 130					08/25/11
Copper	7440-50-8		78.7	mg/kg	80.5	70 - 130					08/25/11
Vanadium	7440-62-2		82.9	mg/kg	84.7	70 - 130					08/25/11
Zinc	7440-66-6		82.7	mg/kg	84.5	70 - 130					08/25/11
Lead	7439-92-1		86.7	mg/kg	88.6	70 - 130					08/25/11
Mercury	7439-97-6		1.74	mg/kg	89	70 - 130					08/25/11
Molybdenum	7439-98-7		90.0	mg/kg	92	70 - 130					08/25/11
Strontium	7440-24-6		94.2	mg/kg	96.3	70 - 130					08/25/11
Tin	7440-31-5		89.2	mg/kg	91.2	70 - 130					08/25/11
Uranium	7440-61-1		91.9	mg/kg	93.9	70 - 130					08/25/11
Arsenic	7440-38-2		89.0	mg/kg	91	70 - 130					08/25/11
Selenium	7782-49-2		88.3	mg/kg	90.3	70 - 130					08/25/11
MSD			**QC Sample #63698**								
			Original	**113002001**					**Paired**	**63697**	
Manganese	7439-96-5		111	mg/kg	119.5	70 - 130	40.70	30	*	X	08/25/11
Nickel	7440-02-0		86.9	mg/kg	93.2	70 - 130	13.90	30			08/25/11
Silver	7440-22-4		86.3	mg/kg	92.5	70 - 130	13.60	30			08/25/11

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF113017

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Beryllium	7440-41-7		91.8	mg/kg	98.4	70 - 130	16.40	30		08/25/11
Cadmium	7440-43-9		95.2	mg/kg	102	70 - 130	14.50	30		08/25/11
Chromium	7440-47-3		94.4	mg/kg	101.2	70 - 130	19.30	30		08/25/11
Cobalt	7440-48-4		87.4	mg/kg	93.6	70 - 130	13.20	30		08/25/11
Copper	7440-50-8		87.6	mg/kg	93.8	70 - 130	15.30	30		08/25/11
Vanadium	7440-62-2		95.2	mg/kg	102	70 - 130	18.50	30		08/25/11
Zinc	7440-66-6		93.9	mg/kg	100.7	70 - 130	17.50	30		08/25/11
Lead	7439-92-1		96.8	mg/kg	103.7	70 - 130	15.70	30		08/25/11
Mercury	7439-97-6		1.99	mg/kg	106.5	70 - 130	17.90	30		08/25/11
Molybdenum	7439-98-7		96.3	mg/kg	103.2	70 - 130	11.50	30		08/25/11
Strontium	7440-24-6		114	mg/kg	121.6	70 - 130	23.20	30		08/25/11
Tin	7440-31-5		96.2	mg/kg	103.1	70 - 130	12.20	30		08/25/11
Uranium	7440-61-1		100	mg/kg	107.1	70 - 130	13.10	30		08/25/11
Arsenic	7440-38-2		98.7	mg/kg	105.8	70 - 130	15.00	30		08/25/11
Selenium	7782-49-2		96.2	mg/kg	103.1	70 - 130	13.20	30		08/25/11

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF113017

QC Batch 188860 **Test** ICP-2008 MS All possible metal
Associated Samples 113017001, 113017002, 113017003, 113017004, 113017005, 113017006, 113017007, 113017008

Analyte	CAS #	Original Found	QC Found	Units	% Recov Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #63695**						
Manganese	7439-96-5		<0.10	ug/L				U	08/25/11
Nickel	7440-02-0		<0.20	ug/L				U	08/25/11
Silver	7440-22-4		<0.050	ug/L				U	08/25/11
Antimony	7440-36-0		<0.050	ug/L				U	08/25/11
Barium	7440-39-3		<0.20	ug/L				U	08/25/11
Beryllium	7440-41-7		<0.050	ug/L				U	08/25/11
Boron	7440-42-8		<0.50	ug/L				U	08/25/11
Cadmium	7440-43-9		<0.050	ug/L				U	08/25/11
Chromium	7440-47-3		<0.10	ug/L				U	08/25/11
Cobalt	7440-48-4		<0.10	ug/L				U	08/25/11
Copper	7440-50-8		<0.10	ug/L				U	08/25/11
Vanadium	7440-62-2		<0.20	ug/L				U	08/25/11
Zinc	7440-66-6		<0.80	ug/L				U	08/25/11
Lead	7439-92-1		<0.10	ug/L				U	08/25/11
Mercury	7439-97-6		<0.030	ug/L				U	08/25/11
Molybdenum	7439-98-7		<0.10	ug/L				U	08/25/11
Strontium	7440-24-6		<0.10	ug/L				U	08/25/11
Tin	7440-31-5		<0.10	ug/L				U	08/25/11
Uranium	7440-61-1		<0.10	ug/L				U	08/25/11

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF113017

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Arsenic	7440-38-2		<0.40	ug/L					U	08/25/11
Selenium	7782-49-2		<0.30	ug/L					U	08/25/11
LCS			**QC Sample #63696**							
Antimony	7440-36-0		141	mg/kg	120.6	62 - 205				08/25/11
Barium	7440-39-3		149	mg/kg	91.6	78 - 118				08/25/11
Boron	7440-42-8		94.6	mg/kg	92.8	64 - 136				08/25/11
MS			**QC Sample #63697**							
			Original 113002001							
Antimony	7440-36-0		84.3	mg/kg	86.2	70 - 130				08/25/11
Barium	7440-39-3		86.6	mg/kg	88.5	70 - 130				08/25/11
Boron	7440-42-8		77.1	mg/kg	78.8	70 - 130				08/25/11
MSD			**QC Sample #63698**							
			Original 113002001					**Paired**	**63697**	
Antimony	7440-36-0		84.0	mg/kg	90	70 - 130	4.30	30		08/25/11
Barium	7440-39-3		106	mg/kg	114.1	70 - 130	25.30	30		08/25/11
Boron	7440-42-8		84.6	mg/kg	90.7	70 - 130	14.00	30		08/25/11

Date: 12 September 2011
To: CH2M Hill (technical representative)
From: Analytical Quality Associates, Inc.
Project: 100-K Project, Waste Site 100-K-63, Excavation Area
Subject: General Chemistry - Sample Data Groups (SDGs) WSCF112993, WSCF113002 and WSCF113017

INTRODUCTION

This memorandum presents the results of data validation for SDGs WSCF112993, WSCF113002 and WSCF113017 prepared by WSCF Analytical Laboratories. A list of samples validated along with the analytical method is provided in the following table.

Sample ID	Sample Date	Media	Validation Level	Analytical Method
B2FX82	8/17/2011	Soil	C	7196A
B2FX93	8/17/2011	Soil	C	7196A
B2FX96	8/17/2011	Soil	C	7196A
B2FX97	8/17/2011	Soil	C	7196A
B2FX98	8/17/2011	Soil	C	7196A
B2FXB0	8/18/2011	Soil	C	7196A
B2FXB1	8/18/2011	Soil	C	7196A
B2FXB2	8/18/2011	Soil	C	7196A
B2FXB3	8/18/2011	Soil	C	7196A
B2FX83	8/18/2011	Soil	C	7196A
B2FX84	8/18/2011	Soil	C	7196A
B2FX85	8/18/2011	Soil	C	7196A
B2FX95	8/18/2011	Soil	C	7196A
B2FX99	8/18/2011	Soil	C	7196A
B2FX86	8/19/2011	Soil	C	7196A
B2FX87	8/19/2011	Soil	C	7196A
B2FX88	8/19/2011	Soil	C	7196A
B2FX89	8/19/2011	Soil	C	7196A
B2FX90	8/19/2011	Soil	C	7196A
B2FX91	8/19/2011	Soil	C	7196A
B2FX92	8/19/2011	Soil	C	7196A
B2FX94	8/19/2011	Soil	C	7196A

Data validation was conducted in accordance with the CHPRC validation statement of work and the 100 Area Remedial Action Sampling and Analysis Plan, DOE/RL-96-22, Rev. 5 (SAP). 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 and Sample Preservation**

Holding times are calculated from Chain-of-Custody forms to determine the validity of the results. The holding time requirement for hexavalent chromium is analysis within 30 days of sample collection. Sample preservation requires chilling to 4 degrees Celsius.

The samples were analyzed within the prescribed holding time and properly preserved.

- **Blanks**

The blank data results are reviewed to assess the extent of contamination introduced through sampling, sample preparation, and analysis.

Laboratory Blanks

All laboratory blank results were acceptable.

Trip Blanks

No trip blanks were submitted for validation.

Field Blanks

No field blanks were submitted for validation.

Equipment Blanks

The equipment blank result was acceptable.

- **Accuracy**

Accuracy is evaluated by reviewing matrix spike sample results and laboratory control sample results. According to the SAP, the matrix spike sample accuracy limits are 70% to 130% and the laboratory control sample accuracy limits are ones specified by the DV procedure. The limits for reported analytes not listed in the SAP are specified by the DV procedure.

Matrix Spike (MS) Samples

All MS recoveries were acceptable with the following exception. For SDGs WSCF113002 and WSCF113017, batch 188974, the MS recovery for hexavalent chromium was < the lower acceptance limit. All associated hexavalent chromium sample results were non-detects and

should be qualified as estimates and flagged "UJ." See the table in Appendix 2 for a listing of all affected sample results.

Laboratory Control Samples (LCSs)

All LCS recoveries were acceptable.

- **Precision**

Precision is evaluated by reviewing laboratory duplicate sample results, field duplicate sample results, and field split sample results. These QC results provide information on the laboratory reproducibility and whether sampling activities are adequate to acquire consistent sample results. According to the SAP, the relative percent difference (RPD) limits are ±30%. The RPD limits for reported analytes not listed in the SAP are specified by the DV procedure. When duplicate RPDs exceed the limits and have associated results <5X the reporting limits with differences <2X the reporting limits no precision infraction occurred.

Laboratory Duplicate Samples

All laboratory duplicate results were acceptable.

Field Duplicate Samples

All field duplicate results were acceptable.

Field Split Samples

No field splits were submitted for validation.

- **Detection Limits**

Reported MDLs are compared against the contractually required detection limits (CRDLs) to ensure that laboratory detection limits meet the required criteria.

All reported sample MDLs were below the CRDL.

- **Completeness**

SDGs WSCF112993, WSCF113002 and WSCF113017 were 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

A minor deficiency leading to qualification of hexavalent chromium sample results as estimates was due to an MS recovery infraction. See the table in Appendix 2 for a listing of all affected sample results.

REFERENCES

GRP-GD-003, Rev. 0, Change 0, *Data Validation for Chemical Analyses*, August 2010.

DOE/RL-96-22, Rev. 5, *100 Area Remedial Action Sampling and Analysis Plan*, September 2009

Appendix 1

Glossary of Data Reporting Qualifiers

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

- **U** — The constituent was analyzed for, but was not detected. The data should be considered usable for decision-making purposes.

- **UJ** — The constituent was analyzed for and was not detected. Due to a quality control deficiency identified during data validation the value reported may not accurately reflect the RL. The data should be considered usable for decision-making purposes.

- **J** — Indicates the constituent was analyzed for and detected. The associated value is estimated due to a quality control deficiency identified during data validation. The data should be considered usable for decision-making purposes.

- **J+** — Indicates the constituent was analyzed for and detected. The associated value is estimated with a suspected positive bias due to a quality control deficiency identified during data validation. The data should be considered usable for decision-making purposes.

- **J-** — Indicates the constituent was analyzed for and detected. The associated value is estimated with a suspected negative bias due to a quality control deficiency identified during data validation. The data should be considered usable for decision-making purposes.

- **N** — The analysis indicates the presence of an analyte that has been tentatively identified.

- **NJ** — The analysis indicates the presence of an analyte that has been tentatively identified and the associated numerical value represents its approximate concentration.

- **NJ+** — The analysis indicates the presence of an analyte that has been tentatively identified. The associated value is estimated with a suspected positive bias due to a quality control deficiency identified during data validation.

- **NJ-** — The analysis indicates the presence of an analyte that has been tentatively identified. The associated value is estimated with a suspected negative bias due to a quality control deficiency identified during data validation.

- **UR** — Indicates the constituent was analyzed for and not detected; however, due to an identified quality control deficiency the data should be considered unusable for decision-making purposes.

- **R** — Indicates the constituent was analyzed for and detected; however, due to an identified quality control deficiency the data should be considered unusable for decision-making purposes.

Appendix 2

Summary of Data Qualification

General Chemistry Data Qualification Summary			
SDGs: WSCF112993, WSCF113002 & WSCF113017	Reviewer: AQA	Project: 100-K Project, Waste Site 100-K-63, Excavation Area	Page 1 of 1
Analyte(s)	**DV Flag**	**Samples Affected**	**Reason**
Cr(VI)	UJ	B2FX85, B2FX95, B2FX99, B2FX86, B2FX87, B2FX88, B2FX89, B2FX90, B2FX91, B2FX92, B2FX94	Low MS recovery

Comments: None

Appendix 3

Annotated Laboratory Reports

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF112993

Sample # 112993001
SAF# F11-159
Sample ID B2FX82

Matrix SOIL
Sampled 08/17/11
Received 08/17/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI) Prep										**08/23/11**
Cr(VI)										
Hexavalent chromium	18540-29-9	LA-265-403	UN	<0.10		ug/g	1	0.10	0.51	08/24/11
ICPMS Prep										**08/22/11**
ICP-MS										
Manganese	7439-96-5	LA-505-412		333		mg/kg	1	0.098	0.98	08/23/11
Nickel	7440-02-0	LA-505-412		15.8		mg/kg	1	0.20	2.0	08/23/11
Silver	7440-22-4	LA-505-412	U	<0.098		mg/kg	1	0.098	0.98	08/23/11
Antimony	7440-36-0	LA-505-412	U	<0.29		mg/kg	1	0.29	2.9	08/23/11
Barium	7440-39-3	LA-505-412		86.4		mg/kg	1	0.20	2.0	08/23/11
Beryllium	7440-41-7	LA-505-412	B	0.298		mg/kg	1	0.098	0.49	08/23/11
Boron	7440-42-8	LA-505-412	B	2.06		mg/kg	1	0.49	4.9	08/23/11
Cadmium	7440-43-9	LA-505-412	B	0.232		mg/kg	1	0.098	0.98	08/23/11
Chromium	7440-47-3	LA-505-412		17.8		mg/kg	1	0.49	4.9	08/23/11
Cobalt	7440-48-4	LA-505-412		7.88		mg/kg	1	0.098	0.49	08/23/11
Copper	7440-50-8	LA-505-412		16.9		mg/kg	1	0.098	0.98	08/23/11
Vanadium	7440-62-2	LA-505-412		51.2		mg/kg	1	0.20	2.0	08/23/11
Zinc	7440-66-6	LA-505-412		73.1		mg/kg	1	0.78	4.9	08/23/11
Lead	7439-92-1	LA-505-412		11.5		mg/kg	1	0.098	0.98	08/23/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

LS
9-12-2011

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF112993

Sample # 112993002
SAF# F11-159
Sample ID B2FX93

Matrix SOIL
Sampled 08/17/11
Received 08/17/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI) Prep										**08/23/11**
Cr(VI)										
Hexavalent chromium	18540-29-9	LA-265-403	UN	<0.10		ug/g	1	0.10	0.50	08/24/11
ICPMS Prep										**08/22/11**
ICP-MS										
Manganese	7439-96-5	LA-505-412		279		mg/kg	1	0.10	1.0	08/23/11
Nickel	7440-02-0	LA-505-412		19.2		mg/kg	1	0.20	2.0	08/23/11
Silver	7440-22-4	LA-505-412	U	<0.10		mg/kg	1	0.10	1.0	08/23/11
Antimony	7440-36-0	LA-505-412	U	<0.31		mg/kg	1	0.31	3.1	08/23/11
Barium	7440-39-3	LA-505-412		90.1		mg/kg	1	0.20	2.0	08/23/11
Beryllium	7440-41-7	LA-505-412	B	0.191		mg/kg	1	0.10	0.51	08/23/11
Boron	7440-42-8	LA-505-412	B	1.84		mg/kg	1	0.51	5.1	08/23/11
Cadmium	7440-43-9	LA-505-412	B	0.193		mg/kg	1	0.10	1.0	08/23/11
Chromium	7440-47-3	LA-505-412		20.4		mg/kg	1	0.51	5.1	08/23/11
Cobalt	7440-48-4	LA-505-412		6.85		mg/kg	1	0.10	0.51	08/23/11
Copper	7440-50-8	LA-505-412		15.0		mg/kg	1	0.10	1.0	08/23/11
Vanadium	7440-62-2	LA-505-412		36.7		mg/kg	1	0.20	2.0	08/23/11
Zinc	7440-66-6	LA-505-412		71.1		mg/kg	1	0.81	5.1	08/23/11
Lead	7439-92-1	LA-505-412		11.8		mg/kg	1	0.10	1.0	08/23/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

LS
9-12-2011

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF112993

Sample # 112993003
SAF# F11-159
Sample ID B2FX96

Matrix SOIL
Sampled 08/17/11
Received 08/17/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI) Prep										**08/23/11**
Cr(VI)										
Hexavalent chromium	18540-29-9	LA-265-403	UN	<0.10		ug/g	1	0.10	0.50	08/24/11
ICPMS Prep										**08/22/11**
ICP-MS										
Manganese	7439-96-5	LA-505-412		3.33		mg/kg	1	0.093	0.93	08/23/11
Nickel	7440-02-0	LA-505-412	U	<0.19		mg/kg	1	0.19	1.9	08/23/11
Silver	7440-22-4	LA-505-412	U	<0.093		mg/kg	1	0.093	0.93	08/23/11
Antimony	7440-36-0	LA-505-412	U	<0.28		mg/kg	1	0.28	2.8	08/23/11
Barium	7440-39-3	LA-505-412	B	1.41		mg/kg	1	0.19	1.9	08/23/11
Beryllium	7440-41-7	LA-505-412	U	<0.093		mg/kg	1	0.093	0.47	08/23/11
Boron	7440-42-8	LA-505-412	U	<0.47		mg/kg	1	0.47	4.7	08/23/11
Cadmium	7440-43-9	LA-505-412	U	<0.093		mg/kg	1	0.093	0.93	08/23/11
Chromium	7440-47-3	LA-505-412	U	<0.47		mg/kg	1	0.47	4.7	08/23/11
Cobalt	7440-48-4	LA-505-412	U	<0.093		mg/kg	1	0.093	0.47	08/23/11
Copper	7440-50-8	LA-505-412	U	<0.093		mg/kg	1	0.093	0.93	08/23/11
Vanadium	7440-62-2	LA-505-412	B	0.557		mg/kg	1	0.19	1.9	08/23/11
Zinc	7440-66-6	LA-505-412	B	1.17		mg/kg	1	0.75	4.7	08/23/11
Lead	7439-92-1	LA-505-412	B	0.267		mg/kg	1	0.093	0.93	08/23/11

MDL = Minimum Detection
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TP Err = Total Propagated
DF = Dilution Factor
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B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

LS
9-12-2011

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF112993

Sample # 112993004
SAF# F11-159
Sample ID B2FX97

Matrix SOIL
Sampled 08/17/11
Received 08/17/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI) Prep										**08/23/11**
Cr(VI)										
Hexavalent chromium	18540-29-9	LA-265-403	UN	<0.10		ug/g	1	0.10	0.51	08/24/11
ICPMS Prep										**08/22/11**
ICP-MS										
Manganese	7439-96-5	LA-505-412		301		mg/kg	1	0.10	1.0	08/23/11
Nickel	7440-02-0	LA-505-412		16.1		mg/kg	1	0.21	2.1	08/23/11
Silver	7440-22-4	LA-505-412	U	<0.10		mg/kg	1	0.10	1.0	08/23/11
Antimony	7440-36-0	LA-505-412	U	<0.31		mg/kg	1	0.31	3.1	08/23/11
Barium	7440-39-3	LA-505-412		82.8		mg/kg	1	0.21	2.1	08/23/11
Beryllium	7440-41-7	LA-505-412	B	0.337		mg/kg	1	0.10	0.52	08/23/11
Boron	7440-42-8	LA-505-412	B	3.51		mg/kg	1	0.52	5.2	08/23/11
Cadmium	7440-43-9	LA-505-412	B	0.162		mg/kg	1	0.10	1.0	08/23/11
Chromium	7440-47-3	LA-505-412		17.5		mg/kg	1	0.52	5.2	08/23/11
Cobalt	7440-48-4	LA-505-412		7.71		mg/kg	1	0.10	0.52	08/23/11
Copper	7440-50-8	LA-505-412		16.4		mg/kg	1	0.10	1.0	08/23/11
Vanadium	7440-62-2	LA-505-412		45.5		mg/kg	1	0.21	2.1	08/23/11
Zinc	7440-66-6	LA-505-412		58.7		mg/kg	1	0.84	5.2	08/23/11
Lead	7439-92-1	LA-505-412		13.5		mg/kg	1	0.10	1.0	08/23/11

MDL = Minimum Detection
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TP Err = Total Propagated
DF = Dilution Factor
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B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
C - Analyte was found in the Associated Blank. (Inorganic)
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E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

LS
9-12-2011

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF112993

Sample # 112993005
SAF# F11-159
Sample ID B2FX98

Matrix SOIL
Sampled 08/17/11
Received 08/17/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI) Prep										**08/23/11**
Cr(VI)										
Hexavalent chromium	18540-29-9	LA-265-403	UN	<0.10		ug/g	1	0.10	0.51	08/24/11
ICPMS Prep										**08/22/11**
ICP-MS										
Manganese	7439-96-5	LA-505-412		297		mg/kg	1	0.098	0.98	08/23/11
Nickel	7440-02-0	LA-505-412		18.9		mg/kg	1	0.20	2.0	08/23/11
Silver	7440-22-4	LA-505-412	U	<0.098		mg/kg	1	0.098	0.98	08/23/11
Antimony	7440-36-0	LA-505-412	U	<0.29		mg/kg	1	0.29	2.9	08/23/11
Barium	7440-39-3	LA-505-412		91.8		mg/kg	1	0.20	2.0	08/23/11
Beryllium	7440-41-7	LA-505-412	B	0.404		mg/kg	1	0.098	0.49	08/23/11
Boron	7440-42-8	LA-505-412	B	1.81		mg/kg	1	0.49	4.9	08/23/11
Cadmium	7440-43-9	LA-505-412	B	0.170		mg/kg	1	0.098	0.98	08/23/11
Chromium	7440-47-3	LA-505-412		20.6		mg/kg	1	0.49	4.9	08/23/11
Cobalt	7440-48-4	LA-505-412		7.07		mg/kg	1	0.098	0.49	08/23/11
Copper	7440-50-8	LA-505-412		14.5		mg/kg	1	0.098	0.98	08/23/11
Vanadium	7440-62-2	LA-505-412		38.0		mg/kg	1	0.20	2.0	08/23/11
Zinc	7440-66-6	LA-505-412		54.2		mg/kg	1	0.79	4.9	08/23/11
Lead	7439-92-1	LA-505-412		7.46		mg/kg	1	0.098	0.98	08/23/11

MDL = Minimum Detection
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D - Analyte was reported at a secondary diltution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

LS
9-12-2011

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF113002

Sample # 113002001
SAF# F11-159
Sample ID B2FXB0

Matrix SOIL
Sampled 08/18/11
Received 08/18/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI) Prep										**08/23/11**
Cr(VI)										
Hexavalent chromium	18540-29-9	LA-265-403	UN	<0.10		ug/g	1	0.10	0.51	08/24/11
ICPMS Prep										**08/24/11**
ICP-MS										
Manganese	7439-96-5	LA-505-412		279		mg/kg	1	0.099	0.99	08/25/11
Nickel	7440-02-0	LA-505-412		15.4		mg/kg	1	0.20	2.0	08/25/11
Silver	7440-22-4	LA-505-412	U	<0.099		mg/kg	1	0.099	0.99	08/25/11
Antimony	7440-36-0	LA-505-412	U	<0.30		mg/kg	1	0.30	3.0	08/25/11
Barium	7440-39-3	LA-505-412		76.8		mg/kg	1	0.20	2.0	08/25/11
Beryllium	7440-41-7	LA-505-412	B	0.291		mg/kg	1	0.099	0.50	08/25/11
Boron	7440-42-8	LA-505-412	B	2.42		mg/kg	1	0.50	5.0	08/25/11
Cadmium	7440-43-9	LA-505-412	B	0.225		mg/kg	1	0.099	0.99	08/25/11
Chromium	7440-47-3	LA-505-412		17.7		mg/kg	1	0.50	5.0	08/25/11
Cobalt	7440-48-4	LA-505-412		5.95		mg/kg	1	0.099	0.50	08/25/11
Copper	7440-50-8	LA-505-412		13.7		mg/kg	1	0.099	0.99	08/25/11
Vanadium	7440-62-2	LA-505-412		31.4		mg/kg	1	0.20	2.0	08/25/11
Zinc	7440-66-6	LA-505-412		49.6		mg/kg	1	0.79	5.0	08/25/11
Lead	7439-92-1	LA-505-412		7.14		mg/kg	1	0.099	0.99	08/25/11

MDL = Minimum Detection
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B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

LS
9-12-2011

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF113002

Sample # 113002002
SAF# F11-159
Sample ID B2FXB1

Matrix SOIL
Sampled 08/18/11
Received 08/18/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI) Prep										**08/23/11**
Cr(VI)										
Hexavalent chromium	18540-29-9	LA-265-403	UN	<0.10		ug/g	1	0.10	0.50	08/24/11
ICPMS Prep										**08/24/11**
ICP-MS										
Manganese	7439-96-5	LA-505-412		267		mg/kg	1	0.10	1.0	08/25/11
Nickel	7440-02-0	LA-505-412		12.6		mg/kg	1	0.20	2.0	08/25/11
Silver	7440-22-4	LA-505-412	U	<0.10		mg/kg	1	0.10	1.0	08/25/11
Antimony	7440-36-0	LA-505-412	U	<0.30		mg/kg	1	0.30	3.0	08/25/11
Barium	7440-39-3	LA-505-412		62.2		mg/kg	1	0.20	2.0	08/25/11
Beryllium	7440-41-7	LA-505-412	B	0.308		mg/kg	1	0.10	0.50	08/25/11
Boron	7440-42-8	LA-505-412	B	1.78		mg/kg	1	0.50	5.0	08/25/11
Cadmium	7440-43-9	LA-505-412	B	0.158		mg/kg	1	0.10	1.0	08/25/11
Chromium	7440-47-3	LA-505-412		13.2		mg/kg	1	0.50	5.0	08/25/11
Cobalt	7440-48-4	LA-505-412		6.43		mg/kg	1	0.10	0.50	08/25/11
Copper	7440-50-8	LA-505-412		13.8		mg/kg	1	0.10	1.0	08/25/11
Vanadium	7440-62-2	LA-505-412		37.4		mg/kg	1	0.20	2.0	08/25/11
Zinc	7440-66-6	LA-505-412		42.5		mg/kg	1	0.81	5.0	08/25/11
Lead	7439-92-1	LA-505-412		6.31		mg/kg	1	0.10	1.0	08/25/11

MDL = Minimum Detection
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TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

LS
9-12-2011

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF113002

Sample # 113002003
SAF# F11-159
Sample ID B2FXB2

Matrix SOIL
Sampled 08/18/11
Received 08/18/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI) Prep										**08/23/11**
Cr(VI)										
Hexavalent chromium	18540-29-9	LA-265-403	UN	<0.10		ug/g	1	0.10	0.50	08/24/11
ICPMS Prep										**08/24/11**
ICP-MS										
Manganese	7439-96-5	LA-505-412		266		mg/kg	1	0.099	0.99	08/25/11
Nickel	7440-02-0	LA-505-412		14.9		mg/kg	1	0.20	2.0	08/25/11
Silver	7440-22-4	LA-505-412	U	<0.099		mg/kg	1	0.099	0.99	08/25/11
Antimony	7440-36-0	LA-505-412	U	<0.30		mg/kg	1	0.30	3.0	08/25/11
Barium	7440-39-3	LA-505-412		71.3		mg/kg	1	0.20	2.0	08/25/11
Beryllium	7440-41-7	LA-505-412	B	0.253		mg/kg	1	0.099	0.49	08/25/11
Boron	7440-42-8	LA-505-412	B	1.36		mg/kg	1	0.49	4.9	08/25/11
Cadmium	7440-43-9	LA-505-412	B	0.155		mg/kg	1	0.099	0.99	08/25/11
Chromium	7440-47-3	LA-505-412		16.7		mg/kg	1	0.49	4.9	08/25/11
Cobalt	7440-48-4	LA-505-412		6.05		mg/kg	1	0.099	0.49	08/25/11
Copper	7440-50-8	LA-505-412		12.7		mg/kg	1	0.099	0.99	08/25/11
Vanadium	7440-62-2	LA-505-412		34.1		mg/kg	1	0.20	2.0	08/25/11
Zinc	7440-66-6	LA-505-412		51.3		mg/kg	1	0.79	4.9	08/25/11
Lead	7439-92-1	LA-505-412		7.43		mg/kg	1	0.099	0.99	08/25/11

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C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

LS
9-12-2011

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X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF113002

Sample # 113002004
SAF# F11-159
Sample ID B2FXB3

Matrix SOIL
Sampled 08/18/11
Received 08/18/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI) Prep										**08/23/11**
Cr(VI)										
Hexavalent chromium	18540-29-9	LA-265-403	UN	<0.10		ug/g	1	0.10	0.50	08/24/11
ICPMS Prep										**08/24/11**
ICP-MS										
Manganese	7439-96-5	LA-505-412		348		mg/kg	1	0.098	0.98	08/25/11
Nickel	7440-02-0	LA-505-412		14.1		mg/kg	1	0.20	2.0	08/25/11
Silver	7440-22-4	LA-505-412	U	<0.098		mg/kg	1	0.098	0.98	08/25/11
Antimony	7440-36-0	LA-505-412	U	<0.29		mg/kg	1	0.29	2.9	08/25/11
Barium	7440-39-3	LA-505-412		68.0		mg/kg	1	0.20	2.0	08/25/11
Beryllium	7440-41-7	LA-505-412	B	0.314		mg/kg	1	0.098	0.49	08/25/11
Boron	7440-42-8	LA-505-412	B	2.58		mg/kg	1	0.49	4.9	08/25/11
Cadmium	7440-43-9	LA-505-412	B	0.173		mg/kg	1	0.098	0.98	08/25/11
Chromium	7440-47-3	LA-505-412		13.1		mg/kg	1	0.49	4.9	08/25/11
Cobalt	7440-48-4	LA-505-412		8.39		mg/kg	1	0.098	0.49	08/25/11
Copper	7440-50-8	LA-505-412		19.5		mg/kg	1	0.098	0.98	08/25/11
Vanadium	7440-62-2	LA-505-412		53.7		mg/kg	1	0.20	2.0	08/25/11
Zinc	7440-66-6	LA-505-412		87.3		mg/kg	1	0.79	4.9	08/25/11
Lead	7439-92-1	LA-505-412		18.8		mg/kg	1	0.098	0.98	08/25/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
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E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

LS
9-12-2011

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X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF113002

Sample # 113002005
SAF# F11-159
Sample ID B2FX83

Matrix SOIL
Sampled 08/18/11
Received 08/18/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI) Prep										**08/23/11**
Cr(VI)										
Hexavalent chromium	18540-29-9	LA-265-403	UN	<0.10		ug/g	1	0.10	0.50	08/24/11
ICPMS Prep										**08/24/11**
ICP-MS										
Manganese	7439-96-5	LA-505-412		326		mg/kg	1	0.096	0.96	08/25/11
Nickel	7440-02-0	LA-505-412		12.9		mg/kg	1	0.19	1.9	08/25/11
Silver	7440-22-4	LA-505-412	U	<0.096		mg/kg	1	0.096	0.96	08/25/11
Antimony	7440-36-0	LA-505-412	U	<0.29		mg/kg	1	0.29	2.9	08/25/11
Barium	7440-39-3	LA-505-412		65.9		mg/kg	1	0.19	1.9	08/25/11
Beryllium	7440-41-7	LA-505-412	B	0.343		mg/kg	1	0.096	0.48	08/25/11
Boron	7440-42-8	LA-505-412	B	1.43		mg/kg	1	0.48	4.8	08/25/11
Cadmium	7440-43-9	LA-505-412	B	0.162		mg/kg	1	0.096	0.96	08/25/11
Chromium	7440-47-3	LA-505-412		13.2		mg/kg	1	0.48	4.8	08/25/11
Cobalt	7440-48-4	LA-505-412		7.96		mg/kg	1	0.096	0.48	08/25/11
Copper	7440-50-8	LA-505-412		15.8		mg/kg	1	0.096	0.96	08/25/11
Vanadium	7440-62-2	LA-505-412		51.0		mg/kg	1	0.19	1.9	08/25/11
Zinc	7440-66-6	LA-505-412		60.2		mg/kg	1	0.77	4.8	08/25/11
Lead	7439-92-1	LA-505-412		8.64		mg/kg	1	0.096	0.96	08/25/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

