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Data Validation Report for CH2M Hill
Plateau Remediation Company

VSR11-048
Project WMA C

Chemical & Radiochemical Validation - Level C

Validation Performed By: Carl Schlosser **Date:** 6-23-2011

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Date: 23 June 2011
To: CH2M Hill (technical representative)
From: Analytical Quality Associates, Inc.
Project: WMA C
Subject: Volatile Organics - Sample Data Group (SDG) 20100556

INTRODUCTION

This memorandum presents the results of data validation for SDG 2010556 prepared by 222-S Laboratory. The sample validated along with the analytical method is provided in the following table.

Sample ID	Sample Date	Media	Validation Level	Analytical Methods
B26CD1	7/22/2010	Soil	C	8260B

Data validation was conducted in accordance with the CHPRC validation statement of work and the Field Sampling and Analysis Plan for Waste Management Area C, RPP-PLAN-40564, Rev. 2 (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 for volatile organics are analysis within 14 days of sample collection. Sample preservation for soil samples requires freezing.

The sample was analyzed within the prescribed holding time and properly preserved.

- **Blanks**

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

Laboratory Blanks

All laboratory blank results were acceptable with the following exceptions. The acetone, toluene and styrene laboratory blank results were > the method detection limits (MDLs). The acetone result for sample B26CD1 was a non-detect and should not be qualified. The toluene result for

sample B26CD1 was a detect <5X the laboratory blank result and should be qualified as a non-detect at the sample concentration (0.427 ug/kg) and flagged "U." Styrene was not reported for sample B26CD1.

Trip Blanks

No trip blanks were submitted for validation.

Field Blanks

No field blanks were submitted for validation.

Equipment Blanks

No equipment blanks were submitted for validation.

- **Accuracy**

Accuracy is evaluated by reviewing surrogate results, matrix spike sample results, and laboratory control sample results. According to the SAP, the matrix spike and laboratory control sample accuracy limits are 70% to 130%.

Surrogates

All surrogate recoveries were acceptable.

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

All MS/MSD recoveries were acceptable with the following exceptions.

Only nine 8260B MS/MSD analytes were reported. Reported analytes not represented in the MS/MSD were trans-1,3-dichloropropene and carbon disulfide. The sample results for these two analytes were non-detects and should be qualified as estimates and flagged "UJ."

The 4-methyl-2-pentanone (a.k.a. hexone) and 2-butanone MS and/or MSD recoveries were above the upper acceptance limit. The associated results for sample B26CD1 were non-detects and should not be qualified.

The 1,1-dichloroethene MSD recovery was below the lower acceptance limit. The reported analytes represented by 1,1-dichloroethene were 1,1-dichloroethene, chloroform, methylene chloride, trichlorofluoromethane, vinyl chloride, 1,2-dichloroethane, cis-dichloroethylene and trans-dichloroethylene. The sample results for these eight analytes were all non-detects and should be qualified as estimates and flagged "UJ."

Laboratory Control Samples (LCSs)

All LCS recoveries were acceptable with the following exceptions. Only nine 8260B LCS analytes were reported. Reported analytes not represented in the LCS were trans-1,3-dichloropropene and carbon disulfide. The sample results for these two analytes were non-detects and should be qualified as estimates and flagged "UJ."

- **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%. When duplicate RPDs exceed the limits and have associated results <5X the SAP required detection limits with differences <2X the required detection limits no precision infraction occurred.

MS/MSD Samples

All MS/MSD relative percent difference values were acceptable.

Field Duplicate Samples

No field duplicates were submitted for validation.

Field Split Samples

No field splits were submitted for validation.

- **Detection Limits**

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

All reported sample MDLs were below the RDLs.

- **Completeness**

SDG 20100556 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 100%.

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

Minor deficiencies leading to qualification of sample results as estimates were due to laboratory blank infractions, an MSD infraction, and non-represented QC data. 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

RPP-PLAN-40564, Rev. 2, *Field Sampling and Analysis Plan for Waste Management Area C*, December 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

Volatile Organics Data Qualification Summary			
SDG: 20100556	Reviewer: AQA	Project: WMA C	Page 1 of 1
Analyte(s)	**DV Flag**	**Samples Affected**	**Reason**
Toluene	0.427U	B26CD1	Lab blank contamination
trans-1,3-Dichloropropene Carbon disulfide	UJ	B26CD1	Non-represented MS/MSD and LCS data
1,1-Dichloroethene Chloroform Methylene chloride Trichlorofluoromethane Vinyl chloride 1,2-Dichloroethane cis-Dichloroethylene trans-Dichloroethylene.	UJ	B26CD1	Low MSD recovery

Comments: None

Appendix 3

Annotated Laboratory Reports

C Farm WMC 2010-2
Data Summary Report

Sample Group: 20100556
Core Number: C7676
Customer Sample ID: B26CD1
Sample Depth: 38-40ft

Sample#	R	A#	CAS #	Analyte		Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S10V001758			71-55-6	1,1,1-Trichloroethane		ug/kg	n/a	<0.0920	<0.0833	n/a	n/a	n/a	n/a	0.0833	n/a	U
S10V001758			79-00-5	1,1,2-Trichloroethane		ug/kg	n/a	<0.166	<0.150	n/a	n/a	n/a	n/a	0.150	n/a	U
S10V001758			79-34-5	1,1,2,2-Tetrachloroethane		ug/kg	n/a	<0.212	<0.192	n/a	n/a	n/a	n/a	0.192	n/a	U
S10V001758			75-35-4	1,1-Dichloroethene	UJ	ug/kg	79.7	<0.423	<0.383	n/a	n/a	n/a	n/a	0.383	n/a	U
S10V001758			107-06-2	1,2-Dichloroethane	UJ	ug/kg	n/a	<0.0538	<0.0487	n/a	n/a	n/a	n/a	0.0487	n/a	U
S10V001758			71-36-3	1-Butanol		ug/kg	123	<10.3	<9.32	n/a	n/a	n/a	n/a	9.32	n/a	U
S10V001758			108-10-1	Hexone		ug/kg	117	<1.71	<1.55	n/a	n/a	n/a	n/a	1.55	n/a	U
S10V001758			67-64-1	Acetone		ug/kg	119	2.86	<1.99	n/a	n/a	n/a	n/a	1.99	n/a	U
S10V001758			71-43-2	Benzene		ug/kg	92.6	<0.147	<0.134	n/a	n/a	n/a	n/a	0.134	n/a	U
S10V001758			75-15-0	Carbon disulfide	UJ	ug/kg	n/a	<0.161	<0.146	n/a	n/a	n/a	n/a	0.146	n/a	U
S10V001758			56-23-5	Carbon tetrachloride		ug/kg	n/a	<0.0934	<0.0846	n/a	n/a	n/a	n/a	0.0846	n/a	U
S10V001758			67-66-3	Chloroform	UJ	ug/kg	n/a	<0.131	<0.118	n/a	n/a	n/a	n/a	0.118	n/a	U
S10V001758			108-90-7	Chlorobenzene		ug/kg	96.6	<0.0864	<0.0783	n/a	n/a	n/a	n/a	0.0783	n/a	U
S10V001758			100-41-4	Ethylbenzene		ug/kg	n/a	<0.107	<0.0971	n/a	n/a	n/a	n/a	0.0971	n/a	U
S10V001758			1330-20-7	Xylenes (total)		ug/kg	n/a	<0.203	<0.184	n/a	n/a	n/a	n/a	0.184	n/a	U
S10V001758			78-93-3	2-Butanone		ug/kg	110	<1.96	<1.78	n/a	n/a	n/a	n/a	1.78	n/a	U
S10V001758			75-09-2	Methylenechloride	UJ	ug/kg	n/a	<0.0640	<0.0580	n/a	n/a	n/a	n/a	0.0580	n/a	U
S10V001758			127-18-4	Tetrachloroethene		ug/kg	n/a	<0.110	<0.0995	n/a	n/a	n/a	n/a	0.0995	n/a	U
S10V001758			108-88-3	Toluene		ug/kg	98.0	0.304	0.427	n/a	n/a	n/a	n/a	0.0726	n/a	BJ
S10V001758			10061-02-6	trans-1,3-Dichloropropene	UJ	ug/kg	n/a	<0.271	<0.245	n/a	n/a	n/a	n/a	0.245	n/a	U
S10V001758			79-01-6	Trichloroethene		ug/kg	95.2	<0.121	<0.110	n/a	n/a	n/a	n/a	0.110	n/a	U
S10V001758			75-01-4	Vinyl chloride	UJ	ug/kg	n/a	<0.173	<0.157	n/a	n/a	n/a	n/a	0.157	n/a	U
S10V001758			156-59-2	cis-Dichloroethylene	UJ	ug/kg	n/a	<0.182	<0.164	n/a	n/a	n/a	n/a	0.164	n/a	U
S10V001758			156-60-5	trans-Dichloroethylene	UJ	ug/kg	n/a	<0.303	<0.274	n/a	n/a	n/a	n/a	0.274	n/a	U
S10V001758			76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane		ug/kg	n/a	<0.116	<0.105	n/a	n/a	n/a	n/a	0.105	n/a	U
S10V001758			79-46-9	2-Nitropropane		ug/kg	n/a	<0.588	<0.533	n/a	n/a	n/a	n/a	0.533	n/a	U
S10V001758			141-78-6	Ethyl acetate		ug/kg	n/a	<0.587	<0.532	n/a	n/a	n/a	n/a	0.532	n/a	U
S10V001758			60-29-7	Diethyl ether		ug/kg	n/a	<0.256	<0.232	n/a	n/a	n/a	n/a	0.232	n/a	U

NA = Not Analyzed, ND = Not Detected

B - Blank Contamination
U - Less Than Detection Limit

B - Estimated
J - Estimated

LS
6-23-2011

N - MS/MSD Outside Range
C - Blank Contamination

M - RPD Outside Range

C Farm WMC 2010-2
Data Summary Report

Sample Group: 20100556
Core Number: C7676
Customer Sample ID: B26CD1
Sample Depth: 38-40ft

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S10V001758			75-69-4	Trichlorofluoromethane UJ	ug/kg	n/a	<0.0940	<0.0851	n/a	n/a	n/a	n/a	0.0851	n/a	U
S10V001758			95-47-6	o-Xylene	ug/kg	n/a	<0.0920	<0.0833	n/a	n/a	n/a	n/a	0.0833	n/a	U
S10V001758			179601-23-1	m,p-Xylene	ug/kg	n/a	<0.167	<0.152	n/a	n/a	n/a	n/a	0.152	n/a	U

LS
6-23-2011

NA = Not Analyzed, ND = Not Detected

B - Blank Contamination
U - Less Than Detection Limit
B - Estimated
J - Estimated
N - MS/MSD Outside Range
C - Blank Contamination
M - RPD Outside Range

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

222-S LABORATORY

FINAL ANALYTICAL REPORT FOR SAMPLES FROM WASTE MANAGEMENT AREA C FOR CORE HOLE C7676 IN SUPPORT OF RCRA SOIL CHARACTERIZATION

1.0 INTRODUCTION

This final report presents the results for the samples taken from Waste Management Area C between July 19, 2010 and July 29, 2010. The samples were analyzed in accordance with RPP-PLAN-40564, *Field Sampling and Analysis Plan for Sites P and L at Waste Management Area C* (FSAP); RPP-PLAN-38777, *Sampling and Analysis Plan for Phase 2 Characterization of Vadose Zone Soil in Waste Management Area C* (SAP); ATL-MP-1011, *ATL Quality Assurance Project Plan for 222-S Laboratory* (QAPP); SW-846, *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods*; and the additional guidance given by the client's point of contact.

Because the 222-S Laboratory facility was designed to analyze hazardous and complex tank waste samples, most SW-846 test methods performed at the 222-S Laboratory contain deviations that are listed in an appendix in the analytical procedures. All other known deviations or variances from SW-846 are documented in this narrative. The following attachments are included in this report.

Attachment 1	Data Summary Report
Attachment 2	Sample Breakdown Diagrams
Attachment 3	Holding Time Report
Attachment 4	Additional Organic Analyses QC Results
Attachment 5	Tentatively Identified Compounds (TIC) for Organic Analyses
Attachment 6	Geological Report
Attachment 7	Characterization Change Notices (CCN) and Correspondence
Attachment 8	Receipt Paperwork
Appendix A	Analytical Report for Analysis Performed at the Waste Sampling and Characterization Facility (WSCF) - Metals Analysis
Appendix B	Analytical Report for Analysis Performed at WSCF - Organic Analysis

2.0 SAMPLE RECEIPT AND BREAKDOWN

2.1 SAMPLE RECEIPT

A total of eight core intervals and two surface grab samples from core hole C7676 along with seven field blanks and six trip blanks were received by the 222-S Laboratory between July 19, 2010 and July 29, 2010. The samples were delivered in a cooler with ice or, in the case of the volatile organic soil samples, in a freezer. The temperatures of the temperature blanks were measured and recorded on the sample receipt check list and/or the chain of custody form.

The chain of custody requested that conductivity be analyzed on the soil samples. Since this analysis was not listed in the SAP or FSAP, it was not performed. The client has indicated that this analysis may be performed after a CCN is issued to cover the change to the FSAP (see Attachment 7).

2.2 SAMPLE BREAKDOWN

The laboratory received each core interval as a set of volatile organic analysis (VOA) samples and three liner samples when complete core recovery was obtained. The VOA samples were made from the shoe section of each core interval following SW-846 5035. The liner samples from each core interval were extruded, described, and composited by the Washington River Protection Solutions, Inc. (WRPS) geologist. The geologist's report is included in Attachment 6. Provided sufficient samples existed, the composite for each core interval was analyzed as described in the SAP and FSAP. Core interval I001 had less than full recovery (see Attachment 2 and Attachment 8) and was combined with core interval I002 to form the composite. Additionally, core interval I004 had less than full recovery and was combined with I005 to form the 14-ft to 18-ft composite (see Attachment 2 and Attachment 8). All intervals were extruded and composited in the normal manner except for the "B" liner from core interval I002. This interval was combined with the shoe and delivered to the laboratory in a glass jar. The surface samples were received as a single grab sample in a 500-mL jar and a set of VOA samples.

WRPS shipped subsamples of the composites to Test America Laboratories, Inc. (TAL) in St Louis, Missouri and Knoxville, Tennessee to be analyzed for dibutyl and monobutyl phosphate, total petroleum hydrocarbons (diesel and gasoline range), ethylene glycol, chlorinated pesticides, and polychlorinated biphenyls (Aroclors and congeners). TAL subsequently subcontracted the monobutyl and dibutyl phosphate analyses to Southwest Research Institute. The results of these analyses will be released in the final WRPS report.

3.0 ANALYTICAL RESULTS SUMMARY

The Data Summary Report (Attachment 1) presents the final analytical results for those analytes requested in the SAP and FSAP. Secondary analytes are only reported if detected. The TIC from gas chromatography-mass spectrometry (GC/MS) analysis of semivolatile organic compounds (SVOC) is presented in Attachment 5. In addition to the required isotopes, all isotopes with positive gamma energy analysis (GEA) results were reported.

The "Det Limit" column in Attachment 1 contains the method detection limit (MDL) for non-radionuclide analyses, or the minimum detectable activity for radionuclides.

In Attachment 1, the column labeled "A#" indicates the aliquot class or the method used for sample preparation before analysis. For solid samples, the aliquot classes are defined as follows:

"A" indicates samples that were prepared by SW-846 3050B.

"E" indicates samples that were prepared by a strong acid digest.

"O" indicates samples that were extracted for organic analysis.

"S" indicates samples that were prepared by a distillation.

"W" indicates samples that were prepared by a standard water digest.

"WV" indicates samples that were prepared by a Vadose water digest.

The "Qual Flags" column in Attachment 1 contains data qualifier flags from FEAD CP-15383, *Common Requirements of the Format for Electronic Analytical Data,* that are defined as follows:

"B" for organic or radiochemistry results is used to indicate that the analyte was detected in the method or preparation blank and in the sample.

"B" for inorganic results is used to indicate that the reported result should be considered an estimate because it is below the quantitation limit. The "B" flag is applied to sample concentrations that are greater than the MDL but less than the quantitation limit.

"C" for inorganic results is used to indicate that the analyte was detected in the method or preparation blank and in the sample, and the result for the blank was greater than or equal to 20% of the reported sample result.

"J" for organic results is used to indicate that the reported result should be considered an estimate because it is below the quantitation limit. The "J" flag is applied to sample concentrations that are greater than the MDL but less than the quantitation limit.

"T" for CG/MS results is used to indicate the matrix spike (MS) recovery or matrix spike duplicate (MSD) recovery is outside control limits.

"U" for all results is used to indicate that the reported result is less than the calculated detection limit.

"N" for all but GC/MS is used to indicate that the MS recovery or MSD recovery was outside of the specified range in the QAPP or SAP.

"N" for GC/MS is used to indicate a TIC which has been named.

"M" for inorganic results is used to indicate that the relative percent difference (RPD) between the sample and the duplicate is greater than 30%.

Manual calculations using rounded results from the Data Summary Report (Attachment 1) or result calculation forms may differ slightly from the actual results derived from the raw data.

Samples without a letter identifier in the "A#" column were analyzed directly with no separate preparation or with sample preparation performed as a part of the procedure steps.

3.1 SAMPLE DIGESTIONS

3.1.1 Radiochemistry Strong Acid Digestion

Strong acid digestions with a hot plate for the heat source were performed using a mixture of concentrated nitric and hydrochloric acids. For each digest, approximately 1 to 10 g of sample were digested depending on the analysis being performed. The digestate was then filtered and diluted to a final volume. This digestion was used for all radiochemical analyses except ^{3}H, ^{14}C, and ^{129}I. This digestion is a leach of the acid soluble species only.

3.1.2 SW-846 3050B - Acid Digestion-Heating Block

This acid digestion follows SW-846 3050B using a heating block and nitric and hydrochloric acids. An aliquot of approximately 5 g of sample was digested. All heating-block digestions were filtered and diluted to a final volume of 50 mL. In soil, this digestion is a leach of the acid soluble species only. This digestion was used for all inductively coupled plasma/mass spectrometry (ICP/MS) and inductively coupled plasma/atomic emission spectroscopy (ICP/AES) analyses except for ^{99}Tc and isotopic tin (^{117}Sn and ^{126}Sn) analyses. The digestion is modified for the ^{99}Tc analysis by using only nitric acid. This is done to eliminate the possibility of the formation a zinc-chlorine ion pair of mass 99. The laboratory believes this ion, when present, is responsible for low level false positives. A separate digestion for antimony was prepared using additional hydrochloric acid, as recommended in SW-846.

3.1.3 Water Digestion

A water digestion or leach was prepared for the anions by ion chromatography, ^{14}C, and ^{3}H analyses using approximately 0.25 to 4 g of sample diluted to 25 mL. Sonification was used, and the leachate was then filtered. In soil, this digestion is a leach of the water soluble species only.

3.1.4 Vadose Water Digestion

A 70-g sample of soil was leached using a ratio of one part water to one part soil. To maintain a one-to-one ratio, the amount of water added to the sample was adjusted based on the percent moisture of the soil. The slurries were placed on a shaker table for about 1 hour. They were then transferred to a centrifuge tube and centrifuged at 4,000 rpm for 30 minutes. An unfiltered aliquot was set aside for alkalinity analysis. The remainder was filtered using a disposable vacuum filtration system. The filtrates were transferred to a clean bottle and then analyzed for ^{99}Tc by ICP/MS analysis.

3.2 INORGANIC ANALYSES

3.2.1 Cyanide

The cyanide analysis by distillation and spectrophotometry was performed on the grab samples and liner composite samples. All analyses met the SW-846 holding time of 14 days. There was no required reporting limit in the SAP for cyanide. The target detection limit was 0.5 µg/g, which is lower than what the current laboratory procedure can achieve. There were no notable quality control (QC) issues with these batches, and all QC requirements in the FSAP, SAP, and QAPP were met.

3.2.2 Sulfide

Sulfide analysis by distillation and ion selective electrode was performed on the grab samples and liner composite samples. All analyses met the SW-846 holding time of 7 days. There was no required reporting limit in the SAP for sulfide. The target detection limit was met. All sample

results had adjusted MDLs of approximately 7 µg/g. There were no notable issues with these batches, and all QC requirements in the FSAP, SAP, and QAPP were met.

3.2.3 pH Analysis

The pH analysis was performed on the grab samples and liner composite samples. These analyses met all QC requirements in the FSAP, SAP, and QAPP. The FSAP lists a pH holding time requirement of "as soon as possible." All pH measurements were taken after the water leach was performed. The sampling to analysis time varied from 3.2 to 7.5 days (see Attachment 3). The sample extrusion/compositing process was basically the cause for the delay in the pH analysis. There is no correlation between pH results and days to analysis, and the results fall within an expected range for alkaline soils. This indicates that the variation in time has no apparent effect on the results.

3.2.4 Mercury

Analysis for Hg by cold-vapor graphic furnace/atomic absorption was performed on the grab samples and liner composite samples. All analyses met the holding time of 28 days. This analysis met the required and target detection limits.

Batch 21197: Mercury was detected in the preparation blanks at a level below the quantitation limit and slightly above the MDL. Since mercury was not detected in the samples, reanalysis was not required.

Batches 20849 and 20982: There were no notable issues with these batches, and all QC requirements in the FSAP, SAP, and QAPP were met.

3.2.5 Ion Chromatography – Ammonium

Analysis for ammonium was performed using a distillation preparation of the grab samples and the liner composite samples. There is no regulatory holding time limit promulgated for ammonium in soil. The SAP lists an administrative holding time of 7 days. The laboratory believes that after distillation and preservation, the holding time is 28 days based on U.S. Environmental Protection Agency drinking water and waste water holding times for preserved samples. All samples met these holding times. These analyses met the target detection limit listed in the SAP. There was no required reporting limit in the SAP or FSAP for ammonium.

Batch 20930: The RPD between the duplicate and the sample exceeded the required 30%. Since the sample result for this analyte was below the quantitation limit, the criterion does not apply and reanalysis is not required. Ammonium was detected in the preparation blanks at a level below the quantitation limit and above the MDL. Ammonium was also detected in the samples at a similar level; these results have been flagged with a "C". Since all results were below the quantitation limit, reanalysis was not required.

Batches 21010 and 21124: Ammonium was detected in the preparation blanks at a level below the quantitation limit and above the MDL. Ammonium was also detected in the samples at a

similar level; these results have been flagged with a “C”. Since all results were below the quantitation limit, reanalysis was not required.

3.2.6 Ion Chromatography – Anions and Small Organic Acids

Ion chromatography analysis was performed on all grab samples and liner composite samples. The laboratory met all of the required and target detection limits. All analyses were within the applicable SW-846 holding times. The sample spikes used for the standard water digestions are predigestion spikes.

Batch 21522: Nitrite was detected in the preparation blanks at a level below the quantitation limit and above the MDL. Nitrite was also detected in three of the samples at a similar level; these results have been flagged with a “C”. Since all results were below the quantitation limit, reanalysis was not required. The MS recovery for phosphate exceeded the ±25% requirement at 63%. The post-digestion spike was recovered at 85% indicating that the low MS recovery may be due to matrix interference. The client agreed (see Attachment 7). The results were reported with an “N” flag applied to each phosphate result in this batch.

Batch 22189: The RPD for nitrite was above the required 30%; however, the result was below the quantitation limit and the criterion does not apply.

3.2.7 Inductively Coupled Plasma/Atomic Emission Spectroscopy

The ICP/AES analysis was performed on an acid-digest (SW-846 3050B) of all grab samples and liner composite samples. The ICP/AES analysis was unable to obtain the required detection limit for antimony, arsenic, cadmium, lead, selenium, silver, and thallium for the soil sample. These elements have been reported from separate ICP/MS analyses. Total uranium has not been reported by the ICP/AES analysis since it cannot meet the required detection limits in the SAP. The isotopic uranium analysis by ICP/MS met the required detection limit for ^{238}U, which is essentially total uranium. The overall data usability was not affected. For all other metals reported by ICP/AES, all target and required detection limits were met. SW-846 lists the holding time for ICP/AES metals as 6 months. All analyses met the holding times.

Batch 23451: The interference check standard-A (ICSA) produced positive results for cobalt and manganese, which are not contained in this standard. This could indicate a positive interference. However, since in the ICSAB these elements recovered at 93%, there appears to be no positive interference. The ICSAB produced a result above the quantitation limit for neodymium. This indicates that spectral interference was occurring. Neodymium results in the sample were not reported due to the high probability that they were the result of this interference. A low level of iron was detected in the preparation blank, but reanalysis was not required since these levels were less than 5% of the lowest sample result.

The MS recoveries for aluminum, calcium, iron, magnesium, potassium, phosphorous, sodium, silicon, and titanium exceeded the ±25% requirement in the FSAP and SAP. Since the sample results for these elements exceeded the MS level by more than four times, this criterion does not apply.

The MS recovery for cerium and zirconium exceeded the ±25% requirement in the SAP and FSAP. For zirconium, the laboratory believes this was due to matrix interference. At 2% recovery, cerium does not appear to have been in the spike solution used. Reanalysis was not required since these are secondary elements. These results have been flagged with an “N”.

The MS recovery for barium exceeded the ±25% requirement at 133%. The post-digestion spike was recovered at 94%. A second sample was spiked from core hole C7676 with similar results (137%). This indicates that the high MS recovery may be due to matrix interference. The client agreed (see Attachment 7). The results were reported with an “N” flag applied to each result in this batch.

The RPD between the sample and the duplicate exceeded the ±30% requirement in the SAP for silicon. The laboratory believes this was due to matrix interference. Reanalysis was not required since this is secondary element. It should be noted that silicon is not listed with other elements in SW-846 3050B, section 1.1, under “Scope and Application” for the method and does not perform consistently when using this digest. The silicon results have been flagged with an “M”.

The opening and closing low level standard (LLS) for zinc was recovered outside the required ±30% at 66%. This could indicate a low bias for results near the LLS level. However, since the zinc results were 14 to 23 times the LLS level, the data quality was not affected. The LLS potassium was recovered outside the ±30% requirement at 149%. However, since the potassium results were 14 to 30 times the LLS level, the data quality was not affected.

Batch 24077: The ICSA produced positive results for manganese, which are not contained in this standard. This could indicate a positive interference. However, since in the ICSAB this element recovered at 92%, there appears to no positive interference. The ICSAB produced results above the quantitation limit for neodymium. This indicates that spectral interference was occurring. Neodymium results were not reported due to the high probability that they were the result of this interference. A low level of iron was detected in the preparation blank, but reanalysis was not required since these levels were less than 5% of the lowest sample result.

The MS recoveries for aluminum, calcium, iron, magnesium, manganese, potassium, phosphorous, sodium, silicon, and titanium exceeded the ±25% requirement in the FSAP and SAP. Since the sample results for these elements exceeded the MS level by more than four times, this criterion does not apply.

The MS recovery for cerium exceeded the ±25% requirement in the SAP and FSAP at 133%. The laboratory believes this was due to matrix interference. Reanalysis was not required since this is a secondary element. These results have been flagged with an “N”.

The MS recovery for barium exceeded the ±25% requirement at 133%. The post-digestion spike was recovered at 94%. A second sample was spiked from core hole C7676 with similar results (137%). This indicates that the high MS recovery may be due to matrix interference. The client agreed (see Attachment 7). The results were reported with an “N” flag.

3.2.8 Inductively Coupled Plasma/Mass Spectroscopy

The ICP/MS actinide and trace metal analyses were performed on the standard SW-846 3050 acid digestion of all grab samples and liner composite samples. The ICP/MS ^{126}Sn and ^{99}Tc analysis was performed on the sample digest without the addition of hydrochloric acid. Hydrochloric acid is not used for ^{99}Tc analysis because of the potential formation of a ZnCl ion pair with mass 99. ICP/MS trace metal analysis for antimony was performed on the SW-846 3050 digest with additional hydrochloric acid, which is required to keep antimony in the solution. In addition to these acid digests, ICP/MS ^{99}Tc analysis was performed on a Vadose water digest of all solid samples.

Direct is the most accurate type of calibration; however, standard material is not commercially available for all of the isotopes of interest. Concentrations of those isotopes without available standards are estimated based on the instrument's mass-response curve, which is generated by using the intensity/concentration relationship for the available isotope standards. Results estimated in this manner are designated "semi-quantitative."

Table 1. Inductively Coupled Plasma-Mass Spectroscopy Standards and Spikes

Standard Type	Analytes Analyzed
Initial calibration verification (nondigested)	^{232}Th, ^{235}U, ^{238}U, ^{237}Np, ^{99}Tc, ^{117}Sn
Acid digest standard (laboratory control standard)	^{232}Th, ^{235}U, ^{238}U, ^{237}Np, ^{99}Tc, ^{117}Sn
Predigest spike (MS)	^{232}Th, ^{235}U, ^{238}U, ^{237}Np, ^{99}Tc, ^{117}Sn
Post-digest spike	^{232}Th, ^{235}U, ^{238}U, ^{237}Np, ^{99}Tc, ^{117}Sn
No standard or spike of either type	^{126}Sn, ^{230}Th, ^{233}U, ^{234}U, ^{236}U

3.2.8.1 Technetium-99 and Tin-126

The required detection limit listed in the SAP for ^{99}Tc was met. The target detection limit for ^{99}Tc was not met. There were no required or target detection limits for ^{126}Sn listed in the SAP. The SAP lists the holding time for isotopic analytes as 6 months. All samples were analyzed within the holding time.

Because there is no available source for ^{126}Sn, ^{117}Sn is used to monitor the chemical recovery for this analysis. Though not specifically requested in the SAP, ^{117}Sn is reported for the laboratory control sample (LCS) and MS in order to demonstrate method accuracy and presence of possible matrix interference.

All sample results for ^{126}Sn were above the MDL and below the quantitation limit with one exception. Based on this, the laboratory suspects that a low level isobaric interference is present in these samples at mass 126. The laboratory believes the most likely suspect is ^{126}Te, but there are other possible candidates. One sample result was above the quantitation level for ^{126}Sn. Users of this data should be aware that all positive ^{126}Sn results in the report may be due to isobaric interference. The laboratory is currently evaluating how to quantify these possible isobaric interferences.

Batch 22109: The MS for ^{117}Sn was recovered below the ±25% requirement at 70%. Similar results have been observed in other batches; this appears to be a matrix interference issue. This

batch was not reanalyzed, but others have been with no improvement. Tin results should be considered biased low at these levels. All samples in the batch have been flagged with an "N". The laboratory is investigating changing the acid mixture used to perform low level ^{126}Sn analysis in hopes of improving spike recoveries. Tin-126was detected in one of the four continuing calibration blanks (CCBs) at slightly above the MDL. This blank bracketed the last three samples in the batch, which have been flagged with a "C". Since all results were below the quantification level, reanalysis was not required.

Batch 23853: Tin-126 was detected in two of the three CCBs at slightly above the MDL. All samples in this batch have been flagged with a "B". Since all results were below the quantification level, reanalysis was not required.

3.2.8.2 Technetium-99 (Vadose Water Digest)

The required and target detection limits listed in the SAP for ^{99}Tc were met. The SAP lists a holding time of 6 months for isotopic analytes. All analyses met this holding time.

Batch 23162: ^{99}Tc was detected in one of the three CCBs at slightly above the MDL. All sample results except two were below the MDL. The blank result was 5% of one these samples, which has been flagged with a "B". Since the sample and blank results were below the quantification level, reanalysis was not required. One sample result (B26CD2) was well above the quantification limit. The sample contained the known interferents chloride and cobalt, but at level that would not account for the ^{99}Tc result. Therefore, no qualifier was place on this result.

3.2.8.3 Actinides

The required and target detection limits were met for all isotopes and in all samples. The SAP lists the holding time for isotopic analytes as 6 months. All samples were analyzed within the holding time.

Batch 22039: The RPD for ^{237}Np and ^{233}U exceeded the 30% requirement in the SAP and FSAP. Since these results were below the quantitation limit, this criterion does not apply. The results for ^{232}Th and ^{236}U in the preparation blank were above the MDL and below the quantitation limit. One sample in this batch demonstrated a similar result for ^{236}U and has been flagged with a "B". Since all ^{236}U results were below the quantitation limit, reanalysis was not required. The sample result for ^{232}Th was more than 20 times the blank result. Neptunium-237 was detected in the initial calibration blank (ICB) at slightly above the MDL. Two samples demonstrated a similar result and have been flagged with "C". Since all ^{237}Np results were below the quantitation limit, reanalysis was not required.

Batch 23864: The percent difference for serial dilution of ^{235}U was above the 10% limit at +11.6%. This could indicate that there was negative bias in the more concentrated sample. This is an unusual result for Vadose samples, which are typically within the ±10% limit for ^{235}U. Since ^{232}Th and ^{238}U were within the ±10% limit, a dilution error can be ruled out. There is no requirement for reanalysis, and the result has been reported with this discussion. The result for ^{230}Th in the preparation blank was above the MDL and below the quantitation limit. All samples in this batch demonstrated a similar result for ^{230}Th and have been flagged with a "C". Since all ^{230}Th results were below the quantitation limit, reanalysis was not required.^{236}U was detected in

the ICB and one of the three CCBs at slightly above the MDL. One sample demonstrated a similar result and has been flagged with "C". Since all ^{236}U results were below the quantitation limit, reanalysis was not required.

3.2.8.4 Trace Metals

Antimony, arsenic, cadmium, lead, selenium, silver, and thallium were analyzed by ICP/MS to obtain the required detection limits in the SAP. Due to an extended room outage at 222S Laboratory, samples were sent WSCF Laboratory by the WRPS for analysis. Table 2 list the samples and analytes that were reported by WSCF. The WSCF report is included in Appendix A of this report. Except for the required detection limit for selenium, all required detection limits were met or the sample results were above the quantitation limit and the sample detection limit criteria do not apply. All target detection limits were met. All samples were analyzed within the holding time.

Table 2, ICPMS Analysis Performed At WSCF Laboratory

Client Sample No.	Sample Depth	ICP/MS Analysis Performed at WSCF
B26JK6	Surface	Arsenic, Cadmium, Lead, Selenium, Silver, Thallium
B26JK7	Surface Dup	Arsenic, Cadmium, Lead, Selenium, Silver, Thallium
B29612	5-9ft	Arsenic, Cadmium, Lead, Selenium, Silver, Thallium
B29613	14-18ft	Arsenic, Cadmium, Lead, Selenium, Silver, Thallium
B26CC4	10-12ft	Arsenic, Cadmium, Lead, Selenium, Silver, Thallium
B26CD0	38-40ft	Antimony, Selenium, Silver, Arsenic
B26CD2	128-130ft	Antimony, Selenium, Silver, Arsenic
B26CD4	157-159ft	Antimony, Selenium, Silver, Arsenic

Batch 21722: There were no notable issues with this antimony batch, and all QC requirements in the FSAP, SAP, and QAPP were met.

Batch 24036: The serial dilution for lead exceeded the 10% difference requirement in the QAPP at +23%. This would indicate that a low bias may exist in the more concentrated sample. This is an unusually result for vadose samples for lead, since lead does not typically fail the serial dilution test.

3.3 RADIOCHEMICAL ANALYSIS

The holding time listed in the SAP for radioactive isotopes is 6 months. The FSAP lists the holding time as "none." All radiochemical analyses met the 6-month holding time listed in the SAP. With the exception of the ^{14}C and ^{3}H analyses, tracers and spikes are added prior to the digestion.

3.3.1 Gamma Energy Analysis

Gamma energy analysis was performed directly on the grab samples and liner composite samples. The SAP requires the reporting of all isotopes with positive results above the minimum detectable activity (MDA); therefore, isotopes additional to those required in the SAP were reported when detected. The GEA analysis met all of the required detection limits in the SAP. The laboratory was unable to meet any of the target detection limits.

Batch 21198: The RPD for ^{40}K was above the 30% requirement in the FSAP. Since the counting error was > 15%, this criterion does not apply.

3.3.2 Strontium-89/90

Strontium-89/90 analysis was performed on the grab samples and liner composite samples. All of the sample analyses met the required and target detection limits. The FSAP and SAP requested ^{90}Sr, not $^{89/90}Sr$, be reported. The 222-S Laboratory only performs the latter analysis. Since the half-life for ^{89}Sr is approximately 51 days and ^{89}Sr has not been produced at Hanford for years, $^{89/90}Sr$ is essentially ^{90}Sr. There were no notable issues with these batches, and all QC requirements in the FSAP, SAP, and QAPP were met.

3.3.3 Tritium

The ^{3}H analysis by liquid scintillation counting (LSC) was performed on a water leach of all grab samples and liner composite samples. This method only measured the ^{3}H in the samples that could be dissolved in water. This analysis achieved the required and target detection limits in the FSAP.

Batch 21940: The preparation blank demonstrated a positive result below the quantitation limit. Since all sample results were below the MDA, reanalysis was not required.

Batch 23378: There were no notable issues with this batch, and all QC requirements in the FSAP, SAP, and QAPP were met.

3.3.4 Selenium-79

The ^{79}Se analysis by LSC was performed on the grab samples and liner composite samples. The analysis achieved the target detection limit in the FSAP. No required detection limit was listed. No standard is currently available for ^{79}Se, and a cold carrier is used to monitor recovery and is measured gravimetrically. The ^{14}C LSC curve is used to determine the ^{79}Se results since their energies are similar. Since both ^{63}Ni and ^{79}Se use a single digestion batch that is equally split prior to the separation step, the maximum tracer/carrier recovery is 50%.

Batch 23725: There were no notable issues with this batch, and all QC requirements in the FSAP, SAP, and QAPP were met.

Batch 24408: The preparation blank demonstrated a positive result below the quantitation limit with a larger counting error. Since all sample results were below the MDA, reanalysis was not required.

3.3.5 Carbon-14

The ^{14}C analysis by LSC was performed on a water leach of the grab samples and liner composite samples. The analysis achieved the required detection limit in the FSAP but exceeded the target detection limit of 1 piC/g. The MDA for the samples were between 1 pCi/g and 2 pCi/g. This analysis will only detect water soluble forms of ^{14}C.

Batch 21907: The RPD for ^{14}C was above the 30% requirement in the FSAP. Since the counting error was > 15%, this criterion does not apply.

Batch 22686: There were no notable issues with this batch, and all QC requirements in the FSAP, SAP, and QAPP were met.

3.3.6 Nickel-63

The ^{63}Ni analysis by LSC was performed on the grab samples and liner composite samples. The analysis achieved the required and target detection limits in the FSAP. Since both ^{63}Ni and ^{79}Se use a single digestion batch that is equally split prior to the separation step, the maximum trace/carrier recovery is 50%.

Batch 23724: There were no notable issues with this batch, and all QC requirements in the FSAP, SAP, and QAPP were met.

3.3.7 Iodine-129

Analysis for ^{129}I by low energy GEA was performed on an iodine-specific fusion digest of all grab samples and liner composite samples. The required and target detection limits in the SAP were met. There were no notable issues with these batches, and all QC requirements in the FSAP, SAP, and QAPP were met.

3.3.8 Americium-241, Curium-243/244, and Curium-242

Analysis for ^{241}Am, $^{243/244}Cm$, and ^{242}Cm by alpha energy analysis (AEA) was performed on the grab samples and liner composite samples. For this analysis, there were no notable issues with any batches and all QC requirements in the FSAP, SAP, and QAPP were met. The required and target detection limits in the SAP were met. The SAP and FSAP requested ^{243}Cm and ^{244}Cm be reported separately. Since it is not possible to resolve these individual isotopes when using AEA, these isotopes have been reported as $^{243/244}Cm$.

3.3.9 Plutonium-238 and Plutonium-239/240

Plutonium isotopic (^{238}Pu and $^{239/240}$Pu) analysis by AEA was performed on the grab samples and liner composite samples. For this analysis, there were no notable issues with any batches and all QC requirements in the FSAP, SAP, and QAPP were met. The required and target detection limits in the SAP were met.

3.4 ORGANIC ANALYSES

3.4.1 Volatile Organic Analysis

The VOA by GC/MS was performed on field samples by purge and trap. Field sampling methods, sample containers, and preservation methods followed SW-846 5035.The soil samples were delivered in a freezer in pre-weighed VOA vials with magnetic stir bars and approximately 5 g of sample. After receipt, the VOA samples were stored in a freezer. For each sample interval, an additional high level sample preserved in methanol was also received. These were not used because none of the results for the frozen samples were above the calibration range. The exact weight of the sample and the tare weight of the VOA vials were recorded by sampling personnel and delivered with the samples. Seven field blanks and six trip blanks were also received and analyzed. The samples were preserved with either HCl or H_2SO_4 to a pH < 2. The holding time for all samples is 14 days. All samples analyzed at the 222-S Laboratory met the required holding time.

Two samples, B26D46 (Trip Blank-6) and B26D57 (Field Blank-7), were shipped to WSCF for analysis due to a laboratory outage. The WSCF report is included in Appendix B of this report.

The VOA met the target and required detection limits in the SAP. The SAP and FSAP requested m-xylene and p-xylene be reported separately. Since it is not possible to resolve these individual compounds when performing VOA by SW-846 8260C, these compounds have been reported as m+p xylene. The SAP and FSAP request that methanol be reported with this analysis; however, this compound is too polar to be purged and cannot be reported (see Attachment 7). Isobutanol, another poor purger, was reported as a semivolatile organic compound.

All of the field blanks and trip blanks contained chloroform above the quantification level. Since chloroform is a common chlorination byproduct, the laboratory believes the likely source of chloroform was the water used by sampling personnel to make the various blanks.

The LCS, MS, and MSD recoveries were compared against the laboratory's statistical process control (SPC) limits, as required by SW-846. The use of SPC limits is allowed in the FSAP, SAP, and QAPP.

Batch 21743: The method blank results for acetone and carbon disulfide were above the quantitation limit. The sample results for carbon disulfide were below the MDL; the data quality was not affected. The sample results for acetone were below the quantitation limit and were flagged with a "B". Since the sample results were below the quantitation limit, reanalysis was not required. Additionally, acetone was less than five times the quantitation limit, which meets DOE/RL-96-68, *Hanford Analytical Services Quality Assurance Requirements Documents*

(HASQARD), and QAPP requirements. Toluene was present in the blank below the quantitation limit. All toluene results in the sample were below the MDL.

Batch 21744: Toluene was present in the blank below the quantitation limit. All sample results for toluene were similar and have been flagged with a “B”. Since all toluene results were below the quantitation limit, reanalysis was not required.

Batch 21745: The method blank results for acetone, toluene, and styrene were above the MDL but below the quantitation limit. The sample results for acetone, toluene, and styrene were similar to the blank and have been flagged with “B”. Since the blank results were below the quantitation limit, reanalysis was not required.

Batch 21746: The method blank result for acetone was above the quantitation limit. The sample results for acetone were below the MDL except for one sample, which was below the quantitation limit and has been flagged with a “B”. Since the sample result was below the quantitation limit, reanalysis was not required. Additionally, acetone was less than five times the quantitation limit, which meets HASQARD and QAPP requirements.

Batch 23313: The method blank results for m,p-xylene, styrene, and toluene were above the MDL and below the quantitation limit. Styrene and toluene were detected in the sample below the quantitation limit, and m,p-xylene was below the MDL. Since all results were below the quantitation limit, reanalysis was not required. Hexane was detected in the sample above the quantitation limit. Since it was not detected in the method blank, this result does not appear to be result of laboratory contamination.

3.4.2 Semivolatile Organic Analysis

The semivolatile organic analysis (SVOA) by GC/MS was performed on methylene chloride extractions of all grab samples and liner composite samples. All holding times were met.

The SVOA analysis met the required and target detection limits with two exceptions:

- The adjusted MDLs for cyclohexanone were above the 0.5-mg/kg target detection limit for most samples. This compound obtained detection limits between 0.5 mg/kg and 0.6 mg/kg.
- The adjusted MDLs for di-n-butyl-phthalate were above the target detection limit of 0.33 mg/kg. The analysis achieved a detection limit of between 0.5 mg/kg and 0.6 mg/kg for this compound.

LCS, MS, and MSD recoveries were compared against the laboratory’s SPC limits, as required by SW-846. The use of SPC limits is permitted in the FSAP, SAP, and QAPP.

The SAP and FSAP requested m-cresol and p-cresol be reported separately. Since it is not possible to resolve these individual compounds when performing SVOA by SW-846 8270C, these compounds have been reported as m+p cresol.

Batches 21133 and 21183: There were no notable issues with these batches, and all QC requirements in the FSAP, SAP, and QAPP were met.

Batch 21072: The percent difference for chrysene and 2,4-dinitrotoluene in continuous calibration verification exceeded the ±20% limit at -20.1% and -22.8%, which could indicate a low bias. However, the LLS demonstrated that there was adequate sensitivity to detect these compounds at the level of quantitation had they been present in the samples.

3.4.3 Tentatively Identified Compounds

Unassigned peaks or TICs were treated as follows. Standards were obtained and analyzed for each secondary analyte identified in the SAP. This data was accumulated in the Hanford library. Following analysis, the largest TICs with instrument responses greater than 10% of the response of the nearest internal standard were evaluated and compared to the Hanford library. The estimated concentration of these TICs was calculated using measured response factors from the Hanford library compound list.

After comparison to the Hanford library, remaining unknowns were compared to the National Institute of Standards and Technology's NIST 02, *HP Mass Spectral Libraries*. The estimated concentration of compounds identified in the NIST library was calculated based on an arbitrary response factor of 1.0. If the compounds were not identified as a result of this comparison, they were reported as "unknown." Summaries of the SVOA and VOA TICs from the field samples and method blanks are provided in Attachment 5. TICs that were found in the field samples and were present in the associated batch method blank have been flagged with "B".

4.0 PROCEDURES

Table 2 lists the analytical procedures used for analysis of the Area C samples.

Table 2. Analytical Procedures

Analysis	Preparation Method	Analysis Procedure
Inorganic Analyses		
Cyanide	LA-695-103, Rev. J-0 (SW-846 9010C)	LA-695-103, Rev. J-0 (SW-846 9014)
Sulfide	LA-361-101, Rev. D-0 (SW-846 9030B)	LA-361-101, Rev. D-0 (SW-846 9215)
pH (solid)	LA-212-105, Rev. G-0 (SW-846 9045D)	LA-212-105, Rev. G-0 (SW-846 9045D)
Mercury – Cold Vapor Atomic Absorption	LA-325-110, Rev. A-0 (SW-846 7471A)	LA-325-110, Rev. A-0 (SW-846 7471A)
Ammonia – IC	LA-544-112, Rev. E-0	LA-533-101, Rev. Q-0
Anions & Organic Acids – IC	LA-504-101, Rev. M-0	LA-533-115, Rev. J-0
Metals – ICP /AES	LA-505-163, Rev. G-0 (SW-846 3050B)	LA-505-161, Rev. J-0-A (SW-846 6010C)

Analysis	Preparation Method	Analysis Procedure
^{99}Tc, ^{126}Sn – ICP/MS	LA-505-163, Rev. G-0 (SW-846 3050B)	LA-506-102, Rev. F-1
^{99}Tc – ICP/MS	08-ATL-078 Vadose Water Digest	LA-506-102, Rev. F-1
Metals – ICP/MS	LA-505-163, Rev. G-0 (SW-846 3050B)	LA-506-102, Rev. F-1 LA-506-103, Rev. B-0 (SW-846 6020A)
Actinides – ICP/MS	LA-505-163, Rev. G-0 (SW-846 3050B)	LA-506-102, Rev. F-1
Radiochemical Analyses		
GEA	Direct	LA-548-121, Rev. I-0
^{90}Sr – Separation/Beta counting (Solid)	LA-544-101, Rev. F-0	LA-220-101, Rev. I-0
^{3}H – LSC	LA-504-101, Rev. M-0	LA-218-111, Rev. G-0
^{14}C – LSC	LA-504-101, Rev. M-0	LA-348-104, Rev. H-0, I-0
^{79}Se – Separation/LSC	LA-544-101, Rev. F-0	LA-365-132, Rev. J-0
^{63}Ni – Separation/LSC	LA-544-101, Rev. F-0	LA-285-102, Rev. E-0
^{129}I – Separation/GEA	LA-378-105, Rev. D-0	LA-378-105, Rev. D-0
^{241}Am, $^{243/244, 242}$Cm – Separation/AEA	LA-544-101, Rev. F-0	LA-953-104, Rev. H-1
$^{239/240, 238}$Pu – Separation/AEA	LA-544-101, Rev. F-0	LA-953-104, Rev. H-1

Organic Analyses		
Analysis	**Preparation Method**	**Analysis Procedure**
VOC – GC/MS	Direct	LA-523-118, Rev. G-O-A, H-O (SW-846 8260B)
SVOC – GC/MS	LA-523-138, Rev. G-0 (SW-846 3540C)	LA-523-135, Rev. D-0 (SW-846 8270C)

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COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 8P	DATA TURNAROUND
Campbell / Harris	TEMPLETON, AM	373-5589	BERLIN, PC	AIR QUALITY ☐	75 Days / 75 Days
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**		
C7676 I006	WMA C Sampling for CMS		V10-003		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**ACTUAL SAMPLE DEPTH**	**COA**	**METHOD OF SHIPMENT**	
TFVS-09-003	TFVZ-10-000004	38'-40'	N/A	Govt. Vehicle	
SHIPPED TO	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		
222-S Lab Operations	N/A		N/A		

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

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

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool <-7C and >-20C	MEOH/Cool~ 4C
HOLDING TIME	14 Days	14 Days
TYPE OF CONTAINER	Gs*	Gs*
NO. OF CONTAINER(S)	5	3
VOLUME	40mL	40mL
SAMPLE ANALYSIS	VOA - 5035/8260 (LOW LEVEL) (TF);	VOA - 5035/8260 (HIGH LEVEL) (TF);

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME		
B26CD1	SOIL	7-22-10	1035	✓	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
Dan Harris Dan Harris	7-22-10 1130	R Steele R Steele	7.22.10 1130
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

** All VOA samples will be collected using EPA Method 5035A.
** VOA sample bottle sets will include 3 bottles for high level analysis, 5 bottles for low level analysis
** The laboratory is to use one of the low level VOA bottles for moisture content determination.
** VOA bottles will be labeled with a suffix of K, L, M, N, or P for low level and W, X, or Y for high level. These suffixes are for the purpose of providing bottle weights to the laboratories. These suffixes should not be included as part of the sample ID reported in the final data packages.

2/2 OL
1 PK

GRP# 20100556
Sim# S10V00 1758
Y 1759

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

Appendix 5

Data Validation Supporting Documentation

Appendix A - Chemical Data Validation Checklist

VALIDATION LEVEL:	A	B	(C)	D	E
PROJECT: WMA C			DATA PACKAGE: VSR11-048		
VALIDATOR: Carl Schloesslin		LAB: 222-S Lab		DATE: 6-23-2011	
			SDG: 20100556		
ANALYSES PERFORMED					
SW-846 8260 X		SW-846 8260 (TCLP)	SW-846 8270		SW-846 8270 (TCLP)
SAMPLES/MATRIX Soil sample B26CD1					

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

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

Comments: None

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

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

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

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

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

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

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

Comments:

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

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

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

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

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

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

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

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

Comments:

MB Hits: Acetone 2.86 ug/kg
Toluene 0.304 ug/kg
Styrene 0.521 ug/kg

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Comments:

Trans-1,3-dichloropropene and carbon disulfide not represented in the LCS and MS/MSD.

4-methyl-2-pentanone (hexone) MS %R = 139%, MSD %R = 132%
2-butanone MS %R = 137%
1,1-dichloroethene MSD %R = 69%

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

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

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

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

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

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

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

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

Comments:

None

6. SYSTEM PERFORMANCE (Levels D and E)

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

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

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

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

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

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

Comments:

7. HOLDING TIMES (all levels)

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

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

Comments:

None

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

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

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

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

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

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

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

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

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

Comments: None

9. SAMPLE CLEANUP (Levels D and E)

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

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

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

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

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

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

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

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

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

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

Comments:

Comments (attach additional sheets as necessary):

None

Appendix 6

Additional Documentation Requested By Client

Holding Time Report: VOA

Sample Group	Sample	Matrix	Method	Prep Method	Sample Date	Received Date	Analysis Date	Missed Holding Time
20100555	S10V001583	LIQUID	SW846-8260C	SW846-5030C	07/19/10 10:00	07/19/10 11:30	07/26/10 16:22	N
20100555	S10V001584	LIQUID	SW846-8260C	SW846-5030C	07/20/10 08:40	07/20/10 11:10	07/26/10 17:22	N
20100555	S10V001585	LIQUID	SW846-8260C	SW846-5030C	07/21/10 09:08	07/21/10 11:30	07/29/10 15:20	N
20100555	S10V001586	LIQUID	SW846-8260C	SW846-5030C	07/21/10 10:25	07/21/10 11:30	07/26/10 19:20	N
20100555	S10V001587	LIQUID	SW846-8260C	SW846-5030C	07/22/10 10:00	07/22/10 11:30	07/29/10 15:50	N
20100555	S10V001588	LIQUID	SW846-8260C	SW846-5030C	07/27/10 08:45	07/27/10 10:50	07/29/10 16:20	N
20100555	S10V001593	LIQUID	SW846-8260C	SW846-5030C	07/19/10 09:05	07/19/10 11:30	07/26/10 14:53	N
20100555	S10V001594	LIQUID	SW846-8260C	SW846-5030C	07/20/10 08:25	07/20/10 11:10	07/26/10 16:52	N
20100555	S10V001595	LIQUID	SW846-8260C	SW846-5030C	07/21/10 08:45	07/21/10 11:30	07/26/10 17:51	N
20100555	S10V001596	LIQUID	SW846-8260C	SW846-5030C	07/22/10 08:55	07/22/10 11:30	07/26/10 18:51	N
20100555	S10V001597	LIQUID	SW846-8260C	SW846-5030C	07/27/10 08:20	07/27/10 10:50	07/29/10 16:49	N
20100556	S10V001603	SOLID	SW846-8260C	SW-846 5035A	07/19/10 10:00	07/19/10 11:30	07/28/10 16:20	N
20100556	S10V001620	SOLID	SW846-8260C	SW-846 5035A	07/19/10 10:00	07/19/10 11:30	07/28/10 16:49	N
20100556	S10V001648	SOLID	SW846-8260C	SW-846 5035A	07/20/10 09:45	07/20/10 11:10	07/27/10 16:40	N
20100556	S10V001688	SOLID	SW846-8260C	SW-846 5035A	07/21/10 09:20	07/21/10 11:30	07/27/10 17:10	N
20100556	S10V001708	SOLID	SW846-8260C	SW-846 5035A	07/21/10 10:30	07/21/10 11:30	07/28/10 18:18	N
20100556	S10V001758	SOLID	SW846-8260C	SW-846 5035A	07/22/10 10:35	07/22/10 11:30	07/28/10 18:48	N
20100556	S10V001778	SOLID	SW846-8260C	SW-846 5035A	07/27/10 09:50	07/27/10 10:50	07/28/10 19:18	N
20100556	S10V001798	SOLID	SW846-8260C	SW-846 5035A	07/29/10 09:35	07/29/10 10:30	08/03/10 23:08	N

LABCORE Completed Batch Report for Batch# 00021745

Analyst: Getz, Andrew

Book#:

Instrument: GCMSD3 (OHURA) for VOA

Method: VOA 222S #2, LA-523-118 Rev/Mod G-0-A

Specification: C Farm WMC 2010-2

Prep Batch:

Batch Comment:

C Farm WMC 2010-2, VOA, Solid, Groups 20100556 & 520

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
Sample Sequence 1																	
1	BLNK	S1008300147		0 0			1,1,1-Trichloroethane	SOLID		<9.2000E-02			0.092	ug/Kg			U
1	BLNK	S1008300147		0 0			1,1,2-Trichloroethane	SOLID		<1.6580E-01			0.1658	ug/Kg			U
1	BLNK	S1008300147		0 0			1,1,2,2-Tetrachloroethane	SOLID		<2.1160E-01			0.2116	ug/Kg			U
1	BLNK	S1008300147		0 0			1,1-Dichloroethene	SOLID		<4.2320E-01			0.4232	ug/Kg			U
1	BLNK	S1008300147		0 0			1,2-Dichloroethane	SOLID		<5.3799E-02			0.053799	ug/Kg			U
1	BLNK	S1008300147		0 0			1-Butanol	SOLID		<1.0292E+01			10.292	ug/Kg			U
1	BLNK	S1008300147		0 0			4-Methyl-2-pentanone	SOLID		<1.7080E+00			1.708	ug/Kg			U
1	BLNK	S1008300147		0 0			Acetone	SOLID		2.8550E+00			2.1996	ug/Kg			J
1	BLNK	S1008300147		0 0			Benzene	SOLID		<1.4740E-01			0.1474	ug/Kg			U
1	BLNK	S1008300147		0 0			Carbon Disulfide	SOLID		<1.6080E-01			0.1608	ug/Kg			U
1	BLNK	S1008300147		0 0			Carbon Tetrachloride	SOLID		<9.3400E-02			0.0934	ug/Kg			U
1	BLNK	S1008300147		0 0			Chloroform	SOLID		<1.3080E-01			0.1308	ug/Kg			U
1	BLNK	S1008300147		0 0			Chlorobenzene	SOLID		<8.6400E-02			0.0864	ug/Kg			U
1	BLNK	S1008300147		0 0			Ethylbenzene	SOLID		<1.0720E-01			0.1072	ug/Kg			U
1	BLNK	S1008300147		0 0			Xylenes (total)	SOLID		<2.0320E-01			0.2032	ug/Kg			U
1	BLNK	S1008300147		0 0			2-Butanone	SOLID		<1.9644E+00			1.9644	ug/Kg			U
1	BLNK	S1008300147		0 0			Methylene Chloride	SOLID		<6.3999E-02			0.063999	ug/Kg			U
1	BLNK	S1008300147		0 0			Tetrachloroethene	SOLID		<1.0980E-01			0.1098	ug/Kg			U
1	BLNK	S1008300147		0 0			Toluene	SOLID		3.0440E-01			0.080199	ug/Kg			J
1	BLNK	S1008300147		0 0			trans-1,3-Dichloropropene	SOLID		<2.7100E-01			0.271	ug/Kg			U
1	BLNK	S1008300147		0 0			Trichloroethene	SOLID		<1.2100E-01			0.121	ug/Kg			U
1	BLNK	S1008300147		0 0			Vinyl Chloride	SOLID		<1.7340E-01			0.1734	ug/Kg			U
1	BLNK	S1008300147		0 0			cis-Dichloroethylene	SOLID		<1.8160E-01			0.1816	ug/Kg			U
1	BLNK	S1008300147		0 0			trans-Dichloroethylene	SOLID		<3.0300E-01			0.303	ug/Kg			U
1	BLNK	S1008300147		0 0			112Trichloro-122Trifluoroethan	SOLID		<1.1620E-01			0.1162	ug/Kg			U
1	BLNK	S1008300147		0 0			2-Nitropropane	SOLID		<5.8800E-01			0.588	ug/Kg			U
1	BLNK	S1008300147		0 0			Ethyl acetate	SOLID		<5.8720E-01			0.5872	ug/Kg			U
1	BLNK	S1008300147		0 0			Diethyl ether	SOLID		<2.5620E-01			0.2562	ug/Kg			U
1	BLNK	S1008300147		0 0			Trichlorofluoromethane	SOLID		<9.3999E-02			0.093999	ug/Kg			U

Units shown for QC (BLK/BKG) may not reflect the actual units.

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00021745

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
1	BLNK	S1008300147		0 0			o-Xylene	SOLID		<9.2000E-02			0.092	ug/Kg			U
1	BLNK	S1008300147		0 0			m,p-Xylene	SOLID		<1.6740E-01			0.1674	ug/Kg			U
1	BLNK	S1008300147		0 0			Styrene	SOLID		5.2140E-01			0.1266	ug/Kg			J
1	BLNK	S1008300147		0 0			2-Propenenitrile	SOLID		0.6963967				ug/Kg			JNT
Sample Sequence 2																	
2	LCS	S1008300148		0 0			1,1-Dichloroethene	SOLID	20	1.5948E+01			0.4232	ug/Kg	79.74	% Recovery	
2	LCS	S1008300148		0 0			1-Butanol	SOLID	200	2.4637E+02			10.292	ug/Kg	123.18	% Recovery	
2	LCS	S1008300148		0 0			4-Methyl-2-pentanone	SOLID	100	1.1713E+02			1.708	ug/Kg	117.13	% Recovery	
2	LCS	S1008300148		0 0			Acetone	SOLID	100	1.1881E+02			2.1996	ug/Kg	118.81	% Recovery	
2	LCS	S1008300148		0 0			Benzene	SOLID	20	1.8515E+01			0.1474	ug/Kg	92.575	% Recovery	
2	LCS	S1008300148		0 0			Chlorobenzene	SOLID	20	1.9314E+01			0.0864	ug/Kg	96.57	% Recovery	
2	LCS	S1008300148		0 0			2-Butanone	SOLID	100	1.0961E+02			1.9644	ug/Kg	109.61	% Recovery	
2	LCS	S1008300148		0 0			Toluene	SOLID	20	1.9590E+01			0.080199	ug/Kg	97.95	% Recovery	
2	LCS	S1008300148		0 0			Trichloroethene	SOLID	20	1.9031E+01			0.121	ug/Kg	95.155	% Recovery	
Sample Sequence 3																	
3	SAMPLE	S10V001603		0 0			1,1,1-Trichloroethane	SOLID	N/A	<9.1269E-02			0.091269	ug/Kg			U
3	SAMPLE	S10V001603		0 0			1,1,2-Trichloroethane	SOLID	N/A	<1.6448E-01			0.16448	ug/Kg			U
3	SAMPLE	S10V001603		0 0			1,1,2,2-Tetrachloroethane	SOLID	N/A	<2.0992E-01			0.20992	ug/Kg			U
3	SAMPLE	S10V001603		0 0			1,1-Dichloroethene	SOLID	N/A	<4.1984E-01			0.41984	ug/Kg			U
3	SAMPLE	S10V001603		0 0			1,2-Dichloroethane	SOLID	N/A	<5.3373E-02			0.053373	ug/Kg			U
3	SAMPLE	S10V001603		0 0			1-Butanol	SOLID	N/A	<1.0210E+01			10.21	ug/Kg			U
3	SAMPLE	S10V001603		0 0			4-Methyl-2-pentanone	SOLID	N/A	<1.6944E+00			1.6944	ug/Kg			U
3	SAMPLE	S10V001603		0 0			Acetone	SOLID	N/A	<2.1821E+00			2.1821	ug/Kg			U
3	SAMPLE	S10V001603		0 0			Benzene	SOLID	N/A	<1.4623E-01			0.14623	ug/Kg			U
3	SAMPLE	S10V001603		0 0			Carbon Disulfide	SOLID	N/A	<1.5952E-01			0.15952	ug/Kg			U
3	SAMPLE	S10V001603		0 0			Carbon Tetrachloride	SOLID	N/A	<9.2658E-02			0.092658	ug/Kg			U
3	SAMPLE	S10V001603		0 0			Chloroform	SOLID	N/A	<1.2976E-01			0.12976	ug/Kg			U
3	SAMPLE	S10V001603		0 0			Chlorobenzene	SOLID	N/A	<8.5714E-02			0.085714	ug/Kg			U
3	SAMPLE	S10V001603		0 0			Ethylbenzene	SOLID	N/A	<1.0635E-01			0.10635	ug/Kg			U
3	SAMPLE	S10V001603		0 0			Xylenes (total)	SOLID	N/A	<2.0159E-01			0.20159	ug/Kg			U
3	SAMPLE	S10V001603		0 0			2-Butanone	SOLID	N/A	<1.9488E+00			1.9488	ug/Kg			U
3	SAMPLE	S10V001603		0 0			Methylene Chloride	SOLID	N/A	<6.3492E-02			0.063492	ug/Kg			U
3	SAMPLE	S10V001603		0 0			Tetrachloroethene	SOLID	N/A	<1.0893E-01			0.10893	ug/Kg			U
3	SAMPLE	S10V001603		0 0			Toluene	SOLID	N/A	3.4560E-01			0.079563	ug/Kg			BJ
3	SAMPLE	S10V001603		0 0			trans-1,3-Dichloropropene	SOLID	N/A	<2.6885E-01			0.26885	ug/Kg			U
3	SAMPLE	S10V001603		0 0			Trichloroethene	SOLID	N/A	<1.2004E-01			0.12004	ug/Kg			U
3	SAMPLE	S10V001603		0 0			Vinyl Chloride	SOLID	N/A	<1.7202E-01			0.17202	ug/Kg			U
3	SAMPLE	S10V001603		0 0			cis-Dichloroethylene	SOLID	N/A	<1.8016E-01			0.18016	ug/Kg			U
3	SAMPLE	S10V001603		0 0			trans-Dichloroethylene	SOLID	N/A	<3.0060E-01			0.3006	ug/Kg			U
3	SAMPLE	S10V001603		0 0			112Trichloro-122Trifluoroethan	SOLID	N/A	<1.1528E-01			0.11528	ug/Kg			U

Units shown for QC (BLK/BKG) may not reflect the actual units.

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00021745

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
3	SAMPLE	S10V001603		0 0			2-Nitropropane	SOLID	N/A	<5.8333E-01			0.58333	ug/Kg			U
3	SAMPLE	S10V001603		0 0			Ethyl acetate	SOLID	N/A	<5.8254E-01			0.58254	ug/Kg			U
3	SAMPLE	S10V001603		0 0			Diethyl ether	SOLID	N/A	<2.5417E-01			0.25417	ug/Kg			U
3	SAMPLE	S10V001603		0 0			Trichlorofluoromethane	SOLID	N/A	<9.3253E-02			0.093253	ug/Kg			U
3	SAMPLE	S10V001603		0 0			o-Xylene	SOLID	N/A	<9.1269E-02			0.091269	ug/Kg			U
3	SAMPLE	S10V001603		0 0			m,p-Xylene	SOLID	N/A	<1.6607E-01			0.16607	ug/Kg			U
3	SAMPLE	S10V001603		0 0			4-Bromofluorobenzene	SOLID	19.84126	1.9381E+01			0.13175	ug/Kg	97.68	% Recovery	
3	SAMPLE	S10V001603		0 0			Dibromofluoromethane	SOLID	19.84126	2.1579E+01			0.17936	ug/Kg	108.76	% Recovery	
3	SAMPLE	S10V001603		0 0			1,2-Dichloroethane-d4	SOLID	19.84126	2.1738E+01			0.19008	ug/Kg	109.56	% Recovery	
3	SAMPLE	S10V001603		0 0			Toluene-d8	SOLID	19.84126	1.9667E+01			0.17004	ug/Kg	99.122	% Recovery	
3	SAMPLE	S10V001603		0 0			Pentane, 2,3-dimethyl-	SOLID		2.5907368				ug/Kg			JNT
3	SAMPLE	S10V001603		0 0			Unknown Alkane-3	SOLID		2.5769956				ug/Kg			JT
3	SAMPLE	S10V001603		0 0			Unknown-1	SOLID		2.0315146				ug/Kg			JT
3	SAMPLE	S10V001603		0 0			Unknown-2	SOLID		2.7409341				ug/Kg			JT
Sample Sequence 4																	
4	SAMPLE	S10V001620		0 0			1,1,1-Trichloroethane	SOLID	N/A	<8.2882E-02			0.082882	ug/Kg			U
4	SAMPLE	S10V001620		0 0			1,1,2-Trichloroethane	SOLID	N/A	<1.4937E-01			0.14937	ug/Kg			U
4	SAMPLE	S10V001620		0 0			1,1,2,2-Tetrachloroethane	SOLID	N/A	<1.9063E-01			0.19063	ug/Kg			U
4	SAMPLE	S10V001620		0 0			1,1-Dichloroethene	SOLID	N/A	<3.8126E-01			0.38126	ug/Kg			U
4	SAMPLE	S10V001620		0 0			1,2-Dichloroethane	SOLID	N/A	<4.8468E-02			0.048468	ug/Kg			U
4	SAMPLE	S10V001620		0 0			1-Butanol	SOLID	N/A	<9.2721E+00			9.2721	ug/Kg			U
4	SAMPLE	S10V001620		0 0			4-Methyl-2-pentanone	SOLID	N/A	<1.5387E+00			1.5387	ug/Kg			U
4	SAMPLE	S10V001620		0 0			Acetone	SOLID	N/A	<1.9816E+00			1.9816	ug/Kg			U
4	SAMPLE	S10V001620		0 0			Benzene	SOLID	N/A	<1.3279E-01			0.13279	ug/Kg			U
4	SAMPLE	S10V001620		0 0			Carbon Disulfide	SOLID	N/A	<1.4486E-01			0.14486	ug/Kg			U
4	SAMPLE	S10V001620		0 0			Carbon Tetrachloride	SOLID	N/A	<8.4144E-02			0.084144	ug/Kg			U
4	SAMPLE	S10V001620		0 0			Chloroform	SOLID	N/A	<1.1784E-01			0.11784	ug/Kg			U
4	SAMPLE	S10V001620		0 0			Chlorobenzene	SOLID	N/A	<7.7837E-02			0.077837	ug/Kg			U
4	SAMPLE	S10V001620		0 0			Ethylbenzene	SOLID	N/A	<9.6576E-02			0.096576	ug/Kg			U
4	SAMPLE	S10V001620		0 0			Xylenes (total)	SOLID	N/A	<1.8306E-01			0.18306	ug/Kg			U
4	SAMPLE	S10V001620		0 0			2-Butanone	SOLID	N/A	<1.7697E+00			1.7697	ug/Kg			U
4	SAMPLE	S10V001620		0 0			Methylene Chloride	SOLID	N/A	<5.7657E-02			0.057657	ug/Kg			U
4	SAMPLE	S10V001620		0 0			Tetrachloroethene	SOLID	N/A	<9.8918E-02			0.098918	ug/Kg			U
4	SAMPLE	S10V001620		0 0			Toluene	SOLID	N/A	7.3780E-01			0.072252	ug/Kg			B
4	SAMPLE	S10V001620		0 0			trans-1,3-Dichloropropene	SOLID	N/A	<2.4414E-01			0.24414	ug/Kg			U
4	SAMPLE	S10V001620		0 0			Trichloroethene	SOLID	N/A	<1.0901E-01			0.10901	ug/Kg			U
4	SAMPLE	S10V001620		0 0			Vinyl Chloride	SOLID	N/A	<1.5622E-01			0.15622	ug/Kg			U
4	SAMPLE	S10V001620		0 0			cis-Dichloroethylene	SOLID	N/A	<1.6360E-01			0.1636	ug/Kg			U
4	SAMPLE	S10V001620		0 0			trans-Dichloroethylene	SOLID	N/A	<2.7297E-01			0.27297	ug/Kg			U
4	SAMPLE	S10V001620		0 0			112Trichloro-122Trifluoroethan	SOLID	N/A	<1.0468E-01			0.10468	ug/Kg			U

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LABCORE Completed Batch Report for Batch# 00021745

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
4	SAMPLE	S10V001620		0 0			2-Nitropropane	SOLID	N/A	<5.2973E-01			0.52973	ug/Kg			U
4	SAMPLE	S10V001620		0 0			Ethyl acetate	SOLID	N/A	<5.2901E-01			0.52901	ug/Kg			U
4	SAMPLE	S10V001620		0 0			Diethyl ether	SOLID	N/A	<2.3081E-01			0.23081	ug/Kg			U
4	SAMPLE	S10V001620		0 0			Trichlorofluoromethane	SOLID	N/A	<8.4684E-02			0.084684	ug/Kg			U
4	SAMPLE	S10V001620		0 0			o-Xylene	SOLID	N/A	<8.2882E-02			0.082882	ug/Kg			U
4	SAMPLE	S10V001620		0 0			m,p-Xylene	SOLID	N/A	<1.5081E-01			0.15081	ug/Kg			U
4	SAMPLE	S10V001620		0 0			4-Bromofluorobenzene	SOLID	18.01801	1.9229E+01			0.11964	ug/Kg	106.72	% Recovery	
4	SAMPLE	S10V001620		0 0			Dibromofluoromethane	SOLID	18.01801	2.0298E+01			0.16288	ug/Kg	112.65	% Recovery	
4	SAMPLE	S10V001620		0 0			1,2-Dichloroethane-d4	SOLID	18.01801	2.1406E+01			0.17261	ug/Kg	118.8	% Recovery	
4	SAMPLE	S10V001620		0 0			Toluene-d8	SOLID	18.01801	1.9250E+01			0.15441	ug/Kg	106.84	% Recovery	
4	SAMPLE	S10V001620		0 0			Styrene	SOLID	N/A	3.7690E-01			0.11405	ug/Kg			BJ
4	SAMPLE	S10V001620		0 0			Unknown-1	SOLID		4.6282141				ug/Kg			JT
4	SAMPLE	S10V001620		0 0			Unknown-2	SOLID		2.2469714				ug/Kg			JT
Sample Sequence 5																	
5	MS	S1008300150	S10V001620	0 0			1,1-Dichloroethene	SOLID	17.76198	1.2746E+01			0.37584	ug/Kg	71.76	% Recovery	
5	MS	S1008300150	S10V001620	0 0			1-Butanol	SOLID	177.6198	2.2770E+02			9.1403	ug/Kg	128.2	% Recovery	
5	MS	S1008300150	S10V001620	0 0			4-Methyl-2-pentanone	SOLID	88.80994	1.2337E+02			1.5169	ug/Kg	138.91	% Recovery	
5	MS	S1008300150	S10V001620	0 0			Acetone	SOLID	88.80994	1.0777E+02			1.9535	ug/Kg	121.35	% Recovery	
5	MS	S1008300150	S10V001620	0 0			Benzene	SOLID	17.76198	1.7887E+01			0.1309	ug/Kg	100.7	% Recovery	
5	MS	S1008300150	S10V001620	0 0			Chlorobenzene	SOLID	17.76198	1.7814E+01			0.076731	ug/Kg	100.29	% Recovery	
5	MS	S1008300150	S10V001620	0 0			2-Butanone	SOLID	88.80994	1.2162E+02			1.7446	ug/Kg	136.94	% Recovery	
5	MS	S1008300150	S10V001620	0 0			Toluene	SOLID	17.76198	1.8390E+01			0.071225	ug/Kg	99.382	% Recovery	
5	MS	S1008300150	S10V001620	0 0			Trichloroethene	SOLID	17.76198	1.7473E+01			0.10746	ug/Kg	98.373	% Recovery	
Sample Sequence 6																	
6	MSD	S1008300151	S10V001620	0 0			1,1-Dichloroethene	SOLID	16.20745	1.1222E+01			0.34295	ug/Kg	69.24	% Recovery	
															3.5745	% RPD	
6	MSD	S1008300151	S10V001620	0 0			1-Butanol	SOLID	162.0745	1.8396E+02			8.3404	ug/Kg	113.5	% Recovery	
															12.164	% RPD	
6	MSD	S1008300151	S10V001620	0 0			4-Methyl-2-pentanone	SOLID	81.03727	1.0674E+02			1.3841	ug/Kg	131.72	% Recovery	
															5.3135	% RPD	
6	MSD	S1008300151	S10V001620	0 0			Acetone	SOLID	81.03727	9.1879E+01			1.7825	ug/Kg	113.38	% Recovery	
															6.7908	% RPD	
6	MSD	S1008300151	S10V001620	0 0			Benzene	SOLID	16.20745	1.6193E+01			0.11945	ug/Kg	99.911	% Recovery	
															0.78660	% RPD	
6	MSD	S1008300151	S10V001620	0 0			Chlorobenzene	SOLID	16.20745	1.6042E+01			0.070016	ug/Kg	98.979	% Recovery	
															1.3158	% RPD	
6	MSD	S1008300151	S10V001620	0 0			2-Butanone	SOLID	81.03727	1.0283E+02			1.5919	ug/Kg	126.89	% Recovery	
															7.6185	% RPD	
6	MSD	S1008300151	S10V001620	0 0			Toluene	SOLID	16.20745	1.6386E+01			0.064991	ug/Kg	96.549	% Recovery	
															2.8918	% RPD	
6	MSD	S1008300151	S10V001620	0 0			Trichloroethene	SOLID	16.20745	1.5541E+01			0.098055	ug/Kg	95.888	% Recovery	
															2.5584	% RPD	
Sample Sequence 7																	

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LABCORE Completed Batch Report for Batch# 00021745

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
7	SAMPLE	S10V001708		0 0			1,1,1-Trichloroethane	SOLID	N/A	<9.6638E-02			0.096638	ug/Kg			U
7	SAMPLE	S10V001708		0 0			1,1,2-Trichloroethane	SOLID	N/A	<1.7416E-01			0.17416	ug/Kg			U
7	SAMPLE	S10V001708		0 0			1,1,2,2-Tetrachloroethane	SOLID	N/A	<2.2227E-01			0.22227	ug/Kg			U
7	SAMPLE	S10V001708		0 0			1,1-Dichloroethene	SOLID	N/A	<4.4454E-01			0.44454	ug/Kg			U
7	SAMPLE	S10V001708		0 0			1,2-Dichloroethane	SOLID	N/A	<5.6512E-02			0.056512	ug/Kg			U
7	SAMPLE	S10V001708		0 0			1-Butanol	SOLID	N/A	<1.0811E+01			10.811	ug/Kg			U
7	SAMPLE	S10V001708		0 0			4-Methyl-2-pentanone	SOLID	N/A	<1.7941E+00			1.7941	ug/Kg			U
7	SAMPLE	S10V001708		0 0			Acetone	SOLID	N/A	5.9650E+00			2.3105	ug/Kg			BJ
7	SAMPLE	S10V001708		0 0			Benzene	SOLID	N/A	3.2820E-01			0.15483	ug/Kg			J
7	SAMPLE	S10V001708		0 0			Carbon Disulfide	SOLID	N/A	<1.6891E-01			0.16891	ug/Kg			U
7	SAMPLE	S10V001708		0 0			Carbon Tetrachloride	SOLID	N/A	<9.8109E-02			0.098109	ug/Kg			U
7	SAMPLE	S10V001708		0 0			Chloroform	SOLID	N/A	<1.3739E-01			0.13739	ug/Kg			U
7	SAMPLE	S10V001708		0 0			Chlorobenzene	SOLID	N/A	<9.0756E-02			0.090756	ug/Kg			U
7	SAMPLE	S10V001708		0 0			Ethylbenzene	SOLID	N/A	<1.1260E-01			0.1126	ug/Kg			U
7	SAMPLE	S10V001708		0 0			Xylenes (total)	SOLID	N/A	<2.1344E-01			0.21344	ug/Kg			U
7	SAMPLE	S10V001708		0 0			2-Butanone	SOLID	N/A	<2.0634E+00			2.0634	ug/Kg			U
7	SAMPLE	S10V001708		0 0			Methylene Chloride	SOLID	N/A	<6.7226E-02			0.067226	ug/Kg			U
7	SAMPLE	S10V001708		0 0			Tetrachloroethene	SOLID	N/A	<1.1534E-01			0.11534	ug/Kg			U
7	SAMPLE	S10V001708		0 0			Toluene	SOLID	N/A	7.0450E-01			0.084243	ug/Kg			BJ
7	SAMPLE	S10V001708		0 0			trans-1,3-Dichloropropene	SOLID	N/A	<2.8466E-01			0.28466	ug/Kg			U
7	SAMPLE	S10V001708		0 0			Trichloroethene	SOLID	N/A	<1.2710E-01			0.1271	ug/Kg			U
7	SAMPLE	S10V001708		0 0			Vinyl Chloride	SOLID	N/A	<1.8214E-01			0.18214	ug/Kg			U
7	SAMPLE	S10V001708		0 0			cis-Dichloroethylene	SOLID	N/A	<1.9076E-01			0.19076	ug/Kg			U
7	SAMPLE	S10V001708		0 0			trans-Dichloroethylene	SOLID	N/A	<3.1828E-01			0.31828	ug/Kg			U
7	SAMPLE	S10V001708		0 0			112Trichloro-122Trifluoroethan	SOLID	N/A	<1.2206E-01			0.12206	ug/Kg			U
7	SAMPLE	S10V001708		0 0			2-Nitropropane	SOLID	N/A	<6.1765E-01			0.61765	ug/Kg			U
7	SAMPLE	S10V001708		0 0			Ethyl acetate	SOLID	N/A	<6.1681E-01			0.61681	ug/Kg			U
7	SAMPLE	S10V001708		0 0			Diethyl ether	SOLID	N/A	<2.6912E-01			0.26912	ug/Kg			U
7	SAMPLE	S10V001708		0 0			Trichlorofluoromethane	SOLID	N/A	<9.8739E-02			0.098739	ug/Kg			U
7	SAMPLE	S10V001708		0 0			o-Xylene	SOLID	N/A	<9.6638E-02			0.096638	ug/Kg			U
7	SAMPLE	S10V001708		0 0			m,p-Xylene	SOLID	N/A	<1.7584E-01			0.17584	ug/Kg			U
7	SAMPLE	S10V001708		0 0			4-Bromofluorobenzene	SOLID	21.0084	2.0362E+01			0.1395	ug/Kg	96.923	% Recovery	
7	SAMPLE	S10V001708		0 0			Dibromofluoromethane	SOLID	21.0084	2.1137E+01			0.18992	ug/Kg	100.61	% Recovery	
7	SAMPLE	S10V001708		0 0			1,2-Dichloroethane-d4	SOLID	21.0084	2.3225E+01			0.20126	ug/Kg	110.55	% Recovery	
7	SAMPLE	S10V001708		0 0			Toluene-d8	SOLID	21.0084	2.0406E+01			0.18004	ug/Kg	97.133	% Recovery	
7	SAMPLE	S10V001708		0 0			1,3-Cyclopentadiene	SOLID		2.686882				ug/Kg			JNT
7	SAMPLE	S10V001708		0 0			1-Propene, 2-methyl-	SOLID		3.7062008				ug/Kg			JNT
7	SAMPLE	S10V001708		0 0			Decane, 3,7-dimethyl-	SOLID		4.1691367				ug/Kg			JNT
7	SAMPLE	S10V001708		0 0			Pentadecane	SOLID	N/A	3.2385835				ug/Kg			JNT
7	SAMPLE	S10V001708		0 0			Pentane, 2,3-dimethyl-	SOLID		3.3294801				ug/Kg			JNT

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LABCORE Completed Batch Report for Batch# 00021745

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
7	SAMPLE	S10V001708		0 0			Propene	SOLID		4.2497036				ug/Kg			JNT
7	SAMPLE	S10V001708		0 0			Unknown-1	SOLID		2.1590566				ug/Kg			JT
7	SAMPLE	S10V001708		0 0			Unknown-2	SOLID		5.1537979				ug/Kg			JT
7	SAMPLE	S10V001708		0 0			Unknown-3	SOLID		2.5533528				ug/Kg			JT
7	SAMPLE	S10V001708		0 0			Unknown-4	SOLID		4.2530974				ug/Kg			JT
Sample Sequence 8																	
8	SAMPLE	S10V001758		0 0			1,1,1-Trichloroethane	SOLID	N/A	<8.3333E-02			0.083333	ug/Kg			U
8	SAMPLE	S10V001758		0 0			1,1,2-Trichloroethane	SOLID	N/A	<1.5018E-01			0.15018	ug/Kg			U
8	SAMPLE	S10V001758		0 0			1,1,2,2-Tetrachloroetha ne	SOLID	N/A	<1.9167E-01			0.19167	ug/Kg			U
8	SAMPLE	S10V001758		0 0			1,1-Dichloroethene	SOLID	N/A	<3.8333E-01			0.38333	ug/Kg			U
8	SAMPLE	S10V001758		0 0			1,2-Dichloroethane	SOLID	N/A	<4.8731E-02			0.048731	ug/Kg			U
8	SAMPLE	S10V001758		0 0			1-Butanol	SOLID	N/A	<9.3225E+00			9.3225	ug/Kg			U
8	SAMPLE	S10V001758		0 0			4-Methyl-2-pentanone	SOLID	N/A	<1.5471E+00			1.5471	ug/Kg			U
8	SAMPLE	S10V001758		0 0			Acetone	SOLID	N/A	<1.9924E+00			1.9924	ug/Kg			U
8	SAMPLE	S10V001758		0 0			Benzene	SOLID	N/A	<1.3351E-01			0.13351	ug/Kg			U
8	SAMPLE	S10V001758		0 0			Carbon Disulfide	SOLID	N/A	<1.4565E-01			0.14565	ug/Kg			U
8	SAMPLE	S10V001758		0 0			Carbon Tetrachloride	SOLID	N/A	<8.4601E-02			0.084601	ug/Kg			U
8	SAMPLE	S10V001758		0 0			Chloroform	SOLID	N/A	<1.1848E-01			0.11848	ug/Kg			U
8	SAMPLE	S10V001758		0 0			Chlorobenzene	SOLID	N/A	<7.8260E-02			0.07826	ug/Kg			U
8	SAMPLE	S10V001758		0 0			Ethylbenzene	SOLID	N/A	<9.7101E-02			0.097101	ug/Kg			U
8	SAMPLE	S10V001758		0 0			Xylenes (total)	SOLID	N/A	<1.8406E-01			0.18406	ug/Kg			U
8	SAMPLE	S10V001758		0 0			2-Butanone	SOLID	N/A	<1.7793E+00			1.7793	ug/Kg			U
8	SAMPLE	S10V001758		0 0			Methylene Chloride	SOLID	N/A	<5.7971E-02			0.057971	ug/Kg			U
8	SAMPLE	S10V001758		0 0			Tetrachloroethene	SOLID	N/A	<9.9456E-02			0.099456	ug/Kg			U
8	SAMPLE	S10V001758		0 0			Toluene	SOLID	N/A	4.2700E-01			0.072644	ug/Kg			BJ
8	SAMPLE	S10V001758		0 0			trans-1,3-Dichloroprope ne	SOLID	N/A	<2.4547E-01			0.24547	ug/Kg			U
8	SAMPLE	S10V001758		0 0			Trichloroethene	SOLID	N/A	<1.0960E-01			0.1096	ug/Kg			U
8	SAMPLE	S10V001758		0 0			Vinyl Chloride	SOLID	N/A	<1.5706E-01			0.15706	ug/Kg			U
8	SAMPLE	S10V001758		0 0			cis-Dichloroethylene	SOLID	N/A	<1.6449E-01			0.16449	ug/Kg			U
8	SAMPLE	S10V001758		0 0			trans-Dichloroethylene	SOLID	N/A	<2.7446E-01			0.27446	ug/Kg			U
8	SAMPLE	S10V001758		0 0			112Trichloro-122Triflu oroethan	SOLID	N/A	<1.0525E-01			0.10525	ug/Kg			U
8	SAMPLE	S10V001758		0 0			2-Nitropropane	SOLID	N/A	<5.3261E-01			0.53261	ug/Kg			U
8	SAMPLE	S10V001758		0 0			Ethyl acetate	SOLID	N/A	<5.3188E-01			0.53188	ug/Kg			U
8	SAMPLE	S10V001758		0 0			Diethyl ether	SOLID	N/A	<2.3206E-01			0.23206	ug/Kg			U
8	SAMPLE	S10V001758		0 0			Trichlorofluoromethane	SOLID	N/A	<8.5144E-02			0.085144	ug/Kg			U
8	SAMPLE	S10V001758		0 0			o-Xylene	SOLID	N/A	<8.3333E-02			0.083333	ug/Kg			U
8	SAMPLE	S10V001758		0 0			m,p-Xylene	SOLID	N/A	<1.5163E-01			0.15163	ug/Kg			U
8	SAMPLE	S10V001758		0 0			4-Bromofluorobenzene	SOLID	18.11594	1.7775E+01			0.12029	ug/Kg	98.118	% Recovery	
8	SAMPLE	S10V001758		0 0			Dibromofluoromethane	SOLID	18.11594	1.8863E+01			0.16377	ug/Kg	104.12	% Recovery	
8	SAMPLE	S10V001758		0 0			1,2-Dichloroethane-d4	SOLID	18.11594	2.0190E+01			0.17355	ug/Kg	111.45	% Recovery	

Units shown for QC (BLK/BKG) may not reflect the actual units.

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00021745

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
8	SAMPLE	S10V001758		0 0			Toluene-d8	SOLID	18.11594	1.7945E+01			0.15525	ug/Kg	99.056	% Recovery	
8	SAMPLE	S10V001758		0 0			Unknown-1	SOLID		1.9235192				ug/Kg			JT
Sample Sequence 9																	
9	SAMPLE	S10V001778		0 0			1,1,1-Trichloroethane	SOLID	N/A	<1.0849E-01			0.10849	ug/Kg			U
9	SAMPLE	S10V001778		0 0			1,1,2-Trichloroethane	SOLID	N/A	<1.9552E-01			0.19552	ug/Kg			U
9	SAMPLE	S10V001778		0 0			1,1,2,2-Tetrachloroethane	SOLID	N/A	<2.4953E-01			0.24953	ug/Kg			U
9	SAMPLE	S10V001778		0 0			1,1-Dichloroethene	SOLID	N/A	<4.9906E-01			0.49906	ug/Kg			U
9	SAMPLE	S10V001778		0 0			1,2-Dichloroethane	SOLID	N/A	<6.3443E-02			0.063443	ug/Kg			U
9	SAMPLE	S10V001778		0 0			1-Butanol	SOLID	N/A	<1.2137E+01			12.137	ug/Kg			U
9	SAMPLE	S10V001778		0 0			4-Methyl-2-pentanone	SOLID	N/A	<2.0142E+00			2.0142	ug/Kg			U
9	SAMPLE	S10V001778		0 0			Acetone	SOLID	N/A	<2.5939E+00			2.5939	ug/Kg			U
9	SAMPLE	S10V001778		0 0			Benzene	SOLID	N/A	<1.7382E-01			0.17382	ug/Kg			U
9	SAMPLE	S10V001778		0 0			Carbon Disulfide	SOLID	N/A	<1.8962E-01			0.18962	ug/Kg			U
9	SAMPLE	S10V001778		0 0			Carbon Tetrachloride	SOLID	N/A	<1.1014E-01			0.11014	ug/Kg			U
9	SAMPLE	S10V001778		0 0			Chloroform	SOLID	N/A	<1.5424E-01			0.15424	ug/Kg			U
9	SAMPLE	S10V001778		0 0			Chlorobenzene	SOLID	N/A	<1.0189E-01			0.10189	ug/Kg			U
9	SAMPLE	S10V001778		0 0			Ethylbenzene	SOLID	N/A	<1.2642E-01			0.12642	ug/Kg			U
9	SAMPLE	S10V001778		0 0			Xylenes (total)	SOLID	N/A	<2.3962E-01			0.23962	ug/Kg			U
9	SAMPLE	S10V001778		0 0			2-Butanone	SOLID	N/A	<2.3165E+00			2.3165	ug/Kg			U
9	SAMPLE	S10V001778		0 0			Methylene Chloride	SOLID	N/A	<7.5471E-02			0.075471	ug/Kg			U
9	SAMPLE	S10V001778		0 0			Tetrachloroethene	SOLID	N/A	<1.2948E-01			0.12948	ug/Kg			U
9	SAMPLE	S10V001778		0 0			Toluene	SOLID	N/A	5.6430E-01			0.094575	ug/Kg			BJ
9	SAMPLE	S10V001778		0 0			trans-1,3-Dichloropropene	SOLID	N/A	<3.1958E-01			0.31958	ug/Kg			U
9	SAMPLE	S10V001778		0 0			Trichloroethene	SOLID	N/A	<1.4269E-01			0.14269	ug/Kg			U
9	SAMPLE	S10V001778		0 0			Vinyl Chloride	SOLID	N/A	<2.0448E-01			0.20448	ug/Kg			U
9	SAMPLE	S10V001778		0 0			cis-Dichloroethylene	SOLID	N/A	<2.1415E-01			0.21415	ug/Kg			U
9	SAMPLE	S10V001778		0 0			trans-Dichloroethylene	SOLID	N/A	<3.5731E-01			0.35731	ug/Kg			U
9	SAMPLE	S10V001778		0 0			112Trichloro-122Trifluoroethan	SOLID	N/A	<1.3703E-01			0.13703	ug/Kg			U
9	SAMPLE	S10V001778		0 0			2-Nitropropane	SOLID	N/A	<6.9340E-01			0.6934	ug/Kg			U
9	SAMPLE	S10V001778		0 0			Ethyl acetate	SOLID	N/A	<6.9245E-01			0.69245	ug/Kg			U
9	SAMPLE	S10V001778		0 0			Diethyl ether	SOLID	N/A	<3.0212E-01			0.30212	ug/Kg			U
9	SAMPLE	S10V001778		0 0			Trichlorofluoromethane	SOLID	N/A	<1.1085E-01			0.11085	ug/Kg			U
9	SAMPLE	S10V001778		0 0			o-Xylene	SOLID	N/A	<1.0849E-01			0.10849	ug/Kg			U
9	SAMPLE	S10V001778		0 0			m,p-Xylene	SOLID	N/A	<1.9740E-01			0.1974	ug/Kg			U
9	SAMPLE	S10V001778		0 0			4-Bromofluorobenzene	SOLID	23.5849	2.4113E+01			0.1566	ug/Kg	102.24	% Recovery	
9	SAMPLE	S10V001778		0 0			Dibromofluoromethane	SOLID	23.5849	2.5104E+01			0.21321	ug/Kg	106.44	% Recovery	
9	SAMPLE	S10V001778		0 0			1,2-Dichloroethane-d4	SOLID	23.5849	2.5804E+01			0.22594	ug/Kg	109.41	% Recovery	
9	SAMPLE	S10V001778		0 0			Toluene-d8	SOLID	23.5849	2.3417E+01			0.20212	ug/Kg	99.288	% Recovery	
9	SAMPLE	S10V001778		0 0			Unknown-1	SOLID		3.1473414				ug/Kg			JT
9	SAMPLE	S10V001778		0 0			Unknown-2	SOLID		3.7697048				ug/Kg			JT

Units shown for QC (BLK/BKG) may not reflect the actual units.

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N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00021745

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
Sample Sequence 10																	
10	SAMPLE	S10V001396		0 0			1,1,1-Trichloroethane	SOLID	N/A	<1.1500E-01			0.115	ug/Kg			U
10	SAMPLE	S10V001396		0 0			1,1,2-Trichloroethane	SOLID	N/A	<2.0725E-01			0.20725	ug/Kg			U
10	SAMPLE	S10V001396		0 0			1,1,2,2-Tetrachloroethane	SOLID	N/A	<2.6450E-01			0.2645	ug/Kg			U
10	SAMPLE	S10V001396		0 0			1,1-Dichloroethene	SOLID	N/A	<5.2900E-01			0.529	ug/Kg			U
10	SAMPLE	S10V001396		0 0			1,2-Dichloroethane	SOLID	N/A	<6.7249E-02			0.067249	ug/Kg			U
10	SAMPLE	S10V001396		0 0			1-Butanol	SOLID	N/A	<1.2865E+01			12.865	ug/Kg			U
10	SAMPLE	S10V001396		0 0			4-Methyl-2-pentanone	SOLID	N/A	<2.1350E+00			2.135	ug/Kg			U
10	SAMPLE	S10V001396		0 0			Acetone	SOLID	N/A	<2.7495E+00			2.7495	ug/Kg			U
10	SAMPLE	S10V001396		0 0			Benzene	SOLID	N/A	<1.8425E-01			0.18425	ug/Kg			U
10	SAMPLE	S10V001396		0 0			Carbon Disulfide	SOLID	N/A	<2.0100E-01			0.201	ug/Kg			U
10	SAMPLE	S10V001396		0 0			Carbon Tetrachloride	SOLID	N/A	<1.1675E-01			0.11675	ug/Kg			U
10	SAMPLE	S10V001396		0 0			Chloroform	SOLID	N/A	<1.6350E-01			0.1635	ug/Kg			U
10	SAMPLE	S10V001396		0 0			Chlorobenzene	SOLID	N/A	<1.0800E-01			0.108	ug/Kg			U
10	SAMPLE	S10V001396		0 0			Ethylbenzene	SOLID	N/A	<1.3400E-01			0.134	ug/Kg			U
10	SAMPLE	S10V001396		0 0			Xylenes (total)	SOLID	N/A	<2.5400E-01			0.254	ug/Kg			U
10	SAMPLE	S10V001396		0 0			2-Butanone	SOLID	N/A	<2.4555E+00			2.4555	ug/Kg			U
10	SAMPLE	S10V001396		0 0			Methylene Chloride	SOLID	N/A	<7.9999E-02			0.079999	ug/Kg			U
10	SAMPLE	S10V001396		0 0			Tetrachloroethene	SOLID	N/A	<1.3725E-01			0.13725	ug/Kg			U
10	SAMPLE	S10V001396		0 0			Toluene	SOLID	N/A	4.0240E-01			0.10025	ug/Kg			BJ
10	SAMPLE	S10V001396		0 0			trans-1,3-Dichloropropene	SOLID	N/A	<3.3875E-01			0.33875	ug/Kg			U
10	SAMPLE	S10V001396		0 0			Trichloroethene	SOLID	N/A	<1.5125E-01			0.15125	ug/Kg			U
10	SAMPLE	S10V001396		0 0			Vinyl Chloride	SOLID	N/A	<2.1675E-01			0.21675	ug/Kg			U
10	SAMPLE	S10V001396		0 0			cis-Dichloroethylene	SOLID	N/A	<2.2700E-01			0.227	ug/Kg			U
10	SAMPLE	S10V001396		0 0			trans-Dichloroethylene	SOLID	N/A	<3.7875E-01			0.37875	ug/Kg			U
10	SAMPLE	S10V001396		0 0			112Trichloro-122Trifluoroethan	SOLID	N/A	<1.4525E-01			0.14525	ug/Kg			U
10	SAMPLE	S10V001396		0 0			2-Nitropropane	SOLID	N/A	<7.3500E-01			0.735	ug/Kg			U
10	SAMPLE	S10V001396		0 0			Ethyl acetate	SOLID	N/A	<7.3400E-01			0.734	ug/Kg			U
10	SAMPLE	S10V001396		0 0			Diethyl ether	SOLID	N/A	<3.2025E-01			0.32025	ug/Kg			U
10	SAMPLE	S10V001396		0 0			Trichlorofluoromethane	SOLID	N/A	<1.1750E-01			0.1175	ug/Kg			U
10	SAMPLE	S10V001396		0 0			o-Xylene	SOLID	N/A	<1.1500E-01			0.115	ug/Kg			U
10	SAMPLE	S10V001396		0 0			m,p-Xylene	SOLID	N/A	<2.0925E-01			0.20925	ug/Kg			U
10	SAMPLE	S10V001396		0 0			4-Bromofluorobenzene	SOLID	25	2.4217E+01			0.166	ug/Kg	96.868	% Recovery	
10	SAMPLE	S10V001396		0 0			Dibromofluoromethane	SOLID	25	2.6280E+01			0.226	ug/Kg	105.12	% Recovery	
10	SAMPLE	S10V001396		0 0			1,2-Dichloroethane-d4	SOLID	25	2.8383E+01			0.2395	ug/Kg	113.53	% Recovery	
10	SAMPLE	S10V001396		0 0			Toluene-d8	SOLID	25	2.4540E+01			0.21425	ug/Kg	98.16	% Recovery	
10	SAMPLE	S10V001396		0 0			Styrene	SOLID	N/A	7.8430E-01			0.15825	ug/Kg			BJ
10	SAMPLE	S10V001396		0 0			Unknown Alkane-10	SOLID		5.4703662				ug/Kg			JT
10	SAMPLE	S10V001396		0 0			Unknown Alkane-4	SOLID		21.391626				ug/Kg			JT
10	SAMPLE	S10V001396		0 0			Unknown Alkane-5	SOLID		37.570618				ug/Kg			JT

Units shown for QC (BLK/BKG) may not reflect the actual units.

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00021745

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
10	SAMPLE	S10V001396		0 0			Unknown Alkane-6	SOLID		3.870112				ug/Kg			JT
10	SAMPLE	S10V001396		0 0			Unknown Alkane-7	SOLID		7.3143527				ug/Kg			JT
10	SAMPLE	S10V001396		0 0			Unknown Alkane-8	SOLID		3.5068647				ug/Kg			JT
10	SAMPLE	S10V001396		0 0			Unknown Alkane-9	SOLID		43.202811				ug/Kg			JT
10	SAMPLE	S10V001396		0 0			Unknown-1	SOLID		2.648628				ug/Kg			JT
10	SAMPLE	S10V001396		0 0			Unknown-2	SOLID		4.7663832				ug/Kg			JT
10	SAMPLE	S10V001396		0 0			Unknown-3	SOLID		2.6739548				ug/Kg			JT

Comments Section:

Data Flagger Status:
Flagging Completed

Final Page for Batch# 00021745

Reviewer Signature **Date**

Units shown for QC (BLK/BKG) may not reflect the actual units.

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00021745

Seq	Sample#	QC Type	Assoc. Sample	Sample Group	Customer Id	Specification
1	S1008300147	BLNK				
2	S1008300148	LCS				
3	S10V001603	SAMPLE		20100556	B26JL6	C Farm WMC 2010-2
4	S10V001620	SAMPLE		20100556	B26JL7	C Farm WMC 2010-2
5	S1008300150	MS	S10V001620			
6	S1008300151	MSD	S10V001620			
7	S10V001708	SAMPLE		20100556	B26CC7	C Farm WMC 2010-2
8	S10V001758	SAMPLE		20100556	B26CD1	C Farm WMC 2010-2
9	S10V001778	SAMPLE		20100556	B26CD3	C Farm WMC 2010-2
10	S10V001396	SAMPLE		20100520	B26C81	C Farm WMC 2010-2

Units shown for QC (BLK/BKG) may not reflect the actual units.

* = Rejected Analyte
N, A = Non-reported Analyte

21745

FORM 2
SOIL VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: 100728CFARM

Level:(low/med) LOW

	CLIENT SAMPLE NO.	SMC1 #	SMC2 (DCE) #	SMC3 (TOL) #	OTHER (BFB) #	TOT OUT
01	CCB	108	110	104	105	0
02	LCS	103	102	104	102	0
03						
04						
05						
06						
07						
08						
09						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						

		QC LIMITS
SMC1	= Dibromofluoromethane	(77-129)
SMC2 (DCE)	= 1,2-Dichloroethane-d4	(73-140)
SMC3 (TOL)	= Toluene-d8	(70-126)
OTHER (BFB)	= Bromofluorobenzene	(79-125)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D System Monitoring Compound diluted out

FORM 2
SOIL VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: 100728CFARM

Level:(low/med) LOW

	CLIENT SAMPLE NO.	SMC1 #	SMC2 (DCE)#	SMC3 (TOL)#	OTHER (BFB)#	TOT OUT
01	S10V001396	105	114	98	97	0
02	S10V001603	109	110	99	98	0
03	S10V001620	113	119	107	107	0
04	S10V001620MS	108	115	101	103	0
05	S10V001620MS	107	113	99	105	0
06	S10V001708	101	110	97	97	0
07	S10V001758	109	114	108	86	0
08	S10V001778	106	109	99	102	0
09						
10						
11						
12						
13						
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19						
20						
21						
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23						
24						
25						
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27						
28						
29						
30						

		QC LIMITS
SMC1	= Dibromofluoromethane	(74-126)
SMC2 (DCE)	= 1,2-Dichloroethane-d4	(78-133)
SMC3 (TOL)	= Toluene-d8	(74-128)
OTHER(BFB)	= Bromofluorobenzene	(64-144)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D System Monitoring Compound diluted out

Data File: 10072807LCS.D
Report Date: 27-Oct-2010 15:02

WSCF

RECOVERY REPORT

Client Name:
Sample Matrix: SOLID
Lab Smp Id: LCS
Level: LOW
Data Type: MS DATA
SpikeList File: 2009LCS_SOL.spk
Sublist File: 2009QC.sub
Method File: \\APWSCF02\slab\chem\Ohura.i\data\V100728CFarm.b\8260S100629.m
Misc Info: VOA

Client SDG: 100728CFarm
Fraction: VOA
Client Smp ID: LCS
Operator: awg
SampleType: LCS
Quant Type: ISTD

SPIKE COMPOUND	CONC ADDED ug/Kg	CONC RECOVERED ug/Kg	% RECOVERED	LIMITS
14 1,1-Dichloroethene	20.000	15.948	79.74	66-141
19 Acetone	100.00	118.81	118.81	58-135
38 2-Butanone	100.00	109.61	109.61	50-149
41 Benzene	20.000	18.515	92.58	70-126
47 Trichloroethene	20.000	19.031	95.15	71-127
49 n-Butanol	200.00	246.37	123.18	53-148
59 Toluene	20.000	19.590	97.95	71-125
60 Methyl Isobutyl Ke	100.00	117.13	117.13	61-145
68 2-Hexanone	100.00	117.80	117.80	59-148
72 Chlorobenzene	20.000	19.314	96.57	81-120

SURROGATE COMPOUND	CONC ADDED ug/Kg	CONC RECOVERED ug/Kg	% RECOVERED	LIMITS
$ 35 Dibromofluorometha	20.000	20.623	103.12	77-129
$ 43 1,2-Dichloroethane	20.000	20.410	102.05	73-140
$ 57 Toluene-d8	20.000	20.755	103.77	70-126
$ 79 Bromofluorobenzene	20.000	20.426	102.13	79-125

Date: 23 June 2011
To: CH2M Hill (technical representative)
From: Analytical Quality Associates, Inc.
Project: WMA C
Subject: Semivolatile Organics - Sample Data Group (SDG) 20100556

INTRODUCTION

This memorandum presents the results of data validation for SDG 20100556 prepared by 222-S Laboratory. A list of samples validated along with the analytical methods is provided in the following table.

Sample ID	Sample Date	Media	Validation Level	Analytical Methods
B26JK6	7/19/2010	Soil	C	8270C
B26CD0	7/22/2010	Soil	C	8270C

Data validation was conducted in accordance with the CHPRC validation statement of work and the Field Sampling and Analysis Plan for Waste Management Area C, RPP-PLAN-40564, Rev. 2 (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 for semivolatile organics in soil are extraction within 14 days of sample collection and analysis within 40 days of sample extraction. Sample preservation 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

No equipment blanks were submitted for validation.

- **Accuracy**

Accuracy is evaluated by reviewing surrogate results, matrix spike sample results, and laboratory control sample results. According to the SAP, the matrix spike and laboratory control sample accuracy limits are 70% to 130%.

Surrogates

All surrogate recoveries were acceptable.

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

All MS/MSD recoveries were acceptable with the following exceptions.

Only seven 8270C MS/MSD analytes were reported. Reported analytes not represented in the MS/MSD were cyclohexanone, isobutanol, n-nitrosomorpholine, pyridine, tributyl phosphate, 2-ethoxyethanol, 2,4,5-trichlorophenol, 2,4,6-trichlorophenol, bis(2-ethylhexyl)phthalate, butylbenzylphthalate, di-n-butylphthalate, di-n-octylphthalate, 2-methylphenol, 3&4-methylphenol, total methylphenols, 2-nitrophenol, hexachlorobutadiene, hexachloroethane and 1,2-dichlorobenzene. All associated sample results for these analytes for both samples were non-detects and should be qualified as estimates and flagged "UJ."

The MS and MSD recoveries for 1,2,4-trichlorobenzene, acenaphthene, 2-chlorophenol and n-nitroso-di-n-dipropylamine were below the lower acceptance limits. The 1,2,4-trichlorobenzene, acenaphthene, fluoranthene, naphthalene, 2-chlorophenol and n-nitroso-di-n-dipropylamine results for both samples were non-detects and should be qualified as estimates and flagged "UJ."

Laboratory Control Samples (LCSs)

All LCS recoveries were acceptable with the following exceptions.

Only seven 8270C LCS analytes were reported. Reported analytes not represented in the LCS were cyclohexanone, isobutanol, n-nitrosomorpholine, pyridine, tributyl phosphate, 2-ethoxyethanol, 2,4,5-trichlorophenol, 2,4,6-trichlorophenol, bis(2-ethylhexyl)phthalate, butylbenzylphthalate, di-n-butylphthalate, di-n-octylphthalate, 2-methylphenol, 3&4-methylphenol, total methylphenols, 2-nitrophenol, hexachlorobutadiene, hexachloroethane and 1,2-dichlorobenzene. All associated sample results for these analytes for both samples were non-detects and should be qualified as estimates and flagged "UJ."

The LCS recoveries for 1,2,4-trichlorobenzene, acenaphthene, 2-chlorophenol and n-nitroso-di-n-dipropylamine were below the lower acceptance limits. The 1,2,4-trichlorobenzene, acenaphthene, fluoranthene, naphthalene, 2-chlorophenol and n-nitroso-di-n-dipropylamine results for both samples were non-detects and should be qualified as estimates and flagged "UJ."

- **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%. When duplicate RPDs exceed the limits and have associated results <5X the SAP required detection limits with differences <2X the required detection limits no precision infraction occurred.

MS/MSD Samples

All MS/MSD relative percent difference values were acceptable.

Field Duplicate Samples

No field duplicates were submitted for validation.

Field Split Samples

No field splits were submitted for validation.

- **Detection Limits**

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

All reported sample MDLs were below the RDLs.

- **Completeness**

SDG 20100556 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 100%.

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

Multiple minor deficiencies leading to qualification of sample results as estimates occurred. 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

RPP-PLAN-40564, Rev. 2, *Field Sampling and Analysis Plan for Waste Management Area C*, December 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

Semivolatile Organics Data Qualification Summary			
SDG: 20100556	Reviewer: AQA	Project: WMA C	Page 1 of 1
Analyte(s)	**DV Flag**	**Samples Affected**	**Reason**
cyclohexanone isobutanol n-nitrosomorpholine pyridine tributyl phosphate 2-ethoxyethanol 2,4,5-trichlorophenol 2,4,6-trichlorophenol bis(2-ethylhexyl)phthalate butylbenzylphthalate di-n-butylphthalate di-n-octylphthalate 2-methylphenol 3&4-methylphenol total methylphenols 2-nitrophenol hexachlorobutadiene hexachloroethane 1,2-dichlorobenzene	UJ	B26JK6, B26CD0	Non-represented MS/MSD and LCS data
1,2,4-trichlorobenze acenaphthene fluoranthene naphthalene 2-chlorophenol n-nitroso-di-n-dipropylamine	UJ	B26JK6, B26CD0	Low LCS, MS and MSD recoveries

Comments: None

Appendix 3

Annotated Laboratory Reports

C Farm WMC 2010-2
Data Summary Report

Sample Group: 20100556
Core Number: C7676
Customer Sample ID: B26JK6
Sample Depth: Surface

Sample#	R	A#	CAS #	Analyte		Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S10V001606			%WATERA	%WATER-APD		%	n/a	n/a	3.040	n/a	n/a	n/a	n/a	0.01000	n/a	
S10V001606			57-12-5	Cyanide		ug/g	109	<0.0370	<2.65	<2.64	n/a	n/a	98.1	2.65	n/a	U
S10V001606			7439-97-6	Mercury		ug/g	99.3	<1.00E-04	<9.39E-03	n/a	n/a	n/a	n/a	9.39E-03	n/a	U
S10V001606			PH	pH		unitless	n/a	n/a	8.34	n/a	n/a	n/a	n/a	0.0100	n/a	
S10V001606			12597-04-5	Sulfide		ug/g	95.4	<0.180	27.2	n/a	n/a	n/a	n/a	7.19	n/a	B
S10V001609		WV	14133-76-7	Technetium-99		ug/g	110	<3.00E-06	<2.84E-06	n/a	n/a	n/a	n/a	2.84E-06	n/a	U
S10V001610		W	14762-75-5	Carbon-14		uCi/g	96.3	<3.46E-07	<1.25E-06	n/a	n/a	n/a	n/a	1.25E-06	n/a	U
S10V001610		W	10028-17-8	Tritium		uCi/g	91.3	1.54E-06	<1.96E-06	n/a	n/a	n/a	n/a	1.96E-06	n/a	U
S10V001611		A	7440-36-0	Antimony		ug/g	102	<2.00E-04	0.229	n/a	n/a	n/a	n/a	9.29E-03	n/a	
S10V001612		O	120-82-1	1,2,4-Trichlorobenzene	UJ	ug/kg	60.0	<77.4	<75.9	n/a	n/a	n/a	n/a	75.9	n/a	U
S10V001612		O	95-50-1	1,2-Dichlorobenzene	UJ	ug/kg	n/a	<101	<98.8	n/a	n/a	n/a	n/a	98.8	n/a	U
S10V001612		O	121-14-2	2,4-Dinitrotoluene		ug/kg	72.6	<38.1	<37.4	n/a	n/a	n/a	n/a	37.4	n/a	U
S10V001612		O	95-95-4	2,4,5-Trichlorophenol	UJ	ug/kg	n/a	<44.0	<43.2	n/a	n/a	n/a	n/a	43.2	n/a	U
S10V001612		O	88-06-2	2,4,6-Trichlorophenol	UJ	ug/kg	n/a	<49.5	<48.6	n/a	n/a	n/a	n/a	48.6	n/a	U
S10V001612		O	95-48-7	2-Methylphenol	UJ	ug/kg	n/a	<57.5	<56.4	n/a	n/a	n/a	n/a	56.4	n/a	U
S10V001612		O	88-75-5	2-Nitrophenol	UJ	ug/kg	n/a	<53.7	<52.7	n/a	n/a	n/a	n/a	52.7	n/a	U
S10V001612		O	65794-96-9	3 &4 Methylphenol	UJ	ug/kg	n/a	<51.4	<50.4	n/a	n/a	n/a	n/a	50.4	n/a	U
S10V001612		O	83-32-9	Acenaphthene	UJ	ug/kg	64.9	<17.6	<17.3	n/a	n/a	n/a	n/a	17.3	n/a	U
S10V001612		O	56-55-3	Benzo(a)anthracene		ug/kg	n/a	<37.8	<37.1	n/a	n/a	n/a	n/a	37.1	n/a	U
S10V001612		O	205-99-2	Benzo(b)fluoranthene		ug/kg	n/a	<48.9	<48.0	n/a	n/a	n/a	n/a	48.0	n/a	U
S10V001612		O	50-32-8	Benzo(a)pyrene		ug/kg	n/a	<41.2	<40.4	n/a	n/a	n/a	n/a	40.4	n/a	U
S10V001612		O	117-81-7	Bis(2-ethylhexyl) phthalate	UJ	ug/kg	n/a	<590	<579	n/a	n/a	n/a	n/a	579	n/a	U
S10V001612		O	207-08-9	Benzo(k)fluoranthene		ug/kg	n/a	<39.1	<38.4	n/a	n/a	n/a	n/a	38.4	n/a	U
S10V001612		O	85-68-7	Butylbenzylphthalate	UJ	ug/kg	n/a	<50.0	<49.1	n/a	n/a	n/a	n/a	49.1	n/a	U
S10V001612		O	59-50-7	4-Chloro-3-methylphenol		ug/kg	69.7	<43.2	<42.4	n/a	n/a	n/a	n/a	42.4	n/a	U
S10V001612		O	95-57-8	2-Chlorophenol	UJ	ug/kg	64.7	<66.5	<65.2	n/a	n/a	n/a	n/a	65.2	n/a	U
S10V001612		O	218-01-9	Chrysene		ug/kg	n/a	<81.4	<79.9	n/a	n/a	n/a	n/a	79.9	n/a	U
S10V001612		O	53-70-3	Dibenz[a,h]anthracene		ug/kg	n/a	<51.1	<50.1	n/a	n/a	n/a	n/a	50.1	n/a	U

NA = Not Analyzed, ND = Not Detected

B - Blank Contamination
U - Less Than Detection Limit

B - Estimated
J - Estimated

LS
6-23-2011

N - MS/MSD Outside Range
C - Blank Contamination

M - RPD Outside Range

C Farm WMC 2010-2
Data Summary Report

Sample Group: 20100556
Core Number: C7676
Customer Sample ID: B26JK6
Sample Depth: Surface

Sample#	R	A#	CAS #	Analyte		Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S10V001612		O	84-74-2	Di-n-butylphthalate	UJ	ug/kg	n/a	<562	<552	n/a	n/a	n/a	n/a	552	n/a	U
S10V001612		O	117-84-0	Di-n-octylphthalate	UJ	ug/kg	n/a	<47.7	<46.8	n/a	n/a	n/a	n/a	46.8	n/a	U
S10V001612		O	621-64-7	N-Nitroso-di-n-dipropylamine	UJ	ug/kg	61.9	<58.1	<57.0	n/a	n/a	n/a	n/a	57.0	n/a	U
S10V001612		O	206-44-0	Fluoranthene	UJ	ug/kg	n/a	<35.4	<34.7	n/a	n/a	n/a	n/a	34.7	n/a	U
S10V001612		O	87-68-3	Hexachlorobutadiene	UJ	ug/kg	n/a	<69.7	<68.4	n/a	n/a	n/a	n/a	68.4	n/a	U
S10V001612		O	67-72-1	Hexachloroethane	UJ	ug/kg	n/a	<112	<110	n/a	n/a	n/a	n/a	110	n/a	U
S10V001612		O	193-39-5	Indeno(1,2,3-cd)pyrene		ug/kg	n/a	<51.0	<50.0	n/a	n/a	n/a	n/a	50.0	n/a	U
S10V001612		O	91-20-3	Naphthalene	UJ	ug/kg	n/a	<62.6	<61.4	n/a	n/a	n/a	n/a	61.4	n/a	U
S10V001612		O	98-95-3	Nitrobenzene		ug/kg	n/a	<64.6	<63.4	n/a	n/a	n/a	n/a	63.4	n/a	U
S10V001612		O	129-00-0	Pyrene		ug/kg	78.0	<62.9	<61.7	n/a	n/a	n/a	n/a	61.7	n/a	U
S10V001612		O	110-86-1	Pyridine	UJ	ug/kg	n/a	<65.0	<63.8	n/a	n/a	n/a	n/a	63.8	n/a	U
S10V001612		O	126-73-8	Tributyl phosphate	UJ	ug/kg	n/a	<108	<106	n/a	n/a	n/a	n/a	106	n/a	U
S10V001612		O	128-37-0	BHT		ug/kg	n/a	<236	<231	n/a	n/a	n/a	n/a	231	n/a	U
S10V001612		O	110-80-5	2-Ethoxyethanol	UJ	ug/kg	n/a	<182	<179	n/a	n/a	n/a	n/a	179	n/a	U
S10V001612		O	1319-77-3	Total Methylphenols	UJ	ug/kg	n/a	<107	<105	n/a	n/a	n/a	n/a	105	n/a	U
S10V001612		O	108-94-1	Cyclohexanone	UJ	ug/kg	n/a	<558	<548	n/a	n/a	n/a	n/a	548	n/a	U
S10V001612		O	59-89-2	N-Nitrosomorpholine	UJ	ug/kg	n/a	<191	<188	n/a	n/a	n/a	n/a	188	n/a	U
S10V001612		O	78-83-1	Isobutanol	UJ	ug/kg	n/a	n/a	<452	n/a	n/a	n/a	n/a	452	n/a	U
S10V001613		W	16984-48-8	Fluoride		ug/g	102	<1.61E-03	0.402	n/a	n/a	n/a	n/a	0.0161	n/a	
S10V001613		W	GLYCOLAT	Glycolate		ug/g	101	<9.37E-03	<0.0936	n/a	n/a	n/a	n/a	0.0936	n/a	U
S10V001613		W	71-50-1	Acetate		ug/g	98.5	<6.04E-03	0.142	n/a	n/a	n/a	n/a	0.0603	n/a	B
S10V001613		W	FORMATE	Formate		ug/g	102	<4.67E-03	0.139	n/a	n/a	n/a	n/a	0.0466	n/a	B
S10V001613		W	16887-00-6	Chloride		ug/g	99.2	<9.98E-03	1.42	n/a	n/a	n/a	n/a	0.0997	n/a	
S10V001613		W	14797-65-0	Nitrite		ug/g	99.6	0.0421	0.900	n/a	n/a	n/a	n/a	0.192	n/a	CB
S10V001613		W	14808-79-8	Sulfate		ug/g	102	<0.0187	4.75	n/a	n/a	n/a	n/a	0.187	n/a	
S10V001613		W	338-70-5	Oxalate		ug/g	100	<0.0231	0.628	n/a	n/a	n/a	n/a	0.231	n/a	B
S10V001613		W	24959-67-9	Bromide		ug/g	97.3	<0.0580	<0.579	n/a	n/a	n/a	n/a	0.579	n/a	U
S10V001613		W	14797-55-8	Nitrate		ug/g	98.6	<0.0208	8.51	n/a	n/a	n/a	n/a	0.208	n/a	

NA = Not Analyzed, ND = Not Detected

B - Blank Contamination
U - Less Than Detection Limit

B - Estimated
J - Estimated

LS
6-23-2011

N - MS/MSD Outside Range
C - Blank Contamination

M - RPD Outside Range

C Farm WMC 2010-2
Data Summary Report

Sample Group: 20100556
Core Number: C7676
Customer Sample ID: B26CD0
Sample Depth: 38-40ft

Sample#	R	A#	CAS #	Analyte		Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
~~S10V001764~~			~~%WATERA~~	~~%WATER-APD~~		~~%~~	~~n/a~~	~~n/a~~	~~12.42~~	~~n/a~~	~~n/a~~	~~n/a~~	~~n/a~~	~~0.01000~~	~~n/a~~	
S10V001764			57-12-5	Cyanide		ug/g	109	<0.0370	<2.37	n/a	n/a	n/a	n/a	2.37	n/a	U
S10V001764			7439-97-6	Mercury		ug/g	102	<1.00E-04	<9.88E-03	n/a	n/a	n/a	n/a	9.88E-03	n/a	U
S10V001764			PH	pH		unitless	n/a	n/a	9.14	n/a	n/a	n/a	n/a	0.0100	n/a	
S10V001764			12597-04-5	Sulfide		ug/g	99.6	<0.180	22.1	n/a	n/a	n/a	n/a	7.15	n/a	B
S10V001766			13966-00-2	Potassium-40		uCi/g	n/a	n/a	1.25E-05	n/a	n/a	n/a	n/a	7.46E-06	39.06	
S10V001766			10198-40-0	Cobalt-60		uCi/g	97.0	<2.77E-07	<3.71E-07	n/a	n/a	n/a	n/a	3.71E-07	n/a	U
S10V001766			14234-35-6	Antimony-125		uCi/g	n/a	<8.11E-07	<9.53E-07	n/a	n/a	n/a	n/a	9.53E-07	n/a	U
S10V001766			10045-97-3	Cesium-137		uCi/g	104	<4.00E-07	<4.95E-07	n/a	n/a	n/a	n/a	4.95E-07	n/a	U
S10V001766			14683-23-9	Europium-152		uCi/g	n/a	<1.48E-06	<1.56E-06	n/a	n/a	n/a	n/a	1.56E-06	n/a	U
S10V001766			15585-10-1	Europium-154		uCi/g	n/a	<8.77E-07	<1.15E-06	n/a	n/a	n/a	n/a	1.15E-06	n/a	U
S10V001766			14391-16-3	Europium-155		uCi/g	n/a	<7.81E-07	<9.76E-07	n/a	n/a	n/a	n/a	9.76E-07	n/a	U
S10V001766			14274-82-9	Thorium-228		uCi/g	n/a	<1.85E-05	<2.24E-05	n/a	n/a	n/a	n/a	2.24E-05	n/a	U
S10V001766			15065-10-8	Thorium-234		uCi/g	n/a	<1.31E-05	<1.83E-05	n/a	n/a	n/a	n/a	1.83E-05	n/a	U
S10V001766			15046-84-1	Iodine-129		uCi/g	115	<1.59E-07	<1.65E-07	n/a	n/a	n/a	n/a	1.65E-07	n/a	U
S10V001767		WV	14133-76-7	Technetium-99		ug/g	110	<3.00E-06	7.14E-06	n/a	n/a	n/a	n/a	3.51E-06	n/a	B
S10V001768		W	14762-75-5	Carbon-14		uCi/g	92.4	<1.33E-07	<1.35E-06	<1.34E-06	n/a	n/a	94.7	1.35E-06	n/a	U
~~S10V001768~~		~~W~~	~~10028-17-8~~	~~Tritium~~		~~uCi/g~~	~~94.7~~	~~<4.95E-06~~	~~<4.59E-06~~	~~<4.43E-06~~	~~n/a~~	~~n/a~~	~~97.0~~	~~4.59E-06~~	~~n/a~~	~~U~~
S10V001770		O	120-82-1	1,2,4-Trichlorobenzene	UJ	ug/kg	60.0	<77.4	<76.6	n/a	n/a	n/a	n/a	76.6	n/a	U
S10V001770		O	95-50-1	1,2-Dichlorobenzene	UJ	ug/kg	n/a	<101	<99.7	n/a	n/a	n/a	n/a	99.7	n/a	U
S10V001770		O	121-14-2	2,4-Dinitrotoluene		ug/kg	72.6	<38.1	<37.7	n/a	n/a	n/a	n/a	37.7	n/a	U
S10V001770		O	95-95-4	2,4,5-Trichlorophenol	UJ	ug/kg	n/a	<44.0	<43.6	n/a	n/a	n/a	n/a	43.6	n/a	U
S10V001770		O	88-06-2	2,4,6-Trichlorophenol	UJ	ug/kg	n/a	<49.5	<49.0	n/a	n/a	n/a	n/a	49.0	n/a	U
S10V001770		O	95-48-7	2-Methylphenol	UJ	ug/kg	n/a	<57.5	<56.9	n/a	n/a	n/a	n/a	56.9	n/a	U
S10V001770		O	88-75-5	2-Nitrophenol	UJ	ug/kg	n/a	<53.7	<53.2	n/a	n/a	n/a	n/a	53.2	n/a	U
S10V001770		O	65794-96-9	3 &4 Methylphenol	UJ	ug/kg	n/a	<51.4	<50.9	n/a	n/a	n/a	n/a	50.9	n/a	U
S10V001770		O	83-32-9	Acenaphthene	UJ	ug/kg	64.9	<17.6	<17.4	n/a	n/a	n/a	n/a	17.4	n/a	U
S10V001770		O	56-55-3	Benzo(a)anthracene		ug/kg	n/a	<37.8	<37.4	n/a	n/a	n/a	n/a	37.4	n/a	U

NA = Not Analyzed, ND = Not Detected

B - Blank Contamination
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B - Estimated
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LS
6-23-2011

N - MS/MSD Outside Range
C - Blank Contamination

M - RPD Outside Range

C Farm WMC 2010-2
Data Summary Report

Sample Group: 20100556
Core Number: C7676
Customer Sample ID: B26CD0
Sample Depth: 38-40ft

Sample#	R	A#	CAS #	Analyte		Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S10V001770		O	205-99-2	Benzo(b)fluoranthene		ug/kg	n/a	<48.9	<48.4	n/a	n/a	n/a	n/a	48.4	n/a	U
S10V001770		O	50-32-8	Benzo(a)pyrene		ug/kg	n/a	<41.2	<40.8	n/a	n/a	n/a	n/a	40.8	n/a	U
S10V001770		O	117-81-7	Bis(2-ethylhexyl) phthalate	UJ	ug/kg	n/a	<590	<584	n/a	n/a	n/a	n/a	584	n/a	U
S10V001770		O	207-08-9	Benzo(k)fluoranthene		ug/kg	n/a	<39.1	<38.7	n/a	n/a	n/a	n/a	38.7	n/a	U
S10V001770		O	85-68-7	Butylbenzylphthalate	UJ	ug/kg	n/a	<50.0	<49.5	n/a	n/a	n/a	n/a	49.5	n/a	U
S10V001770		O	59-50-7	4-Chloro-3-methylphenol		ug/kg	69.7	<43.2	<42.8	n/a	n/a	n/a	n/a	42.8	n/a	U
S10V001770		O	95-57-8	2-Chlorophenol	UJ	ug/kg	64.7	<66.5	<65.8	n/a	n/a	n/a	n/a	65.8	n/a	U
S10V001770		O	218-01-9	Chrysene		ug/kg	n/a	<81.4	<80.6	n/a	n/a	n/a	n/a	80.6	n/a	U
S10V001770		O	53-70-3	Dibenz[a,h]anthracene		ug/kg	n/a	<51.1	<50.6	n/a	n/a	n/a	n/a	50.6	n/a	U
S10V001770		O	84-74-2	Di-n-butylphthalate	UJ	ug/kg	n/a	<562	<557	n/a	n/a	n/a	n/a	557	n/a	U
S10V001770		O	117-84-0	Di-n-octylphthalate	UJ	ug/kg	n/a	<47.7	<47.2	n/a	n/a	n/a	n/a	47.2	n/a	U
S10V001770		O	621-64-7	N-Nitroso-di-n-dipropylamine	UJ	ug/kg	61.9	<58.1	<57.5	n/a	n/a	n/a	n/a	57.5	n/a	U
S10V001770		O	206-44-0	Fluoranthene	UJ	ug/kg	n/a	<35.4	<35.1	n/a	n/a	n/a	n/a	35.1	n/a	U
S10V001770		O	87-68-3	Hexachlorobutadiene	UJ	ug/kg	n/a	<69.7	<69.0	n/a	n/a	n/a	n/a	69.0	n/a	U
S10V001770		O	67-72-1	Hexachloroethane	UJ	ug/kg	n/a	<112	<111	n/a	n/a	n/a	n/a	111	n/a	U
S10V001770		O	193-39-5	Indeno(1,2,3-cd)pyrene		ug/kg	n/a	<51.0	<50.5	n/a	n/a	n/a	n/a	50.5	n/a	U
S10V001770		O	91-20-3	Naphthalene	UJ	ug/kg	n/a	<62.6	<62.0	n/a	n/a	n/a	n/a	62.0	n/a	U
S10V001770		O	98-95-3	Nitrobenzene		ug/kg	n/a	<64.6	<64.0	n/a	n/a	n/a	n/a	64.0	n/a	U
S10V001770		O	129-00-0	Pyrene		ug/kg	78.0	<62.9	<62.3	n/a	n/a	n/a	n/a	62.3	n/a	U
S10V001770		O	110-86-1	Pyridine	UJ	ug/kg	n/a	<65.0	<64.4	n/a	n/a	n/a	n/a	64.4	n/a	U
S10V001770		O	126-73-8	Tributyl phosphate	UJ	ug/kg	n/a	<108	<107	n/a	n/a	n/a	n/a	107	n/a	U
S10V001770		O	128-37-0	BHT		ug/kg	n/a	<236	<233	n/a	n/a	n/a	n/a	233	n/a	U
S10V001770		O	110-80-5	2-Ethoxyethanol	UJ	ug/kg	n/a	<182	<181	n/a	n/a	n/a	n/a	181	n/a	U
S10V001770		O	1319-77-3	Total Methylphenols	UJ	ug/kg	n/a	<107	<106	n/a	n/a	n/a	n/a	106	n/a	U
S10V001770		O	108-94-1	Cyclohexanone	UJ	ug/kg	n/a	<558	<553	n/a	n/a	n/a	n/a	553	n/a	U
S10V001770		O	59-89-2	N-Nitrosomorpholine	UJ	ug/kg	n/a	<191	<189	n/a	n/a	n/a	n/a	189	n/a	U
S10V001770		O	78-83-1	Isobutanol	UJ	ug/kg	n/a	n/a	<456	n/a	n/a	n/a	n/a	456	n/a	U
~~S10V001771~~		~~W~~	~~16984-48-8~~	~~Fluoride~~		~~ug/g~~	~~100~~	~~<1.61E-03~~	~~1.32~~	~~n/a~~	~~n/a~~	~~n/a~~	~~n/a~~	~~0.0161~~	~~n/a~~	

NA = Not Analyzed, ND = Not Detected

B - Blank Contamination
U - Less Than Detection Limit

B - Estimated
J - Estimated

LS
6-23-2011

N - MS/MSD Outside Range
C - Blank Contamination

M - RPD Outside Range

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

222-S LABORATORY

FINAL ANALYTICAL REPORT FOR SAMPLES FROM WASTE MANAGEMENT AREA C FOR CORE HOLE C7676 IN SUPPORT OF RCRA SOIL CHARACTERIZATION

1.0 INTRODUCTION

This final report presents the results for the samples taken from Waste Management Area C between July 19, 2010 and July 29, 2010. The samples were analyzed in accordance with RPP-PLAN-40564, *Field Sampling and Analysis Plan for Sites P and L at Waste Management Area C* (FSAP); RPP-PLAN-38777, *Sampling and Analysis Plan for Phase 2 Characterization of Vadose Zone Soil in Waste Management Area C* (SAP); ATL-MP-1011, *ATL Quality Assurance Project Plan for 222-S Laboratory* (QAPP); SW-846, *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods*; and the additional guidance given by the client's point of contact.

