REVIEW COMMENT RECORD (RCR)

1. Date	2. Review No.
09/08/2011	
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: VSR11-052, Project 100K Area AA	100K Area AA, Zone 3	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) 09/08/2011 Date Deanna L. Klages Author/Originator (print and sign)	Deanna L. Klages Reviewer/Point of Contact (print and sign) 09/08/2011 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 add "Zone 3" after "Project 100K Area AA" and carry this throughout the validation in the reports where Area AA is mentioned.	This sampling activity was only 1 of 4 zones sampled. EPA required us to divide the work into 4 zones.	Title: please add "Zone 3" after "Project 100K Area AA" and carry this throughout the validation in the report where Area AA is mentioned.	Y	"Zone 3" added.	Closed
2	For the equipment blank associated with the metals analyses, a statement is made that "All equipment blank results were acceptable with the following exceptions: Mn, Ba, Cu, V, Pb and Sr were detected in equipment blank B2FK39."	Since the values are well below our cleanup standards, a rerun will not be requested, however since the data was "B" flagged, shouldn't it be "J" flagged here?	Flag the data accordingly, or let me know if this is an issue.	Y	According to the DV procedure, DV qualifiers are not applied to results that are ≥ the MDLs but < the PQLs.	Closed
3	For the sulfate anion, "The field duplicate (B2FK38) and its associated sample (B2FK26) had a sulfate RPD> the acceptance limit."	If the sulfate RPD is > the acceptance limit of ±30%, then we did not meet the precision requirement in the SAP (DOE/RL-96-22, Rev. 5).	If we did not meet the precision requirement in the SAP, shouldn't this data be "R" flagged. May need to rerun these two samples.	Y	According to the DV procedure, DV qualifiers are not applied to results for associated field duplicate precision infractions.	Closed

CHPRC - REVIEW COMMENT RECORD (RCR)

1. Date	2. Review No.
08/01/2011	
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
VSR11-052		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) 08/01/2011 Date Author/Originator (print and sign)	Scot Fitzgerald Reviewer/Point of Contact (print and sign) 08/01/2011 Date 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
	No issues noted.					

REVIEW COMMENT RECORD (RCR)	1. Date 08/02/2011	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
VSR11-052, Data Validation Report for CHPRC - Project 100K Area AA, Chemical Validation - Level C	S&GRP Sample Data Group (SDG); WSCF112608 and WSCF112631	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): ____	Date: 08/02/2011 Reviewer/Point of Contact (print and sign): JA Edwards / Author/Originator (print and sign): JA Edwards	Date: 08/02/2011 Reviewer/Point of Contact (print and sign): JA Edwards / Author/Originator (print and sign): JA Edwards

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

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

VSR11-052
Project 100K Area AA Zone 3

Chemical Validation - Level C

Validation Performed By: Carl Schlosser **Date:** 8-30-2011

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Date: 30 August 2011
To: CH2M Hill (technical representative)
From: Analytical Quality Associates, Inc.
Project: 100K Area AA Zone 3
Subject: Inorganics - Sample Data Groups (SDGs) WSCF112608 and WSCF112631

INTRODUCTION

This memorandum presents the results of data validation for SDGs WSCF112608 and WSCF112631 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
B2FK34	7/05/2011	Soil	C	200.8
B2FK35	7/05/2011	Soil	C	200.8
B2FK36	7/05/2011	Soil	C	200.8
B2FK37	7/05/2011	Soil	C	200.8
B2FK26	7/07/2011	Soil	C	200.8
B2FK27	7/07/2011	Soil	C	200.8
B2FK28	7/07/2011	Soil	C	200.8
B2FK29	7/07/2011	Soil	C	200.8
B2FK30	7/07/2011	Soil	C	200.8
B2FK31	7/07/2011	Soil	C	200.8
B2FK32	7/07/2011	Soil	C	200.8
B2FK33	7/07/2011	Soil	C	200.8
B2FK38	7/07/2011	Soil	C	200.8
B2FK39	7/07/2011	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.

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. Mn, Ba, Cu, V, Pb and Sr were detected in equipment blank B2FK39.

- **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 with the following exception. For SDG WSCF112631, the MSD recovery for Mn was < the lower 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.

Laboratory Control Samples (LCSs)

All LCS recoveries were acceptable with the following exception. For SDG WSCF112608, the LCS recovery for Sb was > the upper acceptance limit. The Sb results for samples B2FK34, B2FK35, B2FK36 and B2FK37 were non-detects and should not be qualified.

- **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 SDG WSCF112631, the Mn RPD was above the acceptance limit. All associated Mn sample results were detects and would be qualified as estimates and flagged "J," but were further flagged "J-" due to an MSD recovery infraction. See the table in Appendix 2 for a listing of all affected sample results.

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

- **Completeness**

SDGs WSCF112608 and WSCF112631 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

Minor deficiencies leading to qualification of sample results as estimates were due to MSD recovery and RPD infractions for Mn. 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: WSCF112608 & WSCF112631	Reviewer: AQA	Project: 100K Area AA Zone 3	Page 1 of 1
Analyte(s)	**DV Flag**	**Samples Affected**	**Reason**
Mn	J-	B2FK26, B2FK27, B2FK28, B2FK29, B2FK30, B2FK31, B2FK32, B2FK33, B2FK38, B2FK39	Low MSD recovery and poor MS/MSD precision

Comments: None

Appendix 3

Annotated Laboratory Reports

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF112608

Sample # 112608001
SAF# F11-096
Sample ID B2FK34

Matrix SOIL
Sampled 07/05/11
Received 07/05/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Anions by IC										**07/06/11**
Anions by IC										
Fluoride	16984-48-8	LA-533-410	U	<1.8		mg/kg	1	1.8	3.6	07/06/11
Chloride	16887-00-6	LA-533-410	U	<3.1		mg/kg	1	3.1	21	07/06/11
Nitrite-N	NO2-N	LA-533-410	U	<1.0		mg/kg	1	1.0	4.9	07/06/11
Nitrate-N	NO3-N	LA-533-410	B	1.07		mg/kg	1	0.96	5.0	07/06/11
Sulfate	14808-79-8	LA-533-410		448		mg/kg	1	3.6	53	07/06/11
Cr(VI) Prep										**07/05/11**
Cr(VI)										
Hexavalent chromium	18540-29-9	LA-265-403	B	0.0413		ug/g	1	0.033	0.50	07/06/11
ICPMS Prep										**07/05/11**
ICP-MS										
Manganese	7439-96-5	LA-505-412		488		mg/kg	1	0.099	0.99	07/12/11
Nickel	7440-02-0	LA-505-412		9.86		mg/kg	1	0.20	2.0	07/12/11
Silver	7440-22-4	LA-505-412	U	<0.099		mg/kg	1	0.099	0.99	07/12/11
Antimony	7440-36-0	LA-505-412	U	<0.30		mg/kg	1	0.30	3.0	07/12/11
Barium	7440-39-3	LA-505-412		75.5		mg/kg	1	0.20	2.0	07/12/11
Beryllium	7440-41-7	LA-505-412	B	0.299		mg/kg	1	0.099	0.50	07/12/11
Boron	7440-42-8	LA-505-412	B	0.521		mg/kg	1	0.50	5.0	07/12/11

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
7-28-2011

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 # WSCF112608

Sample # 112608001
SAF# F11-096
Sample ID B2FK34

Matrix SOIL
Sampled 07/05/11
Received 07/05/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cadmium	7440-43-9	LA-505-412	U	<0.099		mg/kg	1	0.099	0.99	07/12/11
Chromium	7440-47-3	LA-505-412		6.99		mg/kg	1	0.50	5.0	07/12/11
Cobalt	7440-48-4	LA-505-412		12.7		mg/kg	1	0.099	0.50	07/12/11
Copper	7440-50-8	LA-505-412		18.9		mg/kg	1	0.099	0.99	07/12/11
Vanadium	7440-62-2	LA-505-412		87.3		mg/kg	1	0.20	2.0	07/12/11
Zinc	7440-66-6	LA-505-412		56.1		mg/kg	1	0.79	5.0	07/12/11
Lead	7439-92-1	LA-505-412		4.49		mg/kg	1	0.099	0.99	07/12/11
Mercury	7439-97-6	LA-505-412	U	<0.050		mg/kg	1	0.050	0.20	07/12/11
Molybdenum	7439-98-7	LA-505-412	B	0.503		mg/kg	1	0.099	0.99	07/12/11
Strontium	7440-24-6	LA-505-412		33.2		mg/kg	1	0.099	0.99	07/12/11
Tin	7440-31-5	LA-505-412		0.549		mg/kg	1	0.099	0.50	07/12/11
Uranium	7440-61-1	LA-505-412		0.528		mg/kg	1	0.099	0.50	07/12/11
Arsenic	7440-38-2	LA-505-412	B	2.32		mg/kg	1	0.40	4.0	07/12/11
Selenium	7782-49-2	LA-505-412	B	1.20		mg/kg	1	0.30	3.0	07/12/11

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 # WSCF112608

Sample # 112608002
SAF# F11-096
Sample ID B2FK35

Matrix SOIL
Sampled 07/05/11
Received 07/05/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Anions by IC										**07/06/11**
Anions by IC										
Fluoride	16984-48-8	LA-533-410	U	<1.8		mg/kg	1	1.8	3.6	07/06/11
Chloride	16887-00-6	LA-533-410	U	<3.1		mg/kg	1	3.1	20	07/06/11
Nitrite-N	NO2-N	LA-533-410	U	<0.99		mg/kg	1	0.99	4.9	07/06/11
Nitrate-N	NO3-N	LA-533-410	U	<0.94		mg/kg	1	0.94	4.9	07/06/11
Sulfate	14808-79-8	LA-533-410		1820		mg/kg	1	3.6	52	07/06/11
Cr(VI) Prep										**07/05/11**
Cr(VI)										
Hexavalent chromium	18540-29-9	LA-265-403	B	0.0552		ug/g	1	0.033	0.50	07/06/11
ICPMS Prep										**07/05/11**
ICP-MS										
Manganese	7439-96-5	LA-505-412		293		mg/kg	1	0.094	0.94	07/12/11
Nickel	7440-02-0	LA-505-412		11.6		mg/kg	1	0.19	1.9	07/12/11
Silver	7440-22-4	LA-505-412	U	<0.094		mg/kg	1	0.094	0.94	07/12/11
Antimony	7440-36-0	LA-505-412	U	<0.28		mg/kg	1	0.28	2.8	07/12/11
Barium	7440-39-3	LA-505-412		71.1		mg/kg	1	0.19	1.9	07/12/11
Beryllium	7440-41-7	LA-505-412	B	0.215		mg/kg	1	0.094	0.47	07/12/11
Boron	7440-42-8	LA-505-412	B	0.583		mg/kg	1	0.47	4.7	07/12/11

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
7-28-2011

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 # WSCF112608

Sample # 112608002
SAF# F11-096
Sample ID B2FK35

Matrix SOIL
Sampled 07/05/11
Received 07/05/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cadmium	7440-43-9	LA-505-412	U	<0.094		mg/kg	1	0.094	0.94	07/12/11
Chromium	7440-47-3	LA-505-412		9.96		mg/kg	1	0.47	4.7	07/12/11
Cobalt	7440-48-4	LA-505-412		7.19		mg/kg	1	0.094	0.47	07/12/11
Copper	7440-50-8	LA-505-412		12.1		mg/kg	1	0.094	0.94	07/12/11
Vanadium	7440-62-2	LA-505-412		45.9		mg/kg	1	0.19	1.9	07/12/11
Zinc	7440-66-6	LA-505-412		37.4		mg/kg	1	0.75	4.7	07/12/11
Lead	7439-92-1	LA-505-412		4.13		mg/kg	1	0.094	0.94	07/12/11
Mercury	7439-97-6	LA-505-412	U	<0.047		mg/kg	1	0.047	0.19	07/12/11
Molybdenum	7439-98-7	LA-505-412	B	0.347		mg/kg	1	0.094	0.94	07/12/11
Strontium	7440-24-6	LA-505-412		30.4		mg/kg	1	0.094	0.94	07/12/11
Tin	7440-31-5	LA-505-412	B	0.358		mg/kg	1	0.094	0.47	07/12/11
Uranium	7440-61-1	LA-505-412		0.500		mg/kg	1	0.094	0.47	07/12/11
Arsenic	7440-38-2	LA-505-412	B	2.95		mg/kg	1	0.37	3.7	07/12/11
Selenium	7782-49-2	LA-505-412	B	0.416		mg/kg	1	0.28	2.8	07/12/11

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 # WSCF112608

Sample # 112608003
SAF# F11-096
Sample ID B2FK36

Matrix SOIL
Sampled 07/05/11
Received 07/05/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Anions by IC										**07/06/11**
Anions by IC										
Fluoride	16984-48-8	LA-533-410	B	1.91		mg/kg	1	1.8	3.6	07/06/11
Chloride	16887-00-6	LA-533-410	U	<3.1		mg/kg	1	3.1	20	07/06/11
Nitrite-N	NO2-N	LA-533-410	U	<0.99		mg/kg	1	0.99	4.9	07/06/11
Nitrate-N	NO3-N	LA-533-410	B	1.51		mg/kg	1	0.95	4.9	07/06/11
Sulfate	14808-79-8	LA-533-410		307		mg/kg	1	3.6	52	07/06/11
Cr(VI) Prep										**07/05/11**
Cr(VI)										
Hexavalent chromium	18540-29-9	LA-265-403	B	0.0413		ug/g	1	0.033	0.50	07/06/11
ICPMS Prep										**07/05/11**
ICP-MS										
Manganese	7439-96-5	LA-505-412		406		mg/kg	1	0.10	1.0	07/12/11
Nickel	7440-02-0	LA-505-412		10.7		mg/kg	1	0.20	2.0	07/12/11
Silver	7440-22-4	LA-505-412	U	<0.10		mg/kg	1	0.10	1.0	07/12/11
Antimony	7440-36-0	LA-505-412	U	<0.30		mg/kg	1	0.30	3.0	07/12/11
Barium	7440-39-3	LA-505-412		88.5		mg/kg	1	0.20	2.0	07/12/11
Beryllium	7440-41-7	LA-505-412	B	0.440		mg/kg	1	0.10	0.50	07/12/11
Boron	7440-42-8	LA-505-412	B	0.925		mg/kg	1	0.50	5.0	07/12/11

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
7-28-2011

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 # WSCF112608

Sample # 112608003
SAF# F11-096
Sample ID B2FK36

Matrix SOIL
Sampled 07/05/11
Received 07/05/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cadmium	7440-43-9	LA-505-412	U	<0.10		mg/kg	1	0.10	1.0	07/12/11
Chromium	7440-47-3	LA-505-412		8.03		mg/kg	1	0.50	5.0	07/12/11
Cobalt	7440-48-4	LA-505-412		12.6		mg/kg	1	0.10	0.50	07/12/11
Copper	7440-50-8	LA-505-412		21.5		mg/kg	1	0.10	1.0	07/12/11
Vanadium	7440-62-2	LA-505-412		101		mg/kg	1	0.20	2.0	07/12/11
Zinc	7440-66-6	LA-505-412		61.8		mg/kg	1	0.80	5.0	07/12/11
Lead	7439-92-1	LA-505-412		4.48		mg/kg	1	0.10	1.0	07/12/11
Mercury	7439-97-6	LA-505-412	U	<0.050		mg/kg	1	0.050	0.20	07/12/11
Molybdenum	7439-98-7	LA-505-412	B	0.581		mg/kg	1	0.10	1.0	07/12/11
Strontium	7440-24-6	LA-505-412		39.7		mg/kg	1	0.10	1.0	07/12/11
Tin	7440-31-5	LA-505-412		0.588		mg/kg	1	0.10	0.50	07/12/11
Uranium	7440-61-1	LA-505-412		0.614		mg/kg	1	0.10	0.50	07/12/11
Arsenic	7440-38-2	LA-505-412	B	2.74		mg/kg	1	0.40	4.0	07/12/11
Selenium	7782-49-2	LA-505-412	B	1.15		mg/kg	1	0.30	3.0	07/12/11

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 # WSCF112608

Sample # 112608004
SAF# F11-096
Sample ID B2FK37

Matrix SOIL
Sampled 07/05/11
Received 07/05/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Anions by IC										**07/06/11**
Anions by IC										
Fluoride	16984-48-8	LA-533-410	U	<1.8		mg/kg	1	1.8	3.6	07/06/11
Chloride	16887-00-6	LA-533-410	U	<3.1		mg/kg	1	3.1	20	07/06/11
Nitrite-N	NO2-N	LA-533-410	U	<1.0		mg/kg	1	1.0	4.9	07/06/11
Nitrate-N	NO3-N	LA-533-410	B	1.90		mg/kg	1	0.95	4.9	07/06/11
Sulfate	14808-79-8	LA-533-410		2260		mg/kg	1	3.6	52	07/06/11
Cr(VI) Prep										**07/05/11**
Cr(VI)										
Hexavalent chromium	18540-29-9	LA-265-403	B	0.0690		ug/g	1	0.033	0.51	07/06/11
ICPMS Prep										**07/05/11**
ICP-MS										
Manganese	7439-96-5	LA-505-412		351		mg/kg	1	0.097	0.97	07/12/11
Nickel	7440-02-0	LA-505-412		8.54		mg/kg	1	0.19	1.9	07/12/11
Silver	7440-22-4	LA-505-412	U	<0.097		mg/kg	1	0.097	0.97	07/12/11
Antimony	7440-36-0	LA-505-412	U	<0.29		mg/kg	1	0.29	2.9	07/12/11
Barium	7440-39-3	LA-505-412		60.2		mg/kg	1	0.19	1.9	07/12/11
Beryllium	7440-41-7	LA-505-412	B	0.352		mg/kg	1	0.097	0.48	07/12/11
Boron	7440-42-8	LA-505-412	B	0.600		mg/kg	1	0.48	4.8	07/12/11

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
7-28-2011

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 # WSCF112608

Sample # 112608004
SAF# F11-096
Sample ID B2FK37

Matrix SOIL
Sampled 07/05/11
Received 07/05/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cadmium	7440-43-9	LA-505-412	U	<0.097		mg/kg	1	0.097	0.97	07/12/11
Chromium	7440-47-3	LA-505-412		5.77		mg/kg	1	0.48	4.8	07/12/11
Cobalt	7440-48-4	LA-505-412		11.1		mg/kg	1	0.097	0.48	07/12/11
Copper	7440-50-8	LA-505-412		17.3		mg/kg	1	0.097	0.97	07/12/11
Vanadium	7440-62-2	LA-505-412		71.8		mg/kg	1	0.19	1.9	07/12/11
Zinc	7440-66-6	LA-505-412		51.7		mg/kg	1	0.78	4.8	07/12/11
Lead	7439-92-1	LA-505-412		3.19		mg/kg	1	0.097	0.97	07/12/11
Mercury	7439-97-6	LA-505-412	U	<0.048		mg/kg	1	0.048	0.19	07/12/11
Molybdenum	7439-98-7	LA-505-412	B	0.435		mg/kg	1	0.097	0.97	07/12/11
Strontium	7440-24-6	LA-505-412		25.5		mg/kg	1	0.097	0.97	07/12/11
Tin	7440-31-5	LA-505-412	B	0.473		mg/kg	1	0.097	0.48	07/12/11
Uranium	7440-61-1	LA-505-412		0.536		mg/kg	1	0.097	0.48	07/12/11
Arsenic	7440-38-2	LA-505-412	B	1.75		mg/kg	1	0.39	3.9	07/12/11
Selenium	7782-49-2	LA-505-412	B	1.33		mg/kg	1	0.29	2.9	07/12/11