LS
9-12-2011

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF113002

Sample # 113002006
SAF# F11-159
Sample ID B2FX84

Matrix SOIL
Sampled 08/18/11
Received 08/18/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI) Prep										**08/23/11**
Cr(VI)										
Hexavalent chromium	18540-29-9	LA-265-403	UN	<0.10		ug/g	1	0.10	0.50	08/24/11
ICPMS Prep										**08/24/11**
ICP-MS										
Manganese	7439-96-5	LA-505-412		301		mg/kg	1	0.096	0.96	08/25/11
Nickel	7440-02-0	LA-505-412		11.7		mg/kg	1	0.19	1.9	08/25/11
Silver	7440-22-4	LA-505-412	U	<0.096		mg/kg	1	0.096	0.96	08/25/11
Antimony	7440-36-0	LA-505-412	U	<0.29		mg/kg	1	0.29	2.9	08/25/11
Barium	7440-39-3	LA-505-412		69.1		mg/kg	1	0.19	1.9	08/25/11
Beryllium	7440-41-7	LA-505-412	B	0.318		mg/kg	1	0.096	0.48	08/25/11
Boron	7440-42-8	LA-505-412	B	1.08		mg/kg	1	0.48	4.8	08/25/11
Cadmium	7440-43-9	LA-505-412	B	0.105		mg/kg	1	0.096	0.96	08/25/11
Chromium	7440-47-3	LA-505-412		15.7		mg/kg	1	0.48	4.8	08/25/11
Cobalt	7440-48-4	LA-505-412		7.30		mg/kg	1	0.096	0.48	08/25/11
Copper	7440-50-8	LA-505-412		14.9		mg/kg	1	0.096	0.96	08/25/11
Vanadium	7440-62-2	LA-505-412		45.9		mg/kg	1	0.19	1.9	08/25/11
Zinc	7440-66-6	LA-505-412		46.7		mg/kg	1	0.77	4.8	08/25/11
Lead	7439-92-1	LA-505-412		6.15		mg/kg	1	0.096	0.96	08/25/11

MDL = Minimum Detection
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TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

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C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

LS
9-12-2011

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF113002

Sample # 113002007
SAF# F11-159
Sample ID B2FX85

Matrix SOIL
Sampled 08/18/11
Received 08/18/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI) Prep										**08/25/11**
Cr(VI)										
Hexavalent chromium	18540-29-9	LA-265-403	UN	<0.094	UJ	ug/g	1	0.094	0.47	08/26/11
ICPMS Prep										**08/24/11**
ICP-MS										
Manganese	7439-96-5	LA-505-412		352		mg/kg	1	0.096	0.96	08/25/11
Nickel	7440-02-0	LA-505-412		15.5		mg/kg	1	0.19	1.9	08/25/11
Silver	7440-22-4	LA-505-412	U	<0.096		mg/kg	1	0.096	0.96	08/25/11
Antimony	7440-36-0	LA-505-412	U	<0.29		mg/kg	1	0.29	2.9	08/25/11
Barium	7440-39-3	LA-505-412		80.0		mg/kg	1	0.19	1.9	08/25/11
Beryllium	7440-41-7	LA-505-412	B	0.368		mg/kg	1	0.096	0.48	08/25/11
Boron	7440-42-8	LA-505-412	B	1.16		mg/kg	1	0.48	4.8	08/25/11
Cadmium	7440-43-9	LA-505-412	B	0.114		mg/kg	1	0.096	0.96	08/25/11
Chromium	7440-47-3	LA-505-412		23.8		mg/kg	1	0.48	4.8	08/25/11
Cobalt	7440-48-4	LA-505-412		9.06		mg/kg	1	0.096	0.48	08/25/11
Copper	7440-50-8	LA-505-412		20.1		mg/kg	1	0.096	0.96	08/25/11
Vanadium	7440-62-2	LA-505-412		51.0		mg/kg	1	0.19	1.9	08/25/11
Zinc	7440-66-6	LA-505-412		52.4		mg/kg	1	0.77	4.8	08/25/11
Lead	7439-92-1	LA-505-412		6.91		mg/kg	1	0.096	0.96	08/25/11

MDL = Minimum Detection
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TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

LS
9-12-2011

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF113002

Sample # 113002008
SAF# F11-159
Sample ID B2FX95

Matrix SOIL
Sampled 08/18/11
Received 08/18/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI) Prep										**08/25/11**
Cr(VI)										
Hexavalent chromium	18540-29-9	LA-265-403	UN	<0.10	UJ	ug/g	1	0.10	0.50	08/26/11
ICPMS Prep										**08/24/11**
ICP-MS										
Manganese	7439-96-5	LA-505-412		325		mg/kg	1	0.10	1.0	08/25/11
Nickel	7440-02-0	LA-505-412		16.9		mg/kg	1	0.21	2.1	08/25/11
Silver	7440-22-4	LA-505-412	U	<0.10		mg/kg	1	0.10	1.0	08/25/11
Antimony	7440-36-0	LA-505-412	B	0.316		mg/kg	1	0.31	3.1	08/25/11
Barium	7440-39-3	LA-505-412		85.9		mg/kg	1	0.21	2.1	08/25/11
Beryllium	7440-41-7	LA-505-412	B	0.428		mg/kg	1	0.10	0.51	08/25/11
Boron	7440-42-8	LA-505-412	B	2.30		mg/kg	1	0.51	5.1	08/25/11
Cadmium	7440-43-9	LA-505-412	B	0.173		mg/kg	1	0.10	1.0	08/25/11
Chromium	7440-47-3	LA-505-412		19.7		mg/kg	1	0.51	5.1	08/25/11
Cobalt	7440-48-4	LA-505-412		7.35		mg/kg	1	0.10	0.51	08/25/11
Copper	7440-50-8	LA-505-412		17.4		mg/kg	1	0.10	1.0	08/25/11
Vanadium	7440-62-2	LA-505-412		40.4		mg/kg	1	0.21	2.1	08/25/11
Zinc	7440-66-6	LA-505-412		58.8		mg/kg	1	0.82	5.1	08/25/11
Lead	7439-92-1	LA-505-412		12.1		mg/kg	1	0.10	1.0	08/25/11

MDL = Minimum Detection
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TP Err = Total Propagated
DF = Dilution Factor
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C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

LS
9-12-2011

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF113002

Sample # 113002009
SAF# F11-159
Sample ID B2FX99

Matrix SOIL
Sampled 08/18/11
Received 08/18/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI) Prep										**08/25/11**
Cr(VI)										
Hexavalent chromium	18540-29-9	LA-265-403	UN	<0.099	UJ	ug/g	1	0.099	0.49	08/26/11
ICPMS Prep										**08/24/11**
ICP-MS										
Manganese	7439-96-5	LA-505-412		294		mg/kg	1	0.097	0.97	08/25/11
Nickel	7440-02-0	LA-505-412		14.8		mg/kg	1	0.19	1.9	08/25/11
Silver	7440-22-4	LA-505-412	U	<0.097		mg/kg	1	0.097	0.97	08/25/11
Antimony	7440-36-0	LA-505-412	U	<0.29		mg/kg	1	0.29	2.9	08/25/11
Barium	7440-39-3	LA-505-412		72.7		mg/kg	1	0.19	1.9	08/25/11
Beryllium	7440-41-7	LA-505-412	B	0.348		mg/kg	1	0.097	0.49	08/25/11
Boron	7440-42-8	LA-505-412	B	2.41		mg/kg	1	0.49	4.9	08/25/11
Cadmium	7440-43-9	LA-505-412	B	0.124		mg/kg	1	0.097	0.97	08/25/11
Chromium	7440-47-3	LA-505-412		16.5		mg/kg	1	0.49	4.9	08/25/11
Cobalt	7440-48-4	LA-505-412		6.75		mg/kg	1	0.097	0.49	08/25/11
Copper	7440-50-8	LA-505-412		16.1		mg/kg	1	0.097	0.97	08/25/11
Vanadium	7440-62-2	LA-505-412		37.2		mg/kg	1	0.19	1.9	08/25/11
Zinc	7440-66-6	LA-505-412		58.3		mg/kg	1	0.78	4.9	08/25/11
Lead	7439-92-1	LA-505-412		23.0		mg/kg	1	0.097	0.97	08/25/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

LS
9-12-2011

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF113017

Sample # 113017001
SAF# F11-159
Sample ID B2FX86

Matrix SOIL
Sampled 08/19/11
Received 08/23/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI) Prep										**08/25/11**
Cr(VI)										
Hexavalent chromium	18540-29-9	LA-265-403	UN	<0.099	UJ	ug/g	1	0.099	0.50	08/26/11
ICPMS Prep										**08/24/11**
ICP-MS										
Manganese	7439-96-5	LA-505-412		351		mg/kg	1	0.096	0.96	08/25/11
Nickel	7440-02-0	LA-505-412		12.5		mg/kg	1	0.19	1.9	08/25/11
Silver	7440-22-4	LA-505-412	U	<0.096		mg/kg	1	0.096	0.96	08/25/11
Antimony	7440-36-0	LA-505-412	U	<0.29		mg/kg	1	0.29	2.9	08/25/11
Barium	7440-39-3	LA-505-412		67.0		mg/kg	1	0.19	1.9	08/25/11
Beryllium	7440-41-7	LA-505-412	B	0.412		mg/kg	1	0.096	0.48	08/25/11
Boron	7440-42-8	LA-505-412	B	1.29		mg/kg	1	0.48	4.8	08/25/11
Cadmium	7440-43-9	LA-505-412	B	0.0969		mg/kg	1	0.096	0.96	08/25/11
Chromium	7440-47-3	LA-505-412		12.2		mg/kg	1	0.48	4.8	08/25/11
Cobalt	7440-48-4	LA-505-412		8.75		mg/kg	1	0.096	0.48	08/25/11
Copper	7440-50-8	LA-505-412		17.0		mg/kg	1	0.096	0.96	08/25/11
Vanadium	7440-62-2	LA-505-412		50.6		mg/kg	1	0.19	1.9	08/25/11
Zinc	7440-66-6	LA-505-412		55.4		mg/kg	1	0.77	4.8	08/25/11
Lead	7439-92-1	LA-505-412		7.84		mg/kg	1	0.096	0.96	08/25/11

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TP Err = Total Propagated
DF = Dilution Factor
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C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

LS
9-12-2011

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF113017

Sample # 113017002
SAF# F11-159
Sample ID B2FX87

Matrix SOIL
Sampled 08/19/11
Received 08/23/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI) Prep										**08/25/11**
Cr(VI)										
Hexavalent chromium	18540-29-9	LA-265-403	UN	<0.098	UJ	ug/g	1	0.098	0.49	08/26/11
ICPMS Prep										**08/24/11**
ICP-MS										
Manganese	7439-96-5	LA-505-412		318		mg/kg	1	0.097	0.97	08/25/11
Nickel	7440-02-0	LA-505-412		10.1		mg/kg	1	0.19	1.9	08/25/11
Silver	7440-22-4	LA-505-412	U	<0.097		mg/kg	1	0.097	0.97	08/25/11
Antimony	7440-36-0	LA-505-412	U	<0.29		mg/kg	1	0.29	2.9	08/25/11
Barium	7440-39-3	LA-505-412		58.5		mg/kg	1	0.19	1.9	08/25/11
Beryllium	7440-41-7	LA-505-412	B	0.357		mg/kg	1	0.097	0.49	08/25/11
Boron	7440-42-8	LA-505-412	B	1.51		mg/kg	1	0.49	4.9	08/25/11
Cadmium	7440-43-9	LA-505-412	B	0.111		mg/kg	1	0.097	0.97	08/25/11
Chromium	7440-47-3	LA-505-412		9.75		mg/kg	1	0.49	4.9	08/25/11
Cobalt	7440-48-4	LA-505-412		8.00		mg/kg	1	0.097	0.49	08/25/11
Copper	7440-50-8	LA-505-412		15.3		mg/kg	1	0.097	0.97	08/25/11
Vanadium	7440-62-2	LA-505-412		54.1		mg/kg	1	0.19	1.9	08/25/11
Zinc	7440-66-6	LA-505-412		57.4		mg/kg	1	0.78	4.9	08/25/11
Lead	7439-92-1	LA-505-412		8.53		mg/kg	1	0.097	0.97	08/25/11

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C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

LS
9-12-2011

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X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF113017

Sample # 113017003
SAF# F11-159
Sample ID B2FX88

Matrix SOIL
Sampled 08/19/11
Received 08/23/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI) Prep										**08/25/11**
Cr(VI)										
Hexavalent chromium	18540-29-9	LA-265-403	UN	<0.10	UJ	ug/g	1	0.10	0.51	08/26/11
ICPMS Prep										**08/24/11**
ICP-MS										
Manganese	7439-96-5	LA-505-412		307		mg/kg	1	0.10	1.0	08/25/11
Nickel	7440-02-0	LA-505-412		13.2		mg/kg	1	0.20	2.0	08/25/11
Silver	7440-22-4	LA-505-412	U	<0.10		mg/kg	1	0.10	1.0	08/25/11
Antimony	7440-36-0	LA-505-412	U	<0.30		mg/kg	1	0.30	3.0	08/25/11
Barium	7440-39-3	LA-505-412		68.8		mg/kg	1	0.20	2.0	08/25/11
Beryllium	7440-41-7	LA-505-412	B	0.340		mg/kg	1	0.10	0.50	08/25/11
Boron	7440-42-8	LA-505-412	B	1.59		mg/kg	1	0.50	5.0	08/25/11
Cadmium	7440-43-9	LA-505-412	U	<0.10		mg/kg	1	0.10	1.0	08/25/11
Chromium	7440-47-3	LA-505-412		14.8		mg/kg	1	0.50	5.0	08/25/11
Cobalt	7440-48-4	LA-505-412		7.23		mg/kg	1	0.10	0.50	08/25/11
Copper	7440-50-8	LA-505-412		13.8		mg/kg	1	0.10	1.0	08/25/11
Vanadium	7440-62-2	LA-505-412		43.7		mg/kg	1	0.20	2.0	08/25/11
Zinc	7440-66-6	LA-505-412		45.9		mg/kg	1	0.80	5.0	08/25/11
Lead	7439-92-1	LA-505-412		6.43		mg/kg	1	0.10	1.0	08/25/11

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E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

LS
9-12-2011

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X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF113017

Sample # 113017004
SAF# F11-159
Sample ID B2FX89

Matrix SOIL
Sampled 08/19/11
Received 08/23/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI) Prep										**08/25/11**
Cr(VI)										
Hexavalent chromium	18540-29-9	LA-265-403	UN	<0.10	UJ	ug/g	1	0.10	0.50	08/26/11
ICPMS Prep										**08/24/11**
ICP-MS										
Manganese	7439-96-5	LA-505-412		316		mg/kg	1	0.092	0.92	08/25/11
Nickel	7440-02-0	LA-505-412		10.1		mg/kg	1	0.18	1.8	08/25/11
Silver	7440-22-4	LA-505-412	U	<0.092		mg/kg	1	0.092	0.92	08/25/11
Antimony	7440-36-0	LA-505-412	U	<0.28		mg/kg	1	0.28	2.8	08/25/11
Barium	7440-39-3	LA-505-412		61.5		mg/kg	1	0.18	1.8	08/25/11
Beryllium	7440-41-7	LA-505-412	B	0.312		mg/kg	1	0.092	0.46	08/25/11
Boron	7440-42-8	LA-505-412	B	1.22		mg/kg	1	0.46	4.6	08/25/11
Cadmium	7440-43-9	LA-505-412	U	<0.092		mg/kg	1	0.092	0.92	08/25/11
Chromium	7440-47-3	LA-505-412		9.66		mg/kg	1	0.46	4.6	08/25/11
Cobalt	7440-48-4	LA-505-412		7.54		mg/kg	1	0.092	0.46	08/25/11
Copper	7440-50-8	LA-505-412		14.0		mg/kg	1	0.092	0.92	08/25/11
Vanadium	7440-62-2	LA-505-412		50.1		mg/kg	1	0.18	1.8	08/25/11
Zinc	7440-66-6	LA-505-412		41.1		mg/kg	1	0.74	4.6	08/25/11
Lead	7439-92-1	LA-505-412		4.90		mg/kg	1	0.092	0.92	08/25/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

LS
9-12-2011

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF113017

Sample # 113017005
SAF# F11-159
Sample ID B2FX90

Matrix SOIL
Sampled 08/19/11
Received 08/23/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI) Prep										**08/25/11**
Cr(VI)										
Hexavalent chromium	18540-29-9	LA-265-403	UN	<0.10	UJ	ug/g	1	0.10	0.51	08/26/11
ICPMS Prep										**08/24/11**
ICP-MS										
Manganese	7439-96-5	LA-505-412		302		mg/kg	1	0.099	0.99	08/25/11
Nickel	7440-02-0	LA-505-412		12.4		mg/kg	1	0.20	2.0	08/25/11
Silver	7440-22-4	LA-505-412	U	<0.099		mg/kg	1	0.099	0.99	08/25/11
Antimony	7440-36-0	LA-505-412	U	<0.30		mg/kg	1	0.30	3.0	08/25/11
Barium	7440-39-3	LA-505-412		65.5		mg/kg	1	0.20	2.0	08/25/11
Beryllium	7440-41-7	LA-505-412	B	0.309		mg/kg	1	0.099	0.50	08/25/11
Boron	7440-42-8	LA-505-412	B	1.66		mg/kg	1	0.50	5.0	08/25/11
Cadmium	7440-43-9	LA-505-412	B	0.248		mg/kg	1	0.099	0.99	08/25/11
Chromium	7440-47-3	LA-505-412		14.5		mg/kg	1	0.50	5.0	08/25/11
Cobalt	7440-48-4	LA-505-412		7.33		mg/kg	1	0.099	0.50	08/25/11
Copper	7440-50-8	LA-505-412		19.5		mg/kg	1	0.099	0.99	08/25/11
Vanadium	7440-62-2	LA-505-412		43.3		mg/kg	1	0.20	2.0	08/25/11
Zinc	7440-66-6	LA-505-412		124		mg/kg	1	0.79	5.0	08/25/11
Lead	7439-92-1	LA-505-412		24.4		mg/kg	1	0.099	0.99	08/25/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

LS
9-12-2011

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF113017

Sample # 113017006
SAF# F11-159
Sample ID B2FX91

Matrix SOIL
Sampled 08/19/11
Received 08/23/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI) Prep										**08/25/11**
Cr(VI)										
Hexavalent chromium	18540-29-9	LA-265-403	UN	<0.098	UJ	ug/g	1	0.098	0.49	08/26/11
ICPMS Prep										**08/24/11**
ICP-MS										
Manganese	7439-96-5	LA-505-412		331		mg/kg	1	0.095	0.95	08/25/11
Nickel	7440-02-0	LA-505-412		13.4		mg/kg	1	0.19	1.9	08/25/11
Silver	7440-22-4	LA-505-412	U	<0.095		mg/kg	1	0.095	0.95	08/25/11
Antimony	7440-36-0	LA-505-412	U	<0.29		mg/kg	1	0.29	2.9	08/25/11
Barium	7440-39-3	LA-505-412		75.6		mg/kg	1	0.19	1.9	08/25/11
Beryllium	7440-41-7	LA-505-412	B	0.358		mg/kg	1	0.095	0.48	08/25/11
Boron	7440-42-8	LA-505-412	B	1.35		mg/kg	1	0.48	4.8	08/25/11
Cadmium	7440-43-9	LA-505-412	B	0.220		mg/kg	1	0.095	0.95	08/25/11
Chromium	7440-47-3	LA-505-412		16.4		mg/kg	1	0.48	4.8	08/25/11
Cobalt	7440-48-4	LA-505-412		7.59		mg/kg	1	0.095	0.48	08/25/11
Copper	7440-50-8	LA-505-412		17.8		mg/kg	1	0.095	0.95	08/25/11
Vanadium	7440-62-2	LA-505-412		45.9		mg/kg	1	0.19	1.9	08/25/11
Zinc	7440-66-6	LA-505-412		96.4		mg/kg	1	0.76	4.8	08/25/11
Lead	7439-92-1	LA-505-412		17.9		mg/kg	1	0.095	0.95	08/25/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

LS
9-12-2011

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF113017

Sample # 113017007
SAF# F11-159
Sample ID B2FX92

Matrix SOIL
Sampled 08/19/11
Received 08/23/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI) Prep										**08/25/11**
Cr(VI)										
Hexavalent chromium	18540-29-9	LA-265-403	UN	<0.10	UJ	ug/g	1	0.10	0.50	08/26/11
ICPMS Prep										**08/24/11**
ICP-MS										
Manganese	7439-96-5	LA-505-412		396		mg/kg	1	0.094	0.94	08/25/11
Nickel	7440-02-0	LA-505-412		14.1		mg/kg	1	0.19	1.9	08/25/11
Silver	7440-22-4	LA-505-412	U	<0.094		mg/kg	1	0.094	0.94	08/25/11
Antimony	7440-36-0	LA-505-412	U	<0.28		mg/kg	1	0.28	2.8	08/25/11
Barium	7440-39-3	LA-505-412		83.6		mg/kg	1	0.19	1.9	08/25/11
Beryllium	7440-41-7	LA-505-412	B	0.383		mg/kg	1	0.094	0.47	08/25/11
Boron	7440-42-8	LA-505-412	B	2.09		mg/kg	1	0.47	4.7	08/25/11
Cadmium	7440-43-9	LA-505-412	B	0.137		mg/kg	1	0.094	0.94	08/25/11
Chromium	7440-47-3	LA-505-412		15.4		mg/kg	1	0.47	4.7	08/25/11
Cobalt	7440-48-4	LA-505-412		8.45		mg/kg	1	0.094	0.47	08/25/11
Copper	7440-50-8	LA-505-412		15.2		mg/kg	1	0.094	0.94	08/25/11
Vanadium	7440-62-2	LA-505-412		49.7		mg/kg	1	0.19	1.9	08/25/11
Zinc	7440-66-6	LA-505-412		56.4		mg/kg	1	0.75	4.7	08/25/11
Lead	7439-92-1	LA-505-412		7.23		mg/kg	1	0.094	0.94	08/25/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

LS
9-12-2011

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF113017

Sample # 113017008
SAF# F11-159
Sample ID B2FX94

Matrix SOIL
Sampled 08/19/11
Received 08/23/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI) Prep										**08/25/11**
Cr(VI)										
Hexavalent chromium	18540-29-9	LA-265-403	UN	<0.10	UJ	ug/g	1	0.10	0.50	08/26/11
~~**ICPMS Prep**~~										~~**08/24/11**~~
ICP-MS										
Manganese	7439-96-5	LA-505-412		332		mg/kg	1	0.092	0.92	08/25/11
Nickel	7440-02-0	LA-505-412		13.1		mg/kg	1	0.18	1.8	08/25/11
Silver	7440-22-4	LA-505-412	U	<0.092		mg/kg	1	0.092	0.92	08/25/11
Antimony	7440-36-0	LA-505-412	U	<0.27		mg/kg	1	0.27	2.7	08/25/11
Barium	7440-39-3	LA-505-412		77.9		mg/kg	1	0.18	1.8	08/25/11
Beryllium	7440-41-7	LA-505-412	B	0.321		mg/kg	1	0.092	0.46	08/25/11
Boron	7440-42-8	LA-505-412	B	1.70		mg/kg	1	0.46	4.6	08/25/11
Cadmium	7440-43-9	LA-505-412	B	0.170		mg/kg	1	0.092	0.92	08/25/11
Chromium	7440-47-3	LA-505-412		14.7		mg/kg	1	0.46	4.6	08/25/11
Cobalt	7440-48-4	LA-505-412		7.38		mg/kg	1	0.092	0.46	08/25/11
Copper	7440-50-8	LA-505-412		13.5		mg/kg	1	0.092	0.92	08/25/11
Vanadium	7440-62-2	LA-505-412		42.3		mg/kg	1	0.18	1.8	08/25/11
Zinc	7440-66-6	LA-505-412		57.7		mg/kg	1	0.73	4.6	08/25/11
~~Lead~~	~~7439-92-1~~	~~LA-505-412~~		~~8.91~~		~~mg/kg~~	~~1~~	~~0.092~~	~~0.92~~	~~08/25/11~~

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

LS
9-12-2011

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

Attachment 2
Narrative
WSCF112993

Introduction

Samples were received at the WSCF laboratory as referenced on the WSCF SAF Number Cross Reference table included in the final report. The samples were analyzed for the analytes indicated on the attached copy of the chain of custody (COC) form in accordance with the *Statement of Work (SOW), Modification No. 2 to Agreement 36587, Release 3, "FH WSCF ANALYTICAL SERVICES FOR GROUNDWATER."*

The narrative (Attachment 2) will address sample characteristics, analyses requested and general information in performance of the analytical methods. A Data Summary Report (Attachment 3) includes analytical results, a comment report detailing method abnormalities, tentatively identified peaks if applicable, method references, and Laboratory QC information as applicable. Copies of the chain of custody and sample receipt documentation are included as Attachment 4.

It should be noted that the attached chain of custody was not stamped "ICED" by the WSCF Laboratory Sample Custodian during sample receiving. However, based on procedure LO-090-403 form "NOTICE OF IMPROPER SAMPLE SUBMITTAL" was not submitted and was not stamped "NOT ICED". No anomaly was noted during sample receipt.

The following generic data qualifiers (i.e., B, D, U and J) may be applicable to this report, as appropriate

- **B** – Sample results with a concentration greater than the MDL but less than the PQL are B flagged (applies to inorganic and wet chemical analyses), as appropriate.
- **D** – Sample results are D flagged if dilution(s) were required, as appropriate.
- **J** – Sample results with a concentration greater than the MDL but less than the PQL are J flagged (applies to organic analyses), as appropriate.
- **U** – Analyzed for but not detected above limiting criteria. Relative Percent Difference (RPD) values associated with an analyte qualified with a "U" are not applicable.

Analytical Methodology for Requested Analyses

Refer to *WSCF Method References Report* for a complete listing of approved analytical methods.

Inorganic Comments

Hexavalent Chromium – The hold time requirement for this analysis was met. A Duplicate, Matrix Spike, Blank and Laboratory Control Sample were analyzed with this delivery group. Analytical Note(s):

- Post Spike recovery is outside established laboratory limits. Affected sample results in this batch were "N" flagged.
- All other applicable QC controls are within the established limits.

Attachment 2
Narrative
WSCF112993

ICP-MS Metals – The hold time requirements for this analysis were met. A Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group. Analytical Note(s):

- Manganese – Exceeded spiking levels by a factor of 4. Spike recoveries and associated RPDs are not valid.
- All other applicable QC controls are within the established limits.

Radiochemistry Comments

Rad Chem – The hold time requirement for this analysis was met. A Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group. Analytical Note(s):

Tracers are used to determine chemical yield. RPD is monitored in sample duplicate and is not required for tracer recovery per SOW.

- Gamma Energy Analysis:
  - All applicable QC controls are within the established limits.
- Gross Alpha / Gross Beta:
  - Gross Beta – Duplicate Relative Percent Difference(s) (RPD) did not meet the established laboratory limits. Duplicate Relative Percent Difference (RPD) does not apply to results below 5X the minimum detectable activity. No flags issued.
  - All other applicable QC controls are within the established limits.
- Strontium-89/90:
  - Batch QC 188476
    - Duplicate Relative Percent Difference(s) (RPD) did not meet the established laboratory limits. Duplicate Relative Percent Difference (RPD) does not apply to results below 5X the minimum detectable activity. No flags issued.
    - The LCS recovery was outside laboratory acceptance limits, but within the 70 – 130% range allowed in the SOW.
  - Batch QC 188661
    - The LCS recovery was outside laboratory acceptance limits, but within the 70 – 130% range allowed in the SOW.
    - All other applicable QC controls are within the established limits.

Narrative

Attachment 2
Narrative
WSCF112993

We certify that this data package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this data package has been authorized by the Analytical Laboratory Manager (or designee) and the Client Services representative as verified by electronic signatures shown on the WSCF ANALYTICAL RESULTS REPORT.

CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**

F11-159-001 — PAGE 1 OF 2

COLLECTOR: FM Hall CHPRC

COMPANY CONTACT: LUKE, SN

TELEPHONE NO.: 372-1667

PROJECT COORDINATOR: LUKE, SN

PRICE CODE: C01

DATA TURNAROUND: 12 Days / 12 Days

SAMPLING LOCATION: 100-K-63 Excavation Area Sample #1

PROJECT DESIGNATION: 100-K-63 KW Floodplain Verification Sampling (Waste Area AJ)- Soil

SAF NO.: F11-159

AIR QUALITY: ☐

ICE CHEST NO.: 6WS-023

FIELD LOGBOOK NO.: HNF-N-507-23.

ACTUAL SAMPLE DEPTH: 0 - 1'

COA: 302676ES10

METHOD OF SHIPMENT: GOVERNMENT VEHICLE

ORIGINAL

SHIPPED TO: Waste Sampling & Characterization

OFFSITE PROPERTY NO.: N/A

BILL OF LADING/AIR BILL NO.: N/A

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

112993

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool<4C	None	None
HOLDING TIME	6 Months	6 Months	6 Months
TYPE OF CONTAINER	G/P	P	G/P
NO. OF CONTAINER(S)	1	1	1
VOLUME	250mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME			
B2FX82	SOIL	8/17/11	1312	✓	✓	✓

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	8/17/11 1440		8/17/11 1440

SPECIAL INSTRUCTIONS

SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

LABORATORY SECTION — RECEIVED BY — TITLE — DATE/TIME

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

PRINTED ON 7/25/2011

A-6003-618 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-159-001	PAGE 2 OF 2
COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-1667	PROJECT COORDINATOR: LUKE, SN	PRICE CODE: C01	DATA TURNAROUND: 12 Days / 12 Days
SAMPLING LOCATION: 100-K-63 Excavation Area Sample #1	PROJECT DESIGNATION: 100-K-63 KW Floodplain Verification Sampling (Waste Area A)- Soil		SAF NO.: F11-159	AIR QUALITY: ☐	
ICE CHEST NO.: GWS-023	FIELD LOGBOOK NO.: HNF-N-607-23	ACTUAL SAMPLE DEPTH: 0-1'	COA: 302676ES10	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402579ES20.☐☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Silver, Vanadium, Zinc}; ICP/MS - 200.8 (Add-on) {Arsenic, Beryllium, Boron, Lead, Molybdenum, Selenium, Strontium, Tin, Uranium}; 200.8_HG - ICPMS {Mercury}; Chromium Hex - 7196;
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta}; Strontium-89,90 -- Total Sr;

PRINTED ON 7/25/2011 A-6003-618 (REV 2)

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-159-012

PAGE 1 OF 2

COLLECTOR: FM Hall CHPRC

COMPANY CONTACT: LUKE, SN

TELEPHONE NO.: 372-1667

PROJECT COORDINATOR: LUKE, SN

PRICE CODE: C01

DATA TURNAROUND: 12 Days / 12 Days

SAMPLING LOCATION: 100-K-63 Excavation Area Sample #2

PROJECT DESIGNATION: 100-K-63 KW Floodplain Verification Sampling (Waste Area AJ)- Soil

SAF NO.: F11-159

AIR QUALITY: ☐

ICE CHEST NO.: 6WS-023

FIELD LOGBOOK NO.: HNF-N-807-23

ACTUAL SAMPLE DEPTH: 0-1'

COA: 302676ES10

METHOD OF SHIPMENT: GOVERNMENT VEHICLE

ORIGINAL

SHIPPED TO: Waste Sampling & Characterization

OFFSITE PROPERTY NO.: N/A

BILL OF LADING/AIR BILL NO.: N/A

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool~4C	None	None
HOLDING TIME	6 Months	6 Months	6 Months
TYPE OF CONTAINER	G/P	P	G/P
NO. OF CONTAINER(S)	1	1	1
VOLUME	250mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.		MATRIX*	SAMPLE DATE	SAMPLE TIME			
B2FX93	2	SOIL	8/17/11	1325	✓	✓	✓

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	8/17/11 1440		8/17/11 1440

SPECIAL INSTRUCTIONS: SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

LABORATORY SECTION: RECEIVED BY | TITLE | DATE/TIME

FINAL SAMPLE DISPOSITION: DISPOSAL METHOD | DISPOSED BY | DATE/TIME

PRINTED ON 7/25/2011

A-6003-618 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-159-012	PAGE 2 OF 2
COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-1667	PROJECT COORDINATOR: LUKE, SN	PRICE CODE: C01	DATA TURNAROUND: 12 Days / 12 Days
SAMPLING LOCATION: 100-K-63 Excavation Area Sample #2	PROJECT DESIGNATION: 100-K-63 KW Floodplain Verification Sampling (Waste Area A1)- Soil		SAF NO.: F11-159	AIR QUALITY: ☐	
ICE CHEST NO.: 6WS-023	FIELD LOGBOOK NO.: HNF-N-807-23.	ACTUAL SAMPLE DEPTH: 0-6'	COA: 302676ES10	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402579ES20.□□** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Silver, Vanadium, Zinc}; ICP/MS - 200.8 (Add-on) {Arsenic, Beryllium, Boron, Lead, Molybdenum, Selenium, Strontium, Tin, Uranium}; 200.8_HG - ICPMS {Mercury}; Chromium Hex - 7196;
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta}; Strontium-89,90 -- Total Sr;

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CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-159-015 — PAGE 1 OF 2

COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-1667	PROJECT COORDINATOR: LUKE, SN
PRICE CODE: C01	DATA TURNAROUND: 12 Days / 12 Days		
SAMPLING LOCATION: 100-K-63 Excavation Area Sample #22	PROJECT DESIGNATION: 100-K-63 KW Floodplain Verification Sampling (Waste Area AJ)- Soil	SAF NO.: F11-159	AIR QUALITY: ☐
ICE CHEST NO.: GWS-023	FIELD LOGBOOK NO.: HNF-N-507-23	ACTUAL SAMPLE DEPTH: 0-1'	COA: 302676ES10
METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL		
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A	BILL OF LADING/AIR BILL NO.: N/A	

MATRIX*: A=Air, DI=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool<4C	None	None
HOLDING TIME	6 Months	6 Months	6 Months
TYPE OF CONTAINER	G/P	P	G/P
NO. OF CONTAINER(S)	1	1	1
VOLUME	250mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME			
B2FX96 3	SOIL	8/17/11	1302	✓	✓	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: FM Hall CHPRC	DATE/TIME: 8/17/11 1440	RECEIVED BY/STORED IN: [signature]	DATE/TIME: 8/17/11 1440
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
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 DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