Because the 222-S Laboratory facility was designed to analyze hazardous and complex tank waste samples, most SW-846 test methods performed at the 222-S Laboratory contain deviations that are listed in an appendix in the analytical procedures. All other known deviations or variances from SW-846 are documented in this narrative. The following attachments are included in this report.

Attachment 1	Data Summary Report
Attachment 2	Sample Breakdown Diagrams
Attachment 3	Holding Time Report
Attachment 4	Additional Organic Analyses QC Results
Attachment 5	Tentatively Identified Compounds (TIC) for Organic Analyses
Attachment 6	Geological Report
Attachment 7	Characterization Change Notices (CCN) and Correspondence
Attachment 8	Receipt Paperwork
Appendix A	Analytical Report for Analysis Performed at the Waste Sampling and Characterization Facility (WSCF) - Metals Analysis
Appendix B	Analytical Report for Analysis Performed at WSCF - Organic Analysis

2.0 SAMPLE RECEIPT AND BREAKDOWN

2.1 SAMPLE RECEIPT

A total of eight core intervals and two surface grab samples from core hole C7676 along with seven field blanks and six trip blanks were received by the 222-S Laboratory between July 19, 2010 and July 29, 2010. The samples were delivered in a cooler with ice or, in the case of the volatile organic soil samples, in a freezer. The temperatures of the temperature blanks were measured and recorded on the sample receipt check list and/or the chain of custody form.

The chain of custody requested that conductivity be analyzed on the soil samples. Since this analysis was not listed in the SAP or FSAP, it was not performed. The client has indicated that this analysis may be performed after a CCN is issued to cover the change to the FSAP (see Attachment 7).

2.2 SAMPLE BREAKDOWN

The laboratory received each core interval as a set of volatile organic analysis (VOA) samples and three liner samples when complete core recovery was obtained. The VOA samples were made from the shoe section of each core interval following SW-846 5035. The liner samples from each core interval were extruded, described, and composited by the Washington River Protection Solutions, Inc. (WRPS) geologist. The geologist's report is included in Attachment 6. Provided sufficient samples existed, the composite for each core interval was analyzed as described in the SAP and FSAP. Core interval I001 had less than full recovery (see Attachment 2 and Attachment 8) and was combined with core interval I002 to form the composite. Additionally, core interval I004 had less than full recovery and was combined with I005 to form the 14-ft to 18-ft composite (see Attachment 2 and Attachment 8). All intervals were extruded and composited in the normal manner except for the "B" liner from core interval I002. This interval was combined with the shoe and delivered to the laboratory in a glass jar. The surface samples were received as a single grab sample in a 500-mL jar and a set of VOA samples.

WRPS shipped subsamples of the composites to Test America Laboratories, Inc. (TAL) in St Louis, Missouri and Knoxville, Tennessee to be analyzed for dibutyl and monobutyl phosphate, total petroleum hydrocarbons (diesel and gasoline range), ethylene glycol, chlorinated pesticides, and polychlorinated biphenyls (Aroclors and congeners). TAL subsequently subcontracted the monobutyl and dibutyl phosphate analyses to Southwest Research Institute. The results of these analyses will be released in the final WRPS report.

3.0 ANALYTICAL RESULTS SUMMARY

The Data Summary Report (Attachment 1) presents the final analytical results for those analytes requested in the SAP and FSAP. Secondary analytes are only reported if detected. The TIC from gas chromatography-mass spectrometry (GC/MS) analysis of semivolatile organic compounds (SVOC) is presented in Attachment 5. In addition to the required isotopes, all isotopes with positive gamma energy analysis (GEA) results were reported.

The "Det Limit" column in Attachment 1 contains the method detection limit (MDL) for non-radionuclide analyses, or the minimum detectable activity for radionuclides.

In Attachment 1, the column labeled "A#" indicates the aliquot class or the method used for sample preparation before analysis. For solid samples, the aliquot classes are defined as follows:

"A" indicates samples that were prepared by SW-846 3050B.

"E" indicates samples that were prepared by a strong acid digest.

"O" indicates samples that were extracted for organic analysis.

"S" indicates samples that were prepared by a distillation.

"W" indicates samples that were prepared by a standard water digest.

"WV" indicates samples that were prepared by a Vadose water digest.

The "Qual Flags" column in Attachment 1 contains data qualifier flags from FEAD CP-15383, *Common Requirements of the Format for Electronic Analytical Data,* that are defined as follows:

"B" for organic or radiochemistry results is used to indicate that the analyte was detected in the method or preparation blank and in the sample.

"B" for inorganic results is used to indicate that the reported result should be considered an estimate because it is below the quantitation limit. The "B" flag is applied to sample concentrations that are greater than the MDL but less than the quantitation limit.

"C" for inorganic results is used to indicate that the analyte was detected in the method or preparation blank and in the sample, and the result for the blank was greater than or equal to 20% of the reported sample result.

"J" for organic results is used to indicate that the reported result should be considered an estimate because it is below the quantitation limit. The "J" flag is applied to sample concentrations that are greater than the MDL but less than the quantitation limit.

"T" for CG/MS results is used to indicate the matrix spike (MS) recovery or matrix spike duplicate (MSD) recovery is outside control limits.

"U" for all results is used to indicate that the reported result is less than the calculated detection limit.

"N" for all but GC/MS is used to indicate that the MS recovery or MSD recovery was outside of the specified range in the QAPP or SAP.

"N" for GC/MS is used to indicate a TIC which has been named.

"M" for inorganic results is used to indicate that the relative percent difference (RPD) between the sample and the duplicate is greater than 30%.

Manual calculations using rounded results from the Data Summary Report (Attachment 1) or result calculation forms may differ slightly from the actual results derived from the raw data.

Samples without a letter identifier in the "A#" column were analyzed directly with no separate preparation or with sample preparation performed as a part of the procedure steps.

3.1 SAMPLE DIGESTIONS

3.1.1 Radiochemistry Strong Acid Digestion

Strong acid digestions with a hot plate for the heat source were performed using a mixture of concentrated nitric and hydrochloric acids. For each digest, approximately 1 to 10 g of sample were digested depending on the analysis being performed. The digestate was then filtered and diluted to a final volume. This digestion was used for all radiochemical analyses except ^{3}H, ^{14}C, and ^{129}I. This digestion is a leach of the acid soluble species only.

3.1.2 SW-846 3050B - Acid Digestion-Heating Block

This acid digestion follows SW-846 3050B using a heating block and nitric and hydrochloric acids. An aliquot of approximately 5 g of sample was digested. All heating-block digestions were filtered and diluted to a final volume of 50 mL. In soil, this digestion is a leach of the acid soluble species only. This digestion was used for all inductively coupled plasma/mass spectrometry (ICP/MS) and inductively coupled plasma/atomic emission spectroscopy (ICP/AES) analyses except for ^{99}Tc and isotopic tin (^{117}Sn and ^{126}Sn) analyses. The digestion is modified for the ^{99}Tc analysis by using only nitric acid. This is done to eliminate the possibility of the formation a zinc-chlorine ion pair of mass 99. The laboratory believes this ion, when present, is responsible for low level false positives. A separate digestion for antimony was prepared using additional hydrochloric acid, as recommended in SW-846.

3.1.3 Water Digestion

A water digestion or leach was prepared for the anions by ion chromatography, ^{14}C, and ^{3}H analyses using approximately 0.25 to 4 g of sample diluted to 25 mL. Sonification was used, and the leachate was then filtered. In soil, this digestion is a leach of the water soluble species only.

3.1.4 Vadose Water Digestion

A 70-g sample of soil was leached using a ratio of one part water to one part soil. To maintain a one-to-one ratio, the amount of water added to the sample was adjusted based on the percent moisture of the soil. The slurries were placed on a shaker table for about 1 hour. They were then transferred to a centrifuge tube and centrifuged at 4,000 rpm for 30 minutes. An unfiltered aliquot was set aside for alkalinity analysis. The remainder was filtered using a disposable vacuum filtration system. The filtrates were transferred to a clean bottle and then analyzed for ^{99}Tc by ICP/MS analysis.

3.2 INORGANIC ANALYSES

3.2.1 Cyanide

The cyanide analysis by distillation and spectrophotometry was performed on the grab samples and liner composite samples. All analyses met the SW-846 holding time of 14 days. There was no required reporting limit in the SAP for cyanide. The target detection limit was 0.5 μg/g, which is lower than what the current laboratory procedure can achieve. There were no notable quality control (QC) issues with these batches, and all QC requirements in the FSAP, SAP, and QAPP were met.

3.2.2 Sulfide

Sulfide analysis by distillation and ion selective electrode was performed on the grab samples and liner composite samples. All analyses met the SW-846 holding time of 7 days. There was no required reporting limit in the SAP for sulfide. The target detection limit was met. All sample

results had adjusted MDLs of approximately 7 µg/g. There were no notable issues with these batches, and all QC requirements in the FSAP, SAP, and QAPP were met.

3.2.3 pH Analysis

The pH analysis was performed on the grab samples and liner composite samples. These analyses met all QC requirements in the FSAP, SAP, and QAPP. The FSAP lists a pH holding time requirement of "as soon as possible." All pH measurements were taken after the water leach was performed. The sampling to analysis time varied from 3.2 to 7.5 days (see Attachment 3). The sample extrusion/compositing process was basically the cause for the delay in the pH analysis. There is no correlation between pH results and days to analysis, and the results fall within an expected range for alkaline soils. This indicates that the variation in time has no apparent effect on the results.

3.2.4 Mercury

Analysis for Hg by cold-vapor graphic furnace/atomic absorption was performed on the grab samples and liner composite samples. All analyses met the holding time of 28 days. This analysis met the required and target detection limits.

Batch 21197: Mercury was detected in the preparation blanks at a level below the quantitation limit and slightly above the MDL. Since mercury was not detected in the samples, reanalysis was not required.

Batches 20849 and 20982: There were no notable issues with these batches, and all QC requirements in the FSAP, SAP, and QAPP were met.

3.2.5 Ion Chromatography – Ammonium

Analysis for ammonium was performed using a distillation preparation of the grab samples and the liner composite samples. There is no regulatory holding time limit promulgated for ammonium in soil. The SAP lists an administrative holding time of 7 days. The laboratory believes that after distillation and preservation, the holding time is 28 days based on U.S. Environmental Protection Agency drinking water and waste water holding times for preserved samples. All samples met these holding times. These analyses met the target detection limit listed in the SAP. There was no required reporting limit in the SAP or FSAP for ammonium.

Batch 20930: The RPD between the duplicate and the sample exceeded the required 30%. Since the sample result for this analyte was below the quantitation limit, the criterion does not apply and reanalysis is not required. Ammonium was detected in the preparation blanks at a level below the quantitation limit and above the MDL. Ammonium was also detected in the samples at a similar level; these results have been flagged with a "C". Since all results were below the quantitation limit, reanalysis was not required.

Batches 21010 and 21124: Ammonium was detected in the preparation blanks at a level below the quantitation limit and above the MDL. Ammonium was also detected in the samples at a

similar level; these results have been flagged with a “C”. Since all results were below the quantitation limit, reanalysis was not required.

3.2.6 Ion Chromatography – Anions and Small Organic Acids

Ion chromatography analysis was performed on all grab samples and liner composite samples. The laboratory met all of the required and target detection limits. All analyses were within the applicable SW-846 holding times. The sample spikes used for the standard water digestions are predigestion spikes.

Batch 21522: Nitrite was detected in the preparation blanks at a level below the quantitation limit and above the MDL. Nitrite was also detected in three of the samples at a similar level; these results have been flagged with a “C”. Since all results were below the quantitation limit, reanalysis was not required. The MS recovery for phosphate exceeded the ±25% requirement at 63%. The post-digestion spike was recovered at 85% indicating that the low MS recovery may be due to matrix interference. The client agreed (see Attachment 7). The results were reported with an “N” flag applied to each phosphate result in this batch.

Batch 22189: The RPD for nitrite was above the required 30%; however, the result was below the quantitation limit and the criterion does not apply.

3.2.7 Inductively Coupled Plasma/Atomic Emission Spectroscopy

The ICP/AES analysis was performed on an acid-digest (SW-846 3050B) of all grab samples and liner composite samples. The ICP/AES analysis was unable to obtain the required detection limit for antimony, arsenic, cadmium, lead, selenium, silver, and thallium for the soil sample. These elements have been reported from separate ICP/MS analyses. Total uranium has not been reported by the ICP/AES analysis since it cannot meet the required detection limits in the SAP. The isotopic uranium analysis by ICP/MS met the required detection limit for ^{238}U, which is essentially total uranium. The overall data usability was not affected. For all other metals reported by ICP/AES, all target and required detection limits were met. SW-846 lists the holding time for ICP/AES metals as 6 months. All analyses met the holding times.

Batch 23451: The interference check standard-A (ICSA) produced positive results for cobalt and manganese, which are not contained in this standard. This could indicate a positive interference. However, since in the ICSAB these elements recovered at 93%, there appears to be no positive interference. The ICSAB produced a result above the quantitation limit for neodymium. This indicates that spectral interference was occurring. Neodymium results in the sample were not reported due to the high probability that they were the result of this interference. A low level of iron was detected in the preparation blank, but reanalysis was not required since these levels were less than 5% of the lowest sample result.

The MS recoveries for aluminum, calcium, iron, magnesium, potassium, phosphorous, sodium, silicon, and titanium exceeded the ±25% requirement in the FSAP and SAP. Since the sample results for these elements exceeded the MS level by more than four times, this criterion does not apply.

The MS recovery for cerium and zirconium exceeded the ±25% requirement in the SAP and FSAP. For zirconium, the laboratory believes this was due to matrix interference. At 2% recovery, cerium does not appear to have been in the spike solution used. Reanalysis was not required since these are secondary elements. These results have been flagged with an “N”.

The MS recovery for barium exceeded the ±25% requirement at 133%. The post-digestion spike was recovered at 94%. A second sample was spiked from core hole C7676 with similar results (137%). This indicates that the high MS recovery may be due to matrix interference. The client agreed (see Attachment 7). The results were reported with an “N” flag applied to each result in this batch.

The RPD between the sample and the duplicate exceeded the ±30% requirement in the SAP for silicon. The laboratory believes this was due to matrix interference. Reanalysis was not required since this is secondary element. It should be noted that silicon is not listed with other elements in SW-846 3050B, section 1.1, under “Scope and Application” for the method and does not perform consistently when using this digest. The silicon results have been flagged with an “M”.

The opening and closing low level standard (LLS) for zinc was recovered outside the required ±30% at 66%. This could indicate a low bias for results near the LLS level. However, since the zinc results were 14 to 23 times the LLS level, the data quality was not affected. The LLS potassium was recovered outside the ±30% requirement at 149%. However, since the potassium results were 14 to 30 times the LLS level, the data quality was not affected.

Batch 24077: The ICSA produced positive results for manganese, which are not contained in this standard. This could indicate a positive interference. However, since in the ICSAB this element recovered at 92%, there appears to no positive interference. The ICSAB produced results above the quantitation limit for neodymium. This indicates that spectral interference was occurring. Neodymium results were not reported due to the high probability that they were the result of this interference. A low level of iron was detected in the preparation blank, but reanalysis was not required since these levels were less than 5% of the lowest sample result.

The MS recoveries for aluminum, calcium, iron, magnesium, manganese, potassium, phosphorous, sodium, silicon, and titanium exceeded the ±25% requirement in the FSAP and SAP. Since the sample results for these elements exceeded the MS level by more than four times, this criterion does not apply.

The MS recovery for cerium exceeded the ±25% requirement in the SAP and FSAP at 133%. The laboratory believes this was due to matrix interference. Reanalysis was not required since this is a secondary element. These results have been flagged with an “N”.

The MS recovery for barium exceeded the ±25% requirement at 133%. The post-digestion spike was recovered at 94%. A second sample was spiked from core hole C7676 with similar results (137%). This indicates that the high MS recovery may be due to matrix interference. The client agreed (see Attachment 7). The results were reported with an “N” flag.

3.2.8 Inductively Coupled Plasma/Mass Spectroscopy

The ICP/MS actinide and trace metal analyses were performed on the standard SW-846 3050 acid digestion of all grab samples and liner composite samples. The ICP/MS ^{126}Sn and ^{99}Tc analysis was performed on the sample digest without the addition of hydrochloric acid. Hydrochloric acid is not used for ^{99}Tc analysis because of the potential formation of a ZnCl ion pair with mass 99. ICP/MS trace metal analysis for antimony was performed on the SW-846 3050 digest with additional hydrochloric acid, which is required to keep antimony in the solution. In addition to these acid digests, ICP/MS ^{99}Tc analysis was performed on a Vadose water digest of all solid samples.

Direct is the most accurate type of calibration; however, standard material is not commercially available for all of the isotopes of interest. Concentrations of those isotopes without available standards are estimated based on the instrument's mass-response curve, which is generated by using the intensity/concentration relationship for the available isotope standards. Results estimated in this manner are designated "semi-quantitative."

Table 1. Inductively Coupled Plasma-Mass Spectroscopy Standards and Spikes

Standard Type	Analytes Analyzed
Initial calibration verification (nondigested)	^{232}Th, ^{235}U, ^{238}U, ^{237}Np, ^{99}Tc, ^{117}Sn
Acid digest standard (laboratory control standard)	^{232}Th, ^{235}U, ^{238}U, ^{237}Np, ^{99}Tc, ^{117}Sn
Predigest spike (MS)	^{232}Th, ^{235}U, ^{238}U, ^{237}Np, ^{99}Tc, ^{117}Sn
Post-digest spike	^{232}Th, ^{235}U, ^{238}U, ^{237}Np, ^{99}Tc, ^{117}Sn
No standard or spike of either type	^{126}Sn, ^{230}Th, ^{233}U, ^{234}U, ^{236}U

3.2.8.1 Technetium-99 and Tin-126

The required detection limit listed in the SAP for ^{99}Tc was met. The target detection limit for ^{99}Tc was not met. There were no required or target detection limits for ^{126}Sn listed in the SAP. The SAP lists the holding time for isotopic analytes as 6 months. All samples were analyzed within the holding time.

Because there is no available source for ^{126}Sn, ^{117}Sn is used to monitor the chemical recovery for this analysis. Though not specifically requested in the SAP, ^{117}Sn is reported for the laboratory control sample (LCS) and MS in order to demonstrate method accuracy and presence of possible matrix interference.

All sample results for ^{126}Sn were above the MDL and below the quantitation limit with one exception. Based on this, the laboratory suspects that a low level isobaric interference is present in these samples at mass 126. The laboratory believes the most likely suspect is ^{126}Te, but there are other possible candidates. One sample result was above the quantitation level for ^{126}Sn. Users of this data should be aware that all positive ^{126}Sn results in the report may be due to isobaric interference. The laboratory is currently evaluating how to quantify these possible isobaric interferences.

Batch 22109: The MS for ^{117}Sn was recovered below the ±25% requirement at 70%. Similar results have been observed in other batches; this appears to be a matrix interference issue. This

batch was not reanalyzed, but others have been with no improvement. Tin results should be considered biased low at these levels. All samples in the batch have been flagged with an "N". The laboratory is investigating changing the acid mixture used to perform low level ^{126}Sn analysis in hopes of improving spike recoveries. Tin-126was detected in one of the four continuing calibration blanks (CCBs) at slightly above the MDL. This blank bracketed the last three samples in the batch, which have been flagged with a "C". Since all results were below the quantification level, reanalysis was not required.

Batch 23853: Tin-126 was detected in two of the three CCBs at slightly above the MDL. All samples in this batch have been flagged with a "B". Since all results were below the quantification level, reanalysis was not required.

3.2.8.2 Technetium-99 (Vadose Water Digest)

The required and target detection limits listed in the SAP for ^{99}Tc were met. The SAP lists a holding time of 6 months for isotopic analytes. All analyses met this holding time.

Batch 23162: ^{99}Tc was detected in one of the three CCBs at slightly above the MDL. All sample results except two were below the MDL. The blank result was 5% of one these samples, which has been flagged with a "B". Since the sample and blank results were below the quantification level, reanalysis was not required. One sample result (B26CD2) was well above the quantification limit. The sample contained the known interferents chloride and cobalt, but at level that would not account for the ^{99}Tc result. Therefore, no qualifier was place on this result.

3.2.8.3 Actinides

The required and target detection limits were met for all isotopes and in all samples. The SAP lists the holding time for isotopic analytes as 6 months. All samples were analyzed within the holding time.

Batch 22039: The RPD for ^{237}Np and ^{233}U exceeded the 30% requirement in the SAP and FSAP. Since these results were below the quantitation limit, this criterion does not apply. The results for ^{232}Th and ^{236}U in the preparation blank were above the MDL and below the quantitation limit. One sample in this batch demonstrated a similar result for ^{236}U and has been flagged with a "B". Since all ^{236}U results were below the quantitation limit, reanalysis was not required. The sample result for ^{232}Th was more than 20 times the blank result. Neptunium-237 was detected in the initial calibration blank (ICB) at slightly above the MDL. Two samples demonstrated a similar result and have been flagged with "C". Since all ^{237}Np results were below the quantitation limit, reanalysis was not required.

Batch 23864: The percent difference for serial dilution of ^{235}U was above the 10% limit at +11.6%. This could indicate that there was negative bias in the more concentrated sample. This is an unusual result for Vadose samples, which are typically within the ±10% limit for ^{235}U. Since ^{232}Th and ^{238}U were within the ±10% limit, a dilution error can be ruled out. There is no requirement for reanalysis, and the result has been reported with this discussion. The result for ^{230}Th in the preparation blank was above the MDL and below the quantitation limit. All samples in this batch demonstrated a similar result for ^{230}Th and have been flagged with a "C". Since all ^{230}Th results were below the quantitation limit, reanalysis was not required.^{236}U was detected in

the ICB and one of the three CCBs at slightly above the MDL. One sample demonstrated a similar result and has been flagged with "C". Since all ^{236}U results were below the quantitation limit, reanalysis was not required.

3.2.8.4 Trace Metals

Antimony, arsenic, cadmium, lead, selenium, silver, and thallium were analyzed by ICP/MS to obtain the required detection limits in the SAP. Due to an extended room outage at 222S Laboratory, samples were sent WSCF Laboratory by the WRPS for analysis. Table 2 list the samples and analytes that were reported by WSCF. The WSCF report is included in Appendix A of this report. Except for the required detection limit for selenium, all required detection limits were met or the sample results were above the quantitation limit and the sample detection limit criteria do not apply. All target detection limits were met. All samples were analyzed within the holding time.

Table 2, ICPMS Analysis Performed At WSCF Laboratory

Client Sample No.	Sample Depth	ICP/MS Analysis Performed at WSCF
B26JK6	Surface	Arsenic, Cadmium, Lead, Selenium, Silver, Thallium
B26JK7	Surface Dup	Arsenic, Cadmium, Lead, Selenium, Silver, Thallium
B29612	5-9ft	Arsenic, Cadmium, Lead, Selenium, Silver, Thallium
B29613	14-18ft	Arsenic, Cadmium, Lead, Selenium, Silver, Thallium
B26CC4	10-12ft	Arsenic, Cadmium, Lead, Selenium, Silver, Thallium
B26CD0	38-40ft	Antimony, Selenium, Silver, Arsenic
B26CD2	128-130ft	Antimony, Selenium, Silver, Arsenic
B26CD4	157-159ft	Antimony, Selenium, Silver, Arsenic

Batch 21722: There were no notable issues with this antimony batch, and all QC requirements in the FSAP, SAP, and QAPP were met.

Batch 24036: The serial dilution for lead exceeded the 10% difference requirement in the QAPP at +23%. This would indicate that a low bias may exist in the more concentrated sample. This is an unusually result for vadose samples for lead, since lead does not typically fail the serial dilution test.

3.3 RADIOCHEMICAL ANALYSIS

The holding time listed in the SAP for radioactive isotopes is 6 months. The FSAP lists the holding time as "none." All radiochemical analyses met the 6-month holding time listed in the SAP. With the exception of the ^{14}C and ^{3}H analyses, tracers and spikes are added prior to the digestion.

3.3.1 Gamma Energy Analysis

Gamma energy analysis was performed directly on the grab samples and liner composite samples. The SAP requires the reporting of all isotopes with positive results above the minimum detectable activity (MDA); therefore, isotopes additional to those required in the SAP were reported when detected. The GEA analysis met all of the required detection limits in the SAP. The laboratory was unable to meet any of the target detection limits.

Batch 21198: The RPD for ^{40}K was above the 30% requirement in the FSAP. Since the counting error was > 15%, this criterion does not apply.

3.3.2 Strontium-89/90

Strontium-89/90 analysis was performed on the grab samples and liner composite samples. All of the sample analyses met the required and target detection limits. The FSAP and SAP requested ^{90}Sr, not $^{89/90}Sr$, be reported. The 222-S Laboratory only performs the latter analysis. Since the half-life for ^{89}Sr is approximately 51 days and ^{89}Sr has not been produced at Hanford for years, $^{89/90}Sr$ is essentially ^{90}Sr. There were no notable issues with these batches, and all QC requirements in the FSAP, SAP, and QAPP were met.

3.3.3 Tritium

The ^{3}H analysis by liquid scintillation counting (LSC) was performed on a water leach of all grab samples and liner composite samples. This method only measured the ^{3}H in the samples that could be dissolved in water. This analysis achieved the required and target detection limits in the FSAP.

Batch 21940: The preparation blank demonstrated a positive result below the quantitation limit. Since all sample results were below the MDA, reanalysis was not required.

Batch 23378: There were no notable issues with this batch, and all QC requirements in the FSAP, SAP, and QAPP were met.

3.3.4 Selenium-79

The ^{79}Se analysis by LSC was performed on the grab samples and liner composite samples. The analysis achieved the target detection limit in the FSAP. No required detection limit was listed. No standard is currently available for ^{79}Se, and a cold carrier is used to monitor recovery and is measured gravimetrically. The ^{14}C LSC curve is used to determine the ^{79}Se results since their energies are similar. Since both ^{63}Ni and ^{79}Se use a single digestion batch that is equally split prior to the separation step, the maximum tracer/carrier recovery is 50%.

Batch 23725: There were no notable issues with this batch, and all QC requirements in the FSAP, SAP, and QAPP were met.

Batch 24408: The preparation blank demonstrated a positive result below the quantitation limit with a larger counting error. Since all sample results were below the MDA, reanalysis was not required.

3.3.5 Carbon-14

The ^{14}C analysis by LSC was performed on a water leach of the grab samples and liner composite samples. The analysis achieved the required detection limit in the FSAP but exceeded the target detection limit of 1 piC/g. The MDA for the samples were between 1 pCi/g and 2 pCi/g. This analysis will only detect water soluble forms of ^{14}C.

Batch 21907: The RPD for ^{14}C was above the 30% requirement in the FSAP. Since the counting error was > 15%, this criterion does not apply.

Batch 22686: There were no notable issues with this batch, and all QC requirements in the FSAP, SAP, and QAPP were met.

3.3.6 Nickel-63

The ^{63}Ni analysis by LSC was performed on the grab samples and liner composite samples. The analysis achieved the required and target detection limits in the FSAP. Since both ^{63}Ni and ^{79}Se use a single digestion batch that is equally split prior to the separation step, the maximum trace/carrier recovery is 50%.

Batch 23724: There were no notable issues with this batch, and all QC requirements in the FSAP, SAP, and QAPP were met.

3.3.7 Iodine-129

Analysis for ^{129}I by low energy GEA was performed on an iodine-specific fusion digest of all grab samples and liner composite samples. The required and target detection limits in the SAP were met. There were no notable issues with these batches, and all QC requirements in the FSAP, SAP, and QAPP were met.

3.3.8 Americium-241, Curium-243/244, and Curium-242

Analysis for ^{241}Am, $^{243/244}Cm$, and ^{242}Cm by alpha energy analysis (AEA) was performed on the grab samples and liner composite samples. For this analysis, there were no notable issues with any batches and all QC requirements in the FSAP, SAP, and QAPP were met. The required and target detection limits in the SAP were met. The SAP and FSAP requested ^{243}Cm and ^{244}Cm be reported separately. Since it is not possible to resolve these individual isotopes when using AEA, these isotopes have been reported as $^{243/244}Cm$.

3.3.9 Plutonium-238 and Plutonium-239/240

Plutonium isotopic (^{238}Pu and $^{239/240}$Pu) analysis by AEA was performed on the grab samples and liner composite samples. For this analysis, there were no notable issues with any batches and all QC requirements in the FSAP, SAP, and QAPP were met. The required and target detection limits in the SAP were met.

3.4 ORGANIC ANALYSES

3.4.1 Volatile Organic Analysis

The VOA by GC/MS was performed on field samples by purge and trap. Field sampling methods, sample containers, and preservation methods followed SW-846 5035.The soil samples were delivered in a freezer in pre-weighed VOA vials with magnetic stir bars and approximately 5 g of sample. After receipt, the VOA samples were stored in a freezer. For each sample interval, an additional high level sample preserved in methanol was also received. These were not used because none of the results for the frozen samples were above the calibration range. The exact weight of the sample and the tare weight of the VOA vials were recorded by sampling personnel and delivered with the samples. Seven field blanks and six trip blanks were also received and analyzed. The samples were preserved with either HCl or H_2SO_4 to a pH < 2. The holding time for all samples is 14 days. All samples analyzed at the 222-S Laboratory met the required holding time.

Two samples, B26D46 (Trip Blank-6) and B26D57 (Field Blank-7), were shipped to WSCF for analysis due to a laboratory outage. The WSCF report is included in Appendix B of this report.

The VOA met the target and required detection limits in the SAP. The SAP and FSAP requested m-xylene and p-xylene be reported separately. Since it is not possible to resolve these individual compounds when performing VOA by SW-846 8260C, these compounds have been reported as m+p xylene. The SAP and FSAP request that methanol be reported with this analysis; however, this compound is too polar to be purged and cannot be reported (see Attachment 7). Isobutanol, another poor purger, was reported as a semivolatile organic compound.

All of the field blanks and trip blanks contained chloroform above the quantification level. Since chloroform is a common chlorination byproduct, the laboratory believes the likely source of chloroform was the water used by sampling personnel to make the various blanks.

The LCS, MS, and MSD recoveries were compared against the laboratory's statistical process control (SPC) limits, as required by SW-846. The use of SPC limits is allowed in the FSAP, SAP, and QAPP.

Batch 21743: The method blank results for acetone and carbon disulfide were above the quantitation limit. The sample results for carbon disulfide were below the MDL; the data quality was not affected. The sample results for acetone were below the quantitation limit and were flagged with a "B". Since the sample results were below the quantitation limit, reanalysis was not required. Additionally, acetone was less than five times the quantitation limit, which meets DOE/RL-96-68, *Hanford Analytical Services Quality Assurance Requirements Documents*

(HASQARD), and QAPP requirements. Toluene was present in the blank below the quantitation limit. All toluene results in the sample were below the MDL.

Batch 21744: Toluene was present in the blank below the quantitation limit. All sample results for toluene were similar and have been flagged with a “B”. Since all toluene results were below the quantitation limit, reanalysis was not required.

Batch 21745: The method blank results for acetone, toluene, and styrene were above the MDL but below the quantitation limit. The sample results for acetone, toluene, and styrene were similar to the blank and have been flagged with “B”. Since the blank results were below the quantitation limit, reanalysis was not required.

Batch 21746: The method blank result for acetone was above the quantitation limit. The sample results for acetone were below the MDL except for one sample, which was below the quantitation limit and has been flagged with a “B”. Since the sample result was below the quantitation limit, reanalysis was not required. Additionally, acetone was less than five times the quantitation limit, which meets HASQARD and QAPP requirements.

Batch 23313: The method blank results for m,p-xylene, styrene, and toluene were above the MDL and below the quantitation limit. Styrene and toluene were detected in the sample below the quantitation limit, and m,p-xylene was below the MDL. Since all results were below the quantitation limit, reanalysis was not required. Hexane was detected in the sample above the quantitation limit. Since it was not detected in the method blank, this result does not appear to be result of laboratory contamination.

3.4.2 Semivolatile Organic Analysis

The semivolatile organic analysis (SVOA) by GC/MS was performed on methylene chloride extractions of all grab samples and liner composite samples. All holding times were met.

The SVOA analysis met the required and target detection limits with two exceptions:

- The adjusted MDLs for cyclohexanone were above the 0.5-mg/kg target detection limit for most samples. This compound obtained detection limits between 0.5 mg/kg and 0.6 mg/kg.
- The adjusted MDLs for di-n-butyl-phthalate were above the target detection limit of 0.33 mg/kg. The analysis achieved a detection limit of between 0.5 mg/kg and 0.6 mg/kg for this compound.

LCS, MS, and MSD recoveries were compared against the laboratory’s SPC limits, as required by SW-846. The use of SPC limits is permitted in the FSAP, SAP, and QAPP.

The SAP and FSAP requested m-cresol and p-cresol be reported separately. Since it is not possible to resolve these individual compounds when performing SVOA by SW-846 8270C, these compounds have been reported as m+p cresol.

Batches 21133 and 21183: There were no notable issues with these batches, and all QC requirements in the FSAP, SAP, and QAPP were met.

Batch 21072: The percent difference for chrysene and 2,4-dinitrotoluene in continuous calibration verification exceeded the ±20% limit at -20.1% and -22.8%, which could indicate a low bias. However, the LLS demonstrated that there was adequate sensitivity to detect these compounds at the level of quantitation had they been present in the samples.

3.4.3 Tentatively Identified Compounds

Unassigned peaks or TICs were treated as follows. Standards were obtained and analyzed for each secondary analyte identified in the SAP. This data was accumulated in the Hanford library. Following analysis, the largest TICs with instrument responses greater than 10% of the response of the nearest internal standard were evaluated and compared to the Hanford library. The estimated concentration of these TICs was calculated using measured response factors from the Hanford library compound list.

After comparison to the Hanford library, remaining unknowns were compared to the National Institute of Standards and Technology's NIST 02, *HP Mass Spectral Libraries*. The estimated concentration of compounds identified in the NIST library was calculated based on an arbitrary response factor of 1.0. If the compounds were not identified as a result of this comparison, they were reported as "unknown." Summaries of the SVOA and VOA TICs from the field samples and method blanks are provided in Attachment 5. TICs that were found in the field samples and were present in the associated batch method blank have been flagged with "B".

4.0 PROCEDURES

Table 2 lists the analytical procedures used for analysis of the Area C samples.

Table 2. Analytical Procedures

Analysis	Preparation Method	Analysis Procedure
Inorganic Analyses		
Cyanide	LA-695-103, Rev. J-0 (SW-846 9010C)	LA-695-103, Rev. J-0 (SW-846 9014)
Sulfide	LA-361-101, Rev. D-0 (SW-846 9030B)	LA-361-101, Rev. D-0 (SW-846 9215)
pH (solid)	LA-212-105, Rev. G-0 (SW-846 9045D)	LA-212-105, Rev. G-0 (SW-846 9045D)
Mercury – Cold Vapor Atomic Absorption	LA-325-110, Rev. A-0 (SW-846 7471A)	LA-325-110, Rev. A-0 (SW-846 7471A)
Ammonia – IC	LA-544-112, Rev. E-0	LA-533-101, Rev. Q-0
Anions & Organic Acids – IC	LA-504-101, Rev. M-0	LA-533-115, Rev. J-0
Metals – ICP /AES	LA-505-163, Rev. G-0 (SW-846 3050B)	LA-505-161, Rev. J-0-A (SW-846 6010C)

Analysis	Preparation Method	Analysis Procedure
^{99}Tc, ^{126}Sn – ICP/MS	LA-505-163, Rev. G-0 (SW-846 3050B)	LA-506-102, Rev. F-1
^{99}Tc – ICP/MS	08-ATL-078 Vadose Water Digest	LA-506-102, Rev. F-1
Metals – ICP/MS	LA-505-163, Rev. G-0 (SW-846 3050B)	LA-506-102, Rev. F-1 LA-506-103, Rev. B-0 (SW-846 6020A)
Actinides – ICP/MS	LA-505-163, Rev. G-0 (SW-846 3050B)	LA-506-102, Rev. F-1
Radiochemical Analyses		
GEA	Direct	LA-548-121, Rev. I-0
^{90}Sr – Separation/Beta counting (Solid)	LA-544-101, Rev. F-0	LA-220-101, Rev. I-0
^{3}H – LSC	LA-504-101, Rev. M-0	LA-218-111, Rev. G-0
^{14}C – LSC	LA-504-101, Rev. M-0	LA-348-104, Rev. H-0, I-0
^{79}Se – Separation/LSC	LA-544-101, Rev. F-0	LA-365-132, Rev. J-0
^{63}Ni – Separation/LSC	LA-544-101, Rev. F-0	LA-285-102, Rev. E-0
^{129}I – Separation/GEA	LA-378-105, Rev. D-0	LA-378-105, Rev. D-0
^{241}Am, $^{243/244, 242}$Cm – Separation/AEA	LA-544-101, Rev. F-0	LA-953-104, Rev. H-1
$^{239/240, 238}$Pu – Separation/AEA	LA-544-101, Rev. F-0	LA-953-104, Rev. H-1

Organic Analyses		
Analysis	**Preparation Method**	**Analysis Procedure**
VOC – GC/MS	Direct	LA-523-118, Rev. G-O-A, H-O (SW-846 8260B)
SVOC – GC/MS	LA-523-138, Rev. G-0 (SW-846 3540C)	LA-523-135, Rev. D-0 (SW-846 8270C)

5.0 REFERENCES

ATL-MP-1011, 2010, *ATL Quality Assurance Project Plan for 222-S Laboratory*, Rev. 9, Advanced Technologies and Laboratories International, Inc., Richland, Washington.

NIST 02, 2002, *HP Mass Spectral Libraries*, July 2002 Release, Hewlett-Packard Company, Palo Alto, California.

SW-846, 1986, *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods,* Third Edition, as amended, U.S. Environmental Protection Agency, Washington, D.C.

RPP-PLAN-40564, 2009, *Field Sampling and Analysis Plan for Sites P and L at Waste Management Area C,* Rev. 2, Washington River Protection Solutions, Inc.

RPP-PLAN-38777, 2009, *Sampling and Analysis Plan for Phase 2 Characterization of Vadose Zone Soil in Waste Management Area C*, Rev. 1, Washington River Protection Solutions, Inc.

DOE/RL-96-68, 2007, *Hanford Analytical Services Quality Assurance Requirements Documents, Volume 4: Laboratory Technical Requirement, Rev.3*, United States Department of Energy, Richland Field Office.

Washington River Protection Solutions	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	V10-003-251	PAGE 1 OF 2

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 8P	DATA TURNAROUND
Campbell/ Harris	TEMPLETON, AM	373-5589	BERLIN, PC	AIR QUALITY ☐	75 Days / 75 Days
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**		
C7676 Surface	WMA C Sampling for CMS		V10-003		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**ACTUAL SAMPLE DEPTH**	**COA**	**METHOD OF SHIPMENT**	
TFVS-09-003	TFVZ-09-000001	surface	N/A	Govt. Vehicle	
SHIPPED TO	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		
222-S Lab Operations	N/A		N/A		

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

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

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool~4C
HOLDING TIME	14/40 Days
TYPE OF CONTAINER	G/P
NO. OF CONTAINER(S)	1
VOLUME	500mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B26JK6	SOIL	7-19-10	1000	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
Campbell Campbell	7-19-10 1130	ABSteele ABSteele	7.19.10 1130
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS
SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS
OU RD
GRP# 20100556
Sm# 510V001606

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

Washington River Protection Solutions	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			V10-003-251	PAGE 2 OF 2
COLLECTOR Campbell/Harris	**COMPANY CONTACT** TEMPLETON, AM	**TELEPHONE NO.** 373-5589	**PROJECT COORDINATOR** BERLIN, PC	**PRICE CODE** 8P **AIR QUALITY** ☐	**DATA TURNAROUND** 75 Days / 75 Days
SAMPLING LOCATION C7676 Surface	**PROJECT DESIGNATION** WMA C Sampling for CMS		**SAF NO.** V10-003		
ICE CHEST NO. TFVS-09-003	**FIELD LOGBOOK NO.** TFVZ09-000001	**ACTUAL SAMPLE DEPTH** surface	**COA** N/A	**METHOD OF SHIPMENT** Govt. Vehicle	
SHIPPED TO 222-S Lab Operations	**OFFSITE PROPERTY NO.** N/A		**BILL OF LADING/AIR BILL NO.** N/A		

SPECIAL INSTRUCTIONS

** After VOA bottles for the direct pushes are filled, the sampler will cap remaining liners for shipment to 222-S. Where capping is not possible, the sample shall be put into 500 mL or 250 mL glass bottles with Teflon-lined lids.

(1) Semi-VOA - 8270 Complete (TF); TPH-Gasoline Range - WTPH-G; TPH-Diesel Range - WTPH-D; PCBs - 8082; Pesticides - 8081 (TF); 1668 PCB CONGENER (TCL); ICP Metals - 6010 (SW-846) (TF); Mercury - 7471 - (CV) (TF); 300.7_AMMONIUM (TF); IC Anions - 9056; Sulfide - 9215; Total Cyanide - 9014 (TF); pH (Soil) - 9045; Americium-241 (TF); C-14; CURIUM; GAMMA ENERGY ANALYSIS (TF); H3 - TRITIUM; I129_SEP_GEA (TF); Isotopic Plutonium {Plutonium-238, Plutonium-239/240}; Nickel-63 (TF); RADISO_ICPMS (TF); Selenium-79 (TF); Strontium-90; Conductivity - 9050_WE; Percent Solids (TF); Percent Water (TF);

Washington River Protection Solutions	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	V10-003-232	PAGE 1 OF 2

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 8P	DATA TURNAROUND
Campbell / Harris	TEMPLETON, AM	373-5589	BERLIN, PC	AIR QUALITY ☐	75 Days / 75 Days
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**		
C7676 I006	WMA C Sampling for CMS		V10-003		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**ACTUAL SAMPLE DEPTH**	**COA**	**METHOD OF SHIPMENT**	
TFVS-09-003	TFVZ-10-000004	38-40	n/A	Govt. Vehicle	
SHIPPED TO	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		
222-S Lab Operations	n/A		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	Cool~4C
		HOLDING TIME	14/40 Days
		TYPE OF CONTAINER	Gs jar/Liners
		NO. OF CONTAINER(S)	3
		VOLUME	160g
	SPECIAL HANDLING AND/OR STORAGE	SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B26CD0	SOIL	7-22-10	1035	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
Dan Harris Dan Harris	7-22-10 1130	RtSteele RtSteele	7-22-10 1130
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS

SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

ov
v RB

GRP# 20100556
SAM# S10V001761 A
1762 B
1763 C

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

Washington River Protection Solutions	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			V10-003-232	PAGE 2 OF 2
COLLECTOR Campbell / Harris	COMPANY CONTACT TEMPLETON, AM	TELEPHONE NO. 373-5589	PROJECT COORDINATOR BERLIN, PC	PRICE CODE 8P AIR QUALITY ☐	DATA TURNAROUND 75 Days / 75 Days
SAMPLING LOCATION C7676 I006	PROJECT DESIGNATION WMA C Sampling for CMS		SAF NO. V10-003		
ICE CHEST NO. TFVZ-09-003	FIELD LOGBOOK NO. TFVZ-10-00004	ACTUAL SAMPLE DEPTH 38-40	COA N/A	METHOD OF SHIPMENT Govt. Vehicle	
SHIPPED TO BC 7-22-10 222-S Lab Operations	OFFSITE PROPERTY NO. N/A		BILL OF LADING/AIR BILL NO. N/A		

SPECIAL INSTRUCTIONS

** After VOA bottles for the direct pushes are filled, the sampler will cap remaining liners for shipment to 222-S. Where capping is not possible, the sample shall be put into 500 mL or 250 mL glass bottles with Teflon-lined lids.
(1) Semi-VOA - 8270 Complete (TF); TPH-Gasoline Range - WTPH-G; TPH-Diesel Range - WTPH-D; PCBs - 8082; Pesticides - 8081 (TF); 1668 PCB CONGENER (TCL); ICP Metals - 6010 (SW-846) (TF); Mercury - 7471 - (CV) (TF); 300.7_AMMONIUM (TF); IC Anions - 9056; Sulfide - 9215; Total Cyanide - 9014 (TF); pH (Soil) - 9045; Americium-241 (TF); C-14; CURIUM; GAMMA ENERGY ANALYSIS (TF); H3 - TRITIUM; I129_SEP_GEA (TF); Isotopic Plutonium {Plutonium-238, Plutonium-239/240}; Nickel-63 (TF); RADISO_ICPMS (TF); Selenium-79 (TF); Strontium-90; Conductivity - 9050_WE; Percent Solids (TF); Percent Water (TF);

Appendix 5

Data Validation Supporting Documentation

Appendix A - Chemical Data Validation Checklist

VALIDATION LEVEL:	A	B	(C)	D	E
PROJECT: WMA C			DATA PACKAGE: VSR11-048		
VALIDATOR: Carl Schloesslin		LAB: 222-S Lab		DATE: 6-23-2011	
			SDG: 20100556		
ANALYSES PERFORMED					
SW-846 8260		SW-846 8260 (TCLP)	SW-846 8270 X		SW-846 8270 (TCLP)
SAMPLES/MATRIX Soil samples B26JK6 and B26CD0					

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

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

Comments: None

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

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

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

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

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

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

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

Comments:

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

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

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

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

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

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

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

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

Comments:

None

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Comments:

There were 7 spiked LCS and MS/MSD analytes, 19 non-represented analytes

1,2,4-trichlorobenzene	LCS %R = 60%, MS %R = 56%, MSD %R = 56%
acenaphthene	LCS %R = 65%, MS %R = 63%, MSD %R = 62%
2-chlorophenol	LCS %R = 65%, MS %R = 61%, MSD %R = 59%
n-nitroso-di-n-dipropylamine	LCS %R = 62%, MS %R = 56%, MSD %R = 56%

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

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

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

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

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

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

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

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

Comments: None

6. SYSTEM PERFORMANCE (Levels D and E)

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

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

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

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

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

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

Comments:

7. HOLDING TIMES (all levels)

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

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

Comments: None

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

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

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

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

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

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

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

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

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

Comments: None

9. SAMPLE CLEANUP (Levels D and E)

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

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

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

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

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

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

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

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

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

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

Comments:

Comments (attach additional sheets as necessary): None

Appendix 6

Additional Documentation Requested By Client

Hold Time Report: SVOA

Sample Group	Sample	Matrix	Method	Prep Method	Sample Date	Received Date	Prep Date	Analysis Date	Missed Holding Time
20100556	S10V001640	SOLID	SW-846 8270D	SW-846 3540C	07/19/10 10:00	07/19/10 11:40	07/26/10 15:20	07/29/10 19:13	N
20100556	S10V001660	SOLID	SW-846 8270D	SW-846 3540C	07/20/10 09:45	07/20/10 11:10	07/26/10 15:20	07/29/10 13:55	N
20100556	S10V001612	SOLID	SW-846 8270D	SW-846 3540C	07/19/10 10:00	07/19/10 11:30	07/28/10 15:00	08/03/10 18:30	N
20100556	S10V001700	SOLID	SW-846 8270D	SW-846 3540C	07/21/10 09:20	07/21/10 11:30	07/28/10 15:00	08/03/10 19:18	N
20100556	S10V001720	SOLID	SW-846 8270D	SW-846 3540C	07/21/10 10:30	07/21/10 11:30	07/28/10 15:00	08/03/10 16:04	N
20100556	S10V001770	SOLID	SW-846 8270D	SW-846 3540C	07/21/10 09:20	07/21/10 11:30	07/28/10 15:00	08/03/10 20:07	N
20100556	S10V001790	SOLID	SW-846 8270D	SW-846 3540C	07/27/10 09:50	07/27/10 10:50	08/01/10 15:47	08/31/10 12:24	N
20100556	S10V001810	SOLID	SW-846 8270D	SW-846 3540C	07/29/10 09:35	07/29/10 10:30	08/01/10 15:47	08/31/10 14:51	N

LABCORE Completed Batch Report for Batch# 00021072

Analyst: Ojanen, Carol

Book#:

Instrument: GCMSD5 (TUVOK) for SVOA

Method: SVOA 222S #2, LA-523-135 Rev/Mod D-0

Specification: C Farm WMC 2010-2

Prep Batch: 00020985

Batch Comment:

C Farm WMC 2010-2 SVOA SOL. Group # 20100556

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
Sample Sequence 1																	
1	BLNK	S1007280001		0 0	O		1,2,4-Trichlorobenzene	SOLID		<7.7400E+01			77.4	ug/Kg			U
1	BLNK	S1007280001		0 0	O		1,2-Dichlorobenzene	SOLID		<1.0070E+02			100.7	ug/Kg			U
1	BLNK	S1007280001		0 0	O		2,4-Dinitrotoluene	SOLID		<3.8100E+01			38.1	ug/Kg			U
1	BLNK	S1007280001		0 0	O		2,4,5-Trichlorophenol	SOLID		<4.4000E+01			44	ug/Kg			U
1	BLNK	S1007280001		0 0	O		2,4,6-Trichlorophenol	SOLID		<4.9500E+01			49.5	ug/Kg			U
1	BLNK	S1007280001		0 0	O		2-Methylphenol	SOLID		<5.7500E+01			57.5	ug/Kg			U
1	BLNK	S1007280001		0 0	O		2-Nitrophenol	SOLID		<5.3700E+01			53.7	ug/Kg			U
1	BLNK	S1007280001		0 0	O		3 & 4 Methylphenol Total	SOLID		<5.1400E+01			51.4	ug/Kg			U
1	BLNK	S1007280001		0 0	O		Acenaphthene	SOLID		<1.7600E+01			17.6	ug/Kg			U
1	BLNK	S1007280001		0 0	O		Benzo(a)anthracene	SOLID		<3.7800E+01			37.8	ug/Kg			U
1	BLNK	S1007280001		0 0	O		Benzo(b)fluoranthene	SOLID		<4.8900E+01			48.9	ug/Kg			U
1	BLNK	S1007280001		0 0	O		Benzo(a)pyrene	SOLID		<4.1200E+01			41.2	ug/Kg			U
1	BLNK	S1007280001		0 0	O		bis(2-Ethylhexyl)phthalate	SOLID		<5.9020E+02			590.2	ug/Kg			U
1	BLNK	S1007280001		0 0	O		Benzo(k)fluoranthene	SOLID		<3.9100E+01			39.1	ug/Kg			U
1	BLNK	S1007280001		0 0	O		Butylbenzylphthalate	SOLID		<5.0000E+01			50	ug/Kg			U
1	BLNK	S1007280001		0 0	O		4-Chloro-3-methylphenol	SOLID		<4.3200E+01			43.2	ug/Kg			U
1	BLNK	S1007280001		0 0	O		2-Chlorophenol	SOLID		<6.6500E+01			66.5	ug/Kg			U
1	BLNK	S1007280001		0 0	O		Chrysene	SOLID		<8.1400E+01			81.4	ug/Kg			U
1	BLNK	S1007280001		0 0	O		Dibenz(a,h)anthracene	SOLID		<5.1100E+01			51.1	ug/Kg			U
1	BLNK	S1007280001		0 0	O		Di-n-butylphthalate	SOLID		<5.6230E+02			562.3	ug/Kg			U
1	BLNK	S1007280001		0 0	O		Di-n-octylphthalate	SOLID		<4.7700E+01			47.7	ug/Kg			U
1	BLNK	S1007280001		0 0	O		N-Nitrosodipropylamine	SOLID		<5.8100E+01			58.1	ug/Kg			U
1	BLNK	S1007280001		0 0	O		Fluoranthene	SOLID		<3.5400E+01			35.4	ug/Kg			U
1	BLNK	S1007280001		0 0	O		Hexachlorobutadiene	SOLID		<6.9700E+01			69.7	ug/Kg			U
1	BLNK	S1007280001		0 0	O		Hexachloroethane	SOLID		<1.1180E+02			111.8	ug/Kg			U
1	BLNK	S1007280001		0 0	O		Indeno(1,2,3-cd)pyrene	SOLID		<5.1000E+01			51	ug/Kg			U
1	BLNK	S1007280001		0 0	O		Naphthalene	SOLID		<6.2600E+01			62.6	ug/Kg			U
1	BLNK	S1007280001		0 0	O		Nitrobenzene	SOLID		<6.4600E+01			64.6	ug/Kg			U
1	BLNK	S1007280001		0 0	O		Pyrene	SOLID		<6.2900E+01			62.9	ug/Kg			U

Units shown for QC (BLK/BKG) may not reflect the actual units.

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00021072

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
1	BLNK	S1007280001		0 0	O		Pyridine	SOLID		<6.5000E+01			65	ug/Kg			U
1	BLNK	S1007280001		0 0	O		Tri-n-butylphosphate	SOLID		<1.0780E+02			107.8	ug/Kg			U
1	BLNK	S1007280001		0 0	O		2,6 bis-4Methylphenol	SOLID		<2.3560E+02			235.6	ug/Kg			U
1	BLNK	S1007280001		0 0	O		2-Ethoxyethanol	SOLID		<1.8240E+02			182.4	ug/Kg			U
1	BLNK	S1007280001		0 0	O		Methylphenols, Total	SOLID		<1.0660E+02			106.6	ug/Kg			U
1	BLNK	S1007280001		0 0	O		Cyclohexanone	SOLID		<5.5810E+02			558.1	ug/Kg			U
1	BLNK	S1007280001		0 0	O		N-Nitrosomorpholine	SOLID		<1.9130E+02			191.3	ug/Kg			U
1	BLNK	S1007280001		0 0	O		1,2-Benzenedicarboxyli	SOLID		307.54017				ug/Kg			JNT
1	BLNK	S1007280001		0 0	O		Oxime-, methoxy-phenyl	SOLID		201.14465				ug/Kg			JNT
1	BLNK	S1007280001		0 0	O		Unknown Hydrocarbon-3	SOLID		208.38277				ug/Kg			JT
1	BLNK	S1007280001		0 0	O		Unknown-1	SOLID		588.82543				ug/Kg			JT
1	BLNK	S1007280001		0 0	O		Unknown-2	SOLID		428.20759				ug/Kg			JT
Sample Sequence 2																	
2	LCS	S1007280002		0 0	O		1,2,4-Trichlorobenzene	SOLID	2000	1.1992E+03			77.4	ug/Kg	59.96	% Recovery	
2	LCS	S1007280002		0 0	O		2,4-Dinitrotoluene	SOLID	2000	1.4530E+03			38.1	ug/Kg	72.65	% Recovery	
2	LCS	S1007280002		0 0	O		Acenaphthene	SOLID	2000	1.2984E+03			17.6	ug/Kg	64.92	% Recovery	
2	LCS	S1007280002		0 0	O		4-Chloro-3-methylphenol	SOLID	4000	2.7899E+03			43.2	ug/Kg	69.748	% Recovery	
2	LCS	S1007280002		0 0	O		2-Chlorophenol	SOLID	4000	2.5871E+03			66.5	ug/Kg	64.678	% Recovery	
2	LCS	S1007280002		0 0	O		N-Nitrosodipropylamine	SOLID	2000	1.2384E+03			58.1	ug/Kg	61.92	% Recovery	
2	LCS	S1007280002		0 0	O		Pyrene	SOLID	2000	1.5593E+03			62.9	ug/Kg	77.965	% Recovery	
Sample Sequence 3																	
3	SAMPLE	S10V001612		0 0	O		1,2,4-Trichlorobenzene	SOLID	N/A	<7.5934E+01			75.934	ug/Kg			U
3	SAMPLE	S10V001612		0 0	O		1,2-Dichlorobenzene	SOLID	N/A	<9.8793E+01			98.793	ug/Kg			U
3	SAMPLE	S10V001612		0 0	O		2,4-Dinitrotoluene	SOLID	N/A	<3.7379E+01			37.379	ug/Kg			U
3	SAMPLE	S10V001612		0 0	O		2,4,5-Trichlorophenol	SOLID	N/A	<4.3167E+01			43.167	ug/Kg			U
3	SAMPLE	S10V001612		0 0	O		2,4,6-Trichlorophenol	SOLID	N/A	<4.8563E+01			48.563	ug/Kg			U
3	SAMPLE	S10V001612		0 0	O		2-Methylphenol	SOLID	N/A	<5.6411E+01			56.411	ug/Kg			U
3	SAMPLE	S10V001612		0 0	O		2-Nitrophenol	SOLID	N/A	<5.2683E+01			52.683	ug/Kg			U
3	SAMPLE	S10V001612		0 0	O		3 & 4 Methylphenol Total	SOLID	N/A	<5.0427E+01			50.427	ug/Kg			U
3	SAMPLE	S10V001612		0 0	O		Acenaphthene	SOLID	N/A	<1.7267E+01			17.267	ug/Kg			U
3	SAMPLE	S10V001612		0 0	O		Benzo(a)anthracene	SOLID	N/A	<3.7084E+01			37.084	ug/Kg			U
3	SAMPLE	S10V001612		0 0	O		Benzo(b)fluoranthene	SOLID	N/A	<4.7974E+01			47.974	ug/Kg			U
3	SAMPLE	S10V001612		0 0	O		Benzo(a)pyrene	SOLID	N/A	<4.0420E+01			40.42	ug/Kg			U
3	SAMPLE	S10V001612		0 0	O		bis(2-Ethylhexyl)phthalate	SOLID	N/A	<5.7902E+02			579.02	ug/Kg			U
3	SAMPLE	S10V001612		0 0	O		Benzo(k)fluoranthene	SOLID	N/A	<3.8360E+01			38.36	ug/Kg			U
3	SAMPLE	S10V001612		0 0	O		Butylbenzylphthalate	SOLID	N/A	<4.9053E+01			49.053	ug/Kg			U
3	SAMPLE	S10V001612		0 0	O		4-Chloro-3-methylphenol	SOLID	N/A	<4.2382E+01			42.382	ug/Kg			U
3	SAMPLE	S10V001612		0 0	O		2-Chlorophenol	SOLID	N/A	<6.5241E+01			65.241	ug/Kg			U

Units shown for QC (BLK/BKG) may not reflect the actual units.

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00021072

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
3	SAMPLE	S10V001612		0 0	O		Chrysene	SOLID	N/A	<7.9859E+01			79.859	ug/Kg			U
3	SAMPLE	S10V001612		0 0	O		Dibenz(a,h)anthracene	SOLID	N/A	<5.0132E+01			50.132	ug/Kg			U
3	SAMPLE	S10V001612		0 0	O		Di-n-butylphthalate	SOLID	N/A	<5.5165E+02			551.65	ug/Kg			U
3	SAMPLE	S10V001612		0 0	O		Di-n-octylphthalate	SOLID	N/A	<4.6797E+01			46.797	ug/Kg			U
3	SAMPLE	S10V001612		0 0	O		N-Nitrosodipropylamine	SOLID	N/A	<5.7000E+01			57	ug/Kg			U
3	SAMPLE	S10V001612		0 0	O		Fluoranthene	SOLID	N/A	<3.4730E+01			34.73	ug/Kg			U
3	SAMPLE	S10V001612		0 0	O		Hexachlorobutadiene	SOLID	N/A	<6.8380E+01			68.38	ug/Kg			U
3	SAMPLE	S10V001612		0 0	O		Hexachloroethane	SOLID	N/A	<1.0968E+02			109.68	ug/Kg			U
3	SAMPLE	S10V001612		0 0	O		Indeno(1,2,3-cd)pyrene	SOLID	N/A	<5.0034E+01			50.034	ug/Kg			U
3	SAMPLE	S10V001612		0 0	O		Naphthalene	SOLID	N/A	<6.1415E+01			61.415	ug/Kg			U
3	SAMPLE	S10V001612		0 0	O		Nitrobenzene	SOLID	N/A	<6.3377E+01			63.377	ug/Kg			U
3	SAMPLE	S10V001612		0 0	O		Pyrene	SOLID	N/A	<6.1709E+01			61.709	ug/Kg			U
3	SAMPLE	S10V001612		0 0	O		Pyridine	SOLID	N/A	<6.3769E+01			63.769	ug/Kg			U
3	SAMPLE	S10V001612		0 0	O		Tri-n-butylphosphate	SOLID	N/A	<1.0576E+02			105.76	ug/Kg			U
3	SAMPLE	S10V001612		0 0	O		2,6 bis-4Methylphenol	SOLID	N/A	<2.3114E+02			231.14	ug/Kg			U
3	SAMPLE	S10V001612		0 0	O		2-Ethoxyethanol	SOLID	N/A	<1.7895E+02			178.95	ug/Kg			U
3	SAMPLE	S10V001612		0 0	O		Methylphenols, Total	SOLID	N/A	<1.0458E+02			104.58	ug/Kg			U
3	SAMPLE	S10V001612		0 0	O		Cyclohexanone	SOLID	N/A	<5.4753E+02			547.53	ug/Kg			U
3	SAMPLE	S10V001612		0 0	O		N-Nitrosomorpholine	SOLID	N/A	<1.8768E+02			187.68	ug/Kg			U
3	SAMPLE	S10V001612		0 0	O		Isobutanol	SOLID	N/A	<4.5158E+02			451.58	ug/Kg			U
3	SAMPLE	S10V001612		0 0	O		2-Fluorobiphenyl	SOLID	1962.13	1.3047E+03				ug/Kg	66.494	% Recovery	
3	SAMPLE	S10V001612		0 0	O		2-Fluorophenol	SOLID	3924.261	2.1944E+03				ug/Kg	55.919	% Recovery	
3	SAMPLE	S10V001612		0 0	O		Nitrobenzene-d5	SOLID	1962.13	1.2268E+03				ug/Kg	62.524	% Recovery	
3	SAMPLE	S10V001612		0 0	O		2,4,6-Tribromophenol	SOLID	3924.261	2.7802E+03				ug/Kg	70.846	% Recovery	
3	SAMPLE	S10V001612		0 0	O		Terphenyl-d14	SOLID	1962.13	1.6525E+03				ug/Kg	84.22	% Recovery	
3	SAMPLE	S10V001612		0 0	O		Phenol-d6	SOLID	3924.261	2.5612E+03				ug/Kg	65.3	% Recovery	
3	SAMPLE	S10V001612		0 0	O		1,2-Benzenedicarboxyli	SOLID		606.86605				ug/Kg			BJNT
3	SAMPLE	S10V001612		0 0	O		3-Buten-2-one, 3-methy	SOLID		539.95337				ug/Kg			JNT
3	SAMPLE	S10V001612		0 0	O		Benzene, 1,2-dichloro-	SOLID		461.91334				ug/Kg			JNT
3	SAMPLE	S10V001612		0 0	O		Bromacil	SOLID		1297.7696				ug/Kg			JNT
3	SAMPLE	S10V001612		0 0	O		Unknown-1	SOLID		310.58798				ug/Kg			JT
3	SAMPLE	S10V001612		0 0	O		Unknown-2	SOLID		913.3317				ug/Kg			BJT
3	SAMPLE	S10V001612		0 0	O		Unknown-3	SOLID		529.07747				ug/Kg			BJT
3	SAMPLE	S10V001612		0 0	O		Unknown-4	SOLID		287.62257				ug/Kg			JT
Sample Sequence 4																	
4	SAMPLE	S10V001700		0 0	O		1,2,4-Trichlorobenzene	SOLID	N/A	<7.5767E+01			75.767	ug/Kg			U
4	SAMPLE	S10V001700		0 0	O		1,2-Dichlorobenzene	SOLID	N/A	<9.8576E+01			98.576	ug/Kg			U
4	SAMPLE	S10V001700		0 0	O		2,4-Dinitrotoluene	SOLID	N/A	<3.7296E+01			37.296	ug/Kg			U
4	SAMPLE	S10V001700		0 0	O		2,4,5-Trichlorophenol	SOLID	N/A	<4.3072E+01			43.072	ug/Kg			U
4	SAMPLE	S10V001700		0 0	O		2,4,6-Trichlorophenol	SOLID	N/A	<4.8456E+01			48.456	ug/Kg			U
4	SAMPLE	S10V001700		0 0	O		2-Methylphenol	SOLID	N/A	<5.6287E+01			56.287	ug/Kg			U
4	SAMPLE	S10V001700		0 0	O		2-Nitrophenol	SOLID	N/A	<5.2567E+01			52.567	ug/Kg			U

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LABCORE Completed Batch Report for Batch# 00021072

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
4	SAMPLE	S10V001700		0 0	O		3 & 4 Methylphenol Total	SOLID	N/A	<5.0316E+01			50.316	ug/Kg			U
4	SAMPLE	S10V001700		0 0	O		Acenaphthene	SOLID	N/A	<1.7229E+01			17.229	ug/Kg			U
4	SAMPLE	S10V001700		0 0	O		Benzo(a)anthracene	SOLID	N/A	<3.7003E+01			37.003	ug/Kg			U
4	SAMPLE	S10V001700		0 0	O		Benzo(b)fluoranthene	SOLID	N/A	<4.7868E+01			47.868	ug/Kg			U
4	SAMPLE	S10V001700		0 0	O		Benzo(a)pyrene	SOLID	N/A	<4.0331E+01			40.331	ug/Kg			U
4	SAMPLE	S10V001700		0 0	O		bis(2-Ethylhexyl)phthalate	SOLID	N/A	<5.7775E+02			577.75	ug/Kg			U
4	SAMPLE	S10V001700		0 0	O		Benzo(k)fluoranthene	SOLID	N/A	<3.8275E+01			38.275	ug/Kg			U
4	SAMPLE	S10V001700		0 0	O		Butylbenzylphthalate	SOLID	N/A	<4.8945E+01			48.945	ug/Kg			U
4	SAMPLE	S10V001700		0 0	O		4-Chloro-3-methylphenol	SOLID	N/A	<4.2289E+01			42.289	ug/Kg			U
4	SAMPLE	S10V001700		0 0	O		2-Chlorophenol	SOLID	N/A	<6.5097E+01			65.097	ug/Kg			U
4	SAMPLE	S10V001700		0 0	O		Chrysene	SOLID	N/A	<7.9683E+01			79.683	ug/Kg			U
4	SAMPLE	S10V001700		0 0	O		Dibenz(a,h)anthracene	SOLID	N/A	<5.0022E+01			50.022	ug/Kg			U
4	SAMPLE	S10V001700		0 0	O		Di-n-butylphthalate	SOLID	N/A	<5.5044E+02			550.44	ug/Kg			U
4	SAMPLE	S10V001700		0 0	O		Di-n-octylphthalate	SOLID	N/A	<4.6694E+01			46.694	ug/Kg			U
4	SAMPLE	S10V001700		0 0	O		N-Nitrosodipropylamine	SOLID	N/A	<5.6874E+01			56.874	ug/Kg			U
4	SAMPLE	S10V001700		0 0	O		Fluoranthene	SOLID	N/A	<3.4653E+01			34.653	ug/Kg			U
4	SAMPLE	S10V001700		0 0	O		Hexachlorobutadiene	SOLID	N/A	<6.8230E+01			68.23	ug/Kg			U
4	SAMPLE	S10V001700		0 0	O		Hexachloroethane	SOLID	N/A	<1.0944E+02			109.44	ug/Kg			U
4	SAMPLE	S10V001700		0 0	O		Indeno(1,2,3-cd)pyrene	SOLID	N/A	<4.9924E+01			49.924	ug/Kg			U
4	SAMPLE	S10V001700		0 0	O		Naphthalene	SOLID	N/A	<6.1279E+01			61.279	ug/Kg			U
4	SAMPLE	S10V001700		0 0	O		Nitrobenzene	SOLID	N/A	<6.3237E+01			63.237	ug/Kg			U
4	SAMPLE	S10V001700		0 0	O		Pyrene	SOLID	N/A	<6.1573E+01			61.573	ug/Kg			U
4	SAMPLE	S10V001700		0 0	O		Pyridine	SOLID	N/A	<6.3629E+01			63.629	ug/Kg			U
4	SAMPLE	S10V001700		0 0	O		Tri-n-butylphosphate	SOLID	N/A	<1.0553E+02			105.53	ug/Kg			U
4	SAMPLE	S10V001700		0 0	O		2,6 bis-4Methylphenol	SOLID	N/A	<2.3063E+02			230.63	ug/Kg			U
4	SAMPLE	S10V001700		0 0	O		2-Ethoxyethanol	SOLID	N/A	<1.7855E+02			178.55	ug/Kg			U
4	SAMPLE	S10V001700		0 0	O		Methylphenols, Total	SOLID	N/A	<1.0435E+02			104.35	ug/Kg			U
4	SAMPLE	S10V001700		0 0	O		Cyclohexanone	SOLID	N/A	<5.4633E+02			546.33	ug/Kg			U
4	SAMPLE	S10V001700		0 0	O		N-Nitrosomorpholine	SOLID	N/A	<1.8726E+02			187.26	ug/Kg			U
4	SAMPLE	S10V001700		0 0	O		Isobutanol	SOLID	N/A	<4.5059E+02			450.59	ug/Kg			U
4	SAMPLE	S10V001700		0 0	O		2-Fluorobiphenyl	SOLID	1957.809	1.0936E+03				ug/Kg	55.858	% Recovery	
4	SAMPLE	S10V001700		0 0	O		2-Fluorophenol	SOLID	3915.618	2.3068E+03				ug/Kg	58.913	% Recovery	
4	SAMPLE	S10V001700		0 0	O		Nitrobenzene-d5	SOLID	1957.809	1.1008E+03				ug/Kg	56.226	% Recovery	
4	SAMPLE	S10V001700		0 0	O		2,4,6-Tribromophenol	SOLID	3915.618	2.9407E+03				ug/Kg	75.102	% Recovery	
4	SAMPLE	S10V001700		0 0	O		Terphenyl-d14	SOLID	1957.809	1.6362E+03				ug/Kg	83.573	% Recovery	
4	SAMPLE	S10V001700		0 0	O		Phenol-d6	SOLID	3915.618	2.4003E+03				ug/Kg	61.3	% Recovery	
4	SAMPLE	S10V001700		0 0	O		1,2-Benzenedicarboxyli	SOLID		291.6962				ug/Kg			BJNT
4	SAMPLE	S10V001700		0 0	O		Unknown Hydrocarbon-3	SOLID		249.49225				ug/Kg			BJT
4	SAMPLE	S10V001700		0 0	O		Unknown-1	SOLID		1400.6986				ug/Kg			BJT
4	SAMPLE	S10V001700		0 0	O		Unknown-2	SOLID		911.75502				ug/Kg			BJT

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LABCORE Completed Batch Report for Batch# 00021072

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
Sample Sequence 5																	
5	SAMPLE	S10V001720		0 0	O		1,2,4-Trichlorobenzene	SOLID	N/A	<7.6877E+01			76.877	ug/Kg			U
5	SAMPLE	S10V001720		0 0	O		1,2-Dichlorobenzene	SOLID	N/A	<1.0002E+02			100.02	ug/Kg			U
5	SAMPLE	S10V001720		0 0	O		2,4-Dinitrotoluene	SOLID	N/A	<3.7843E+01			37.843	ug/Kg			U
5	SAMPLE	S10V001720		0 0	O		2,4,5-Trichlorophenol	SOLID	N/A	<4.3703E+01			43.703	ug/Kg			U
5	SAMPLE	S10V001720		0 0	O		2,4,6-Trichlorophenol	SOLID	N/A	<4.9166E+01			49.166	ug/Kg			U
5	SAMPLE	S10V001720		0 0	O		2-Methylphenol	SOLID	N/A	<5.7112E+01			57.112	ug/Kg			U
5	SAMPLE	S10V001720		0 0	O		2-Nitrophenol	SOLID	N/A	<5.3337E+01			53.337	ug/Kg			U
5	SAMPLE	S10V001720		0 0	O		3 & 4 Methylphenol Total	SOLID	N/A	<5.1053E+01			51.053	ug/Kg			U
5	SAMPLE	S10V001720		0 0	O		Acenaphthene	SOLID	N/A	<1.7481E+01			17.481	ug/Kg			U
5	SAMPLE	S10V001720		0 0	O		Benzo(a)anthracene	SOLID	N/A	<3.7545E+01			37.545	ug/Kg			U
5	SAMPLE	S10V001720		0 0	O		Benzo(b)fluoranthene	SOLID	N/A	<4.8570E+01			48.57	ug/Kg			U
5	SAMPLE	S10V001720		0 0	O		Benzo(a)pyrene	SOLID	N/A	<4.0922E+01			40.922	ug/Kg			U
5	SAMPLE	S10V001720		0 0	O		bis(2-Ethylhexyl)phthalate	SOLID	N/A	<5.8621E+02			586.21	ug/Kg			U
5	SAMPLE	S10V001720		0 0	O		Benzo(k)fluoranthene	SOLID	N/A	<3.8836E+01			38.836	ug/Kg			U
5	SAMPLE	S10V001720		0 0	O		Butylbenzylphthalate	SOLID	N/A	<4.9662E+01			49.662	ug/Kg			U
5	SAMPLE	S10V001720		0 0	O		4-Chloro-3-methylphenol	SOLID	N/A	<4.2908E+01			42.908	ug/Kg			U
5	SAMPLE	S10V001720		0 0	O		2-Chlorophenol	SOLID	N/A	<6.6051E+01			66.051	ug/Kg			U
5	SAMPLE	S10V001720		0 0	O		Chrysene	SOLID	N/A	<8.0850E+01			80.85	ug/Kg			U
5	SAMPLE	S10V001720		0 0	O		Dibenz(a,h)anthracene	SOLID	N/A	<5.0755E+01			50.755	ug/Kg			U
5	SAMPLE	S10V001720		0 0	O		Di-n-butylphthalate	SOLID	N/A	<5.5850E+02			558.5	ug/Kg			U
5	SAMPLE	S10V001720		0 0	O		Di-n-octylphthalate	SOLID	N/A	<4.7378E+01			47.378	ug/Kg			U
5	SAMPLE	S10V001720		0 0	O		N-Nitrosodipropylamine	SOLID	N/A	<5.7708E+01			57.708	ug/Kg			U
5	SAMPLE	S10V001720		0 0	O		Fluoranthene	SOLID	N/A	<3.5161E+01			35.161	ug/Kg			U
5	SAMPLE	S10V001720		0 0	O		Hexachlorobutadiene	SOLID	N/A	<6.9229E+01			69.229	ug/Kg			U
5	SAMPLE	S10V001720		0 0	O		Hexachloroethane	SOLID	N/A	<1.1104E+02			111.04	ug/Kg			U
5	SAMPLE	S10V001720		0 0	O		Indeno(1,2,3-cd)pyrene	SOLID	N/A	<5.0656E+01			50.656	ug/Kg			U
5	SAMPLE	S10V001720		0 0	O		Naphthalene	SOLID	N/A	<6.2177E+01			62.177	ug/Kg			U
5	SAMPLE	S10V001720		0 0	O		Nitrobenzene	SOLID	N/A	<6.4164E+01			64.164	ug/Kg			U
5	SAMPLE	S10V001720		0 0	O		Pyrene	SOLID	N/A	<6.2475E+01			62.475	ug/Kg			U
5	SAMPLE	S10V001720		0 0	O		Pyridine	SOLID	N/A	<6.4561E+01			64.561	ug/Kg			U
5	SAMPLE	S10V001720		0 0	O		Tri-n-butylphosphate	SOLID	N/A	<1.0707E+02			107.07	ug/Kg			U
5	SAMPLE	S10V001720		0 0	O		2,6 bis-4Methylphenol	SOLID	N/A	<2.3401E+02			234.01	ug/Kg			U
5	SAMPLE	S10V001720		0 0	O		2-Ethoxyethanol	SOLID	N/A	<1.8117E+02			181.17	ug/Kg			U
5	SAMPLE	S10V001720		0 0	O		Methylphenols, Total	SOLID	N/A	<1.0588E+02			105.88	ug/Kg			U
5	SAMPLE	S10V001720		0 0	O		Cyclohexanone	SOLID	N/A	<5.5433E+02			554.33	ug/Kg			U
5	SAMPLE	S10V001720		0 0	O		N-Nitrosomorpholine	SOLID	N/A	<1.9001E+02			190.01	ug/Kg			U
5	SAMPLE	S10V001720		0 0	O		Isobutanol	SOLID	N/A	<4.5719E+02			457.19	ug/Kg			U
5	SAMPLE	S10V001720		0 0	O		2-Fluorobiphenyl	SOLID	1986.491	1.2534E+03				ug/Kg	63.096	% Recovery	
5	SAMPLE	S10V001720		0 0	O		2-Fluorophenol	SOLID	3972.983	2.5530E+03				ug/Kg	64.259	% Recovery	

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LABCORE Completed Batch Report for Batch# 00021072

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
5	SAMPLE	S10V001720		0 0	O		Nitrobenzene-d5	SOLID	1986.491	1.2228E+03				ug/Kg	61.556	% Recovery	
5	SAMPLE	S10V001720		0 0	O		2,4,6-Tribromophenol	SOLID	3972.983	2.9663E+03				ug/Kg	74.662	% Recovery	
5	SAMPLE	S10V001720		0 0	O		Terphenyl-d14	SOLID	1986.491	1.5393E+03				ug/Kg	77.488	% Recovery	
5	SAMPLE	S10V001720		0 0	O		Phenol-d6	SOLID	3972.983	2.6892E+03				ug/Kg	67.7	% Recovery	
5	SAMPLE	S10V001720		0 0	O		1,2-Benzenedicarboxyli	SOLID		206.54009				ug/Kg			BJNT
Sample Sequence 6																	
6	MS	S1007280004	S10V001720	0 0	O		1,2,4-Trichlorobenzene	SOLID	1841.62	1.0378E+03			71.271	ug/Kg	56.353	% Recovery	
6	MS	S1007280004	S10V001720	0 0	O		2,4-Dinitrotoluene	SOLID	1841.62	1.4126E+03			35.083	ug/Kg	76.704	% Recovery	
6	MS	S1007280004	S10V001720	0 0	O		Acenaphthene	SOLID	1841.62	1.1684E+03			16.206	ug/Kg	63.444	% Recovery	
6	MS	S1007280004	S10V001720	0 0	O		4-Chloro-3-methylphen ol	SOLID	3683.241	2.6167E+03			39.779	ug/Kg	71.043	% Recovery	
6	MS	S1007280004	S10V001720	0 0	O		2-Chlorophenol	SOLID	3683.241	2.2425E+03			61.234	ug/Kg	60.884	% Recovery	
6	MS	S1007280004	S10V001720	0 0	O		N-Nitrosodipropylamine	SOLID	1841.62	1.0339E+03			53.499	ug/Kg	56.141	% Recovery	
6	MS	S1007280004	S10V001720	0 0	O		Pyrene	SOLID	1841.62	1.4614E+03			57.919	ug/Kg	79.354	% Recovery	
6	MS	S1007280004	S10V001720	0 0	O		2-Fluorophenol	SOLID	3683.241	2.2873E+03				ug/Kg	62.1	% Recovery	
Sample Sequence 7																	
7	MSD	S1007280005	S10V001720	0 0	O		1,2,4-Trichlorobenzene	SOLID	1980.786	1.1133E+03			76.656	ug/Kg	56.205	% Recovery	
															0.26298	% RPD	
7	MSD	S1007280005	S10V001720	0 0	O		2,4-Dinitrotoluene	SOLID	1980.786	1.4444E+03			37.734	ug/Kg	72.921	% Recovery	
															5.0566	% RPD	
7	MSD	S1007280005	S10V001720	0 0	O		Acenaphthene	SOLID	1980.786	1.2348E+03			17.431	ug/Kg	62.339	% Recovery	
															1.7570	% RPD	
7	MSD	S1007280005	S10V001720	0 0	O		4-Chloro-3-methylphen ol	SOLID	3961.572	2.7648E+03			42.785	ug/Kg	69.79	% Recovery	
															1.7794	% RPD	
7	MSD	S1007280005	S10V001720	0 0	O		2-Chlorophenol	SOLID	3961.572	2.3478E+03			65.861	ug/Kg	59.264	% Recovery	
															2.6967	% RPD	
7	MSD	S1007280005	S10V001720	0 0	O		N-Nitrosodipropylamine	SOLID	1980.786	1.1161E+03			57.542	ug/Kg	56.346	% Recovery	
															0.36449	% RPD	
7	MSD	S1007280005	S10V001720	0 0	O		Pyrene	SOLID	1980.786	1.4902E+03			62.296	ug/Kg	75.233	% Recovery	
															5.3316	% RPD	
Sample Sequence 8																	
8	SAMPLE	S10V001770		0 0	O		1,2,4-Trichlorobenzene	SOLID	N/A	<7.6641E+01			76.641	ug/Kg			U
8	SAMPLE	S10V001770		0 0	O		1,2-Dichlorobenzene	SOLID	N/A	<9.9713E+01			99.713	ug/Kg			U
8	SAMPLE	S10V001770		0 0	O		2,4-Dinitrotoluene	SOLID	N/A	<3.7726E+01			37.726	ug/Kg			U
8	SAMPLE	S10V001770		0 0	O		2,4,5-Trichlorophenol	SOLID	N/A	<4.3569E+01			43.569	ug/Kg			U
8	SAMPLE	S10V001770		0 0	O		2,4,6-Trichlorophenol	SOLID	N/A	<4.9015E+01			49.015	ug/Kg			U
8	SAMPLE	S10V001770		0 0	O		2-Methylphenol	SOLID	N/A	<5.6936E+01			56.936	ug/Kg			U
8	SAMPLE	S10V001770		0 0	O		2-Nitrophenol	SOLID	N/A	<5.3174E+01			53.174	ug/Kg			U
8	SAMPLE	S10V001770		0 0	O		3 & 4 Methylphenol Total	SOLID	N/A	<5.0896E+01			50.896	ug/Kg			U
8	SAMPLE	S10V001770		0 0	O		Acenaphthene	SOLID	N/A	<1.7427E+01			17.427	ug/Kg			U
8	SAMPLE	S10V001770		0 0	O		Benzo(a)anthracene	SOLID	N/A	<3.7429E+01			37.429	ug/Kg			U
8	SAMPLE	S10V001770		0 0	O		Benzo(b)fluoranthene	SOLID	N/A	<4.8421E+01			48.421	ug/Kg			U

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LABCORE Completed Batch Report for Batch# 00021072

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
8	SAMPLE	S10V001770		0 0	O		Benzo(a)pyrene	SOLID	N/A	<4.0796E+01			40.796	ug/Kg			U
8	SAMPLE	S10V001770		0 0	O		bis(2-Ethylhexyl)phthalate	SOLID	N/A	<5.8441E+02			584.41	ug/Kg			U
8	SAMPLE	S10V001770		0 0	O		Benzo(k)fluoranthene	SOLID	N/A	<3.8717E+01			38.717	ug/Kg			U
8	SAMPLE	S10V001770		0 0	O		Butylbenzylphthalate	SOLID	N/A	<4.9510E+01			49.51	ug/Kg			U
8	SAMPLE	S10V001770		0 0	O		4-Chloro-3-methylphenol	SOLID	N/A	<4.2777E+01			42.777	ug/Kg			U
8	SAMPLE	S10V001770		0 0	O		2-Chlorophenol	SOLID	N/A	<6.5848E+01			65.848	ug/Kg			U
8	SAMPLE	S10V001770		0 0	O		Chrysene	SOLID	N/A	<8.0602E+01			80.602	ug/Kg			U
8	SAMPLE	S10V001770		0 0	O		Dibenz(a,h)anthracene	SOLID	N/A	<5.0599E+01			50.599	ug/Kg			U
8	SAMPLE	S10V001770		0 0	O		Di-n-butylphthalate	SOLID	N/A	<5.5679E+02			556.79	ug/Kg			U
8	SAMPLE	S10V001770		0 0	O		Di-n-octylphthalate	SOLID	N/A	<4.7232E+01			47.232	ug/Kg			U
8	SAMPLE	S10V001770		0 0	O		N-Nitrosodipropylamine	SOLID	N/A	<5.7530E+01			57.53	ug/Kg			U
8	SAMPLE	S10V001770		0 0	O		Fluoranthene	SOLID	N/A	<3.5053E+01			35.053	ug/Kg			U
8	SAMPLE	S10V001770		0 0	O		Hexachlorobutadiene	SOLID	N/A	<6.9017E+01			69.017	ug/Kg			U
8	SAMPLE	S10V001770		0 0	O		Hexachloroethane	SOLID	N/A	<1.1070E+02			110.7	ug/Kg			U
8	SAMPLE	S10V001770		0 0	O		Indeno(1,2,3-cd)pyrene	SOLID	N/A	<5.0500E+01			50.5	ug/Kg			U
8	SAMPLE	S10V001770		0 0	O		Naphthalene	SOLID	N/A	<6.1986E+01			61.986	ug/Kg			U
8	SAMPLE	S10V001770		0 0	O		Nitrobenzene	SOLID	N/A	<6.3967E+01			63.967	ug/Kg			U
8	SAMPLE	S10V001770		0 0	O		Pyrene	SOLID	N/A	<6.2283E+01			62.283	ug/Kg			U
8	SAMPLE	S10V001770		0 0	O		Pyridine	SOLID	N/A	<6.4363E+01			64.363	ug/Kg			U
8	SAMPLE	S10V001770		0 0	O		Tri-n-butylphosphate	SOLID	N/A	<1.0674E+02			106.74	ug/Kg			U
8	SAMPLE	S10V001770		0 0	O		2,6 bis-4Methylphenol	SOLID	N/A	<2.3329E+02			233.29	ug/Kg			U
8	SAMPLE	S10V001770		0 0	O		2-Ethoxyethanol	SOLID	N/A	<1.8061E+02			180.61	ug/Kg			U
8	SAMPLE	S10V001770		0 0	O		Methylphenols, Total	SOLID	N/A	<1.0556E+02			105.56	ug/Kg			U
8	SAMPLE	S10V001770		0 0	O		Cyclohexanone	SOLID	N/A	<5.5263E+02			552.63	ug/Kg			U
8	SAMPLE	S10V001770		0 0	O		N-Nitrosomorpholine	SOLID	N/A	<1.8942E+02			189.42	ug/Kg			U
8	SAMPLE	S10V001770		0 0	O		Isobutanol	SOLID	N/A	<4.5579E+02			455.79	ug/Kg			U
8	SAMPLE	S10V001770		0 0	O		2-Fluorobiphenyl	SOLID	1980.394	1.2127E+03				ug/Kg	61.235	% Recovery	
8	SAMPLE	S10V001770		0 0	O		2-Fluorophenol	SOLID	3960.788	2.5043E+03				ug/Kg	63.227	% Recovery	
8	SAMPLE	S10V001770		0 0	O		Nitrobenzene-d5	SOLID	1980.394	1.1736E+03				ug/Kg	59.261	% Recovery	
8	SAMPLE	S10V001770		0 0	O		2,4,6-Tribromophenol	SOLID	3960.788	2.9767E+03				ug/Kg	75.154	% Recovery	
8	SAMPLE	S10V001770		0 0	O		Terphenyl-d14	SOLID	1980.394	1.6583E+03				ug/Kg	83.736	% Recovery	
8	SAMPLE	S10V001770		0 0	O		Phenol-d6	SOLID	3960.788	2.6717E+03				ug/Kg	67.5	% Recovery	

Comments Section:

Data Flagger Status:
Flagging Completed

Units shown for QC (BLK/BKG) may not reflect the actual units.

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00021072

Final Page for Batch# 00021072

Reviewer Signature **Date**

Units shown for QC (BLK/BKG) may not reflect the actual units.

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00021072

Seq	Sample#	QC Type	Assoc. Sample	Sample Group	Customer Id	Specification
1	S1007280001	BLNK				
2	S1007280002	LCS				
3	S10V001612	SAMPLE		20100556	B26JK6	C Farm WMC 2010-2
4	S10V001700	SAMPLE		20100556	B26CC4	C Farm WMC 2010-2
5	S10V001720	SAMPLE		20100556	B29613	C Farm WMC 2010-2
6	S1007280004	MS	S10V001720			
7	S1007280005	MSD	S10V001720			
8	S10V001770	SAMPLE		20100556	B26CD0	C Farm WMC 2010-2

21072

FORM 2
SOIL SEMIVOLATILE SURROGATE RECOVERY

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: CFARMWMC2010_F

Level:(low/med) LOW

	CHG SAMPLE NO.	S1 (FBP)#	S2 (2FP)#	S3 (NBZ)#	S4 #	S5 (TBP)#	S6 (TPH)#	S7 #	S8 #	TOT OUT
01	BLANK	62	63	65	64	73	84			0
02	LCS	64	68	67	69	73	84			0
03	S10V001720	63	64	62	68	75	77			0
04	S10V001720MS	60	62	62	64	78	86			0
05	S10V001720MS	59	61	62	64	75	80			0
06	S10V001612	66	56	62	65	71	84			0
07	S10V001700	56	59	56	61	75	84			0
08	S10V001770	61	63	59	67	75	84			0
09										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										

		QC LIMITS
S1 (FBP)	= 2-Fluorobiphenyl	(10-147)
S2 (2FP)	= 2-Fluorophenol	(0-127)
S3 (NBZ)	= Nitrobenzene-d5	(0-125)
S4	= Phenol-d6	(37-125)
S5 (TBP)	= 2,4,6-Tribromophenol	(40-176)
S6 (TPH)	= Terphenyl-d14	(71-175)

Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogate diluted out

FORM 3
SOIL SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: CFARMWMC2010_F

Matrix Spike - CHG Sample No.: LCS Level:(low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
1,2,4-Trichlorobenzene	2000.0		1199.2	60	2-128
2,4-Dinitrotoluene	2000.0		1453.0	73	55-111
Acenaphthene	2000.0		1298.4	65	36-114
4-Chloro-3-Methylphenol	4000.0		2789.9	70	42-103
2-Chlorophenol	4000.0		2587.1	65	28-111
N-Nitroso-di-n-prop.(1)	2000.0		1238.4	62	18-108
Pyrene	2000.0		1559.3	78	64-113

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 0 out of 7 outside limits

COMMENTS: _____

Date: 23 June 2011
To: CH2M Hill (technical representative)
From: Analytical Quality Associates, Inc.
Project: WMA C
Subject: Inorganics - Sample Data Group (SDG) 20100556

INTRODUCTION

This memorandum presents the results of data validation for SDG 20100556 prepared by 222-S Laboratory with ICP-MS 200.8 analysis subcontracted to WSCF. A list of samples validated along with the analytical methods is provided in the following table.

Sample ID	Sample Date	Media	Validation Level	Analytical Methods
B26JK6	7/19/2010	Soil	C	See note 1
B26CD0	7/22/2010	Soil	C	See note 1

1 – 6010C (ICP-AES), 6020A (ICP-MS), 200.8 (ICP-MS), ICP-MS actinides, ICP-MS fission products, ICP-MS Tc-99 Vadose Water Digest, 7471A (CVAA Hg)

Data validation was conducted in accordance with the CHPRC validation statement of work and the Field Sampling and Analysis Plan for Waste Management Area C, RPP-PLAN-40564, Rev. 2 (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. Radionuclides in soil have no holding time. Sample preservation for soil samples requires chilling to <6 degrees Celsius.

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

- **Blanks**

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

Laboratory Blanks

All laboratory blank results were acceptable with the following exceptions.

For batch 23451 the Fe laboratory blank result was > the MDL, and for batch 24077 the Fe and Ca laboratory blank results were > the MDLs. The Fe and Ca results for samples B26JK6 and B26CD0 were detects >5X the laboratory blank results and should not be qualified.

For batch 23864, the Th-230 laboratory blank result was > the MDL. The Th-230 result for sample B26CD0 was a detect <5X the laboratory blank result and should be qualified as a non-detect at the sample concentration (5.21E-05 ug/g) and flagged "U."

For batch 22039, the Th-232 and U-236 laboratory blank results were > the MDLs. The Th-232 result for sample B26JK6 was a detect >5X the laboratory blank result and should not be qualified. The U-236 result for sample B26JK6 was a non-detect and should not be qualified.

Trip Blanks

No trip blanks were submitted for validation.

Field Blanks

No field blanks were submitted for validation.

Equipment Blanks

No equipment blanks were submitted for validation.

- **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 75% to 125% and the laboratory control sample accuracy limits are 80% to 120%. 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 exceptions.

For batch 23451, the MS recoveries for Ce and Zr were < the lower acceptance limit and the associated post spike recoveries were acceptable. The MS recovery for Ba was > the upper acceptance limit and the associated post spike recovery was acceptable. The Ba, Ce and Zr results for sample B26JK6 were detects and should be qualified as estimates and flagged "J."

For batch 24077, the MS recoveries for Ba, Ce and S were > the upper acceptance limit and the associated post spike recoveries were acceptable. The Ba, Ce and S results for sample B26CD0 were detects and should be qualified as estimates and flagged "J."

For batch 22109, the MS recovery for Sn-117 was < the lower acceptance limit and the associated post spike recovery was acceptable. The Sn-117 and Sn-126 results for sample B26JK6 were detects and should be qualified as estimates and flagged "J."

Laboratory Control Samples (LCSs)

All LCS recoveries were acceptable with the following exceptions. The LCS recoveries for Sb and Cd were > the upper acceptance limit, with the Sb recovery >170%. The Sb result for sample B26CD0 was a non-detect and should be qualified as unusable and flagged "UR." The Cd result for sample B26JK6 was a non-detect and should not be qualified.

- **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 limits for reported analytes not listed in the SAP are specified by the DV procedure. When soil duplicate RPDs exceed the limits and have associated results <5X the SAP required detection limits with differences <2X the required detection limits no precision infraction occurred.

MS/MSD Samples

All MS/MSD RPD values were acceptable.

Laboratory Duplicate Samples

All laboratory duplicate results were acceptable with the following exceptions. For batch 23451, the Si RPD was above the acceptance limit. The Si result for sample B26JK6 was a detect and should be qualified as an estimate and flagged "J."

Field Duplicate Samples

No field duplicates were submitted for validation.

Field Split Samples

No field splits were submitted for validation.

- **Detection Limits**

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

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

- **Completeness**

SDG 20100556 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage for method 200.8 was 90% for the two samples validated. The completion percentages for all remaining analyses were 100%.

MAJOR DEFICIENCIES

A major deficiency leading to qualification of the Sb result for sample B26CD0 as unusable was due to a very high LCS recovery.

MINOR DEFICIENCIES

Several minor deficiencies leading to qualification of sample results as estimates occurred. 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.

RPP-PLAN-40564, Rev. 2, *Field Sampling and Analysis Plan for Waste Management Area C*, December 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			
SDG: 20100556	Reviewer: AQA	Project: WMA C	Page 1 of 1
Analyte(s)	**DV Flag**	**Samples Affected**	**Reason**
Th-230	2.77E-05U	B26CD0	Lab blank contamination
Ba	J	B26JK6, B26CD0	High MS recovery
Ce	J	B26JK6	Low MS recovery
Ce	J	B26CD0	High MS recovery
Zr	J	B26JK6	Low MS recovery
S	J	B26CD0	High MS recovery
Sn-117, Sn-126	J	B26JK6	Low MS recovery
Sb	**UR**	B26CD0	Very high LCS recovery
Si	J	B26JK6	Poor lab duplicate precision

Comments: None

Appendix 3

Annotated Laboratory Reports

C Farm WMC 2010-2
Data Summary Report

Sample Group: 20100556
Core Number: C7676
Customer Sample ID: B26JK6
Sample Depth: Surface

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S10V001606			%WATERA	%WATER-APD	%	n/a	n/a	3.040	n/a	n/a	n/a	n/a	0.01000	n/a	
S10V001606			57-12-5	Cyanide	ug/g	109	<0.0370	<2.65	<2.64	n/a	n/a	98.1	2.65	n/a	U
S10V001606			7439-97-6	Mercury	ug/g	99.3	<1.00E-04	<9.39E-03	n/a	n/a	n/a	n/a	9.39E-03	n/a	U
S10V001606			PH	pH	unitless	n/a	n/a	8.34	n/a	n/a	n/a	n/a	0.0100	n/a	
S10V001606			12597-04-5	Sulfide	ug/g	95.4	<0.180	27.2	n/a	n/a	n/a	n/a	7.19	n/a	B
S10V001609		WV	14133-76-7	Technetium-99	ug/g	110	<3.00E-06	<2.84E-06	n/a	n/a	n/a	n/a	2.84E-06	n/a	U
S10V001610		W	14762-75-5	Carbon-14	uCi/g	96.3	<3.46E-07	<1.25E-06	n/a	n/a	n/a	n/a	1.25E-06	n/a	U
S10V001610		W	10028-17-8	Tritium	uCi/g	91.3	1.54E-06	<1.96E-06	n/a	n/a	n/a	n/a	1.96E-06	n/a	U
S10V001611		A	7440-36-0	Antimony	ug/g	102	<2.00E-04	0.229	n/a	n/a	n/a	n/a	9.29E-03	n/a	
S10V001612		O	120-82-1	1,2,4-Trichlorobenzene	ug/kg	60.0	<77.4	<75.9	n/a	n/a	n/a	n/a	75.9	n/a	U
S10V001612		O	95-50-1	1,2-Dichlorobenzene	ug/kg	n/a	<101	<98.8	n/a	n/a	n/a	n/a	98.8	n/a	U
S10V001612		O	121-14-2	2,4-Dinitrotoluene	ug/kg	72.6	<38.1	<37.4	n/a	n/a	n/a	n/a	37.4	n/a	U
S10V001612		O	95-95-4	2,4,5-Trichlorophenol	ug/kg	n/a	<44.0	<43.2	n/a	n/a	n/a	n/a	43.2	n/a	U
S10V001612		O	88-06-2	2,4,6-Trichlorophenol	ug/kg	n/a	<49.5	<48.6	n/a	n/a	n/a	n/a	48.6	n/a	U
S10V001612		O	95-48-7	2-Methylphenol	ug/kg	n/a	<57.5	<56.4	n/a	n/a	n/a	n/a	56.4	n/a	U
S10V001612		O	88-75-5	2-Nitrophenol	ug/kg	n/a	<53.7	<52.7	n/a	n/a	n/a	n/a	52.7	n/a	U
S10V001612		O	65794-96-9	3 &4 Methylphenol	ug/kg	n/a	<51.4	<50.4	n/a	n/a	n/a	n/a	50.4	n/a	U
S10V001612		O	83-32-9	Acenaphthene	ug/kg	64.9	<17.6	<17.3	n/a	n/a	n/a	n/a	17.3	n/a	U
S10V001612		O	56-55-3	Benzo(a)anthracene	ug/kg	n/a	<37.8	<37.1	n/a	n/a	n/a	n/a	37.1	n/a	U
S10V001612		O	205-99-2	Benzo(b)fluoranthene	ug/kg	n/a	<48.9	<48.0	n/a	n/a	n/a	n/a	48.0	n/a	U
S10V001612		O	50-32-8	Benzo(a)pyrene	ug/kg	n/a	<41.2	<40.4	n/a	n/a	n/a	n/a	40.4	n/a	U
S10V001612		O	117-81-7	Bis(2-ethylhexyl) phthalate	ug/kg	n/a	<590	<579	n/a	n/a	n/a	n/a	579	n/a	U
S10V001612		O	207-08-9	Benzo(k)fluoranthene	ug/kg	n/a	<39.1	<38.4	n/a	n/a	n/a	n/a	38.4	n/a	U
S10V001612		O	85-68-7	Butylbenzylphthalate	ug/kg	n/a	<50.0	<49.1	n/a	n/a	n/a	n/a	49.1	n/a	U
S10V001612		O	59-50-7	4-Chloro-3-methylphenol	ug/kg	69.7	<43.2	<42.4	n/a	n/a	n/a	n/a	42.4	n/a	U
S10V001612		O	95-57-8	2-Chlorophenol	ug/kg	64.7	<66.5	<65.2	n/a	n/a	n/a	n/a	65.2	n/a	U
S10V001612		O	218-01-9	Chrysene	ug/kg	n/a	<81.4	<79.9	n/a	n/a	n/a	n/a	79.9	n/a	U
S10V001612		O	53-70-3	Dibenz[a,h]anthracene	ug/kg	n/a	<51.1	<50.1	n/a	n/a	n/a	n/a	50.1	n/a	U

NA = Not Analyzed, ND = Not Detected

B - Blank Contamination
U - Less Than Detection Limit

B - Estimated
J - Estimated

LS
6-23-2011

N - MS/MSD Outside Range
C - Blank Contamination

M - RPD Outside Range

C Farm WMC 2010-2
Data Summary Report

Sample Group: 20100556
Core Number: C7676
Customer Sample ID: B26JK6
Sample Depth: Surface

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
~~S10V001613~~		~~W~~	~~14265-44-2~~	~~Phosphate~~	~~ug/g~~	~~99.6~~	~~<0.0167~~	~~1.64~~	~~n/a~~	~~n/a~~	~~n/a~~	~~n/a~~	~~0.167~~	~~n/a~~	~~BN~~
S10V001614		A	7429-90-5	Aluminum	ug/g	98.4	<0.0300	6.91E+03	6.18E+03	6.54E+03	11.1	1.58E+03	2.97	n/a	
S10V001614		A	7440-42-8	Boron	ug/g	98.3	<0.0300	6.42	n/a	n/a	n/a	96.7	2.97	n/a	B
S10V001614		A	7440-39-3	Barium J	ug/g	85.0	<3.00E-03	96.9	83.4	90.1	15.0	133	0.297	n/a	N
S10V001614		A	7440-41-7	Beryllium	ug/g	83.3	<1.00E-03	0.174	0.169	0.172	2.95	97.1	0.0990	n/a	B
S10V001614		A	7440-70-2	Calcium	ug/g	88.2	<0.0500	1.04E+04	8.24E+03	9.34E+03	23.5	2.49E+03	4.95	n/a	
S10V001614		A	7440-45-1	Cerium J	ug/g	88.0	<0.0300	23.4	21.9	22.6	6.41	1.75	2.97	n/a	BN
S10V001614		A	7440-48-4	Cobalt	ug/g	95.0	<0.0100	8.51	7.80	8.15	8.68	98.2	0.990	n/a	B
S10V001614		A	7440-47-3	Chromium	ug/g	94.4	<5.00E-03	7.46	6.91	7.18	7.70	96.3	0.495	n/a	
S10V001614		A	7440-50-8	Copper	ug/g	87.3	<5.00E-03	11.3	11.7	11.5	3.37	104	0.495	n/a	
S10V001614		A	7439-89-6	Iron	ug/g	97.5	0.0146	2.09E+04	2.03E+04	2.06E+04	2.72	-257	0.495	n/a	N
S10V001614		A	7440-09-7	Potassium	ug/g	99.1	<0.500	896	857	876	4.45	360	49.5	n/a	
S10V001614		A	7439-91-0	Lanthanum	ug/g	86.4	<3.00E-03	10.1	9.72	9.93	4.25	100	0.297	n/a	
S10V001614		A	7439-93-2	Lithium	ug/g	94.1	<3.00E-03	7.10	7.17	7.14	1.06	109	0.297	n/a	
S10V001614		A	7439-95-4	Magnesium	ug/g	94.4	<0.0500	4.65E+03	4.52E+03	4.59E+03	2.75	694	4.95	n/a	
S10V001614		A	7439-96-5	Manganese	ug/g	94.4	<3.00E-03	304	295	299	2.99	122	0.297	n/a	
S10V001614		A	7439-98-7	Molybdenum	ug/g	97.6	<0.0200	2.38	<1.98	n/a	n/a	92.5	1.98	n/a	B
S10V001614		A	7440-23-5	Sodium	ug/g	91.4	<0.100	327	286	307	13.3	423	9.90	n/a	
S10V001614		A	7440-02-0	Nickel	ug/g	93.6	<0.0200	8.78	9.01	8.90	2.58	94.7	1.98	n/a	B
S10V001614		A	7723-14-0	Phosphorus	ug/g	97.4	<0.0500	917	942	930	2.64	89.1	4.95	n/a	
S10V001614		A	7704-34-9	Sulfur	ug/g	97.8	<0.100	73.4	66.8	70.1	9.50	114	9.90	n/a	B
S10V001614		A	7440-21-3	Silicon J	ug/g	91.6	<0.0300	16.2	22.8	19.5	33.8	48.9	2.97	n/a	BM
S10V001614		A	7440-24-6	Strontium	ug/g	85.0	<3.00E-03	47.1	41.2	44.2	13.3	119	0.297	n/a	
S10V001614		A	7440-32-6	Titanium	ug/g	98.7	<5.00E-03	1.48E+03	n/a	n/a	n/a	-64.2	0.495	n/a	
S10V001614		A	7440-62-2	Vanadium	ug/g	99.1	<5.00E-03	50.0	47.0	48.5	6.14	96.6	0.495	n/a	
S10V001614		A	7440-65-5	Yttrium	ug/g	80.0	<2.00E-03	10.6	n/a	n/a	n/a	87.5	0.198	n/a	
S10V001614		A	7440-66-6	Zinc	ug/g	95.7	<5.00E-03	40.9	39.0	40.0	4.71	98.0	0.495	n/a	
S10V001614		A	7440-67-7	Zirconium J	ug/g	98.8	<5.00E-03	6.38	n/a	n/a	n/a	73.6	0.495	n/a	N

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B - Blank Contamination
U - Less Than Detection Limit

B - Estimated
J - Estimated

LS
6-23-2011

N - MS/MSD Outside Range
C - Blank Contamination

M - RPD Outside Range

C Farm WMC 2010-2
Data Summary Report

Sample Group: 20100556
Core Number: C7676
Customer Sample ID: B26JK6
Sample Depth: Surface

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S10V001614		A	14269-63-7	Thorium-230	ug/g	n/a	<2.80E-06	<2.77E-05	5.11E-05	3.94E-05	59.3	n/a	2.77E-05	n/a	U
S10V001614		A	TH-232	Thorium-232	ug/g	106	2.68E-04	2.62	2.66	2.64	1.59	84.1	1.98E-03	n/a	
S10V001614		A	13968-55-3	Uranium-233	ug/g	n/a	<4.00E-06	1.58E-04	1.06E-04	1.32E-04	39.2	n/a	3.96E-05	n/a	
S10V001614		A	13966-29-5	Uranium-234	ug/g	n/a	<2.00E-06	2.96E-05	<1.98E-05	n/a	n/a	n/a	1.98E-05	n/a	
S10V001614		A	15117-96-1	Uranium-235	ug/g	99.7	<4.00E-06	3.28E-03	3.27E-03	3.28E-03	0.221	84.8	3.96E-05	n/a	
S10V001614		A	13982-70-2	Uranium-236	ug/g	n/a	2.12E-06	<1.58E-05	<1.59E-05	n/a	n/a	n/a	1.58E-05	n/a	U
S10V001614		A	13994-20-2	Neptunium-237	ug/g	101	<4.00E-05	8.57E-04	5.26E-04	6.91E-04	47.8	96.9	3.96E-04	n/a	B
S10V001614		A	U-238	Uranium-238	ug/g	107	<2.00E-04	0.487	0.501	0.494	2.90	92.4	1.98E-03	n/a	
~~S10V001615~~		~~S~~	~~14798-03-9~~	~~Ammonium~~	~~ug/g~~	~~103~~	~~0.0356~~	~~0.930~~	~~1.56~~	~~1.24~~	~~50.4~~	~~95.3~~	~~0.465~~	~~n/a~~	~~CB~~
S10V001616		A	14133-76-7	Technetium-99	ug/g	111	<1.50E-05	<1.49E-04	n/a	n/a	n/a	n/a	1.49E-04	n/a	U
S10V001616		A	SN-117	Tin-117 J	ug/g	105	<5.00E-04	0.0136	n/a	n/a	n/a	n/a	4.97E-03	n/a	N
S10V001616		A	15832-50-5	Tin-126 J	ug/g	n/a	<1.00E-05	4.16E-04	n/a	n/a	n/a	n/a	9.94E-05	n/a	N
~~S10V001617~~		~~E~~	~~CM-243/244~~	~~Curium-243/244~~	~~uCi/g~~	~~n/a~~	~~<4.17E-07~~	~~<2.19E-07~~	~~n/a~~	~~n/a~~	~~n/a~~	~~n/a~~	~~2.19E-07~~	~~n/a~~	~~U~~
S10V001617		E	14596-10-2	Americium-241	uCi/g	96.5	<1.04E-06	<5.48E-07	n/a	n/a	n/a	n/a	5.48E-07	n/a	U
S10V001617		E	15510-73-3	Curium-242	uCi/g	n/a	<4.17E-07	<2.19E-07	n/a	n/a	n/a	n/a	2.19E-07	n/a	U
S10V001617		E	PU-239/240	Plutonium-239/240	uCi/g	102	<1.22E-06	<2.81E-07	n/a	n/a	n/a	n/a	2.81E-07	n/a	U
S10V001617		E	13981-16-3	Plutonium-238	uCi/g	n/a	<1.22E-06	<2.81E-07	n/a	n/a	n/a	n/a	2.81E-07	n/a	U
S10V001618		E	SR-89/90	Strontium-89/90	uCi/g	102	<2.27E-07	3.38E-06	n/a	n/a	n/a	n/a	2.14E-07	15.426	
S10V001619		E	13981-37-8	Nickel-63	uCi/g	89.7	<7.67E-06	<9.71E-06	n/a	n/a	n/a	n/a	9.71E-06	n/a	U
S10V001619		E	15758-45-9	Selenium-79	uCi/g	n/a	3.93E-06	<2.63E-06	n/a	n/a	n/a	n/a	2.63E-06	n/a	U
S10V001608			13966-00-2	Potassium-40	uCi/g	n/a	n/a	1.48E-05	n/a	n/a	n/a	n/a	6.68E-06	30.68	
S10V001608			10198-40-0	Cobalt-60	uCi/g	97.0	<2.77E-07	<3.38E-07	n/a	n/a	n/a	n/a	3.38E-07	n/a	U
S10V001608			14234-35-6	Antimony-125	uCi/g	n/a	<8.11E-07	<8.92E-07	n/a	n/a	n/a	n/a	8.92E-07	n/a	U
S10V001608			10045-97-3	Cesium-137	uCi/g	104	<4.00E-07	2.06E-06	n/a	n/a	n/a	n/a	5.79E-07	20.40	
S10V001608			14683-23-9	Europium-152	uCi/g	n/a	<1.48E-06	<1.65E-06	n/a	n/a	n/a	n/a	1.65E-06	n/a	U
S10V001608			15585-10-1	Europium-154	uCi/g	n/a	<8.77E-07	<1.05E-06	n/a	n/a	n/a	n/a	1.05E-06	n/a	U
S10V001608			14391-16-3	Europium-155	uCi/g	n/a	<7.81E-07	<9.20E-07	n/a	n/a	n/a	n/a	9.20E-07	n/a	U
~~S10V001608~~			~~14274-82-9~~	~~Thorium-228~~	~~uCi/g~~	~~n/a~~	~~<1.85E-05~~	~~<2.15E-05~~	~~n/a~~	~~n/a~~	~~n/a~~	~~n/a~~	~~2.15E-05~~	~~n/a~~	~~U~~

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B - Estimated
J - Estimated

LS
6-23-2011

N - MS/MSD Outside Range
C - Blank Contamination

M - RPD Outside Range

C Farm WMC 2010-2
Data Summary Report

Sample Group: 20100556
Core Number: C7676
Customer Sample ID: B26CD0
Sample Depth: 38-40ft

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S10V001764			%WATERA	%WATER-APD	%	n/a	n/a	12.42	n/a	n/a	n/a	n/a	0.01000	n/a	
S10V001764			57-12-5	Cyanide	ug/g	100	<0.0370	<2.37	n/a	n/a	n/a	n/a	2.37	n/a	U
S10V001764			7439-97-6	Mercury	ug/g	102	<1.00E-04	<9.88E-03	n/a	n/a	n/a	n/a	9.88E-03	n/a	U
S10V001764			PH	pH	unitless	n/a	n/a	9.14	n/a	n/a	n/a	n/a	0.0100	n/a	
S10V001764			12597-04-5	Sulfide	ug/g	99.6	<0.180	22.1	n/a	n/a	n/a	n/a	7.15	n/a	B
S10V001766			13966-00-2	Potassium-40	uCi/g	n/a	n/a	1.25E-05	n/a	n/a	n/a	n/a	7.46E-06	39.06	
S10V001766			10198-40-0	Cobalt-60	uCi/g	97.0	<2.77E-07	<3.71E-07	n/a	n/a	n/a	n/a	3.71E-07	n/a	U
S10V001766			14234-35-6	Antimony-125	uCi/g	n/a	<8.11E-07	<9.53E-07	n/a	n/a	n/a	n/a	9.53E-07	n/a	U
S10V001766			10045-97-3	Cesium-137	uCi/g	104	<4.00E-07	<4.95E-07	n/a	n/a	n/a	n/a	4.95E-07	n/a	U
S10V001766			14683-23-9	Europium-152	uCi/g	n/a	<1.48E-06	<1.56E-06	n/a	n/a	n/a	n/a	1.56E-06	n/a	U
S10V001766			15585-10-1	Europium-154	uCi/g	n/a	<8.77E-07	<1.15E-06	n/a	n/a	n/a	n/a	1.15E-06	n/a	U
S10V001766			14391-16-3	Europium-155	uCi/g	n/a	<7.81E-07	<9.76E-07	n/a	n/a	n/a	n/a	9.76E-07	n/a	U
S10V001766			14274-82-9	Thorium-228	uCi/g	n/a	<1.85E-05	<2.24E-05	n/a	n/a	n/a	n/a	2.24E-05	n/a	U
S10V001766			15065-10-8	Thorium-234	uCi/g	n/a	<1.31E-05	<1.83E-05	n/a	n/a	n/a	n/a	1.83E-05	n/a	U
S10V001766			15046-84-1	Iodine-129	uCi/g	115	<1.59E-07	<1.65E-07	n/a	n/a	n/a	n/a	1.65E-07	n/a	U
S10V001767		WV	14133-76-7	Technetium-99	ug/g	110	<3.00E-06	7.14E-06	n/a	n/a	n/a	n/a	3.51E-06	n/a	B
S10V001768		W	14762-75-5	Carbon-14	uCi/g	92.4	<1.33E-07	<1.35E-06	<1.34E-06	n/a	n/a	94.7	1.35E-06	n/a	U
S10V001768		W	10028-17-8	Tritium	uCi/g	94.7	<4.95E-06	<4.59E-06	<4.43E-06	n/a	n/a	97.0	4.59E-06	n/a	U
S10V001770		O	120-82-1	1,2,4-Trichlorobenzene	ug/kg	60.0	<77.4	<76.6	n/a	n/a	n/a	n/a	76.6	n/a	U
S10V001770		O	95-50-1	1,2-Dichlorobenzene	ug/kg	n/a	<101	<99.7	n/a	n/a	n/a	n/a	99.7	n/a	U
S10V001770		O	121-14-2	2,4-Dinitrotoluene	ug/kg	72.6	<38.1	<37.7	n/a	n/a	n/a	n/a	37.7	n/a	U
S10V001770		O	95-95-4	2,4,5-Trichlorophenol	ug/kg	n/a	<44.0	<43.6	n/a	n/a	n/a	n/a	43.6	n/a	U
S10V001770		O	88-06-2	2,4,6-Trichlorophenol	ug/kg	n/a	<49.5	<49.0	n/a	n/a	n/a	n/a	49.0	n/a	U
S10V001770		O	95-48-7	2-Methylphenol	ug/kg	n/a	<57.5	<56.9	n/a	n/a	n/a	n/a	56.9	n/a	U
S10V001770		O	88-75-5	2-Nitrophenol	ug/kg	n/a	<53.7	<53.2	n/a	n/a	n/a	n/a	53.2	n/a	U
S10V001770		O	65794-96-9	3 &4 Methylphenol	ug/kg	n/a	<51.4	<50.9	n/a	n/a	n/a	n/a	50.9	n/a	U
S10V001770		O	83-32-9	Acenaphthene	ug/kg	64.9	<17.6	<17.4	n/a	n/a	n/a	n/a	17.4	n/a	U
S10V001770		O	56-55-3	Benzo(a)anthracene	ug/kg	n/a	<37.8	<37.4	n/a	n/a	n/a	n/a	37.4	n/a	U

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LS
6-23-2011

N - MS/MSD Outside Range
C - Blank Contamination

M - RPD Outside Range

C Farm WMC 2010-2
Data Summary Report

Sample Group: 20100556
Core Number: C7676
Customer Sample ID: B26CD0
Sample Depth: 38-40ft

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
~~S10V001771~~		~~W~~	~~GLYCOLAT~~	~~Glycolate~~	~~ug/g~~	~~98.8~~	~~<9.37E-03~~	~~<0.0935~~	~~n/a~~	~~n/a~~	~~n/a~~	~~n/a~~	~~0.0935~~	~~n/a~~	~~U~~
S10V001771		W	71-50-1	Acetate	ug/g	97.2	<6.04E-03	<0.0602	n/a	n/a	n/a	n/a	0.0602	n/a	U
S10V001771		W	FORMATE	Formate	ug/g	100	<4.67E-03	<0.0466	n/a	n/a	n/a	n/a	0.0466	n/a	U
S10V001771		W	16887-00-6	Chloride	ug/g	98.1	<9.98E-03	0.825	n/a	n/a	n/a	n/a	0.0995	n/a	
S10V001771		W	14797-65-0	Nitrite	ug/g	99.8	<0.0192	<0.192	n/a	n/a	n/a	n/a	0.192	n/a	U
S10V001771		W	14808-79-8	Sulfate	ug/g	101	<0.0187	11.1	n/a	n/a	n/a	n/a	0.187	n/a	
S10V001771		W	338-70-5	Oxalate	ug/g	101	<0.0231	<0.230	n/a	n/a	n/a	n/a	0.230	n/a	U
S10V001771		W	24959-67-9	Bromide	ug/g	99.2	<0.0580	<0.579	n/a	n/a	n/a	n/a	0.579	n/a	U
S10V001771		W	14797-55-8	Nitrate	ug/g	99.7	<0.0208	11.8	n/a	n/a	n/a	n/a	0.207	n/a	
~~S10V001771~~		~~W~~	~~14265-44-2~~	~~Phosphate~~	~~ug/g~~	~~98.9~~	~~<0.0167~~	~~0.409~~	~~n/a~~	~~n/a~~	~~n/a~~	~~n/a~~	~~0.167~~	~~n/a~~	~~B~~
S10V001772		A	7429-90-5	Aluminum	ug/g	89.2	<0.0300	7.62E+03	n/a	n/a	n/a	n/a	2.49	n/a	
S10V001772		A	7440-39-3	Barium J	ug/g	94.8	<3.00E-03	75.7	n/a	n/a	n/a	n/a	0.249	n/a	N
S10V001772		A	7440-41-7	Beryllium	ug/g	97.8	<1.00E-03	0.221	n/a	n/a	n/a	n/a	0.0829	n/a	B
S10V001772		A	7440-70-2	Calcium	ug/g	84.7	0.105	1.15E+04	n/a	n/a	n/a	n/a	4.14	n/a	
S10V001772		A	7440-45-1	Cerium J	ug/g	99.2	<0.0300	20.1	n/a	n/a	n/a	n/a	2.49	n/a	BN
S10V001772		A	7440-48-4	Cobalt	ug/g	88.6	<0.0100	7.07	n/a	n/a	n/a	n/a	0.829	n/a	B
S10V001772		A	7440-47-3	Chromium	ug/g	88.3	<5.00E-03	9.86	n/a	n/a	n/a	n/a	0.414	n/a	
S10V001772		A	7440-50-8	Copper	ug/g	95.6	<5.00E-03	12.5	n/a	n/a	n/a	n/a	0.414	n/a	
S10V001772		A	7439-89-6	Iron	ug/g	89.8	0.0140	1.85E+04	n/a	n/a	n/a	n/a	0.414	n/a	
S10V001772		A	7440-09-7	Potassium	ug/g	85.3	<0.500	1.08E+03	n/a	n/a	n/a	n/a	41.4	n/a	
S10V001772		A	7439-91-0	Lanthanum	ug/g	95.1	<3.00E-03	9.80	n/a	n/a	n/a	n/a	0.249	n/a	
S10V001772		A	7439-93-2	Lithium	ug/g	104	<3.00E-03	8.74	n/a	n/a	n/a	n/a	0.249	n/a	
S10V001772		A	7439-95-4	Magnesium	ug/g	87.8	<0.0500	5.26E+03	n/a	n/a	n/a	n/a	4.14	n/a	
S10V001772		A	7439-96-5	Manganese	ug/g	87.7	<3.00E-03	307	n/a	n/a	n/a	n/a	0.249	n/a	
S10V001772		A	7439-98-7	Molybdenum	ug/g	90.8	<0.0200	<1.66	n/a	n/a	n/a	n/a	1.66	n/a	U
S10V001772		A	7440-23-5	Sodium	ug/g	102	<0.100	414	n/a	n/a	n/a	n/a	8.29	n/a	
S10V001772		A	7440-00-8	Neodymium	ug/g	97.3	<0.0100	13.2	n/a	n/a	n/a	n/a	0.829	n/a	
S10V001772		A	7440-02-0	Nickel	ug/g	88.2	<0.0200	12.3	n/a	n/a	n/a	n/a	1.66	n/a	B

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LS
6-23-2011

N - MS/MSD Outside Range
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M - RPD Outside Range

C Farm WMC 2010-2
Data Summary Report

Sample Group: 20100556
Core Number: C7676
Customer Sample ID: B26CD0
Sample Depth: 38-40ft

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S10V001772		A	7723-14-0	Phosphorus	ug/g	90.1	<0.0500	738	n/a	n/a	n/a	n/a	4.14	n/a	
S10V001772		A	7439-92-1	Lead	ug/g	86.6	<0.0500	<4.14	n/a	n/a	n/a	n/a	4.14	n/a	U
S10V001772		A	7704-34-9	Sulfur J	ug/g	90.7	<0.100	77.0	n/a	n/a	n/a	n/a	8.29	n/a	BN
S10V001772		A	7440-21-3	Silicon	ug/g	81.1	<0.0300	63.8	n/a	n/a	n/a	n/a	2.49	n/a	
S10V001772		A	7440-24-6	Strontium	ug/g	94.5	<3.00E-03	36.1	n/a	n/a	n/a	n/a	0.249	n/a	
S10V001772		A	7440-32-6	Titanium	ug/g	90.7	<5.00E-03	1.19E+03	n/a	n/a	n/a	n/a	0.414	n/a	
S10V001772		A	7440-62-2	Vanadium	ug/g	91.4	<5.00E-03	42.0	n/a	n/a	n/a	n/a	0.414	n/a	
S10V001772		A	7440-65-5	Yttrium	ug/g	90.6	<2.00E-03	8.11	n/a	n/a	n/a	n/a	0.166	n/a	
S10V001772		A	7440-66-6	Zinc	ug/g	87.9	<5.00E-03	37.1	n/a	n/a	n/a	n/a	0.414	n/a	
S10V001772		A	7440-67-7	Zirconium	ug/g	88.9	<5.00E-03	12.7	n/a	n/a	n/a	n/a	0.414	n/a	
S10V001772		A	14269-63-7	Thorium-230 2.77E-05U	ug/g	n/a	5.21E-06	2.77E-05	<2.78E-05	n/a	n/a	n/a	2.77E-05	n/a	B
S10V001772		A	TH-232	Thorium-232	ug/g	104	<2.00E-04	3.24	3.25	3.25	0.426	95.1	1.98E-03	n/a	
S10V001772		A	13968-55-3	Uranium-233	ug/g	n/a	<4.00E-06	1.65E-04	2.75E-04	2.20E-04	49.8	n/a	3.95E-05	n/a	
S10V001772		A	13966-29-5	Uranium-234	ug/g	n/a	<2.00E-06	<1.98E-05	<1.99E-05	n/a	n/a	n/a	1.98E-05	n/a	U
S10V001772		A	15117-96-1	Uranium-235	ug/g	94.8	<4.00E-06	5.43E-03	5.59E-03	5.51E-03	2.81	101	3.95E-05	n/a	
S10V001772		A	13982-70-2	Uranium-236	ug/g	n/a	<1.60E-06	2.71E-05	2.68E-05	2.70E-05	0.997	n/a	1.58E-05	n/a	B
S10V001772		A	13994-20-2	Neptunium-237	ug/g	102	<4.00E-05	<3.95E-04	<3.97E-04	n/a	n/a	98.0	3.95E-04	n/a	U
S10V001772		A	U-238	Uranium-238	ug/g	104	<2.00E-04	0.819	0.838	0.829	2.30	106	1.98E-03	n/a	
S10V001772		A	7440-43-9	Cadmium	ug/g	104	<3.60E-03	0.190	0.162	0.176	15.8	105	0.0237	n/a	B
S10V001772		A	7439-92-1	Lead	ug/g	97.1	<6.00E-03	10.9	9.45	10.2	14.1	88.6	0.0593	n/a	
S10V001772		A	7440-28-0	Thallium	ug/g	103	<8.00E-04	0.165	0.142	0.153	15.2	102	0.0158	n/a	
~~S10V001773~~		~~S~~	~~14798-03-9~~	~~Ammonium~~	~~ug/g~~	~~102~~	~~0.0318~~	~~3.39~~	~~n/a~~	~~n/a~~	~~n/a~~	~~n/a~~	~~0.469~~	~~n/a~~	~~CB~~
S10V001774		A	14133-76-7	Technetium-99	ug/g	109	<3.00E-05	3.11E-04	n/a	n/a	n/a	n/a	2.98E-04	n/a	
S10V001774		A	SN-117	Tin-117	ug/g	102	<1.00E-03	0.0125	n/a	n/a	n/a	n/a	9.94E-03	n/a	
S10V001774		A	15832-50-5	Tin-126	ug/g	n/a	<2.00E-05	6.69E-04	n/a	n/a	n/a	n/a	1.99E-04	n/a	B
~~S10V001775~~		~~E~~	~~CM-243/244~~	~~Curium-243/244~~	~~uCi/g~~	~~n/a~~	~~<2.11E-07~~	~~<1.41E-07~~	~~n/a~~	~~n/a~~	~~n/a~~	~~n/a~~	~~1.41E-07~~	~~n/a~~	~~U~~
S10V001775		E	14596-10-2	Americium-241	uCi/g	98.9	<5.26E-07	<3.52E-07	n/a	n/a	n/a	n/a	3.52E-07	n/a	U
~~S10V001775~~		~~E~~	~~15510-73-3~~	~~Curium-242~~	~~uCi/g~~	~~n/a~~	~~<2.11E-07~~	~~<1.41E-07~~	~~n/a~~	~~n/a~~	~~n/a~~	~~n/a~~	~~1.41E-07~~	~~n/a~~	~~U~~

NA = Not Analyzed, ND = Not Detected

B - Blank Contamination
U - Less Than Detection Limit

B - Estimated
J - Estimated

LS
6-23-2011

N - MS/MSD Outside Range
C - Blank Contamination

M - RPD Outside Range

WSCF Analytical Results Report

Attention Melissa Garrard
Department Inorganic

Group # WSCF111100

Sample # 111100001
SAF#
Sample ID B26CD0

Matrix SOIL
Sampled 07/21/10
Received 01/11/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
ICPMS Prep										**01/12/11**
ICP-MS										
Silver	7440-22-4	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	01/16/11
Antimony	7440-36-0	LA-505-412	U	<0.32	UR	mg/kg	1	0.32	3.2	01/16/11
Arsenic	7440-38-2	LA-505-412		6.03		mg/kg	1	0.43	4.3	01/16/11
Selenium	7782-49-2	LA-505-412	B	1.36		mg/kg	1	0.32	3.2	01/16/11

LS
6-23-2011

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 Melissa Garrard
Department Inorganic

Group # WSCF111100

Sample # 111100004
SAF#
Sample ID B26JK6

Matrix SOIL
Sampled 07/19/10
Received 01/11/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
ICPMS Prep										**01/12/11**
ICP-MS										
Silver	7440-22-4	LA-505-412	U	<0.086		mg/kg	1	0.086	0.86	01/16/11
Cadmium	7440-43-9	LA-505-412	U	<0.086		mg/kg	1	0.086	0.86	01/16/11
Lead	7439-92-1	LA-505-412		4.05		mg/kg	1	0.086	0.86	01/16/11
Thallium	7440-28-0	LA-505-412	U	<0.086		mg/kg	1	0.086	0.43	01/16/11
Arsenic	7440-38-2	LA-505-412	B	3.12		mg/kg	1	0.35	3.5	01/16/11
Selenium	7782-49-2	LA-505-412	B	1.01		mg/kg	1	0.26	2.6	01/16/11

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

222-S LABORATORY

FINAL ANALYTICAL REPORT FOR SAMPLES FROM WASTE MANAGEMENT AREA C FOR CORE HOLE C7676 IN SUPPORT OF RCRA SOIL CHARACTERIZATION

1.0 INTRODUCTION

This final report presents the results for the samples taken from Waste Management Area C between July 19, 2010 and July 29, 2010. The samples were analyzed in accordance with RPP-PLAN-40564, *Field Sampling and Analysis Plan for Sites P and L at Waste Management Area C* (FSAP); RPP-PLAN-38777, *Sampling and Analysis Plan for Phase 2 Characterization of Vadose Zone Soil in Waste Management Area C* (SAP); ATL-MP-1011, *ATL Quality Assurance Project Plan for 222-S Laboratory* (QAPP); SW-846, *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods*; and the additional guidance given by the client's point of contact.