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 # WSCF112631

Sample # 112631001
SAF# F11-096
Sample ID B2FK26

Matrix SOIL
Sampled 07/07/11
Received 07/07/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Anions by IC										**07/11/11**
Anions by IC										
Fluoride	16984-48-8	LA-533-410	U	<1.8		mg/kg	1	1.8	3.6	07/11/11
Chloride	16887-00-6	LA-533-410	U	<3.1		mg/kg	1	3.1	21	07/11/11
Nitrite-N	NO2-N	LA-533-410	U	<1.0		mg/kg	1	1.0	5.0	07/11/11
Nitrate-N	NO3-N	LA-533-410	U	<0.96		mg/kg	1	0.96	5.0	07/11/11
Sulfate	14808-79-8	LA-533-410		746		mg/kg	1	3.6	53	07/11/11
Cr(VI) Prep										**07/11/11**
Cr(VI)										
Hexavalent chromium	18540-29-9	LA-265-403	UN	<0.10		ug/g	1	0.10	0.51	07/11/11
ICPMS Prep										**07/12/11**
ICP-MS										
Manganese	7439-96-5	LA-505-412	N	363 J-		mg/kg	1	0.093	0.93	07/13/11
Nickel	7440-02-0	LA-505-412		9.13		mg/kg	1	0.19	1.9	07/13/11
Silver	7440-22-4	LA-505-412	U	<0.093		mg/kg	1	0.093	0.93	07/13/11
Antimony	7440-36-0	LA-505-412	U	<0.28		mg/kg	1	0.28	2.8	07/13/11
Barium	7440-39-3	LA-505-412		63.7		mg/kg	1	0.19	1.9	07/13/11
Beryllium	7440-41-7	LA-505-412	B	0.413		mg/kg	1	0.093	0.47	07/13/11
Boron	7440-42-8	LA-505-412	B	0.848		mg/kg	1	0.47	4.7	07/14/11

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
7-28-2011

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 # WSCF112631

Sample # 112631001
SAF# F11-096
Sample ID B2FK26

Matrix SOIL
Sampled 07/07/11
Received 07/07/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cadmium	7440-43-9	LA-505-412	U	<0.093		mg/kg	1	0.093	0.93	07/13/11
Chromium	7440-47-3	LA-505-412		6.39		mg/kg	1	0.47	4.7	07/13/11
Cobalt	7440-48-4	LA-505-412		11.0		mg/kg	1	0.093	0.47	07/13/11
Copper	7440-50-8	LA-505-412		18.3		mg/kg	1	0.093	0.93	07/13/11
Vanadium	7440-62-2	LA-505-412		69.4		mg/kg	1	0.19	1.9	07/13/11
Zinc	7440-66-6	LA-505-412		49.0		mg/kg	1	0.74	4.7	07/14/11
Lead	7439-92-1	LA-505-412		4.39		mg/kg	1	0.093	0.93	07/13/11
Mercury	7439-97-6	LA-505-412	U	<0.047		mg/kg	1	0.047	0.19	07/13/11
Molybdenum	7439-98-7	LA-505-412	B	0.486		mg/kg	1	0.093	0.93	07/13/11
Strontium	7440-24-6	LA-505-412		30.6		mg/kg	1	0.093	0.93	07/13/11
Tin	7440-31-5	LA-505-412		0.585		mg/kg	1	0.093	0.47	07/13/11
Uranium	7440-61-1	LA-505-412		0.580		mg/kg	1	0.093	0.47	07/14/11
Arsenic	7440-38-2	LA-505-412	B	2.50		mg/kg	1	0.37	3.7	07/13/11
Selenium	7782-49-2	LA-505-412	B	0.902		mg/kg	1	0.28	2.8	07/13/11

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 # WSCF112631

Sample # 112631002
SAF# F11-096
Sample ID B2FK27

Matrix SOIL
Sampled 07/07/11
Received 07/07/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Anions by IC										**07/11/11**
Anions by IC										
Fluoride	16984-48-8	LA-533-410	U	<1.8		mg/kg	1	1.8	3.7	07/11/11
Chloride	16887-00-6	LA-533-410		23.9		mg/kg	1	3.2	21	07/11/11
Nitrite-N	NO2-N	LA-533-410	U	<1.0		mg/kg	1	1.0	5.0	07/11/11
Nitrate-N	NO3-N	LA-533-410	U	<0.97		mg/kg	1	0.97	5.0	07/11/11
Sulfate	14808-79-8	LA-533-410		1380		mg/kg	1	3.7	53	07/11/11
Cr(VI) Prep										**07/11/11**
Cr(VI)										
Hexavalent chromium	18540-29-9	LA-265-403	UN	<0.10		ug/g	1	0.10	0.51	07/11/11
ICPMS Prep										**07/12/11**
ICP-MS										
Manganese	7439-96-5	LA-505-412	N	391 J-		mg/kg	1	0.099	0.99	07/13/11
Nickel	7440-02-0	LA-505-412		9.33		mg/kg	1	0.20	2.0	07/13/11
Silver	7440-22-4	LA-505-412	U	<0.099		mg/kg	1	0.099	0.99	07/13/11
Antimony	7440-36-0	LA-505-412	U	<0.30		mg/kg	1	0.30	3.0	07/13/11
Barium	7440-39-3	LA-505-412		62.5		mg/kg	1	0.20	2.0	07/13/11
Beryllium	7440-41-7	LA-505-412	B	0.426		mg/kg	1	0.099	0.50	07/13/11
Boron	7440-42-8	LA-505-412	U	<0.50		mg/kg	1	0.50	5.0	07/14/11

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
7-28-2011

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 # WSCF112631

Sample # 112631002
SAF# F11-096
Sample ID B2FK27

Matrix SOIL
Sampled 07/07/11
Received 07/07/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cadmium	7440-43-9	LA-505-412	U	<0.099		mg/kg	1	0.099	0.99	07/13/11
Chromium	7440-47-3	LA-505-412		5.12		mg/kg	1	0.50	5.0	07/13/11
Cobalt	7440-48-4	LA-505-412		12.5		mg/kg	1	0.099	0.50	07/13/11
Copper	7440-50-8	LA-505-412		17.3		mg/kg	1	0.099	0.99	07/13/11
Vanadium	7440-62-2	LA-505-412		80.6		mg/kg	1	0.20	2.0	07/13/11
Zinc	7440-66-6	LA-505-412		54.4		mg/kg	1	0.79	5.0	07/14/11
Lead	7439-92-1	LA-505-412		3.65		mg/kg	1	0.099	0.99	07/13/11
Mercury	7439-97-6	LA-505-412	U	<0.050		mg/kg	1	0.050	0.20	07/13/11
Molybdenum	7439-98-7	LA-505-412	B	0.682		mg/kg	1	0.099	0.99	07/13/11
Strontium	7440-24-6	LA-505-412		27.0		mg/kg	1	0.099	0.99	07/13/11
Tin	7440-31-5	LA-505-412		0.591		mg/kg	1	0.099	0.50	07/13/11
Uranium	7440-61-1	LA-505-412		0.565		mg/kg	1	0.099	0.50	07/14/11
Arsenic	7440-38-2	LA-505-412	B	1.96		mg/kg	1	0.40	4.0	07/13/11
Selenium	7782-49-2	LA-505-412	B	0.965		mg/kg	1	0.30	3.0	07/13/11

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.

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 # WSCF112631

Sample # 112631003
SAF# F11-096
Sample ID B2FK28

Matrix SOIL
Sampled 07/07/11
Received 07/07/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Anions by IC										**07/11/11**
Anions by IC										
Fluoride	16984-48-8	LA-533-410	U	<1.8		mg/kg	1	1.8	3.6	07/11/11
Chloride	16887-00-6	LA-533-410	U	<3.1		mg/kg	1	3.1	21	07/11/11
Nitrite-N	NO2-N	LA-533-410	U	<1.0		mg/kg	1	1.0	5.0	07/11/11
Nitrate-N	NO3-N	LA-533-410	B	1.03		mg/kg	1	0.96	5.0	07/11/11
Sulfate	14808-79-8	LA-533-410	B	4.56		mg/kg	1	3.6	53	07/11/11
Cr(VI) Prep										**07/11/11**
Cr(VI)										
Hexavalent chromium	18540-29-9	LA-265-403	UN	<0.10		ug/g	1	0.10	0.51	07/11/11
ICPMS Prep										**07/12/11**
ICP-MS										
Manganese	7439-96-5	LA-505-412	N	360 J-		mg/kg	1	0.099	0.99	07/13/11
Nickel	7440-02-0	LA-505-412		9.71		mg/kg	1	0.20	2.0	07/13/11
Silver	7440-22-4	LA-505-412	U	<0.099		mg/kg	1	0.099	0.99	07/13/11
Antimony	7440-36-0	LA-505-412	U	<0.30		mg/kg	1	0.30	3.0	07/13/11
Barium	7440-39-3	LA-505-412		61.7		mg/kg	1	0.20	2.0	07/13/11
Beryllium	7440-41-7	LA-505-412		0.598		mg/kg	1	0.099	0.50	07/13/11
Boron	7440-42-8	LA-505-412	B	1.56		mg/kg	1	0.50	5.0	07/14/11

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
7-28-2011

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 # WSCF112631

Sample # 112631003
SAF# F11-096
Sample ID B2FK28

Matrix SOIL
Sampled 07/07/11
Received 07/07/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cadmium	7440-43-9	LA-505-412	U	<0.099		mg/kg	1	0.099	0.99	07/13/11
Chromium	7440-47-3	LA-505-412		6.94		mg/kg	1	0.50	5.0	07/13/11
Cobalt	7440-48-4	LA-505-412		11.0		mg/kg	1	0.099	0.50	07/13/11
Copper	7440-50-8	LA-505-412		19.1		mg/kg	1	0.099	0.99	07/13/11
Vanadium	7440-62-2	LA-505-412		73.6		mg/kg	1	0.20	2.0	07/13/11
Zinc	7440-66-6	LA-505-412		52.4		mg/kg	1	0.80	5.0	07/14/11
Lead	7439-92-1	LA-505-412		4.94		mg/kg	1	0.099	0.99	07/13/11
Mercury	7439-97-6	LA-505-412	U	<0.050		mg/kg	1	0.050	0.20	07/13/11
Molybdenum	7439-98-7	LA-505-412	B	0.591		mg/kg	1	0.099	0.99	07/13/11
Strontium	7440-24-6	LA-505-412		30.2		mg/kg	1	0.099	0.99	07/13/11
Tin	7440-31-5	LA-505-412		0.540		mg/kg	1	0.099	0.50	07/13/11
Uranium	7440-61-1	LA-505-412		0.569		mg/kg	1	0.099	0.50	07/14/11
Arsenic	7440-38-2	LA-505-412	B	2.65		mg/kg	1	0.40	4.0	07/13/11
Selenium	7782-49-2	LA-505-412	B	0.986		mg/kg	1	0.30	3.0	07/13/11

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 # WSCF112631

Sample # 112631004
SAF# F11-096
Sample ID B2FK29

Matrix SOIL
Sampled 07/07/11
Received 07/07/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Anions by IC										**07/11/11**
Anions by IC										
Fluoride	16984-48-8	LA-533-410	U	<1.8		mg/kg	1	1.8	3.6	07/11/11
Chloride	16887-00-6	LA-533-410	U	<3.1		mg/kg	1	3.1	21	07/11/11
Nitrite-N	NO2-N	LA-533-410	U	<1.0		mg/kg	1	1.0	4.9	07/11/11
Nitrate-N	NO3-N	LA-533-410	U	<0.96		mg/kg	1	0.96	5.0	07/11/11
Sulfate	14808-79-8	LA-533-410	B	21.1		mg/kg	1	3.6	53	07/11/11
Cr(VI) Prep										**07/11/11**
Cr(VI)										
Hexavalent chromium	18540-29-9	LA-265-403	UN	<0.10		ug/g	1	0.10	0.51	07/11/11
ICPMS Prep										**07/12/11**
ICP-MS										
Manganese	7439-96-5	LA-505-412	N	289 J-		mg/kg	1	0.096	0.96	07/13/11
Nickel	7440-02-0	LA-505-412		6.34		mg/kg	1	0.19	1.9	07/13/11
Silver	7440-22-4	LA-505-412	U	<0.096		mg/kg	1	0.096	0.96	07/13/11
Antimony	7440-36-0	LA-505-412	U	<0.29		mg/kg	1	0.29	2.9	07/13/11
Barium	7440-39-3	LA-505-412		52.9		mg/kg	1	0.19	1.9	07/13/11
Beryllium	7440-41-7	LA-505-412	B	0.170		mg/kg	1	0.096	0.48	07/13/11
Boron	7440-42-8	LA-505-412	B	0.676		mg/kg	1	0.48	4.8	07/14/11

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
7-28-2011

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 # WSCF112631

Sample # 112631004
SAF# F11-096
Sample ID B2FK29

Matrix SOIL
Sampled 07/07/11
Received 07/07/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cadmium	7440-43-9	LA-505-412	U	<0.096		mg/kg	1	0.096	0.96	07/13/11
Chromium	7440-47-3	LA-505-412	B	2.83		mg/kg	1	0.48	4.8	07/13/11
Cobalt	7440-48-4	LA-505-412		9.60		mg/kg	1	0.096	0.48	07/13/11
Copper	7440-50-8	LA-505-412		19.5		mg/kg	1	0.096	0.96	07/13/11
Vanadium	7440-62-2	LA-505-412		65.5		mg/kg	1	0.19	1.9	07/13/11
Zinc	7440-66-6	LA-505-412		42.0		mg/kg	1	0.77	4.8	07/14/11
Lead	7439-92-1	LA-505-412		2.47		mg/kg	1	0.096	0.96	07/13/11
Mercury	7439-97-6	LA-505-412	U	<0.048		mg/kg	1	0.048	0.19	07/13/11
Molybdenum	7439-98-7	LA-505-412	B	0.451		mg/kg	1	0.096	0.96	07/13/11
Strontium	7440-24-6	LA-505-412		29.4		mg/kg	1	0.096	0.96	07/13/11
Tin	7440-31-5	LA-505-412		0.531		mg/kg	1	0.096	0.48	07/13/11
Uranium	7440-61-1	LA-505-412	B	0.427		mg/kg	1	0.096	0.48	07/14/11
Arsenic	7440-38-2	LA-505-412	B	1.39		mg/kg	1	0.38	3.8	07/13/11
Selenium	7782-49-2	LA-505-412	B	0.573		mg/kg	1	0.29	2.9	07/13/11

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 # WSCF112631

Sample # 112631005
SAF# F11-096
Sample ID B2FK30

Matrix SOIL
Sampled 07/07/11
Received 07/07/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Anions by IC										**07/11/11**
Anions by IC										
Fluoride	16984-48-8	LA-533-410	U	<1.8		mg/kg	1	1.8	3.6	07/11/11
Chloride	16887-00-6	LA-533-410	U	<3.1		mg/kg	1	3.1	21	07/11/11
Nitrite-N	NO2-N	LA-533-410	U	<1.0		mg/kg	1	1.0	5.0	07/11/11
Nitrate-N	NO3-N	LA-533-410	U	<0.96		mg/kg	1	0.96	5.0	07/11/11
Sulfate	14808-79-8	LA-533-410	B	9.75		mg/kg	1	3.6	53	07/11/11
Cr(VI) Prep										**07/12/11**
Cr(VI)										
Hexavalent chromium	18540-29-9	LA-265-403	U	<0.095		ug/g	1	0.095	0.48	07/13/11
ICPMS Prep										**07/12/11**
ICP-MS										
Manganese	7439-96-5	LA-505-412	N	367 J-		mg/kg	1	0.099	0.99	07/13/11
Nickel	7440-02-0	LA-505-412		10.5		mg/kg	1	0.20	2.0	07/13/11
Silver	7440-22-4	LA-505-412	U	<0.099		mg/kg	1	0.099	0.99	07/13/11
Antimony	7440-36-0	LA-505-412	U	<0.30		mg/kg	1	0.30	3.0	07/13/11
Barium	7440-39-3	LA-505-412		50.8		mg/kg	1	0.20	2.0	07/13/11
Beryllium	7440-41-7	LA-505-412	B	0.328		mg/kg	1	0.099	0.49	07/13/11
Boron	7440-42-8	LA-505-412	B	0.561		mg/kg	1	0.49	4.9	07/14/11

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
7-28-2011

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 # WSCF112631

Sample # 112631005
SAF# F11-096
Sample ID B2FK30

Matrix SOIL
Sampled 07/07/11
Received 07/07/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cadmium	7440-43-9	LA-505-412	U	<0.099		mg/kg	1	0.099	0.99	07/13/11
Chromium	7440-47-3	LA-505-412	B	4.10		mg/kg	1	0.49	4.9	07/13/11
Cobalt	7440-48-4	LA-505-412		13.0		mg/kg	1	0.099	0.49	07/13/11
Copper	7440-50-8	LA-505-412		17.0		mg/kg	1	0.099	0.99	07/13/11
Vanadium	7440-62-2	LA-505-412		78.2		mg/kg	1	0.20	2.0	07/13/11
Zinc	7440-66-6	LA-505-412		50.4		mg/kg	1	0.79	4.9	07/14/11
Lead	7439-92-1	LA-505-412		3.17		mg/kg	1	0.099	0.99	07/13/11
Mercury	7439-97-6	LA-505-412	U	<0.049		mg/kg	1	0.049	0.20	07/13/11
Molybdenum	7439-98-7	LA-505-412	B	0.570		mg/kg	1	0.099	0.99	07/13/11
Strontium	7440-24-6	LA-505-412		24.5		mg/kg	1	0.099	0.99	07/13/11
Tin	7440-31-5	LA-505-412		0.507		mg/kg	1	0.099	0.49	07/13/11
Uranium	7440-61-1	LA-505-412		0.499		mg/kg	1	0.099	0.49	07/14/11
Arsenic	7440-38-2	LA-505-412	B	1.81		mg/kg	1	0.40	4.0	07/13/11
Selenium	7782-49-2	LA-505-412	B	0.930		mg/kg	1	0.30	3.0	07/13/11