PRINTED ON 7/25/2011 — A-6003-618 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-159-015	PAGE 2 OF 2
COLLECTOR	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-1667	PROJECT COORDINATOR: LUKE, SN	PRICE CODE: C01	DATA TURNAROUND: 12 Days / 12 Days
SAMPLING LOCATION: 100 K 63 Excavation Area Sample #22	PROJECT DESIGNATION: 100 K 63 KW Floodplain Verification Sampling (Waste Area A) - Soil		SAF NO.: F11-159	AIR QUALITY: ☐	
ICE CHEST NO.: 6WS-023	FIELD LOGBOOK NO.: HNF-N-507-23	ACTUAL SAMPLE DEPTH: 0-1'	COA: 302676ES10	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402579ES20.□□** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Silver, Vanadium, Zinc}; ICP/MS - 200.8 (Add-on) {Arsenic, Beryllium, Boron, Lead, Molybdenum, Selenium, Strontium, Tin, Uranium}; 200.8_HG - ICPMS {Mercury}; Chromium Hex - 7196;
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta}; Strontium-89,90 -- Total Sr;

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A-6003-618 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-159-016 PAGE 1 OF 2

COLLECTOR: FM Hall CHPRC

SAMPLING LOCATION: 100-K-63 Excavation Area Sample #3

ICE CHEST NO.: GWS-023

SHIPPED TO: Waste Sampling & Characterization

COMPANY CONTACT: LUKE, SN

TELEPHONE NO.: 372-1667

PROJECT COORDINATOR: LUKE, SN

PRICE CODE: C01

DATA TURNAROUND: 12 Days / 12 Days

AIR QUALITY: ☐

PROJECT DESIGNATION: 100-K-63 KW Floodplain Verification Sampling (Waste Area A1)-Soil

SAF NO.: F11-159

FIELD LOGBOOK NO.: HNF-N-507-23

ACTUAL SAMPLE DEPTH: 0-1'

COA: 302676ES10

METHOD OF SHIPMENT: GOVERNMENT VEHICLE

ORIGINAL

OFFSITE PROPERTY NO.: N/A

BILL OF LADING/AIR BILL NO.: N/A

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool-4C	None	None
HOLDING TIME	6 Months	6 Months	6 Months
TYPE OF CONTAINER	G/P	P	G/P
NO. OF CONTAINER(S)	1	1	1
VOLUME	250mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.		MATRIX*	SAMPLE DATE	SAMPLE TIME			
B2FX97	4	SOIL	8/17/11	1336	✓	✓	✓

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	8/17/11 1440	[illegible]	8/17/11 1440

SPECIAL INSTRUCTIONS: SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

LABORATORY SECTION: RECEIVED BY | TITLE | DATE/TIME

FINAL SAMPLE DISPOSITION: DISPOSAL METHOD | DISPOSED BY | DATE/TIME

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A-6003-618 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**

F11-159-016 — PAGE 2 OF 2

COLLECTOR FM Hall CHPRC	**COMPANY CONTACT** LUKE, SN	**TELEPHONE NO.** 372-1667	**PROJECT COORDINATOR** LUKE, SN
SAMPLING LOCATION 100-K-63 Excavation Area Sample #3	**PROJECT DESIGNATION** 100-K-63 KW Floodplain Verification Sampling (Waste Area AJ)- Soil		**SAF NO.** F11-159
ICE CHEST NO. 6WS-023	**FIELD LOGBOOK NO.** HNF-N-507-23.	**ACTUAL SAMPLE DEPTH** 0-1'	**COA** 302676ES10
SHIPPED TO Waste Sampling & Characterization	**OFFSITE PROPERTY NO.** N/A		**BILL OF LADING/AIR BILL NO.** N/A

PRICE CODE C01 — **DATA TURNAROUND** 12 Days / 12 Days

AIR QUALITY ☐

METHOD OF SHIPMENT GOVERNMENT VEHICLE

ORIGINAL

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402579ES20.☐☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Silver, Vanadium, Zinc}; ICP/MS - 200.8 (Add-on) {Arsenic, Beryllium, Boron, Lead, Molybdenum, Selenium, Strontium, Tin, Uranium}; 200.8_HG - ICPMS {Mercury}; Chromium Hex - 7196;
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta}; Strontium-89,90 -- Total Sr;

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CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**

F11-159-017 — PAGE 1 OF 2

COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-1667	PROJECT COORDINATOR: LUKE, SN
SAMPLING LOCATION: 100-K-63 Excavation Area Sample #4	PROJECT DESIGNATION: 100-K-63 KW Floodplain Verification Sampling (Waste Area A)- Soil		SAF NO.: F11-159
ICE CHEST NO.: GWS-023	FIELD LOGBOOK NO.: HNF-N-507-23	ACTUAL SAMPLE DEPTH: 0-1'	COA: 3026/6ES10
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A

PRICE CODE: C01 — AIR QUALITY: [ ] — DATA TURNAROUND: 12 Days / 12 Days

METHOD OF SHIPMENT: GOVERNMENT VEHICLE — **ORIGINAL**

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool-4C	None	None
HOLDING TIME	6 Months	6 Months	6 Months
TYPE OF CONTAINER	G/P	P	G/P
NO. OF CONTAINER(S)	1	1	1
VOLUME	250mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME			
B2FX98 5	SOIL	8/17/11	1346	✓	✓	✓

CHAIN OF POSSESSION	DATE/TIME	SIGN/ PRINT NAMES	DATE/TIME
RELINQUISHED BY/REMOVED FROM: FM Hall CHPRC	8/17/11 1440	RECEIVED BY/STORED IN: KBreazeal	8/17/11 1440
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
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 DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

PRINTED ON 7/25/2011 — A-6003-618 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-159-017	PAGE 2 OF 2
COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-1667	PROJECT COORDINATOR: LUKE, SN	PRICE CODE: C01	DATA TURNAROUND: 12 Days / 12 Days
SAMPLING LOCATION: 100-K-63 Excavation Area Sample #4	PROJECT DESIGNATION: 100-K-63 KW Floodplain Verification Sampling (Waste Area A1)- Soil		SAF NO.: F11-159	AIR QUALITY: ☐	ORIGINAL
ICE CHEST NO.: 6WS-023	FIELD LOGBOOK NO.: HNF-N-507-23	ACTUAL SAMPLE DEPTH: 0-1'	COA: 302676ES10	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

** The CACN for WSCF Analytical is 402579ES20.□□** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Silver, Vanadium, Zinc}; ICP/MS - 200.8 (Add-on) {Arsenic, Beryllium, Boron, Lead, Molybdenum, Selenium, Strontium, Tin, Uranium}; 200.8_HG - ICPMS {Mercury}; Chromium Hex - 7196;
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta}; Strontium-89,90 -- Total Sr;

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A-6003-618 (REV 2)

Attachment 2
Narrative
WSCF113002

Introduction

Samples were received at the WSCF laboratory as referenced on the WSCF SAF Number Cross Reference table included in the final report. The samples were analyzed for the analytes indicated on the attached copy of the chain of custody (COC) form in accordance with the *Statement of Work (SOW), Modification No. 2 to Agreement 36587, Release 3, "FH WSCF ANALYTICAL SERVICES FOR GROUNDWATER."*

The narrative (Attachment 2) will address sample characteristics, analyses requested and general information in performance of the analytical methods. A Data Summary Report (Attachment 3) includes analytical results, a comment report detailing method abnormalities, tentatively identified peaks if applicable, method references, and Laboratory QC information as applicable. Copies of the chain of custody and sample receipt documentation are included as Attachment 4.

It should be noted that the attached chain of custody was not stamped "ICED" by the WSCF Laboratory Sample Custodian during sample receiving. However, based on procedure LO-090-403 form "NOTICE OF IMPROPER SAMPLE SUBMITTAL" was not submitted and was not stamped "NOT ICED". No anomaly was noted during sample receipt.

The following generic data qualifiers (i.e., B, D, U and J) may be applicable to this report, as appropriate

- **B** – Sample results with a concentration greater than the MDL but less than the PQL are B flagged (applies to inorganic and wet chemical analyses), as appropriate.
- **D** – Sample results are D flagged if dilution(s) were required, as appropriate.
- **J** – Sample results with a concentration greater than the MDL but less than the PQL are J flagged (applies to organic analyses), as appropriate.
- **U** – Analyzed for but not detected above limiting criteria. Relative Percent Difference (RPD) values associated with an analyte qualified with a "U" are not applicable.

Analytical Methodology for Requested Analyses

Refer to *WSCF Method References Report* for a complete listing of approved analytical methods.

Inorganic Comments

Hexavalent Chromium – The hold time requirement for this analysis was met. A Duplicate, Matrix Spike, Blank and Laboratory Control Sample were analyzed with this delivery group. Analytical Note(s):

- Batch QC 188844
- Post Spike recovery is outside established laboratory limits. Affected sample results in this batch were "N" flagged.

- Batch QC 188972
- Matrix Spike and Post Spike recoveries are outside established laboratory limits. Affected sample results in this batch were "N" flagged.
- All other applicable QC controls are within the established limits.

ICP-MS Metals – The hold time requirements for this analysis were met. A Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group. Analytical Note(s):

- Manganese – MS / MSD Relative Percent Difference (RPD) is outside established laboratory limits. The quality control report was flagged for RPD failure.
- All other applicable QC controls are within the established limits.

Radiochemistry Comments

Rad Chem – The hold time requirement for this analysis was met. A Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group. Analytical Note(s):

Tracers are used to determine chemical yield. RPD is monitored in sample duplicate and is not required for tracer recovery per SOW.

- Gamma Energy Analysis:
  - All applicable QC controls are within the established limits.
- Gross Alpha / Gross Beta:
  - Batch QC 188471
    - Gross Beta – Duplicate Relative Percent Difference(s) (RPD) did not meet the established laboratory limits. Duplicate Relative Percent Difference (RPD) does not apply to results below 5X the minimum detectable activity. No flags issued.
  - Batch QC 188472
    - Gross Alpha and Gross Beta – Duplicate Relative Percent Difference(s) (RPD) did not meet the established laboratory limits. Duplicate Relative Percent Difference (RPD) does not apply to results below 5X the minimum detectable activity. No flags issued.
    - All other applicable QC controls are within the established limits.
- Strontium-89/90:
  - Batch QC 188661

- The LCS recovery was outside laboratory acceptance limits, but within the 70 – 130% range allowed in the SOW.
- All other applicable QC controls are within the established limits.

We certify that this data package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this data package has been authorized by the Analytical Laboratory Manager (or designee) and the Client Services representative as verified by electronic signatures shown on the WSCF ANALYTICAL RESULTS REPORT.

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-159-019 | PAGE 1 OF 2

COLLECTOR	FM Hall CHPRC
SAMPLING LOCATION	100-K-63 Excavation Area Sample #6
ICE CHEST NO.	GWS.023
SHIPPED TO	Waste Sampling & Characterization
COMPANY CONTACT	LUKE, SN
TELEPHONE NO.	372-1667
PROJECT DESIGNATION	100-K-63 KW Floodplain Verification Sampling (Waste Area A1)- Soil
FIELD LOGBOOK NO.	HNF-N-607-23
ACTUAL SAMPLE DEPTH	0-1'
OFFSITE PROPERTY NO.	N/A
PROJECT COORDINATOR	LUKE, SN
SAF NO.	F11-159
COA	302676ES10
BILL OF LADING/AIR BILL NO.	N/A
PRICE CODE	C01
AIR QUALITY	☐
DATA TURNAROUND	12 Days / 12 Days
METHOD OF SHIPMENT	GOVERNMENT VEHICLE

ORIGINAL

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS
Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

113002

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool~4C	None	None
HOLDING TIME	6 Months	6 Months	6 Months
TYPE OF CONTAINER	G/P	P	G/P
NO. OF CONTAINER(S)	1	1	1
VOLUME	250mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	[redacted]		
B2FXB0	SOIL	8/18/11	0934	✓	—	—

CHAIN OF POSSESSION

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	8/18/11 1250	[illegible]	8/18/11 1250

SIGN/ PRINT NAMES

SPECIAL INSTRUCTIONS
SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

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

PRINTED ON 7/25/2011

A-6003-618 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-159-019 — PAGE 2 OF 2

COLLECTOR FM Hall CHPRC	**COMPANY CONTACT** LUKE, SN	**TELEPHONE NO.** 372-1667	**PROJECT COORDINATOR** LUKE, SN
SAMPLING LOCATION 100-K-63 Excavation Area Sample #6	**PROJECT DESIGNATION** 100-K-63 KW Floodplain Verification Sampling (Waste Area A)- Soil		**SAF NO.** F11-159
ICE CHEST NO. GWS-023	**FIELD LOGBOOK NO.** HNF-N-507-23	**ACTUAL SAMPLE DEPTH** 0-1'	**COA** 302676ES10
SHIPPED TO Waste Sampling & Characterization	**OFFSITE PROPERTY NO.** N/A		**BILL OF LADING/AIR BILL NO.** N/A

PRICE CODE C01 — **AIR QUALITY** ☐ — **METHOD OF SHIPMENT** GOVERNMENT VEHICLE — **DATA TURNAROUND** 12 Days / 12 Days — **ORIGINAL**

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402579ES20.☐☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Silver, Vanadium, Zinc}; ICP/MS - 200.8 (Add-on) {Arsenic, Beryllium, Boron, Lead, Molybdenum, Selenium, Strontium, Tin, Uranium}; 200.8_HG - ICPMS {Mercury}; Chromium Hex - 7196;
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta}; Strontium-89,90 -- Total Sr;

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Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-159-020

PAGE 1 OF 2

COLLECTOR: FM Hall CHPRC

COMPANY CONTACT: LUKE, SN

TELEPHONE NO.: 372-1667

PROJECT COORDINATOR: LUKE, SN

PRICE CODE: C01

DATA TURNAROUND: 12 Days / 12 Days

SAMPLING LOCATION: 100-K-63 Excavation Area Sample #7

PROJECT DESIGNATION: 100-K-63 KW Floodplain Verification Sampling (Waste Area AJ)- Soil

SAF NO.: F11-159

AIR QUALITY: ☐

ICE CHEST NO.: GWS-023

FIELD LOGBOOK NO.: HNF-N-507-23

ACTUAL SAMPLE DEPTH: 0-1'

COA: 302676ES10

METHOD OF SHIPMENT: GOVERNMENT VEHICLE

ORIGINAL

SHIPPED TO: Waste Sampling & Characterization

OFFSITE PROPERTY NO.: N/A

BILL OF LADING/AIR BILL NO.: N/A

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool~4C	None	None
HOLDING TIME	6 Months	6 Months	6 Months
TYPE OF CONTAINER	G/P	P	G/P
NO. OF CONTAINER(S)	1	1	1
VOLUME	250mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME			
B2FXB1	SOIL	8/18/11	0942	✓	✓	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	8/18/11 1250	[illegible]	8/18/11 1260
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
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 DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

PRINTED ON 7/25/2011

A-6003-618 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-159-020	PAGE 2 OF 2
COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-1667	PROJECT COORDINATOR: LUKE, SN	PRICE CODE: C01	DATA TURNAROUND: 12 Days / 12 Days
SAMPLING LOCATION: 100-K-63 Excavation Area Sample #7	PROJECT DESIGNATION: 100-K-63 KW Floodplain Verification Sampling (Waste Area AJ)- Soil		SAF NO.: F11-159	AIR QUALITY: ☐	
ICE CHEST NO.: GWS-023	FIELD LOGBOOK NO.: HNF-N-507-23	ACTUAL SAMPLE DEPTH: 0-1'	COA: 302676ES10	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402579ES20.□□** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Silver, Vanadium, Zinc}; ICP/MS - 200.8 (Add-on) {Arsenic, Beryllium, Boron, Lead, Molybdenum, Selenium, Strontium, Tin, Uranium}; 200.8_HG - ICPMS {Mercury}; Chromium Hex - 7196;
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta}; Strontium-89,90 -- Total Sr;

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Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		F11-159-021	PAGE 1 OF 2
COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-1667	PROJECT COORDINATOR: LUKE, SN	PRICE CODE: C01
SAMPLING LOCATION: 100-K-63 Excavation Area Sample #8	PROJECT DESIGNATION: 100-K-63 KW Floodplain Verification Sampling (Waste Area A1)- Soil		SAF NO.: F11-159	AIR QUALITY: ☐
ICE CHEST NO.: GWS - 023	FIELD LOGBOOK NO.: HNF-N-507-23.	ACTUAL SAMPLE DEPTH: 0-1'	COA: 302676ES10	METHOD OF SHIPMENT: GOVERNMENT VEHICLE
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A	

DATA TURNAROUND: 12 Days / 12 Days

ORIGINAL

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool~4C	None	None
HOLDING TIME	6 Months	6 Months	6 Months
TYPE OF CONTAINER	G/P	P	G/P
NO. OF CONTAINER(S)	1	1	1
VOLUME	250mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME			
B2FXB2 3	SOIL	8/18/11	0954	✓	✓	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS
RELINQUISHED BY/REMOVED FROM: FM Hall CHPRC	DATE/TIME: 8/18/11 1250	RECEIVED BY/STORED IN: [illegible]	DATE/TIME: 8/18/11 1250	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	
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

PRINTED ON 7/25/2011

A-6003-618 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-159-021	PAGE 2 OF 2
COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-1667	PROJECT COORDINATOR: LUKE, SN	PRICE CODE: C01	DATA TURNAROUND: 12 Days / 12 Days
SAMPLING LOCATION: 100-K-63 Excavation Area Sample #8	PROJECT DESIGNATION: 100-K-63 KW Floodplain Verification Sampling (Waste Area AJ)- Soil		SAF NO.: F11-159	AIR QUALITY: ☐	
ICE CHEST NO.: GWS-023	FIELD LOGBOOK NO.: HNF-N-507-23.	ACTUAL SAMPLE DEPTH: 0-11	COA: 302676ES10	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402579ES20.☐☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Silver, Vanadium, Zinc}; ICP/MS - 200.8 (Add-on) {Arsenic, Beryllium, Boron, Lead, Molybdenum, Selenium, Strontium, Tin, Uranium}; 200.8_HG - ICPMS {Mercury}; Chromium Hex - 7196;
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta}; Strontium-89,90 -- Total Sr;

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Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-159-022 — PAGE 1 OF 2

COLLECTOR: FM Hall, CHPRC	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-1667	PROJECT COORDINATOR: LUKE, SN
PRICE CODE: C01	DATA TURNAROUND: 12 Days / 12 Days	SAMPLING LOCATION: 100-K-63 Excavation Area Sample #9	PROJECT DESIGNATION: 100-K-63 KW Floodplain Verification Sampling (Waste Area AJ)- Soil
SAF NO.: F11-159	AIR QUALITY:	ICE CHEST NO.: GW3-023	FIELD LOGBOOK NO.: HNF-N-507-23
ACTUAL SAMPLE DEPTH: 0-1'	COA: 302676ES10	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A	BILL OF LADING/AIR BILL NO.: N/A	

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, Se=Sediment, T=Tissue, V=Vegetation, W=Water, Wi=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool~4C	None	None
HOLDING TIME	6 Months	6 Months	6 Months
TYPE OF CONTAINER	G/P	P	G/P
NO. OF CONTAINER(S)	1	1	1
VOLUME	250mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME			
B2FXB3 4	SOIL	8-18-11	1010	✓	✓	✓

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	1250 8-18-11	[illegible]	1250 8-18-11

SPECIAL INSTRUCTIONS: SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

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

PRINTED ON 7/25/2011 — A-6003-618 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-159-022	PAGE 2 OF 2
COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-1667	PROJECT COORDINATOR: LUKE, SN	PRICE CODE: C01	DATA TURNAROUND: 12 Days / 12 Days
SAMPLING LOCATION: 100-K-63 Excavation Area Sample #9	PROJECT DESIGNATION: 100-K-63 KW Floodplain Verification Sampling (Waste Area A)- Soil		SAF NO.: F11-159	AIR QUALITY: ☐	
ICE CHEST NO.: GWS-023	FIELD LOGBOOK NO.: HNF-N-507-23	ACTUAL SAMPLE DEPTH: G-1'	COA: 302676ES10	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402579ES20.□□** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Silver, Vanadium, Zinc}; ICP/MS - 200.8 (Add-on) {Arsenic, Beryllium, Boron, Lead, Molybdenum, Selenium, Strontium, Tin, Uranium}; 200.8_HG - ICPMS {Mercury}; Chromium Hex - 7196;
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta}; Strontium-89,90 -- Total Sr;

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Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-159-002 — PAGE 1 OF 2

COLLECTOR: FM Hall, CHPRC	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-1667	PROJECT COORDINATOR: LUKE, SN
PRICE CODE: C01	DATA TURNAROUND: 12 Days / 12 Days	AIR QUALITY: ☐	SAMPLING LOCATION: 100-K-63 Excavation Area Sample #10
PROJECT DESIGNATION: 100-K-63 KW Floodplain Verification Sampling (Waste Area AJ)- Soil	SAF NO.: F11-159	ICE CHEST NO.: GWS-023	FIELD LOGBOOK NO.: HNF-N-507-23
ACTUAL SAMPLE DEPTH: 0-1'	COA: 302676ES10	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A	BILL OF LADING/AIR BILL NO.: N/A	

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool-4C	None	None
HOLDING TIME	6 Months	6 Months	6 Months
TYPE OF CONTAINER	G/P	P	G/P
NO. OF CONTAINER(S)	1	1	1
VOLUME	250mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME			
B2FX83 5	SOIL	8/18/11	1020	✓	✓	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: FM Hall CHPRC	DATE/TIME: 8/18/11 1250	RECEIVED BY/STORED IN: K Overcash-Hoeage	DATE/TIME: 8/18/11 1250
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
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 DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

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Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-159-002	PAGE 2 OF 2
COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-1667	PROJECT COORDINATOR: LUKE, SN	PRICE CODE: C01	DATA TURNAROUND: 12 Days / 12 Days
SAMPLING LOCATION: 100-K-63 Excavation Area Sample #10	PROJECT DESIGNATION: 100-K-63 KW Floodplain Verification Sampling (Waste Area A)- Soil		SAF NO.: F11-159	AIR QUALITY: ☐	
ICE CHEST NO.: GWS-023	FIELD LOGBOOK NO.: HNF-N-507-83	ACTUAL SAMPLE DEPTH: 0-1'	COA: 302676ES10	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402579FS20.□□** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Silver, Vanadium, Zinc}; ICP/MS - 200.8 (Add-on) {Arsenic, Beryllium, Boron, Lead, Molybdenum, Selenium, Strontium, Tin, Uranium}; 200.8_HG - ICPMS {Mercury}; Chromium Hex - 7196;
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta}; Strontium-89,90 -- Total Sr;

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Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-159-003 | PAGE 1 OF 2

COLLECTOR: FM Hall CHPRC

COMPANY CONTACT: LUKE, SN

TELEPHONE NO.: 372-1667

PROJECT COORDINATOR: LUKE, SN

PRICE CODE: C01

DATA TURNAROUND: 12 Days / 12 Days

SAMPLING LOCATION: 100-K-63 Excavation Area Sample #11

PROJECT DESIGNATION: 100-K-63 KW Floodplain Verification Sampling (Waste Area AJ)- Soil

SAF NO.: F11-159

AIR QUALITY: ☐

ICE CHEST NO.: GWS-023

FIELD LOGBOOK NO.: HNF-N-507-23.

ACTUAL SAMPLE DEPTH: C-1'

COA: 302676ES10

METHOD OF SHIPMENT: GOVERNMENT VEHICLE

ORIGINAL

SHIPPED TO: Waste Sampling & Characterization

OFFSITE PROPERTY NO.: N/A

BILL OF LADING/AIR BILL NO.: N/A

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool~4C	None	None
HOLDING TIME	6 Months	6 Months	6 Months
TYPE OF CONTAINER	G/P	P	G/P
NO. OF CONTAINER(S)	1	1	1
VOLUME	250mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME			
B2FX84 6	SOIL	8-18-11	1033	✓	✓	✓

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	1250 8-18-11	[illegible]	1250 8-18-11

SPECIAL INSTRUCTIONS: SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

LABORATORY SECTION: RECEIVED BY | TITLE | DATE/TIME

FINAL SAMPLE DISPOSITION: DISPOSAL METHOD | DISPOSED BY | DATE/TIME

PRINTED ON 7/25/2011

A-6003-618 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-159-003	PAGE 2 OF 2
COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-1667	PROJECT COORDINATOR: LUKE, SN	PRICE CODE: C01	DATA TURNAROUND: 12 Days / 12 Days
SAMPLING LOCATION: 100-K-63 Excavation Area Sample #11	PROJECT DESIGNATION: 100-K-63 KW Floodplain Verification Sampling (Waste Area A1)- Soil		SAF NO.: F11-159	AIR QUALITY: ☐	
ICE CHEST NO.: HNF-N-507-14 8/15/11 GWS-023	FIELD LOGBOOK NO.: HNF-N-507-23	ACTUAL SAMPLE DEPTH: 0-1'	COA: 302676ES10	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402579ES20.□□** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Silver, Vanadium, Zinc}; ICP/MS - 200.8 (Add-on) {Arsenic, Beryllium, Boron, Lead, Molybdenum, Selenium, Strontium, Tin, Uranium}; 200.8_HG - ICPMS {Mercury}; Chromium Hex - 7196;
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta}; Strontium-89,90 -- Total Sr;

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Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-159-004

PAGE 1 OF 2

COLLECTOR: FM Hall CHPRC

COMPANY CONTACT: LUKE, SN

TELEPHONE NO.: 372-1667

PROJECT COORDINATOR: LUKE, SN

PRICE CODE: C01

DATA TURNAROUND: 12 Days / 12 Days

SAMPLING LOCATION: 100-K-63 Excavation Area Sample #12

PROJECT DESIGNATION: 100-K-63 KW Floodplain Verification Sampling (Waste Area AJ)- Soil

SAF NO.: F11-159

AIR QUALITY: ☐

ICE CHEST NO.: GWS-023

FIELD LOGBOOK NO.: HNF-N-507-23

ACTUAL SAMPLE DEPTH: 0-1'

COA: 302676ES10

METHOD OF SHIPMENT: GOVERNMENT VEHICLE

ORIGINAL

SHIPPED TO: Waste Sampling & Characterization

OFFSITE PROPERTY NO.: N/A

BILL OF LADING/AIR BILL NO.: N/A

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool~4C	None	None
HOLDING TIME	6 Months	6 Months	6 Months
TYPE OF CONTAINER	G/P	P	G/P
NO. OF CONTAINER(S)	1	1	1
VOLUME	250mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME			
B2FX85	SOIL	8/18/11	1041	✓	✓	✓

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	8/18/11 1250	[illegible]	8/18/11 1250

SPECIAL INSTRUCTIONS: SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

LABORATORY SECTION: RECEIVED BY | TITLE | DATE/TIME

FINAL SAMPLE DISPOSITION: DISPOSAL METHOD | DISPOSED BY | DATE/TIME

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A-6003-618 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-159-004	PAGE 2 OF 2
COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-1667	PROJECT COORDINATOR: LUKE, SN	PRICE CODE: C01	DATA TURNAROUND: 12 Days / 12 Days
SAMPLING LOCATION: 100-K-63 Excavation Area Sample #12	PROJECT DESIGNATION: 100-K-63 KW Floodplain Verification Sampling (Waste Area AJ)- Soil		SAF NO.: F11-159	AIR QUALITY: ☐	
ICE CHEST NO.: GWS-23	FIELD LOGBOOK NO.: HNF-N-507-23	ACTUAL SAMPLE DEPTH: 0-6"	COA: 302676ES10	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402579ES20.☐☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Silver, Vanadium, Zinc}; ICP/MS - 200.8 (Add-on) {Arsenic, Beryllium, Boron, Lead, Molybdenum, Selenium, Strontium, Tin, Uranium}; 200.8_HG - ICPMS {Mercury}; Chromium Hex - 7196;
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta}; Strontium-89,90 -- Total Sr;

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Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-159-014 | PAGE 1 OF 2

COLLECTOR	FM Hall CHPRC
COMPANY CONTACT	LUKE, SN
TELEPHONE NO.	372-1667
PROJECT COORDINATOR	LUKE, SN
PRICE CODE	C01
DATA TURNAROUND	12 Days / 12 Days
AIR QUALITY	☐
SAMPLING LOCATION	100-K-63 Excavation Area Sample #21
PROJECT DESIGNATION	100-K-63 KW Floodplain Verification Sampling (Waste Area AJ)- Soil
SAF NO.	F11-159
ICE CHEST NO.	GWS-023
FIELD LOGBOOK NO.	HNF-N-507-23
ACTUAL SAMPLE DEPTH	0-1'
COA	302676ES10
METHOD OF SHIPMENT	GOVERNMENT VEHICLE
ORIGINAL	
SHIPPED TO	Waste Sampling & Characterization
OFFSITE PROPERTY NO.	N/A
BILL OF LADING/AIR BILL NO.	N/A

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool~4C	None	None
HOLDING TIME	6 Months	6 Months	6 Months
TYPE OF CONTAINER	G/P	P	G/P
NO. OF CONTAINER(S)	1	1	1
VOLUME	250mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME			
B2FX95	SOIL	8/18/11	0920	✓	✓	✓

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	8/18/11 1250		8/18/11 1260

SPECIAL INSTRUCTIONS

SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

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

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A-6003-518 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSTS REQUEST			F11-159-014	PAGE 2 OF 2
COLLECTOR: FM Hall, CHPRC	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-1667	PROJECT COORDINATOR: LUKE, SN	PRICE CODE: C01	DATA TURNAROUND: 12 Days / 12 Days
SAMPLING LOCATION: 100-K-63 Excavation Area Sample #21	PROJECT DESIGNATION: 100-K-63 KW Floodplain Verification Sampling (Waste Area AJ)- Soil		SAF NO.: F11-159	AIR QUALITY:	
ICE CHEST NO.: GWS-023	FIELD LOGBOOK NO.: HNF-N-507-23	ACTUAL SAMPLE DEPTH: 0-1'	COA: 302676ES10	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402579ES20.□□** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Silver, Vanadium, Zinc}; ICP/MS - 200.8 (Add-on) {Arsenic, Beryllium, Boron, Lead, Molybdenum, Selenium, Strontium, Tin, Uranium}; 200.8_HG - ICPMS {Mercury}; Chromium Hex - 7196;
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta}; Strontium-89,90 -- Total Sr;

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Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-159-018 — PAGE 1 OF 2

COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-1667	PROJECT COORDINATOR: LUKE, SN
SAMPLING LOCATION: 100-K-63 Excavation Area Sample #5	PROJECT DESIGNATION: 100-K-63 KW Floodplain Verification Sampling (Waste Area AJ) Soil		SAF NO.: F11-159
ICE CHEST NO.: GWS-023	FIELD LOGBOOK NO.: HNF-N-507-23	ACTUAL SAMPLE DEPTH: 0-1'	COA: 302676ES10
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A

PRICE CODE: C01 — AIR QUALITY: ☐ — DATA TURNAROUND: 12 Days / 12 Days — METHOD OF SHIPMENT: GOVERNMENT VEHICLE — **ORIGINAL**

MATRIX*: A=Air, D=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool~4C	None	None
HOLDING TIME	6 Months	6 Months	6 Months
TYPE OF CONTAINER	G/P	P	G/P
NO. OF CONTAINER(S)	1	1	1
VOLUME	250mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME			
B2FX99 9	SOIL	8/18/11	0920	✓	✓	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: FM Hall CHPRC	DATE/TIME: 8/18/11 1250	RECEIVED BY/STORED IN: K Breazeal-Kbreazeal	DATE/TIME: 8/18/11 1250
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
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 DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

PRINTED ON 7/25/2011 — A-6003-618 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-1S9-018	PAGE 2 OF 2
COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-1667	PROJECT COORDINATOR: LUKE, SN	PRICE CODE: C01	DATA TURNAROUND: 12 Days / 12 Days
SAMPLING LOCATION: 100-K-63 Excavation Area Sample #5	PROJECT DESIGNATION: 100-K-63 KW Floodplain Verification Sampling (Waste Area A1)- Soil		SAF NO.: F11-159	AIR QUALITY: ☐	
ICE CHEST NO.: GWS-023	FIELD LOGBOOK NO.: HNF-N-507-23	ACTUAL SAMPLE DEPTH: 0-1'	COA: 302676ES10	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402579ES20.□□** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Silver, Vanadium, Zinc}; ICP/MS - 200.8 (Add-on) {Arsenic, Beryllium, Boron, Lead, Molybdenum, Selenium, Strontium, Tin, Uranium}; 200.8_HG - ICPMS {Mercury}; Chromium Hex - 7196;
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta}; Strontium-89,90 -- Total Sr;

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Attachment 2
Narrative
WSCF113017

Introduction

Samples were received at the WSCF laboratory as referenced on the WSCF SAF Number Cross Reference table included in the final report. The samples were analyzed for the analytes indicated on the attached copy of the chain of custody (COC) form in accordance with the *Statement of Work (SOW), Modification No. 2 to Agreement 36587, Release 3, "FH WSCF ANALYTICAL SERVICES FOR GROUNDWATER."*

The narrative (Attachment 2) will address sample characteristics, analyses requested and general information in performance of the analytical methods. A Data Summary Report (Attachment 3) includes analytical results, a comment report detailing method abnormalities, tentatively identified peaks if applicable, method references, and Laboratory QC information as applicable. Copies of the chain of custody and sample receipt documentation are included as Attachment 4.

It should be noted that the attached chain of custody was not stamped "ICED" by the WSCF Laboratory Sample Custodian during sample receiving. However, based on procedure LO-090-403 form "NOTICE OF IMPROPER SAMPLE SUBMITTAL" was not submitted and was not stamped "NOT ICED". No anomaly was noted during sample receipt.