Because the 222-S Laboratory facility was designed to analyze hazardous and complex tank waste samples, most SW-846 test methods performed at the 222-S Laboratory contain deviations that are listed in an appendix in the analytical procedures. All other known deviations or variances from SW-846 are documented in this narrative. The following attachments are included in this report.

Attachment 1	Data Summary Report
Attachment 2	Sample Breakdown Diagrams
Attachment 3	Holding Time Report
Attachment 4	Additional Organic Analyses QC Results
Attachment 5	Tentatively Identified Compounds (TIC) for Organic Analyses
Attachment 6	Geological Report
Attachment 7	Characterization Change Notices (CCN) and Correspondence
Attachment 8	Receipt Paperwork
Appendix A	Analytical Report for Analysis Performed at the Waste Sampling and Characterization Facility (WSCF) - Metals Analysis
Appendix B	Analytical Report for Analysis Performed at WSCF - Organic Analysis

2.0 SAMPLE RECEIPT AND BREAKDOWN

2.1 SAMPLE RECEIPT

A total of eight core intervals and two surface grab samples from core hole C7676 along with seven field blanks and six trip blanks were received by the 222-S Laboratory between July 19, 2010 and July 29, 2010. The samples were delivered in a cooler with ice or, in the case of the volatile organic soil samples, in a freezer. The temperatures of the temperature blanks were measured and recorded on the sample receipt check list and/or the chain of custody form.

The chain of custody requested that conductivity be analyzed on the soil samples. Since this analysis was not listed in the SAP or FSAP, it was not performed. The client has indicated that this analysis may be performed after a CCN is issued to cover the change to the FSAP (see Attachment 7).

2.2 SAMPLE BREAKDOWN

The laboratory received each core interval as a set of volatile organic analysis (VOA) samples and three liner samples when complete core recovery was obtained. The VOA samples were made from the shoe section of each core interval following SW-846 5035. The liner samples from each core interval were extruded, described, and composited by the Washington River Protection Solutions, Inc. (WRPS) geologist. The geologist's report is included in Attachment 6. Provided sufficient samples existed, the composite for each core interval was analyzed as described in the SAP and FSAP. Core interval I001 had less than full recovery (see Attachment 2 and Attachment 8) and was combined with core interval I002 to form the composite. Additionally, core interval I004 had less than full recovery and was combined with I005 to form the 14-ft to 18-ft composite (see Attachment 2 and Attachment 8). All intervals were extruded and composited in the normal manner except for the "B" liner from core interval I002. This interval was combined with the shoe and delivered to the laboratory in a glass jar. The surface samples were received as a single grab sample in a 500-mL jar and a set of VOA samples.

WRPS shipped subsamples of the composites to Test America Laboratories, Inc. (TAL) in St Louis, Missouri and Knoxville, Tennessee to be analyzed for dibutyl and monobutyl phosphate, total petroleum hydrocarbons (diesel and gasoline range), ethylene glycol, chlorinated pesticides, and polychlorinated biphenyls (Aroclors and congeners). TAL subsequently subcontracted the monobutyl and dibutyl phosphate analyses to Southwest Research Institute. The results of these analyses will be released in the final WRPS report.

3.0 ANALYTICAL RESULTS SUMMARY

The Data Summary Report (Attachment 1) presents the final analytical results for those analytes requested in the SAP and FSAP. Secondary analytes are only reported if detected. The TIC from gas chromatography-mass spectrometry (GC/MS) analysis of semivolatile organic compounds (SVOC) is presented in Attachment 5. In addition to the required isotopes, all isotopes with positive gamma energy analysis (GEA) results were reported.

The "Det Limit" column in Attachment 1 contains the method detection limit (MDL) for non-radionuclide analyses, or the minimum detectable activity for radionuclides.

In Attachment 1, the column labeled "A#" indicates the aliquot class or the method used for sample preparation before analysis. For solid samples, the aliquot classes are defined as follows:

"A" indicates samples that were prepared by SW-846 3050B.

"E" indicates samples that were prepared by a strong acid digest.

"O" indicates samples that were extracted for organic analysis.

"S" indicates samples that were prepared by a distillation.

"W" indicates samples that were prepared by a standard water digest.

"WV" indicates samples that were prepared by a Vadose water digest.

The "Qual Flags" column in Attachment 1 contains data qualifier flags from FEAD CP-15383, *Common Requirements of the Format for Electronic Analytical Data,* that are defined as follows:

"B" for organic or radiochemistry results is used to indicate that the analyte was detected in the method or preparation blank and in the sample.

"B" for inorganic results is used to indicate that the reported result should be considered an estimate because it is below the quantitation limit. The "B" flag is applied to sample concentrations that are greater than the MDL but less than the quantitation limit.

"C" for inorganic results is used to indicate that the analyte was detected in the method or preparation blank and in the sample, and the result for the blank was greater than or equal to 20% of the reported sample result.

"J" for organic results is used to indicate that the reported result should be considered an estimate because it is below the quantitation limit. The "J" flag is applied to sample concentrations that are greater than the MDL but less than the quantitation limit.

"T" for CG/MS results is used to indicate the matrix spike (MS) recovery or matrix spike duplicate (MSD) recovery is outside control limits.

"U" for all results is used to indicate that the reported result is less than the calculated detection limit.

"N" for all but GC/MS is used to indicate that the MS recovery or MSD recovery was outside of the specified range in the QAPP or SAP.

"N" for GC/MS is used to indicate a TIC which has been named.

"M" for inorganic results is used to indicate that the relative percent difference (RPD) between the sample and the duplicate is greater than 30%.

Manual calculations using rounded results from the Data Summary Report (Attachment 1) or result calculation forms may differ slightly from the actual results derived from the raw data.

Samples without a letter identifier in the "A#" column were analyzed directly with no separate preparation or with sample preparation performed as a part of the procedure steps.

3.1 SAMPLE DIGESTIONS

3.1.1 Radiochemistry Strong Acid Digestion

Strong acid digestions with a hot plate for the heat source were performed using a mixture of concentrated nitric and hydrochloric acids. For each digest, approximately 1 to 10 g of sample were digested depending on the analysis being performed. The digestate was then filtered and diluted to a final volume. This digestion was used for all radiochemical analyses except ^{3}H, ^{14}C, and ^{129}I. This digestion is a leach of the acid soluble species only.

3.1.2 SW-846 3050B - Acid Digestion-Heating Block

This acid digestion follows SW-846 3050B using a heating block and nitric and hydrochloric acids. An aliquot of approximately 5 g of sample was digested. All heating-block digestions were filtered and diluted to a final volume of 50 mL. In soil, this digestion is a leach of the acid soluble species only. This digestion was used for all inductively coupled plasma/mass spectrometry (ICP/MS) and inductively coupled plasma/atomic emission spectroscopy (ICP/AES) analyses except for ^{99}Tc and isotopic tin (^{117}Sn and ^{126}Sn) analyses. The digestion is modified for the ^{99}Tc analysis by using only nitric acid. This is done to eliminate the possibility of the formation a zinc-chlorine ion pair of mass 99. The laboratory believes this ion, when present, is responsible for low level false positives. A separate digestion for antimony was prepared using additional hydrochloric acid, as recommended in SW-846.

3.1.3 Water Digestion

A water digestion or leach was prepared for the anions by ion chromatography, ^{14}C, and ^{3}H analyses using approximately 0.25 to 4 g of sample diluted to 25 mL. Sonification was used, and the leachate was then filtered. In soil, this digestion is a leach of the water soluble species only.

3.1.4 Vadose Water Digestion

A 70-g sample of soil was leached using a ratio of one part water to one part soil. To maintain a one-to-one ratio, the amount of water added to the sample was adjusted based on the percent moisture of the soil. The slurries were placed on a shaker table for about 1 hour. They were then transferred to a centrifuge tube and centrifuged at 4,000 rpm for 30 minutes. An unfiltered aliquot was set aside for alkalinity analysis. The remainder was filtered using a disposable vacuum filtration system. The filtrates were transferred to a clean bottle and then analyzed for ^{99}Tc by ICP/MS analysis.

3.2 INORGANIC ANALYSES

3.2.1 Cyanide

The cyanide analysis by distillation and spectrophotometry was performed on the grab samples and liner composite samples. All analyses met the SW-846 holding time of 14 days. There was no required reporting limit in the SAP for cyanide. The target detection limit was 0.5 µg/g, which is lower than what the current laboratory procedure can achieve. There were no notable quality control (QC) issues with these batches, and all QC requirements in the FSAP, SAP, and QAPP were met.

3.2.2 Sulfide

Sulfide analysis by distillation and ion selective electrode was performed on the grab samples and liner composite samples. All analyses met the SW-846 holding time of 7 days. There was no required reporting limit in the SAP for sulfide. The target detection limit was met. All sample

results had adjusted MDLs of approximately 7 µg/g. There were no notable issues with these batches, and all QC requirements in the FSAP, SAP, and QAPP were met.

3.2.3 pH Analysis

The pH analysis was performed on the grab samples and liner composite samples. These analyses met all QC requirements in the FSAP, SAP, and QAPP. The FSAP lists a pH holding time requirement of "as soon as possible." All pH measurements were taken after the water leach was performed. The sampling to analysis time varied from 3.2 to 7.5 days (see Attachment 3). The sample extrusion/compositing process was basically the cause for the delay in the pH analysis. There is no correlation between pH results and days to analysis, and the results fall within an expected range for alkaline soils. This indicates that the variation in time has no apparent effect on the results.

3.2.4 Mercury

Analysis for Hg by cold-vapor graphic furnace/atomic absorption was performed on the grab samples and liner composite samples. All analyses met the holding time of 28 days. This analysis met the required and target detection limits.

Batch 21197: Mercury was detected in the preparation blanks at a level below the quantitation limit and slightly above the MDL. Since mercury was not detected in the samples, reanalysis was not required.

Batches 20849 and 20982: There were no notable issues with these batches, and all QC requirements in the FSAP, SAP, and QAPP were met.

3.2.5 Ion Chromatography – Ammonium

Analysis for ammonium was performed using a distillation preparation of the grab samples and the liner composite samples. There is no regulatory holding time limit promulgated for ammonium in soil. The SAP lists an administrative holding time of 7 days. The laboratory believes that after distillation and preservation, the holding time is 28 days based on U.S. Environmental Protection Agency drinking water and waste water holding times for preserved samples. All samples met these holding times. These analyses met the target detection limit listed in the SAP. There was no required reporting limit in the SAP or FSAP for ammonium.

Batch 20930: The RPD between the duplicate and the sample exceeded the required 30%. Since the sample result for this analyte was below the quantitation limit, the criterion does not apply and reanalysis is not required. Ammonium was detected in the preparation blanks at a level below the quantitation limit and above the MDL. Ammonium was also detected in the samples at a similar level; these results have been flagged with a "C". Since all results were below the quantitation limit, reanalysis was not required.

Batches 21010 and 21124: Ammonium was detected in the preparation blanks at a level below the quantitation limit and above the MDL. Ammonium was also detected in the samples at a

similar level; these results have been flagged with a “C”. Since all results were below the quantitation limit, reanalysis was not required.

3.2.6 Ion Chromatography – Anions and Small Organic Acids

Ion chromatography analysis was performed on all grab samples and liner composite samples. The laboratory met all of the required and target detection limits. All analyses were within the applicable SW-846 holding times. The sample spikes used for the standard water digestions are predigestion spikes.

Batch 21522: Nitrite was detected in the preparation blanks at a level below the quantitation limit and above the MDL. Nitrite was also detected in three of the samples at a similar level; these results have been flagged with a “C”. Since all results were below the quantitation limit, reanalysis was not required. The MS recovery for phosphate exceeded the ±25% requirement at 63%. The post-digestion spike was recovered at 85% indicating that the low MS recovery may be due to matrix interference. The client agreed (see Attachment 7). The results were reported with an “N” flag applied to each phosphate result in this batch.

Batch 22189: The RPD for nitrite was above the required 30%; however, the result was below the quantitation limit and the criterion does not apply.

3.2.7 Inductively Coupled Plasma/Atomic Emission Spectroscopy

The ICP/AES analysis was performed on an acid-digest (SW-846 3050B) of all grab samples and liner composite samples. The ICP/AES analysis was unable to obtain the required detection limit for antimony, arsenic, cadmium, lead, selenium, silver, and thallium for the soil sample. These elements have been reported from separate ICP/MS analyses. Total uranium has not been reported by the ICP/AES analysis since it cannot meet the required detection limits in the SAP. The isotopic uranium analysis by ICP/MS met the required detection limit for ^{238}U, which is essentially total uranium. The overall data usability was not affected. For all other metals reported by ICP/AES, all target and required detection limits were met. SW-846 lists the holding time for ICP/AES metals as 6 months. All analyses met the holding times.

Batch 23451: The interference check standard-A (ICSA) produced positive results for cobalt and manganese, which are not contained in this standard. This could indicate a positive interference. However, since in the ICSAB these elements recovered at 93%, there appears to be no positive interference. The ICSAB produced a result above the quantitation limit for neodymium. This indicates that spectral interference was occurring. Neodymium results in the sample were not reported due to the high probability that they were the result of this interference. A low level of iron was detected in the preparation blank, but reanalysis was not required since these levels were less than 5% of the lowest sample result.

The MS recoveries for aluminum, calcium, iron, magnesium, potassium, phosphorous, sodium, silicon, and titanium exceeded the ±25% requirement in the FSAP and SAP. Since the sample results for these elements exceeded the MS level by more than four times, this criterion does not apply.

The MS recovery for cerium and zirconium exceeded the ±25% requirement in the SAP and FSAP. For zirconium, the laboratory believes this was due to matrix interference. At 2% recovery, cerium does not appear to have been in the spike solution used. Reanalysis was not required since these are secondary elements. These results have been flagged with an “N”.

The MS recovery for barium exceeded the ±25% requirement at 133%. The post-digestion spike was recovered at 94%. A second sample was spiked from core hole C7676 with similar results (137%). This indicates that the high MS recovery may be due to matrix interference. The client agreed (see Attachment 7). The results were reported with an “N” flag applied to each result in this batch.

The RPD between the sample and the duplicate exceeded the ±30% requirement in the SAP for silicon. The laboratory believes this was due to matrix interference. Reanalysis was not required since this is secondary element. It should be noted that silicon is not listed with other elements in SW-846 3050B, section 1.1, under “Scope and Application” for the method and does not perform consistently when using this digest. The silicon results have been flagged with an “M”.

The opening and closing low level standard (LLS) for zinc was recovered outside the required ±30% at 66%. This could indicate a low bias for results near the LLS level. However, since the zinc results were 14 to 23 times the LLS level, the data quality was not affected. The LLS potassium was recovered outside the ±30% requirement at 149%. However, since the potassium results were 14 to 30 times the LLS level, the data quality was not affected.

Batch 24077: The ICSA produced positive results for manganese, which are not contained in this standard. This could indicate a positive interference. However, since in the ICSAB this element recovered at 92%, there appears to no positive interference. The ICSAB produced results above the quantitation limit for neodymium. This indicates that spectral interference was occurring. Neodymium results were not reported due to the high probability that they were the result of this interference. A low level of iron was detected in the preparation blank, but reanalysis was not required since these levels were less than 5% of the lowest sample result.

The MS recoveries for aluminum, calcium, iron, magnesium, manganese, potassium, phosphorous, sodium, silicon, and titanium exceeded the ±25% requirement in the FSAP and SAP. Since the sample results for these elements exceeded the MS level by more than four times, this criterion does not apply.

The MS recovery for cerium exceeded the ±25% requirement in the SAP and FSAP at 133%. The laboratory believes this was due to matrix interference. Reanalysis was not required since this is a secondary element. These results have been flagged with an “N”.

The MS recovery for barium exceeded the ±25% requirement at 133%. The post-digestion spike was recovered at 94%. A second sample was spiked from core hole C7676 with similar results (137%). This indicates that the high MS recovery may be due to matrix interference. The client agreed (see Attachment 7). The results were reported with an “N” flag.

3.2.8 Inductively Coupled Plasma/Mass Spectroscopy

The ICP/MS actinide and trace metal analyses were performed on the standard SW-846 3050 acid digestion of all grab samples and liner composite samples. The ICP/MS ^{126}Sn and ^{99}Tc analysis was performed on the sample digest without the addition of hydrochloric acid. Hydrochloric acid is not used for ^{99}Tc analysis because of the potential formation of a ZnCl ion pair with mass 99. ICP/MS trace metal analysis for antimony was performed on the SW-846 3050 digest with additional hydrochloric acid, which is required to keep antimony in the solution. In addition to these acid digests, ICP/MS ^{99}Tc analysis was performed on a Vadose water digest of all solid samples.

Direct is the most accurate type of calibration; however, standard material is not commercially available for all of the isotopes of interest. Concentrations of those isotopes without available standards are estimated based on the instrument's mass-response curve, which is generated by using the intensity/concentration relationship for the available isotope standards. Results estimated in this manner are designated "semi-quantitative."

Table 1. Inductively Coupled Plasma-Mass Spectroscopy Standards and Spikes

Standard Type	Analytes Analyzed
Initial calibration verification (nondigested)	^{232}Th, ^{235}U, ^{238}U, ^{237}Np, ^{99}Tc, ^{117}Sn
Acid digest standard (laboratory control standard)	^{232}Th, ^{235}U, ^{238}U, ^{237}Np, ^{99}Tc, ^{117}Sn
Predigest spike (MS)	^{232}Th, ^{235}U, ^{238}U, ^{237}Np, ^{99}Tc, ^{117}Sn
Post-digest spike	^{232}Th, ^{235}U, ^{238}U, ^{237}Np, ^{99}Tc, ^{117}Sn
No standard or spike of either type	^{126}Sn, ^{230}Th, ^{233}U, ^{234}U, ^{236}U

3.2.8.1 Technetium-99 and Tin-126

The required detection limit listed in the SAP for ^{99}Tc was met. The target detection limit for ^{99}Tc was not met. There were no required or target detection limits for ^{126}Sn listed in the SAP. The SAP lists the holding time for isotopic analytes as 6 months. All samples were analyzed within the holding time.

Because there is no available source for ^{126}Sn, ^{117}Sn is used to monitor the chemical recovery for this analysis. Though not specifically requested in the SAP, ^{117}Sn is reported for the laboratory control sample (LCS) and MS in order to demonstrate method accuracy and presence of possible matrix interference.

All sample results for ^{126}Sn were above the MDL and below the quantitation limit with one exception. Based on this, the laboratory suspects that a low level isobaric interference is present in these samples at mass 126. The laboratory believes the most likely suspect is ^{126}Te, but there are other possible candidates. One sample result was above the quantitation level for ^{126}Sn. Users of this data should be aware that all positive ^{126}Sn results in the report may be due to isobaric interference. The laboratory is currently evaluating how to quantify these possible isobaric interferences.

Batch 22109: The MS for ^{117}Sn was recovered below the ±25% requirement at 70%. Similar results have been observed in other batches; this appears to be a matrix interference issue. This

batch was not reanalyzed, but others have been with no improvement. Tin results should be considered biased low at these levels. All samples in the batch have been flagged with an "N". The laboratory is investigating changing the acid mixture used to perform low level ^{126}Sn analysis in hopes of improving spike recoveries. Tin-126was detected in one of the four continuing calibration blanks (CCBs) at slightly above the MDL. This blank bracketed the last three samples in the batch, which have been flagged with a "C". Since all results were below the quantification level, reanalysis was not required.

Batch 23853: Tin-126 was detected in two of the three CCBs at slightly above the MDL. All samples in this batch have been flagged with a "B". Since all results were below the quantification level, reanalysis was not required.

3.2.8.2 Technetium-99 (Vadose Water Digest)

The required and target detection limits listed in the SAP for ^{99}Tc were met. The SAP lists a holding time of 6 months for isotopic analytes. All analyses met this holding time.

Batch 23162: ^{99}Tc was detected in one of the three CCBs at slightly above the MDL. All sample results except two were below the MDL. The blank result was 5% of one these samples, which has been flagged with a "B". Since the sample and blank results were below the quantification level, reanalysis was not required. One sample result (B26CD2) was well above the quantification limit. The sample contained the known interferents chloride and cobalt, but at level that would not account for the ^{99}Tc result. Therefore, no qualifier was place on this result.

3.2.8.3 Actinides

The required and target detection limits were met for all isotopes and in all samples. The SAP lists the holding time for isotopic analytes as 6 months. All samples were analyzed within the holding time.

Batch 22039: The RPD for ^{237}Np and ^{233}U exceeded the 30% requirement in the SAP and FSAP. Since these results were below the quantitation limit, this criterion does not apply. The results for ^{232}Th and ^{236}U in the preparation blank were above the MDL and below the quantitation limit. One sample in this batch demonstrated a similar result for ^{236}U and has been flagged with a "B". Since all ^{236}U results were below the quantitation limit, reanalysis was not required. The sample result for ^{232}Th was more than 20 times the blank result. Neptunium-237 was detected in the initial calibration blank (ICB) at slightly above the MDL. Two samples demonstrated a similar result and have been flagged with "C". Since all ^{237}Np results were below the quantitation limit, reanalysis was not required.

Batch 23864: The percent difference for serial dilution of ^{235}U was above the 10% limit at +11.6%. This could indicate that there was negative bias in the more concentrated sample. This is an unusual result for Vadose samples, which are typically within the ±10% limit for ^{235}U. Since ^{232}Th and ^{238}U were within the ±10% limit, a dilution error can be ruled out. There is no requirement for reanalysis, and the result has been reported with this discussion. The result for ^{230}Th in the preparation blank was above the MDL and below the quantitation limit. All samples in this batch demonstrated a similar result for ^{230}Th and have been flagged with a "C". Since all ^{230}Th results were below the quantitation limit, reanalysis was not required.^{236}U was detected in

the ICB and one of the three CCBs at slightly above the MDL. One sample demonstrated a similar result and has been flagged with "C". Since all ^{236}U results were below the quantitation limit, reanalysis was not required.

3.2.8.4 Trace Metals

Antimony, arsenic, cadmium, lead, selenium, silver, and thallium were analyzed by ICP/MS to obtain the required detection limits in the SAP. Due to an extended room outage at 222S Laboratory, samples were sent WSCF Laboratory by the WRPS for analysis. Table 2 list the samples and analytes that were reported by WSCF. The WSCF report is included in Appendix A of this report. Except for the required detection limit for selenium, all required detection limits were met or the sample results were above the quantitation limit and the sample detection limit criteria do not apply. All target detection limits were met. All samples were analyzed within the holding time.

Table 2, ICPMS Analysis Performed At WSCF Laboratory

Client Sample No.	Sample Depth	ICP/MS Analysis Performed at WSCF
B26JK6	Surface	Arsenic, Cadmium, Lead, Selenium, Silver, Thallium
B26JK7	Surface Dup	Arsenic, Cadmium, Lead, Selenium, Silver, Thallium
B29612	5-9ft	Arsenic, Cadmium, Lead, Selenium, Silver, Thallium
B29613	14-18ft	Arsenic, Cadmium, Lead, Selenium, Silver, Thallium
B26CC4	10-12ft	Arsenic, Cadmium, Lead, Selenium, Silver, Thallium
B26CD0	38-40ft	Antimony, Selenium, Silver, Arsenic
B26CD2	128-130ft	Antimony, Selenium, Silver, Arsenic
B26CD4	157-159ft	Antimony, Selenium, Silver, Arsenic

Batch 21722: There were no notable issues with this antimony batch, and all QC requirements in the FSAP, SAP, and QAPP were met.

Batch 24036: The serial dilution for lead exceeded the 10% difference requirement in the QAPP at +23%. This would indicate that a low bias may exist in the more concentrated sample. This is an unusually result for vadose samples for lead, since lead does not typically fail the serial dilution test.

3.3 RADIOCHEMICAL ANALYSIS

The holding time listed in the SAP for radioactive isotopes is 6 months. The FSAP lists the holding time as "none." All radiochemical analyses met the 6-month holding time listed in the SAP. With the exception of the ^{14}C and ^{3}H analyses, tracers and spikes are added prior to the digestion.

3.3.1 Gamma Energy Analysis

Gamma energy analysis was performed directly on the grab samples and liner composite samples. The SAP requires the reporting of all isotopes with positive results above the minimum detectable activity (MDA); therefore, isotopes additional to those required in the SAP were reported when detected. The GEA analysis met all of the required detection limits in the SAP. The laboratory was unable to meet any of the target detection limits.

Batch 21198: The RPD for ^{40}K was above the 30% requirement in the FSAP. Since the counting error was > 15%, this criterion does not apply.

3.3.2 Strontium-89/90

Strontium-89/90 analysis was performed on the grab samples and liner composite samples. All of the sample analyses met the required and target detection limits. The FSAP and SAP requested ^{90}Sr, not $^{89/90}Sr$, be reported. The 222-S Laboratory only performs the latter analysis. Since the half-life for ^{89}Sr is approximately 51 days and ^{89}Sr has not been produced at Hanford for years, $^{89/90}Sr$ is essentially ^{90}Sr. There were no notable issues with these batches, and all QC requirements in the FSAP, SAP, and QAPP were met.

3.3.3 Tritium

The ^{3}H analysis by liquid scintillation counting (LSC) was performed on a water leach of all grab samples and liner composite samples. This method only measured the ^{3}H in the samples that could be dissolved in water. This analysis achieved the required and target detection limits in the FSAP.

Batch 21940: The preparation blank demonstrated a positive result below the quantitation limit. Since all sample results were below the MDA, reanalysis was not required.

Batch 23378: There were no notable issues with this batch, and all QC requirements in the FSAP, SAP, and QAPP were met.

3.3.4 Selenium-79

The ^{79}Se analysis by LSC was performed on the grab samples and liner composite samples. The analysis achieved the target detection limit in the FSAP. No required detection limit was listed. No standard is currently available for ^{79}Se, and a cold carrier is used to monitor recovery and is measured gravimetrically. The ^{14}C LSC curve is used to determine the ^{79}Se results since their energies are similar. Since both ^{63}Ni and ^{79}Se use a single digestion batch that is equally split prior to the separation step, the maximum tracer/carrier recovery is 50%.

Batch 23725: There were no notable issues with this batch, and all QC requirements in the FSAP, SAP, and QAPP were met.

Batch 24408: The preparation blank demonstrated a positive result below the quantitation limit with a larger counting error. Since all sample results were below the MDA, reanalysis was not required.

3.3.5 Carbon-14

The ^{14}C analysis by LSC was performed on a water leach of the grab samples and liner composite samples. The analysis achieved the required detection limit in the FSAP but exceeded the target detection limit of 1 piC/g. The MDA for the samples were between 1 pCi/g and 2 pCi/g. This analysis will only detect water soluble forms of ^{14}C.

Batch 21907: The RPD for ^{14}C was above the 30% requirement in the FSAP. Since the counting error was > 15%, this criterion does not apply.

Batch 22686: There were no notable issues with this batch, and all QC requirements in the FSAP, SAP, and QAPP were met.

3.3.6 Nickel-63

The ^{63}Ni analysis by LSC was performed on the grab samples and liner composite samples. The analysis achieved the required and target detection limits in the FSAP. Since both ^{63}Ni and ^{79}Se use a single digestion batch that is equally split prior to the separation step, the maximum trace/carrier recovery is 50%.

Batch 23724: There were no notable issues with this batch, and all QC requirements in the FSAP, SAP, and QAPP were met.

3.3.7 Iodine-129

Analysis for ^{129}I by low energy GEA was performed on an iodine-specific fusion digest of all grab samples and liner composite samples. The required and target detection limits in the SAP were met. There were no notable issues with these batches, and all QC requirements in the FSAP, SAP, and QAPP were met.

3.3.8 Americium-241, Curium-243/244, and Curium-242

Analysis for ^{241}Am, $^{243/244}Cm$, and ^{242}Cm by alpha energy analysis (AEA) was performed on the grab samples and liner composite samples. For this analysis, there were no notable issues with any batches and all QC requirements in the FSAP, SAP, and QAPP were met. The required and target detection limits in the SAP were met. The SAP and FSAP requested ^{243}Cm and ^{244}Cm be reported separately. Since it is not possible to resolve these individual isotopes when using AEA, these isotopes have been reported as $^{243/244}Cm$.

3.3.9 Plutonium-238 and Plutonium-239/240

Plutonium isotopic (^{238}Pu and $^{239/240}$Pu) analysis by AEA was performed on the grab samples and liner composite samples. For this analysis, there were no notable issues with any batches and all QC requirements in the FSAP, SAP, and QAPP were met. The required and target detection limits in the SAP were met.

3.4 ORGANIC ANALYSES

3.4.1 Volatile Organic Analysis

The VOA by GC/MS was performed on field samples by purge and trap. Field sampling methods, sample containers, and preservation methods followed SW-846 5035.The soil samples were delivered in a freezer in pre-weighed VOA vials with magnetic stir bars and approximately 5 g of sample. After receipt, the VOA samples were stored in a freezer. For each sample interval, an additional high level sample preserved in methanol was also received. These were not used because none of the results for the frozen samples were above the calibration range. The exact weight of the sample and the tare weight of the VOA vials were recorded by sampling personnel and delivered with the samples. Seven field blanks and six trip blanks were also received and analyzed. The samples were preserved with either HCl or H_2SO_4 to a pH < 2. The holding time for all samples is 14 days. All samples analyzed at the 222-S Laboratory met the required holding time.

Two samples, B26D46 (Trip Blank-6) and B26D57 (Field Blank-7), were shipped to WSCF for analysis due to a laboratory outage. The WSCF report is included in Appendix B of this report.

The VOA met the target and required detection limits in the SAP. The SAP and FSAP requested m-xylene and p-xylene be reported separately. Since it is not possible to resolve these individual compounds when performing VOA by SW-846 8260C, these compounds have been reported as m+p xylene. The SAP and FSAP request that methanol be reported with this analysis; however, this compound is too polar to be purged and cannot be reported (see Attachment 7). Isobutanol, another poor purger, was reported as a semivolatile organic compound.

All of the field blanks and trip blanks contained chloroform above the quantification level. Since chloroform is a common chlorination byproduct, the laboratory believes the likely source of chloroform was the water used by sampling personnel to make the various blanks.

The LCS, MS, and MSD recoveries were compared against the laboratory's statistical process control (SPC) limits, as required by SW-846. The use of SPC limits is allowed in the FSAP, SAP, and QAPP.

Batch 21743: The method blank results for acetone and carbon disulfide were above the quantitation limit. The sample results for carbon disulfide were below the MDL; the data quality was not affected. The sample results for acetone were below the quantitation limit and were flagged with a "B". Since the sample results were below the quantitation limit, reanalysis was not required. Additionally, acetone was less than five times the quantitation limit, which meets DOE/RL-96-68, *Hanford Analytical Services Quality Assurance Requirements Documents*

(HASQARD), and QAPP requirements. Toluene was present in the blank below the quantitation limit. All toluene results in the sample were below the MDL.

Batch 21744: Toluene was present in the blank below the quantitation limit. All sample results for toluene were similar and have been flagged with a “B”. Since all toluene results were below the quantitation limit, reanalysis was not required.

Batch 21745: The method blank results for acetone, toluene, and styrene were above the MDL but below the quantitation limit. The sample results for acetone, toluene, and styrene were similar to the blank and have been flagged with “B”. Since the blank results were below the quantitation limit, reanalysis was not required.

Batch 21746: The method blank result for acetone was above the quantitation limit. The sample results for acetone were below the MDL except for one sample, which was below the quantitation limit and has been flagged with a “B”. Since the sample result was below the quantitation limit, reanalysis was not required. Additionally, acetone was less than five times the quantitation limit, which meets HASQARD and QAPP requirements.

Batch 23313: The method blank results for m,p-xylene, styrene, and toluene were above the MDL and below the quantitation limit. Styrene and toluene were detected in the sample below the quantitation limit, and m,p-xylene was below the MDL. Since all results were below the quantitation limit, reanalysis was not required. Hexane was detected in the sample above the quantitation limit. Since it was not detected in the method blank, this result does not appear to be result of laboratory contamination.

3.4.2 Semivolatile Organic Analysis

The semivolatile organic analysis (SVOA) by GC/MS was performed on methylene chloride extractions of all grab samples and liner composite samples. All holding times were met.

The SVOA analysis met the required and target detection limits with two exceptions:

- The adjusted MDLs for cyclohexanone were above the 0.5-mg/kg target detection limit for most samples. This compound obtained detection limits between 0.5 mg/kg and 0.6 mg/kg.
- The adjusted MDLs for di-n-butyl-phthalate were above the target detection limit of 0.33 mg/kg. The analysis achieved a detection limit of between 0.5 mg/kg and 0.6 mg/kg for this compound.

LCS, MS, and MSD recoveries were compared against the laboratory’s SPC limits, as required by SW-846. The use of SPC limits is permitted in the FSAP, SAP, and QAPP.

The SAP and FSAP requested m-cresol and p-cresol be reported separately. Since it is not possible to resolve these individual compounds when performing SVOA by SW-846 8270C, these compounds have been reported as m+p cresol.

Batches 21133 and 21183: There were no notable issues with these batches, and all QC requirements in the FSAP, SAP, and QAPP were met.

Batch 21072: The percent difference for chrysene and 2,4-dinitrotoluene in continuous calibration verification exceeded the ±20% limit at -20.1% and -22.8%, which could indicate a low bias. However, the LLS demonstrated that there was adequate sensitivity to detect these compounds at the level of quantitation had they been present in the samples.

3.4.3 Tentatively Identified Compounds

Unassigned peaks or TICs were treated as follows. Standards were obtained and analyzed for each secondary analyte identified in the SAP. This data was accumulated in the Hanford library. Following analysis, the largest TICs with instrument responses greater than 10% of the response of the nearest internal standard were evaluated and compared to the Hanford library. The estimated concentration of these TICs was calculated using measured response factors from the Hanford library compound list.

After comparison to the Hanford library, remaining unknowns were compared to the National Institute of Standards and Technology's NIST 02, *HP Mass Spectral Libraries*. The estimated concentration of compounds identified in the NIST library was calculated based on an arbitrary response factor of 1.0. If the compounds were not identified as a result of this comparison, they were reported as "unknown." Summaries of the SVOA and VOA TICs from the field samples and method blanks are provided in Attachment 5. TICs that were found in the field samples and were present in the associated batch method blank have been flagged with "B".

4.0 PROCEDURES

Table 2 lists the analytical procedures used for analysis of the Area C samples.

Table 2. Analytical Procedures

Analysis	Preparation Method	Analysis Procedure
Inorganic Analyses		
Cyanide	LA-695-103, Rev. J-0 (SW-846 9010C)	LA-695-103, Rev. J-0 (SW-846 9014)
Sulfide	LA-361-101, Rev. D-0 (SW-846 9030B)	LA-361-101, Rev. D-0 (SW-846 9215)
pH (solid)	LA-212-105, Rev. G-0 (SW-846 9045D)	LA-212-105, Rev. G-0 (SW-846 9045D)
Mercury – Cold Vapor Atomic Absorption	LA-325-110, Rev. A-0 (SW-846 7471A)	LA-325-110, Rev. A-0 (SW-846 7471A)
Ammonia – IC	LA-544-112, Rev. E-0	LA-533-101, Rev. Q-0
Anions & Organic Acids – IC	LA-504-101, Rev. M-0	LA-533-115, Rev. J-0
Metals – ICP /AES	LA-505-163, Rev. G-0 (SW-846 3050B)	LA-505-161, Rev. J-0-A (SW-846 6010C)

Analysis	Preparation Method	Analysis Procedure
^{99}Tc, ^{126}Sn – ICP/MS	LA-505-163, Rev. G-0 (SW-846 3050B)	LA-506-102, Rev. F-1
^{99}Tc – ICP/MS	08-ATL-078 Vadose Water Digest	LA-506-102, Rev. F-1
Metals – ICP/MS	LA-505-163, Rev. G-0 (SW-846 3050B)	LA-506-102, Rev. F-1 LA-506-103, Rev. B-0 (SW-846 6020A)
Actinides – ICP/MS	LA-505-163, Rev. G-0 (SW-846 3050B)	LA-506-102, Rev. F-1
Radiochemical Analyses		
GEA	Direct	LA-548-121, Rev. I-0
^{90}Sr – Separation/Beta counting (Solid)	LA-544-101, Rev. F-0	LA-220-101, Rev. I-0
^{3}H – LSC	LA-504-101, Rev. M-0	LA-218-111, Rev. G-0
^{14}C – LSC	LA-504-101, Rev. M-0	LA-348-104, Rev. H-0, I-0
^{79}Se – Separation/LSC	LA-544-101, Rev. F-0	LA-365-132, Rev. J-0
^{63}Ni – Separation/LSC	LA-544-101, Rev. F-0	LA-285-102, Rev. E-0
^{129}I – Separation/GEA	LA-378-105, Rev. D-0	LA-378-105, Rev. D-0
^{241}Am, $^{243/244, 242}$Cm – Separation/AEA	LA-544-101, Rev. F-0	LA-953-104, Rev. H-1
$^{239/240, 238}$Pu – Separation/AEA	LA-544-101, Rev. F-0	LA-953-104, Rev. H-1

Organic Analyses		
Analysis	**Preparation Method**	**Analysis Procedure**
VOC – GC/MS	Direct	LA-523-118, Rev. G-O-A, H-O (SW-846 8260B)
SVOC – GC/MS	LA-523-138, Rev. G-0 (SW-846 3540C)	LA-523-135, Rev. D-0 (SW-846 8270C)

5.0 REFERENCES

ATL-MP-1011, 2010, *ATL Quality Assurance Project Plan for 222-S Laboratory*, Rev. 9, Advanced Technologies and Laboratories International, Inc., Richland, Washington.

NIST 02, 2002, *HP Mass Spectral Libraries*, July 2002 Release, Hewlett-Packard Company, Palo Alto, California.

SW-846, 1986, *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods,* Third Edition, as amended, U.S. Environmental Protection Agency, Washington, D.C.

RPP-PLAN-40564, 2009, *Field Sampling and Analysis Plan for Sites P and L at Waste Management Area C,* Rev. 2, Washington River Protection Solutions, Inc.

RPP-PLAN-38777, 2009, *Sampling and Analysis Plan for Phase 2 Characterization of Vadose Zone Soil in Waste Management Area C*, Rev. 1, Washington River Protection Solutions, Inc.

DOE/RL-96-68, 2007, *Hanford Analytical Services Quality Assurance Requirements Documents, Volume 4: Laboratory Technical Requirement, Rev.3*, United States Department of Energy, Richland Field Office.

Washington River Protection Solutions	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	V10-003-251	PAGE 1 OF 2

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 8P	DATA TURNAROUND
Campbell/ Harris	TEMPLETON, AM	373-5589	BERLIN, PC	AIR QUALITY ☐	75 Days / 75 Days
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**		
C7676 Surface	WMA C Sampling for CMS		V10-003		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**ACTUAL SAMPLE DEPTH**	**COA**	**METHOD OF SHIPMENT**	
TFVS-09-003	TFVZ-09-000001	surface	N/A	Govt. Vehicle	
SHIPPED TO	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		
222-S Lab Operations	N/A		N/A		

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

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

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool~4C
HOLDING TIME	14/40 Days
TYPE OF CONTAINER	G/P
NO. OF CONTAINER(S)	1
VOLUME	500mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B26JK6	SOIL	7-19-10	1000	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
Campbell Campbell	7-19-10 1130	ABSteele ABSteele	7.19.10 1130
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS
SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS
OU RD
GRP# 20100556
Sm# 510001606

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

Washington River Protection Solutions	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			V10-003-251	PAGE 2 OF 2
COLLECTOR Campbell/Harris	**COMPANY CONTACT** TEMPLETON, AM	**TELEPHONE NO.** 373-5589	**PROJECT COORDINATOR** BERLIN, PC	**PRICE CODE** 8P **AIR QUALITY** ☐	**DATA TURNAROUND** 75 Days / 75 Days
SAMPLING LOCATION C7676 Surface	**PROJECT DESIGNATION** WMA C Sampling for CMS		**SAF NO.** V10-003		
ICE CHEST NO. TFVS-09-003	**FIELD LOGBOOK NO.** TFVZ09-000001	**ACTUAL SAMPLE DEPTH** surface	**COA** N/A	**METHOD OF SHIPMENT** Govt. Vehicle	
SHIPPED TO 222-S Lab Operations	**OFFSITE PROPERTY NO.** N/A		**BILL OF LADING/AIR BILL NO.** N/A		

SPECIAL INSTRUCTIONS

** After VOA bottles for the direct pushes are filled, the sampler will cap remaining liners for shipment to 222-S. Where capping is not possible, the sample shall be put into 500 mL or 250 mL glass bottles with Teflon-lined lids.

(1) Semi-VOA - 8270 Complete (TF); TPH-Gasoline Range - WTPH-G; TPH-Diesel Range - WTPH-D; PCBs - 8082; Pesticides - 8081 (TF); 1668 PCB CONGENER (TCL); ICP Metals - 6010 (SW-846) (TF); Mercury - 7471 - (CV) (TF); 300.7_AMMONIUM (TF); IC Anions - 9056; Sulfide - 9215; Total Cyanide - 9014 (TF); pH (Soil) - 9045; Americium-241 (TF); C-14; CURIUM; GAMMA ENERGY ANALYSIS (TF); H3 - TRITIUM; I129_SEP_GEA (TF); Isotopic Plutonium {Plutonium-238, Plutonium-239/240}; Nickel-63 (TF); RADISO_ICPMS (TF); Selenium-79 (TF); Strontium-90; Conductivity - 9050_WE; Percent Solids (TF); Percent Water (TF);

Washington River Protection Solutions	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	V10-003-232	PAGE 1 OF 2

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 8P	DATA TURNAROUND
Campbell / Harris	TEMPLETON, AM	373-5589	BERLIN, PC	AIR QUALITY ☐	75 Days / 75 Days
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**		
C7676 I006	WMA C Sampling for CMS		V10-003		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**ACTUAL SAMPLE DEPTH**	**COA**	**METHOD OF SHIPMENT**	
TFVS-09-003	TFVZ-10-000004	38-40	n/A	Govt. Vehicle	
SHIPPED TO	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		
222-S Lab Operations	n/A		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	Cool~4C
		HOLDING TIME	14/40 Days
		TYPE OF CONTAINER	Gs jar/Liners
		NO. OF CONTAINER(S)	3
		VOLUME	160g
	SPECIAL HANDLING AND/OR STORAGE	SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B26CD0	SOIL	7-22-10	1035	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
Dan Harris Dan Harris	7-22-10 1130	RTSteele RTSteele	7-22-10 1130
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS

SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

GRP# 20100556
SAM# S10V001761 A
1762 B
1763 C

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

Washington River Protection Solutions	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			V10-003-232	PAGE 2 OF 2
COLLECTOR Campbell / Harris	COMPANY CONTACT TEMPLETON, AM	TELEPHONE NO. 373-5589	PROJECT COORDINATOR BERLIN, PC	PRICE CODE 8P AIR QUALITY ☐	DATA TURNAROUND 75 Days / 75 Days
SAMPLING LOCATION C7676 I006	PROJECT DESIGNATION WMA C Sampling for CMS		SAF NO. V10-003		
ICE CHEST NO. TFVZ-09-003	FIELD LOGBOOK NO. TFVZ-10-00004	ACTUAL SAMPLE DEPTH 38-40	COA N/A	METHOD OF SHIPMENT Govt. Vehicle	
SHIPPED TO BC 7-22-10 222-S Lab Operations	OFFSITE PROPERTY NO. N/A		BILL OF LADING/AIR BILL NO. N/A		

SPECIAL INSTRUCTIONS

** After VOA bottles for the direct pushes are filled, the sampler will cap remaining liners for shipment to 222-S. Where capping is not possible, the sample shall be put into 500 mL or 250 mL glass bottles with Teflon-lined lids.
(1) Semi-VOA - 8270 Complete (TF); TPH-Gasoline Range - WTPH-G; TPH-Diesel Range - WTPH-D; PCBs - 8082; Pesticides - 8081 (TF); 1668 PCB CONGENER (TCL); ICP Metals - 6010 (SW-846) (TF); Mercury - 7471 - (CV) (TF); 300.7_AMMONIUM (TF); IC Anions - 9056; Sulfide - 9215; Total Cyanide - 9014 (TF); pH (Soil) - 9045; Americium-241 (TF); C-14; CURIUM; GAMMA ENERGY ANALYSIS (TF); H3 - TRITIUM; I129_SEP_GEA (TF); Isotopic Plutonium {Plutonium-238, Plutonium-239/240}; Nickel-63 (TF); RADISO_ICPMS (TF); Selenium-79 (TF); Strontium-90; Conductivity - 9050_WE; Percent Solids (TF); Percent Water (TF);

Attachment 2
Narrative
WSCF111100

Introduction

Twenty (20) soil samples were received at the WSCF Laboratory on January 11, 2011. The samples were analyzed for the analytes indicated on the attached copy of the chain of custody (COC) form in accordance with the *Field Sampling and Analysis Plan for Waste Management Area C, RPP-PLAN-40564, Rev 2.*

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.

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

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 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.

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. No: 20100556

Page 2 of 2

Assembler:		
Collector: Ekstrom/Campbell Harris	Contact/Requestor: Jo Marie Johnson/Steve McKinney	Telephone No.: 372-9474 M.S.: 6-02 FAX:
SAF No.: N/A	Sample Origin: C Farm 2010-2 Vadose	Purchase Order/Charge Code: Contract No 36612 Release 9
Project Title: C Farm CNA 2010-[illegible]	Logbook/ Work Package No.: N/A	Ice Chest No.: GWS-183 Temp.:
Shipped To (Lab): WSCF	Method of Shipment: Govt. vehicle	Bill of Lading/Air Bill No.:
Protocol: N/A 111100	Data Turnaround: per EMAIL Marisol Avila (15/21)	Parts and Return No.:

Sample No.	Lab ID	*	Date	Time	No./Type Container	Sample Analysis	Preservative
B26CD0	001		7/21/10	9:20	1/amber glass	ICP-MS (Antimony only) RPP-PLAN-40564, Rev.2	
B26CD2	002		7/27/10	9:50	1/amber glass	ICP-MS (Antimony only) RPP-PLAN-40564, Rev.2	
B26CD4	003		7/29/10	9:35	1/amber glass	ICP-MS (Antimony only) RPP-PLAN-40564, Rev.2	

POSSIBLE SAMPLE HAZARDS/REMARKS (List all known wastes) MSDS ○ Yes ◉ No

REMARKS: Sample No. = OmniLIMS No.
B26CD0 = S11V004025
B26CD2 = S11V004026
B26CD4 = ~~S11V004027~~ S11V004027 RTSteele 1.11.11

SPECIAL INSTRUCTIONS — Hold Time

NOTE: 6 MONTH HOLD APPROACHING. SEE SAMPLE DATE. — 14 days

Send results to JO MARIE JOHNSON (Jo_M_Johnson@rl.gov) and Mellisma Garrard (see SOW for e-mail address)
Contract 36612, rel. 9

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
RTSteele	RTSteele		1.11.11 0917	L.D WALL	L.D.	Wall	1/11/11 0917
L.D.WALL	L.D.	Wall	1/11/11 0945	Victor			1/11/11 0945

Matrix*

S = Soil		DL = Drum Liquids	
SE = Sediment		T = Tissue	
SO = Solid		WI = Wipe	
SL = Sludge		L = Liquid	
W = Water		V = Vegetation	
O = Oil		VA = Vapor	
A = Air		X = Other	
DS = Drum Solids			

FINAL SAMPLE DISPOSITION: Disposal Method (e.g., Return to customer, per lab procedure, used in process) — Disposed By — Date/Time

All samples containing hazardous materials shall be picked up by requestor and returned to parent container or site of origin.

A-6003-982 (03/05)

Chain of Custody

Assembler: N/A

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. No. 20100556

Page 1 of 2

Collector: Harris	Contact/Requestor: Jo Marie Johnson/Steve McKinney	Telephone No. / MSIN T6-02 / FAX
SAF No.: N/A	Sample Origin: C Farm 2010-2 Vadose	Purchase Order/Charge Code: Contract 36612 Release 9
Project: C Farm	Logbook/ Work Package No.: N/A	Ice Chest No. GWS-183 Temp.
Shipper: WSCF	Method of Shipment: Govt. Vehicle	Bill of Lading/Air Bill No.
Protocol: N/A	Data Turnaround: per EMAIL-Karisol Avila-(15/21)	Parts and Return No.

Sample No.	Lab ID	*	Date	Time	No./Type Container	Sample Analysis	Preservative
B26CD0	001		7/21/10	9:20	1/glass 125mL	ICP-MS(Silver,Selenium,Arsenic) RPP-PLAN-40564, Rev.2	
B26CD2	002		7/27/10	9:50	1/glass 125mL	ICP-MS(Silver,Selenium,Arsenic) RPP-PLAN-40564, Rev.2	
B26CD4	003		7/29/10	9:35	1/glass 125mL	ICP-MS(Silver,Selenium,Arsenic) RPP-PLAN-40564, Rev.2	
B26JK6	004		7/19/10	10:00	1/glass 125mL	ICP-MS(Silver,Cadmium,Selenium,Arsenic,Thallium,Lead) RPP-PLAN-40564, Rev.2	
B26JK7	005		7/19/10	10:00	1/glass 125mL	ICP-MS(Silver,Cadmium,Selenium,Arsenic,Thallium,Lead) RPP-PLAN-40564, Rev.2	
B29612	006		7/20/10	9:45	1/glass 125mL	ICP-MS(Silver,Cadmium,Selenium,Arsenic,Thallium,Lead) RPP-PLAN-40564, Rev.2	
B26CC4	007		7/21/10	9:20	1/glass 125mL	ICP-MS(Silver,Cadmium,Selenium,Arsenic,Thallium,Lead) RPP-PLAN-40564, Rev.2	
B29613	008		7/21/10	10:30	1/glass 125mL	ICP-MS(Silver,Cadmium,Selenium,Arsenic,Thallium,Lead) RPP-PLAN-40564, Rev.2	

POSSIBLE SAMPLE HAZARDS/REMARKS (List all known wastes) MSDS ○ Yes ◉ No

REMARKS: Sample No.= OmniLIMS No.
B26CD0 = S11V004010
B26CD2 = S11V004011
B26CD4 = S11V004012
B26JK6 = S11V004005
B26JK7 = S11V004006
B29612 = S11V004007
B26CC4 = S11V004008
Sample No.= OmniLIMS No.
B29613 = S11V004009

SPECIAL INSTRUCTIONS — Hold Time

NOTE: 6 MONTH HOLD APPROACHING. See Sample Date

Send results to Jo Marie Johnson (Jo.M.Johnson@rl.gov) and Melissa Garrard (see SOW for e-mail address)
Contract 36612, rel. 9

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
RFSteele	RFSteele		1.11.11 0917	L.D.WALL	L.D.Wall		1/11/11 0917
L.D.WALL	L.D.Wall		1/11/11 0945	[illegible]	[illegible]		1/11/11 0945

Matrix*

S	= Soil	DL	= Drum Liquids
SE	= Sediment	T	= Tissue
SO	= Solid	WI	= Wipe
SL	= Sludge	L	= Liquid
W	= Water	V	= Vegetation
O	= Oil	VA	= Vapor
A	= Air	X	= Other
DS	= Drum Solids		

FINAL SAMPLE DISPOSITION: Disposal Method (e.g., Return to customer, per lab procedure, used in process) — Disposed By — Date/Time

All samples containing hazardous materials shall be picked up by requestor and returned to parent container or site of origin.

A-6003-962 (03/05)

Appendix 5

Data Validation Supporting Documentation

VALIDATION LEVEL:	A	B	C	D	E
PROJECT: WMA C			DATA PACKAGE: VSR11-048		
VALIDATOR: Carl Schloesslin		LAB: 222-S Lab, WSCF		DATE: 6-23-2011	
			SDG: 20100556		
ANALYSES PERFORMED					
SW-846/ICP X	SW-846/GFAA	SW-846/Hg X		EPA 200.8 X	
SAMPLES/MATRIX Soil samples B26JK6 and B26CD0					

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:

6010C Batch 23451 MB Hit: Fe 1.45 ug/g
6010C Batch 24077 MB Hits: Fe 1.16 ug/g, Ca 8.72 ug/g

ICP-MS Actinides Batch 23864 MB Hit: Th-230 5.21E-05 ug/g
ICP-MS Actinides Batch 22039 MB Hit: Th-232 2.68E-03 ug/g, U-236 2.12E-05 ug/g

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:

6010C Batch 23451: Ba MS/PS %Rs = 133%/OK, Ce MS/PS %Rs = 2%*/OK, Zr MS/PS %Rs = 74%/OK
6010C Batch 24077: Ba MS/PS %Rs = 137%/OK, Ce MS/PS %Rs = 132%/OK, S MS/PS %Rs = 132%/OK
*The lab suspects that Ce was not present in the spike solution used

ICP-MS Fission Batch 22109: Sn-117 MS/PS %Rs = 70%/OK

200.8: Sb LCS %R = 174%, Cd LCS %R = 123%

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:

6010C Batch 23451: Si RPD = 34%

C,

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:

The MDLs for Se were approximately 10X > the RDL of 0.03 ug/g. The Se results for both samples were detects.

Appendix 6

Additional Documentation Requested By Client

Hold Timeing Report: Mercury

Sample Group	Sample	Matrix	Method	Prep Method	Sample Date	Received Date	Analysis Date	Missed Holding Time
20100556	S10V001606	SOLID	SW-846 7471A	SW-846 7471A	07/19/10 10:00	07/19/10 11:30	07/20/10 22:46	N
20100556	S10V001623	SOLID	SW-846 7471A	SW-846 7471A	07/19/10 10:00	07/19/10 11:30	07/20/10 22:46	N
20100556	S10V001654	SOLID	SW-846 7471A	SW-846 7471A	07/20/10 09:45	07/20/10 11:10	07/27/10 14:30	N
20100556	S10V001694	SOLID	SW-846 7471A	SW-846 7471A	07/21/10 09:20	07/21/10 11:30	07/27/10 14:30	N
20100556	S10V001714	SOLID	SW-846 7471A	SW-846 7471A	07/21/10 10:30	07/21/10 11:30	07/27/10 14:30	N
20100556	S10V001764	SOLID	SW-846 7471A	SW-846 7471A	07/22/10 10:35	07/22/10 11:30	07/27/10 14:30	N
20100556	S10V001784	SOLID	SW-846 7471A	SW-846 7471A	07/27/10 09:50	07/27/10 10:50	08/04/10 20:30	N
20100556	S10V001804	SOLID	SW-846 7471A	SW-846 7471A	07/29/10 09:35	07/29/10 10:30	08/04/10 20:30	N

Holding Time Report: Metals by ICP/AES and ICP/MS

Sample Group	Sample	Matrix	Method	Prep Method	Sample Date	Received Date	Analysis Date	Missed Holding Time
20100556	S10V001614	SOLID	SW-846 6010C	SW-846 3050B	07/19/10 10:00	07/19/10 11:30	10/19/10 10:35	N
20100556	S10V001642	SOLID	SW-846 6010C	SW-846 3050B	07/19/10 10:00	07/19/10 11:40	10/19/10 12:54	N
20100556	S10V001662	SOLID	SW-846 6010C	SW-846 3050B	07/20/10 09:45	07/20/10 11:10	10/19/10 12:57	N
20100556	S10V001702	SOLID	SW-846 6010C	SW-846 3050B	07/21/10 09:20	07/21/10 11:30	10/19/10 13:00	N
20100556	S10V001722	SOLID	SW-846 6010C	SW-846 3050B	07/21/10 10:30	07/21/10 11:30	10/19/10 13:03	N
20100556	S10V001772	SOLID	SW-846 6010C	SW-846 3050B	07/22/10 10:35	07/22/10 11:30	11/15/10 13:46	N
20100556	S10V001792	SOLID	SW-846 6010C	SW-846 3050B	07/27/10 09:50	07/27/10 10:50	11/15/10 11:07	N
20100556	S10V001812	SOLID	SW-846 6010C	SW-846 3050B	07/29/10 09:35	07/29/10 10:30	11/15/10 13:48	N

Holding Time Report: Radio-Isotopes by ICP/MS

Sample Group	Sample	Matrix	Method	Prep Method	Sample Date	Received Date	Analysis Date	Missed Holding Time
20100556	S10V001614	SOLID	MS ACTINIDES	SW-846 3050B	07/19/10 10:00	07/19/10 11:30	09/27/10 18:48	N
20100556	S10V001642	SOLID	MS ACTINIDES	SW-846 3050B	07/19/10 10:00	07/19/10 11:40	09/27/10 19:01	N
20100556	S10V001662	SOLID	MS ACTINIDES	SW-846 3050B	07/20/10 09:45	07/20/10 11:10	09/27/10 19:08	N
20100556	S10V001702	SOLID	MS ACTINIDES	SW-846 3050B	07/21/10 09:20	07/21/10 11:30	09/27/10 19:50	N
20100556	S10V001722	SOLID	MS ACTINIDES	SW-846 3050B	07/21/10 10:30	07/21/10 11:30	09/27/10 19:57	N
20100556	S10V001722	SOLID	MS ACTINIDES	SW-846 3050B	07/21/10 10:30	07/21/10 11:30	09/27/10 20:16	N
20100556	S10V001772	SOLID	MS ACTINIDES	SW-846 3050B	07/22/10 10:35	07/22/10 11:30	11/03/10 18:58	N
20100556	S10V001792	SOLID	MS ACTINIDES	SW-846 3050B	07/27/10 09:50	07/27/10 10:50	11/03/10 19:11	N
20100556	S10V001812	SOLID	MS ACTINIDES	SW-846 3050B	07/29/10 09:35	07/29/10 10:30	11/03/10 19:17	N
20100556	S10V001616	SOLID	MS FISSION PRODUCTS	SW-846 3050B	07/19/10 10:00	07/19/10 11:30	09/07/10 21:00	N
20100556	S10V001644	SOLID	MS FISSION PRODUCTS	SW-846 3050B	07/19/10 10:00	07/19/10 11:40	09/07/10 20:46	N
20100556	S10V001664	SOLID	MS FISSION PRODUCTS	SW-846 3050B	07/20/10 09:45	07/20/10 11:10	09/07/10 21:33	N
20100556	S10V001704	SOLID	MS FISSION PRODUCTS	SW-846 3050B	07/21/10 09:20	07/21/10 11:30	09/07/10 21:40	N
20100556	S10V001724	SOLID	MS FISSION PRODUCTS	SW-846 3050B	07/21/10 10:30	07/21/10 11:30	09/07/10 21:47	N
20100556	S10V001774	SOLID	MS FISSION PRODUCTS	SW-846 3050B	07/22/10 10:35	07/22/10 11:30	11/03/10 12:34	N
20100556	S10V001794	SOLID	MS FISSION PRODUCTS	SW-846 3050B	07/27/10 09:50	07/27/10 10:50	11/03/10 13:06	N
20100556	S10V001814	SOLID	MS FISSION PRODUCTS	SW-846 3050B	07/29/10 09:35	07/29/10 10:30	11/03/10 12:20	N

LABCORE Completed Batch Report for Batch# 00023451

Analyst: Thorndike, Kathy

Instrument: ICP-TJA

Method: ICP-TOTAL METALS, LA-505-161 Rev/Mod J-0-A

Specification: C Farm WMC 2010-2

Prep Batch: 00021567

Batch Comment:

C-FARM WMC 2010-2

Book#: 1015919, 1015924, 1015934, 1015947, 1016014, 1016021, 1016028, A-124-100708-2, A-124-100708-3, A-124-100712-1

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
Sample Sequence 1																	
1	ICV	S1010220031		0 0			Silver	LIQUID	1	9.7123E-01			5.00E-03	ug/mL	97.123	% Recovery	
1	ICV	S1010220031		0 0			Aluminum	LIQUID	5	5.1090E+00			0.03	ug/mL	102.18	% Recovery	
1	ICV	S1010220031		0 0			Arsenic	LIQUID	5	5.0788E+00			0.05	ug/mL	101.58	% Recovery	
1	ICV	S1010220031		0 0			Boron	LIQUID	5	4.9360E+00			0.03	ug/mL	98.721	% Recovery	
1	ICV	S1010220031		0 0			Barium	LIQUID	5	5.1014E+00			3.00E-03	ug/mL	102.03	% Recovery	
1	ICV	S1010220031		0 0			Beryllium	LIQUID	5	4.8772E+00			1.00E-03	ug/mL	97.544	% Recovery	
1	ICV	S1010220031		0 0			Bismuth	LIQUID	5	4.9576E+00			0.1	ug/mL	99.152	% Recovery	
1	ICV	S1010220031		0 0			Calcium	LIQUID	5	5.0678E+00			0.05	ug/mL	101.36	% Recovery	
1	ICV	S1010220031		0 0			Cadmium	LIQUID	5	5.0072E+00			5.00E-03	ug/mL	100.14	% Recovery	
1	ICV	S1010220031		0 0			Cerium	LIQUID	5	5.1673E+00			0.03	ug/mL	103.35	% Recovery	
1	ICV	S1010220031		0 0			Cobalt	LIQUID	5	5.0929E+00			0.01	ug/mL	101.86	% Recovery	
1	ICV	S1010220031		0 0			Chromium	LIQUID	5	5.0435E+00			5.00E-03	ug/mL	100.87	% Recovery	
1	ICV	S1010220031		0 0			Copper	LIQUID	5	5.0854E+00			5.00E-03	ug/mL	101.71	% Recovery	
2	ICV	S1010220031		0 1			Europium	LIQUID	5	4.9758E+00			5.00E-03	ug/mL	99.517	% Recovery	
1	ICV	S1010220031		0 0			Iron	LIQUID	5	5.0626E+00			5.00E-03	ug/mL	101.25	% Recovery	
1	ICV	S1010220031		0 0			Potassium	LIQUID	5	4.7927E+00			0.5	ug/mL	95.854	% Recovery	
1	ICV	S1010220031		0 0			Lanthanum	LIQUID	5	5.0171E+00			3.00E-03	ug/mL	100.34	% Recovery	
1	ICV	S1010220031		0 0			Lithium	LIQUID	5	5.1994E+00			3.00E-03	ug/mL	103.99	% Recovery	
1	ICV	S1010220031		0 0			Magnesium	LIQUID	5	5.0420E+00			0.05	ug/mL	100.84	% Recovery	
1	ICV	S1010220031		0 0			Manganese	LIQUID	5	5.0171E+00			3.00E-03	ug/mL	100.34	% Recovery	
1	ICV	S1010220031		0 0			Molybdenum	LIQUID	5	5.0115E+00			0.02	ug/mL	100.23	% Recovery	
1	ICV	S1010220031		0 0			Sodium	LIQUID	5	5.2215E+00			0.1	ug/mL	104.43	% Recovery	
1	ICV	S1010220031		0 0			Neodymium	LIQUID	5	5.1101E+00			0.01	ug/mL	102.2	% Recovery	
1	ICV	S1010220031		0 0			Nickel	LIQUID	5	5.0637E+00			0.02	ug/mL	101.27	% Recovery	
3	ICV	S1010220031		0 2			Niobium	LIQUID	5	5.1829E+00			0.03	ug/mL	103.66	% Recovery	
1	ICV	S1010220031		0 0			Phosphorus	LIQUID	5	5.0697E+00			0.05	ug/mL	101.39	% Recovery	
1	ICV	S1010220031		0 0			Lead	LIQUID	5	5.1315E+00			0.05	ug/mL	102.63	% Recovery	
2	ICV	S1010220031		0 1			Palladium	LIQUID	5	4.8102E+00			0.1	ug/mL	96.204	% Recovery	
2	ICV	S1010220031		0 1			Praseodymium	LIQUID	5	5.1472E+00			0.01	ug/mL	102.94	% Recovery	
2	ICV	S1010220031		0 1			Rubidium	LIQUID	5	4.9098E+00			1	ug/mL	98.195	% Recovery	
2	ICV	S1010220031		0 1			Rhodium	LIQUID	5	5.0121E+00			0.05	ug/mL	100.24	% Recovery	

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LABCORE Completed Batch Report for Batch# 00023451

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
2	ICV	S1010220031		0 1			Ruthenium	LIQUID	5	5.1288E+00			0.03	ug/mL	102.58	% Recovery	
1	ICV	S1010220031		0 0			Sulfur	LIQUID	5	5.0176E+00			0.1	ug/mL	100.35	% Recovery	
1	ICV	S1010220031		0 0			Antimony	LIQUID	5	4.9160E+00			0.05	ug/mL	98.321	% Recovery	
1	ICV	S1010220031		0 0			Selenium	LIQUID	5	5.1551E+00			0.1	ug/mL	103.1	% Recovery	
1	ICV	S1010220031		0 0			Silicon	LIQUID	5	4.7260E+00			0.03	ug/mL	94.521	% Recovery	
1	ICV	S1010220031		0 0			Samarium	LIQUID	5	5.0693E+00			0.02	ug/mL	101.39	% Recovery	
3	ICV	S1010220031		0 2			Tin	LIQUID	5	5.2405E+00			0.03	ug/mL	104.81	% Recovery	
1	ICV	S1010220031		0 0			Strontium	LIQUID	5	5.0565E+00			3.00E-03	ug/mL	101.13	% Recovery	
3	ICV	S1010220031		0 2			Tantalum	LIQUID	5	5.0912E+00			0.05	ug/mL	101.82	% Recovery	
3	ICV	S1010220031		0 2			Tellurium	LIQUID	5	5.2153E+00			0.1	ug/mL	104.31	% Recovery	
1	ICV	S1010220031		0 0			Thorium	LIQUID	5	5.1639E+00			0.05	ug/mL	103.28	% Recovery	
1	ICV	S1010220031		0 0			Titanium	LIQUID	5	5.0025E+00			5.00E-03	ug/mL	100.05	% Recovery	
1	ICV	S1010220031		0 0			Thallium	LIQUID	5	5.2406E+00			0.1	ug/mL	104.81	% Recovery	
2	ICV	S1010220031		0 1			Uranium	LIQUID	5	5.3162E+00			0.1	ug/mL	106.32	% Recovery	
1	ICV	S1010220031		0 0			Vanadium	LIQUID	5	5.0787E+00			5.00E-03	ug/mL	101.57	% Recovery	
3	ICV	S1010220031		0 2			Tungsten	LIQUID	5	5.2303E+00			0.2	ug/mL	104.61	% Recovery	
2	ICV	S1010220031		0 1			Yttrium	LIQUID	5	5.0382E+00			2.00E-03	ug/mL	100.76	% Recovery	
1	ICV	S1010220031		0 0			Zinc	LIQUID	5	4.9700E+00			5.00E-03	ug/mL	99.4	% Recovery	
1	ICV	S1010220031		0 0			Zirconium	LIQUID	5	5.2050E+00			5.00E-03	ug/mL	104.1	% Recovery	
Sample Sequence 4																	
5	LLS	S1010220033		0 1			Silver	LIQUID	.02	2.1590E-02			5.00E-03	ug/mL	107.95	% Recovery	
5	LLS	S1010220033		0 1			Aluminum	LIQUID	.1	9.3880E-02			0.03	ug/mL	93.88	% Recovery	
5	LLS	S1010220033		0 1			Arsenic	LIQUID	.2	2.2432E-01			0.05	ug/mL	112.16	% Recovery	
7	LLS	S1010220033		0 3			Boron	LIQUID	.1	1.0196E-01			0.03	ug/mL	101.96	% Recovery	
5	LLS	S1010220033		0 1			Barium	LIQUID	.01	9.6800E-03			3.00E-03	ug/mL	96.8	% Recovery	
5	LLS	S1010220033		0 1			Beryllium	LIQUID	.001	1.0300E-03			1.00E-03	ug/mL	103	% Recovery	
5	LLS	S1010220033		0 1			Calcium	LIQUID	.2	1.6641E-01			0.05	ug/mL	83.205	% Recovery	
5	LLS	S1010220033		0 1			Cadmium	LIQUID	.01	9.9900E-03			5.00E-03	ug/mL	99.9	% Recovery	
5	LLS	S1010220033		0 1			Cerium	LIQUID	.2	2.1043E-01			0.03	ug/mL	105.22	% Recovery	
7	LLS	S1010220033		0 3			Cobalt	LIQUID	.04	3.9770E-02			0.01	ug/mL	99.425	% Recovery	
5	LLS	S1010220033		0 1			Chromium	LIQUID	.02	2.1290E-02			5.00E-03	ug/mL	106.45	% Recovery	
7	LLS	S1010220033		0 3			Copper	LIQUID	.02	2.2870E-02			5.00E-03	ug/mL	114.35	% Recovery	
8	LLS	S1010220033		0 4			Europium	LIQUID	.1	9.6670E-02			5.00E-03	ug/mL	96.67	% Recovery	
5	LLS	S1010220033		0 1			Iron	LIQUID	.05	4.9440E-02			5.00E-03	ug/mL	98.88	% Recovery	
5	LLS	S1010220033		0 1			Potassium	LIQUID	.5	7.4652E-01			0.5	ug/mL	149.3	% Recovery	
5	LLS	S1010220033		0 1			Lanthanum	LIQUID	.01	1.1120E-02			3.00E-03	ug/mL	111.2	% Recovery	
5	LLS	S1010220033		0 1			Lithium	LIQUID	.02	2.2040E-02			3.00E-03	ug/mL	110.2	% Recovery	
5	LLS	S1010220033		0 1			Magnesium	LIQUID	.2	1.9286E-01			0.05	ug/mL	96.43	% Recovery	
5	LLS	S1010220033		0 1			Manganese	LIQUID	.02	1.9920E-02			3.00E-03	ug/mL	99.6	% Recovery	
7	LLS	S1010220033		0 3			Molybdenum	LIQUID	.1	1.0998E-01			0.02	ug/mL	109.98	% Recovery	
5	LLS	S1010220033		0 1			Sodium	LIQUID	.2	2.1359E-01			0.1	ug/mL	106.8	% Recovery	
5	LLS	S1010220033		0 1			Neodymium	LIQUID	.1	1.0401E-01			0.01	ug/mL	104.01	% Recovery	

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LABCORE Completed Batch Report for Batch# 00023451

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
5	LLS	S1010220033		0 1			Nickel	LIQUID	.04	3.1220E-02			0.02	ug/mL	78.05	% Recovery	
10	LLS	S1010220033		0 6			Niobium	LIQUID	.1	9.4160E-02			0.03	ug/mL	94.16	% Recovery	
6	LLS	S1010220033		0 2			Phosphorus	LIQUID	.4	3.6658E-01			0.05	ug/mL	91.645	% Recovery	
5	LLS	S1010220033		0 1			Lead	LIQUID	.2	2.0005E-01			0.05	ug/mL	100.02	% Recovery	
9	LLS	S1010220033		0 5			Palladium	LIQUID	1	9.3430E-01			0.1	ug/mL	93.43	% Recovery	
8	LLS	S1010220033		0 4			Praseodymium	LIQUID	.1	9.3060E-02			0.01	ug/mL	93.06	% Recovery	
9	LLS	S1010220033		0 5			Rhodium	LIQUID	.1	9.5630E-02			0.05	ug/mL	95.63	% Recovery	
9	LLS	S1010220033		0 5			Ruthenium	LIQUID	.1	1.0919E-01			0.03	ug/mL	109.19	% Recovery	
7	LLS	S1010220033		0 3			Sulfur	LIQUID	.2	1.8477E-01			0.1	ug/mL	92.385	% Recovery	
7	LLS	S1010220033		0 3			Antimony	LIQUID	.1	7.6150E-02			0.05	ug/mL	76.15	% Recovery	
5	LLS	S1010220033		0 1			Selenium	LIQUID	.2	1.5579E-01			0.1	ug/mL	77.895	% Recovery	
7	LLS	S1010220033		0 3			Silicon	LIQUID	.1	9.3700E-02			0.03	ug/mL	93.7	% Recovery	
5	LLS	S1010220033		0 1			Samarium	LIQUID	.1	1.0348E-01			0.02	ug/mL	103.48	% Recovery	
10	LLS	S1010220033		0 6			Tin	LIQUID	.1	1.0399E-01			0.03	ug/mL	103.99	% Recovery	
5	LLS	S1010220033		0 1			Strontium	LIQUID	.02	1.9860E-02			3.00E-03	ug/mL	99.3	% Recovery	
10	LLS	S1010220033		0 6			Tantalum	LIQUID	1	1.0118E+00			0.05	ug/mL	101.18	% Recovery	
10	LLS	S1010220033		0 6			Tellurium	LIQUID	1	1.0668E+00			0.1	ug/mL	106.68	% Recovery	
8	LLS	S1010220033		0 4			Thorium	LIQUID	.1	1.0061E-01			0.05	ug/mL	100.61	% Recovery	
7	LLS	S1010220033		0 3			Titanium	LIQUID	.02	1.9750E-02			5.00E-03	ug/mL	98.75	% Recovery	
5	LLS	S1010220033		0 1			Thallium	LIQUID	.4	4.1699E-01			0.1	ug/mL	104.25	% Recovery	
7	LLS	S1010220033		0 3			Uranium	LIQUID	.5	5.6621E-01			0.1	ug/mL	113.24	% Recovery	
7	LLS	S1010220033		0 3			Vanadium	LIQUID	.05	5.0450E-02			5.00E-03	ug/mL	100.9	% Recovery	
10	LLS	S1010220033		0 6			Tungsten	LIQUID	1	1.0699E+00			0.2	ug/mL	106.99	% Recovery	
8	LLS	S1010220033		0 4			Yttrium	LIQUID	.1	9.8220E-02			2.00E-03	ug/mL	98.22	% Recovery	
6	LLS	S1010220033		0 2			Zinc	LIQUID	.02	1.3120E-02			5.00E-03	ug/mL	65.6	% Recovery	
7	LLS	S1010220033		0 3			Zirconium	LIQUID	.02	1.8760E-02			5.00E-03	ug/mL	93.8	% Recovery	
Sample Sequence 11																	
11	ICB	S1010220032		0 0			Silver	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
11	ICB	S1010220032		0 0			Aluminum	LIQUID		<3.0000E-02			0.03	ug/mL			
11	ICB	S1010220032		0 0			Arsenic	LIQUID		<5.0000E-02			0.05	ug/mL			
11	ICB	S1010220032		0 0			Boron	LIQUID		<3.0000E-02			0.03	ug/mL			
11	ICB	S1010220032		0 0			Barium	LIQUID		<3.0000E-03			3.00E-03	ug/mL			
11	ICB	S1010220032		0 0			Beryllium	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
11	ICB	S1010220032		0 0			Bismuth	LIQUID		<1.0000E-01			0.1	ug/mL			
11	ICB	S1010220032		0 0			Calcium	LIQUID		<5.0000E-02			0.05	ug/mL			
11	ICB	S1010220032		0 0			Cadmium	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
11	ICB	S1010220032		0 0			Cerium	LIQUID		<3.0000E-02			0.03	ug/mL			
11	ICB	S1010220032		0 0			Cobalt	LIQUID		<1.0000E-02			0.01	ug/mL			
11	ICB	S1010220032		0 0			Chromium	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
11	ICB	S1010220032		0 0			Copper	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
11	ICB	S1010220032		0 0			Europium	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
11	ICB	S1010220032		0 0			Iron	LIQUID		<5.0000E-03			5.00E-03	ug/mL			

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LABCORE Completed Batch Report for Batch# 00023451

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
11	ICB	S1010220032		0 0			Potassium	LIQUID		<5.0000E-01			0.5	ug/mL			
11	ICB	S1010220032		0 0			Lanthanum	LIQUID		<3.0000E-03			3.00E-03	ug/mL			
11	ICB	S1010220032		0 0			Lithium	LIQUID		<3.0000E-03			3.00E-03	ug/mL			
11	ICB	S1010220032		0 0			Magnesium	LIQUID		<5.0000E-02			0.05	ug/mL			
11	ICB	S1010220032		0 0			Manganese	LIQUID		<3.0000E-03			3.00E-03	ug/mL			
11	ICB	S1010220032		0 0			Molybdenum	LIQUID		<2.0000E-02			0.02	ug/mL			
11	ICB	S1010220032		0 0			Sodium	LIQUID		<1.0000E-01			0.1	ug/mL			
11	ICB	S1010220032		0 0			Neodymium	LIQUID		<1.0000E-02			0.01	ug/mL			
11	ICB	S1010220032		0 0			Nickel	LIQUID		<2.0000E-02			0.02	ug/mL			
11	ICB	S1010220032		0 0			Niobium	LIQUID		<3.0000E-02			0.03	ug/mL			
11	ICB	S1010220032		0 0			Phosphorus	LIQUID		<5.0000E-02			0.05	ug/mL			
11	ICB	S1010220032		0 0			Lead	LIQUID		<5.0000E-02			0.05	ug/mL			
11	ICB	S1010220032		0 0			Palladium	LIQUID		<1.0000E-01			0.1	ug/mL			
11	ICB	S1010220032		0 0			Praseodymium	LIQUID		<1.0000E-02			0.01	ug/mL			
11	ICB	S1010220032		0 0			Rubidium	LIQUID		<1.0000E+00			1	ug/mL			
11	ICB	S1010220032		0 0			Rhodium	LIQUID		<5.0000E-02			0.05	ug/mL			
11	ICB	S1010220032		0 0			Ruthenium	LIQUID		<3.0000E-02			0.03	ug/mL			
11	ICB	S1010220032		0 0			Sulfur	LIQUID		<1.0000E-01			0.1	ug/mL			
11	ICB	S1010220032		0 0			Antimony	LIQUID		<5.0000E-02			0.05	ug/mL			
11	ICB	S1010220032		0 0			Selenium	LIQUID		<1.0000E-01			0.1	ug/mL			
11	ICB	S1010220032		0 0			Silicon	LIQUID		<3.0000E-02			0.03	ug/mL			
11	ICB	S1010220032		0 0			Samarium	LIQUID		<2.0000E-02			0.02	ug/mL			
11	ICB	S1010220032		0 0			Tin	LIQUID		<3.0000E-02			0.03	ug/mL			
11	ICB	S1010220032		0 0			Strontium	LIQUID		<3.0000E-03			3.00E-03	ug/mL			
11	ICB	S1010220032		0 0			Tantalum	LIQUID		<5.0000E-02			0.05	ug/mL			
11	ICB	S1010220032		0 0			Tellurium	LIQUID		<1.0000E-01			0.1	ug/mL			
11	ICB	S1010220032		0 0			Thorium	LIQUID		<5.0000E-02			0.05	ug/mL			
11	ICB	S1010220032		0 0			Titanium	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
11	ICB	S1010220032		0 0			Thallium	LIQUID		<1.0000E-01			0.1	ug/mL			
11	ICB	S1010220032		0 0			Uranium	LIQUID		<1.0000E-01			0.1	ug/mL			
11	ICB	S1010220032		0 0			Vanadium	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
11	ICB	S1010220032		0 0			Tungsten	LIQUID		<2.0000E-01			0.2	ug/mL			
11	ICB	S1010220032		0 0			Yttrium	LIQUID		<2.0000E-03			2.00E-03	ug/mL			
11	ICB	S1010220032		0 0			Zinc	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
11	ICB	S1010220032		0 0			Zirconium	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
Sample Sequence 12																	
12	ICSA	S1010220034		0 0			Silver	LIQUID		<5.0000E-03			5.00E-03	ug/mL	N/A		
12	ICSA	S1010220034		0 0			Aluminum	LIQUID	200	1.9845E+02			0.03	ug/mL	99.226	% Recovery	
12	ICSA	S1010220034		0 0			Boron	LIQUID		<3.0000E-02			0.03	ug/mL	N/A		
12	ICSA	S1010220034		0 0			Barium	LIQUID		<3.0000E-03			3.00E-03	ug/mL	N/A		
12	ICSA	S1010220034		0 0			Beryllium	LIQUID		<1.0000E-03			1.00E-03	ug/mL	N/A		
12	ICSA	S1010220034		0 0			Bismuth	LIQUID		<1.0000E-01			0.1	ug/mL	N/A		

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LABCORE Completed Batch Report for Batch# 00023451

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
12	ICSA	S1010220034		0 0			Calcium	LIQUID	200	2.0935E+02			0.05	ug/mL	104.68	% Recovery	
12	ICSA	S1010220034		0 0			Cerium	LIQUID		<3.0000E-02			0.03	ug/mL	N/A		
12	ICSA	S1010220034		0 0			Cobalt	LIQUID		1.0230E-02			0.01	ug/mL	N/A		
12	ICSA	S1010220034		0 0			Chromium	LIQUID		<5.0000E-03			5.00E-03	ug/mL	N/A		
12	ICSA	S1010220034		0 0			Copper	LIQUID		<5.0000E-03			5.00E-03	ug/mL	N/A		
12	ICSA	S1010220034		0 0			Iron	LIQUID	200	1.8833E+02			5.00E-03	ug/mL	94.164	% Recovery	
12	ICSA	S1010220034		0 0			Potassium	LIQUID		<5.0000E-01			0.5	ug/mL	N/A		
12	ICSA	S1010220034		0 0			Lanthanum	LIQUID		<3.0000E-03			3.00E-03	ug/mL	N/A		
12	ICSA	S1010220034		0 0			Lithium	LIQUID		<3.0000E-03			3.00E-03	ug/mL	N/A		
12	ICSA	S1010220034		0 0			Magnesium	LIQUID	200	1.9629E+02			0.05	ug/mL	98.143	% Recovery	
12	ICSA	S1010220034		0 0			Manganese	LIQUID		5.4690E-02			3.00E-03	ug/mL	N/A		
12	ICSA	S1010220034		0 0			Molybdenum	LIQUID		<2.0000E-02			0.02	ug/mL	N/A		
12	ICSA	S1010220034		0 0			Sodium	LIQUID	200	1.8051E+02			0.1	ug/mL	90.257	% Recovery	
12	ICSA	S1010220034		0 0			Neodymium	LIQUID		1.3730E-02			0.01	ug/mL	N/A		
12	ICSA	S1010220034		0 0			Nickel	LIQUID		<2.0000E-02			0.02	ug/mL	N/A		
12	ICSA	S1010220034		0 0			Niobium	LIQUID		<3.0000E-02			0.03	ug/mL	N/A		
12	ICSA	S1010220034		0 0			Phosphorus	LIQUID		<5.0000E-02			0.05	ug/mL	N/A		
12	ICSA	S1010220034		0 0			Lead	LIQUID		<5.0000E-02			0.05	ug/mL	N/A		
12	ICSA	S1010220034		0 0			Praseodymium	LIQUID		<1.0000E-02			0.01	ug/mL	N/A		
12	ICSA	S1010220034		0 0			Rubidium	LIQUID		<1.0000E+00			1	ug/mL	N/A		
12	ICSA	S1010220034		0 0			Rhodium	LIQUID		<5.0000E-02			0.05	ug/mL	N/A		
12	ICSA	S1010220034		0 0			Sulfur	LIQUID		<1.0000E-01			0.1	ug/mL	N/A		
12	ICSA	S1010220034		0 0			Antimony	LIQUID		<5.0000E-02			0.05	ug/mL	N/A		
12	ICSA	S1010220034		0 0			Selenium	LIQUID		<1.0000E-01			0.1	ug/mL	N/A		
12	ICSA	S1010220034		0 0			Silicon	LIQUID		<3.0000E-02			0.03	ug/mL	N/A		
12	ICSA	S1010220034		0 0			Samarium	LIQUID		<2.0000E-02			0.02	ug/mL	N/A		
12	ICSA	S1010220034		0 0			Strontium	LIQUID		<3.0000E-03			3.00E-03	ug/mL	N/A		
12	ICSA	S1010220034		0 0			Tellurium	LIQUID		<1.0000E-01			0.1	ug/mL	N/A		
12	ICSA	S1010220034		0 0			Thorium	LIQUID		<5.0000E-02			0.05	ug/mL	N/A		
12	ICSA	S1010220034		0 0			Titanium	LIQUID		<5.0000E-03			5.00E-03	ug/mL	N/A		
12	ICSA	S1010220034		0 0			Thallium	LIQUID		<1.0000E-01			0.1	ug/mL	N/A		
12	ICSA	S1010220034		0 0			Uranium	LIQUID		<1.0000E-01			0.1	ug/mL	N/A		
12	ICSA	S1010220034		0 0			Vanadium	LIQUID		<5.0000E-03			5.00E-03	ug/mL	N/A		
12	ICSA	S1010220034		0 0			Yttrium	LIQUID		<2.0000E-03			2.00E-03	ug/mL	N/A		
12	ICSA	S1010220034		0 0			Zinc	LIQUID		<5.0000E-03			5.00E-03	ug/mL	N/A		
12	ICSA	S1010220034		0 0			Zirconium	LIQUID		<5.0000E-03			5.00E-03	ug/mL	N/A		
Sample Sequence 13																	
13	ICSAB	S1010220035		0 0			Silver	LIQUID	1	1.0023E+00			5.00E-03	ug/mL	100.23	% Recovery	
13	ICSAB	S1010220035		0 0			Aluminum	LIQUID	200	1.9777E+02			0.03	ug/mL	98.886	% Recovery	
13	ICSAB	S1010220035		0 0			Arsenic	LIQUID	5	5.1690E+00			0.05	ug/mL	103.38	% Recovery	
13	ICSAB	S1010220035		0 0			Boron	LIQUID	1	9.8949E-01			0.03	ug/mL	98.949	% Recovery	
13	ICSAB	S1010220035		0 0			Barium	LIQUID	1	9.1332E-01			3.00E-03	ug/mL	91.332	% Recovery	

Units shown for QC (BLK/BKG) may not reflect the actual units.

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00023451

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
13	ICSAB	S1010220035		0 0			Beryllium	LIQUID	.1	8.6590E-02			1.00E-03	ug/mL	86.59	% Recovery	
13	ICSAB	S1010220035		0 0			Bismuth	LIQUID	5	4.4892E+00			0.1	ug/mL	89.784	% Recovery	
13	ICSAB	S1010220035		0 0			Calcium	LIQUID	200	1.9778E+02			0.05	ug/mL	98.891	% Recovery	
13	ICSAB	S1010220035		0 0			Cadmium	LIQUID	.2	2.0513E-01			5.00E-03	ug/mL	102.56	% Recovery	
13	ICSAB	S1010220035		0 0			Cerium	LIQUID		<3.0000E-02			0.03	ug/mL	N/A		
13	ICSAB	S1010220035		0 0			Cobalt	LIQUID	5	4.6552E+00			0.01	ug/mL	93.104	% Recovery	
13	ICSAB	S1010220035		0 0			Chromium	LIQUID	5	4.6022E+00			5.00E-03	ug/mL	92.043	% Recovery	
13	ICSAB	S1010220035		0 0			Copper	LIQUID	5	4.9880E+00			5.00E-03	ug/mL	99.759	% Recovery	
13	ICSAB	S1010220035		0 0			Iron	LIQUID	200	1.8246E+02			5.00E-03	ug/mL	91.228	% Recovery	
13	ICSAB	S1010220035		0 0			Potassium	LIQUID		<5.0000E-01			0.5	ug/mL	N/A		
13	ICSAB	S1010220035		0 0			Lanthanum	LIQUID		<3.0000E-03			3.00E-03	ug/mL	N/A		
13	ICSAB	S1010220035		0 0			Lithium	LIQUID	1	9.7440E-01			3.00E-03	ug/mL	97.44	% Recovery	
13	ICSAB	S1010220035		0 0			Magnesium	LIQUID	200	1.9248E+02			0.05	ug/mL	96.24	% Recovery	
13	ICSAB	S1010220035		0 0			Manganese	LIQUID	5	4.6523E+00			3.00E-03	ug/mL	93.046	% Recovery	
13	ICSAB	S1010220035		0 0			Molybdenum	LIQUID	5	4.6316E+00			0.02	ug/mL	92.631	% Recovery	
13	ICSAB	S1010220035		0 0			Sodium	LIQUID	200	1.8534E+02			0.1	ug/mL	92.668	% Recovery	
13	ICSAB	S1010220035		0 0			Neodymium	LIQUID		9.1110E-02			0.01	ug/mL	N/A		
13	ICSAB	S1010220035		0 0			Nickel	LIQUID	5	4.6199E+00			0.02	ug/mL	92.398	% Recovery	
13	ICSAB	S1010220035		0 0			Niobium	LIQUID	5	4.7073E+00			0.03	ug/mL	94.147	% Recovery	
13	ICSAB	S1010220035		0 0			Phosphorus	LIQUID	1	9.1018E-01			0.05	ug/mL	91.018	% Recovery	
13	ICSAB	S1010220035		0 0			Lead	LIQUID	1	1.0783E+00			0.05	ug/mL	107.83	% Recovery	
13	ICSAB	S1010220035		0 0			Praseodymium	LIQUID		<1.0000E-02			0.01	ug/mL	N/A		
13	ICSAB	S1010220035		0 0			Rubidium	LIQUID		<1.0000E+00			1	ug/mL	N/A		
13	ICSAB	S1010220035		0 0			Rhodium	LIQUID	1	9.6646E-01			0.05	ug/mL	96.646	% Recovery	
13	ICSAB	S1010220035		0 0			Sulfur	LIQUID		<1.0000E-01			0.1	ug/mL	N/A		
13	ICSAB	S1010220035		0 0			Antimony	LIQUID	5	4.8746E+00			0.05	ug/mL	97.493	% Recovery	
13	ICSAB	S1010220035		0 0			Selenium	LIQUID	5	4.7883E+00			0.1	ug/mL	95.766	% Recovery	
13	ICSAB	S1010220035		0 0			Silicon	LIQUID	5	4.6729E+00			0.03	ug/mL	93.458	% Recovery	
13	ICSAB	S1010220035		0 0			Samarium	LIQUID		<2.0000E-02			0.02	ug/mL	N/A		
13	ICSAB	S1010220035		0 0			Tin	LIQUID	1	1.2331E+00			0.03	ug/mL	123.31	% Recovery	
13	ICSAB	S1010220035		0 0			Strontium	LIQUID	1	9.2983E-01			3.00E-03	ug/mL	92.983	% Recovery	
13	ICSAB	S1010220035		0 0			Tellurium	LIQUID		<1.0000E-01			0.1	ug/mL	N/A		
13	ICSAB	S1010220035		0 0			Thorium	LIQUID	5	4.5354E+00			0.05	ug/mL	90.708	% Recovery	
13	ICSAB	S1010220035		0 0			Titanium	LIQUID	50	4.7000E+01			5.00E-03	ug/mL	93.999	% Recovery	
13	ICSAB	S1010220035		0 0			Thallium	LIQUID	5	4.5895E+00			0.1	ug/mL	91.79	% Recovery	
13	ICSAB	S1010220035		0 0			Uranium	LIQUID	5	4.6773E+00			0.1	ug/mL	93.546	% Recovery	
13	ICSAB	S1010220035		0 0			Vanadium	LIQUID	1	9.4605E-01			5.00E-03	ug/mL	94.605	% Recovery	
13	ICSAB	S1010220035		0 0			Tungsten	LIQUID	5	5.5807E+00			0.2	ug/mL	111.61	% Recovery	
13	ICSAB	S1010220035		0 0			Yttrium	LIQUID		<2.0000E-03			2.00E-03	ug/mL	N/A		
13	ICSAB	S1010220035		0 0			Zinc	LIQUID	5	4.7234E+00			5.00E-03	ug/mL	94.467	% Recovery	
13	ICSAB	S1010220035		0 0			Zirconium	LIQUID	5	4.5876E+00			5.00E-03	ug/mL	91.753	% Recovery	

Sample Sequence 14

Units shown for QC (BLK/BKG) may not reflect the actual units.

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N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00023451

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
14	BLNK-PREP	S1008250079		0 0	A		Silver	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
14	BLNK-PREP	S1008250079		0 0	A		Aluminum	LIQUID		<3.0000E-02			0.03	ug/mL			
14	BLNK-PREP	S1008250079		0 0	A		Arsenic	LIQUID		<5.0000E-02			0.05	ug/mL			
14	BLNK-PREP	S1008250079		0 0	A		Boron	LIQUID		<3.0000E-02			0.03	ug/mL			
14	BLNK-PREP	S1008250079		0 0	A		Barium	LIQUID		<3.0000E-03			3.00E-03	ug/mL			
14	BLNK-PREP	S1008250079		0 0	A		Beryllium	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
14	BLNK-PREP	S1008250079		0 0	A		Bismuth	LIQUID		<1.0000E-01			0.1	ug/mL			
14	BLNK-PREP	S1008250079		0 0	A		Calcium	LIQUID		<5.0000E-02			0.05	ug/mL			
14	BLNK-PREP	S1008250079		0 0	A		Cadmium	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
14	BLNK-PREP	S1008250079		0 0	A		Cerium	LIQUID		<3.0000E-02			0.03	ug/mL			
14	BLNK-PREP	S1008250079		0 0	A		Cobalt	LIQUID		<1.0000E-02			0.01	ug/mL			
14	BLNK-PREP	S1008250079		0 0	A		Chromium	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
14	BLNK-PREP	S1008250079		0 0	A		Copper	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
14	BLNK-PREP	S1008250079		0 0	A		Europium	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
14	BLNK-PREP	S1008250079		0 0	A		Iron	LIQUID		1.4580E-02			5.00E-03	ug/mL			
14	BLNK-PREP	S1008250079		0 0	A		Potassium	LIQUID		<5.0000E-01			0.5	ug/mL			
14	BLNK-PREP	S1008250079		0 0	A		Lanthanum	LIQUID		<3.0000E-03			3.00E-03	ug/mL			
14	BLNK-PREP	S1008250079		0 0	A		Lithium	LIQUID		<3.0000E-03			3.00E-03	ug/mL			
14	BLNK-PREP	S1008250079		0 0	A		Magnesium	LIQUID		<5.0000E-02			0.05	ug/mL			
14	BLNK-PREP	S1008250079		0 0	A		Manganese	LIQUID		<3.0000E-03			3.00E-03	ug/mL			
14	BLNK-PREP	S1008250079		0 0	A		Molybdenum	LIQUID		<2.0000E-02			0.02	ug/mL			
14	BLNK-PREP	S1008250079		0 0	A		Sodium	LIQUID		<1.0000E-01			0.1	ug/mL			
14	BLNK-PREP	S1008250079		0 0	A		Neodymium	LIQUID		<1.0000E-02			0.01	ug/mL			
14	BLNK-PREP	S1008250079		0 0	A		Nickel	LIQUID		<2.0000E-02			0.02	ug/mL			
14	BLNK-PREP	S1008250079		0 0	A		Niobium	LIQUID		<3.0000E-02			0.03	ug/mL			
14	BLNK-PREP	S1008250079		0 0	A		Phosphorus	LIQUID		<5.0000E-02			0.05	ug/mL			
14	BLNK-PREP	S1008250079		0 0	A		Lead	LIQUID		<5.0000E-02			0.05	ug/mL			
14	BLNK-PREP	S1008250079		0 0	A		Palladium	LIQUID		<1.0000E-01			0.1	ug/mL			
14	BLNK-PREP	S1008250079		0 0	A		Praseodymium	LIQUID		<1.0000E-02			0.01	ug/mL			
14	BLNK-PREP	S1008250079		0 0	A		Rubidium	LIQUID		<1.0000E+00			1	ug/mL			
14	BLNK-PREP	S1008250079		0 0	A		Rhodium	LIQUID		<5.0000E-02			0.05	ug/mL			
14	BLNK-PREP	S1008250079		0 0	A		Ruthenium	LIQUID		<3.0000E-02			0.03	ug/mL			
14	BLNK-PREP	S1008250079		0 0	A		Sulfur	LIQUID		<1.0000E-01			0.1	ug/mL			
14	BLNK-PREP	S1008250079		0 0	A		Antimony	LIQUID		<5.0000E-02			0.05	ug/mL			
14	BLNK-PREP	S1008250079		0 0	A		Selenium	LIQUID		<1.0000E-01			0.1	ug/mL			
14	BLNK-PREP	S1008250079		0 0	A		Silicon	LIQUID		<3.0000E-02			0.03	ug/mL			
14	BLNK-PREP	S1008250079		0 0	A		Samarium	LIQUID		<2.0000E-02			0.02	ug/mL			
14	BLNK-PREP	S1008250079		0 0	A		Tin	LIQUID		<3.0000E-02			0.03	ug/mL			
14	BLNK-PREP	S1008250079		0 0	A		Strontium	LIQUID		<3.0000E-03			3.00E-03	ug/mL			
14	BLNK-PREP	S1008250079		0 0	A		Tantalum	LIQUID		<5.0000E-02			0.05	ug/mL			
14	BLNK-PREP	S1008250079		0 0	A		Tellurium	LIQUID		<1.0000E-01			0.1	ug/mL			
14	BLNK-PREP	S1008250079		0 0	A		Thorium	LIQUID		<5.0000E-02			0.05	ug/mL			

Units shown for QC (BLK/BKG) may not reflect the actual units.

* = Rejected Analyte
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LABCORE Completed Batch Report for Batch# 00023451

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
14	BLNK-PREP	S1008250079		0 0	A		Titanium	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
14	BLNK-PREP	S1008250079		0 0	A		Thallium	LIQUID		<1.0000E-01			0.1	ug/mL			
14	BLNK-PREP	S1008250079		0 0	A		Uranium	LIQUID		<1.0000E-01			0.1	ug/mL			
14	BLNK-PREP	S1008250079		0 0	A		Vanadium	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
14	BLNK-PREP	S1008250079		0 0	A		Tungsten	LIQUID		<2.0000E-01			0.2	ug/mL			
14	BLNK-PREP	S1008250079		0 0	A		Yttrium	LIQUID		<2.0000E-03			2.00E-03	ug/mL			
14	BLNK-PREP	S1008250079		0 0	A		Zinc	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
14	BLNK-PREP	S1008250079		0 0	A		Zirconium	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
Sample Sequence 15																	
15	STD-PREP	S1008250080		0 0	A		Silver	LIQUID	1	8.8868E-01			5.00E-03	ug/mL	88.868	% Recovery	
15	STD-PREP	S1008250080		0 0	A		Aluminum	LIQUID	5	4.9176E+00			0.03	ug/mL	98.352	% Recovery	
15	STD-PREP	S1008250080		0 0	A		Arsenic	LIQUID	5	4.9579E+00			0.05	ug/mL	99.159	% Recovery	
15	STD-PREP	S1008250080		0 0	A		Boron	LIQUID	5	4.9174E+00			0.03	ug/mL	98.348	% Recovery	
15	STD-PREP	S1008250080		0 0	A		Barium	LIQUID	5	4.2494E+00			3.00E-03	ug/mL	84.987	% Recovery	
15	STD-PREP	S1008250080		0 0	A		Beryllium	LIQUID	5	4.1645E+00			1.00E-03	ug/mL	83.29	% Recovery	
15	STD-PREP	S1008250080		0 0	A		Bismuth	LIQUID	5	4.5668E+00			0.1	ug/mL	91.337	% Recovery	
15	STD-PREP	S1008250080		0 0	A		Calcium	LIQUID	5	4.4111E+00			0.05	ug/mL	88.223	% Recovery	
15	STD-PREP	S1008250080		0 0	A		Cadmium	LIQUID	5	4.6969E+00			5.00E-03	ug/mL	93.938	% Recovery	
15	STD-PREP	S1008250080		0 0	A		Cobalt	LIQUID	5	4.7519E+00			0.01	ug/mL	95.038	% Recovery	
15	STD-PREP	S1008250080		0 0	A		Chromium	LIQUID	5	4.7214E+00			5.00E-03	ug/mL	94.428	% Recovery	
15	STD-PREP	S1008250080		0 0	A		Copper	LIQUID	5	4.3671E+00			5.00E-03	ug/mL	87.341	% Recovery	
15	STD-PREP	S1008250080		0 0	A		Iron	LIQUID	5	4.8735E+00			5.00E-03	ug/mL	97.47	% Recovery	
15	STD-PREP	S1008250080		0 0	A		Potassium	LIQUID	5	4.9525E+00			0.5	ug/mL	99.051	% Recovery	
15	STD-PREP	S1008250080		0 0	A		Lanthanum	LIQUID	5	4.3189E+00			3.00E-03	ug/mL	86.378	% Recovery	
15	STD-PREP	S1008250080		0 0	A		Lithium	LIQUID	5	4.7028E+00			3.00E-03	ug/mL	94.055	% Recovery	
15	STD-PREP	S1008250080		0 0	A		Magnesium	LIQUID	5	4.7188E+00			0.05	ug/mL	94.376	% Recovery	
15	STD-PREP	S1008250080		0 0	A		Manganese	LIQUID	5	4.7180E+00			3.00E-03	ug/mL	94.36	% Recovery	
15	STD-PREP	S1008250080		0 0	A		Molybdenum	LIQUID	5	4.8794E+00			0.02	ug/mL	97.588	% Recovery	
15	STD-PREP	S1008250080		0 0	A		Sodium	LIQUID	5	4.5684E+00			0.1	ug/mL	91.368	% Recovery	
15	STD-PREP	S1008250080		0 0	A		Nickel	LIQUID	5	4.6788E+00			0.02	ug/mL	93.575	% Recovery	
15	STD-PREP	S1008250080		0 0	A		Phosphorus	LIQUID	5	4.8678E+00			0.05	ug/mL	97.356	% Recovery	
15	STD-PREP	S1008250080		0 0	A		Lead	LIQUID	5	4.5874E+00			0.05	ug/mL	91.747	% Recovery	
15	STD-PREP	S1008250080		0 0	A		Sulfur	LIQUID	5	4.8897E+00			0.1	ug/mL	97.795	% Recovery	
15	STD-PREP	S1008250080		0 0	A		Antimony	LIQUID	5	4.7390E+00			0.05	ug/mL	94.78	% Recovery	
15	STD-PREP	S1008250080		0 0	A		Selenium	LIQUID	5	4.9722E+00			0.1	ug/mL	99.445	% Recovery	
15	STD-PREP	S1008250080		0 0	A		Silicon	LIQUID	5	4.5788E+00			0.03	ug/mL	91.577	% Recovery	
15	STD-PREP	S1008250080		0 0	A		Strontium	LIQUID	5	4.2479E+00			3.00E-03	ug/mL	84.958	% Recovery	
15	STD-PREP	S1008250080		0 0	A		Titanium	LIQUID	5	4.9365E+00			5.00E-03	ug/mL	98.729	% Recovery	
15	STD-PREP	S1008250080		0 0	A		Vanadium	LIQUID	5	4.9539E+00			5.00E-03	ug/mL	99.077	% Recovery	
15	STD-PREP	S1008250080		0 0	A		Zinc	LIQUID	5	4.7839E+00			5.00E-03	ug/mL	95.678	% Recovery	
15	STD-PREP	S1008250080		0 0	A		Zirconium	LIQUID	5	4.9392E+00			5.00E-03	ug/mL	98.783	% Recovery	
Sample Sequence 16																	
16	STD-PREP	S1008250088		0 0	A		Cerium	LIQUID	5	4.3991E+00			0.03	ug/mL	87.982	% Recovery	

Units shown for QC (BLK/BKG) may not reflect the actual units.

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N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00023451

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
16	STD-PREP	S1008250088		0 0	A		Europium	LIQUID	5	4.2333E+00			5.00E-03	ug/mL	84.666	% Recovery	
16	STD-PREP	S1008250088		0 0	A		Neodymium	LIQUID	5	4.5895E+00			0.01	ug/mL	91.79	% Recovery	
16	STD-PREP	S1008250088		0 0	A		Niobium	LIQUID	5	4.0798E+00			0.03	ug/mL	81.596	% Recovery	
16	STD-PREP	S1008250088		0 0	A		Palladium	LIQUID	5	4.6416E+00			0.1	ug/mL	92.832	% Recovery	
16	STD-PREP	S1008250088		0 0	A		Praseodymium	LIQUID	5	4.6401E+00			0.01	ug/mL	92.801	% Recovery	
16	STD-PREP	S1008250088		0 0	A		Rubidium	LIQUID	5	4.2965E+00			1	ug/mL	85.93	% Recovery	
16	STD-PREP	S1008250088		0 0	A		Rhodium	LIQUID	5	4.2944E+00			0.05	ug/mL	85.888	% Recovery	
16	STD-PREP	S1008250088		0 0	A		Ruthenium	LIQUID	5	4.7784E+00			0.03	ug/mL	95.568	% Recovery	
16	STD-PREP	S1008250088		0 0	A		Samarium	LIQUID	5	4.5908E+00			0.02	ug/mL	91.815	% Recovery	
16	STD-PREP	S1008250088		0 0	A		Tin	LIQUID	5	4.5174E+00			0.03	ug/mL	90.349	% Recovery	
16	STD-PREP	S1008250088		0 0	A		Tantalum	LIQUID	5	4.7313E+00			0.05	ug/mL	94.626	% Recovery	
16	STD-PREP	S1008250088		0 0	A		Tellurium	LIQUID	5	4.9442E+00			0.1	ug/mL	98.885	% Recovery	
16	STD-PREP	S1008250088		0 0	A		Thorium	LIQUID	5	4.8352E+00			0.05	ug/mL	96.705	% Recovery	
16	STD-PREP	S1008250088		0 0	A		Thallium	LIQUID	5	4.8081E+00			0.1	ug/mL	96.162	% Recovery	
16	STD-PREP	S1008250088		0 0	A		Uranium	LIQUID	5	5.0298E+00			0.1	ug/mL	100.6	% Recovery	
16	STD-PREP	S1008250088		0 0	A		Tungsten	LIQUID	5	4.0414E+00			0.2	ug/mL	80.829	% Recovery	
16	STD-PREP	S1008250088		0 0	A		Yttrium	LIQUID	5	4.0021E+00			2.00E-03	ug/mL	80.043	% Recovery	
Sample Sequence 17																	
17	SERDIL	S1010220036	S10V001614	0 0			Aluminum	SOLID		7.2133E+03			14.855	ug/g	4.4544	% Diff	
17	SERDIL	S1010220036	S10V001614	0 0			Barium	SOLID		1.0231E+02			1.4855	ug/g	5.6178	% Diff	
17	SERDIL	S1010220036	S10V001614	0 0			Beryllium	SOLID		<4.9516E-01			0.49516	ug/g	N/A		
17	SERDIL	S1010220036	S10V001614	0 0			Calcium	SOLID		1.0728E+04			24.758	ug/g	2.8264	% Diff	
17	SERDIL	S1010220036	S10V001614	0 0			Cerium	SOLID		2.8642E+00			1.5	ug/g	N/A		
17	SERDIL	S1010220036	S10V001614	0 0			Cobalt	SOLID		1.1572E+00			0.5	ug/g	N/A		
17	SERDIL	S1010220036	S10V001614	0 0			Chromium	SOLID		7.4783E+00			2.4758	ug/g	.24749	% Diff	
17	SERDIL	S1010220036	S10V001614	0 0			Copper	SOLID		1.2236E+01			2.4758	ug/g	8.1677	% Diff	
17	SERDIL	S1010220036	S10V001614	0 0			Iron	SOLID		2.2112E+04			2.4758	ug/g	5.8977	% Diff	
17	SERDIL	S1010220036	S10V001614	0 0			Potassium	SOLID		1.0915E+03			247.58	ug/g	21.853	% Diff	
17	SERDIL	S1010220036	S10V001614	0 0			Lanthanum	SOLID		1.0548E+01			1.4855	ug/g	4.0158	% Diff	
17	SERDIL	S1010220036	S10V001614	0 0			Lithium	SOLID		8.0453E+00			1.4855	ug/g	13.356	% Diff	
17	SERDIL	S1010220036	S10V001614	0 0			Magnesium	SOLID		4.9116E+03			24.758	ug/g	5.6354	% Diff	
17	SERDIL	S1010220036	S10V001614	0 0			Manganese	SOLID		3.1852E+02			1.4855	ug/g	4.8421	% Diff	
17	SERDIL	S1010220036	S10V001614	0 0			Molybdenum	SOLID		<9.9031E+00			9.9031	ug/g	N/A		
17	SERDIL	S1010220036	S10V001614	0 0			Sodium	SOLID		3.6186E+02			49.516	ug/g	10.577	% Diff	
17	SERDIL	S1010220036	S10V001614	0 0			Neodymium	SOLID		1.6848E+01			4.9516	ug/g	6.1385	% Diff	
17	SERDIL	S1010220036	S10V001614	0 0			Nickel	SOLID		<9.9031E+00			9.9031	ug/g	N/A		
17	SERDIL	S1010220036	S10V001614	0 0			Phosphorus	SOLID		9.1934E+02			24.758	ug/g	.20992	% Diff	
17	SERDIL	S1010220036	S10V001614	0 0			Sulfur	SOLID		7.2698E+01			49.516	ug/g	1.004	% Diff	
17	SERDIL	S1010220036	S10V001614	0 0			Silicon	SOLID		2.7328E+01			14.855	ug/g	68.496	% Diff	
17	SERDIL	S1010220036	S10V001614	0 0			Strontium	SOLID		4.9515E+01			1.4855	ug/g	5.1601	% Diff	
17	SERDIL	S1010220036	S10V001614	0 0			Titanium	SOLID		1.5564E+03			2.4758	ug/g	4.8195	% Diff	
17	SERDIL	S1010220036	S10V001614	0 0			Vanadium	SOLID		5.3252E+01			2.4758	ug/g	6.4512	% Diff	

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LABCORE Completed Batch Report for Batch# 00023451

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
17	SERDIL	S1010220036	S10V001614	0 0			Yttrium	SOLID		1.1055E+01			0.99031	ug/g	4.5163	% Diff	
17	SERDIL	S1010220036	S10V001614	0 0			Zinc	SOLID		4.0657E+01			2.4758	ug/g	.6588	% Diff	
17	SERDIL	S1010220036	S10V001614	0 0			Zirconium	SOLID		6.4143E+00			2.4758	ug/g	.5655	% Diff	
Sample Sequence 18																	
18	SAMPLE	S10V001614		0 0	A		Aluminum	SOLID	N/A	6.9057E+03			2.9709	ug/g			
18	SAMPLE	S10V001614		0 0	A		Boron	SOLID	N/A	6.4170E+00			2.9709	ug/g			J
18	SAMPLE	S10V001614		0 0	A		Barium	SOLID	N/A	9.6871E+01			0.29709	ug/g			b
18	SAMPLE	S10V001614		0 0	A		Beryllium	SOLID	N/A	1.7430E-01			0.099031	ug/g			J
18	SAMPLE	S10V001614		0 0	A		Calcium	SOLID	N/A	1.0433E+04			4.9516	ug/g			
18	SAMPLE	S10V001614		0 0	A		Cerium	SOLID	N/A	2.3374E+01			2.9709	ug/g			Jb
18	SAMPLE	S10V001614		0 0	A		Cobalt	SOLID	N/A	8.5082E+00			0.99031	ug/g			J
18	SAMPLE	S10V001614		0 0	A		Chromium	SOLID	N/A	7.4598E+00			0.49516	ug/g			
18	SAMPLE	S10V001614		0 0	A		Copper	SOLID	N/A	1.1312E+01			0.49516	ug/g			
18	SAMPLE	S10V001614		0 0	A		Iron	SOLID	N/A	2.0881E+04			0.49516	ug/g			b
18	SAMPLE	S10V001614		0 0	A		Potassium	SOLID	N/A	8.9571E+02			49.516	ug/g			
18	SAMPLE	S10V001614		0 0	A		Lanthanum	SOLID	N/A	1.0141E+01			0.29709	ug/g			
18	SAMPLE	S10V001614		0 0	A		Lithium	SOLID	N/A	7.0974E+00			0.29709	ug/g			
18	SAMPLE	S10V001614		0 0	A		Magnesium	SOLID	N/A	4.6496E+03			4.9516	ug/g			
18	SAMPLE	S10V001614		0 0	A		Manganese	SOLID	N/A	3.0381E+02			0.29709	ug/g			
18	SAMPLE	S10V001614		0 0	A		Molybdenum	SOLID	N/A	2.3814E+00			1.9806	ug/g			J
18	SAMPLE	S10V001614		0 0	A		Sodium	SOLID	N/A	3.2725E+02			9.9031	ug/g			
18	SAMPLE	S10V001614		0 0	A		Nickel	SOLID	N/A	8.7831E+00			1.9806	ug/g			J
18	SAMPLE	S10V001614		0 0	A		Phosphorus	SOLID	N/A	9.1741E+02			4.9516	ug/g			
18	SAMPLE	S10V001614		0 0	A		Sulfur	SOLID	N/A	7.3435E+01			9.9031	ug/g			J
18	SAMPLE	S10V001614		0 0	A		Silicon	SOLID	N/A	1.6219E+01			2.9709	ug/g			Jc
18	SAMPLE	S10V001614		0 0	A		Strontium	SOLID	N/A	4.7085E+01			0.29709	ug/g			
18	SAMPLE	S10V001614		0 0	A		Titanium	SOLID	N/A	1.4848E+03			0.49516	ug/g			
18	SAMPLE	S10V001614		0 0	A		Vanadium	SOLID	N/A	5.0025E+01			0.49516	ug/g			
18	SAMPLE	S10V001614		0 0	A		Yttrium	SOLID	N/A	1.0577E+01			0.19806	ug/g			
18	SAMPLE	S10V001614		0 0	A		Zinc	SOLID	N/A	4.0927E+01			0.49516	ug/g			
18	SAMPLE	S10V001614		0 0	A		Zirconium	SOLID	N/A	6.3782E+00			0.49516	ug/g			b
Sample Sequence 19																	
19	DUP	S1008250081	S10V001614	0 0	A		Aluminum	SOLID	6.9057E+03	6.1766E+03			2.9725	ug/g	11.146	% RPD	
19	DUP	S1008250081	S10V001614	0 0	A		Barium	SOLID	9.6871E+01	8.3389E+01			0.29725	ug/g	14.958	% RPD	
19	DUP	S1008250081	S10V001614	0 0	A		Beryllium	SOLID	1.7430E-01	1.6923E-01			0.099082	ug/g	2.9491	% RPD	
19	DUP	S1008250081	S10V001614	0 0	A		Calcium	SOLID	1.0433E+04	8.2407E+03			4.9541	ug/g	23.480	% RPD	
19	DUP	S1008250081	S10V001614	0 0	A		Cobalt	SOLID	8.5082E+00	7.8004E+00			0.99082	ug/g	8.6800	% RPD	
19	DUP	S1008250081	S10V001614	0 0	A		Chromium	SOLID	7.4598E+00	6.9064E+00			0.49541	ug/g	7.7048	% RPD	
19	DUP	S1008250081	S10V001614	0 0	A		Copper	SOLID	1.1312E+01	1.1700E+01			0.49541	ug/g	3.3716	% RPD	
19	DUP	S1008250081	S10V001614	0 0	A		Iron	SOLID	2.0881E+04	2.0321E+04			0.49541	ug/g	2.7167	% RPD	
19	DUP	S1008250081	S10V001614	0 0	A		Potassium	SOLID	8.9571E+02	8.5669E+02			49.541	ug/g	4.4533	% RPD	
19	DUP	S1008250081	S10V001614	0 0	A		Lithium	SOLID	7.0974E+00	7.1728E+00			0.29725	ug/g	1.0569	% RPD	
19	DUP	S1008250081	S10V001614	0 0	A		Magnesium	SOLID	4.6496E+03	4.5233E+03			4.9541	ug/g	2.7538	% RPD	

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LABCORE Completed Batch Report for Batch# 00023451

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
19	DUP	S1008250081	S10V001614	0 0	A		Manganese	SOLID	3.0381E+02	2.9485E+02			0.29725	ug/g	2.9924	% RPD	
19	DUP	S1008250081	S10V001614	0 0	A		Molybdenum	SOLID	2.3814E+00	<1.9816E+00			1.9816	ug/g			
19	DUP	S1008250081	S10V001614	0 0	A		Sodium	SOLID	3.2725E+02	2.8632E+02			9.9082	ug/g	13.341	% RPD	
19	DUP	S1008250081	S10V001614	0 0	A		Nickel	SOLID	8.7831E+00	9.0129E+00			1.9816	ug/g	2.5826	% RPD	
19	DUP	S1008250081	S10V001614	0 0	A		Phosphorus	SOLID	9.1741E+02	9.4191E+02			4.9541	ug/g	2.6355	% RPD	
19	DUP	S1008250081	S10V001614	0 0	A		Strontium	SOLID	4.7085E+01	4.1215E+01			0.29725	ug/g	13.295	% RPD	
19	DUP	S1008250081	S10V001614	0 0	A		Vanadium	SOLID	5.0025E+01	4.7047E+01			0.49541	ug/g	6.1364	% RPD	
19	DUP	S1008250081	S10V001614	0 0	A		Zinc	SOLID	4.0927E+01	3.9045E+01			0.49541	ug/g	4.7062	% RPD	
19	DUP	S1008250081	S10V001614	0 0	A		Cerium	SOLID	2.3374E+01	2.1922E+01			2.9725	ug/g	6.4103	% RPD	
19	DUP	S1008250081	S10V001614	0 0	A		Lanthanum	SOLID	1.0141E+01	9.7189E+00			0.29725	ug/g	4.2520	% RPD	
19	DUP	S1008250081	S10V001614	0 0	A		Neodymium	SOLID		1.4713E+01			0.99082	ug/g			
19	DUP	S1008250081	S10V001614	0 0	A		Silicon	SOLID	1.6219E+01	2.2806E+01			2.9725	ug/g	33.756	% RPD	
19	DUP	S1008250081	S10V001614	0 0	A		Sulfur	SOLID	7.3435E+01	6.6773E+01			9.9082	ug/g	9.5028	% RPD	
Sample Sequence 20																	
20	SPK-PREDIG	S1008250082	S10V001614	0 0	A		Aluminum	SOLID	49.31550085	7.6847E+03			2.9589	ug/g	1579.7	% Recovery	
20	SPK-PREDIG	S1008250082	S10V001614	0 0	A		Boron	SOLID	49.31550085	5.4105E+01			2.9589	ug/g	96.7	% Recovery	
20	SPK-PREDIG	S1008250082	S10V001614	0 0	A		Barium	SOLID	49.31550085	1.6236E+02			0.29589	ug/g	132.8	% Recovery	
20	SPK-PREDIG	S1008250082	S10V001614	0 0	A		Beryllium	SOLID	49.31550085	4.8056E+01			0.098631	ug/g	97.092	% Recovery	
20	SPK-PREDIG	S1008250082	S10V001614	0 0	A		Calcium	SOLID	49.31550085	1.1661E+04			4.9316	ug/g	2489.8	% Recovery	
20	SPK-PREDIG	S1008250082	S10V001614	0 0	A		Cerium	SOLID	49.31550085	2.4239E+01			2.9589	ug/g	1.7533	% Recovery	
20	SPK-PREDIG	S1008250082	S10V001614	0 0	A		Cobalt	SOLID	49.31550085	5.6949E+01			0.98631	ug/g	98.226	% Recovery	
20	SPK-PREDIG	S1008250082	S10V001614	0 0	A		Chromium	SOLID	49.31550085	5.4965E+01			0.49316	ug/g	96.329	% Recovery	
20	SPK-PREDIG	S1008250082	S10V001614	0 0	A		Copper	SOLID	49.31550085	6.2478E+01			0.49316	ug/g	103.75	% Recovery	
20	SPK-PREDIG	S1008250082	S10V001614	0 0	A		Iron	SOLID	49.31550085	2.0754E+04			0.49316	ug/g	-257.16	% Recovery	
20	SPK-PREDIG	S1008250082	S10V001614	0 0	A		Potassium	SOLID	49.31550085	1.0732E+03			49.316	ug/g	359.97	% Recovery	
20	SPK-PREDIG	S1008250082	S10V001614	0 0	A		Lanthanum	SOLID	49.31550085	5.9611E+01			0.29589	ug/g	100.31	% Recovery	
20	SPK-PREDIG	S1008250082	S10V001614	0 0	A		Lithium	SOLID	49.31550085	6.0707E+01			0.29589	ug/g	108.71	% Recovery	
20	SPK-PREDIG	S1008250082	S10V001614	0 0	A		Magnesium	SOLID	49.31550085	4.9919E+03			4.9316	ug/g	694.14	% Recovery	
20	SPK-PREDIG	S1008250082	S10V001614	0 0	A		Manganese	SOLID	49.31550085	3.6378E+02			0.29589	ug/g	121.61	% Recovery	
20	SPK-PREDIG	S1008250082	S10V001614	0 0	A		Molybdenum	SOLID	49.31550085	4.7980E+01			1.9726	ug/g	92.463	% Recovery	
20	SPK-PREDIG	S1008250082	S10V001614	0 0	A		Sodium	SOLID	49.31550085	5.3590E+02			9.8631	ug/g	423.09	% Recovery	
20	SPK-PREDIG	S1008250082	S10V001614	0 0	A		Nickel	SOLID	49.31550085	5.5468E+01			1.9726	ug/g	94.665	% Recovery	
20	SPK-PREDIG	S1008250082	S10V001614	0 0	A		Phosphorus	SOLID	49.31550085	9.6133E+02			4.9316	ug/g	89.067	% Recovery	
20	SPK-PREDIG	S1008250082	S10V001614	0 0	A		Sulfur	SOLID	49.31550085	1.2977E+02			9.8631	ug/g	114.24	% Recovery	
20	SPK-PREDIG	S1008250082	S10V001614	0 0	A		Silicon	SOLID	49.31550085	4.0351E+01			2.9589	ug/g	48.935	% Recovery	
20	SPK-PREDIG	S1008250082	S10V001614	0 0	A		Strontium	SOLID	49.31550085	1.0589E+02			0.29589	ug/g	119.24	% Recovery	
20	SPK-PREDIG	S1008250082	S10V001614	0 0	A		Titanium	SOLID	49.31550085	1.4532E+03			0.49316	ug/g	-64.163	% Recovery	
20	SPK-PREDIG	S1008250082	S10V001614	0 0	A		Vanadium	SOLID	49.31550085	9.7681E+01			0.49316	ug/g	96.635	% Recovery	
20	SPK-PREDIG	S1008250082	S10V001614	0 0	A		Zinc	SOLID	49.31550085	8.9281E+01			0.49316	ug/g	98.049	% Recovery	
20	SPK-PREDIG	S1008250082	S10V001614	0 0	A		Zirconium	SOLID	49.31550085	4.2683E+01			0.49316	ug/g	73.618	% Recovery	
Sample Sequence 21																	
21	SPK-PREDIG	S1008250091	S10V001614	0 0	A		Neodymium	SOLID	49.32815059	6.0064E+01			0.98656	ug/g	89.583	% Recovery	
21	SPK-PREDIG	S1008250091	S10V001614	0 0	A		Yttrium	SOLID	49.32815059	5.3715E+01			0.19731	ug/g	87.451	% Recovery	

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LABCORE Completed Batch Report for Batch# 00023451