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 # WSCF112631

Sample # 112631006
SAF# F11-096
Sample ID B2FK31

Matrix SOIL
Sampled 07/07/11
Received 07/07/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Anions by IC										**07/11/11**
Anions by IC										
Fluoride	16984-48-8	LA-533-410	U	<1.8		mg/kg	1	1.8	3.6	07/11/11
Chloride	16887-00-6	LA-533-410	U	<3.1		mg/kg	1	3.1	20	07/11/11
Nitrite-N	NO2-N	LA-533-410	U	<1.0		mg/kg	1	1.0	4.9	07/11/11
Nitrate-N	NO3-N	LA-533-410	B	1.33		mg/kg	1	0.95	5.0	07/11/11
Sulfate	14808-79-8	LA-533-410	U	<3.6		mg/kg	1	3.6	53	07/11/11
Cr(VI) Prep										**07/12/11**
Cr(VI)										
Hexavalent chromium	18540-29-9	LA-265-403	U	<0.098		ug/g	1	0.098	0.49	07/13/11
ICPMS Prep										**07/12/11**
ICP-MS										
Manganese	7439-96-5	LA-505-412	N	344 J-		mg/kg	1	0.094	0.94	07/13/11
Nickel	7440-02-0	LA-505-412		8.85		mg/kg	1	0.19	1.9	07/13/11
Silver	7440-22-4	LA-505-412	U	<0.094		mg/kg	1	0.094	0.94	07/13/11
Antimony	7440-36-0	LA-505-412	U	<0.28		mg/kg	1	0.28	2.8	07/13/11
Barium	7440-39-3	LA-505-412		57.9		mg/kg	1	0.19	1.9	07/13/11
Beryllium	7440-41-7	LA-505-412	B	0.365		mg/kg	1	0.094	0.47	07/13/11
Boron	7440-42-8	LA-505-412	B	0.638		mg/kg	1	0.47	4.7	07/14/11

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
7-28-2011

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 # WSCF112631

Sample # 112631006
SAF# F11-096
Sample ID B2FK31

Matrix SOIL
Sampled 07/07/11
Received 07/07/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cadmium	7440-43-9	LA-505-412	U	<0.094		mg/kg	1	0.094	0.94	07/13/11
Chromium	7440-47-3	LA-505-412		5.50		mg/kg	1	0.47	4.7	07/13/11
Cobalt	7440-48-4	LA-505-412		10.9		mg/kg	1	0.094	0.47	07/13/11
Copper	7440-50-8	LA-505-412		19.0		mg/kg	1	0.094	0.94	07/13/11
Vanadium	7440-62-2	LA-505-412		71.9		mg/kg	1	0.19	1.9	07/13/11
Zinc	7440-66-6	LA-505-412		50.0		mg/kg	1	0.76	4.7	07/14/11
Lead	7439-92-1	LA-505-412		4.10		mg/kg	1	0.094	0.94	07/13/11
Mercury	7439-97-6	LA-505-412	U	<0.047		mg/kg	1	0.047	0.19	07/13/11
Molybdenum	7439-98-7	LA-505-412	B	0.462		mg/kg	1	0.094	0.94	07/13/11
Strontium	7440-24-6	LA-505-412		25.7		mg/kg	1	0.094	0.94	07/13/11
Tin	7440-31-5	LA-505-412		0.497		mg/kg	1	0.094	0.47	07/13/11
Uranium	7440-61-1	LA-505-412		0.481		mg/kg	1	0.094	0.47	07/14/11
Arsenic	7440-38-2	LA-505-412	B	2.75		mg/kg	1	0.38	3.8	07/13/11
Selenium	7782-49-2	LA-505-412	B	1.07		mg/kg	1	0.28	2.8	07/13/11

MDL = Minimum Detection
RQ = Result Qualifier
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.

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 # WSCF112631

Sample # 112631007
SAF# F11-096
Sample ID B2FK32

Matrix SOIL
Sampled 07/07/11
Received 07/07/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Anions by IC										**07/11/11**
Anions by IC										
Fluoride	16984-48-8	LA-533-410	U	<1.8		mg/kg	1	1.8	3.7	07/11/11
Chloride	16887-00-6	LA-533-410	B	6.63		mg/kg	1	3.2	21	07/11/11
Nitrite-N	NO2-N	LA-533-410	U	<1.0		mg/kg	1	1.0	5.0	07/11/11
Nitrate-N	NO3-N	LA-533-410	B	4.77		mg/kg	1	0.97	5.0	07/11/11
Sulfate	14808-79-8	LA-533-410	B	12.3		mg/kg	1	3.7	53	07/11/11
Cr(VI) Prep										**07/12/11**
Cr(VI)										
Hexavalent chromium	18540-29-9	LA-265-403	U	<0.096		ug/g	1	0.096	0.48	07/13/11
ICPMS Prep										**07/12/11**
ICP-MS										
Manganese	7439-96-5	LA-505-412	N	371 J-		mg/kg	1	0.096	0.96	07/13/11
Nickel	7440-02-0	LA-505-412		10.1		mg/kg	1	0.19	1.9	07/13/11
Silver	7440-22-4	LA-505-412	U	<0.096		mg/kg	1	0.096	0.96	07/13/11
Antimony	7440-36-0	LA-505-412	U	<0.29		mg/kg	1	0.29	2.9	07/13/11
Barium	7440-39-3	LA-505-412		63.7		mg/kg	1	0.19	1.9	07/13/11
Beryllium	7440-41-7	LA-505-412	B	0.247		mg/kg	1	0.096	0.48	07/13/11
Boron	7440-42-8	LA-505-412	B	0.830		mg/kg	1	0.48	4.8	07/14/11

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
7-28-2011

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 # WSCF112631

Sample # 112631007
SAF# F11-096
Sample ID B2FK32

Matrix SOIL
Sampled 07/07/11
Received 07/07/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cadmium	7440-43-9	LA-505-412	U	<0.096		mg/kg	1	0.096	0.96	07/13/11
Chromium	7440-47-3	LA-505-412		7.07		mg/kg	1	0.48	4.8	07/13/11
Cobalt	7440-48-4	LA-505-412		11.1		mg/kg	1	0.096	0.48	07/13/11
Copper	7440-50-8	LA-505-412		17.7		mg/kg	1	0.096	0.96	07/13/11
Vanadium	7440-62-2	LA-505-412		72.7		mg/kg	1	0.19	1.9	07/13/11
Zinc	7440-66-6	LA-505-412		52.8		mg/kg	1	0.77	4.8	07/14/11
Lead	7439-92-1	LA-505-412		5.33		mg/kg	1	0.096	0.96	07/13/11
Mercury	7439-97-6	LA-505-412	U	<0.048		mg/kg	1	0.048	0.19	07/13/11
Molybdenum	7439-98-7	LA-505-412	B	0.461		mg/kg	1	0.096	0.96	07/13/11
Strontium	7440-24-6	LA-505-412		28.6		mg/kg	1	0.096	0.96	07/13/11
Tin	7440-31-5	LA-505-412		0.558		mg/kg	1	0.096	0.48	07/13/11
Uranium	7440-61-1	LA-505-412		0.501		mg/kg	1	0.096	0.48	07/14/11
Arsenic	7440-38-2	LA-505-412	B	2.49		mg/kg	1	0.38	3.8	07/13/11
Selenium	7782-49-2	LA-505-412	B	1.03		mg/kg	1	0.29	2.9	07/13/11

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 # WSCF112631

Sample # 112631008
SAF# F11-096
Sample ID B2FK33

Matrix SOIL
Sampled 07/07/11
Received 07/07/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Anions by IC										**07/11/11**
Anions by IC										
Fluoride	16984-48-8	LA-533-410	U	<1.8		mg/kg	1	1.8	3.6	07/11/11
Chloride	16887-00-6	LA-533-410	B	5.02		mg/kg	1	3.1	20	07/11/11
Nitrite-N	NO2-N	LA-533-410	U	<1.0		mg/kg	1	1.0	4.9	07/11/11
Nitrate-N	NO3-N	LA-533-410	B	2.86		mg/kg	1	0.95	5.0	07/11/11
Sulfate	14808-79-8	LA-533-410	B	12.3		mg/kg	1	3.6	53	07/11/11
Cr(VI) Prep										**07/12/11**
Cr(VI)										
Hexavalent chromium	18540-29-9	LA-265-403	B	0.335		ug/g	1	0.10	0.50	07/13/11
ICPMS Prep										**07/12/11**
ICP-MS										
Manganese	7439-96-5	LA-505-412	N	404 J-		mg/kg	1	0.094	0.94	07/13/11
Nickel	7440-02-0	LA-505-412		10.7		mg/kg	1	0.19	1.9	07/13/11
Silver	7440-22-4	LA-505-412	U	<0.094		mg/kg	1	0.094	0.94	07/13/11
Antimony	7440-36-0	LA-505-412	U	<0.28		mg/kg	1	0.28	2.8	07/13/11
Barium	7440-39-3	LA-505-412		71.2		mg/kg	1	0.19	1.9	07/13/11
Beryllium	7440-41-7	LA-505-412		0.550		mg/kg	1	0.094	0.47	07/13/11
Boron	7440-42-8	LA-505-412	B	1.75		mg/kg	1	0.47	4.7	07/14/11

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
7-28-2011

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 # WSCF112631

Sample # 112631008
SAF# F11-096
Sample ID B2FK33

Matrix SOIL
Sampled 07/07/11
Received 07/07/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cadmium	7440-43-9	LA-505-412	U	<0.094		mg/kg	1	0.094	0.94	07/13/11
Chromium	7440-47-3	LA-505-412		11.1		mg/kg	1	0.47	4.7	07/13/11
Cobalt	7440-48-4	LA-505-412		11.0		mg/kg	1	0.094	0.47	07/13/11
Copper	7440-50-8	LA-505-412		18.9		mg/kg	1	0.094	0.94	07/13/11
Vanadium	7440-62-2	LA-505-412		61.7		mg/kg	1	0.19	1.9	07/13/11
Zinc	7440-66-6	LA-505-412		57.5		mg/kg	1	0.75	4.7	07/14/11
Lead	7439-92-1	LA-505-412		17.9		mg/kg	1	0.094	0.94	07/13/11
Mercury	7439-97-6	LA-505-412	U	<0.047		mg/kg	1	0.047	0.19	07/13/11
Molybdenum	7439-98-7	LA-505-412	B	0.447		mg/kg	1	0.094	0.94	07/13/11
Strontium	7440-24-6	LA-505-412		27.9		mg/kg	1	0.094	0.94	07/13/11
Tin	7440-31-5	LA-505-412		0.582		mg/kg	1	0.094	0.47	07/13/11
Uranium	7440-61-1	LA-505-412		0.554		mg/kg	1	0.094	0.47	07/14/11
Arsenic	7440-38-2	LA-505-412	B	2.92		mg/kg	1	0.38	3.8	07/13/11
Selenium	7782-49-2	LA-505-412	B	0.742		mg/kg	1	0.28	2.8	07/13/11

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 # WSCF112631

Sample # 112631009
SAF# F11-096
Sample ID B2FK38

Matrix SOIL
Sampled 07/07/11
Received 07/07/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Anions by IC										**07/11/11**
Anions by IC										
Fluoride	16984-48-8	LA-533-410	U	<1.8		mg/kg	1	1.8	3.6	07/11/11
Chloride	16887-00-6	LA-533-410	U	<3.1		mg/kg	1	3.1	21	07/11/11
Nitrite-N	NO2-N	LA-533-410	U	<1.0		mg/kg	1	1.0	5.0	07/11/11
Nitrate-N	NO3-N	LA-533-410	U	<0.96		mg/kg	1	0.96	5.0	07/11/11
Sulfate	14808-79-8	LA-533-410		498		mg/kg	1	3.6	53	07/11/11
Cr(VI) Prep										**07/12/11**
Cr(VI)										
Hexavalent chromium	18540-29-9	LA-265-403	U	<0.094		ug/g	1	0.094	0.47	07/13/11
ICPMS Prep										**07/12/11**
ICP-MS										
Manganese	7439-96-5	LA-505-412	N	366 J-		mg/kg	1	0.098	0.98	07/13/11
Nickel	7440-02-0	LA-505-412		9.87		mg/kg	1	0.20	2.0	07/13/11
Silver	7440-22-4	LA-505-412	U	<0.098		mg/kg	1	0.098	0.98	07/13/11
Antimony	7440-36-0	LA-505-412	U	<0.29		mg/kg	1	0.29	2.9	07/13/11
Barium	7440-39-3	LA-505-412		60.1		mg/kg	1	0.20	2.0	07/13/11
Beryllium	7440-41-7	LA-505-412	B	0.367		mg/kg	1	0.098	0.49	07/13/11
Boron	7440-42-8	LA-505-412	U	<0.49		mg/kg	1	0.49	4.9	07/14/11

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
7-28-2011

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 # WSCF112631

Sample # 112631009
SAF# F11-096
Sample ID B2FK38

Matrix SOIL
Sampled 07/07/11
Received 07/07/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cadmium	7440-43-9	LA-505-412	U	<0.098		mg/kg	1	0.098	0.98	07/13/11
Chromium	7440-47-3	LA-505-412		5.69		mg/kg	1	0.49	4.9	07/13/11
Cobalt	7440-48-4	LA-505-412		10.9		mg/kg	1	0.098	0.49	07/13/11
Copper	7440-50-8	LA-505-412		17.5		mg/kg	1	0.098	0.98	07/13/11
Vanadium	7440-62-2	LA-505-412		73.4		mg/kg	1	0.20	2.0	07/13/11
Zinc	7440-66-6	LA-505-412		50.6		mg/kg	1	0.78	4.9	07/14/11
Lead	7439-92-1	LA-505-412		3.88		mg/kg	1	0.098	0.98	07/13/11
Mercury	7439-97-6	LA-505-412	U	<0.049		mg/kg	1	0.049	0.20	07/13/11
Molybdenum	7439-98-7	LA-505-412	B	0.467		mg/kg	1	0.098	0.98	07/13/11
Strontium	7440-24-6	LA-505-412		28.0		mg/kg	1	0.098	0.98	07/13/11
Tin	7440-31-5	LA-505-412		0.539		mg/kg	1	0.098	0.49	07/13/11
Uranium	7440-61-1	LA-505-412		0.509		mg/kg	1	0.098	0.49	07/14/11
Arsenic	7440-38-2	LA-505-412	B	2.16		mg/kg	1	0.39	3.9	07/13/11
Selenium	7782-49-2	LA-505-412	B	1.08		mg/kg	1	0.29	2.9	07/13/11

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 # WSCF112631

Sample # 112631010
SAF# F11-096
Sample ID B2FK39

Matrix SOIL
Sampled 07/07/11
Received 07/07/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Anions by IC										**07/12/11**
Anions by IC										
Fluoride	16984-48-8	LA-533-410	U	<1.8		mg/kg	1	1.8	3.6	07/12/11
Chloride	16887-00-6	LA-533-410	U	<3.1		mg/kg	1	3.1	20	07/12/11
Nitrite-N	NO2-N	LA-533-410	U	<0.99		mg/kg	1	0.99	4.9	07/12/11
Nitrate-N	NO3-N	LA-533-410	U	<0.95		mg/kg	1	0.95	4.9	07/12/11
Sulfate	14808-79-8	LA-533-410	U	<3.6		mg/kg	1	3.6	52	07/12/11
Cr(VI) Prep										**07/12/11**
Cr(VI)										
Hexavalent chromium	18540-29-9	LA-265-403	U	<0.098		ug/g	1	0.098	0.49	07/13/11
ICPMS Prep										**07/12/11**
ICP-MS										
Manganese	7439-96-5	LA-505-412	BN	0.595 J-		mg/kg	1	0.095	0.95	07/13/11
Nickel	7440-02-0	LA-505-412	U	<0.19		mg/kg	1	0.19	1.9	07/13/11
Silver	7440-22-4	LA-505-412	U	<0.095		mg/kg	1	0.095	0.95	07/13/11
Antimony	7440-36-0	LA-505-412	U	<0.28		mg/kg	1	0.28	2.8	07/13/11
Barium	7440-39-3	LA-505-412	B	0.276		mg/kg	1	0.19	1.9	07/13/11
Beryllium	7440-41-7	LA-505-412	U	<0.095		mg/kg	1	0.095	0.47	07/13/11
Boron	7440-42-8	LA-505-412	U	<0.47		mg/kg	1	0.47	4.7	07/14/11

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
7-28-2011

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 # WSCF112631

Sample # 112631010
SAF# F11-096
Sample ID B2FK39

Matrix SOIL
Sampled 07/07/11
Received 07/07/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cadmium	7440-43-9	LA-505-412	U	<0.095		mg/kg	1	0.095	0.95	07/13/11
Chromium	7440-47-3	LA-505-412	U	<0.47		mg/kg	1	0.47	4.7	07/13/11
Cobalt	7440-48-4	LA-505-412	U	<0.095		mg/kg	1	0.095	0.47	07/13/11
Copper	7440-50-8	LA-505-412	B	0.139		mg/kg	1	0.095	0.95	07/13/11
Vanadium	7440-62-2	LA-505-412	B	0.196		mg/kg	1	0.19	1.9	07/13/11
Zinc	7440-66-6	LA-505-412	U	<0.76		mg/kg	1	0.76	4.7	07/14/11
Lead	7439-92-1	LA-505-412	B	0.103		mg/kg	1	0.095	0.95	07/13/11
Mercury	7439-97-6	LA-505-412	U	<0.047		mg/kg	1	0.047	0.19	07/13/11
Molybdenum	7439-98-7	LA-505-412	U	<0.095		mg/kg	1	0.095	0.95	07/13/11
Strontium	7440-24-6	LA-505-412	B	0.134		mg/kg	1	0.095	0.95	07/13/11
Tin	7440-31-5	LA-505-412	U	<0.095		mg/kg	1	0.095	0.47	07/13/11
Uranium	7440-61-1	LA-505-412	U	<0.095		mg/kg	1	0.095	0.47	07/14/11
Arsenic	7440-38-2	LA-505-412	U	<0.38		mg/kg	1	0.38	3.8	07/13/11
Selenium	7782-49-2	LA-505-412	U	<0.28		mg/kg	1	0.28	2.8	07/13/11

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
WSCF112608

Revision: This report has been revised to include Boron QC results that were missing from the original report.

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

Anions – Hold time requirements for this analysis were met. A Duplicate, Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group. Analytical Note(s):

Narrative

- Sulfate – 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.