The following generic data qualifiers (i.e., B, D, U and J) may be applicable to this report, as appropriate

- **B** – Sample results with a concentration greater than the MDL but less than the PQL are B flagged (applies to inorganic and wet chemical analyses), as appropriate.
- **D** – Sample results are D flagged if dilution(s) were required, as appropriate.
- **J** – Sample results with a concentration greater than the MDL but less than the PQL are J flagged (applies to organic analyses), as appropriate.
- **U** – Analyzed for but not detected above limiting criteria. Relative Percent Difference (RPD) values associated with an analyte qualified with a "U" are not applicable.

Analytical Methodology for Requested Analyses

Refer to *WSCF Method References Report* for a complete listing of approved analytical methods.

Inorganic Comments

Hexavalent Chromium – The hold time requirement for this analysis was met. A Duplicate, Matrix Spike, Blank and Laboratory Control Sample were analyzed with this delivery group. Analytical Note(s):

- Matrix Spike and Post Spike recoveries are outside established laboratory limits. Affected sample results in this batch were "N" flagged.
- All other applicable QC controls are within the established limits.

Attachment 2
Narrative
WSCF113017

ICP-MS Metals – The hold time requirements for this analysis were met. A Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group. Analytical Note(s):

- Manganese – MS / MSD Relative Percent Difference (RPD) is outside established laboratory limits. The quality control report was flagged for RPD failure.
- All other applicable QC controls are within the established limits.

Radiochemistry Comments

Rad Chem – The hold time requirement for this analysis was met. A Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group. Analytical Note(s):

Tracers are used to determine chemical yield. RPD is monitored in sample duplicate and is not required for tracer recovery per SOW.

- Gamma Energy Analysis:
  - Europium-152 – Duplicate Relative Percent Difference(s) (RPD) did not meet the established laboratory limits. Duplicate Relative Percent Difference (RPD) does not apply to results below 5X the minimum detectable activity. No flags issued.
  - All other applicable QC controls are within the established limits.
- Gross Alpha / Gross Beta:
  - All applicable QC controls are within the established limits.
- Strontium-89/90:
  - Duplicate Relative Percent Difference(s) (RPD) did not meet the established laboratory limits. Duplicate Relative Percent Difference (RPD) does not apply to results below 5X the minimum detectable activity. No flags issued.
  - All applicable QC controls are within the established limits.

We certify that this data package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this data package has been authorized by the Analytical Laboratory Manager (or designee) and the Client Services representative as verified by electronic signatures shown on the WSCF ANALYTICAL RESULTS REPORT.

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-159-005

PAGE 1 OF 2

COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-1667	PROJECT COORDINATOR: LUKE, SN
SAMPLING LOCATION: 100-K-63 Excavation Area Sample #13	PROJECT DESIGNATION: 100-K-63 KW Floodplain Verification Sampling (Waste Area AJ)- Soil		SAF NO.: F11 159
ICE CHEST NO.: GWS-023	FIELD LOGBOOK NO.: HNF-N-507-23	ACTUAL SAMPLE DEPTH: 0-1'	COA: 302676ES10
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A

PRICE CODE: C01

AIR QUALITY: ☐

DATA TURNAROUND: 12 Days / 12 Days

METHOD OF SHIPMENT: GOVERNMENT VEHICLE

ORIGINAL

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

113017

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool~4C	None	None
HOLDING TIME	6 Months	6 Months	6 Months
TYPE OF CONTAINER	G/P	P	G/P
NO. OF CONTAINER(S)	1	1	1
VOLUME	250mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME			
B2FX86	SOIL	8/19/11	0655	✓	✓	✓

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	8/19/11 / 1400	M01109SSU#1	8/19/11 / 1400
M01109SSU#1	8-23-11 0930	FM Hall CHPRC	8-23-11 0930
FM Hall CHPRC	8-23-11 1005	[illegible]	8-23-11 1005

SPECIAL INSTRUCTIONS: SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

LABORATORY SECTION: RECEIVED BY | TITLE | DATE/TIME

FINAL SAMPLE DISPOSITION: DISPOSAL METHOD | DISPOSED BY | DATE/TIME

PRINTED ON 7/25/2011

A-6003-618 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-159-005	PAGE 2 OF 2
COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-1667	PROJECT COORDINATOR: LUKE, SN	PRICE CODE: C01	DATA TURNAROUND: 12 Days / 12 Days
SAMPLING LOCATION: 100-K-63 Excavation Area Sample #13	PROJECT DESIGNATION: 100-K-63 KW Floodplain Verification Sampling (Waste Area AJ)- Soil		SAF NO.: F11-159	AIR QUALITY: ☐	
ICE CHEST NO.: GWS-023	FIELD LOGBOOK NO.: HNF-N-507-23	ACTUAL SAMPLE DEPTH: 0-1'	COA: 302676ES10	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402579ES20.☐☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Silver, Vanadium, Zinc}; ICP/MS - 200.8 (Add-on) {Arsenic, Beryllium, Boron, Lead, Molybdenum, Selenium, Strontium, Tin, Uranium}; 200.8_HG - ICPMS {Mercury}; Chromium Hex - 7196;
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta}; Strontium-89,90 -- Total Sr;

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CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-159-006 — PAGE 1 OF 2

COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-1667	PROJECT COORDINATOR: LUKE, SN
PRICE CODE: C01	AIR QUALITY: ☐	DATA TURNAROUND: 12 Days / 12 Days	
SAMPLING LOCATION: 100-K-63 Excavation Area Sample #14	PROJECT DESIGNATION: 100-K-63 KW Floodplain Verification Sampling (Waste Area AJ)- Soil	SAF NO.: F11-159	
ICE CHEST NO.: GW3-023	FIELD LOGBOOK NO.: HNF-N-507-23.	ACTUAL SAMPLE DEPTH: 0-1'	COA: 302676ES10
METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL		
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A	BILL OF LADING/AIR BILL NO.: N/A	

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool~4C	None	None
HOLDING TIME	6 Months	6 Months	6 Months
TYPE OF CONTAINER	G/P	P	G/P
NO. OF CONTAINER(S)	1	1	1
VOLUME	250mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.		MATRIX*	SAMPLE DATE	SAMPLE TIME			
B2FX87	2	SOIL	8/19/11	0703	✓	✓	✓

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	8/19/11 / 1400	M01109 SSU #1	8/19/11 / 1406
M01109 SSU#1	8-23-11 0930	FM Hall CHPRC	8-23-11 0930
FM Hall CHPRC	8-23-11 / 005	Victor Bin	8-23-11 / 005

SPECIAL INSTRUCTIONS: SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

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

PRINTED ON 7/25/2011 — A-6003-618 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-159-006	PAGE 2 OF 2
COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-1667	PROJECT COORDINATOR: LUKE, SN	PRICE CODE: C01	DATA TURNAROUND: 12 Days / 12 Days
SAMPLING LOCATION: 100-K-63 Excavation Area Sample #14	PROJECT DESIGNATION: 100-K-63 KW Floodplain Verification Sampling (Waste Area A1)- Soil		SAF NO.: F11-159	AIR QUALITY: ☐	
ICE CHEST NO.: GWS-023	FIELD LOGBOOK NO.: HNF-N-507-23	ACTUAL SAMPLE DEPTH: 0-1'	COA: 302676ES10	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402579ES20.☐☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Silver, Vanadium, Zinc}; ICP/MS - 200.8 (Add-on) {Arsenic, Beryllium, Boron, Lead, Molybdenum, Selenium, Strontium, Tin, Uranium}; 200.8_HG - ICPMS {Mercury}; Chromium Hex - 7196;
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta}; Strontium-89,90 -- Total Sr;

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Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-159-007 | PAGE 1 OF 2

COLLECTOR: FM Hall, CHPRC

COMPANY CONTACT: LUKE, SN

TELEPHONE NO.: 372-1667

PROJECT COORDINATOR: LUKE, SN

PRICE CODE: C01

DATA TURNAROUND: 12 Days / 12 Days

SAMPLING LOCATION: 100-K-63 Excavation Area Sample #15

PROJECT DESIGNATION: 100-K-63 KW Floodplain Verification Sampling (Waste Area AJ)- Soil

SAF NO.: F11-159

AIR QUALITY: ☐

ICE CHEST NO.: 6W3-023

FIELD LOGBOOK NO.: HNF-N-807-23

ACTUAL SAMPLE DEPTH: 0-1'

COA: 302676ES10

METHOD OF SHIPMENT: GOVERNMENT VEHICLE

ORIGINAL

SHIPPED TO: Waste Sampling & Characterization

OFFSITE PROPERTY NO.: N/A

BILL OF LADING/AIR BILL NO.: N/A

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool~4C	None	None
HOLDING TIME	6 Months	6 Months	6 Months
TYPE OF CONTAINER	G/P	P	G/P
NO. OF CONTAINER(S)	1	1	1
VOLUME	250mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.		MATRIX*	SAMPLE DATE	SAMPLE TIME			
B2FX88	3	SOIL	8/19/11	0728	✓	✓	✓

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall, CHPRC	8/19/11 1400	M01109SSU#1	8/19/11 1400
M01109SSU#1	8-23-11 0930	FM Hall, CHPRC	8-23-11 0930
FM Hall, CHPRC	8-23-11 1005	Victor Bing	8-23-11 1005

SPECIAL INSTRUCTIONS: SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

LABORATORY SECTION: RECEIVED BY | TITLE | DATE/TIME

FINAL SAMPLE DISPOSITION: DISPOSAL METHOD | DISPOSED BY | DATE/TIME

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A-6003-618 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-159-007	PAGE 2 OF 2
COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-1667	PROJECT COORDINATOR: LUKE, SN	PRICE CODE: C01	DATA TURNAROUND: 12 Days / 12 Days
SAMPLING LOCATION: 100-K-63 Excavation Area Sample #15	PROJECT DESIGNATION: 100-K-63 KW Floodplain Verification Sampling (Waste Area AJ)- Soil		SAF NO.: F11-159	AIR QUALITY: [ ]	
ICE CHEST NO.: GWS-023	FIELD LOGBOOK NO.: HNF-N-507-23	ACTUAL SAMPLE DEPTH: 0-6"	COA: 302676ES10	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402579ES20.□□** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Silver, Vanadium, Zinc}; ICP/MS - 200.8 (Add-on) {Arsenic, Beryllium, Boron, Lead, Molybdenum, Selenium, Strontium, Tin, Uranium}; 200.8_HG - ICPMS {Mercury}; Chromium Hex - 7196;
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta}; Strontium-89,90 -- Total Sr;

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CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-159-008 — PAGE 1 OF 2

COLLECTOR: FM Hall, CHPRC	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-166 /	PROJECT COORDINATOR: LUKE, SN
PRICE CODE: C01	DATA TURNAROUND: 12 Days / 12 Days	AIR QUALITY: ☐	SAMPLING LOCATION: 100-K-63 Excavation Area Sample #16
PROJECT DESIGNATION: 100-K-63 KW Floodplain Verification Sampling (Waste Area AJ) Soil	SAF NO.: F11-159	ICE CHEST NO.: GWS-023	FIELD LOGBOOK NO.: HNF-N-507-23
ACTUAL SAMPLE DEPTH: 0-1'	COA: 302676ES10	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A	BILL OF LADING/AIR BILL NO.: N/A	

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool~4C	None	None
HOLDING TIME	6 Months	6 Months	6 Months
TYPE OF CONTAINER	G/P	P	G/P
NO. OF CONTAINER(S)	1	1	1
VOLUME	250mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME			
B2FX89 4	SOIL	8/19/11	0738	✓	—	—

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall	8/19/11 1400	MO1109SSU #1	8/19/11 1400
MO1109SSU #1	8-23-11 0930	FM Hall CHPRC	8-23-11 0930
FM Hall	8-23-11 1005	Victor Sing	8-23-11 1005

SPECIAL INSTRUCTIONS: SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

LABORATORY SECTION — RECEIVED BY — TITLE — DATE/TIME

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

PRINTED ON 7/25/2011 — A-6003-618 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-159-008	PAGE 2 OF 2
COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-1667	PROJECT COORDINATOR: LUKE, SN	PRICE CODE: C01	DATA TURNAROUND: 12 Days / 12 Days
SAMPLING LOCATION: 100-K-63 Excavation Area Sample #16	PROJECT DESIGNATION: 100-K-63 KW Floodplain Verification Sampling (Waste Area A1)- Soil		SAF NO.: F11-159	AIR QUALITY: ☐	
ICE CHEST NO.: GWS-023	FIELD LOGBOOK NO.: HNF-N-507-23	ACTUAL SAMPLE DEPTH: 0-1'	COA: 302676ES10	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402579ES20.□□** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Silver, Vanadium, Zinc}; ICP/MS - 200.8 (Add-on) {Arsenic, Beryllium, Boron, Lead, Molybdenum, Selenium, Strontium, Tin, Uranium}; 200.8_HG - ICPMS {Mercury}; Chromium Hex - 7196;
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta}; Strontium-89,90 -- Total Sr;

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CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**

COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-1667	PROJECT COORDINATOR: LUKE, SN
SAMPLING LOCATION: 100-K-63 Excavation Area Sample #17	PROJECT DESIGNATION: 100-K-63 KW Floodplain Verification Sampling (Waste Area AJ)- Soil		SAF NO.: F11-159
ICE CHEST NO.: GWS-023	FIELD LOGBOOK NO.: HNF-N-807-23	ACTUAL SAMPLE DEPTH: 0-1'	COA: 302676ES10
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A

F11-159-009 — PAGE 1 OF 2

PRICE CODE: C01 — DATA TURNAROUND: 12 Days / 12 Days

AIR QUALITY: ☐ — METHOD OF SHIPMENT: GOVERNMENT VEHICLE

ORIGINAL

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool-4C	None	None
HOLDING TIME	6 Months	6 Months	6 Months
TYPE OF CONTAINER	G/P	P	G/P
NO. OF CONTAINER(S)	1	1	1
VOLUME	250mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME			
B2FX90 5	SOIL	8/19/11	0800	✓	✓	✓

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	8/19/11 1400	M0110955U#1	8/19/11 1400
M0110955U#1	8-23-11 0930	FM Hall CHPRC	8-23-11 0930
FM Hall CHPRC	8-23-11 1005	VIL TOV	8-23-11 1005

SPECIAL INSTRUCTIONS: SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

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

PRINTED ON 7/25/2011 — A-6003-618 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-159-009	PAGE 2 OF 2
COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-1667	PROJECT COORDINATOR: LUKE, SN	PRICE CODE: C01	DATA TURNAROUND: 12 Days / 12 Days
SAMPLING LOCATION: 100-K-63 Excavation Area Sample #17	PROJECT DESIGNATION: 100-K-63 KW Floodplain Verification Sampling (Waste Area A1)- Soil		SAF NO.: F11-159	AIR QUALITY: ☐	
ICE CHEST NO.: 6W5-023	FIELD LOGBOOK NO.: HNF-N-507-23	ACTUAL SAMPLE DEPTH: 0-1'	COA: 302676ES10	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402579ES20.☐☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Silver, Vanadium, Zinc}; ICP/MS - 200.8 (Add-on) {Arsenic, Beryllium, Boron, Lead, Molybdenum, Selenium, Strontium, Tin, Uranium}; 200.8_HG - ICPMS {Mercury}; Chromium Hex - 7196;
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta}; Strontium-89,90 -- Total Sr;

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Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-159-010

PAGE 1 OF 2

COLLECTOR: FM Hall CHPRC

COMPANY CONTACT: LUKE, SN

TELEPHONE NO.: 372-1667

PROJECT COORDINATOR: LUKE, SN

PRICE CODE: C01

DATA TURNAROUND: 12 Days / 12 Days

SAMPLING LOCATION: 100-K-63 Excavation Area Sample #18

PROJECT DESIGNATION: 100-K-63 KW Floodplain Verification Sampling (Waste Area AJ)- Soil

SAF NO.: F11-159

AIR QUALITY: ☐

ICE CHEST NO.: GWS-023

FIELD LOGBOOK NO.: HNF-N-507-23

ACTUAL SAMPLE DEPTH: 0-1

COA: 302676ES10

METHOD OF SHIPMENT: GOVERNMENT VEHICLE

ORIGINAL

SHIPPED TO: Waste Sampling & Characterization

OFFSITE PROPERTY NO.: N/A

BILL OF LADING/AIR BILL NO.: N/A

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE:

PRESERVATION	Cool~4C	None	None
HOLDING TIME	6 Months	6 Months	6 Months
TYPE OF CONTAINER	G/P	P	G/P
NO. OF CONTAINER(S)	1	1	1
VOLUME	250mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.		MATRIX*	SAMPLE DATE	SAMPLE TIME			
B2FX91	LD	SOIL	8/19/11	0806	✓	✓	—

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall	8/19/11 1400	M01109SSU#1	8/19/11 1400
M01109 SSU#1	8-23-11 0930	FM Hall CHPRC	8-23-11 0930
FM Hall CHPRC	8-23-11 1005	Victor Spry	8-23-11 1005

SPECIAL INSTRUCTIONS: SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

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

PRINTED ON 7/25/2011

A-6003-618 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-159-010	PAGE 2 OF 2
COLLECTOR: FM Hall, CHPRC	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-1667	PROJECT COORDINATOR: LUKE, SN	PRICE CODE: C01	DATA TURNAROUND: 12 Days / 12 Days
SAMPLING LOCATION: 100-K-63 Excavation Area Sample #18	PROJECT DESIGNATION: 100-K-63 KW Floodplain Verification Sampling (Waste Area AJ)- Soil		SAF NO.: F11-159	AIR QUALITY: ☐	
ICE CHEST NO.: GW5-023	FIELD LOGBOOK NO.: HNF-N-507-23	ACTUAL SAMPLE DEPTH: 0-1'	COA: 302676E510	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402579ES20.□□** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Silver, Vanadium, Zinc}; ICP/MS - 200.8 (Add-on) {Arsenic, Beryllium, Boron, Lead, Molybdenum, Selenium, Strontium, Tin, Uranium}; 200.8_HG - ICPMS {Mercury}; Chromium Hex - 7196;
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta}; Strontium-89,90 -- Total Sr;

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CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-159-011 — PAGE 1 OF 2

COLLECTOR: FM Hall CHPRC

SAMPLING LOCATION: 100-K-63 Excavation Area Sample #19

ICE CHEST NO.: GW3-023

SHIPPED TO: Waste Sampling & Characterization

COMPANY CONTACT: LUKE, SN

TELEPHONE NO.: 372-1667

PROJECT DESIGNATION: 100-K-63 KW Floodplain Verification Sampling (Waste Area AJ)- Soil

FIELD LOGBOOK NO.: HNF-N-507-23

ACTUAL SAMPLE DEPTH: 0-1'

OFFSITE PROPERTY NO.: N/A

PROJECT COORDINATOR: LUKE, SN

SAF NO.: F11-159

COA: 302676ES10

BILL OF LADING/AIR BILL NO.: N/A

PRICE CODE: C01

AIR QUALITY: [ ]

METHOD OF SHIPMENT: GOVERNMENT VEHICLE

DATA TURNAROUND: 12 Days / 12 Days

ORIGINAL

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool-4C	None	None
HOLDING TIME	6 Months	6 Months	6 Months
TYPE OF CONTAINER	G/P	P	G/P
NO. OF CONTAINER(S)	1	1	1
VOLUME	250mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.		MATRIX*	SAMPLE DATE	SAMPLE TIME			
B2FX92	7	SOIL	8/19/11	0837	✓	✓	✓

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	8/19/11 1400	M01109SSU#1	8/19/11 1400
M01109SSU#1	8-23-11 0930	FM Hall CHPRC	8-23-11 0930
FM Hall CHPRC	8-23-11 1005	VLC for	8-23-11 1005

SPECIAL INSTRUCTIONS: SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

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

PRINTED ON 7/25/2011 — A-6003-618 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-159-011 — PAGE 2 OF 2

COLLECTOR FM Hall CHPRC	**COMPANY CONTACT** LUKE, SN	**TELEPHONE NO.** 372-1667	**PROJECT COORDINATOR** LUKE, SN
SAMPLING LOCATION 100-K-63 Excavation Area Sample #19	**PROJECT DESIGNATION** 100-K-63 KW Floodplain Verification Sampling (Waste Area A)) Soil		**SAF NO.** F11-159
ICE CHEST NO. GWS-023	**FIELD LOGBOOK NO.** HNF-N-507-23	**ACTUAL SAMPLE DEPTH** 0-1'	**COA** 302676ES10
SHIPPED TO Waste Sampling & Characterization	**OFFSITE PROPERTY NO.** N/A		**BILL OF LADING/AIR BILL NO.** N/A

PRICE CODE C01 — **AIR QUALITY** ☐ — **DATA TURNAROUND** 12 Days / 12 Days — **METHOD OF SHIPMENT** GOVERNMENT VEHICLE — **ORIGINAL**

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402579ES20.☐☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKT applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Silver, Vanadium, Zinc}; ICP/MS - 200.8 (Add-on) {Arsenic, Beryllium, Boron, Lead, Molybdenum, Selenium, Strontium, Tin, Uranium}; 200.8_HG - ICPMS {Mercury}; Chromium Hex - 7196;
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta}; Strontium-89,90 -- Total Sr;

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CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-159-013 | PAGE 1 OF 2

COLLECTOR: FM Hall, CHPRC

COMPANY CONTACT: LUKE, SN

TELEPHONE NO.: 372-1667

PROJECT COORDINATOR: LUKE, SN

PRICE CODE: C01

DATA TURNAROUND: 12 Days / 12 Days

SAMPLING LOCATION: 100-K-63 Excavation Area Sample #20

PROJECT DESIGNATION: 100-K-63 KW Floodplain Verification Sampling (Waste Area AJ)- Soil

SAF NO.: F11-159

AIR QUALITY: ☐

ICE CHEST NO.: GWS-023

FIELD LOGBOOK NO.: HNF-N-507-23.

ACTUAL SAMPLE DEPTH: 0-1'

COA: 302676ES10

METHOD OF SHIPMENT: GOVERNMENT VEHICLE

ORIGINAL

SHIPPED TO: Waste Sampling & Characterization

OFFSITE PROPERTY NO.: N/A

BILL OF LADING/AIR BILL NO.: N/A

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool~4C	None	None
HOLDING TIME	6 Months	6 Months	6 Months
TYPE OF CONTAINER	G/P	P	G/P
NO. OF CONTAINER(S)	1	1	1
VOLUME	250mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.		MATRIX*	SAMPLE DATE	SAMPLE TIME	[redacted]		
B2FX94	8	SOIL	8/19/11	0840	✓	✓	✓

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall, CHPRC	8/19/11 1400	M01109SSU#1	8/19/11 1400
M01109SSU#1	8-23-11 0930	FM Hall, CHPRC	8-23-11 0930
FM Hall, CHPRC	8-23-11 1005	Victor Bing	8-23-11 1005

SPECIAL INSTRUCTIONS: SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

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

PRINTED ON 7/25/2011

A-6033-618 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-159-013	PAGE 2 OF 2
COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-1667	PROJECT COORDINATOR: LUKE, SN	PRICE CODE: C01	DATA TURNAROUND: 12 Days / 12 Days
SAMPLING LOCATION: 100-K-63 Excavation Area Sample #20	PROJECT DESIGNATION: 100-K-63 KW Floodplain Verification Sampling (Waste Area A) - Soil		SAF NO.: F11-159	AIR QUALITY: ☐	
ICE CHEST NO.: GWS-023	FIELD LOGBOOK NO.: HNF-N-507-23	ACTUAL SAMPLE DEPTH: 0-1'	COA: 302676ES10	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402579ES20.□□** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Silver, Vanadium, Zinc}; ICP/MS - 200.8 (Add-on) {Arsenic, Beryllium, Boron, Lead, Molybdenum, Selenium, Strontium, Tin, Uranium}; 200.8_HG - ICPMS {Mercury}; Chromium Hex - 7196;
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta}; Strontium-89,90 – Total Sr;

PRINTED ON 7/25/2011 A-6003-610 (REV 2)

Appendix 5

Data Validation Supporting Documentation

VALIDATION LEVEL:	A	B	(C)	D	E
PROJECT: 100-K Project, Waste Site 100-K-63, Excavation Area			DATA PACKAGE: VSR11-056		
VALIDATOR: Carl Schloesslin		LAB: WSCF		DATE: 9-12-2011	
			SDG: WSCF-112993, -113002, -113017		
ANALYSES PERFORMED					
Anions/IC	TOC	TOX	TPH-418.1	Oil and Grease	Alkalinity
Ammonia	BOD/COD	Chloride	Chromium-VI X	pH	NO_3/NO_2
Sulfate	TDS	TKN	Phosphate	Cyanide	

SAMPLES/MATRIX Soil samples

SDG WSCF112993: B2FX82, B2FX93, B2FX96, B2FX97, B2FX98

SDG WSCF113002: B2FXB0, B2FXB1, B2FXB2, B2FXB3, B2FX83, B2FX84, B2FX85, B2FX95, B2FX99

SDG WSCF113017: B2FX86, B2FX87, B2FX88, B2FX89, B2FX90, B2FX91, B2FX92, B2FX94

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

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

Comments: None

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:

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:

None

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

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

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

Spike 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:

WSCF113002 & WSCF113017: Batch 188974 Cr(VI) MS %R = 38%

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:

None

6. HOLDING TIMES (all levels)

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

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

Comments: None

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: None

Appendix 6

Additional Documentation Requested By Client

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF112993

QC Batch 188844
Associated Samples 112993001, 112993002, 112993003, 112993004, 112993005

Test Hexavalent chromium

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #63676**							
Hexavalent chromium	18540-29-9		<0.098	ug/g					U	08/24/11
LCS			**QC Sample #63677**							
Hexavalent chromium	18540-29-9		4.01	ug/g	101.2	80 - 120				08/24/11
DUP			**QC Sample #63678**							
			Original 112982001							
Hexavalent chromium	18540-29-9		<0.088	ug/g			25.50	30	U	08/24/11
MS			**QC Sample #63679**							
			Original 112982001							
Hexavalent chromium	18540-29-9		3.34	ug/g	85.3	75 - 125				08/24/11
PSTSPK			**QC Sample #63680**							
Hexavalent chromium	18540-29-9		0.0342	ug/g	68.4	85 - 115			N	08/24/11
IMS			**QC Sample #63681**							
			Original 112982001							
Hexavalent chromium	18540-29-9		318	ug/g	94.2	75 - 125			D	08/24/11

Batch QC List

Attention Michael Neely
Department Inorganic

Group # WSCF113002

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
188844	188846	3	BLANK	63676	BLANK		Hexavalent chromium
188844	188846	4	LCS	63677	LCS		Hexavalent chromium
188844	188846	5	DUP	63678	B2H038(112982001DUP)	112982001	Hexavalent chromium
188844	188846	6	MS	63679	B2H038(112982001MS)	112982001	Hexavalent chromium
188844	188846	7	PSTSPK	63680	PSTSPK		Hexavalent chromium
188844	188846	8	IMS	63681	B2H038(112982001IMS)	112982001	Hexavalent chromium
188844	188846	24	SAMPLE	113002001	B2FXB0		Hexavalent chromium
188844	188846	25	SAMPLE	113002002	B2FXB1		Hexavalent chromium
188844	188846	26	SAMPLE	113002003	B2FXB2		Hexavalent chromium
188844	188846	27	SAMPLE	113002004	B2FXB3		Hexavalent chromium
188844	188846	28	SAMPLE	113002005	B2FX83		Hexavalent chromium
188844	188846	29	SAMPLE	113002006	B2FX84		Hexavalent chromium
188860	188861	4	BLANK	63695	BLANK		ICP-2008 MS All possible metal
188860	188861	5	LCS	63696	LCS		ICP-2008 MS All possible metal
188860	188861	6	SAMPLE	113002001	B2FXB0		ICP-2008 MS All possible metal
188860	188861	7	MS	63697	B2FXB0(113002001MS)	113002001	ICP-2008 MS All possible metal
188860	188861	8	MSD	63698	B2FXB0(113002001MSD)	113002001	ICP-2008 MS All possible metal
188860	188861	9	SAMPLE	113002002	B2FXB1		ICP-2008 MS All possible metal
188860	188861	10	SAMPLE	113002003	B2FXB2		ICP-2008 MS All possible metal
188860	188861	11	SAMPLE	113002004	B2FXB3		ICP-2008 MS All possible metal
188860	188861	12	SAMPLE	113002005	B2FX83		ICP-2008 MS All possible metal
188860	188861	13	SAMPLE	113002006	B2FX84		ICP-2008 MS All possible metal
188860	188861	16	SAMPLE	113002007	B2FX85		ICP-2008 MS All possible metal

Batch QC List

Attention Michael Neely
Department Inorganic

Group # WSCF113002

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
188860	188861	17	SAMPLE	113002008	B2FX95		ICP-2008 MS All possible metal
188860	188861	18	SAMPLE	113002009	B2FX99		ICP-2008 MS All possible metal
188972	188974	3	BLANK	63859	BLANK		Hexavalent chromium
188972	188974	4	LCS	63860	LCS		Hexavalent chromium
188972	188974	5	DUP	63861	B2FX86(113017001DUP)	113017001	Hexavalent chromium
188972	188974	6	MS	63862	B2FX86(113017001MS)	113017001	Hexavalent chromium
188972	188974	7	PSTSPK	63863	PSTSPK		Hexavalent chromium
188972	188974	8	IMS	63864	B2FX86(113017001IMS)	113017001	Hexavalent chromium
188972	188974	17	SAMPLE	113002007	B2FX85		Hexavalent chromium
188972	188974	18	SAMPLE	113002008	B2FX95		Hexavalent chromium
188972	188974	20	SAMPLE	113002009	B2FX99		Hexavalent chromium

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF113002

QC Batch 188844 **Test** Hexavalent chromium
Associated Samples 113002001, 113002002, 113002003, 113002004, 113002005, 113002006

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #63676**							
Hexavalent chromium	18540-29-9		<0.098	ug/g					U	08/24/11
LCS			**QC Sample #63677**							
Hexavalent chromium	18540-29-9		4.01	ug/g	101.2	80 - 120				08/24/11
DUP			**QC Sample #63678**							
			Original 112982001							
Hexavalent chromium	18540-29-9		<0.088	ug/g			25.50	30	U	08/24/11
MS			**QC Sample #63679**							
			Original 112982001							
Hexavalent chromium	18540-29-9		3.34	ug/g	85.3	75 - 125				08/24/11
PSTSPK			**QC Sample #63680**							
Hexavalent chromium	18540-29-9		0.0342	ug/g	68.4	85 - 115			N	08/24/11
IMS			**QC Sample #63681**							
			Original 112982001							
Hexavalent chromium	18540-29-9		318	ug/g	94.2	75 - 125			D	08/24/11

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF113002

QC Batch 188972
Associated Samples 113002007, 113002008, 113002009

Test Hexavalent chromium

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #63859**							
Hexavalent chromium	18540-29-9		<0.099	ug/g					U	08/26/11
LCS			**QC Sample #63860**							
Hexavalent chromium	18540-29-9		3.88	ug/g	98.6	80 - 120				08/26/11
DUP			**QC Sample #63861**							
			Original 113017001							
Hexavalent chromium	18540-29-9		<0.098	ug/g			-91666.7	30	U	08/26/11
MS			**QC Sample #63862**							
			Original 113017001							
Hexavalent chromium	18540-29-9		1.51	ug/g	38.1	75 - 125			N	08/26/11
PSTSPK			**QC Sample #63863**							
Hexavalent chromium	18540-29-9		0.0367	ug/g	73.4	85 - 115			N	08/26/11
IMS			**QC Sample #63864**							
			Original 113017001							
Hexavalent chromium	18540-29-9		258	ug/g	80.9	75 - 125			D	08/26/11

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF113017

QC Batch 188972 **Test** Hexavalent chromium
Associated Samples 113017001, 113017002, 113017003, 113017004, 113017005, 113017006, 113017007, 113017008

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #63859**							
Hexavalent chromium	18540-29-9		<0.099	ug/g					U	08/26/11
LCS			**QC Sample #63860**							
Hexavalent chromium	18540-29-9		3.88	ug/g	98.6	80 - 120				08/26/11
DUP			**QC Sample #63861**							
			Original 113017001							
Hexavalent chromium	18540-29-9	<0.099	<0.10	ug/g			-91666.7	30	U	08/26/11
MS			**QC Sample #63862**							
			Original 113017001							
Hexavalent chromium	18540-29-9	<0.099	1.51	ug/g	38.1	75 - 125			N	08/26/11
PSTSPK			**QC Sample #63863**							
Hexavalent chromium	18540-29-9		0.0367	ug/g	73.4	85 - 115			N	08/26/11
IMS			**QC Sample #63864**							
			Original 113017001							
Hexavalent chromium	18540-29-9	<0.099	258	ug/g	80.9	75 - 125			D	08/26/11

Date: 12 September 2011
To: CH2M Hill (technical representative)
From: Analytical Quality Associates, Inc.
Project: 100-K Project, Waste Site 100-K-63, Excavation Area
Subject: Radiochemical - Sample Data Groups (SDGs) WSCF112993, WSCF113002 and WSCF113017

INTRODUCTION

This memorandum presents the results of data validation for SDGs WSCF112993, WSCF113002 and WSCF113017 prepared by WSCF Analytical Laboratories. A list of samples validated along with the analytical methods is provided in the following table.