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
Sample Sequence 22																	
22	CCV	S1010220038		0 0			Silver	LIQUID	1	9.7616E-01			5.00E-03	ug/mL	97.616	% Recovery	
22	CCV	S1010220038		0 0			Aluminum	LIQUID	5	5.1615E+00			0.03	ug/mL	103.23	% Recovery	
22	CCV	S1010220038		0 0			Arsenic	LIQUID	5	5.1434E+00			0.05	ug/mL	102.87	% Recovery	
22	CCV	S1010220038		0 0			Boron	LIQUID	5	4.9583E+00			0.03	ug/mL	99.166	% Recovery	
22	CCV	S1010220038		0 0			Barium	LIQUID	5	5.1358E+00			3.00E-03	ug/mL	102.72	% Recovery	
22	CCV	S1010220038		0 0			Beryllium	LIQUID	5	4.8935E+00			1.00E-03	ug/mL	97.871	% Recovery	
22	CCV	S1010220038		0 0			Bismuth	LIQUID	5	5.0829E+00			0.1	ug/mL	101.66	% Recovery	
22	CCV	S1010220038		0 0			Calcium	LIQUID	5	5.1155E+00			0.05	ug/mL	102.31	% Recovery	
22	CCV	S1010220038		0 0			Cadmium	LIQUID	5	5.0320E+00			5.00E-03	ug/mL	100.64	% Recovery	
22	CCV	S1010220038		0 0			Cerium	LIQUID	5	5.1965E+00			0.03	ug/mL	103.93	% Recovery	
22	CCV	S1010220038		0 0			Cobalt	LIQUID	5	5.1347E+00			0.01	ug/mL	102.69	% Recovery	
22	CCV	S1010220038		0 0			Chromium	LIQUID	5	5.0874E+00			5.00E-03	ug/mL	101.75	% Recovery	
22	CCV	S1010220038		0 0			Copper	LIQUID	5	5.1264E+00			5.00E-03	ug/mL	102.53	% Recovery	
24	CCV	S1010220038		0 2			Europium	LIQUID	5	4.9387E+00			5.00E-03	ug/mL	98.774	% Recovery	
22	CCV	S1010220038		0 0			Iron	LIQUID	5	5.0401E+00			5.00E-03	ug/mL	100.8	% Recovery	
22	CCV	S1010220038		0 0			Potassium	LIQUID	5	5.0775E+00			0.5	ug/mL	101.55	% Recovery	
22	CCV	S1010220038		0 0			Lanthanum	LIQUID	5	5.0534E+00			3.00E-03	ug/mL	101.07	% Recovery	
22	CCV	S1010220038		0 0			Lithium	LIQUID	5	5.4017E+00			3.00E-03	ug/mL	108.03	% Recovery	
22	CCV	S1010220038		0 0			Magnesium	LIQUID	5	5.0416E+00			0.05	ug/mL	100.83	% Recovery	
22	CCV	S1010220038		0 0			Manganese	LIQUID	5	5.0581E+00			3.00E-03	ug/mL	101.16	% Recovery	
22	CCV	S1010220038		0 0			Molybdenum	LIQUID	5	5.0426E+00			0.02	ug/mL	100.85	% Recovery	
23	CCV	S1010220038		0 1			Sodium	LIQUID	5	5.4192E+00			0.1	ug/mL	108.38	% Recovery	
22	CCV	S1010220038		0 0			Neodymium	LIQUID	5	5.1148E+00			0.01	ug/mL	102.3	% Recovery	
22	CCV	S1010220038		0 0			Nickel	LIQUID	5	5.0442E+00			0.02	ug/mL	100.88	% Recovery	
25	CCV	S1010220038		0 3			Niobium	LIQUID	5	5.2486E+00			0.03	ug/mL	104.97	% Recovery	
22	CCV	S1010220038		0 0			Phosphorus	LIQUID	5	5.0690E+00			0.05	ug/mL	101.38	% Recovery	
22	CCV	S1010220038		0 0			Lead	LIQUID	5	5.1600E+00			0.05	ug/mL	103.2	% Recovery	
24	CCV	S1010220038		0 2			Palladium	LIQUID	5	4.8029E+00			0.1	ug/mL	96.057	% Recovery	
24	CCV	S1010220038		0 2			Praseodymium	LIQUID	5	5.0975E+00			0.01	ug/mL	101.95	% Recovery	
24	CCV	S1010220038		0 2			Rubidium	LIQUID	5	4.9591E+00			1	ug/mL	99.182	% Recovery	
24	CCV	S1010220038		0 2			Rhodium	LIQUID	5	4.9976E+00			0.05	ug/mL	99.953	% Recovery	
24	CCV	S1010220038		0 2			Ruthenium	LIQUID	5	5.1035E+00			0.03	ug/mL	102.07	% Recovery	
22	CCV	S1010220038		0 0			Sulfur	LIQUID	5	5.0998E+00			0.1	ug/mL	102	% Recovery	
22	CCV	S1010220038		0 0			Antimony	LIQUID	5	4.9752E+00			0.05	ug/mL	99.503	% Recovery	
22	CCV	S1010220038		0 0			Selenium	LIQUID	5	5.1343E+00			0.1	ug/mL	102.69	% Recovery	
22	CCV	S1010220038		0 0			Silicon	LIQUID	5	4.7625E+00			0.03	ug/mL	95.249	% Recovery	
22	CCV	S1010220038		0 0			Samarium	LIQUID	5	5.1113E+00			0.02	ug/mL	102.23	% Recovery	
25	CCV	S1010220038		0 3			Tin	LIQUID	5	5.2931E+00			0.03	ug/mL	105.86	% Recovery	
22	CCV	S1010220038		0 0			Strontium	LIQUID	5	5.0770E+00			3.00E-03	ug/mL	101.54	% Recovery	
25	CCV	S1010220038		0 3			Tantalum	LIQUID	5	5.2146E+00			0.05	ug/mL	104.29	% Recovery	
25	CCV	S1010220038		0 3			Tellurium	LIQUID	5	5.1931E+00			0.1	ug/mL	103.86	% Recovery	

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LABCORE Completed Batch Report for Batch# 00023451

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
22	CCV	S1010220038		0 0			Thorium	LIQUID	5	5.1762E+00			0.05	ug/mL	103.52	% Recovery	
22	CCV	S1010220038		0 0			Titanium	LIQUID	5	4.9966E+00			5.00E-03	ug/mL	99.932	% Recovery	
22	CCV	S1010220038		0 0			Thallium	LIQUID	5	5.2098E+00			0.1	ug/mL	104.2	% Recovery	
24	CCV	S1010220038		0 2			Uranium	LIQUID	5	5.2600E+00			0.1	ug/mL	105.2	% Recovery	
22	CCV	S1010220038		0 0			Vanadium	LIQUID	5	5.1241E+00			5.00E-03	ug/mL	102.48	% Recovery	
25	CCV	S1010220038		0 3			Tungsten	LIQUID	5	5.2752E+00			0.2	ug/mL	105.5	% Recovery	
24	CCV	S1010220038		0 2			Yttrium	LIQUID	5	4.9947E+00			2.00E-03	ug/mL	99.894	% Recovery	
22	CCV	S1010220038		0 0			Zinc	LIQUID	5	5.0007E+00			5.00E-03	ug/mL	100.01	% Recovery	
22	CCV	S1010220038		0 0			Zirconium	LIQUID	5	5.2147E+00			5.00E-03	ug/mL	104.29	% Recovery	
Sample Sequence 26																	
26	CCB	S1010220039		0 0			Silver	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
26	CCB	S1010220039		0 0			Aluminum	LIQUID		<3.0000E-02			0.03	ug/mL			
26	CCB	S1010220039		0 0			Arsenic	LIQUID		<5.0000E-02			0.05	ug/mL			
26	CCB	S1010220039		0 0			Boron	LIQUID		<3.0000E-02			0.03	ug/mL			
26	CCB	S1010220039		0 0			Barium	LIQUID		<3.0000E-03			3.00E-03	ug/mL			
26	CCB	S1010220039		0 0			Beryllium	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
26	CCB	S1010220039		0 0			Bismuth	LIQUID		<1.0000E-01			0.1	ug/mL			
26	CCB	S1010220039		0 0			Calcium	LIQUID		<5.0000E-02			0.05	ug/mL			
26	CCB	S1010220039		0 0			Cadmium	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
26	CCB	S1010220039		0 0			Cerium	LIQUID		<3.0000E-02			0.03	ug/mL			
26	CCB	S1010220039		0 0			Cobalt	LIQUID		<1.0000E-02			0.01	ug/mL			
26	CCB	S1010220039		0 0			Chromium	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
26	CCB	S1010220039		0 0			Copper	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
26	CCB	S1010220039		0 0			Europium	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
26	CCB	S1010220039		0 0			Iron	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
26	CCB	S1010220039		0 0			Potassium	LIQUID		<5.0000E-01			0.5	ug/mL			
26	CCB	S1010220039		0 0			Lanthanum	LIQUID		<3.0000E-03			3.00E-03	ug/mL			
26	CCB	S1010220039		0 0			Lithium	LIQUID		<3.0000E-03			3.00E-03	ug/mL			
26	CCB	S1010220039		0 0			Magnesium	LIQUID		<5.0000E-02			0.05	ug/mL			
26	CCB	S1010220039		0 0			Manganese	LIQUID		<3.0000E-03			3.00E-03	ug/mL			
26	CCB	S1010220039		0 0			Molybdenum	LIQUID		<2.0000E-02			0.02	ug/mL			
26	CCB	S1010220039		0 0			Sodium	LIQUID		<1.0000E-01			0.1	ug/mL			
26	CCB	S1010220039		0 0			Neodymium	LIQUID		<1.0000E-02			0.01	ug/mL			
26	CCB	S1010220039		0 0			Nickel	LIQUID		<2.0000E-02			0.02	ug/mL			
26	CCB	S1010220039		0 0			Niobium	LIQUID		<3.0000E-02			0.03	ug/mL			
26	CCB	S1010220039		0 0			Phosphorus	LIQUID		<5.0000E-02			0.05	ug/mL			
26	CCB	S1010220039		0 0			Lead	LIQUID		<5.0000E-02			0.05	ug/mL			
26	CCB	S1010220039		0 0			Palladium	LIQUID		<1.0000E-01			0.1	ug/mL			
26	CCB	S1010220039		0 0			Praseodymium	LIQUID		<1.0000E-02			0.01	ug/mL			
26	CCB	S1010220039		0 0			Rubidium	LIQUID		<1.0000E+00			1	ug/mL			
26	CCB	S1010220039		0 0			Rhodium	LIQUID		<5.0000E-02			0.05	ug/mL			
26	CCB	S1010220039		0 0			Ruthenium	LIQUID		<3.0000E-02			0.03	ug/mL			

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LABCORE Completed Batch Report for Batch# 00023451

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
26	CCB	S1010220039		0 0			Sulfur	LIQUID		<1.0000E-01			0.1	ug/mL			
26	CCB	S1010220039		0 0			Antimony	LIQUID		<5.0000E-02			0.05	ug/mL			
26	CCB	S1010220039		0 0			Selenium	LIQUID		<1.0000E-01			0.1	ug/mL			
26	CCB	S1010220039		0 0			Silicon	LIQUID		3.3860E-02			0.03	ug/mL			
26	CCB	S1010220039		0 0			Samarium	LIQUID		<2.0000E-02			0.02	ug/mL			
26	CCB	S1010220039		0 0			Tin	LIQUID		<3.0000E-02			0.03	ug/mL			
26	CCB	S1010220039		0 0			Strontium	LIQUID		<3.0000E-03			3.00E-03	ug/mL			
26	CCB	S1010220039		0 0			Tantalum	LIQUID		<5.0000E-02			0.05	ug/mL			
26	CCB	S1010220039		0 0			Tellurium	LIQUID		<1.0000E-01			0.1	ug/mL			
26	CCB	S1010220039		0 0			Thorium	LIQUID		<5.0000E-02			0.05	ug/mL			
26	CCB	S1010220039		0 0			Titanium	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
26	CCB	S1010220039		0 0			Thallium	LIQUID		<1.0000E-01			0.1	ug/mL			
26	CCB	S1010220039		0 0			Uranium	LIQUID		<1.0000E-01			0.1	ug/mL			
26	CCB	S1010220039		0 0			Vanadium	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
26	CCB	S1010220039		0 0			Tungsten	LIQUID		<2.0000E-01			0.2	ug/mL			
26	CCB	S1010220039		0 0			Yttrium	LIQUID		<2.0000E-03			2.00E-03	ug/mL			
26	CCB	S1010220039		0 0			Zinc	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
26	CCB	S1010220039		0 0			Zirconium	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
Sample Sequence 27																	
27	SPK-POST	S1010220037	S10V001614	0 0			Aluminum	SOLID	100	7.7410E+02			0.03	ug/g	76.778	% Recovery	
27	SPK-POST	S1010220037	S10V001614	0 0			Barium	SOLID	100	1.0404E+02			3.00E-03	ug/g	94.255	% Recovery	
27	SPK-POST	S1010220037	S10V001614	0 0			Beryllium	SOLID	100	8.6672E+01			1.00E-03	ug/g	86.654	% Recovery	
29	SPK-POST	S1010220037	S10V001614	0 2			Calcium	SOLID	1000	2.0653E+03			0.05	ug/g	101.19	% Recovery	
27	SPK-POST	S1010220037	S10V001614	0 0			Cerium	SOLID	100	9.4433E+01			0.03	ug/g	92.073	% Recovery	
27	SPK-POST	S1010220037	S10V001614	0 0			Cobalt	SOLID	100	8.9235E+01			0.01	ug/g	88.376	% Recovery	
27	SPK-POST	S1010220037	S10V001614	0 0			Chromium	SOLID	100	8.7852E+01			5.00E-03	ug/g	87.099	% Recovery	
27	SPK-POST	S1010220037	S10V001614	0 0			Copper	SOLID	100	9.9074E+01			5.00E-03	ug/g	97.932	% Recovery	
29	SPK-POST	S1010220037	S10V001614	0 2			Iron	SOLID	1000	2.0616E+03			5.00E-03	ug/g	-4.6872	% Recovery	
27	SPK-POST	S1010220037	S10V001614	0 0			Potassium	SOLID	100	1.8275E+02			0.5	ug/g	92.304	% Recovery	
27	SPK-POST	S1010220037	S10V001614	0 0			Lanthanum	SOLID	100	9.1948E+01			3.00E-03	ug/g	90.924	% Recovery	
27	SPK-POST	S1010220037	S10V001614	0 0			Lithium	SOLID	100	9.7951E+01			3.00E-03	ug/g	97.235	% Recovery	
29	SPK-POST	S1010220037	S10V001614	0 2			Magnesium	SOLID	1000	1.4478E+03			0.05	ug/g	97.832	% Recovery	
27	SPK-POST	S1010220037	S10V001614	0 0			Manganese	SOLID	100	1.1757E+02			3.00E-03	ug/g	86.894	% Recovery	
27	SPK-POST	S1010220037	S10V001614	0 0			Molybdenum	SOLID	100	8.8364E+01			0.02	ug/g	88.123	% Recovery	
27	SPK-POST	S1010220037	S10V001614	0 0			Sodium	SOLID	100	1.3324E+02			0.1	ug/g	100.19	% Recovery	
27	SPK-POST	S1010220037	S10V001614	0 0			Neodymium	SOLID	100	9.3935E+01			0.01	ug/g	92.332	% Recovery	
27	SPK-POST	S1010220037	S10V001614	0 0			Nickel	SOLID	100	8.8896E+01			0.02	ug/g	88.009	% Recovery	
27	SPK-POST	S1010220037	S10V001614	0 0			Phosphorus	SOLID	100	1.7986E+02			0.05	ug/g	87.221	% Recovery	
27	SPK-POST	S1010220037	S10V001614	0 0			Sulfur	SOLID	100	1.0065E+02			0.1	ug/g	93.23	% Recovery	
27	SPK-POST	S1010220037	S10V001614	0 0			Silicon	SOLID	100	8.7495E+01			0.03	ug/g	85.857	% Recovery	
27	SPK-POST	S1010220037	S10V001614	0 0			Strontium	SOLID	100	9.6369E+01			3.00E-03	ug/g	91.614	% Recovery	
27	SPK-POST	S1010220037	S10V001614	0 0			Titanium	SOLID	100	2.3060E+02			5.00E-03	ug/g	80.664	% Recovery	

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LABCORE Completed Batch Report for Batch# 00023451

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
27	SPK-POST	S1010220037	S10V001614	0 0			Vanadium	SOLID	100	9.4752E+01			5.00E-03	ug/g	89.7	% Recovery	
28	SPK-POST	S1010220037	S10V001614	0 1			Yttrium	SOLID	100	9.3400E+01			2.00E-03	ug/g	92.332	% Recovery	
27	SPK-POST	S1010220037	S10V001614	0 0			Zinc	SOLID	100	9.2704E+01			5.00E-03	ug/g	88.571	% Recovery	
27	SPK-POST	S1010220037	S10V001614	0 0			Zirconium	SOLID	100	9.2703E+01			5.00E-03	ug/g	92.059	% Recovery	
Sample Sequence 30																	
30	SAMPLE	S10V001642		0 0	A		Aluminum	SOLID	N/A	6.8101E+03			2.9407	ug/g			
30	SAMPLE	S10V001642		0 0	A		Barium	SOLID	N/A	9.0130E+01			0.29407	ug/g			b
30	SAMPLE	S10V001642		0 0	A		Beryllium	SOLID	N/A	2.2222E-01			0.098024	ug/g			J
30	SAMPLE	S10V001642		0 0	A		Calcium	SOLID	N/A	7.8328E+03			4.9012	ug/g			
30	SAMPLE	S10V001642		0 0	A		Cerium	SOLID	N/A	2.2462E+01			2.9407	ug/g			Jb
30	SAMPLE	S10V001642		0 0	A		Cobalt	SOLID	N/A	7.8012E+00			0.98024	ug/g			J
30	SAMPLE	S10V001642		0 0	A		Chromium	SOLID	N/A	7.2578E+00			0.49012	ug/g			
30	SAMPLE	S10V001642		0 0	A		Copper	SOLID	N/A	1.1469E+01			0.49012	ug/g			
30	SAMPLE	S10V001642		0 0	A		Iron	SOLID	N/A	2.0489E+04			0.49012	ug/g			b
30	SAMPLE	S10V001642		0 0	A		Potassium	SOLID	N/A	8.4450E+02			49.012	ug/g			
30	SAMPLE	S10V001642		0 0	A		Lanthanum	SOLID	N/A	1.0443E+01			0.29407	ug/g			
30	SAMPLE	S10V001642		0 0	A		Lithium	SOLID	N/A	7.3642E+00			0.29407	ug/g			
30	SAMPLE	S10V001642		0 0	A		Magnesium	SOLID	N/A	4.6088E+03			4.9012	ug/g			
30	SAMPLE	S10V001642		0 0	A		Manganese	SOLID	N/A	2.9669E+02			0.29407	ug/g			
30	SAMPLE	S10V001642		0 0	A		Molybdenum	SOLID	N/A	<1.9605E+00			1.9605	ug/g			U
30	SAMPLE	S10V001642		0 0	A		Sodium	SOLID	N/A	2.8966E+02			9.8024	ug/g			
30	SAMPLE	S10V001642		0 0	A		Nickel	SOLID	N/A	7.3839E+00			1.9605	ug/g			J
30	SAMPLE	S10V001642		0 0	A		Phosphorus	SOLID	N/A	8.2058E+02			4.9012	ug/g			
30	SAMPLE	S10V001642		0 0	A		Sulfur	SOLID	N/A	5.4271E+01			9.8024	ug/g			J
30	SAMPLE	S10V001642		0 0	A		Silicon	SOLID	N/A	1.6343E+01			2.9407	ug/g			Jc
30	SAMPLE	S10V001642		0 0	A		Strontium	SOLID	N/A	4.9581E+01			0.29407	ug/g			
30	SAMPLE	S10V001642		0 0	A		Titanium	SOLID	N/A	1.3242E+03			0.49012	ug/g			
30	SAMPLE	S10V001642		0 0	A		Vanadium	SOLID	N/A	4.6159E+01			0.49012	ug/g			
30	SAMPLE	S10V001642		0 0	A		Yttrium	SOLID	N/A	1.0719E+01			0.19605	ug/g			
30	SAMPLE	S10V001642		0 0	A		Zinc	SOLID	N/A	3.8570E+01			0.49012	ug/g			
30	SAMPLE	S10V001642		0 0	A		Zirconium	SOLID	N/A	7.3932E+00			0.49012	ug/g			b
Sample Sequence 31																	
31	SAMPLE	S10V001662		0 0	A		Aluminum	SOLID	N/A	8.2668E+03			2.9826	ug/g			
31	SAMPLE	S10V001662		0 0	A		Barium	SOLID	N/A	8.3616E+01			0.29826	ug/g			b
31	SAMPLE	S10V001662		0 0	A		Beryllium	SOLID	N/A	2.3503E-01			0.099421	ug/g			J
31	SAMPLE	S10V001662		0 0	A		Calcium	SOLID	N/A	1.2919E+04			4.9711	ug/g			
31	SAMPLE	S10V001662		0 0	A		Cerium	SOLID	N/A	2.6425E+01			2.9826	ug/g			Jb
31	SAMPLE	S10V001662		0 0	A		Cobalt	SOLID	N/A	8.7304E+00			0.99421	ug/g			J
31	SAMPLE	S10V001662		0 0	A		Chromium	SOLID	N/A	1.0042E+01			0.49711	ug/g			
31	SAMPLE	S10V001662		0 0	A		Copper	SOLID	N/A	1.3194E+01			0.49711	ug/g			
31	SAMPLE	S10V001662		0 0	A		Iron	SOLID	N/A	2.3137E+04			0.49711	ug/g			b
31	SAMPLE	S10V001662		0 0	A		Potassium	SOLID	N/A	1.1929E+03			49.711	ug/g			
31	SAMPLE	S10V001662		0 0	A		Lanthanum	SOLID	N/A	1.1433E+01			0.29826	ug/g			

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LABCORE Completed Batch Report for Batch# 00023451

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
31	SAMPLE	S10V001662		0 0	A		Lithium	SOLID	N/A	9.2446E+00			0.29826	ug/g			
31	SAMPLE	S10V001662		0 0	A		Magnesium	SOLID	N/A	6.2164E+03			4.9711	ug/g			
31	SAMPLE	S10V001662		0 0	A		Manganese	SOLID	N/A	3.6381E+02			0.29826	ug/g			
31	SAMPLE	S10V001662		0 0	A		Molybdenum	SOLID	N/A	2.5338E+00			1.9884	ug/g			J
31	SAMPLE	S10V001662		0 0	A		Sodium	SOLID	N/A	4.1875E+02			9.9421	ug/g			
31	SAMPLE	S10V001662		0 0	A		Nickel	SOLID	N/A	9.8029E+00			1.9884	ug/g			J
31	SAMPLE	S10V001662		0 0	A		Phosphorus	SOLID	N/A	8.8224E+02			4.9711	ug/g			
31	SAMPLE	S10V001662		0 0	A		Sulfur	SOLID	N/A	7.6809E+01			9.9421	ug/g			J
31	SAMPLE	S10V001662		0 0	A		Silicon	SOLID	N/A	1.0791E+01			2.9826	ug/g			Jc
31	SAMPLE	S10V001662		0 0	A		Strontium	SOLID	N/A	3.6817E+01			0.29826	ug/g			
31	SAMPLE	S10V001662		0 0	A		Titanium	SOLID	N/A	1.4988E+03			0.49711	ug/g			
31	SAMPLE	S10V001662		0 0	A		Vanadium	SOLID	N/A	5.1946E+01			0.49711	ug/g			
31	SAMPLE	S10V001662		0 0	A		Yttrium	SOLID	N/A	1.0274E+01			0.19884	ug/g			
31	SAMPLE	S10V001662		0 0	A		Zinc	SOLID	N/A	4.5346E+01			0.49711	ug/g			
31	SAMPLE	S10V001662		0 0	A		Zirconium	SOLID	N/A	1.6206E+01			0.49711	ug/g			b
Sample Sequence 32																	
32	SAMPLE	S10V001702		0 0	A		Aluminum	SOLID	N/A	4.9580E+03			2.9647	ug/g			
32	SAMPLE	S10V001702		0 0	A		Barium	SOLID	N/A	4.8083E+01			0.29647	ug/g			b
32	SAMPLE	S10V001702		0 0	A		Beryllium	SOLID	N/A	1.2649E-01			0.098822	ug/g			J
32	SAMPLE	S10V001702		0 0	A		Calcium	SOLID	N/A	5.7503E+03			4.9411	ug/g			
32	SAMPLE	S10V001702		0 0	A		Cerium	SOLID	N/A	1.5472E+01			2.9647	ug/g			Jb
32	SAMPLE	S10V001702		0 0	A		Cobalt	SOLID	N/A	5.5433E+00			0.98822	ug/g			J
32	SAMPLE	S10V001702		0 0	A		Chromium	SOLID	N/A	8.5111E+00			0.49411	ug/g			
32	SAMPLE	S10V001702		0 0	A		Copper	SOLID	N/A	9.0824E+00			0.49411	ug/g			
32	SAMPLE	S10V001702		0 0	A		Iron	SOLID	N/A	1.5506E+04			0.49411	ug/g			b
32	SAMPLE	S10V001702		0 0	A		Potassium	SOLID	N/A	7.0716E+02			49.411	ug/g			
32	SAMPLE	S10V001702		0 0	A		Lanthanum	SOLID	N/A	7.5061E+00			0.29647	ug/g			
32	SAMPLE	S10V001702		0 0	A		Lithium	SOLID	N/A	5.5164E+00			0.29647	ug/g			
32	SAMPLE	S10V001702		0 0	A		Magnesium	SOLID	N/A	3.3177E+03			4.9411	ug/g			
32	SAMPLE	S10V001702		0 0	A		Manganese	SOLID	N/A	2.2606E+02			0.29647	ug/g			
32	SAMPLE	S10V001702		0 0	A		Molybdenum	SOLID	N/A	<1.9764E+00			1.9764	ug/g			U
32	SAMPLE	S10V001702		0 0	A		Sodium	SOLID	N/A	3.2760E+02			9.8822	ug/g			
32	SAMPLE	S10V001702		0 0	A		Nickel	SOLID	N/A	6.6778E+00			1.9764	ug/g			J
32	SAMPLE	S10V001702		0 0	A		Phosphorus	SOLID	N/A	5.6174E+02			4.9411	ug/g			
32	SAMPLE	S10V001702		0 0	A		Sulfur	SOLID	N/A	4.3073E+01			9.8822	ug/g			J
32	SAMPLE	S10V001702		0 0	A		Silicon	SOLID	N/A	1.8001E+01			2.9647	ug/g			Jc
32	SAMPLE	S10V001702		0 0	A		Strontium	SOLID	N/A	2.2976E+01			0.29647	ug/g			
32	SAMPLE	S10V001702		0 0	A		Titanium	SOLID	N/A	1.1043E+03			0.49411	ug/g			
32	SAMPLE	S10V001702		0 0	A		Vanadium	SOLID	N/A	3.8781E+01			0.49411	ug/g			
32	SAMPLE	S10V001702		0 0	A		Yttrium	SOLID	N/A	6.7820E+00			0.19764	ug/g			
32	SAMPLE	S10V001702		0 0	A		Zinc	SOLID	N/A	2.8467E+01			0.49411	ug/g			
32	SAMPLE	S10V001702		0 0	A		Zirconium	SOLID	N/A	1.1778E+01			0.49411	ug/g			b
Sample Sequence 33																	

Units shown for QC (BLK/BKG) may not reflect the actual units.

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00023451

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
33	SAMPLE	S10V001722		0 0	A		Aluminum	SOLID	N/A	5.7256E+03			2.9623	ug/g			
33	SAMPLE	S10V001722		0 0	A		Barium	SOLID	N/A	5.5809E+01			0.29623	ug/g			b
33	SAMPLE	S10V001722		0 0	A		Beryllium	SOLID	N/A	1.4199E-01			0.098742	ug/g			J
33	SAMPLE	S10V001722		0 0	A		Calcium	SOLID	N/A	7.3403E+03			4.9371	ug/g			
33	SAMPLE	S10V001722		0 0	A		Cerium	SOLID	N/A	2.0901E+01			2.9623	ug/g			Jb
33	SAMPLE	S10V001722		0 0	A		Cobalt	SOLID	N/A	7.1002E+00			0.98742	ug/g			J
33	SAMPLE	S10V001722		0 0	A		Chromium	SOLID	N/A	1.0006E+01			0.49371	ug/g			
33	SAMPLE	S10V001722		0 0	A		Copper	SOLID	N/A	1.0061E+01			0.49371	ug/g			
33	SAMPLE	S10V001722		0 0	A		Iron	SOLID	N/A	1.7709E+04			0.49371	ug/g			b
33	SAMPLE	S10V001722		0 0	A		Potassium	SOLID	N/A	8.2258E+02			49.371	ug/g			
33	SAMPLE	S10V001722		0 0	A		Lanthanum	SOLID	N/A	8.6466E+00			0.29623	ug/g			
33	SAMPLE	S10V001722		0 0	A		Lithium	SOLID	N/A	6.1871E+00			0.29623	ug/g			
33	SAMPLE	S10V001722		0 0	A		Magnesium	SOLID	N/A	4.1462E+03			4.9371	ug/g			
33	SAMPLE	S10V001722		0 0	A		Manganese	SOLID	N/A	2.6494E+02			0.29623	ug/g			
33	SAMPLE	S10V001722		0 0	A		Molybdenum	SOLID	N/A	<1.9748E+00			1.9748	ug/g			U
33	SAMPLE	S10V001722		0 0	A		Sodium	SOLID	N/A	3.6359E+02			9.8742	ug/g			
33	SAMPLE	S10V001722		0 0	A		Nickel	SOLID	N/A	1.0700E+01			1.9748	ug/g			J
33	SAMPLE	S10V001722		0 0	A		Phosphorus	SOLID	N/A	6.6931E+02			4.9371	ug/g			
33	SAMPLE	S10V001722		0 0	A		Silicon	SOLID	N/A	2.2299E+01			2.9623	ug/g			Jc
33	SAMPLE	S10V001722		0 0	A		Strontium	SOLID	N/A	2.8057E+01			0.29623	ug/g			
33	SAMPLE	S10V001722		0 0	A		Titanium	SOLID	N/A	1.2480E+03			0.49371	ug/g			
33	SAMPLE	S10V001722		0 0	A		Vanadium	SOLID	N/A	4.3901E+01			0.49371	ug/g			
33	SAMPLE	S10V001722		0 0	A		Yttrium	SOLID	N/A	8.3334E+00			0.19748	ug/g			
33	SAMPLE	S10V001722		0 0	A		Zinc	SOLID	N/A	3.1674E+01			0.49371	ug/g			
33	SAMPLE	S10V001722		0 0	A		Zirconium	SOLID	N/A	1.3419E+01			0.49371	ug/g			b
Sample Sequence 34																	
34	ICSA	S1010220040		0 0			Silver	LIQUID		<5.0000E-03			5.00E-03	ug/mL	N/A		
34	ICSA	S1010220040		0 0			Aluminum	LIQUID	200	1.9656E+02			0.03	ug/mL	98.282	% Recovery	
34	ICSA	S1010220040		0 0			Boron	LIQUID		<3.0000E-02			0.03	ug/mL	N/A		
34	ICSA	S1010220040		0 0			Barium	LIQUID		<3.0000E-03			3.00E-03	ug/mL	N/A		
34	ICSA	S1010220040		0 0			Beryllium	LIQUID		<1.0000E-03			1.00E-03	ug/mL	N/A		
34	ICSA	S1010220040		0 0			Bismuth	LIQUID		<1.0000E-01			0.1	ug/mL	N/A		
34	ICSA	S1010220040		0 0			Calcium	LIQUID	200	2.0194E+02			0.05	ug/mL	100.97	% Recovery	
34	ICSA	S1010220040		0 0			Cerium	LIQUID		<3.0000E-02			0.03	ug/mL	N/A		
34	ICSA	S1010220040		0 0			Cobalt	LIQUID		1.0900E-02			0.01	ug/mL	N/A		
34	ICSA	S1010220040		0 0			Chromium	LIQUID		<5.0000E-03			5.00E-03	ug/mL	N/A		
34	ICSA	S1010220040		0 0			Copper	LIQUID		<5.0000E-03			5.00E-03	ug/mL	N/A		
34	ICSA	S1010220040		0 0			Iron	LIQUID	200	1.8246E+02			5.00E-03	ug/mL	91.232	% Recovery	
34	ICSA	S1010220040		0 0			Potassium	LIQUID		<5.0000E-01			0.5	ug/mL	N/A		
34	ICSA	S1010220040		0 0			Lanthanum	LIQUID		<3.0000E-03			3.00E-03	ug/mL	N/A		
34	ICSA	S1010220040		0 0			Lithium	LIQUID		<3.0000E-03			3.00E-03	ug/mL	N/A		
34	ICSA	S1010220040		0 0			Magnesium	LIQUID	200	1.9466E+02			0.05	ug/mL	97.329	% Recovery	

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LABCORE Completed Batch Report for Batch# 00023451

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
34	ICSA	S1010220040		0 0			Manganese	LIQUID		5.3890E-02			3.00E-03	ug/mL	N/A		
34	ICSA	S1010220040		0 0			Molybdenum	LIQUID		<2.0000E-02			0.02	ug/mL	N/A		
34	ICSA	S1010220040		0 0			Sodium	LIQUID	200	1.8498E+02			0.1	ug/mL	92.489	% Recovery	
34	ICSA	S1010220040		0 0			Neodymium	LIQUID		1.6190E-02			0.01	ug/mL	N/A		
34	ICSA	S1010220040		0 0			Nickel	LIQUID		<2.0000E-02			0.02	ug/mL	N/A		
34	ICSA	S1010220040		0 0			Phosphorus	LIQUID		<5.0000E-02			0.05	ug/mL	N/A		
34	ICSA	S1010220040		0 0			Lead	LIQUID		<5.0000E-02			0.05	ug/mL	N/A		
34	ICSA	S1010220040		0 0			Palladium	LIQUID		<1.0000E-01			0.1	ug/mL	N/A		
34	ICSA	S1010220040		0 0			Praseodymium	LIQUID		<1.0000E-02			0.01	ug/mL	N/A		
34	ICSA	S1010220040		0 0			Rubidium	LIQUID		<1.0000E+00			1	ug/mL	N/A		
34	ICSA	S1010220040		0 0			Rhodium	LIQUID		<5.0000E-02			0.05	ug/mL	N/A		
34	ICSA	S1010220040		0 0			Sulfur	LIQUID		<1.0000E-01			0.1	ug/mL	N/A		
34	ICSA	S1010220040		0 0			Antimony	LIQUID		<5.0000E-02			0.05	ug/mL	N/A		
34	ICSA	S1010220040		0 0			Selenium	LIQUID		<1.0000E-01			0.1	ug/mL	N/A		
34	ICSA	S1010220040		0 0			Silicon	LIQUID		<3.0000E-02			0.03	ug/mL	N/A		
34	ICSA	S1010220040		0 0			Samarium	LIQUID		<2.0000E-02			0.02	ug/mL	N/A		
34	ICSA	S1010220040		0 0			Tin	LIQUID		<3.0000E-02			0.03	ug/mL	N/A		
34	ICSA	S1010220040		0 0			Strontium	LIQUID		<3.0000E-03			3.00E-03	ug/mL	N/A		
34	ICSA	S1010220040		0 0			Thorium	LIQUID		<5.0000E-02			0.05	ug/mL	N/A		
34	ICSA	S1010220040		0 0			Titanium	LIQUID		<5.0000E-03			5.00E-03	ug/mL	N/A		
34	ICSA	S1010220040		0 0			Thallium	LIQUID		<1.0000E-01			0.1	ug/mL	N/A		
34	ICSA	S1010220040		0 0			Uranium	LIQUID		<1.0000E-01			0.1	ug/mL	N/A		
34	ICSA	S1010220040		0 0			Vanadium	LIQUID		<5.0000E-03			5.00E-03	ug/mL	N/A		
34	ICSA	S1010220040		0 0			Yttrium	LIQUID		<2.0000E-03			2.00E-03	ug/mL	N/A		
34	ICSA	S1010220040		0 0			Zinc	LIQUID		<5.0000E-03			5.00E-03	ug/mL	N/A		
34	ICSA	S1010220040		0 0			Zirconium	LIQUID		<5.0000E-03			5.00E-03	ug/mL	N/A		
Sample Sequence 35																	
35	ICSAB	S1010220041		0 0			Silver	LIQUID	1	9.6581E-01			5.00E-03	ug/mL	96.581	% Recovery	
35	ICSAB	S1010220041		0 0			Aluminum	LIQUID	200	1.9238E+02			0.03	ug/mL	96.189	% Recovery	
35	ICSAB	S1010220041		0 0			Arsenic	LIQUID	5	4.8855E+00			0.05	ug/mL	97.711	% Recovery	
35	ICSAB	S1010220041		0 0			Boron	LIQUID	1	9.3529E-01			0.03	ug/mL	93.529	% Recovery	
35	ICSAB	S1010220041		0 0			Barium	LIQUID	1	8.8559E-01			3.00E-03	ug/mL	88.559	% Recovery	
35	ICSAB	S1010220041		0 0			Beryllium	LIQUID	.1	8.1370E-02			1.00E-03	ug/mL	81.37	% Recovery	
35	ICSAB	S1010220041		0 0			Bismuth	LIQUID	5	4.0605E+00			0.1	ug/mL	81.21	% Recovery	
35	ICSAB	S1010220041		0 0			Calcium	LIQUID	200	1.8435E+02			0.05	ug/mL	92.173	% Recovery	
35	ICSAB	S1010220041		0 0			Cadmium	LIQUID	.2	1.9440E-01			5.00E-03	ug/mL	97.2	% Recovery	
35	ICSAB	S1010220041		0 0			Cerium	LIQUID		<3.0000E-02			0.03	ug/mL	N/A		
35	ICSAB	S1010220041		0 0			Cobalt	LIQUID	5	4.4119E+00			0.01	ug/mL	88.237	% Recovery	
35	ICSAB	S1010220041		0 0			Chromium	LIQUID	5	4.3395E+00			5.00E-03	ug/mL	86.79	% Recovery	
35	ICSAB	S1010220041		0 0			Copper	LIQUID	5	4.8874E+00			5.00E-03	ug/mL	97.748	% Recovery	
35	ICSAB	S1010220041		0 0			Europium	LIQUID		1.8210E-02			5.00E-03	ug/mL	N/A		
35	ICSAB	S1010220041		0 0			Iron	LIQUID	200	1.7123E+02			5.00E-03	ug/mL	85.613	% Recovery	

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LABCORE Completed Batch Report for Batch# 00023451

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
35	ICSAB	S1010220041		0 0			Potassium	LIQUID		<5.0000E-01			0.5	ug/mL	N/A		
35	ICSAB	S1010220041		0 0			Lanthanum	LIQUID		3.9000E-03			3.00E-03	ug/mL	N/A		
35	ICSAB	S1010220041		0 0			Lithium	LIQUID	1	9.6346E-01			3.00E-03	ug/mL	96.346	% Recovery	
35	ICSAB	S1010220041		0 0			Magnesium	LIQUID	200	1.8732E+02			0.05	ug/mL	93.661	% Recovery	
35	ICSAB	S1010220041		0 0			Manganese	LIQUID	5	4.3994E+00			3.00E-03	ug/mL	87.987	% Recovery	
35	ICSAB	S1010220041		0 0			Molybdenum	LIQUID	5	4.3913E+00			0.02	ug/mL	87.827	% Recovery	
35	ICSAB	S1010220041		0 0			Sodium	LIQUID	200	1.8678E+02			0.1	ug/mL	93.392	% Recovery	
35	ICSAB	S1010220041		0 0			Neodymium	LIQUID		5.8290E-02			0.01	ug/mL	N/A		
35	ICSAB	S1010220041		0 0			Nickel	LIQUID	5	4.3627E+00			0.02	ug/mL	87.254	% Recovery	
35	ICSAB	S1010220041		0 0			Niobium	LIQUID	5	4.5829E+00			0.03	ug/mL	91.659	% Recovery	
35	ICSAB	S1010220041		0 0			Phosphorus	LIQUID	1	8.9744E-01			0.05	ug/mL	89.744	% Recovery	
35	ICSAB	S1010220041		0 0			Lead	LIQUID	1	9.6992E-01			0.05	ug/mL	96.992	% Recovery	
35	ICSAB	S1010220041		0 0			Palladium	LIQUID		<1.0000E-01			0.1	ug/mL	N/A		
35	ICSAB	S1010220041		0 0			Praseodymium	LIQUID		<1.0000E-02			0.01	ug/mL	N/A		
35	ICSAB	S1010220041		0 0			Rubidium	LIQUID		<1.0000E+00			1	ug/mL	N/A		
35	ICSAB	S1010220041		0 0			Rhodium	LIQUID	1	9.8259E-01			0.05	ug/mL	98.259	% Recovery	
35	ICSAB	S1010220041		0 0			Sulfur	LIQUID		<1.0000E-01			0.1	ug/mL	N/A		
35	ICSAB	S1010220041		0 0			Antimony	LIQUID	5	4.7356E+00			0.05	ug/mL	94.712	% Recovery	
35	ICSAB	S1010220041		0 0			Selenium	LIQUID	5	4.7391E+00			0.1	ug/mL	94.783	% Recovery	
35	ICSAB	S1010220041		0 0			Silicon	LIQUID	5	4.4952E+00			0.03	ug/mL	89.903	% Recovery	
35	ICSAB	S1010220041		0 0			Samarium	LIQUID		<2.0000E-02			0.02	ug/mL	N/A		
35	ICSAB	S1010220041		0 0			Tin	LIQUID	1	1.1234E+00			0.03	ug/mL	112.34	% Recovery	
35	ICSAB	S1010220041		0 0			Strontium	LIQUID	1	8.9973E-01			3.00E-03	ug/mL	89.973	% Recovery	
35	ICSAB	S1010220041		0 0			Tantalum	LIQUID		<5.0000E-02			0.05	ug/mL	N/A		
35	ICSAB	S1010220041		0 0			Thorium	LIQUID	5	4.3415E+00			0.05	ug/mL	86.829	% Recovery	
35	ICSAB	S1010220041		0 0			Titanium	LIQUID	50	4.4795E+01			5.00E-03	ug/mL	89.59	% Recovery	
35	ICSAB	S1010220041		0 0			Thallium	LIQUID	5	4.4105E+00			0.1	ug/mL	88.21	% Recovery	
35	ICSAB	S1010220041		0 0			Uranium	LIQUID	5	4.6053E+00			0.1	ug/mL	92.106	% Recovery	
35	ICSAB	S1010220041		0 0			Vanadium	LIQUID	1	9.0588E-01			5.00E-03	ug/mL	90.588	% Recovery	
35	ICSAB	S1010220041		0 0			Tungsten	LIQUID	5	4.9277E+00			0.2	ug/mL	98.554	% Recovery	
35	ICSAB	S1010220041		0 0			Yttrium	LIQUID		<2.0000E-03			2.00E-03	ug/mL	N/A		
35	ICSAB	S1010220041		0 0			Zinc	LIQUID	5	4.4796E+00			5.00E-03	ug/mL	89.591	% Recovery	
35	ICSAB	S1010220041		0 0			Zirconium	LIQUID	5	4.4012E+00			5.00E-03	ug/mL	88.024	% Recovery	
Sample Sequence 36																	
36	CCV	S1010220042		0 0			Silver	LIQUID	1	9.6283E-01			5.00E-03	ug/mL	96.283	% Recovery	
36	CCV	S1010220042		0 0			Aluminum	LIQUID	5	5.0921E+00			0.03	ug/mL	101.84	% Recovery	
36	CCV	S1010220042		0 0			Arsenic	LIQUID	5	5.1470E+00			0.05	ug/mL	102.94	% Recovery	
36	CCV	S1010220042		0 0			Boron	LIQUID	5	4.9356E+00			0.03	ug/mL	98.713	% Recovery	
36	CCV	S1010220042		0 0			Barium	LIQUID	5	5.0887E+00			3.00E-03	ug/mL	101.77	% Recovery	
36	CCV	S1010220042		0 0			Beryllium	LIQUID	5	4.9129E+00			1.00E-03	ug/mL	98.258	% Recovery	
36	CCV	S1010220042		0 0			Bismuth	LIQUID	5	4.9342E+00			0.1	ug/mL	98.684	% Recovery	
36	CCV	S1010220042		0 0			Calcium	LIQUID	5	5.0932E+00			0.05	ug/mL	101.86	% Recovery	

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N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00023451

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
36	CCV	S1010220042		0 0			Cadmium	LIQUID	5	5.0108E+00			5.00E-03	ug/mL	100.22	% Recovery	
36	CCV	S1010220042		0 0			Cerium	LIQUID	5	5.1726E+00			0.03	ug/mL	103.45	% Recovery	
36	CCV	S1010220042		0 0			Cobalt	LIQUID	5	5.1153E+00			0.01	ug/mL	102.31	% Recovery	
36	CCV	S1010220042		0 0			Chromium	LIQUID	5	5.0806E+00			5.00E-03	ug/mL	101.61	% Recovery	
36	CCV	S1010220042		0 0			Copper	LIQUID	5	5.0734E+00			5.00E-03	ug/mL	101.47	% Recovery	
37	CCV	S1010220042		0 1			Europium	LIQUID	5	4.9863E+00			5.00E-03	ug/mL	99.726	% Recovery	
36	CCV	S1010220042		0 0			Iron	LIQUID	5	5.0123E+00			5.00E-03	ug/mL	100.25	% Recovery	
36	CCV	S1010220042		0 0			Potassium	LIQUID	5	4.7048E+00			0.5	ug/mL	94.096	% Recovery	
36	CCV	S1010220042		0 0			Lanthanum	LIQUID	5	5.0301E+00			3.00E-03	ug/mL	100.6	% Recovery	
36	CCV	S1010220042		0 0			Lithium	LIQUID	5	5.0654E+00			3.00E-03	ug/mL	101.31	% Recovery	
36	CCV	S1010220042		0 0			Magnesium	LIQUID	5	4.9423E+00			0.05	ug/mL	98.847	% Recovery	
36	CCV	S1010220042		0 0			Manganese	LIQUID	5	5.0359E+00			3.00E-03	ug/mL	100.72	% Recovery	
36	CCV	S1010220042		0 0			Molybdenum	LIQUID	5	5.0125E+00			0.02	ug/mL	100.25	% Recovery	
36	CCV	S1010220042		0 0			Sodium	LIQUID	5	5.2180E+00			0.1	ug/mL	104.36	% Recovery	
36	CCV	S1010220042		0 0			Neodymium	LIQUID	5	5.0494E+00			0.01	ug/mL	100.99	% Recovery	
36	CCV	S1010220042		0 0			Nickel	LIQUID	5	5.0298E+00			0.02	ug/mL	100.6	% Recovery	
36	CCV	S1010220042		0 0			Niobium	LIQUID		<3.0000E-02			0.03	ug/mL	N/A		
36	CCV	S1010220042		0 0			Phosphorus	LIQUID	5	5.0605E+00			0.05	ug/mL	101.21	% Recovery	
36	CCV	S1010220042		0 0			Lead	LIQUID	5	5.1171E+00			0.05	ug/mL	102.34	% Recovery	
37	CCV	S1010220042		0 1			Palladium	LIQUID	5	4.8276E+00			0.1	ug/mL	96.552	% Recovery	
37	CCV	S1010220042		0 1			Praseodymium	LIQUID	5	5.2112E+00			0.01	ug/mL	104.22	% Recovery	
37	CCV	S1010220042		0 1			Rhodium	LIQUID	5	5.0574E+00			0.05	ug/mL	101.15	% Recovery	
37	CCV	S1010220042		0 1			Ruthenium	LIQUID	5	5.1591E+00			0.03	ug/mL	103.18	% Recovery	
36	CCV	S1010220042		0 0			Sulfur	LIQUID	5	5.0833E+00			0.1	ug/mL	101.67	% Recovery	
36	CCV	S1010220042		0 0			Antimony	LIQUID	5	4.9505E+00			0.05	ug/mL	99.009	% Recovery	
36	CCV	S1010220042		0 0			Selenium	LIQUID	5	4.9996E+00			0.1	ug/mL	99.992	% Recovery	
36	CCV	S1010220042		0 0			Silicon	LIQUID	5	4.7229E+00			0.03	ug/mL	94.459	% Recovery	
36	CCV	S1010220042		0 0			Samarium	LIQUID	5	5.1047E+00			0.02	ug/mL	102.09	% Recovery	
38	CCV	S1010220042		0 2			Tin	LIQUID	5	5.1438E+00			0.03	ug/mL	102.88	% Recovery	
36	CCV	S1010220042		0 0			Strontium	LIQUID	5	5.0435E+00			3.00E-03	ug/mL	100.87	% Recovery	
38	CCV	S1010220042		0 2			Tantalum	LIQUID	5	5.2250E+00			0.05	ug/mL	104.5	% Recovery	
38	CCV	S1010220042		0 2			Tellurium	LIQUID	5	5.1438E+00			0.1	ug/mL	102.88	% Recovery	
36	CCV	S1010220042		0 0			Thorium	LIQUID	5	5.1610E+00			0.05	ug/mL	103.22	% Recovery	
36	CCV	S1010220042		0 0			Titanium	LIQUID	5	4.9640E+00			5.00E-03	ug/mL	99.281	% Recovery	
37	CCV	S1010220042		0 1			Thallium	LIQUID	5	5.2104E+00			0.1	ug/mL	104.21	% Recovery	
37	CCV	S1010220042		0 1			Uranium	LIQUID	5	5.4158E+00			0.1	ug/mL	108.32	% Recovery	
36	CCV	S1010220042		0 0			Vanadium	LIQUID	5	5.1171E+00			5.00E-03	ug/mL	102.34	% Recovery	
38	CCV	S1010220042		0 2			Tungsten	LIQUID	5	5.1536E+00			0.2	ug/mL	103.07	% Recovery	
37	CCV	S1010220042		0 1			Yttrium	LIQUID	5	5.0737E+00			2.00E-03	ug/mL	101.47	% Recovery	
36	CCV	S1010220042		0 0			Zinc	LIQUID	5	4.9664E+00			5.00E-03	ug/mL	99.329	% Recovery	
36	CCV	S1010220042		0 0			Zirconium	LIQUID	5	5.1980E+00			5.00E-03	ug/mL	103.96	% Recovery	

Sample Sequence 39

Units shown for QC (BLK/BKG) may not reflect the actual units.

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LABCORE Completed Batch Report for Batch# 00023451

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
40	LLS	S1010220044		0 1			Silver	LIQUID	.02	1.9270E-02			5.00E-03	ug/mL	96.35	% Recovery	
39	LLS	S1010220044		0 0			Aluminum	LIQUID	.1	1.0264E-01			0.03	ug/mL	102.64	% Recovery	
40	LLS	S1010220044		0 1			Arsenic	LIQUID	.2	2.0530E-01			0.05	ug/mL	102.65	% Recovery	
41	LLS	S1010220044		0 2			Boron	LIQUID	.1	1.0346E-01			0.03	ug/mL	103.46	% Recovery	
40	LLS	S1010220044		0 1			Barium	LIQUID	.01	9.5300E-03			3.00E-03	ug/mL	95.3	% Recovery	
39	LLS	S1010220044		0 0			Beryllium	LIQUID	.001	1.0000E-03			1.00E-03	ug/mL	100	% Recovery	
40	LLS	S1010220044		0 1			Bismuth	LIQUID	.2	1.2370E-01			0.1	ug/mL	61.85	% Recovery	
40	LLS	S1010220044		0 1			Calcium	LIQUID	.2	1.5274E-01			0.05	ug/mL	76.37	% Recovery	
39	LLS	S1010220044		0 0			Cadmium	LIQUID	.01	9.7100E-03			5.00E-03	ug/mL	97.1	% Recovery	
39	LLS	S1010220044		0 0			Cerium	LIQUID	.2	1.9560E-01			0.03	ug/mL	97.8	% Recovery	
41	LLS	S1010220044		0 2			Cobalt	LIQUID	.04	4.0150E-02			0.01	ug/mL	100.38	% Recovery	
40	LLS	S1010220044		0 1			Chromium	LIQUID	.02	1.9040E-02			5.00E-03	ug/mL	95.2	% Recovery	
42	LLS	S1010220044		0 3			Copper	LIQUID	.02	2.0360E-02			5.00E-03	ug/mL	101.8	% Recovery	
43	LLS	S1010220044		0 4			Europium	LIQUID	.1	9.5550E-02			5.00E-03	ug/mL	95.55	% Recovery	
39	LLS	S1010220044		0 0			Iron	LIQUID	.05	4.9900E-02			5.00E-03	ug/mL	99.8	% Recovery	
39	LLS	S1010220044		0 0			Potassium	LIQUID	.5	4.8775E-01			0.1	ug/mL	97.55	% Recovery	
39	LLS	S1010220044		0 0			Lanthanum	LIQUID	.01	9.2900E-03			3.00E-03	ug/mL	92.9	% Recovery	
40	LLS	S1010220044		0 1			Lithium	LIQUID	.02	2.2120E-02			3.00E-03	ug/mL	110.6	% Recovery	
39	LLS	S1010220044		0 0			Magnesium	LIQUID	.2	2.0057E-01			0.05	ug/mL	100.28	% Recovery	
39	LLS	S1010220044		0 0			Manganese	LIQUID	.02	1.9190E-02			3.00E-03	ug/mL	95.95	% Recovery	
41	LLS	S1010220044		0 2			Molybdenum	LIQUID	.1	1.0044E-01			0.02	ug/mL	100.44	% Recovery	
39	LLS	S1010220044		0 0			Sodium	LIQUID	.2	2.0830E-01			0.1	ug/mL	104.15	% Recovery	
40	LLS	S1010220044		0 1			Neodymium	LIQUID	.1	9.3340E-02			0.01	ug/mL	93.34	% Recovery	
39	LLS	S1010220044		0 0			Nickel	LIQUID	.04	4.1060E-02			0.02	ug/mL	102.65	% Recovery	
45	LLS	S1010220044		0 6			Niobium	LIQUID	.1	8.8490E-02			0.03	ug/mL	88.49	% Recovery	
42	LLS	S1010220044		0 3			Phosphorus	LIQUID	.4	3.5786E-01			0.05	ug/mL	89.465	% Recovery	
39	LLS	S1010220044		0 0			Lead	LIQUID	.2	1.9894E-01			0.05	ug/mL	99.47	% Recovery	
44	LLS	S1010220044		0 5			Palladium	LIQUID	1	9.8867E-01			0.1	ug/mL	98.867	% Recovery	
43	LLS	S1010220044		0 4			Praseodymium	LIQUID	.1	9.7400E-02			0.01	ug/mL	97.4	% Recovery	
44	LLS	S1010220044		0 5			Rhodium	LIQUID	.1	8.8900E-02			0.05	ug/mL	88.9	% Recovery	
44	LLS	S1010220044		0 5			Ruthenium	LIQUID	.1	1.0346E-01			0.03	ug/mL	103.46	% Recovery	
41	LLS	S1010220044		0 2			Sulfur	LIQUID	.2	2.0272E-01			0.1	ug/mL	101.36	% Recovery	
41	LLS	S1010220044		0 2			Antimony	LIQUID	.1	9.0440E-02			0.05	ug/mL	90.44	% Recovery	
39	LLS	S1010220044		0 0			Selenium	LIQUID	.2	1.4961E-01			0.1	ug/mL	74.805	% Recovery	
42	LLS	S1010220044		0 3			Silicon	LIQUID	.1	9.5140E-02			0.03	ug/mL	95.14	% Recovery	
40	LLS	S1010220044		0 1			Samarium	LIQUID	.1	1.0140E-01			0.02	ug/mL	101.4	% Recovery	
45	LLS	S1010220044		0 6			Tin	LIQUID	.1	1.1689E-01			0.03	ug/mL	116.89	% Recovery	
40	LLS	S1010220044		0 1			Strontium	LIQUID	.02	1.9810E-02			3.00E-03	ug/mL	99.05	% Recovery	
45	LLS	S1010220044		0 6			Tantalum	LIQUID	1	1.0207E+00			0.05	ug/mL	102.07	% Recovery	
45	LLS	S1010220044		0 6			Tellurium	LIQUID	1	9.8680E-01			0.1	ug/mL	98.68	% Recovery	
43	LLS	S1010220044		0 4			Thorium	LIQUID	.1	9.1060E-02			0.05	ug/mL	91.06	% Recovery	
42	LLS	S1010220044		0 3			Titanium	LIQUID	.02	1.9600E-02			5.00E-03	ug/mL	98	% Recovery	

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LABCORE Completed Batch Report for Batch# 00023451

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
39	LLS	S1010220044		0 0			Thallium	LIQUID	.4	3.8940E-01			0.1	ug/mL	97.35	% Recovery	
42	LLS	S1010220044		0 3			Uranium	LIQUID	.5	4.9651E-01			0.1	ug/mL	99.302	% Recovery	
41	LLS	S1010220044		0 2			Vanadium	LIQUID	.05	5.0470E-02			5.00E-03	ug/mL	100.94	% Recovery	
45	LLS	S1010220044		0 6			Tungsten	LIQUID	1	9.8065E-01			0.2	ug/mL	98.065	% Recovery	
43	LLS	S1010220044		0 4			Yttrium	LIQUID	.1	9.8680E-02			2.00E-03	ug/mL	98.68	% Recovery	
42	LLS	S1010220044		0 3			Zinc	LIQUID	.02	1.3220E-02			5.00E-03	ug/mL	66.1	% Recovery	
41	LLS	S1010220044		0 2			Zirconium	LIQUID	.02	1.8770E-02			5.00E-03	ug/mL	93.85	% Recovery	
Sample Sequence 46																	
46	CCB	S1010220043		0 0			Silver	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
46	CCB	S1010220043		0 0			Aluminum	LIQUID		<3.0000E-02			0.03	ug/mL			
46	CCB	S1010220043		0 0			Arsenic	LIQUID		<5.0000E-02			0.05	ug/mL			
46	CCB	S1010220043		0 0			Boron	LIQUID		<3.0000E-02			0.03	ug/mL			
46	CCB	S1010220043		0 0			Barium	LIQUID		<3.0000E-03			3.00E-03	ug/mL			
46	CCB	S1010220043		0 0			Beryllium	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
46	CCB	S1010220043		0 0			Bismuth	LIQUID		<1.0000E-01			0.1	ug/mL			
46	CCB	S1010220043		0 0			Calcium	LIQUID		<5.0000E-02			0.05	ug/mL			
46	CCB	S1010220043		0 0			Cadmium	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
46	CCB	S1010220043		0 0			Cerium	LIQUID		<3.0000E-02			0.03	ug/mL			
46	CCB	S1010220043		0 0			Cobalt	LIQUID		<1.0000E-02			0.01	ug/mL			
46	CCB	S1010220043		0 0			Chromium	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
46	CCB	S1010220043		0 0			Copper	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
46	CCB	S1010220043		0 0			Europium	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
46	CCB	S1010220043		0 0			Iron	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
46	CCB	S1010220043		0 0			Potassium	LIQUID		<5.0000E-01			0.5	ug/mL			
46	CCB	S1010220043		0 0			Lanthanum	LIQUID		<3.0000E-03			3.00E-03	ug/mL			
46	CCB	S1010220043		0 0			Lithium	LIQUID		<3.0000E-03			3.00E-03	ug/mL			
46	CCB	S1010220043		0 0			Magnesium	LIQUID		<5.0000E-02			0.05	ug/mL			
46	CCB	S1010220043		0 0			Manganese	LIQUID		<3.0000E-03			3.00E-03	ug/mL			
46	CCB	S1010220043		0 0			Molybdenum	LIQUID		<2.0000E-02			0.02	ug/mL			
46	CCB	S1010220043		0 0			Sodium	LIQUID		<1.0000E-01			0.1	ug/mL			
46	CCB	S1010220043		0 0			Neodymium	LIQUID		<1.0000E-02			0.01	ug/mL			
46	CCB	S1010220043		0 0			Nickel	LIQUID		<2.0000E-02			0.02	ug/mL			
46	CCB	S1010220043		0 0			Niobium	LIQUID		<3.0000E-02			0.03	ug/mL			
46	CCB	S1010220043		0 0			Phosphorus	LIQUID		<5.0000E-02			0.05	ug/mL			
46	CCB	S1010220043		0 0			Lead	LIQUID		<5.0000E-02			0.05	ug/mL			
46	CCB	S1010220043		0 0			Palladium	LIQUID		<1.0000E-01			0.1	ug/mL			
46	CCB	S1010220043		0 0			Praseodymium	LIQUID		<1.0000E-02			0.01	ug/mL			
46	CCB	S1010220043		0 0			Rubidium	LIQUID		<1.0000E+00			1	ug/mL			
46	CCB	S1010220043		0 0			Rhodium	LIQUID		<5.0000E-02			0.05	ug/mL			
46	CCB	S1010220043		0 0			Ruthenium	LIQUID		<3.0000E-02			0.03	ug/mL			
46	CCB	S1010220043		0 0			Sulfur	LIQUID		<1.0000E-01			0.1	ug/mL			
46	CCB	S1010220043		0 0			Antimony	LIQUID		<5.0000E-02			0.05	ug/mL			

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LABCORE Completed Batch Report for Batch# 00023451

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
46	CCB	S1010220043		0 0			Selenium	LIQUID		<1.0000E-01			0.1	ug/mL			
46	CCB	S1010220043		0 0			Silicon	LIQUID		<3.0000E-02			0.03	ug/mL			
46	CCB	S1010220043		0 0			Samarium	LIQUID		<2.0000E-02			0.02	ug/mL			
46	CCB	S1010220043		0 0			Tin	LIQUID		<3.0000E-02			0.03	ug/mL			
46	CCB	S1010220043		0 0			Strontium	LIQUID		<3.0000E-03			3.00E-03	ug/mL			
46	CCB	S1010220043		0 0			Tantalum	LIQUID		<5.0000E-02			0.05	ug/mL			
46	CCB	S1010220043		0 0			Tellurium	LIQUID		<1.0000E-01			0.1	ug/mL			
46	CCB	S1010220043		0 0			Thorium	LIQUID		<5.0000E-02			0.05	ug/mL			
46	CCB	S1010220043		0 0			Titanium	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
46	CCB	S1010220043		0 0			Thallium	LIQUID		<1.0000E-01			0.1	ug/mL			
46	CCB	S1010220043		0 0			Uranium	LIQUID		<1.0000E-01			0.1	ug/mL			
46	CCB	S1010220043		0 0			Vanadium	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
46	CCB	S1010220043		0 0			Tungsten	LIQUID		<2.0000E-01			0.2	ug/mL			
46	CCB	S1010220043		0 0			Yttrium	LIQUID		<2.0000E-03			2.00E-03	ug/mL			
46	CCB	S1010220043		0 0			Zinc	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
46	CCB	S1010220043		0 0			Zirconium	LIQUID		<5.0000E-03			5.00E-03	ug/mL			

Comments Section:

Data Flagger Status:
Flagging Completed

Final Page for Batch# 00023451

Reviewer Signature **Date**

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LABCORE Completed Batch Report for Batch# 00023451

Seq	Sample#	QC Type	Assoc. Sample	Sample Group	Customer Id	Specification
1	S1010220031	ICV				
2	S1010220031	ICV				
3	S1010220031	ICV				
4	S1010220033	LLS				
5	S1010220033	LLS				
6	S1010220033	LLS				
7	S1010220033	LLS				
8	S1010220033	LLS				
9	S1010220033	LLS				
10	S1010220033	LLS				
11	S1010220032	ICB				
12	S1010220034	ICSA				
13	S1010220035	ICSAB				
14	S1008250079	BLNK-PREP				
15	S1008250080	STD-PREP				
16	S1008250088	STD-PREP				
17	S1010220036	SERDIL	S10V001614			
18	S10V001614	SAMPLE		20100556	B26JK6	C Farm WMC 2010-2
19	S1008250081	DUP	S10V001614			
20	S1008250082	SPK-PREDIG	S10V001614			
21	S1008250091	SPK-PREDIG	S10V001614			
22	S1010220038	CCV				
23	S1010220038	CCV				
24	S1010220038	CCV				
25	S1010220038	CCV				
26	S1010220039	CCB				
27	S1010220037	SPK-POST	S10V001614			
28	S1010220037	SPK-POST	S10V001614			
29	S1010220037	SPK-POST	S10V001614			
30	S10V001642	SAMPLE		20100556	B26JK7	C Farm WMC 2010-2
31	S10V001662	SAMPLE		20100556	B29612	C Farm WMC 2010-2
32	S10V001702	SAMPLE		20100556	B26CC4	C Farm WMC 2010-2
33	S10V001722	SAMPLE		20100556	B29613	C Farm WMC 2010-2
34	S1010220040	ICSA				
35	S1010220041	ICSAB				

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LABCORE Completed Batch Report for Batch# 00023451

36	S1010220042	CCV
37	S1010220042	CCV
38	S1010220042	CCV
39	S1010220044	LLS
40	S1010220044	LLS
41	S1010220044	LLS
42	S1010220044	LLS
43	S1010220044	LLS
44	S1010220044	LLS
45	S1010220044	LLS
46	S1010220043	CCB

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LABCORE Completed Batch Report for Batch# 00024077

Analyst: Boisoneau, Ryan

Instrument: ICP-TJA

Method: ICP-TOTAL METALS, LA-505-161 Rev/Mod J-0-A

Specification: C Farm WMC 2010-2

Prep Batch: 00023871

Batch Comment:

C-Farm WMC 2010-2 ICP TJA Total Metals trm

Book#: 0935525, 0935526, 0935527, 0935528, 0935529, A-109-090826-4, A-118-100225-2, A-124-100712-1, A-126-100825-2, A-127-100922-1

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
Sample Sequence 1																	
1	ICV	S1011160142		0 0			Silver	LIQUID	1	9.8575E-01			5.00E-03	ug/mL	98.575	% Recovery	
1	ICV	S1011160142		0 0			Aluminum	LIQUID	5	5.1200E+00			0.03	ug/mL	102.4	% Recovery	
1	ICV	S1011160142		0 0			Arsenic	LIQUID	5	5.1011E+00			0.05	ug/mL	102.02	% Recovery	
1	ICV	S1011160142		0 0			Boron	LIQUID	5	5.0392E+00			0.03	ug/mL	100.78	% Recovery	
1	ICV	S1011160142		0 0			Barium	LIQUID	5	5.1370E+00			3.00E-03	ug/mL	102.74	% Recovery	
1	ICV	S1011160142		0 0			Beryllium	LIQUID	5	5.0872E+00			1.00E-03	ug/mL	101.74	% Recovery	
1	ICV	S1011160142		0 0			Bismuth	LIQUID	5	5.1918E+00			0.1	ug/mL	103.84	% Recovery	
1	ICV	S1011160142		0 0			Calcium	LIQUID	5	4.9923E+00			0.05	ug/mL	99.846	% Recovery	
1	ICV	S1011160142		0 0			Cadmium	LIQUID	5	5.1306E+00			5.00E-03	ug/mL	102.61	% Recovery	
2	ICV	S1011160142		0 1			Cerium	LIQUID	5	5.3367E+00			0.03	ug/mL	106.73	% Recovery	
1	ICV	S1011160142		0 0			Cobalt	LIQUID	5	5.1688E+00			0.01	ug/mL	103.38	% Recovery	
1	ICV	S1011160142		0 0			Chromium	LIQUID	5	5.1158E+00			5.00E-03	ug/mL	102.32	% Recovery	
1	ICV	S1011160142		0 0			Copper	LIQUID	5	5.1661E+00			5.00E-03	ug/mL	103.32	% Recovery	
2	ICV	S1011160142		0 1			Europium	LIQUID	5	4.9740E+00			5.00E-03	ug/mL	99.48	% Recovery	
1	ICV	S1011160142		0 0			Iron	LIQUID	5	5.1297E+00			5.00E-03	ug/mL	102.59	% Recovery	
1	ICV	S1011160142		0 0			Potassium	LIQUID	5	4.6735E+00			0.5	ug/mL	93.47	% Recovery	
1	ICV	S1011160142		0 0			Lanthanum	LIQUID	5	5.1023E+00			3.00E-03	ug/mL	102.05	% Recovery	
1	ICV	S1011160142		0 0			Lithium	LIQUID	5	5.3400E+00			3.00E-03	ug/mL	106.8	% Recovery	
1	ICV	S1011160142		0 0			Magnesium	LIQUID	5	5.1470E+00			0.05	ug/mL	102.94	% Recovery	
1	ICV	S1011160142		0 0			Manganese	LIQUID	5	5.0795E+00			3.00E-03	ug/mL	101.59	% Recovery	
1	ICV	S1011160142		0 0			Molybdenum	LIQUID	5	5.0806E+00			0.02	ug/mL	101.61	% Recovery	
1	ICV	S1011160142		0 0			Sodium	LIQUID	5	5.3228E+00			0.1	ug/mL	106.46	% Recovery	
2	ICV	S1011160142		0 1			Neodymium	LIQUID	5	5.0423E+00			0.01	ug/mL	100.85	% Recovery	
1	ICV	S1011160142		0 0			Nickel	LIQUID	5	5.1254E+00			0.02	ug/mL	102.51	% Recovery	
3	ICV	S1011160142		0 2			Niobium	LIQUID	5	5.0814E+00			0.03	ug/mL	101.63	% Recovery	
1	ICV	S1011160142		0 0			Phosphorus	LIQUID	5	4.9934E+00			0.05	ug/mL	99.867	% Recovery	
1	ICV	S1011160142		0 0			Lead	LIQUID	5	5.2148E+00			0.05	ug/mL	104.3	% Recovery	
2	ICV	S1011160142		0 1			Palladium	LIQUID	5	4.7596E+00			0.1	ug/mL	95.192	% Recovery	
2	ICV	S1011160142		0 1			Praseodymium	LIQUID	5	5.1199E+00			0.01	ug/mL	102.4	% Recovery	
2	ICV	S1011160142		0 1			Rubidium	LIQUID	5	4.7198E+00			1	ug/mL	94.396	% Recovery	
2	ICV	S1011160142		0 1			Rhodium	LIQUID	5	4.8182E+00			0.05	ug/mL	96.364	% Recovery	

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LABCORE Completed Batch Report for Batch# 00024077

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
2	ICV	S1011160142		0 1			Ruthenium	LIQUID	5	5.0823E+00			0.03	ug/mL	101.65	% Recovery	
1	ICV	S1011160142		0 0			Sulfur	LIQUID	5	5.1548E+00			0.1	ug/mL	103.1	% Recovery	
1	ICV	S1011160142		0 0			Antimony	LIQUID	5	5.0180E+00			0.05	ug/mL	100.36	% Recovery	
1	ICV	S1011160142		0 0			Selenium	LIQUID	5	5.2181E+00			0.1	ug/mL	104.36	% Recovery	
1	ICV	S1011160142		0 0			Silicon	LIQUID	5	4.8231E+00			0.03	ug/mL	96.462	% Recovery	
2	ICV	S1011160142		0 1			Samarium	LIQUID	5	5.2348E+00			0.02	ug/mL	104.7	% Recovery	
3	ICV	S1011160142		0 2			Tin	LIQUID	5	5.2090E+00			0.03	ug/mL	104.18	% Recovery	
1	ICV	S1011160142		0 0			Strontium	LIQUID	5	5.1158E+00			3.00E-03	ug/mL	102.32	% Recovery	
3	ICV	S1011160142		0 2			Tantalum	LIQUID	5	5.0978E+00			0.05	ug/mL	101.96	% Recovery	
3	ICV	S1011160142		0 2			Tellurium	LIQUID	5	5.0730E+00			0.1	ug/mL	101.46	% Recovery	
2	ICV	S1011160142		0 1			Thorium	LIQUID	5	5.0374E+00			0.05	ug/mL	100.75	% Recovery	
1	ICV	S1011160142		0 0			Titanium	LIQUID	5	5.0180E+00			5.00E-03	ug/mL	100.36	% Recovery	
2	ICV	S1011160142		0 1			Thallium	LIQUID	5	5.3336E+00			0.1	ug/mL	106.67	% Recovery	
2	ICV	S1011160142		0 1			Uranium	LIQUID	5	5.1725E+00			0.1	ug/mL	103.45	% Recovery	
1	ICV	S1011160142		0 0			Vanadium	LIQUID	5	5.1838E+00			5.00E-03	ug/mL	103.68	% Recovery	
3	ICV	S1011160142		0 2			Tungsten	LIQUID	5	5.0995E+00			0.2	ug/mL	101.99	% Recovery	
2	ICV	S1011160142		0 1			Yttrium	LIQUID	5	5.0240E+00			2.00E-03	ug/mL	100.48	% Recovery	
1	ICV	S1011160142		0 0			Zinc	LIQUID	5	5.1031E+00			5.00E-03	ug/mL	102.06	% Recovery	
1	ICV	S1011160142		0 0			Zirconium	LIQUID	5	4.8903E+00			5.00E-03	ug/mL	97.806	% Recovery	
Sample Sequence 4																	
5	LLS	S1011160144		0 1			Silver	LIQUID	.02	2.0190E-02			5.00E-05	ug/mL	100.95	% Recovery	
4	LLS	S1011160144		0 0			Aluminum	LIQUID	.1	9.4770E-02			3.00E-04	ug/mL	94.77	% Recovery	
4	LLS	S1011160144		0 0			Arsenic	LIQUID	.2	2.3697E-01			5.00E-04	ug/mL	118.48	% Recovery	
6	LLS	S1011160144		0 2			Boron	LIQUID	.1	1.0380E-01			3.00E-04	ug/mL	103.8	% Recovery	
5	LLS	S1011160144		0 1			Barium	LIQUID	.01	9.9900E-03			3.00E-05	ug/mL	99.9	% Recovery	
4	LLS	S1011160144		0 0			Beryllium	LIQUID	.001	1.1000E-03			1.00E-05	ug/mL	110	% Recovery	
5	LLS	S1011160144		0 1			Bismuth	LIQUID	.2	2.2156E-01			1.00E-03	ug/mL	110.78	% Recovery	
4	LLS	S1011160144		0 0			Calcium	LIQUID	.2	1.9104E-01			5.00E-04	ug/mL	95.52	% Recovery	
5	LLS	S1011160144		0 1			Cadmium	LIQUID	.01	1.0600E-02			5.00E-05	ug/mL	106	% Recovery	
5	LLS	S1011160144		0 1			Cerium	LIQUID	.2	2.0689E-01			3.00E-04	ug/mL	103.44	% Recovery	
6	LLS	S1011160144		0 2			Cobalt	LIQUID	.04	3.8000E-02			1.00E-04	ug/mL	95	% Recovery	
5	LLS	S1011160144		0 1			Chromium	LIQUID	.02	1.9930E-02			5.00E-05	ug/mL	99.65	% Recovery	
6	LLS	S1011160144		0 2			Copper	LIQUID	.02	1.9500E-02			5.00E-05	ug/mL	97.5	% Recovery	
7	LLS	S1011160144		0 3			Europium	LIQUID	.1	9.6900E-02			5.00E-04	ug/mL	96.9	% Recovery	
4	LLS	S1011160144		0 0			Iron	LIQUID	.05	5.0960E-02			5.00E-05	ug/mL	101.92	% Recovery	
5	LLS	S1011160144		0 1			Potassium	LIQUID	.5	5.7223E-01			5.00E-03	ug/mL	114.45	% Recovery	
4	LLS	S1011160144		0 0			Lanthanum	LIQUID	.01	1.1740E-02			3.00E-05	ug/mL	117.4	% Recovery	
5	LLS	S1011160144		0 1			Lithium	LIQUID	.02	2.3110E-02			3.00E-05	ug/mL	115.55	% Recovery	
4	LLS	S1011160144		0 0			Magnesium	LIQUID	.2	1.9936E-01			5.00E-04	ug/mL	99.68	% Recovery	
4	LLS	S1011160144		0 0			Manganese	LIQUID	.2	2.0180E-02			3.00E-05	ug/mL	10.09	% Recovery	
6	LLS	S1011160144		0 2			Molybdenum	LIQUID	.1	1.0105E-01			2.00E-04	ug/mL	101.05	% Recovery	
4	LLS	S1011160144		0 0			Sodium	LIQUID	.2	2.0580E-01			1.00E-03	ug/mL	102.9	% Recovery	

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LABCORE Completed Batch Report for Batch# 00024077

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
5	LLS	S1011160144		0 1			Neodymium	LIQUID	.1	1.0501E-01			1.00E-04	ug/mL	105.01	% Recovery	
5	LLS	S1011160144		0 1			Nickel	LIQUID	.04	4.1290E-02			2.00E-04	ug/mL	103.22	% Recovery	
9	LLS	S1011160144		0 5			Niobium	LIQUID	.1	1.0156E-01			3.00E-03	ug/mL	101.56	% Recovery	
6	LLS	S1011160144		0 2			Phosphorus	LIQUID	.4	3.6336E-01			5.00E-04	ug/mL	90.84	% Recovery	
4	LLS	S1011160144		0 0			Lead	LIQUID	.2	1.8687E-01			5.00E-04	ug/mL	93.435	% Recovery	
8	LLS	S1011160144		0 4			Palladium	LIQUID	1	9.2852E-01			0.01	ug/mL	92.852	% Recovery	
7	LLS	S1011160144		0 3			Praseodymium	LIQUID	.1	9.9080E-02			1.00E-03	ug/mL	99.08	% Recovery	
7	LLS	S1011160144		0 3			Rubidium	LIQUID	1	9.1208E-01			0.1	ug/mL	91.208	% Recovery	
8	LLS	S1011160144		0 4			Rhodium	LIQUID	.1	9.8500E-02			5.00E-03	ug/mL	98.5	% Recovery	
8	LLS	S1011160144		0 4			Ruthenium	LIQUID	.1	1.0647E-01			3.00E-03	ug/mL	106.47	% Recovery	
6	LLS	S1011160144		0 2			Sulfur	LIQUID	.2	1.9264E-01			1.00E-03	ug/mL	96.32	% Recovery	
6	LLS	S1011160144		0 2			Antimony	LIQUID	.1	1.0456E-01			5.00E-04	ug/mL	104.56	% Recovery	
5	LLS	S1011160144		0 1			Selenium	LIQUID	.2	1.9564E-01			1.00E-03	ug/mL	97.82	% Recovery	
6	LLS	S1011160144		0 2			Silicon	LIQUID	.1	8.7850E-02			3.00E-04	ug/mL	87.85	% Recovery	
5	LLS	S1011160144		0 1			Samarium	LIQUID	.1	1.0839E-01			2.00E-04	ug/mL	108.39	% Recovery	
9	LLS	S1011160144		0 5			Tin	LIQUID	.1	1.0244E-01			3.00E-03	ug/mL	102.44	% Recovery	
4	LLS	S1011160144		0 0			Strontium	LIQUID	.02	2.0460E-02			3.00E-05	ug/mL	102.3	% Recovery	
9	LLS	S1011160144		0 5			Tantalum	LIQUID	1	1.0127E+00			5.00E-03	ug/mL	101.27	% Recovery	
9	LLS	S1011160144		0 5			Tellurium	LIQUID	1	1.0493E+00			0.01	ug/mL	104.93	% Recovery	
7	LLS	S1011160144		0 3			Thorium	LIQUID	.1	1.0625E-01			5.00E-03	ug/mL	106.25	% Recovery	
6	LLS	S1011160144		0 2			Titanium	LIQUID	.02	1.9880E-02			5.00E-05	ug/mL	99.4	% Recovery	
4	LLS	S1011160144		0 0			Thallium	LIQUID	.4	4.0933E-01			1.00E-03	ug/mL	102.33	% Recovery	
6	LLS	S1011160144		0 2			Uranium	LIQUID	.5	4.9587E-01			1.00E-03	ug/mL	99.174	% Recovery	
6	LLS	S1011160144		0 2			Vanadium	LIQUID	.05	4.9470E-02			5.00E-05	ug/mL	98.94	% Recovery	
9	LLS	S1011160144		0 5			Tungsten	LIQUID	1	9.2861E-01			0.02	ug/mL	92.861	% Recovery	
7	LLS	S1011160144		0 3			Yttrium	LIQUID	.1	1.0046E-01			2.00E-04	ug/mL	100.46	% Recovery	
6	LLS	S1011160144		0 2			Zinc	LIQUID	.02	1.9420E-02			5.00E-05	ug/mL	97.1	% Recovery	
6	LLS	S1011160144		0 2			Zirconium	LIQUID	.02	2.0520E-02			5.00E-05	ug/mL	102.6	% Recovery	
Sample Sequence 10																	
10	ICB	S1011160143		0 0			Silver	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
10	ICB	S1011160143		0 0			Aluminum	LIQUID		<3.0000E-02			0.03	ug/mL			
10	ICB	S1011160143		0 0			Arsenic	LIQUID		<5.0000E-02			0.05	ug/mL			
10	ICB	S1011160143		0 0			Boron	LIQUID		<3.0000E-02			0.03	ug/mL			
10	ICB	S1011160143		0 0			Barium	LIQUID		<3.0000E-03			3.00E-03	ug/mL			
10	ICB	S1011160143		0 0			Beryllium	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
10	ICB	S1011160143		0 0			Bismuth	LIQUID		<1.0000E-01			0.1	ug/mL			
10	ICB	S1011160143		0 0			Calcium	LIQUID		<5.0000E-02			0.05	ug/mL			
10	ICB	S1011160143		0 0			Cadmium	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
10	ICB	S1011160143		0 0			Cerium	LIQUID		<3.0000E-02			0.03	ug/mL			
10	ICB	S1011160143		0 0			Cobalt	LIQUID		<1.0000E-02			0.01	ug/mL			
10	ICB	S1011160143		0 0			Chromium	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
10	ICB	S1011160143		0 0			Copper	LIQUID		<5.0000E-03			5.00E-03	ug/mL			

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LABCORE Completed Batch Report for Batch# 00024077

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
10	ICB	S1011160143		0 0			Europium	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
10	ICB	S1011160143		0 0			Iron	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
10	ICB	S1011160143		0 0			Potassium	LIQUID		<5.0000E-01			0.5	ug/mL			
10	ICB	S1011160143		0 0			Lanthanum	LIQUID		<3.0000E-03			3.00E-03	ug/mL			
10	ICB	S1011160143		0 0			Lithium	LIQUID		<3.0000E-03			3.00E-03	ug/mL			
10	ICB	S1011160143		0 0			Magnesium	LIQUID		<5.0000E-02			0.05	ug/mL			
10	ICB	S1011160143		0 0			Manganese	LIQUID		<3.0000E-03			3.00E-03	ug/mL			
10	ICB	S1011160143		0 0			Molybdenum	LIQUID		<2.0000E-02			0.02	ug/mL			
10	ICB	S1011160143		0 0			Sodium	LIQUID		<1.0000E-01			0.1	ug/mL			
10	ICB	S1011160143		0 0			Neodymium	LIQUID		<1.0000E-02			0.01	ug/mL			
10	ICB	S1011160143		0 0			Nickel	LIQUID		<2.0000E-02			0.02	ug/mL			
10	ICB	S1011160143		0 0			Niobium	LIQUID		<3.0000E-02			0.03	ug/mL			
10	ICB	S1011160143		0 0			Phosphorus	LIQUID		<5.0000E-02			0.05	ug/mL			
10	ICB	S1011160143		0 0			Lead	LIQUID		<5.0000E-02			0.05	ug/mL			
10	ICB	S1011160143		0 0			Palladium	LIQUID		<1.0000E-01			0.1	ug/mL			
10	ICB	S1011160143		0 0			Praseodymium	LIQUID		<1.0000E-02			0.01	ug/mL			
10	ICB	S1011160143		0 0			Rubidium	LIQUID		<1.0000E+00			1	ug/mL			
10	ICB	S1011160143		0 0			Rhodium	LIQUID		<5.0000E-02			0.05	ug/mL			
10	ICB	S1011160143		0 0			Ruthenium	LIQUID		<3.0000E-02			0.03	ug/mL			
10	ICB	S1011160143		0 0			Sulfur	LIQUID		<1.0000E-01			0.1	ug/mL			
10	ICB	S1011160143		0 0			Antimony	LIQUID		<5.0000E-02			0.05	ug/mL			
10	ICB	S1011160143		0 0			Selenium	LIQUID		<1.0000E-01			0.1	ug/mL			
10	ICB	S1011160143		0 0			Silicon	LIQUID		<3.0000E-02			0.03	ug/mL			
10	ICB	S1011160143		0 0			Samarium	LIQUID		<2.0000E-02			0.02	ug/mL			
10	ICB	S1011160143		0 0			Tin	LIQUID		<3.0000E-02			0.03	ug/mL			
10	ICB	S1011160143		0 0			Strontium	LIQUID		<3.0000E-03			3.00E-03	ug/mL			
10	ICB	S1011160143		0 0			Tantalum	LIQUID		<5.0000E-02			0.05	ug/mL			
10	ICB	S1011160143		0 0			Tellurium	LIQUID		<1.0000E-01			0.1	ug/mL			
10	ICB	S1011160143		0 0			Thorium	LIQUID		<5.0000E-02			0.05	ug/mL			
10	ICB	S1011160143		0 0			Titanium	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
10	ICB	S1011160143		0 0			Thallium	LIQUID		<1.0000E-01			0.1	ug/mL			
10	ICB	S1011160143		0 0			Uranium	LIQUID		<1.0000E-01			0.1	ug/mL			
10	ICB	S1011160143		0 0			Vanadium	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
10	ICB	S1011160143		0 0			Tungsten	LIQUID		<2.0000E-01			0.2	ug/mL			
10	ICB	S1011160143		0 0			Yttrium	LIQUID		<2.0000E-03			2.00E-03	ug/mL			
10	ICB	S1011160143		0 0			Zinc	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
10	ICB	S1011160143		0 0			Zirconium	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
Sample Sequence 11																	
11	ICSA	S1011160145		0 0			Aluminum	LIQUID	200	1.9898E+02			0.03	ug/mL	99.488	% Recovery	
11	ICSA	S1011160145		0 0			Barium	LIQUID		<3.0000E-03			3.00E-03	ug/mL	N/A		
11	ICSA	S1011160145		0 0			Beryllium	LIQUID		<1.0000E-03			1.00E-03	ug/mL	N/A		
11	ICSA	S1011160145		0 0			Calcium	LIQUID	200	2.0141E+02			0.05	ug/mL	100.71	% Recovery	

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N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00024077

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
11	ICSA	S1011160145		0 0			Cerium	LIQUID		<3.0000E-02			0.03	ug/mL	N/A		
11	ICSA	S1011160145		0 0			Cobalt	LIQUID		<1.0000E-02			0.01	ug/mL	N/A		
11	ICSA	S1011160145		0 0			Chromium	LIQUID		<5.0000E-03			5.00E-03	ug/mL	N/A		
11	ICSA	S1011160145		0 0			Copper	LIQUID		<5.0000E-03			5.00E-03	ug/mL	N/A		
11	ICSA	S1011160145		0 0			Iron	LIQUID	200	1.8679E+02			5.00E-03	ug/mL	93.395	% Recovery	
11	ICSA	S1011160145		0 0			Potassium	LIQUID		<5.0000E-01			0.5	ug/mL	N/A		
11	ICSA	S1011160145		0 0			Lanthanum	LIQUID		<3.0000E-03			3.00E-03	ug/mL	N/A		
11	ICSA	S1011160145		0 0			Lithium	LIQUID		<3.0000E-03			3.00E-03	ug/mL	N/A		
11	ICSA	S1011160145		0 0			Magnesium	LIQUID	200	1.9700E+02			0.05	ug/mL	98.499	% Recovery	
11	ICSA	S1011160145		0 0			Manganese	LIQUID		5.1010E-02			3.00E-03	ug/mL	N/A		
11	ICSA	S1011160145		0 0			Molybdenum	LIQUID		<2.0000E-02			0.02	ug/mL	N/A		
11	ICSA	S1011160145		0 0			Sodium	LIQUID	200	1.8729E+02			0.1	ug/mL	93.647	% Recovery	
11	ICSA	S1011160145		0 0			Neodymium	LIQUID		1.0550E-02			0.01	ug/mL	N/A		
11	ICSA	S1011160145		0 0			Nickel	LIQUID		<2.0000E-02			0.02	ug/mL	N/A		
11	ICSA	S1011160145		0 0			Phosphorus	LIQUID		<5.0000E-02			0.05	ug/mL	N/A		
11	ICSA	S1011160145		0 0			Sulfur	LIQUID		<1.0000E-01			0.1	ug/mL	N/A		
11	ICSA	S1011160145		0 0			Silicon	LIQUID		<3.0000E-02			0.03	ug/mL	N/A		
11	ICSA	S1011160145		0 0			Strontium	LIQUID		<3.0000E-03			3.00E-03	ug/mL	N/A		
11	ICSA	S1011160145		0 0			Titanium	LIQUID		<5.0000E-03			5.00E-03	ug/mL	N/A		
11	ICSA	S1011160145		0 0			Vanadium	LIQUID		<5.0000E-03			5.00E-03	ug/mL	N/A		
11	ICSA	S1011160145		0 0			Yttrium	LIQUID		<2.0000E-03			2.00E-03	ug/mL	N/A		
11	ICSA	S1011160145		0 0			Zinc	LIQUID		<5.0000E-03			5.00E-03	ug/mL	N/A		
11	ICSA	S1011160145		0 0			Zirconium	LIQUID		<5.0000E-03			5.00E-03	ug/mL	N/A		
Sample Sequence 12																	
12	ICSAB	S1011160146		0 0			Aluminum	LIQUID	200	1.9783E+02			0.03	ug/mL	98.917	% Recovery	
12	ICSAB	S1011160146		0 0			Barium	LIQUID	1	9.1581E-01			3.00E-03	ug/mL	91.581	% Recovery	
12	ICSAB	S1011160146		0 0			Beryllium	LIQUID	.1	8.7140E-02			1.00E-03	ug/mL	87.14	% Recovery	
12	ICSAB	S1011160146		0 0			Calcium	LIQUID	200	1.9106E+02			0.05	ug/mL	95.531	% Recovery	
12	ICSAB	S1011160146		0 0			Cerium	LIQUID		<3.0000E-02			0.03	ug/mL	N/A		
12	ICSAB	S1011160146		0 0			Cobalt	LIQUID	5	4.6050E+00			0.01	ug/mL	92.1	% Recovery	
12	ICSAB	S1011160146		0 0			Chromium	LIQUID	5	4.5628E+00			5.00E-03	ug/mL	91.256	% Recovery	
12	ICSAB	S1011160146		0 0			Copper	LIQUID	5	5.0680E+00			5.00E-03	ug/mL	101.36	% Recovery	
12	ICSAB	S1011160146		0 0			Iron	LIQUID	200	1.8108E+02			5.00E-03	ug/mL	90.54	% Recovery	
12	ICSAB	S1011160146		0 0			Potassium	LIQUID		<5.0000E-01			0.5	ug/mL	N/A		
12	ICSAB	S1011160146		0 0			Lanthanum	LIQUID		<3.0000E-03			3.00E-03	ug/mL	N/A		
12	ICSAB	S1011160146		0 0			Lithium	LIQUID	1	1.0126E+00			3.00E-03	ug/mL	101.26	% Recovery	
12	ICSAB	S1011160146		0 0			Magnesium	LIQUID	200	1.9350E+02			0.05	ug/mL	96.75	% Recovery	
12	ICSAB	S1011160146		0 0			Manganese	LIQUID	5	4.6079E+00			3.00E-03	ug/mL	92.158	% Recovery	
12	ICSAB	S1011160146		0 0			Molybdenum	LIQUID	5	4.5428E+00			0.02	ug/mL	90.855	% Recovery	
12	ICSAB	S1011160146		0 0			Sodium	LIQUID	200	1.8813E+02			0.1	ug/mL	94.065	% Recovery	
12	ICSAB	S1011160146		0 0			Neodymium	LIQUID		1.2715E-01			0.01	ug/mL	N/A		
12	ICSAB	S1011160146		0 0			Nickel	LIQUID	5	4.6297E+00			0.02	ug/mL	92.595	% Recovery	

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LABCORE Completed Batch Report for Batch# 00024077

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
12	ICSAB	S1011160146		0 0			Phosphorus	LIQUID	1	9.2207E-01			0.05	ug/mL	92.207	% Recovery	
12	ICSAB	S1011160146		0 0			Sulfur	LIQUID		<1.0000E-01			0.1	ug/mL	N/A		
12	ICSAB	S1011160146		0 0			Silicon	LIQUID	5	4.6768E+00			0.03	ug/mL	93.535	% Recovery	
12	ICSAB	S1011160146		0 0			Strontium	LIQUID	1	9.3280E-01			3.00E-03	ug/mL	93.28	% Recovery	
12	ICSAB	S1011160146		0 0			Titanium	LIQUID	50	4.6296E+01			5.00E-03	ug/mL	92.591	% Recovery	
12	ICSAB	S1011160146		0 0			Vanadium	LIQUID	1	9.3629E-01			5.00E-03	ug/mL	93.629	% Recovery	
12	ICSAB	S1011160146		0 0			Yttrium	LIQUID		<2.0000E-03			2.00E-03	ug/mL	N/A		
12	ICSAB	S1011160146		0 0			Zinc	LIQUID	5	4.7342E+00			5.00E-03	ug/mL	94.685	% Recovery	
12	ICSAB	S1011160146		0 0			Zirconium	LIQUID	5	4.4281E+00			5.00E-03	ug/mL	88.562	% Recovery	
Sample Sequence 13																	
13	BLNK-PREP	S1011050120		0 0	A		Silver	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
13	BLNK-PREP	S1011050120		0 0	A		Aluminum	LIQUID		<3.0000E-02			0.03	ug/mL			
13	BLNK-PREP	S1011050120		0 0	A		Arsenic	LIQUID		<5.0000E-02			0.05	ug/mL			
13	BLNK-PREP	S1011050120		0 0	A		Boron	LIQUID		<3.0000E-02			0.03	ug/mL			
13	BLNK-PREP	S1011050120		0 0	A		Barium	LIQUID		<3.0000E-03			3.00E-03	ug/mL			
13	BLNK-PREP	S1011050120		0 0	A		Beryllium	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
13	BLNK-PREP	S1011050120		0 0	A		Bismuth	LIQUID		<1.0000E-01			0.1	ug/mL			
13	BLNK-PREP	S1011050120		0 0	A		Calcium	LIQUID		1.0515E-01			0.05	ug/mL			
13	BLNK-PREP	S1011050120		0 0	A		Cadmium	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
13	BLNK-PREP	S1011050120		0 0	A		Cerium	LIQUID		<3.0000E-02			0.03	ug/mL			
13	BLNK-PREP	S1011050120		0 0	A		Cobalt	LIQUID		<1.0000E-02			0.01	ug/mL			
13	BLNK-PREP	S1011050120		0 0	A		Chromium	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
13	BLNK-PREP	S1011050120		0 0	A		Copper	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
13	BLNK-PREP	S1011050120		0 0	A		Europium	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
13	BLNK-PREP	S1011050120		0 0	A		Iron	LIQUID		1.4040E-02			5.00E-03	ug/mL			
13	BLNK-PREP	S1011050120		0 0	A		Potassium	LIQUID		<5.0000E-01			0.5	ug/mL			
13	BLNK-PREP	S1011050120		0 0	A		Lanthanum	LIQUID		<3.0000E-03			3.00E-03	ug/mL			
13	BLNK-PREP	S1011050120		0 0	A		Lithium	LIQUID		<3.0000E-03			3.00E-03	ug/mL			
13	BLNK-PREP	S1011050120		0 0	A		Magnesium	LIQUID		<5.0000E-02			0.05	ug/mL			
13	BLNK-PREP	S1011050120		0 0	A		Manganese	LIQUID		<3.0000E-03			3.00E-03	ug/mL			
13	BLNK-PREP	S1011050120		0 0	A		Molybdenum	LIQUID		<2.0000E-02			0.02	ug/mL			
13	BLNK-PREP	S1011050120		0 0	A		Sodium	LIQUID		<1.0000E-01			0.1	ug/mL			
13	BLNK-PREP	S1011050120		0 0	A		Neodymium	LIQUID		<1.0000E-02			0.01	ug/mL			
13	BLNK-PREP	S1011050120		0 0	A		Nickel	LIQUID		<2.0000E-02			0.02	ug/mL			
13	BLNK-PREP	S1011050120		0 0	A		Niobium	LIQUID		<3.0000E-02			0.03	ug/mL			
13	BLNK-PREP	S1011050120		0 0	A		Phosphorus	LIQUID		<5.0000E-02			0.05	ug/mL			
13	BLNK-PREP	S1011050120		0 0	A		Lead	LIQUID		<5.0000E-02			0.05	ug/mL			
13	BLNK-PREP	S1011050120		0 0	A		Palladium	LIQUID		<1.0000E-01			0.1	ug/mL			
13	BLNK-PREP	S1011050120		0 0	A		Praseodymium	LIQUID		<1.0000E-02			0.01	ug/mL			
13	BLNK-PREP	S1011050120		0 0	A		Rubidium	LIQUID		<1.0000E+00			1	ug/mL			
13	BLNK-PREP	S1011050120		0 0	A		Rhodium	LIQUID		<5.0000E-02			0.05	ug/mL			
13	BLNK-PREP	S1011050120		0 0	A		Ruthenium	LIQUID		<3.0000E-02			0.03	ug/mL			

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LABCORE Completed Batch Report for Batch# 00024077

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
13	BLNK-PREP	S1011050120		0 0	A		Sulfur	LIQUID		<1.0000E-01			0.1	ug/mL			
13	BLNK-PREP	S1011050120		0 0	A		Antimony	LIQUID		<5.0000E-02			0.05	ug/mL			
13	BLNK-PREP	S1011050120		0 0	A		Selenium	LIQUID		<1.0000E-01			0.1	ug/mL			
13	BLNK-PREP	S1011050120		0 0	A		Silicon	LIQUID		<3.0000E-02			0.03	ug/mL			
13	BLNK-PREP	S1011050120		0 0	A		Samarium	LIQUID		<2.0000E-02			0.02	ug/mL			
13	BLNK-PREP	S1011050120		0 0	A		Tin	LIQUID		<3.0000E-02			0.03	ug/mL			
13	BLNK-PREP	S1011050120		0 0	A		Strontium	LIQUID		<3.0000E-03			3.00E-03	ug/mL			
13	BLNK-PREP	S1011050120		0 0	A		Tantalum	LIQUID		<5.0000E-02			0.05	ug/mL			
13	BLNK-PREP	S1011050120		0 0	A		Tellurium	LIQUID		<1.0000E-01			0.1	ug/mL			
13	BLNK-PREP	S1011050120		0 0	A		Thorium	LIQUID		<5.0000E-02			0.05	ug/mL			
13	BLNK-PREP	S1011050120		0 0	A		Titanium	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
13	BLNK-PREP	S1011050120		0 0	A		Thallium	LIQUID		<1.0000E-01			0.1	ug/mL			
13	BLNK-PREP	S1011050120		0 0	A		Uranium	LIQUID		<1.0000E-01			0.1	ug/mL			
13	BLNK-PREP	S1011050120		0 0	A		Vanadium	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
13	BLNK-PREP	S1011050120		0 0	A		Tungsten	LIQUID		<2.0000E-01			0.2	ug/mL			
13	BLNK-PREP	S1011050120		0 0	A		Yttrium	LIQUID		<2.0000E-03			2.00E-03	ug/mL			
13	BLNK-PREP	S1011050120		0 0	A		Zinc	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
13	BLNK-PREP	S1011050120		0 0	A		Zirconium	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
Sample Sequence 14																	
14	STD-PREP	S1011090069		0 0	A		Silver	LIQUID	1	8.0197E-01			5.00E-03	ug/mL	80.197	% Recovery	
14	STD-PREP	S1011090069		0 0	A		Aluminum	LIQUID	5	4.4586E+00			0.03	ug/mL	89.171	% Recovery	
14	STD-PREP	S1011090069		0 0	A		Arsenic	LIQUID	5	4.4666E+00			0.05	ug/mL	89.332	% Recovery	
14	STD-PREP	S1011090069		0 0	A		Boron	LIQUID	5	4.4661E+00			0.03	ug/mL	89.322	% Recovery	
14	STD-PREP	S1011090069		0 0	A		Barium	LIQUID	5	4.7410E+00			3.00E-03	ug/mL	94.82	% Recovery	
14	STD-PREP	S1011090069		0 0	A		Beryllium	LIQUID	5	4.8905E+00			1.00E-03	ug/mL	97.81	% Recovery	
14	STD-PREP	S1011090069		0 0	A		Bismuth	LIQUID	5	4.4632E+00			0.1	ug/mL	89.265	% Recovery	
14	STD-PREP	S1011090069		0 0	A		Calcium	LIQUID	5	4.2333E+00			0.05	ug/mL	84.666	% Recovery	
14	STD-PREP	S1011090069		0 0	A		Cadmium	LIQUID	5	4.3944E+00			5.00E-03	ug/mL	87.887	% Recovery	
14	STD-PREP	S1011090069		0 0	A		Cobalt	LIQUID	5	4.4288E+00			0.01	ug/mL	88.577	% Recovery	
14	STD-PREP	S1011090069		0 0	A		Chromium	LIQUID	5	4.4133E+00			5.00E-03	ug/mL	88.266	% Recovery	
14	STD-PREP	S1011090069		0 0	A		Copper	LIQUID	5	4.7781E+00			5.00E-03	ug/mL	95.563	% Recovery	
14	STD-PREP	S1011090069		0 0	A		Iron	LIQUID	5	4.4883E+00			5.00E-03	ug/mL	89.765	% Recovery	
14	STD-PREP	S1011090069		0 0	A		Potassium	LIQUID	5	4.2673E+00			0.5	ug/mL	85.346	% Recovery	
14	STD-PREP	S1011090069		0 0	A		Lanthanum	LIQUID	5	4.7565E+00			3.00E-03	ug/mL	95.13	% Recovery	
14	STD-PREP	S1011090069		0 0	A		Lithium	LIQUID	5	5.2083E+00			3.00E-03	ug/mL	104.17	% Recovery	
14	STD-PREP	S1011090069		0 0	A		Magnesium	LIQUID	5	4.3920E+00			0.05	ug/mL	87.841	% Recovery	
14	STD-PREP	S1011090069		0 0	A		Manganese	LIQUID	5	4.3859E+00			3.00E-03	ug/mL	87.719	% Recovery	
14	STD-PREP	S1011090069		0 0	A		Molybdenum	LIQUID	5	4.5384E+00			0.02	ug/mL	90.769	% Recovery	
14	STD-PREP	S1011090069		0 0	A		Sodium	LIQUID	5	5.0853E+00			0.1	ug/mL	101.71	% Recovery	
14	STD-PREP	S1011090069		0 0	A		Nickel	LIQUID	5	4.4123E+00			0.02	ug/mL	88.245	% Recovery	
14	STD-PREP	S1011090069		0 0	A		Phosphorus	LIQUID	5	4.5057E+00			0.05	ug/mL	90.113	% Recovery	
14	STD-PREP	S1011090069		0 0	A		Lead	LIQUID	5	4.3325E+00			0.05	ug/mL	86.649	% Recovery	

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LABCORE Completed Batch Report for Batch# 00024077

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
14	STD-PREP	S1011090069		0 0	A		Sulfur	LIQUID	5	4.5339E+00			0.1	ug/mL	90.678	% Recovery	
14	STD-PREP	S1011090069		0 0	A		Antimony	LIQUID	5	4.4218E+00			0.05	ug/mL	88.436	% Recovery	
14	STD-PREP	S1011090069		0 0	A		Selenium	LIQUID	5	4.6476E+00			0.1	ug/mL	92.951	% Recovery	
14	STD-PREP	S1011090069		0 0	A		Silicon	LIQUID	5	4.0527E+00			0.03	ug/mL	81.053	% Recovery	
14	STD-PREP	S1011090069		0 0	A		Strontium	LIQUID	5	4.7251E+00			3.00E-03	ug/mL	94.501	% Recovery	
14	STD-PREP	S1011090069		0 0	A		Titanium	LIQUID	5	4.5365E+00			5.00E-03	ug/mL	90.731	% Recovery	
14	STD-PREP	S1011090069		0 0	A		Vanadium	LIQUID	5	4.5699E+00			5.00E-03	ug/mL	91.397	% Recovery	
14	STD-PREP	S1011090069		0 0	A		Zinc	LIQUID	5	4.3934E+00			5.00E-03	ug/mL	87.869	% Recovery	
14	STD-PREP	S1011090069		0 0	A		Zirconium	LIQUID	5	4.4428E+00			5.00E-03	ug/mL	88.855	% Recovery	
Sample Sequence 15																	
15	STD-PREP	S1011050121		0 0	A		Cerium	LIQUID	5	4.9584E+00			0.03	ug/mL	99.167	% Recovery	
15	STD-PREP	S1011050121		0 0	A		Europium	LIQUID	5	4.6492E+00			5.00E-03	ug/mL	92.983	% Recovery	
15	STD-PREP	S1011050121		0 0	A		Neodymium	LIQUID	5	4.8651E+00			0.01	ug/mL	97.301	% Recovery	
15	STD-PREP	S1011050121		0 0	A		Niobium	LIQUID	5	4.4710E+00			0.03	ug/mL	89.42	% Recovery	
15	STD-PREP	S1011050121		0 0	A		Palladium	LIQUID	5	4.1461E+00			0.1	ug/mL	82.921	% Recovery	
15	STD-PREP	S1011050121		0 0	A		Praseodymium	LIQUID	5	4.9362E+00			0.01	ug/mL	98.723	% Recovery	
15	STD-PREP	S1011050121		0 0	A		Rhodium	LIQUID	5	4.5623E+00			0.05	ug/mL	91.247	% Recovery	
15	STD-PREP	S1011050121		0 0	A		Ruthenium	LIQUID	5	4.3544E+00			0.03	ug/mL	87.088	% Recovery	
15	STD-PREP	S1011050121		0 0	A		Samarium	LIQUID	5	5.0680E+00			0.02	ug/mL	101.36	% Recovery	
15	STD-PREP	S1011050121		0 0	A		Tin	LIQUID	5	4.1571E+00			0.03	ug/mL	83.142	% Recovery	
15	STD-PREP	S1011050121		0 0	A		Tantalum	LIQUID	5	4.2494E+00			0.05	ug/mL	84.988	% Recovery	
15	STD-PREP	S1011050121		0 0	A		Tellurium	LIQUID	5	4.4633E+00			0.1	ug/mL	89.266	% Recovery	
15	STD-PREP	S1011050121		0 0	A		Thorium	LIQUID	5	4.3887E+00			0.05	ug/mL	87.775	% Recovery	
15	STD-PREP	S1011050121		0 0	A		Thallium	LIQUID	5	4.4775E+00			0.1	ug/mL	89.55	% Recovery	
15	STD-PREP	S1011050121		0 0	A		Uranium	LIQUID	5	5.2945E+00			0.1	ug/mL	105.89	% Recovery	
15	STD-PREP	S1011050121		0 0	A		Tungsten	LIQUID	5	4.4248E+00			0.2	ug/mL	88.496	% Recovery	
15	STD-PREP	S1011050121		0 0	A		Yttrium	LIQUID	5	4.5300E+00			2.00E-03	ug/mL	90.599	% Recovery	
Sample Sequence 16																	
16	SERDIL	S1011160147	S10V001792	0 0			Aluminum	SOLID		6.0354E+03			12.41	ug/g	4.5849	% Diff	
16	SERDIL	S1011160147	S10V001792	0 0			Barium	SOLID		5.8575E+01			1.241	ug/g	6.0587	% Diff	
16	SERDIL	S1011160147	S10V001792	0 0			Beryllium	SOLID		<4.1367E-01			0.41367	ug/g	N/A		
16	SERDIL	S1011160147	S10V001792	0 0			Calcium	SOLID		7.1584E+03			20.684	ug/g	6.5149	% Diff	
16	SERDIL	S1011160147	S10V001792	0 0			Cerium	SOLID		<1.2410E+01			12.41	ug/g	N/A		
16	SERDIL	S1011160147	S10V001792	0 0			Cobalt	SOLID		<4.1367E+00			4.1367	ug/g	N/A		
16	SERDIL	S1011160147	S10V001792	0 0			Chromium	SOLID		1.4399E+01			2.0684	ug/g	1.9837	% Diff	
16	SERDIL	S1011160147	S10V001792	0 0			Copper	SOLID		6.7398E+00			2.0684	ug/g	10.264	% Diff	
16	SERDIL	S1011160147	S10V001792	0 0			Iron	SOLID		1.2725E+04			2.0684	ug/g	7.9662	% Diff	
16	SERDIL	S1011160147	S10V001792	0 0			Potassium	SOLID		9.9970E+02			206.84	ug/g	.97052	% Diff	
16	SERDIL	S1011160147	S10V001792	0 0			Lanthanum	SOLID		8.9568E+00			1.241	ug/g	13.648	% Diff	
16	SERDIL	S1011160147	S10V001792	0 0			Lithium	SOLID		8.6134E+00			1.241	ug/g	4.4219	% Diff	
16	SERDIL	S1011160147	S10V001792	0 0			Magnesium	SOLID		4.1538E+03			20.684	ug/g	5.7894	% Diff	
16	SERDIL	S1011160147	S10V001792	0 0			Manganese	SOLID		2.2915E+02			1.241	ug/g	7.4467	% Diff	
16	SERDIL	S1011160147	S10V001792	0 0			Molybdenum	SOLID		<8.2735E+00			8.2735	ug/g	N/A		

Units shown for QC (BLK/BKG) may not reflect the actual units.

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LABCORE Completed Batch Report for Batch# 00024077

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
16	SERDIL	S1011160147	S10V001792	0 0			Sodium	SOLID		1.8555E+02			41.367	ug/g	1.1906	% Diff	
16	SERDIL	S1011160147	S10V001792	0 0			Neodymium	SOLID		9.7357E+00			4.1367	ug/g	.81769	% Diff	
16	SERDIL	S1011160147	S10V001792	0 0			Nickel	SOLID		1.7157E+01			8.2735	ug/g	38.174	% Diff	
16	SERDIL	S1011160147	S10V001792	0 0			Phosphorus	SOLID		3.6351E+02			20.684	ug/g	2.8237	% Diff	
16	SERDIL	S1011160147	S10V001792	0 0			Ruthenium	SOLID		<1.5000E+00			1.5	ug/g	N/A		
16	SERDIL	S1011160147	S10V001792	0 0			Sulfur	SOLID		6.3006E+01			41.367	ug/g	4.03	% Diff	
16	SERDIL	S1011160147	S10V001792	0 0			Silicon	SOLID		6.1176E+01			12.41	ug/g	22.502	% Diff	
16	SERDIL	S1011160147	S10V001792	0 0			Strontium	SOLID		2.9824E+01			1.241	ug/g	6.1112	% Diff	
16	SERDIL	S1011160147	S10V001792	0 0			Titanium	SOLID		6.3094E+02			2.0684	ug/g	6.3681	% Diff	
16	SERDIL	S1011160147	S10V001792	0 0			Vanadium	SOLID		2.4568E+01			2.0684	ug/g	7.6108	% Diff	
16	SERDIL	S1011160147	S10V001792	0 0			Yttrium	SOLID		4.4997E+00			0.82735	ug/g	5.372	% Diff	
16	SERDIL	S1011160147	S10V001792	0 0			Zinc	SOLID		2.7777E+01			2.0684	ug/g	6.8865	% Diff	
16	SERDIL	S1011160147	S10V001792	0 0			Zirconium	SOLID		5.8493E+00			2.0684	ug/g	7.332	% Diff	
Sample Sequence 17																	
17	SAMPLE	S10V001792		0 1	A		Aluminum	SOLID	N/A	5.7708E+03			2.482	ug/g			
17	SAMPLE	S10V001792		0 1	A		Barium	SOLID	N/A	5.5229E+01			0.2482	ug/g			b
17	SAMPLE	S10V001792		0 1	A		Beryllium	SOLID	N/A	1.7441E-01			0.082735	ug/g			J
17	SAMPLE	S10V001792		0 1	A		Calcium	SOLID	N/A	6.7206E+03			4.1367	ug/g			
17	SAMPLE	S10V001792		0 1	A		Cerium	SOLID	N/A	1.7206E+01			2.482	ug/g			Jb
17	SAMPLE	S10V001792		0 1	A		Cobalt	SOLID	N/A	4.0634E+00			0.82735	ug/g			J
17	SAMPLE	S10V001792		0 1	A		Chromium	SOLID	N/A	1.4690E+01			0.41367	ug/g			
17	SAMPLE	S10V001792		0 1	A		Copper	SOLID	N/A	7.5107E+00			0.41367	ug/g			
17	SAMPLE	S10V001792		0 1	A		Iron	SOLID	N/A	1.1786E+04			0.41367	ug/g			
17	SAMPLE	S10V001792		0 1	A		Potassium	SOLID	N/A	1.0095E+03			41.367	ug/g			
17	SAMPLE	S10V001792		0 1	A		Lanthanum	SOLID	N/A	7.8812E+00			0.2482	ug/g			
17	SAMPLE	S10V001792		0 1	A		Lithium	SOLID	N/A	8.2487E+00			0.2482	ug/g			
17	SAMPLE	S10V001792		0 1	A		Magnesium	SOLID	N/A	3.9265E+03			4.1367	ug/g			
17	SAMPLE	S10V001792		0 1	A		Manganese	SOLID	N/A	2.1327E+02			0.2482	ug/g			
17	SAMPLE	S10V001792		0 1	A		Molybdenum	SOLID	N/A	<1.6547E+00			1.6547	ug/g			U
17	SAMPLE	S10V001792		0 1	A		Sodium	SOLID	N/A	1.8337E+02			8.2735	ug/g			
17	SAMPLE	S10V001792		0 1	A		Neodymium	SOLID	N/A	9.6567E+00			0.82735	ug/g			
17	SAMPLE	S10V001792		0 1	A		Nickel	SOLID	N/A	1.2417E+01			1.6547	ug/g			J
17	SAMPLE	S10V001792		0 1	A		Phosphorus	SOLID	N/A	3.5353E+02			4.1367	ug/g			
17	SAMPLE	S10V001792		0 1	A		Sulfur	SOLID	N/A	6.5652E+01			8.2735	ug/g			Jb
17	SAMPLE	S10V001792		0 1	A		Silicon	SOLID	N/A	4.9939E+01			2.482	ug/g			
17	SAMPLE	S10V001792		0 1	A		Strontium	SOLID	N/A	2.8106E+01			0.2482	ug/g			
17	SAMPLE	S10V001792		0 1	A		Titanium	SOLID	N/A	5.9317E+02			0.41367	ug/g			
17	SAMPLE	S10V001792		0 1	A		Vanadium	SOLID	N/A	2.2830E+01			0.41367	ug/g			
17	SAMPLE	S10V001792		0 1	A		Yttrium	SOLID	N/A	4.2703E+00			0.16547	ug/g			
17	SAMPLE	S10V001792		0 1	A		Zinc	SOLID	N/A	2.5987E+01			0.41367	ug/g			
17	SAMPLE	S10V001792		0 1	A		Zirconium	SOLID	N/A	5.4497E+00			0.41367	ug/g			
Sample Sequence 18																	
18	DUP	S1011050122	S10V001792	0 0	A		Aluminum	SOLID	5.7708E+03	5.7506E+03			2.4717	ug/g	0.35108	% RPD	

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LABCORE Completed Batch Report for Batch# 00024077

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
18	DUP	S1011050122	S10V001792	0 0	A		Barium	SOLID	5.5229E+01	5.0109E+01			0.24717	ug/g	9.7219	% RPD	
18	DUP	S1011050122	S10V001792	0 0	A		Beryllium	SOLID	1.7441E-01	1.6173E-01			0.082391	ug/g	7.5417	% RPD	
18	DUP	S1011050122	S10V001792	0 0	A		Calcium	SOLID	6.7206E+03	6.8279E+03			4.1196	ug/g	1.5839	% RPD	
18	DUP	S1011050122	S10V001792	0 0	A		Cobalt	SOLID	4.0634E+00	4.0743E+00			0.82391	ug/g	0.26891	% RPD	
18	DUP	S1011050122	S10V001792	0 0	A		Chromium	SOLID	1.4690E+01	1.4184E+01			0.41196	ug/g	3.5037	% RPD	
18	DUP	S1011050122	S10V001792	0 0	A		Copper	SOLID	7.5107E+00	7.1484E+00			0.41196	ug/g	4.9426	% RPD	
18	DUP	S1011050122	S10V001792	0 0	A		Iron	SOLID	1.1786E+04	1.1551E+04			0.41196	ug/g	2.0131	% RPD	
18	DUP	S1011050122	S10V001792	0 0	A		Potassium	SOLID	1.0095E+03	9.4264E+02			41.196	ug/g	6.8535	% RPD	
18	DUP	S1011050122	S10V001792	0 0	A		Lithium	SOLID	8.2487E+00	7.9318E+00			0.24717	ug/g	3.9167	% RPD	
18	DUP	S1011050122	S10V001792	0 0	A		Magnesium	SOLID	3.9265E+03	3.8772E+03			4.1196	ug/g	1.2629	% RPD	
18	DUP	S1011050122	S10V001792	0 0	A		Manganese	SOLID	2.1327E+02	2.0530E+02			0.24717	ug/g	3.8089	% RPD	
18	DUP	S1011050122	S10V001792	0 0	A		Molybdenum	SOLID	<1.6547E+00	<1.6478E+00			1.6478	ug/g			
18	DUP	S1011050122	S10V001792	0 0	A		Sodium	SOLID	1.8337E+02	1.9333E+02			8.2391	ug/g	5.2879	% RPD	
18	DUP	S1011050122	S10V001792	0 0	A		Nickel	SOLID	1.2417E+01	1.0326E+01			1.6478	ug/g	18.385	% RPD	
18	DUP	S1011050122	S10V001792	0 0	A		Phosphorus	SOLID	3.5353E+02	3.4286E+02			4.1196	ug/g	3.0650	% RPD	
18	DUP	S1011050122	S10V001792	0 0	A		Strontium	SOLID	2.8106E+01	2.8985E+01			0.24717	ug/g	3.0809	% RPD	
18	DUP	S1011050122	S10V001792	0 0	A		Vanadium	SOLID	2.2830E+01	2.3091E+01			0.41196	ug/g	1.1355	% RPD	
18	DUP	S1011050122	S10V001792	0 0	A		Zinc	SOLID	2.5987E+01	2.5379E+01			0.41196	ug/g	2.3674	% RPD	
18	DUP	S1011050122	S10V001792	0 0	A		Cerium	SOLID	1.7206E+01	1.5156E+01			2.4717	ug/g	12.667	% RPD	
18	DUP	S1011050122	S10V001792	0 0	A		Lanthanum	SOLID	7.8812E+00	7.6211E+00			0.24717	ug/g	3.3562	% RPD	
18	DUP	S1011050122	S10V001792	0 0	A		Neodymium	SOLID	9.6567E+00	9.2457E+00			0.82391	ug/g	4.3490	% RPD	
18	DUP	S1011050122	S10V001792	0 0	A		Silicon	SOLID	4.9939E+01	5.4484E+01			2.4717	ug/g	8.7044	% RPD	
18	DUP	S1011050122	S10V001792	0 0	A		Sulfur	SOLID	6.5652E+01	6.8235E+01			8.2391	ug/g	3.8586	% RPD	
18	DUP	S1011050122	S10V001792	0 0	A		Titanium	SOLID	5.9317E+02	5.7861E+02			0.41196	ug/g	2.4844	% RPD	
18	DUP	S1011050122	S10V001792	0 0	A		Yttrium	SOLID	4.2703E+00	4.1696E+00			0.16478	ug/g	2.3858	% RPD	
18	DUP	S1011050122	S10V001792	0 0	A		Zirconium	SOLID	5.4497E+00	4.6461E+00			0.41196	ug/g	15.919	% RPD	
Sample Sequence 19																	
19	SPK-PREDIG	S1011050123	S10V001792	0 0	A		Aluminum	SOLID	41.567597225	8.7197E+03			2.4941	ug/g	7094.3	% Recovery	
19	SPK-PREDIG	S1011050123	S10V001792	0 0	A		Barium	SOLID	41.567597225	1.1225E+02			0.24941	ug/g	137.17	% Recovery	
19	SPK-PREDIG	S1011050123	S10V001792	0 0	A		Beryllium	SOLID	41.567597225	4.1558E+01			0.083135	ug/g	99.557	% Recovery	
19	SPK-PREDIG	S1011050123	S10V001792	0 0	A		Calcium	SOLID	41.567597225	9.4802E+03			4.1568	ug/g	6638.8	% Recovery	
19	SPK-PREDIG	S1011050123	S10V001792	0 0	A		Cobalt	SOLID	41.567597225	4.6834E+01			0.83135	ug/g	102.9	% Recovery	
19	SPK-PREDIG	S1011050123	S10V001792	0 0	A		Chromium	SOLID	41.567597225	6.1040E+01			0.41568	ug/g	111.5	% Recovery	
19	SPK-PREDIG	S1011050123	S10V001792	0 0	A		Copper	SOLID	41.567597225	5.3415E+01			0.41568	ug/g	110.43	% Recovery	
19	SPK-PREDIG	S1011050123	S10V001792	0 0	A		Iron	SOLID	41.567597225	1.5181E+04			0.41568	ug/g	8166.9	% Recovery	
19	SPK-PREDIG	S1011050123	S10V001792	0 0	A		Potassium	SOLID	41.567597225	1.4821E+03			41.568	ug/g	1136.9	% Recovery	
19	SPK-PREDIG	S1011050123	S10V001792	0 0	A		Lanthanum	SOLID	41.567597225	5.2495E+01			0.24941	ug/g	107.33	% Recovery	
19	SPK-PREDIG	S1011050123	S10V001792	0 0	A		Lithium	SOLID	41.567597225	5.6669E+01			0.24941	ug/g	116.49	% Recovery	
19	SPK-PREDIG	S1011050123	S10V001792	0 0	A		Magnesium	SOLID	41.567597225	5.2881E+03			4.1568	ug/g	3275.5	% Recovery	
19	SPK-PREDIG	S1011050123	S10V001792	0 0	A		Manganese	SOLID	41.567597225	3.2234E+02			0.24941	ug/g	262.4	% Recovery	
19	SPK-PREDIG	S1011050123	S10V001792	0 0	A		Molybdenum	SOLID	41.567597225	4.0875E+01			1.6627	ug/g	98.335	% Recovery	
19	SPK-PREDIG	S1011050123	S10V001792	0 0	A		Sodium	SOLID	41.567597225	3.7202E+02			8.3135	ug/g	453.85	% Recovery	

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LABCORE Completed Batch Report for Batch# 00024077

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
19	SPK-PREDIG	S1011050123	S10V001792	0 0	A		Neodymium	SOLID	41.567597225	1.3457E+01			0.83135	ug/g	9.1433	% Recovery	
19	SPK-PREDIG	S1011050123	S10V001792	0 0	A		Nickel	SOLID	41.567597225	5.6559E+01			1.6627	ug/g	106.19	% Recovery	
19	SPK-PREDIG	S1011050123	S10V001792	0 0	A		Phosphorus	SOLID	41.567597225	5.2581E+02			4.1568	ug/g	414.47	% Recovery	
19	SPK-PREDIG	S1011050123	S10V001792	0 0	A		Sulfur	SOLID	41.567597225	1.2052E+02			8.3135	ug/g	131.99	% Recovery	
19	SPK-PREDIG	S1011050123	S10V001792	0 0	A		Silicon	SOLID	41.567597225	8.1420E+01			2.4941	ug/g	75.734	% Recovery	
19	SPK-PREDIG	S1011050123	S10V001792	0 0	A		Strontium	SOLID	41.567597225	7.9992E+01			0.24941	ug/g	124.82	% Recovery	
19	SPK-PREDIG	S1011050123	S10V001792	0 0	A		Titanium	SOLID	41.567597225	8.5252E+02			0.41568	ug/g	623.91	% Recovery	
19	SPK-PREDIG	S1011050123	S10V001792	0 0	A		Vanadium	SOLID	41.567597225	7.3059E+01			0.41568	ug/g	120.84	% Recovery	
19	SPK-PREDIG	S1011050123	S10V001792	0 0	A		Zinc	SOLID	41.567597225	7.6387E+01			0.41568	ug/g	121.25	% Recovery	
19	SPK-PREDIG	S1011050123	S10V001792	0 0	A		Zirconium	SOLID	41.567597225	4.4347E+01			0.41568	ug/g	93.576	% Recovery	
Sample Sequence 20																	
20	SPK-PREDIG	S1011090070	S10V001792	0 0	A		Cerium	SOLID	41.295693685	7.1911E+01			2.4777	ug/g	132.47	% Recovery	
20	SPK-PREDIG	S1011090070	S10V001792	0 0	A		Neodymium	SOLID	41.295693685	5.5898E+01			0.82591	ug/g	111.98	% Recovery	
20	SPK-PREDIG	S1011090070	S10V001792	0 0	A		Yttrium	SOLID	41.295693685	4.7137E+01			0.16518	ug/g	103.8	% Recovery	
Sample Sequence 21																	
21	CCV	S1011160149		0 0			Silver	LIQUID	1	9.9864E-01			5.00E-03	ug/mL	99.864	% Recovery	
21	CCV	S1011160149		0 0			Aluminum	LIQUID	5	5.1894E+00			0.03	ug/mL	103.79	% Recovery	
21	CCV	S1011160149		0 0			Arsenic	LIQUID	5	5.1080E+00			0.05	ug/mL	102.16	% Recovery	
21	CCV	S1011160149		0 0			Boron	LIQUID	5	5.0929E+00			0.03	ug/mL	101.86	% Recovery	
21	CCV	S1011160149		0 0			Barium	LIQUID	5	5.2609E+00			3.00E-03	ug/mL	105.22	% Recovery	
21	CCV	S1011160149		0 0			Beryllium	LIQUID	5	5.1405E+00			1.00E-03	ug/mL	102.81	% Recovery	
21	CCV	S1011160149		0 0			Bismuth	LIQUID	5	5.1604E+00			0.1	ug/mL	103.21	% Recovery	
21	CCV	S1011160149		0 0			Calcium	LIQUID	5	5.0624E+00			0.05	ug/mL	101.25	% Recovery	
21	CCV	S1011160149		0 0			Cadmium	LIQUID	5	5.2060E+00			5.00E-03	ug/mL	104.12	% Recovery	
23	CCV	S1011160149		0 2			Cerium	LIQUID	5	5.3211E+00			0.03	ug/mL	106.42	% Recovery	
21	CCV	S1011160149		0 0			Cobalt	LIQUID	5	5.2790E+00			0.01	ug/mL	105.58	% Recovery	
21	CCV	S1011160149		0 0			Chromium	LIQUID	5	5.1988E+00			5.00E-03	ug/mL	103.98	% Recovery	
21	CCV	S1011160149		0 0			Copper	LIQUID	5	5.2566E+00			5.00E-03	ug/mL	105.13	% Recovery	
23	CCV	S1011160149		0 2			Europium	LIQUID	5	4.9750E+00			5.00E-03	ug/mL	99.5	% Recovery	
21	CCV	S1011160149		0 0			Iron	LIQUID	5	5.1629E+00			5.00E-03	ug/mL	103.26	% Recovery	
21	CCV	S1011160149		0 0			Potassium	LIQUID	5	4.9769E+00			0.5	ug/mL	99.538	% Recovery	
21	CCV	S1011160149		0 0			Lanthanum	LIQUID	5	5.2045E+00			3.00E-03	ug/mL	104.09	% Recovery	
21	CCV	S1011160149		0 0			Lithium	LIQUID	5	5.4596E+00			3.00E-03	ug/mL	109.19	% Recovery	
21	CCV	S1011160149		0 0			Magnesium	LIQUID	5	5.2037E+00			0.05	ug/mL	104.07	% Recovery	
21	CCV	S1011160149		0 0			Manganese	LIQUID	5	5.1665E+00			3.00E-03	ug/mL	103.33	% Recovery	
21	CCV	S1011160149		0 0			Molybdenum	LIQUID	5	5.2058E+00			0.02	ug/mL	104.12	% Recovery	
22	CCV	S1011160149		0 1			Sodium	LIQUID	5	5.2858E+00			0.1	ug/mL	105.72	% Recovery	
23	CCV	S1011160149		0 2			Neodymium	LIQUID	5	5.0097E+00			0.01	ug/mL	100.19	% Recovery	
21	CCV	S1011160149		0 0			Nickel	LIQUID	5	5.2081E+00			0.02	ug/mL	104.16	% Recovery	
24	CCV	S1011160149		0 3			Niobium	LIQUID	5	5.0674E+00			0.03	ug/mL	101.35	% Recovery	
21	CCV	S1011160149		0 0			Phosphorus	LIQUID	5	5.1028E+00			0.05	ug/mL	102.06	% Recovery	
21	CCV	S1011160149		0 0			Lead	LIQUID	5	5.3083E+00			0.05	ug/mL	106.17	% Recovery	
23	CCV	S1011160149		0 2			Palladium	LIQUID	5	4.7657E+00			0.1	ug/mL	95.314	% Recovery	

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LABCORE Completed Batch Report for Batch# 00024077