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):

- All 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):

- 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			F11-096-127	PAGE 1 OF 1
COLLECTOR FM Hall CHPRC	COMPANY CONTACT LUKE, SN	TELEPHONE NO. 372-1667	PROJECT COORDINATOR LUKE, SN	PRICE CODE C01	DATA TURNAROUND
SAMPLING LOCATION Area AA Zone 3 Sample 9	PROJECT DESIGNATION Area AA In-Process Sampling - Soil		SAF NO. F11-096	AIR QUALITY ☐	12 Days / 12 Days
ICE CHEST NO. GW3-116	FIELD LOGBOOK NO. HNF-N-507	ACTUAL SAMPLE DEPTH Surface	COA 302682ES10	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: 112608

PRESERVATION	None	Cool-4C
HOLDING TIME	6 Months	28 Days/48 Hours
TYPE OF CONTAINER	G/P	G/P
NO. OF CONTAINER(S)	1	1
VOLUME	120mL	60mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	[redacted]	
B2FK34	SOIL	JUL 05 2011	1155	X	X

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM FM Hall CHPRC	DATE/TIME JUL 05 2011 1310	RECEIVED BY/STORED IN M01109 SSU#1	DATE/TIME JUL 05 2011 1305
RELINQUISHED BY/REMOVED FROM M01109 SSU#1	DATE/TIME 7/15/11 1320	RECEIVED BY/STORED IN FM Hall CHPRC	DATE/TIME 7/15/11 1320
RELINQUISHED BY/REMOVED FROM FM Hall CHPRC	DATE/TIME 7/15/11 1450	RECEIVED BY/STORED IN M. Nelson	DATE/TIME 7/15/11 1450
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

** The CACN for all analytical work at WSCF laboratory is 402581ES20.☐** 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) IC Anions - 300.0 {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Sulfate};

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

PRINTED ON 6/29/2011

A-6003-618 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-096-128	PAGE 1 OF 1
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: Area AA Zone 3 Sample 10	PROJECT DESIGNATION: Area AA In-Process Sampling - Soil		SAF NO.: F11-096	AIR QUALITY: ☐	
ICE CHEST NO.: GWS-116	FIELD LOGBOOK NO.: HNF-N-507-22	ACTUAL SAMPLE DEPTH: Surface	COA: 302682ES10	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	None	Cool~4C
HOLDING TIME	6 Months	28 Days/48 Hours
TYPE OF CONTAINER	G/P	G/P
NO. OF CONTAINER(S)	1	1
VOLUME	120mL	60mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME		
B2FK35 2	SOIL	JUL 05 2011	815	X	X

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: FM Hall CHPRC	DATE/TIME: JUL 05 2011 1300	RECEIVED BY/STORED IN: LOLIOS SSLF#1	DATE/TIME: JUL 05 2011 1300
RELINQUISHED BY/REMOVED FROM: LOLIOS SSLF#1	DATE/TIME: 7/5/11 1320	RECEIVED BY/STORED IN: FM Hall CHPRC	DATE/TIME: 7/5/11 1320
RELINQUISHED BY/REMOVED FROM: FM Hall CHPRC	DATE/TIME: 7/5/11 1450	RECEIVED BY/STORED IN: H.Nelson H.Nelson	DATE/TIME: 7/5/11 1450
RELINQUISHED BY/REMOVED FROM	DATE/TIME: 7/5/11	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

** The CACN for all analytical work at WSCF laboratory is 402581ES20.☐** 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) IC Anions - 300.0 {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Sulfate};

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

PRINTED ON 6/29/2011

A-6003-618 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-096-129	PAGE 1 OF 1
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: Area AA Zone 3 Sample 11	PROJECT DESIGNATION: Area AA In-Process Sampling - Soil		SAF NO.: F11-096	AIR QUALITY: ☐	
ICE CHEST NO.: GWS-116	FIELD LOGBOOK NO.: HNF-N-507-~~49~~	ACTUAL SAMPLE DEPTH: Surface	COA: 302682ES10	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	None	Cool~4C
HOLDING TIME	6 Months	28 Days/48 Hours
TYPE OF CONTAINER	G/P	G/P
NO. OF CONTAINER(S)	1	1
VOLUME	120mL	60mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME		
B2FK36 3	SOIL	JUL 05 2011	1230	+	+

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: FM Hall CHPRC	DATE/TIME: JUL 05 2011 1300	RECEIVED BY/STORED IN: HOLLIOT SSU#1	DATE/TIME: JUL 05 2011 1300
RELINQUISHED BY/REMOVED FROM: HOLLIOT SSU#1	DATE/TIME: 7/15/11 1320	RECEIVED BY/STORED IN: FM Hall CHPRC	DATE/TIME: 7/15/11 1320
RELINQUISHED BY/REMOVED FROM: FM Hall CHPRC	DATE/TIME: 7/15/11 1450	RECEIVED BY/STORED IN: M. Nelson Mnels	DATE/TIME: 7/15/11 1450
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

* The CACN for all analytical work at WSCF laboratory is 402581ES20.☐** 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) IC Anions - 300.0 {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Sulfate};

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

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CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-096-130	PAGE 1 OF 1
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 Area AA Zone 3 Sample 12	PROJECT DESIGNATION Area AA In-Process Sampling - Soil		SAF NO. F11-096		
ICE CHEST NO. GW09-116	FIELD LOGBOOK NO. HNF-N-507-22	ACTUAL SAMPLE DEPTH Surface	COA 302682ES10	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*	POSSIBLE SAMPLE HAZARDS/ REMARKS	PRESERVATION	None	Cool~9C
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	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)	HOLDING TIME	6 Months	28 Days/48 Hours
		TYPE OF CONTAINER	G/P	G/P
		NO. OF CONTAINER(S)	1	1
		VOLUME	120mL	60mL
	SPECIAL HANDLING AND/OR STORAGE	SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME		
B2FK37 4	SOIL	JUL 05 2011	1748	+	+

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS
RELINQUISHED BY/REMOVED FROM FM Hall CHPRC	DATE/TIME JUL 05 2011 1300	RECEIVED BY/STORED IN MO 1109 SDG #1	DATE/TIME 1300	** The CACN for all analytical work at WSCF laboratory is 402581ES20.☐** 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) IC Anions - 300.0 {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Sulfate};
RELINQUISHED BY/REMOVED FROM MO 1109 SDG #1	DATE/TIME 7/15/11 1330	RECEIVED BY/STORED IN FM Hall CHPRC	DATE/TIME JUL 05 2011 7/15/11 1330	
RELINQUISHED BY/REMOVED FROM FM Hall CHPRC	DATE/TIME 7/15/11 1450	RECEIVED BY/STORED IN M. Nelson M. Nels	DATE/TIME 7/15/11 1450	
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 6/29/2011

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Attachment 2
Narrative
WSCF112631

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

Anions – Hold time requirements for this analysis were met. A Duplicate, Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group. Analytical Note(s):

- All applicable QC controls are within the established limits.

Narrative

Attachment 2
Narrative
WSCF112631

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 185471
  - Matrix Spike recovery was outside laboratory limits. Sample results are "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 – Matrix Spike Duplicate Relative Percent Difference (RPD) outside of established laboratory limits. No flags issued.
  - Manganese – Matrix Spike and/or Matrix Spike Duplicate 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.

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			F11-096-119	PAGE 1 OF 1
COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-1667	PROJECT COORDINATOR: LUKE, SN	PRICE CODE: C01	DATA TURNAROUND
SAMPLING LOCATION: Area AA Zone 3 Sample 1	PROJECT DESIGNATION: Area AA In-Process Sampling - Soil		SAF NO.: F11-096	AIR QUALITY: ☐	12 Days / 12 Days
ICE CHEST NO.: GWS-007	FIELD LOGBOOK NO.: HNF-N-607-22	ACTUAL SAMPLE DEPTH: SURFACE	COA: 302682ES10	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)

112631

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	None	Cool~4C
HOLDING TIME	6 Months	28 Days/48 Hours
TYPE OF CONTAINER	G/P	G/P
NO. OF CONTAINER(S)	1	1
VOLUME	120mL	60mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME		
B2FK26 1	SOIL	JUL 07 2011	0740	✓	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: FM Hall CHPRC	DATE/TIME: JUL 07 2011 1215	RECEIVED BY/STORED IN: C Johnson	DATE/TIME: JUL 07 2011 1215
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

** The CACN for all analytical work at WSCF laboratory is 402581ES20.☐** 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) IC Anions - 300.0 {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Sulfate};

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

PRINTED ON 6/29/2011

A-6003-618 (REV 2)

Chain of Custody

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-096-120	PAGE 1 OF 1
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: Area AA Zone 3 Sample 2	PROJECT DESIGNATION: Area AA In-Process Sampling - Soil		SAF NO.: F11-096	AIR QUALITY: ☐	
ICE CHEST NO.: GW9-007	FIELD LOGBOOK NO.: -INF -N-507- 22	ACTUAL SAMPLE DEPTH: SURFACE	COA: 302682ES10	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	None	Cool~4C
HOLDING TIME	6 Months	28 Days/48 Hours
TYPE OF CONTAINER	G/P	G/P
NO. OF CONTAINER(S)	1	1
VOLUME	120mL	60mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	[redacted]	[redacted]
B2FK27	SOIL	JUL 07 2011	0905	✓	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: FM Hall CHPRC	DATE/TIME: JUL 07 2011 1215	RECEIVED BY/STORED IN: CJohnson	DATE/TIME: JUL 07 2011 1215
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

** The CACN for all analytical work at WSCF laboratory is 402581ES20.☐** 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) IC Anions - 300.0 {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Sulfate};

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

PRINTED ON 6/29/2011

A-6003-618 (REV 2)

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-096-121	PAGE 1 OF 1
COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-1667	PROJECT COORDINATOR: LUKE, SN	PRICE CODE: C01	DATA TURNAROUND
SAMPLING LOCATION: Area AA Zone 3 Sample 3	PROJECT DESIGNATION: Area AA In-Process Sampling - Soil		SAF NO.: F11-096	AIR QUALITY: ☐	12 Days / 12 Days
ICE CHEST NO.: GWS-007	FIELD LOGBOOK NO.: HNF-N-807-22	ACTUAL SAMPLE DEPTH: SURFACE	COA: 302682ES10	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	None	Cool~4C
HOLDING TIME	6 Months	28 Days/48 Hours
TYPE OF CONTAINER	G/P	G/P
NO. OF CONTAINER(S)	1	1
VOLUME	120mL	60mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME		
B2FK28 3	SOIL	JUL 07 2011	0818	✓	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: FM Hall CHPRC	DATE/TIME: JUL 07 2011 1245	RECEIVED BY/STORED IN: C Johnson	DATE/TIME: JUL 07 2011 1245
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

** The CACN for all analytical work at WSCF laboratory is 402581ES20.☐** 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) IC Anions - 300.0 {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Sulfate};

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

PRINTED ON 6/29/2011

A-6003-618 (REV 2)

Chain of Custody

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-096-122	PAGE 1 OF 1
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: Area AA Zone 3 Sample 4	PROJECT DESIGNATION: Area AA In-Process Sampling - Soil		SAF NO.: F11-096	AIR QUALITY: ☐	
ICE CHEST NO.: GWS-007	FIELD LOGBOOK NO.: HNF-N-507-22	ACTUAL SAMPLE DEPTH: SURFACE	COA: 302682ES10	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	None	Cool~4C
HOLDING TIME	6 Months	28 Days/48 Hours
TYPE OF CONTAINER	G/P	G/P
NO. OF CONTAINER(S)	1	1
VOLUME	120mL	60mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME		
B2FK29 4	SOIL	JUL 07 2011	0831	✓	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: FM Hall CHPRC	DATE/TIME: JUL 07 2011 1245	RECEIVED BY/STORED IN: CJWhite	DATE/TIME: JUL 07 2011 1245
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

** The CACN for all analytical work at WSCF laboratory is 402581ES20.☐** 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) IC Anions - 300.0 {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Sulfate};

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

PRINTED ON 6/29/2011

A-6003-618 (REV 2)

Chain of Custody

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-096-123	PAGE 1 OF 1
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: Area AA Zone 3 Sample 5	PROJECT DESIGNATION: Area AA In-Process Sampling - Soil		SAF NO.: F11-096	AIR QUALITY: ☐	
ICE CHEST NO.: GWS-007	FIELD LOGBOOK NO.: HNF-N-607-22	ACTUAL SAMPLE DEPTH: SURFACE	COA: 302682ES10	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	None	Cool-4C
HOLDING TIME	6 Months	28 Days/48 Hours
TYPE OF CONTAINER	G/P	G/P
NO. OF CONTAINER(S)	1	1
VOLUME	120mL	60mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME		
B2FK30 5	SOIL	JUL 07 2011	0845	✓	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: FM Hall, CHPRC	DATE/TIME: JUL 07 2011 1215	RECEIVED BY/STORED IN: C Simon	DATE/TIME: JUL 07 2011 1215
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

** The CACN for all analytical work at WSCF laboratory is 402581ES20.☐** 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) IC Anions - 300.0 {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Sulfate};

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

PRINTED ON 6/29/2011 A-6003-618 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-096-124	PAGE 1 OF 1
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: Area AA Zone 3 Sample 6	PROJECT DESIGNATION: Area AA In Process Sampling - Soil		SAF NO.: F11-096	AIR QUALITY: ☐	
ICE CHEST NO.: GWS-007	FIELD LOGBOOK NO.: HNF-N-807-22	ACTUAL SAMPLE DEPTH: SURFACE	COA: 302682E510	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	None	Cool~4C
HOLDING TIME	6 Months	28 Days/48 Hours
TYPE OF CONTAINER	G/P	G/P
NO. OF CONTAINER(S)	1	1
VOLUME	120mL	60mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	[redacted]	[redacted]
B2FK31 6	SOIL	JUL 07 2011	0955	✓	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: FM Hall CHPRC	DATE/TIME: JUL 07 2011 1215	RECEIVED BY/STORED IN: C Johnson	DATE/TIME: JUL 07 2011 1215
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

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(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) IC Anions - 300.0 {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Sulfate};

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

PRINTED ON 6/29/2011

A-6003-618 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-096-125	PAGE 1 OF 1
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 Area AA Zone 3 Sample 7	PROJECT DESIGNATION Area AA In-Process Sampling - Soil		SAF NO. F11-096	AIR QUALITY ☐	
ICE CHEST NO. GW3-007	FIELD LOGBOOK NO. HNF -N-507- 22	ACTUAL SAMPLE DEPTH SURFACE	COA 302682ES10	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	None	Cool-4C
HOLDING TIME	6 Months	28 Days/48 Hours
TYPE OF CONTAINER	G/P	G/P
NO. OF CONTAINER(S)	1	1
VOLUME	120mL	60mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME		
B2FK32	SOIL	JUL 07 2011	0922	✓	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM FM Hall CHPRC	DATE/TIME JUL 07 2011 1245	RECEIVED BY/STORED IN C Johnson	DATE/TIME JUL 07 2011 1245
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

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(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) IC Anions - 300.0 {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Sulfate};

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

PRINTED ON 6/29/2011

A-6003-618 (REV 2)

Chain of Custody

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-096-126	PAGE 1 OF 1
COLLECTOR FM Hall CHPRC	COMPANY CONTACT LUKE, SN	TELEPHONE NO. 372-1667	PROJECT COORDINATOR LUKE, SN	PRICE CODE C01	DATA TURNAROUND
SAMPLING LOCATION Area AA Zone 3 Sample 8	PROJECT DESIGNATION Area AA In-Process Sampling - Soil		SAF NO. F11-096	AIR QUALITY ☐	12 Days / 12 Days
ICE CHEST NO. GWS-007	FIELD LOGBOOK NO. HNF-N-607-22	ACTUAL SAMPLE DEPTH SURFACE	COA 302682ES10	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	None	Cool~4C
HOLDING TIME	6 Months	28 Days/48 Hours
TYPE OF CONTAINER	G/P	G/P
NO. OF CONTAINER(S)	1	1
VOLUME	120mL	60mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME		
B2FK33	SOIL	JUL 07 2011	0930	✓	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: FM Hall CHPRC	DATE/TIME: JUL 07 2011 1215	RECEIVED BY/STORED IN: C Johnson	DATE/TIME: JUL 07 2011 1215
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

** The CACN for all analytical work at WSCF laboratory is 402581ES20.☐** 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) IC Anions - 300.0 {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Sulfate};

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)

Chain of Custody

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-096-131	PAGE 1 OF 1
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: Area AA Zone 3 Sample 13	PROJECT DESIGNATION: Area AA In-Process Sampling - Soil		SAF NO.: F11-096	AIR QUALITY: ☐	
ICE CHEST NO.: GW5-007	FIELD LOGBOOK NO.: HNF-N-507-	ACTUAL SAMPLE DEPTH: SURFACE	COA: 302682ES10	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	None	Cool~4C
HOLDING TIME	6 Months	28 Days/48 Hours
TYPE OF CONTAINER	G/P	G/P
NO. OF CONTAINER(S)	1	1
VOLUME	120mL	60mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME		
B2FK38 9	SOIL	JUL 07 2011	0740	✓	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: FM Hall, CHPRC	DATE/TIME: JUL 07 2011 1245	RECEIVED BY/STORED IN: C. Johnson	DATE/TIME: JUL 07 2011 1245
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

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(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) IC Anions - 300.0 {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Sulfate};

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

PRINTED ON 6/29/2011

A-6003-618 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-096-132	PAGE 1 OF 1
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: Area AA Zone 3 Sample 14	PROJECT DESIGNATION: Area AA In-Process Sampling - Soil		SAF NO.: F11-096	AIR QUALITY: ☐	
ICE CHEST NO.: GWS-007	FIELD LOGBOOK NO.: HNF-N 587-22	ACTUAL SAMPLE DEPTH: SURFACE	COA: 302682ES10	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	None	Cool~4C
HOLDING TIME	6 Months	28 Days/48 Hours
TYPE OF CONTAINER	G/P	G/P
NO. OF CONTAINER(S)	1	1
VOLUME	120mL	60mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME		
B2FK39 10	SOIL	7/7/11	0713	✓	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: FM Hall, CHPRC	DATE/TIME: 7/7/11 1215	RECEIVED BY/STORED IN: C Johns-CL	DATE/TIME: 7/7/11 1215
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

** The CACN for all analytical work at WSCF laboratory is 402581ES20.☐** 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) IC Anions - 300.0 {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Sulfate};

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

PRINTED ON 6/29/2011

A-6003-618 (REV 2)

Appendix 5

Data Validation Supporting Documentation

VALIDATION LEVEL:	A	B	(C)	D	E
PROJECT: 100K Area AA Zone 3			DATA PACKAGE: VSR11-052		
VALIDATOR: Carl Schloesslin		LAB: WSCF		DATE: 8-30-2011	
			SDG: WSCF112608, WSCF112631		
ANALYSES PERFORMED					
SW-846/ICP	SW-846/GFAA	SW-846/Hg		EPA 200.8 X	

SAMPLES/MATRIX Soil samples

SDG WSCF112608: B2FK34, B2FK35, B2FK36, B2FK37

SDG WSCF112631: B2FK26, B2FK27, B2FK28, B2FK29, B2FK30, B2FK31, B2FK32, B2FK33, B2FK38, B2FK39

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:

EB B2FK39 Hits: Mn 0.595 mg/kg, Ba 0.276 mg/kg, Cu 0.139 mg/kg, V 0.196 mg/kg, Pb 0.103 mg/kg, Sr 0.134 mg/kg

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:

WSCF112608: Sb LCS %R = 162%

WSCF112631: Mn MSD %R = 58%

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:

WSCF112631: Mn MS/MSD RPD = 49%

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 # WSCF112608

QC Batch 185327
Associated Samples 112608001, 112608002, 112608003, 112608004

Test ICP-2008 MS All possible metal

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
LCS			**QC Sample #59796**							
Manganese	7439-96-5		420	mg/kg	92.8	75 - 121				07/12/11
Nickel	7440-02-0		51.2	mg/kg	92.1	74 - 122				07/12/11
Silver	7440-22-4		98.2	mg/kg	97.3	83 - 127				07/12/11
Antimony	7440-36-0		146	mg/kg	161.6	62 - 205				07/12/11
Barium	7440-39-3		300	mg/kg	94.2	78 - 118				07/12/11
Beryllium	7440-41-7		73.6	mg/kg	82.2	77 - 120				07/12/11
Cadmium	7440-43-9		60.4	mg/kg	90.9	76 - 129				07/12/11
Chromium	7440-47-3		69.3	mg/kg	95.1	68 - 119				07/12/11
Cobalt	7440-48-4		68.4	mg/kg	93.5	77 - 122				07/12/11
Copper	7440-50-8		60.6	mg/kg	88.4	67 - 120				07/12/11
Vanadium	7440-62-2		82.7	mg/kg	99.6	67 - 122				07/12/11
Zinc	7440-66-6		160	mg/kg	90.1	73 - 131				07/12/11
Lead	7439-92-1		121	mg/kg	93.1	79 - 124				07/12/11
Mercury	7439-97-6		7.39	mg/kg	89	69 - 124				07/12/11
Molybdenum	7439-98-7		50.8	mg/kg	104.2	80 - 125				07/12/11
Strontium	7440-24-6		52.8	mg/kg	97.1	78 - 119				07/12/11
Tin	7440-31-5		172	mg/kg	99.4	84 - 130				07/12/11
Uranium	7440-61-1		348	mg/kg	87	86 - 113				07/12/11
Arsenic	7440-38-2		124	mg/kg	94.3	79 - 125				07/12/11