Sample ID	Sample Date	Media	Validation Level	Analytical Methods
B2FX82	8/17/2011	Soil	C	Gross αβ, Gamma, Sr-89/90
B2FX93	8/17/2011	Soil	C	Gross αβ, Gamma, Sr-89/90
B2FX96	8/17/2011	Soil	C	Gross αβ, Gamma, Sr-89/90
B2FX97	8/17/2011	Soil	C	Gross αβ, Gamma, Sr-89/90
B2FX98	8/17/2011	Soil	C	Gross αβ, Gamma, Sr-89/90
B2FXB0	8/18/2011	Soil	C	Gross αβ, Gamma, Sr-89/90
B2FXB1	8/18/2011	Soil	C	Gross αβ, Gamma, Sr-89/90
B2FXB2	8/18/2011	Soil	C	Gross αβ, Gamma, Sr-89/90
B2FXB3	8/18/2011	Soil	C	Gross αβ, Gamma, Sr-89/90
B2FX83	8/18/2011	Soil	C	Gross αβ, Gamma, Sr-89/90
B2FX84	8/18/2011	Soil	C	Gross αβ, Gamma, Sr-89/90
B2FX85	8/18/2011	Soil	C	Gross αβ, Gamma, Sr-89/90
B2FX95	8/18/2011	Soil	C	Gross αβ, Gamma, Sr-89/90
B2FX99	8/18/2011	Soil	C	Gross αβ, Gamma, Sr-89/90
B2FX86	8/19/2011	Soil	C	Gross αβ, Gamma, Sr-89/90
B2FX87	8/19/2011	Soil	C	Gross αβ, Gamma, Sr-89/90
B2FX88	8/19/2011	Soil	C	Gross αβ, Gamma, Sr-89/90
B2FX89	8/19/2011	Soil	C	Gross αβ, Gamma, Sr-89/90
B2FX90	8/19/2011	Soil	C	Gross αβ, Gamma, Sr-89/90
B2FX91	8/19/2011	Soil	C	Gross αβ, Gamma, Sr-89/90
B2FX92	8/19/2011	Soil	C	Gross αβ, Gamma, Sr-89/90
B2FX94	8/19/2011	Soil	C	Gross αβ, Gamma, Sr-89/90

Data validation was conducted in accordance with the CHPRC validation statement of work and the 100 Area Remedial Action Sampling and Analysis Plan, DOE/RL-96-22, Rev. 5 (SAP). 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 and Sample Preservation**

Holding times are calculated from Chain-of-Custody forms to determine the validity of the results. The maximum holding time for radiochemical analysis is 180 days. There are no specific preservation requirements for radiochemical soil analysis.

The samples were analyzed within the prescribed holding times.

- **Blanks**

The blank data results are reviewed to assess the extent of contamination introduced through sampling, sample preparation, and analysis.

Laboratory Blanks

All laboratory blank results were acceptable.

Trip Blanks

No trip blanks were submitted for validation.

Field Blanks

No field blanks were submitted for validation.

Equipment Blanks

All equipment blank results were acceptable with the following exception. Sr-89/90 was detected in equipment blank B2FX96.

- **Accuracy**

Accuracy is evaluated by reviewing matrix spike sample results, laboratory control sample results, and chemical recovery factors. Chemical recovery factors are determined through use of a carrier or tracer and provide assessment of the chemical separation process that is affected by the laboratory procedure, sample matrix, and/or interference. Chemical recovery factors are used to correct sample concentration, uncertainty, and MDC results. According to the SAP, the laboratory control sample accuracy limits are 70% to 130%. The matrix spike sample accuracy limits are ones specified by the DV procedure. The limits for reported analytes not listed in the SAP are specified by the DV procedure.

Matrix Spike (MS) Samples

MS analyses are not required for the analytical methods performed.

Laboratory Control Samples (LCSs)

All LCS recoveries were acceptable.

Carrier/Tracer Recovery Factors

All carrier/tracer recovery factors were acceptable.

- **Precision**

Precision is evaluated by reviewing laboratory duplicate, field duplicate, and field split sample results. These QC results provide information on the laboratory reproducibility and whether sampling activities are adequate to acquire consistent sample results. According to the SAP, the relative percent difference (RPD) limits are ±30%. The RPD limits for reported analytes not listed in the SAP are specified by the DV procedure. When duplicate RPDs exceed the limits and have associated results <5X the MDCs the precision limits are ones specified by the DV procedure.

Laboratory Duplicate Samples

All laboratory duplicate results were acceptable with the following exception. For SDG WSCF113002, batch 188687, the gross beta difference was >2X the MDC. The gross beta results for samples B2FXB3, B2FX83, B2FX85, B2FX95 and B2FX99 were detects and should be qualified as estimates and flagged "J." The gross beta result for sample B2FX84 was a non-detect and should be qualified as an estimate and flagged "UJ."

Field Duplicate Samples

All field duplicate results were acceptable.

Field Split Samples

No field splits were submitted for validation.

- **Detection Limits**

Reported MDCs are compared against the contractually required detection limits (CRDLs) to ensure that laboratory detection limits meet the required criteria.

All reported sample MDCs with associated non-detected sample results were below the CRDLs with the following exceptions. Many Eu-152, Eu-54 and Eu-155 MDCs were slightly > the CRDLs. See the data validation checklist in Appendix 5 for a listing of results.

- **Completeness**

SDGs WSCF112993, WSCF113002 and WSCF113017 were 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

A minor deficiency leading to qualification of gross beta sample results as estimates was due to a laboratory duplicate infraction. See the table in Appendix 2 for a listing of all affected sample results.

REFERENCES

GRP-GD-002, Rev. 0, Change 0, *Data Validation for Radiochemical Analyses*, August 2010.

DOE/RL-96-22, Rev. 5, *100 Area Remedial Action Sampling and Analysis Plan*, September 2009

Appendix 1

Glossary of Data Reporting Qualifiers

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

- **U** — The constituent was analyzed for and was not detected. The data should be considered usable for decision-making purposes.

- **UJ** — The constituent was analyzed for and was not detected. Due to a quality control deficiency identified during data validation the value reported may not accurately reflect the MDC. The data should be considered usable for decision-making purposes.

- **J** — Indicates the constituent was analyzed for and detected. The associated value is estimated due to a quality control deficiency identified during data validation. The data should be considered usable for decision-making purposes.

- **J+** — Indicates the constituent was analyzed for and detected. The associated value is estimated with a suspected positive bias due to a quality control deficiency identified during data validation. The data should be considered usable for decision-making purposes.

- **J-** — Indicates the constituent was analyzed for and detected. The associated value is estimated with a suspected negative bias due to a quality control deficiency identified during data validation. The data should be considered usable for decision-making purposes.

- **UR** — Indicates the constituent was analyzed for and not detected; however, due to an identified quality control deficiency the data should be considered unusable for decision-making purposes.

- **R** — Indicates the constituent was analyzed for and detected; however, due to an identified quality control deficiency the data should be considered unusable for decision-making purposes.

Appendix 2

Summary of Data Qualification

Radiochemical Data Qualification Summary			
SDGs: WSCF112993, WSCF113002 & WSCF113017	Reviewer: AQA	Project: 100-K Project, Waste Site 100-K-63, Excavation Area	Page 1 of 1
Analyte(s)	**DV Flag**	**Samples Affected**	**Reason**
Gross beta	UJ	B2FX84	Poor laboratory duplicate precision
Gross beta	J	B2FXB3, B2FX83, B2FX85, B2FX95 & B2FX99	Poor laboratory duplicate precision

Comments: None

Appendix 3

Annotated Laboratory Reports

WSCF Analytical Results Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF112993

Sample # 112993001
SAF# F11-159
Sample ID B2FX82

Matrix SOIL
Sampled 08/17/11
Received 08/17/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Alpha/Beta Prep										**08/23/11**
Gross Alpha/Beta										
Gross Alpha	12587-46-1	LA-508-415	U	1.4	.98	pCi/g	1	1.5		08/30/11
Gross Beta	12587-47-2	LA-508-415		6.2	1.5	pCi/g	1	1.9		08/30/11
GEA Prep										**08/22/11**
GEA										
Cesium-137	10045-97-3	LA-508-481		0.74	.11	pCi/g	1	0.036		08/22/11
Cobalt-60	10198-40-0	LA-508-481	U	-8.8E-3	.018	pCi/g	1	0.032		08/22/11
Europium-152	14683-23-9	LA-508-481		0.31	.07	pCi/g	1	0.11		08/22/11
Europium-154	15585-10-1	LA-508-481	U	0.023	.055	pCi/g	1	0.10		08/22/11
Europium-155	14391-16-3	LA-508-481	U	0.050	.087	pCi/g	1	0.15		08/22/11
SR-89/90										**08/24/11**
SR-89/90										
Strontium-89/90	SR-RAD	LA-220-406		0.69	1	pCi/g	1	0.49		08/26/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte was detected in both the BLANK and SAMPLE
U - Analyzed for but not detected above limiting criteria.
N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.

WSCF Analytical Results Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF112993

Sample # 112993002
SAF# F11-159
Sample ID B2FX93

Matrix SOIL
Sampled 08/17/11
Received 08/17/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Alpha/Beta Prep										**08/23/11**
Gross Alpha/Beta										
Gross Alpha	12587-46-1	LA-508-415		3.5	1.3	pCi/g	1	1.5		08/30/11
Gross Beta	12587-47-2	LA-508-415		4.6	1.5	pCi/g	1	2.0		08/30/11
GEA Prep										**08/22/11**
GEA										
Cesium-137	10045-97-3	LA-508-481	U	-0.015	.017	pCi/g	1	0.029		08/22/11
Cobalt-60	10198-40-0	LA-508-481	U	8.5E-4	.017	pCi/g	1	0.031		08/22/11
Europium-152	14683-23-9	LA-508-481	U	-5.3E-3	.059	pCi/g	1	0.088		08/22/11
Europium-154	15585-10-1	LA-508-481	U	0.030	.056	pCi/g	1	0.10		08/22/11
Europium-155	14391-16-3	LA-508-481	U	0.11	.079	pCi/g	1	0.14		08/22/11
SR-89/90										**08/24/11**
SR-89/90										
Strontium-89/90	SR-RAD	LA-220-406	U	0.076	.82	pCi/g	1	0.42		08/26/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte was detected in both the BLANK and SAMPLE
U - Analyzed for but not detected above limiting criteria.
N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.

WSCF Analytical Results Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF112993

Sample # 112993003
SAF# F11-159
Sample ID B2FX96

Matrix SOIL
Sampled 08/17/11
Received 08/17/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Alpha/Beta Prep										**08/23/11**
Gross Alpha/Beta										
Gross Alpha	12587-46-1	LA-508-415	U	0.10	.59	pCi/g	1	1.1		08/30/11
Gross Beta	12587-47-2	LA-508-415	U	1.1	1	pCi/g	1	1.6		08/30/11
GEA Prep										**08/22/11**
GEA										
Cesium-137	10045-97-3	LA-508-481	U	-0.010	.0095	pCi/g	1	0.015		08/22/11
Cobalt-60	10198-40-0	LA-508-481	U	-3.8E-3	.0082	pCi/g	1	0.012		08/22/11
Europium-152	14683-23-9	LA-508-481	U	0.013	.027	pCi/g	1	0.050		08/22/11
Europium-154	15585-10-1	LA-508-481	U	-1.6E-3	.022	pCi/g	1	0.041		08/22/11
Europium-155	14391-16-3	LA-508-481	U	-8.4E-3	.036	pCi/g	1	0.061		08/22/11
SR-89/90										**08/24/11**
SR-89/90										
Strontium-89/90	SR-RAD	LA-220-406		1.2	.95	pCi/g	1	0.51		08/26/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte was detected in both the BLANK and SAMPLE
U - Analyzed for but not detected above limiting criteria.
N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.

WSCF Analytical Results Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF112993

Sample # 112993004
SAF# F11-159
Sample ID B2FX97

Matrix SOIL
Sampled 08/17/11
Received 08/17/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Alpha/Beta Prep										**08/23/11**
Gross Alpha/Beta										
Gross Alpha	12587-46-1	LA-508-415		2.8	1.2	pCi/g	1	1.5		08/30/11
Gross Beta	12587-47-2	LA-508-415		5.2	1.5	pCi/g	1	1.9		08/30/11
GEA Prep										**08/22/11**
GEA										
Cesium-137	10045-97-3	LA-508-481		0.15	.044	pCi/g	1	0.034		08/22/11
Cobalt-60	10198-40-0	LA-508-481	U	-3.8E-3	.016	pCi/g	1	0.029		08/22/11
Europium-152	14683-23-9	LA-508-481	U	0.064	.065	pCi/g	1	0.11		08/22/11
Europium-154	15585-10-1	LA-508-481	U	-0.013	.058	pCi/g	1	0.10		08/22/11
Europium-155	14391-16-3	LA-508-481	U	0.078	.083	pCi/g	1	0.15		08/22/11
SR-89/90										**08/24/11**
SR-89/90										
Strontium-89/90	SR-RAD	LA-220-406		1.1	.9	pCi/g	1	0.46		08/26/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte was detected in both the BLANK and SAMPLE
U - Analyzed for but not detected above limiting criteria.
N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.

WSCF Analytical Results Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF112993

Sample # 112993005
SAF# F11-159
Sample ID B2FX98

Matrix SOIL
Sampled 08/17/11
Received 08/17/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Alpha/Beta Prep										**08/23/11**
Gross Alpha/Beta										
Gross Alpha	12587-46-1	LA-508-415		2.5	1.2	pCi/g	1	1.6		08/30/11
Gross Beta	12587-47-2	LA-508-415		10	1.9	pCi/g	1	2.0		08/30/11
GEA Prep										**08/22/11**
GEA										
Cesium-137	10045-97-3	LA-508-481	U	0.0090	.019	pCi/g	1	0.031		08/22/11
Cobalt-60	10198-40-0	LA-508-481	U	4.5E-4	.015	pCi/g	1	0.027		08/22/11
Europium-152	14683-23-9	LA-508-481	U	0.025	.055	pCi/g	1	0.095		08/22/11
Europium-154	15585-10-1	LA-508-481	U	0.064	.058	pCi/g	1	0.10		08/22/11
Europium-155	14391-16-3	LA-508-481	U	0.12	.083	pCi/g	1	0.15		08/22/11
SR-89/90										**08/25/11**
SR-89/90										
Strontium-89/90	SR-RAD	LA-220-406	U	0.23	.61	pCi/g	1	0.48		08/30/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte was detected in both the BLANK and SAMPLE
U - Analyzed for but not detected above limiting criteria.
N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.

WSCF Analytical Results Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF113002

Sample # 113002001
SAF# F11-159
Sample ID B2FXB0

Matrix SOIL
Sampled 08/18/11
Received 08/18/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Alpha/Beta Prep										**08/23/11**
Gross Alpha/Beta										
Gross Alpha	12587-46-1	LA-508-415	U	1.5	1.2	pCi/g	1	1.8		08/30/11
Gross Beta	12587-47-2	LA-508-415		3.8	1.4	pCi/g	1	2.0		08/30/11
GEA Prep										**08/22/11**
GEA										
Cesium-137	10045-97-3	LA-508-481	U	-5.9E-3	.019	pCi/g	1	0.033		08/22/11
Cobalt-60	10198-40-0	LA-508-481	U	7.5E-3	.016	pCi/g	1	0.031		08/22/11
Europium-152	14683-23-9	LA-508-481	U	-0.016	.059	pCi/g	1	0.094		08/22/11
Europium-154	15585-10-1	LA-508-481	U	0.032	.062	pCi/g	1	0.10		08/22/11
Europium-155	14391-16-3	LA-508-481	U	-0.014	.082	pCi/g	1	0.14		08/22/11
SR-89/90										**08/25/11**
SR-89/90										
Strontium-89/90	SR-RAD	LA-220-406	U	-0.62	.59	pCi/g	1	0.47		08/30/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte was detected in both the BLANK and SAMPLE
U - Analyzed for but not detected above limiting criteria.
N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.

WSCF Analytical Results Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF113002

Sample # 113002002
SAF# F11-159
Sample ID B2FXB1

Matrix SOIL
Sampled 08/18/11
Received 08/18/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Alpha/Beta Prep										**08/23/11**
Gross Alpha/Beta										
Gross Alpha	12587-46-1	LA-508-415		2.4	1.1	pCi/g	1	1.4		08/30/11
Gross Beta	12587-47-2	LA-508-415		3.0	1.3	pCi/g	1	1.9		08/30/11
GEA Prep										**08/22/11**
GEA										
Cesium-137	10045-97-3	LA-508-481	U	0.0080	.017	pCi/g	1	0.031		08/22/11
Cobalt-60	10198-40-0	LA-508-481	U	-0.0040	.016	pCi/g	1	0.024		08/22/11
Europium-152	14683-23-9	LA-508-481	U	9.4E-3	.053	pCi/g	1	0.082		08/22/11
Europium-154	15585-10-1	LA-508-481	U	-0.016	.043	pCi/g	1	0.075		08/22/11
Europium-155	14391-16-3	LA-508-481	U	0.091	.069	pCi/g	1	0.12		08/22/11
SR-89/90										**08/25/11**
SR-89/90										
Strontium-89/90	SR-RAD	LA-220-406	U	0.27	.58	pCi/g	1	0.47		08/30/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte was detected in both the BLANK and SAMPLE
U - Analyzed for but not detected above limiting criteria.
N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.

WSCF Analytical Results Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF113002

Sample # 113002003
SAF# F11-159
Sample ID B2FXB2

Matrix SOIL
Sampled 08/18/11
Received 08/18/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Alpha/Beta Prep										**08/23/11**
Gross Alpha/Beta										
Gross Alpha	12587-46-1	LA-508-415	U	1.3	.95	pCi/g	1	1.4		08/30/11
Gross Beta	12587-47-2	LA-508-415		3.1	1.3	pCi/g	1	1.9		08/30/11
GEA Prep										**08/22/11**
GEA										
Cesium-137	10045-97-3	LA-508-481		0.043	.027	pCi/g	1	0.030		08/22/11
Cobalt-60	10198-40-0	LA-508-481	U	-2.4E-3	.015	pCi/g	1	0.027		08/22/11
Europium-152	14683-23-9	LA-508-481	U	0.024	.064	pCi/g	1	0.092		08/22/11
Europium-154	15585-10-1	LA-508-481	U	-0.016	.05	pCi/g	1	0.086		08/22/11
Europium-155	14391-16-3	LA-508-481	U	0.034	.074	pCi/g	1	0.13		08/22/11
SR-89/90										**08/25/11**
SR-89/90										
Strontium-89/90	SR-RAD	LA-220-406		0.65	.59	pCi/g	1	0.45		08/30/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte was detected in both the BLANK and SAMPLE
U - Analyzed for but not detected above limiting criteria.
N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.

WSCF Analytical Results Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF113002

Sample # 113002004
SAF# F11-159
Sample ID B2FXB3

Matrix SOIL
Sampled 08/18/11
Received 08/18/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Alpha/Beta Prep										**08/23/11**
Gross Alpha/Beta										
Gross Alpha	12587-46-1	LA-508-415		1.4	.79	pCi/g	1	1.0		08/30/11
Gross Beta	12587-47-2	LA-508-415		9.5 J	1.8	pCi/g	1	1.8		08/30/11
GEA Prep										**08/22/11**
GEA										
Cesium-137	10045-97-3	LA-508-481		0.33	.069	pCi/g	1	0.037		08/22/11
Cobalt-60	10198-40-0	LA-508-481	U	-0.011	.019	pCi/g	1	0.033		08/22/11
Europium-152	14683-23-9	LA-508-481	U	0.11	.1	pCi/g	1	0.12		08/22/11
Europium-154	15585-10-1	LA-508-481	U	-0.022	.059	pCi/g	1	0.10		08/22/11
Europium-155	14391-16-3	LA-508-481	U	-0.014	.11	pCi/g	1	0.18		08/22/11
SR-89/90										**08/25/11**
SR-89/90										
Strontium-89/90	SR-RAD	LA-220-406	U	-0.52	.59	pCi/g	1	0.44		08/30/11

LS
9-12-2011

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte was detected in both the BLANK and SAMPLE
U - Analyzed for but not detected above limiting criteria.
N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.

WSCF Analytical Results Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF113002

Sample # 113002005
SAF# F11-159
Sample ID B2FX83

Matrix SOIL
Sampled 08/18/11
Received 08/18/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Alpha/Beta Prep										**08/23/11**
Gross Alpha/Beta										
Gross Alpha	12587-46-1	LA-508-415		3.0	1.1	pCi/g	1	1.2		08/30/11
Gross Beta	12587-47-2	LA-508-415		3.2 J	1.4	pCi/g	1	2.1		08/30/11
GEA Prep										**08/22/11**
GEA										
Cesium-137	10045-97-3	LA-508-481		0.32	.07	pCi/g	1	0.036		08/22/11
Cobalt-60	10198-40-0	LA-508-481	U	-3.3E-3	.023	pCi/g	1	0.040		08/22/11
Europium-152	14683-23-9	LA-508-481	U	0.068	.079	pCi/g	1	0.13		08/22/11
Europium-154	15585-10-1	LA-508-481	U	0.015	.074	pCi/g	1	0.13		08/22/11
Europium-155	14391-16-3	LA-508-481	U	0.086	.09	pCi/g	1	0.16		08/22/11
SR-89/90										**08/25/11**
SR-89/90										
Strontium-89/90	SR-RAD	LA-220-406	U	0.28	.74	pCi/g	1	0.60		08/30/11

LS
9-12-2011

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte was detected in both the BLANK and SAMPLE
U - Analyzed for but not detected above limiting criteria.
N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.

WSCF Analytical Results Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF113002

Sample # 113002006
SAF# F11-159
Sample ID B2FX84

Matrix SOIL
Sampled 08/18/11
Received 08/18/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Alpha/Beta Prep										**08/23/11**
Gross Alpha/Beta										
Gross Alpha	12587-46-1	LA-508-415		2.4	.92	pCi/g	1	1.0		08/30/11
Gross Beta	12587-47-2	LA-508-415	U	1.2 UJ	1.1	pCi/g	1	1.8		08/30/11
GEA Prep										**08/22/11**
GEA										
Cesium-137	10045-97-3	LA-508-481	U	-6.9E-3	.016	pCi/g	1	0.027		08/22/11
Cobalt-60	10198-40-0	LA-508-481	U	-3.9E-3	.014	pCi/g	1	0.024		08/22/11
Europium-152	14683-23-9	LA-508-481	U	0.022	.05	pCi/g	1	0.078		08/22/11
Europium-154	15585-10-1	LA-508-481	U	-7.9E-3	.048	pCi/g	1	0.085		08/22/11
Europium-155	14391-16-3	LA-508-481	U	0.052	.068	pCi/g	1	0.12		08/22/11
SR-89/90										**08/25/11**
SR-89/90										
Strontium-89/90	SR-RAD	LA-220-406	U	0.32	.58	pCi/g	1	0.45		08/30/11

LS
9-12-2011

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte was detected in both the BLANK and SAMPLE
U - Analyzed for but not detected above limiting criteria.
N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.

WSCF Analytical Results Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF113002

Sample # 113002007
SAF# F11-159
Sample ID B2FX85

Matrix SOIL
Sampled 08/18/11
Received 08/18/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Alpha/Beta Prep										**08/23/11**
Gross Alpha/Beta										
Gross Alpha	12587-46-1	LA-508-415		2.9	1.1	pCi/g	1	1.2		08/30/11
Gross Beta	12587-47-2	LA-508-415		2.6 J	1.4	pCi/g	1	2.1		08/30/11
GEA Prep										**08/22/11**
GEA										
Cesium-137	10045-97-3	LA-508-481		0.047	.031	pCi/g	1	0.041		08/22/11
Cobalt-60	10198-40-0	LA-508-481	U	-0.013	.018	pCi/g	1	0.031		08/22/11
Europium-152	14683-23-9	LA-508-481	U	0.083	.079	pCi/g	1	0.11		08/22/11
Europium-154	15585-10-1	LA-508-481	U	-0.014	.062	pCi/g	1	0.11		08/22/11
Europium-155	14391-16-3	LA-508-481	U	0.18	.11	pCi/g	1	0.19		08/22/11
SR-89/90										**08/25/11**
SR-89/90										
Strontium-89/90	SR-RAD	LA-220-406		0.55	.9	pCi/g	1	0.48		08/30/11

LS
9-12-2011

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte was detected in both the BLANK and SAMPLE
U - Analyzed for but not detected above limiting criteria.
N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.

WSCF Analytical Results Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF113002

Sample # 113002008
SAF# F11-159
Sample ID B2FX95

Matrix SOIL
Sampled 08/18/11
Received 08/18/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Alpha/Beta Prep										**08/23/11**
Gross Alpha/Beta										
Gross Alpha	12587-46-1	LA-508-415		2.5	1.1	pCi/g	1	1.3		08/30/11
Gross Beta	12587-47-2	LA-508-415		3.7 J	1.4	pCi/g	1	2.1		08/30/11
GEA Prep										**08/22/11**
GEA										
Cesium-137	10045-97-3	LA-508-481	U	5.4E-3	.023	pCi/g	1	0.037		08/23/11
Cobalt-60	10198-40-0	LA-508-481	U	6.1E-3	.018	pCi/g	1	0.034		08/23/11
Europium-152	14683-23-9	LA-508-481	U	0.019	.075	pCi/g	1	0.10		08/23/11
Europium-154	15585-10-1	LA-508-481	U	-8.5E-3	.061	pCi/g	1	0.11		08/23/11
Europium-155	14391-16-3	LA-508-481	U	0.18	.13	pCi/g	1	0.21		08/23/11
SR-89/90										**08/25/11**
SR-89/90										
Strontium-89/90	SR-RAD	LA-220-406	U	0.057	.86	pCi/g	1	0.50		08/30/11

LS
9-12-2011

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte was detected in both the BLANK and SAMPLE
U - Analyzed for but not detected above limiting criteria.
N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.

WSCF Analytical Results Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF113002

Sample # 113002009
SAF# F11-159
Sample ID B2FX99

Matrix SOIL
Sampled 08/18/11
Received 08/18/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Alpha/Beta Prep										**08/23/11**
Gross Alpha/Beta										
Gross Alpha	12587-46-1	LA-508-415		3.0	1.1	pCi/g	1	1.2		08/30/11
Gross Beta	12587-47-2	LA-508-415		3.3 J	1.4	pCi/g	1	2.0		08/30/11
GEA Prep										**08/22/11**
GEA										
Cesium-137	10045-97-3	LA-508-481		0.032	.026	pCi/g	1	0.031		08/23/11
Cobalt-60	10198-40-0	LA-508-481	U	0.013	.018	pCi/g	1	0.032		08/23/11
Europium-152	14683-23-9	LA-508-481	U	-0.048	.059	pCi/g	1	0.090		08/23/11
Europium-154	15585-10-1	LA-508-481	U	-0.047	.055	pCi/g	1	0.093		08/23/11
Europium-155	14391-16-3	LA-508-481	U	0.065	.082	pCi/g	1	0.14		08/23/11
SR-89/90										**08/25/11**
SR-89/90										
Strontium-89/90	SR-RAD	LA-220-406	U	0.34	.88	pCi/g	1	0.53		08/30/11

LS
9-12-2011

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte was detected in both the BLANK and SAMPLE
U - Analyzed for but not detected above limiting criteria.
N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.

WSCF Analytical Results Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF113017

Sample # 113017001
SAF# F11-159
Sample ID B2FX86

Matrix SOIL
Sampled 08/19/11
Received 08/23/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Alpha/Beta Prep										**08/25/11**
Gross Alpha/Beta										
Gross Alpha	12587-46-1	LA-508-415		1.3	.72	pCi/g	1	0.96		09/01/11
Gross Beta	12587-47-2	LA-508-415		2.5	.81	pCi/g	1	1.1		09/01/11
GEA Prep										**08/23/11**
GEA										
Cesium-137	10045-97-3	LA-508-481		0.13	.034	pCi/g	1	0.023		08/23/11
Cobalt-60	10198-40-0	LA-508-481	U	2.1E-3	.012	pCi/g	1	0.022		08/23/11
Europium-152	14683-23-9	LA-508-481		0.11	.055	pCi/g	1	0.078		08/23/11
Europium-154	15585-10-1	LA-508-481	U	-7.2E-3	.039	pCi/g	1	0.069		08/23/11
Europium-155	14391-16-3	LA-508-481	U	0.041	.064	pCi/g	1	0.11		08/23/11
SR-89/90										**08/29/11**
SR-89/90										
Strontium-89/90	SR-RAD	LA-220-406	U	0.31	.53	pCi/g	1	0.39		08/31/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte was detected in both the BLANK and SAMPLE
U - Analyzed for but not detected above limiting criteria.
N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.

WSCF Analytical Results Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF113017

Sample # 113017002
SAF# F11-159
Sample ID B2FX87

Matrix SOIL
Sampled 08/19/11
Received 08/23/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Alpha/Beta Prep										**08/25/11**
Gross Alpha/Beta										
Gross Alpha	12587-46-1	LA-508-415		1.3	.7	pCi/g	1	0.93		09/01/11
Gross Beta	12587-47-2	LA-508-415		3.6	.95	pCi/g	1	1.2		09/01/11
GEA Prep										**08/23/11**
GEA										
Cesium-137	10045-97-3	LA-508-481		1.2	.17	pCi/g	1	0.028		08/23/11
Cobalt-60	10198-40-0	LA-508-481		0.041	.022	pCi/g	1	0.019		08/23/11
Europium-152	14683-23-9	LA-508-481		0.64	.077	pCi/g	1	0.089		08/23/11
Europium-154	15585-10-1	LA-508-481		0.14	.077	pCi/g	1	0.10		08/23/11
Europium-155	14391-16-3	LA-508-481	U	-0.012	.073	pCi/g	1	0.12		08/23/11
SR-89/90										**08/29/11**
SR-89/90										
Strontium-89/90	SR-RAD	LA-220-406	U	0.29	.59	pCi/g	1	0.40		08/31/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte was detected in both the BLANK and SAMPLE
U - Analyzed for but not detected above limiting criteria.
N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.

WSCF Analytical Results Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF113017

Sample # 113017003
SAF# F11-159
Sample ID B2FX88

Matrix SOIL
Sampled 08/19/11
Received 08/23/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Alpha/Beta Prep										**08/25/11**
Gross Alpha/Beta										
Gross Alpha	12587-46-1	LA-508-415	U	0.87	.61	pCi/g	1	0.89		09/01/11
Gross Beta	12587-47-2	LA-508-415		2.8	.86	pCi/g	1	1.2		09/01/11
GEA Prep										**08/23/11**
GEA										
Cesium-137	10045-97-3	LA-508-481	U	0.010	.016	pCi/g	1	0.029		08/23/11
Cobalt-60	10198-40-0	LA-508-481	U	4.1E-3	.014	pCi/g	1	0.026		08/23/11
Europium-152	14683-23-9	LA-508-481	U	-0.022	.051	pCi/g	1	0.080		08/23/11
Europium-154	15585-10-1	LA-508-481	U	7.6E-4	.049	pCi/g	1	0.088		08/23/11
Europium-155	14391-16-3	LA-508-481	U	-7.7E-4	.073	pCi/g	1	0.12		08/23/11
SR-89/90										**08/29/11**
SR-89/90										
Strontium-89/90	SR-RAD	LA-220-406	U	0.22	.58	pCi/g	1	0.43		08/31/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte was detected in both the BLANK and SAMPLE
U - Analyzed for but not detected above limiting criteria.
N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.

WSCF Analytical Results Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF113017

Sample # 113017004
SAF# F11-159
Sample ID B2FX89

Matrix SOIL
Sampled 08/19/11
Received 08/23/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Alpha/Beta Prep										**08/25/11**
Gross Alpha/Beta										
Gross Alpha	12587-46-1	LA-508-415	U	0.83	.64	pCi/g	1	0.95		09/01/11
Gross Beta	12587-47-2	LA-508-415		2.0	.82	pCi/g	1	1.2		09/01/11
GEA Prep										**08/23/11**
GEA										
Cesium-137	10045-97-3	LA-508-481		0.050	.016	pCi/g	1	0.022		08/23/11
Cobalt-60	10198-40-0	LA-508-481	U	-2.8E-3	.012	pCi/g	1	0.021		08/23/11
Europium-152	14683-23-9	LA-508-481	U	0.019	.047	pCi/g	1	0.076		08/23/11
Europium-154	15585-10-1	LA-508-481	U	0.034	.044	pCi/g	1	0.083		08/23/11
Europium-155	14391-16-3	LA-508-481	U	0.11	.072	pCi/g	1	0.20		08/23/11
SR-89/90										**08/29/11**
SR-89/90										
Strontium-89/90	SR-RAD	LA-220-406		0.41	.56	pCi/g	1	0.41		08/31/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte was detected in both the BLANK and SAMPLE
U - Analyzed for but not detected above limiting criteria.
N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.

WSCF Analytical Results Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF113017

Sample # 113017005
SAF# F11-159
Sample ID B2FX90

Matrix SOIL
Sampled 08/19/11
Received 08/23/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Alpha/Beta Prep										**08/25/11**
Gross Alpha/Beta										
Gross Alpha	12587-46-1	LA-508-415	U	0.67	.64	pCi/g	1	1.0		09/01/11
Gross Beta	12587-47-2	LA-508-415		3.0	.93	pCi/g	1	1.2		09/01/11
GEA Prep										**08/23/11**
GEA										
Cesium-137	10045-97-3	LA-508-481		0.081	.029	pCi/g	1	0.025		08/23/11
Cobalt-60	10198-40-0	LA-508-481	U	0.013	.013	pCi/g	1	0.025		08/23/11
Europium-152	14683-23-9	LA-508-481	U	0.046	.047	pCi/g	1	0.079		08/23/11
Europium-154	15585-10-1	LA-508-481	U	-5.4E-3	.043	pCi/g	1	0.076		08/23/11
Europium-155	14391-16-3	LA-508-481	U	0.045	.068	pCi/g	1	0.12		08/23/11
SR-89/90										**08/29/11**
SR-89/90										
Strontium-89/90	SR-RAD	LA-220-406		0.79	.69	pCi/g	1	0.47		08/31/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte was detected in both the BLANK and SAMPLE
U - Analyzed for but not detected above limiting criteria.
N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.