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
23	CCV	S1011160149		0 2			Praseodymium	LIQUID	5	5.1365E+00			0.01	ug/mL	102.73	% Recovery	
23	CCV	S1011160149		0 2			Rhodium	LIQUID	5	4.8524E+00			0.05	ug/mL	97.049	% Recovery	
23	CCV	S1011160149		0 2			Ruthenium	LIQUID	5	5.0557E+00			0.03	ug/mL	101.11	% Recovery	
21	CCV	S1011160149		0 0			Sulfur	LIQUID	5	5.1816E+00			0.1	ug/mL	103.63	% Recovery	
21	CCV	S1011160149		0 0			Antimony	LIQUID	5	5.1057E+00			0.05	ug/mL	102.11	% Recovery	
21	CCV	S1011160149		0 0			Selenium	LIQUID	5	5.3861E+00			0.1	ug/mL	107.72	% Recovery	
21	CCV	S1011160149		0 0			Silicon	LIQUID	5	4.8885E+00			0.03	ug/mL	97.77	% Recovery	
23	CCV	S1011160149		0 2			Samarium	LIQUID	5	5.2444E+00			0.02	ug/mL	104.89	% Recovery	
24	CCV	S1011160149		0 3			Tin	LIQUID	5	5.1580E+00			0.03	ug/mL	103.16	% Recovery	
21	CCV	S1011160149		0 0			Strontium	LIQUID	5	5.1940E+00			3.00E-03	ug/mL	103.88	% Recovery	
24	CCV	S1011160149		0 3			Tantalum	LIQUID	5	5.1102E+00			0.05	ug/mL	102.2	% Recovery	
24	CCV	S1011160149		0 3			Tellurium	LIQUID	5	5.0879E+00			0.1	ug/mL	101.76	% Recovery	
23	CCV	S1011160149		0 2			Thorium	LIQUID	5	5.0092E+00			0.05	ug/mL	100.18	% Recovery	
21	CCV	S1011160149		0 0			Titanium	LIQUID	5	5.0661E+00			5.00E-03	ug/mL	101.32	% Recovery	
23	CCV	S1011160149		0 2			Thallium	LIQUID	5	5.3787E+00			0.1	ug/mL	107.57	% Recovery	
23	CCV	S1011160149		0 2			Uranium	LIQUID	5	5.1931E+00			0.1	ug/mL	103.86	% Recovery	
21	CCV	S1011160149		0 0			Vanadium	LIQUID	5	5.2791E+00			5.00E-03	ug/mL	105.58	% Recovery	
24	CCV	S1011160149		0 3			Tungsten	LIQUID	5	5.0127E+00			0.2	ug/mL	100.25	% Recovery	
23	CCV	S1011160149		0 2			Yttrium	LIQUID	5	5.0064E+00			2.00E-03	ug/mL	100.13	% Recovery	
21	CCV	S1011160149		0 0			Zinc	LIQUID	5	5.1564E+00			5.00E-03	ug/mL	103.13	% Recovery	
21	CCV	S1011160149		0 0			Zirconium	LIQUID	5	4.9734E+00			5.00E-03	ug/mL	99.468	% Recovery	
Sample Sequence 25																	
25	CCB	S1011160150		0 0			Silver	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
25	CCB	S1011160150		0 0			Aluminum	LIQUID		<3.0000E-02			0.03	ug/mL			
25	CCB	S1011160150		0 0			Arsenic	LIQUID		<5.0000E-02			0.05	ug/mL			
25	CCB	S1011160150		0 0			Boron	LIQUID		<3.0000E-02			0.03	ug/mL			
25	CCB	S1011160150		0 0			Barium	LIQUID		<3.0000E-03			3.00E-03	ug/mL			
25	CCB	S1011160150		0 0			Beryllium	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
25	CCB	S1011160150		0 0			Bismuth	LIQUID		<1.0000E-01			0.1	ug/mL			
25	CCB	S1011160150		0 0			Calcium	LIQUID		<5.0000E-02			0.05	ug/mL			
25	CCB	S1011160150		0 0			Cadmium	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
25	CCB	S1011160150		0 0			Cerium	LIQUID		<3.0000E-02			0.03	ug/mL			
25	CCB	S1011160150		0 0			Cobalt	LIQUID		<1.0000E-02			0.01	ug/mL			
25	CCB	S1011160150		0 0			Chromium	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
25	CCB	S1011160150		0 0			Copper	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
25	CCB	S1011160150		0 0			Europium	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
25	CCB	S1011160150		0 0			Iron	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
25	CCB	S1011160150		0 0			Potassium	LIQUID		<5.0000E-01			0.5	ug/mL			
25	CCB	S1011160150		0 0			Lanthanum	LIQUID		<3.0000E-03			3.00E-03	ug/mL			
25	CCB	S1011160150		0 0			Lithium	LIQUID		<3.0000E-03			3.00E-03	ug/mL			
25	CCB	S1011160150		0 0			Magnesium	LIQUID		<5.0000E-02			0.05	ug/mL			
25	CCB	S1011160150		0 0			Manganese	LIQUID		<3.0000E-03			3.00E-03	ug/mL			

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LABCORE Completed Batch Report for Batch# 00024077

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
25	CCB	S1011160150		0 0			Molybdenum	LIQUID		<2.0000E-02			0.02	ug/mL			
25	CCB	S1011160150		0 0			Sodium	LIQUID		<1.0000E-01			0.1	ug/mL			
25	CCB	S1011160150		0 0			Neodymium	LIQUID		<1.0000E-02			0.01	ug/mL			
25	CCB	S1011160150		0 0			Nickel	LIQUID		<2.0000E-02			0.02	ug/mL			
25	CCB	S1011160150		0 0			Niobium	LIQUID		<3.0000E-02			0.03	ug/mL			
25	CCB	S1011160150		0 0			Phosphorus	LIQUID		<5.0000E-02			0.05	ug/mL			
25	CCB	S1011160150		0 0			Lead	LIQUID		<5.0000E-02			0.05	ug/mL			
25	CCB	S1011160150		0 0			Palladium	LIQUID		<1.0000E-01			0.1	ug/mL			
25	CCB	S1011160150		0 0			Praseodymium	LIQUID		<1.0000E-02			0.01	ug/mL			
25	CCB	S1011160150		0 0			Rubidium	LIQUID		<1.0000E+00			1	ug/mL			
25	CCB	S1011160150		0 0			Rhodium	LIQUID		<5.0000E-02			0.05	ug/mL			
25	CCB	S1011160150		0 0			Ruthenium	LIQUID		<3.0000E-02			0.03	ug/mL			
25	CCB	S1011160150		0 0			Sulfur	LIQUID		<1.0000E-01			0.1	ug/mL			
25	CCB	S1011160150		0 0			Antimony	LIQUID		<5.0000E-02			0.05	ug/mL			
25	CCB	S1011160150		0 0			Selenium	LIQUID		<1.0000E-01			0.1	ug/mL			
26	CCB	S1011160150		0 1			Silicon	LIQUID		<3.0000E-02			0.03	ug/mL			
25	CCB	S1011160150		0 0			Samarium	LIQUID		<2.0000E-02			0.02	ug/mL			
25	CCB	S1011160150		0 0			Tin	LIQUID		<3.0000E-02			0.03	ug/mL			
25	CCB	S1011160150		0 0			Strontium	LIQUID		<3.0000E-03			3.00E-03	ug/mL			
25	CCB	S1011160150		0 0			Tantalum	LIQUID		<5.0000E-02			0.05	ug/mL			
25	CCB	S1011160150		0 0			Tellurium	LIQUID		<1.0000E-01			0.1	ug/mL			
25	CCB	S1011160150		0 0			Thorium	LIQUID		<5.0000E-02			0.05	ug/mL			
25	CCB	S1011160150		0 0			Titanium	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
25	CCB	S1011160150		0 0			Thallium	LIQUID		<1.0000E-01			0.1	ug/mL			
25	CCB	S1011160150		0 0			Uranium	LIQUID		<1.0000E-01			0.1	ug/mL			
25	CCB	S1011160150		0 0			Vanadium	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
25	CCB	S1011160150		0 0			Tungsten	LIQUID		<2.0000E-01			0.2	ug/mL			
25	CCB	S1011160150		0 0			Yttrium	LIQUID		<2.0000E-03			2.00E-03	ug/mL			
25	CCB	S1011160150		0 0			Zinc	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
25	CCB	S1011160150		0 0			Zirconium	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
Sample Sequence 27																	
29	SPK-POST	S1011160148	S10V001792	0 2			Aluminum	SOLID	1000	1.6770E+03			0.03	ug/g	97.95	% Recovery	
27	SPK-POST	S1011160148	S10V001792	0 0			Barium	SOLID	100	1.0367E+02			3.00E-03	ug/g	96.999	% Recovery	
27	SPK-POST	S1011160148	S10V001792	0 0			Beryllium	SOLID	100	9.2240E+01			1.00E-03	ug/g	92.219	% Recovery	
29	SPK-POST	S1011160148	S10V001792	0 2			Calcium	SOLID	1000	1.8047E+03			0.05	ug/g	99.238	% Recovery	
28	SPK-POST	S1011160148	S10V001792	0 1			Cerium	SOLID	100	1.0075E+02			0.03	ug/g	98.668	% Recovery	
27	SPK-POST	S1011160148	S10V001792	0 0			Cobalt	SOLID	100	9.4264E+01			0.01	ug/g	93.773	% Recovery	
27	SPK-POST	S1011160148	S10V001792	0 0			Chromium	SOLID	100	9.4538E+01			5.00E-03	ug/g	92.762	% Recovery	
27	SPK-POST	S1011160148	S10V001792	0 0			Copper	SOLID	100	1.0080E+02			5.00E-03	ug/g	99.887	% Recovery	
29	SPK-POST	S1011160148	S10V001792	0 2			Iron	SOLID	1000	2.3121E+03			5.00E-03	ug/g	88.756	% Recovery	
27	SPK-POST	S1011160148	S10V001792	0 0			Potassium	SOLID	100	2.0258E+02			0.5	ug/g	80.558	% Recovery	
27	SPK-POST	S1011160148	S10V001792	0 0			Lanthanum	SOLID	100	9.4830E+01			3.00E-03	ug/g	93.877	% Recovery	

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LABCORE Completed Batch Report for Batch# 00024077

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
27	SPK-POST	S1011160148	S10V001792	0 0			Lithium	SOLID	100	1.0144E+02			3.00E-03	ug/g	100.45	% Recovery	
29	SPK-POST	S1011160148	S10V001792	0 2			Magnesium	SOLID	1000	1.4460E+03			0.05	ug/g	97.138	% Recovery	
27	SPK-POST	S1011160148	S10V001792	0 0			Manganese	SOLID	100	1.1879E+02			3.00E-03	ug/g	93.008	% Recovery	
27	SPK-POST	S1011160148	S10V001792	0 0			Molybdenum	SOLID	100	9.2327E+01			0.02	ug/g	92.327	% Recovery	
27	SPK-POST	S1011160148	S10V001792	0 0			Sodium	SOLID	100	1.2266E+02			0.1	ug/g	100.49	% Recovery	
27	SPK-POST	S1011160148	S10V001792	0 0			Neodymium	SOLID	100	9.3803E+01			0.01	ug/g	92.636	% Recovery	
27	SPK-POST	S1011160148	S10V001792	0 0			Nickel	SOLID	100	9.4148E+01			0.02	ug/g	92.648	% Recovery	
27	SPK-POST	S1011160148	S10V001792	0 0			Phosphorus	SOLID	100	1.3830E+02			0.05	ug/g	95.573	% Recovery	
27	SPK-POST	S1011160148	S10V001792	0 0			Sulfur	SOLID	100	1.0449E+02			0.1	ug/g	96.558	% Recovery	
27	SPK-POST	S1011160148	S10V001792	0 0			Silicon	SOLID	100	9.4158E+01			0.03	ug/g	88.122	% Recovery	
27	SPK-POST	S1011160148	S10V001792	0 0			Strontium	SOLID	100	9.8155E+01			3.00E-03	ug/g	94.758	% Recovery	
27	SPK-POST	S1011160148	S10V001792	0 0			Titanium	SOLID	100	1.6077E+02			5.00E-03	ug/g	89.077	% Recovery	
27	SPK-POST	S1011160148	S10V001792	0 0			Vanadium	SOLID	100	9.7222E+01			5.00E-03	ug/g	94.463	% Recovery	
28	SPK-POST	S1011160148	S10V001792	0 1			Yttrium	SOLID	100	9.3202E+01			2.00E-03	ug/g	92.685	% Recovery	
27	SPK-POST	S1011160148	S10V001792	0 0			Zinc	SOLID	100	9.7176E+01			5.00E-03	ug/g	94.035	% Recovery	
27	SPK-POST	S1011160148	S10V001792	0 0			Zirconium	SOLID	100	9.3674E+01			5.00E-03	ug/g	93.015	% Recovery	
Sample Sequence 30																	
30	SAMPLE	S10V001772		0 1	A		Aluminum	SOLID	N/A	7.6166E+03			2.4864	ug/g			
30	SAMPLE	S10V001772		0 1	A		Barium	SOLID	N/A	7.5689E+01			0.24864	ug/g			b
30	SAMPLE	S10V001772		0 1	A		Beryllium	SOLID	N/A	2.2096E-01			0.082882	ug/g			J
30	SAMPLE	S10V001772		0 1	A		Calcium	SOLID	N/A	1.1509E+04			4.1441	ug/g			
30	SAMPLE	S10V001772		0 1	A		Cerium	SOLID	N/A	2.0066E+01			2.4864	ug/g			Jb
30	SAMPLE	S10V001772		0 1	A		Cobalt	SOLID	N/A	7.0736E+00			0.82882	ug/g			J
30	SAMPLE	S10V001772		0 1	A		Chromium	SOLID	N/A	9.8554E+00			0.41441	ug/g			
30	SAMPLE	S10V001772		0 1	A		Copper	SOLID	N/A	1.2501E+01			0.41441	ug/g			
30	SAMPLE	S10V001772		0 1	A		Iron	SOLID	N/A	1.8525E+04			0.41441	ug/g			
30	SAMPLE	S10V001772		0 1	A		Potassium	SOLID	N/A	1.0787E+03			41.441	ug/g			
30	SAMPLE	S10V001772		0 1	A		Lanthanum	SOLID	N/A	9.7955E+00			0.24864	ug/g			
30	SAMPLE	S10V001772		0 1	A		Lithium	SOLID	N/A	8.7370E+00			0.24864	ug/g			
30	SAMPLE	S10V001772		0 1	A		Magnesium	SOLID	N/A	5.2566E+03			4.1441	ug/g			
30	SAMPLE	S10V001772		0 1	A		Manganese	SOLID	N/A	3.0677E+02			0.24864	ug/g			
30	SAMPLE	S10V001772		0 1	A		Molybdenum	SOLID	N/A	<1.6576E+00			1.6576	ug/g			U
30	SAMPLE	S10V001772		0 1	A		Sodium	SOLID	N/A	4.1404E+02			8.2882	ug/g			
30	SAMPLE	S10V001772		0 1	A		Neodymium	SOLID	N/A	1.3184E+01			0.82882	ug/g			
30	SAMPLE	S10V001772		0 1	A		Nickel	SOLID	N/A	1.2298E+01			1.6576	ug/g			J
30	SAMPLE	S10V001772		0 1	A		Phosphorus	SOLID	N/A	7.3849E+02			4.1441	ug/g			
30	SAMPLE	S10V001772		0 1	A		Lead	SOLID	N/A	<4.1441E+00			4.1441	ug/g			U
30	SAMPLE	S10V001772		0 1	A		Sulfur	SOLID	N/A	7.6961E+01			8.2882	ug/g			Jb
30	SAMPLE	S10V001772		0 1	A		Silicon	SOLID	N/A	6.3802E+01			2.4864	ug/g			
30	SAMPLE	S10V001772		0 1	A		Strontium	SOLID	N/A	3.6053E+01			0.24864	ug/g			
30	SAMPLE	S10V001772		0 1	A		Titanium	SOLID	N/A	1.1881E+03			0.41441	ug/g			
30	SAMPLE	S10V001772		0 1	A		Vanadium	SOLID	N/A	4.2048E+01			0.41441	ug/g			

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30	SAMPLE	S10V001772		0 1	A		Yttrium	SOLID	N/A	8.1120E+00			0.16576	ug/g			
30	SAMPLE	S10V001772		0 1	A		Zinc	SOLID	N/A	3.7084E+01			0.41441	ug/g			
30	SAMPLE	S10V001772		0 1	A		Zirconium	SOLID	N/A	1.2743E+01			0.41441	ug/g			
Sample Sequence 31																	
31	SAMPLE	S10V001812		0 1	A		Aluminum	SOLID	N/A	8.3656E+03			2.4924	ug/g			
31	SAMPLE	S10V001812		0 1	A		Barium	SOLID	N/A	6.8026E+01			0.24924	ug/g			b
31	SAMPLE	S10V001812		0 1	A		Beryllium	SOLID	N/A	2.3113E-01			0.08308	ug/g			J
31	SAMPLE	S10V001812		0 1	A		Calcium	SOLID	N/A	9.9100E+03			4.154	ug/g			
31	SAMPLE	S10V001812		0 1	A		Cerium	SOLID	N/A	2.0858E+01			2.4924	ug/g			Jb
31	SAMPLE	S10V001812		0 1	A		Cobalt	SOLID	N/A	6.3289E+00			0.8308	ug/g			J
31	SAMPLE	S10V001812		0 1	A		Chromium	SOLID	N/A	4.4463E+01			0.4154	ug/g			
31	SAMPLE	S10V001812		0 1	A		Copper	SOLID	N/A	1.2029E+01			0.4154	ug/g			
31	SAMPLE	S10V001812		0 1	A		Iron	SOLID	N/A	1.8540E+04			0.4154	ug/g			
31	SAMPLE	S10V001812		0 1	A		Potassium	SOLID	N/A	1.1919E+03			41.54	ug/g			
31	SAMPLE	S10V001812		0 1	A		Lanthanum	SOLID	N/A	1.0834E+01			0.24924	ug/g			
31	SAMPLE	S10V001812		0 1	A		Lithium	SOLID	N/A	1.1607E+01			0.24924	ug/g			
31	SAMPLE	S10V001812		0 1	A		Magnesium	SOLID	N/A	6.0109E+03			4.154	ug/g			
31	SAMPLE	S10V001812		0 1	A		Manganese	SOLID	N/A	3.0651E+02			0.24924	ug/g			
31	SAMPLE	S10V001812		0 1	A		Molybdenum	SOLID	N/A	1.8802E+00			1.6616	ug/g			J
31	SAMPLE	S10V001812		0 1	A		Sodium	SOLID	N/A	3.1975E+02			8.308	ug/g			
31	SAMPLE	S10V001812		0 1	A		Neodymium	SOLID	N/A	1.2596E+01			0.8308	ug/g			
31	SAMPLE	S10V001812		0 1	A		Nickel	SOLID	N/A	2.9369E+01			1.6616	ug/g			
31	SAMPLE	S10V001812		0 1	A		Phosphorus	SOLID	N/A	5.7064E+02			4.154	ug/g			
31	SAMPLE	S10V001812		0 1	A		Sulfur	SOLID	N/A	7.6071E+01			8.308	ug/g			Jb
31	SAMPLE	S10V001812		0 1	A		Silicon	SOLID	N/A	6.0310E+01			2.4924	ug/g			
31	SAMPLE	S10V001812		0 1	A		Strontium	SOLID	N/A	3.4306E+01			0.24924	ug/g			
31	SAMPLE	S10V001812		0 1	A		Titanium	SOLID	N/A	9.0701E+02			0.4154	ug/g			
31	SAMPLE	S10V001812		0 1	A		Vanadium	SOLID	N/A	3.7630E+01			0.4154	ug/g			
31	SAMPLE	S10V001812		0 1	A		Yttrium	SOLID	N/A	6.8008E+00			0.16616	ug/g			
31	SAMPLE	S10V001812		0 1	A		Zinc	SOLID	N/A	3.7931E+01			0.4154	ug/g			
31	SAMPLE	S10V001812		0 1	A		Zirconium	SOLID	N/A	6.8802E+00			0.4154	ug/g			
Sample Sequence 32																	
32	CCV	S1011160153		0 0			Silver	LIQUID	1	9.8254E-01			5.00E-03	ug/mL	98.254	% Recovery	
32	CCV	S1011160153		0 0			Aluminum	LIQUID	5	5.1482E+00			0.03	ug/mL	102.96	% Recovery	
32	CCV	S1011160153		0 0			Arsenic	LIQUID	5	5.1021E+00			0.05	ug/mL	102.04	% Recovery	
32	CCV	S1011160153		0 0			Boron	LIQUID	5	5.0199E+00			0.03	ug/mL	100.4	% Recovery	
32	CCV	S1011160153		0 0			Barium	LIQUID	5	5.1706E+00			3.00E-03	ug/mL	103.41	% Recovery	
32	CCV	S1011160153		0 0			Beryllium	LIQUID	5	5.0931E+00			1.00E-03	ug/mL	101.86	% Recovery	
32	CCV	S1011160153		0 0			Bismuth	LIQUID	5	5.0314E+00			0.1	ug/mL	100.63	% Recovery	
32	CCV	S1011160153		0 0			Calcium	LIQUID	5	4.9784E+00			0.05	ug/mL	99.569	% Recovery	
32	CCV	S1011160153		0 0			Cadmium	LIQUID	5	5.1182E+00			5.00E-03	ug/mL	102.36	% Recovery	
34	CCV	S1011160153		0 2			Cerium	LIQUID	5	5.1119E+00			0.03	ug/mL	102.24	% Recovery	
34	CCV	S1011160153		0 2			Cobalt	LIQUID	5	4.9566E+00			0.01	ug/mL	99.133	% Recovery	

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LABCORE Completed Batch Report for Batch# 00024077

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
32	CCV	S1011160153		0 0			Chromium	LIQUID	5	5.1306E+00			5.00E-03	ug/mL	102.61	% Recovery	
32	CCV	S1011160153		0 0			Copper	LIQUID	5	5.1984E+00			5.00E-03	ug/mL	103.97	% Recovery	
34	CCV	S1011160153		0 2			Europium	LIQUID	5	4.7243E+00			5.00E-03	ug/mL	94.485	% Recovery	
32	CCV	S1011160153		0 0			Iron	LIQUID	5	5.0540E+00			5.00E-03	ug/mL	101.08	% Recovery	
32	CCV	S1011160153		0 0			Potassium	LIQUID	5	4.9048E+00			0.5	ug/mL	98.096	% Recovery	
32	CCV	S1011160153		0 0			Lanthanum	LIQUID	5	5.1403E+00			3.00E-03	ug/mL	102.81	% Recovery	
34	CCV	S1011160153		0 2			Lithium	LIQUID	5	5.2041E+00			3.00E-03	ug/mL	104.08	% Recovery	
32	CCV	S1011160153		0 0			Magnesium	LIQUID	5	5.1684E+00			0.05	ug/mL	103.37	% Recovery	
32	CCV	S1011160153		0 0			Manganese	LIQUID	5	5.0769E+00			3.00E-03	ug/mL	101.54	% Recovery	
32	CCV	S1011160153		0 0			Molybdenum	LIQUID	5	5.0994E+00			0.02	ug/mL	101.99	% Recovery	
34	CCV	S1011160153		0 2			Sodium	LIQUID	5	5.2612E+00			0.1	ug/mL	105.22	% Recovery	
35	CCV	S1011160153		0 3			Neodymium	LIQUID	5	4.9214E+00			0.01	ug/mL	98.427	% Recovery	
32	CCV	S1011160153		0 0			Nickel	LIQUID	5	5.0568E+00			0.02	ug/mL	101.14	% Recovery	
36	CCV	S1011160153		0 4			Niobium	LIQUID	5	5.0664E+00			0.03	ug/mL	101.33	% Recovery	
32	CCV	S1011160153		0 0			Phosphorus	LIQUID	5	5.0434E+00			0.05	ug/mL	100.87	% Recovery	
32	CCV	S1011160153		0 0			Lead	LIQUID	5	5.2293E+00			0.05	ug/mL	104.59	% Recovery	
35	CCV	S1011160153		0 3			Palladium	LIQUID	5	4.7272E+00			0.1	ug/mL	94.544	% Recovery	
34	CCV	S1011160153		0 2			Praseodymium	LIQUID	5	4.9687E+00			0.01	ug/mL	99.375	% Recovery	
35	CCV	S1011160153		0 3			Rubidium	LIQUID	5	4.6495E+00			1	ug/mL	92.991	% Recovery	
35	CCV	S1011160153		0 3			Rhodium	LIQUID	5	4.7982E+00			0.05	ug/mL	95.964	% Recovery	
35	CCV	S1011160153		0 3			Ruthenium	LIQUID	5	4.9895E+00			0.03	ug/mL	99.79	% Recovery	
32	CCV	S1011160153		0 0			Sulfur	LIQUID	5	5.2370E+00			0.1	ug/mL	104.74	% Recovery	
32	CCV	S1011160153		0 0			Antimony	LIQUID	5	5.0180E+00			0.05	ug/mL	100.36	% Recovery	
32	CCV	S1011160153		0 0			Selenium	LIQUID	5	5.3212E+00			0.1	ug/mL	106.42	% Recovery	
32	CCV	S1011160153		0 0			Silicon	LIQUID	5	4.8330E+00			0.03	ug/mL	96.661	% Recovery	
34	CCV	S1011160153		0 2			Samarium	LIQUID	5	5.0863E+00			0.02	ug/mL	101.73	% Recovery	
36	CCV	S1011160153		0 4			Tin	LIQUID	5	5.1580E+00			0.03	ug/mL	103.16	% Recovery	
32	CCV	S1011160153		0 0			Strontium	LIQUID	5	5.1284E+00			3.00E-03	ug/mL	102.57	% Recovery	
36	CCV	S1011160153		0 4			Tantalum	LIQUID	5	5.0624E+00			0.05	ug/mL	101.25	% Recovery	
36	CCV	S1011160153		0 4			Tellurium	LIQUID	5	5.1552E+00			0.1	ug/mL	103.1	% Recovery	
35	CCV	S1011160153		0 3			Thorium	LIQUID	5	4.9510E+00			0.05	ug/mL	99.02	% Recovery	
32	CCV	S1011160153		0 0			Titanium	LIQUID	5	4.9876E+00			5.00E-03	ug/mL	99.752	% Recovery	
34	CCV	S1011160153		0 2			Thallium	LIQUID	5	4.9637E+00			0.1	ug/mL	99.274	% Recovery	
34	CCV	S1011160153		0 2			Uranium	LIQUID	5	5.0592E+00			0.1	ug/mL	101.18	% Recovery	
34	CCV	S1011160153		0 2			Vanadium	LIQUID	5	4.9989E+00			5.00E-03	ug/mL	99.977	% Recovery	
36	CCV	S1011160153		0 4			Tungsten	LIQUID	5	4.9405E+00			0.2	ug/mL	98.81	% Recovery	
35	CCV	S1011160153		0 3			Yttrium	LIQUID	5	4.9423E+00			2.00E-03	ug/mL	98.846	% Recovery	
32	CCV	S1011160153		0 0			Zinc	LIQUID	5	5.0741E+00			5.00E-03	ug/mL	101.48	% Recovery	
32	CCV	S1011160153		0 0			Zirconium	LIQUID	5	4.8978E+00			5.00E-03	ug/mL	97.956	% Recovery	
Sample Sequence 37																	
37	CCB	S1011160154		0 0			Silver	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
37	CCB	S1011160154		0 0			Aluminum	LIQUID		<3.0000E-02			0.03	ug/mL			

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LABCORE Completed Batch Report for Batch# 00024077

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
37	CCB	S1011160154		0 0			Arsenic	LIQUID		<5.0000E-02			0.05	ug/mL			
37	CCB	S1011160154		0 0			Boron	LIQUID		<3.0000E-02			0.03	ug/mL			
37	CCB	S1011160154		0 0			Barium	LIQUID		<3.0000E-03			3.00E-03	ug/mL			
37	CCB	S1011160154		0 0			Beryllium	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
37	CCB	S1011160154		0 0			Bismuth	LIQUID		<1.0000E-01			0.1	ug/mL			
37	CCB	S1011160154		0 0			Calcium	LIQUID		<5.0000E-02			0.05	ug/mL			
37	CCB	S1011160154		0 0			Cadmium	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
37	CCB	S1011160154		0 0			Cerium	LIQUID		<3.0000E-02			0.03	ug/mL			
37	CCB	S1011160154		0 0			Cobalt	LIQUID		<1.0000E-02			0.01	ug/mL			
37	CCB	S1011160154		0 0			Chromium	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
37	CCB	S1011160154		0 0			Copper	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
37	CCB	S1011160154		0 0			Europium	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
37	CCB	S1011160154		0 0			Iron	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
37	CCB	S1011160154		0 0			Potassium	LIQUID		<5.0000E-01			0.5	ug/mL			
37	CCB	S1011160154		0 0			Lanthanum	LIQUID		<3.0000E-03			3.00E-03	ug/mL			
37	CCB	S1011160154		0 0			Lithium	LIQUID		<3.0000E-03			3.00E-03	ug/mL			
37	CCB	S1011160154		0 0			Magnesium	LIQUID		<5.0000E-02			0.05	ug/mL			
37	CCB	S1011160154		0 0			Manganese	LIQUID		<3.0000E-03			3.00E-03	ug/mL			
37	CCB	S1011160154		0 0			Molybdenum	LIQUID		<2.0000E-02			0.02	ug/mL			
37	CCB	S1011160154		0 0			Sodium	LIQUID		<1.0000E-01			0.1	ug/mL			
37	CCB	S1011160154		0 0			Neodymium	LIQUID		<1.0000E-02			0.01	ug/mL			
37	CCB	S1011160154		0 0			Nickel	LIQUID		<2.0000E-02			0.02	ug/mL			
37	CCB	S1011160154		0 0			Niobium	LIQUID		<3.0000E-02			0.03	ug/mL			
37	CCB	S1011160154		0 0			Phosphorus	LIQUID		<5.0000E-02			0.05	ug/mL			
37	CCB	S1011160154		0 0			Lead	LIQUID		<5.0000E-02			0.05	ug/mL			
38	CCB	S1011160154		0 1			Palladium	LIQUID		<1.0000E-01			0.1	ug/mL			
37	CCB	S1011160154		0 0			Praseodymium	LIQUID		<1.0000E-02			0.01	ug/mL			
37	CCB	S1011160154		0 0			Rubidium	LIQUID		<1.0000E+00			1	ug/mL			
37	CCB	S1011160154		0 0			Rhodium	LIQUID		<5.0000E-02			0.05	ug/mL			
37	CCB	S1011160154		0 0			Ruthenium	LIQUID		<3.0000E-02			0.03	ug/mL			
37	CCB	S1011160154		0 0			Sulfur	LIQUID		<1.0000E-01			0.1	ug/mL			
37	CCB	S1011160154		0 0			Antimony	LIQUID		<5.0000E-02			0.05	ug/mL			
37	CCB	S1011160154		0 0			Selenium	LIQUID		<1.0000E-01			0.1	ug/mL			
37	CCB	S1011160154		0 0			Silicon	LIQUID		<3.0000E-02			0.03	ug/mL			
37	CCB	S1011160154		0 0			Samarium	LIQUID		<2.0000E-02			0.02	ug/mL			
37	CCB	S1011160154		0 0			Tin	LIQUID		<3.0000E-02			0.03	ug/mL			
37	CCB	S1011160154		0 0			Strontium	LIQUID		<3.0000E-03			3.00E-03	ug/mL			
37	CCB	S1011160154		0 0			Tantalum	LIQUID		<5.0000E-02			0.05	ug/mL			
37	CCB	S1011160154		0 0			Tellurium	LIQUID		<1.0000E-01			0.1	ug/mL			
37	CCB	S1011160154		0 0			Thorium	LIQUID		<5.0000E-02			0.05	ug/mL			
37	CCB	S1011160154		0 0			Titanium	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
37	CCB	S1011160154		0 0			Thallium	LIQUID		<1.0000E-01			0.1	ug/mL			

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LABCORE Completed Batch Report for Batch# 00024077

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
37	CCB	S1011160154		0 0			Uranium	LIQUID		<1.0000E-01			0.1	ug/mL			
37	CCB	S1011160154		0 0			Vanadium	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
37	CCB	S1011160154		0 0			Tungsten	LIQUID		<2.0000E-01			0.2	ug/mL			
37	CCB	S1011160154		0 0			Yttrium	LIQUID		<2.0000E-03			2.00E-03	ug/mL			
37	CCB	S1011160154		0 0			Zinc	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
37	CCB	S1011160154		0 0			Zirconium	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
Sample Sequence 39																	
39	ICSA	S1011160151		0 0			Aluminum	LIQUID	200	2.0200E+02			0.03	ug/mL	101	% Recovery	
39	ICSA	S1011160151		0 0			Barium	LIQUID		<3.0000E-03			3.00E-03	ug/mL	N/A		
39	ICSA	S1011160151		0 0			Beryllium	LIQUID		<1.0000E-03			1.00E-03	ug/mL	N/A		
39	ICSA	S1011160151		0 0			Calcium	LIQUID	200	2.0380E+02			0.05	ug/mL	101.9	% Recovery	
39	ICSA	S1011160151		0 0			Cerium	LIQUID		<3.0000E-02			0.03	ug/mL	N/A		
39	ICSA	S1011160151		0 0			Cobalt	LIQUID		<1.0000E-02			0.01	ug/mL	N/A		
39	ICSA	S1011160151		0 0			Chromium	LIQUID		<5.0000E-03			5.00E-03	ug/mL	N/A		
39	ICSA	S1011160151		0 0			Copper	LIQUID		<5.0000E-03			5.00E-03	ug/mL	N/A		
39	ICSA	S1011160151		0 0			Iron	LIQUID	200	1.8739E+02			5.00E-03	ug/mL	93.695	% Recovery	
39	ICSA	S1011160151		0 0			Potassium	LIQUID		<5.0000E-01			0.5	ug/mL	N/A		
39	ICSA	S1011160151		0 0			Lanthanum	LIQUID		<3.0000E-03			3.00E-03	ug/mL	N/A		
39	ICSA	S1011160151		0 0			Lithium	LIQUID		<3.0000E-03			3.00E-03	ug/mL	N/A		
39	ICSA	S1011160151		0 0			Magnesium	LIQUID	200	2.0009E+02			0.05	ug/mL	100.05	% Recovery	
39	ICSA	S1011160151		0 0			Manganese	LIQUID		5.2200E-02			3.00E-03	ug/mL	N/A		
39	ICSA	S1011160151		0 0			Molybdenum	LIQUID		<2.0000E-02			0.02	ug/mL	N/A		
39	ICSA	S1011160151		0 0			Sodium	LIQUID	200	1.9481E+02			0.1	ug/mL	97.405	% Recovery	
39	ICSA	S1011160151		0 0			Neodymium	LIQUID		<1.0000E-02			0.01	ug/mL	N/A		
39	ICSA	S1011160151		0 0			Nickel	LIQUID		<2.0000E-02			0.02	ug/mL	N/A		
39	ICSA	S1011160151		0 0			Phosphorus	LIQUID		<5.0000E-02			0.05	ug/mL	N/A		
39	ICSA	S1011160151		0 0			Sulfur	LIQUID		<1.0000E-01			0.1	ug/mL	N/A		
39	ICSA	S1011160151		0 0			Silicon	LIQUID		<3.0000E-02			0.03	ug/mL	N/A		
39	ICSA	S1011160151		0 0			Strontium	LIQUID		<3.0000E-03			3.00E-03	ug/mL	N/A		
39	ICSA	S1011160151		0 0			Titanium	LIQUID		<5.0000E-03			5.00E-03	ug/mL	N/A		
39	ICSA	S1011160151		0 0			Vanadium	LIQUID		<5.0000E-03			5.00E-03	ug/mL	N/A		
39	ICSA	S1011160151		0 0			Yttrium	LIQUID		<2.0000E-03			2.00E-03	ug/mL	N/A		
39	ICSA	S1011160151		0 0			Zinc	LIQUID		<5.0000E-03			5.00E-03	ug/mL	N/A		
39	ICSA	S1011160151		0 0			Zirconium	LIQUID		<5.0000E-03			5.00E-03	ug/mL	N/A		
Sample Sequence 40																	
40	ICSAB	S1011160152		0 0			Aluminum	LIQUID	200	2.0057E+02			0.03	ug/mL	100.29	% Recovery	
40	ICSAB	S1011160152		0 0			Barium	LIQUID	1	9.3406E-01			3.00E-03	ug/mL	93.406	% Recovery	
40	ICSAB	S1011160152		0 0			Beryllium	LIQUID	.1	8.9070E-02			1.00E-03	ug/mL	89.07	% Recovery	
40	ICSAB	S1011160152		0 0			Calcium	LIQUID	200	1.9898E+02			0.05	ug/mL	99.492	% Recovery	
40	ICSAB	S1011160152		0 0			Cerium	LIQUID		<3.0000E-02			0.03	ug/mL	N/A		
40	ICSAB	S1011160152		0 0			Cobalt	LIQUID	5	4.8303E+00			0.01	ug/mL	96.605	% Recovery	
40	ICSAB	S1011160152		0 0			Chromium	LIQUID	5	4.7699E+00			5.00E-03	ug/mL	95.397	% Recovery	
40	ICSAB	S1011160152		0 0			Copper	LIQUID	5	5.0885E+00			5.00E-03	ug/mL	101.77	% Recovery	

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* = Rejected Analyte
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LABCORE Completed Batch Report for Batch# 00024077

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
40	ICSAB	S1011160152		0 0			Iron	LIQUID	200	1.8503E+02			5.00E-03	ug/mL	92.513	% Recovery	
40	ICSAB	S1011160152		0 0			Potassium	LIQUID		<5.0000E-01			0.5	ug/mL	N/A		
40	ICSAB	S1011160152		0 0			Lanthanum	LIQUID		<3.0000E-03			3.00E-03	ug/mL	N/A		
40	ICSAB	S1011160152		0 0			Lithium	LIQUID	1	9.8140E-01			3.00E-03	ug/mL	98.14	% Recovery	
40	ICSAB	S1011160152		0 0			Magnesium	LIQUID	200	1.9701E+02			0.05	ug/mL	98.505	% Recovery	
40	ICSAB	S1011160152		0 0			Manganese	LIQUID	5	4.7728E+00			3.00E-03	ug/mL	95.457	% Recovery	
40	ICSAB	S1011160152		0 0			Molybdenum	LIQUID	5	4.7077E+00			0.02	ug/mL	94.155	% Recovery	
40	ICSAB	S1011160152		0 0			Sodium	LIQUID	200	1.8960E+02			0.1	ug/mL	94.802	% Recovery	
40	ICSAB	S1011160152		0 0			Neodymium	LIQUID		6.4350E-02			0.01	ug/mL	N/A		
40	ICSAB	S1011160152		0 0			Nickel	LIQUID	5	4.7178E+00			0.02	ug/mL	94.357	% Recovery	
40	ICSAB	S1011160152		0 0			Phosphorus	LIQUID	1	9.3943E-01			0.05	ug/mL	93.943	% Recovery	
40	ICSAB	S1011160152		0 0			Sulfur	LIQUID		<1.0000E-01			0.1	ug/mL	N/A		
40	ICSAB	S1011160152		0 0			Silicon	LIQUID	5	4.7680E+00			0.03	ug/mL	95.361	% Recovery	
40	ICSAB	S1011160152		0 0			Strontium	LIQUID	1	9.4499E-01			3.00E-03	ug/mL	94.499	% Recovery	
40	ICSAB	S1011160152		0 0			Titanium	LIQUID	50	4.7424E+01			5.00E-03	ug/mL	94.848	% Recovery	
40	ICSAB	S1011160152		0 0			Vanadium	LIQUID	1	9.7622E-01			5.00E-03	ug/mL	97.622	% Recovery	
40	ICSAB	S1011160152		0 0			Yttrium	LIQUID		<2.0000E-03			2.00E-03	ug/mL	N/A		
40	ICSAB	S1011160152		0 0			Zinc	LIQUID	5	4.8672E+00			5.00E-03	ug/mL	97.344	% Recovery	
40	ICSAB	S1011160152		0 0			Zirconium	LIQUID	5	4.5475E+00			5.00E-03	ug/mL	90.951	% Recovery	
Sample Sequence 41																	
41	CCV	S1011160166		0 0			Silver	LIQUID	1	9.9943E-01			5.00E-03	ug/mL	99.943	% Recovery	
41	CCV	S1011160166		0 0			Aluminum	LIQUID	5	5.2148E+00			0.03	ug/mL	104.3	% Recovery	
41	CCV	S1011160166		0 0			Arsenic	LIQUID	5	5.1978E+00			0.05	ug/mL	103.96	% Recovery	
41	CCV	S1011160166		0 0			Boron	LIQUID	5	5.1017E+00			0.03	ug/mL	102.03	% Recovery	
41	CCV	S1011160166		0 0			Barium	LIQUID	5	5.2736E+00			3.00E-03	ug/mL	105.47	% Recovery	
41	CCV	S1011160166		0 0			Beryllium	LIQUID	5	5.1555E+00			1.00E-03	ug/mL	103.11	% Recovery	
41	CCV	S1011160166		0 0			Bismuth	LIQUID	5	5.1591E+00			0.1	ug/mL	103.18	% Recovery	
41	CCV	S1011160166		0 0			Calcium	LIQUID	5	5.0671E+00			0.05	ug/mL	101.34	% Recovery	
41	CCV	S1011160166		0 0			Cadmium	LIQUID	5	5.2058E+00			5.00E-03	ug/mL	104.12	% Recovery	
43	CCV	S1011160166		0 2			Cerium	LIQUID	5	5.2058E+00			0.03	ug/mL	104.12	% Recovery	
41	CCV	S1011160166		0 0			Cobalt	LIQUID	5	5.3261E+00			0.01	ug/mL	106.52	% Recovery	
41	CCV	S1011160166		0 0			Chromium	LIQUID	5	5.2246E+00			5.00E-03	ug/mL	104.49	% Recovery	
41	CCV	S1011160166		0 0			Copper	LIQUID	5	5.2840E+00			5.00E-03	ug/mL	105.68	% Recovery	
44	CCV	S1011160166		0 3			Europium	LIQUID	5	4.9735E+00			5.00E-03	ug/mL	99.47	% Recovery	
41	CCV	S1011160166		0 0			Iron	LIQUID	5	5.1436E+00			5.00E-03	ug/mL	102.87	% Recovery	
41	CCV	S1011160166		0 0			Potassium	LIQUID	5	5.1002E+00			0.5	ug/mL	102	% Recovery	
41	CCV	S1011160166		0 0			Lanthanum	LIQUID	5	5.2214E+00			3.00E-03	ug/mL	104.43	% Recovery	
43	CCV	S1011160166		0 2			Lithium	LIQUID	5	5.4212E+00			3.00E-03	ug/mL	108.42	% Recovery	
41	CCV	S1011160166		0 0			Magnesium	LIQUID	5	5.2302E+00			0.05	ug/mL	104.6	% Recovery	
41	CCV	S1011160166		0 0			Manganese	LIQUID	5	5.1610E+00			3.00E-03	ug/mL	103.22	% Recovery	
41	CCV	S1011160166		0 0			Molybdenum	LIQUID	5	5.2004E+00			0.02	ug/mL	104.01	% Recovery	
43	CCV	S1011160166		0 2			Sodium	LIQUID	5	5.2025E+00			0.1	ug/mL	104.05	% Recovery	

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LABCORE Completed Batch Report for Batch# 00024077

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
44	CCV	S1011160166		0 3			Neodymium	LIQUID	5	4.9636E+00			0.01	ug/mL	99.272	% Recovery	
41	CCV	S1011160166		0 0			Nickel	LIQUID	5	5.1640E+00			0.02	ug/mL	103.28	% Recovery	
45	CCV	S1011160166		0 4			Niobium	LIQUID	5	5.0309E+00			0.03	ug/mL	100.62	% Recovery	
41	CCV	S1011160166		0 0			Phosphorus	LIQUID	5	5.1224E+00			0.05	ug/mL	102.45	% Recovery	
41	CCV	S1011160166		0 0			Lead	LIQUID	5	5.3605E+00			0.05	ug/mL	107.21	% Recovery	
44	CCV	S1011160166		0 3			Palladium	LIQUID	5	4.8164E+00			0.1	ug/mL	96.329	% Recovery	
43	CCV	S1011160166		0 2			Praseodymium	LIQUID	5	5.0507E+00			0.01	ug/mL	101.01	% Recovery	
44	CCV	S1011160166		0 3			Rubidium	LIQUID	5	4.9540E+00			1	ug/mL	99.081	% Recovery	
44	CCV	S1011160166		0 3			Rhodium	LIQUID	5	4.8650E+00			0.05	ug/mL	97.301	% Recovery	
44	CCV	S1011160166		0 3			Ruthenium	LIQUID	5	5.0989E+00			0.03	ug/mL	101.98	% Recovery	
41	CCV	S1011160166		0 0			Sulfur	LIQUID	5	5.3034E+00			0.1	ug/mL	106.07	% Recovery	
41	CCV	S1011160166		0 0			Antimony	LIQUID	5	5.1418E+00			0.05	ug/mL	102.84	% Recovery	
41	CCV	S1011160166		0 0			Selenium	LIQUID	5	5.2714E+00			0.1	ug/mL	105.43	% Recovery	
41	CCV	S1011160166		0 0			Silicon	LIQUID	5	4.9087E+00			0.03	ug/mL	98.174	% Recovery	
43	CCV	S1011160166		0 2			Samarium	LIQUID	5	5.1586E+00			0.02	ug/mL	103.17	% Recovery	
45	CCV	S1011160166		0 4			Tin	LIQUID	5	5.1283E+00			0.03	ug/mL	102.57	% Recovery	
41	CCV	S1011160166		0 0			Strontium	LIQUID	5	5.2120E+00			3.00E-03	ug/mL	104.24	% Recovery	
45	CCV	S1011160166		0 4			Tantalum	LIQUID	5	5.0033E+00			0.05	ug/mL	100.07	% Recovery	
45	CCV	S1011160166		0 4			Tellurium	LIQUID	5	5.0082E+00			0.1	ug/mL	100.16	% Recovery	
44	CCV	S1011160166		0 3			Thorium	LIQUID	5	5.0409E+00			0.05	ug/mL	100.82	% Recovery	
41	CCV	S1011160166		0 0			Titanium	LIQUID	5	5.0622E+00			5.00E-03	ug/mL	101.24	% Recovery	
43	CCV	S1011160166		0 2			Thallium	LIQUID	5	5.1189E+00			0.1	ug/mL	102.38	% Recovery	
43	CCV	S1011160166		0 2			Uranium	LIQUID	5	5.1615E+00			0.1	ug/mL	103.23	% Recovery	
43	CCV	S1011160166		0 2			Vanadium	LIQUID	5	5.0980E+00			5.00E-03	ug/mL	101.96	% Recovery	
45	CCV	S1011160166		0 4			Tungsten	LIQUID	5	4.9232E+00			0.2	ug/mL	98.464	% Recovery	
43	CCV	S1011160166		0 2			Yttrium	LIQUID	5	4.8478E+00			2.00E-03	ug/mL	96.957	% Recovery	
41	CCV	S1011160166		0 0			Zinc	LIQUID	5	5.1532E+00			5.00E-03	ug/mL	103.06	% Recovery	
41	CCV	S1011160166		0 0			Zirconium	LIQUID	5	4.9898E+00			5.00E-03	ug/mL	99.797	% Recovery	
Sample Sequence 46																	
47	LLS	S1011160167		0 1			Silver	LIQUID	.02	1.8960E-02			5.00E-05	ug/mL	94.8	% Recovery	
47	LLS	S1011160167		0 1			Aluminum	LIQUID	.1	9.6570E-02			3.00E-04	ug/mL	96.57	% Recovery	
46	LLS	S1011160167		0 0			Arsenic	LIQUID	.2	2.2960E-01			5.00E-04	ug/mL	114.8	% Recovery	
48	LLS	S1011160167		0 2			Boron	LIQUID	.1	1.0089E-01			3.00E-04	ug/mL	100.89	% Recovery	
46	LLS	S1011160167		0 0			Barium	LIQUID	.01	9.8300E-03			3.00E-05	ug/mL	98.3	% Recovery	
47	LLS	S1011160167		0 1			Beryllium	LIQUID	.001	1.0500E-03			1.00E-05	ug/mL	105	% Recovery	
47	LLS	S1011160167		0 1			Bismuth	LIQUID	.2	1.7694E-01			1.00E-03	ug/mL	88.47	% Recovery	
47	LLS	S1011160167		0 1			Calcium	LIQUID	.2	1.8906E-01			5.00E-04	ug/mL	94.53	% Recovery	
47	LLS	S1011160167		0 1			Cadmium	LIQUID	.01	1.0670E-02			5.00E-05	ug/mL	106.7	% Recovery	
47	LLS	S1011160167		0 1			Cerium	LIQUID	.2	1.9767E-01			3.00E-04	ug/mL	98.835	% Recovery	
48	LLS	S1011160167		0 2			Cobalt	LIQUID	.04	4.3440E-02			1.00E-04	ug/mL	108.6	% Recovery	
46	LLS	S1011160167		0 0			Chromium	LIQUID	.02	1.8310E-02			5.00E-05	ug/mL	91.55	% Recovery	
48	LLS	S1011160167		0 2			Copper	LIQUID	.02	2.1180E-02			5.00E-05	ug/mL	105.9	% Recovery	

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LABCORE Completed Batch Report for Batch# 00024077

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
49	LLS	S1011160167		0 3			Europium	LIQUID	.1	9.5340E-02			5.00E-04	ug/mL	95.34	% Recovery	
46	LLS	S1011160167		0 0			Iron	LIQUID	.05	4.7510E-02			5.00E-05	ug/mL	95.02	% Recovery	
46	LLS	S1011160167		0 0			Potassium	LIQUID	.5	5.3099E-01			5.00E-03	ug/mL	106.2	% Recovery	
47	LLS	S1011160167		0 1			Lanthanum	LIQUID	.01	1.0660E-02			3.00E-05	ug/mL	106.6	% Recovery	
46	LLS	S1011160167		0 0			Lithium	LIQUID	.02	2.3600E-02			3.00E-05	ug/mL	118	% Recovery	
47	LLS	S1011160167		0 1			Magnesium	LIQUID	.2	1.7640E-01			5.00E-04	ug/mL	88.2	% Recovery	
46	LLS	S1011160167		0 0			Manganese	LIQUID	.02	1.9120E-02			3.00E-05	ug/mL	95.6	% Recovery	
48	LLS	S1011160167		0 2			Molybdenum	LIQUID	.1	1.0723E-01			2.00E-04	ug/mL	107.23	% Recovery	
47	LLS	S1011160167		0 1			Sodium	LIQUID	.2	2.2691E-01			1.00E-03	ug/mL	113.46	% Recovery	
47	LLS	S1011160167		0 1			Neodymium	LIQUID	.1	9.7290E-02			1.00E-04	ug/mL	97.29	% Recovery	
46	LLS	S1011160167		0 0			Nickel	LIQUID	.04	4.4270E-02			2.00E-04	ug/mL	110.68	% Recovery	
51	LLS	S1011160167		0 5			Niobium	LIQUID	.1	1.1891E-01			3.00E-03	ug/mL	118.91	% Recovery	
48	LLS	S1011160167		0 2			Phosphorus	LIQUID	.4	3.6542E-01			5.00E-04	ug/mL	91.355	% Recovery	
46	LLS	S1011160167		0 0			Lead	LIQUID	.2	1.5920E-01			5.00E-04	ug/mL	79.6	% Recovery	
50	LLS	S1011160167		0 4			Palladium	LIQUID	1	1.0227E+00			0.01	ug/mL	102.27	% Recovery	
49	LLS	S1011160167		0 3			Praseodymium	LIQUID	.1	1.0589E-01			1.00E-03	ug/mL	105.89	% Recovery	
50	LLS	S1011160167		0 4			Rhodium	LIQUID	.1	1.0407E-01			5.00E-03	ug/mL	104.07	% Recovery	
50	LLS	S1011160167		0 4			Ruthenium	LIQUID	.1	1.0287E-01			3.00E-03	ug/mL	102.87	% Recovery	
48	LLS	S1011160167		0 2			Sulfur	LIQUID	.2	1.8994E-01			1.00E-03	ug/mL	94.97	% Recovery	
48	LLS	S1011160167		0 2			Antimony	LIQUID	.1	1.1079E-01			5.00E-04	ug/mL	110.79	% Recovery	
46	LLS	S1011160167		0 0			Selenium	LIQUID	.2	2.0548E-01			1.00E-03	ug/mL	102.74	% Recovery	
48	LLS	S1011160167		0 2			Silicon	LIQUID	.1	8.6150E-02			3.00E-04	ug/mL	86.15	% Recovery	
47	LLS	S1011160167		0 1			Samarium	LIQUID	.1	1.0813E-01			2.00E-04	ug/mL	108.13	% Recovery	
51	LLS	S1011160167		0 5			Tin	LIQUID	.1	1.1491E-01			3.00E-03	ug/mL	114.91	% Recovery	
46	LLS	S1011160167		0 0			Strontium	LIQUID	.02	1.9990E-02			3.00E-05	ug/mL	99.95	% Recovery	
51	LLS	S1011160167		0 5			Tantalum	LIQUID	1	9.5158E-01			5.00E-03	ug/mL	95.158	% Recovery	
51	LLS	S1011160167		0 5			Tellurium	LIQUID	1	9.4083E-01			0.01	ug/mL	94.083	% Recovery	
49	LLS	S1011160167		0 3			Thorium	LIQUID	.1	9.7030E-02			5.00E-03	ug/mL	97.03	% Recovery	
48	LLS	S1011160167		0 2			Titanium	LIQUID	.02	1.9130E-02			5.00E-05	ug/mL	95.65	% Recovery	
47	LLS	S1011160167		0 1			Thallium	LIQUID	.4	4.0425E-01			1.00E-03	ug/mL	101.06	% Recovery	
48	LLS	S1011160167		0 2			Uranium	LIQUID	.5	5.4389E-01			1.00E-03	ug/mL	108.78	% Recovery	
48	LLS	S1011160167		0 2			Vanadium	LIQUID	.05	5.0880E-02			5.00E-05	ug/mL	101.76	% Recovery	
51	LLS	S1011160167		0 5			Tungsten	LIQUID	1	9.3416E-01			0.02	ug/mL	93.416	% Recovery	
49	LLS	S1011160167		0 3			Yttrium	LIQUID	.1	9.7600E-02			2.00E-04	ug/mL	97.6	% Recovery	
48	LLS	S1011160167		0 2			Zinc	LIQUID	.02	1.8160E-02			5.00E-05	ug/mL	90.8	% Recovery	
48	LLS	S1011160167		0 2			Zirconium	LIQUID	.02	1.8940E-02			5.00E-05	ug/mL	94.7	% Recovery	
Sample Sequence 52																	
52	CCB	S1011160165		0 0			Silver	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
52	CCB	S1011160165		0 0			Aluminum	LIQUID		<3.0000E-02			0.03	ug/mL			
52	CCB	S1011160165		0 0			Arsenic	LIQUID		<5.0000E-02			0.05	ug/mL			
52	CCB	S1011160165		0 0			Boron	LIQUID		<3.0000E-02			0.03	ug/mL			
52	CCB	S1011160165		0 0			Barium	LIQUID		<3.0000E-03			3.00E-03	ug/mL			

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N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00024077

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
52	CCB	S1011160165		0 0			Beryllium	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
52	CCB	S1011160165		0 0			Bismuth	LIQUID		<1.0000E-01			0.1	ug/mL			
52	CCB	S1011160165		0 0			Calcium	LIQUID		<5.0000E-02			0.05	ug/mL			
52	CCB	S1011160165		0 0			Cadmium	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
52	CCB	S1011160165		0 0			Cerium	LIQUID		<3.0000E-02			0.03	ug/mL			
52	CCB	S1011160165		0 0			Cobalt	LIQUID		<1.0000E-02			0.01	ug/mL			
52	CCB	S1011160165		0 0			Chromium	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
52	CCB	S1011160165		0 0			Copper	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
52	CCB	S1011160165		0 0			Europium	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
52	CCB	S1011160165		0 0			Iron	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
52	CCB	S1011160165		0 0			Potassium	LIQUID		<5.0000E-01			0.5	ug/mL			
52	CCB	S1011160165		0 0			Lanthanum	LIQUID		<3.0000E-03			3.00E-03	ug/mL			
52	CCB	S1011160165		0 0			Lithium	LIQUID		<3.0000E-03			3.00E-03	ug/mL			
52	CCB	S1011160165		0 0			Magnesium	LIQUID		<5.0000E-02			0.05	ug/mL			
52	CCB	S1011160165		0 0			Manganese	LIQUID		<3.0000E-03			3.00E-03	ug/mL			
52	CCB	S1011160165		0 0			Molybdenum	LIQUID		<2.0000E-02			0.02	ug/mL			
52	CCB	S1011160165		0 0			Sodium	LIQUID		<1.0000E-01			0.1	ug/mL			
52	CCB	S1011160165		0 0			Neodymium	LIQUID		<1.0000E-02			0.01	ug/mL			
52	CCB	S1011160165		0 0			Nickel	LIQUID		<2.0000E-02			0.02	ug/mL			
52	CCB	S1011160165		0 0			Niobium	LIQUID		<3.0000E-02			0.03	ug/mL			
52	CCB	S1011160165		0 0			Phosphorus	LIQUID		<5.0000E-02			0.05	ug/mL			
52	CCB	S1011160165		0 0			Lead	LIQUID		<5.0000E-02			0.05	ug/mL			
52	CCB	S1011160165		0 0			Palladium	LIQUID		<1.0000E-01			0.1	ug/mL			
52	CCB	S1011160165		0 0			Praseodymium	LIQUID		<1.0000E-02			0.01	ug/mL			
52	CCB	S1011160165		0 0			Rubidium	LIQUID		<1.0000E+00			1	ug/mL			
52	CCB	S1011160165		0 0			Rhodium	LIQUID		<5.0000E-02			0.05	ug/mL			
52	CCB	S1011160165		0 0			Ruthenium	LIQUID		<3.0000E-02			0.03	ug/mL			
52	CCB	S1011160165		0 0			Sulfur	LIQUID		<1.0000E-01			0.1	ug/mL			
52	CCB	S1011160165		0 0			Antimony	LIQUID		<5.0000E-02			0.05	ug/mL			
52	CCB	S1011160165		0 0			Selenium	LIQUID		<1.0000E-01			0.1	ug/mL			
52	CCB	S1011160165		0 0			Silicon	LIQUID		<3.0000E-02			0.03	ug/mL			
52	CCB	S1011160165		0 0			Samarium	LIQUID		<2.0000E-02			0.02	ug/mL			
52	CCB	S1011160165		0 0			Tin	LIQUID		<3.0000E-02			0.03	ug/mL			
52	CCB	S1011160165		0 0			Strontium	LIQUID		<3.0000E-03			3.00E-03	ug/mL			
52	CCB	S1011160165		0 0			Tantalum	LIQUID		<5.0000E-02			0.05	ug/mL			
52	CCB	S1011160165		0 0			Tellurium	LIQUID		<1.0000E-01			0.1	ug/mL			
52	CCB	S1011160165		0 0			Thorium	LIQUID		<5.0000E-02			0.05	ug/mL			
52	CCB	S1011160165		0 0			Titanium	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
52	CCB	S1011160165		0 0			Thallium	LIQUID		<1.0000E-01			0.1	ug/mL			
52	CCB	S1011160165		0 0			Uranium	LIQUID		<1.0000E-01			0.1	ug/mL			
52	CCB	S1011160165		0 0			Vanadium	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
52	CCB	S1011160165		0 0			Tungsten	LIQUID		<2.0000E-01			0.2	ug/mL			

Units shown for QC (BLK/BKG) may not reflect the actual units.

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00024077

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
52	CCB	S1011160165		0 0			Yttrium	LIQUID		<2.0000E-03			2.00E-03	ug/mL			
52	CCB	S1011160165		0 0			Zinc	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
52	CCB	S1011160165		0 0			Zirconium	LIQUID		<5.0000E-03			5.00E-03	ug/mL			

Comments Section:

Data Flagger Status:
Flagging Completed

Final Page for Batch# 00024077

Reviewer Signature **Date**

Units shown for QC (BLK/BKG) may not reflect the actual units.

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LABCORE Completed Batch Report for Batch# 00024077

Seq	Sample#	QC Type	Assoc. Sample	Sample Group	Customer Id	Specification
1	S1011160142	ICV				
2	S1011160142	ICV				
3	S1011160142	ICV				
4	S1011160144	LLS				
5	S1011160144	LLS				
6	S1011160144	LLS				
7	S1011160144	LLS				
8	S1011160144	LLS				
9	S1011160144	LLS				
10	S1011160143	ICB				
11	S1011160145	ICSA				
12	S1011160146	ICSAB				
13	S1011050120	BLNK-PREP				
14	S1011090069	STD-PREP				
15	S1011050121	STD-PREP				
16	S1011160147	SERDIL	S10V001792			
17	S10V001792	SAMPLE		20100556	B26CD2	C Farm WMC 2010-2
18	S1011050122	DUP	S10V001792			
19	S1011050123	SPK-PREDIG	S10V001792			
20	S1011090070	SPK-PREDIG	S10V001792			
21	S1011160149	CCV				
22	S1011160149	CCV				
23	S1011160149	CCV				
24	S1011160149	CCV				
25	S1011160150	CCB				
26	S1011160150	CCB				
27	S1011160148	SPK-POST	S10V001792			
28	S1011160148	SPK-POST	S10V001792			
29	S1011160148	SPK-POST	S10V001792			
30	S10V001772	SAMPLE		20100556	B26CD0	C Farm WMC 2010-2
31	S10V001812	SAMPLE		20100556	B26CD4	C Farm WMC 2010-2
32	S1011160153	CCV				
33	S1011160153	CCV				
34	S1011160153	CCV				
35	S1011160153	CCV				

Units shown for QC (BLK/BKG) may not reflect the actual units.

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LABCORE Completed Batch Report for Batch# 00024077

36	S1011160153	CCV
37	S1011160154	CCB
38	S1011160154	CCB
39	S1011160151	ICSA
40	S1011160152	ICSAB
41	S1011160166	CCV
42	S1011160166	CCV
43	S1011160166	CCV
44	S1011160166	CCV
45	S1011160166	CCV
46	S1011160167	LLS
47	S1011160167	LLS
48	S1011160167	LLS
49	S1011160167	LLS
50	S1011160167	LLS
51	S1011160167	LLS
52	S1011160165	CCB

Units shown for QC (BLK/BKG) may not reflect the actual units.

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N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00021722

Analyst: Mull, Bryanna **Book#:**

Instrument: ICP/MS PQ-EXCELL

Method: MS PERIODIC TABLE, LA-506-102 Rev/Mod F-1

Specification: C Farm WMC 2010-2

Prep Batch: 00021495

Batch Comment:

C Farm 2010-2 Sb run

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
Sample Sequence 1																	
1	ICV	S1008300045		0 0			Antimony	LIQUID	.002	2.0160E-03			2.00E-06	ug/mL	100.8	% Recovery	
Sample Sequence 2																	
2	LLS	S1008300047		0 0			Antimony	LIQUID	.00001	1.1170E-05			2.00E-06	ug/mL	111.7	% Recovery	
Sample Sequence 3																	
3	ICB	S1008300046		0 0			Antimony	LIQUID		<2.0000E-06			2.00E-06	ug/mL			
Sample Sequence 4																	
4	BLNK-PREP	S1008230032		0 0	A		Antimony	LIQUID		<2.0000E-04			2.00E-04	ug/mL			
Sample Sequence 5																	
5	SERDIL	S1008300048	S10V001659	0 0			Antimony	SOLID		3.0710E-01			0.048309	ug/g	5.6166	% Diff	
Sample Sequence 6																	
6	SAMPLE	S10V001659		0 0	A		Antimony	SOLID	N/A	2.9077E-01			9.66E-03	ug/g			
Sample Sequence 7																	
7	SAMPLE	S10V001611		0 0	A		Antimony	SOLID	N/A	2.2892E-01			9.29E-03	ug/g			
Sample Sequence 8																	
8	SAMPLE	S10V001639		0 0	A		Antimony	SOLID	N/A	2.1549E-01			9.71E-03	ug/g			
Sample Sequence 9																	
9	SAMPLE	S10V001699		0 0	A		Antimony	SOLID	N/A	1.5068E-01			9.66E-03	ug/g			
Sample Sequence 10																	
10	SAMPLE	S10V001719		0 0	A		Antimony	SOLID	N/A	1.3914E-01			9.40E-03	ug/g			
Sample Sequence 11																	
11	CCV	S1008300050		0 0			Antimony	LIQUID	.002	1.9850E-03			2.00E-06	ug/mL	99.25	% Recovery	
Sample Sequence 12																	
12	CCB	S1008300051		0 0			Antimony	LIQUID		<2.0000E-06			2.00E-06	ug/mL			
Sample Sequence 13																	
13	STD-PREP	S1008230033		0 0	A		Antimony	LIQUID	1	1.0170E+00			1.00E-03	ug/mL	101.7	% Recovery	
Sample Sequence 14																	
14	SPK-POST	S1008300049	S10V001659	0 0			Antimony	SOLID	.1	1.0560E-01			2.00E-06	ug/mL	99.581	% Recovery	
Sample Sequence 15																	
15	DUP	S1008230034	S10V001659	0 0	A		Antimony	SOLID	2.9077E-01	2.5341E-01			9.46E-03	ug/g	13.732	% RPD	
Sample Sequence 16																	
16	SPK-PREDIG	S1008230035	S10V001659	0 0	A		Antimony	SOLID	47.89272	4.7237E+01			0.047893	ug/g	98.023	% Recovery	
Sample Sequence 17																	
17	CCV	S1008300052		0 0			Antimony	LIQUID	.002	1.9840E-03			2.00E-06	ug/mL	99.2	% Recovery	
Sample Sequence 18																	

Units shown for QC (BLK/BKG) may not reflect the actual units.

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N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00021722

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
18	LLS	S1008300054		0 0			Antimony	LIQUID	.00001	1.1010E-05			2.00E-06	ug/mL	110.1	% Recovery	
Sample Sequence 19																	
19	CCB	S1008300053		0 0			Antimony	LIQUID		<2.0000E-06			2.00E-06	ug/mL			

Comments Section:

Data Flagger Status:
Flagging Completed

Final Page for Batch# 00021722

Reviewer Signature **Date**

Units shown for QC (BLK/BKG) may not reflect the actual units.

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LABCORE Completed Batch Report for Batch# 00021722

Seq	Sample#	QC Type	Assoc. Sample	Sample Group	Customer Id	Specification
1	S1008300045	ICV				
2	S1008300047	LLS				
3	S1008300046	ICB				
4	S1008230032	BLNK-PREP				
5	S1008300048	SERDIL	S10V001659			
6	S10V001659	SAMPLE		20100556	B29612	C Farm WMC 2010-2
7	S10V001611	SAMPLE		20100556	B26JK6	C Farm WMC 2010-2
8	S10V001639	SAMPLE		20100556	B26JK7	C Farm WMC 2010-2
9	S10V001699	SAMPLE		20100556	B26CC4	C Farm WMC 2010-2
10	S10V001719	SAMPLE		20100556	B29613	C Farm WMC 2010-2
11	S1008300050	CCV				
12	S1008300051	CCB				
13	S1008230033	STD-PREP				
14	S1008300049	SPK-POST	S10V001659			
15	S1008230034	DUP	S10V001659			
16	S1008230035	SPK-PREDIG	S10V001659			
17	S1008300052	CCV				
18	S1008300054	LLS				
19	S1008300053	CCB				

Units shown for QC (BLK/BKG) may not reflect the actual units.

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LABCORE Completed Batch Report for Batch# 00024036

Analyst: Shaw, Levi **Book#:**

Instrument: ICP/MS PQ-EXCELL

Method: MS PERIODIC TABLE, LA-506-102 Rev/Mod F-1

Specification: C Farm WMC 2010-2

Prep Batch: 00022273

Batch Comment:

ICP-MS analysis of Actinides for C Farm WMC 2010-2 acid digestates. bsm

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
Sample Sequence 1																	
1	ICV	S1011150043		0 0			Silver	LIQUID	.0004	3.9290E-04			2.00E-06	ug/mL	98.225	% Recovery	
1	ICV	S1011150043		0 0			Cadmium	LIQUID	.002	1.9730E-03			9.00E-06	ug/mL	98.65	% Recovery	
1	ICV	S1011150043		0 0			Lead	LIQUID	.002	2.0100E-03			1.50E-05	ug/mL	100.5	% Recovery	
1	ICV	S1011150043		0 0			Selenium	LIQUID	.002	2.0050E-03			1.35E-04	ug/mL	100.25	% Recovery	
1	ICV	S1011150043		0 0			Thallium	LIQUID	.002	2.0540E-03			2.00E-06	ug/mL	102.7	% Recovery	
Sample Sequence 2																	
3	LLS	S1011150045		0 1			Silver	LIQUID	.00001	9.7300E-06			2.00E-06	ug/mL	97.3	% Recovery	
4	LLS	S1011150045		0 2			Cadmium	LIQUID	.00001	1.0120E-05			9.00E-06	ug/mL	101.2	% Recovery	
3	LLS	S1011150045		0 1			Lead	LIQUID	.00005	4.9450E-05			1.50E-05	ug/mL	98.9	% Recovery	
2	LLS	S1011150045		0 0			Selenium	LIQUID	.0002	2.3250E-04			1.35E-04	ug/mL	116.25	% Recovery	
4	LLS	S1011150045		0 2			Thallium	LIQUID	.00001	1.0590E-05			2.00E-06	ug/mL	105.9	% Recovery	
Sample Sequence 5																	
5	ICB	S1011150044		0 0			Silver	LIQUID		<2.0000E-06			2.00E-06	ug/mL			
5	ICB	S1011150044		0 0			Cadmium	LIQUID		<9.0000E-06			9.00E-06	ug/mL			
5	ICB	S1011150044		0 0			Lead	LIQUID		<1.5000E-05			1.50E-05	ug/mL			
5	ICB	S1011150044		0 0			Selenium	LIQUID		<1.3500E-04			1.35E-04	ug/mL			
5	ICB	S1011150044		0 0			Thallium	LIQUID		<2.0000E-06			2.00E-06	ug/mL			
Sample Sequence 6																	
6	BLNK-PREP	S1009170007		0 0	A		Silver	LIQUID		<8.0000E-04			8.00E-04	ug/mL			
6	BLNK-PREP	S1009170007		0 0	A		Cadmium	LIQUID		<3.6000E-03			3.60E-03	ug/mL			
6	BLNK-PREP	S1009170007		0 0	A		Lead	LIQUID		<6.0000E-03			6.00E-03	ug/mL			
6	BLNK-PREP	S1009170007		0 0	A		Thallium	LIQUID		<8.0000E-04			8.00E-04	ug/mL			
Sample Sequence 7																	
7	SERDIL	S1011150046	S10V001772	0 0			Silver	SOLID		1.1972E-01			0.039511	ug/g	.49215	% Diff	
7	SERDIL	S1011150046	S10V001772	0 0			Cadmium	SOLID		1.9410E-01			0.11853	ug/g	2.0275	% Diff	
7	SERDIL	S1011150046	S10V001772	0 0			Lead	SOLID		1.3444E+01			0.29633	ug/g	23.505	% Diff	
7	SERDIL	S1011150046	S10V001772	0 0			Thallium	SOLID		1.8145E-01			0.079022	ug/g	10.132	% Diff	
Sample Sequence 8																	
8	SAMPLE	S10V001772		0 0	A		Cadmium	SOLID	N/A	1.9024E-01			0.023707	ug/g			J
8	SAMPLE	S10V001772		0 0	A		Lead	SOLID	N/A	1.0885E+01			0.059266	ug/g			e
8	SAMPLE	S10V001772		0 0	A		Thallium	SOLID	N/A	1.6476E-01			0.015804	ug/g			
Sample Sequence 9																	

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LABCORE Completed Batch Report for Batch# 00024036

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
9	DUP	S1009170009	S10V001772	0 0	A		Silver	SOLID		1.1014E-01			7.95E-03	ug/g			
9	DUP	S1009170009	S10V001772	0 0	A		Cadmium	SOLID	1.9024E-01	1.6239E-01			0.023836	ug/g	15.798	% RPD	
9	DUP	S1009170009	S10V001772	0 0	A		Lead	SOLID	1.0885E+01	9.4541E+00			0.059591	ug/g	14.073	% RPD	
9	DUP	S1009170009	S10V001772	0 0	A		Thallium	SOLID	1.6476E-01	1.4153E-01			0.015891	ug/g	15.169	% RPD	
Sample Sequence 10																	
10	SAMPLE	S10V001792		0 0	A		Cadmium	SOLID	N/A	1.2463E-01			0.023645	ug/g			J
10	SAMPLE	S10V001792		0 0	A		Lead	SOLID	N/A	8.2777E+00			0.059112	ug/g			
10	SAMPLE	S10V001792		0 0	A		Thallium	SOLID	N/A	1.5448E-01			0.015763	ug/g			J
Sample Sequence 11																	
11	SAMPLE	S10V001812		0 0	A		Cadmium	SOLID	N/A	1.4012E-01			0.023817	ug/g			J
11	SAMPLE	S10V001812		0 0	A		Lead	SOLID	N/A	8.1107E+00			0.059543	ug/g			
11	SAMPLE	S10V001812		0 0	A		Thallium	SOLID	N/A	1.2673E-01			0.015878	ug/g			J
Sample Sequence 12																	
12	SAMPLE	S10V002398		0 0	A		Cadmium	SOLID	N/A	1.3588E-01			0.023874	ug/g			J
12	SAMPLE	S10V002398		0 0	A		Lead	SOLID	N/A	6.8608E+00			0.059685	ug/g			
12	SAMPLE	S10V002398		0 0	A		Thallium	SOLID	N/A	1.9447E-01			0.015916	ug/g			
Sample Sequence 13																	
13	SAMPLE	S10V002352		0 0	A		Cadmium	SOLID	N/A	1.9555E-01			0.023933	ug/g			J
13	SAMPLE	S10V002352		0 0	A		Lead	SOLID	N/A	1.1278E+01			0.059832	ug/g			
13	SAMPLE	S10V002352		0 0	A		Thallium	SOLID	N/A	1.8049E-01			0.015955	ug/g			
Sample Sequence 14																	
14	CCV	S1011150049		0 0			Silver	LIQUID	.0004	3.9350E-04			2.00E-06	ug/mL	98.375	% Recovery	
14	CCV	S1011150049		0 0			Cadmium	LIQUID	.002	1.9920E-03			9.00E-06	ug/mL	99.6	% Recovery	
14	CCV	S1011150049		0 0			Lead	LIQUID	.002	1.9560E-03			1.50E-05	ug/mL	97.8	% Recovery	
14	CCV	S1011150049		0 0			Selenium	LIQUID	.002	2.0260E-03			1.35E-04	ug/mL	101.3	% Recovery	
14	CCV	S1011150049		0 0			Thallium	LIQUID	.002	2.0110E-03			2.00E-06	ug/mL	100.55	% Recovery	
Sample Sequence 15																	
15	CCB	S1011150050		0 0			Silver	LIQUID		<2.0000E-06			2.00E-06	ug/mL			
15	CCB	S1011150050		0 0			Cadmium	LIQUID		<9.0000E-06			9.00E-06	ug/mL			
15	CCB	S1011150050		0 0			Lead	LIQUID		<1.5000E-05			1.50E-05	ug/mL			
15	CCB	S1011150050		0 0			Selenium	LIQUID		<1.3500E-04			1.35E-04	ug/mL			
15	CCB	S1011150050		0 0			Thallium	LIQUID		<2.0000E-06			2.00E-06	ug/mL			
Sample Sequence 16																	
16	SAMPLE	S10V002417		0 0	A		Cadmium	SOLID	N/A	1.2672E-01			0.023947	ug/g			J
16	SAMPLE	S10V002417		0 0	A		Lead	SOLID	N/A	6.6414E+00			0.059868	ug/g			
16	SAMPLE	S10V002417		0 0	A		Thallium	SOLID	N/A	1.7721E-01			0.015965	ug/g			
Sample Sequence 17																	
17	SAMPLE	S10V002436		0 0	A		Cadmium	SOLID	N/A	1.3667E-01			0.023718	ug/g			J
17	SAMPLE	S10V002436		0 0	A		Lead	SOLID	N/A	1.0278E+01			0.059294	ug/g			
17	SAMPLE	S10V002436		0 0	A		Thallium	SOLID	N/A	1.8905E-01			0.015812	ug/g			
Sample Sequence 18																	
18	SAMPLE	S10V002455		0 0	A		Cadmium	SOLID	N/A	1.0797E-01			0.023838	ug/g			J
18	SAMPLE	S10V002455		0 0	A		Lead	SOLID	N/A	6.4005E+00			0.059595	ug/g			

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N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00024036

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
18	SAMPLE	S10V002455		0 0	A		Thallium	SOLID	N/A	1.4025E-01			0.015892	ug/g			J
Sample Sequence 19																	
19	SAMPLE	S10V002493		0 0	A		Cadmium	SOLID	N/A	1.1612E-01			0.023922	ug/g			J
19	SAMPLE	S10V002493		0 0	A		Lead	SOLID	N/A	8.5659E+00			0.059804	ug/g			
19	SAMPLE	S10V002493		0 0	A		Thallium	SOLID	N/A	1.3386E-01			0.015948	ug/g			J
Sample Sequence 20																	
20	STD-PREP	S1009170018		0 0	A		Silver	LIQUID	1	1.0610E+00			0.01	ug/mL	106.1	% Recovery	
20	STD-PREP	S1009170018		0 0	A		Cadmium	LIQUID	5	5.1820E+00			0.045	ug/mL	103.64	% Recovery	
20	STD-PREP	S1009170018		0 0	A		Lead	LIQUID	5	4.8560E+00			0.075	ug/mL	97.12	% Recovery	
20	STD-PREP	S1009170018		0 0	A		Selenium	LIQUID	5	5.5290E+00			0.675	ug/mL	110.58	% Recovery	
21	STD-PREP	S1009170018		0 1	A		Thallium	LIQUID	5	5.1610E+00			0.01	ug/mL	103.22	% Recovery	
Sample Sequence 22																	
22	SPK-POST	S1011150048	S10V001772	0 0			Silver	SOLID	.1	8.8880E-02			2.00E-06	ug/mL	76.7	% Recovery	
22	SPK-POST	S1011150048	S10V001772	0 0			Cadmium	SOLID	.4	4.0370E-01			6.00E-06	ug/mL	96.11	% Recovery	
22	SPK-POST	S1011150048	S10V001772	0 0			Lead	SOLID	.4	1.4920E+00			1.50E-05	ug/mL	97.5	% Recovery	
22	SPK-POST	S1011150048	S10V001772	0 0			Thallium	SOLID	.4	4.1770E-01			4.00E-06	ug/mL	100.26	% Recovery	
Sample Sequence 23																	
23	SPK-PREDIG	S1009170010	S10V001772	0 0	A		Silver	SOLID	9.9332485	3.9604E+00			0.099332	ug/g	38.659	% Recovery	
23	SPK-PREDIG	S1009170010	S10V001772	0 0	A		Cadmium	SOLID	49.6662425	5.2408E+01			0.298	ug/g	105.14	% Recovery	
23	SPK-PREDIG	S1009170010	S10V001772	0 0	A		Lead	SOLID	49.6662425	5.4871E+01			0.74499	ug/g	88.564	% Recovery	
Sample Sequence 24																	
24	CCV	S1011150051		0 0			Silver	LIQUID	.0004	3.9260E-04			2.00E-06	ug/mL	98.15	% Recovery	
24	CCV	S1011150051		0 0			Cadmium	LIQUID	.002	1.9660E-03			9.00E-06	ug/mL	98.3	% Recovery	
24	CCV	S1011150051		0 0			Lead	LIQUID	.002	1.9600E-03			1.50E-05	ug/mL	98	% Recovery	
24	CCV	S1011150051		0 0			Selenium	LIQUID	.002	2.0300E-03			1.35E-04	ug/mL	101.5	% Recovery	
24	CCV	S1011150051		0 0			Thallium	LIQUID	.002	2.0120E-03			2.00E-06	ug/mL	100.6	% Recovery	
Sample Sequence 25																	
25	CCB	S1011150052		0 0			Silver	LIQUID		<2.0000E-06			2.00E-06	ug/mL			
25	CCB	S1011150052		0 0			Cadmium	LIQUID		<9.0000E-06			9.00E-06	ug/mL			
25	CCB	S1011150052		0 0			Lead	LIQUID		<1.5000E-05			1.50E-05	ug/mL			
25	CCB	S1011150052		0 0			Selenium	LIQUID		<1.3500E-04			1.35E-04	ug/mL			
25	CCB	S1011150052		0 0			Thallium	LIQUID		<2.0000E-06			2.00E-06	ug/mL			
Sample Sequence 26																	
26	SPK-PREDIG	S1009170011	S10V001772	0 0	A		Thallium	SOLID	49.68006	5.0743E+01			0.19872	ug/g	101.81	% Recovery	
Sample Sequence 27																	
27	CCV	S1011150060		0 0			Silver	LIQUID	.0004	3.9160E-04			2.00E-06	ug/mL	97.9	% Recovery	
27	CCV	S1011150060		0 0			Cadmium	LIQUID	.002	1.9710E-03			9.00E-06	ug/mL	98.55	% Recovery	
27	CCV	S1011150060		0 0			Lead	LIQUID	.002	1.9490E-03			1.50E-05	ug/mL	97.45	% Recovery	
27	CCV	S1011150060		0 0			Selenium	LIQUID	.002	2.0680E-03			1.35E-04	ug/mL	103.4	% Recovery	
27	CCV	S1011150060		0 0			Thallium	LIQUID	.002	1.9940E-03			2.00E-06	ug/mL	99.7	% Recovery	
Sample Sequence 28																	
29	LLS	S1011150061		0 1			Silver	LIQUID	.00001	9.7370E-06			2.00E-06	ug/mL	97.37	% Recovery	
30	LLS	S1011150061		0 2			Cadmium	LIQUID	.00001	9.4980E-06			9.00E-06	ug/mL	94.98	% Recovery	

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LABCORE Completed Batch Report for Batch# 00024036

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
29	LLS	S1011150061		0 1			Lead	LIQUID	.00005	4.6260E-05			1.50E-05	ug/mL	92.52	% Recovery	
28	LLS	S1011150061		0 0			Selenium	LIQUID	.0002	2.1140E-04			1.35E-04	ug/mL	105.7	% Recovery	
30	LLS	S1011150061		0 2			Thallium	LIQUID	.00001	1.0480E-05			2.00E-06	ug/mL	104.8	% Recovery	
Sample Sequence 31																	
31	CCB	S1011150059		0 0			Silver	LIQUID		<2.0000E-06			2.00E-06	ug/mL			
31	CCB	S1011150059		0 0			Cadmium	LIQUID		<9.0000E-06			9.00E-06	ug/mL			
31	CCB	S1011150059		0 0			Lead	LIQUID		<1.5000E-05			1.50E-05	ug/mL			
31	CCB	S1011150059		0 0			Selenium	LIQUID		<1.3500E-04			1.35E-04	ug/mL			
31	CCB	S1011150059		0 0			Thallium	LIQUID		<2.0000E-06			2.00E-06	ug/mL			

Comments Section:

Data Flagger Status:
Flagging Completed

Final Page for Batch# 00024036

Reviewer Signature **Date**

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LABCORE Completed Batch Report for Batch# 00024036

Seq	Sample#	QC Type	Assoc. Sample	Sample Group	Customer Id	Specification
1	S1011150043	ICV				
2	S1011150045	LLS				
3	S1011150045	LLS				
4	S1011150045	LLS				
5	S1011150044	ICB				
6	S1009170007	BLNK-PREP				
7	S1011150046	SERDIL	S10V001772			
8	S10V001772	SAMPLE		20100556	B26CD0	C Farm WMC 2010-2
9	S1009170009	DUP	S10V001772			
10	S10V001792	SAMPLE		20100556	B26CD2	C Farm WMC 2010-2
11	S10V001812	SAMPLE		20100556	B26CD4	C Farm WMC 2010-2
12	S10V002398	SAMPLE		20100660	B26C51	C Farm WMC 2010-2
13	S10V002352	SAMPLE		20100660	B26C47	C Farm WMC 2010-2
14	S1011150049	CCV				
15	S1011150050	CCB				
16	S10V002417	SAMPLE		20100660	B26C53	C Farm WMC 2010-2
17	S10V002436	SAMPLE		20100660	B26C55	C Farm WMC 2010-2
18	S10V002455	SAMPLE		20100660	B26C57	C Farm WMC 2010-2
19	S10V002493	SAMPLE		20100660	B26C61	C Farm WMC 2010-2
20	S1009170018	STD-PREP				
21	S1009170018	STD-PREP				
22	S1011150048	SPK-POST	S10V001772			
23	S1009170010	SPK-PREDIG	S10V001772			
24	S1011150051	CCV				
25	S1011150052	CCB				
26	S1009170011	SPK-PREDIG	S10V001772			
27	S1011150060	CCV				
28	S1011150061	LLS				
29	S1011150061	LLS				
30	S1011150061	LLS				
31	S1011150059	CCB				

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LABCORE Completed Batch Report for Batch# 00023864

Analyst: Shaw, Levi

Book#:

Instrument: ICP/MS PQ-EXCELL

Method: MS ACTINIDES, LA-506-102 Rev/Mod F-1

Specification: C Farm WMC 2010-2

Prep Batch: 00019100, 00022273

Batch Comment:

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
Sample Sequence 1																	
1	ICV	S1011050101		0 0			Thorium-232	LIQUID	.001	9.8250E-04			5.00E-07	ug/mL	98.25	% Recovery	
1	ICV	S1011050101		0 0			Uranium-235	LIQUID	.0000072	7.1980E-06			1.00E-08	ug/mL	99.972	% Recovery	
1	ICV	S1011050101		0 0			Neptunium-237	LIQUID	.00115	1.0720E-03			1.00E-07	ug/mL	93.217	% Recovery	
1	ICV	S1011050101		0 0			Uranium-238	LIQUID	.0009928	9.7540E-04			5.00E-07	ug/mL	98.247	% Recovery	
Sample Sequence 2																	
2	LLS	S1011050103		0 0			Thorium-232	LIQUID	.000005	5.5110E-06			5.00E-07	ug/mL	110.22	% Recovery	
2	LLS	S1011050103		0 0			Uranium-235	LIQUID	.000000036	2.6000E-08			1.00E-08	ug/mL	72.222	% Recovery	
2	LLS	S1011050103		0 0			Neptunium-237	LIQUID	.00000505	4.9360E-06			1.00E-07	ug/mL	97.743	% Recovery	
2	LLS	S1011050103		0 0			Uranium-238	LIQUID	.000004964	4.8400E-06			5.00E-07	ug/mL	97.502	% Recovery	
Sample Sequence 3																	
3	ICB	S1011050102		0 0			Thorium-230	LIQUID		<7.0000E-09			7.00E-09	ug/mL			
3	ICB	S1011050102		0 0			Thorium-232	LIQUID		5.0700E-07			5.00E-07	ug/mL			
3	ICB	S1011050102		0 0			Uranium-233	LIQUID		<1.0000E-08			1.00E-08	ug/mL			
3	ICB	S1011050102		0 0			Uranium-234	LIQUID		<5.0000E-09			5.00E-09	ug/mL			
3	ICB	S1011050102		0 0			Uranium-235	LIQUID		<1.0000E-08			1.00E-08	ug/mL			
3	ICB	S1011050102		0 0			Uranium-236	LIQUID		6.0000E-09			4.00E-09	ug/mL			
3	ICB	S1011050102		0 0			Neptunium-237	LIQUID		<1.0000E-07			1.00E-07	ug/mL			
3	ICB	S1011050102		0 0			Uranium-238	LIQUID		<5.0000E-07			5.00E-07	ug/mL			
Sample Sequence 4																	
4	BLNK-PREP	S1009170007		0 0	A		Thorium-230	LIQUID		5.2080E-06			2.80E-06	ug/mL			
4	BLNK-PREP	S1009170007		0 0	A		Thorium-232	LIQUID		<2.0000E-04			2.00E-04	ug/mL			
4	BLNK-PREP	S1009170007		0 0	A		Uranium-233	LIQUID		<4.0000E-06			4.00E-06	ug/mL			
4	BLNK-PREP	S1009170007		0 0	A		Uranium-234	LIQUID		<2.0000E-06			2.00E-06	ug/mL			
4	BLNK-PREP	S1009170007		0 0	A		Uranium-235	LIQUID		<4.0000E-06			4.00E-06	ug/mL			
4	BLNK-PREP	S1009170007		0 0	A		Uranium-236	LIQUID		<1.6000E-06			1.60E-06	ug/mL			
4	BLNK-PREP	S1009170007		0 0	A		Neptunium-237	LIQUID		<4.0000E-05			4.00E-05	ug/mL			
4	BLNK-PREP	S1009170007		0 0	A		Uranium-238	LIQUID		<2.0000E-04			2.00E-04	ug/mL			
Sample Sequence 5																	
5	SERDIL	S1011050104	S10V001772	0 0			Thorium-230	SOLID		3.5263E-04			1.38E-04	ug/g	1171.8	% Diff	
5	SERDIL	S1011050104	S10V001772	0 0			Thorium-232	SOLID		3.2300E+00			9.88E-03	ug/g	.33594	% Diff	
5	SERDIL	S1011050104	S10V001772	0 0			Uranium-233	SOLID		4.1397E-04			1.98E-04	ug/g	150.8	% Diff	
5	SERDIL	S1011050104	S10V001772	0 0			Uranium-234	SOLID		<9.8777E-05			9.88E-05	ug/g	N/A		

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LABCORE Completed Batch Report for Batch# 00023864

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
5	SERDIL	S1011050104	S10V001772	0 0			Uranium-235	SOLID		6.0629E-03			1.98E-04	ug/g	11.56	% Diff	
5	SERDIL	S1011050104	S10V001772	0 0			Uranium-236	SOLID		<7.9022E-05			7.90E-05	ug/g	N/A		
5	SERDIL	S1011050104	S10V001772	0 0			Neptunium-237	SOLID		<1.9755E-03			1.98E-03	ug/g	N/A		
5	SERDIL	S1011050104	S10V001772	0 0			Uranium-238	SOLID		8.2854E-01			9.88E-03	ug/g	1.1331	% Diff	
Sample Sequence 6																	
6	SAMPLE	S10V001772		0 0	A		Thorium-230	SOLID	N/A	2.7727E-05			2.77E-05	ug/g			BJ
6	SAMPLE	S10V001772		0 0	A		Thorium-232	SOLID	N/A	3.2409E+00			1.98E-03	ug/g			
6	SAMPLE	S10V001772		0 0	A		Uranium-233	SOLID	N/A	1.6506E-04			3.95E-05	ug/g			J
6	SAMPLE	S10V001772		0 0	A		Uranium-234	SOLID	N/A	<1.9755E-05			1.98E-05	ug/g			U
6	SAMPLE	S10V001772		0 0	A		Uranium-235	SOLID	N/A	5.4347E-03			3.95E-05	ug/g			e
6	SAMPLE	S10V001772		0 0	A		Uranium-236	SOLID	N/A	2.7085E-05			1.58E-05	ug/g			BJ
6	SAMPLE	S10V001772		0 0	A		Neptunium-237	SOLID	N/A	<3.9511E-04			3.95E-04	ug/g			U
6	SAMPLE	S10V001772		0 0	A		Uranium-238	SOLID	N/A	8.1926E-01			1.98E-03	ug/g			
Sample Sequence 7																	
7	DUP	S1009170009	S10V001772	0 0	A		Thorium-230	SOLID	2.7727E-05	<2.7809E-05			2.78E-05	ug/g			
7	DUP	S1009170009	S10V001772	0 0	A		Thorium-232	SOLID	3.2409E+00	3.2547E+00			1.99E-03	ug/g	0.42558	% RPD	
7	DUP	S1009170009	S10V001772	0 0	A		Uranium-233	SOLID	1.6506E-04	2.7452E-04			3.97E-05	ug/g	49.804	% RPD	
7	DUP	S1009170009	S10V001772	0 0	A		Uranium-234	SOLID	<1.9755E-05	<1.9864E-05			1.99E-05	ug/g			
7	DUP	S1009170009	S10V001772	0 0	A		Uranium-235	SOLID	5.4347E-03	5.5897E-03			3.97E-05	ug/g	2.8116	% RPD	
7	DUP	S1009170009	S10V001772	0 0	A		Uranium-236	SOLID	2.7085E-05	2.6816E-05			1.59E-05	ug/g	0.99699	% RPD	
7	DUP	S1009170009	S10V001772	0 0	A		Neptunium-237	SOLID	<3.9511E-04	<3.9727E-04			3.97E-04	ug/g			
7	DUP	S1009170009	S10V001772	0 0	A		Uranium-238	SOLID	8.1926E-01	8.3835E-01			1.99E-03	ug/g	2.3036	% RPD	
Sample Sequence 8																	
8	SAMPLE	S10V001792		0 0	A		Thorium-230	SOLID	N/A	4.6482E-05			2.76E-05	ug/g			BJ
8	SAMPLE	S10V001792		0 0	A		Thorium-232	SOLID	N/A	4.5644E+00			1.97E-03	ug/g			
8	SAMPLE	S10V001792		0 0	A		Uranium-233	SOLID	N/A	2.4226E-04			3.94E-05	ug/g			J
8	SAMPLE	S10V001792		0 0	A		Uranium-234	SOLID	N/A	<1.9704E-05			1.97E-05	ug/g			U
8	SAMPLE	S10V001792		0 0	A		Uranium-235	SOLID	N/A	3.4009E-03			3.94E-05	ug/g			
8	SAMPLE	S10V001792		0 0	A		Uranium-236	SOLID	N/A	<1.5763E-05			1.58E-05	ug/g			U
8	SAMPLE	S10V001792		0 0	A		Neptunium-237	SOLID	N/A	<3.9408E-04			3.94E-04	ug/g			U
8	SAMPLE	S10V001792		0 0	A		Uranium-238	SOLID	N/A	5.0088E-01			1.97E-03	ug/g			
Sample Sequence 9																	
9	SAMPLE	S10V001812		0 0	A		Thorium-230	SOLID	N/A	6.5834E-05			2.78E-05	ug/g			BJ
9	SAMPLE	S10V001812		0 0	A		Thorium-232	SOLID	N/A	3.9775E+00			1.98E-03	ug/g			
9	SAMPLE	S10V001812		0 0	A		Uranium-233	SOLID	N/A	2.4323E-04			3.97E-05	ug/g			J
9	SAMPLE	S10V001812		0 0	A		Uranium-234	SOLID	N/A	<1.9848E-05			1.98E-05	ug/g			U
9	SAMPLE	S10V001812		0 0	A		Uranium-235	SOLID	N/A	3.6142E-03			3.97E-05	ug/g			
9	SAMPLE	S10V001812		0 0	A		Uranium-236	SOLID	N/A	<1.5878E-05			1.59E-05	ug/g			U
9	SAMPLE	S10V001812		0 0	A		Neptunium-237	SOLID	N/A	<3.9695E-04			3.97E-04	ug/g			U
9	SAMPLE	S10V001812		0 0	A		Uranium-238	SOLID	N/A	5.4750E-01			1.98E-03	ug/g			
Sample Sequence 10																	
10	SAMPLE	S10V002288		0 0	A		Thorium-230	SOLID	N/A	<2.8080E-05			2.81E-05	ug/g			U
10	SAMPLE	S10V002288		0 0	A		Thorium-232	SOLID	N/A	3.4287E+00			2.01E-03	ug/g			

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LABCORE Completed Batch Report for Batch# 00023864

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
10	SAMPLE	S10V002288		0 0	A		Uranium-233	SOLID	N/A	1.8773E-04			4.01E-05	ug/g			J
10	SAMPLE	S10V002288		0 0	A		Uranium-234	SOLID	N/A	<2.0057E-05			2.01E-05	ug/g			U
10	SAMPLE	S10V002288		0 0	A		Uranium-235	SOLID	N/A	3.0095E-03			4.01E-05	ug/g			
10	SAMPLE	S10V002288		0 0	A		Uranium-236	SOLID	N/A	<1.6046E-05			1.60E-05	ug/g			U
10	SAMPLE	S10V002288		0 0	A		Neptunium-237	SOLID	N/A	<4.0114E-04			4.01E-04	ug/g			U
10	SAMPLE	S10V002288		0 0	A		Uranium-238	SOLID	N/A	4.4557E-01			2.01E-03	ug/g			
Sample Sequence 11																	
11	SAMPLE	S10V002316		0 0	A		Thorium-230	SOLID	N/A	<2.7888E-05			2.79E-05	ug/g			U
11	SAMPLE	S10V002316		0 0	A		Thorium-232	SOLID	N/A	3.8655E+00			1.99E-03	ug/g			
11	SAMPLE	S10V002316		0 0	A		Uranium-233	SOLID	N/A	1.6434E-04			3.98E-05	ug/g			J
11	SAMPLE	S10V002316		0 0	A		Uranium-234	SOLID	N/A	<1.9920E-05			1.99E-05	ug/g			U
11	SAMPLE	S10V002316		0 0	A		Uranium-235	SOLID	N/A	3.7559E-03			3.98E-05	ug/g			
11	SAMPLE	S10V002316		0 0	A		Uranium-236	SOLID	N/A	<1.5936E-05			1.59E-05	ug/g			U
11	SAMPLE	S10V002316		0 0	A		Neptunium-237	SOLID	N/A	<3.9840E-04			3.98E-04	ug/g			U
11	SAMPLE	S10V002316		0 0	A		Uranium-238	SOLID	N/A	5.7260E-01			1.99E-03	ug/g			
Sample Sequence 12																	
12	SAMPLE	S10V002352		0 0	A		Thorium-230	SOLID	N/A	<2.7922E-05			2.79E-05	ug/g			U
12	SAMPLE	S10V002352		0 0	A		Thorium-232	SOLID	N/A	3.4384E+00			1.99E-03	ug/g			
12	SAMPLE	S10V002352		0 0	A		Uranium-233	SOLID	N/A	2.0383E-04			3.99E-05	ug/g			J
12	SAMPLE	S10V002352		0 0	A		Uranium-234	SOLID	N/A	<1.9944E-05			1.99E-05	ug/g			U
12	SAMPLE	S10V002352		0 0	A		Uranium-235	SOLID	N/A	2.9667E-03			3.99E-05	ug/g			
12	SAMPLE	S10V002352		0 0	A		Uranium-236	SOLID	N/A	<1.5955E-05			1.60E-05	ug/g			U
12	SAMPLE	S10V002352		0 0	A		Neptunium-237	SOLID	N/A	<3.9888E-04			3.99E-04	ug/g			U
12	SAMPLE	S10V002352		0 0	A		Uranium-238	SOLID	N/A	4.7467E-01			1.99E-03	ug/g			
Sample Sequence 13																	
13	CCV	S1011050106		0 0			Thorium-232	LIQUID	.001	9.9060E-04			5.00E-07	ug/mL	99.06	% Recovery	
13	CCV	S1011050106		0 0			Uranium-235	LIQUID	.0000072	7.3930E-06			1.00E-08	ug/mL	102.68	% Recovery	
13	CCV	S1011050106		0 0			Neptunium-237	LIQUID	.00115	1.0760E-03			1.00E-07	ug/mL	93.565	% Recovery	
13	CCV	S1011050106		0 0			Uranium-238	LIQUID	.0009928	9.8400E-04			5.00E-07	ug/mL	99.114	% Recovery	
Sample Sequence 14																	
14	CCB	S1011050107		0 0			Thorium-230	LIQUID		1.2000E-08			7.00E-09	ug/mL			
14	CCB	S1011050107		0 0			Thorium-232	LIQUID		<5.0000E-07			5.00E-07	ug/mL			
14	CCB	S1011050107		0 0			Uranium-233	LIQUID		<1.0000E-08			1.00E-08	ug/mL			
14	CCB	S1011050107		0 0			Uranium-234	LIQUID		<5.0000E-09			5.00E-09	ug/mL			
14	CCB	S1011050107		0 0			Uranium-235	LIQUID		<1.0000E-08			1.00E-08	ug/mL			
14	CCB	S1011050107		0 0			Uranium-236	LIQUID		<4.0000E-09			4.00E-09	ug/mL			
14	CCB	S1011050107		0 0			Neptunium-237	LIQUID		<1.0000E-07			1.00E-07	ug/mL			
14	CCB	S1011050107		0 0			Uranium-238	LIQUID		<5.0000E-07			5.00E-07	ug/mL			
Sample Sequence 15																	
15	SAMPLE	S10V002398		0 0	A		Thorium-230	SOLID	N/A	3.6239E-05			2.79E-05	ug/g			BJ
15	SAMPLE	S10V002398		0 0	A		Thorium-232	SOLID	N/A	2.4580E+00			1.99E-03	ug/g			
15	SAMPLE	S10V002398		0 0	A		Uranium-233	SOLID	N/A	1.0783E-04			3.98E-05	ug/g			J
15	SAMPLE	S10V002398		0 0	A		Uranium-234	SOLID	N/A	<1.9895E-05			1.99E-05	ug/g			U

Units shown for QC (BLK/BKG) may not reflect the actual units.

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00023864

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
15	SAMPLE	S10V002398		0 0	A		Uranium-235	SOLID	N/A	3.3215E-03			3.98E-05	ug/g			
15	SAMPLE	S10V002398		0 0	A		Uranium-236	SOLID	N/A	2.0939E-05			1.59E-05	ug/g			J
15	SAMPLE	S10V002398		0 0	A		Neptunium-237	SOLID	N/A	<3.9790E-04			3.98E-04	ug/g			U
15	SAMPLE	S10V002398		0 0	A		Uranium-238	SOLID	N/A	5.0414E-01			1.99E-03	ug/g			
Sample Sequence 16																	
16	SAMPLE	S10V002417		0 0	A		Thorium-230	SOLID	N/A	5.6436E-05			2.79E-05	ug/g			BJ
16	SAMPLE	S10V002417		0 0	A		Thorium-232	SOLID	N/A	2.5484E+00			2.00E-03	ug/g			
16	SAMPLE	S10V002417		0 0	A		Uranium-233	SOLID	N/A	1.3391E-04			3.99E-05	ug/g			J
16	SAMPLE	S10V002417		0 0	A		Uranium-234	SOLID	N/A	<1.9956E-05			2.00E-05	ug/g			U
16	SAMPLE	S10V002417		0 0	A		Uranium-235	SOLID	N/A	3.7039E-03			3.99E-05	ug/g			
16	SAMPLE	S10V002417		0 0	A		Uranium-236	SOLID	N/A	3.2419E-05			1.60E-05	ug/g			J
16	SAMPLE	S10V002417		0 0	A		Neptunium-237	SOLID	N/A	<3.9912E-04			3.99E-04	ug/g			U
16	SAMPLE	S10V002417		0 0	A		Uranium-238	SOLID	N/A	5.7404E-01			2.00E-03	ug/g			
Sample Sequence 17																	
17	SAMPLE	S10V002436		0 0	A		Thorium-230	SOLID	N/A	4.7050E-05			2.77E-05	ug/g			BJ
17	SAMPLE	S10V002436		0 0	A		Thorium-232	SOLID	N/A	4.5004E+00			1.98E-03	ug/g			
17	SAMPLE	S10V002436		0 0	A		Uranium-233	SOLID	N/A	2.2621E-04			3.95E-05	ug/g			J
17	SAMPLE	S10V002436		0 0	A		Uranium-234	SOLID	N/A	<1.9765E-05			1.98E-05	ug/g			U
17	SAMPLE	S10V002436		0 0	A		Uranium-235	SOLID	N/A	4.1743E-03			3.95E-05	ug/g			
17	SAMPLE	S10V002436		0 0	A		Uranium-236	SOLID	N/A	<1.5812E-05			1.58E-05	ug/g			U
17	SAMPLE	S10V002436		0 0	A		Neptunium-237	SOLID	N/A	<3.9530E-04			3.95E-04	ug/g			U
17	SAMPLE	S10V002436		0 0	A		Uranium-238	SOLID	N/A	6.5916E-01			1.98E-03	ug/g			
Sample Sequence 18																	
18	SAMPLE	S10V002455		0 0	A		Thorium-230	SOLID	N/A	3.7435E-05			2.78E-05	ug/g			BJ
18	SAMPLE	S10V002455		0 0	A		Thorium-232	SOLID	N/A	2.6907E+00			1.99E-03	ug/g			
18	SAMPLE	S10V002455		0 0	A		Uranium-233	SOLID	N/A	2.0292E-04			3.97E-05	ug/g			J
18	SAMPLE	S10V002455		0 0	A		Uranium-234	SOLID	N/A	1.9984E-05			1.99E-05	ug/g			J
18	SAMPLE	S10V002455		0 0	A		Uranium-235	SOLID	N/A	3.2241E-03			3.97E-05	ug/g			
18	SAMPLE	S10V002455		0 0	A		Uranium-236	SOLID	N/A	<1.5892E-05			1.59E-05	ug/g			U
18	SAMPLE	S10V002455		0 0	A		Neptunium-237	SOLID	N/A	<3.9730E-04			3.97E-04	ug/g			U
18	SAMPLE	S10V002455		0 0	A		Uranium-238	SOLID	N/A	4.5620E-01			1.99E-03	ug/g			
Sample Sequence 19																	
19	SAMPLE	S10V002474		0 0	A		Thorium-230	SOLID	N/A	8.7136E-05			2.81E-05	ug/g			BJ
19	SAMPLE	S10V002474		0 0	A		Thorium-232	SOLID	N/A	4.0091E+00			2.00E-03	ug/g			
19	SAMPLE	S10V002474		0 0	A		Uranium-233	SOLID	N/A	2.1053E-04			4.01E-05	ug/g			J
19	SAMPLE	S10V002474		0 0	A		Uranium-234	SOLID	N/A	3.7716E-05			2.00E-05	ug/g			J
19	SAMPLE	S10V002474		0 0	A		Uranium-235	SOLID	N/A	3.4149E-03			4.01E-05	ug/g			
19	SAMPLE	S10V002474		0 0	A		Uranium-236	SOLID	N/A	2.1904E-05			1.60E-05	ug/g			BJ
19	SAMPLE	S10V002474		0 0	A		Neptunium-237	SOLID	N/A	<4.0081E-04			4.01E-04	ug/g			U
19	SAMPLE	S10V002474		0 0	A		Uranium-238	SOLID	N/A	5.1274E-01			2.00E-03	ug/g			
Sample Sequence 20																	
20	SAMPLE	S10V002493		0 0	A		Thorium-230	SOLID	N/A	4.7713E-05			2.79E-05	ug/g			BJ
20	SAMPLE	S10V002493		0 0	A		Thorium-232	SOLID	N/A	3.8294E+00			1.99E-03	ug/g			

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LABCORE Completed Batch Report for Batch# 00023864

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
20	SAMPLE	S10V002493		0 0	A		Uranium-233	SOLID	N/A	2.0463E-04			3.99E-05	ug/g			J
20	SAMPLE	S10V002493		0 0	A		Uranium-234	SOLID	N/A	<1.9935E-05			1.99E-05	ug/g			U
20	SAMPLE	S10V002493		0 0	A		Uranium-235	SOLID	N/A	3.2473E-03			3.99E-05	ug/g			
20	SAMPLE	S10V002493		0 0	A		Uranium-236	SOLID	N/A	<1.5948E-05			1.59E-05	ug/g			U
20	SAMPLE	S10V002493		0 0	A		Neptunium-237	SOLID	N/A	<3.9869E-04			3.99E-04	ug/g			U
20	SAMPLE	S10V002493		0 0	A		Uranium-238	SOLID	N/A	4.8740E-01			1.99E-03	ug/g			
Sample Sequence 21																	
22	STD-PREP	S1009170008		0 1	A		Thorium-232	LIQUID	.02	2.0880E-02			1.00E-05	ug/mL	104.4	% Recovery	
22	STD-PREP	S1009170008		0 1	A		Uranium-235	LIQUID	.000144	1.3650E-04			2.00E-07	ug/mL	94.792	% Recovery	
21	STD-PREP	S1009170008		0 0	A		Neptunium-237	LIQUID	.0175	1.7800E-02			2.00E-06	ug/mL	101.71	% Recovery	
22	STD-PREP	S1009170008		0 1	A		Uranium-238	LIQUID	.019856	2.0720E-02			1.00E-05	ug/mL	104.35	% Recovery	
Sample Sequence 23																	
23	SPK-POST	S1011050105	S10V001772	0 0			Thorium-232	SOLID	.4	7.2880E-01			5.00E-07	ug/mL	100.18	% Recovery	
23	SPK-POST	S1011050105	S10V001772	0 0			Uranium-235	SOLID	.00288	3.4950E-03			1.00E-08	ug/mL	102.25	% Recovery	
23	SPK-POST	S1011050105	S10V001772	0 0			Neptunium-237	SOLID	.3934	3.9760E-01			1.00E-07	ug/mL	101.07	% Recovery	
23	SPK-POST	S1011050105	S10V001772	0 0			Uranium-238	SOLID	.39712	4.8030E-01			5.00E-07	ug/mL	100.06	% Recovery	
Sample Sequence 24																	
24	CCV	S1011050108		0 0			Thorium-232	LIQUID	.001	9.8070E-04			5.00E-07	ug/mL	98.07	% Recovery	
24	CCV	S1011050108		0 0			Uranium-235	LIQUID	.0000072	7.1180E-06			1.00E-08	ug/mL	98.861	% Recovery	
24	CCV	S1011050108		0 0			Neptunium-237	LIQUID	.00115	1.0650E-03			1.00E-07	ug/mL	92.609	% Recovery	
24	CCV	S1011050108		0 0			Uranium-238	LIQUID	.0009928	9.7160E-04			5.00E-07	ug/mL	97.865	% Recovery	
Sample Sequence 25																	
25	CCB	S1011050109		0 0			Thorium-230	LIQUID		<7.0000E-09			7.00E-09	ug/mL			
25	CCB	S1011050109		0 0			Thorium-232	LIQUID		<5.0000E-07			5.00E-07	ug/mL			
25	CCB	S1011050109		0 0			Uranium-233	LIQUID		<1.0000E-08			1.00E-08	ug/mL			
25	CCB	S1011050109		0 0			Uranium-234	LIQUID		<5.0000E-09			5.00E-09	ug/mL			
25	CCB	S1011050109		0 0			Uranium-235	LIQUID		<1.0000E-08			1.00E-08	ug/mL			
25	CCB	S1011050109		0 0			Uranium-236	LIQUID		4.0000E-09			4.00E-09	ug/mL			
25	CCB	S1011050109		0 0			Neptunium-237	LIQUID		<1.0000E-07			1.00E-07	ug/mL			
25	CCB	S1011050109		0 0			Uranium-238	LIQUID		<5.0000E-07			5.00E-07	ug/mL			
Sample Sequence 26																	
26	SPK-PREDIG	S1009170013	S10V001772	0 0	A		Neptunium-237	SOLID	.493247902896	4.8349E-01			3.94E-04	ug/g	98.022	% Recovery	
Sample Sequence 27																	
27	SPK-PREDIG	S1009170015	S10V001772	0 0	A		Thorium-232	SOLID	1.0028279	4.1938E+00			2.01E-03	ug/g	95.121	% Recovery	
27	SPK-PREDIG	S1009170015	S10V001772	0 0	A		Uranium-235	SOLID	.0072203609	1.2706E-02			4.01E-05	ug/g	100.7	% Recovery	
27	SPK-PREDIG	S1009170015	S10V001772	0 0	A		Uranium-238	SOLID	1.0010228098	1.8773E+00			2.01E-03	ug/g	105.7	% Recovery	
Sample Sequence 29																	
29	CCV	S1011050119		0 0			Thorium-232	LIQUID	.001	9.8490E-04			5.00E-07	ug/mL	98.49	% Recovery	
29	CCV	S1011050119		0 0			Uranium-235	LIQUID	.0000072	7.2830E-06			1.00E-08	ug/mL	101.15	% Recovery	
29	CCV	S1011050119		0 0			Neptunium-237	LIQUID	.00115	1.0690E-03			1.00E-07	ug/mL	92.957	% Recovery	
29	CCV	S1011050119		0 0			Uranium-238	LIQUID	.0009928	9.7720E-04			5.00E-07	ug/mL	98.429	% Recovery	
Sample Sequence 30																	
30	LLS	S1011050112		0 0			Thorium-232	LIQUID	.000005	5.1160E-06			5.00E-07	ug/mL	102.32	% Recovery	

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LABCORE Completed Batch Report for Batch# 00023864

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
30	LLS	S1011050112		0 0			Uranium-235	LIQUID	.000000036	3.5000E-08			1.00E-08	ug/mL	97.222	% Recovery	
30	LLS	S1011050112		0 0			Neptunium-237	LIQUID	.00000505	4.9920E-06			1.00E-07	ug/mL	98.851	% Recovery	
30	LLS	S1011050112		0 0			Uranium-238	LIQUID	.000004964	4.8750E-06			5.00E-07	ug/mL	98.207	% Recovery	
Sample Sequence 31																	
31	CCB	S1011050118		0 0			Thorium-230	LIQUID		<7.0000E-09			7.00E-09	ug/mL			
31	CCB	S1011050118		0 0			Thorium-232	LIQUID		<5.0000E-07			5.00E-07	ug/mL			
31	CCB	S1011050118		0 0			Uranium-233	LIQUID		<1.0000E-08			1.00E-08	ug/mL			
31	CCB	S1011050118		0 0			Uranium-234	LIQUID		<5.0000E-09			5.00E-09	ug/mL			
31	CCB	S1011050118		0 0			Uranium-235	LIQUID		<1.0000E-08			1.00E-08	ug/mL			
31	CCB	S1011050118		0 0			Uranium-236	LIQUID		<4.0000E-09			4.00E-09	ug/mL			
31	CCB	S1011050118		0 0			Neptunium-237	LIQUID		<1.0000E-07			1.00E-07	ug/mL			
31	CCB	S1011050118		0 0			Uranium-238	LIQUID		<5.0000E-07			5.00E-07	ug/mL			

Comments Section:

Data Flagger Status:
Flagging Completed

Final Page for Batch# 00023864

Reviewer Signature **Date**

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LABCORE Completed Batch Report for Batch# 00023864

Seq	Sample#	QC Type	Assoc. Sample	Sample Group	Customer Id	Specification
1	S1011050101	ICV				
2	S1011050103	LLS				
3	S1011050102	ICB				
4	S1009170007	BLNK-PREP				
5	S1011050104	SERDIL	S10V001772			
6	S10V001772	SAMPLE		20100556	B26CD0	C Farm WMC 2010-2
7	S1009170009	DUP	S10V001772			
8	S10V001792	SAMPLE		20100556	B26CD2	C Farm WMC 2010-2
9	S10V001812	SAMPLE		20100556	B26CD4	C Farm WMC 2010-2
10	S10V002288	SAMPLE		20100660	B26JL0	C Farm WMC 2010-2
11	S10V002316	SAMPLE		20100660	B26JL1	C Farm WMC 2010-2
12	S10V002352	SAMPLE		20100660	B26C47	C Farm WMC 2010-2
13	S1011050106	CCV				
14	S1011050107	CCB				
15	S10V002398	SAMPLE		20100660	B26C51	C Farm WMC 2010-2
16	S10V002417	SAMPLE		20100660	B26C53	C Farm WMC 2010-2
17	S10V002436	SAMPLE		20100660	B26C55	C Farm WMC 2010-2
18	S10V002455	SAMPLE		20100660	B26C57	C Farm WMC 2010-2
19	S10V002474	SAMPLE		20100660	B26C59	C Farm WMC 2010-2
20	S10V002493	SAMPLE		20100660	B26C61	C Farm WMC 2010-2
21	S1009170008	STD-PREP				
22	S1009170008	STD-PREP				
23	S1011050105	SPK-POST	S10V001772			
24	S1011050108	CCV				
25	S1011050109	CCB				
26	S1009170013	SPK-PREDIG	S10V001772			
27	S1009170015	SPK-PREDIG	S10V001772			
29	S1011050119	CCV				
30	S1011050112	LLS				
31	S1011050118	CCB				

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LABCORE Completed Batch Report for Batch# 00022039

Analyst: Shaw, Levi **Book#:**

Instrument: ICP/MS PQ-EXCELL

Method: MS ACTINIDES, LA-506-102 Rev/Mod F-1

Specification: C Farm WMC 2010-2

Prep Batch: 00021567

Batch Comment:

ICP-MS determination of actinides for C Farm WMC 2010-2 acid digestates. bsm

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
Sample Sequence 1																	
1	ICV	S1009080224		0 0			Thorium-232	LIQUID	.001	9.8380E-04			5.00E-07	ug/mL	98.38	% Recovery	
1	ICV	S1009080224		0 0			Uranium-235	LIQUID	.0000072	7.3220E-06			1.00E-08	ug/mL	101.69	% Recovery	
1	ICV	S1009080224		0 0			Neptunium-237	LIQUID	.0011	1.0550E-03			1.00E-07	ug/mL	95.909	% Recovery	
1	ICV	S1009080224		0 0			Uranium-238	LIQUID	.0009928	9.6280E-04			5.00E-07	ug/mL	96.978	% Recovery	
Sample Sequence 2																	
3	LLS	S1009080226		0 1			Thorium-232	LIQUID	.000005	5.4150E-06			5.00E-07	ug/mL	108.3	% Recovery	
2	LLS	S1009080226		0 0			Uranium-235	LIQUID	.000000036	3.6000E-08			1.00E-08	ug/mL	100	% Recovery	
2	LLS	S1009080226		0 0			Neptunium-237	LIQUID	.0000049175	5.5450E-06			1.00E-07	ug/mL	112.76	% Recovery	
2	LLS	S1009080226		0 0			Uranium-238	LIQUID	.000004964	5.1570E-06			5.00E-07	ug/mL	103.89	% Recovery	
Sample Sequence 4																	
4	ICB	S1009080225		0 0			Thorium-230	LIQUID		<7.0000E-09			7.00E-09	ug/mL			
4	ICB	S1009080225		0 0			Thorium-232	LIQUID		9.5200E-07			5.00E-07	ug/mL			
4	ICB	S1009080225		0 0			Uranium-233	LIQUID		<1.0000E-08			1.00E-08	ug/mL			
4	ICB	S1009080225		0 0			Uranium-234	LIQUID		<5.0000E-09			5.00E-09	ug/mL			
4	ICB	S1009080225		0 0			Uranium-235	LIQUID		<1.0000E-08			1.00E-08	ug/mL			
4	ICB	S1009080225		0 0			Uranium-236	LIQUID		5.0000E-09			4.00E-09	ug/mL			
4	ICB	S1009080225		0 0			Neptunium-237	LIQUID		2.0600E-07			1.00E-07	ug/mL			
4	ICB	S1009080225		0 0			Uranium-238	LIQUID		<5.0000E-07			5.00E-07	ug/mL			
Sample Sequence 5																	
5	BLNK-PREP	S1008250079		0 0	A		Thorium-230	LIQUID		<2.8000E-06			2.80E-06	ug/mL			
5	BLNK-PREP	S1008250079		0 0	A		Thorium-232	LIQUID		2.6840E-04			2.00E-04	ug/mL			
5	BLNK-PREP	S1008250079		0 0	A		Uranium-233	LIQUID		<4.0000E-06			4.00E-06	ug/mL			
5	BLNK-PREP	S1008250079		0 0	A		Uranium-234	LIQUID		<2.0000E-06			2.00E-06	ug/mL			
5	BLNK-PREP	S1008250079		0 0	A		Uranium-235	LIQUID		<4.0000E-06			4.00E-06	ug/mL			
5	BLNK-PREP	S1008250079		0 0	A		Uranium-236	LIQUID		2.1220E-06			1.60E-06	ug/mL			
5	BLNK-PREP	S1008250079		0 0	A		Neptunium-237	LIQUID		<4.0000E-05			4.00E-05	ug/mL			
5	BLNK-PREP	S1008250079		0 0	A		Uranium-238	LIQUID		<2.0000E-04			2.00E-04	ug/mL			
Sample Sequence 6																	
6	SERDIL	S1009080227	S10V001614	0 0			Thorium-230	SOLID		1.7469E-04			1.39E-04	ug/g	N/A		
6	SERDIL	S1009080227	S10V001614	0 0			Thorium-232	SOLID		2.6491E+00			9.90E-03	ug/g	1.2108	% Diff	
6	SERDIL	S1009080227	S10V001614	0 0			Uranium-233	SOLID		3.2710E-04			1.98E-04	ug/g	106.96	% Diff	
6	SERDIL	S1009080227	S10V001614	0 0			Uranium-234	SOLID		1.5152E-04			9.90E-05	ug/g	412.39	% Diff	

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LABCORE Completed Batch Report for Batch# 00022039

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
6	SERDIL	S1009080227	S10V001614	0 0			Uranium-235	SOLID		3.3364E-03			1.98E-04	ug/g	1.7527	% Diff	
6	SERDIL	S1009080227	S10V001614	0 0			Uranium-236	SOLID		<7.9225E-05			7.92E-05	ug/g	N/A		
6	SERDIL	S1009080227	S10V001614	0 0			Neptunium-237	SOLID		3.4532E-03			1.98E-03	ug/g	303.17	% Diff	
6	SERDIL	S1009080227	S10V001614	0 0			Uranium-238	SOLID		4.8922E-01			9.90E-03	ug/g	.50858	% Diff	
Sample Sequence 7																	
7	SAMPLE	S10V001614		0 0	A		Thorium-230	SOLID	N/A	<2.7729E-05			2.77E-05	ug/g			U
7	SAMPLE	S10V001614		0 0	A		Thorium-232	SOLID	N/A	2.6174E+00			1.98E-03	ug/g			
7	SAMPLE	S10V001614		0 0	A		Uranium-233	SOLID	N/A	1.5805E-04			3.96E-05	ug/g			J
7	SAMPLE	S10V001614		0 0	A		Uranium-234	SOLID	N/A	2.9571E-05			1.98E-05	ug/g			J
7	SAMPLE	S10V001614		0 0	A		Uranium-235	SOLID	N/A	3.2789E-03			3.96E-05	ug/g			
7	SAMPLE	S10V001614		0 0	A		Uranium-236	SOLID	N/A	<1.5845E-05			1.58E-05	ug/g			U
7	SAMPLE	S10V001614		0 0	A		Neptunium-237	SOLID	N/A	8.5652E-04			3.96E-04	ug/g			BJ
7	SAMPLE	S10V001614		0 0	A		Uranium-238	SOLID	N/A	4.8674E-01			1.98E-03	ug/g			
Sample Sequence 8																	
8	DUP	S1008250081	S10V001614	0 0	A		Thorium-230	SOLID	<2.7729E-05	5.1087E-05			2.77E-05	ug/g	59.272	% RPD	
8	DUP	S1008250081	S10V001614	0 0	A		Thorium-232	SOLID	2.6174E+00	2.6594E+00			1.98E-03	ug/g	1.5918	% RPD	
8	DUP	S1008250081	S10V001614	0 0	A		Uranium-233	SOLID	1.5805E-04	1.0622E-04			3.96E-05	ug/g	39.228	% RPD	
8	DUP	S1008250081	S10V001614	0 0	A		Uranium-234	SOLID	2.9571E-05	<1.9816E-05			1.98E-05	ug/g			
8	DUP	S1008250081	S10V001614	0 0	A		Uranium-235	SOLID	3.2789E-03	3.2717E-03			3.96E-05	ug/g	0.22080	% RPD	
8	DUP	S1008250081	S10V001614	0 0	A		Uranium-236	SOLID	<1.5845E-05	<1.5853E-05			1.59E-05	ug/g			
8	DUP	S1008250081	S10V001614	0 0	A		Neptunium-237	SOLID	8.5652E-04	5.2593E-04			3.96E-04	ug/g	47.827	% RPD	
8	DUP	S1008250081	S10V001614	0 0	A		Uranium-238	SOLID	4.8674E-01	5.0106E-01			1.98E-03	ug/g	2.8994	% RPD	
Sample Sequence 9																	
9	SAMPLE	S10V001642		0 0	A		Thorium-230	SOLID	N/A	4.2131E-05			2.74E-05	ug/g			J
9	SAMPLE	S10V001642		0 0	A		Thorium-232	SOLID	N/A	3.1387E+00			1.96E-03	ug/g			
9	SAMPLE	S10V001642		0 0	A		Uranium-233	SOLID	N/A	1.9458E-04			3.92E-05	ug/g			J
9	SAMPLE	S10V001642		0 0	A		Uranium-234	SOLID	N/A	3.9366E-05			1.96E-05	ug/g			J
9	SAMPLE	S10V001642		0 0	A		Uranium-235	SOLID	N/A	3.4387E-03			3.92E-05	ug/g			
9	SAMPLE	S10V001642		0 0	A		Uranium-236	SOLID	N/A	<1.5684E-05			1.57E-05	ug/g			U
9	SAMPLE	S10V001642		0 0	A		Neptunium-237	SOLID	N/A	4.0405E-04			3.92E-04	ug/g			BJ
9	SAMPLE	S10V001642		0 0	A		Uranium-238	SOLID	N/A	5.3678E-01			1.96E-03	ug/g			
Sample Sequence 10																	
10	SAMPLE	S10V001662		0 0	A		Thorium-230	SOLID	N/A	4.3308E-05			2.78E-05	ug/g			J
10	SAMPLE	S10V001662		0 0	A		Thorium-232	SOLID	N/A	3.7253E+00			1.99E-03	ug/g			
10	SAMPLE	S10V001662		0 0	A		Uranium-233	SOLID	N/A	2.1525E-04			3.98E-05	ug/g			J
10	SAMPLE	S10V001662		0 0	A		Uranium-234	SOLID	N/A	5.0476E-05			1.99E-05	ug/g			J
10	SAMPLE	S10V001662		0 0	A		Uranium-235	SOLID	N/A	4.1081E-03			3.98E-05	ug/g			
10	SAMPLE	S10V001662		0 0	A		Uranium-236	SOLID	N/A	<1.5907E-05			1.59E-05	ug/g			U
10	SAMPLE	S10V001662		0 0	A		Neptunium-237	SOLID	N/A	<3.9769E-04			3.98E-04	ug/g			U
10	SAMPLE	S10V001662		0 0	A		Uranium-238	SOLID	N/A	6.1254E-01			1.99E-03	ug/g			
Sample Sequence 11																	
11	CCV	S1009080229		0 0			Thorium-232	LIQUID	.001	9.5970E-04			5.00E-07	ug/mL	95.97	% Recovery	
11	CCV	S1009080229		0 0			Uranium-235	LIQUID	.0000072	7.2710E-06			1.00E-08	ug/mL	100.99	% Recovery	

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LABCORE Completed Batch Report for Batch# 00022039

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
11	CCV	S1009080229		0 0			Neptunium-237	LIQUID	.0011	1.0440E-03			1.00E-07	ug/mL	94.909	% Recovery	
11	CCV	S1009080229		0 0			Uranium-238	LIQUID	.0009928	9.5330E-04			5.00E-07	ug/mL	96.021	% Recovery	
Sample Sequence 12																	
12	CCB	S1009080230		0 0			Thorium-230	LIQUID		<7.0000E-09			7.00E-09	ug/mL			
12	CCB	S1009080230		0 0			Thorium-232	LIQUID		<5.0000E-07			5.00E-07	ug/mL			
12	CCB	S1009080230		0 0			Uranium-233	LIQUID		<1.0000E-08			1.00E-08	ug/mL			
12	CCB	S1009080230		0 0			Uranium-234	LIQUID		<5.0000E-09			5.00E-09	ug/mL			
12	CCB	S1009080230		0 0			Uranium-235	LIQUID		<1.0000E-08			1.00E-08	ug/mL			
12	CCB	S1009080230		0 0			Uranium-236	LIQUID		4.0000E-09			4.00E-09	ug/mL			
12	CCB	S1009080230		0 0			Neptunium-237	LIQUID		<1.0000E-07			1.00E-07	ug/mL			
12	CCB	S1009080230		0 0			Uranium-238	LIQUID		<5.0000E-07			5.00E-07	ug/mL			
Sample Sequence 13																	
13	SAMPLE	S10V001702		0 0	A		Thorium-230	SOLID	N/A	4.2829E-05			2.77E-05	ug/g			J
13	SAMPLE	S10V001702		0 0	A		Thorium-232	SOLID	N/A	2.3411E+00			1.98E-03	ug/g			
13	SAMPLE	S10V001702		0 0	A		Uranium-233	SOLID	N/A	7.9917E-05			3.95E-05	ug/g			J
13	SAMPLE	S10V001702		0 0	A		Uranium-234	SOLID	N/A	2.9992E-05			1.98E-05	ug/g			J
13	SAMPLE	S10V001702		0 0	A		Uranium-235	SOLID	N/A	2.5951E-03			3.95E-05	ug/g			
13	SAMPLE	S10V001702		0 0	A		Uranium-236	SOLID	N/A	2.4043E-05			1.58E-05	ug/g			BJ
13	SAMPLE	S10V001702		0 0	A		Neptunium-237	SOLID	N/A	<3.9529E-04			3.95E-04	ug/g			U
13	SAMPLE	S10V001702		0 0	A		Uranium-238	SOLID	N/A	3.4983E-01			1.98E-03	ug/g			
Sample Sequence 14																	
14	SAMPLE	S10V001722		0 0	A		Thorium-230	SOLID	N/A	5.1060E-05			2.76E-05	ug/g			J
15	SAMPLE	S10V001722		0 2	A		Thorium-232	SOLID	N/A	1.6411E+01			0.019748	ug/g			
14	SAMPLE	S10V001722		0 0	A		Uranium-233	SOLID	N/A	7.9063E-04			3.95E-05	ug/g			
14	SAMPLE	S10V001722		0 0	A		Uranium-234	SOLID	N/A	8.4266E-05			1.97E-05	ug/g			J
14	SAMPLE	S10V001722		0 0	A		Uranium-235	SOLID	N/A	9.4230E-03			3.95E-05	ug/g			
14	SAMPLE	S10V001722		0 0	A		Uranium-236	SOLID	N/A	<1.5799E-05			1.58E-05	ug/g			U
14	SAMPLE	S10V001722		0 0	A		Neptunium-237	SOLID	N/A	<3.9497E-04			3.95E-04	ug/g			U
14	SAMPLE	S10V001722		0 0	A		Uranium-238	SOLID	N/A	1.3794E+00			1.97E-03	ug/g			
Sample Sequence 16																	
16	SPK-POST	S1009080228	S10V001614	0 0			Thorium-232	SOLID	.4	6.5530E-01			5.00E-07	ug/mL	97.75	% Recovery	
16	SPK-POST	S1009080228	S10V001614	0 0			Uranium-235	SOLID	.00288	3.1130E-03			1.00E-08	ug/mL	96.594	% Recovery	
16	SPK-POST	S1009080228	S10V001614	0 0			Neptunium-237	SOLID	.3934	3.9770E-01			1.00E-07	ug/mL	101.07	% Recovery	
16	SPK-POST	S1009080228	S10V001614	0 0			Uranium-238	SOLID	.39712	4.4200E-01			5.00E-07	ug/mL	98.925	% Recovery	
Sample Sequence 17																	
17	SPK-PREDIG	S1008250091	S10V001614	0 0	A		Neptunium-237	SOLID	.494916326568	4.8055E-01			3.95E-04	ug/g	96.925	% Recovery	
Sample Sequence 18																	
18	SPK-PREDIG	S1008250092	S10V001614	0 0	A		Thorium-232	SOLID	1.95637288	4.2618E+00			1.98E-03	ug/g	84.052	% Recovery	
18	SPK-PREDIG	S1008250092	S10V001614	0 0	A		Uranium-235	SOLID	.014085884736	1.5221E-02			3.96E-05	ug/g	84.783	% Recovery	
18	SPK-PREDIG	S1008250092	S10V001614	0 0	A		Uranium-238	SOLID	1.942286995264	2.2807E+00			1.98E-03	ug/g	92.365	% Recovery	
Sample Sequence 19																	

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LABCORE Completed Batch Report for Batch# 00022039

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
20	STD-PREP	S1008250080		0 1	A		Thorium-232	LIQUID	.02	2.1300E-02			1.00E-05	ug/mL	106.5	% Recovery	
20	STD-PREP	S1008250080		0 1	A		Uranium-235	LIQUID	.000144	1.4350E-04			2.00E-07	ug/mL	99.653	% Recovery	
19	STD-PREP	S1008250080		0 0	A		Neptunium-237	LIQUID	.0175	1.7620E-02			2.00E-06	ug/mL	100.69	% Recovery	
20	STD-PREP	S1008250080		0 1	A		Uranium-238	LIQUID	.019856	2.1260E-02			1.00E-05	ug/mL	107.07	% Recovery	
Sample Sequence 21																	
21	CCV	S1009080231		0 0			Thorium-232	LIQUID	.001	9.3970E-04			5.00E-07	ug/mL	93.97	% Recovery	
21	CCV	S1009080231		0 0			Uranium-235	LIQUID	.0000072	7.0120E-06			1.00E-08	ug/mL	97.389	% Recovery	
21	CCV	S1009080231		0 0			Neptunium-237	LIQUID	.0011	1.0480E-03			1.00E-07	ug/mL	95.273	% Recovery	
21	CCV	S1009080231		0 0			Uranium-238	LIQUID	.0009928	9.5900E-04			5.00E-07	ug/mL	96.595	% Recovery	
Sample Sequence 22																	
22	LLS	S1009080233		0 0			Thorium-232	LIQUID	.000005	4.8890E-06			5.00E-07	ug/mL	97.78	% Recovery	
22	LLS	S1009080233		0 0			Uranium-235	LIQUID	.000000036	4.1000E-08			1.00E-08	ug/mL	113.89	% Recovery	
22	LLS	S1009080233		0 0			Neptunium-237	LIQUID	.0000049175	5.1750E-06			1.00E-07	ug/mL	105.24	% Recovery	
22	LLS	S1009080233		0 0			Uranium-238	LIQUID	.000004964	5.2660E-06			5.00E-07	ug/mL	106.08	% Recovery	
Sample Sequence 23																	
23	CCB	S1009080232		0 0			Thorium-230	LIQUID		<7.0000E-09			7.00E-09	ug/mL			
23	CCB	S1009080232		0 0			Thorium-232	LIQUID		6.4000E-07			5.00E-07	ug/mL			
23	CCB	S1009080232		0 0			Uranium-233	LIQUID		<1.0000E-08			1.00E-08	ug/mL			
23	CCB	S1009080232		0 0			Uranium-234	LIQUID		<5.0000E-09			5.00E-09	ug/mL			
23	CCB	S1009080232		0 0			Uranium-235	LIQUID		<1.0000E-08			1.00E-08	ug/mL			
23	CCB	S1009080232		0 0			Uranium-236	LIQUID		<4.0000E-09			4.00E-09	ug/mL			
23	CCB	S1009080232		0 0			Neptunium-237	LIQUID		<1.0000E-07			1.00E-07	ug/mL			
23	CCB	S1009080232		0 0			Uranium-238	LIQUID		<5.0000E-07			5.00E-07	ug/mL			

Comments Section:

Data Flagger Status:
Flagging Completed

Final Page for Batch# 00022039

Reviewer Signature **Date**

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N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00022039

Seq	Sample#	QC Type	Assoc. Sample	Sample Group	Customer Id	Specification
1	S1009080224	ICV				
2	S1009080226	LLS				
3	S1009080226	LLS				
4	S1009080225	ICB				
5	S1008250079	BLNK-PREP				
6	S1009080227	SERDIL	S10V001614			
7	S10V001614	SAMPLE		20100556	B26JK6	C Farm WMC 2010-2
8	S1008250081	DUP	S10V001614			
9	S10V001642	SAMPLE		20100556	B26JK7	C Farm WMC 2010-2
10	S10V001662	SAMPLE		20100556	B29612	C Farm WMC 2010-2
11	S1009080229	CCV				
12	S1009080230	CCB				
13	S10V001702	SAMPLE		20100556	B26CC4	C Farm WMC 2010-2
14	S10V001722	SAMPLE		20100556	B29613	C Farm WMC 2010-2
15	S10V001722	SAMPLE		20100556	B29613	C Farm WMC 2010-2
16	S1009080228	SPK-POST	S10V001614			
17	S1008250091	SPK-PREDIG	S10V001614			
18	S1008250092	SPK-PREDIG	S10V001614			
19	S1008250080	STD-PREP				
20	S1008250080	STD-PREP				
21	S1009080231	CCV				
22	S1009080233	LLS				
23	S1009080232	CCB				

Units shown for QC (BLK/BKG) may not reflect the actual units.