REVISED112608 -

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF112608

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Selenium	7782-49-2		160	mg/kg	99.4	82 - 133				07/12/11
MS			**QC Sample #59797**							
			Original 112567001							
Manganese	7439-96-5		83.7	mg/kg	87.2	70 - 130				07/12/11
Nickel	7440-02-0		91.0	mg/kg	94.8	70 - 130				07/12/11
Silver	7440-22-4		92.6	mg/kg	96.5	70 - 130				07/12/11
Antimony	7440-36-0		86.7	mg/kg	90.4	70 - 130				07/12/11
Barium	7440-39-3		88.7	mg/kg	92.5	70 - 130				07/12/11
Beryllium	7440-41-7		87.5	mg/kg	91.1	70 - 130				07/12/11
Cadmium	7440-43-9		91.4	mg/kg	95.2	70 - 130				07/12/11
Chromium	7440-47-3		91.8	mg/kg	95.7	70 - 130				07/12/11
Cobalt	7440-48-4		91.0	mg/kg	94.8	70 - 130				07/12/11
Copper	7440-50-8		89.1	mg/kg	92.9	70 - 130				07/12/11
Vanadium	7440-62-2		86.7	mg/kg	90.4	70 - 130				07/12/11
Zinc	7440-66-6		85.3	mg/kg	88.9	70 - 130				07/12/11
Lead	7439-92-1		92.8	mg/kg	96.7	70 - 130				07/12/11
Mercury	7439-97-6		1.78	mg/kg	92.5	70 - 130				07/12/11
Molybdenum	7439-98-7		95.1	mg/kg	99	70 - 130				07/12/11
Strontium	7440-24-6		93.3	mg/kg	97.2	70 - 130				07/12/11
Tin	7440-31-5		93.9	mg/kg	97.8	70 - 130				07/12/11
Uranium	7440-61-1		94.1	mg/kg	98.1	70 - 130				07/12/11
Arsenic	7440-38-2		91.5	mg/kg	95.3	70 - 130				07/12/11
Selenium	7782-49-2		93.8	mg/kg	97.7	70 - 130				07/12/11
MSD			**QC Sample #59798**							
			Original 112567001					**Paired**	**59797**	

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Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF112608

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Manganese	7439-96-5		109	mg/kg	116.3	70 - 130	28.60	30		07/12/11
Nickel	7440-02-0		81.6	mg/kg	87.3	70 - 130	8.20	30		07/12/11
Silver	7440-22-4		87.0	mg/kg	93.1	70 - 130	3.60	30		07/12/11
Antimony	7440-36-0		80.1	mg/kg	85.7	70 - 130	5.30	30		07/12/11
Barium	7440-39-3		97.2	mg/kg	103.9	70 - 130	11.60	30		07/12/11
Beryllium	7440-41-7		79.7	mg/kg	85.2	70 - 130	6.70	30		07/12/11
Cadmium	7440-43-9		87.0	mg/kg	93.1	70 - 130	2.20	30		07/12/11
Chromium	7440-47-3		83.7	mg/kg	89.5	70 - 130	6.70	30		07/12/11
Cobalt	7440-48-4		81.4	mg/kg	87.1	70 - 130	8.50	30		07/12/11
Copper	7440-50-8		80.0	mg/kg	85.6	70 - 130	8.20	30		07/12/11
Vanadium	7440-62-2		84.0	mg/kg	89.8	70 - 130	0.70	30		07/12/11
Zinc	7440-66-6		74.7	mg/kg	79.9	70 - 130	10.70	30		07/12/11
Lead	7439-92-1		86.9	mg/kg	93	70 - 130	3.90	30		07/12/11
Mercury	7439-97-6		1.66	mg/kg	89	70 - 130	3.90	30		07/12/11
Molybdenum	7439-98-7		87.9	mg/kg	94	70 - 130	5.20	30		07/12/11
Strontium	7440-24-6		87.2	mg/kg	93.3	70 - 130	4.10	30		07/12/11
Tin	7440-31-5		87.0	mg/kg	93.1	70 - 130	4.90	30		07/12/11
Uranium	7440-61-1		87.2	mg/kg	93.2	70 - 130	5.10	30		07/12/11
Arsenic	7440-38-2		85.8	mg/kg	91.8	70 - 130	3.70	30		07/12/11
Selenium	7782-49-2		85.0	mg/kg	91	70 - 130	7.10	30		07/12/11

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF112608

QC Batch 185327
Associated Samples 112608001, 112608002, 112608003, 112608004

Test ICP-2008 MS All possible metal

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #59795**							
Manganese	7439-96-5		<0.10	ug/L					U	07/12/11
Nickel	7440-02-0		<0.20	ug/L					U	07/12/11
Silver	7440-22-4		<0.050	ug/L					U	07/12/11
Antimony	7440-36-0		<0.050	ug/L					U	07/12/11
Barium	7440-39-3		<0.20	ug/L					U	07/12/11
Beryllium	7440-41-7		<0.050	ug/L					U	07/12/11
Boron	7440-42-8		<0.50	ug/L					U	07/12/11
Cadmium	7440-43-9		<0.050	ug/L					U	07/12/11
Chromium	7440-47-3		<0.10	ug/L					U	07/12/11
Cobalt	7440-48-4		<0.10	ug/L					U	07/12/11
Copper	7440-50-8		<0.10	ug/L					U	07/12/11
Vanadium	7440-62-2		<0.20	ug/L					U	07/12/11
Zinc	7440-66-6		<0.80	ug/L					U	07/12/11
Lead	7439-92-1		<0.10	ug/L					U	07/12/11
Mercury	7439-97-6		<0.030	ug/L					U	07/12/11
Molybdenum	7439-98-7		<0.10	ug/L					U	07/12/11
Strontium	7440-24-6		<0.10	ug/L					U	07/12/11
Tin	7440-31-5		<0.10	ug/L					U	07/12/11
Uranium	7440-61-1		<0.10	ug/L					U	07/12/11

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Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF112608

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Arsenic	7440-38-2		<0.40	ug/L					U	07/12/11
Selenium	7782-49-2		<0.30	ug/L					U	07/12/11
LCS			**QC Sample #59796**							
Boron	7440-42-8		108	mg/kg	93.5	64 - 136				07/12/11
MS			**QC Sample #59797**							
			Original 112567001							
Boron	7440-42-8		89.2	mg/kg	93	70 - 130				07/12/11
MSD			**QC Sample #59798**							
			Original 112567001					**Paired**	**59797**	
Boron	7440-42-8		77.4	mg/kg	82.8	70 - 130	11.60	30		07/12/11

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Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF112631

QC Batch 185521 **Test** ICP-2008 MS All possible metal
Associated Samples 112631001, 112631002, 112631003, 112631004, 112631005, 112631006, 112631007, 112631008, 112631009, 112631010

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
LCS			**QC Sample #60251**							
Manganese	7439-96-5		277	mg/kg	97	75 - 121				07/13/11
Nickel	7440-02-0		59.3	mg/kg	100.4	74 - 122				07/13/11
Silver	7440-22-4		36.9	mg/kg	107.2	83 - 127				07/13/11
Antimony	7440-36-0		181	mg/kg	148.3	62 - 205				07/13/11
Barium	7440-39-3		178	mg/kg	105.4	78 - 118				07/13/11
Beryllium	7440-41-7		68.9	mg/kg	110.4	77 - 120				07/13/11
Cadmium	7440-43-9		65.2	mg/kg	105.5	76 - 129				07/13/11
Chromium	7440-47-3		71.3	mg/kg	100	68 - 119				07/13/11
Cobalt	7440-48-4		105	mg/kg	101.6	77 - 122				07/13/11
Copper	7440-50-8		79.1	mg/kg	97.5	67 - 120				07/13/11
Vanadium	7440-62-2		58.8	mg/kg	99.3	67 - 122				07/13/11
Zinc	7440-66-6		140	mg/kg	99.1	73 - 131				07/14/11
Lead	7439-92-1		99.7	mg/kg	107.8	79 - 124				07/13/11
Mercury	7439-97-6		3.94	mg/kg	104.5	69 - 124				07/13/11
Molybdenum	7439-98-7		48.8	mg/kg	114.6	80 - 125				07/13/11
Strontium	7440-24-6		72.3	mg/kg	99.9	78 - 119				07/13/11
Tin	7440-31-5		122	mg/kg	114.3	84 - 130				07/13/11
Uranium	7440-61-1		351	mg/kg	87.6	86 - 113				07/14/11
Arsenic	7440-38-2		100	mg/kg	108.4	79 - 125				07/13/11

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF112631

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit		RQ	Analyzed
Selenium	7782-49-2		99.9	mg/kg	111.7	82 - 133					07/13/11
MS			**QC Sample #61132**								
			Original	**112631001**							
Manganese	7439-96-5	363	93.8	mg/kg	95.2	70 - 130					07/13/11
Nickel	7440-02-0	9.13	93.1	mg/kg	94.5	70 - 130					07/13/11
Silver	7440-22-4	<0.093	101	mg/kg	102.3	70 - 130					07/13/11
Antimony	7440-36-0	<0.28	95.2	mg/kg	96.6	70 - 130					07/13/11
Beryllium	7440-41-7	0.413	106	mg/kg	107.5	70 - 130					07/13/11
Cadmium	7440-43-9	<0.093	102	mg/kg	103.6	70 - 130					07/13/11
Chromium	7440-47-3	6.39	94.0	mg/kg	95.3	70 - 130					07/13/11
Cobalt	7440-48-4	11.0	91.1	mg/kg	92.4	70 - 130					07/13/11
Copper	7440-50-8	18.3	90.0	mg/kg	91.3	70 - 130					07/13/11
Vanadium	7440-62-2	69.4	92.4	mg/kg	93.8	70 - 130					07/13/11
Zinc	7440-66-6	49.0	88.5	mg/kg	89.8	70 - 130					07/14/11
Lead	7439-92-1	4.39	102	mg/kg	103	70 - 130					07/13/11
Mercury	7439-97-6	<0.047	2.06	mg/kg	104.5	70 - 130					07/13/11
Molybdenum	7439-98-7	0.486	102	mg/kg	103.8	70 - 130					07/13/11
Strontium	7440-24-6	30.6	107	mg/kg	108.8	70 - 130					07/13/11
Tin	7440-31-5	0.585	103	mg/kg	104.5	70 - 130					07/13/11
Uranium	7440-61-1	0.580	102	mg/kg	103.2	70 - 130					07/14/11
Arsenic	7440-38-2	2.50	100	mg/kg	101.8	70 - 130					07/13/11
Selenium	7782-49-2	0.902	101	mg/kg	102.5	70 - 130					07/13/11
MSD			**QC Sample #61133**								
			Original	**112631001**					**Paired**	**61132**	
Manganese	7439-96-5	363	53.7	mg/kg	57.6	70 - 130	49.20	30	*	XN	07/13/11

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF112631

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Nickel	7440-02-0	9.13	90.1	mg/kg	96.6	70 - 130	2.20	30		07/13/11
Silver	7440-22-4	<0.093	95.4	mg/kg	102.3	70 - 130	0.00	30		07/13/11
Antimony	7440-36-0	<0.28	92.7	mg/kg	99.4	70 - 130	2.90	30		07/13/11
Beryllium	7440-41-7	0.413	102	mg/kg	109.9	70 - 130	2.20	30		07/13/11
Cadmium	7440-43-9	<0.093	96.3	mg/kg	103.3	70 - 130	0.30	30		07/13/11
Chromium	7440-47-3	6.39	90.7	mg/kg	97.3	70 - 130	2.10	30		07/13/11
Cobalt	7440-48-4	11.0	89.0	mg/kg	95.4	70 - 130	3.20	30		07/13/11
Copper	7440-50-8	18.3	89.0	mg/kg	95.4	70 - 130	4.40	30		07/13/11
Vanadium	7440-62-2	69.4	88.9	mg/kg	95.4	70 - 130	1.70	30		07/13/11
Zinc	7440-66-6	49.0	86.7	mg/kg	93	70 - 130	3.50	30		07/14/11
Lead	7439-92-1	4.39	94.8	mg/kg	101.7	70 - 130	1.30	30		07/13/11
Mercury	7439-97-6	<0.047	1.93	mg/kg	103.5	70 - 130	1.00	30		07/13/11
Molybdenum	7439-98-7	0.486	96.6	mg/kg	103.6	70 - 130	0.20	30		07/13/11
Strontium	7440-24-6	30.6	95.4	mg/kg	102.2	70 - 130	6.30	30		07/13/11
Tin	7440-31-5	0.585	98.2	mg/kg	105.3	70 - 130	0.80	30		07/13/11
Uranium	7440-61-1	0.580	95.8	mg/kg	102.7	70 - 130	0.50	30		07/14/11
Arsenic	7440-38-2	2.50	94.2	mg/kg	101	70 - 130	0.80	30		07/13/11
Selenium	7782-49-2	0.902	94.2	mg/kg	100.9	70 - 130	1.60	30		07/13/11

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF112631

QC Batch 185521 **Test** ICP-2008 MS All possible metal
Associated Samples 112631001, 112631002, 112631003, 112631004, 112631005, 112631006, 112631007, 112631008, 112631009, 112631010

Analyte	CAS #	Original Found	QC Found	Units	% Recov Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #60250**						
Manganese	7439-96-5		<0.10	ug/L				U	07/13/11
Nickel	7440-02-0		<0.20	ug/L				U	07/13/11
Silver	7440-22-4		<0.050	ug/L				U	07/13/11
Antimony	7440-36-0		<0.050	ug/L				U	07/13/11
Barium	7440-39-3		<0.20	ug/L				U	07/13/11
Beryllium	7440-41-7		<0.050	ug/L				U	07/13/11
Boron	7440-42-8		<0.50	ug/L				U	07/14/11
Cadmium	7440-43-9		<0.050	ug/L				U	07/13/11
Chromium	7440-47-3		<0.10	ug/L				U	07/13/11
Cobalt	7440-48-4		<0.10	ug/L				U	07/13/11
Copper	7440-50-8		<0.10	ug/L				U	07/13/11
Vanadium	7440-62-2		<0.20	ug/L				U	07/13/11
Zinc	7440-66-6		<0.80	ug/L				U	07/14/11
Lead	7439-92-1		<0.10	ug/L				U	07/13/11
Mercury	7439-97-6		<0.030	ug/L				U	07/13/11
Molybdenum	7439-98-7		<0.10	ug/L				U	07/13/11
Strontium	7440-24-6		<0.10	ug/L				U	07/13/11
Tin	7440-31-5		<0.10	ug/L				U	07/13/11
Uranium	7440-61-1		<0.10	ug/L				U	07/14/11

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF112631

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Arsenic	7440-38-2		<0.40	ug/L					U	07/13/11
Selenium	7782-49-2		<0.30	ug/L					U	07/13/11
LCS			**QC Sample #60251**							
Boron	7440-42-8		131	mg/kg	124	64 - 136				07/14/11
MS			**QC Sample #61132**							
			Original 112631001							
Barium	7440-39-3	63.7	106	mg/kg	107.4	70 - 130				07/13/11
Boron	7440-42-8	0.848	116	mg/kg	118.2	70 - 130				07/14/11
MSD			**QC Sample #61133**							
			Original 112631001					**Paired**	**61132**	
Barium	7440-39-3	63.7	87.2	mg/kg	93.5	70 - 130	13.80	30		07/13/11
Boron	7440-42-8	0.848	110	mg/kg	117.6	70 - 130	0.50	30		07/14/11

Date: 28 July 2011
To: CH2M Hill (technical representative)
From: Analytical Quality Associates, Inc.
Project: 100K Area AA Zone 3
Subject: General Chemistry - Sample Data Groups (SDGs) WSCF112608 and WSCF112631

INTRODUCTION

This memorandum presents the results of data validation for SDGs WSCF112608 and WSCF112631 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 Methods
B2FK34	7/05/2011	Soil	C	300.0 & 7196A
B2FK35	7/05/2011	Soil	C	300.0 & 7196A
B2FK36	7/05/2011	Soil	C	300.0 & 7196A
B2FK37	7/05/2011	Soil	C	300.0 & 7196A
B2FK26	7/07/2011	Soil	C	300.0 & 7196A
B2FK27	7/07/2011	Soil	C	300.0 & 7196A
B2FK28	7/07/2011	Soil	C	300.0 & 7196A
B2FK29	7/07/2011	Soil	C	300.0 & 7196A
B2FK30	7/07/2011	Soil	C	300.0 & 7196A
B2FK31	7/07/2011	Soil	C	300.0 & 7196A
B2FK32	7/07/2011	Soil	C	300.0 & 7196A
B2FK33	7/07/2011	Soil	C	300.0 & 7196A
B2FK38	7/07/2011	Soil	C	300.0 & 7196A
B2FK39	7/07/2011	Soil	C	300.0 & 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 requirements are as follows:

- All anions except nitrate, nitrite, and phosphate – analysis within 28 days of sample collection
- Nitrate, nitrite, and phosphate – extraction within 28 days of sample collection and analysis within 48 hours of extraction
- Hexavalent chromium – analysis within 30 days of sample collection

Sample preservation for anions requires chilling to 4 degrees Celsius.

The samples were extracted and 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.

- **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, 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.

MS/MSD Samples

All MS/MSD RPD values were acceptable.

Laboratory Duplicate Samples

All laboratory duplicate results were acceptable.

Field Duplicate Samples

All field duplicate results were acceptable with the following exception. Field duplicate sample B2FK38 and its associated sample (B2FK26) had a sulfate RPD > the acceptance limit.

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 CRDLs.

- **Completeness**

SDGs WSCF112608 and WSCF112631 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

None found.