WSCF Analytical Results Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF113017

Sample # 113017006
SAF# F11-159
Sample ID B2FX91

Matrix SOIL
Sampled 08/19/11
Received 08/23/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Alpha/Beta Prep										**08/25/11**
Gross Alpha/Beta										
Gross Alpha	12587-46-1	LA-508-415	U	0.86	.63	pCi/g	1	0.93		09/01/11
Gross Beta	12587-47-2	LA-508-415		2.5	.84	pCi/g	1	1.1		09/01/11
GEA Prep										**08/23/11**
GEA										
Cesium-137	10045-97-3	LA-508-481	U	0.024	.016	pCi/g	1	0.030		08/23/11
Cobalt-60	10198-40-0	LA-508-481	U	9.4E-3	.013	pCi/g	1	0.026		08/23/11
Europium-152	14683-23-9	LA-508-481	U	-1.9E-3	.055	pCi/g	1	0.082		08/23/11
Europium-154	15585-10-1	LA-508-481	U	-5.5E-3	.051	pCi/g	1	0.077		08/23/11
Europium-155	14391-16-3	LA-508-481	U	0.13	.11	pCi/g	1	0.20		08/23/11
SR-89/90										**08/29/11**
SR-89/90										
Strontium-89/90	SR-RAD	LA-220-406		0.58	.58	pCi/g	1	0.41		08/31/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte was detected in both the BLANK and SAMPLE
U - Analyzed for but not detected above limiting criteria.
N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.

WSCF Analytical Results Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF113017

Sample # 113017007
SAF# F11-159
Sample ID B2FX92

Matrix SOIL
Sampled 08/19/11
Received 08/23/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Alpha/Beta Prep										**08/25/11**
Gross Alpha/Beta										
Gross Alpha	12587-46-1	LA-508-415	U	0.79	.67	pCi/g	1	1.0		09/01/11
Gross Beta	12587-47-2	LA-508-415		2.3	.86	pCi/g	1	1.2		09/01/11
GEA Prep										**08/23/11**
GEA										
Cesium-137	10045-97-3	LA-508-481		0.032	.027	pCi/g	1	0.032		08/23/11
Cobalt-60	10198-40-0	LA-508-481	U	-5.6E-3	.014	pCi/g	1	0.024		08/23/11
Europium-152	14683-23-9	LA-508-481	U	6.9E-3	.059	pCi/g	1	0.084		08/23/11
Europium-154	15585-10-1	LA-508-481	U	-0.0090	.052	pCi/g	1	0.092		08/23/11
Europium-155	14391-16-3	LA-508-481	U	-0.044	.075	pCi/g	1	0.12		08/23/11
SR-89/90										**08/29/11**
SR-89/90										
Strontium-89/90	SR-RAD	LA-220-406	U	-0.34	.56	pCi/g	1	0.41		08/31/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte was detected in both the BLANK and SAMPLE
U - Analyzed for but not detected above limiting criteria.
N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.

WSCF Analytical Results Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF113017

Sample # 113017008
SAF# F11-159
Sample ID B2FX94

Matrix SOIL
Sampled 08/19/11
Received 08/23/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Alpha/Beta Prep										**08/25/11**
Gross Alpha/Beta										
Gross Alpha	12587-46-1	LA-508-415	U	0.39	.57	pCi/g	1	0.95		09/01/11
Gross Beta	12587-47-2	LA-508-415		2.5	.88	pCi/g	1	1.2		09/01/11
GEA Prep										**08/23/11**
GEA										
Cesium-137	10045-97-3	LA-508-481		0.039	.023	pCi/g	1	0.030		08/23/11
Cobalt-60	10198-40-0	LA-508-481	U	-2.5E-3	.013	pCi/g	1	0.022		08/23/11
Europium-152	14683-23-9	LA-508-481	U	-4.5E-4	.055	pCi/g	1	0.083		08/23/11
Europium-154	15585-10-1	LA-508-481	U	-0.012	.048	pCi/g	1	0.083		08/23/11
Europium-155	14391-16-3	LA-508-481	U	0.051	.071	pCi/g	1	0.12		08/23/11
SR-89/90										**08/29/11**
SR-89/90										
Strontium-89/90	SR-RAD	LA-220-406		0.59	.63	pCi/g	1	0.47		08/31/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte was detected in both the BLANK and SAMPLE
U - Analyzed for but not detected above limiting criteria.
N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

Attachment 2
Narrative
WSCF112993

Introduction

Samples were received at the WSCF laboratory as referenced on the WSCF SAF Number Cross Reference table included in the final report. The samples were analyzed for the analytes indicated on the attached copy of the chain of custody (COC) form in accordance with the *Statement of Work (SOW), Modification No. 2 to Agreement 36587, Release 3, "FH WSCF ANALYTICAL SERVICES FOR GROUNDWATER."*

The narrative (Attachment 2) will address sample characteristics, analyses requested and general information in performance of the analytical methods. A Data Summary Report (Attachment 3) includes analytical results, a comment report detailing method abnormalities, tentatively identified peaks if applicable, method references, and Laboratory QC information as applicable. Copies of the chain of custody and sample receipt documentation are included as Attachment 4.

It should be noted that the attached chain of custody was not stamped "ICED" by the WSCF Laboratory Sample Custodian during sample receiving. However, based on procedure LO-090-403 form "NOTICE OF IMPROPER SAMPLE SUBMITTAL" was not submitted and was not stamped "NOT ICED". No anomaly was noted during sample receipt.

The following generic data qualifiers (i.e., B, D, U and J) may be applicable to this report, as appropriate

- **B** – Sample results with a concentration greater than the MDL but less than the PQL are B flagged (applies to inorganic and wet chemical analyses), as appropriate.
- **D** – Sample results are D flagged if dilution(s) were required, as appropriate.
- **J** – Sample results with a concentration greater than the MDL but less than the PQL are J flagged (applies to organic analyses), as appropriate.
- **U** – Analyzed for but not detected above limiting criteria. Relative Percent Difference (RPD) values associated with an analyte qualified with a "U" are not applicable.

Analytical Methodology for Requested Analyses

Refer to *WSCF Method References Report* for a complete listing of approved analytical methods.

Inorganic Comments

Hexavalent Chromium – The hold time requirement for this analysis was met. A Duplicate, Matrix Spike, Blank and Laboratory Control Sample were analyzed with this delivery group. Analytical Note(s):

- Post Spike recovery is outside established laboratory limits. Affected sample results in this batch were "N" flagged.
- All other applicable QC controls are within the established limits.

Attachment 2
Narrative
WSCF112993

ICP-MS Metals – The hold time requirements for this analysis were met. A Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group. Analytical Note(s):

- Manganese – Exceeded spiking levels by a factor of 4. Spike recoveries and associated RPDs are not valid.
- All other applicable QC controls are within the established limits.

Radiochemistry Comments

Rad Chem – The hold time requirement for this analysis was met. A Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group. Analytical Note(s):

Tracers are used to determine chemical yield. RPD is monitored in sample duplicate and is not required for tracer recovery per SOW.

- Gamma Energy Analysis:
  - All applicable QC controls are within the established limits.
- Gross Alpha / Gross Beta:
  - Gross Beta – Duplicate Relative Percent Difference(s) (RPD) did not meet the established laboratory limits. Duplicate Relative Percent Difference (RPD) does not apply to results below 5X the minimum detectable activity. No flags issued.
  - All other applicable QC controls are within the established limits.
- Strontium-89/90:
  - Batch QC 188476
    - Duplicate Relative Percent Difference(s) (RPD) did not meet the established laboratory limits. Duplicate Relative Percent Difference (RPD) does not apply to results below 5X the minimum detectable activity. No flags issued.
    - The LCS recovery was outside laboratory acceptance limits, but within the 70 – 130% range allowed in the SOW.
  - Batch QC 188661
    - The LCS recovery was outside laboratory acceptance limits, but within the 70 – 130% range allowed in the SOW.
    - All other applicable QC controls are within the established limits.

Narrative

Attachment 2
Narrative
WSCF112993

We certify that this data package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this data package has been authorized by the Analytical Laboratory Manager (or designee) and the Client Services representative as verified by electronic signatures shown on the WSCF ANALYTICAL RESULTS REPORT.

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-159-001 | PAGE 1 OF 2

COLLECTOR	FM Hall CHPRC
SAMPLING LOCATION	100-K-63 Excavation Area Sample #1
ICE CHEST NO.	6WS-023
SHIPPED TO	Waste Sampling & Characterization
COMPANY CONTACT	LUKE, SN
TELEPHONE NO.	372-1667
PROJECT DESIGNATION	100-K-63 KW Floodplain Verification Sampling (Waste Area AJ)- Soil
FIELD LOGBOOK NO.	HNF-N-507-23
ACTUAL SAMPLE DEPTH	0 - 1'
OFFSITE PROPERTY NO.	N/A
PROJECT COORDINATOR	LUKE, SN
SAF NO.	F11-159
COA	302676ES10
BILL OF LADING/AIR BILL NO.	N/A
PRICE CODE	C01
AIR QUALITY	
DATA TURNAROUND	12 Days / 12 Days
METHOD OF SHIPMENT	GOVERNMENT VEHICLE

ORIGINAL

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS
Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

112993

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool<4C	None	None
HOLDING TIME	6 Months	6 Months	6 Months
TYPE OF CONTAINER	G/P	P	G/P
NO. OF CONTAINER(S)	1	1	1
VOLUME	250mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME			
B2FX82	SOIL	8/17/11	1312	✓	✓	✓

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	8/17/11 1440		8/17/11 1440

SPECIAL INSTRUCTIONS
SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

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

PRINTED ON 7/25/2011

A-6003-618 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-159-001	PAGE 2 OF 2
COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-1667	PROJECT COORDINATOR: LUKE, SN	PRICE CODE: C01	DATA TURNAROUND: 12 Days / 12 Days
SAMPLING LOCATION: 100-K-63 Excavation Area Sample #1	PROJECT DESIGNATION: 100-K-63 KW Floodplain Verification Sampling (Waste Area A)- Soil		SAF NO.: F11-159	AIR QUALITY: ☐	
ICE CHEST NO.: GWS-023	FIELD LOGBOOK NO.: HNF-N-607-23	ACTUAL SAMPLE DEPTH: 0-1'	COA: 302676ES10	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402579ES20.☐☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Silver, Vanadium, Zinc}; ICP/MS - 200.8 (Add-on) {Arsenic, Beryllium, Boron, Lead, Molybdenum, Selenium, Strontium, Tin, Uranium}; 200.8_HG - ICPMS {Mercury}; Chromium Hex - 7196;
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta}; Strontium-89,90 -- Total Sr;

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Wednesday, August 17, 2011 3:45:18 PM
Page 3 of 11

Chain of Custody

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-159-012

PAGE 1 OF 2

COLLECTOR: FM Hall CHPRC

COMPANY CONTACT: LUKE, SN

TELEPHONE NO.: 372-1667

PROJECT COORDINATOR: LUKE, SN

PRICE CODE: C01

DATA TURNAROUND: 12 Days / 12 Days

SAMPLING LOCATION: 100-K-63 Excavation Area Sample #2

PROJECT DESIGNATION: 100-K-63 KW Floodplain Verification Sampling (Waste Area A)- Soil

SAF NO.: F11-159

AIR QUALITY: ☐

ICE CHEST NO.: 6WS-023

FIELD LOGBOOK NO.: HNF-N-807-23

ACTUAL SAMPLE DEPTH: 0-1'

COA: 302676ES10

METHOD OF SHIPMENT: GOVERNMENT VEHICLE

ORIGINAL

SHIPPED TO: Waste Sampling & Characterization

OFFSITE PROPERTY NO.: N/A

BILL OF LADING/AIR BILL NO.: N/A

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool~4C	None	None
HOLDING TIME	6 Months	6 Months	6 Months
TYPE OF CONTAINER	G/P	P	G/P
NO. OF CONTAINER(S)	1	1	1
VOLUME	250mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.		MATRIX*	SAMPLE DATE	SAMPLE TIME			
B2FX93	2	SOIL	8/17/11	1325	✓	✓	✓

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	8/17/11 1440		8/17/11 1440

SPECIAL INSTRUCTIONS: SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

LABORATORY SECTION: RECEIVED BY | TITLE | DATE/TIME

FINAL SAMPLE DISPOSITION: DISPOSAL METHOD | DISPOSED BY | DATE/TIME

PRINTED ON 7/25/2011

A-6003-618 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-159-012	PAGE 2 OF 2
COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-1667	PROJECT COORDINATOR: LUKE, SN	PRICE CODE: C01	DATA TURNAROUND: 12 Days / 12 Days
SAMPLING LOCATION: 100-K-63 Excavation Area Sample #2	PROJECT DESIGNATION: 100-K-63 KW Floodplain Verification Sampling (Waste Area A1)- Soil		SAF NO.: F11-159	AIR QUALITY: ☐	
ICE CHEST NO.: 6WS-023	FIELD LOGBOOK NO.: HNF-N-807-23.	ACTUAL SAMPLE DEPTH: 0-6'	COA: 302676ES10	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402579ES20.□□** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Silver, Vanadium, Zinc}; ICP/MS - 200.8 (Add-on) {Arsenic, Beryllium, Boron, Lead, Molybdenum, Selenium, Strontium, Tin, Uranium}; 200.8_HG - ICPMS {Mercury}; Chromium Hex - 7196;
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta}; Strontium-89,90 -- Total Sr;

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CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-159-015 — PAGE 1 OF 2

COLLECTOR: FM Hall, CHPRC	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-1667	PROJECT COORDINATOR: LUKE, SN
PRICE CODE: C01	DATA TURNAROUND: 12 Days / 12 Days		
SAMPLING LOCATION: 100-K-63 Excavation Area Sample #22	PROJECT DESIGNATION: 100-K-63 KW Floodplain Verification Sampling (Waste Area AJ)- Soil	SAF NO.: F11-159	AIR QUALITY: ☐
ICE CHEST NO.: GWS-023	FIELD LOGBOOK NO.: HNF-N-507-23	ACTUAL SAMPLE DEPTH: 0-1'	COA: 302676ES10
METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL		
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A	BILL OF LADING/AIR BILL NO.: N/A	

MATRIX*: A=Air, DI=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool<4C	None	None
HOLDING TIME	6 Months	6 Months	6 Months
TYPE OF CONTAINER	G/P	P	G/P
NO. OF CONTAINER(S)	1	1	1
VOLUME	250mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME			
B2FX96 3	SOIL	8/17/11	1302	✓	✓	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: FM Hall, CHPRC	DATE/TIME: 8/17/11 1440	RECEIVED BY/STORED IN: [signature]	DATE/TIME: 8/17/11 1440
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
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 DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

PRINTED ON 7/25/2011 — A-6003-618 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-159-015	PAGE 2 OF 2
COLLECTOR	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-1667	PROJECT COORDINATOR: LUKE, SN	PRICE CODE: C01	DATA TURNAROUND: 12 Days / 12 Days
SAMPLING LOCATION: 100 K 63 Excavation Area Sample #22	PROJECT DESIGNATION: 100 K 63 KW Floodplain Verification Sampling (Waste Area A) - Soil		SAF NO.: F11-159	AIR QUALITY: ☐	
ICE CHEST NO.: 6WS-023	FIELD LOGBOOK NO.: HNF-N-507-23	ACTUAL SAMPLE DEPTH: 0-1'	COA: 302676ES10	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402579ES20.□□** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Silver, Vanadium, Zinc}; ICP/MS - 200.8 (Add-on) {Arsenic, Beryllium, Boron, Lead, Molybdenum, Selenium, Strontium, Tin, Uranium}; 200.8_HG - ICPMS {Mercury}; Chromium Hex - 7196;
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta}; Strontium-89,90 -- Total Sr;

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A-6003-618 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-159-016 | PAGE 1 OF 2

COLLECTOR	FM Hall CHPRC
SAMPLING LOCATION	100-K-63 Excavation Area Sample #3
ICE CHEST NO.	GWS-023
SHIPPED TO	Waste Sampling & Characterization
COMPANY CONTACT	LUKE, SN
TELEPHONE NO.	372-1667
PROJECT COORDINATOR	LUKE, SN
PRICE CODE	C01
DATA TURNAROUND	12 Days / 12 Days
PROJECT DESIGNATION	100-K-63 KW Floodplain Verification Sampling (Waste Area A1)-Soil
SAF NO.	F11-159
AIR QUALITY	☐
FIELD LOGBOOK NO.	HNF-N-507-23
ACTUAL SAMPLE DEPTH	0-1'
COA	302676ES10
METHOD OF SHIPMENT	GOVERNMENT VEHICLE
ORIGINAL	
OFFSITE PROPERTY NO.	N/A
BILL OF LADING/AIR BILL NO.	N/A

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool-4C	None	None
HOLDING TIME	6 Months	6 Months	6 Months
TYPE OF CONTAINER	G/P	P	G/P
NO. OF CONTAINER(S)	1	1	1
VOLUME	250mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.		MATRIX*	SAMPLE DATE	SAMPLE TIME			
B2FX97	4	SOIL	8/17/11	1336	✓	✓	✓

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	8/17/11 1440	[illegible]	8/17/11 1440

SPECIAL INSTRUCTIONS

SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

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

PRINTED ON 7/25/2011

A-6003-618 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**

F11-159-016 — PAGE 2 OF 2

COLLECTOR FM Hall CHPRC	**COMPANY CONTACT** LUKE, SN	**TELEPHONE NO.** 372-1667	**PROJECT COORDINATOR** LUKE, SN
SAMPLING LOCATION 100-K-63 Excavation Area Sample #3	**PROJECT DESIGNATION** 100-K-63 KW Floodplain Verification Sampling (Waste Area AJ)- Soil		**SAF NO.** F11-159
ICE CHEST NO. 6WS-023	**FIELD LOGBOOK NO.** HNF-N-507-23.	**ACTUAL SAMPLE DEPTH** 0-1'	**COA** 302676ES10
SHIPPED TO Waste Sampling & Characterization	**OFFSITE PROPERTY NO.** N/A		**BILL OF LADING/AIR BILL NO.** N/A

PRICE CODE C01 — **AIR QUALITY** L — **METHOD OF SHIPMENT** GOVERNMENT VEHICLE

DATA TURNAROUND 12 Days / 12 Days

ORIGINAL

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402579ES20.□□** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Silver, Vanadium, Zinc}; ICP/MS - 200.8 (Add-on) {Arsenic, Beryllium, Boron, Lead, Molybdenum, Selenium, Strontium, Tin, Uranium}; 200.8_HG - ICPMS {Mercury}; Chromium Hex - 7196;
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta}; Strontium-89,90 -- Total Sr;

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CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**

F11-159-017 — PAGE 1 OF 2

COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-1667	PROJECT COORDINATOR: LUKE, SN
SAMPLING LOCATION: 100-K-63 Excavation Area Sample #4	PROJECT DESIGNATION: 100-K-63 KW Floodplain Verification Sampling (Waste Area A)- Soil		SAF NO.: F11-159
ICE CHEST NO.: GWS-023	FIELD LOGBOOK NO.: HNF-N-507-23	ACTUAL SAMPLE DEPTH: 0-1'	COA: 3026/6ES10
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A

PRICE CODE: C01 — AIR QUALITY: [ ] — DATA TURNAROUND: 12 Days / 12 Days — METHOD OF SHIPMENT: GOVERNMENT VEHICLE — **ORIGINAL**

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, Sd=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool-4C	None	None
HOLDING TIME	6 Months	6 Months	6 Months
TYPE OF CONTAINER	G/P	P	G/P
NO. OF CONTAINER(S)	1	1	1
VOLUME	250mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.		MATRIX*	SAMPLE DATE	SAMPLE TIME			
B2FX98	5	SOIL	8/17/11	1346	✓	✓	✓

CHAIN OF POSSESSION	DATE/TIME	SIGN/ PRINT NAMES	DATE/TIME
RELINQUISHED BY/REMOVED FROM: FM Hall CHPRC	8/17/11 1440	RECEIVED BY/STORED IN: KBreazeal	8/17/11 1440
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
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 DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

PRINTED ON 7/25/2011 — A-6003-618 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-159-017	PAGE 2 OF 2
COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-1667	PROJECT COORDINATOR: LUKE, SN	PRICE CODE: C01	DATA TURNAROUND: 12 Days / 12 Days
SAMPLING LOCATION: 100-K-63 Excavation Area Sample #4	PROJECT DESIGNATION: 100-K-63 KW Floodplain Verification Sampling (Waste Area A1)- Soil		SAF NO.: F11-159	AIR QUALITY: ☐	ORIGINAL
ICE CHEST NO.: 6WS-023	FIELD LOGBOOK NO.: HNF-N-507-23	ACTUAL SAMPLE DEPTH: 0-1'	COA: 302676ES10	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

** The CACN for WSCF Analytical is 402579ES20.□□** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Silver, Vanadium, Zinc}; ICP/MS - 200.8 (Add-on) {Arsenic, Beryllium, Boron, Lead, Molybdenum, Selenium, Strontium, Tin, Uranium}; 200.8_HG - ICPMS {Mercury}; Chromium Hex - 7196;
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta}; Strontium-89,90 -- Total Sr;

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A-6003-618 (REV 2)

Attachment 2
Narrative
WSCF113002

Introduction

Samples were received at the WSCF laboratory as referenced on the WSCF SAF Number Cross Reference table included in the final report. The samples were analyzed for the analytes indicated on the attached copy of the chain of custody (COC) form in accordance with the *Statement of Work (SOW), Modification No. 2 to Agreement 36587, Release 3, "FH WSCF ANALYTICAL SERVICES FOR GROUNDWATER."*

The narrative (Attachment 2) will address sample characteristics, analyses requested and general information in performance of the analytical methods. A Data Summary Report (Attachment 3) includes analytical results, a comment report detailing method abnormalities, tentatively identified peaks if applicable, method references, and Laboratory QC information as applicable. Copies of the chain of custody and sample receipt documentation are included as Attachment 4.

It should be noted that the attached chain of custody was not stamped "ICED" by the WSCF Laboratory Sample Custodian during sample receiving. However, based on procedure LO-090-403 form "NOTICE OF IMPROPER SAMPLE SUBMITTAL" was not submitted and was not stamped "NOT ICED". No anomaly was noted during sample receipt.

The following generic data qualifiers (i.e., B, D, U and J) may be applicable to this report, as appropriate

- **B** – Sample results with a concentration greater than the MDL but less than the PQL are B flagged (applies to inorganic and wet chemical analyses), as appropriate.
- **D** – Sample results are D flagged if dilution(s) were required, as appropriate.
- **J** – Sample results with a concentration greater than the MDL but less than the PQL are J flagged (applies to organic analyses), as appropriate.
- **U** – Analyzed for but not detected above limiting criteria. Relative Percent Difference (RPD) values associated with an analyte qualified with a "U" are not applicable.

Analytical Methodology for Requested Analyses

Refer to *WSCF Method References Report* for a complete listing of approved analytical methods.

Inorganic Comments

Hexavalent Chromium – The hold time requirement for this analysis was met. A Duplicate, Matrix Spike, Blank and Laboratory Control Sample were analyzed with this delivery group. Analytical Note(s):

- Batch QC 188844
- Post Spike recovery is outside established laboratory limits. Affected sample results in this batch were "N" flagged.

- Batch QC 188972
- Matrix Spike and Post Spike recoveries are outside established laboratory limits. Affected sample results in this batch were "N" flagged.
- All other applicable QC controls are within the established limits.

ICP-MS Metals – The hold time requirements for this analysis were met. A Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group. Analytical Note(s):

- Manganese – MS / MSD Relative Percent Difference (RPD) is outside established laboratory limits. The quality control report was flagged for RPD failure.
- All other applicable QC controls are within the established limits.

Radiochemistry Comments

Rad Chem – The hold time requirement for this analysis was met. A Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group. Analytical Note(s):

Tracers are used to determine chemical yield. RPD is monitored in sample duplicate and is not required for tracer recovery per SOW.

- Gamma Energy Analysis:
  - All applicable QC controls are within the established limits.
- Gross Alpha / Gross Beta:
  - Batch QC 188471
    - Gross Beta – Duplicate Relative Percent Difference(s) (RPD) did not meet the established laboratory limits. Duplicate Relative Percent Difference (RPD) does not apply to results below 5X the minimum detectable activity. No flags issued.
  - Batch QC 188472
    - Gross Alpha and Gross Beta – Duplicate Relative Percent Difference(s) (RPD) did not meet the established laboratory limits. Duplicate Relative Percent Difference (RPD) does not apply to results below 5X the minimum detectable activity. No flags issued.
    - All other applicable QC controls are within the established limits.
- Strontium-89/90:
  - Batch QC 188661

- The LCS recovery was outside laboratory acceptance limits, but within the 70 – 130% range allowed in the SOW.
- All other applicable QC controls are within the established limits.

We certify that this data package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this data package has been authorized by the Analytical Laboratory Manager (or designee) and the Client Services representative as verified by electronic signatures shown on the WSCF ANALYTICAL RESULTS REPORT.

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-159-019 | PAGE 1 OF 2

COLLECTOR	FM Hall CHPRC
SAMPLING LOCATION	100-K-63 Excavation Area Sample #6
ICE CHEST NO.	GWS.023
SHIPPED TO	Waste Sampling & Characterization
COMPANY CONTACT	LUKE, SN
TELEPHONE NO.	372-1667
PROJECT DESIGNATION	100-K-63 KW Floodplain Verification Sampling (Waste Area A1)- Soil
FIELD LOGBOOK NO.	HNF-N-607-23
ACTUAL SAMPLE DEPTH	0-1'
OFFSITE PROPERTY NO.	N/A
PROJECT COORDINATOR	LUKE, SN
SAF NO.	F11-159
COA	302676ES10
BILL OF LADING/AIR BILL NO.	N/A
PRICE CODE	C01
AIR QUALITY	☐
DATA TURNAROUND	12 Days / 12 Days
METHOD OF SHIPMENT	GOVERNMENT VEHICLE

ORIGINAL

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS
Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

113002

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool~4C	None	None
HOLDING TIME	6 Months	6 Months	6 Months
TYPE OF CONTAINER	G/P	P	G/P
NO. OF CONTAINER(S)	1	1	1
VOLUME	250mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	[redacted]		
B2FXB0	SOIL	8/18/11	0934	✓	✓	✓

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	8/18/11 1250	[illegible]	8/18/11 1250

SPECIAL INSTRUCTIONS
SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

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

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A-6003-618 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-159-019 — PAGE 2 OF 2

COLLECTOR FM Hall CHPRC	**COMPANY CONTACT** LUKE, SN	**TELEPHONE NO.** 372-1667	**PROJECT COORDINATOR** LUKE, SN
SAMPLING LOCATION 100-K-63 Excavation Area Sample #6	**PROJECT DESIGNATION** 100-K-63 KW Floodplain Verification Sampling (Waste Area A)- Soil		**SAF NO.** F11-159
ICE CHEST NO. GWS-023	**FIELD LOGBOOK NO.** HNF-N-507-23	**ACTUAL SAMPLE DEPTH** 0-1'	**COA** 302676ES10
SHIPPED TO Waste Sampling & Characterization	**OFFSITE PROPERTY NO.** N/A		**BILL OF LADING/AIR BILL NO.** N/A

PRICE CODE C01 — **AIR QUALITY** ☐ — **METHOD OF SHIPMENT** GOVERNMENT VEHICLE — **DATA TURNAROUND** 12 Days / 12 Days — **ORIGINAL**

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402579ES20.☐☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Silver, Vanadium, Zinc}; ICP/MS - 200.8 (Add-on) {Arsenic, Beryllium, Boron, Lead, Molybdenum, Selenium, Strontium, Tin, Uranium}; 200.8_HG - ICPMS {Mercury}; Chromium Hex - 7196;
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta}; Strontium-89,90 -- Total Sr;

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CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-159-020

PAGE 1 OF 2

COLLECTOR: FM Hall CHPRC

COMPANY CONTACT: LUKE, SN

TELEPHONE NO.: 372-1667

PROJECT COORDINATOR: LUKE, SN

PRICE CODE: C01

DATA TURNAROUND: 12 Days / 12 Days

SAMPLING LOCATION: 100-K-63 Excavation Area Sample #7

PROJECT DESIGNATION: 100-K-63 KW Floodplain Verification Sampling (Waste Area AJ)- Soil

SAF NO.: F11-159

AIR QUALITY: ☐

ICE CHEST NO.: GWS-023

FIELD LOGBOOK NO.: HNF-N-507-23

ACTUAL SAMPLE DEPTH: 0-1'

COA: 302676ES10

METHOD OF SHIPMENT: GOVERNMENT VEHICLE

ORIGINAL

SHIPPED TO: Waste Sampling & Characterization

OFFSITE PROPERTY NO.: N/A

BILL OF LADING/AIR BILL NO.: N/A

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool~4C	None	None
HOLDING TIME	6 Months	6 Months	6 Months
TYPE OF CONTAINER	G/P	P	G/P
NO. OF CONTAINER(S)	1	1	1
VOLUME	250mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.		MATRIX*	SAMPLE DATE	SAMPLE TIME			
B2FXB1	2	SOIL	8/18/11	0942	✓	✓	✓

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	8/18/11 1250	[illegible]	8/18/11 1260
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
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 DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

PRINTED ON 7/25/2011

A-6003-618 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-159-020	PAGE 2 OF 2
COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-1667	PROJECT COORDINATOR: LUKE, SN	PRICE CODE: C01	DATA TURNAROUND: 12 Days / 12 Days
SAMPLING LOCATION: 100-K-63 Excavation Area Sample #7	PROJECT DESIGNATION: 100-K-63 KW Floodplain Verification Sampling (Waste Area AJ)- Soil		SAF NO.: F11-159	AIR QUALITY: ☐	
ICE CHEST NO.: GWS-023	FIELD LOGBOOK NO.: HNF-N-507-23	ACTUAL SAMPLE DEPTH: 0-1'	COA: 302676ES10	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402579ES20.□□** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Silver, Vanadium, Zinc}; ICP/MS - 200.8 (Add-on) {Arsenic, Beryllium, Boron, Lead, Molybdenum, Selenium, Strontium, Tin, Uranium}; 200.8_HG - ICPMS {Mercury}; Chromium Hex - 7196;
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta}; Strontium-89,90 -- Total Sr;

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Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-159-021 — PAGE 1 OF 2

COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-1667	PROJECT COORDINATOR: LUKE, SN
PRICE CODE: C01	AIR QUALITY: ☐	DATA TURNAROUND: 12 Days / 12 Days	
SAMPLING LOCATION: 100-K-63 Excavation Area Sample #8	PROJECT DESIGNATION: 100-K-63 KW Floodplain Verification Sampling (Waste Area A1)- Soil	SAF NO.: F11-159	
ICE CHEST NO.: GWS - 023	FIELD LOGBOOK NO.: HNF-N-507-23.	ACTUAL SAMPLE DEPTH: 0-1'	COA: 302676ES10
METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL		
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A	BILL OF LADING/AIR BILL NO.: N/A	

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool~4C	None	None
HOLDING TIME	6 Months	6 Months	6 Months
TYPE OF CONTAINER	G/P	P	G/P
NO. OF CONTAINER(S)	1	1	1
VOLUME	250mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME			
B2FXB2 3	SOIL	8/18/11	0954	✓	✓	✓

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	8/18/11 1250	[illegible]	8/18/11 1250

SPECIAL INSTRUCTIONS: SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

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

PRINTED ON 7/25/2011 — A-6003-618 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-159-021	PAGE 2 OF 2
COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-1667	PROJECT COORDINATOR: LUKE, SN	PRICE CODE: C01	DATA TURNAROUND: 12 Days / 12 Days
SAMPLING LOCATION: 100-K-63 Excavation Area Sample #8	PROJECT DESIGNATION: 100-K-63 KW Floodplain Verification Sampling (Waste Area AJ)- Soil		SAF NO.: F11-159	AIR QUALITY: ☐	
ICE CHEST NO.: GWS-023	FIELD LOGBOOK NO.: HNF-N-507-23.	ACTUAL SAMPLE DEPTH: 0-11	COA: 302676ES10	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402579ES20.☐☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Silver, Vanadium, Zinc}; ICP/MS - 200.8 (Add-on) {Arsenic, Beryllium, Boron, Lead, Molybdenum, Selenium, Strontium, Tin, Uranium}; 200.8_HG - ICPMS {Mercury}; Chromium Hex - 7196;
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta}; Strontium-89,90 -- Total Sr;

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Chain of Custody

CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-159-022 — PAGE 1 OF 2

COLLECTOR: FM Hall, CHPRC	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-1667	PROJECT COORDINATOR: LUKE, SN
PRICE CODE: C01	DATA TURNAROUND: 12 Days / 12 Days	SAMPLING LOCATION: 100-K-63 Excavation Area Sample #9	PROJECT DESIGNATION: 100-K-63 KW Floodplain Verification Sampling (Waste Area AJ)- Soil
SAF NO.: F11-159	AIR QUALITY:	ICE CHEST NO.: GW3-023	FIELD LOGBOOK NO.: HNF-N-507-23
ACTUAL SAMPLE DEPTH: 0-1'	COA: 302676ES10	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A	BILL OF LADING/AIR BILL NO.: N/A	

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool~4C	None	None
HOLDING TIME	6 Months	6 Months	6 Months
TYPE OF CONTAINER	G/P	P	G/P
NO. OF CONTAINER(S)	1	1	1
VOLUME	250mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME			
B2FXB3 4	SOIL	8-18-11	1010	✓	✓	✓

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	1250 8-18-11	[illegible]	1250 8-18-11

SPECIAL INSTRUCTIONS: SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

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

PRINTED ON 7/25/2011 — A-6003-618 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-159-022	PAGE 2 OF 2
COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-1667	PROJECT COORDINATOR: LUKE, SN	PRICE CODE: C01	DATA TURNAROUND: 12 Days / 12 Days
SAMPLING LOCATION: 100-K-63 Excavation Area Sample #9	PROJECT DESIGNATION: 100-K-63 KW Floodplain Verification Sampling (Waste Area A)- Soil		SAF NO.: F11-159	AIR QUALITY: ☐	
ICE CHEST NO.: GWS-023	FIELD LOGBOOK NO.: HNF-N-507-23	ACTUAL SAMPLE DEPTH: G-1'	COA: 302676ES10	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402579ES20.□□** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Silver, Vanadium, Zinc}; ICP/MS - 200.8 (Add-on) {Arsenic, Beryllium, Boron, Lead, Molybdenum, Selenium, Strontium, Tin, Uranium}; 200.8_HG - ICPMS {Mercury}; Chromium Hex - 7196;
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta}; Strontium-89,90 -- Total Sr;