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LABCORE Completed Batch Report for Batch# 00023853

Analyst: Mull, Bryanna **Book#:**

Instrument: ICP/MS PQ-EXCELL

Method: MS FISSION PRODUCTS, LA-506-102 Rev/Mod F-1

Specification: C Farm WMC 2010-2

Prep Batch: 00022490

Batch Comment:

ICPMS Fission Product C-farm WMC 2010-2. RJB

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
Sample Sequence 1																	
2	ICV	S1011050073		0 1			Technetium-99	LIQUID	.001	1.0090E-03			3.00E-07	ug/mL	100.9	% Recovery	
1	ICV	S1011050073		0 0			Tin-117	LIQUID	.001	1.0600E-03			1.00E-05	ug/mL	106	% Recovery	
Sample Sequence 3																	
4	LLS	S1011050075		0 1			Technetium-99	LIQUID	.000002	2.0930E-06			3.00E-07	ug/mL	104.65	% Recovery	
3	LLS	S1011050075		0 0			Tin-117	LIQUID	.000016	1.6870E-05			1.00E-05	ug/mL	105.44	% Recovery	
Sample Sequence 5																	
5	ICB	S1011050074		0 0			Technetium-99	LIQUID		<3.0000E-07			3.00E-07	ug/mL			
5	ICB	S1011050074		0 0			Tin-117	LIQUID		<1.0000E-05			1.00E-05	ug/mL			
5	ICB	S1011050074		0 0			Tin-126	LIQUID		<2.0000E-07			2.00E-07	ug/mL			
Sample Sequence 6																	
6	BLNK-PREP	S1009230141		0 0	A		Technetium-99	LIQUID		<3.0000E-05			3.00E-05	ug/mL			
6	BLNK-PREP	S1009230141		0 0	A		Tin-117	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
6	BLNK-PREP	S1009230141		0 0	A		Tin-126	LIQUID		<2.0000E-05			2.00E-05	ug/mL			
Sample Sequence 7																	
7	SERDIL	S1011050076	S10V001814	0 0			Technetium-99	SOLID		<1.5000E-03			1.50E-03	ug/g	N/A		
7	SERDIL	S1011050076	S10V001814	0 0			Tin-117	SOLID		<4.9999E-02			0.049999	ug/g	N/A		
7	SERDIL	S1011050076	S10V001814	0 0			Tin-126	SOLID		<9.9998E-04			1.00E-03	ug/g	N/A		
Sample Sequence 8																	
8	SAMPLE	S10V001814		0 0	A		Technetium-99	SOLID	N/A	<2.9999E-04			3.00E-04	ug/g			U
8	SAMPLE	S10V001814		0 0	A		Tin-117	SOLID	N/A	<9.9998E-03			1.00E-02	ug/g			U
8	SAMPLE	S10V001814		0 0	A		Tin-126	SOLID	N/A	5.3509E-04			2.00E-04	ug/g			BJ
Sample Sequence 9																	
9	DUP	S1009230143	S10V001814	0 0	A		Technetium-99	SOLID	<2.9999E-04	<2.9996E-04			3.00E-04	ug/g			
9	DUP	S1009230143	S10V001814	0 0	A		Tin-117	SOLID	<9.9998E-03	1.0679E-02			1.00E-02	ug/g	6.5690	% RPD	
9	DUP	S1009230143	S10V001814	0 0	A		Tin-126	SOLID	5.3509E-04	4.7224E-04			2.00E-04	ug/g	12.478	% RPD	
Sample Sequence 10																	
10	SAMPLE	S10V001774		0 0	A		Technetium-99	SOLID	N/A	3.1075E-04			2.98E-04	ug/g			J
10	SAMPLE	S10V001774		0 0	A		Tin-117	SOLID	N/A	1.2490E-02			9.94E-03	ug/g			J
10	SAMPLE	S10V001774		0 0	A		Tin-126	SOLID	N/A	6.6924E-04			1.99E-04	ug/g			BJ
Sample Sequence 11																	
12	CCV	S1011050088		0 1			Technetium-99	LIQUID	.001	1.0130E-03			3.00E-07	ug/mL	101.3	% Recovery	
11	CCV	S1011050088		0 0			Tin-117	LIQUID	.001	1.0670E-03			1.00E-05	ug/mL	106.7	% Recovery	
Sample Sequence 13																	

Units shown for QC (BLK/BKG) may not reflect the actual units.

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00023853

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
13	CCB	S1011050087		0 0			Technetium-99	LIQUID		<3.0000E-07			3.00E-07	ug/mL			
13	CCB	S1011050087		0 0			Tin-117	LIQUID		<1.0000E-05			1.00E-05	ug/mL			
13	CCB	S1011050087		0 0			Tin-126	LIQUID		2.8400E-07			2.00E-07	ug/mL			
Sample Sequence 14																	
14	SAMPLE	S10V001794		0 0	A		Technetium-99	SOLID	N/A	3.1337E-03			2.93E-04	ug/g			
14	SAMPLE	S10V001794		0 0	A		Tin-117	SOLID	N/A	<9.7807E-03			9.78E-03	ug/g			U
14	SAMPLE	S10V001794		0 0	A		Tin-126	SOLID	N/A	5.8772E-04			1.96E-04	ug/g			BJ
Sample Sequence 15																	
15	SAMPLE	S10V002291		0 0	A		Technetium-99	SOLID	N/A	<2.9998E-04			3.00E-04	ug/g			U
15	SAMPLE	S10V002291		0 0	A		Tin-117	SOLID	N/A	1.1009E-02			1.00E-02	ug/g			J
15	SAMPLE	S10V002291		0 0	A		Tin-126	SOLID	N/A	4.1078E-04			2.00E-04	ug/g			BJ
Sample Sequence 16																	
16	SAMPLE	S10V002318		0 0	A		Technetium-99	SOLID	N/A	<2.9448E-04			2.94E-04	ug/g			U
16	SAMPLE	S10V002318		0 0	A		Tin-117	SOLID	N/A	1.0719E-02			9.82E-03	ug/g			J
16	SAMPLE	S10V002318		0 0	A		Tin-126	SOLID	N/A	7.9078E-04			1.96E-04	ug/g			BJ
Sample Sequence 17																	
17	SAMPLE	S10V002354		0 0	A		Technetium-99	SOLID	N/A	<2.9999E-04			3.00E-04	ug/g			U
17	SAMPLE	S10V002354		0 0	A		Tin-117	SOLID	N/A	1.0720E-02			1.00E-02	ug/g			J
17	SAMPLE	S10V002354		0 0	A		Tin-126	SOLID	N/A	6.9209E-04			2.00E-04	ug/g			BJ
Sample Sequence 18																	
18	SAMPLE	S10V002400		0 0	A		Technetium-99	SOLID	N/A	<2.9999E-04			3.00E-04	ug/g			U
18	SAMPLE	S10V002400		0 0	A		Tin-117	SOLID	N/A	<9.9996E-03			1.00E-02	ug/g			U
18	SAMPLE	S10V002400		0 0	A		Tin-126	SOLID	N/A	2.7729E-04			2.00E-04	ug/g			BJ
Sample Sequence 19																	
19	SAMPLE	S10V002419		0 0	A		Technetium-99	SOLID	N/A	<2.9770E-04			2.98E-04	ug/g			U
19	SAMPLE	S10V002419		0 0	A		Tin-117	SOLID	N/A	1.1848E-02			9.92E-03	ug/g			J
19	SAMPLE	S10V002419		0 0	A		Tin-126	SOLID	N/A	4.3851E-04			1.98E-04	ug/g			BJ
Sample Sequence 20																	
20	SAMPLE	S10V002438		0 0	A		Technetium-99	SOLID	N/A	<2.9747E-04			2.97E-04	ug/g			U
20	SAMPLE	S10V002438		0 0	A		Tin-117	SOLID	N/A	<9.9157E-03			9.92E-03	ug/g			U
20	SAMPLE	S10V002438		0 0	A		Tin-126	SOLID	N/A	4.7060E-04			1.98E-04	ug/g			BJ
Sample Sequence 21																	
21	SAMPLE	S10V002457		0 0	A		Technetium-99	SOLID	N/A	<2.9999E-04			3.00E-04	ug/g			U
21	SAMPLE	S10V002457		0 0	A		Tin-117	SOLID	N/A	<9.9998E-03			1.00E-02	ug/g			U
21	SAMPLE	S10V002457		0 0	A		Tin-126	SOLID	N/A	4.0879E-04			2.00E-04	ug/g			BJ
Sample Sequence 22																	
22	SAMPLE	S10V002476		0 0	A		Technetium-99	SOLID	N/A	<2.9687E-04			2.97E-04	ug/g			U
22	SAMPLE	S10V002476		0 0	A		Tin-117	SOLID	N/A	<9.8955E-03			9.90E-03	ug/g			U
22	SAMPLE	S10V002476		0 0	A		Tin-126	SOLID	N/A	4.5539E-04			1.98E-04	ug/g			BJ
Sample Sequence 23																	
23	SAMPLE	S10V002495		0 0	A		Technetium-99	SOLID	N/A	<2.9999E-04			3.00E-04	ug/g			U
23	SAMPLE	S10V002495		0 0	A		Tin-117	SOLID	N/A	1.1030E-02			1.00E-02	ug/g			J
23	SAMPLE	S10V002495		0 0	A		Tin-126	SOLID	N/A	6.7357E-04			2.00E-04	ug/g			BJ
Sample Sequence 24																	

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N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00023853

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
25	CCV	S1011050080		0 1			Technetium-99	LIQUID	.001	1.0030E-03			3.00E-07	ug/mL	100.3	% Recovery	
24	CCV	S1011050080		0 0			Tin-117	LIQUID	.001	1.0500E-03			1.00E-05	ug/mL	105	% Recovery	
Sample Sequence 26																	
26	CCB	S1011050081		0 0			Technetium-99	LIQUID		<3.0000E-07			3.00E-07	ug/mL			
26	CCB	S1011050081		0 0			Tin-117	LIQUID		<1.0000E-05			1.00E-05	ug/mL			
26	CCB	S1011050081		0 0			Tin-126	LIQUID		3.6700E-07			2.00E-07	ug/mL			
Sample Sequence 27																	
27	STD-PREP	S1009230146		0 0	A		Technetium-99	LIQUID	.0005249	5.7160E-04			3.00E-07	ug/mL	108.9	% Recovery	
28	STD-PREP	S1009230146		0 1	A		Tin-117	LIQUID	.00308	3.1440E-03			2.00E-05	ug/mL	102.08	% Recovery	
Sample Sequence 29																	
29	SPK-PREDIG	S1009230144	S10V001814	0 0	A		Technetium-99	SOLID	.00524858008	5.6885E-03			3.00E-04	ug/g	108.38	% Recovery	
Sample Sequence 30																	
30	SPK-PREDIG	S1009230145	S10V001814	0 0	A		Tin-117	SOLID	.15399692	1.1480E-01			1.00E-02	ug/g	74.545	% Recovery	
Sample Sequence 31																	
32	SPK-POST	S1011050077	S10V001814	0 1			Technetium-99	SOLID	.1	9.2250E-02			3.00E-07	ug/mL	92.25	% Recovery	
31	SPK-POST	S1011050077	S10V001814	0 0			Tin-117	SOLID	.1	1.0510E-01			1.00E-05	ug/mL	105.1	% Recovery	
Sample Sequence 33																	
34	CCV	S1011050078		0 1			Technetium-99	LIQUID	.001	9.9710E-04			3.00E-07	ug/mL	99.71	% Recovery	
33	CCV	S1011050078		0 0			Tin-117	LIQUID	.001	1.0530E-03			1.00E-05	ug/mL	105.3	% Recovery	
Sample Sequence 35																	
36	LLS	S1011050082		0 1			Technetium-99	LIQUID	.000002	2.0640E-06			3.00E-07	ug/mL	103.2	% Recovery	
35	LLS	S1011050082		0 0			Tin-117	LIQUID	.000016	1.6830E-05			1.00E-05	ug/mL	105.19	% Recovery	
Sample Sequence 37																	
37	CCB	S1011050079		0 0			Technetium-99	LIQUID		<3.0000E-07			3.00E-07	ug/mL			
37	CCB	S1011050079		0 0			Tin-117	LIQUID		<1.0000E-05			1.00E-05	ug/mL			
37	CCB	S1011050079		0 0			Tin-126	LIQUID		<2.0000E-07			2.00E-07	ug/mL			

Comments Section:

Data Flagger Status:
Flagging Completed

Final Page for Batch# 00023853

Reviewer Signature **Date**

Units shown for QC (BLK/BKG) may not reflect the actual units.

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LABCORE Completed Batch Report for Batch# 00023853

Seq	Sample#	QC Type	Assoc. Sample	Sample Group	Customer Id	Specification
1	S1011050073	ICV				
2	S1011050073	ICV				
3	S1011050075	LLS				
4	S1011050075	LLS				
5	S1011050074	ICB				
6	S1009230141	BLNK-PREP				
7	S1011050076	SERDIL	S10V001814			
8	S10V001814	SAMPLE		20100556	B26CD4	C Farm WMC 2010-2
9	S1009230143	DUP	S10V001814			
10	S10V001774	SAMPLE		20100556	B26CD0	C Farm WMC 2010-2
11	S1011050088	CCV				
12	S1011050088	CCV				
13	S1011050087	CCB				
14	S10V001794	SAMPLE		20100556	B26CD2	C Farm WMC 2010-2
15	S10V002291	SAMPLE		20100660	B26JL0	C Farm WMC 2010-2
16	S10V002318	SAMPLE		20100660	B26JL1	C Farm WMC 2010-2
17	S10V002354	SAMPLE		20100660	B26C47	C Farm WMC 2010-2
18	S10V002400	SAMPLE		20100660	B26C51	C Farm WMC 2010-2
19	S10V002419	SAMPLE		20100660	B26C53	C Farm WMC 2010-2
20	S10V002438	SAMPLE		20100660	B26C55	C Farm WMC 2010-2
21	S10V002457	SAMPLE		20100660	B26C57	C Farm WMC 2010-2
22	S10V002476	SAMPLE		20100660	B26C59	C Farm WMC 2010-2
23	S10V002495	SAMPLE		20100660	B26C61	C Farm WMC 2010-2
24	S1011050080	CCV				
25	S1011050080	CCV				
26	S1011050081	CCB				
27	S1009230146	STD-PREP				
28	S1009230146	STD-PREP				
29	S1009230144	SPK-PREDIG	S10V001814			
30	S1009230145	SPK-PREDIG	S10V001814			
31	S1011050077	SPK-POST	S10V001814			
32	S1011050077	SPK-POST	S10V001814			
33	S1011050078	CCV				
34	S1011050078	CCV				
35	S1011050082	LLS				

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LABCORE Completed Batch Report for Batch# 00023853

36	S1011050082	LLS
37	S1011050079	CCB

Units shown for QC (BLK/BKG) may not reflect the actual units.

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LABCORE Completed Batch Report for Batch# 00022109

Analyst: Shaw, Levi **Book#:**

Instrument: ICP/MS PQ-EXCELL

Method: MS FISSION PRODUCTS, LA-506-102 Rev/Mod F-1

Specification: C Farm WMC 2010-2

Prep Batch: 00021568

Batch Comment:

ICP-MS analysis of C Farm WMC 2010-2 soil digestates. bsm

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
Sample Sequence 1																	
1	ICV	S1009100114		0 0			Technetium-99	LIQUID	.001	1.0240E-03			3.00E-07	ug/mL	102.4	% Recovery	
2	ICV	S1009100114		0 1			Tin-117	LIQUID	.001	1.0340E-03			1.00E-05	ug/mL	103.4	% Recovery	
Sample Sequence 3																	
3	LLS	S1009100116		0 0			Technetium-99	LIQUID	.000001856	2.1700E-06			3.00E-07	ug/mL	116.92	% Recovery	
4	LLS	S1009100116		0 1			Tin-117	LIQUID	.000016	1.7540E-05			1.00E-05	ug/mL	109.62	% Recovery	
Sample Sequence 5																	
5	ICB	S1009100115		0 0			Technetium-99	LIQUID		<3.0000E-07			3.00E-07	ug/mL			
5	ICB	S1009100115		0 0			Tin-117	LIQUID		<1.0000E-05			1.00E-05	ug/mL			
5	ICB	S1009100115		0 0			Tin-126	LIQUID		<2.0000E-07			2.00E-07	ug/mL			
Sample Sequence 6																	
6	BLNK-PREP	S1008250094		0 0	A		Technetium-99	LIQUID		<1.5000E-05			1.50E-05	ug/mL			
6	BLNK-PREP	S1008250094		0 0	A		Tin-117	LIQUID		<5.0000E-04			5.00E-04	ug/mL			
6	BLNK-PREP	S1008250094		0 0	A		Tin-126	LIQUID		<1.0000E-05			1.00E-05	ug/mL			
Sample Sequence 7																	
7	SERDIL	S1009100117	S10V001644	0 0			Technetium-99	SOLID		<7.4442E-04			7.44E-04	ug/g	N/A		
7	SERDIL	S1009100117	S10V001644	0 0			Tin-117	SOLID		<2.4814E-02			0.024814	ug/g	N/A		
7	SERDIL	S1009100117	S10V001644	0 0			Tin-126	SOLID		<4.9628E-04			4.96E-04	ug/g	N/A		
Sample Sequence 8																	
8	SAMPLE	S10V001644		0 0	A		Technetium-99	SOLID	N/A	<1.4888E-04			1.49E-04	ug/g			U
8	SAMPLE	S10V001644		0 0	A		Tin-117	SOLID	N/A	1.4283E-02			4.96E-03	ug/g			Jb
8	SAMPLE	S10V001644		0 0	A		Tin-126	SOLID	N/A	3.8809E-04			9.93E-05	ug/g			Jb
Sample Sequence 9																	
9	DUP	S1008250096	S10V001644	0 0	A		Technetium-99	SOLID	<1.4888E-04	<1.4919E-04			1.49E-04	ug/g			
9	DUP	S1008250096	S10V001644	0 0	A		Tin-117	SOLID	1.4283E-02	1.4253E-02			4.97E-03	ug/g	0.20941	% RPD	
9	DUP	S1008250096	S10V001644	0 0	A		Tin-126	SOLID	3.8809E-04	3.5419E-04			9.95E-05	ug/g	9.1338	% RPD	
Sample Sequence 10																	
10	SAMPLE	S10V001616		0 0	A		Technetium-99	SOLID	N/A	<1.4903E-04			1.49E-04	ug/g			U
10	SAMPLE	S10V001616		0 0	A		Tin-117	SOLID	N/A	1.3572E-02			4.97E-03	ug/g			Jb
10	SAMPLE	S10V001616		0 0	A		Tin-126	SOLID	N/A	4.1569E-04			9.94E-05	ug/g			Jb
Sample Sequence 11																	
11	CCV	S1009100119		0 0			Technetium-99	LIQUID	.001	1.0160E-03			3.00E-07	ug/mL	101.6	% Recovery	
12	CCV	S1009100119		0 1			Tin-117	LIQUID	.001	1.0310E-03			1.00E-05	ug/mL	103.1	% Recovery	
Sample Sequence 13																	

Units shown for QC (BLK/BKG) may not reflect the actual units.

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00022109

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
13	CCB	S1009100120		0 0			Technetium-99	LIQUID		<3.0000E-07			3.00E-07	ug/mL			
13	CCB	S1009100120		0 0			Tin-117	LIQUID		<1.0000E-05			1.00E-05	ug/mL			
13	CCB	S1009100120		0 0			Tin-126	LIQUID		<2.0000E-07			2.00E-07	ug/mL			
Sample Sequence 14																	
14	SAMPLE	S10V001664		0 0	A		Technetium-99	SOLID	N/A	<1.4887E-04			1.49E-04	ug/g			U
14	SAMPLE	S10V001664		0 0	A		Tin-117	SOLID	N/A	1.6653E-02			4.96E-03	ug/g			Jb
14	SAMPLE	S10V001664		0 0	A		Tin-126	SOLID	N/A	5.1190E-04			9.92E-05	ug/g			BJb
Sample Sequence 15																	
15	SAMPLE	S10V001704		0 0	A		Technetium-99	SOLID	N/A	<1.4875E-04			1.49E-04	ug/g			U
15	SAMPLE	S10V001704		0 0	A		Tin-117	SOLID	N/A	1.5311E-02			4.96E-03	ug/g			Jb
15	SAMPLE	S10V001704		0 0	A		Tin-126	SOLID	N/A	3.0434E-04			9.92E-05	ug/g			BJb
Sample Sequence 16																	
16	SAMPLE	S10V001724		0 0	A		Technetium-99	SOLID	N/A	<1.4937E-04			1.49E-04	ug/g			U
16	SAMPLE	S10V001724		0 0	A		Tin-117	SOLID	N/A	1.2547E-02			4.98E-03	ug/g			Jb
16	SAMPLE	S10V001724		0 0	A		Tin-126	SOLID	N/A	3.0970E-04			9.96E-05	ug/g			BJb
Sample Sequence 17																	
17	SPK-POST	S1009100118	S10V001644	0 0			Technetium-99	SOLID	.05	4.5450E-02			3.00E-07	ug/mL	90.9	% Recovery	
18	SPK-POST	S1009100118	S10V001644	0 1			Tin-117	SOLID	.05	5.2380E-02			1.00E-05	ug/mL	101.88	% Recovery	
Sample Sequence 19																	
19	STD-PREP	S1008250095		0 0	A		Technetium-99	LIQUID	.0005249	5.8030E-04			3.00E-07	ug/mL	110.55	% Recovery	
20	STD-PREP	S1008250095		0 1	A		Tin-117	LIQUID	.00308	3.2290E-03			2.00E-05	ug/mL	104.84	% Recovery	
Sample Sequence 21																	
21	SPK-PREDIG	S1008250097	S10V001644	0 0	A		Technetium-99	SOLID	.005236955	5.7787E-03			1.50E-04	ug/g	110.34	% Recovery	
Sample Sequence 22																	
22	SPK-PREDIG	S1008250099	S10V001644	0 0	A		Tin-117	SOLID	.15376013268	1.2201E-01			4.99E-03	ug/g	70.062	% Recovery	
Sample Sequence 23																	
23	CCV	S1009100121		0 0			Technetium-99	LIQUID	.001	1.0110E-03			3.00E-07	ug/mL	101.1	% Recovery	
24	CCV	S1009100121		0 1			Tin-117	LIQUID	.001	1.0260E-03			1.00E-05	ug/mL	102.6	% Recovery	
Sample Sequence 25																	
25	CCB	S1009100122		0 0			Technetium-99	LIQUID		<3.0000E-07			3.00E-07	ug/mL			
25	CCB	S1009100122		0 0			Tin-117	LIQUID		<1.0000E-05			1.00E-05	ug/mL			
25	CCB	S1009100122		0 0			Tin-126	LIQUID		2.6500E-07			2.00E-07	ug/mL			
Sample Sequence 26																	
26	CCV	S1009100124		0 0			Technetium-99	LIQUID	.001	1.0100E-03			3.00E-07	ug/mL	101	% Recovery	
27	CCV	S1009100124		0 1			Tin-117	LIQUID	.001	1.0290E-03			1.00E-05	ug/mL	102.9	% Recovery	
Sample Sequence 28																	
28	LLS	S1009100125		0 0			Technetium-99	LIQUID	.000002	2.2450E-06			3.00E-07	ug/mL	112.25	% Recovery	
29	LLS	S1009100125		0 1			Tin-117	LIQUID	.000016	1.8070E-05			1.00E-05	ug/mL	112.94	% Recovery	
Sample Sequence 30																	
30	CCB	S1009100123		0 0			Technetium-99	LIQUID		<3.0000E-07			3.00E-07	ug/mL			
30	CCB	S1009100123		0 0			Tin-117	LIQUID		<1.0000E-05			1.00E-05	ug/mL			
30	CCB	S1009100123		0 0			Tin-126	LIQUID		<2.0000E-07			2.00E-07	ug/mL			

Units shown for QC (BLK/BKG) may not reflect the actual units.

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00022109

Comments Section:

Data Flagger Status:
Flagging Completed

Final Page for Batch# 00022109

Reviewer Signature **Date**

Units shown for QC (BLK/BKG) may not reflect the actual units.

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00022109

Seq	Sample#	QC Type	Assoc. Sample	Sample Group	Customer Id	Specification
1	S1009100114	ICV				
2	S1009100114	ICV				
3	S1009100116	LLS				
4	S1009100116	LLS				
5	S1009100115	ICB				
6	S1008250094	BLNK-PREP				
7	S1009100117	SERDIL	S10V001644			
8	S10V001644	SAMPLE		20100556	B26JK7	C Farm WMC 2010-2
9	S1008250096	DUP	S10V001644			
10	S10V001616	SAMPLE		20100556	B26JK6	C Farm WMC 2010-2
11	S1009100119	CCV				
12	S1009100119	CCV				
13	S1009100120	CCB				
14	S10V001664	SAMPLE		20100556	B29612	C Farm WMC 2010-2
15	S10V001704	SAMPLE		20100556	B26CC4	C Farm WMC 2010-2
16	S10V001724	SAMPLE		20100556	B29613	C Farm WMC 2010-2
17	S1009100118	SPK-POST	S10V001644			
18	S1009100118	SPK-POST	S10V001644			
19	S1008250095	STD-PREP				
20	S1008250095	STD-PREP				
21	S1008250097	SPK-PREDIG	S10V001644			
22	S1008250099	SPK-PREDIG	S10V001644			
23	S1009100121	CCV				
24	S1009100121	CCV				
25	S1009100122	CCB				
26	S1009100124	CCV				
27	S1009100124	CCV				
28	S1009100125	LLS				
29	S1009100125	LLS				
30	S1009100123	CCB				

Units shown for QC (BLK/BKG) may not reflect the actual units.

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00023162

Analyst: Shaw, Levi

Book#:

Instrument: ICP/MS PQ-EXCELL

Method: MS TC-99, LA-506-102 Rev/Mod F-1

Specification: C Farm WMC 2010-2

Prep Batch: 00022393

Batch Comment:

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
Sample Sequence 1																	
1	ICV	S1010130180		0 0			Technetium-99	LIQUID	.001	1.0280E-03			3.00E-07	ug/mL	102.8	% Recovery	
Sample Sequence 2																	
2	LLS	S1010130182		0 0			Technetium-99	LIQUID	.000001856	2.1800E-06			3.00E-07	ug/mL	117.46	% Recovery	
Sample Sequence 3																	
3	ICB	S1010130181		0 0			Technetium-99	LIQUID		<3.0000E-07			3.00E-07	ug/mL			
Sample Sequence 4																	
4	BLNK-PREP	S1009220064		0 0	WV		Technetium-99	LIQUID		<3.0000E-06			3.00E-06	ug/mL			
Sample Sequence 5																	
5	SERDIL	S1010130183	S10V001657	0 0			Technetium-99	SOLID		<1.4883E-05			1.49E-05	ug/g	N/A		
Sample Sequence 6																	
6	SAMPLE	S10V001657		0 0	WV		Technetium-99	SOLID	N/A	<2.9765E-06			2.98E-06	ug/g			U
Sample Sequence 7																	
7	DUP	S1009220065	S10V001657	0 0	WV		Technetium-99	SOLID	<2.9765E-06	<2.9719E-06			2.97E-06	ug/g			
Sample Sequence 8																	
8	SAMPLE	S10V001609		0 0	WV		Technetium-99	SOLID	N/A	<2.8384E-06			2.84E-06	ug/g			U
Sample Sequence 9																	
9	SAMPLE	S10V001637		0 0	WV		Technetium-99	SOLID	N/A	<2.8738E-06			2.87E-06	ug/g			U
Sample Sequence 10																	
10	SAMPLE	S10V001697		0 0	WV		Technetium-99	SOLID	N/A	<2.9912E-06			2.99E-06	ug/g			U
Sample Sequence 11																	
11	STD-PREP	S1009220063		0 0	WV		Technetium-99	LIQUID	.001048	1.1480E-03			6.00E-07	ug/mL	109.54	% Recovery	
Sample Sequence 12																	
12	SPK-POST	S1010130185	S10V001657	0 0			Technetium-99	SOLID	.00928	9.3610E-03			3.00E-07	ug/mL	100.87	% Recovery	
Sample Sequence 13																	
13	CCV	S1010130186		0 0			Technetium-99	LIQUID	.001	1.0170E-03			3.00E-07	ug/mL	101.7	% Recovery	
Sample Sequence 14																	
14	CCB	S1010130187		0 0			Technetium-99	LIQUID		4.8800E-07			3.00E-07	ug/mL			
Sample Sequence 15																	
15	SAMPLE	S10V001717		0 0	WV		Technetium-99	SOLID	N/A	<2.9759E-06			2.98E-06	ug/g			U
Sample Sequence 16																	
16	SAMPLE	S10V001767		0 0	WV		Technetium-99	SOLID	N/A	7.1360E-06			3.51E-06	ug/g			BJ
Sample Sequence 17																	
17	SAMPLE	S10V001787		0 0	WV		Technetium-99	SOLID	N/A	1.2864E-03			3.05E-06	ug/g			
Sample Sequence 18																	

Units shown for QC (BLK/BKG) may not reflect the actual units.

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N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00023162

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
18	SAMPLE	S10V001807		0 0	WV		Technetium-99	SOLID	N/A	<2.8225E-06			2.82E-06	ug/g			U
Sample Sequence 19																	
19	SAMPLE	S10V002282		0 0	WV		Technetium-99	SOLID	N/A	<2.9468E-06			2.95E-06	ug/g			U
Sample Sequence 20																	
20	SAMPLE	S10V002311		0 0	WV		Technetium-99	SOLID	N/A	<2.9657E-06			2.97E-06	ug/g			U
Sample Sequence 21																	
21	SAMPLE	S10V002343		0 0	WV		Technetium-99	SOLID	N/A	<3.4040E-06			3.40E-06	ug/g			U
Sample Sequence 22																	
22	SAMPLE	S10V002393		0 0	WV		Technetium-99	SOLID	N/A	<3.0909E-06			3.09E-06	ug/g			U
Sample Sequence 23																	
23	SAMPLE	S10V002412		0 0	WV		Technetium-99	SOLID	N/A	<3.0331E-06			3.03E-06	ug/g			U
Sample Sequence 24																	
24	SAMPLE	S10V002431		0 0	WV		Technetium-99	SOLID	N/A	<3.1691E-06			3.17E-06	ug/g			U
Sample Sequence 25																	
25	CCV	S1010130188		0 0			Technetium-99	LIQUID	.001	1.0040E-03			3.00E-07	ug/mL	100.4	% Recovery	
Sample Sequence 26																	
26	CCB	S1010130189		0 0			Technetium-99	LIQUID		<3.0000E-07			3.00E-07	ug/mL			
Sample Sequence 27																	
27	SAMPLE	S10V002450		0 0	WV		Technetium-99	SOLID	N/A	<3.1041E-06			3.10E-06	ug/g			U
Sample Sequence 28																	
28	SAMPLE	S10V002469		0 0	WV		Technetium-99	SOLID	N/A	<3.0164E-06			3.02E-06	ug/g			U
Sample Sequence 29																	
29	SAMPLE	S10V002488		0 0	WV		Technetium-99	SOLID	N/A	<2.8788E-06			2.88E-06	ug/g			U
Sample Sequence 30																	
30	CCV	S1010130191		0 0			Technetium-99	LIQUID	.001	1.0010E-03			3.00E-07	ug/mL	100.1	% Recovery	
Sample Sequence 31																	
31	LLS	S1010130192		0 0			Technetium-99	LIQUID	.000001856	2.0100E-06			3.00E-07	ug/mL	108.3	% Recovery	
Sample Sequence 32																	
32	CCB	S1010130190		0 0			Technetium-99	LIQUID		<3.0000E-07			3.00E-07	ug/mL			

Comments Section:

Data Flagger Status:
Flagging Completed

Units shown for QC (BLK/BKG) may not reflect the actual units.

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LABCORE Completed Batch Report for Batch# 00023162

Final Page for Batch# 00023162

Reviewer Signature **Date**

Units shown for QC (BLK/BKG) may not reflect the actual units.

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LABCORE Completed Batch Report for Batch# 00023162

Seq	Sample#	QC Type	Assoc. Sample	Sample Group	Customer Id	Specification
1	S1010130180	ICV				
2	S1010130182	LLS				
3	S1010130181	ICB				
4	S1009220064	BLNK-PREP				
5	S1010130183	SERDIL	S10V001657			
6	S10V001657	SAMPLE		20100556	B29612 WE	C Farm WMC 2010-2
7	S1009220065	DUP	S10V001657			
8	S10V001609	SAMPLE		20100556	B26JK6 WE	C Farm WMC 2010-2
9	S10V001637	SAMPLE		20100556	B26JK7 WE	C Farm WMC 2010-2
10	S10V001697	SAMPLE		20100556	B26CC4 WE	C Farm WMC 2010-2
11	S1009220063	STD-PREP				
12	S1010130185	SPK-POST	S10V001657			
13	S1010130186	CCV				
14	S1010130187	CCB				
15	S10V001717	SAMPLE		20100556	B29613 WE	C Farm WMC 2010-2
16	S10V001767	SAMPLE		20100556	B26CD0 WE	C Farm WMC 2010-2
17	S10V001787	SAMPLE		20100556	B26CD2 WE	C Farm WMC 2010-2
18	S10V001807	SAMPLE		20100556	B26CD4 WE	C Farm WMC 2010-2
19	S10V002282	SAMPLE		20100660	B26JL0 WE	C Farm WMC 2010-2
20	S10V002311	SAMPLE		20100660	B26JL1 WE	C Farm WMC 2010-2
21	S10V002343	SAMPLE		20100660	B26C47 WE	C Farm WMC 2010-2
22	S10V002393	SAMPLE		20100660	B26C51 WE	C Farm WMC 2010-2
23	S10V002412	SAMPLE		20100660	B26C53 WE	C Farm WMC 2010-2
24	S10V002431	SAMPLE		20100660	B26C55 WE	C Farm WMC 2010-2
25	S1010130188	CCV				
26	S1010130189	CCB				
27	S10V002450	SAMPLE		20100660	B26C57 WE	C Farm WMC 2010-2
28	S10V002469	SAMPLE		20100660	B26C59 WE	C Farm WMC 2010-2
29	S10V002488	SAMPLE		20100660	B26C61 WE	C Farm WMC 2010-2
30	S1010130191	CCV				
31	S1010130192	LLS				
32	S1010130190	CCB				

Units shown for QC (BLK/BKG) may not reflect the actual units.

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LABCORE Completed Batch Report for Batch# 00020982

Analyst: Dinh, Liem **Book#:** 122N11B

Instrument: Hg by FIMS

Method: HG, LA-325-110 Rev/Mod A-0

Specification: C Farm WMC 2010-2

Prep Batch:

Batch Comment:

Hg for C-Farm WMC 2010-2/ Soil 71. lnd

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
Sample Sequence 1																	
1	ICV	S1007270127		0 0			Mercury	LIQUID	.01	1.0160E-02			1.00E-04	ug/mL	101.6	% Recovery	
Sample Sequence 2																	
2	ICB	S1007270128		0 0			Mercury	LIQUID		<1.0000E-04			1.00E-04	ug/mL			
Sample Sequence 3																	
3	LLS	S1007270129		0 0			Mercury	LIQUID	.001	1.1030E-03			1.00E-04	ug/mL	110.3	% Recovery	
Sample Sequence 4																	
4	SAMPLE	S10V001422		0 0			Mercury	SOLID	N/A	<9.9350E-03			9.94E-03	ug/g			U
Sample Sequence 5																	
5	SPK	S1007270131	S10V001422	0 0			Mercury	SOLID	5	5.3470E+00			9.92E-03	ug/g	106.94	% Recovery	
Sample Sequence 6																	
6	SPK-DUP	S1007270132	S10V001422	0 0			Mercury	SOLID	5	5.3700E+00			0.01002	ug/g	107.4	% Recovery	
															0.42922	% RPD	
Sample Sequence 7																	
7	SAMPLE	S10V001654		0 0			Mercury	SOLID	N/A	1.0225E-02			9.56E-03	ug/g			J
Sample Sequence 8																	
8	SAMPLE	S10V001694		0 0			Mercury	SOLID	N/A	<9.6570E-03			9.66E-03	ug/g			U
Sample Sequence 9																	
9	SAMPLE	S10V001714		0 0			Mercury	SOLID	N/A	<1.0121E-02			0.010121	ug/g			U
Sample Sequence 10																	
10	SAMPLE	S10V001764		0 0			Mercury	SOLID	N/A	<9.8810E-03			9.88E-03	ug/g			U
Sample Sequence 12																	
12	DUP	S1007270130	S10Q000169	0 0			Mercury	SOLID					0.036832	ug/g	2.1209	% RPD	
Sample Sequence 13																	
13	CCV	S1007270133		0 0			Mercury	LIQUID	.01	1.0420E-02			1.00E-04	ug/mL	104.2	% Recovery	
Sample Sequence 14																	
14	CCB	S1007270134		0 0			Mercury	LIQUID		<1.0000E-04			1.00E-04	ug/mL			

Comments Section:

Units shown for QC (BLK/BKG) may not reflect the actual units.

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00020982

Data Flagger Status:
Flagging Completed

Final Page for Batch# 00020982

Reviewer Signature **Date**

Units shown for QC (BLK/BKG) may not reflect the actual units.

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00020982

Seq	Sample#	QC Type	Assoc. Sample	Sample Group	Customer Id	Specification
1	S1007270127	ICV				
2	S1007270128	ICB				
3	S1007270129	LLS				
4	S10V001422	SAMPLE		20100520	B26C82	C Farm WMC 2010-2
5	S1007270131	SPK	S10V001422			
6	S1007270132	SPK-DUP	S10V001422			
7	S10V001654	SAMPLE		20100556	B29612	C Farm WMC 2010-2
8	S10V001694	SAMPLE		20100556	B26CC4	C Farm WMC 2010-2
9	S10V001714	SAMPLE		20100556	B29613	C Farm WMC 2010-2
10	S10V001764	SAMPLE		20100556	B26CD0	C Farm WMC 2010-2
12	S1007270130	DUP	S10Q000169			
13	S1007270133	CCV				
14	S1007270134	CCB				

Units shown for QC (BLK/BKG) may not reflect the actual units.

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00020849

Analyst: Hexum, Troy

Book#: 121N, 122N11B

Instrument: Hg by FIMS

Method: HG, LA-325-110 Rev/Mod A-0

Specification: C Farm WMC 2010-2

Prep Batch:

Batch Comment:

C-FARM WMC 2010-2 HG SOLIDS TJH

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
Sample Sequence 1																	
1	ICV	S1007200125		0 0			Mercury	LIQUID	.01	9.7440E-03			1.00E-04	ug/mL	97.44	% Recovery	
Sample Sequence 2																	
2	ICB	S1007200126		0 0			Mercury	LIQUID		<1.0000E-04			1.00E-04	ug/mL			
Sample Sequence 3																	
3	LLS	S1007200127		0 0			Mercury	LIQUID	.001	1.0120E-03			1.00E-04	ug/mL	101.2	% Recovery	
Sample Sequence 4																	
4	SAMPLE	S10V001225		0 0			Mercury	SOLID	N/A	1.8462E-02			9.05E-03	ug/g			J
Sample Sequence 5																	
5	DUP	S1007200128	S10V001225	0 0			Mercury	SOLID	1.8462E-02	1.6214E-02			8.91E-03	ug/g	12.963	% RPD	
Sample Sequence 6																	
6	SPK-PREDIG	S1007200133	S10V001225	0 0			Mercury	SOLID	.44785	4.6872E-01			8.96E-03	ug/g	100.54	% Recovery	
Sample Sequence 7																	
7	SPKPRE-DUP	S1007200134	S10V001225	0 0			Mercury	SOLID	.45935	4.6036E-01			9.19E-03	ug/g	96.201	% Recovery	
															4.4109	% RPD	
Sample Sequence 8																	
8	SAMPLE	S10V001242		0 0			Mercury	SOLID	N/A	2.3181E-02			8.99E-03	ug/g			J
Sample Sequence 9																	
9	SAMPLE	S10V001282		0 0			Mercury	SOLID	N/A	<9.7750E-03			9.78E-03	ug/g			U
Sample Sequence 10																	
10	SAMPLE	S10V001302		0 0			Mercury	SOLID	N/A	<9.8960E-03			9.90E-03	ug/g			U
Sample Sequence 11																	
11	CCV	S1007200131		0 0			Mercury	LIQUID	.01	9.9300E-03			1.00E-04	ug/mL	99.3	% Recovery	
Sample Sequence 12																	
12	CCB	S1007200132		0 0			Mercury	LIQUID		<1.0000E-04			1.00E-04	ug/mL			
Sample Sequence 13																	
13	SAMPLE	S10V001342		0 0			Mercury	SOLID	N/A	<9.1830E-03			9.18E-03	ug/g			U
Sample Sequence 14																	
14	SAMPLE	S10V001362		0 0			Mercury	SOLID	N/A	<9.7040E-03			9.70E-03	ug/g			U
Sample Sequence 15																	
15	SAMPLE	S10V001382		0 0			Mercury	SOLID	N/A	<8.7370E-03			8.74E-03	ug/g			U
Sample Sequence 16																	
16	SAMPLE	S10V001402		0 0			Mercury	SOLID	N/A	<9.4877E-03			9.49E-03	ug/g			U
Sample Sequence 17																	
17	SAMPLE	S10V001606		0 0			Mercury	SOLID	N/A	<9.3940E-03			9.39E-03	ug/g			U

Units shown for QC (BLK/BKG) may not reflect the actual units.

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00020849

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
Sample Sequence 18																	
18	SAMPLE	S10V001623		0 0			Mercury	SOLID	N/A	2.0555E-02			9.43E-03	ug/g			J
Sample Sequence 19																	
19	CCV	S1007200136		0 0			Mercury	LIQUID	.01	9.9330E-03			1.00E-04	ug/mL	99.33	% Recovery	
Sample Sequence 20																	
20	CCB	S1007200135		0 0			Mercury	LIQUID		<1.0000E-04			1.00E-04	ug/mL			

Comments Section:

Data Flagger Status:
Flagging Completed

Final Page for Batch# 00020849

Reviewer Signature **Date**

Units shown for QC (BLK/BKG) may not reflect the actual units.

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N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00020849

Seq	Sample#	QC Type	Assoc. Sample	Sample Group	Customer Id	Specification
1	S1007200125	ICV				
2	S1007200126	ICB				
3	S1007200127	LLS				
4	S10V001225	SAMPLE		20100520	B26JK2	C Farm WMC 2010-2
5	S1007200128	DUP	S10V001225			
6	S1007200133	SPK-PREDIG	S10V001225			
7	S1007200134	SPKPRE-DUP	S10V001225			
8	S10V001242	SAMPLE		20100520	B26JK3	C Farm WMC 2010-2
9	S10V001282	SAMPLE		20100520	B26C68	C Farm WMC 2010-2
10	S10V001302	SAMPLE		20100520	B26C70	C Farm WMC 2010-2
11	S1007200131	CCV				
12	S1007200132	CCB				
13	S10V001342	SAMPLE		20100520	B26C74	C Farm WMC 2010-2
14	S10V001362	SAMPLE		20100520	B26C76	C Farm WMC 2010-2
15	S10V001382	SAMPLE		20100520	B26C78	C Farm WMC 2010-2
16	S10V001402	SAMPLE		20100520	B26C80	C Farm WMC 2010-2
17	S10V001606	SAMPLE		20100556	B26JK6	C Farm WMC 2010-2
18	S10V001623	SAMPLE		20100556	B26JK7	C Farm WMC 2010-2
19	S1007200136	CCV				
20	S1007200135	CCB				

Units shown for QC (BLK/BKG) may not reflect the actual units.

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Quality Control Report

Attention Melissa Garrard
Department Inorganic

Group # WSCF111100

QC Batch 173809 **Test** ICP-2008 MS All possible metal
Associated Samples 111100001, 111100002, 111100003, 111100004, 111100005, 111100006, 111100007, 111100008, 111100009, 111100010, 111100011, 111100012, 111100013, 111100014, 111100015, 111100016, 111100017, 111100018, 111100019, 111100020

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #46100**							
Silver	7440-22-4		<0.10	ug/L					U	01/16/11
Antimony	7440-36-0		<0.30	ug/L					U	01/16/11
Cadmium	7440-43-9		<0.10	ug/L					U	01/16/11
Lead	7439-92-1		<0.10	ug/L					U	01/16/11
Thallium	7440-28-0		<0.050	ug/L					U	01/16/11
Arsenic	7440-38-2		<0.40	ug/L					U	01/16/11
Selenium	7782-49-2		<0.30	ug/L					U	01/16/11
LCS			**QC Sample #46101**							
Silver	7440-22-4		108	mg/kg	112	83 - 127				01/16/11
Antimony	7440-36-0		149	mg/kg	173.6	62 - 205				01/16/11
Cadmium	7440-43-9		77.7	mg/kg	122.6	76 - 129				01/16/11
Lead	7439-92-1		138	mg/kg	111.1	79 - 124				01/16/11
Thallium	7440-28-0		149	mg/kg	117.7	52 - 137				01/16/11
Arsenic	7440-38-2		132	mg/kg	105.2	79 - 125				01/16/11
Selenium	7782-49-2		170	mg/kg	110.6	82 - 133				01/16/11
MS			**QC Sample #46102**							
			Original	**111100001**						
Silver	7440-22-4	<0.11	101	mg/kg	101.7	70 - 130				01/16/11

Quality Control Report

Attention Melissa Garrard
Department Inorganic

Group # WSCF111100

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Antimony	7440-36-0	<0.32	92.6	mg/kg	93.1	70 - 130				01/16/11
Cadmium	7440-43-9		102	mg/kg	102.6	70 - 130				01/16/11
Lead	7439-92-1		100	mg/kg	101	70 - 130				01/16/11
Thallium	7440-28-0		98.9	mg/kg	99.5	70 - 130				01/16/11
Arsenic	7440-38-2	6.03	102	mg/kg	102.5	70 - 130				01/16/11
Selenium	7782-49-2	1.36	97.6	mg/kg	98.2	70 - 130				01/16/11
MSD			**QC Sample #46103**							
			Original 111100001						**Paired 46102**	
Silver	7440-22-4	<0.11	103	mg/kg	101.9	70 - 130	1.40	30		01/16/11
Antimony	7440-36-0	<0.32	88.4	mg/kg	87.8	70 - 130	4.70	30		01/16/11
Cadmium	7440-43-9		104	mg/kg	103	70 - 130	1.50	30		01/16/11
Lead	7439-92-1		102	mg/kg	101.5	70 - 130	1.60	30		01/16/11
Thallium	7440-28-0		101	mg/kg	100.4	70 - 130	2.10	30		01/16/11
Arsenic	7440-38-2	6.03	103	mg/kg	102.5	70 - 130	1.10	30		01/16/11
Selenium	7782-49-2	1.36	97.8	mg/kg	97.2	70 - 130	0.20	30		01/16/11

Date: 23 June 2011
To: CH2M Hill (technical representative)
From: Analytical Quality Associates, Inc.
Project: WMA C
Subject: General Chemistry - Sample Data Group (SDG) 20100556

INTRODUCTION

This memorandum presents the results of data validation for SDG 20100556 prepared by 222-S Laboratory. A list of samples validated along with the analytical methods is provided in the following table.

Sample ID	Sample Date	Media	Validation Level	Analytical Methods
B26JK6	7/19/2010	Soil	C	See note 1
B26CD0	7/22/2010	Soil	C	See note 1

1 – 300.7 (ammonium), 9014 (cyanide), 9045D (pH), 9056 (anions) and 9215 (sulfide)

Data validation was conducted in accordance with the CHPRC validation statement of work and the Field Sampling and Analysis Plan for Waste Management Area C, RPP-PLAN-40564, Rev. 2 (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 for soil samples are as follows:

- All anions – analysis within 48 hours of sample preparation
- Ammonium – analysis within 7 days of sample collection
- pH – analysis as soon as possible after sample collection (24 hours is a reasonable limit)
- Sulfide – analysis within 7 days of sample collection
- Cyanide – analysis within 14 days of sample collection

Sample preservation for soil requires chilling to approximately 4 degrees Celsius.

The samples were analyzed within the prescribed holding times and properly preserved with the following exceptions. Samples B26JK6 and B26CD0 were analyzed for pH 3.2 days and 6.5 days, respectively, after sample collection. Based on professional judgment, these results should be qualified as estimates and flagged "J."

- **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 with the following exceptions.

For batch 21522, the nitrite laboratory blank result was > the MDL. The nitrite result for sample B26JK6 was a detect <5X the laboratory blank result and should be qualified as a non-detect at the sample concentration (0.900 ug/g) and flagged "U."

For batches 20930 and 21010, the ammonium laboratory blank results were > the MDLs. The ammonium results for samples B26JK6 and B26CD0 were detects <5X the associated laboratory blank results and should be qualified as non-detects at the sample concentrations (0.930 ug/g and 3.39 ug/g, respectively) and flagged "U."

Trip Blanks

No trip blanks were submitted for validation.

Field Blanks

No field blanks were submitted for validation.

Equipment Blanks

No equipment blanks were submitted for validation.

- **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 75% to 125% and the laboratory control sample accuracy limits are 80% to 120%. The limits for reported analytes not listed in the SAP are specified by the DV procedure.

Matrix Spike (MS) Samples

All MS recoveries were acceptable with the following exception. For batch 21522, the MS recovery for phosphate was < the lower acceptance limit. The phosphate result for sample B26JK6 was a detect and should be qualified as an estimate and flagged "J."

Laboratory Control Samples (LCSs)

All LCS recoveries were acceptable.

- **Precision**

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

Laboratory Duplicate Samples

All laboratory duplicate results were acceptable.

Field Duplicate Samples

No field duplicates were submitted for validation.

Field Split Samples

No field splits were submitted for validation.

- **Detection Limits**

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

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

- **Completeness**

SDG 20100556 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 100%.

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

Minor deficiencies leading to qualification of several results as estimates were due to holding time infractions, laboratory blank infractions, and an MS recovery infraction. See the table in Appendix 2 for a listing of all affected sample results.

REFERENCES

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

RPP-PLAN-40564, Rev. 2, *Field Sampling and Analysis Plan for Waste Management Area C*, December 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			
SDG: 20100556	Reviewer: AQA	Project: WMA C	Page 1 of 1
Analyte(s)	**DV Flag**	**Samples Affected**	**Reason**
pH	J	B26JK6, B26CD0	Analysis beyond the holding time
Nitrite	0.900U	B26JK6	Lab blank contamination
Ammonium	0.930U	B26JK6	Lab blank contamination
Ammonium	3.39U	B26CD0	Lab blank contamination
Phosphate	J	B26JK6	Low MS recovery

Comments: None

Appendix 3

Annotated Laboratory Reports

C Farm WMC 2010-2
Data Summary Report

Sample Group: 20100556
Core Number: C7676
Customer Sample ID: B26JK6
Sample Depth: Surface

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
~~S10V001606~~			~~%WATERA~~	~~%WATER-APD~~	~~%~~	~~n/a~~	~~n/a~~	~~3.040~~	~~n/a~~	~~n/a~~	~~n/a~~	~~n/a~~	~~0.01000~~	~~n/a~~	
S10V001606			57-12-5	Cyanide	ug/g	109	<0.0370	<2.65	<2.64	n/a	n/a	98.1	2.65	n/a	U
~~S10V001606~~			~~7439-97-6~~	~~Mercury~~	~~ug/g~~	~~99.3~~	~~<1.00E-04~~	~~<9.39E-03~~	~~n/a~~	~~n/a~~	~~n/a~~	~~n/a~~	~~9.39E-03~~	~~n/a~~	~~U~~
S10V001606			PH	pH J	unitless	n/a	n/a	8.34	n/a	n/a	n/a	n/a	0.0100	n/a	
S10V001606			12597-04-5	Sulfide	ug/g	95.4	<0.180	27.2	n/a	n/a	n/a	n/a	7.19	n/a	B
~~S10V001609~~		~~WV~~	~~14133-76-7~~	~~Technetium-99~~	~~ug/g~~	~~110~~	~~<3.00E-06~~	~~<2.84E-06~~	~~n/a~~	~~n/a~~	~~n/a~~	~~n/a~~	~~2.84E-06~~	~~n/a~~	~~U~~
S10V001610		W	14762-75-5	Carbon-14	uCi/g	96.3	<3.46E-07	<1.25E-06	n/a	n/a	n/a	n/a	1.25E-06	n/a	U
S10V001610		W	10028-17-8	Tritium	uCi/g	91.3	1.54E-06	<1.96E-06	n/a	n/a	n/a	n/a	1.96E-06	n/a	U
S10V001611		A	7440-36-0	Antimony	ug/g	102	<2.00E-04	0.229	n/a	n/a	n/a	n/a	9.29E-03	n/a	
S10V001612		O	120-82-1	1,2,4-Trichlorobenzene	ug/kg	60.0	<77.4	<75.9	n/a	n/a	n/a	n/a	75.9	n/a	U
S10V001612		O	95-50-1	1,2-Dichlorobenzene	ug/kg	n/a	<101	<98.8	n/a	n/a	n/a	n/a	98.8	n/a	U
S10V001612		O	121-14-2	2,4-Dinitrotoluene	ug/kg	72.6	<38.1	<37.4	n/a	n/a	n/a	n/a	37.4	n/a	U
S10V001612		O	95-95-4	2,4,5-Trichlorophenol	ug/kg	n/a	<44.0	<43.2	n/a	n/a	n/a	n/a	43.2	n/a	U
S10V001612		O	88-06-2	2,4,6-Trichlorophenol	ug/kg	n/a	<49.5	<48.6	n/a	n/a	n/a	n/a	48.6	n/a	U
S10V001612		O	95-48-7	2-Methylphenol	ug/kg	n/a	<57.5	<56.4	n/a	n/a	n/a	n/a	56.4	n/a	U
S10V001612		O	88-75-5	2-Nitrophenol	ug/kg	n/a	<53.7	<52.7	n/a	n/a	n/a	n/a	52.7	n/a	U
S10V001612		O	65794-96-9	3 &4 Methylphenol	ug/kg	n/a	<51.4	<50.4	n/a	n/a	n/a	n/a	50.4	n/a	U
S10V001612		O	83-32-9	Acenaphthene	ug/kg	64.9	<17.6	<17.3	n/a	n/a	n/a	n/a	17.3	n/a	U
S10V001612		O	56-55-3	Benzo(a)anthracene	ug/kg	n/a	<37.8	<37.1	n/a	n/a	n/a	n/a	37.1	n/a	U
S10V001612		O	205-99-2	Benzo(b)fluoranthene	ug/kg	n/a	<48.9	<48.0	n/a	n/a	n/a	n/a	48.0	n/a	U
S10V001612		O	50-32-8	Benzo(a)pyrene	ug/kg	n/a	<41.2	<40.4	n/a	n/a	n/a	n/a	40.4	n/a	U
S10V001612		O	117-81-7	Bis(2-ethylhexyl) phthalate	ug/kg	n/a	<590	<579	n/a	n/a	n/a	n/a	579	n/a	U
S10V001612		O	207-08-9	Benzo(k)fluoranthene	ug/kg	n/a	<39.1	<38.4	n/a	n/a	n/a	n/a	38.4	n/a	U
S10V001612		O	85-68-7	Butylbenzylphthalate	ug/kg	n/a	<50.0	<49.1	n/a	n/a	n/a	n/a	49.1	n/a	U
S10V001612		O	59-50-7	4-Chloro-3-methylphenol	ug/kg	69.7	<43.2	<42.4	n/a	n/a	n/a	n/a	42.4	n/a	U
S10V001612		O	95-57-8	2-Chlorophenol	ug/kg	64.7	<66.5	<65.2	n/a	n/a	n/a	n/a	65.2	n/a	U
S10V001612		O	218-01-9	Chrysene	ug/kg	n/a	<81.4	<79.9	n/a	n/a	n/a	n/a	79.9	n/a	U
~~S10V001612~~		~~O~~	~~53-70-3~~	~~Dibenz[a,h]anthracene~~	~~ug/kg~~	~~n/a~~	~~<51.1~~	~~<50.1~~	~~n/a~~	~~n/a~~	~~n/a~~	~~n/a~~	~~50.1~~	~~n/a~~	~~U~~

LS
6-23-2011

NA = Not Analyzed, ND = Not Detected

B - Blank Contamination
U - Less Than Detection Limit

B - Estimated
J - Estimated

N - MS/MSD Outside Range
C - Blank Contamination

M - RPD Outside Range

C Farm WMC 2010-2
Data Summary Report

Sample Group: 20100556
Core Number: C7676
Customer Sample ID: B26JK6
Sample Depth: Surface

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S10V001612		O	84-74-2	Di-n-butylphthalate	ug/kg	n/a	<562	<552	n/a	n/a	n/a	n/a	552	n/a	U
S10V001612		O	117-84-0	Di-n-octylphthalate	ug/kg	n/a	<47.7	<46.8	n/a	n/a	n/a	n/a	46.8	n/a	U
S10V001612		O	621-64-7	N-Nitroso-di-n-dipropylamine	ug/kg	61.9	<58.1	<57.0	n/a	n/a	n/a	n/a	57.0	n/a	U
S10V001612		O	206-44-0	Fluoranthene	ug/kg	n/a	<35.4	<34.7	n/a	n/a	n/a	n/a	34.7	n/a	U
S10V001612		O	87-68-3	Hexachlorobutadiene	ug/kg	n/a	<69.7	<68.4	n/a	n/a	n/a	n/a	68.4	n/a	U
S10V001612		O	67-72-1	Hexachloroethane	ug/kg	n/a	<112	<110	n/a	n/a	n/a	n/a	110	n/a	U
S10V001612		O	193-39-5	Indeno(1,2,3-cd)pyrene	ug/kg	n/a	<51.0	<50.0	n/a	n/a	n/a	n/a	50.0	n/a	U
S10V001612		O	91-20-3	Naphthalene	ug/kg	n/a	<62.6	<61.4	n/a	n/a	n/a	n/a	61.4	n/a	U
S10V001612		O	98-95-3	Nitrobenzene	ug/kg	n/a	<64.6	<63.4	n/a	n/a	n/a	n/a	63.4	n/a	U
S10V001612		O	129-00-0	Pyrene	ug/kg	78.0	<62.9	<61.7	n/a	n/a	n/a	n/a	61.7	n/a	U
S10V001612		O	110-86-1	Pyridine	ug/kg	n/a	<65.0	<63.8	n/a	n/a	n/a	n/a	63.8	n/a	U
S10V001612		O	126-73-8	Tributyl phosphate	ug/kg	n/a	<108	<106	n/a	n/a	n/a	n/a	106	n/a	U
S10V001612		O	128-37-0	BHT	ug/kg	n/a	<236	<231	n/a	n/a	n/a	n/a	231	n/a	U
S10V001612		O	110-80-5	2-Ethoxyethanol	ug/kg	n/a	<182	<179	n/a	n/a	n/a	n/a	179	n/a	U
S10V001612		O	1319-77-3	Total Methylphenols	ug/kg	n/a	<107	<105	n/a	n/a	n/a	n/a	105	n/a	U
S10V001612		O	108-94-1	Cyclohexanone	ug/kg	n/a	<558	<548	n/a	n/a	n/a	n/a	548	n/a	U
S10V001612		O	59-89-2	N-Nitrosomorpholine	ug/kg	n/a	<191	<188	n/a	n/a	n/a	n/a	188	n/a	U
S10V001612		O	78-83-1	Isobutanol	ug/kg	n/a	n/a	<452	n/a	n/a	n/a	n/a	452	n/a	U
S10V001613		W	16984-48-8	Fluoride	ug/g	102	<1.61E-03	0.402	n/a	n/a	n/a	n/a	0.0161	n/a	
S10V001613		W	GLYCOLAT	Glycolate	ug/g	101	<9.37E-03	<0.0936	n/a	n/a	n/a	n/a	0.0936	n/a	U
S10V001613		W	71-50-1	Acetate	ug/g	98.5	<6.04E-03	0.142	n/a	n/a	n/a	n/a	0.0603	n/a	B
S10V001613		W	FORMATE	Formate	ug/g	102	<4.67E-03	0.139	n/a	n/a	n/a	n/a	0.0466	n/a	B
S10V001613		W	16887-00-6	Chloride	ug/g	99.2	<9.98E-03	1.42	n/a	n/a	n/a	n/a	0.0997	n/a	
S10V001613		W	14797-65-0	Nitrite 0.900U	ug/g	99.6	0.0421	0.900	n/a	n/a	n/a	n/a	0.192	n/a	CB
S10V001613		W	14808-79-8	Sulfate	ug/g	102	<0.0187	4.75	n/a	n/a	n/a	n/a	0.187	n/a	
S10V001613		W	338-70-5	Oxalate	ug/g	100	<0.0231	0.628	n/a	n/a	n/a	n/a	0.231	n/a	B
S10V001613		W	24959-67-9	Bromide	ug/g	97.3	<0.0580	<0.579	n/a	n/a	n/a	n/a	0.579	n/a	U
S10V001613		W	14797-55-8	Nitrate	ug/g	98.6	<0.0208	8.51	n/a	n/a	n/a	n/a	0.208	n/a	

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B - Estimated
J - Estimated

LS
6-23-2011

N - MS/MSD Outside Range
C - Blank Contamination

M - RPD Outside Range

C Farm WMC 2010-2
Data Summary Report

Sample Group: 20100556
Core Number: C7676
Customer Sample ID: B26JK6
Sample Depth: Surface

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S10V001613		W	14265-44-2	Phosphate J	ug/g	99.6	<0.0167	1.64	n/a	n/a	n/a	n/a	0.167	n/a	BN
S10V001614		A	7429-90-5	Aluminum	ug/g	98.4	<0.0300	6.91E+03	6.18E+03	6.54E+03	11.1	1.58E+03	2.97	n/a	
S10V001614		A	7440-42-8	Boron	ug/g	98.3	<0.0300	6.42	n/a	n/a	n/a	96.7	2.97	n/a	B
S10V001614		A	7440-39-3	Barium	ug/g	85.0	<3.00E-03	96.9	83.4	90.1	15.0	133	0.297	n/a	N
S10V001614		A	7440-41-7	Beryllium	ug/g	83.3	<1.00E-03	0.174	0.169	0.172	2.95	97.1	0.0990	n/a	B
S10V001614		A	7440-70-2	Calcium	ug/g	88.2	<0.0500	1.04E+04	8.24E+03	9.34E+03	23.5	2.49E+03	4.95	n/a	
S10V001614		A	7440-45-1	Cerium	ug/g	88.0	<0.0300	23.4	21.9	22.6	6.41	1.75	2.97	n/a	BN
S10V001614		A	7440-48-4	Cobalt	ug/g	95.0	<0.0100	8.51	7.80	8.15	8.68	98.2	0.990	n/a	B
S10V001614		A	7440-47-3	Chromium	ug/g	94.4	<5.00E-03	7.46	6.91	7.18	7.70	96.3	0.495	n/a	
S10V001614		A	7440-50-8	Copper	ug/g	87.3	<5.00E-03	11.3	11.7	11.5	3.37	104	0.495	n/a	
S10V001614		A	7439-89-6	Iron	ug/g	97.5	0.0146	2.09E+04	2.03E+04	2.06E+04	2.72	-257	0.495	n/a	N
S10V001614		A	7440-09-7	Potassium	ug/g	99.1	<0.500	896	857	876	4.45	360	49.5	n/a	
S10V001614		A	7439-91-0	Lanthanum	ug/g	86.4	<3.00E-03	10.1	9.72	9.93	4.25	100	0.297	n/a	
S10V001614		A	7439-93-2	Lithium	ug/g	94.1	<3.00E-03	7.10	7.17	7.14	1.06	109	0.297	n/a	
S10V001614		A	7439-95-4	Magnesium	ug/g	94.4	<0.0500	4.65E+03	4.52E+03	4.59E+03	2.75	694	4.95	n/a	
S10V001614		A	7439-96-5	Manganese	ug/g	94.4	<3.00E-03	304	295	299	2.99	122	0.297	n/a	
S10V001614		A	7439-98-7	Molybdenum	ug/g	97.6	<0.0200	2.38	<1.98	n/a	n/a	92.5	1.98	n/a	B
S10V001614		A	7440-23-5	Sodium	ug/g	91.4	<0.100	327	286	307	13.3	423	9.90	n/a	
S10V001614		A	7440-02-0	Nickel	ug/g	93.6	<0.0200	8.78	9.01	8.90	2.58	94.7	1.98	n/a	B
S10V001614		A	7723-14-0	Phosphorus	ug/g	97.4	<0.0500	917	942	930	2.64	89.1	4.95	n/a	
S10V001614		A	7704-34-9	Sulfur	ug/g	97.8	<0.100	73.4	66.8	70.1	9.50	114	9.90	n/a	B
S10V001614		A	7440-21-3	Silicon	ug/g	91.6	<0.0300	16.2	22.8	19.5	33.8	48.9	2.97	n/a	BM
S10V001614		A	7440-24-6	Strontium	ug/g	85.0	<3.00E-03	47.1	41.2	44.2	13.3	119	0.297	n/a	
S10V001614		A	7440-32-6	Titanium	ug/g	98.7	<5.00E-03	1.48E+03	n/a	n/a	n/a	-64.2	0.495	n/a	
S10V001614		A	7440-62-2	Vanadium	ug/g	99.1	<5.00E-03	50.0	47.0	48.5	6.14	96.6	0.495	n/a	
S10V001614		A	7440-65-5	Yttrium	ug/g	80.0	<2.00E-03	10.6	n/a	n/a	n/a	87.5	0.198	n/a	
S10V001614		A	7440-66-6	Zinc	ug/g	95.7	<5.00E-03	40.9	39.0	40.0	4.71	98.0	0.495	n/a	
S10V001614		A	7440-67-7	Zirconium	ug/g	98.8	<5.00E-03	6.38	n/a	n/a	n/a	73.6	0.495	n/a	N

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B - Estimated
J - Estimated

LS
6-23-2011

N - MS/MSD Outside Range
C - Blank Contamination

M - RPD Outside Range

C Farm WMC 2010-2
Data Summary Report

Sample Group: 20100556
Core Number: C7676
Customer Sample ID: B26JK6
Sample Depth: Surface

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S10V001614		A	14269-63-7	Thorium-230	ug/g	n/a	<2.80E-06	<2.77E-05	5.11E-05	3.94E-05	59.3	n/a	2.77E-05	n/a	U
S10V001614		A	TH-232	Thorium-232	ug/g	106	2.68E-04	2.62	2.66	2.64	1.59	84.1	1.98E-03	n/a	
S10V001614		A	13968-55-3	Uranium-233	ug/g	n/a	<4.00E-06	1.58E-04	1.06E-04	1.32E-04	39.2	n/a	3.96E-05	n/a	
S10V001614		A	13966-29-5	Uranium-234	ug/g	n/a	<2.00E-06	2.96E-05	<1.98E-05	n/a	n/a	n/a	1.98E-05	n/a	
S10V001614		A	15117-96-1	Uranium-235	ug/g	99.7	<4.00E-06	3.28E-03	3.27E-03	3.28E-03	0.221	84.8	3.96E-05	n/a	
S10V001614		A	13982-70-2	Uranium-236	ug/g	n/a	2.12E-06	<1.58E-05	<1.59E-05	n/a	n/a	n/a	1.58E-05	n/a	U
S10V001614		A	13994-20-2	Neptunium-237	ug/g	101	<4.00E-05	8.57E-04	5.26E-04	6.91E-04	47.8	96.9	3.96E-04	n/a	B
S10V001614		A	U-238	Uranium-238	ug/g	107	<2.00E-04	0.487	0.501	0.494	2.90	92.4	1.98E-03	n/a	
S10V001615		S	14798-03-9	Ammonium 0.930U	ug/g	103	0.0356	0.930	1.56	1.24	50.4	95.3	0.465	n/a	CB
S10V001616		A	14133-76-7	Technetium-99	ug/g	111	<1.50E-05	<1.49E-04	n/a	n/a	n/a	n/a	1.49E-04	n/a	U
S10V001616		A	SN-117	Tin-117	ug/g	105	<5.00E-04	0.0136	n/a	n/a	n/a	n/a	4.97E-03	n/a	N
S10V001616		A	15832-50-5	Tin-126	ug/g	n/a	<1.00E-05	4.16E-04	n/a	n/a	n/a	n/a	9.94E-05	n/a	N
S10V001617		E	CM-243/244	Curium-243/244	uCi/g	n/a	<4.17E-07	<2.19E-07	n/a	n/a	n/a	n/a	2.19E-07	n/a	U
S10V001617		E	14596-10-2	Americium-241	uCi/g	96.5	<1.04E-06	<5.48E-07	n/a	n/a	n/a	n/a	5.48E-07	n/a	U
S10V001617		E	15510-73-3	Curium-242	uCi/g	n/a	<4.17E-07	<2.19E-07	n/a	n/a	n/a	n/a	2.19E-07	n/a	U
S10V001617		E	PU-239/240	Plutonium-239/240	uCi/g	102	<1.22E-06	<2.81E-07	n/a	n/a	n/a	n/a	2.81E-07	n/a	U
S10V001617		E	13981-16-3	Plutonium-238	uCi/g	n/a	<1.22E-06	<2.81E-07	n/a	n/a	n/a	n/a	2.81E-07	n/a	U
S10V001618		E	SR-89/90	Strontium-89/90	uCi/g	102	<2.27E-07	3.38E-06	n/a	n/a	n/a	n/a	2.14E-07	15.426	
S10V001619		E	13981-37-8	Nickel-63	uCi/g	89.7	<7.67E-06	<9.71E-06	n/a	n/a	n/a	n/a	9.71E-06	n/a	U
S10V001619		E	15758-45-9	Selenium-79	uCi/g	n/a	3.93E-06	<2.63E-06	n/a	n/a	n/a	n/a	2.63E-06	n/a	U
S10V001608			13966-00-2	Potassium-40	uCi/g	n/a	n/a	1.48E-05	n/a	n/a	n/a	n/a	6.68E-06	30.68	
S10V001608			10198-40-0	Cobalt-60	uCi/g	97.0	<2.77E-07	<3.38E-07	n/a	n/a	n/a	n/a	3.38E-07	n/a	U
S10V001608			14234-35-6	Antimony-125	uCi/g	n/a	<8.11E-07	<8.92E-07	n/a	n/a	n/a	n/a	8.92E-07	n/a	U
S10V001608			10045-97-3	Cesium-137	uCi/g	104	<4.00E-07	2.06E-06	n/a	n/a	n/a	n/a	5.79E-07	20.40	
S10V001608			14683-23-9	Europium-152	uCi/g	n/a	<1.48E-06	<1.65E-06	n/a	n/a	n/a	n/a	1.65E-06	n/a	U
S10V001608			15585-10-1	Europium-154	uCi/g	n/a	<8.77E-07	<1.05E-06	n/a	n/a	n/a	n/a	1.05E-06	n/a	U
S10V001608			14391-16-3	Europium-155	uCi/g	n/a	<7.81E-07	<9.20E-07	n/a	n/a	n/a	n/a	9.20E-07	n/a	U
S10V001608			14274-82-9	Thorium-228	uCi/g	n/a	<1.85E-05	<2.15E-05	n/a	n/a	n/a	n/a	2.15E-05	n/a	U

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B - Estimated
J - Estimated

LS
6-23-2011

N - MS/MSD Outside Range
C - Blank Contamination

M - RPD Outside Range

C Farm WMC 2010-2
Data Summary Report

Sample Group: 20100556
Core Number: C7676
Customer Sample ID: B26CD0
Sample Depth: 38-40ft

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S10V001764			%WATERA	%WATER-APD	%	n/a	n/a	12.42	n/a	n/a	n/a	n/a	0.01000	n/a	
S10V001764			57-12-5	Cyanide	ug/g	109	<0.0370	<2.37	n/a	n/a	n/a	n/a	2.37	n/a	U
S10V001764			7439-97-6	Mercury	ug/g	102	<1.00E-04	<9.88E-03	n/a	n/a	n/a	n/a	9.88E-03	n/a	U
S10V001764			PH	pH J	unitless	n/a	n/a	9.14	n/a	n/a	n/a	n/a	0.0100	n/a	
S10V001764			12597-04-5	Sulfide	ug/g	99.6	<0.180	22.1	n/a	n/a	n/a	n/a	7.15	n/a	B
S10V001766			13966-00-2	Potassium-40	uCi/g	n/a	n/a	1.25E-05	n/a	n/a	n/a	n/a	7.46E-06	39.06	
S10V001766			10198-40-0	Cobalt-60	uCi/g	97.0	<2.77E-07	<3.71E-07	n/a	n/a	n/a	n/a	3.71E-07	n/a	U
S10V001766			14234-35-6	Antimony-125	uCi/g	n/a	<8.11E-07	<9.53E-07	n/a	n/a	n/a	n/a	9.53E-07	n/a	U
S10V001766			10045-97-3	Cesium-137	uCi/g	104	<4.00E-07	<4.95E-07	n/a	n/a	n/a	n/a	4.95E-07	n/a	U
S10V001766			14683-23-9	Europium-152	uCi/g	n/a	<1.48E-06	<1.56E-06	n/a	n/a	n/a	n/a	1.56E-06	n/a	U
S10V001766			15585-10-1	Europium-154	uCi/g	n/a	<8.77E-07	<1.15E-06	n/a	n/a	n/a	n/a	1.15E-06	n/a	U
S10V001766			14391-16-3	Europium-155	uCi/g	n/a	<7.81E-07	<9.76E-07	n/a	n/a	n/a	n/a	9.76E-07	n/a	U
S10V001766			14274-82-9	Thorium-228	uCi/g	n/a	<1.85E-05	<2.24E-05	n/a	n/a	n/a	n/a	2.24E-05	n/a	U
S10V001766			15065-10-8	Thorium-234	uCi/g	n/a	<1.31E-05	<1.83E-05	n/a	n/a	n/a	n/a	1.83E-05	n/a	U
S10V001766			15046-84-1	Iodine-129	uCi/g	115	<1.59E-07	<1.65E-07	n/a	n/a	n/a	n/a	1.65E-07	n/a	U
S10V001767		WV	14133-76-7	Technetium-99	ug/g	110	<3.00E-06	7.14E-06	n/a	n/a	n/a	n/a	3.51E-06	n/a	B
S10V001768		W	14762-75-5	Carbon-14	uCi/g	92.4	<1.33E-07	<1.35E-06	<1.34E-06	n/a	n/a	94.7	1.35E-06	n/a	U
S10V001768		W	10028-17-8	Tritium	uCi/g	94.7	<4.95E-06	<4.59E-06	<4.43E-06	n/a	n/a	97.0	4.59E-06	n/a	U
S10V001770		O	120-82-1	1,2,4-Trichlorobenzene	ug/kg	60.0	<77.4	<76.6	n/a	n/a	n/a	n/a	76.6	n/a	U
S10V001770		O	95-50-1	1,2-Dichlorobenzene	ug/kg	n/a	<101	<99.7	n/a	n/a	n/a	n/a	99.7	n/a	U
S10V001770		O	121-14-2	2,4-Dinitrotoluene	ug/kg	72.6	<38.1	<37.7	n/a	n/a	n/a	n/a	37.7	n/a	U
S10V001770		O	95-95-4	2,4,5-Trichlorophenol	ug/kg	n/a	<44.0	<43.6	n/a	n/a	n/a	n/a	43.6	n/a	U
S10V001770		O	88-06-2	2,4,6-Trichlorophenol	ug/kg	n/a	<49.5	<49.0	n/a	n/a	n/a	n/a	49.0	n/a	U
S10V001770		O	95-48-7	2-Methylphenol	ug/kg	n/a	<57.5	<56.9	n/a	n/a	n/a	n/a	56.9	n/a	U
S10V001770		O	88-75-5	2-Nitrophenol	ug/kg	n/a	<53.7	<53.2	n/a	n/a	n/a	n/a	53.2	n/a	U
S10V001770		O	65794-96-9	3 &4 Methylphenol	ug/kg	n/a	<51.4	<50.9	n/a	n/a	n/a	n/a	50.9	n/a	U
S10V001770		O	83-32-9	Acenaphthene	ug/kg	64.9	<17.6	<17.4	n/a	n/a	n/a	n/a	17.4	n/a	U
S10V001770		O	56-55-3	Benzo(a)anthracene	ug/kg	n/a	<37.8	<37.4	n/a	n/a	n/a	n/a	37.4	n/a	U

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B - Estimated
J - Estimated

LS
6-23-2011

N - MS/MSD Outside Range
C - Blank Contamination

M - RPD Outside Range

C Farm WMC 2010-2
Data Summary Report

Sample Group: 20100556
Core Number: C7676
Customer Sample ID: B26CD0
Sample Depth: 38-40ft

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S10V001770		O	205-99-2	Benzo(b)fluoranthene	ug/kg	n/a	<48.9	<48.4	n/a	n/a	n/a	n/a	48.4	n/a	U
S10V001770		O	50-32-8	Benzo(a)pyrene	ug/kg	n/a	<41.2	<40.8	n/a	n/a	n/a	n/a	40.8	n/a	U
S10V001770		O	117-81-7	Bis(2-ethylhexyl) phthalate	ug/kg	n/a	<590	<584	n/a	n/a	n/a	n/a	584	n/a	U
S10V001770		O	207-08-9	Benzo(k)fluoranthene	ug/kg	n/a	<39.1	<38.7	n/a	n/a	n/a	n/a	38.7	n/a	U
S10V001770		O	85-68-7	Butylbenzylphthalate	ug/kg	n/a	<50.0	<49.5	n/a	n/a	n/a	n/a	49.5	n/a	U
S10V001770		O	59-50-7	4-Chloro-3-methylphenol	ug/kg	69.7	<43.2	<42.8	n/a	n/a	n/a	n/a	42.8	n/a	U
S10V001770		O	95-57-8	2-Chlorophenol	ug/kg	64.7	<66.5	<65.8	n/a	n/a	n/a	n/a	65.8	n/a	U
S10V001770		O	218-01-9	Chrysene	ug/kg	n/a	<81.4	<80.6	n/a	n/a	n/a	n/a	80.6	n/a	U
S10V001770		O	53-70-3	Dibenz[a,h]anthracene	ug/kg	n/a	<51.1	<50.6	n/a	n/a	n/a	n/a	50.6	n/a	U
S10V001770		O	84-74-2	Di-n-butylphthalate	ug/kg	n/a	<562	<557	n/a	n/a	n/a	n/a	557	n/a	U
S10V001770		O	117-84-0	Di-n-octylphthalate	ug/kg	n/a	<47.7	<47.2	n/a	n/a	n/a	n/a	47.2	n/a	U
S10V001770		O	621-64-7	N-Nitroso-di-n-dipropylamine	ug/kg	61.9	<58.1	<57.5	n/a	n/a	n/a	n/a	57.5	n/a	U
S10V001770		O	206-44-0	Fluoranthene	ug/kg	n/a	<35.4	<35.1	n/a	n/a	n/a	n/a	35.1	n/a	U
S10V001770		O	87-68-3	Hexachlorobutadiene	ug/kg	n/a	<69.7	<69.0	n/a	n/a	n/a	n/a	69.0	n/a	U
S10V001770		O	67-72-1	Hexachloroethane	ug/kg	n/a	<112	<111	n/a	n/a	n/a	n/a	111	n/a	U
S10V001770		O	193-39-5	Indeno(1,2,3-cd)pyrene	ug/kg	n/a	<51.0	<50.5	n/a	n/a	n/a	n/a	50.5	n/a	U
S10V001770		O	91-20-3	Naphthalene	ug/kg	n/a	<62.6	<62.0	n/a	n/a	n/a	n/a	62.0	n/a	U
S10V001770		O	98-95-3	Nitrobenzene	ug/kg	n/a	<64.6	<64.0	n/a	n/a	n/a	n/a	64.0	n/a	U
S10V001770		O	129-00-0	Pyrene	ug/kg	78.0	<62.9	<62.3	n/a	n/a	n/a	n/a	62.3	n/a	U
S10V001770		O	110-86-1	Pyridine	ug/kg	n/a	<65.0	<64.4	n/a	n/a	n/a	n/a	64.4	n/a	U
S10V001770		O	126-73-8	Tributyl phosphate	ug/kg	n/a	<108	<107	n/a	n/a	n/a	n/a	107	n/a	U
S10V001770		O	128-37-0	BHT	ug/kg	n/a	<236	<233	n/a	n/a	n/a	n/a	233	n/a	U
S10V001770		O	110-80-5	2-Ethoxyethanol	ug/kg	n/a	<182	<181	n/a	n/a	n/a	n/a	181	n/a	U
S10V001770		O	1319-77-3	Total Methylphenols	ug/kg	n/a	<107	<106	n/a	n/a	n/a	n/a	106	n/a	U
S10V001770		O	108-94-1	Cyclohexanone	ug/kg	n/a	<558	<553	n/a	n/a	n/a	n/a	553	n/a	U
S10V001770		O	59-89-2	N-Nitrosomorpholine	ug/kg	n/a	<191	<189	n/a	n/a	n/a	n/a	189	n/a	U
S10V001770		O	78-83-1	Isobutanol	ug/kg	n/a	n/a	<456	n/a	n/a	n/a	n/a	456	n/a	U
S10V001771		W	16984-48-8	Fluoride	ug/g	100	<1.61E-03	1.32	n/a	n/a	n/a	n/a	0.0161	n/a	

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LS
6-23-2011

N - MS/MSD Outside Range
C - Blank Contamination

M - RPD Outside Range

C Farm WMC 2010-2
Data Summary Report

Sample Group: 20100556
Core Number: C7676
Customer Sample ID: B26CD0
Sample Depth: 38-40ft

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S10V001771		W	GLYCOLAT	Glycolate	ug/g	98.8	<9.37E-03	<0.0935	n/a	n/a	n/a	n/a	0.0935	n/a	U
S10V001771		W	71-50-1	Acetate	ug/g	97.2	<6.04E-03	<0.0602	n/a	n/a	n/a	n/a	0.0602	n/a	U
S10V001771		W	FORMATE	Formate	ug/g	100	<4.67E-03	<0.0466	n/a	n/a	n/a	n/a	0.0466	n/a	U
S10V001771		W	16887-00-6	Chloride	ug/g	98.1	<9.98E-03	0.825	n/a	n/a	n/a	n/a	0.0995	n/a	
S10V001771		W	14797-65-0	Nitrite	ug/g	99.8	<0.0192	<0.192	n/a	n/a	n/a	n/a	0.192	n/a	U
S10V001771		W	14808-79-8	Sulfate	ug/g	101	<0.0187	11.1	n/a	n/a	n/a	n/a	0.187	n/a	
S10V001771		W	338-70-5	Oxalate	ug/g	101	<0.0231	<0.230	n/a	n/a	n/a	n/a	0.230	n/a	U
S10V001771		W	24959-67-9	Bromide	ug/g	99.2	<0.0580	<0.579	n/a	n/a	n/a	n/a	0.579	n/a	U
S10V001771		W	14797-55-8	Nitrate	ug/g	99.7	<0.0208	11.8	n/a	n/a	n/a	n/a	0.207	n/a	
S10V001771		W	14265-44-2	Phosphate	ug/g	98.9	<0.0167	0.409	n/a	n/a	n/a	n/a	0.167	n/a	B
S10V001772		A	7429-90-5	Aluminum	ug/g	89.2	<0.0300	7.62E+03	n/a	n/a	n/a	n/a	2.49	n/a	
S10V001772		A	7440-39-3	Barium	ug/g	94.8	<3.00E-03	75.7	n/a	n/a	n/a	n/a	0.249	n/a	N
S10V001772		A	7440-41-7	Beryllium	ug/g	97.8	<1.00E-03	0.221	n/a	n/a	n/a	n/a	0.0829	n/a	B
S10V001772		A	7440-70-2	Calcium	ug/g	84.7	0.105	1.15E+04	n/a	n/a	n/a	n/a	4.14	n/a	
S10V001772		A	7440-45-1	Cerium	ug/g	99.2	<0.0300	20.1	n/a	n/a	n/a	n/a	2.49	n/a	BN
S10V001772		A	7440-48-4	Cobalt	ug/g	88.6	<0.0100	7.07	n/a	n/a	n/a	n/a	0.829	n/a	B
S10V001772		A	7440-47-3	Chromium	ug/g	88.3	<5.00E-03	9.86	n/a	n/a	n/a	n/a	0.414	n/a	
S10V001772		A	7440-50-8	Copper	ug/g	95.6	<5.00E-03	12.5	n/a	n/a	n/a	n/a	0.414	n/a	
S10V001772		A	7439-89-6	Iron	ug/g	89.8	0.0140	1.85E+04	n/a	n/a	n/a	n/a	0.414	n/a	
S10V001772		A	7440-09-7	Potassium	ug/g	85.3	<0.500	1.08E+03	n/a	n/a	n/a	n/a	41.4	n/a	
S10V001772		A	7439-91-0	Lanthanum	ug/g	95.1	<3.00E-03	9.80	n/a	n/a	n/a	n/a	0.249	n/a	
S10V001772		A	7439-93-2	Lithium	ug/g	104	<3.00E-03	8.74	n/a	n/a	n/a	n/a	0.249	n/a	
S10V001772		A	7439-95-4	Magnesium	ug/g	87.8	<0.0500	5.26E+03	n/a	n/a	n/a	n/a	4.14	n/a	
S10V001772		A	7439-96-5	Manganese	ug/g	87.7	<3.00E-03	307	n/a	n/a	n/a	n/a	0.249	n/a	
S10V001772		A	7439-98-7	Molybdenum	ug/g	90.8	<0.0200	<1.66	n/a	n/a	n/a	n/a	1.66	n/a	U
S10V001772		A	7440-23-5	Sodium	ug/g	102	<0.100	414	n/a	n/a	n/a	n/a	8.29	n/a	
S10V001772		A	7440-00-8	Neodymium	ug/g	97.3	<0.0100	13.2	n/a	n/a	n/a	n/a	0.829	n/a	
S10V001772		A	7440-02-0	Nickel	ug/g	88.2	<0.0200	12.3	n/a	n/a	n/a	n/a	1.66	n/a	B

NA = Not Analyzed, ND = Not Detected

B - Blank Contamination
U - Less Than Detection Limit

B - Estimated
J - Estimated

LS
6-23-2011

N - MS/MSD Outside Range
C - Blank Contamination

M - RPD Outside Range

C Farm WMC 2010-2
Data Summary Report

Sample Group: 20100556
Core Number: C7676
Customer Sample ID: B26CD0
Sample Depth: 38-40ft

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
~~S10V001772~~		~~A~~	~~7723-14-0~~	~~Phosphorus~~	~~ug/g~~	~~90.1~~	~~<0.0500~~	~~738~~	~~n/a~~	~~n/a~~	~~n/a~~	~~n/a~~	~~4.14~~	~~n/a~~	
S10V001772		A	7439-92-1	Lead	ug/g	86.6	<0.0500	<4.14	n/a	n/a	n/a	n/a	4.14	n/a	U
S10V001772		A	7704-34-9	Sulfur	ug/g	90.7	<0.100	77.0	n/a	n/a	n/a	n/a	8.29	n/a	BN
S10V001772		A	7440-21-3	Silicon	ug/g	81.1	<0.0300	63.8	n/a	n/a	n/a	n/a	2.49	n/a	
S10V001772		A	7440-24-6	Strontium	ug/g	94.5	<3.00E-03	36.1	n/a	n/a	n/a	n/a	0.249	n/a	
S10V001772		A	7440-32-6	Titanium	ug/g	90.7	<5.00E-03	1.19E+03	n/a	n/a	n/a	n/a	0.414	n/a	
S10V001772		A	7440-62-2	Vanadium	ug/g	91.4	<5.00E-03	42.0	n/a	n/a	n/a	n/a	0.414	n/a	
S10V001772		A	7440-65-5	Yttrium	ug/g	90.6	<2.00E-03	8.11	n/a	n/a	n/a	n/a	0.166	n/a	
S10V001772		A	7440-66-6	Zinc	ug/g	87.9	<5.00E-03	37.1	n/a	n/a	n/a	n/a	0.414	n/a	
S10V001772		A	7440-67-7	Zirconium	ug/g	88.9	<5.00E-03	12.7	n/a	n/a	n/a	n/a	0.414	n/a	
S10V001772		A	14269-63-7	Thorium-230	ug/g	n/a	5.21E-06	2.77E-05	<2.78E-05	n/a	n/a	n/a	2.77E-05	n/a	B
S10V001772		A	TH-232	Thorium-232	ug/g	104	<2.00E-04	3.24	3.25	3.25	0.426	95.1	1.98E-03	n/a	
S10V001772		A	13968-55-3	Uranium-233	ug/g	n/a	<4.00E-06	1.65E-04	2.75E-04	2.20E-04	49.8	n/a	3.95E-05	n/a	
S10V001772		A	13966-29-5	Uranium-234	ug/g	n/a	<2.00E-06	<1.98E-05	<1.99E-05	n/a	n/a	n/a	1.98E-05	n/a	U
S10V001772		A	15117-96-1	Uranium-235	ug/g	94.8	<4.00E-06	5.43E-03	5.59E-03	5.51E-03	2.81	101	3.95E-05	n/a	
S10V001772		A	13982-70-2	Uranium-236	ug/g	n/a	<1.60E-06	2.71E-05	2.68E-05	2.70E-05	0.997	n/a	1.58E-05	n/a	B
S10V001772		A	13994-20-2	Neptunium-237	ug/g	102	<4.00E-05	<3.95E-04	<3.97E-04	n/a	n/a	98.0	3.95E-04	n/a	U
S10V001772		A	U-238	Uranium-238	ug/g	104	<2.00E-04	0.819	0.838	0.829	2.30	106	1.98E-03	n/a	
S10V001772		A	7440-43-9	Cadmium	ug/g	104	<3.60E-03	0.190	0.162	0.176	15.8	105	0.0237	n/a	B
S10V001772		A	7439-92-1	Lead	ug/g	97.1	<6.00E-03	10.9	9.45	10.2	14.1	88.6	0.0593	n/a	
~~S10V001772~~		~~A~~	~~7440-28-0~~	~~Thallium~~	~~ug/g~~	~~103~~	~~<8.00E-04~~	~~0.165~~	~~0.142~~	~~0.153~~	~~15.2~~	~~102~~	~~0.0158~~	~~n/a~~	
S10V001773		S	14798-03-9	Ammonium 3.39U	ug/g	102	0.0318	3.39	n/a	n/a	n/a	n/a	0.469	n/a	CB
~~S10V001774~~		~~A~~	~~14133-76-7~~	~~Technetium-99~~	~~ug/g~~	~~109~~	~~<3.00E-05~~	~~3.11E-04~~	~~n/a~~	~~n/a~~	~~n/a~~	~~n/a~~	~~2.98E-04~~	~~n/a~~	
S10V001774		A	SN-117	Tin-117	ug/g	102	<1.00E-03	0.0125	n/a	n/a	n/a	n/a	9.94E-03	n/a	
S10V001774		A	15832-50-5	Tin-126	ug/g	n/a	<2.00E-05	6.69E-04	n/a	n/a	n/a	n/a	1.99E-04	n/a	B
S10V001775		E	CM-243/244	Curium-243/244	uCi/g	n/a	<2.11E-07	<1.41E-07	n/a	n/a	n/a	n/a	1.41E-07	n/a	U
S10V001775		E	14596-10-2	Americium-241	uCi/g	98.9	<5.26E-07	<3.52E-07	n/a	n/a	n/a	n/a	3.52E-07	n/a	U
~~S10V001775~~		~~E~~	~~15510-73-3~~	~~Curium-242~~	~~uCi/g~~	~~n/a~~	~~<2.11E-07~~	~~<1.41E-07~~	~~n/a~~	~~n/a~~	~~n/a~~	~~n/a~~	~~1.41E-07~~	~~n/a~~	~~U~~

NA = Not Analyzed, ND = Not Detected

B - Blank Contamination
U - Less Than Detection Limit

B - Estimated
J - Estimated

LS
6-23-2011

N - MS/MSD Outside Range
C - Blank Contamination

M - RPD Outside Range

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

222-S LABORATORY

FINAL ANALYTICAL REPORT FOR SAMPLES FROM WASTE MANAGEMENT AREA C FOR CORE HOLE C7676 IN SUPPORT OF RCRA SOIL CHARACTERIZATION

1.0 INTRODUCTION

This final report presents the results for the samples taken from Waste Management Area C between July 19, 2010 and July 29, 2010. The samples were analyzed in accordance with RPP-PLAN-40564, *Field Sampling and Analysis Plan for Sites P and L at Waste Management Area C* (FSAP); RPP-PLAN-38777, *Sampling and Analysis Plan for Phase 2 Characterization of Vadose Zone Soil in Waste Management Area C* (SAP); ATL-MP-1011, *ATL Quality Assurance Project Plan for 222-S Laboratory* (QAPP); SW-846, *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods*; and the additional guidance given by the client's point of contact.

Because the 222-S Laboratory facility was designed to analyze hazardous and complex tank waste samples, most SW-846 test methods performed at the 222-S Laboratory contain deviations that are listed in an appendix in the analytical procedures. All other known deviations or variances from SW-846 are documented in this narrative. The following attachments are included in this report.

Attachment 1	Data Summary Report
Attachment 2	Sample Breakdown Diagrams
Attachment 3	Holding Time Report
Attachment 4	Additional Organic Analyses QC Results
Attachment 5	Tentatively Identified Compounds (TIC) for Organic Analyses
Attachment 6	Geological Report
Attachment 7	Characterization Change Notices (CCN) and Correspondence
Attachment 8	Receipt Paperwork
Appendix A	Analytical Report for Analysis Performed at the Waste Sampling and Characterization Facility (WSCF) - Metals Analysis
Appendix B	Analytical Report for Analysis Performed at WSCF - Organic Analysis

2.0 SAMPLE RECEIPT AND BREAKDOWN

2.1 SAMPLE RECEIPT

A total of eight core intervals and two surface grab samples from core hole C7676 along with seven field blanks and six trip blanks were received by the 222-S Laboratory between July 19, 2010 and July 29, 2010. The samples were delivered in a cooler with ice or, in the case of the volatile organic soil samples, in a freezer. The temperatures of the temperature blanks were measured and recorded on the sample receipt check list and/or the chain of custody form.

The chain of custody requested that conductivity be analyzed on the soil samples. Since this analysis was not listed in the SAP or FSAP, it was not performed. The client has indicated that this analysis may be performed after a CCN is issued to cover the change to the FSAP (see Attachment 7).

2.2 SAMPLE BREAKDOWN

The laboratory received each core interval as a set of volatile organic analysis (VOA) samples and three liner samples when complete core recovery was obtained. The VOA samples were made from the shoe section of each core interval following SW-846 5035. The liner samples from each core interval were extruded, described, and composited by the Washington River Protection Solutions, Inc. (WRPS) geologist. The geologist's report is included in Attachment 6. Provided sufficient samples existed, the composite for each core interval was analyzed as described in the SAP and FSAP. Core interval I001 had less than full recovery (see Attachment 2 and Attachment 8) and was combined with core interval I002 to form the composite. Additionally, core interval I004 had less than full recovery and was combined with I005 to form the 14-ft to 18-ft composite (see Attachment 2 and Attachment 8). All intervals were extruded and composited in the normal manner except for the "B" liner from core interval I002. This interval was combined with the shoe and delivered to the laboratory in a glass jar. The surface samples were received as a single grab sample in a 500-mL jar and a set of VOA samples.

WRPS shipped subsamples of the composites to Test America Laboratories, Inc. (TAL) in St Louis, Missouri and Knoxville, Tennessee to be analyzed for dibutyl and monobutyl phosphate, total petroleum hydrocarbons (diesel and gasoline range), ethylene glycol, chlorinated pesticides, and polychlorinated biphenyls (Aroclors and congeners). TAL subsequently subcontracted the monobutyl and dibutyl phosphate analyses to Southwest Research Institute. The results of these analyses will be released in the final WRPS report.

3.0 ANALYTICAL RESULTS SUMMARY

The Data Summary Report (Attachment 1) presents the final analytical results for those analytes requested in the SAP and FSAP. Secondary analytes are only reported if detected. The TIC from gas chromatography-mass spectrometry (GC/MS) analysis of semivolatile organic compounds (SVOC) is presented in Attachment 5. In addition to the required isotopes, all isotopes with positive gamma energy analysis (GEA) results were reported.

The "Det Limit" column in Attachment 1 contains the method detection limit (MDL) for non-radionuclide analyses, or the minimum detectable activity for radionuclides.

In Attachment 1, the column labeled "A#" indicates the aliquot class or the method used for sample preparation before analysis. For solid samples, the aliquot classes are defined as follows:

"A" indicates samples that were prepared by SW-846 3050B.

"E" indicates samples that were prepared by a strong acid digest.

"O" indicates samples that were extracted for organic analysis.

"S" indicates samples that were prepared by a distillation.

"W" indicates samples that were prepared by a standard water digest.

"WV" indicates samples that were prepared by a Vadose water digest.

The "Qual Flags" column in Attachment 1 contains data qualifier flags from FEAD CP-15383, *Common Requirements of the Format for Electronic Analytical Data,* that are defined as follows:

"B" for organic or radiochemistry results is used to indicate that the analyte was detected in the method or preparation blank and in the sample.

"B" for inorganic results is used to indicate that the reported result should be considered an estimate because it is below the quantitation limit. The "B" flag is applied to sample concentrations that are greater than the MDL but less than the quantitation limit.

"C" for inorganic results is used to indicate that the analyte was detected in the method or preparation blank and in the sample, and the result for the blank was greater than or equal to 20% of the reported sample result.

"J" for organic results is used to indicate that the reported result should be considered an estimate because it is below the quantitation limit. The "J" flag is applied to sample concentrations that are greater than the MDL but less than the quantitation limit.

"T" for CG/MS results is used to indicate the matrix spike (MS) recovery or matrix spike duplicate (MSD) recovery is outside control limits.

"U" for all results is used to indicate that the reported result is less than the calculated detection limit.

"N" for all but GC/MS is used to indicate that the MS recovery or MSD recovery was outside of the specified range in the QAPP or SAP.

"N" for GC/MS is used to indicate a TIC which has been named.

"M" for inorganic results is used to indicate that the relative percent difference (RPD) between the sample and the duplicate is greater than 30%.

Manual calculations using rounded results from the Data Summary Report (Attachment 1) or result calculation forms may differ slightly from the actual results derived from the raw data.

Samples without a letter identifier in the "A#" column were analyzed directly with no separate preparation or with sample preparation performed as a part of the procedure steps.

3.1 SAMPLE DIGESTIONS

3.1.1 Radiochemistry Strong Acid Digestion

Strong acid digestions with a hot plate for the heat source were performed using a mixture of concentrated nitric and hydrochloric acids. For each digest, approximately 1 to 10 g of sample were digested depending on the analysis being performed. The digestate was then filtered and diluted to a final volume. This digestion was used for all radiochemical analyses except ^{3}H, ^{14}C, and ^{129}I. This digestion is a leach of the acid soluble species only.

3.1.2 SW-846 3050B - Acid Digestion-Heating Block

This acid digestion follows SW-846 3050B using a heating block and nitric and hydrochloric acids. An aliquot of approximately 5 g of sample was digested. All heating-block digestions were filtered and diluted to a final volume of 50 mL. In soil, this digestion is a leach of the acid soluble species only. This digestion was used for all inductively coupled plasma/mass spectrometry (ICP/MS) and inductively coupled plasma/atomic emission spectroscopy (ICP/AES) analyses except for ^{99}Tc and isotopic tin (^{117}Sn and ^{126}Sn) analyses. The digestion is modified for the ^{99}Tc analysis by using only nitric acid. This is done to eliminate the possibility of the formation a zinc-chlorine ion pair of mass 99. The laboratory believes this ion, when present, is responsible for low level false positives. A separate digestion for antimony was prepared using additional hydrochloric acid, as recommended in SW-846.

3.1.3 Water Digestion

A water digestion or leach was prepared for the anions by ion chromatography, ^{14}C, and ^{3}H analyses using approximately 0.25 to 4 g of sample diluted to 25 mL. Sonification was used, and the leachate was then filtered. In soil, this digestion is a leach of the water soluble species only.

3.1.4 Vadose Water Digestion

A 70-g sample of soil was leached using a ratio of one part water to one part soil. To maintain a one-to-one ratio, the amount of water added to the sample was adjusted based on the percent moisture of the soil. The slurries were placed on a shaker table for about 1 hour. They were then transferred to a centrifuge tube and centrifuged at 4,000 rpm for 30 minutes. An unfiltered aliquot was set aside for alkalinity analysis. The remainder was filtered using a disposable vacuum filtration system. The filtrates were transferred to a clean bottle and then analyzed for ^{99}Tc by ICP/MS analysis.

3.2 INORGANIC ANALYSES

3.2.1 Cyanide

The cyanide analysis by distillation and spectrophotometry was performed on the grab samples and liner composite samples. All analyses met the SW-846 holding time of 14 days. There was no required reporting limit in the SAP for cyanide. The target detection limit was 0.5 µg/g, which is lower than what the current laboratory procedure can achieve. There were no notable quality control (QC) issues with these batches, and all QC requirements in the FSAP, SAP, and QAPP were met.

3.2.2 Sulfide

Sulfide analysis by distillation and ion selective electrode was performed on the grab samples and liner composite samples. All analyses met the SW-846 holding time of 7 days. There was no required reporting limit in the SAP for sulfide. The target detection limit was met. All sample

results had adjusted MDLs of approximately 7 µg/g. There were no notable issues with these batches, and all QC requirements in the FSAP, SAP, and QAPP were met.

3.2.3 pH Analysis

The pH analysis was performed on the grab samples and liner composite samples. These analyses met all QC requirements in the FSAP, SAP, and QAPP. The FSAP lists a pH holding time requirement of "as soon as possible." All pH measurements were taken after the water leach was performed. The sampling to analysis time varied from 3.2 to 7.5 days (see Attachment 3). The sample extrusion/compositing process was basically the cause for the delay in the pH analysis. There is no correlation between pH results and days to analysis, and the results fall within an expected range for alkaline soils. This indicates that the variation in time has no apparent effect on the results.

3.2.4 Mercury

Analysis for Hg by cold-vapor graphic furnace/atomic absorption was performed on the grab samples and liner composite samples. All analyses met the holding time of 28 days. This analysis met the required and target detection limits.

Batch 21197: Mercury was detected in the preparation blanks at a level below the quantitation limit and slightly above the MDL. Since mercury was not detected in the samples, reanalysis was not required.

Batches 20849 and 20982: There were no notable issues with these batches, and all QC requirements in the FSAP, SAP, and QAPP were met.

3.2.5 Ion Chromatography – Ammonium

Analysis for ammonium was performed using a distillation preparation of the grab samples and the liner composite samples. There is no regulatory holding time limit promulgated for ammonium in soil. The SAP lists an administrative holding time of 7 days. The laboratory believes that after distillation and preservation, the holding time is 28 days based on U.S. Environmental Protection Agency drinking water and waste water holding times for preserved samples. All samples met these holding times. These analyses met the target detection limit listed in the SAP. There was no required reporting limit in the SAP or FSAP for ammonium.

Batch 20930: The RPD between the duplicate and the sample exceeded the required 30%. Since the sample result for this analyte was below the quantitation limit, the criterion does not apply and reanalysis is not required. Ammonium was detected in the preparation blanks at a level below the quantitation limit and above the MDL. Ammonium was also detected in the samples at a similar level; these results have been flagged with a "C". Since all results were below the quantitation limit, reanalysis was not required.

Batches 21010 and 21124: Ammonium was detected in the preparation blanks at a level below the quantitation limit and above the MDL. Ammonium was also detected in the samples at a

similar level; these results have been flagged with a “C”. Since all results were below the quantitation limit, reanalysis was not required.

3.2.6 Ion Chromatography – Anions and Small Organic Acids

Ion chromatography analysis was performed on all grab samples and liner composite samples. The laboratory met all of the required and target detection limits. All analyses were within the applicable SW-846 holding times. The sample spikes used for the standard water digestions are predigestion spikes.

Batch 21522: Nitrite was detected in the preparation blanks at a level below the quantitation limit and above the MDL. Nitrite was also detected in three of the samples at a similar level; these results have been flagged with a “C”. Since all results were below the quantitation limit, reanalysis was not required. The MS recovery for phosphate exceeded the ±25% requirement at 63%. The post-digestion spike was recovered at 85% indicating that the low MS recovery may be due to matrix interference. The client agreed (see Attachment 7). The results were reported with an “N” flag applied to each phosphate result in this batch.

Batch 22189: The RPD for nitrite was above the required 30%; however, the result was below the quantitation limit and the criterion does not apply.

3.2.7 Inductively Coupled Plasma/Atomic Emission Spectroscopy

The ICP/AES analysis was performed on an acid-digest (SW-846 3050B) of all grab samples and liner composite samples. The ICP/AES analysis was unable to obtain the required detection limit for antimony, arsenic, cadmium, lead, selenium, silver, and thallium for the soil sample. These elements have been reported from separate ICP/MS analyses. Total uranium has not been reported by the ICP/AES analysis since it cannot meet the required detection limits in the SAP. The isotopic uranium analysis by ICP/MS met the required detection limit for ^{238}U, which is essentially total uranium. The overall data usability was not affected. For all other metals reported by ICP/AES, all target and required detection limits were met. SW-846 lists the holding time for ICP/AES metals as 6 months. All analyses met the holding times.

Batch 23451: The interference check standard-A (ICSA) produced positive results for cobalt and manganese, which are not contained in this standard. This could indicate a positive interference. However, since in the ICSAB these elements recovered at 93%, there appears to be no positive interference. The ICSAB produced a result above the quantitation limit for neodymium. This indicates that spectral interference was occurring. Neodymium results in the sample were not reported due to the high probability that they were the result of this interference. A low level of iron was detected in the preparation blank, but reanalysis was not required since these levels were less than 5% of the lowest sample result.

The MS recoveries for aluminum, calcium, iron, magnesium, potassium, phosphorous, sodium, silicon, and titanium exceeded the ±25% requirement in the FSAP and SAP. Since the sample results for these elements exceeded the MS level by more than four times, this criterion does not apply.

The MS recovery for cerium and zirconium exceeded the ±25% requirement in the SAP and FSAP. For zirconium, the laboratory believes this was due to matrix interference. At 2% recovery, cerium does not appear to have been in the spike solution used. Reanalysis was not required since these are secondary elements. These results have been flagged with an “N”.

The MS recovery for barium exceeded the ±25% requirement at 133%. The post-digestion spike was recovered at 94%. A second sample was spiked from core hole C7676 with similar results (137%). This indicates that the high MS recovery may be due to matrix interference. The client agreed (see Attachment 7). The results were reported with an “N” flag applied to each result in this batch.

The RPD between the sample and the duplicate exceeded the ±30% requirement in the SAP for silicon. The laboratory believes this was due to matrix interference. Reanalysis was not required since this is secondary element. It should be noted that silicon is not listed with other elements in SW-846 3050B, section 1.1, under “Scope and Application” for the method and does not perform consistently when using this digest. The silicon results have been flagged with an “M”.

The opening and closing low level standard (LLS) for zinc was recovered outside the required ±30% at 66%. This could indicate a low bias for results near the LLS level. However, since the zinc results were 14 to 23 times the LLS level, the data quality was not affected. The LLS potassium was recovered outside the ±30% requirement at 149%. However, since the potassium results were 14 to 30 times the LLS level, the data quality was not affected.

Batch 24077: The ICSA produced positive results for manganese, which are not contained in this standard. This could indicate a positive interference. However, since in the ICSAB this element recovered at 92%, there appears to no positive interference. The ICSAB produced results above the quantitation limit for neodymium. This indicates that spectral interference was occurring. Neodymium results were not reported due to the high probability that they were the result of this interference. A low level of iron was detected in the preparation blank, but reanalysis was not required since these levels were less than 5% of the lowest sample result.

The MS recoveries for aluminum, calcium, iron, magnesium, manganese, potassium, phosphorous, sodium, silicon, and titanium exceeded the ±25% requirement in the FSAP and SAP. Since the sample results for these elements exceeded the MS level by more than four times, this criterion does not apply.

The MS recovery for cerium exceeded the ±25% requirement in the SAP and FSAP at 133%. The laboratory believes this was due to matrix interference. Reanalysis was not required since this is a secondary element. These results have been flagged with an “N”.

The MS recovery for barium exceeded the ±25% requirement at 133%. The post-digestion spike was recovered at 94%. A second sample was spiked from core hole C7676 with similar results (137%). This indicates that the high MS recovery may be due to matrix interference. The client agreed (see Attachment 7). The results were reported with an “N” flag.

3.2.8 Inductively Coupled Plasma/Mass Spectroscopy

The ICP/MS actinide and trace metal analyses were performed on the standard SW-846 3050 acid digestion of all grab samples and liner composite samples. The ICP/MS ^{126}Sn and ^{99}Tc analysis was performed on the sample digest without the addition of hydrochloric acid. Hydrochloric acid is not used for ^{99}Tc analysis because of the potential formation of a ZnCl ion pair with mass 99. ICP/MS trace metal analysis for antimony was performed on the SW-846 3050 digest with additional hydrochloric acid, which is required to keep antimony in the solution. In addition to these acid digests, ICP/MS ^{99}Tc analysis was performed on a Vadose water digest of all solid samples.

Direct is the most accurate type of calibration; however, standard material is not commercially available for all of the isotopes of interest. Concentrations of those isotopes without available standards are estimated based on the instrument's mass-response curve, which is generated by using the intensity/concentration relationship for the available isotope standards. Results estimated in this manner are designated "semi-quantitative."

Table 1. Inductively Coupled Plasma-Mass Spectroscopy Standards and Spikes

Standard Type	Analytes Analyzed
Initial calibration verification (nondigested)	^{232}Th, ^{235}U, ^{238}U, ^{237}Np, ^{99}Tc, ^{117}Sn
Acid digest standard (laboratory control standard)	^{232}Th, ^{235}U, ^{238}U, ^{237}Np, ^{99}Tc, ^{117}Sn
Predigest spike (MS)	^{232}Th, ^{235}U, ^{238}U, ^{237}Np, ^{99}Tc, ^{117}Sn
Post-digest spike	^{232}Th, ^{235}U, ^{238}U, ^{237}Np, ^{99}Tc, ^{117}Sn
No standard or spike of either type	^{126}Sn, ^{230}Th, ^{233}U, ^{234}U, ^{236}U

3.2.8.1 Technetium-99 and Tin-126

The required detection limit listed in the SAP for ^{99}Tc was met. The target detection limit for ^{99}Tc was not met. There were no required or target detection limits for ^{126}Sn listed in the SAP. The SAP lists the holding time for isotopic analytes as 6 months. All samples were analyzed within the holding time.

Because there is no available source for ^{126}Sn, ^{117}Sn is used to monitor the chemical recovery for this analysis. Though not specifically requested in the SAP, ^{117}Sn is reported for the laboratory control sample (LCS) and MS in order to demonstrate method accuracy and presence of possible matrix interference.

All sample results for ^{126}Sn were above the MDL and below the quantitation limit with one exception. Based on this, the laboratory suspects that a low level isobaric interference is present in these samples at mass 126. The laboratory believes the most likely suspect is ^{126}Te, but there are other possible candidates. One sample result was above the quantitation level for ^{126}Sn. Users of this data should be aware that all positive ^{126}Sn results in the report may be due to isobaric interference. The laboratory is currently evaluating how to quantify these possible isobaric interferences.

Batch 22109: The MS for ^{117}Sn was recovered below the ±25% requirement at 70%. Similar results have been observed in other batches; this appears to be a matrix interference issue. This

batch was not reanalyzed, but others have been with no improvement. Tin results should be considered biased low at these levels. All samples in the batch have been flagged with an "N". The laboratory is investigating changing the acid mixture used to perform low level ^{126}Sn analysis in hopes of improving spike recoveries. Tin-126was detected in one of the four continuing calibration blanks (CCBs) at slightly above the MDL. This blank bracketed the last three samples in the batch, which have been flagged with a "C". Since all results were below the quantification level, reanalysis was not required.

Batch 23853: Tin-126 was detected in two of the three CCBs at slightly above the MDL. All samples in this batch have been flagged with a "B". Since all results were below the quantification level, reanalysis was not required.

3.2.8.2 Technetium-99 (Vadose Water Digest)

The required and target detection limits listed in the SAP for ^{99}Tc were met. The SAP lists a holding time of 6 months for isotopic analytes. All analyses met this holding time.

Batch 23162: ^{99}Tc was detected in one of the three CCBs at slightly above the MDL. All sample results except two were below the MDL. The blank result was 5% of one these samples, which has been flagged with a "B". Since the sample and blank results were below the quantification level, reanalysis was not required. One sample result (B26CD2) was well above the quantification limit. The sample contained the known interferents chloride and cobalt, but at level that would not account for the ^{99}Tc result. Therefore, no qualifier was place on this result.

3.2.8.3 Actinides

The required and target detection limits were met for all isotopes and in all samples. The SAP lists the holding time for isotopic analytes as 6 months. All samples were analyzed within the holding time.

Batch 22039: The RPD for ^{237}Np and ^{233}U exceeded the 30% requirement in the SAP and FSAP. Since these results were below the quantitation limit, this criterion does not apply. The results for ^{232}Th and ^{236}U in the preparation blank were above the MDL and below the quantitation limit. One sample in this batch demonstrated a similar result for ^{236}U and has been flagged with a "B". Since all ^{236}U results were below the quantitation limit, reanalysis was not required. The sample result for ^{232}Th was more than 20 times the blank result. Neptunium-237 was detected in the initial calibration blank (ICB) at slightly above the MDL. Two samples demonstrated a similar result and have been flagged with "C". Since all ^{237}Np results were below the quantitation limit, reanalysis was not required.

Batch 23864: The percent difference for serial dilution of ^{235}U was above the 10% limit at +11.6%. This could indicate that there was negative bias in the more concentrated sample. This is an unusual result for Vadose samples, which are typically within the ±10% limit for ^{235}U. Since ^{232}Th and ^{238}U were within the ±10% limit, a dilution error can be ruled out. There is no requirement for reanalysis, and the result has been reported with this discussion. The result for ^{230}Th in the preparation blank was above the MDL and below the quantitation limit. All samples in this batch demonstrated a similar result for ^{230}Th and have been flagged with a "C". Since all ^{230}Th results were below the quantitation limit, reanalysis was not required.^{236}U was detected in

the ICB and one of the three CCBs at slightly above the MDL. One sample demonstrated a similar result and has been flagged with "C". Since all ^{236}U results were below the quantitation limit, reanalysis was not required.

3.2.8.4 Trace Metals

Antimony, arsenic, cadmium, lead, selenium, silver, and thallium were analyzed by ICP/MS to obtain the required detection limits in the SAP. Due to an extended room outage at 222S Laboratory, samples were sent WSCF Laboratory by the WRPS for analysis. Table 2 list the samples and analytes that were reported by WSCF. The WSCF report is included in Appendix A of this report. Except for the required detection limit for selenium, all required detection limits were met or the sample results were above the quantitation limit and the sample detection limit criteria do not apply. All target detection limits were met. All samples were analyzed within the holding time.

Table 2, ICPMS Analysis Performed At WSCF Laboratory

Client Sample No.	Sample Depth	ICP/MS Analysis Performed at WSCF
B26JK6	Surface	Arsenic, Cadmium, Lead, Selenium, Silver, Thallium
B26JK7	Surface Dup	Arsenic, Cadmium, Lead, Selenium, Silver, Thallium
B29612	5-9ft	Arsenic, Cadmium, Lead, Selenium, Silver, Thallium
B29613	14-18ft	Arsenic, Cadmium, Lead, Selenium, Silver, Thallium
B26CC4	10-12ft	Arsenic, Cadmium, Lead, Selenium, Silver, Thallium
B26CD0	38-40ft	Antimony, Selenium, Silver, Arsenic
B26CD2	128-130ft	Antimony, Selenium, Silver, Arsenic
B26CD4	157-159ft	Antimony, Selenium, Silver, Arsenic

Batch 21722: There were no notable issues with this antimony batch, and all QC requirements in the FSAP, SAP, and QAPP were met.

Batch 24036: The serial dilution for lead exceeded the 10% difference requirement in the QAPP at +23%. This would indicate that a low bias may exist in the more concentrated sample. This is an unusually result for vadose samples for lead, since lead does not typically fail the serial dilution test.

3.3 RADIOCHEMICAL ANALYSIS

The holding time listed in the SAP for radioactive isotopes is 6 months. The FSAP lists the holding time as "none." All radiochemical analyses met the 6-month holding time listed in the SAP. With the exception of the ^{14}C and ^{3}H analyses, tracers and spikes are added prior to the digestion.

3.3.1 Gamma Energy Analysis

Gamma energy analysis was performed directly on the grab samples and liner composite samples. The SAP requires the reporting of all isotopes with positive results above the minimum detectable activity (MDA); therefore, isotopes additional to those required in the SAP were reported when detected. The GEA analysis met all of the required detection limits in the SAP. The laboratory was unable to meet any of the target detection limits.

Batch 21198: The RPD for ^{40}K was above the 30% requirement in the FSAP. Since the counting error was > 15%, this criterion does not apply.

3.3.2 Strontium-89/90

Strontium-89/90 analysis was performed on the grab samples and liner composite samples. All of the sample analyses met the required and target detection limits. The FSAP and SAP requested ^{90}Sr, not $^{89/90}Sr$, be reported. The 222-S Laboratory only performs the latter analysis. Since the half-life for ^{89}Sr is approximately 51 days and ^{89}Sr has not been produced at Hanford for years, $^{89/90}Sr$ is essentially ^{90}Sr. There were no notable issues with these batches, and all QC requirements in the FSAP, SAP, and QAPP were met.

3.3.3 Tritium

The ^{3}H analysis by liquid scintillation counting (LSC) was performed on a water leach of all grab samples and liner composite samples. This method only measured the ^{3}H in the samples that could be dissolved in water. This analysis achieved the required and target detection limits in the FSAP.

Batch 21940: The preparation blank demonstrated a positive result below the quantitation limit. Since all sample results were below the MDA, reanalysis was not required.

Batch 23378: There were no notable issues with this batch, and all QC requirements in the FSAP, SAP, and QAPP were met.

3.3.4 Selenium-79

The ^{79}Se analysis by LSC was performed on the grab samples and liner composite samples. The analysis achieved the target detection limit in the FSAP. No required detection limit was listed. No standard is currently available for ^{79}Se, and a cold carrier is used to monitor recovery and is measured gravimetrically. The ^{14}C LSC curve is used to determine the ^{79}Se results since their energies are similar. Since both ^{63}Ni and ^{79}Se use a single digestion batch that is equally split prior to the separation step, the maximum tracer/carrier recovery is 50%.

Batch 23725: There were no notable issues with this batch, and all QC requirements in the FSAP, SAP, and QAPP were met.

Batch 24408: The preparation blank demonstrated a positive result below the quantitation limit with a larger counting error. Since all sample results were below the MDA, reanalysis was not required.

3.3.5 Carbon-14

The ^{14}C analysis by LSC was performed on a water leach of the grab samples and liner composite samples. The analysis achieved the required detection limit in the FSAP but exceeded the target detection limit of 1 piC/g. The MDA for the samples were between 1 pCi/g and 2 pCi/g. This analysis will only detect water soluble forms of ^{14}C.

Batch 21907: The RPD for ^{14}C was above the 30% requirement in the FSAP. Since the counting error was > 15%, this criterion does not apply.

Batch 22686: There were no notable issues with this batch, and all QC requirements in the FSAP, SAP, and QAPP were met.

3.3.6 Nickel-63

The ^{63}Ni analysis by LSC was performed on the grab samples and liner composite samples. The analysis achieved the required and target detection limits in the FSAP. Since both ^{63}Ni and ^{79}Se use a single digestion batch that is equally split prior to the separation step, the maximum trace/carrier recovery is 50%.

Batch 23724: There were no notable issues with this batch, and all QC requirements in the FSAP, SAP, and QAPP were met.

3.3.7 Iodine-129

Analysis for ^{129}I by low energy GEA was performed on an iodine-specific fusion digest of all grab samples and liner composite samples. The required and target detection limits in the SAP were met. There were no notable issues with these batches, and all QC requirements in the FSAP, SAP, and QAPP were met.

3.3.8 Americium-241, Curium-243/244, and Curium-242

Analysis for ^{241}Am, $^{243/244}Cm$, and ^{242}Cm by alpha energy analysis (AEA) was performed on the grab samples and liner composite samples. For this analysis, there were no notable issues with any batches and all QC requirements in the FSAP, SAP, and QAPP were met. The required and target detection limits in the SAP were met. The SAP and FSAP requested ^{243}Cm and ^{244}Cm be reported separately. Since it is not possible to resolve these individual isotopes when using AEA, these isotopes have been reported as $^{243/244}Cm$.

3.3.9 Plutonium-238 and Plutonium-239/240

Plutonium isotopic (^{238}Pu and $^{239/240}$Pu) analysis by AEA was performed on the grab samples and liner composite samples. For this analysis, there were no notable issues with any batches and all QC requirements in the FSAP, SAP, and QAPP were met. The required and target detection limits in the SAP were met.