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: WSCF112608 & WSCF112631	Reviewer: AQA	Project: 100K Area AA Zone 3	Page 1 of 1
Analyte(s)	**DV Flag**	**Samples Affected**	**Reason**
Anions & Cr(VI)	None	N/A	N/A

Comments: None

Appendix 3

Annotated Laboratory Reports

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF112608

Sample # 112608001
SAF# F11-096
Sample ID B2FK34

Matrix SOIL
Sampled 07/05/11
Received 07/05/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Anions by IC										**07/06/11**
Anions by IC										
Fluoride	16984-48-8	LA-533-410	U	<1.8		mg/kg	1	1.8	3.6	07/06/11
Chloride	16887-00-6	LA-533-410	U	<3.1		mg/kg	1	3.1	21	07/06/11
Nitrite-N	NO2-N	LA-533-410	U	<1.0		mg/kg	1	1.0	4.9	07/06/11
Nitrate-N	NO3-N	LA-533-410	B	1.07		mg/kg	1	0.96	5.0	07/06/11
Sulfate	14808-79-8	LA-533-410		448		mg/kg	1	3.6	53	07/06/11
Cr(VI) Prep										**07/05/11**
Cr(VI)										
Hexavalent chromium	18540-29-9	LA-265-403	B	0.0413		ug/g	1	0.033	0.50	07/06/11
ICPMS Prep										**07/05/11**
ICP-MS										
Manganese	7439-96-5	LA-505-412		488		mg/kg	1	0.099	0.99	07/12/11
Nickel	7440-02-0	LA-505-412		9.86		mg/kg	1	0.20	2.0	07/12/11
Silver	7440-22-4	LA-505-412	U	<0.099		mg/kg	1	0.099	0.99	07/12/11
Antimony	7440-36-0	LA-505-412	U	<0.30		mg/kg	1	0.30	3.0	07/12/11
Barium	7440-39-3	LA-505-412		75.5		mg/kg	1	0.20	2.0	07/12/11
Beryllium	7440-41-7	LA-505-412	B	0.299		mg/kg	1	0.099	0.50	07/12/11
Boron	7440-42-8	LA-505-412	B	0.521		mg/kg	1	0.50	5.0	07/12/11

LS
7-28-2011

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 # WSCF112608

Sample # 112608002
SAF# F11-096
Sample ID B2FK35

Matrix SOIL
Sampled 07/05/11
Received 07/05/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Anions by IC										**07/06/11**
Anions by IC										
Fluoride	16984-48-8	LA-533-410	U	<1.8		mg/kg	1	1.8	3.6	07/06/11
Chloride	16887-00-6	LA-533-410	U	<3.1		mg/kg	1	3.1	20	07/06/11
Nitrite-N	NO2-N	LA-533-410	U	<0.99		mg/kg	1	0.99	4.9	07/06/11
Nitrate-N	NO3-N	LA-533-410	U	<0.94		mg/kg	1	0.94	4.9	07/06/11
Sulfate	14808-79-8	LA-533-410		1820		mg/kg	1	3.6	52	07/06/11
Cr(VI) Prep										**07/05/11**
Cr(VI)										
Hexavalent chromium	18540-29-9	LA-265-403	B	0.0552		ug/g	1	0.033	0.50	07/06/11
ICPMS Prep										**07/05/11**
ICP-MS										
Manganese	7439-96-5	LA-505-412		293		mg/kg	1	0.094	0.94	07/12/11
Nickel	7440-02-0	LA-505-412		11.6		mg/kg	1	0.19	1.9	07/12/11
Silver	7440-22-4	LA-505-412	U	<0.094		mg/kg	1	0.094	0.94	07/12/11
Antimony	7440-36-0	LA-505-412	U	<0.28		mg/kg	1	0.28	2.8	07/12/11
Barium	7440-39-3	LA-505-412		71.1		mg/kg	1	0.19	1.9	07/12/11
Beryllium	7440-41-7	LA-505-412	B	0.215		mg/kg	1	0.094	0.47	07/12/11
Boron	7440-42-8	LA-505-412	B	0.583		mg/kg	1	0.47	4.7	07/12/11

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7-28-2011

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 # WSCF112608

Sample # 112608003
SAF# F11-096
Sample ID B2FK36

Matrix SOIL
Sampled 07/05/11
Received 07/05/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Anions by IC										**07/06/11**
Anions by IC										
Fluoride	16984-48-8	LA-533-410	B	1.91		mg/kg	1	1.8	3.6	07/06/11
Chloride	16887-00-6	LA-533-410	U	<3.1		mg/kg	1	3.1	20	07/06/11
Nitrite-N	NO2-N	LA-533-410	U	<0.99		mg/kg	1	0.99	4.9	07/06/11
Nitrate-N	NO3-N	LA-533-410	B	1.51		mg/kg	1	0.95	4.9	07/06/11
Sulfate	14808-79-8	LA-533-410		307		mg/kg	1	3.6	52	07/06/11
Cr(VI) Prep										**07/05/11**
Cr(VI)										
Hexavalent chromium	18540-29-9	LA-265-403	B	0.0413		ug/g	1	0.033	0.50	07/06/11
~~**ICPMS Prep**~~										~~**07/05/11**~~
ICP-MS										
Manganese	7439-96-5	LA-505-412		406		mg/kg	1	0.10	1.0	07/12/11
Nickel	7440-02-0	LA-505-412		10.7		mg/kg	1	0.20	2.0	07/12/11
Silver	7440-22-4	LA-505-412	U	<0.10		mg/kg	1	0.10	1.0	07/12/11
Antimony	7440-36-0	LA-505-412	U	<0.30		mg/kg	1	0.30	3.0	07/12/11
Barium	7440-39-3	LA-505-412		88.5		mg/kg	1	0.20	2.0	07/12/11
Beryllium	7440-41-7	LA-505-412	B	0.440		mg/kg	1	0.10	0.50	07/12/11
Boron	7440-42-8	LA-505-412	B	0.925		mg/kg	1	0.50	5.0	07/12/11

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7-28-2011

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 # WSCF112608

Sample # 112608004
SAF# F11-096
Sample ID B2FK37

Matrix SOIL
Sampled 07/05/11
Received 07/05/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Anions by IC										**07/06/11**
Anions by IC										
Fluoride	16984-48-8	LA-533-410	U	<1.8		mg/kg	1	1.8	3.6	07/06/11
Chloride	16887-00-6	LA-533-410	U	<3.1		mg/kg	1	3.1	20	07/06/11
Nitrite-N	NO2-N	LA-533-410	U	<1.0		mg/kg	1	1.0	4.9	07/06/11
Nitrate-N	NO3-N	LA-533-410	B	1.90		mg/kg	1	0.95	4.9	07/06/11
Sulfate	14808-79-8	LA-533-410		2260		mg/kg	1	3.6	52	07/06/11
Cr(VI) Prep										**07/05/11**
Cr(VI)										
Hexavalent chromium	18540-29-9	LA-265-403	B	0.0690		ug/g	1	0.033	0.51	07/06/11
ICPMS Prep										**07/05/11**
ICP-MS										
Manganese	7439-96-5	LA-505-412		351		mg/kg	1	0.097	0.97	07/12/11
Nickel	7440-02-0	LA-505-412		8.54		mg/kg	1	0.19	1.9	07/12/11
Silver	7440-22-4	LA-505-412	U	<0.097		mg/kg	1	0.097	0.97	07/12/11
Antimony	7440-36-0	LA-505-412	U	<0.29		mg/kg	1	0.29	2.9	07/12/11
Barium	7440-39-3	LA-505-412		60.2		mg/kg	1	0.19	1.9	07/12/11
Beryllium	7440-41-7	LA-505-412	B	0.352		mg/kg	1	0.097	0.48	07/12/11
Boron	7440-42-8	LA-505-412	B	0.600		mg/kg	1	0.48	4.8	07/12/11

LS
7-28-2011

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 # WSCF112631

Sample # 112631001
SAF# F11-096
Sample ID B2FK26

Matrix SOIL
Sampled 07/07/11
Received 07/07/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Anions by IC										**07/11/11**
Anions by IC										
Fluoride	16984-48-8	LA-533-410	U	<1.8		mg/kg	1	1.8	3.6	07/11/11
Chloride	16887-00-6	LA-533-410	U	<3.1		mg/kg	1	3.1	21	07/11/11
Nitrite-N	NO2-N	LA-533-410	U	<1.0		mg/kg	1	1.0	5.0	07/11/11
Nitrate-N	NO3-N	LA-533-410	U	<0.96		mg/kg	1	0.96	5.0	07/11/11
Sulfate	14808-79-8	LA-533-410		746		mg/kg	1	3.6	53	07/11/11
Cr(VI) Prep										**07/11/11**
Cr(VI)										
Hexavalent chromium	18540-29-9	LA-265-403	UN	<0.10		ug/g	1	0.10	0.51	07/11/11
ICPMS Prep										**07/12/11**
ICP-MS										
Manganese	7439-96-5	LA-505-412	N	363		mg/kg	1	0.093	0.93	07/13/11
Nickel	7440-02-0	LA-505-412		9.13		mg/kg	1	0.19	1.9	07/13/11
Silver	7440-22-4	LA-505-412	U	<0.093		mg/kg	1	0.093	0.93	07/13/11
Antimony	7440-36-0	LA-505-412	U	<0.28		mg/kg	1	0.28	2.8	07/13/11
Barium	7440-39-3	LA-505-412		63.7		mg/kg	1	0.19	1.9	07/13/11
Beryllium	7440-41-7	LA-505-412	B	0.413		mg/kg	1	0.093	0.47	07/13/11
Boron	7440-42-8	LA-505-412	B	0.848		mg/kg	1	0.47	4.7	07/14/11

LS
7-28-2011

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 # WSCF112631

Sample # 112631002
SAF# F11-096
Sample ID B2FK27

Matrix SOIL
Sampled 07/07/11
Received 07/07/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Anions by IC										**07/11/11**
Anions by IC										
Fluoride	16984-48-8	LA-533-410	U	<1.8		mg/kg	1	1.8	3.7	07/11/11
Chloride	16887-00-6	LA-533-410		23.9		mg/kg	1	3.2	21	07/11/11
Nitrite-N	NO2-N	LA-533-410	U	<1.0		mg/kg	1	1.0	5.0	07/11/11
Nitrate-N	NO3-N	LA-533-410	U	<0.97		mg/kg	1	0.97	5.0	07/11/11
Sulfate	14808-79-8	LA-533-410		1380		mg/kg	1	3.7	53	07/11/11
Cr(VI) Prep										**07/11/11**
Cr(VI)										
Hexavalent chromium	18540-29-9	LA-265-403	UN	<0.10		ug/g	1	0.10	0.51	07/11/11
ICPMS Prep										**07/12/11**
ICP-MS										
Manganese	7439-96-5	LA-505-412	N	391		mg/kg	1	0.099	0.99	07/13/11
Nickel	7440-02-0	LA-505-412		9.33		mg/kg	1	0.20	2.0	07/13/11
Silver	7440-22-4	LA-505-412	U	<0.099		mg/kg	1	0.099	0.99	07/13/11
Antimony	7440-36-0	LA-505-412	U	<0.30		mg/kg	1	0.30	3.0	07/13/11
Barium	7440-39-3	LA-505-412		62.5		mg/kg	1	0.20	2.0	07/13/11
Beryllium	7440-41-7	LA-505-412	B	0.426		mg/kg	1	0.099	0.50	07/13/11
Boron	7440-42-8	LA-505-412	U	<0.50		mg/kg	1	0.50	5.0	07/14/11

LS
7-28-2011

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 # WSCF112631

Sample # 112631003
SAF# F11-096
Sample ID B2FK28

Matrix SOIL
Sampled 07/07/11
Received 07/07/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Anions by IC										**07/11/11**
Anions by IC										
Fluoride	16984-48-8	LA-533-410	U	<1.8		mg/kg	1	1.8	3.6	07/11/11
Chloride	16887-00-6	LA-533-410	U	<3.1		mg/kg	1	3.1	21	07/11/11
Nitrite-N	NO2-N	LA-533-410	U	<1.0		mg/kg	1	1.0	5.0	07/11/11
Nitrate-N	NO3-N	LA-533-410	B	1.03		mg/kg	1	0.96	5.0	07/11/11
Sulfate	14808-79-8	LA-533-410	B	4.56		mg/kg	1	3.6	53	07/11/11
Cr(VI) Prep										**07/11/11**
Cr(VI)										
Hexavalent chromium	18540-29-9	LA-265-403	UN	<0.10		ug/g	1	0.10	0.51	07/11/11
~~**ICPMS Prep**~~										~~**07/12/11**~~
ICP-MS										
~~Manganese~~	~~7439-96-5~~	~~LA-505-412~~	~~N~~	~~360~~		~~mg/kg~~	~~1~~	~~0.099~~	~~0.99~~	~~07/13/11~~
~~Nickel~~	~~7440-02-0~~	~~LA-505-412~~		~~9.71~~		~~mg/kg~~	~~1~~	~~0.20~~	~~2.0~~	~~07/13/11~~
~~Silver~~	~~7440-22-4~~	~~LA-505-412~~	~~U~~	~~<0.099~~		~~mg/kg~~	~~1~~	~~0.099~~	~~0.99~~	~~07/13/11~~
~~Antimony~~	~~7440-36-0~~	~~LA-505-412~~	~~U~~	~~<0.30~~		~~mg/kg~~	~~1~~	~~0.30~~	~~3.0~~	~~07/13/11~~
~~Barium~~	~~7440-39-3~~	~~LA-505-412~~		~~61.7~~		~~mg/kg~~	~~1~~	~~0.20~~	~~2.0~~	~~07/13/11~~
~~Beryllium~~	~~7440-41-7~~	~~LA-505-412~~		~~0.598~~		~~mg/kg~~	~~1~~	~~0.099~~	~~0.50~~	~~07/13/11~~
~~Boron~~	~~7440-42-8~~	~~LA-505-412~~	~~B~~	~~1.56~~		~~mg/kg~~	~~1~~	~~0.50~~	~~5.0~~	~~07/14/11~~

LS
7-28-2011

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.

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 # WSCF112631

Sample # 112631004
SAF# F11-096
Sample ID B2FK29

Matrix SOIL
Sampled 07/07/11
Received 07/07/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Anions by IC										**07/11/11**
Anions by IC										
Fluoride	16984-48-8	LA-533-410	U	<1.8		mg/kg	1	1.8	3.6	07/11/11
Chloride	16887-00-6	LA-533-410	U	<3.1		mg/kg	1	3.1	21	07/11/11
Nitrite-N	NO2-N	LA-533-410	U	<1.0		mg/kg	1	1.0	4.9	07/11/11
Nitrate-N	NO3-N	LA-533-410	U	<0.96		mg/kg	1	0.96	5.0	07/11/11
Sulfate	14808-79-8	LA-533-410	B	21.1		mg/kg	1	3.6	53	07/11/11
Cr(VI) Prep										**07/11/11**
Cr(VI)										
Hexavalent chromium	18540-29-9	LA-265-403	UN	<0.10		ug/g	1	0.10	0.51	07/11/11
ICPMS Prep										**07/12/11**
ICP-MS										
Manganese	7439-96-5	LA-505-412	N	289		mg/kg	1	0.096	0.96	07/13/11
Nickel	7440-02-0	LA-505-412		6.34		mg/kg	1	0.19	1.9	07/13/11
Silver	7440-22-4	LA-505-412	U	<0.096		mg/kg	1	0.096	0.96	07/13/11
Antimony	7440-36-0	LA-505-412	U	<0.29		mg/kg	1	0.29	2.9	07/13/11
Barium	7440-39-3	LA-505-412		52.9		mg/kg	1	0.19	1.9	07/13/11
Beryllium	7440-41-7	LA-505-412	B	0.170		mg/kg	1	0.096	0.48	07/13/11
Boron	7440-42-8	LA-505-412	B	0.676		mg/kg	1	0.48	4.8	07/14/11

LS
7-28-2011

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 # WSCF112631

Sample # 112631005
SAF# F11-096
Sample ID B2FK30

Matrix SOIL
Sampled 07/07/11
Received 07/07/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Anions by IC										**07/11/11**
Anions by IC										
Fluoride	16984-48-8	LA-533-410	U	<1.8		mg/kg	1	1.8	3.6	07/11/11
Chloride	16887-00-6	LA-533-410	U	<3.1		mg/kg	1	3.1	21	07/11/11
Nitrite-N	NO2-N	LA-533-410	U	<1.0		mg/kg	1	1.0	5.0	07/11/11
Nitrate-N	NO3-N	LA-533-410	U	<0.96		mg/kg	1	0.96	5.0	07/11/11
Sulfate	14808-79-8	LA-533-410	B	9.75		mg/kg	1	3.6	53	07/11/11
Cr(VI) Prep										**07/12/11**
Cr(VI)										
Hexavalent chromium	18540-29-9	LA-265-403	U	<0.095		ug/g	1	0.095	0.48	07/13/11
ICPMS Prep										**07/12/11**
ICP-MS										
Manganese	7439-96-5	LA-505-412	N	367		mg/kg	1	0.099	0.99	07/13/11
Nickel	7440-02-0	LA-505-412		10.5		mg/kg	1	0.20	2.0	07/13/11
Silver	7440-22-4	LA-505-412	U	<0.099		mg/kg	1	0.099	0.99	07/13/11
Antimony	7440-36-0	LA-505-412	U	<0.30		mg/kg	1	0.30	3.0	07/13/11
Barium	7440-39-3	LA-505-412		50.8		mg/kg	1	0.20	2.0	07/13/11
Beryllium	7440-41-7	LA-505-412	B	0.328		mg/kg	1	0.099	0.49	07/13/11
Boron	7440-42-8	LA-505-412	B	0.561		mg/kg	1	0.49	4.9	07/14/11

LS
7-28-2011

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 # WSCF112631

Sample # 112631006
SAF# F11-096
Sample ID B2FK31

Matrix SOIL
Sampled 07/07/11
Received 07/07/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Anions by IC										**07/11/11**
Anions by IC										
Fluoride	16984-48-8	LA-533-410	U	<1.8		mg/kg	1	1.8	3.6	07/11/11
Chloride	16887-00-6	LA-533-410	U	<3.1		mg/kg	1	3.1	20	07/11/11
Nitrite-N	NO2-N	LA-533-410	U	<1.0		mg/kg	1	1.0	4.9	07/11/11
Nitrate-N	NO3-N	LA-533-410	B	1.33		mg/kg	1	0.95	5.0	07/11/11
Sulfate	14808-79-8	LA-533-410	U	<3.6		mg/kg	1	3.6	53	07/11/11
Cr(VI) Prep										**07/12/11**
Cr(VI)										
Hexavalent chromium	18540-29-9	LA-265-403	U	<0.098		ug/g	1	0.098	0.49	07/13/11
ICPMS Prep										**07/12/11**
ICP-MS										
Manganese	7439-96-5	LA-505-412	N	344		mg/kg	1	0.094	0.94	07/13/11
Nickel	7440-02-0	LA-505-412		8.85		mg/kg	1	0.19	1.9	07/13/11
Silver	7440-22-4	LA-505-412	U	<0.094		mg/kg	1	0.094	0.94	07/13/11
Antimony	7440-36-0	LA-505-412	U	<0.28		mg/kg	1	0.28	2.8	07/13/11
Barium	7440-39-3	LA-505-412		57.9		mg/kg	1	0.19	1.9	07/13/11
Beryllium	7440-41-7	LA-505-412	B	0.365		mg/kg	1	0.094	0.47	07/13/11
Boron	7440-42-8	LA-505-412	B	0.638		mg/kg	1	0.47	4.7	07/14/11