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Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-159-002 — PAGE 1 OF 2

COLLECTOR: FM Hall, CHPRC	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-1667	PROJECT COORDINATOR: LUKE, SN
PRICE CODE: C01	DATA TURNAROUND: 12 Days / 12 Days	AIR QUALITY: ☐	SAMPLING LOCATION: 100-K-63 Excavation Area Sample #10
PROJECT DESIGNATION: 100-K-63 KW Floodplain Verification Sampling (Waste Area AJ)- Soil	SAF NO.: F11-159	ICE CHEST NO.: 6WS-023	FIELD LOGBOOK NO.: HNF-N-507-23
ACTUAL SAMPLE DEPTH: 0-1'	COA: 302676ES10	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A	BILL OF LADING/AIR BILL NO.: N/A	

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool-4C	None	None
HOLDING TIME	6 Months	6 Months	6 Months
TYPE OF CONTAINER	G/P	P	G/P
NO. OF CONTAINER(S)	1	1	1
VOLUME	250mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME			
B2FX83 5	SOIL	8/18/11	1020	✓	✓	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: FM Hall, CHPRC	DATE/TIME: 8/18/11 1250	RECEIVED BY/STORED IN: Roberson Hoeye	DATE/TIME: 8/18/11 1250
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
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 DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

PRINTED ON 7/25/2011 — A-6003-618 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-159-002	PAGE 2 OF 2
COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-1667	PROJECT COORDINATOR: LUKE, SN	PRICE CODE: C01	DATA TURNAROUND: 12 Days / 12 Days
SAMPLING LOCATION: 100-K-63 Excavation Area Sample #10	PROJECT DESIGNATION: 100-K-63 KW Floodplain Verification Sampling (Waste Area A)- Soil		SAF NO.: F11-159	AIR QUALITY: ☐	
ICE CHEST NO.: GWS-023	FIELD LOGBOOK NO.: HNF-N-507-83	ACTUAL SAMPLE DEPTH: 0-1'	COA: 302676ES10	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402579FS20.□□** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Silver, Vanadium, Zinc}; ICP/MS - 200.8 (Add-on) {Arsenic, Beryllium, Boron, Lead, Molybdenum, Selenium, Strontium, Tin, Uranium}; 200.8_HG - ICPMS {Mercury}; Chromium Hex - 7196;
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta}; Strontium-89,90 -- Total Sr;

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CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-159-003 — PAGE 1 OF 2

COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-1667	PROJECT COORDINATOR: LUKE, SN
SAMPLING LOCATION: 100-K-63 Excavation Area Sample #11	PROJECT DESIGNATION: 100-K-63 KW Floodplain Verification Sampling (Waste Area AJ)- Soil		SAF NO.: F11-159
ICE CHEST NO.: GWS-023	FIELD LOGBOOK NO.: HNF-N-507-23.	ACTUAL SAMPLE DEPTH: C-1'	COA: 302676ES10
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A

PRICE CODE: C01 — AIR QUALITY: ☐ — DATA TURNAROUND: 12 Days / 12 Days — METHOD OF SHIPMENT: GOVERNMENT VEHICLE — **ORIGINAL**

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool~4C	None	None
HOLDING TIME	6 Months	6 Months	6 Months
TYPE OF CONTAINER	G/P	P	G/P
NO. OF CONTAINER(S)	1	1	1
VOLUME	250mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME			
B2FX84 6	SOIL	8-18-11	1033	✓	✓	✓

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	1250 8-18-11	[illegible]	1250 8-18-11

SPECIAL INSTRUCTIONS: SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

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

PRINTED ON 7/25/2011 — A-6003-618 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-159-003	PAGE 2 OF 2
COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-1667	PROJECT COORDINATOR: LUKE, SN	PRICE CODE: C01	DATA TURNAROUND: 12 Days / 12 Days
SAMPLING LOCATION: 100-K-63 Excavation Area Sample #11	PROJECT DESIGNATION: 100-K-63 KW Floodplain Verification Sampling (Waste Area A1)- Soil		SAF NO.: F11-159	AIR QUALITY: ☐	
ICE CHEST NO.: HNF-N-507-14 8/15/11 GWS-023	FIELD LOGBOOK NO.: HNF-N-507-23	ACTUAL SAMPLE DEPTH: 0-1'	COA: 302676ES10	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402579ES20.☐☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Silver, Vanadium, Zinc}; ICP/MS - 200.8 (Add-on) {Arsenic, Beryllium, Boron, Lead, Molybdenum, Selenium, Strontium, Tin, Uranium}; 200.8_HG - ICPMS {Mercury}; Chromium Hex - 7196;
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta}; Strontium-89,90 -- Total Sr;

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Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-159-004

PAGE 1 OF 2

COLLECTOR: FM Hall CHPRC

COMPANY CONTACT: LUKE, SN

TELEPHONE NO.: 372-1667

PROJECT COORDINATOR: LUKE, SN

PRICE CODE: C01

DATA TURNAROUND: 12 Days / 12 Days

SAMPLING LOCATION: 100-K-63 Excavation Area Sample #12

PROJECT DESIGNATION: 100-K-63 KW Floodplain Verification Sampling (Waste Area AJ)- Soil

SAF NO.: F11-159

AIR QUALITY: ☐

ICE CHEST NO.: GWS-023

FIELD LOGBOOK NO.: HNF-N-507-23

ACTUAL SAMPLE DEPTH: 0-1'

COA: 302676ES10

METHOD OF SHIPMENT: GOVERNMENT VEHICLE

ORIGINAL

SHIPPED TO: Waste Sampling & Characterization

OFFSITE PROPERTY NO.: N/A

BILL OF LADING/AIR BILL NO.: N/A

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool~4C	None	None
HOLDING TIME	6 Months	6 Months	6 Months
TYPE OF CONTAINER	G/P	P	G/P
NO. OF CONTAINER(S)	1	1	1
VOLUME	250mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME			
B2FX85	SOIL	8/18/11	1041	✓	✓	✓

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	8/18/11 1250	[illegible]	8/18/11 1250

SPECIAL INSTRUCTIONS: SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

LABORATORY SECTION: RECEIVED BY | TITLE | DATE/TIME

FINAL SAMPLE DISPOSITION: DISPOSAL METHOD | DISPOSED BY | DATE/TIME

PRINTED ON 7/25/2011

A-6003-618 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-159-004	PAGE 2 OF 2
COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-1667	PROJECT COORDINATOR: LUKE, SN	PRICE CODE: C01	DATA TURNAROUND: 12 Days / 12 Days
SAMPLING LOCATION: 100-K-63 Excavation Area Sample #12	PROJECT DESIGNATION: 100-K-63 KW Floodplain Verification Sampling (Waste Area AJ)- Soil		SAF NO.: F11-159	AIR QUALITY: ☐	
ICE CHEST NO.: GWS-23	FIELD LOGBOOK NO.: HNF-N-507-23	ACTUAL SAMPLE DEPTH: 0-6"	COA: 302676ES10	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402579ES20.☐☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Silver, Vanadium, Zinc}; ICP/MS - 200.8 (Add-on) {Arsenic, Beryllium, Boron, Lead, Molybdenum, Selenium, Strontium, Tin, Uranium}; 200.8_HG - ICPMS {Mercury}; Chromium Hex - 7196;
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta}; Strontium-89,90 -- Total Sr;

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Chain of Custody

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-159-014 | PAGE 1 OF 2

COLLECTOR	FM Hall CHPRC
COMPANY CONTACT	LUKE, SN
TELEPHONE NO.	372-1667
PROJECT COORDINATOR	LUKE, SN
PRICE CODE	C01
DATA TURNAROUND	12 Days / 12 Days
AIR QUALITY	☐
SAMPLING LOCATION	100-K-63 Excavation Area Sample #21
PROJECT DESIGNATION	100-K-63 KW Floodplain Verification Sampling (Waste Area AJ)- Soil
SAF NO.	F11-159
ICE CHEST NO.	GW3-023
FIELD LOGBOOK NO.	HNF-N-507-23
ACTUAL SAMPLE DEPTH	0-1'
COA	302676ES10
METHOD OF SHIPMENT	GOVERNMENT VEHICLE
	ORIGINAL
SHIPPED TO	Waste Sampling & Characterization
OFFSITE PROPERTY NO.	N/A
BILL OF LADING/AIR BILL NO.	N/A

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool~4C	None	None
HOLDING TIME	6 Months	6 Months	6 Months
TYPE OF CONTAINER	G/P	P	G/P
NO. OF CONTAINER(S)	1	1	1
VOLUME	250mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME			
B2FX95	SOIL	8/18/11	0920	✓	✓	✓

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	8/18/11 1250	[illegible]	8/18/11 1250

SPECIAL INSTRUCTIONS

SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

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

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A-6003-518 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-159-014	PAGE 2 OF 2
COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-1667	PROJECT COORDINATOR: LUKE, SN	PRICE CODE: C01	DATA TURNAROUND: 12 Days / 12 Days
SAMPLING LOCATION: 100-K-63 Excavation Area Sample #21	PROJECT DESIGNATION: 100-K-63 KW Floodplain Verification Sampling (Waste Area AJ)- Soil		SAF NO.: F11-159	AIR QUALITY:	
ICE CHEST NO.: GWS-023	FIELD LOGBOOK NO.: HNF-N-507-23	ACTUAL SAMPLE DEPTH: 0-1'	COA: 302676ES10	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402579ES20.□□** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Silver, Vanadium, Zinc}; ICP/MS - 200.8 (Add-on) {Arsenic, Beryllium, Boron, Lead, Molybdenum, Selenium, Strontium, Tin, Uranium}; 200.8_HG - ICPMS {Mercury}; Chromium Hex - 7196;
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta}; Strontium-89,90 -- Total Sr;

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CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**

F11-159-018 — PAGE 1 OF 2

COLLECTOR: FM Hall CHPRC

COMPANY CONTACT: LUKE, SN

TELEPHONE NO.: 372-1667

PROJECT COORDINATOR: LUKE, SN

PRICE CODE: C01

DATA TURNAROUND: 12 Days / 12 Days

AIR QUALITY: ☐

SAMPLING LOCATION: 100-K-63 Excavation Area Sample #5

PROJECT DESIGNATION: 100-K-63 KW Floodplain Verification Sampling (Waste Area AJ)- Soil

SAF NO.: F11-159

ICE CHEST NO.: GWS-023

FIELD LOGBOOK NO.: HNF-N-507-23

ACTUAL SAMPLE DEPTH: 0-1'

COA: 302676ES10

METHOD OF SHIPMENT: GOVERNMENT VEHICLE

ORIGINAL

SHIPPED TO: Waste Sampling & Characterization

OFFSITE PROPERTY NO.: N/A

BILL OF LADING/AIR BILL NO.: N/A

MATRIX*: A=Air, D=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool~4C	None	None
HOLDING TIME	6 Months	6 Months	6 Months
TYPE OF CONTAINER	G/P	P	G/P
NO. OF CONTAINER(S)	1	1	1
VOLUME	250mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME			
B2FX99 9	SOIL	8/18/11	0920	✓	✓	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: FM Hall CHPRC	DATE/TIME: 8/18/11 1250	RECEIVED BY/STORED IN: CBrazeal-Brazeal	DATE/TIME: 8/18/11 1250
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
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 DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

PRINTED ON 7/25/2011

A-6003-618 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-1S9-018	PAGE 2 OF 2
COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-1667	PROJECT COORDINATOR: LUKE, SN	PRICE CODE: C01	DATA TURNAROUND: 12 Days / 12 Days
SAMPLING LOCATION: 100-K-63 Excavation Area Sample #5	PROJECT DESIGNATION: 100-K-63 KW Floodplain Verification Sampling (Waste Area A1)- Soil		SAF NO.: F11-159	AIR QUALITY: ☐	
ICE CHEST NO.: GWS-023	FIELD LOGBOOK NO.: HNF-N-507-23	ACTUAL SAMPLE DEPTH: 0-1'	COA: 302676ES10	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402579ES20.□□** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Silver, Vanadium, Zinc}; ICP/MS - 200.8 (Add-on) {Arsenic, Beryllium, Boron, Lead, Molybdenum, Selenium, Strontium, Tin, Uranium}; 200.8_HG - ICPMS {Mercury}; Chromium Hex - 7196;
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta}; Strontium-89,90 -- Total Sr;

PRINTED ON 7/25/2011 A-5003-618 (REV 2)

Attachment 2
Narrative
WSCF113017

Introduction

Samples were received at the WSCF laboratory as referenced on the WSCF SAF Number Cross Reference table included in the final report. The samples were analyzed for the analytes indicated on the attached copy of the chain of custody (COC) form in accordance with the *Statement of Work (SOW), Modification No. 2 to Agreement 36587, Release 3, "FH WSCF ANALYTICAL SERVICES FOR GROUNDWATER."*

The narrative (Attachment 2) will address sample characteristics, analyses requested and general information in performance of the analytical methods. A Data Summary Report (Attachment 3) includes analytical results, a comment report detailing method abnormalities, tentatively identified peaks if applicable, method references, and Laboratory QC information as applicable. Copies of the chain of custody and sample receipt documentation are included as Attachment 4.

It should be noted that the attached chain of custody was not stamped "ICED" by the WSCF Laboratory Sample Custodian during sample receiving. However, based on procedure LO-090-403 form "NOTICE OF IMPROPER SAMPLE SUBMITTAL" was not submitted and was not stamped "NOT ICED". No anomaly was noted during sample receipt.

The following generic data qualifiers (i.e., B, D, U and J) may be applicable to this report, as appropriate

- **B** – Sample results with a concentration greater than the MDL but less than the PQL are B flagged (applies to inorganic and wet chemical analyses), as appropriate.
- **D** – Sample results are D flagged if dilution(s) were required, as appropriate.
- **J** – Sample results with a concentration greater than the MDL but less than the PQL are J flagged (applies to organic analyses), as appropriate.
- **U** – Analyzed for but not detected above limiting criteria. Relative Percent Difference (RPD) values associated with an analyte qualified with a "U" are not applicable.

Analytical Methodology for Requested Analyses

Refer to *WSCF Method References Report* for a complete listing of approved analytical methods.

Inorganic Comments

Hexavalent Chromium – The hold time requirement for this analysis was met. A Duplicate, Matrix Spike, Blank and Laboratory Control Sample were analyzed with this delivery group. Analytical Note(s):

- Matrix Spike and Post Spike recoveries are outside established laboratory limits. Affected sample results in this batch were "N" flagged.
- All other applicable QC controls are within the established limits.

Attachment 2
Narrative
WSCF113017

ICP-MS Metals – The hold time requirements for this analysis were met. A Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group. Analytical Note(s):

- Manganese – MS / MSD Relative Percent Difference (RPD) is outside established laboratory limits. The quality control report was flagged for RPD failure.
- All other applicable QC controls are within the established limits.

Radiochemistry Comments

Rad Chem – The hold time requirement for this analysis was met. A Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group. Analytical Note(s):

Tracers are used to determine chemical yield. RPD is monitored in sample duplicate and is not required for tracer recovery per SOW.

- Gamma Energy Analysis:
  - Europium-152 – Duplicate Relative Percent Difference(s) (RPD) did not meet the established laboratory limits. Duplicate Relative Percent Difference (RPD) does not apply to results below 5X the minimum detectable activity. No flags issued.
  - All other applicable QC controls are within the established limits.
- Gross Alpha / Gross Beta:
  - All applicable QC controls are within the established limits.
- Strontium-89/90:
  - Duplicate Relative Percent Difference(s) (RPD) did not meet the established laboratory limits. Duplicate Relative Percent Difference (RPD) does not apply to results below 5X the minimum detectable activity. No flags issued.
  - All applicable QC controls are within the established limits.

We certify that this data package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this data package has been authorized by the Analytical Laboratory Manager (or designee) and the Client Services representative as verified by electronic signatures shown on the WSCF ANALYTICAL RESULTS REPORT.

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-159-005

PAGE 1 OF 2

COLLECTOR	FM Hall CHPRC
SAMPLING LOCATION	100-K-63 Excavation Area Sample #13
ICE CHEST NO.	GWS-023
SHIPPED TO	Waste Sampling & Characterization
COMPANY CONTACT	LUKE, SN
TELEPHONE NO.	372-1667
PROJECT COORDINATOR	LUKE, SN
PRICE CODE	C01
AIR QUALITY	☐
DATA TURNAROUND	12 Days / 12 Days
PROJECT DESIGNATION	100-K-63 KW Floodplain Verification Sampling (Waste Area AJ)- Soil
SAF NO.	F11 159
FIELD LOGBOOK NO.	HNF-N-507-23
ACTUAL SAMPLE DEPTH	0-1'
COA	302676ES10
METHOD OF SHIPMENT	GOVERNMENT VEHICLE
ORIGINAL	
OFFSITE PROPERTY NO.	N/A
BILL OF LADING/AIR BILL NO.	N/A

MATRIX*
A=Air
DL=Drum Liquids
DS=Drum Solids
L=Liquid
O=Oil
S=Soil
SE=Sediment
T=Tissue
V=Vegetation
W=Water
WI=Wipe
X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS
Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

113017

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool~4C	None	None
HOLDING TIME	6 Months	6 Months	6 Months
TYPE OF CONTAINER	G/P	P	G/P
NO. OF CONTAINER(S)	1	1	1
VOLUME	250mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME			
B2FX86	SOIL	8/19/11	0655	✓	✓	✓

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	8/19/11 / 1400	M01109SSU#1	8/19/11 / 1400
M01109SSU#1	8-23-11 0930	FM Hall CHPRC	8-23-11 0930
FM Hall CHPRC	8-23-11 1005	[illegible]	8-23-11 1005

SPECIAL INSTRUCTIONS
SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

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

PRINTED ON 7/25/2011

A-6003-618 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-159-005	PAGE 2 OF 2
COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-1667	PROJECT COORDINATOR: LUKE, SN	PRICE CODE: C01	DATA TURNAROUND: 12 Days / 12 Days
SAMPLING LOCATION: 100-K-63 Excavation Area Sample #13	PROJECT DESIGNATION: 100-K-63 KW Floodplain Verification Sampling (Waste Area AJ)- Soil		SAF NO.: F11-159	AIR QUALITY: ☐	
ICE CHEST NO.: GWS-023	FIELD LOGBOOK NO.: HNF-N-507-23	ACTUAL SAMPLE DEPTH: 0-1'	COA: 302676ES10	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402579ES20.☐☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Silver, Vanadium, Zinc}; ICP/MS - 200.8 (Add-on) {Arsenic, Beryllium, Boron, Lead, Molybdenum, Selenium, Strontium, Tin, Uranium}; 200.8_HG - ICPMS {Mercury}; Chromium Hex - 7196;
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta}; Strontium-89,90 -- Total Sr;

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Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-159-006	PAGE 1 OF 2
COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-1667	PROJECT COORDINATOR: LUKE, SN	PRICE CODE: C01	DATA TURNAROUND: 12 Days / 12 Days
SAMPLING LOCATION: 100-K-63 Excavation Area Sample #14	PROJECT DESIGNATION: 100-K-63 KW Floodplain Verification Sampling (Waste Area AJ)- Soil		SAF NO.: F11-159	AIR QUALITY: ☐	
ICE CHEST NO.: GW3-023	FIELD LOGBOOK NO.: HNF-N-507-23.	ACTUAL SAMPLE DEPTH: 0-1'	COA: 302676ES10	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool~4C	None	None
HOLDING TIME	6 Months	6 Months	6 Months
TYPE OF CONTAINER	G/P	P	G/P
NO. OF CONTAINER(S)	1	1	1
VOLUME	250mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.		MATRIX*	SAMPLE DATE	SAMPLE TIME			
B2FX87	2	SOIL	8/19/11	0703	✓	✓	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS
RELINQUISHED BY/REMOVED FROM: FM Hall CHPRC	DATE/TIME: 8/19/11 / 1400	RECEIVED BY/STORED IN: M01109 SSU #1	DATE/TIME: 8/19/11 / 1406	SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS
RELINQUISHED BY/REMOVED FROM: M01109 SSU#1	DATE/TIME: 0930 8-23-11	RECEIVED BY/STORED IN: FM Hall CHPRC	DATE/TIME: 0930 8-23-11	
RELINQUISHED BY/REMOVED FROM: FM Hall CHPRC	DATE/TIME: 1005 8-23-11	RECEIVED BY/STORED IN: Victor Bin	DATE/TIME: 1005 8-23-11	
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	
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

PRINTED ON 7/25/2011

A-6003-618 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-159-006	PAGE 2 OF 2
COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-1667	PROJECT COORDINATOR: LUKE, SN	PRICE CODE: C01	DATA TURNAROUND: 12 Days / 12 Days
SAMPLING LOCATION: 100-K-63 Excavation Area Sample #14	PROJECT DESIGNATION: 100-K-63 KW Floodplain Verification Sampling (Waste Area A1)- Soil		SAF NO.: F11-159	AIR QUALITY: ☐	
ICE CHEST NO.: GWS-023	FIELD LOGBOOK NO.: HNF-N-507-23	ACTUAL SAMPLE DEPTH: 0-1'	COA: 302676ES10	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402579ES20.☐☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Silver, Vanadium, Zinc}; ICP/MS - 200.8 (Add-on) {Arsenic, Beryllium, Boron, Lead, Molybdenum, Selenium, Strontium, Tin, Uranium}; 200.8_HG - ICPMS {Mercury}; Chromium Hex - 7196;
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta}; Strontium-89,90 -- Total Sr;

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Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-159-007 | PAGE 1 OF 2

COLLECTOR: FM Hall, CHPRC

COMPANY CONTACT: LUKE, SN

TELEPHONE NO.: 372-1667

PROJECT COORDINATOR: LUKE, SN

PRICE CODE: C01

DATA TURNAROUND: 12 Days / 12 Days

SAMPLING LOCATION: 100-K-63 Excavation Area Sample #15

PROJECT DESIGNATION: 100-K-63 KW Floodplain Verification Sampling (Waste Area AJ)- Soil

SAF NO.: F11-159

AIR QUALITY: ☐

ICE CHEST NO.: 6W3-023

FIELD LOGBOOK NO.: HNF-N-807-23

ACTUAL SAMPLE DEPTH: 0-1'

COA: 302676ES10

METHOD OF SHIPMENT: GOVERNMENT VEHICLE

ORIGINAL

SHIPPED TO: Waste Sampling & Characterization

OFFSITE PROPERTY NO.: N/A

BILL OF LADING/AIR BILL NO.: N/A

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool~4C	None	None
HOLDING TIME	6 Months	6 Months	6 Months
TYPE OF CONTAINER	G/P	P	G/P
NO. OF CONTAINER(S)	1	1	1
VOLUME	250mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.		MATRIX*	SAMPLE DATE	SAMPLE TIME			
B2FX88	3	SOIL	8/19/11	0728	✓	✓	✓

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall, CHPRC	8/19/11 1400	M01109SSU#1	8/19/11 1400
M01109SSU#1	8-23-11 0950	FM Hall, CHPRC	8-23-11 0950
FM Hall, CHPRC	8-23-11 1005	Victor Bing	8-23-11 1005

SPECIAL INSTRUCTIONS: SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

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

PRINTED ON 7/25/2011

A-6003-618 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-159-007	PAGE 2 OF 2
COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-1667	PROJECT COORDINATOR: LUKE, SN	PRICE CODE: C01	DATA TURNAROUND: 12 Days / 12 Days
SAMPLING LOCATION: 100-K-63 Excavation Area Sample #15	PROJECT DESIGNATION: 100-K-63 KW Floodplain Verification Sampling (Waste Area AJ)- Soil		SAF NO.: F11-159	AIR QUALITY: [ ]	
ICE CHEST NO.: GWS-023	FIELD LOGBOOK NO.: HNF-N-507-23	ACTUAL SAMPLE DEPTH: 0-6"	COA: 302676ES10	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402579ES20.□□** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Silver, Vanadium, Zinc}; ICP/MS - 200.8 (Add-on) {Arsenic, Beryllium, Boron, Lead, Molybdenum, Selenium, Strontium, Tin, Uranium}; 200.8_HG - ICPMS {Mercury}; Chromium Hex - 7196;
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta}; Strontium-89,90 -- Total Sr;

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CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-159-008 — PAGE 1 OF 2

COLLECTOR: FM Hall, CHPRC	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-166 /	PROJECT COORDINATOR: LUKE, SN
PRICE CODE: C01	DATA TURNAROUND: 12 Days / 12 Days	AIR QUALITY: ☐	SAMPLING LOCATION: 100-K-63 Excavation Area Sample #16
PROJECT DESIGNATION: 100-K-63 KW Floodplain Verification Sampling (Waste Area AJ) Soil	SAF NO.: F11-159	ICE CHEST NO.: GWS-023	FIELD LOGBOOK NO.: HNF-N-507-23
ACTUAL SAMPLE DEPTH: 0-1'	COA: 302676ES10	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A	BILL OF LADING/AIR BILL NO.: N/A	

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool~4C	None	None
HOLDING TIME	6 Months	6 Months	6 Months
TYPE OF CONTAINER	G/P	P	G/P
NO. OF CONTAINER(S)	1	1	1
VOLUME	250mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME			
B2FX89 4	SOIL	8/19/11	0738	✓	—	—

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall	8/19/11 1400	MO1109SSU #1	8/19/11 1400
MO1109SSU #1	8-23-11 0930	FM Hall CHPRC	8-23-11 0930
FM Hall	8-23-11 1005	Victor Sing	8-23-11 1005

SPECIAL INSTRUCTIONS: SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

LABORATORY SECTION — RECEIVED BY — TITLE — DATE/TIME

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

PRINTED ON 7/25/2011 — A-6003-618 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-159-008	PAGE 2 OF 2
COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-1667	PROJECT COORDINATOR: LUKE, SN	PRICE CODE: C01	DATA TURNAROUND: 12 Days / 12 Days
SAMPLING LOCATION: 100-K-63 Excavation Area Sample #16	PROJECT DESIGNATION: 100-K-63 KW Floodplain Verification Sampling (Waste Area A1)- Soil		SAF NO.: F11-159	AIR QUALITY: ☐	
ICE CHEST NO.: GWS-023	FIELD LOGBOOK NO.: HNF-N-507-23	ACTUAL SAMPLE DEPTH: 0-1'	COA: 302676ES10	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402579ES20.□□** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Silver, Vanadium, Zinc}; ICP/MS - 200.8 (Add-on) {Arsenic, Beryllium, Boron, Lead, Molybdenum, Selenium, Strontium, Tin, Uranium}; 200.8_HG - ICPMS {Mercury}; Chromium Hex - 7196;
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta}; Strontium-89,90 -- Total Sr;

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Chain of Custody

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-159-009

PAGE 1 OF 2

COLLECTOR: FM Hall CHPRC

COMPANY CONTACT: LUKE, SN

TELEPHONE NO.: 372-1667

PROJECT COORDINATOR: LUKE, SN

PRICE CODE: C01

DATA TURNAROUND: 12 Days / 12 Days

SAMPLING LOCATION: 100-K-63 Excavation Area Sample #17

PROJECT DESIGNATION: 100-K-63 KW Floodplain Verification Sampling (Waste Area AJ)- Soil

SAF NO.: F11-159

AIR QUALITY: ☐

ICE CHEST NO.: GWS-023

FIELD LOGBOOK NO.: HNF-N-807-23

ACTUAL SAMPLE DEPTH: 0-1'

COA: 302676ES10

METHOD OF SHIPMENT: GOVERNMENT VEHICLE

ORIGINAL

SHIPPED TO: Waste Sampling & Characterization

OFFSITE PROPERTY NO.: N/A

BILL OF LADING/AIR BILL NO.: N/A

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool-4C	None	None
HOLDING TIME	6 Months	6 Months	6 Months
TYPE OF CONTAINER	G/P	P	G/P
NO. OF CONTAINER(S)	1	1	1
VOLUME	250mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME			
B2FX90 5	SOIL	8/19/11	0800	✓	✓	✓

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	8/19/11 1400	M0110955U#1	8/19/11 1400
M0110955U#1	8-23-11 0930	FM Hall CHPRC	8-23-11 0930
FM Hall CHPRC	8-23-11 1005	VIL TOV	8-23-11 1005

SPECIAL INSTRUCTIONS

SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

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

PRINTED ON 7/25/2011

A-6003-618 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-159-009	PAGE 2 OF 2
COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-1667	PROJECT COORDINATOR: LUKE, SN	PRICE CODE: C01	DATA TURNAROUND: 12 Days / 12 Days
SAMPLING LOCATION: 100-K-63 Excavation Area Sample #17	PROJECT DESIGNATION: 100-K-63 KW Floodplain Verification Sampling (Waste Area A1)- Soil		SAF NO.: FI1-159	AIR QUALITY: ☐	
ICE CHEST NO.: 6W5-023	FIELD LOGBOOK NO.: HNF-N-607-23	ACTUAL SAMPLE DEPTH: 0-1'	COA: 302676ES10	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402579ES20.☐☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Silver, Vanadium, Zinc}; ICP/MS - 200.8 (Add-on) {Arsenic, Beryllium, Boron, Lead, Molybdenum, Selenium, Strontium, Tin, Uranium}; 200.8_HG - ICPMS {Mercury}; Chromium Hex - 7196;
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta}; Strontium-89,90 -- Total Sr;

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CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-159-010 — PAGE 1 OF 2

COLLECTOR: FM Hall, CHPRC	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-1667	PROJECT COORDINATOR: LUKE, SN
PRICE CODE: C01	DATA TURNAROUND: 12 Days / 12 Days		
SAMPLING LOCATION: 100-K-63 Excavation Area Sample #18	PROJECT DESIGNATION: 100-K-63 KW Floodplain Verification Sampling (Waste Area AJ)- Soil		SAF NO.: F11-159
AIR QUALITY: ☐			
ICE CHEST NO.: GWS-023	FIELD LOGBOOK NO.: HNF-N-507-23	ACTUAL SAMPLE DEPTH: 0-1	COA: 302676ES10
METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL		
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool~4C	None	None
HOLDING TIME	6 Months	6 Months	6 Months
TYPE OF CONTAINER	G/P	P	G/P
NO. OF CONTAINER(S)	1	1	1
VOLUME	250mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.		MATRIX*	SAMPLE DATE	SAMPLE TIME			
B2FX91	LD	SOIL	8/19/11	0806	✓	✓	—

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall	8/19/11 1400	M01109SSU#1	8/19/11 1400
M01109 SSU#1	8-23-11 0930	FM Hall, CHPRC	8-23-11 0930
FM Hall, CHPRC	8-23-11 1005	Victor Spry	8-23-11 1005

SPECIAL INSTRUCTIONS: SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

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

PRINTED ON 7/25/2011 — A-6003-618 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-159-010	PAGE 2 OF 2
COLLECTOR: FM Hall, CHPRC	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-1667	PROJECT COORDINATOR: LUKE, SN	PRICE CODE: C01	DATA TURNAROUND: 12 Days / 12 Days
SAMPLING LOCATION: 100-K-63 Excavation Area Sample #18	PROJECT DESIGNATION: 100-K-63 KW Floodplain Verification Sampling (Waste Area AJ)- Soil		SAF NO.: F11-159	AIR QUALITY: ☐	
ICE CHEST NO.: GW5-023	FIELD LOGBOOK NO.: HNF-N-507-23	ACTUAL SAMPLE DEPTH: 0-1'	COA: 302676E510	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402579ES20.□□** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Silver, Vanadium, Zinc}; ICP/MS - 200.8 (Add-on) {Arsenic, Beryllium, Boron, Lead, Molybdenum, Selenium, Strontium, Tin, Uranium}; 200.8_HG - ICPMS {Mercury}; Chromium Hex - 7196;
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta}; Strontium-89,90 -- Total Sr;

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Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-159-011

PAGE 1 OF 2

COLLECTOR: FM Hall CHPRC

COMPANY CONTACT: LUKE, SN

TELEPHONE NO.: 372-1667

PROJECT COORDINATOR: LUKE, SN

PRICE CODE: C01

DATA TURNAROUND: 12 Days / 12 Days

SAMPLING LOCATION: 100-K-63 Excavation Area Sample #19

PROJECT DESIGNATION: 100-K-63 KW Floodplain Verification Sampling (Waste Area AJ)- Soil

SAF NO.: F11-159

AIR QUALITY: [ ]

ICE CHEST NO.: GW3-023

FIELD LOGBOOK NO.: HNF-N-507-23

ACTUAL SAMPLE DEPTH: 0-1'

COA: 302676ES10

METHOD OF SHIPMENT: GOVERNMENT VEHICLE

ORIGINAL

SHIPPED TO: Waste Sampling & Characterization

OFFSITE PROPERTY NO.: N/A

BILL OF LADING/AIR BILL NO.: N/A

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool-4C	None	None
HOLDING TIME	6 Months	6 Months	6 Months
TYPE OF CONTAINER	G/P	P	G/P
NO. OF CONTAINER(S)	1	1	1
VOLUME	250mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.		MATRIX*	SAMPLE DATE	SAMPLE TIME			
B2FX92	7	SOIL	8/19/11	0837	✓	✓	✓

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	8/19/11 1400	M01109SSU #1	8/19/11 1400
M01109SSU #1	8-23-11 0930	FM Hall CHPRC	8-23-11 0930
FM Hall CHPRC	8-23-11 1005	VLC for	8-23-11 1005

SPECIAL INSTRUCTIONS: SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

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

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A-6003-618 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-159-011 — PAGE 2 OF 2

COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-1667	PROJECT COORDINATOR: LUKE, SN
SAMPLING LOCATION: 100-K-63 Excavation Area Sample #19	PROJECT DESIGNATION: 100-K-63 KW Floodplain Verification Sampling (Waste Area A)) Soil		SAF NO.: F11-159
ICE CHEST NO.: GWS-023	FIELD LOGBOOK NO.: HNF-N-507-23	ACTUAL SAMPLE DEPTH: 0-1'	COA: 302676ES10
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A

PRICE CODE: C01 — AIR QUALITY: ☐ — DATA TURNAROUND: 12 Days / 12 Days — METHOD OF SHIPMENT: GOVERNMENT VEHICLE — **ORIGINAL**

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402579ES20.□□** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKT applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Silver, Vanadium, Zinc}; ICP/MS - 200.8 (Add-on) {Arsenic, Beryllium, Boron, Lead, Molybdenum, Selenium, Strontium, Tin, Uranium}; 200.8_HG - ICPMS {Mercury}; Chromium Hex - 7196;
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta}; Strontium-89,90 -- Total Sr;

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CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-159-013 | PAGE 1 OF 2

COLLECTOR: FM Hall, CHPRC

COMPANY CONTACT: LUKE, SN

TELEPHONE NO.: 372-1667

PROJECT COORDINATOR: LUKE, SN

PRICE CODE: C01

DATA TURNAROUND: 12 Days / 12 Days

SAMPLING LOCATION: 100-K-63 Excavation Area Sample #20

PROJECT DESIGNATION: 100-K-63 KW Floodplain Verification Sampling (Waste Area AJ)- Soil

SAF NO.: F11-159

AIR QUALITY: ☐

ICE CHEST NO.: GWS-023

FIELD LOGBOOK NO.: HNF-N-507-23.