3.4 ORGANIC ANALYSES

3.4.1 Volatile Organic Analysis

The VOA by GC/MS was performed on field samples by purge and trap. Field sampling methods, sample containers, and preservation methods followed SW-846 5035.The soil samples were delivered in a freezer in pre-weighed VOA vials with magnetic stir bars and approximately 5 g of sample. After receipt, the VOA samples were stored in a freezer. For each sample interval, an additional high level sample preserved in methanol was also received. These were not used because none of the results for the frozen samples were above the calibration range. The exact weight of the sample and the tare weight of the VOA vials were recorded by sampling personnel and delivered with the samples. Seven field blanks and six trip blanks were also received and analyzed. The samples were preserved with either HCl or H_2SO_4 to a pH < 2. The holding time for all samples is 14 days. All samples analyzed at the 222-S Laboratory met the required holding time.

Two samples, B26D46 (Trip Blank-6) and B26D57 (Field Blank-7), were shipped to WSCF for analysis due to a laboratory outage. The WSCF report is included in Appendix B of this report.

The VOA met the target and required detection limits in the SAP. The SAP and FSAP requested m-xylene and p-xylene be reported separately. Since it is not possible to resolve these individual compounds when performing VOA by SW-846 8260C, these compounds have been reported as m+p xylene. The SAP and FSAP request that methanol be reported with this analysis; however, this compound is too polar to be purged and cannot be reported (see Attachment 7). Isobutanol, another poor purger, was reported as a semivolatile organic compound.

All of the field blanks and trip blanks contained chloroform above the quantification level. Since chloroform is a common chlorination byproduct, the laboratory believes the likely source of chloroform was the water used by sampling personnel to make the various blanks.

The LCS, MS, and MSD recoveries were compared against the laboratory's statistical process control (SPC) limits, as required by SW-846. The use of SPC limits is allowed in the FSAP, SAP, and QAPP.

Batch 21743: The method blank results for acetone and carbon disulfide were above the quantitation limit. The sample results for carbon disulfide were below the MDL; the data quality was not affected. The sample results for acetone were below the quantitation limit and were flagged with a "B". Since the sample results were below the quantitation limit, reanalysis was not required. Additionally, acetone was less than five times the quantitation limit, which meets DOE/RL-96-68, *Hanford Analytical Services Quality Assurance Requirements Documents*

(HASQARD), and QAPP requirements. Toluene was present in the blank below the quantitation limit. All toluene results in the sample were below the MDL.

Batch 21744: Toluene was present in the blank below the quantitation limit. All sample results for toluene were similar and have been flagged with a “B”. Since all toluene results were below the quantitation limit, reanalysis was not required.

Batch 21745: The method blank results for acetone, toluene, and styrene were above the MDL but below the quantitation limit. The sample results for acetone, toluene, and styrene were similar to the blank and have been flagged with “B”. Since the blank results were below the quantitation limit, reanalysis was not required.

Batch 21746: The method blank result for acetone was above the quantitation limit. The sample results for acetone were below the MDL except for one sample, which was below the quantitation limit and has been flagged with a “B”. Since the sample result was below the quantitation limit, reanalysis was not required. Additionally, acetone was less than five times the quantitation limit, which meets HASQARD and QAPP requirements.

Batch 23313: The method blank results for m,p-xylene, styrene, and toluene were above the MDL and below the quantitation limit. Styrene and toluene were detected in the sample below the quantitation limit, and m,p-xylene was below the MDL. Since all results were below the quantitation limit, reanalysis was not required. Hexane was detected in the sample above the quantitation limit. Since it was not detected in the method blank, this result does not appear to be result of laboratory contamination.

3.4.2 Semivolatile Organic Analysis

The semivolatile organic analysis (SVOA) by GC/MS was performed on methylene chloride extractions of all grab samples and liner composite samples. All holding times were met.

The SVOA analysis met the required and target detection limits with two exceptions:

- The adjusted MDLs for cyclohexanone were above the 0.5-mg/kg target detection limit for most samples. This compound obtained detection limits between 0.5 mg/kg and 0.6 mg/kg.
- The adjusted MDLs for di-n-butyl-phthalate were above the target detection limit of 0.33 mg/kg. The analysis achieved a detection limit of between 0.5 mg/kg and 0.6 mg/kg for this compound.

LCS, MS, and MSD recoveries were compared against the laboratory’s SPC limits, as required by SW-846. The use of SPC limits is permitted in the FSAP, SAP, and QAPP.

The SAP and FSAP requested m-cresol and p-cresol be reported separately. Since it is not possible to resolve these individual compounds when performing SVOA by SW-846 8270C, these compounds have been reported as m+p cresol.

Batches 21133 and 21183: There were no notable issues with these batches, and all QC requirements in the FSAP, SAP, and QAPP were met.

Batch 21072: The percent difference for chrysene and 2,4-dinitrotoluene in continuous calibration verification exceeded the ±20% limit at -20.1% and -22.8%, which could indicate a low bias. However, the LLS demonstrated that there was adequate sensitivity to detect these compounds at the level of quantitation had they been present in the samples.

3.4.3 Tentatively Identified Compounds

Unassigned peaks or TICs were treated as follows. Standards were obtained and analyzed for each secondary analyte identified in the SAP. This data was accumulated in the Hanford library. Following analysis, the largest TICs with instrument responses greater than 10% of the response of the nearest internal standard were evaluated and compared to the Hanford library. The estimated concentration of these TICs was calculated using measured response factors from the Hanford library compound list.

After comparison to the Hanford library, remaining unknowns were compared to the National Institute of Standards and Technology's NIST 02, *HP Mass Spectral Libraries*. The estimated concentration of compounds identified in the NIST library was calculated based on an arbitrary response factor of 1.0. If the compounds were not identified as a result of this comparison, they were reported as "unknown." Summaries of the SVOA and VOA TICs from the field samples and method blanks are provided in Attachment 5. TICs that were found in the field samples and were present in the associated batch method blank have been flagged with "B".

4.0 PROCEDURES

Table 2 lists the analytical procedures used for analysis of the Area C samples.

Table 2. Analytical Procedures

Analysis	Preparation Method	Analysis Procedure
Inorganic Analyses		
Cyanide	LA-695-103, Rev. J-0 (SW-846 9010C)	LA-695-103, Rev. J-0 (SW-846 9014)
Sulfide	LA-361-101, Rev. D-0 (SW-846 9030B)	LA-361-101, Rev. D-0 (SW-846 9215)
pH (solid)	LA-212-105, Rev. G-0 (SW-846 9045D)	LA-212-105, Rev. G-0 (SW-846 9045D)
Mercury – Cold Vapor Atomic Absorption	LA-325-110, Rev. A-0 (SW-846 7471A)	LA-325-110, Rev. A-0 (SW-846 7471A)
Ammonia – IC	LA-544-112, Rev. E-0	LA-533-101, Rev. Q-0
Anions & Organic Acids – IC	LA-504-101, Rev. M-0	LA-533-115, Rev. J-0
Metals – ICP /AES	LA-505-163, Rev. G-0 (SW-846 3050B)	LA-505-161, Rev. J-0-A (SW-846 6010C)

Analysis	Preparation Method	Analysis Procedure
^{99}Tc, ^{126}Sn – ICP/MS	LA-505-163, Rev. G-0 (SW-846 3050B)	LA-506-102, Rev. F-1
^{99}Tc – ICP/MS	08-ATL-078 Vadose Water Digest	LA-506-102, Rev. F-1
Metals – ICP/MS	LA-505-163, Rev. G-0 (SW-846 3050B)	LA-506-102, Rev. F-1 LA-506-103, Rev. B-0 (SW-846 6020A)
Actinides – ICP/MS	LA-505-163, Rev. G-0 (SW-846 3050B)	LA-506-102, Rev. F-1
Radiochemical Analyses		
GEA	Direct	LA-548-121, Rev. I-0
^{90}Sr – Separation/Beta counting (Solid)	LA-544-101, Rev. F-0	LA-220-101, Rev. I-0
^{3}H – LSC	LA-504-101, Rev. M-0	LA-218-111, Rev. G-0
^{14}C – LSC	LA-504-101, Rev. M-0	LA-348-104, Rev. H-0, I-0
^{79}Se – Separation/LSC	LA-544-101, Rev. F-0	LA-365-132, Rev. J-0
^{63}Ni – Separation/LSC	LA-544-101, Rev. F-0	LA-285-102, Rev. E-0
^{129}I – Separation/GEA	LA-378-105, Rev. D-0	LA-378-105, Rev. D-0
^{241}Am, $^{243/244,\ 242}$Cm – Separation/AEA	LA-544-101, Rev. F-0	LA-953-104, Rev. H-1
$^{239/240,\ 238}$Pu – Separation/AEA	LA-544-101, Rev. F-0	LA-953-104, Rev. H-1

Organic Analyses		
Analysis	**Preparation Method**	**Analysis Procedure**
VOC – GC/MS	Direct	LA-523-118, Rev. G-O-A, H-O (SW-846 8260B)
SVOC – GC/MS	LA-523-138, Rev. G-0 (SW-846 3540C)	LA-523-135, Rev. D-0 (SW-846 8270C)

5.0 REFERENCES

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Washington River Protection Solutions	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	V10-003-251	PAGE 1 OF 2

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 8P	DATA TURNAROUND
Campbell/ Harris	TEMPLETON, AM	373-5589	BERLIN, PC	AIR QUALITY ☐	75 Days / 75 Days
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**		
C7676 Surface	WMA C Sampling for CMS		V10-003		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**ACTUAL SAMPLE DEPTH**	**COA**	**METHOD OF SHIPMENT**	
TFVS-09-003	TFVZ-09-000001	surface	N/A	Govt. Vehicle	
SHIPPED TO	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		
222-S Lab Operations	N/A		N/A		

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

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

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool~4C
HOLDING TIME	14/40 Days
TYPE OF CONTAINER	G/P
NO. OF CONTAINER(S)	1
VOLUME	500mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B26JK6	SOIL	7-19-10	1000	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
Campbell Campbell	7-19-10 1130	ABSteele ABSteele	7.19.10 1130
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS
SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS
OU RD
GRP# 20100556
Stm# 510V001606

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

Washington River Protection Solutions	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			V10-003-251	PAGE 2 OF 2
COLLECTOR Campbell/Harris	**COMPANY CONTACT** TEMPLETON, AM	**TELEPHONE NO.** 373-5589	**PROJECT COORDINATOR** BERLIN, PC	**PRICE CODE** 8P **AIR QUALITY** ☐	**DATA TURNAROUND** 75 Days / 75 Days
SAMPLING LOCATION C7676 Surface	**PROJECT DESIGNATION** WMA C Sampling for CMS		**SAF NO.** V10-003		
ICE CHEST NO. TFVS-09-003	**FIELD LOGBOOK NO.** TFVZ09-000001	**ACTUAL SAMPLE DEPTH** surface	**COA** N/A	**METHOD OF SHIPMENT** Govt. Vehicle	
SHIPPED TO 222-S Lab Operations	**OFFSITE PROPERTY NO.** N/A		**BILL OF LADING/AIR BILL NO.** N/A		

SPECIAL INSTRUCTIONS

** After VOA bottles for the direct pushes are filled, the sampler will cap remaining liners for shipment to 222-S. Where capping is not possible, the sample shall be put into 500 mL or 250 mL glass bottles with Teflon-lined lids.
(1) Semi-VOA - 8270 Complete (TF); TPH-Gasoline Range - WTPH-G; TPH-Diesel Range - WTPH-D; PCBs - 8082; Pesticides - 8081 (TF); 1668 PCB CONGENER (TCL); ICP Metals - 6010 (SW-846) (TF); Mercury - 7471 - (CV) (TF); 300.7_AMMONIUM (TF); IC Anions - 9056; Sulfide - 9215; Total Cyanide - 9014 (TF); pH (Soil) - 9045; Americium-241 (TF); C-14; CURIUM; GAMMA ENERGY ANALYSIS (TF); H3 - TRITIUM; I129_SEP_GEA (TF); Isotopic Plutonium {Plutonium-238, Plutonium-239/240}; Nickel-63 (TF); RADISO_ICPMS (TF); Selenium-79 (TF); Strontium-90; Conductivity - 9050_WE; Percent Solids (TF); Percent Water (TF);

Washington River Protection Solutions	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	V10-003-232	PAGE 1 OF 2

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 8P	DATA TURNAROUND
Campbell / Harris	TEMPLETON, AM	373-5589	BERLIN, PC	AIR QUALITY ☐	75 Days / 75 Days
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**		
C7676 I006	WMA C Sampling for CMS		V10-003		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**ACTUAL SAMPLE DEPTH**	**COA**	**METHOD OF SHIPMENT**	
TFVS-09-003	TFVZ-10-000004	38-40	n/A	Govt. Vehicle	
SHIPPED TO	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		
222-S Lab Operations	n/A		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	Cool~4C
		HOLDING TIME	14/40 Days
		TYPE OF CONTAINER	Gs jar/Liners
		NO. OF CONTAINER(S)	3
		VOLUME	160g
	SPECIAL HANDLING AND/OR STORAGE	SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B26CD0	SOIL	7-22-10	1035	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
Dan Harris Dan Harris	7-22-10 1130	RTSteele RTSteele	7-22-10 1130
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS

SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

ov
v RB

GRP# 20100556
SAM# S10V001761 A
1762 B
1763 C

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

Washington River Protection Solutions	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			V10-003-232	PAGE 2 OF 2
COLLECTOR Campbell / Harris	COMPANY CONTACT TEMPLETON, AM	TELEPHONE NO. 373-5589	PROJECT COORDINATOR BERLIN, PC	PRICE CODE 8P AIR QUALITY ☐	DATA TURNAROUND 75 Days / 75 Days
SAMPLING LOCATION C7676 I006	PROJECT DESIGNATION WMA C Sampling for CMS		SAF NO. V10-003		
ICE CHEST NO. TFVZ-09-003	FIELD LOGBOOK NO. TFVZ-10-00004	ACTUAL SAMPLE DEPTH 38-40	COA N/A	METHOD OF SHIPMENT Govt. Vehicle	
SHIPPED TO BC 7-22-10 222-S Lab Operations	OFFSITE PROPERTY NO. N/A		BILL OF LADING/AIR BILL NO. N/A		

SPECIAL INSTRUCTIONS

** After VOA bottles for the direct pushes are filled, the sampler will cap remaining liners for shipment to 222-S. Where capping is not possible, the sample shall be put into 500 mL or 250 mL glass bottles with Teflon-lined lids.
(1) Semi-VOA - 8270 Complete (TF); TPH-Gasoline Range - WTPH-G; TPH-Diesel Range - WTPH-D; PCBs - 8082; Pesticides - 8081 (TF); 1668 PCB CONGENER (TCL); ICP Metals - 6010 (SW-846) (TF); Mercury - 7471 - (CV) (TF); 300.7_AMMONIUM (TF); IC Anions - 9056; Sulfide - 9215; Total Cyanide - 9014 (TF); pH (Soil) - 9045; Americium-241 (TF); C-14; CURIUM; GAMMA ENERGY ANALYSIS (TF); H3 - TRITIUM; I129_SEP_GEA (TF); Isotopic Plutonium {Plutonium-238, Plutonium-239/240}; Nickel-63 (TF); RADISO_ICPMS (TF); Selenium-79 (TF); Strontium-90; Conductivity - 9050_WE; Percent Solids (TF); Percent Water (TF);

Appendix 5

Data Validation Supporting Documentation

VALIDATION LEVEL:	A	B	(C)	D	E
PROJECT: WMA C			DATA PACKAGE: VSR11-048		
VALIDATOR: Carl Schloesslin		LAB: 222-S Lab		DATE: 6-23-2011	
			SDG: 20100556		
ANALYSES PERFORMED					
Anions/IC X	TOC	TOX	TPH-418.1	Oil and Grease	Alkalinity
Ammonia X	BOD/COD	Chloride	Chromium-VI	pH X	NO_3/NO_2
Sulfate	TDS	TKN	Phosphate	Cyanide X	Sulfide X
SAMPLES/MATRIX Soil samples B26JK6 and B26CD0					

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:

MB Hits: batch 21522 nitrite 0.42 ug/g
batch 20930 ammonium 1.42 ug/g
batch 21010 ammonium 1.27 ug/g

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:

Batch 21522 phosphate MS %R = 63%

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

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

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

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

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

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

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

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

Comments:

None

6. HOLDING TIMES (all levels)

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

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

Comments:

Samples B26JK6 and B26CD0 analyzed for pH 3.2 and 6.5 days, respectively, after sample collection (HT = ASAP).

Some sample analyses with HTs of at least one week had minor HT infractions of only several hours. Sample results were not qualified in these cases.

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

Holding Time Report: Cyanide

Sample Group	Sample	Matrix	Method	Prep Method	Sample Date	Received Date	Analysis Date	Missed Holding Time
20100556	S10V001606	SOLID	SW846-9014	SW846-9010C	07/19/10 10:00	07/19/10 11:30	07/28/10 21:48	N
20100556	S10V001623	SOLID	SW846-9014	SW846-9010C	07/19/10 10:00	07/19/10 11:30	07/28/10 21:48	N
20100556	S10V001654	SOLID	SW846-9014	SW846-9010C	07/20/10 09:45	07/20/10 11:10	07/28/10 21:48	N
20100556	S10V001694	SOLID	SW846-9014	SW846-9010C	07/21/10 09:20	07/21/10 11:30	07/28/10 21:48	N
20100556	S10V001714	SOLID	SW846-9014	SW846-9010C	07/21/10 10:30	07/21/10 11:30	07/28/10 21:48	N
20100556	S10V001764	SOLID	SW846-9014	SW846-9010C	07/22/10 10:35	07/22/10 11:30	07/28/10 21:48	N
20100556	S10V001784	SOLID	SW846-9014	SW846-9010C	07/27/10 09:50	07/27/10 10:50	08/02/10 16:23	N
20100556	S10V001804	SOLID	SW846-9014	SW846-9010C	07/29/10 09:35	07/29/10 10:30	08/02/10 16:23	N

Holding Time Report: pH

Sample Group	Sample	Matrix	Method	Sample Date	Received Date	Analysis Date	Days Lasped
20100556	S10V001606	SOLID	SW-846 9045D	07/19/10 10:00	07/19/10 11:30	07/22/10 15:19	3.2
20100556	S10V001623	SOLID	SW-846 9045D	07/19/10 10:00	07/19/10 11:30	07/22/10 15:19	3.2
20100556	S10V001654	SOLID	SW-846 9045D	07/20/10 09:45	07/20/10 11:10	07/22/10 15:19	2.2
20100556	S10V001694	SOLID	SW-846 9045D	07/21/10 09:20	07/21/10 11:30	07/28/10 22:30	7.5
20100556	S10V001714	SOLID	SW-846 9045D	07/21/10 10:30	07/21/10 11:30	07/28/10 22:30	7.5
20100556	S10V001764	SOLID	SW-846 9045D	07/22/10 10:35	07/22/10 11:30	07/28/10 22:30	6.5
20100556	S10V001784	SOLID	SW-846 9045D	07/27/10 09:50	07/27/10 10:50	07/30/10 14:21	3.2
20100556	S10V001804	SOLID	SW-846 9045D	07/29/10 09:35	07/29/10 10:30	08/04/10 14:26	6.2

Holding Time Report: Sulfide

Sample Group	Sample	Matrix	Method	Prep Method	Sample Date	Received Date	Analysis Date	Missed Holding Time
20100556	S10V001606	SOLID	SW-846 9215	SW-846 9030B	07/19/10 10:00	07/19/10 11:30	07/22/10 20:45	N
20100556	S10V001623	SOLID	SW-846 9215	SW-846 9030B	07/19/10 10:00	07/19/10 11:30	07/22/10 20:45	N
20100556	S10V001654	SOLID	SW-846 9215	SW-846 9030B	07/20/10 09:45	7/20/2010 11:10	07/22/10 20:45	N
20100556	S10V001694	SOLID	SW-846 9215	SW-846 9030B	07/21/10 09:20	07/21/10 11:30	07/28/10 15:10	N
20100556	S10V001714	SOLID	SW-846 9215	SW-846 9030B	07/21/10 10:30	07/21/10 11:30	07/28/10 15:10	N
20100556	S10V001764	SOLID	SW-846 9215	SW-846 9030B	07/21/10 09:20	07/21/10 11:30	07/28/10 15:10	N
20100556	S10V001784	SOLID	SW-846 9215	SW-846 9030B	07/27/10 09:50	07/27/10 10:50	08/02/10 15:15	N
20100556	S10V001804	SOLID	SW-846 9215	SW-846 9030B	07/29/10 09:35	07/29/10 10:30	08/02/10 15:15	N

Holding Time Report: Anoins by IC

Sample Group	Sample	Matrix	Method	Prep Method	Sample Date	Received Date	Prep Date	Analysis Date	Missed Holding Time
20100556	S10V001613	SOLID	SW-846 9056A	Water Digest	07/19/10 10:00	07/19/10 11:30	08/23/10 16:17	08/23/10 20:29	N
20100556	S10V001641	SOLID	SW-846 9056A	Water Digest	07/19/10 10:00	07/19/10 11:40	08/23/10 16:17	08/23/10 21:01	N
20100556	S10V001661	SOLID	SW-846 9056A	Water Digest	07/20/10 09:45	07/20/10 11:10	08/23/10 16:17	08/23/10 21:33	N
20100556	S10V001701	SOLID	SW-846 9056A	Water Digest	07/21/10 09:20	07/21/10 11:30	08/23/10 16:17	08/23/10 22:05	N
20100556	S10V001721	SOLID	SW-846 9056A	Water Digest	07/21/10 10:30	07/21/10 11:30	08/23/10 16:17	08/23/10 22:36	N
20100556	S10V001771	SOLID	SW-846 9056A	Water Digest	07/22/10 10:35	07/22/10 11:30	09/14/10 10:00	09/14/10 20:08	N
20100556	S10V001791	SOLID	SW-846 9056A	Water Digest	07/27/10 09:50	07/27/10 10:50	09/14/10 10:00	09/14/10 20:40	N
20100556	S10V001811	SOLID	SW-846 9056A	Water Digest	07/29/10 09:35	07/29/10 10:30	09/14/10 10:00	09/14/10 22:48	N

Holding Time Report: Ammonium by IC

Sample Group	Sample	Matrix	Method	Prep Method	Sample Date	Received Date	Prep Date	Analysis Date	Missed Holding Time
20100556	S10V001615	SOLID	EPA-300.7	Distillation	07/19/10 10:00	07/19/10 11:30	07/22/10 10:00	07/22/10 16:01	N
20100556	S10V001643	SOLID	EPA-300.7	Distillation	07/19/10 10:00	07/19/10 11:40	07/22/10 10:00	07/22/10 17:10	N
20100556	S10V001663	SOLID	EPA-300.7	Distillation	07/20/10 09:45	07/20/10 11:10	07/22/10 10:00	07/22/10 17:27	N
20100556	S10V001703	SOLID	EPA-300.7	Distillation	07/21/10 09:20	07/21/10 11:30	07/28/10 11:11	07/28/10 16:53	N
20100556	S10V001723	SOLID	EPA-300.7	Distillation	07/21/10 10:30	07/21/10 11:30	07/28/10 11:11	07/28/10 18:01	N
20100556	S10V001773	SOLID	EPA-300.7	Distillation	07/22/10 10:35	07/22/10 11:30	07/28/10 10:30	07/28/10 18:18	N
20100556	S10V001793	SOLID	EPA-300.7	Distillation	07/27/10 09:50	07/27/10 10:50	08/02/10 10:30	08/02/10 18:40	N
20100556	S10V001813	SOLID	EPA-300.7	Distillation	07/29/10 09:35	07/29/10 10:30	08/02/10 10:30	08/02/10 20:05	N

LABCORE Completed Batch Report for Batch# 00021034

Analyst: Hexum, Troy

Book#:

Instrument: CARY 50-2

Method: CN - EDTA, LA-695-103 Rev/Mod J-0

Specification: C Farm WMC 2010-2

Prep Batch:

Batch Comment:

CYANIDE BY EDTA SOLIDS TJH

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
Sample Sequence 1																	
1	LCS	S1007280150		0 0			Cyanide	LIQUID	.2014	2.2048E-01			0.037	ug/mL	109.47	% Recovery	
Sample Sequence 2																	
2	ICB	S1007280151		0 0			Cyanide	LIQUID		<3.7000E-02			0.037	ug/mL			
Sample Sequence 3																	
3	LLS	S1007280152		0 0			Cyanide	LIQUID	.04016	4.0605E-02			0.037	ug/mL	101.11	% Recovery	
Sample Sequence 4																	
4	SAMPLE	S10V001606		0 0			Cyanide	SOLID	N/A	<2.6490E+00			2.649	ug/g			U
Sample Sequence 5																	
5	DUP	S1007280153	S10V001606	0 0			Cyanide	SOLID	<2.6490E+00	<2.6450E+00			2.645	ug/g			
Sample Sequence 6																	
6	SPK	S1007280154	S10V001606	0 0			Cyanide	SOLID	7.177068	7.0374E+00			2.637	ug/g	98.054	% Recovery	
Sample Sequence 7																	
7	SAMPLE	S10V001623		0 0			Cyanide	SOLID	N/A	<2.4890E+00			2.489	ug/g			U
Sample Sequence 8																	
8	SAMPLE	S10V001654		0 0			Cyanide	SOLID	N/A	<2.5830E+00			2.583	ug/g			U
Sample Sequence 9																	
9	SAMPLE	S10V001694		0 0			Cyanide	SOLID	N/A	<2.6420E+00			2.642	ug/g			U
Sample Sequence 10																	
10	SAMPLE	S10V001714		0 0			Cyanide	SOLID	N/A	<2.4540E+00			2.454	ug/g			U
Sample Sequence 11																	
11	SAMPLE	S10V001764		0 0			Cyanide	SOLID	N/A	<2.3730E+00			2.373	ug/g			U
Sample Sequence 12																	
12	SAMPLE	S10V001422		0 0			Cyanide	SOLID	N/A	<2.4750E+00			2.475	ug/g			U
Sample Sequence 13																	
13	CCV	S1007280155		0 0			Cyanide	LIQUID	.2014	2.0102E-01			0.037	ug/mL	99.811	% Recovery	
Sample Sequence 14																	
14	CCB	S1007280156		0 0			Cyanide	LIQUID		<3.7000E-02			0.037	ug/mL			

Comments Section:

Units shown for QC (BLK/BKG) may not reflect the actual units.

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00021034

Data Flagger Status:
Flagging Completed

Final Page for Batch# 00021034

Reviewer Signature **Date**

Units shown for QC (BLK/BKG) may not reflect the actual units.

* = Rejected Analyte
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LABCORE Completed Batch Report for Batch# 00021034

Seq	Sample#	QC Type	Assoc. Sample	Sample Group	Customer Id	Specification
1	S1007280150	LCS				
2	S1007280151	ICB				
3	S1007280152	LLS				
4	S10V001606	SAMPLE		20100556	B26JK6	C Farm WMC 2010-2
5	S1007280153	DUP	S10V001606			
6	S1007280154	SPK	S10V001606			
7	S10V001623	SAMPLE		20100556	B26JK7	C Farm WMC 2010-2
8	S10V001654	SAMPLE		20100556	B29612	C Farm WMC 2010-2
9	S10V001694	SAMPLE		20100556	B26CC4	C Farm WMC 2010-2
10	S10V001714	SAMPLE		20100556	B29613	C Farm WMC 2010-2
11	S10V001764	SAMPLE		20100556	B26CD0	C Farm WMC 2010-2
12	S10V001422	SAMPLE		20100520	B26C82	C Farm WMC 2010-2
13	S1007280155	CCV				
14	S1007280156	CCB				

Units shown for QC (BLK/BKG) may not reflect the actual units.

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00020895

Analyst: Hexum, Troy

Book#:

Instrument: ISE-Meter #1

Method: SULFIDE, LA-361-101 Rev/Mod D-0

Specification: C Farm WMC 2010-2

Prep Batch:

Batch Comment:

SULFIDE FOR C-FARM WMC 2010-2 TJH

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
Sample Sequence 1																	
1	ICV	S1007220004		0 0			Sulfide	LIQUID	5.01	5.0400E+00			0.18	ug/mL	100.6	% Recovery	
Sample Sequence 2																	
2	ICB	S1007220005		0 0			Sulfide	LIQUID		<1.8000E-01			0.18	ug/mL			
Sample Sequence 3																	
3	LLS	S1007220006		0 0			Sulfide	LIQUID	1	1.0800E+00			0.18	ug/mL	108	% Recovery	
Sample Sequence 4																	
4	BLNK-PREP	S1007220007		0 0			Sulfide	LIQUID		<1.8000E-01			0.18	ug/mL			
Sample Sequence 5																	
5	LCS	S1007220008		0 0			Sulfide	LIQUID	2.505	2.3900E+00			0.18	ug/mL	95.409	% Recovery	
Sample Sequence 6																	
6	SAMPLE	S10V001422		0 0			Sulfide	SOLID	N/A	1.7864E+01			7.3082	ug/g			J
Sample Sequence 7																	
7	DUP	S1007220009	S10V001422	0 0			Sulfide	SOLID	1.7864E+01	1.6081E+01			7.4411	ug/g	10.505	% RPD	
Sample Sequence 8																	
8	SPK-PREDIG	S1007220010	S10V001422	0 0			Sulfide	SOLID	101.13	1.0658E+02			7.2669	ug/g	87.725	% Recovery	
Sample Sequence 9																	
9	SAMPLE	S10V001606		0 0			Sulfide	SOLID	N/A	2.7226E+01			7.1859	ug/g			J
Sample Sequence 10																	
10	SAMPLE	S10V001623		0 0			Sulfide	SOLID	N/A	1.7356E+01			6.9579	ug/g			J
Sample Sequence 11																	
11	SAMPLE	S10V001654		0 0			Sulfide	SOLID	N/A	2.3455E+01			7.0838	ug/g			J
Sample Sequence 12																	
12	CCV	S1007220011		0 0			Sulfide	LIQUID	5.01	5.0900E+00			0.18	ug/mL	101.6	% Recovery	
Sample Sequence 13																	
13	CCB	S1007220012		0 0			Sulfide	LIQUID		<1.8000E-01			0.18	ug/mL			

Comments Section:

Data Flagger Status:
Flagging Completed

Units shown for QC (BLK/BKG) may not reflect the actual units.

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00020895

Final Page for Batch# 00020895

Reviewer Signature **Date**

Units shown for QC (BLK/BKG) may not reflect the actual units.

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00020895

Seq	Sample#	QC Type	Assoc. Sample	Sample Group	Customer Id	Specification
1	S1007220004	ICV				
2	S1007220005	ICB				
3	S1007220006	LLS				
4	S1007220007	BLNK-PREP				
5	S1007220008	LCS				
6	S10V001422	SAMPLE		20100520	B26C82	C Farm WMC 2010-2
7	S1007220009	DUP	S10V001422			
8	S1007220010	SPK-PREDIG	S10V001422			
9	S10V001606	SAMPLE		20100556	B26JK6	C Farm WMC 2010-2
10	S10V001623	SAMPLE		20100556	B26JK7	C Farm WMC 2010-2
11	S10V001654	SAMPLE		20100556	B29612	C Farm WMC 2010-2
12	S1007220011	CCV				
13	S1007220012	CCB				

Units shown for QC (BLK/BKG) may not reflect the actual units.

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00021024

Analyst: Dinh, Liem

Book#:

Instrument: ISE-Meter #1

Method: SULFIDE, LA-361-101 Rev/Mod D-0

Specification: C Farm WMC 2010-2

Prep Batch:

Batch Comment:

Sulfide for C-farm WMC 2010-2. lnd

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
Sample Sequence 1																	
1	ICV	S1007280111		0 0			Sulfide	LIQUID	4.9985	5.2100E+00			0.18	ug/mL	104.23	% Recovery	
Sample Sequence 2																	
2	ICB	S1007280112		0 0			Sulfide	LIQUID		<1.8000E-01			0.18	ug/mL			
Sample Sequence 3																	
3	LLS	S1007280113		0 0			Sulfide	LIQUID	.9997	1.0800E+00			0.18	ug/mL	108.03	% Recovery	
Sample Sequence 4																	
4	BLNK-PREP	S1007280114		0 0			Sulfide	LIQUID		<1.8000E-01			0.18	ug/mL			
Sample Sequence 5																	
5	LCS	S1007280115		0 0			Sulfide	LIQUID	2.49925	2.4900E+00			0.18	ug/mL	99.63	% Recovery	
Sample Sequence 6																	
6	SAMPLE	S10V001694		0 0			Sulfide	SOLID	N/A	2.1002E+01			7.1599	ug/g			J
Sample Sequence 7																	
7	DUP	S1007280116	S10V001694	0 0			Sulfide	SOLID	2.1002E+01	2.2052E+01			7.0755	ug/g	4.8771	% RPD	
Sample Sequence 8																	
8	SPK-PREDIG	S1007280117	S10V001694	0 0			Sulfide	SOLID	96.8	1.1232E+02			6.9713	ug/g	94.333	% Recovery	
Sample Sequence 9																	
9	SAMPLE	S10V001714		0 0			Sulfide	SOLID	N/A	1.6198E+01			7.1287	ug/g			J
Sample Sequence 10																	
10	SAMPLE	S10V001764		0 0			Sulfide	SOLID	N/A	2.2081E+01			7.1485	ug/g			J
Sample Sequence 11																	
11	CCV	S1007280118		0 0			Sulfide	LIQUID	4.9985	5.4100E+00			0.18	ug/mL	108.23	% Recovery	
Sample Sequence 12																	
12	CCB	S1007280119		0 0			Sulfide	LIQUID		<1.8000E-01			0.18	ug/mL			

Comments Section:

Data Flagger Status:
Flagging Completed

Units shown for QC (BLK/BKG) may not reflect the actual units.

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00021024

Final Page for Batch# 00021024

Reviewer Signature **Date**

Units shown for QC (BLK/BKG) may not reflect the actual units.

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00021024

Seq	Sample#	QC Type	Assoc. Sample	Sample Group	Customer Id	Specification
1	S1007280111	ICV				
2	S1007280112	ICB				
3	S1007280113	LLS				
4	S1007280114	BLNK-PREP				
5	S1007280115	LCS				
6	S10V001694	SAMPLE		20100556	B26CC4	C Farm WMC 2010-2
7	S1007280116	DUP	S10V001694			
8	S1007280117	SPK-PREDIG	S10V001694			
9	S10V001714	SAMPLE		20100556	B29613	C Farm WMC 2010-2
10	S10V001764	SAMPLE		20100556	B26CD0	C Farm WMC 2010-2
11	S1007280118	CCV				
12	S1007280119	CCB				

Units shown for QC (BLK/BKG) may not reflect the actual units.

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N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00020959

Analyst: Purinton, Tony

Book#:

Instrument: PH02

Method: PH SOLID, LA-212-105 Rev/Mod G-0

Specification: C Farm WMC 2010-2

Prep Batch:

Batch Comment:

Ph for WMC 2010-2 SOLID ADP

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
Sample Sequence 1																	
1	ICVPH	S1007270027		0 0			pH	LIQUID	8	8.03			0.01	pH			
Sample Sequence 2																	
2	SAMPLE	S10V001225		0 0			pH	SOLID	N/A	8.68			0.01	pH			
Sample Sequence 3																	
3	DUP	S1007270029	S10V001225	0 0			pH	SOLID	8.68	8.73			0.01	pH	0.57438	% RPD	
Sample Sequence 4																	
4	SAMPLE	S10V001242		0 0			pH	SOLID	N/A	8.92			0.01	pH			
Sample Sequence 5																	
5	SAMPLE	S10V001342		0 0			pH	SOLID	N/A	9.24			0.01	pH			
Sample Sequence 6																	
6	SAMPLE	S10V001654		0 0			pH	SOLID	N/A	9.13			0.01	pH			
Sample Sequence 7																	
7	SAMPLE	S10V001422		0 0			pH	SOLID	N/A	8.92			0.01	pH			
Sample Sequence 8																	
8	SAMPLE	S10V001606		0 0			pH	SOLID	N/A	8.34			0.01	pH			
Sample Sequence 9																	
9	SAMPLE	S10V001382		0 0			pH	SOLID	N/A	8.74			0.01	pH			
Sample Sequence 10																	
10	CCVPH	S1007270104		0 0			pH	LIQUID	8	8.04			0.01	pH			
Sample Sequence 11																	
11	SAMPLE	S10V001302		0 0			pH	SOLID	N/A	8.97			0.01	pH			
Sample Sequence 12																	
12	SAMPLE	S10V001282		0 0			pH	SOLID	N/A	8.67			0.01	pH			
Sample Sequence 13																	
13	SAMPLE	S10V001623		0 0			pH	SOLID	N/A	8.74			0.01	pH			
Sample Sequence 14																	
14	SAMPLE	S10V001362		0 0			pH	SOLID	N/A	9.81			0.01	pH			
Sample Sequence 15																	
15	SAMPLE	S10V001402		0 0			pH	SOLID	N/A	8.69			0.01	pH			
Sample Sequence 16																	
16	CCVPH	S1007270030		0 0			pH	LIQUID	8	8.04			0.01	pH			

Units shown for QC (BLK/BKG) may not reflect the actual units.

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N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00020959

Comments Section:

Data Flagger Status:
Flagging Completed

Final Page for Batch# 00020959

Reviewer Signature **Date**

Units shown for QC (BLK/BKG) may not reflect the actual units.

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LABCORE Completed Batch Report for Batch# 00020959

Seq	Sample#	QC Type	Assoc. Sample	Sample Group	Customer Id	Specification
1	S1007270027	ICVPH				
2	S10V001225	SAMPLE		20100520	B26JK2	C Farm WMC 2010-2
3	S1007270029	DUP	S10V001225			
4	S10V001242	SAMPLE		20100520	B26JK3	C Farm WMC 2010-2
5	S10V001342	SAMPLE		20100520	B26C74	C Farm WMC 2010-2
6	S10V001654	SAMPLE		20100556	B29612	C Farm WMC 2010-2
7	S10V001422	SAMPLE		20100520	B26C82	C Farm WMC 2010-2
8	S10V001606	SAMPLE		20100556	B26JK6	C Farm WMC 2010-2
9	S10V001382	SAMPLE		20100520	B26C78	C Farm WMC 2010-2
10	S1007270104	CCVPH				
11	S10V001302	SAMPLE		20100520	B26C70	C Farm WMC 2010-2
12	S10V001282	SAMPLE		20100520	B26C68	C Farm WMC 2010-2
13	S10V001623	SAMPLE		20100556	B26JK7	C Farm WMC 2010-2
14	S10V001362	SAMPLE		20100520	B26C76	C Farm WMC 2010-2
15	S10V001402	SAMPLE		20100520	B26C80	C Farm WMC 2010-2
16	S1007270030	CCVPH				

Units shown for QC (BLK/BKG) may not reflect the actual units.

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N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00021035

Analyst: Dinh, Liem

Book#:

Instrument: PH02

Method: PH SOLID, LA-212-105 Rev/Mod G-0

Specification: C Farm WMC 2010-2

Prep Batch:

Batch Comment:

pH for Soil 71 and C-Farm WMC 2010-2. lnd

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
Sample Sequence 1																	
1	ICVPH	S1007280157		0 0			pH	LIQUID	8	8.08			0.01	pH			
Sample Sequence 3																	
3	DUP	S1007280159	S10Q000163	0 0			pH	SOLID					0.01	pH	2.7907	% RPD	
Sample Sequence 4																	
4	SAMPLE	S10V001694		0 0			pH	SOLID	N/A	9.1			0.01	pH			
Sample Sequence 5																	
5	DUP	S1007280161	S10V001694	0 0			pH	SOLID	9.1	9.26			0.01	pH	1.7429	% RPD	
Sample Sequence 6																	
6	SAMPLE	S10V001714		0 0			pH	SOLID	N/A	9.37			0.01	pH			
Sample Sequence 7																	
7	SAMPLE	S10V001764		0 0			pH	SOLID	N/A	9.14			0.01	pH			
Sample Sequence 8																	
8	CCVPH	S1007280160		0 0			pH	LIQUID	8	8.05			0.01	pH			

Comments Section:

Data Flagger Status:
Flagging Completed

Final Page for Batch# 00021035

Reviewer Signature **Date**

Units shown for QC (BLK/BKG) may not reflect the actual units.

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N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00021035

Seq	Sample#	QC Type	Assoc. Sample	Sample Group	Customer Id	Specification
1	S1007280157	ICVPH				
3	S1007280159	DUP	S10Q000163			
4	S10V001694	SAMPLE		20100556	B26CC4	C Farm WMC 2010-2
5	S1007280161	DUP	S10V001694			
6	S10V001714	SAMPLE		20100556	B29613	C Farm WMC 2010-2
7	S10V001764	SAMPLE		20100556	B26CD0	C Farm WMC 2010-2
8	S1007280160	CCVPH				

Units shown for QC (BLK/BKG) may not reflect the actual units.

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LABCORE Completed Batch Report for Batch# 00021522

Analyst: LaPlant, Kelsey **Book#:** 29N29B

Instrument: IC-6 (SMALL ORG ACIDS)

Method: IC - ANIONS/SMALL ORG. ACIDS, LA-533-115 Rev/Mod J-0

Specification: C Farm WMC 2010-2

Prep Batch: 00021498

Batch Comment:

C FARM IC-ANIONS AND SMALL ORGANIC ACIDS

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
Sample Sequence 1																	
1	CCV	S1008240058		0 0			Fluoride	LIQUID	.47616	4.8342E-01			1.61E-03	ug/mL	101.52	% Recovery	
1	CCV	S1008240058		0 0			Glycolate	LIQUID	2.960128	2.9504E+00			9.37E-03	ug/mL	99.673	% Recovery	
1	CCV	S1008240058		0 0			Acetate	LIQUID	3.595008	3.5031E+00			6.04E-03	ug/mL	97.444	% Recovery	
1	CCV	S1008240058		0 0			Formate	LIQUID	3.483904	3.5313E+00			4.67E-03	ug/mL	101.36	% Recovery	
1	CCV	S1008240058		0 0			Chloride	LIQUID	.6737664	6.7195E-01			9.98E-03	ug/mL	99.73	% Recovery	
1	CCV	S1008240058		0 0			Nitrite	LIQUID	4.388608	4.3358E+00			0.0192	ug/mL	98.797	% Recovery	
1	CCV	S1008240058		0 0			Sulfate	LIQUID	5.190144	5.2573E+00			0.0187	ug/mL	101.29	% Recovery	
1	CCV	S1008240058		0 0			Oxalate	LIQUID	4.229888	4.2645E+00			0.0231	ug/mL	100.82	% Recovery	
1	CCV	S1008240058		0 0			Bromide	LIQUID	4.833024	4.7366E+00			0.058	ug/mL	98.005	% Recovery	
1	CCV	S1008240058		0 0			Nitrate	LIQUID	4.396544	4.3496E+00			0.0208	ug/mL	98.933	% Recovery	
1	CCV	S1008240058		0 0			Phosphate	LIQUID	4.380672	4.3549E+00			0.0167	ug/mL	99.412	% Recovery	
Sample Sequence 2																	
2	CCB	S1008240059		0 0			Fluoride	LIQUID		<1.6100E-03			1.61E-03	ug/mL			
2	CCB	S1008240059		0 0			Glycolate	LIQUID		<9.3700E-03			9.37E-03	ug/mL			
2	CCB	S1008240059		0 0			Acetate	LIQUID		<6.0400E-03			6.04E-03	ug/mL			
2	CCB	S1008240059		0 0			Formate	LIQUID		<4.6700E-03			4.67E-03	ug/mL			
2	CCB	S1008240059		0 0			Chloride	LIQUID		<9.9800E-03			9.98E-03	ug/mL			
2	CCB	S1008240059		0 0			Nitrite	LIQUID		<1.9200E-02			0.0192	ug/mL			
2	CCB	S1008240059		0 0			Sulfate	LIQUID		<1.8700E-02			0.0187	ug/mL			
2	CCB	S1008240059		0 0			Oxalate	LIQUID		<2.3100E-02			0.0231	ug/mL			
2	CCB	S1008240059		0 0			Bromide	LIQUID		<5.8000E-02			0.058	ug/mL			
2	CCB	S1008240059		0 0			Nitrate	LIQUID		<2.0800E-02			0.0208	ug/mL			
2	CCB	S1008240059		0 0			Phosphate	LIQUID		<1.6700E-02			0.0167	ug/mL			
Sample Sequence 3																	
3	LLS	S1008240060		0 0			Fluoride	LIQUID	.02985	2.5860E-02			1.61E-03	ug/mL	86.633	% Recovery	
3	LLS	S1008240060		0 0			Glycolate	LIQUID	.1855675	1.5574E-01			9.37E-03	ug/mL	83.926	% Recovery	
3	LLS	S1008240060		0 0			Acetate	LIQUID	.2253675	1.8599E-01			6.04E-03	ug/mL	82.527	% Recovery	
3	LLS	S1008240060		0 0			Formate	LIQUID	.2184025	2.0049E-01			4.67E-03	ug/mL	91.798	% Recovery	
3	LLS	S1008240060		0 0			Chloride	LIQUID	.04223775	4.1420E-02			9.98E-03	ug/mL	98.064	% Recovery	
3	LLS	S1008240060		0 0			Nitrite	LIQUID	.2751175	2.6549E-01			0.0192	ug/mL	96.501	% Recovery	
3	LLS	S1008240060		0 0			Sulfate	LIQUID	.325365	3.2323E-01			0.0187	ug/mL	99.344	% Recovery	
3	LLS	S1008240060		0 0			Oxalate	LIQUID	.2651675	2.5561E-01			0.0231	ug/mL	96.396	% Recovery	

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N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00021522

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
3	LLS	S1008240060		0 0			Bromide	LIQUID	.3029775	2.6037E-01			0.058	ug/mL	85.937	% Recovery	
3	LLS	S1008240060		0 0			Nitrate	LIQUID	.275615	2.4990E-01			0.0208	ug/mL	90.67	% Recovery	
3	LLS	S1008240060		0 0			Phosphate	LIQUID	.27462	2.5924E-01			0.0167	ug/mL	94.4	% Recovery	
Sample Sequence 4																	
4	BLNK-PREP	S1008230041		0 0	W		Fluoride	LIQUID		<1.6100E-03			1.61E-03	ug/mL			
4	BLNK-PREP	S1008230041		0 0	W		Glycolate	LIQUID		<9.3700E-03			9.37E-03	ug/mL			
4	BLNK-PREP	S1008230041		0 0	W		Acetate	LIQUID		<6.0400E-03			6.04E-03	ug/mL			
4	BLNK-PREP	S1008230041		0 0	W		Formate	LIQUID		<4.6700E-03			4.67E-03	ug/mL			
4	BLNK-PREP	S1008230041		0 0	W		Chloride	LIQUID		<9.9800E-03			9.98E-03	ug/mL			
4	BLNK-PREP	S1008230041		0 0	W		Nitrite	LIQUID		4.2110E-02			0.0192	ug/mL			
4	BLNK-PREP	S1008230041		0 0	W		Sulfate	LIQUID		<1.8700E-02			0.0187	ug/mL			
4	BLNK-PREP	S1008230041		0 0	W		Oxalate	LIQUID		<2.3100E-02			0.0231	ug/mL			
4	BLNK-PREP	S1008230041		0 0	W		Bromide	LIQUID		<5.8000E-02			0.058	ug/mL			
4	BLNK-PREP	S1008230041		0 0	W		Nitrate	LIQUID		<2.0800E-02			0.0208	ug/mL			
4	BLNK-PREP	S1008230041		0 0	W		Phosphate	LIQUID		<1.6700E-02			0.0167	ug/mL			
Sample Sequence 5																	
5	STD-PREP	S1008240064		0 0			Fluoride	LIQUID	.6	6.1373E-01			1.61E-03	ug/mL	102.29	% Recovery	
5	STD-PREP	S1008240064		0 0			Glycolate	LIQUID	3.73	3.7544E+00			9.37E-03	ug/mL	100.65	% Recovery	
5	STD-PREP	S1008240064		0 0			Acetate	LIQUID	4.53	4.4615E+00			6.04E-03	ug/mL	98.487	% Recovery	
5	STD-PREP	S1008240064		0 0			Formate	LIQUID	4.39	4.4608E+00			4.67E-03	ug/mL	101.61	% Recovery	
5	STD-PREP	S1008240064		0 0			Chloride	LIQUID	.849	8.4214E-01			9.98E-03	ug/mL	99.192	% Recovery	
5	STD-PREP	S1008240064		0 0			Nitrite	LIQUID	5.53	5.5070E+00			0.0192	ug/mL	99.584	% Recovery	
5	STD-PREP	S1008240064		0 0			Sulfate	LIQUID	6.54	6.6401E+00			0.0187	ug/mL	101.53	% Recovery	
5	STD-PREP	S1008240064		0 0			Oxalate	LIQUID	5.33	5.3516E+00			0.0231	ug/mL	100.41	% Recovery	
5	STD-PREP	S1008240064		0 0			Bromide	LIQUID	6.09	5.9252E+00			0.058	ug/mL	97.294	% Recovery	
5	STD-PREP	S1008240064		0 0			Nitrate	LIQUID	5.54	5.4651E+00			0.0208	ug/mL	98.649	% Recovery	
5	STD-PREP	S1008240064		0 0			Phosphate	LIQUID	5.52	5.5005E+00			0.0167	ug/mL	99.647	% Recovery	
Sample Sequence 6																	
6	SAMPLE	S10V001613		0 0	W		Fluoride	SOLID	N/A	4.0198E-01			0.016079	ug/g			
6	SAMPLE	S10V001613		0 0	W		Glycolate	SOLID	N/A	<9.3578E-02			0.093578	ug/g			U
6	SAMPLE	S10V001613		0 0	W		Acetate	SOLID	N/A	1.4172E-01			0.060322	ug/g			J
6	SAMPLE	S10V001613		0 0	W		Formate	SOLID	N/A	1.3872E-01			0.046639	ug/g			J
6	SAMPLE	S10V001613		0 0	W		Chloride	SOLID	N/A	1.4203E+00			0.09967	ug/g			
6	SAMPLE	S10V001613		0 0	W		Nitrite	SOLID	N/A	8.9993E-01			0.19175	ug/g			BJ
6	SAMPLE	S10V001613		0 0	W		Sulfate	SOLID	N/A	4.7470E+00			0.18676	ug/g			
6	SAMPLE	S10V001613		0 0	W		Oxalate	SOLID	N/A	6.2838E-01			0.2307	ug/g			J
6	SAMPLE	S10V001613		0 0	W		Bromide	SOLID	N/A	<5.7925E-01			0.57925	ug/g			U
6	SAMPLE	S10V001613		0 0	W		Nitrate	SOLID	N/A	8.5057E+00			0.20773	ug/g			
6	SAMPLE	S10V001613		0 0	W		Phosphate	SOLID	N/A	1.6352E+00			0.16678	ug/g			Jb
Sample Sequence 7																	
7	SAMPLE	S10V001641		0 0	W		Fluoride	SOLID	N/A	3.7977E-01			0.016112	ug/g			
7	SAMPLE	S10V001641		0 0	W		Glycolate	SOLID	N/A	<9.3768E-02			0.093768	ug/g			U
7	SAMPLE	S10V001641		0 0	W		Acetate	SOLID	N/A	<6.0444E-02			0.060444	ug/g			U

Units shown for QC (BLK/BKG) may not reflect the actual units.

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LABCORE Completed Batch Report for Batch# 00021522

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
7	SAMPLE	S10V001641		0 0	W		Formate	SOLID	N/A	9.4068E-02			0.046734	ug/g			J
7	SAMPLE	S10V001641		0 0	W		Chloride	SOLID	N/A	1.5097E+00			0.099872	ug/g			
7	SAMPLE	S10V001641		0 0	W		Nitrite	SOLID	N/A	9.8211E-01			0.19214	ug/g			BJ
7	SAMPLE	S10V001641		0 0	W		Sulfate	SOLID	N/A	3.4706E+00			0.18713	ug/g			
7	SAMPLE	S10V001641		0 0	W		Oxalate	SOLID	N/A	3.6486E-01			0.23117	ug/g			J
7	SAMPLE	S10V001641		0 0	W		Bromide	SOLID	N/A	<5.8042E-01			0.58042	ug/g			U
7	SAMPLE	S10V001641		0 0	W		Nitrate	SOLID	N/A	6.7229E+00			0.20815	ug/g			
7	SAMPLE	S10V001641		0 0	W		Phosphate	SOLID	N/A	1.5477E+00			0.16712	ug/g			Jb
Sample Sequence 8																	
8	SAMPLE	S10V001661		0 0	W		Fluoride	SOLID	N/A	1.8099E+00			0.016094	ug/g			
8	SAMPLE	S10V001661		0 0	W		Glycolate	SOLID	N/A	<9.3666E-02			0.093666	ug/g			U
8	SAMPLE	S10V001661		0 0	W		Acetate	SOLID	N/A	3.1609E-01			0.060378	ug/g			J
8	SAMPLE	S10V001661		0 0	W		Formate	SOLID	N/A	1.3305E-01			0.046683	ug/g			J
8	SAMPLE	S10V001661		0 0	W		Chloride	SOLID	N/A	6.2098E-01			0.099764	ug/g			
8	SAMPLE	S10V001661		0 0	W		Nitrite	SOLID	N/A	2.1939E+00			0.19193	ug/g			J
8	SAMPLE	S10V001661		0 0	W		Sulfate	SOLID	N/A	9.9441E+00			0.18693	ug/g			
8	SAMPLE	S10V001661		0 0	W		Oxalate	SOLID	N/A	5.6410E-01			0.23092	ug/g			J
8	SAMPLE	S10V001661		0 0	W		Bromide	SOLID	N/A	<5.7979E-01			0.57979	ug/g			U
8	SAMPLE	S10V001661		0 0	W		Nitrate	SOLID	N/A	7.3736E+00			0.20793	ug/g			
8	SAMPLE	S10V001661		0 0	W		Phosphate	SOLID	N/A	7.1594E-01			0.16694	ug/g			Jb
Sample Sequence 9																	
9	SAMPLE	S10V001701		0 0	W		Fluoride	SOLID	N/A	2.0213E+00			0.016045	ug/g			
9	SAMPLE	S10V001701		0 0	W		Glycolate	SOLID	N/A	<9.3382E-02			0.093382	ug/g			U
9	SAMPLE	S10V001701		0 0	W		Acetate	SOLID	N/A	1.1202E-01			0.060195	ug/g			J
9	SAMPLE	S10V001701		0 0	W		Formate	SOLID	N/A	1.5338E-01			0.046542	ug/g			J
9	SAMPLE	S10V001701		0 0	W		Chloride	SOLID	N/A	1.0578E+00			0.099462	ug/g			
9	SAMPLE	S10V001701		0 0	W		Nitrite	SOLID	N/A	6.7132E-01			0.19135	ug/g			BJ
9	SAMPLE	S10V001701		0 0	W		Sulfate	SOLID	N/A	9.0166E+00			0.18637	ug/g			
9	SAMPLE	S10V001701		0 0	W		Oxalate	SOLID	N/A	8.1862E-01			0.23022	ug/g			J
9	SAMPLE	S10V001701		0 0	W		Bromide	SOLID	N/A	<5.7803E-01			0.57803	ug/g			U
9	SAMPLE	S10V001701		0 0	W		Nitrate	SOLID	N/A	6.5879E+00			0.2073	ug/g			
9	SAMPLE	S10V001701		0 0	W		Phosphate	SOLID	N/A	1.2587E+00			0.16643	ug/g			Jb
Sample Sequence 10																	
10	SAMPLE	S10V001721		0 0	W		Fluoride	SOLID	N/A	1.3015E+00			0.015986	ug/g			
10	SAMPLE	S10V001721		0 0	W		Glycolate	SOLID	N/A	<9.3039E-02			0.093039	ug/g			U
10	SAMPLE	S10V001721		0 0	W		Acetate	SOLID	N/A	1.6989E-01			0.059974	ug/g			J
10	SAMPLE	S10V001721		0 0	W		Formate	SOLID	N/A	1.4745E-01			0.046371	ug/g			J
10	SAMPLE	S10V001721		0 0	W		Chloride	SOLID	N/A	7.8552E-01			0.099096	ug/g			
10	SAMPLE	S10V001721		0 0	W		Nitrite	SOLID	N/A	2.3656E+00			0.19065	ug/g			J
10	SAMPLE	S10V001721		0 0	W		Sulfate	SOLID	N/A	6.1958E+00			0.18568	ug/g			
10	SAMPLE	S10V001721		0 0	W		Oxalate	SOLID	N/A	6.4194E-01			0.22937	ug/g			J
10	SAMPLE	S10V001721		0 0	W		Bromide	SOLID	N/A	<5.7591E-01			0.57591	ug/g			U
10	SAMPLE	S10V001721		0 0	W		Nitrate	SOLID	N/A	6.9844E+00			0.20653	ug/g			

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LABCORE Completed Batch Report for Batch# 00021522

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
10	SAMPLE	S10V001721		0 0	W		Phosphate	SOLID	N/A	9.3556E-01			0.16582	ug/g			Jb
Sample Sequence 11																	
11	DUP	S1008230042	S10V001721	0 0	W		Fluoride	SOLID	1.3015E+00	1.5343E+00			0.016105	ug/g	16.422	% RPD	
11	DUP	S1008230042	S10V001721	0 0	W		Glycolate	SOLID	<9.3039E-02	<9.3732E-02			0.093732	ug/g			
11	DUP	S1008230042	S10V001721	0 0	W		Acetate	SOLID	1.6989E-01	1.7296E-01			0.060421	ug/g	1.7887	% RPD	
11	DUP	S1008230042	S10V001721	0 0	W		Formate	SOLID	1.4745E-01	1.1904E-01			0.046716	ug/g	21.324	% RPD	
11	DUP	S1008230042	S10V001721	0 0	W		Chloride	SOLID	7.8552E-01	9.7253E-01			0.099834	ug/g	21.274	% RPD	
11	DUP	S1008230042	S10V001721	0 0	W		Nitrite	SOLID	2.3656E+00	2.6796E+00			0.19207	ug/g	12.447	% RPD	
11	DUP	S1008230042	S10V001721	0 0	W		Sulfate	SOLID	6.1958E+00	6.3583E+00			0.18706	ug/g	2.5886	% RPD	
11	DUP	S1008230042	S10V001721	0 0	W		Oxalate	SOLID	6.4194E-01	5.3908E-01			0.23108	ug/g	17.419	% RPD	
11	DUP	S1008230042	S10V001721	0 0	W		Bromide	SOLID	<5.7591E-01	<5.8020E-01			0.5802	ug/g			
11	DUP	S1008230042	S10V001721	0 0	W		Nitrate	SOLID	6.9844E+00	7.2526E+00			0.20807	ug/g	3.7675	% RPD	
11	DUP	S1008230042	S10V001721	0 0	W		Phosphate	SOLID	9.3556E-01	1.2109E+00			0.16706	ug/g	25.656	% RPD	
Sample Sequence 12																	
12	SPK-IC	S1008240061	S10V001721	0 0			Fluoride	SOLID	60	8.0244E-01			1.61E-03	ug/g	113.01	% Recovery	
12	SPK-IC	S1008240061	S10V001721	0 0			Glycolate	SOLID	373	3.7194E+00			9.37E-03	ug/g	100.71	% Recovery	
12	SPK-IC	S1008240061	S10V001721	0 0			Acetate	SOLID	453	4.3961E+00			6.04E-03	ug/g	97.632	% Recovery	
12	SPK-IC	S1008240061	S10V001721	0 0			Formate	SOLID	439	4.4144E+00			4.67E-03	ug/g	101.22	% Recovery	
12	SPK-IC	S1008240061	S10V001721	0 0			Chloride	SOLID	84.9	9.1613E-01			9.98E-03	ug/g	99.575	% Recovery	
12	SPK-IC	S1008240061	S10V001721	0 0			Nitrite	SOLID	553	5.4673E+00			0.0192	ug/g	95.503	% Recovery	
12	SPK-IC	S1008240061	S10V001721	0 0			Sulfate	SOLID	654	7.2793E+00			0.0187	ug/g	102.78	% Recovery	
12	SPK-IC	S1008240061	S10V001721	0 0			Oxalate	SOLID	533	5.3342E+00			0.0231	ug/g	99.855	% Recovery	
12	SPK-IC	S1008240061	S10V001721	0 0			Bromide	SOLID	609	6.0276E+00			0.058	ug/g	99.964	% Recovery	
12	SPK-IC	S1008240061	S10V001721	0 0			Nitrate	SOLID	554	6.3594E+00			0.0208	ug/g	103.12	% Recovery	
12	SPK-IC	S1008240061	S10V001721	0 0			Phosphate	SOLID	552	3.5536E+00			0.0167	ug/g	63.297	% Recovery	
Sample Sequence 13																	
13	SPK-IC	S1008240074	S10V001721	0 0			Fluoride	SOLID	229.542	1.4203E+00			1.61E-03	ug/g	110.68	% Recovery	
13	SPK-IC	S1008240074	S10V001721	0 0			Glycolate	SOLID	1426.9861	7.5262E+00			9.37E-03	ug/g	103.93	% Recovery	
13	SPK-IC	S1008240074	S10V001721	0 0			Acetate	SOLID	1733.0421	8.9026E+00			6.04E-03	ug/g	101.03	% Recovery	
13	SPK-IC	S1008240074	S10V001721	0 0			Formate	SOLID	1679.4823	8.8601E+00			4.67E-03	ug/g	103.78	% Recovery	
13	SPK-IC	S1008240074	S10V001721	0 0			Chloride	SOLID	324.80193	1.7770E+00			9.98E-03	ug/g	103.01	% Recovery	
13	SPK-IC	S1008240074	S10V001721	0 0			Nitrite	SOLID	2115.6121	1.0901E+01			0.0192	ug/g	99.316	% Recovery	
13	SPK-IC	S1008240074	S10V001721	0 0			Sulfate	SOLID	2502.0078	1.4009E+01			0.0187	ug/g	105.42	% Recovery	
13	SPK-IC	S1008240074	S10V001721	0 0			Oxalate	SOLID	2039.0981	1.0660E+01			0.0231	ug/g	102.39	% Recovery	
13	SPK-IC	S1008240074	S10V001721	0 0			Bromide	SOLID	2329.8513	1.2236E+01			0.058	ug/g	103.49	% Recovery	
13	SPK-IC	S1008240074	S10V001721	0 0			Nitrate	SOLID	2119.4378	1.1979E+01			0.0208	ug/g	104.84	% Recovery	
13	SPK-IC	S1008240074	S10V001721	0 0			Phosphate	SOLID	2111.7864	9.1688E+00			0.0167	ug/g	84.678	% Recovery	
Sample Sequence 14																	
14	CCV	S1008240062		0 0			Fluoride	LIQUID	.47616	4.8590E-01			1.61E-03	ug/mL	102.05	% Recovery	
14	CCV	S1008240062		0 0			Glycolate	LIQUID	2.960128	2.9600E+00			9.37E-03	ug/mL	99.994	% Recovery	
14	CCV	S1008240062		0 0			Acetate	LIQUID	3.595008	3.5250E+00			6.04E-03	ug/mL	98.052	% Recovery	
14	CCV	S1008240062		0 0			Formate	LIQUID	3.483904	3.5524E+00			4.67E-03	ug/mL	101.97	% Recovery	
14	CCV	S1008240062		0 0			Chloride	LIQUID	.6737664	6.6988E-01			9.98E-03	ug/mL	99.423	% Recovery	

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LABCORE Completed Batch Report for Batch# 00021522

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
14	CCV	S1008240062		0 0			Nitrite	LIQUID	4.388608	4.2577E+00			0.0192	ug/mL	97.016	% Recovery	
14	CCV	S1008240062		0 0			Sulfate	LIQUID	5.190144	5.2851E+00			0.0187	ug/mL	101.83	% Recovery	
14	CCV	S1008240062		0 0			Oxalate	LIQUID	4.229888	4.2775E+00			0.0231	ug/mL	101.13	% Recovery	
14	CCV	S1008240062		0 0			Bromide	LIQUID	4.833024	4.8107E+00			0.058	ug/mL	99.537	% Recovery	
14	CCV	S1008240062		0 0			Nitrate	LIQUID	4.396544	4.4201E+00			0.0208	ug/mL	100.54	% Recovery	
14	CCV	S1008240062		0 0			Phosphate	LIQUID	4.380672	4.3749E+00			0.0167	ug/mL	99.868	% Recovery	
Sample Sequence 15																	
15	CCB	S1008240063		0 0			Fluoride	LIQUID		<1.6100E-03			1.61E-03	ug/mL			
15	CCB	S1008240063		0 0			Glycolate	LIQUID		<9.3700E-03			9.37E-03	ug/mL			
15	CCB	S1008240063		0 0			Acetate	LIQUID		<6.0400E-03			6.04E-03	ug/mL			
15	CCB	S1008240063		0 0			Formate	LIQUID		<4.6700E-03			4.67E-03	ug/mL			
15	CCB	S1008240063		0 0			Chloride	LIQUID		<9.9800E-03			9.98E-03	ug/mL			
15	CCB	S1008240063		0 0			Nitrite	LIQUID		<1.9200E-02			0.0192	ug/mL			
15	CCB	S1008240063		0 0			Sulfate	LIQUID		<1.8700E-02			0.0187	ug/mL			
15	CCB	S1008240063		0 0			Oxalate	LIQUID		<2.3100E-02			0.0231	ug/mL			
15	CCB	S1008240063		0 0			Bromide	LIQUID		<5.8000E-02			0.058	ug/mL			
15	CCB	S1008240063		0 0			Nitrate	LIQUID		<2.0800E-02			0.0208	ug/mL			
15	CCB	S1008240063		0 0			Phosphate	LIQUID		<1.6700E-02			0.0167	ug/mL			

Comments Section:

Data Flagger Status:
Flagging Completed

Final Page for Batch# 00021522

Reviewer Signature **Date**

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LABCORE Completed Batch Report for Batch# 00021522

Seq	Sample#	QC Type	Assoc. Sample	Sample Group	Customer Id	Specification
1	S1008240058	CCV				
2	S1008240059	CCB				
3	S1008240060	LLS				
4	S1008230041	BLNK-PREP				
5	S1008240064	STD-PREP				
6	S10V001613	SAMPLE		20100556	B26JK6	C Farm WMC 2010-2
7	S10V001641	SAMPLE		20100556	B26JK7	C Farm WMC 2010-2
8	S10V001661	SAMPLE		20100556	B29612	C Farm WMC 2010-2
9	S10V001701	SAMPLE		20100556	B26CC4	C Farm WMC 2010-2
10	S10V001721	SAMPLE		20100556	B29613	C Farm WMC 2010-2
11	S1008230042	DUP	S10V001721			
12	S1008240061	SPK-IC	S10V001721			
13	S1008240074	SPK-IC	S10V001721			
14	S1008240062	CCV				
15	S1008240063	CCB				

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LABCORE Completed Batch Report for Batch# 00022189

Analyst: LaPlant, Kelsey **Book#:** 29N29D

Instrument: IC-6 (SMALL ORG ACIDS)

Method: IC - ANIONS/SMALL ORG. ACIDS, LA-533-115 Rev/Mod J-0

Specification: C Farm WMC 2010-2

Prep Batch: 00022173, 00022174

Batch Comment:

C-Farm WMC 2010-2 IC anions small organic acids. KJL/AMP

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
Sample Sequence 1																	
1	CCV	S1009140055		0 0			Fluoride	LIQUID	.47619048	4.6761E-01			1.61E-03	ug/mL	98.198	% Recovery	
1	CCV	S1009140055		0 0			Glycolate	LIQUID	2.960317484	2.8734E+00			9.37E-03	ug/mL	97.062	% Recovery	
1	CCV	S1009140055		0 0			Acetate	LIQUID	3.595238124	3.4019E+00			6.04E-03	ug/mL	94.622	% Recovery	
1	CCV	S1009140055		0 0			Formate	LIQUID	3.484127012	3.4394E+00			4.67E-03	ug/mL	98.715	% Recovery	
1	CCV	S1009140055		0 0			Chloride	LIQUID	.6738095292	6.5476E-01			9.98E-03	ug/mL	97.173	% Recovery	
1	CCV	S1009140055		0 0			Nitrite	LIQUID	4.222222256	4.1933E+00			0.0192	ug/mL	99.315	% Recovery	
1	CCV	S1009140055		0 0			Sulfate	LIQUID	5.190476232	5.1662E+00			0.0187	ug/mL	99.533	% Recovery	
1	CCV	S1009140055		0 0			Oxalate	LIQUID	4.12698416	4.1148E+00			0.0231	ug/mL	99.706	% Recovery	
1	CCV	S1009140055		0 0			Bromide	LIQUID	4.833333372	4.6875E+00			0.058	ug/mL	96.982	% Recovery	
1	CCV	S1009140055		0 0			Nitrate	LIQUID	4.396825432	4.2708E+00			0.0208	ug/mL	97.133	% Recovery	
1	CCV	S1009140055		0 0			Phosphate	LIQUID	4.380952416	4.2629E+00			0.0167	ug/mL	97.305	% Recovery	
Sample Sequence 2																	
2	CCB	S1009140056		0 0			Fluoride	LIQUID		<1.6100E-03			1.61E-03	ug/mL			
2	CCB	S1009140056		0 0			Glycolate	LIQUID		<9.3700E-03			9.37E-03	ug/mL			
2	CCB	S1009140056		0 0			Acetate	LIQUID		<6.0400E-03			6.04E-03	ug/mL			
2	CCB	S1009140056		0 0			Formate	LIQUID		<4.6700E-03			4.67E-03	ug/mL			
2	CCB	S1009140056		0 0			Chloride	LIQUID		<9.9800E-03			9.98E-03	ug/mL			
2	CCB	S1009140056		0 0			Nitrite	LIQUID		<1.9200E-02			0.0192	ug/mL			
2	CCB	S1009140056		0 0			Sulfate	LIQUID		<1.8700E-02			0.0187	ug/mL			
2	CCB	S1009140056		0 0			Oxalate	LIQUID		<2.3100E-02			0.0231	ug/mL			
2	CCB	S1009140056		0 0			Bromide	LIQUID		<5.8000E-02			0.058	ug/mL			
2	CCB	S1009140056		0 0			Nitrate	LIQUID		<2.0800E-02			0.0208	ug/mL			
2	CCB	S1009140056		0 0			Phosphate	LIQUID		<1.6700E-02			0.0167	ug/mL			
Sample Sequence 3																	
3	LLS	S1009140057		0 0			Fluoride	LIQUID	.02985072	2.3060E-02			1.61E-03	ug/mL	77.251	% Recovery	
3	LLS	S1009140057		0 0			Glycolate	LIQUID	.185571976	1.3309E-01			9.37E-03	ug/mL	71.719	% Recovery	
3	LLS	S1009140057		0 0			Acetate	LIQUID	.225372936	1.6774E-01			6.04E-03	ug/mL	74.428	% Recovery	
3	LLS	S1009140057		0 0			Formate	LIQUID	.218407768	1.7957E-01			4.67E-03	ug/mL	82.218	% Recovery	
3	LLS	S1009140057		0 0			Chloride	LIQUID	.0422387688	3.9520E-02			9.98E-03	ug/mL	93.563	% Recovery	
3	LLS	S1009140057		0 0			Nitrite	LIQUID	.264676384	2.3567E-01			0.0192	ug/mL	89.041	% Recovery	
3	LLS	S1009140057		0 0			Sulfate	LIQUID	.325372848	3.0672E-01			0.0187	ug/mL	94.267	% Recovery	
3	LLS	S1009140057		0 0			Oxalate	LIQUID	.25870624	2.4132E-01			0.0231	ug/mL	93.28	% Recovery	

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LABCORE Completed Batch Report for Batch# 00022189

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
3	LLS	S1009140057		0 0			Bromide	LIQUID	.302984808	2.5749E-01			0.058	ug/mL	84.984	% Recovery	
3	LLS	S1009140057		0 0			Nitrate	LIQUID	.275621648	2.4687E-01			0.0208	ug/mL	89.568	% Recovery	
3	LLS	S1009140057		0 0			Phosphate	LIQUID	.274626624	2.7284E-01			0.0167	ug/mL	99.349	% Recovery	
Sample Sequence 4																	
4	BLNK-PREP	S1009140024		0 0	W		Fluoride	LIQUID		<1.6100E-03			1.61E-03	ug/mL			
4	BLNK-PREP	S1009140024		0 0	W		Glycolate	LIQUID		<9.3700E-03			9.37E-03	ug/mL			
4	BLNK-PREP	S1009140024		0 0	W		Acetate	LIQUID		<6.0400E-03			6.04E-03	ug/mL			
4	BLNK-PREP	S1009140024		0 0	W		Formate	LIQUID		<4.6700E-03			4.67E-03	ug/mL			
4	BLNK-PREP	S1009140024		0 0	W		Chloride	LIQUID		<9.9800E-03			9.98E-03	ug/mL			
4	BLNK-PREP	S1009140024		0 0	W		Nitrite	LIQUID		<1.9200E-02			0.0192	ug/mL			
4	BLNK-PREP	S1009140024		0 0	W		Sulfate	LIQUID		<1.8700E-02			0.0187	ug/mL			
4	BLNK-PREP	S1009140024		0 0	W		Oxalate	LIQUID		<2.3100E-02			0.0231	ug/mL			
4	BLNK-PREP	S1009140024		0 0	W		Bromide	LIQUID		<5.8000E-02			0.058	ug/mL			
4	BLNK-PREP	S1009140024		0 0	W		Nitrate	LIQUID		<2.0800E-02			0.0208	ug/mL			
4	BLNK-PREP	S1009140024		0 0	W		Phosphate	LIQUID		<1.6700E-02			0.0167	ug/mL			
Sample Sequence 5																	
5	STD-PREP	S1009140068		0 0			Fluoride	LIQUID	.6	6.0024E-01			1.61E-03	ug/mL	100.04	% Recovery	
5	STD-PREP	S1009140068		0 0			Glycolate	LIQUID	3.73	3.6863E+00			9.37E-03	ug/mL	98.828	% Recovery	
5	STD-PREP	S1009140068		0 0			Acetate	LIQUID	4.53	4.4035E+00			6.04E-03	ug/mL	97.208	% Recovery	
5	STD-PREP	S1009140068		0 0			Formate	LIQUID	4.39	4.3918E+00			4.67E-03	ug/mL	100.04	% Recovery	
5	STD-PREP	S1009140068		0 0			Chloride	LIQUID	.849	8.3306E-01			9.98E-03	ug/mL	98.122	% Recovery	
5	STD-PREP	S1009140068		0 0			Nitrite	LIQUID	5.32	5.3099E+00			0.0192	ug/mL	99.81	% Recovery	
5	STD-PREP	S1009140068		0 0			Sulfate	LIQUID	6.54	6.5971E+00			0.0187	ug/mL	100.87	% Recovery	
5	STD-PREP	S1009140068		0 0			Oxalate	LIQUID	5.2	5.2572E+00			0.0231	ug/mL	101.1	% Recovery	
5	STD-PREP	S1009140068		0 0			Bromide	LIQUID	6.09	6.0385E+00			0.058	ug/mL	99.154	% Recovery	
5	STD-PREP	S1009140068		0 0			Nitrate	LIQUID	5.54	5.5225E+00			0.0208	ug/mL	99.685	% Recovery	
5	STD-PREP	S1009140068		0 0			Phosphate	LIQUID	5.52	5.4584E+00			0.0167	ug/mL	98.884	% Recovery	
Sample Sequence 6																	
6	SAMPLE	S10V001771		0 1	W		Fluoride	SOLID	N/A	1.3175E+00			0.01606	ug/g			
6	SAMPLE	S10V001771		0 1	W		Glycolate	SOLID	N/A	<9.3464E-02			0.093464	ug/g			U
6	SAMPLE	S10V001771		0 1	W		Acetate	SOLID	N/A	<6.0248E-02			0.060248	ug/g			U
6	SAMPLE	S10V001771		0 1	W		Formate	SOLID	N/A	<4.6583E-02			0.046583	ug/g			U
6	SAMPLE	S10V001771		0 1	W		Chloride	SOLID	N/A	8.2532E-01			0.099549	ug/g			
6	SAMPLE	S10V001771		0 1	W		Nitrite	SOLID	N/A	<1.9152E-01			0.19152	ug/g			U
6	SAMPLE	S10V001771		0 1	W		Sulfate	SOLID	N/A	1.1130E+01			0.18653	ug/g			
6	SAMPLE	S10V001771		0 1	W		Oxalate	SOLID	N/A	<2.3042E-01			0.23042	ug/g			U
6	SAMPLE	S10V001771		0 1	W		Bromide	SOLID	N/A	<5.7854E-01			0.57854	ug/g			U
6	SAMPLE	S10V001771		0 1	W		Nitrate	SOLID	N/A	1.1835E+01			0.20748	ug/g			
6	SAMPLE	S10V001771		0 1	W		Phosphate	SOLID	N/A	4.0947E-01			0.16658	ug/g			J
Sample Sequence 7																	
7	SAMPLE	S10V001791		0 1	W		Fluoride	SOLID	N/A	4.3298E-01			0.015854	ug/g			
7	SAMPLE	S10V001791		0 1	W		Glycolate	SOLID	N/A	<9.2268E-02			0.092268	ug/g			U
7	SAMPLE	S10V001791		0 1	W		Acetate	SOLID	N/A	3.3756E-01			0.059477	ug/g			J

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LABCORE Completed Batch Report for Batch# 00022189

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
7	SAMPLE	S10V001791		0 1	W		Formate	SOLID	N/A	6.9649E-01			0.045986	ug/g			J
7	SAMPLE	S10V001791		0 1	W		Chloride	SOLID	N/A	1.3681E+01			0.098275	ug/g			
7	SAMPLE	S10V001791		0 1	W		Nitrite	SOLID	N/A	3.9320E-01			0.18907	ug/g			J
7	SAMPLE	S10V001791		0 1	W		Sulfate	SOLID	N/A	1.3105E+02			0.18414	ug/g			
7	SAMPLE	S10V001791		0 1	W		Oxalate	SOLID	N/A	<2.2747E-01			0.22747	ug/g			U
7	SAMPLE	S10V001791		0 1	W		Bromide	SOLID	N/A	<5.7114E-01			0.57114	ug/g			U
7	SAMPLE	S10V001791		0 1	W		Nitrate	SOLID	N/A	7.1600E+01			0.20482	ug/g			
7	SAMPLE	S10V001791		0 1	W		Phosphate	SOLID	N/A	<1.6445E-01			0.16445	ug/g			U
Sample Sequence 8																	
8	DUP	S1009140025	S10V001791	0 0	W		Fluoride	SOLID	4.3298E-01	5.2355E-01			0.016086	ug/g	18.937	% RPD	
8	DUP	S1009140025	S10V001791	0 0	W		Glycolate	SOLID	<9.2268E-02	<9.3619E-02			0.093619	ug/g			
8	DUP	S1009140025	S10V001791	0 0	W		Acetate	SOLID	3.3756E-01	3.1673E-01			0.060348	ug/g	6.3675	% RPD	
8	DUP	S1009140025	S10V001791	0 0	W		Formate	SOLID	6.9649E-01	6.3445E-01			0.04666	ug/g	9.3228	% RPD	
8	DUP	S1009140025	S10V001791	0 0	W		Chloride	SOLID	1.3681E+01	1.3792E+01			0.099714	ug/g	0.80612	% RPD	
8	DUP	S1009140025	S10V001791	0 0	W		Nitrite	SOLID	3.9320E-01	6.8721E-01			0.19184	ug/g	54.426	% RPD	
8	DUP	S1009140025	S10V001791	0 0	W		Sulfate	SOLID	1.3105E+02	1.3292E+02			0.18684	ug/g	1.4206	% RPD	
8	DUP	S1009140025	S10V001791	0 0	W		Oxalate	SOLID	<2.2747E-01	<2.3080E-01			0.2308	ug/g			
8	DUP	S1009140025	S10V001791	0 0	W		Bromide	SOLID	<5.7114E-01	<5.7950E-01			0.5795	ug/g			
8	DUP	S1009140025	S10V001791	0 0	W		Nitrate	SOLID	7.1600E+01	7.0953E+01			0.20782	ug/g	0.90810	% RPD	
8	DUP	S1009140025	S10V001791	0 0	W		Phosphate	SOLID	<1.6445E-01	<1.6686E-01			0.16686	ug/g			
Sample Sequence 9																	
9	SPK-PREDIG	S1009140077	S10V001791	0 0			Fluoride	SOLID	6.0678	6.2813E+00			1.61E-03	ug/g	96.383	% Recovery	
9	SPK-PREDIG	S1009140077	S10V001791	0 0			Glycolate	SOLID	37.72149	3.6098E+01			9.37E-03	ug/g	95.697	% Recovery	
9	SPK-PREDIG	S1009140077	S10V001791	0 0			Acetate	SOLID	45.81189	4.2896E+01			6.04E-03	ug/g	92.899	% Recovery	
9	SPK-PREDIG	S1009140077	S10V001791	0 0			Formate	SOLID	44.39607	4.3580E+01			4.67E-03	ug/g	96.593	% Recovery	
9	SPK-PREDIG	S1009140077	S10V001791	0 0			Chloride	SOLID	8.585937	2.1522E+01			9.98E-03	ug/g	91.328	% Recovery	
9	SPK-PREDIG	S1009140077	S10V001791	0 0			Nitrite	SOLID	53.80116	5.2348E+01			0.0192	ug/g	96.568	% Recovery	
9	SPK-PREDIG	S1009140077	S10V001791	0 0			Sulfate	SOLID	66.13902	1.9142E+02			0.0187	ug/g	91.27	% Recovery	
9	SPK-PREDIG	S1009140077	S10V001791	0 0			Oxalate	SOLID	52.5876	5.2929E+01			0.0231	ug/g	100.65	% Recovery	
9	SPK-PREDIG	S1009140077	S10V001791	0 0			Bromide	SOLID	61.58817	5.9404E+01			0.058	ug/g	96.454	% Recovery	
9	SPK-PREDIG	S1009140077	S10V001791	0 0			Nitrate	SOLID	56.02602	1.2326E+02			0.0208	ug/g	92.2	% Recovery	
9	SPK-PREDIG	S1009140077	S10V001791	0 0			Phosphate	SOLID	55.82376	4.5897E+01			0.0167	ug/g	82.217	% Recovery	
Sample Sequence 10																	
10	SPK-IC	S1009140058	S10V001791	0 0			Fluoride	SOLID	59.40594	6.4585E-01			1.61E-03	ug/g	101.32	% Recovery	
10	SPK-IC	S1009140058	S10V001791	0 0			Glycolate	SOLID	369.306927	3.6336E+00			9.37E-03	ug/g	98.389	% Recovery	
10	SPK-IC	S1009140058	S10V001791	0 0			Acetate	SOLID	448.514847	4.3878E+00			6.04E-03	ug/g	97.064	% Recovery	
10	SPK-IC	S1009140058	S10V001791	0 0			Formate	SOLID	434.653461	4.4069E+00			4.67E-03	ug/g	99.762	% Recovery	
10	SPK-IC	S1009140058	S10V001791	0 0			Chloride	SOLID	84.0594051	2.2363E+00			9.98E-03	ug/g	100.76	% Recovery	
10	SPK-IC	S1009140058	S10V001791	0 0			Nitrite	SOLID	526.732668	5.2260E+00			0.0192	ug/g	98.458	% Recovery	
10	SPK-IC	S1009140058	S10V001791	0 0			Sulfate	SOLID	647.524746	1.9993E+01			0.0187	ug/g	103.24	% Recovery	
10	SPK-IC	S1009140058	S10V001791	0 0			Oxalate	SOLID	514.85148	5.4248E+00			0.0231	ug/g	105.37	% Recovery	
10	SPK-IC	S1009140058	S10V001791	0 0			Bromide	SOLID	602.970291	6.0343E+00			0.058	ug/g	100.08	% Recovery	
10	SPK-IC	S1009140058	S10V001791	0 0			Nitrate	SOLID	548.514846	1.2760E+01			0.0208	ug/g	100.06	% Recovery	

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LABCORE Completed Batch Report for Batch# 00022189

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
10	SPK-IC	S1009140058	S10V001791	0 0			Phosphate	SOLID	546.534648	5.3958E+00			0.0167	ug/g	98.727	% Recovery	
Sample Sequence 11																	
11	SAMPLE	S10V001811		0 1	W		Fluoride	SOLID	N/A	5.9424E-01			0.015945	ug/g			
11	SAMPLE	S10V001811		0 1	W		Glycolate	SOLID	N/A	<9.2800E-02			0.0928	ug/g			U
11	SAMPLE	S10V001811		0 1	W		Acetate	SOLID	N/A	1.1409E-01			0.05982	ug/g			J
11	SAMPLE	S10V001811		0 1	W		Formate	SOLID	N/A	1.9976E-01			0.046251	ug/g			J
11	SAMPLE	S10V001811		0 1	W		Chloride	SOLID	N/A	2.0683E+00			0.098841	ug/g			
11	SAMPLE	S10V001811		0 1	W		Nitrite	SOLID	N/A	<1.9016E-01			0.19016	ug/g			U
11	SAMPLE	S10V001811		0 1	W		Sulfate	SOLID	N/A	4.4791E+01			0.1852	ug/g			
11	SAMPLE	S10V001811		0 1	W		Oxalate	SOLID	N/A	<2.2878E-01			0.22878	ug/g			U
11	SAMPLE	S10V001811		0 1	W		Bromide	SOLID	N/A	<5.7443E-01			0.57443	ug/g			U
11	SAMPLE	S10V001811		0 1	W		Nitrate	SOLID	N/A	4.4942E+00			0.206	ug/g			
11	SAMPLE	S10V001811		0 1	W		Phosphate	SOLID	N/A	<1.6540E-01			0.1654	ug/g			U
Sample Sequence 12																	
12	CCV	S1009140059		0 0			Fluoride	LIQUID	.47619048	4.6008E-01			1.61E-03	ug/mL	96.617	% Recovery	
12	CCV	S1009140059		0 0			Glycolate	LIQUID	2.960317484	2.8162E+00			9.37E-03	ug/mL	95.132	% Recovery	
12	CCV	S1009140059		0 0			Acetate	LIQUID	3.595238124	3.3848E+00			6.04E-03	ug/mL	94.147	% Recovery	
12	CCV	S1009140059		0 0			Formate	LIQUID	3.484127012	3.3817E+00			4.67E-03	ug/mL	97.059	% Recovery	
12	CCV	S1009140059		0 0			Chloride	LIQUID	.6738095292	6.4201E-01			9.98E-03	ug/mL	95.281	% Recovery	
12	CCV	S1009140059		0 0			Nitrite	LIQUID	4.222222256	4.0297E+00			0.0192	ug/mL	95.439	% Recovery	
12	CCV	S1009140059		0 0			Sulfate	LIQUID	5.190476232	5.0914E+00			0.0187	ug/mL	98.092	% Recovery	
12	CCV	S1009140059		0 0			Oxalate	LIQUID	4.12698416	4.0540E+00			0.0231	ug/mL	98.233	% Recovery	
12	CCV	S1009140059		0 0			Bromide	LIQUID	4.833333372	4.6474E+00			0.058	ug/mL	96.154	% Recovery	
12	CCV	S1009140059		0 0			Nitrate	LIQUID	4.396825432	4.2365E+00			0.0208	ug/mL	96.353	% Recovery	
12	CCV	S1009140059		0 0			Phosphate	LIQUID	4.380952416	4.2090E+00			0.0167	ug/mL	96.076	% Recovery	
Sample Sequence 13																	
13	CCB	S1009140060		0 0			Fluoride	LIQUID		<1.6100E-03			1.61E-03	ug/mL			
13	CCB	S1009140060		0 0			Glycolate	LIQUID		<9.3700E-03			9.37E-03	ug/mL			
13	CCB	S1009140060		0 0			Acetate	LIQUID		<6.0400E-03			6.04E-03	ug/mL			
13	CCB	S1009140060		0 0			Formate	LIQUID		<4.6700E-03			4.67E-03	ug/mL			
13	CCB	S1009140060		0 0			Chloride	LIQUID		<9.9800E-03			9.98E-03	ug/mL			
13	CCB	S1009140060		0 0			Nitrite	LIQUID		<1.9200E-02			0.0192	ug/mL			
13	CCB	S1009140060		0 0			Sulfate	LIQUID		<1.8700E-02			0.0187	ug/mL			
13	CCB	S1009140060		0 0			Oxalate	LIQUID		<2.3100E-02			0.0231	ug/mL			
13	CCB	S1009140060		0 0			Bromide	LIQUID		<5.8000E-02			0.058	ug/mL			
13	CCB	S1009140060		0 0			Nitrate	LIQUID		<2.0800E-02			0.0208	ug/mL			
13	CCB	S1009140060		0 0			Phosphate	LIQUID		<1.6700E-02			0.0167	ug/mL			
Sample Sequence 14																	
14	BLNK-PREP	S1009140028		0 0	W		Fluoride	LIQUID		<1.6100E-03			1.61E-03	ug/mL			
14	BLNK-PREP	S1009140028		0 0	W		Glycolate	LIQUID		<9.3700E-03			9.37E-03	ug/mL			
14	BLNK-PREP	S1009140028		0 0	W		Acetate	LIQUID		<6.0400E-03			6.04E-03	ug/mL			
14	BLNK-PREP	S1009140028		0 0	W		Formate	LIQUID		<4.6700E-03			4.67E-03	ug/mL			
14	BLNK-PREP	S1009140028		0 0	W		Chloride	LIQUID		<9.9800E-03			9.98E-03	ug/mL			

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LABCORE Completed Batch Report for Batch# 00022189

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
14	BLNK-PREP	S1009140028		0 0	W		Nitrite	LIQUID		<1.9200E-02			0.0192	ug/mL			
14	BLNK-PREP	S1009140028		0 0	W		Sulfate	LIQUID		<1.8700E-02			0.0187	ug/mL			
14	BLNK-PREP	S1009140028		0 0	W		Oxalate	LIQUID		<2.3100E-02			0.0231	ug/mL			
14	BLNK-PREP	S1009140028		0 0	W		Bromide	LIQUID		<5.8000E-02			0.058	ug/mL			
14	BLNK-PREP	S1009140028		0 0	W		Nitrate	LIQUID		<2.0800E-02			0.0208	ug/mL			
14	BLNK-PREP	S1009140028		0 0	W		Phosphate	LIQUID		<1.6700E-02			0.0167	ug/mL			
Sample Sequence 15																	
15	STD-PREP	S1009140069		0 0			Fluoride	LIQUID	.6	5.9150E-01			1.61E-03	ug/mL	98.583	% Recovery	
15	STD-PREP	S1009140069		0 0			Glycolate	LIQUID	3.73	3.6544E+00			9.37E-03	ug/mL	97.972	% Recovery	
15	STD-PREP	S1009140069		0 0			Acetate	LIQUID	4.53	4.3050E+00			6.04E-03	ug/mL	95.033	% Recovery	
15	STD-PREP	S1009140069		0 0			Formate	LIQUID	4.39	4.3453E+00			4.67E-03	ug/mL	98.982	% Recovery	
15	STD-PREP	S1009140069		0 0			Chloride	LIQUID	.849	8.2429E-01			9.98E-03	ug/mL	97.09	% Recovery	
15	STD-PREP	S1009140069		0 0			Nitrite	LIQUID	5.32	5.1748E+00			0.0192	ug/mL	97.27	% Recovery	
15	STD-PREP	S1009140069		0 0			Sulfate	LIQUID	6.54	6.4965E+00			0.0187	ug/mL	99.335	% Recovery	
15	STD-PREP	S1009140069		0 0			Oxalate	LIQUID	5.2	5.1873E+00			0.0231	ug/mL	99.755	% Recovery	
15	STD-PREP	S1009140069		0 0			Bromide	LIQUID	6.09	5.9600E+00			0.058	ug/mL	97.865	% Recovery	
15	STD-PREP	S1009140069		0 0			Nitrate	LIQUID	5.54	5.4431E+00			0.0208	ug/mL	98.251	% Recovery	
15	STD-PREP	S1009140069		0 0			Phosphate	LIQUID	5.52	5.4084E+00			0.0167	ug/mL	97.979	% Recovery	
Sample Sequence 16																	
16	SAMPLE	S10V002286		0 1	W		Fluoride	SOLID	N/A	1.9613E+00			0.016073	ug/g			
16	SAMPLE	S10V002286		0 1	W		Glycolate	SOLID	N/A	<9.3541E-02			0.093541	ug/g			U
16	SAMPLE	S10V002286		0 1	W		Acetate	SOLID	N/A	1.6043E-01			0.060297	ug/g			J
16	SAMPLE	S10V002286		0 1	W		Formate	SOLID	N/A	1.6821E-01			0.046621	ug/g			J
16	SAMPLE	S10V002286		0 1	W		Chloride	SOLID	N/A	3.6312E+01			0.099631	ug/g			
16	SAMPLE	S10V002286		0 1	W		Nitrite	SOLID	N/A	9.6326E-01			0.19167	ug/g			J
16	SAMPLE	S10V002286		0 1	W		Sulfate	SOLID	N/A	1.1780E+01			0.18668	ug/g			
16	SAMPLE	S10V002286		0 1	W		Oxalate	SOLID	N/A	2.0967E+00			0.23061	ug/g			J
16	SAMPLE	S10V002286		0 1	W		Bromide	SOLID	N/A	<5.7902E-01			0.57902	ug/g			U
16	SAMPLE	S10V002286		0 1	W		Nitrate	SOLID	N/A	5.2996E+01			0.20765	ug/g			
16	SAMPLE	S10V002286		0 1	W		Phosphate	SOLID	N/A	5.6000E+00			0.16672	ug/g			
Sample Sequence 17																	
17	SAMPLE	S10V002315		0 1	W		Fluoride	SOLID	N/A	2.1036E+00			0.015925	ug/g			
17	SAMPLE	S10V002315		0 1	W		Glycolate	SOLID	N/A	<9.2681E-02			0.092681	ug/g			U
17	SAMPLE	S10V002315		0 1	W		Acetate	SOLID	N/A	2.5757E-01			0.059743	ug/g			J
17	SAMPLE	S10V002315		0 1	W		Formate	SOLID	N/A	2.3660E-01			0.046192	ug/g			J
18	SAMPLE	S10V002315		0 2	W		Chloride	SOLID	N/A	3.2824E+01			0.59228	ug/g			
17	SAMPLE	S10V002315		0 1	W		Nitrite	SOLID	N/A	1.2110E+00			0.18991	ug/g			J
17	SAMPLE	S10V002315		0 1	W		Sulfate	SOLID	N/A	1.1841E+01			0.18497	ug/g			
17	SAMPLE	S10V002315		0 1	W		Oxalate	SOLID	N/A	3.1428E+00			0.22849	ug/g			
17	SAMPLE	S10V002315		0 1	W		Bromide	SOLID	N/A	<5.7369E-01			0.57369	ug/g			U
17	SAMPLE	S10V002315		0 1	W		Nitrate	SOLID	N/A	5.4628E+01			0.20574	ug/g			
17	SAMPLE	S10V002315		0 1	W		Phosphate	SOLID	N/A	5.7354E+00			0.16518	ug/g			
Sample Sequence 19																	

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LABCORE Completed Batch Report for Batch# 00022189

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
19	DUP	S1009140029	S10V002315	0 0	W		Fluoride	SOLID	2.1036E+00	1.5758E+00			0.015909	ug/g	28.690	% RPD	
19	DUP	S1009140029	S10V002315	0 0	W		Glycolate	SOLID	<9.2681E-02	<9.2589E-02			0.092589	ug/g			
19	DUP	S1009140029	S10V002315	0 0	W		Acetate	SOLID	2.5757E-01	<5.9684E-02			0.059684	ug/g			
19	DUP	S1009140029	S10V002315	0 0	W		Formate	SOLID	2.3660E-01	<4.6146E-02			0.046146	ug/g			
20	DUP	S1009140029	S10V002315	0 1	W		Chloride	SOLID	3.2824E+01	3.4738E+01			0.5917	ug/g	5.6670	% RPD	
19	DUP	S1009140029	S10V002315	0 0	W		Nitrite	SOLID	1.2110E+00	<1.8972E-01			0.18972	ug/g			
19	DUP	S1009140029	S10V002315	0 0	W		Sulfate	SOLID	1.1841E+01	1.0532E+01			0.18478	ug/g	11.701	% RPD	
19	DUP	S1009140029	S10V002315	0 0	W		Oxalate	SOLID	3.1428E+00	5.7016E-01			0.22826	ug/g	138.58	% RPD	
19	DUP	S1009140029	S10V002315	0 0	W		Bromide	SOLID	<5.7369E-01	<5.7312E-01			0.57312	ug/g			
19	DUP	S1009140029	S10V002315	0 0	W		Nitrate	SOLID	5.4628E+01	5.5863E+01			0.20553	ug/g	2.2348	% RPD	
19	DUP	S1009140029	S10V002315	0 0	W		Phosphate	SOLID	5.7354E+00	5.4682E+00			0.16502	ug/g	4.7702	% RPD	
Sample Sequence 21																	
21	SPK-PREDIG	S1009140074	S10V002315	0 0			Fluoride	SOLID	6.11532	7.8107E+00			1.61E-03	ug/g	93.325	% Recovery	
21	SPK-PREDIG	S1009140074	S10V002315	0 0			Glycolate	SOLID	38.016906	3.5569E+01			9.37E-03	ug/g	93.56	% Recovery	
21	SPK-PREDIG	S1009140074	S10V002315	0 0			Acetate	SOLID	46.170666	4.2791E+01			6.04E-03	ug/g	92.123	% Recovery	
21	SPK-PREDIG	S1009140074	S10V002315	0 0			Formate	SOLID	44.743758	4.2332E+01			4.67E-03	ug/g	94.082	% Recovery	
22	SPK-PREDIG	S1009140074	S10V002315	0 1			Chloride	SOLID	8.6531778	4.0355E+01			0.05988	ug/g	87.032	% Recovery	
21	SPK-PREDIG	S1009140074	S10V002315	0 0			Nitrite	SOLID	54.222504	5.2330E+01			0.0192	ug/g	94.276	% Recovery	
21	SPK-PREDIG	S1009140074	S10V002315	0 0			Sulfate	SOLID	66.656988	7.5443E+01			0.0187	ug/g	95.417	% Recovery	
21	SPK-PREDIG	S1009140074	S10V002315	0 0			Oxalate	SOLID	52.99944	5.2177E+01			0.0231	ug/g	92.518	% Recovery	
21	SPK-PREDIG	S1009140074	S10V002315	0 0			Bromide	SOLID	62.070498	5.9078E+01			0.058	ug/g	95.178	% Recovery	
21	SPK-PREDIG	S1009140074	S10V002315	0 0			Nitrate	SOLID	56.464788	1.0822E+02			0.0208	ug/g	94.912	% Recovery	
21	SPK-PREDIG	S1009140074	S10V002315	0 0			Phosphate	SOLID	56.260944	4.9868E+01			0.0167	ug/g	78.443	% Recovery	
Sample Sequence 23																	
23	SPK-IC	S1009140084	S10V002315	0 0			Fluoride	SOLID	59.40594	8.0946E-01			1.61E-03	ug/g	100.46	% Recovery	
23	SPK-IC	S1009140084	S10V002315	0 0			Glycolate	SOLID	369.306927	3.6475E+00			9.37E-03	ug/g	98.767	% Recovery	
23	SPK-IC	S1009140084	S10V002315	0 0			Acetate	SOLID	448.514847	4.3090E+00			6.04E-03	ug/g	95.493	% Recovery	
23	SPK-IC	S1009140084	S10V002315	0 0			Formate	SOLID	434.653461	4.3688E+00			4.67E-03	ug/g	99.961	% Recovery	
24	SPK-IC	S1009140084	S10V002315	0 1			Chloride	SOLID	517.89	8.3549E+00			9.98E-03	ug/g	98.221	% Recovery	
23	SPK-IC	S1009140084	S10V002315	0 0			Nitrite	SOLID	526.732668	5.2271E+00			0.0192	ug/g	96.911	% Recovery	
23	SPK-IC	S1009140084	S10V002315	0 0			Sulfate	SOLID	647.524746	7.6588E+00			0.0187	ug/g	99.791	% Recovery	
23	SPK-IC	S1009140084	S10V002315	0 0			Oxalate	SOLID	514.85148	5.4854E+00			0.0231	ug/g	100.37	% Recovery	
23	SPK-IC	S1009140084	S10V002315	0 0			Bromide	SOLID	602.970291	5.9552E+00			0.058	ug/g	98.764	% Recovery	
23	SPK-IC	S1009140084	S10V002315	0 0			Nitrate	SOLID	548.514846	1.0893E+01			0.0208	ug/g	97.899	% Recovery	
23	SPK-IC	S1009140084	S10V002315	0 0			Phosphate	SOLID	546.534648	6.0351E+00			0.0167	ug/g	99.815	% Recovery	
Sample Sequence 25																	
25	SAMPLE	S10V002351		0 1	W		Fluoride	SOLID	N/A	1.6000E+00			0.016075	ug/g			
25	SAMPLE	S10V002351		0 1	W		Glycolate	SOLID	N/A	<9.3554E-02			0.093554	ug/g			U
25	SAMPLE	S10V002351		0 1	W		Acetate	SOLID	N/A	<6.0306E-02			0.060306	ug/g			U
25	SAMPLE	S10V002351		0 1	W		Formate	SOLID	N/A	<4.6627E-02			0.046627	ug/g			U
25	SAMPLE	S10V002351		0 1	W		Chloride	SOLID	N/A	1.8168E+01			0.099645	ug/g			
25	SAMPLE	S10V002351		0 1	W		Nitrite	SOLID	N/A	<1.9170E-01			0.1917	ug/g			U
25	SAMPLE	S10V002351		0 1	W		Sulfate	SOLID	N/A	1.9573E+01			0.18671	ug/g			

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LABCORE Completed Batch Report for Batch# 00022189

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
25	SAMPLE	S10V002351		0 1	W		Oxalate	SOLID	N/A	<2.3064E-01			0.23064	ug/g			U
25	SAMPLE	S10V002351		0 1	W		Bromide	SOLID	N/A	<5.7910E-01			0.5791	ug/g			U
25	SAMPLE	S10V002351		0 1	W		Nitrate	SOLID	N/A	2.3847E+01			0.20768	ug/g			
25	SAMPLE	S10V002351		0 1	W		Phosphate	SOLID	N/A	1.2714E+00			0.16674	ug/g			J
Sample Sequence 26																	
26	SAMPLE	S10V002397		0 1	W		Fluoride	SOLID	N/A	1.4526E+00			0.015823	ug/g			
26	SAMPLE	S10V002397		0 1	W		Glycolate	SOLID	N/A	<9.2088E-02			0.092088	ug/g			U
26	SAMPLE	S10V002397		0 1	W		Acetate	SOLID	N/A	3.4034E-01			0.059361	ug/g			J
26	SAMPLE	S10V002397		0 1	W		Formate	SOLID	N/A	1.8462E+00			0.045897	ug/g			J
26	SAMPLE	S10V002397		0 1	W		Chloride	SOLID	N/A	2.3922E+00			0.098084	ug/g			
26	SAMPLE	S10V002397		0 1	W		Nitrite	SOLID	N/A	1.8461E+00			0.1887	ug/g			J
26	SAMPLE	S10V002397		0 1	W		Sulfate	SOLID	N/A	9.5642E+01			0.18378	ug/g			
26	SAMPLE	S10V002397		0 1	W		Oxalate	SOLID	N/A	<2.2703E-01			0.22703	ug/g			U
26	SAMPLE	S10V002397		0 1	W		Bromide	SOLID	N/A	<5.7002E-01			0.57002	ug/g			U
26	SAMPLE	S10V002397		0 1	W		Nitrate	SOLID	N/A	1.2240E+01			0.20442	ug/g			
26	SAMPLE	S10V002397		0 1	W		Phosphate	SOLID	N/A	1.1157E+00			0.16413	ug/g			J
Sample Sequence 27																	
27	SAMPLE	S10V002416		0 1	W		Fluoride	SOLID	N/A	1.4894E+00			0.015931	ug/g			
27	SAMPLE	S10V002416		0 1	W		Glycolate	SOLID	N/A	<9.2715E-02			0.092715	ug/g			U
27	SAMPLE	S10V002416		0 1	W		Acetate	SOLID	N/A	2.7379E-01			0.059765	ug/g			J
27	SAMPLE	S10V002416		0 1	W		Formate	SOLID	N/A	3.1347E-01			0.046209	ug/g			J
27	SAMPLE	S10V002416		0 1	W		Chloride	SOLID	N/A	1.9768E+00			0.098751	ug/g			
27	SAMPLE	S10V002416		0 1	W		Nitrite	SOLID	N/A	1.3394E+00			0.18998	ug/g			J
27	SAMPLE	S10V002416		0 1	W		Sulfate	SOLID	N/A	5.0889E+01			0.18503	ug/g			
27	SAMPLE	S10V002416		0 1	W		Oxalate	SOLID	N/A	<2.2857E-01			0.22857	ug/g			U
27	SAMPLE	S10V002416		0 1	W		Bromide	SOLID	N/A	<5.7391E-01			0.57391	ug/g			U
27	SAMPLE	S10V002416		0 1	W		Nitrate	SOLID	N/A	1.2792E+01			0.20581	ug/g			
27	SAMPLE	S10V002416		0 1	W		Phosphate	SOLID	N/A	1.0065E+00			0.16525	ug/g			J
Sample Sequence 28																	
28	SAMPLE	S10V002435		0 1	W		Fluoride	SOLID	N/A	8.2798E-01			0.015909	ug/g			
28	SAMPLE	S10V002435		0 1	W		Glycolate	SOLID	N/A	<9.2591E-02			0.092591	ug/g			U
28	SAMPLE	S10V002435		0 1	W		Acetate	SOLID	N/A	<5.9685E-02			0.059685	ug/g			U
28	SAMPLE	S10V002435		0 1	W		Formate	SOLID	N/A	1.1048E-01			0.046147	ug/g			J
28	SAMPLE	S10V002435		0 1	W		Chloride	SOLID	N/A	6.4138E+00			0.098619	ug/g			
28	SAMPLE	S10V002435		0 1	W		Nitrite	SOLID	N/A	<1.8973E-01			0.18973	ug/g			U
28	SAMPLE	S10V002435		0 1	W		Sulfate	SOLID	N/A	9.4269E+01			0.18479	ug/g			
28	SAMPLE	S10V002435		0 1	W		Oxalate	SOLID	N/A	<2.2827E-01			0.22827	ug/g			U
28	SAMPLE	S10V002435		0 1	W		Bromide	SOLID	N/A	<5.7313E-01			0.57313	ug/g			U
28	SAMPLE	S10V002435		0 1	W		Nitrate	SOLID	N/A	1.6877E+01			0.20554	ug/g			
28	SAMPLE	S10V002435		0 1	W		Phosphate	SOLID	N/A	4.2600E-01			0.16502	ug/g			J
Sample Sequence 29																	
29	CCV	S1009140087		0 0			Fluoride	LIQUID	.47619048	4.7032E-01			1.61E-03	ug/mL	98.767	% Recovery	
29	CCV	S1009140087		0 0			Glycolate	LIQUID	2.960317484	2.8926E+00			9.37E-03	ug/mL	97.713	% Recovery	

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LABCORE Completed Batch Report for Batch# 00022189

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
29	CCV	S1009140087		0 0			Acetate	LIQUID	3.595238124	3.4376E+00			6.04E-03	ug/mL	95.614	% Recovery	
29	CCV	S1009140087		0 0			Formate	LIQUID	3.484127012	3.4369E+00			4.67E-03	ug/mL	98.644	% Recovery	
29	CCV	S1009140087		0 0			Chloride	LIQUID	.6738095292	6.5576E-01			9.98E-03	ug/mL	97.321	% Recovery	
29	CCV	S1009140087		0 0			Nitrite	LIQUID	4.222222256	4.1245E+00			0.0192	ug/mL	97.685	% Recovery	
29	CCV	S1009140087		0 0			Sulfate	LIQUID	5.190476232	5.1758E+00			0.0187	ug/mL	99.718	% Recovery	
29	CCV	S1009140087		0 0			Oxalate	LIQUID	4.12698416	4.1603E+00			0.0231	ug/mL	100.81	% Recovery	
29	CCV	S1009140087		0 0			Bromide	LIQUID	4.833333372	4.6902E+00			0.058	ug/mL	97.039	% Recovery	
29	CCV	S1009140087		0 0			Nitrate	LIQUID	4.396825432	4.3243E+00			0.0208	ug/mL	98.35	% Recovery	
29	CCV	S1009140087		0 0			Phosphate	LIQUID	4.380952416	4.2565E+00			0.0167	ug/mL	97.159	% Recovery	
Sample Sequence 30																	
30	CCB	S1009140085		0 0			Fluoride	LIQUID		<1.6100E-03			1.61E-03	ug/mL			
30	CCB	S1009140085		0 0			Glycolate	LIQUID		<9.3700E-03			9.37E-03	ug/mL			
30	CCB	S1009140085		0 0			Acetate	LIQUID		<6.0400E-03			6.04E-03	ug/mL			
30	CCB	S1009140085		0 0			Formate	LIQUID		<4.6700E-03			4.67E-03	ug/mL			
30	CCB	S1009140085		0 0			Chloride	LIQUID		<9.9800E-03			9.98E-03	ug/mL			
30	CCB	S1009140085		0 0			Nitrite	LIQUID		<1.9200E-02			0.0192	ug/mL			
30	CCB	S1009140085		0 0			Sulfate	LIQUID		<1.8700E-02			0.0187	ug/mL			
30	CCB	S1009140085		0 0			Oxalate	LIQUID		<2.3100E-02			0.0231	ug/mL			
30	CCB	S1009140085		0 0			Bromide	LIQUID		<5.8000E-02			0.058	ug/mL			
30	CCB	S1009140085		0 0			Nitrate	LIQUID		<2.0800E-02			0.0208	ug/mL			
30	CCB	S1009140085		0 0			Phosphate	LIQUID		<1.6700E-02			0.0167	ug/mL			
Sample Sequence 31																	
31	SAMPLE	S10V002454		0 1	W		Fluoride	SOLID	N/A	1.5602E+00			0.016003	ug/g			
31	SAMPLE	S10V002454		0 1	W		Glycolate	SOLID	N/A	<9.3134E-02			0.093134	ug/g			U
31	SAMPLE	S10V002454		0 1	W		Acetate	SOLID	N/A	<6.0035E-02			0.060035	ug/g			U
31	SAMPLE	S10V002454		0 1	W		Formate	SOLID	N/A	1.6331E-01			0.046418	ug/g			J
31	SAMPLE	S10V002454		0 1	W		Chloride	SOLID	N/A	2.1806E+00			0.099197	ug/g			
31	SAMPLE	S10V002454		0 1	W		Nitrite	SOLID	N/A	8.4188E-01			0.19084	ug/g			J
31	SAMPLE	S10V002454		0 1	W		Sulfate	SOLID	N/A	1.0914E+02			0.18587	ug/g			
31	SAMPLE	S10V002454		0 1	W		Oxalate	SOLID	N/A	<2.2960E-01			0.2296	ug/g			U
31	SAMPLE	S10V002454		0 1	W		Bromide	SOLID	N/A	<5.7649E-01			0.57649	ug/g			U
31	SAMPLE	S10V002454		0 1	W		Nitrate	SOLID	N/A	9.3441E+00			0.20674	ug/g			
31	SAMPLE	S10V002454		0 1	W		Phosphate	SOLID	N/A	8.3363E-01			0.16599	ug/g			J
Sample Sequence 32																	
32	SAMPLE	S10V002473		0 1	W		Fluoride	SOLID	N/A	7.3867E-01			0.016034	ug/g			
32	SAMPLE	S10V002473		0 1	W		Glycolate	SOLID	N/A	<9.3317E-02			0.093317	ug/g			U
32	SAMPLE	S10V002473		0 1	W		Acetate	SOLID	N/A	2.0217E-01			0.060153	ug/g			J
32	SAMPLE	S10V002473		0 1	W		Formate	SOLID	N/A	2.0426E-01			0.046509	ug/g			J
32	SAMPLE	S10V002473		0 1	W		Chloride	SOLID	N/A	9.7542E+00			0.099392	ug/g			
32	SAMPLE	S10V002473		0 1	W		Nitrite	SOLID	N/A	1.2366E+00			0.19122	ug/g			J
32	SAMPLE	S10V002473		0 1	W		Sulfate	SOLID	N/A	9.6722E+01			0.18624	ug/g			
32	SAMPLE	S10V002473		0 1	W		Oxalate	SOLID	N/A	<2.3006E-01			0.23006	ug/g			U
32	SAMPLE	S10V002473		0 1	W		Bromide	SOLID	N/A	<5.7763E-01			0.57763	ug/g			U

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LABCORE Completed Batch Report for Batch# 00022189

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
32	SAMPLE	S10V002473		0 1	W		Nitrate	SOLID	N/A	1.9155E+01			0.20715	ug/g			
32	SAMPLE	S10V002473		0 1	W		Phosphate	SOLID	N/A	<1.6632E-01			0.16632	ug/g			U
Sample Sequence 33																	
33	CCV	S1009140088		0 0			Fluoride	LIQUID	.47619048	4.6806E-01			1.61E-03	ug/mL	98.293	% Recovery	
33	CCV	S1009140088		0 0			Glycolate	LIQUID	2.960317484	2.8648E+00			9.37E-03	ug/mL	96.772	% Recovery	
33	CCV	S1009140088		0 0			Acetate	LIQUID	3.595238124	3.4654E+00			6.04E-03	ug/mL	96.39	% Recovery	
33	CCV	S1009140088		0 0			Formate	LIQUID	3.484127012	3.4601E+00			4.67E-03	ug/mL	99.31	% Recovery	
33	CCV	S1009140088		0 0			Chloride	LIQUID	.6738095292	6.5567E-01			9.98E-03	ug/mL	97.308	% Recovery	
33	CCV	S1009140088		0 0			Nitrite	LIQUID	4.222222256	4.1040E+00			0.0192	ug/mL	97.2	% Recovery	
33	CCV	S1009140088		0 0			Sulfate	LIQUID	5.190476232	5.1798E+00			0.0187	ug/mL	99.795	% Recovery	
33	CCV	S1009140088		0 0			Oxalate	LIQUID	4.12698416	4.1374E+00			0.0231	ug/mL	100.25	% Recovery	
33	CCV	S1009140088		0 0			Bromide	LIQUID	4.833333372	4.7035E+00			0.058	ug/mL	97.314	% Recovery	
33	CCV	S1009140088		0 0			Nitrate	LIQUID	4.396825432	4.3381E+00			0.0208	ug/mL	98.664	% Recovery	
33	CCV	S1009140088		0 0			Phosphate	LIQUID	4.380952416	4.2651E+00			0.0167	ug/mL	97.355	% Recovery	
Sample Sequence 34																	
34	CCB	S1009140086		0 0			Fluoride	LIQUID		<1.6100E-03			1.61E-03	ug/mL			
34	CCB	S1009140086		0 0			Glycolate	LIQUID		<9.3700E-03			9.37E-03	ug/mL			
34	CCB	S1009140086		0 0			Acetate	LIQUID		<6.0400E-03			6.04E-03	ug/mL			
34	CCB	S1009140086		0 0			Formate	LIQUID		<4.6700E-03			4.67E-03	ug/mL			
34	CCB	S1009140086		0 0			Chloride	LIQUID		<9.9800E-03			9.98E-03	ug/mL			
34	CCB	S1009140086		0 0			Nitrite	LIQUID		<1.9200E-02			0.0192	ug/mL			
34	CCB	S1009140086		0 0			Sulfate	LIQUID		<1.8700E-02			0.0187	ug/mL			
34	CCB	S1009140086		0 0			Oxalate	LIQUID		<2.3100E-02			0.0231	ug/mL			
34	CCB	S1009140086		0 0			Bromide	LIQUID		<5.8000E-02			0.058	ug/mL			
34	CCB	S1009140086		0 0			Nitrate	LIQUID		<2.0800E-02			0.0208	ug/mL			
34	CCB	S1009140086		0 0			Phosphate	LIQUID		<1.6700E-02			0.0167	ug/mL			
Sample Sequence 35																	
35	CCV	S1009150025		0 0			Fluoride	LIQUID	.47619048	4.6799E-01			1.61E-03	ug/mL	98.278	% Recovery	
35	CCV	S1009150025		0 0			Glycolate	LIQUID	2.960317484	2.8746E+00			9.37E-03	ug/mL	97.103	% Recovery	
35	CCV	S1009150025		0 0			Acetate	LIQUID	3.595238124	3.4466E+00			6.04E-03	ug/mL	95.865	% Recovery	
35	CCV	S1009150025		0 0			Formate	LIQUID	3.484127012	3.4473E+00			4.67E-03	ug/mL	98.942	% Recovery	
35	CCV	S1009150025		0 0			Chloride	LIQUID	.6738095292	6.6659E-01			9.98E-03	ug/mL	98.929	% Recovery	
35	CCV	S1009150025		0 0			Nitrite	LIQUID	4.222222256	4.1383E+00			0.0192	ug/mL	98.012	% Recovery	
35	CCV	S1009150025		0 0			Sulfate	LIQUID	5.190476232	5.1682E+00			0.0187	ug/mL	99.57	% Recovery	
35	CCV	S1009150025		0 0			Oxalate	LIQUID	4.12698416	4.1163E+00			0.0231	ug/mL	99.741	% Recovery	
35	CCV	S1009150025		0 0			Bromide	LIQUID	4.833333372	4.6734E+00			0.058	ug/mL	96.69	% Recovery	
35	CCV	S1009150025		0 0			Nitrate	LIQUID	4.396825432	4.2694E+00			0.0208	ug/mL	97.103	% Recovery	
35	CCV	S1009150025		0 0			Phosphate	LIQUID	4.380952416	4.2492E+00			0.0167	ug/mL	96.994	% Recovery	
Sample Sequence 36																	
36	CCB	S1009150024		0 0			Fluoride	LIQUID		<1.6100E-03			1.61E-03	ug/mL			
36	CCB	S1009150024		0 0			Glycolate	LIQUID		<9.3700E-03			9.37E-03	ug/mL			
36	CCB	S1009150024		0 0			Acetate	LIQUID		<6.0400E-03			6.04E-03	ug/mL			
36	CCB	S1009150024		0 0			Formate	LIQUID		<4.6700E-03			4.67E-03	ug/mL			

Units shown for QC (BLK/BKG) may not reflect the actual units.

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N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00022189

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
36	CCB	S1009150024		0 0			Chloride	LIQUID		<9.9800E-03			9.98E-03	ug/mL			
36	CCB	S1009150024		0 0			Nitrite	LIQUID		<1.9200E-02			0.0192	ug/mL			
36	CCB	S1009150024		0 0			Sulfate	LIQUID		<1.8700E-02			0.0187	ug/mL			
36	CCB	S1009150024		0 0			Oxalate	LIQUID		<2.3100E-02			0.0231	ug/mL			
36	CCB	S1009150024		0 0			Bromide	LIQUID		<5.8000E-02			0.058	ug/mL			
36	CCB	S1009150024		0 0			Nitrate	LIQUID		<2.0800E-02			0.0208	ug/mL			
36	CCB	S1009150024		0 0			Phosphate	LIQUID		<1.6700E-02			0.0167	ug/mL			
Sample Sequence 37																	
37	LLS	S1009150026		0 0			Fluoride	LIQUID	.02985072	2.3220E-02			1.61E-03	ug/mL	77.787	% Recovery	
37	LLS	S1009150026		0 0			Glycolate	LIQUID	.185571976	1.3201E-01			9.37E-03	ug/mL	71.137	% Recovery	
37	LLS	S1009150026		0 0			Acetate	LIQUID	.225372936	1.8064E-01			6.04E-03	ug/mL	80.152	% Recovery	
37	LLS	S1009150026		0 0			Formate	LIQUID	.218407768	1.8013E-01			4.67E-03	ug/mL	82.474	% Recovery	
37	LLS	S1009150026		0 0			Chloride	LIQUID	.0422387688	3.8260E-02			9.98E-03	ug/mL	90.58	% Recovery	
37	LLS	S1009150026		0 0			Nitrite	LIQUID	.264676384	2.3107E-01			0.0192	ug/mL	87.303	% Recovery	
37	LLS	S1009150026		0 0			Sulfate	LIQUID	.325372848	2.9631E-01			0.0187	ug/mL	91.068	% Recovery	
37	LLS	S1009150026		0 0			Oxalate	LIQUID	.25870624	2.3087E-01			0.0231	ug/mL	89.24	% Recovery	
37	LLS	S1009150026		0 0			Bromide	LIQUID	.302984808	2.4943E-01			0.058	ug/mL	82.324	% Recovery	
37	LLS	S1009150026		0 0			Nitrate	LIQUID	.275621648	2.3292E-01			0.0208	ug/mL	84.507	% Recovery	
37	LLS	S1009150026		0 0			Phosphate	LIQUID	.274626624	2.3191E-01			0.0167	ug/mL	84.446	% Recovery	
Sample Sequence 38																	
38	CCV	S1009150028		0 0			Fluoride	LIQUID	.47619048	4.6658E-01			1.61E-03	ug/mL	97.982	% Recovery	
38	CCV	S1009150028		0 0			Glycolate	LIQUID	2.960317484	2.8730E+00			9.37E-03	ug/mL	97.051	% Recovery	
38	CCV	S1009150028		0 0			Acetate	LIQUID	3.595238124	3.4253E+00			6.04E-03	ug/mL	95.273	% Recovery	
38	CCV	S1009150028		0 0			Formate	LIQUID	3.484127012	3.4225E+00			4.67E-03	ug/mL	98.232	% Recovery	
38	CCV	S1009150028		0 0			Chloride	LIQUID	.6738095292	6.6445E-01			9.98E-03	ug/mL	98.611	% Recovery	
38	CCV	S1009150028		0 0			Nitrite	LIQUID	4.222222256	4.0857E+00			0.0192	ug/mL	96.767	% Recovery	
38	CCV	S1009150028		0 0			Sulfate	LIQUID	5.190476232	5.1590E+00			0.0187	ug/mL	99.394	% Recovery	
38	CCV	S1009150028		0 0			Oxalate	LIQUID	4.12698416	4.1190E+00			0.0231	ug/mL	99.806	% Recovery	
38	CCV	S1009150028		0 0			Bromide	LIQUID	4.833333372	4.6993E+00			0.058	ug/mL	97.227	% Recovery	
38	CCV	S1009150028		0 0			Nitrate	LIQUID	4.396825432	4.2943E+00			0.0208	ug/mL	97.667	% Recovery	
38	CCV	S1009150028		0 0			Phosphate	LIQUID	4.380952416	4.2646E+00			0.0167	ug/mL	97.345	% Recovery	
Sample Sequence 39																	
39	CCB	S1009150027		0 0			Fluoride	LIQUID		<1.6100E-03			1.61E-03	ug/mL			
39	CCB	S1009150027		0 0			Glycolate	LIQUID		<9.3700E-03			9.37E-03	ug/mL			
39	CCB	S1009150027		0 0			Acetate	LIQUID		<6.0400E-03			6.04E-03	ug/mL			
39	CCB	S1009150027		0 0			Formate	LIQUID		<4.6700E-03			4.67E-03	ug/mL			
39	CCB	S1009150027		0 0			Chloride	LIQUID		<9.9800E-03			9.98E-03	ug/mL			
39	CCB	S1009150027		0 0			Nitrite	LIQUID		<1.9200E-02			0.0192	ug/mL			
39	CCB	S1009150027		0 0			Sulfate	LIQUID		<1.8700E-02			0.0187	ug/mL			
39	CCB	S1009150027		0 0			Oxalate	LIQUID		<2.3100E-02			0.0231	ug/mL			
39	CCB	S1009150027		0 0			Bromide	LIQUID		<5.8000E-02			0.058	ug/mL			
39	CCB	S1009150027		0 0			Nitrate	LIQUID		<2.0800E-02			0.0208	ug/mL			
39	CCB	S1009150027		0 0			Phosphate	LIQUID		<1.6700E-02			0.0167	ug/mL			

Units shown for QC (BLK/BKG) may not reflect the actual units.

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00022189

Comments Section:

Data Flagger Status:
Flagging Completed

Final Page for Batch# 00022189

Reviewer Signature **Date**

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LABCORE Completed Batch Report for Batch# 00022189

Seq	Sample#	QC Type	Assoc. Sample	Sample Group	Customer Id	Specification
1	S1009140055	CCV				
2	S1009140056	CCB				
3	S1009140057	LLS				
4	S1009140024	BLNK-PREP				
5	S1009140068	STD-PREP				
6	S10V001771	SAMPLE		20100556	B26CD0	C Farm WMC 2010-2
7	S10V001791	SAMPLE		20100556	B26CD2	C Farm WMC 2010-2
8	S1009140025	DUP	S10V001791			
9	S1009140077	SPK-PREDIG	S10V001791			
10	S1009140058	SPK-IC	S10V001791			
11	S10V001811	SAMPLE		20100556	B26CD4	C Farm WMC 2010-2
12	S1009140059	CCV				
13	S1009140060	CCB				
14	S1009140028	BLNK-PREP				
15	S1009140069	STD-PREP				
16	S10V002286	SAMPLE		20100660	B26JL0	C Farm WMC 2010-2
17	S10V002315	SAMPLE		20100660	B26JL1	C Farm WMC 2010-2
18	S10V002315	SAMPLE		20100660	B26JL1	C Farm WMC 2010-2
19	S1009140029	DUP	S10V002315			
20	S1009140029	DUP	S10V002315			
21	S1009140074	SPK-PREDIG	S10V002315			
22	S1009140074	SPK-PREDIG	S10V002315			
23	S1009140084	SPK-IC	S10V002315			
24	S1009140084	SPK-IC	S10V002315			
25	S10V002351	SAMPLE		20100660	B26C47	C Farm WMC 2010-2
26	S10V002397	SAMPLE		20100660	B26C51	C Farm WMC 2010-2
27	S10V002416	SAMPLE		20100660	B26C53	C Farm WMC 2010-2
28	S10V002435	SAMPLE		20100660	B26C55	C Farm WMC 2010-2
29	S1009140087	CCV				
30	S1009140085	CCB				
31	S10V002454	SAMPLE		20100660	B26C57	C Farm WMC 2010-2
32	S10V002473	SAMPLE		20100660	B26C59	C Farm WMC 2010-2
33	S1009140088	CCV				
34	S1009140086	CCB				
35	S1009150025	CCV				

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LABCORE Completed Batch Report for Batch# 00022189

36	S1009150024	CCB
37	S1009150026	LLS
38	S1009150028	CCV
39	S1009150027	CCB

Units shown for QC (BLK/BKG) may not reflect the actual units.

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N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00020930

Analyst: LaPlant, Kelsey **Book#:** 27N29C

Instrument: IC-5 (IC-NH4)

Method: IC - NH4, LA-533-101 Rev/Mod Q-0

Specification: C Farm WMC 2010-2

Prep Batch: 00020905

Batch Comment:

C-Farm WMC 2010-2 NH4 Dist Instrument Run. KJL.

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
Sample Sequence 1																	
1	CCV	S1007260042		0 0			Ammonium	LIQUID	2.94059403	2.9254E+00			0.012	ug/mL	99.483	% Recovery	
Sample Sequence 2																	
2	CCB	S1007260043		0 0			Ammonium	LIQUID		<1.2000E-02			0.012	ug/mL			
Sample Sequence 3																	
3	LLS	S1007260044		0 0			Ammonium	LIQUID	.11646855	1.0871E-01			0.012	ug/mL	93.339	% Recovery	
Sample Sequence 4																	
4	BLNK-PREP	S1007220061		0 0	S		Ammonium	LIQUID		3.5590E-02			0.012	ug/mL			
Sample Sequence 5																	
5	LCS	S1007220060		0 0	S		Ammonium	LIQUID	297	3.0524E+02			0.612	ug/mL	102.77	% Recovery	
Sample Sequence 6																	
6	SAMPLE	S10V001615		0 0	S		Ammonium	SOLID	N/A	9.3018E-01			0.46548	ug/g			BJ
Sample Sequence 7																	
7	DUP	S1007220062	S10V001615	0 0	S		Ammonium	SOLID	9.3018E-01	1.5572E+00			0.47188	ug/g	50.416	% RPD	
Sample Sequence 8																	
8	SPK-PREDIG	S1007220063	S10V001615	0 0	S		Ammonium	SOLID	115.6815	1.1108E+02			0.46765	ug/g	95.305	% Recovery	
Sample Sequence 9																	
9	SPK-IC	S1007260046	S10V001615	0 0			Ammonium	SOLID	297	2.9138E+00			0.012	ug/g	97.387	% Recovery	
Sample Sequence 10																	
10	SAMPLE	S10V001643		0 0	S		Ammonium	SOLID	N/A	8.7685E-01			0.46765	ug/g			BJ
Sample Sequence 11																	
11	SAMPLE	S10V001663		0 0	S		Ammonium	SOLID	N/A	<4.7562E-01			0.47562	ug/g			U
Sample Sequence 12																	
12	SAMPLE	S10V001431		0 0	S		Ammonium	SOLID	N/A	<4.7412E-01			0.47412	ug/g			U
Sample Sequence 13																	
13	CCV	S1007260048		0 0			Ammonium	LIQUID	2.94059403	2.9361E+00			0.012	ug/mL	99.846	% Recovery	
Sample Sequence 14																	
14	CCB	S1007260049		0 0			Ammonium	LIQUID		<1.2000E-02			0.012	ug/mL			

Comments Section:

Units shown for QC (BLK/BKG) may not reflect the actual units.