LS
7-28-2011

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 # WSCF112631

Sample # 112631007
SAF# F11-096
Sample ID B2FK32

Matrix SOIL
Sampled 07/07/11
Received 07/07/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Anions by IC										**07/11/11**
Anions by IC										
Fluoride	16984-48-8	LA-533-410	U	<1.8		mg/kg	1	1.8	3.7	07/11/11
Chloride	16887-00-6	LA-533-410	B	6.63		mg/kg	1	3.2	21	07/11/11
Nitrite-N	NO2-N	LA-533-410	U	<1.0		mg/kg	1	1.0	5.0	07/11/11
Nitrate-N	NO3-N	LA-533-410	B	4.77		mg/kg	1	0.97	5.0	07/11/11
Sulfate	14808-79-8	LA-533-410	B	12.3		mg/kg	1	3.7	53	07/11/11
Cr(VI) Prep										**07/12/11**
Cr(VI)										
Hexavalent chromium	18540-29-9	LA-265-403	U	<0.096		ug/g	1	0.096	0.48	07/13/11
ICPMS Prep										**07/12/11**
ICP-MS										
Manganese	7439-96-5	LA-505-412	N	371		mg/kg	1	0.096	0.96	07/13/11
Nickel	7440-02-0	LA-505-412		10.1		mg/kg	1	0.19	1.9	07/13/11
Silver	7440-22-4	LA-505-412	U	<0.096		mg/kg	1	0.096	0.96	07/13/11
Antimony	7440-36-0	LA-505-412	U	<0.29		mg/kg	1	0.29	2.9	07/13/11
Barium	7440-39-3	LA-505-412		63.7		mg/kg	1	0.19	1.9	07/13/11
Beryllium	7440-41-7	LA-505-412	B	0.247		mg/kg	1	0.096	0.48	07/13/11
Boron	7440-42-8	LA-505-412	B	0.830		mg/kg	1	0.48	4.8	07/14/11

LS
7-28-2011

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 # WSCF112631

Sample # 112631008
SAF# F11-096
Sample ID B2FK33

Matrix SOIL
Sampled 07/07/11
Received 07/07/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Anions by IC										**07/11/11**
Anions by IC										
Fluoride	16984-48-8	LA-533-410	U	<1.8		mg/kg	1	1.8	3.6	07/11/11
Chloride	16887-00-6	LA-533-410	B	5.02		mg/kg	1	3.1	20	07/11/11
Nitrite-N	NO2-N	LA-533-410	U	<1.0		mg/kg	1	1.0	4.9	07/11/11
Nitrate-N	NO3-N	LA-533-410	B	2.86		mg/kg	1	0.95	5.0	07/11/11
Sulfate	14808-79-8	LA-533-410	B	12.3		mg/kg	1	3.6	53	07/11/11
Cr(VI) Prep										**07/12/11**
Cr(VI)										
Hexavalent chromium	18540-29-9	LA-265-403	B	0.335		ug/g	1	0.10	0.50	07/13/11
~~**ICPMS Prep**~~										~~**07/12/11**~~
ICP-MS										
Manganese	7439-96-5	LA-505-412	N	404		mg/kg	1	0.094	0.94	07/13/11
Nickel	7440-02-0	LA-505-412		10.7		mg/kg	1	0.19	1.9	07/13/11
Silver	7440-22-4	LA-505-412	U	<0.094		mg/kg	1	0.094	0.94	07/13/11
Antimony	7440-36-0	LA-505-412	U	<0.28		mg/kg	1	0.28	2.8	07/13/11
Barium	7440-39-3	LA-505-412		71.2		mg/kg	1	0.19	1.9	07/13/11
Beryllium	7440-41-7	LA-505-412		0.550		mg/kg	1	0.094	0.47	07/13/11
Boron	7440-42-8	LA-505-412	B	1.75		mg/kg	1	0.47	4.7	07/14/11

LS
7-28-2011

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.

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 # WSCF112631

Sample # 112631009
SAF# F11-096
Sample ID B2FK38

Matrix SOIL
Sampled 07/07/11
Received 07/07/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Anions by IC										**07/11/11**
Anions by IC										
Fluoride	16984-48-8	LA-533-410	U	<1.8		mg/kg	1	1.8	3.6	07/11/11
Chloride	16887-00-6	LA-533-410	U	<3.1		mg/kg	1	3.1	21	07/11/11
Nitrite-N	NO2-N	LA-533-410	U	<1.0		mg/kg	1	1.0	5.0	07/11/11
Nitrate-N	NO3-N	LA-533-410	U	<0.96		mg/kg	1	0.96	5.0	07/11/11
Sulfate	14808-79-8	LA-533-410		498		mg/kg	1	3.6	53	07/11/11
Cr(VI) Prep										**07/12/11**
Cr(VI)										
Hexavalent chromium	18540-29-9	LA-265-403	U	<0.094		ug/g	1	0.094	0.47	07/13/11
ICPMS Prep										**07/12/11**
ICP-MS										
Manganese	7439-96-5	LA-505-412	N	366		mg/kg	1	0.098	0.98	07/13/11
Nickel	7440-02-0	LA-505-412		9.87		mg/kg	1	0.20	2.0	07/13/11
Silver	7440-22-4	LA-505-412	U	<0.098		mg/kg	1	0.098	0.98	07/13/11
Antimony	7440-36-0	LA-505-412	U	<0.29		mg/kg	1	0.29	2.9	07/13/11
Barium	7440-39-3	LA-505-412		60.1		mg/kg	1	0.20	2.0	07/13/11
Beryllium	7440-41-7	LA-505-412	B	0.367		mg/kg	1	0.098	0.49	07/13/11
Boron	7440-42-8	LA-505-412	U	<0.49		mg/kg	1	0.49	4.9	07/14/11

LS
7-28-2011

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 # WSCF112631

Sample # 112631010
SAF# F11-096
Sample ID B2FK39

Matrix SOIL
Sampled 07/07/11
Received 07/07/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Anions by IC										**07/12/11**
Anions by IC										
Fluoride	16984-48-8	LA-533-410	U	<1.8		mg/kg	1	1.8	3.6	07/12/11
Chloride	16887-00-6	LA-533-410	U	<3.1		mg/kg	1	3.1	20	07/12/11
Nitrite-N	NO2-N	LA-533-410	U	<0.99		mg/kg	1	0.99	4.9	07/12/11
Nitrate-N	NO3-N	LA-533-410	U	<0.95		mg/kg	1	0.95	4.9	07/12/11
Sulfate	14808-79-8	LA-533-410	U	<3.6		mg/kg	1	3.6	52	07/12/11
Cr(VI) Prep										**07/12/11**
Cr(VI)										
Hexavalent chromium	18540-29-9	LA-265-403	U	<0.098		ug/g	1	0.098	0.49	07/13/11
ICPMS Prep										**07/12/11**
ICP-MS										
Manganese	7439-96-5	LA-505-412	BN	0.595		mg/kg	1	0.095	0.95	07/13/11
Nickel	7440-02-0	LA-505-412	U	<0.19		mg/kg	1	0.19	1.9	07/13/11
Silver	7440-22-4	LA-505-412	U	<0.095		mg/kg	1	0.095	0.95	07/13/11
Antimony	7440-36-0	LA-505-412	U	<0.28		mg/kg	1	0.28	2.8	07/13/11
Barium	7440-39-3	LA-505-412	B	0.276		mg/kg	1	0.19	1.9	07/13/11
Beryllium	7440-41-7	LA-505-412	U	<0.095		mg/kg	1	0.095	0.47	07/13/11
Boron	7440-42-8	LA-505-412	U	<0.47		mg/kg	1	0.47	4.7	07/14/11

LS
7-28-2011

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
WSCF112608

Revision: This report has been revised to include Boron QC results that were missing from the original report.

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

Anions – Hold time requirements for this analysis were met. A Duplicate, Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group. Analytical Note(s):

- Sulfate – 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.

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):

- All 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):

- 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			F11-096-127	PAGE 1 OF 1
COLLECTOR FM Hall CHPRC	COMPANY CONTACT LUKE, SN	TELEPHONE NO. 372-1667	PROJECT COORDINATOR LUKE, SN	PRICE CODE C01	DATA TURNAROUND
SAMPLING LOCATION Area AA Zone 3 Sample 9	PROJECT DESIGNATION Area AA In-Process Sampling - Soil		SAF NO. F11-096	AIR QUALITY ☐	12 Days / 12 Days
ICE CHEST NO. GW3-116	FIELD LOGBOOK NO. HNF-N-507	ACTUAL SAMPLE DEPTH Surface	COA 302682ES10	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*	POSSIBLE SAMPLE HAZARDS/ REMARKS			
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	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)	PRESERVATION	None	Cool<4C
		HOLDING TIME	6 Months	28 Days/48 Hours
		TYPE OF CONTAINER	G/P	G/P
		NO. OF CONTAINER(S)	1	1
		VOLUME	120mL	60mL
	SPECIAL HANDLING AND/OR STORAGE	SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS
	112608			

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	[redacted]	
B2FK34	SOIL	JUL 05 2011	1155	X	X

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS
RELINQUISHED BY/REMOVED FROM FM Hall CHPRC	DATE/TIME JUL 05 2011	RECEIVED BY/STORED IN M01109 SSU#1	DATE/TIME 1305 JUL 05 2011	** The CACN for all analytical work at WSCF laboratory is 402581ES20.☐** 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) IC Anions - 300.0 {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Sulfate};
RELINQUISHED BY/REMOVED FROM M01109 SSU#1	DATE/TIME 7/5/11 1320	RECEIVED BY/STORED IN FM Hall CHPRC	DATE/TIME 7/5/11 1320	
RELINQUISHED BY/REMOVED FROM FM Hall CHPRC	DATE/TIME 7/5/11 1450	RECEIVED BY/STORED IN M. Nelson	DATE/TIME 7/5/11 1450	
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 6/29/2011

A-6003-618 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		F11-096-128	PAGE 1 OF 1
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: Area AA Zone 3 Sample 10	PROJECT DESIGNATION: Area AA In-Process Sampling - Soil		SAF NO.: F11-095	AIR QUALITY: ☐
ICE CHEST NO.: GWS-116	FIELD LOGBOOK NO.: HNF-N-507-22	ACTUAL SAMPLE DEPTH: Surface	COA: 302682ES10	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	None	Cool~4C
HOLDING TIME	6 Months	28 Days/48 Hours
TYPE OF CONTAINER	G/P	G/P
NO. OF CONTAINER(S)	1	1
VOLUME	120mL	60mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME		
B2FK35 2	SOIL	JUL 05 2011	815	X	X

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: FM Hall CHPRC	DATE/TIME: JUL 05 2011 1300	RECEIVED BY/STORED IN: LOLIOS SSLF#1	DATE/TIME: JUL 05 2011 1300
RELINQUISHED BY/REMOVED FROM: LOLIOS SSLF#1	DATE/TIME: 7/15/11 1820	RECEIVED BY/STORED IN: FM Hall CHPRC	DATE/TIME: 7/15/11 1820
RELINQUISHED BY/REMOVED FROM: FM Hall CHPRC	DATE/TIME: 7/15/11 1450	RECEIVED BY/STORED IN: H.Nelson H.Nelson	DATE/TIME: 7/15/11 1450
RELINQUISHED BY/REMOVED FROM	DATE/TIME: 7/15/11	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

The CACN for all analytical work at WSCF laboratory is 402581ES20.☐** 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) IC Anions - 300.0 {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Sulfate};

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

PRINTED ON 6/29/2011

A-6003-618 (REV 2)

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-096-129	PAGE 1 OF 1
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: Area AA Zone 3 Sample 11	PROJECT DESIGNATION: Area AA In-Process Sampling - Soil		SAF NO.: F11-096	AIR QUALITY: ☐	
ICE CHEST NO.: GWS-116	FIELD LOGBOOK NO.: HNF-N-507-~~4~~	ACTUAL SAMPLE DEPTH: Surface	COA: 302682ES10	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	None	Cool~4C
HOLDING TIME	6 Months	28 Days/48 Hours
TYPE OF CONTAINER	G/P	G/P
NO. OF CONTAINER(S)	1	1
VOLUME	120mL	60mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME		
B2FK36 3	SOIL	JUL 05 2011	1230	+	+

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: FM Hall, CHPRC	DATE/TIME: JUL 05 2011	RECEIVED BY/STORED IN: HOLLOW SSU#1	DATE/TIME: JUL 05 2011
RELINQUISHED BY/REMOVED FROM: HOLLOW SSU#1	DATE/TIME: 7/15/11	RECEIVED BY/STORED IN: FM Hall, CHPRC	DATE/TIME: 7/15/11
RELINQUISHED BY/REMOVED FROM: FM Hall, CHPRC	DATE/TIME: 7/15/11	RECEIVED BY/STORED IN: M. Nelson	DATE/TIME: 7/15/11
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

SPECIAL INSTRUCTIONS

* The CACN for all analytical work at WSCF laboratory is 402581ES20.☐** 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) IC Anions - 300.0 {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Sulfate};

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

PRINTED ON 6/29/2011

A-6000-618 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-096-130	PAGE 1 OF 1
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: Area AA Zone 3 Sample 12	PROJECT DESIGNATION: Area AA In-Process Sampling - Soil		SAF NO.: F11-096	AIR QUALITY: ☐	
ICE CHEST NO.: GW09-116	FIELD LOGBOOK NO.: HNF-N-507-22	ACTUAL SAMPLE DEPTH: Surface	COA: 302682ES10	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)

PRESERVATION	None	Cool-4C
HOLDING TIME	6 Months	28 Days/48 Hours
TYPE OF CONTAINER	G/P	G/P
NO. OF CONTAINER(S)	1	1
VOLUME	120mL	60mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS

SPECIAL HANDLING AND/OR STORAGE

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME		
B2FK37 4	SOIL	JUL 05 2011	1248	+	+

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS
RELINQUISHED BY/REMOVED FROM: FM Hall CHPRC	DATE/TIME: JUL 05 2011 1300	RECEIVED BY/STORED IN: MO 1109 SDG #1	DATE/TIME: JUL 05 2011 1300	** The CACN for all analytical work at WSCF laboratory is 402581ES20.☐** 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) IC Anions - 300.0 {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Sulfate};
RELINQUISHED BY/REMOVED FROM: MO 1109 SDG #1	DATE/TIME: 7/15/11 1330	RECEIVED BY/STORED IN: FM Hall CHPRC	DATE/TIME: 7/15/11 1330	
RELINQUISHED BY/REMOVED FROM: FM Hall CHPRC	DATE/TIME: 7/15/11 1450	RECEIVED BY/STORED IN: M. Nelson Minels	DATE/TIME: 7/15/11 1450	
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

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Attachment 2
Narrative
WSCF112631

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

Anions – Hold time requirements for this analysis were met. A Duplicate, Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group. Analytical Note(s):

- All applicable QC controls are within the established limits.

Narrative

Attachment 2
Narrative
WSCF112631

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 185471
  - Matrix Spike recovery was outside laboratory limits. Sample results are "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 – Matrix Spike Duplicate Relative Percent Difference (RPD) outside of established laboratory limits. No flags issued.
  - Manganese – Matrix Spike and/or Matrix Spike Duplicate 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.

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			F11-096-119	PAGE 1 OF 1
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: Area AA Zone 3 Sample 1	PROJECT DESIGNATION: Area AA In-Process Sampling - Soil		SAF NO.: F11-096	AIR QUALITY: ☐	
ICE CHEST NO.: GWS-007	FIELD LOGBOOK NO.: HNF-N-607-22	ACTUAL SAMPLE DEPTH: SURFACE	COA: 302682ES10	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)

112631

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	None	Cool~4C
HOLDING TIME	6 Months	28 Days/48 Hours
TYPE OF CONTAINER	G/P	G/P
NO. OF CONTAINER(S)	1	1
VOLUME	120mL	60mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME		
B2FK26 1	SOIL	JUL 07 2011	0740	✓	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: FM Hall CHPRC	DATE/TIME: JUL 07 2011 1215	RECEIVED BY/STORED IN: C Johnson	DATE/TIME: JUL 07 2011 1215
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

** The CACN for all analytical work at WSCF laboratory is 402581ES20.☐** 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) IC Anions - 300.0 {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Sulfate};

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

PRINTED ON 6/29/2011

A-6003-618 (REV 2)

Chain of Custody

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-096-120	PAGE 1 OF 1
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: Area AA Zone 3 Sample 2	PROJECT DESIGNATION: Area AA In-Process Sampling - Soil		SAF NO.: F11-096	AIR QUALITY: ☐	
ICE CHEST NO.: GW9-007	FIELD LOGBOOK NO.: -INF -N-507- 22	ACTUAL SAMPLE DEPTH: SURFACE	COA: 302682ES10	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	None	Cool~4C
HOLDING TIME	6 Months	28 Days/48 Hours
TYPE OF CONTAINER	G/P	G/P
NO. OF CONTAINER(S)	1	1
VOLUME	120mL	60mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	[redacted]	
B2FK27	SOIL	JUL 07 2011	0905	✓	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: FM Hall CHPRC	DATE/TIME: JUL 07 2011 1215	RECEIVED BY/STORED IN: CJohnson	DATE/TIME: JUL 07 2011 1215
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

** The CACN for all analytical work at WSCF laboratory is 402581ES20.☐** 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) IC Anions - 300.0 {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Sulfate};

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

PRINTED ON 6/29/2011

A-6003-618 (REV 2)

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-096-121	PAGE 1 OF 1
COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-1667	PROJECT COORDINATOR: LUKE, SN	PRICE CODE: C01	DATA TURNAROUND
SAMPLING LOCATION: Area AA Zone 3 Sample 3	PROJECT DESIGNATION: Area AA In-Process Sampling - Soil		SAF NO.: F11-096	AIR QUALITY: ☐	12 Days / 12 Days
ICE CHEST NO.: GWS-007	FIELD LOGBOOK NO.: HNF-N-807-22	ACTUAL SAMPLE DEPTH: SURFACE	COA: 302682ES10	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	None	Cool~4C
HOLDING TIME	6 Months	28 Days/48 Hours
TYPE OF CONTAINER	G/P	G/P
NO. OF CONTAINER(S)	1	1
VOLUME	120mL	60mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME		
B2FK28 3	SOIL	JUL 07 2011	0818	✓	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: FM Hall CHPRC	DATE/TIME: JUL 07 2011 1215	RECEIVED BY/STORED IN: C Johnson	DATE/TIME: JUL 07 2011 1215
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

** The CACN for all analytical work at WSCF laboratory is 402581ES20.☐** 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) IC Anions - 300.0 {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Sulfate};

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

PRINTED ON 6/29/2011

A-6003-618 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-096-122	PAGE 1 OF 1
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: Area AA Zone 3 Sample 4	PROJECT DESIGNATION: Area AA In-Process Sampling - Soil		SAF NO.: F11-096	AIR QUALITY: ☐	
ICE CHEST NO.: GWS-007	FIELD LOGBOOK NO.: HNF -N-507- 22	ACTUAL SAMPLE DEPTH: SURFACE	COA: 302682ES10	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	None	Cool~4C
HOLDING TIME	6 Months	28 Days/48 Hours
TYPE OF CONTAINER	G/P	G/P
NO. OF CONTAINER(S)	1	1
VOLUME	120mL	60mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME		
B2FK29 4	SOIL	JUL 07 2011	0831	✓	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS
RELINQUISHED BY/REMOVED FROM: FM Hall CHPRC	DATE/TIME: JUL 07 2011 1245	RECEIVED BY/STORED IN: CJWhite	DATE/TIME: JUL 07 2011 1245	** The CACN for all analytical work at WSCF laboratory is 402581ES20.☐** 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) IC Anions - 300.0 {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Sulfate};
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