ACTUAL SAMPLE DEPTH: 0-1'

COA: 302676ES10

METHOD OF SHIPMENT: GOVERNMENT VEHICLE

ORIGINAL

SHIPPED TO: Waste Sampling & Characterization

OFFSITE PROPERTY NO.: N/A

BILL OF LADING/AIR BILL NO.: N/A

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool~4C	None	None
HOLDING TIME	6 Months	6 Months	6 Months
TYPE OF CONTAINER	G/P	P	G/P
NO. OF CONTAINER(S)	1	1	1
VOLUME	250mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.		MATRIX*	SAMPLE DATE	SAMPLE TIME			
B2FX94	8	SOIL	8/19/11	0840	✓	✓	✓

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall, CHPRC	8/19/11 1400	M01109SSU#1	8/19/11 1400
M01109SSU#1	8-23-11 0930	FM Hall, CHPRC	8-23-11 0930
FM Hall, CHPRC	8-23-11 1005	Victor Bing	8-23-11 1005

SPECIAL INSTRUCTIONS: SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

LABORATORY SECTION: RECEIVED BY | TITLE | DATE/TIME

FINAL SAMPLE DISPOSITION: DISPOSAL METHOD | DISPOSED BY | DATE/TIME

PRINTED ON 7/25/2011

A-6033-618 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-159-013	PAGE 2 OF 2
COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-1667	PROJECT COORDINATOR: LUKE, SN	PRICE CODE: C01	DATA TURNAROUND: 12 Days / 12 Days
SAMPLING LOCATION: 100-K-63 Excavation Area Sample #20	PROJECT DESIGNATION: 100-K-63 KW Floodplain Verification Sampling (Waste Area A) - Soil		SAF NO.: F11-159	AIR QUALITY: ☐	
ICE CHEST NO.: GWS-023	FIELD LOGBOOK NO.: HNF-N-507-23	ACTUAL SAMPLE DEPTH: 0-1'	COA: 302676ES10	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402579ES20.□□** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Silver, Vanadium, Zinc}; ICP/MS - 200.8 (Add-on) {Arsenic, Beryllium, Boron, Lead, Molybdenum, Selenium, Strontium, Tin, Uranium}; 200.8_HG - ICPMS {Mercury}; Chromium Hex - 7196;
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta}; Strontium-89,90 – Total Sr;

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Appendix 5

Data Validation Supporting Documentation

Appendix B - Radiochemical Data Validation Checklist

RADIOCHEMICAL DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	(C)	D	E
PROJECT: 100-K Project, Waste Site 100-K-63, Excavation Area			DATA PACKAGE: VSR11-056		
VALIDATOR: Carl Schloesslin		LAB: WSCF		DATE: 9-12-2011	
			SDG: WSCF-112993, -113002, -113017		
ANALYSES PERFORMED					
Gross Alpha/Beta X	Strontium-90 X	Technetium-99	Alpha Spectroscopy	Gamma Spectroscopy X	
Total Uranium	Radium-22	Tritium	C-14	I-129	

SAMPLES/MATRIX Soil samples

SDG WSCF112993: B2FX82, B2FX93, B2FX96, B2FX97, B2FX98

SDG WSCF113002: B2FXB0, B2FXB1, B2FXB2, B2FXB3, B2FX83, B2FX84, B2FX85, B2FX95, B2FX99

SDG WSCF113017: B2FX86, B2FX87, B2FX88, B2FX89, B2FX90, B2FX91, B2FX92, B2FX94

1. Completeness ..... ☐ N/A

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

Comments: None

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:

WSCF112993 EB B2FX96 Hit: Sr-90 1.2 pCi/g

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: None

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: None

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: None

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: None

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:

WSCF113002, Batch 188687 gross beta difference = 4.9 pCi/g, MDC = 1.8 pCi/g

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: None

12. Holding Times (All levels)

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

Comments: None

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:

MDCs > CRDLs for associated non-detect sample results

WSCF112993: Eu-155 CRDL = 0.1 pCi/g, B2FX82 MDC = 0.15 pCi/g, B2FX93 MDC = 0.14 pCi/g, B2FX97 MDC = 0.15 pCi/g, B2FX98 MDC = 0.15 pCi/g

WSCF113002: Eu-155 CRDL = 0.1 pCi/g, B2FXB0 MDC = 0.14 pCi/g, B2FXB1 MDC = 0.12 pCi/g, B2FXB2 MDC = 0.13 pCi/g, B2FXB3 MDC = 0.18 pCi/g, B2FX83 MDC = 0.16 pCi/g, B2FX84 MDC = 0.12 pCi/g, B2FX85 MDC = 0.19 pCi/g, B2FX95 MDC = 0.19 pCi/g, B2FX99 MDC = 0.14 pCi/g

MDCs > CRDLs for associated non-detect sample results continued

WSCF113002: Eu-152 CRDL = 0.1 pCi/g, B2FXB3 MDC = 0.12 pCi/g, B2FX83 MDC = 0.13 pCi/g

WSCF113002: Eu-154 CRDL = 0.1 pCi/g, B2FX83 MDC = 0.13 pCi/g

WSCF113017: Eu-155 CRDL = 0.1 pCi/g, B2FX87 MDC = 0.12 pCi/g, B2FX88 MDC = 0.12 pCi/g, B2FX89 MDC = 0.20 pCi/g, B2FX90 MDC = 0.12 pCi/g, B2FX91 MDC = 0.20 pCi/g, B2FX92 MDC = 0.12 pCi/g, B2FX94 MDC = 0.12 pCi/g

Appendix 6

Additional Documentation Requested By Client

Batch QC List

Attention Michael Neely
Department Radiochemistry

Group # WSCF112993

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
188471	188684	1	BLANK	63449	BLANK		Gross Alpha/Gross Beta
188471	188684	2	LCS	63450	LCS		Gross Alpha/Gross Beta
188471	188684	3	DUP	63451	B2FX82(112993001DUP)	112993001	Gross Alpha/Gross Beta
188471	188684	4	SAMPLE	112993001	B2FX82		Gross Alpha/Gross Beta
188471	188684	5	SAMPLE	112993001	B2FX82		Gross Alpha/Gross Beta
188471	188684	6	SAMPLE	112993002	B2FX93		Gross Alpha/Gross Beta
188471	188684	7	SAMPLE	112993002	B2FX93		Gross Alpha/Gross Beta
188471	188684	8	SAMPLE	112993003	B2FX96		Gross Alpha/Gross Beta
188471	188684	9	SAMPLE	112993003	B2FX96		Gross Alpha/Gross Beta
188471	188684	10	SAMPLE	112993004	B2FX97		Gross Alpha/Gross Beta
188471	188684	11	SAMPLE	112993004	B2FX97		Gross Alpha/Gross Beta
188471	188684	12	SAMPLE	112993005	B2FX98		Gross Alpha/Gross Beta
188471	188684	13	SAMPLE	112993005	B2FX98		Gross Alpha/Gross Beta
188473	188546	1	IBLANK	63455	IBLANK		Gamma Energy Analysis-general
188473	188546	2	LCS	63456	LCS		Gamma Energy Analysis-general
188473	188546	3	DUP	63457	B2FX82(112993001DUP)	112993001	Gamma Energy Analysis-general
188473	188546	4	SAMPLE	112993001	B2FX82		Gamma Energy Analysis-general
188473	188546	5	SAMPLE	112993002	B2FX93		Gamma Energy Analysis-general
188473	188546	6	SAMPLE	112993003	B2FX96		Gamma Energy Analysis-general
188473	188546	7	SAMPLE	112993004	B2FX97		Gamma Energy Analysis-general
188473	188546	8	SAMPLE	112993005	B2FX98		Gamma Energy Analysis-general
188476	188878	1	BLANK	63461	BLANK		Strontium 89/90 (GPC/GEA)
188476	188878	2	LCS	63462	LCS		Strontium 89/90 (GPC/GEA)

Batch QC List

Attention Michael Neely
Department Radiochemistry

Group # WSCF112993

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
188476	188878	3	DUP	63463	B2FD64(112963001DUP)	112963001	Strontium 89/90 (GPC/GEA)
188476	188878	4	SAMPLE	112993001	B2FX82		Strontium 89/90 (GPC/GEA)
188476	188878	5	SAMPLE	112993002	B2FX93		Strontium 89/90 (GPC/GEA)
188476	188878	6	SAMPLE	112993003	B2FX96		Strontium 89/90 (GPC/GEA)
188476	188878	7	SAMPLE	112993004	B2FX97		Strontium 89/90 (GPC/GEA)
188661	188979	1	BLANK	63583	BLANK		Strontium 89/90 (GPC/GEA)
188661	188979	2	LCS	63584	LCS		Strontium 89/90 (GPC/GEA)
188661	188979	3	DUP	63585	B2FX98(112993005DUP)	112993005	Strontium 89/90 (GPC/GEA)
188661	188979	4	SAMPLE	112993005	B2FX98		Strontium 89/90 (GPC/GEA)

Quality Control Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF112993

QC Batch 188471 **Test** Gross Alpha/Gross Beta
Associated Samples 112993001, 112993002, 112993003, 112993004, 112993005

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #63449**							
Gross Alpha	12587-46-1		0.22	pCi/g					U	08/30/11
Gross Beta	12587-47-2		0.29	pCi/g					U	08/30/11
LCS			**QC Sample #63450**							
Gross Alpha	12587-46-1		8.0	pCi/g	98.4	80 - 120				08/30/11
Gross Beta	12587-47-2		26	pCi/g	117.1	80 - 120				08/30/11
DUP			**QC Sample #63451**							
			Original 112993001							
Gross Alpha	12587-46-1	1.4	1.6	pCi/g			14.30	30		08/30/11
Gross Beta	12587-47-2	6.2	5.3	pCi/g			14.30	30		08/30/11

Quality Control Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF112993

QC Batch 188473 **Test** Gamma Energy Analysis-general
Associated Samples 112993001, 112993002, 112993003, 112993004, 112993005

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit		RQ	Analyzed
IBLANK			**QC Sample #63455**								
Cesium-137	10045-97-3		-4.7E-3	pCi/g						U	08/22/11
Cobalt-60	10198-40-0		1.7E-3	pCi/g						U	08/22/11
Europium-152	14683-23-9		0.022	pCi/g						U	08/22/11
Europium-154	15585-10-1		6.6E-3	pCi/g						U	08/22/11
Europium-155	14391-16-3		-0.017	pCi/g						U	08/22/11
LCS			**QC Sample #63456**								
Cesium-137	10045-97-3		6600	pCi/sample	108.5	80 - 120					08/22/11
Cobalt-60	10198-40-0		10000	pCi/sample	105.2	80 - 120					08/22/11
DUP			**QC Sample #63457**								
			Original 112993001								
Cesium-137	10045-97-3	0.74	0.78	pCi/g			5.40	30			08/22/11
Cobalt-60	10198-40-0	-8.8E-3	-5.1E-4	pCi/g			-178.00	30	*	U	08/22/11
Europium-152	14683-23-9	0.31	0.31	pCi/g			0.00	30			08/22/11
Europium-154	15585-10-1	0.023	4.4E-3	pCi/g			134.60	30	*	U	08/22/11
Europium-155	14391-16-3	0.050	0.033	pCi/g			39.00	30	*	U	08/22/11

Quality Control Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF112993

QC Batch 188476
Associated Samples 112993001, 112993002, 112993003, 112993004

Test Strontium 89/90 (GPC/GEA)

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit		RQ	Analyzed
BLANK			**QC Sample #63461**								
Strontium-89/90	SR-RAD		-0.14	pCi/g						U	08/26/11
LCS			**QC Sample #63462**								
Strontium-89/90	SR-RAD		27	pCi/g	122.3	80 - 120				X	08/26/11
DUP			**QC Sample #63463**								
			Original 112963001								
Strontium-89/90	SR-RAD		1.7	pCi/g			123.20	30	*	X	08/26/11

Quality Control Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF112993

QC Batch 188661
Associated Samples 112993005

Test Strontium 89/90 (GPC/GEA)

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #63583**							
Strontium-89/90	SR-RAD		0.12	pCi/g					U	08/30/11
LCS			**QC Sample #63584**							
Strontium-89/90	SR-RAD		24	pCi/g	120.6	80 - 120			X	08/30/11
DUP			**QC Sample #63585**							
			Original 112993005							
Strontium-89/90	SR-RAD	0.23	-0.22	pCi/g					U	08/30/11

Quality Control Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF112993

QC Batch 188476
Associated Samples 112993001, 112993002, 112993003, 112993004

Test Strontium 89/90 (GPC/GEA)

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
SAMPLE			**Sample #112993001**							
Strontium-85	13967-73-2				70.1	25 - 105				08/26/11
SAMPLE			**Sample #112993002**							
Strontium-85	13967-73-2				76.7	25 - 105				08/26/11
SAMPLE			**Sample #112993003**							
Strontium-85	13967-73-2				63.4	25 - 105				08/26/11
SAMPLE			**Sample #112993004**							
Strontium-85	13967-73-2				67	25 - 105				08/26/11
BLANK			**QC Sample #63461**							
Strontium-85	13967-73-2				71.9	25 - 105				08/26/11
LCS			**QC Sample #63462**							
Strontium-85	13967-73-2				67.1	25 - 105				08/26/11
DUP			**QC Sample #63463**							
			Original 112963001							
Strontium-85	13967-73-2				67.4	25 - 105	n/a			08/26/11

Quality Control Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF112993

QC Batch 188661
Associated Samples 112993005

Test Strontium 89/90 (GPC/GEA)

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
SAMPLE			**Sample #112993005**							
Strontium-85	13967-73-2				71.2	25 - 105				08/30/11
BLANK			**QC Sample #63583**							
Strontium-85	13967-73-2				71.5	25 - 105				08/30/11
LCS			**QC Sample #63584**							
Strontium-85	13967-73-2				61	25 - 105				08/30/11
DUP			**QC Sample #63585**							
			Original 112993005							
Strontium-85	13967-73-2				74.1	25 - 105	n/a			08/30/11

Batch QC List

Attention Michael Neely
Department Radiochemistry

Group # WSCF113002

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
188471	188684	1	BLANK	63449	BLANK		Gross Alpha/Gross Beta
188471	188684	2	LCS	63450	LCS		Gross Alpha/Gross Beta
188471	188684	3	DUP	63451	B2FX82(112993001DUP)	112993001	Gross Alpha/Gross Beta
188471	188684	14	SAMPLE	113002001	B2FXB0		Gross Alpha/Gross Beta
188471	188684	15	SAMPLE	113002001	B2FXB0		Gross Alpha/Gross Beta
188471	188684	16	SAMPLE	113002002	B2FXB1		Gross Alpha/Gross Beta
188471	188684	17	SAMPLE	113002002	B2FXB1		Gross Alpha/Gross Beta
188471	188684	18	SAMPLE	113002003	B2FXB2		Gross Alpha/Gross Beta
188471	188684	19	SAMPLE	113002003	B2FXB2		Gross Alpha/Gross Beta
188472	188687	1	BLANK	63452	BLANK		Gross Alpha/Gross Beta
188472	188687	2	LCS	63453	LCS		Gross Alpha/Gross Beta
188472	188687	3	DUP	63454	B2FXB3(113002004DUP)	113002004	Gross Alpha/Gross Beta
188472	188687	4	SAMPLE	113002004	B2FXB3		Gross Alpha/Gross Beta
188472	188687	5	SAMPLE	113002004	B2FXB3		Gross Alpha/Gross Beta
188472	188687	6	SAMPLE	113002005	B2FX83		Gross Alpha/Gross Beta
188472	188687	7	SAMPLE	113002005	B2FX83		Gross Alpha/Gross Beta
188472	188687	8	SAMPLE	113002006	B2FX84		Gross Alpha/Gross Beta
188472	188687	9	SAMPLE	113002006	B2FX84		Gross Alpha/Gross Beta
188472	188687	10	SAMPLE	113002007	B2FX85		Gross Alpha/Gross Beta
188472	188687	11	SAMPLE	113002007	B2FX85		Gross Alpha/Gross Beta
188472	188687	12	SAMPLE	113002008	B2FX95		Gross Alpha/Gross Beta
188472	188687	13	SAMPLE	113002008	B2FX95		Gross Alpha/Gross Beta
188472	188687	14	SAMPLE	113002009	B2FX99		Gross Alpha/Gross Beta

Batch QC List

Attention Michael Neely
Department Radiochemistry

Group # WSCF113002

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
188472	188687	15	SAMPLE	113002009	B2FX99		Gross Alpha/Gross Beta
188473	188546	1	IBLANK	63455	IBLANK		Gamma Energy Analysis-general
188473	188546	2	LCS	63456	LCS		Gamma Energy Analysis-general
188473	188546	3	DUP	63457	B2FX82(112993001DUP)	112993001	Gamma Energy Analysis-general
188473	188546	9	SAMPLE	113002001	B2FXB0		Gamma Energy Analysis-general
188473	188546	10	SAMPLE	113002002	B2FXB1		Gamma Energy Analysis-general
188474	188547	1	IBLANK	63458	IBLANK		Gamma Energy Analysis-general
188474	188547	2	LCS	63459	LCS		Gamma Energy Analysis-general
188474	188547	3	DUP	63460	B2FXB2(113002003DUP)	113002003	Gamma Energy Analysis-general
188474	188547	4	SAMPLE	113002003	B2FXB2		Gamma Energy Analysis-general
188474	188547	5	SAMPLE	113002004	B2FXB3		Gamma Energy Analysis-general
188474	188547	6	SAMPLE	113002005	B2FX83		Gamma Energy Analysis-general
188474	188547	7	SAMPLE	113002006	B2FX84		Gamma Energy Analysis-general
188474	188547	8	SAMPLE	113002007	B2FX85		Gamma Energy Analysis-general
188474	188547	9	SAMPLE	113002008	B2FX95		Gamma Energy Analysis-general
188474	188547	10	SAMPLE	113002009	B2FX99		Gamma Energy Analysis-general
188661	188979	1	BLANK	63583	BLANK		Strontium 89/90 (GPC/GEA)
188661	188979	2	LCS	63584	LCS		Strontium 89/90 (GPC/GEA)
188661	188979	3	DUP	63585	B2FX98(112993005DUP)	112993005	Strontium 89/90 (GPC/GEA)
188661	188979	5	SAMPLE	113002001	B2FXB0		Strontium 89/90 (GPC/GEA)
188661	188979	6	SAMPLE	113002002	B2FXB1		Strontium 89/90 (GPC/GEA)
188661	188979	7	SAMPLE	113002003	B2FXB2		Strontium 89/90 (GPC/GEA)
188661	188979	8	SAMPLE	113002004	B2FXB3		Strontium 89/90 (GPC/GEA)

Batch QC List

Attention Michael Neely
Department Radiochemistry

Group # WSCF113002

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
188661	188979	9	SAMPLE	113002005	B2FX83		Strontium 89/90 (GPC/GEA)
188661	188979	10	SAMPLE	113002006	B2FX84		Strontium 89/90 (GPC/GEA)
188662	188944	1	BLANK	63586	BLANK		Strontium 89/90 (GPC/GEA)
188662	188944	2	LCS	63587	LCS		Strontium 89/90 (GPC/GEA)
188662	188944	3	DUP	63588	B2FX85(113002007DUP)	113002007	Strontium 89/90 (GPC/GEA)
188662	188944	4	SAMPLE	113002007	B2FX85		Strontium 89/90 (GPC/GEA)
188662	188944	5	SAMPLE	113002008	B2FX95		Strontium 89/90 (GPC/GEA)
188662	188944	6	SAMPLE	113002009	B2FX99		Strontium 89/90 (GPC/GEA)

Quality Control Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF113002

QC Batch 188471
Associated Samples 113002001, 113002002, 113002003

Test Gross Alpha/Gross Beta

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #63449**							
Gross Alpha	12587-46-1		0.22	pCi/g					U	08/30/11
Gross Beta	12587-47-2		0.29	pCi/g					U	08/30/11
LCS			**QC Sample #63450**							
Gross Alpha	12587-46-1		8.0	pCi/g	98.4	80 - 120				08/30/11
Gross Beta	12587-47-2		26	pCi/g	117.1	80 - 120				08/30/11
DUP			**QC Sample #63451**							
			Original 112993001							
Gross Alpha	12587-46-1		1.6	pCi/g			14.30	30		08/30/11
Gross Beta	12587-47-2		5.3	pCi/g			14.30	30		08/30/11

Quality Control Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF113002

QC Batch 188472 **Test** Gross Alpha/Gross Beta
Associated Samples 113002004, 113002005, 113002006, 113002007, 113002008, 113002009

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit		RQ	Analyzed
BLANK			**QC Sample #63452**								
Gross Alpha	12587-46-1		-0.23	pCi/g						U	08/30/11
Gross Beta	12587-47-2		0.21	pCi/g						U	08/30/11
LCS			**QC Sample #63453**								
Gross Alpha	12587-46-1		8.4	pCi/g	103.6	80 - 120					08/30/11
Gross Beta	12587-47-2		25	pCi/g	114.4	80 - 120					08/30/11
DUP			**QC Sample #63454**								
			Original 113002004								
Gross Alpha	12587-46-1	1.4	2.4	pCi/g			52.60	30	*	X	08/30/11
Gross Beta	12587-47-2	9.5	4.6	pCi/g			71.40	30	*	X	08/30/11

Quality Control Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF113002

QC Batch 188473
Associated Samples 113002001, 113002002

Test Gamma Energy Analysis-general

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit		RQ	Analyzed
IBLANK			**QC Sample #63455**								
Cesium-137	10045-97-3		-4.7E-3	pCi/g						U	08/22/11
Cobalt-60	10198-40-0		1.7E-3	pCi/g						U	08/22/11
Europium-152	14683-23-9		0.022	pCi/g						U	08/22/11
Europium-154	15585-10-1		6.6E-3	pCi/g						U	08/22/11
Europium-155	14391-16-3		-0.017	pCi/g						U	08/22/11
LCS			**QC Sample #63456**								
Cesium-137	10045-97-3		6600	pCi/sample	108.5	80 - 120					08/22/11
Cobalt-60	10198-40-0		10000	pCi/sample	105.2	80 - 120					08/22/11
DUP			**QC Sample #63457**								
			Original 112993001								
Cesium-137	10045-97-3		0.78	pCi/g			5.40	30			08/22/11
Cobalt-60	10198-40-0		-5.1E-4	pCi/g			-178.00	30	*	U	08/22/11
Europium-152	14683-23-9		0.31	pCi/g			0.00	30			08/22/11
Europium-154	15585-10-1		4.4E-3	pCi/g			134.60	30	*	U	08/22/11
Europium-155	14391-16-3		0.033	pCi/g			39.00	30	*	U	08/22/11

Quality Control Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF113002

QC Batch 188474 **Test** Gamma Energy Analysis-general
Associated Samples 113002003, 113002004, 113002005, 113002006, 113002007, 113002008, 113002009

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit		RQ	Analyzed
IBLANK			**QC Sample #63458**								
Cesium-137	10045-97-3		5.1E-3	pCi/g						U	08/22/11
Cobalt-60	10198-40-0		-4.4E-3	pCi/g						U	08/22/11
Europium-152	14683-23-9		4.2E-3	pCi/g						U	08/22/11
Europium-154	15585-10-1		-0.0030	pCi/g						U	08/22/11
Europium-155	14391-16-3		8.7E-3	pCi/g						U	08/22/11
LCS			**QC Sample #63459**								
Cesium-137	10045-97-3		6400	pCi/sample	106.6	80 - 120					08/22/11
Cobalt-60	10198-40-0		10000	pCi/sample	104.3	80 - 120					08/22/11
DUP			**QC Sample #63460**								
			Original 113002003								
Cesium-137	10045-97-3	0.043	0.043	pCi/g			2.40	30			08/22/11
Cobalt-60	10198-40-0	-2.4E-3	9.5E-3	pCi/g			335.20	30	*	U	08/22/11
Europium-152	14683-23-9	0.024	0.069	pCi/g			96.80	30	*	U	08/22/11
Europium-154	15585-10-1	-0.016	0.035	pCi/g			555.60	30	*	U	08/22/11
Europium-155	14391-16-3	0.034	0.074	pCi/g			72.90	30	*	U	08/22/11

Quality Control Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF113002

QC Batch 188661 **Test** Strontium 89/90 (GPC/GEA)
Associated Samples 113002001, 113002002, 113002003, 113002004, 113002005, 113002006

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #63583**							
Strontium-89/90	SR-RAD		0.12	pCi/g					U	08/30/11
LCS			**QC Sample #63584**							
Strontium-89/90	SR-RAD		24	pCi/g	120.6	80 - 120			X	08/30/11
DUP			**QC Sample #63585**							
			Original 112993005							
Strontium-89/90	SR-RAD		-0.22	pCi/g					U	08/30/11

Quality Control Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF113002

QC Batch 188662
Associated Samples 113002007, 113002008, 113002009

Test Strontium 89/90 (GPC/GEA)

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit		RQ	Analyzed
BLANK			**QC Sample #63586**								
Strontium-89/90	SR-RAD		-0.20	pCi/g						U	08/30/11
LCS			**QC Sample #63587**								
Strontium-89/90	SR-RAD		22	pCi/g	107	80 - 120					08/30/11
DUP			**QC Sample #63588**								
			Original 113002007								
Strontium-89/90	SR-RAD	0.55	-0.21	pCi/g			428.60	30	*	U	08/30/11

Quality Control Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF113002

QC Batch 188661 **Test** Strontium 89/90 (GPC/GEA)
Associated Samples 113002001, 113002002, 113002003, 113002004, 113002005, 113002006

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
SAMPLE			**Sample #113002001**							
Strontium-85	13967-73-2				74.1	25 - 105				08/30/11
SAMPLE			**Sample #113002002**							
Strontium-85	13967-73-2				74	25 - 105				08/30/11
SAMPLE			**Sample #113002003**							
Strontium-85	13967-73-2				75.6	25 - 105				08/30/11
SAMPLE			**Sample #113002004**							
Strontium-85	13967-73-2				79.2	25 - 105				08/30/11
SAMPLE			**Sample #113002005**							
Strontium-85	13967-73-2				70.3	25 - 105				08/30/11
SAMPLE			**Sample #113002006**							
Strontium-85	13967-73-2				74.1	25 - 105				08/30/11
BLANK			**QC Sample #63583**							
Strontium-85	13967-73-2				71.5	25 - 105				08/30/11

Quality Control Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF113002

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
LCS			**QC Sample #63584**							
Strontium-85	13967-73-2				61	25 - 105				08/30/11
DUP			**QC Sample #63585**							
			Original 112993005							
Strontium-85	13967-73-2				74.1	25 - 105	5.10			08/30/11

Quality Control Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF113002

QC Batch 188662
Associated Samples 113002007, 113002008, 113002009

Test Strontium 89/90 (GPC/GEA)

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
SAMPLE			**Sample #113002007**							
Strontium-85	13967-73-2				74.3	25 - 105				08/30/11
SAMPLE			**Sample #113002008**							
Strontium-85	13967-73-2				73.4	25 - 105				08/30/11
SAMPLE			**Sample #113002009**							
Strontium-85	13967-73-2				68.3	25 - 105				08/30/11
BLANK			**QC Sample #63586**							
Strontium-85	13967-73-2				72.7	25 - 105				08/30/11
LCS			**QC Sample #63587**							
Strontium-85	13967-73-2				69.6	25 - 105				08/30/11
DUP			**QC Sample #63588**							
			Original 113002007							
Strontium-85	13967-73-2				75.5	25 - 105	0.00			08/30/11

Quality Control Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF113017

QC Batch 188674 **Test** Gamma Energy Analysis-general
Associated Samples 113017001, 113017002, 113017003, 113017004, 113017005, 113017006, 113017007, 113017008

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit		RQ	Analyzed
IBLANK			**QC Sample #63596**								
Cesium-137	10045-97-3		1.2E-3	pCi/g						U	08/23/11
Cobalt-60	10198-40-0		9.2E-4	pCi/g						U	08/23/11
Europium-152	14683-23-9		0.023	pCi/g						U	08/23/11
Europium-154	15585-10-1		8.8E-3	pCi/g						U	08/23/11
Europium-155	14391-16-3		-0.017	pCi/g						U	08/23/11
LCS			**QC Sample #63597**								
Cesium-137	10045-97-3		6500	pCi/sample	107.2	80 - 120					08/23/11
Cobalt-60	10198-40-0		10000	pCi/sample	100.6	80 - 120					08/23/11
DUP			**QC Sample #63598**								
			Original 113017001								
Cesium-137	10045-97-3	0.13	0.12	pCi/g			8.00	30			08/23/11
Cobalt-60	10198-40-0	2.1E-3	-4.5E-3	pCi/g			-533.30	30	*	U	08/23/11
Europium-152	14683-23-9	0.11	0.15	pCi/g			40.00	30	*	X	08/23/11
Europium-154	15585-10-1	-7.2E-3	-0.025	pCi/g			-111.50	30	*	U	08/23/11
Europium-155	14391-16-3	0.041	0.29	pCi/g			150.50	30	*	U	08/23/11

Quality Control Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF113017

QC Batch 188856 **Test** Strontium 89/90 (GPC/GEA)
Associated Samples 113017001, 113017002, 113017003, 113017004, 113017005, 113017006, 113017007, 113017008

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit		RQ	Analyzed
BLANK			**QC Sample #63686**								
Strontium-89/90	SR-RAD		-0.15	pCi/g						U	08/31/11
LCS			**QC Sample #63687**								
Strontium-89/90	SR-RAD		24	pCi/g	110.4	80 - 120					08/31/11
DUP			**QC Sample #63688**								
			Original 113017001								
Strontium-89/90	SR-RAD	0.31	1.0	pCi/g			105.30	30	*	X	08/31/11

Quality Control Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF113017

QC Batch 188871 **Test** Gross Alpha/Gross Beta
Associated Samples 113017001, 113017002, 113017003, 113017004, 113017005, 113017006, 113017007, 113017008

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #63736**							
Gross Alpha	12587-46-1		1.6E-3	pCi/g					U	09/01/11
Gross Beta	12587-47-2		0.22	pCi/g					U	09/01/11
LCS			**QC Sample #63737**							
Gross Alpha	12587-46-1		8.2	pCi/g	100.1	80 - 120				09/01/11
Gross Beta	12587-47-2		26	pCi/g	117.5	80 - 120				09/01/11
DUP			**QC Sample #63738**							
			Original 113017001							
Gross Alpha	12587-46-1	1.3	1.5	pCi/g			7.40	30		09/01/11
Gross Beta	12587-47-2	2.5	2.6	pCi/g			3.90	30		09/01/11

Quality Control Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF113017

QC Batch 188856 **Test** Strontium 89/90 (GPC/GEA)
Associated Samples 113017001, 113017002, 113017003, 113017004, 113017005, 113017006, 113017007, 113017008

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
SAMPLE			**Sample #113017001**							
Strontium-85	13967-73-2				79.4	25 - 105				08/31/11
SAMPLE			**Sample #113017002**							
Strontium-85	13967-73-2				84.8	25 - 105				08/31/11
SAMPLE			**Sample #113017003**							
Strontium-85	13967-73-2				78.2	25 - 105				08/31/11
SAMPLE			**Sample #113017004**							
Strontium-85	13967-73-2				81.6	25 - 105				08/31/11
SAMPLE			**Sample #113017005**							
Strontium-85	13967-73-2				74.1	25 - 105				08/31/11
SAMPLE			**Sample #113017006**							
Strontium-85	13967-73-2				79.1	25 - 105				08/31/11
SAMPLE			**Sample #113017007**							
Strontium-85	13967-73-2				83.3	25 - 105				08/31/11

Quality Control Report

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Department Radiochemistry

Group # WSCF113017

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
SAMPLE			**Sample #113017008**							
Strontium-85	13967-73-2				75.3	25 - 105				08/31/11
BLANK			**QC Sample #63686**							
Strontium-85	13967-73-2				78.3	25 - 105				08/31/11
LCS			**QC Sample #63687**							
Strontium-85	13967-73-2				77.4	25 - 105				08/31/11
DUP			**QC Sample #63688**							
			Original	**113017001**						
Strontium-85	13967-73-2				73.9	25 - 105	4.90			08/31/11