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Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-096-123	PAGE 1 OF 1
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: Area AA Zone 3 Sample 5	PROJECT DESIGNATION: Area AA In-Process Sampling - Soil		SAF NO.: F11-096	AIR QUALITY: ☐	
ICE CHEST NO.: GWS-007	FIELD LOGBOOK NO.: HNF-N-607-22	ACTUAL SAMPLE DEPTH: SURFACE	COA: 302682ES10	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	None	Cool-4C
HOLDING TIME	6 Months	28 Days/48 Hours
TYPE OF CONTAINER	G/P	G/P
NO. OF CONTAINER(S)	1	1
VOLUME	120mL	60mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME		
B2FK30 5	SOIL	JUL 07 2011	0845	✓	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: FM Hall, CHPRC	DATE/TIME: JUL 07 2011 1215	RECEIVED BY/STORED IN: C Simon	DATE/TIME: JUL 07 2011 1215
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

** The CACN for all analytical work at WSCF laboratory is 402581ES20.☐** 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) IC Anions - 300.0 {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Sulfate};

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

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Chain of Custody

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-096-124	PAGE 1 OF 1
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: Area AA Zone 3 Sample 6	PROJECT DESIGNATION: Area AA In Process Sampling - Soil		SAF NO.: F11-096	AIR QUALITY: ☐	
ICE CHEST NO.: GWS-007	FIELD LOGBOOK NO.: HNF-N-807-22	ACTUAL SAMPLE DEPTH: SURFACE	COA: 302682E510	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	None	Cool~4C
HOLDING TIME	6 Months	28 Days/48 Hours
TYPE OF CONTAINER	G/P	G/P
NO. OF CONTAINER(S)	1	1
VOLUME	120mL	60mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME		
B2FK31	SOIL	JUL 07 2011	0955	✓	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: FM Hall CHPRC	DATE/TIME: JUL 07 2011 1215	RECEIVED BY/STORED IN: C Johnson	DATE/TIME: JUL 07 2011 1215
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

** The CACN for all analytical work at WSCF laboratory is 402581ES20.☐** 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) IC Anions - 300.0 {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Sulfate};

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			F11-096-125	PAGE 1 OF 1
COLLECTOR FM Hall CHPRC	COMPANY CONTACT LUKE, SN	TELEPHONE NO. 372-1667	PROJECT COORDINATOR LUKE, SN	PRICE CODE C01	DATA TURNAROUND
SAMPLING LOCATION Area AA Zone 3 Sample 7	PROJECT DESIGNATION Area AA In-Process Sampling - Soil		SAF NO. F11-096	AIR QUALITY ☐	12 Days / 12 Days
ICE CHEST NO. GW9-007	FIELD LOGBOOK NO. HNF -N-507- 22	ACTUAL SAMPLE DEPTH SURFACE	COA 302682ES10	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	None	Cool-4C
HOLDING TIME	6 Months	28 Days/48 Hours
TYPE OF CONTAINER	G/P	G/P
NO. OF CONTAINER(S)	1	1
VOLUME	120mL	60mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME		
B2FK32 7	SOIL	JUL 07 2011	0922	✓	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM FM Hall CHPRC	DATE/TIME JUL 07 2011 1215	RECEIVED BY/STORED IN C Johnson	DATE/TIME JUL 07 2011 1215
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
** The CACN for all analytical work at WSCF laboratory is 402581ES20.☐** 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) IC Anions - 300.0 {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Sulfate};

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

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Chain of Custody

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-096-126	PAGE 1 OF 1
COLLECTOR FM Hall CHPRC	COMPANY CONTACT LUKE, SN	TELEPHONE NO. 372-1667	PROJECT COORDINATOR LUKE, SN	PRICE CODE C01	DATA TURNAROUND
SAMPLING LOCATION Area AA Zone 3 Sample 8	PROJECT DESIGNATION Area AA In-Process Sampling - Soil		SAF NO. F11-096	AIR QUALITY ☐	12 Days / 12 Days
ICE CHEST NO. GWS-007	FIELD LOGBOOK NO. HNF-N-607-22	ACTUAL SAMPLE DEPTH SURFACE	COA 302682ES10	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	None	Cool~4C
HOLDING TIME	6 Months	28 Days/48 Hours
TYPE OF CONTAINER	G/P	G/P
NO. OF CONTAINER(S)	1	1
VOLUME	120mL	60mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME		
B2FK33	SOIL	JUL 07 2011	0930	✓	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: FM Hall CHPRC	DATE/TIME: JUL 07 2011 1215	RECEIVED BY/STORED IN: C Johnson	DATE/TIME: JUL 07 2011 1215
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

** The CACN for all analytical work at WSCF laboratory is 402581ES20.☐** 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) IC Anions - 300.0 {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Sulfate};

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			F11-096-131	PAGE 1 OF 1
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: Area AA Zone 3 Sample 13	PROJECT DESIGNATION: Area AA In-Process Sampling - Soil		SAF NO.: F11-096	AIR QUALITY: ☐	
ICE CHEST NO.: GW5-007	FIELD LOGBOOK NO.: HNF-N-507-	ACTUAL SAMPLE DEPTH: SURFACE	COA: 302682ES10	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	None	Cool~4C
HOLDING TIME	6 Months	28 Days/48 Hours
TYPE OF CONTAINER	G/P	G/P
NO. OF CONTAINER(S)	1	1
VOLUME	120mL	60mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME		
B2FK38 9	SOIL	JUL 07 2011	0740	✓	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: FM Hall, CHPRC	DATE/TIME: JUL 07 2011 1245	RECEIVED BY/STORED IN: C Johnson	DATE/TIME: JUL 07 2011 1245
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

** The CACN for all analytical work at WSCF laboratory is 402581ES20.☐** 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) IC Anions - 300.0 {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Sulfate};

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

PRINTED ON 6/29/2011

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Chain of Custody

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-096-132	PAGE 1 OF 1
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: Area AA Zone 3 Sample 14	PROJECT DESIGNATION: Area AA In-Process Sampling - Soil		SAF NO.: F11-096	AIR QUALITY: ☐	
ICE CHEST NO.: GWS-007	FIELD LOGBOOK NO.: HNF-N 587-22	ACTUAL SAMPLE DEPTH: SURFACE	COA: 302682ES10	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	None	Cool~4C
HOLDING TIME	6 Months	28 Days/48 Hours
TYPE OF CONTAINER	G/P	G/P
NO. OF CONTAINER(S)	1	1
VOLUME	120mL	60mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME		
B2FK39 10	SOIL	7/7/11	0713	✓	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: FM Hall, CHPRC	DATE/TIME: 7/7/11 1215	RECEIVED BY/STORED IN: C Johns-CL	DATE/TIME: 7/7/11 1215
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

** The CACN for all analytical work at WSCF laboratory is 402581ES20.☐** 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) IC Anions - 300.0 {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Sulfate};

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

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Appendix 5

Data Validation Supporting Documentation

VALIDATION LEVEL:	A	B	(C)	D	E
PROJECT: 100K Area AA Zone 3			DATA PACKAGE: VSR11-052		
VALIDATOR: Carl Schloesslin		LAB: WSCF		DATE: 7-28-2011	
			SDG: WSCF112608, WSCF112631		
ANALYSES PERFORMED					
Anions/IC X	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 WSCF112608: B2FK34, B2FK35, B2FK36, B2FK37

SDG WSCF112631: B2FK26, B2FK27, B2FK28, B2FK29, B2FK30, B2FK31, B2FK32, B2FK33, B2FK38, B2FK39

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: 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:

Field duplicates B2FK26 and B2FK38 sulfate RPD = 40%

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 # WSCF112608

QC Batch 185365
Associated Samples 112608001, 112608002, 112608003, 112608004

Test Hexavalent chromium

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #59909**							
Hexavalent chromium	18540-29-9		<0.10	ug/g					U	07/06/11
LCS			**QC Sample #59910**							
Hexavalent chromium	18540-29-9		4.04	ug/g	101	80 - 120				07/06/11
DUP			**QC Sample #59911**							
			Original 112583002							
Hexavalent chromium	18540-29-9		0.0654	ug/g			20.80	30	B	07/06/11
MS			**QC Sample #59912**							
			Original 112583002							
Hexavalent chromium	18540-29-9		3.04	ug/g	76.1	75 - 125				07/06/11
PSTSPK			**QC Sample #59913**							
Hexavalent chromium	18540-29-9		0.0463	ug/g	87	85 - 115				07/06/11
IMS			**QC Sample #59914**							
			Original 112583002							
Hexavalent chromium	18540-29-9		309	ug/g	94.5	75 - 125				07/06/11

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF112608

QC Batch 185387
Associated Samples 112608001, 112608002, 112608003, 112608004

Test Anions by Ion Chromatography (Solid)

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #59985**							
Fluoride	16984-48-8		<0.036	ug/mL					U	07/06/11
Chloride	16887-00-6		<0.062	ug/mL					U	07/06/11
Nitrite-N	NO2-N		<0.020	ug/mL					U	07/06/11
Nitrate-N	NO3-N		<0.019	ug/mL					U	07/06/11
Sulfate	14808-79-8		<0.072	ug/mL					U	07/06/11
LCS			**QC Sample #59986**							
Fluoride	16984-48-8		0.909	ug/mL	91.8	90 - 110				07/06/11
Chloride	16887-00-6		1.84	ug/mL	93.2	90 - 110				07/06/11
Nitrite-N	NO2-N		0.938	ug/mL	95.8	90 - 110				07/06/11
Nitrate-N	NO3-N		0.880	ug/mL	99.4	90 - 110				07/06/11
Sulfate	14808-79-8		3.63	ug/mL	92.7	90 - 110				07/06/11
MS			**QC Sample #59987**							
			Original	**112608001**						
Fluoride	16984-48-8	<1.8	22.2	mg/kg	87.8	80 - 120				07/06/11
Chloride	16887-00-6	<3.1	49.2	mg/kg	97.4	80 - 120				07/06/11
Nitrite-N	NO2-N	<1.0	23.5	mg/kg	94.2	80 - 120				07/06/11
Nitrate-N	NO3-N	1.07	22.0	mg/kg	97.4	80 - 120				07/06/11
Sulfate	14808-79-8	448	300	mg/kg	300.3	80 - 120			X	07/06/11

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF112608

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
MSD			**QC Sample #59988**							
			Original	**112608001**				**Paired**	**59987**	
Fluoride	16984-48-8	<1.8	21.9	mg/kg	87.1	80 - 120	0.80	30		07/06/11
Chloride	16887-00-6	<3.1	48.5	mg/kg	96.4	80 - 120	1.00	30		07/06/11
Nitrite-N	NO2-N	<1.0	23.0	mg/kg	92.7	80 - 120	1.60	30		07/06/11
Nitrate-N	NO3-N	1.07	21.9	mg/kg	97.4	80 - 120	0.00	30		07/06/11
Sulfate	14808-79-8	448	265	mg/kg	266.1	80 - 120	12.10	30	X	07/06/11
DUP			**QC Sample #59989**							
			Original	**112608001**						
Fluoride	16984-48-8	<1.8	<1.8	mg/kg			9.70	30	U	07/06/11
Chloride	16887-00-6	<3.1	<3.1	mg/kg			4.20	30	U	07/06/11
Nitrite-N	NO2-N	<1.0	<1.0	mg/kg			0.00	30	U	07/06/11
Nitrate-N	NO3-N	1.07	1.05	mg/kg			1.90	30	B	07/06/11
Sulfate	14808-79-8	448	409	mg/kg			9.40	30		07/06/11

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF112631

QC Batch 185471
Associated Samples 112631001, 112631002, 112631003, 112631004

Test Hexavalent chromium

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #60181**							
Hexavalent chromium	18540-29-9		<0.10	ug/g					U	07/11/11
LCS			**QC Sample #60182**							
Hexavalent chromium	18540-29-9		4.17	ug/g	104.4	80 - 120				07/11/11
DUP			**QC Sample #60183**							
			Original 112619001							
Hexavalent chromium	18540-29-9		<0.10	ug/g			0.00	30	U	07/11/11
MS			**QC Sample #60184**							
			Original 112619001							
Hexavalent chromium	18540-29-9		2.96	ug/g	74	75 - 125			N	07/11/11
PSTSPK			**QC Sample #60185**							
Hexavalent chromium	18540-29-9		0.0463	ug/g	87	85 - 115				07/11/11
IMS			**QC Sample #60186**							
			Original 112619001							
Hexavalent chromium	18540-29-9		315	ug/g	97.1	75 - 125				07/11/11

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF112631

QC Batch 185710 **Test** Anions by Ion Chromatography (Solid)
Associated Samples 112631001, 112631002, 112631003, 112631004, 112631005, 112631006, 112631007, 112631008, 112631009

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #60300**							
Fluoride	16984-48-8		<0.036	ug/mL					U	07/11/11
Chloride	16887-00-6		<0.062	ug/mL					U	07/11/11
Nitrite-N	NO2-N		<0.020	ug/mL					U	07/11/11
Nitrate-N	NO3-N		<0.019	ug/mL					U	07/11/11
Sulfate	14808-79-8		<0.072	ug/mL					U	07/11/11
LCS			**QC Sample #60302**							
Fluoride	16984-48-8		0.916	ug/mL	92.5	90 - 110				07/11/11
Chloride	16887-00-6		1.84	ug/mL	93.1	90 - 110				07/11/11
Nitrite-N	NO2-N		0.965	ug/mL	98.6	90 - 110				07/11/11
Nitrate-N	NO3-N		0.874	ug/mL	98.7	90 - 110				07/11/11
Sulfate	14808-79-8		3.59	ug/mL	91.6	90 - 110				07/11/11
MS			**QC Sample #60303**							
			Original 112639001							
Fluoride	16984-48-8		20.6	mg/kg	82.3	80 - 120				07/11/11
Chloride	16887-00-6		46.1	mg/kg	92.2	80 - 120				07/11/11
Nitrite-N	NO2-N		22.9	mg/kg	92.7	80 - 120				07/11/11
Nitrate-N	NO3-N		20.6	mg/kg	92.2	80 - 120				07/11/11
Sulfate	14808-79-8		87.9	mg/kg	88.7	80 - 120				07/11/11

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF112631

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit		RQ	Analyzed
MSD			**QC Sample #60304**								
			Original	**112639001**					**Paired**	**60303**	
Fluoride	16984-48-8		20.8	mg/kg	82.9	80 - 120	0.70	30			07/11/11
Chloride	16887-00-6		46.2	mg/kg	92.2	80 - 120	0.00	30			07/11/11
Nitrite-N	NO2-N		22.8	mg/kg	92.2	80 - 120	0.50	30			07/11/11
Nitrate-N	NO3-N		20.9	mg/kg	93.4	80 - 120	1.30	30			07/11/11
Sulfate	14808-79-8		89.6	mg/kg	90.3	80 - 120	1.80	30			07/11/11
DUP			**QC Sample #60305**								
			Original	**112639001**							
Fluoride	16984-48-8		<1.8	mg/kg			0.00	30		U	07/11/11
Chloride	16887-00-6		<3.1	mg/kg			34.50	30	*	UX	07/11/11
Nitrite-N	NO2-N		<1.0	mg/kg			0.00	30		U	07/11/11
Nitrate-N	NO3-N		4.40	mg/kg			15.40	30		B	07/11/11
Sulfate	14808-79-8		8.80	mg/kg			16.30	30		B	07/11/11

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF112631

QC Batch 185765 **Test** Hexavalent chromium
Associated Samples 112631005, 112631006, 112631007, 112631008, 112631009, 112631010

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #60416**							
Hexavalent chromium	18540-29-9		<0.099	ug/g					U	07/13/11
LCS			**QC Sample #60417**							
Hexavalent chromium	18540-29-9		4.08	ug/g	102.4	80 - 120				07/13/11
DUP			**QC Sample #60418**							
			Original 112631005							
Hexavalent chromium	18540-29-9	<0.095	<0.099	ug/g			4.50	30	U	07/13/11
MS			**QC Sample #60419**							
			Original 112631005							
Hexavalent chromium	18540-29-9	<0.095	3.69	ug/g	94	75 - 125				07/13/11
PSTSPK			**QC Sample #60420**							
Hexavalent chromium	18540-29-9		0.0489	ug/g	97.8	85 - 115				07/13/11
IMS			**QC Sample #60421**							
			Original 112631005							
Hexavalent chromium	18540-29-9	<0.095	333	ug/g	97.9	75 - 125				07/13/11

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF112631

QC Batch 185773
Associated Samples 112631010

Test Anions by Ion Chromatography (Solid)

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #60440**							
Fluoride	16984-48-8		<0.036	ug/mL					U	07/12/11
Chloride	16887-00-6		<0.062	ug/mL					U	07/12/11
Nitrite-N	NO2-N		<0.020	ug/mL					U	07/12/11
Nitrate-N	NO3-N		<0.019	ug/mL					U	07/12/11
Sulfate	14808-79-8		<0.072	ug/mL					U	07/12/11
LCS			**QC Sample #60442**							
Fluoride	16984-48-8		0.931	ug/mL	94	90 - 110				07/12/11
Chloride	16887-00-6		1.83	ug/mL	92.2	90 - 110				07/12/11
Nitrite-N	NO2-N		0.996	ug/mL	101.8	90 - 110				07/12/11
Nitrate-N	NO3-N		0.880	ug/mL	99.5	90 - 110				07/12/11
Sulfate	14808-79-8		3.58	ug/mL	91.3	90 - 110				07/12/11
MS			**QC Sample #60443**							
			Original 112639003							
Fluoride	16984-48-8		20.9	mg/kg	82.8	80 - 120				07/12/11
Chloride	16887-00-6		42.7	mg/kg	84.6	80 - 120				07/12/11
Nitrite-N	NO2-N		23.7	mg/kg	95.2	80 - 120				07/12/11
Nitrate-N	NO3-N		21.3	mg/kg	94.3	80 - 120				07/12/11
Sulfate	14808-79-8		86.7	mg/kg	86.8	80 - 120				07/12/11

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF112631

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit		RQ	Analyzed
MSD			**QC Sample #60444**								
			Original	**112639003**					**Paired**	**60443**	
Fluoride	16984-48-8		20.4	mg/kg	81.2	80 - 120	2.00	30			07/12/11
Chloride	16887-00-6		42.7	mg/kg	85	80 - 120	0.50	30			07/12/11
Nitrite-N	NO2-N		23.4	mg/kg	94.4	80 - 120	0.80	30			07/12/11
Nitrate-N	NO3-N		20.9	mg/kg	93.1	80 - 120	1.30	30			07/12/11
Sulfate	14808-79-8		84.2	mg/kg	84.7	80 - 120	2.40	30			07/12/11
DUP			**QC Sample #60445**								
			Original	**112639003**							
Fluoride	16984-48-8		<1.8	mg/kg			0.00	30		U	07/12/11
Chloride	16887-00-6		<3.1	mg/kg			35.20	30	*	UX	07/12/11
Nitrite-N	NO2-N		<1.0	mg/kg			0.00	30		U	07/12/11
Nitrate-N	NO3-N		<0.95	mg/kg			19.10	30		U	07/12/11
Sulfate	14808-79-8		14.2	mg/kg			29.60	30		B	07/12/11