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N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00020930

Data Flagger Status:
Flagging Completed

Final Page for Batch# 00020930

Reviewer Signature **Date**

Units shown for QC (BLK/BKG) may not reflect the actual units.

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LABCORE Completed Batch Report for Batch# 00020930

Seq	Sample#	QC Type	Assoc. Sample	Sample Group	Customer Id	Specification
1	S1007260042	CCV				
2	S1007260043	CCB				
3	S1007260044	LLS				
4	S1007220061	BLNK-PREP				
5	S1007220060	LCS				
6	S10V001615	SAMPLE		20100556	B26JK6	C Farm WMC 2010-2
7	S1007220062	DUP	S10V001615			
8	S1007220063	SPK-PREDIG	S10V001615			
9	S1007260046	SPK-IC	S10V001615			
10	S10V001643	SAMPLE		20100556	B26JK7	C Farm WMC 2010-2
11	S10V001663	SAMPLE		20100556	B29612	C Farm WMC 2010-2
12	S10V001431	SAMPLE		20100520	B26C82	C Farm WMC 2010-2
13	S1007260048	CCV				
14	S1007260049	CCB				

Units shown for QC (BLK/BKG) may not reflect the actual units.

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LABCORE Completed Batch Report for Batch# 00021010

Analyst: Boisoneau, Ryan **Book#:** 27N29C

Instrument: IC-5 (IC-NH4)

Method: IC - NH4, LA-533-101 Rev/Mod Q-0

Specification: C Farm WMC 2010-2

Prep Batch: 00020989

Batch Comment:

NH4 DIST. IC RUN ON C-FARM WMC 2010-2. RJB

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
Sample Sequence 1																	
1	CCV	S1007280041		0 0			Ammonium	LIQUID	2.94059403	2.8951E+00			0.012	ug/mL	98.452	% Recovery	
Sample Sequence 2																	
2	CCB	S1007280042		0 0			Ammonium	LIQUID		<1.2000E-02			0.012	ug/mL			
Sample Sequence 3																	
3	LLS	S1007280043		0 0			Ammonium	LIQUID	.1164705993	1.0720E-01			0.012	ug/mL	92.04	% Recovery	
Sample Sequence 4																	
4	BLNK-PREP	S1007280011		0 0	S		Ammonium	LIQUID		3.1790E-02			0.012	ug/g			
Sample Sequence 5																	
5	LCS	S1007280010		0 0	S		Ammonium	LIQUID	297	3.0323E+02			0.6	ug/g	102.1	% Recovery	
Sample Sequence 6																	
6	SAMPLE	S10V001703		0 0	S		Ammonium	SOLID	N/A	1.5556E+00			0.46693	ug/g			BJ
Sample Sequence 7																	
7	DUP	S1007280012	S10V001703	0 0	S		Ammonium	SOLID	1.5556E+00	1.2517E+00			0.47487	ug/g	21.652	% RPD	
Sample Sequence 8																	
8	SPK-PREDIG	S1007280013	S10V001703	0 0	S		Ammonium	SOLID	118.04451516	1.1786E+02			0.47695	ug/g	98.525	% Recovery	
Sample Sequence 9																	
9	SPK-IC	S1007280045	S10V001703	0 0			Ammonium	SOLID	299.97	2.9497E+00			0.012	ug/g	97.971	% Recovery	
Sample Sequence 10																	
10	SAMPLE	S10V001723		0 0	S		Ammonium	SOLID	N/A	9.2871E-01			0.47525	ug/g			BJ
Sample Sequence 11																	
11	SAMPLE	S10V001773		0 0	S		Ammonium	SOLID	N/A	3.3930E+00			0.4693	ug/g			BJ
Sample Sequence 12																	
12	CCV	S1007280047		0 0			Ammonium	LIQUID	2.94059403	2.8966E+00			0.012	ug/mL	98.504	% Recovery	
Sample Sequence 13																	
13	CCB	S1007280048		0 0			Ammonium	LIQUID		<1.2000E-02			0.012	ug/mL			

Comments Section:

Data Flagger Status:
Flagging Completed

Units shown for QC (BLK/BKG) may not reflect the actual units.

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00021010

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Units shown for QC (BLK/BKG) may not reflect the actual units.

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00021010

Seq	Sample#	QC Type	Assoc. Sample	Sample Group	Customer Id	Specification
1	S1007280041	CCV				
2	S1007280042	CCB				
3	S1007280043	LLS				
4	S1007280011	BLNK-PREP				
5	S1007280010	LCS				
6	S10V001703	SAMPLE		20100556	B26CC4	C Farm WMC 2010-2
7	S1007280012	DUP	S10V001703			
8	S1007280013	SPK-PREDIG	S10V001703			
9	S1007280045	SPK-IC	S10V001703			
10	S10V001723	SAMPLE		20100556	B29613	C Farm WMC 2010-2
11	S10V001773	SAMPLE		20100556	B26CD0	C Farm WMC 2010-2
12	S1007280047	CCV				
13	S1007280048	CCB				

Units shown for QC (BLK/BKG) may not reflect the actual units.

* = Rejected Analyte
N, A = Non-reported Analyte

Date: 23 June 2011
To: CH2M Hill (technical representative)
From: Analytical Quality Associates, Inc.
Project: WMA C
Subject: Radiochemical - Sample Data Group (SDG) 20100556

INTRODUCTION

This memorandum presents the results of data validation for SDG 20100556 prepared by 222-S Laboratory. A list of samples validated along with the analytical methods is provided in the following table.

Sample ID	Sample Date	Media	Validation Level	Analytical Methods
B26JK6	7/19/2010	Soil	C	See note 1
B26CD0	7/22/2010	Soil	C	See note 1

1 – Gamma spectrometry, Sr-89/90, Tritium, Se-79, C-14, Ni-63, I-129, Isotopic-Am/Cm, Isotopic-Pu

Data validation was conducted in accordance with the CHPRC validation statement of work and the Field Sampling and Analysis Plan for Waste Management Area C, RPP-PLAN-40564, Rev. 2 (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. There are no specific holding time and preservation requirements for radiochemical soil analysis.

- **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 with the following exceptions.

For batch 21940, the tritium laboratory blank result was > the minimum detectable concentration. The tritium result for sample B26JK6 was a non-detect and should not be qualified.

For batch 24408, the Se-79 laboratory blank result was > the minimum detectable concentration. The Se-79 result for sample B26JK6 was a non-detect and should not be qualified for the blank infraction.

Trip Blanks

No trip blanks were submitted for validation.

Field Blanks

No field blanks were submitted for validation.

Equipment Blanks

No equipment blanks were submitted for validation.

- **Accuracy**

Accuracy is evaluated by reviewing matrix spike sample results, laboratory control sample results, and chemical recovery factors. Chemical recovery factors are determined through use of a carrier or tracer and provide assessment of the chemical separation process that is affected by the laboratory procedure, sample matrix, and/or interference. Chemical recovery factors are used to correct sample concentration, uncertainty, and MDC results. According to the SAP, the matrix spike sample accuracy limits are 75% to 125% and the laboratory control sample accuracy limits are 80% to 120%.

Matrix Spike (MS) Samples

All MS recoveries were acceptable.

Laboratory Control Samples (LCSs)

All LCS recoveries were acceptable with the following exception. LCS analyses were not performed for Se-79. The Se-79 results for samples B26JK6 and B26CD0 were non-detects and should be qualified as estimates and flagged "UJ."

Carrier/Tracer Recovery Factors

All carrier/tracer recovery factors were acceptable with the following exception. The I-129 carrier recovery for sample B26CD0 was >105%. The I-129 result for sample B26CD0 was a non-detect and should not be qualified.

- **Precision**

Precision is evaluated by reviewing laboratory duplicate, field duplicate, and field split sample results. These QC results provide information on the laboratory reproducibility and whether sampling activities are adequate to acquire consistent sample results. According to the SAP, the relative percent difference (RPD) limits are ±30%. The RPD limits for reported analytes not listed in the SAP are specified by the DV procedure. When duplicate RPDs exceed the limits and have associated results <5X the MDCs the precision limits are ones specified by the DV procedure.

Laboratory Duplicate Samples

All laboratory duplicate results were acceptable with the following exception. For batch 23877, a laboratory duplicate analysis was not performed for isotopic Am/Cm. The Am-241, Cm-242 and Cm-243/244 results for sample B26CD0 were non-detects and should be qualified as estimates and flagged "UJ."

Field Duplicate Samples

No field duplicates were submitted for validation.

Field Split Samples

No field splits were submitted for validation.

- **Detection Limits**

Reported MDCs are compared against the required detection limits (RDLs) to ensure that laboratory detection limits meet the required criteria.

All reported sample MDCs were below the RDLs.

- **Completeness**

SDG 20100556 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 100%.

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

Minor deficiencies leading to qualification of sample results as estimates were due to lack of LCS analyses for Se-79 and lack of laboratory duplicate analysis for isotopic Am/Cm. See the table in Appendix 2 for a listing of all affected sample results.

REFERENCES

GRP-GD-002, Rev. 0, Change 0, *Data Validation for Radiochemical Analyses*, August 2010.

RPP-PLAN-40564, Rev. 2, *Field Sampling and Analysis Plan for Waste Management Area C*, December 2009

Appendix 1

Glossary of Data Reporting Qualifiers

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

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

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

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

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

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

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

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

Appendix 2

Summary of Data Qualification

Radiochemical Data Qualification Summary			
SDG: 20100556	Reviewer: AQA	Project: WMA C	Page 1 of 1
Analyte(s)	**DV Flag**	**Samples Affected**	**Reason**
Se-79	UJ	B26JK6, B26CD0	Lack of LCS data
Am-241 Cm-242 Cm-243/244	UJ	B26CD0	Lack of lab duplicate data

Comments: None

Appendix 3

Annotated Laboratory Reports

C Farm WMC 2010-2
Data Summary Report

Sample Group: 20100556
Core Number: C7676
Customer Sample ID: B26JK6
Sample Depth: Surface

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S10V001606			%WATERA	%WATER-APD	%	n/a	n/a	3.040	n/a	n/a	n/a	n/a	0.01000	n/a	
S10V001606			57-12-5	Cyanide	ug/g	109	<0.0370	<2.65	<2.64	n/a	n/a	98.1	2.65	n/a	U
S10V001606			7439-97-6	Mercury	ug/g	99.3	<1.00E-04	<9.39E-03	n/a	n/a	n/a	n/a	9.39E-03	n/a	U
S10V001606			PH	pH	unitless	n/a	n/a	8.34	n/a	n/a	n/a	n/a	0.0100	n/a	
S10V001606			12597-04-5	Sulfide	ug/g	95.4	<0.180	27.2	n/a	n/a	n/a	n/a	7.19	n/a	B
S10V001609		WV	14133-76-7	Technetium-99	ug/g	110	<3.00E-06	<2.84E-06	n/a	n/a	n/a	n/a	2.84E-06	n/a	U
S10V001610		W	14762-75-5	Carbon-14	uCi/g	96.3	<3.46E-07	<1.25E-06	n/a	n/a	n/a	n/a	1.25E-06	n/a	U
S10V001610		W	10028-17-8	Tritium	uCi/g	91.3	1.54E-06	<1.96E-06	n/a	n/a	n/a	n/a	1.96E-06	n/a	U
S10V001611		A	7440-36-0	Antimony	ug/g	102	<2.00E-04	0.229	n/a	n/a	n/a	n/a	9.29E-03	n/a	
S10V001612		O	120-82-1	1,2,4-Trichlorobenzene	ug/kg	60.0	<77.4	<75.9	n/a	n/a	n/a	n/a	75.9	n/a	U
S10V001612		O	95-50-1	1,2-Dichlorobenzene	ug/kg	n/a	<101	<98.8	n/a	n/a	n/a	n/a	98.8	n/a	U
S10V001612		O	121-14-2	2,4-Dinitrotoluene	ug/kg	72.6	<38.1	<37.4	n/a	n/a	n/a	n/a	37.4	n/a	U
S10V001612		O	95-95-4	2,4,5-Trichlorophenol	ug/kg	n/a	<44.0	<43.2	n/a	n/a	n/a	n/a	43.2	n/a	U
S10V001612		O	88-06-2	2,4,6-Trichlorophenol	ug/kg	n/a	<49.5	<48.6	n/a	n/a	n/a	n/a	48.6	n/a	U
S10V001612		O	95-48-7	2-Methylphenol	ug/kg	n/a	<57.5	<56.4	n/a	n/a	n/a	n/a	56.4	n/a	U
S10V001612		O	88-75-5	2-Nitrophenol	ug/kg	n/a	<53.7	<52.7	n/a	n/a	n/a	n/a	52.7	n/a	U
S10V001612		O	65794-96-9	3 &4 Methylphenol	ug/kg	n/a	<51.4	<50.4	n/a	n/a	n/a	n/a	50.4	n/a	U
S10V001612		O	83-32-9	Acenaphthene	ug/kg	64.9	<17.6	<17.3	n/a	n/a	n/a	n/a	17.3	n/a	U
S10V001612		O	56-55-3	Benzo(a)anthracene	ug/kg	n/a	<37.8	<37.1	n/a	n/a	n/a	n/a	37.1	n/a	U
S10V001612		O	205-99-2	Benzo(b)fluoranthene	ug/kg	n/a	<48.9	<48.0	n/a	n/a	n/a	n/a	48.0	n/a	U
S10V001612		O	50-32-8	Benzo(a)pyrene	ug/kg	n/a	<41.2	<40.4	n/a	n/a	n/a	n/a	40.4	n/a	U
S10V001612		O	117-81-7	Bis(2-ethylhexyl) phthalate	ug/kg	n/a	<590	<579	n/a	n/a	n/a	n/a	579	n/a	U
S10V001612		O	207-08-9	Benzo(k)fluoranthene	ug/kg	n/a	<39.1	<38.4	n/a	n/a	n/a	n/a	38.4	n/a	U
S10V001612		O	85-68-7	Butylbenzylphthalate	ug/kg	n/a	<50.0	<49.1	n/a	n/a	n/a	n/a	49.1	n/a	U
S10V001612		O	59-50-7	4-Chloro-3-methylphenol	ug/kg	69.7	<43.2	<42.4	n/a	n/a	n/a	n/a	42.4	n/a	U
S10V001612		O	95-57-8	2-Chlorophenol	ug/kg	64.7	<66.5	<65.2	n/a	n/a	n/a	n/a	65.2	n/a	U
S10V001612		O	218-01-9	Chrysene	ug/kg	n/a	<81.4	<79.9	n/a	n/a	n/a	n/a	79.9	n/a	U
S10V001612		O	53-70-3	Dibenz[a,h]anthracene	ug/kg	n/a	<51.1	<50.1	n/a	n/a	n/a	n/a	50.1	n/a	U

NA = Not Analyzed, ND = Not Detected

B - Blank Contamination
U - Less Than Detection Limit

B - Estimated
J - Estimated

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N - MS/MSD Outside Range
C - Blank Contamination

M - RPD Outside Range

C Farm WMC 2010-2
Data Summary Report

Sample Group: 20100556
Core Number: C7676
Customer Sample ID: B26JK6
Sample Depth: Surface

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S10V001614		A	14269-03-7	Thorium-230	ug/g	n/a	<2.80E-06	<2.77E-05	5.11E-05	3.94E-05	59.3	n/a	2.77E-05	n/a	U
S10V001614		A	TH-232	Thorium-232	ug/g	106	2.68E-04	2.62	2.66	2.64	1.59	84.1	1.98E-03	n/a	
S10V001614		A	13968-55-3	Uranium-233	ug/g	n/a	<4.00E-06	1.58E-04	1.06E-04	1.32E-04	39.2	n/a	3.96E-05	n/a	
S10V001614		A	13966-29-5	Uranium-234	ug/g	n/a	<2.00E-06	2.96E-05	<1.98E-05	n/a	n/a	n/a	1.98E-05	n/a	
S10V001614		A	15117-96-1	Uranium-235	ug/g	99.7	<4.00E-06	3.28E-03	3.27E-03	3.28E-03	0.221	84.8	3.96E-05	n/a	
S10V001614		A	13982-70-2	Uranium-236	ug/g	n/a	2.12E-06	<1.58E-05	<1.59E-05	n/a	n/a	n/a	1.58E-05	n/a	U
S10V001614		A	13994-20-2	Neptunium-237	ug/g	101	<4.00E-05	8.57E-04	5.26E-04	6.91E-04	47.8	96.9	3.96E-04	n/a	B
S10V001614		A	U-238	Uranium-238	ug/g	107	<2.00E-04	0.487	0.501	0.494	2.90	92.4	1.98E-03	n/a	
S10V001615		S	14798-03-9	Ammonium	ug/g	103	0.0356	0.930	1.56	1.24	50.4	95.3	0.465	n/a	CB
S10V001616		A	14133-76-7	Technetium-99	ug/g	111	<1.50E-05	<1.49E-04	n/a	n/a	n/a	n/a	1.49E-04	n/a	U
S10V001616		A	SN-117	Tin-117	ug/g	105	<5.00E-04	0.0136	n/a	n/a	n/a	n/a	4.97E-03	n/a	N
S10V001616		A	15832-50-5	Tin-126	ug/g	n/a	<1.00E-05	4.16E-04	n/a	n/a	n/a	n/a	9.94E-05	n/a	N
S10V001617		E	CM-243/244	Curium-243/244	uCi/g	n/a	<4.17E-07	<2.19E-07	n/a	n/a	n/a	n/a	2.19E-07	n/a	U
S10V001617		E	14596-10-2	Americium-241	uCi/g	96.5	<1.04E-06	<5.48E-07	n/a	n/a	n/a	n/a	5.48E-07	n/a	U
S10V001617		E	15510-73-3	Curium-242	uCi/g	n/a	<4.17E-07	<2.19E-07	n/a	n/a	n/a	n/a	2.19E-07	n/a	U
S10V001617		E	PU-239/240	Plutonium-239/240	uCi/g	102	<1.22E-06	<2.81E-07	n/a	n/a	n/a	n/a	2.81E-07	n/a	U
S10V001617		E	13981-16-3	Plutonium-238	uCi/g	n/a	<1.22E-06	<2.81E-07	n/a	n/a	n/a	n/a	2.81E-07	n/a	U
S10V001618		E	SR-89/90	Strontium-89/90	uCi/g	102	<2.27E-07	3.38E-06	n/a	n/a	n/a	n/a	2.14E-07	15.426	
S10V001619		E	13981-37-8	Nickel-63	uCi/g	89.7	<7.67E-06	<9.71E-06	n/a	n/a	n/a	n/a	9.71E-06	n/a	U
S10V001619		E	15758-45-9	Selenium-79 UJ	uCi/g	n/a	3.93E-06	<2.63E-06	n/a	n/a	n/a	n/a	2.63E-06	n/a	U
S10V001608			13966-00-2	Potassium-40	uCi/g	n/a	n/a	1.48E-05	n/a	n/a	n/a	n/a	6.68E-06	30.68	
S10V001608			10198-40-0	Cobalt-60	uCi/g	97.0	<2.77E-07	<3.38E-07	n/a	n/a	n/a	n/a	3.38E-07	n/a	U
S10V001608			14234-35-6	Antimony-125	uCi/g	n/a	<8.11E-07	<8.92E-07	n/a	n/a	n/a	n/a	8.92E-07	n/a	U
S10V001608			10045-97-3	Cesium-137	uCi/g	104	<4.00E-07	2.06E-06	n/a	n/a	n/a	n/a	5.79E-07	20.40	
S10V001608			14683-23-9	Europium-152	uCi/g	n/a	<1.48E-06	<1.65E-06	n/a	n/a	n/a	n/a	1.65E-06	n/a	U
S10V001608			15585-10-1	Europium-154	uCi/g	n/a	<8.77E-07	<1.05E-06	n/a	n/a	n/a	n/a	1.05E-06	n/a	U
S10V001608			14391-16-3	Europium-155	uCi/g	n/a	<7.81E-07	<9.20E-07	n/a	n/a	n/a	n/a	9.20E-07	n/a	U
S10V001608			14274-82-9	Thorium-228	uCi/g	n/a	<1.85E-05	<2.15E-05	n/a	n/a	n/a	n/a	2.15E-05	n/a	U

NA = Not Analyzed, ND = Not Detected

B - Blank Contamination
U - Less Than Detection Limit

B - Estimated
J - Estimated

LS
6-23-2011

N - MS/MSD Outside Range
C - Blank Contamination

M - RPD Outside Range

C Farm WMC 2010-2
Data Summary Report

Sample Group: 20100556
Core Number: C7676
Customer Sample ID: B26JK6
Sample Depth: Surface

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S10V001608			15065-10-8	Thorium-234	uCi/g	n/a	<1.31E-05	<1.74E-05	n/a	n/a	n/a	n/a	1.74E-05	n/a	U
S10V001608			15046-84-1	Iodine-129	uCi/g	103	<1.63E-07	<1.57E-07	n/a	n/a	n/a	n/a	1.57E-07	n/a	U

NA = Not Analyzed, ND = Not Detected

B - Blank Contamination
U - Less Than Detection Limit

B - Estimated
J - Estimated

N - MS/MSD Outside Range
C - Blank Contamination

M - RPD Outside Range

C Farm WMC 2010-2
Data Summary Report

Sample Group: 20100556
Core Number: C7676
Customer Sample ID: B26CD0
Sample Depth: 38-40ft

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S10V001764			%WATERA	%WATER-APD	%	n/a	n/a	12.42	n/a	n/a	n/a	n/a	0.01000	n/a	
S10V001764			57-12-5	Cyanide	ug/g	109	<0.0370	<2.37	n/a	n/a	n/a	n/a	2.37	n/a	U
S10V001764			7439-97-6	Mercury	ug/g	102	<1.00E-04	<9.88E-03	n/a	n/a	n/a	n/a	9.88E-03	n/a	U
S10V001764			PH	pH	unitless	n/a	n/a	9.14	n/a	n/a	n/a	n/a	0.0100	n/a	
S10V001764			12597-04-5	Sulfide	ug/g	99.6	<0.180	22.1	n/a	n/a	n/a	n/a	7.15	n/a	B
S10V001766			13966-00-2	Potassium-40	uCi/g	n/a	n/a	1.25E-05	n/a	n/a	n/a	n/a	7.46E-06	39.06	
S10V001766			10198-40-0	Cobalt-60	uCi/g	97.0	<2.77E-07	<3.71E-07	n/a	n/a	n/a	n/a	3.71E-07	n/a	U
S10V001766			14234-35-6	Antimony-125	uCi/g	n/a	<8.11E-07	<9.53E-07	n/a	n/a	n/a	n/a	9.53E-07	n/a	U
S10V001766			10045-97-3	Cesium-137	uCi/g	104	<4.00E-07	<4.95E-07	n/a	n/a	n/a	n/a	4.95E-07	n/a	U
S10V001766			14683-23-9	Europium-152	uCi/g	n/a	<1.48E-06	<1.56E-06	n/a	n/a	n/a	n/a	1.56E-06	n/a	U
S10V001766			15585-10-1	Europium-154	uCi/g	n/a	<8.77E-07	<1.15E-06	n/a	n/a	n/a	n/a	1.15E-06	n/a	U
S10V001766			14391-16-3	Europium-155	uCi/g	n/a	<7.81E-07	<9.76E-07	n/a	n/a	n/a	n/a	9.76E-07	n/a	U
S10V001766			14274-82-9	Thorium-228	uCi/g	n/a	<1.85E-05	<2.24E-05	n/a	n/a	n/a	n/a	2.24E-05	n/a	U
S10V001766			15065-10-8	Thorium-234	uCi/g	n/a	<1.31E-05	<1.83E-05	n/a	n/a	n/a	n/a	1.83E-05	n/a	U
S10V001766			15046-84-1	Iodine-129	uCi/g	115	<1.59E-07	<1.65E-07	n/a	n/a	n/a	n/a	1.65E-07	n/a	U
S10V001767		WV	14133-76-7	Technetium-99	ug/g	110	<3.00E-06	7.14E-06	n/a	n/a	n/a	n/a	3.51E-06	n/a	B
S10V001768		W	14762-75-5	Carbon-14	uCi/g	92.4	<1.33E-07	<1.35E-06	<1.34E-06	n/a	n/a	94.7	1.35E-06	n/a	U
S10V001768		W	10028-17-8	Tritium	uCi/g	94.7	<4.95E-06	<4.59E-06	<4.43E-06	n/a	n/a	97.0	4.59E-06	n/a	U
S10V001770		O	120-82-1	1,2,4-Trichlorobenzene	ug/kg	60.0	<77.4	<76.6	n/a	n/a	n/a	n/a	76.6	n/a	U
S10V001770		O	95-50-1	1,2-Dichlorobenzene	ug/kg	n/a	<101	<99.7	n/a	n/a	n/a	n/a	99.7	n/a	U
S10V001770		O	121-14-2	2,4-Dinitrotoluene	ug/kg	72.6	<38.1	<37.7	n/a	n/a	n/a	n/a	37.7	n/a	U
S10V001770		O	95-95-4	2,4,5-Trichlorophenol	ug/kg	n/a	<44.0	<43.6	n/a	n/a	n/a	n/a	43.6	n/a	U
S10V001770		O	88-06-2	2,4,6-Trichlorophenol	ug/kg	n/a	<49.5	<49.0	n/a	n/a	n/a	n/a	49.0	n/a	U
S10V001770		O	95-48-7	2-Methylphenol	ug/kg	n/a	<57.5	<56.9	n/a	n/a	n/a	n/a	56.9	n/a	U
S10V001770		O	88-75-5	2-Nitrophenol	ug/kg	n/a	<53.7	<53.2	n/a	n/a	n/a	n/a	53.2	n/a	U
S10V001770		O	65794-96-9	3 &4 Methylphenol	ug/kg	n/a	<51.4	<50.9	n/a	n/a	n/a	n/a	50.9	n/a	U
S10V001770		O	83-32-9	Acenaphthene	ug/kg	64.9	<17.6	<17.4	n/a	n/a	n/a	n/a	17.4	n/a	U
S10V001770		O	56-55-3	Benzo(a)anthracene	ug/kg	n/a	<37.8	<37.4	n/a	n/a	n/a	n/a	37.4	n/a	U

NA = Not Analyzed, ND = Not Detected

B - Blank Contamination
U - Less Than Detection Limit

B - Estimated
J - Estimated

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N - MS/MSD Outside Range
C - Blank Contamination

M - RPD Outside Range

C Farm WMC 2010-2
Data Summary Report

Sample Group: 20100556
Core Number: C7676
Customer Sample ID: B26CD0
Sample Depth: 38-40ft

Sample#	R	A#	CAS #	Analyte		Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
~~S10V001772~~		~~A~~	~~7723-14-0~~	~~Phosphorus~~		~~ug/g~~	~~90.1~~	~~<0.0500~~	~~738~~	~~n/a~~	~~n/a~~	~~n/a~~	~~n/a~~	~~4.14~~	~~n/a~~	
S10V001772		A	7439-92-1	Lead		ug/g	86.6	<0.0500	<4.14	n/a	n/a	n/a	n/a	4.14	n/a	U
S10V001772		A	7704-34-9	Sulfur		ug/g	90.7	<0.100	77.0	n/a	n/a	n/a	n/a	8.29	n/a	BN
S10V001772		A	7440-21-3	Silicon		ug/g	81.1	<0.0300	63.8	n/a	n/a	n/a	n/a	2.49	n/a	
S10V001772		A	7440-24-6	Strontium		ug/g	94.5	<3.00E-03	36.1	n/a	n/a	n/a	n/a	0.249	n/a	
S10V001772		A	7440-32-6	Titanium		ug/g	90.7	<5.00E-03	1.19E+03	n/a	n/a	n/a	n/a	0.414	n/a	
S10V001772		A	7440-62-2	Vanadium		ug/g	91.4	<5.00E-03	42.0	n/a	n/a	n/a	n/a	0.414	n/a	
S10V001772		A	7440-65-5	Yttrium		ug/g	90.6	<2.00E-03	8.11	n/a	n/a	n/a	n/a	0.166	n/a	
S10V001772		A	7440-66-6	Zinc		ug/g	87.9	<5.00E-03	37.1	n/a	n/a	n/a	n/a	0.414	n/a	
S10V001772		A	7440-67-7	Zirconium		ug/g	88.9	<5.00E-03	12.7	n/a	n/a	n/a	n/a	0.414	n/a	
S10V001772		A	14269-63-7	Thorium-230		ug/g	n/a	5.21E-06	2.77E-05	<2.78E-05	n/a	n/a	n/a	2.77E-05	n/a	B
S10V001772		A	TH-232	Thorium-232		ug/g	104	<2.00E-04	3.24	3.25	3.25	0.426	95.1	1.98E-03	n/a	
S10V001772		A	13968-55-3	Uranium-233		ug/g	n/a	<4.00E-06	1.65E-04	2.75E-04	2.20E-04	49.8	n/a	3.95E-05	n/a	
S10V001772		A	13966-29-5	Uranium-234		ug/g	n/a	<2.00E-06	<1.98E-05	<1.99E-05	n/a	n/a	n/a	1.98E-05	n/a	U
S10V001772		A	15117-96-1	Uranium-235		ug/g	94.8	<4.00E-06	5.43E-03	5.59E-03	5.51E-03	2.81	101	3.95E-05	n/a	
S10V001772		A	13982-70-2	Uranium-236		ug/g	n/a	<1.60E-06	2.71E-05	2.68E-05	2.70E-05	0.997	n/a	1.58E-05	n/a	B
S10V001772		A	13994-20-2	Neptunium-237		ug/g	102	<4.00E-05	<3.95E-04	<3.97E-04	n/a	n/a	98.0	3.95E-04	n/a	U
S10V001772		A	U-238	Uranium-238		ug/g	104	<2.00E-04	0.819	0.838	0.829	2.30	106	1.98E-03	n/a	
S10V001772		A	7440-43-9	Cadmium		ug/g	104	<3.60E-03	0.190	0.162	0.176	15.8	105	0.0237	n/a	B
S10V001772		A	7439-92-1	Lead		ug/g	97.1	<6.00E-03	10.9	9.45	10.2	14.1	88.6	0.0593	n/a	
S10V001772		A	7440-28-0	Thallium		ug/g	103	<8.00E-04	0.165	0.142	0.153	15.2	102	0.0158	n/a	
S10V001773		S	14798-03-9	Ammonium		ug/g	102	0.0318	3.39	n/a	n/a	n/a	n/a	0.469	n/a	CB
S10V001774		A	14133-76-7	Technetium-99		ug/g	109	<3.00E-05	3.11E-04	n/a	n/a	n/a	n/a	2.98E-04	n/a	
S10V001774		A	SN-117	Tin-117		ug/g	102	<1.00E-03	0.0125	n/a	n/a	n/a	n/a	9.94E-03	n/a	
~~S10V001774~~		~~A~~	~~15832-50-5~~	~~Tin-126~~		~~ug/g~~	~~n/a~~	~~<2.00E-05~~	~~6.69E-04~~	~~n/a~~	~~n/a~~	~~n/a~~	~~n/a~~	~~1.99E-04~~	~~n/a~~	~~B~~
S10V001775		E	CM-243/244	Curium-243/244	UJ	uCi/g	n/a	<2.11E-07	<1.41E-07	n/a	n/a	n/a	n/a	1.41E-07	n/a	U
S10V001775		E	14596-10-2	Americium-241	UJ	uCi/g	98.9	<5.26E-07	<3.52E-07	n/a	n/a	n/a	n/a	3.52E-07	n/a	U
S10V001775		E	15510-73-3	Curium-242	UJ	uCi/g	n/a	<2.11E-07	<1.41E-07	n/a	n/a	n/a	n/a	1.41E-07	n/a	U

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U - Less Than Detection Limit

B - Estimated
J - Estimated

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N - MS/MSD Outside Range
C - Blank Contamination

M - RPD Outside Range

C Farm WMC 2010-2
Data Summary Report

Sample Group: 20100556
Core Number: C7676
Customer Sample ID: B26CD0
Sample Depth: 38-40ft

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S10V001775		E	PU-239/240	Plutonium-239/240	uCi/g	102	<1.22E-06	<3.29E-07	n/a	n/a	n/a	n/a	3.29E-07	n/a	U
S10V001775		E	13981-16-3	Plutonium-238	uCi/g	n/a	<1.22E-06	<3.29E-07	n/a	n/a	n/a	n/a	3.29E-07	n/a	U
S10V001776		E	SR-89/90	Strontium-89/90	uCi/g	102	<2.27E-07	<2.01E-07	n/a	n/a	n/a	n/a	2.01E-07	n/a	U
S10V001777		E	13981-37-8	Nickel-63	uCi/g	89.7	<7.67E-06	<5.26E-06	n/a	n/a	n/a	n/a	5.26E-06	n/a	U
S10V001777		E	15758-45-9	Selenium-79 UJ	uCi/g	n/a	<2.68E-06	<4.86E-06	n/a	n/a	n/a	n/a	4.86E-06	n/a	U

LS
6-23-2011

NA = Not Analyzed, ND = Not Detected

B - Blank Contamination
U - Less Than Detection Limit

B - Estimated
J - Estimated

N - MS/MSD Outside Range
C - Blank Contamination

M - RPD Outside Range

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

222-S LABORATORY

FINAL ANALYTICAL REPORT FOR SAMPLES FROM WASTE MANAGEMENT AREA C FOR CORE HOLE C7676 IN SUPPORT OF RCRA SOIL CHARACTERIZATION

1.0 INTRODUCTION

This final report presents the results for the samples taken from Waste Management Area C between July 19, 2010 and July 29, 2010. The samples were analyzed in accordance with RPP-PLAN-40564, *Field Sampling and Analysis Plan for Sites P and L at Waste Management Area C* (FSAP); RPP-PLAN-38777, *Sampling and Analysis Plan for Phase 2 Characterization of Vadose Zone Soil in Waste Management Area C* (SAP); ATL-MP-1011, *ATL Quality Assurance Project Plan for 222-S Laboratory* (QAPP); SW-846, *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods*; and the additional guidance given by the client's point of contact.

Because the 222-S Laboratory facility was designed to analyze hazardous and complex tank waste samples, most SW-846 test methods performed at the 222-S Laboratory contain deviations that are listed in an appendix in the analytical procedures. All other known deviations or variances from SW-846 are documented in this narrative. The following attachments are included in this report.

Attachment 1	Data Summary Report
Attachment 2	Sample Breakdown Diagrams
Attachment 3	Holding Time Report
Attachment 4	Additional Organic Analyses QC Results
Attachment 5	Tentatively Identified Compounds (TIC) for Organic Analyses
Attachment 6	Geological Report
Attachment 7	Characterization Change Notices (CCN) and Correspondence
Attachment 8	Receipt Paperwork
Appendix A	Analytical Report for Analysis Performed at the Waste Sampling and Characterization Facility (WSCF) - Metals Analysis
Appendix B	Analytical Report for Analysis Performed at WSCF - Organic Analysis

2.0 SAMPLE RECEIPT AND BREAKDOWN

2.1 SAMPLE RECEIPT

A total of eight core intervals and two surface grab samples from core hole C7676 along with seven field blanks and six trip blanks were received by the 222-S Laboratory between July 19, 2010 and July 29, 2010. The samples were delivered in a cooler with ice or, in the case of the volatile organic soil samples, in a freezer. The temperatures of the temperature blanks were measured and recorded on the sample receipt check list and/or the chain of custody form.

The chain of custody requested that conductivity be analyzed on the soil samples. Since this analysis was not listed in the SAP or FSAP, it was not performed. The client has indicated that this analysis may be performed after a CCN is issued to cover the change to the FSAP (see Attachment 7).

2.2 SAMPLE BREAKDOWN

The laboratory received each core interval as a set of volatile organic analysis (VOA) samples and three liner samples when complete core recovery was obtained. The VOA samples were made from the shoe section of each core interval following SW-846 5035. The liner samples from each core interval were extruded, described, and composited by the Washington River Protection Solutions, Inc. (WRPS) geologist. The geologist's report is included in Attachment 6. Provided sufficient samples existed, the composite for each core interval was analyzed as described in the SAP and FSAP. Core interval I001 had less than full recovery (see Attachment 2 and Attachment 8) and was combined with core interval I002 to form the composite. Additionally, core interval I004 had less than full recovery and was combined with I005 to form the 14-ft to 18-ft composite (see Attachment 2 and Attachment 8). All intervals were extruded and composited in the normal manner except for the "B" liner from core interval I002. This interval was combined with the shoe and delivered to the laboratory in a glass jar. The surface samples were received as a single grab sample in a 500-mL jar and a set of VOA samples.

WRPS shipped subsamples of the composites to Test America Laboratories, Inc. (TAL) in St Louis, Missouri and Knoxville, Tennessee to be analyzed for dibutyl and monobutyl phosphate, total petroleum hydrocarbons (diesel and gasoline range), ethylene glycol, chlorinated pesticides, and polychlorinated biphenyls (Aroclors and congeners). TAL subsequently subcontracted the monobutyl and dibutyl phosphate analyses to Southwest Research Institute. The results of these analyses will be released in the final WRPS report.

3.0 ANALYTICAL RESULTS SUMMARY

The Data Summary Report (Attachment 1) presents the final analytical results for those analytes requested in the SAP and FSAP. Secondary analytes are only reported if detected. The TIC from gas chromatography-mass spectrometry (GC/MS) analysis of semivolatile organic compounds (SVOC) is presented in Attachment 5. In addition to the required isotopes, all isotopes with positive gamma energy analysis (GEA) results were reported.

The "Det Limit" column in Attachment 1 contains the method detection limit (MDL) for non-radionuclide analyses, or the minimum detectable activity for radionuclides.

In Attachment 1, the column labeled "A#" indicates the aliquot class or the method used for sample preparation before analysis. For solid samples, the aliquot classes are defined as follows:

"A" indicates samples that were prepared by SW-846 3050B.

"E" indicates samples that were prepared by a strong acid digest.

"O" indicates samples that were extracted for organic analysis.

"S" indicates samples that were prepared by a distillation.

"W" indicates samples that were prepared by a standard water digest.

"WV" indicates samples that were prepared by a Vadose water digest.

The "Qual Flags" column in Attachment 1 contains data qualifier flags from FEAD CP-15383, *Common Requirements of the Format for Electronic Analytical Data,* that are defined as follows:

"B" for organic or radiochemistry results is used to indicate that the analyte was detected in the method or preparation blank and in the sample.

"B" for inorganic results is used to indicate that the reported result should be considered an estimate because it is below the quantitation limit. The "B" flag is applied to sample concentrations that are greater than the MDL but less than the quantitation limit.

"C" for inorganic results is used to indicate that the analyte was detected in the method or preparation blank and in the sample, and the result for the blank was greater than or equal to 20% of the reported sample result.

"J" for organic results is used to indicate that the reported result should be considered an estimate because it is below the quantitation limit. The "J" flag is applied to sample concentrations that are greater than the MDL but less than the quantitation limit.

"T" for CG/MS results is used to indicate the matrix spike (MS) recovery or matrix spike duplicate (MSD) recovery is outside control limits.

"U" for all results is used to indicate that the reported result is less than the calculated detection limit.

"N" for all but GC/MS is used to indicate that the MS recovery or MSD recovery was outside of the specified range in the QAPP or SAP.

"N" for GC/MS is used to indicate a TIC which has been named.

"M" for inorganic results is used to indicate that the relative percent difference (RPD) between the sample and the duplicate is greater than 30%.

Manual calculations using rounded results from the Data Summary Report (Attachment 1) or result calculation forms may differ slightly from the actual results derived from the raw data.

Samples without a letter identifier in the "A#" column were analyzed directly with no separate preparation or with sample preparation performed as a part of the procedure steps.

3.1 SAMPLE DIGESTIONS

3.1.1 Radiochemistry Strong Acid Digestion

Strong acid digestions with a hot plate for the heat source were performed using a mixture of concentrated nitric and hydrochloric acids. For each digest, approximately 1 to 10 g of sample were digested depending on the analysis being performed. The digestate was then filtered and diluted to a final volume. This digestion was used for all radiochemical analyses except ^{3}H, ^{14}C, and ^{129}I. This digestion is a leach of the acid soluble species only.

3.1.2 SW-846 3050B - Acid Digestion-Heating Block

This acid digestion follows SW-846 3050B using a heating block and nitric and hydrochloric acids. An aliquot of approximately 5 g of sample was digested. All heating-block digestions were filtered and diluted to a final volume of 50 mL. In soil, this digestion is a leach of the acid soluble species only. This digestion was used for all inductively coupled plasma/mass spectrometry (ICP/MS) and inductively coupled plasma/atomic emission spectroscopy (ICP/AES) analyses except for ^{99}Tc and isotopic tin (^{117}Sn and ^{126}Sn) analyses. The digestion is modified for the ^{99}Tc analysis by using only nitric acid. This is done to eliminate the possibility of the formation a zinc-chlorine ion pair of mass 99. The laboratory believes this ion, when present, is responsible for low level false positives. A separate digestion for antimony was prepared using additional hydrochloric acid, as recommended in SW-846.

3.1.3 Water Digestion

A water digestion or leach was prepared for the anions by ion chromatography, ^{14}C, and ^{3}H analyses using approximately 0.25 to 4 g of sample diluted to 25 mL. Sonification was used, and the leachate was then filtered. In soil, this digestion is a leach of the water soluble species only.

3.1.4 Vadose Water Digestion

A 70-g sample of soil was leached using a ratio of one part water to one part soil. To maintain a one-to-one ratio, the amount of water added to the sample was adjusted based on the percent moisture of the soil. The slurries were placed on a shaker table for about 1 hour. They were then transferred to a centrifuge tube and centrifuged at 4,000 rpm for 30 minutes. An unfiltered aliquot was set aside for alkalinity analysis. The remainder was filtered using a disposable vacuum filtration system. The filtrates were transferred to a clean bottle and then analyzed for ^{99}Tc by ICP/MS analysis.

3.2 INORGANIC ANALYSES

3.2.1 Cyanide

The cyanide analysis by distillation and spectrophotometry was performed on the grab samples and liner composite samples. All analyses met the SW-846 holding time of 14 days. There was no required reporting limit in the SAP for cyanide. The target detection limit was 0.5 µg/g, which is lower than what the current laboratory procedure can achieve. There were no notable quality control (QC) issues with these batches, and all QC requirements in the FSAP, SAP, and QAPP were met.

3.2.2 Sulfide

Sulfide analysis by distillation and ion selective electrode was performed on the grab samples and liner composite samples. All analyses met the SW-846 holding time of 7 days. There was no required reporting limit in the SAP for sulfide. The target detection limit was met. All sample

results had adjusted MDLs of approximately 7 µg/g. There were no notable issues with these batches, and all QC requirements in the FSAP, SAP, and QAPP were met.

3.2.3 pH Analysis

The pH analysis was performed on the grab samples and liner composite samples. These analyses met all QC requirements in the FSAP, SAP, and QAPP. The FSAP lists a pH holding time requirement of "as soon as possible." All pH measurements were taken after the water leach was performed. The sampling to analysis time varied from 3.2 to 7.5 days (see Attachment 3). The sample extrusion/compositing process was basically the cause for the delay in the pH analysis. There is no correlation between pH results and days to analysis, and the results fall within an expected range for alkaline soils. This indicates that the variation in time has no apparent effect on the results.

3.2.4 Mercury

Analysis for Hg by cold-vapor graphic furnace/atomic absorption was performed on the grab samples and liner composite samples. All analyses met the holding time of 28 days. This analysis met the required and target detection limits.

Batch 21197: Mercury was detected in the preparation blanks at a level below the quantitation limit and slightly above the MDL. Since mercury was not detected in the samples, reanalysis was not required.

Batches 20849 and 20982: There were no notable issues with these batches, and all QC requirements in the FSAP, SAP, and QAPP were met.

3.2.5 Ion Chromatography – Ammonium

Analysis for ammonium was performed using a distillation preparation of the grab samples and the liner composite samples. There is no regulatory holding time limit promulgated for ammonium in soil. The SAP lists an administrative holding time of 7 days. The laboratory believes that after distillation and preservation, the holding time is 28 days based on U.S. Environmental Protection Agency drinking water and waste water holding times for preserved samples. All samples met these holding times. These analyses met the target detection limit listed in the SAP. There was no required reporting limit in the SAP or FSAP for ammonium.

Batch 20930: The RPD between the duplicate and the sample exceeded the required 30%. Since the sample result for this analyte was below the quantitation limit, the criterion does not apply and reanalysis is not required. Ammonium was detected in the preparation blanks at a level below the quantitation limit and above the MDL. Ammonium was also detected in the samples at a similar level; these results have been flagged with a "C". Since all results were below the quantitation limit, reanalysis was not required.

Batches 21010 and 21124: Ammonium was detected in the preparation blanks at a level below the quantitation limit and above the MDL. Ammonium was also detected in the samples at a

similar level; these results have been flagged with a “C”. Since all results were below the quantitation limit, reanalysis was not required.

3.2.6 Ion Chromatography – Anions and Small Organic Acids

Ion chromatography analysis was performed on all grab samples and liner composite samples. The laboratory met all of the required and target detection limits. All analyses were within the applicable SW-846 holding times. The sample spikes used for the standard water digestions are predigestion spikes.

Batch 21522: Nitrite was detected in the preparation blanks at a level below the quantitation limit and above the MDL. Nitrite was also detected in three of the samples at a similar level; these results have been flagged with a “C”. Since all results were below the quantitation limit, reanalysis was not required. The MS recovery for phosphate exceeded the ±25% requirement at 63%. The post-digestion spike was recovered at 85% indicating that the low MS recovery may be due to matrix interference. The client agreed (see Attachment 7). The results were reported with an “N” flag applied to each phosphate result in this batch.

Batch 22189: The RPD for nitrite was above the required 30%; however, the result was below the quantitation limit and the criterion does not apply.

3.2.7 Inductively Coupled Plasma/Atomic Emission Spectroscopy

The ICP/AES analysis was performed on an acid-digest (SW-846 3050B) of all grab samples and liner composite samples. The ICP/AES analysis was unable to obtain the required detection limit for antimony, arsenic, cadmium, lead, selenium, silver, and thallium for the soil sample. These elements have been reported from separate ICP/MS analyses. Total uranium has not been reported by the ICP/AES analysis since it cannot meet the required detection limits in the SAP. The isotopic uranium analysis by ICP/MS met the required detection limit for ^{238}U, which is essentially total uranium. The overall data usability was not affected. For all other metals reported by ICP/AES, all target and required detection limits were met. SW-846 lists the holding time for ICP/AES metals as 6 months. All analyses met the holding times.

Batch 23451: The interference check standard-A (ICSA) produced positive results for cobalt and manganese, which are not contained in this standard. This could indicate a positive interference. However, since in the ICSAB these elements recovered at 93%, there appears to be no positive interference. The ICSAB produced a result above the quantitation limit for neodymium. This indicates that spectral interference was occurring. Neodymium results in the sample were not reported due to the high probability that they were the result of this interference. A low level of iron was detected in the preparation blank, but reanalysis was not required since these levels were less than 5% of the lowest sample result.

The MS recoveries for aluminum, calcium, iron, magnesium, potassium, phosphorous, sodium, silicon, and titanium exceeded the ±25% requirement in the FSAP and SAP. Since the sample results for these elements exceeded the MS level by more than four times, this criterion does not apply.

The MS recovery for cerium and zirconium exceeded the ±25% requirement in the SAP and FSAP. For zirconium, the laboratory believes this was due to matrix interference. At 2% recovery, cerium does not appear to have been in the spike solution used. Reanalysis was not required since these are secondary elements. These results have been flagged with an “N”.

The MS recovery for barium exceeded the ±25% requirement at 133%. The post-digestion spike was recovered at 94%. A second sample was spiked from core hole C7676 with similar results (137%). This indicates that the high MS recovery may be due to matrix interference. The client agreed (see Attachment 7). The results were reported with an “N” flag applied to each result in this batch.

The RPD between the sample and the duplicate exceeded the ±30% requirement in the SAP for silicon. The laboratory believes this was due to matrix interference. Reanalysis was not required since this is secondary element. It should be noted that silicon is not listed with other elements in SW-846 3050B, section 1.1, under “Scope and Application” for the method and does not perform consistently when using this digest. The silicon results have been flagged with an “M”.

The opening and closing low level standard (LLS) for zinc was recovered outside the required ±30% at 66%. This could indicate a low bias for results near the LLS level. However, since the zinc results were 14 to 23 times the LLS level, the data quality was not affected. The LLS potassium was recovered outside the ±30% requirement at 149%. However, since the potassium results were 14 to 30 times the LLS level, the data quality was not affected.

Batch 24077: The ICSA produced positive results for manganese, which are not contained in this standard. This could indicate a positive interference. However, since in the ICSAB this element recovered at 92%, there appears to no positive interference. The ICSAB produced results above the quantitation limit for neodymium. This indicates that spectral interference was occurring. Neodymium results were not reported due to the high probability that they were the result of this interference. A low level of iron was detected in the preparation blank, but reanalysis was not required since these levels were less than 5% of the lowest sample result.

The MS recoveries for aluminum, calcium, iron, magnesium, manganese, potassium, phosphorous, sodium, silicon, and titanium exceeded the ±25% requirement in the FSAP and SAP. Since the sample results for these elements exceeded the MS level by more than four times, this criterion does not apply.

The MS recovery for cerium exceeded the ±25% requirement in the SAP and FSAP at 133%. The laboratory believes this was due to matrix interference. Reanalysis was not required since this is a secondary element. These results have been flagged with an “N”.

The MS recovery for barium exceeded the ±25% requirement at 133%. The post-digestion spike was recovered at 94%. A second sample was spiked from core hole C7676 with similar results (137%). This indicates that the high MS recovery may be due to matrix interference. The client agreed (see Attachment 7). The results were reported with an “N” flag.

3.2.8 Inductively Coupled Plasma/Mass Spectroscopy

The ICP/MS actinide and trace metal analyses were performed on the standard SW-846 3050 acid digestion of all grab samples and liner composite samples. The ICP/MS ^{126}Sn and ^{99}Tc analysis was performed on the sample digest without the addition of hydrochloric acid. Hydrochloric acid is not used for ^{99}Tc analysis because of the potential formation of a ZnCl ion pair with mass 99. ICP/MS trace metal analysis for antimony was performed on the SW-846 3050 digest with additional hydrochloric acid, which is required to keep antimony in the solution. In addition to these acid digests, ICP/MS ^{99}Tc analysis was performed on a Vadose water digest of all solid samples.

Direct is the most accurate type of calibration; however, standard material is not commercially available for all of the isotopes of interest. Concentrations of those isotopes without available standards are estimated based on the instrument's mass-response curve, which is generated by using the intensity/concentration relationship for the available isotope standards. Results estimated in this manner are designated "semi-quantitative."

Table 1. Inductively Coupled Plasma-Mass Spectroscopy Standards and Spikes

Standard Type	Analytes Analyzed
Initial calibration verification (nondigested)	^{232}Th, ^{235}U, ^{238}U, ^{237}Np, ^{99}Tc, ^{117}Sn
Acid digest standard (laboratory control standard)	^{232}Th, ^{235}U, ^{238}U, ^{237}Np, ^{99}Tc, ^{117}Sn
Predigest spike (MS)	^{232}Th, ^{235}U, ^{238}U, ^{237}Np, ^{99}Tc, ^{117}Sn
Post-digest spike	^{232}Th, ^{235}U, ^{238}U, ^{237}Np, ^{99}Tc, ^{117}Sn
No standard or spike of either type	^{126}Sn, ^{230}Th, ^{233}U, ^{234}U, ^{236}U

3.2.8.1 Technetium-99 and Tin-126

The required detection limit listed in the SAP for ^{99}Tc was met. The target detection limit for ^{99}Tc was not met. There were no required or target detection limits for ^{126}Sn listed in the SAP. The SAP lists the holding time for isotopic analytes as 6 months. All samples were analyzed within the holding time.

Because there is no available source for ^{126}Sn, ^{117}Sn is used to monitor the chemical recovery for this analysis. Though not specifically requested in the SAP, ^{117}Sn is reported for the laboratory control sample (LCS) and MS in order to demonstrate method accuracy and presence of possible matrix interference.

All sample results for ^{126}Sn were above the MDL and below the quantitation limit with one exception. Based on this, the laboratory suspects that a low level isobaric interference is present in these samples at mass 126. The laboratory believes the most likely suspect is ^{126}Te, but there are other possible candidates. One sample result was above the quantitation level for ^{126}Sn. Users of this data should be aware that all positive ^{126}Sn results in the report may be due to isobaric interference. The laboratory is currently evaluating how to quantify these possible isobaric interferences.

Batch 22109: The MS for ^{117}Sn was recovered below the ±25% requirement at 70%. Similar results have been observed in other batches; this appears to be a matrix interference issue. This

batch was not reanalyzed, but others have been with no improvement. Tin results should be considered biased low at these levels. All samples in the batch have been flagged with an "N". The laboratory is investigating changing the acid mixture used to perform low level ^{126}Sn analysis in hopes of improving spike recoveries. Tin-126was detected in one of the four continuing calibration blanks (CCBs) at slightly above the MDL. This blank bracketed the last three samples in the batch, which have been flagged with a "C". Since all results were below the quantification level, reanalysis was not required.

Batch 23853: Tin-126 was detected in two of the three CCBs at slightly above the MDL. All samples in this batch have been flagged with a "B". Since all results were below the quantification level, reanalysis was not required.

3.2.8.2 Technetium-99 (Vadose Water Digest)

The required and target detection limits listed in the SAP for ^{99}Tc were met. The SAP lists a holding time of 6 months for isotopic analytes. All analyses met this holding time.

Batch 23162: ^{99}Tc was detected in one of the three CCBs at slightly above the MDL. All sample results except two were below the MDL. The blank result was 5% of one these samples, which has been flagged with a "B". Since the sample and blank results were below the quantification level, reanalysis was not required. One sample result (B26CD2) was well above the quantification limit. The sample contained the known interferents chloride and cobalt, but at level that would not account for the ^{99}Tc result. Therefore, no qualifier was place on this result.

3.2.8.3 Actinides

The required and target detection limits were met for all isotopes and in all samples. The SAP lists the holding time for isotopic analytes as 6 months. All samples were analyzed within the holding time.

Batch 22039: The RPD for ^{237}Np and ^{233}U exceeded the 30% requirement in the SAP and FSAP. Since these results were below the quantitation limit, this criterion does not apply. The results for ^{232}Th and ^{236}U in the preparation blank were above the MDL and below the quantitation limit. One sample in this batch demonstrated a similar result for ^{236}U and has been flagged with a "B". Since all ^{236}U results were below the quantitation limit, reanalysis was not required. The sample result for ^{232}Th was more than 20 times the blank result. Neptunium-237 was detected in the initial calibration blank (ICB) at slightly above the MDL. Two samples demonstrated a similar result and have been flagged with "C". Since all ^{237}Np results were below the quantitation limit, reanalysis was not required.

Batch 23864: The percent difference for serial dilution of ^{235}U was above the 10% limit at +11.6%. This could indicate that there was negative bias in the more concentrated sample. This is an unusual result for Vadose samples, which are typically within the ±10% limit for ^{235}U. Since ^{232}Th and ^{238}U were within the ±10% limit, a dilution error can be ruled out. There is no requirement for reanalysis, and the result has been reported with this discussion. The result for ^{230}Th in the preparation blank was above the MDL and below the quantitation limit. All samples in this batch demonstrated a similar result for ^{230}Th and have been flagged with a "C". Since all ^{230}Th results were below the quantitation limit, reanalysis was not required.^{236}U was detected in

the ICB and one of the three CCBs at slightly above the MDL. One sample demonstrated a similar result and has been flagged with "C". Since all ^{236}U results were below the quantitation limit, reanalysis was not required.

3.2.8.4 Trace Metals

Antimony, arsenic, cadmium, lead, selenium, silver, and thallium were analyzed by ICP/MS to obtain the required detection limits in the SAP. Due to an extended room outage at 222S Laboratory, samples were sent WSCF Laboratory by the WRPS for analysis. Table 2 list the samples and analytes that were reported by WSCF. The WSCF report is included in Appendix A of this report. Except for the required detection limit for selenium, all required detection limits were met or the sample results were above the quantitation limit and the sample detection limit criteria do not apply. All target detection limits were met. All samples were analyzed within the holding time.

Table 2, ICPMS Analysis Performed At WSCF Laboratory

Client Sample No.	Sample Depth	ICP/MS Analysis Performed at WSCF
B26JK6	Surface	Arsenic, Cadmium, Lead, Selenium, Silver, Thallium
B26JK7	Surface Dup	Arsenic, Cadmium, Lead, Selenium, Silver, Thallium
B29612	5-9ft	Arsenic, Cadmium, Lead, Selenium, Silver, Thallium
B29613	14-18ft	Arsenic, Cadmium, Lead, Selenium, Silver, Thallium
B26CC4	10-12ft	Arsenic, Cadmium, Lead, Selenium, Silver, Thallium
B26CD0	38-40ft	Antimony, Selenium, Silver, Arsenic
B26CD2	128-130ft	Antimony, Selenium, Silver, Arsenic
B26CD4	157-159ft	Antimony, Selenium, Silver, Arsenic

Batch 21722: There were no notable issues with this antimony batch, and all QC requirements in the FSAP, SAP, and QAPP were met.

Batch 24036: The serial dilution for lead exceeded the 10% difference requirement in the QAPP at +23%. This would indicate that a low bias may exist in the more concentrated sample. This is an unusually result for vadose samples for lead, since lead does not typically fail the serial dilution test.

3.3 RADIOCHEMICAL ANALYSIS

The holding time listed in the SAP for radioactive isotopes is 6 months. The FSAP lists the holding time as "none." All radiochemical analyses met the 6-month holding time listed in the SAP. With the exception of the ^{14}C and ^{3}H analyses, tracers and spikes are added prior to the digestion.

3.3.1 Gamma Energy Analysis

Gamma energy analysis was performed directly on the grab samples and liner composite samples. The SAP requires the reporting of all isotopes with positive results above the minimum detectable activity (MDA); therefore, isotopes additional to those required in the SAP were reported when detected. The GEA analysis met all of the required detection limits in the SAP. The laboratory was unable to meet any of the target detection limits.

Batch 21198: The RPD for ^{40}K was above the 30% requirement in the FSAP. Since the counting error was > 15%, this criterion does not apply.

3.3.2 Strontium-89/90

Strontium-89/90 analysis was performed on the grab samples and liner composite samples. All of the sample analyses met the required and target detection limits. The FSAP and SAP requested ^{90}Sr, not $^{89/90}Sr$, be reported. The 222-S Laboratory only performs the latter analysis. Since the half-life for ^{89}Sr is approximately 51 days and ^{89}Sr has not been produced at Hanford for years, $^{89/90}Sr$ is essentially ^{90}Sr. There were no notable issues with these batches, and all QC requirements in the FSAP, SAP, and QAPP were met.

3.3.3 Tritium

The ^{3}H analysis by liquid scintillation counting (LSC) was performed on a water leach of all grab samples and liner composite samples. This method only measured the ^{3}H in the samples that could be dissolved in water. This analysis achieved the required and target detection limits in the FSAP.

Batch 21940: The preparation blank demonstrated a positive result below the quantitation limit. Since all sample results were below the MDA, reanalysis was not required.

Batch 23378: There were no notable issues with this batch, and all QC requirements in the FSAP, SAP, and QAPP were met.

3.3.4 Selenium-79

The ^{79}Se analysis by LSC was performed on the grab samples and liner composite samples. The analysis achieved the target detection limit in the FSAP. No required detection limit was listed. No standard is currently available for ^{79}Se, and a cold carrier is used to monitor recovery and is measured gravimetrically. The ^{14}C LSC curve is used to determine the ^{79}Se results since their energies are similar. Since both ^{63}Ni and ^{79}Se use a single digestion batch that is equally split prior to the separation step, the maximum tracer/carrier recovery is 50%.

Batch 23725: There were no notable issues with this batch, and all QC requirements in the FSAP, SAP, and QAPP were met.

Batch 24408: The preparation blank demonstrated a positive result below the quantitation limit with a larger counting error. Since all sample results were below the MDA, reanalysis was not required.

3.3.5 Carbon-14

The ^{14}C analysis by LSC was performed on a water leach of the grab samples and liner composite samples. The analysis achieved the required detection limit in the FSAP but exceeded the target detection limit of 1 piC/g. The MDA for the samples were between 1 pCi/g and 2 pCi/g. This analysis will only detect water soluble forms of ^{14}C.

Batch 21907: The RPD for ^{14}C was above the 30% requirement in the FSAP. Since the counting error was > 15%, this criterion does not apply.

Batch 22686: There were no notable issues with this batch, and all QC requirements in the FSAP, SAP, and QAPP were met.

3.3.6 Nickel-63

The ^{63}Ni analysis by LSC was performed on the grab samples and liner composite samples. The analysis achieved the required and target detection limits in the FSAP. Since both ^{63}Ni and ^{79}Se use a single digestion batch that is equally split prior to the separation step, the maximum trace/carrier recovery is 50%.

Batch 23724: There were no notable issues with this batch, and all QC requirements in the FSAP, SAP, and QAPP were met.

3.3.7 Iodine-129

Analysis for ^{129}I by low energy GEA was performed on an iodine-specific fusion digest of all grab samples and liner composite samples. The required and target detection limits in the SAP were met. There were no notable issues with these batches, and all QC requirements in the FSAP, SAP, and QAPP were met.

3.3.8 Americium-241, Curium-243/244, and Curium-242

Analysis for ^{241}Am, $^{243/244}Cm$, and ^{242}Cm by alpha energy analysis (AEA) was performed on the grab samples and liner composite samples. For this analysis, there were no notable issues with any batches and all QC requirements in the FSAP, SAP, and QAPP were met. The required and target detection limits in the SAP were met. The SAP and FSAP requested ^{243}Cm and ^{244}Cm be reported separately. Since it is not possible to resolve these individual isotopes when using AEA, these isotopes have been reported as $^{243/244}Cm$.

3.3.9 Plutonium-238 and Plutonium-239/240

Plutonium isotopic (^{238}Pu and $^{239/240}$Pu) analysis by AEA was performed on the grab samples and liner composite samples. For this analysis, there were no notable issues with any batches and all QC requirements in the FSAP, SAP, and QAPP were met. The required and target detection limits in the SAP were met.

3.4 ORGANIC ANALYSES

3.4.1 Volatile Organic Analysis

The VOA by GC/MS was performed on field samples by purge and trap. Field sampling methods, sample containers, and preservation methods followed SW-846 5035.The soil samples were delivered in a freezer in pre-weighed VOA vials with magnetic stir bars and approximately 5 g of sample. After receipt, the VOA samples were stored in a freezer. For each sample interval, an additional high level sample preserved in methanol was also received. These were not used because none of the results for the frozen samples were above the calibration range. The exact weight of the sample and the tare weight of the VOA vials were recorded by sampling personnel and delivered with the samples. Seven field blanks and six trip blanks were also received and analyzed. The samples were preserved with either HCl or H_2SO_4 to a pH < 2. The holding time for all samples is 14 days. All samples analyzed at the 222-S Laboratory met the required holding time.

Two samples, B26D46 (Trip Blank-6) and B26D57 (Field Blank-7), were shipped to WSCF for analysis due to a laboratory outage. The WSCF report is included in Appendix B of this report.

The VOA met the target and required detection limits in the SAP. The SAP and FSAP requested m-xylene and p-xylene be reported separately. Since it is not possible to resolve these individual compounds when performing VOA by SW-846 8260C, these compounds have been reported as m+p xylene. The SAP and FSAP request that methanol be reported with this analysis; however, this compound is too polar to be purged and cannot be reported (see Attachment 7). Isobutanol, another poor purger, was reported as a semivolatile organic compound.

All of the field blanks and trip blanks contained chloroform above the quantification level. Since chloroform is a common chlorination byproduct, the laboratory believes the likely source of chloroform was the water used by sampling personnel to make the various blanks.

The LCS, MS, and MSD recoveries were compared against the laboratory's statistical process control (SPC) limits, as required by SW-846. The use of SPC limits is allowed in the FSAP, SAP, and QAPP.

Batch 21743: The method blank results for acetone and carbon disulfide were above the quantitation limit. The sample results for carbon disulfide were below the MDL; the data quality was not affected. The sample results for acetone were below the quantitation limit and were flagged with a "B". Since the sample results were below the quantitation limit, reanalysis was not required. Additionally, acetone was less than five times the quantitation limit, which meets DOE/RL-96-68, *Hanford Analytical Services Quality Assurance Requirements Documents*

(HASQARD), and QAPP requirements. Toluene was present in the blank below the quantitation limit. All toluene results in the sample were below the MDL.

Batch 21744: Toluene was present in the blank below the quantitation limit. All sample results for toluene were similar and have been flagged with a “B”. Since all toluene results were below the quantitation limit, reanalysis was not required.

Batch 21745: The method blank results for acetone, toluene, and styrene were above the MDL but below the quantitation limit. The sample results for acetone, toluene, and styrene were similar to the blank and have been flagged with “B”. Since the blank results were below the quantitation limit, reanalysis was not required.

Batch 21746: The method blank result for acetone was above the quantitation limit. The sample results for acetone were below the MDL except for one sample, which was below the quantitation limit and has been flagged with a “B”. Since the sample result was below the quantitation limit, reanalysis was not required. Additionally, acetone was less than five times the quantitation limit, which meets HASQARD and QAPP requirements.

Batch 23313: The method blank results for m,p-xylene, styrene, and toluene were above the MDL and below the quantitation limit. Styrene and toluene were detected in the sample below the quantitation limit, and m,p-xylene was below the MDL. Since all results were below the quantitation limit, reanalysis was not required. Hexane was detected in the sample above the quantitation limit. Since it was not detected in the method blank, this result does not appear to be result of laboratory contamination.

3.4.2 Semivolatile Organic Analysis

The semivolatile organic analysis (SVOA) by GC/MS was performed on methylene chloride extractions of all grab samples and liner composite samples. All holding times were met.

The SVOA analysis met the required and target detection limits with two exceptions:

- The adjusted MDLs for cyclohexanone were above the 0.5-mg/kg target detection limit for most samples. This compound obtained detection limits between 0.5 mg/kg and 0.6 mg/kg.
- The adjusted MDLs for di-n-butyl-phthalate were above the target detection limit of 0.33 mg/kg. The analysis achieved a detection limit of between 0.5 mg/kg and 0.6 mg/kg for this compound.

LCS, MS, and MSD recoveries were compared against the laboratory’s SPC limits, as required by SW-846. The use of SPC limits is permitted in the FSAP, SAP, and QAPP.

The SAP and FSAP requested m-cresol and p-cresol be reported separately. Since it is not possible to resolve these individual compounds when performing SVOA by SW-846 8270C, these compounds have been reported as m+p cresol.

Batches 21133 and 21183: There were no notable issues with these batches, and all QC requirements in the FSAP, SAP, and QAPP were met.

Batch 21072: The percent difference for chrysene and 2,4-dinitrotoluene in continuous calibration verification exceeded the ±20% limit at -20.1% and -22.8%, which could indicate a low bias. However, the LLS demonstrated that there was adequate sensitivity to detect these compounds at the level of quantitation had they been present in the samples.

3.4.3 Tentatively Identified Compounds

Unassigned peaks or TICs were treated as follows. Standards were obtained and analyzed for each secondary analyte identified in the SAP. This data was accumulated in the Hanford library. Following analysis, the largest TICs with instrument responses greater than 10% of the response of the nearest internal standard were evaluated and compared to the Hanford library. The estimated concentration of these TICs was calculated using measured response factors from the Hanford library compound list.

After comparison to the Hanford library, remaining unknowns were compared to the National Institute of Standards and Technology's NIST 02, *HP Mass Spectral Libraries*. The estimated concentration of compounds identified in the NIST library was calculated based on an arbitrary response factor of 1.0. If the compounds were not identified as a result of this comparison, they were reported as "unknown." Summaries of the SVOA and VOA TICs from the field samples and method blanks are provided in Attachment 5. TICs that were found in the field samples and were present in the associated batch method blank have been flagged with "B".

4.0 PROCEDURES

Table 2 lists the analytical procedures used for analysis of the Area C samples.

Table 2. Analytical Procedures

Analysis	Preparation Method	Analysis Procedure
Inorganic Analyses		
Cyanide	LA-695-103, Rev. J-0 (SW-846 9010C)	LA-695-103, Rev. J-0 (SW-846 9014)
Sulfide	LA-361-101, Rev. D-0 (SW-846 9030B)	LA-361-101, Rev. D-0 (SW-846 9215)
pH (solid)	LA-212-105, Rev. G-0 (SW-846 9045D)	LA-212-105, Rev. G-0 (SW-846 9045D)
Mercury – Cold Vapor Atomic Absorption	LA-325-110, Rev. A-0 (SW-846 7471A)	LA-325-110, Rev. A-0 (SW-846 7471A)
Ammonia – IC	LA-544-112, Rev. E-0	LA-533-101, Rev. Q-0
Anions & Organic Acids – IC	LA-504-101, Rev. M-0	LA-533-115, Rev. J-0
Metals – ICP /AES	LA-505-163, Rev. G-0 (SW-846 3050B)	LA-505-161, Rev. J-0-A (SW-846 6010C)

Analysis	Preparation Method	Analysis Procedure
^{99}Tc, ^{126}Sn – ICP/MS	LA-505-163, Rev. G-0 (SW-846 3050B)	LA-506-102, Rev. F-1
^{99}Tc – ICP/MS	08-ATL-078 Vadose Water Digest	LA-506-102, Rev. F-1
Metals – ICP/MS	LA-505-163, Rev. G-0 (SW-846 3050B)	LA-506-102, Rev. F-1 LA-506-103, Rev. B-0 (SW-846 6020A)
Actinides – ICP/MS	LA-505-163, Rev. G-0 (SW-846 3050B)	LA-506-102, Rev. F-1
Radiochemical Analyses		
GEA	Direct	LA-548-121, Rev. I-0
^{90}Sr – Separation/Beta counting (Solid)	LA-544-101, Rev. F-0	LA-220-101, Rev. I-0
^{3}H – LSC	LA-504-101, Rev. M-0	LA-218-111, Rev. G-0
^{14}C – LSC	LA-504-101, Rev. M-0	LA-348-104, Rev. H-0, I-0
^{79}Se – Separation/LSC	LA-544-101, Rev. F-0	LA-365-132, Rev. J-0
^{63}Ni – Separation/LSC	LA-544-101, Rev. F-0	LA-285-102, Rev. E-0
^{129}I – Separation/GEA	LA-378-105, Rev. D-0	LA-378-105, Rev. D-0
^{241}Am, $^{243/244, 242}$Cm – Separation/AEA	LA-544-101, Rev. F-0	LA-953-104, Rev. H-1
$^{239/240, 238}$Pu – Separation/AEA	LA-544-101, Rev. F-0	LA-953-104, Rev. H-1

Organic Analyses		
Analysis	**Preparation Method**	**Analysis Procedure**
VOC – GC/MS	Direct	LA-523-118, Rev. G-O-A, H-O (SW-846 8260B)
SVOC – GC/MS	LA-523-138, Rev. G-0 (SW-846 3540C)	LA-523-135, Rev. D-0 (SW-846 8270C)

5.0 REFERENCES

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COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 8P	DATA TURNAROUND
Campbell/ Harris	TEMPLETON, AM	373-5589	BERLIN, PC	AIR QUALITY ☐	75 Days / 75 Days
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**		
C7676 Surface	WMA C Sampling for CMS		V10-003		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**ACTUAL SAMPLE DEPTH**	**COA**	**METHOD OF SHIPMENT**	
TFVS-09-003	TFVZ-09-000001	surface	N/A	Govt. Vehicle	
SHIPPED TO	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		
222-S Lab Operations	N/A		N/A		

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

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

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool~4C
HOLDING TIME	14/40 Days
TYPE OF CONTAINER	G/P
NO. OF CONTAINER(S)	1
VOLUME	500mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B26JK6	SOIL	7-19-10	1000	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
Campbell Campbell	7-19-10 1130	ABSteele ABSteele	7.19.10 1130
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS
SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS
OU RD
GRP# 20100556
Sm# 510001606

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

Washington River Protection Solutions	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			V10-003-251	PAGE 2 OF 2
COLLECTOR Campbell/Harris	**COMPANY CONTACT** TEMPLETON, AM	**TELEPHONE NO.** 373-5589	**PROJECT COORDINATOR** BERLIN, PC	**PRICE CODE** 8P **AIR QUALITY** ☐	**DATA TURNAROUND** 75 Days / 75 Days
SAMPLING LOCATION C7676 Surface	**PROJECT DESIGNATION** WMA C Sampling for CMS		**SAF NO.** V10-003		
ICE CHEST NO. TFVS-09-003	**FIELD LOGBOOK NO.** TFVZ09-000001	**ACTUAL SAMPLE DEPTH** surface	**COA** N/A	**METHOD OF SHIPMENT** Govt. Vehicle	
SHIPPED TO 222-S Lab Operations	**OFFSITE PROPERTY NO.** N/A		**BILL OF LADING/AIR BILL NO.** N/A		

SPECIAL INSTRUCTIONS

** After VOA bottles for the direct pushes are filled, the sampler will cap remaining liners for shipment to 222-S. Where capping is not possible, the sample shall be put into 500 mL or 250 mL glass bottles with Teflon-lined lids.
(1) Semi-VOA - 8270 Complete (TF); TPH-Gasoline Range - WTPH-G; TPH-Diesel Range - WTPH-D; PCBs - 8082; Pesticides - 8081 (TF); 1668 PCB CONGENER (TCL); ICP Metals - 6010 (SW-846) (TF); Mercury - 7471 - (CV) (TF); 300.7_AMMONIUM (TF); IC Anions - 9056; Sulfide - 9215; Total Cyanide - 9014 (TF); pH (Soil) - 9045; Americium-241 (TF); C-14; CURIUM; GAMMA ENERGY ANALYSIS (TF); H3 - TRITIUM; I129_SEP_GEA (TF); Isotopic Plutonium {Plutonium-238, Plutonium-239/240}; Nickel-63 (TF); RADISO_ICPMS (TF); Selenium-79 (TF); Strontium-90; Conductivity - 9050_WE; Percent Solids (TF); Percent Water (TF);

Washington River Protection Solutions	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	V10-003-232	PAGE 1 OF 2

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 8P	DATA TURNAROUND
Campbell / Harris	TEMPLETON, AM	373-5589	BERLIN, PC	AIR QUALITY ☐	75 Days / 75 Days
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**		
C7676 I006	WMA C Sampling for CMS		V10-003		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**ACTUAL SAMPLE DEPTH**	**COA**	**METHOD OF SHIPMENT**	
TFVS-09-003	TFVZ-10-000004	38-40	n/A	Govt. Vehicle	
SHIPPED TO	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		
222-S Lab Operations	n/A		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	Cool~4C
		HOLDING TIME	14/40 Days
		TYPE OF CONTAINER	Gs jar/Liners
		NO. OF CONTAINER(S)	3
		VOLUME	160g
	SPECIAL HANDLING AND/OR STORAGE	SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B26CD0	SOIL	7-22-10	1035	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
Dan Harris Dan Harris	7-22-10 1130	RTSteele RTSteele	7-22-10 1130
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS

SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

ov
v RB

GRP# 20100556
SAM# S10V001761 A
1762 B
1763 C

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

Washington River Protection Solutions	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			V10-003-232	PAGE 2 OF 2
COLLECTOR Campbell / Harris	COMPANY CONTACT TEMPLETON, AM	TELEPHONE NO. 373-5589	PROJECT COORDINATOR BERLIN, PC	PRICE CODE 8P AIR QUALITY ☐	DATA TURNAROUND 75 Days / 75 Days
SAMPLING LOCATION C7676 I006	PROJECT DESIGNATION WMA C Sampling for CMS		SAF NO. V10-003		
ICE CHEST NO. TFVZ-09-003	FIELD LOGBOOK NO. TFVZ-10-00004	ACTUAL SAMPLE DEPTH 38-40	COA N/A	METHOD OF SHIPMENT Govt. Vehicle	
SHIPPED TO BC 7-22-10 222-S Lab Operations	OFFSITE PROPERTY NO. N/A		BILL OF LADING/AIR BILL NO. N/A		

SPECIAL INSTRUCTIONS

** After VOA bottles for the direct pushes are filled, the sampler will cap remaining liners for shipment to 222-S. Where capping is not possible, the sample shall be put into 500 mL or 250 mL glass bottles with Teflon-lined lids.
(1) Semi-VOA - 8270 Complete (TF); TPH-Gasoline Range - WTPH-G; TPH-Diesel Range - WTPH-D; PCBs - 8082; Pesticides - 8081 (TF); 1668 PCB CONGENER (TCL); ICP Metals - 6010 (SW-846) (TF); Mercury - 7471 - (CV) (TF); 300.7_AMMONIUM (TF); IC Anions - 9056; Sulfide - 9215; Total Cyanide - 9014 (TF); pH (Soil) - 9045; Americium-241 (TF); C-14; CURIUM; GAMMA ENERGY ANALYSIS (TF); H3 - TRITIUM; I129_SEP_GEA (TF); Isotopic Plutonium {Plutonium-238, Plutonium-239/240}; Nickel-63 (TF); RADISO_ICPMS (TF); Selenium-79 (TF); Strontium-90; Conductivity - 9050_WE; Percent Solids (TF); Percent Water (TF);

Appendix 5

Data Validation Supporting Documentation

Appendix B - Radiochemical Data Validation Checklist

RADIOCHEMICAL DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	(C)	D	E
PROJECT: WMA C			DATA PACKAGE: VSR11-048		
VALIDATOR: Carl Schloesslin		LAB: 222-S Lab		DATE: 6-23-2011	
			SDG: 20100556		
ANALYSES PERFORMED					
Gross Alpha/Beta	Strontium-90 X	Technetium-99	Alpha Spectroscopy X	Gamma Spectroscopy X	Se-79 X
Total Uranium	Radium-22	Tritium X	C-14 X	I-129 X	Ni-63 X
SAMPLES/MATRIX Soil samples B26JK6 and B26CD0					

1. Completeness ..... ☐ N/A

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

Comments:

None

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

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

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

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

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

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

Comments:

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

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

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

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

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

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

Comments:

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

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

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

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

Comments:

5. Blanks (Levels B, C, D, E) ☐ N/A

Method blank analyzed within required frequency? (Yes) No N/A

Method blank results acceptable? (Yes) No N/A

Analytes detected in method blank? (Yes) No N/A

Field blank(s) analyzed? Yes No (N/A)

Field blank results acceptable? Yes No (N/A)

Analytes detected in field blank(s)? Yes No (N/A)

Transcription/Calculation Errors? (Levels D, E) Yes No (N/A)

Comments:

MB Hits: H-3 Batch 21940 1.54E-06 uCi/g
Se-79 Batch 24408 3.93E-06 iCi/g

6. Laboratory Control Samples or Blank Spike Samples (Levels C, D, E) ☐ N/A

LCS /BSS analyzed within required frequency? Yes (No) N/A

LCS/BSS recoveries acceptable? (Yes) No N/A

LCS/BSS traceable? (Levels D,E) Yes No (N/A)

LCS/BSS expired? (Levels D,E) Yes No (N/A)

LCS/BSS levels correct? (Levels D,E) Yes No (N/A)

Transcription/Calculation Errors? (Levels D, E) Yes No (N/A)

Comments:

No LCSs performed for the Se-79 batches.

7. Chemical Carrier Recovery (Levels C, D, E) ..... ☐ N/A

Chemical carrier added? ..... (Yes) No N/A

Chemical recovery acceptable? ..... Yes (No) N/A

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

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

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

Comments:

Sample B26CD0 I-129 carrier recovery = 114%

8. Tracer Recovery (Levels C, D, E) ..... ☐ N/A

Tracer added? ..... (Yes) No N/A

Tracer recovery acceptable? ..... (Yes) No N/A

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

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

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

Comments: None

9. Matrix Spikes (Levels C, D, E)..... ☐ N/A

Matrix spike analyzed?..... (Yes) No N/A

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

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

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

Transcription/Calculation Errors? (Levels D, E)..... Yes No (N/A)

Comments:

None

10. Duplicates (Levels C, D, E) ..... ☐ N/A

Duplicates Analyzed at required frequency? ..... Yes (No) N/A

RPD Values Acceptable?..... (Yes) No N/A

Transcription/Calculation Errors? (Levels D, E)..... Yes No (N/A)

Comments:

Iso-Am/Cm Batch 23877 - no lab duplicate performed

11. Field QC Samples (Levels C, D E) ..... ☐ N/A

Field duplicate sample(s) analyzed? ..... Yes No (N/A)

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

Field split sample(s) analyzed? ..... Yes No (N/A)

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

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

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

Comments:

None

12. Holding Times (All levels)

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

Comments: None

13. Results and Detection Limits (All Levels) ..... ☐ N/A

Results reported for all required sample analyses? ..... (Yes) No N/A

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

Results Acceptable? (Levels D, E) ..... Yes No (N/A)

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

MDA's meet required detection limits? ..... (Yes) No N/A

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

Comments: None

Appendix 6

Additional Documentation Requested By Client

LABCORE Completed Batch Report for Batch# 00021330

Analyst: Lai, Sue **Book#:** 31B64

Instrument: GEA02 B-1A

Method: GEA, LA-548-121 Rev/Mod I-0

Specification: C Farm WMC 2010-2

Prep Batch:

Batch Comment:

GEA for C-Farm WMC 2010-2

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
Sample Sequence 1																	
1	STD	S1008160037		0 0			Cobalt-60	SOLID	.00444	4.3090E-03		5.11	2.01E-04	uCi/mL	97.05	% Recovery	
1	STD	S1008160037		0 0			Cesium-137	SOLID	.00483	5.0070E-03		5.92	1.68E-04	uCi/mL	103.66	% Recovery	
Sample Sequence 2																	
2	BLNK	S1008160038		0 0			Cobalt-60	SOLID		<2.7700E-07			2.77E-07	uCi/g			
2	BLNK	S1008160038		0 0			Antimony-125	SOLID		<8.1100E-07			8.11E-07	uCi/g			
2	BLNK	S1008160038		0 0			Cesium-137	SOLID		<4.0000E-07			4.00E-07	uCi/g			
2	BLNK	S1008160038		0 0			Europium-152	SOLID		<1.4800E-06			1.48E-06	uCi/g			
2	BLNK	S1008160038		0 0			Europium-154	SOLID		<8.7700E-07			8.77E-07	uCi/g			
2	BLNK	S1008160038		0 0			Europium-155	SOLID		<7.8100E-07			7.81E-07	uCi/g			
2	BLNK	S1008160038		0 0			Thorium-228	SOLID		<1.8500E-05			1.85E-05	uCi/g			
2	BLNK	S1008160038		0 0			Thorium-234	SOLID		<1.3100E-05			1.31E-05	uCi/g			
Sample Sequence 3																	
3	SAMPLE	S10V001608		0 0			Cobalt-60	SOLID	N/A	<3.3800E-07			3.38E-07	uCi/g			U
3	SAMPLE	S10V001608		0 0			Antimony-125	SOLID	N/A	<8.9200E-07			8.92E-07	uCi/g			U
3	SAMPLE	S10V001608		0 0			Cesium-137	SOLID	N/A	2.0590E-06		20.40	5.79E-07	uCi/g			
3	SAMPLE	S10V001608		0 0			Europium-152	SOLID	N/A	<1.6500E-06			1.65E-06	uCi/g			U
3	SAMPLE	S10V001608		0 0			Europium-154	SOLID	N/A	<1.0500E-06			1.05E-06	uCi/g			U
3	SAMPLE	S10V001608		0 0			Europium-155	SOLID	N/A	<9.2000E-07			9.20E-07	uCi/g			U
3	SAMPLE	S10V001608		0 0			Thorium-228	SOLID	N/A	<2.1500E-05			2.15E-05	uCi/g			U
3	SAMPLE	S10V001608		0 0			Thorium-234	SOLID	N/A	<1.7400E-05			1.74E-05	uCi/g			U
3	SAMPLE	S10V001608		0 0			Potassium-40	SOLID	N/A	1.4840E-05		30.68	6.68E-06	uCi/g			J
Sample Sequence 4																	
4	SAMPLE	S10V001625		0 0			Cobalt-60	SOLID	N/A	<3.4400E-07			3.44E-07	uCi/g			U
4	SAMPLE	S10V001625		0 0			Antimony-125	SOLID	N/A	<9.4200E-07			9.42E-07	uCi/g			U
4	SAMPLE	S10V001625		0 0			Cesium-137	SOLID	N/A	1.8000E-06		21.47	5.34E-07	uCi/g			
4	SAMPLE	S10V001625		0 0			Europium-152	SOLID	N/A	<1.6300E-06			1.63E-06	uCi/g			U
4	SAMPLE	S10V001625		0 0			Europium-154	SOLID	N/A	<1.0900E-06			1.09E-06	uCi/g			U
4	SAMPLE	S10V001625		0 0			Europium-155	SOLID	N/A	<9.1700E-07			9.17E-07	uCi/g			U
4	SAMPLE	S10V001625		0 0			Thorium-228	SOLID	N/A	<2.2500E-05			2.25E-05	uCi/g			U
4	SAMPLE	S10V001625		0 0			Thorium-234	SOLID	N/A	<1.7800E-05			1.78E-05	uCi/g			U
4	SAMPLE	S10V001625		0 0			Potassium-40	SOLID	N/A	8.8390E-06		49.15	6.76E-06	uCi/g			J
Sample Sequence 5																	

Units shown for QC (BLK/BKG) may not reflect the actual units.

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00021330

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
5	SAMPLE	S10V001656		0 0			Cobalt-60	SOLID	N/A	<4.2000E-07			4.20E-07	uCi/g			U
5	SAMPLE	S10V001656		0 0			Antimony-125	SOLID	N/A	<1.0200E-06			1.02E-06	uCi/g			U
5	SAMPLE	S10V001656		0 0			Cesium-137	SOLID	N/A	<5.5200E-07			5.52E-07	uCi/g			U
5	SAMPLE	S10V001656		0 0			Europium-152	SOLID	N/A	<1.8400E-06			1.84E-06	uCi/g			U
5	SAMPLE	S10V001656		0 0			Europium-154	SOLID	N/A	<1.1800E-06			1.18E-06	uCi/g			U
5	SAMPLE	S10V001656		0 0			Europium-155	SOLID	N/A	<1.0300E-06			1.03E-06	uCi/g			U
5	SAMPLE	S10V001656		0 0			Thorium-228	SOLID	N/A	<2.5100E-05			2.51E-05	uCi/g			U
5	SAMPLE	S10V001656		0 0			Thorium-234	SOLID	N/A	<1.9700E-05			1.97E-05	uCi/g			U
5	SAMPLE	S10V001656		0 0			Lead-214	SOLID	N/A	1.4480E-06		34.64	9.31E-07	uCi/g			J
Sample Sequence 6																	
6	SAMPLE	S10V001696		0 0			Cobalt-60	SOLID	N/A	<3.6500E-07			3.65E-07	uCi/g			U
6	SAMPLE	S10V001696		0 0			Antimony-125	SOLID	N/A	<1.1000E-06			1.10E-06	uCi/g			U
6	SAMPLE	S10V001696		0 0			Cesium-137	SOLID	N/A	<5.8500E-07			5.85E-07	uCi/g			U
6	SAMPLE	S10V001696		0 0			Europium-152	SOLID	N/A	<2.2300E-06			2.23E-06	uCi/g			U
6	SAMPLE	S10V001696		0 0			Europium-154	SOLID	N/A	<1.2000E-06			1.20E-06	uCi/g			U
6	SAMPLE	S10V001696		0 0			Europium-155	SOLID	N/A	<1.0700E-06			1.07E-06	uCi/g			U
6	SAMPLE	S10V001696		0 0			Thorium-228	SOLID	N/A	<2.5800E-05			2.58E-05	uCi/g			U
6	SAMPLE	S10V001696		0 0			Thorium-234	SOLID	N/A	<2.0700E-05			2.07E-05	uCi/g			U
6	SAMPLE	S10V001696		0 0			Lead-214	SOLID	N/A	1.2370E-06		39.12	8.66E-07	uCi/g			J
6	SAMPLE	S10V001696		0 0			Potassium-40	SOLID	N/A	1.2620E-05		41.96	8.09E-06	uCi/g			J
Sample Sequence 7																	
7	SAMPLE	S10V001716		0 0			Cobalt-60	SOLID	N/A	<3.6200E-07			3.62E-07	uCi/g			U
7	SAMPLE	S10V001716		0 0			Antimony-125	SOLID	N/A	<9.4400E-07			9.44E-07	uCi/g			U
7	SAMPLE	S10V001716		0 0			Cesium-137	SOLID	N/A	<5.2600E-07			5.26E-07	uCi/g			U
7	SAMPLE	S10V001716		0 0			Europium-152	SOLID	N/A	<1.6200E-06			1.62E-06	uCi/g			U
7	SAMPLE	S10V001716		0 0			Europium-154	SOLID	N/A	<1.0400E-06			1.04E-06	uCi/g			U
7	SAMPLE	S10V001716		0 0			Europium-155	SOLID	N/A	<9.4700E-07			9.47E-07	uCi/g			U
7	SAMPLE	S10V001716		0 0			Thorium-228	SOLID	N/A	<2.3800E-05			2.38E-05	uCi/g			U
7	SAMPLE	S10V001716		0 0			Thorium-234	SOLID	N/A	<1.8300E-05			1.83E-05	uCi/g			U
Sample Sequence 8																	
8	SAMPLE	S10V001766		0 0			Cobalt-60	SOLID	N/A	<3.7100E-07			3.71E-07	uCi/g			U
8	SAMPLE	S10V001766		0 0			Antimony-125	SOLID	N/A	<9.5300E-07			9.53E-07	uCi/g			U
8	SAMPLE	S10V001766		0 0			Cesium-137	SOLID	N/A	<4.9500E-07			4.95E-07	uCi/g			U
8	SAMPLE	S10V001766		0 0			Europium-152	SOLID	N/A	<1.5600E-06			1.56E-06	uCi/g			U
8	SAMPLE	S10V001766		0 0			Europium-154	SOLID	N/A	<1.1500E-06			1.15E-06	uCi/g			U
8	SAMPLE	S10V001766		0 0			Europium-155	SOLID	N/A	<9.7600E-07			9.76E-07	uCi/g			U
8	SAMPLE	S10V001766		0 0			Thorium-228	SOLID	N/A	<2.2400E-05			2.24E-05	uCi/g			U
8	SAMPLE	S10V001766		0 0			Thorium-234	SOLID	N/A	<1.8300E-05			1.83E-05	uCi/g			U
8	SAMPLE	S10V001766		0 0			Potassium-40	SOLID	N/A	1.2530E-05		39.06	7.46E-06	uCi/g			J
Sample Sequence 9																	
9	SAMPLE	S10V001786		0 0			Cobalt-60	SOLID	N/A	<4.6300E-07			4.63E-07	uCi/g			U
9	SAMPLE	S10V001786		0 0			Antimony-125	SOLID	N/A	<1.1400E-06			1.14E-06	uCi/g			U
9	SAMPLE	S10V001786		0 0			Cesium-137	SOLID	N/A	<6.3300E-07			6.33E-07	uCi/g			U

Units shown for QC (BLK/BKG) may not reflect the actual units.

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00021330

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
9	SAMPLE	S10V001786		0 0			Europium-152	SOLID	N/A	<2.2800E-06			2.28E-06	uCi/g			U
9	SAMPLE	S10V001786		0 0			Europium-154	SOLID	N/A	<1.4900E-06			1.49E-06	uCi/g			U
9	SAMPLE	S10V001786		0 0			Europium-155	SOLID	N/A	<1.1900E-06			1.19E-06	uCi/g			U
9	SAMPLE	S10V001786		0 0			Thorium-228	SOLID	N/A	<2.7500E-05			2.75E-05	uCi/g			U
9	SAMPLE	S10V001786		0 0			Thorium-234	SOLID	N/A	<2.1900E-05			2.19E-05	uCi/g			U
9	SAMPLE	S10V001786		0 0			Potassium-40	SOLID	N/A	1.4610E-05		40.05	8.90E-06	uCi/g			J
Sample Sequence 10																	
10	SAMPLE	S10V001806		0 0			Cobalt-60	SOLID	N/A	<3.4600E-07			3.46E-07	uCi/g			U
10	SAMPLE	S10V001806		0 0			Antimony-125	SOLID	N/A	<9.4000E-07			9.40E-07	uCi/g			U
10	SAMPLE	S10V001806		0 0			Cesium-137	SOLID	N/A	<4.8600E-07			4.86E-07	uCi/g			U
10	SAMPLE	S10V001806		0 0			Europium-152	SOLID	N/A	<1.9300E-06			1.93E-06	uCi/g			U
10	SAMPLE	S10V001806		0 0			Europium-154	SOLID	N/A	<1.1700E-06			1.17E-06	uCi/g			U
10	SAMPLE	S10V001806		0 0			Europium-155	SOLID	N/A	<8.9800E-07			8.98E-07	uCi/g			U
10	SAMPLE	S10V001806		0 0			Thorium-228	SOLID	N/A	<2.2800E-05			2.28E-05	uCi/g			U
10	SAMPLE	S10V001806		0 0			Thorium-234	SOLID	N/A	<1.8300E-05			1.83E-05	uCi/g			U
10	SAMPLE	S10V001806		0 0			Lead-214	SOLID	N/A	1.0880E-06		38.38	8.08E-07	uCi/g			J
10	SAMPLE	S10V001806		0 0			Potassium-40	SOLID	N/A	2.1670E-05		23.36	7.05E-06	uCi/g			
Sample Sequence 11																	
11	DUP	S1008160039	S10V001806	0 0			Cobalt-60	SOLID	<3.4600E-07	<3.5400E-07			3.54E-07	uCi/g			
11	DUP	S1008160039	S10V001806	0 0			Antimony-125	SOLID	<9.4000E-07	<9.1300E-07			9.13E-07	uCi/g			
11	DUP	S1008160039	S10V001806	0 0			Cesium-137	SOLID	<4.8600E-07	<4.7700E-07			4.77E-07	uCi/g			
11	DUP	S1008160039	S10V001806	0 0			Europium-152	SOLID	<1.9300E-06	<1.7300E-06			1.73E-06	uCi/g			
11	DUP	S1008160039	S10V001806	0 0			Europium-154	SOLID	<1.1700E-06	<1.1100E-06			1.11E-06	uCi/g			
11	DUP	S1008160039	S10V001806	0 0			Europium-155	SOLID	<8.9800E-07	<9.3800E-07			9.38E-07	uCi/g			
11	DUP	S1008160039	S10V001806	0 0			Thorium-228	SOLID	<2.2800E-05	<2.2700E-05			2.27E-05	uCi/g			
11	DUP	S1008160039	S10V001806	0 0			Thorium-234	SOLID	<1.8300E-05	<1.8800E-05			1.88E-05	uCi/g			
11	DUP	S1008160039	S10V001806	0 0			Potassium-40	SOLID	2.1670E-05	1.5670E-05		31.56	7.32E-06	uCi/g	32.137	% RPD	J

Comments Section:

Data Flagger Status:
Flagging Completed

Final Page for Batch# 00021330

Reviewer Signature **Date**

Units shown for QC (BLK/BKG) may not reflect the actual units.

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00021330

Seq	Sample#	QC Type	Assoc. Sample	Sample Group	Customer Id	Specification
1	S1008160037	STD				
2	S1008160038	BLNK				
3	S10V001608	SAMPLE		20100556	B26JK6	C Farm WMC 2010-2
4	S10V001625	SAMPLE		20100556	B26JK7	C Farm WMC 2010-2
5	S10V001656	SAMPLE		20100556	B29612	C Farm WMC 2010-2
6	S10V001696	SAMPLE		20100556	B26CC4	C Farm WMC 2010-2
7	S10V001716	SAMPLE		20100556	B29613	C Farm WMC 2010-2
8	S10V001766	SAMPLE		20100556	B26CD0	C Farm WMC 2010-2
9	S10V001786	SAMPLE		20100556	B26CD2	C Farm WMC 2010-2
10	S10V001806	SAMPLE		20100556	B26CD4	C Farm WMC 2010-2
11	S1008160039	DUP	S10V001806			

Units shown for QC (BLK/BKG) may not reflect the actual units.

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00023556

Analyst: Fabre, Martha **Book#:** 120B64

Instrument: A/B Detector 18 B-1A

Method: STRONTIUM-90, LA-220-101 Rev/Mod I-0

Specification: C Farm WMC 2010-2

Prep Batch: 00023482

Batch Comment:

C Farm WMC 2010-2 group 20100556. ACC

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
Sample Sequence 1																	
1	STD	S1010260148		0 0			Strontium-89/90	LIQUID	.00069255898 8090804	7.0501E-04		2.635	1.97E-06	uCi/mL	101.8	% Recovery	
1	STD	S1010260148		0 0			Strontium-C	LIQUID		81.419				% Recovery	N/A		
Sample Sequence 2																	
2	BLNK-PREP	S1010250015		0 0	E		Strontium-89/90	SOLID		<2.2692E-07			2.27E-07	uCi/g			
2	BLNK-PREP	S1010250015		0 0	E		Strontium-C	SOLID		70.43				% Recovery			
Sample Sequence 3																	
3	SAMPLE	S10V001618		0 0	E		Strontium-89/90	SOLID	N/A	3.3839E-06		15.426	2.14E-07	uCi/g			
3	SAMPLE	S10V001618		0 0	E		Strontium-C	SOLID		74.525				% Recovery			
Sample Sequence 4																	
4	SAMPLE	S10V001646		0 0	E		Strontium-89/90	SOLID	N/A	4.2032E-06		13.4	2.15E-07	uCi/g			
4	SAMPLE	S10V001646		0 0	E		Strontium-C	SOLID		73.626				% Recovery			
Sample Sequence 5																	
5	SAMPLE	S10V001666		0 0	E		Strontium-89/90	SOLID	N/A	<2.1127E-07			2.11E-07	uCi/g			U
5	SAMPLE	S10V001666		0 0	E		Strontium-C	SOLID		75.325				% Recovery			
Sample Sequence 6																	
6	SAMPLE	S10V001706		0 0	E		Strontium-89/90	SOLID	N/A	<2.1129E-07			2.11E-07	uCi/g			U
6	SAMPLE	S10V001706		0 0	E		Strontium-C	SOLID		74.226				% Recovery			
Sample Sequence 7																	
7	SAMPLE	S10V001726		0 0	E		Strontium-89/90	SOLID	N/A	<2.0773E-07			2.08E-07	uCi/g			U
7	SAMPLE	S10V001726		0 0	E		Strontium-C	SOLID		75.125				% Recovery			
Sample Sequence 8																	
8	SAMPLE	S10V001776		0 0	E		Strontium-89/90	SOLID	N/A	<2.0125E-07			2.01E-07	uCi/g			U
8	SAMPLE	S10V001776		0 0	E		Strontium-C	SOLID		79.52				% Recovery			
Sample Sequence 9																	
9	SAMPLE	S10V001796		0 0	E		Strontium-89/90	SOLID	N/A	<2.4795E-07			2.48E-07	uCi/g			U
9	SAMPLE	S10V001796		0 0	E		Strontium-C	SOLID		63.037				% Recovery			
Sample Sequence 10																	
10	SAMPLE	S10V001816		0 0	E		Strontium-89/90	SOLID	N/A	<2.7113E-07			2.71E-07	uCi/g			U
10	SAMPLE	S10V001816		0 0	E		Strontium-C	SOLID		57.942				% Recovery			
Sample Sequence 11																	
11	DUP	S1010250016	S10V001816	0 0	E		Strontium-89/90	SOLID	<2.7113E-07	<3.0246E-07			3.02E-07	uCi/g			
11	DUP	S1010250016	S10V001816	0 0	E		Strontium-C	SOLID	57.942	51.648				% Recovery			

Units shown for QC (BLK/BKG) may not reflect the actual units.

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00023556

Comments Section:

Data Flagger Status:
Flagging Completed

Final Page for Batch# 00023556

Reviewer Signature **Date**

Units shown for QC (BLK/BKG) may not reflect the actual units.

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00023556

Seq	Sample#	QC Type	Assoc. Sample	Sample Group	Customer Id	Specification
1	S1010260148	STD				
2	S1010250015	BLNK-PREP				
3	S10V001618	SAMPLE		20100556	B26JK6	C Farm WMC 2010-2
4	S10V001646	SAMPLE		20100556	B26JK7	C Farm WMC 2010-2
5	S10V001666	SAMPLE		20100556	B29612	C Farm WMC 2010-2
6	S10V001706	SAMPLE		20100556	B26CC4	C Farm WMC 2010-2
7	S10V001726	SAMPLE		20100556	B29613	C Farm WMC 2010-2
8	S10V001776	SAMPLE		20100556	B26CD0	C Farm WMC 2010-2
9	S10V001796	SAMPLE		20100556	B26CD2	C Farm WMC 2010-2
10	S10V001816	SAMPLE		20100556	B26CD4	C Farm WMC 2010-2
11	S1010250016	DUP	S10V001816			

Units shown for QC (BLK/BKG) may not reflect the actual units.

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00021940

Analyst: Casey, Adam **Book#:** 111B64

Instrument: LSC2 LS6000 B-1A

Method: TRITIUM-LARGE VOLUME, LA-218-111 Rev/Mod G-0

Specification: C Farm WMC 2010-2

Prep Batch: 00021497

Batch Comment:

C Farm WMC 2010-2 Gp 20100556. ACC

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
Sample Sequence 1																	
1	STD	S1009070011		0 0			Tritium	LIQUID	.0000260610255305548	2.3802E-05		2.849	3.00E-07	uCi/mL	91.33	% Recovery	
Sample Sequence 2																	
2	BLNK-PREP	S1008230037		0 0	W		Tritium	LIQUID		1.5400E-06		123.265	1.51E-06	uCi/g			
Sample Sequence 3																	
3	SAMPLE	S10V001610		0 0	W		Tritium	SOLID	N/A	<1.9600E-06			1.96E-06	uCi/g			U
Sample Sequence 4																	
4	SAMPLE	S10V001638		0 0	W		Tritium	SOLID	N/A	<2.4600E-06			2.46E-06	uCi/g			U
Sample Sequence 5																	
5	SAMPLE	S10V001658		0 0	W		Tritium	SOLID	N/A	<1.8900E-06			1.89E-06	uCi/g			U
Sample Sequence 6																	
6	SAMPLE	S10V001698		0 0	W		Tritium	SOLID	N/A	<2.3700E-06			2.37E-06	uCi/g			U
Sample Sequence 7																	
7	DUP	S1008230038	S10V001698	0 0	W		Tritium	SOLID	<2.3700E-06	<2.2800E-06			2.28E-06	uCi/g			
Sample Sequence 8																	
8	SPK	S1009070012	S10V001698	0 0			Tritium	LIQUID	.0000260610255305548	2.3062E-05		4.270530032	2.99E-07	uCi/mL	88.493	% Recovery	
Sample Sequence 9																	
9	SAMPLE	S10V001718		0 0	W		Tritium	SOLID	N/A	<1.5000E-06			1.50E-06	uCi/g			U

Comments Section:

Data Flagger Status:
Flagging Completed

Units shown for QC (BLK/BKG) may not reflect the actual units.

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00021940

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Reviewer Signature **Date**

Units shown for QC (BLK/BKG) may not reflect the actual units.

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N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00021940

Seq	Sample#	QC Type	Assoc. Sample	Sample Group	Customer Id	Specification
1	S1009070011	STD				
2	S1008230037	BLNK-PREP				
3	S10V001610	SAMPLE		20100556	B26JK6	C Farm WMC 2010-2
4	S10V001638	SAMPLE		20100556	B26JK7	C Farm WMC 2010-2
5	S10V001658	SAMPLE		20100556	B29612	C Farm WMC 2010-2
6	S10V001698	SAMPLE		20100556	B26CC4	C Farm WMC 2010-2
7	S1008230038	DUP	S10V001698			
8	S1009070012	SPK	S10V001698			
9	S10V001718	SAMPLE		20100556	B29613	C Farm WMC 2010-2

Units shown for QC (BLK/BKG) may not reflect the actual units.

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N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00023378

Analyst: Casey, Adam **Book#:** 135B64

Instrument: LSC2 LS6000 B-1A

Method: TRITIUM-LARGE VOLUME, LA-218-111 Rev/Mod G-0

Specification: C Farm WMC 2010-2

Prep Batch: 00021906

Batch Comment:

C-Farm Grp 660 for Large Volume H3. ACC

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
Sample Sequence 1																	
1	STD	S1010200106		0 0			Tritium	LIQUID	.0000214014822387116	2.0257E-05		2.887	2.50E-07	uCi/mL	94.653	% Recovery	
Sample Sequence 2																	
2	BLNK-PREP	S1009020043		0 0	W		Tritium	LIQUID		<4.9500E-06			4.95E-06	uCi/g			
Sample Sequence 3																	
3	SAMPLE	S10V001768		0 0	W		Tritium	SOLID	N/A	<4.5900E-06			4.59E-06	uCi/g			U
Sample Sequence 4																	
4	DUP	S1009020044	S10V001768	0 0	W		Tritium	SOLID	<4.5900E-06	<4.4300E-06			4.43E-06	uCi/g			
Sample Sequence 5																	
5	SPK	S1010200107	S10V001768	0 0			Tritium	SOLID	.0000214014822387116	2.0767E-05		4.586352999	2.52E-07	uCi/g	97.034	% Recovery	
Sample Sequence 6																	
6	SAMPLE	S10V001788		0 0	W		Tritium	SOLID	N/A	3.7700E-06		98.763	2.50E-06	uCi/g			J
Sample Sequence 7																	
7	SAMPLE	S10V001808		0 0	W		Tritium	SOLID	N/A	<4.9200E-06			4.92E-06	uCi/g			U
Sample Sequence 8																	
8	SAMPLE	S10V002283		0 0	W		Tritium	SOLID	N/A	<4.6200E-06			4.62E-06	uCi/g			U
Sample Sequence 9																	
9	SAMPLE	S10V002312		0 0	W		Tritium	SOLID	N/A	2.9100E-06		167.854	2.51E-06	uCi/g			J
Sample Sequence 10																	
10	SAMPLE	S10V002345		0 0	W		Tritium	SOLID	N/A	<4.0300E-06			4.03E-06	uCi/g			U
Sample Sequence 11																	
11	SAMPLE	S10V002394		0 0	W		Tritium	SOLID	N/A	2.9300E-06		151.808	2.50E-06	uCi/g			J
Sample Sequence 12																	
12	SAMPLE	S10V002413		0 0	W		Tritium	SOLID	N/A	5.0600E-06		74.014	2.49E-06	uCi/g			J
Sample Sequence 13																	
13	SAMPLE	S10V002432		0 0	W		Tritium	SOLID	N/A	<3.8400E-06			3.84E-06	uCi/g			U
Sample Sequence 14																	
14	SAMPLE	S10V002451		0 0	W		Tritium	SOLID	N/A	<4.2800E-06			4.28E-06	uCi/g			U
Sample Sequence 15																	
15	SAMPLE	S10V002470		0 0	W		Tritium	SOLID	N/A	2.6800E-06		164.945	2.50E-06	uCi/g			J
Sample Sequence 16																	
16	SAMPLE	S10V002489		0 0	W		Tritium	SOLID	N/A	<4.4300E-06			4.43E-06	uCi/g			U

Units shown for QC (BLK/BKG) may not reflect the actual units.

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00023378

Comments Section:

Data Flagger Status:
Flagging Completed

Final Page for Batch# 00023378

Reviewer Signature **Date**

Units shown for QC (BLK/BKG) may not reflect the actual units.

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LABCORE Completed Batch Report for Batch# 00023378

Seq	Sample#	QC Type	Assoc. Sample	Sample Group	Customer Id	Specification
1	S1010200106	STD				
2	S1009020043	BLNK-PREP				
3	S10V001768	SAMPLE		20100556	B26CD0	C Farm WMC 2010-2
4	S1009020044	DUP	S10V001768			
5	S1010200107	SPK	S10V001768			
6	S10V001788	SAMPLE		20100556	B26CD2	C Farm WMC 2010-2
7	S10V001808	SAMPLE		20100556	B26CD4	C Farm WMC 2010-2
8	S10V002283	SAMPLE		20100660	B26JL0	C Farm WMC 2010-2
9	S10V002312	SAMPLE		20100660	B26JL1	C Farm WMC 2010-2
10	S10V002345	SAMPLE		20100660	B26C47	C Farm WMC 2010-2
11	S10V002394	SAMPLE		20100660	B26C51	C Farm WMC 2010-2
12	S10V002413	SAMPLE		20100660	B26C53	C Farm WMC 2010-2
13	S10V002432	SAMPLE		20100660	B26C55	C Farm WMC 2010-2
14	S10V002451	SAMPLE		20100660	B26C57	C Farm WMC 2010-2
15	S10V002470	SAMPLE		20100660	B26C59	C Farm WMC 2010-2
16	S10V002489	SAMPLE		20100660	B26C61	C Farm WMC 2010-2

Units shown for QC (BLK/BKG) may not reflect the actual units.

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N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00024408

Analyst: LaPlant, Gary

Book#:

Instrument: LSC3 LS6500 B-1A

Method: SELENIUM-79, LA-365-132 Rev/Mod J-0

Specification: C Farm WMC 2010-2

Prep Batch: 00024395

Batch Comment:

C-Farm WMC 2010-2 gp556 for Se79. gll

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
Sample Sequence 1																	
1	BLNK-PREP	S1012020015		0 0	E		Selenium-79	SOLID		3.9300E-06		78.237	1.28E-06	uCi/g			
1	BLNK-PREP	S1012020015		0 0	E		Selenium-C	SOLID		82.356				% Recovery			
Sample Sequence 2																	
2	SAMPLE	S10V001619		0 1	E		Selenium-79	SOLID	N/A	<2.6300E-06			2.63E-06	uCi/g			U
2	SAMPLE	S10V001619		0 1	E		Selenium-C	SOLID		65.885				% Recovery			
Sample Sequence 3																	
3	SAMPLE	S10V001797		0 1	E		Selenium-79	SOLID	N/A	<1.6200E-06			1.62E-06	uCi/g			U
3	SAMPLE	S10V001797		0 1	E		Selenium-C	SOLID		69.878				% Recovery			
Sample Sequence 4																	
4	SAMPLE	S10V001817		0 1	E		Selenium-79	SOLID	N/A	<1.4400E-06			1.44E-06	uCi/g			U
4	SAMPLE	S10V001817		0 1	E		Selenium-C	SOLID		74.37				% Recovery			
Sample Sequence 5																	
5	DUP	S1012020016	S10V001817	0 0	E		Selenium-79	SOLID	<1.4400E-06	<1.3400E-06			1.34E-06	uCi/g			
5	DUP	S1012020016	S10V001817	0 0	E		Selenium-C	SOLID	74.37	70.876				% Recovery			

Comments Section:

Data Flagger Status:
Flagging Completed

Final Page for Batch# 00024408

Reviewer Signature **Date**

Units shown for QC (BLK/BKG) may not reflect the actual units.

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00024408

Seq	Sample#	QC Type	Assoc. Sample	Sample Group	Customer Id	Specification
1	S1012020015	BLNK-PREP				
2	S10V001619	SAMPLE		20100556	B26JK6	C Farm WMC 2010-2
3	S10V001797	SAMPLE		20100556	B26CD2	C Farm WMC 2010-2
4	S10V001817	SAMPLE		20100556	B26CD4	C Farm WMC 2010-2
5	S1012020016	DUP	S10V001817			

Units shown for QC (BLK/BKG) may not reflect the actual units.

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00023725

Analyst: LaPlant, Gary **Book#:**

Instrument: LSC2 LS6000 B-1A

Method: SELENIUM-79, LA-365-132 Rev/Mod I-0

Specification: C Farm WMC 2010-2

Prep Batch: 00023486

Batch Comment:

C Farm WMC 2010-2 Grp 566 for Se-79. ACC Removed S10V001619 from original Batch because of "Lost Sample". mcb

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
Sample Sequence 1																	
1	BLNK-PREP	S1010250024		0 0	E		Selenium-79	SOLID		<2.6800E-06			2.68E-06	uCi/g			
1	BLNK-PREP	S1010250024		0 0	E		Selenium-C	SOLID		31.36				% Recovery			
Sample Sequence 2																	
2	SAMPLE	S10V001619		0 0	E	*	Selenium-79	SOLID	N/A	<2.0200E-09			2.02E-09	uCi/g			U
2	SAMPLE	S10V001619		0 0	E	*	Selenium-C	SOLID		49778				% Recovery			
Sample Sequence 3																	
3	SAMPLE	S10V001647		0 0	E		Selenium-79	SOLID	N/A	<2.2500E-06			2.25E-06	uCi/g			U
3	SAMPLE	S10V001647		0 0	E		Selenium-C	SOLID		21.654				% Recovery			
Sample Sequence 4																	
4	SAMPLE	S10V001667		0 0	E		Selenium-79	SOLID	N/A	2.8000E-06		146.332	1.74E-06	uCi/g			J
4	SAMPLE	S10V001667		0 0	E		Selenium-C	SOLID		29.369				% Recovery			
Sample Sequence 5																	
5	SAMPLE	S10V001707		0 0	E		Selenium-79	SOLID	N/A	<2.9400E-06			2.94E-06	uCi/g			U
5	SAMPLE	S10V001707		0 0	E		Selenium-C	SOLID		25.885				% Recovery			
Sample Sequence 6																	
6	SAMPLE	S10V001727		0 0	E		Selenium-79	SOLID	N/A	<2.6300E-06			2.63E-06	uCi/g			U
6	SAMPLE	S10V001727		0 0	E		Selenium-C	SOLID		29.867				% Recovery			
Sample Sequence 7																	
7	SAMPLE	S10V001777		0 0	E		Selenium-79	SOLID	N/A	<4.8600E-06			4.86E-06	uCi/g			U
7	SAMPLE	S10V001777		0 0	E		Selenium-C	SOLID		16.925				% Recovery			
Sample Sequence 8																	
8	SAMPLE	S10V001797		0 0	E	*	Selenium-79	SOLID	N/A	6.9200E-06		87.946	4.44E-06	uCi/g			J
8	SAMPLE	S10V001797		0 0	E	*	Selenium-C	SOLID		11.2				% Recovery			
Sample Sequence 9																	
9	SAMPLE	S10V001817		0 0	E	*	Selenium-79	SOLID	N/A	3.3900E-06		139.885	2.49E-06	uCi/g			J
9	SAMPLE	S10V001817		0 0	E	*	Selenium-C	SOLID		19.911				% Recovery			
Sample Sequence 10																	
10	DUP	S1010250025	S10V001817	0 0	E	*	Selenium-79	SOLID		4.1100E-06		120.092	3.51E-06	uCi/g	19.200	% RPD	
10	DUP	S1010250025	S10V001817	0 0	E	*	Selenium-C	SOLID		13.938				% Recovery			

Units shown for QC (BLK/BKG) may not reflect the actual units.

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00023725

Comments Section:

Data Flagger Status:
Flagging Completed

Final Page for Batch# 00023725

Reviewer Signature **Date**

Units shown for QC (BLK/BKG) may not reflect the actual units.

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00023725

Seq	Sample#	QC Type	Assoc. Sample	Sample Group	Customer Id	Specification
1	S1010250024	BLNK-PREP				
2	S10V001619	SAMPLE		20100556	B26JK6	C Farm WMC 2010-2
3	S10V001647	SAMPLE		20100556	B26JK7	C Farm WMC 2010-2
4	S10V001667	SAMPLE		20100556	B29612	C Farm WMC 2010-2
5	S10V001707	SAMPLE		20100556	B26CC4	C Farm WMC 2010-2
6	S10V001727	SAMPLE		20100556	B29613	C Farm WMC 2010-2
7	S10V001777	SAMPLE		20100556	B26CD0	C Farm WMC 2010-2
8	S10V001797	SAMPLE		20100556	B26CD2	C Farm WMC 2010-2
9	S10V001817	SAMPLE		20100556	B26CD4	C Farm WMC 2010-2
10	S1010250025	DUP	S10V001817			

Units shown for QC (BLK/BKG) may not reflect the actual units.

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N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00021907

Analyst: Lai, Sue **Book#:** 40B64B

Instrument: LSC2 LS6000 B-1A

Method: CARBON-14, LA-348-104 Rev/Mod H-0

Specification: C Farm WMC 2010-2

Prep Batch: 00021497

Batch Comment:

C Farm WMC 2010-1 Gp 20100556 for C-14 scl

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
Sample Sequence 1																	
1	STD	S1009070051		0 0			Carbon-14	SOLID	.00120819526 736584	1.1635E-03		0.627	1.29E-06	uCi/g	96.304	% Recovery	
Sample Sequence 2																	
2	BLNK-PREP	S1008230037		0 0	W		Carbon-14	LIQUID		<3.4600E-07			3.46E-07	uCi/mL			
Sample Sequence 3																	
3	SAMPLE	S10V001610		0 0	W		Carbon-14	SOLID	N/A	<1.2500E-06			1.25E-06	uCi/g			U
Sample Sequence 4																	
4	SAMPLE	S10V001638		0 0	W		Carbon-14	SOLID	N/A	<1.2700E-06			1.27E-06	uCi/g			U
Sample Sequence 5																	
5	SAMPLE	S10V001658		0 0	W		Carbon-14	SOLID	N/A	<2.2200E-06			2.22E-06	uCi/g			U
Sample Sequence 6																	
6	SAMPLE	S10V001698		0 0	W		Carbon-14	SOLID	N/A	1.6600E-06		213.981	1.32E-06	uCi/g			J
Sample Sequence 7																	
7	DUP	S1008230038	S10V001698	0 0	W		Carbon-14	SOLID	1.6600E-06	2.5300E-06		135.214	1.30E-06	uCi/g	41.527	% RPD	
Sample Sequence 8																	
8	SPK	S1009070050	S10V001698	0 0			Carbon-14	SOLID	.00120819526 736584	1.1399E-03		0.623	1.88E-07	uCi/g	94.35	% Recovery	
Sample Sequence 9																	
9	SAMPLE	S10V001718		0 0	W		Carbon-14	SOLID	N/A	4.8800E-06		95.154	1.34E-06	uCi/g			J

Comments Section:

Data Flagger Status:
Flagging Completed

Units shown for QC (BLK/BKG) may not reflect the actual units.

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N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00021907

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Reviewer Signature **Date**

Units shown for QC (BLK/BKG) may not reflect the actual units.

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LABCORE Completed Batch Report for Batch# 00021907

Seq	Sample#	QC Type	Assoc. Sample	Sample Group	Customer Id	Specification
1	S1009070051	STD				
2	S1008230037	BLNK-PREP				
3	S10V001610	SAMPLE		20100556	B26JK6	C Farm WMC 2010-2
4	S10V001638	SAMPLE		20100556	B26JK7	C Farm WMC 2010-2
5	S10V001658	SAMPLE		20100556	B29612	C Farm WMC 2010-2
6	S10V001698	SAMPLE		20100556	B26CC4	C Farm WMC 2010-2
7	S1008230038	DUP	S10V001698			
8	S1009070050	SPK	S10V001698			
9	S10V001718	SAMPLE		20100556	B29613	C Farm WMC 2010-2

Units shown for QC (BLK/BKG) may not reflect the actual units.

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N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00022686

Analyst: Lai, Sue **Book#:** 40B64B

Instrument: LSC2 LS6000 B-1A

Method: CARBON-14, LA-348-104 Rev/Mod I-0

Specification: C Farm WMC 2010-2

Prep Batch: 00021906

Batch Comment:

C Farm 2010-2 Gps 20100556, 660 for C-14 scl

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
Sample Sequence 1																	
1	STD	S1009290098		0 0			Carbon-14	LIQUID	.00120818440 662818	1.1160E-03		0.627	1.31E-06	uCi/mL	92.373	% Recovery	
Sample Sequence 2																	
2	BLNK-PREP	S1009020043		0 0	W		Carbon-14	LIQUID		<1.3300E-07			1.33E-07	uCi/g			
Sample Sequence 3																	
3	SAMPLE	S10V001768		0 0	W		Carbon-14	SOLID	N/A	<1.3500E-06			1.35E-06	uCi/g			U
Sample Sequence 4																	
4	DUP	S1009020044	S10V001768	0 0	W		Carbon-14	SOLID	<1.3500E-06	<1.3400E-06			1.34E-06	uCi/g			
Sample Sequence 5																	
5	SPK	S1009290099	S10V001768	0 0			Carbon-14	SOLID	.00120818440 662818	1.1441E-03		0.606	1.28E-06	uCi/g	94.699	% Recovery	
Sample Sequence 6																	
6	SAMPLE	S10V001788		0 0	W		Carbon-14	SOLID	N/A	<1.3300E-06			1.33E-06	uCi/g			U
Sample Sequence 7																	
7	SAMPLE	S10V001808		0 0	W		Carbon-14	SOLID	N/A	<1.9300E-06			1.93E-06	uCi/g			U
Sample Sequence 8																	
8	SAMPLE	S10V002283		0 0	W		Carbon-14	SOLID	N/A	<1.3900E-06			1.39E-06	uCi/g			U
Sample Sequence 9																	
9	SAMPLE	S10V002312		0 0	W		Carbon-14	SOLID	N/A	<1.3200E-06			1.32E-06	uCi/g			U
Sample Sequence 10																	
10	SAMPLE	S10V002345		0 0	W		Carbon-14	SOLID	N/A	3.4900E-06		27.16	1.30E-06	uCi/g			
Sample Sequence 11																	
11	SAMPLE	S10V002394		0 0	W		Carbon-14	SOLID	N/A	<1.3100E-06			1.31E-06	uCi/g			U
Sample Sequence 12																	
12	SAMPLE	S10V002413		0 0	W		Carbon-14	SOLID	N/A	<2.5400E-06			2.54E-06	uCi/g			U
Sample Sequence 13																	
13	SAMPLE	S10V002432		0 0	W		Carbon-14	SOLID	N/A	<1.3600E-06			1.36E-06	uCi/g			U
Sample Sequence 14																	
14	SAMPLE	S10V002451		0 0	W		Carbon-14	SOLID	N/A	<1.3200E-06			1.32E-06	uCi/g			U
Sample Sequence 15																	
15	SAMPLE	S10V002470		0 0	W		Carbon-14	SOLID	N/A	<1.3100E-06			1.31E-06	uCi/g			U
Sample Sequence 16																	
16	SAMPLE	S10V002489		0 0	W		Carbon-14	SOLID	N/A	<1.3400E-06			1.35E-06	uCi/g			U

Units shown for QC (BLK/BKG) may not reflect the actual units.

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00022686

Comments Section:

Data Flagger Status:
Flagging Completed

Final Page for Batch# 00022686

Reviewer Signature **Date**

Units shown for QC (BLK/BKG) may not reflect the actual units.

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LABCORE Completed Batch Report for Batch# 00022686

Seq	Sample#	QC Type	Assoc. Sample	Sample Group	Customer Id	Specification
1	S1009290098	STD				
2	S1009020043	BLNK-PREP				
3	S10V001768	SAMPLE		20100556	B26CD0	C Farm WMC 2010-2
4	S1009020044	DUP	S10V001768			
5	S1009290099	SPK	S10V001768			
6	S10V001788	SAMPLE		20100556	B26CD2	C Farm WMC 2010-2
7	S10V001808	SAMPLE		20100556	B26CD4	C Farm WMC 2010-2
8	S10V002283	SAMPLE		20100660	B26JL0	C Farm WMC 2010-2
9	S10V002312	SAMPLE		20100660	B26JL1	C Farm WMC 2010-2
10	S10V002345	SAMPLE		20100660	B26C47	C Farm WMC 2010-2
11	S10V002394	SAMPLE		20100660	B26C51	C Farm WMC 2010-2
12	S10V002413	SAMPLE		20100660	B26C53	C Farm WMC 2010-2
13	S10V002432	SAMPLE		20100660	B26C55	C Farm WMC 2010-2
14	S10V002451	SAMPLE		20100660	B26C57	C Farm WMC 2010-2
15	S10V002470	SAMPLE		20100660	B26C59	C Farm WMC 2010-2
16	S10V002489	SAMPLE		20100660	B26C61	C Farm WMC 2010-2

Units shown for QC (BLK/BKG) may not reflect the actual units.

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N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00023724

Analyst: Fabre, Martha **Book#:** 51B64

Instrument: LSC3 LS6500 B-1A

Method: NICKEL-63, LA-285-102 Rev/Mod E-0

Specification: C Farm WMC 2010-2

Prep Batch: 00023486

Batch Comment:

C Farm WMC 2010-2 Grp 566 for Ni-63. ACC

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
Sample Sequence 1																	
1	STD	S1011020033		0 0			Nickel-63	LIQUID	.00351383402 002227	3.1536E-03		1.036	5.67E-06	uCi/mL	89.747	% Recovery	
1	STD	S1011020033		0 0			Nickel-C	LIQUID		88.426				% Recovery	N/A		
Sample Sequence 2																	
2	BLNK-PREP	S1010250024		0 0	E		Nickel-63	SOLID		<7.6700E-06			7.67E-06	uCi/g			
2	BLNK-PREP	S1010250024		0 0	E		Nickel-C	SOLID		32.919				% Recovery			
Sample Sequence 3																	
3	SAMPLE	S10V001619		0 0	E		Nickel-63	SOLID	N/A	<9.7100E-06			9.71E-06	uCi/g			U
3	SAMPLE	S10V001619		0 0	E		Nickel-C	SOLID		45.341				% Recovery			
Sample Sequence 4																	
4	SAMPLE	S10V001647		0 0	E		Nickel-63	SOLID	N/A	<4.6600E-06			4.66E-06	uCi/g			U
4	SAMPLE	S10V001647		0 0	E		Nickel-C	SOLID		51.283				% Recovery			
Sample Sequence 5																	
5	SAMPLE	S10V001667		0 0	E		Nickel-63	SOLID	N/A	<5.7000E-06			5.70E-06	uCi/g			U
5	SAMPLE	S10V001667		0 0	E		Nickel-C	SOLID		43.619				% Recovery			
Sample Sequence 6																	
6	SAMPLE	S10V001707		0 0	E		Nickel-63	SOLID	N/A	<5.3000E-06			5.30E-06	uCi/g			U
6	SAMPLE	S10V001707		0 0	E		Nickel-C	SOLID		46.409				% Recovery			
Sample Sequence 7																	
7	SAMPLE	S10V001727		0 0	E		Nickel-63	SOLID	N/A	<4.8400E-06			4.84E-06	uCi/g			U
7	SAMPLE	S10V001727		0 0	E		Nickel-C	SOLID		48.8				% Recovery			
Sample Sequence 8																	
8	SAMPLE	S10V001777		0 0	E		Nickel-63	SOLID	N/A	<5.2600E-06			5.26E-06	uCi/g			U
8	SAMPLE	S10V001777		0 0	E		Nickel-C	SOLID		45.405				% Recovery			
Sample Sequence 9																	
9	SAMPLE	S10V001797		0 0	E		Nickel-63	SOLID	N/A	<1.0200E-05			1.02E-05	uCi/g			U
9	SAMPLE	S10V001797		0 0	E		Nickel-C	SOLID		23.968				% Recovery			
Sample Sequence 10																	
10	SAMPLE	S10V001817		0 0	E		Nickel-63	SOLID	N/A	<5.2900E-06			5.29E-06	uCi/g			U
10	SAMPLE	S10V001817		0 0	E		Nickel-C	SOLID		45.717				% Recovery			
Sample Sequence 11																	
11	DUP	S1010250025	S10V001817	0 0	E		Nickel-63	SOLID	<5.2900E-06	<4.9400E-06			4.94E-06	uCi/g			
11	DUP	S1010250025	S10V001817	0 0	E		Nickel-C	SOLID	45.717	48.862				% Recovery			

Units shown for QC (BLK/BKG) may not reflect the actual units.

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00023724

Comments Section:

Data Flagger Status:
Flagging Completed

Final Page for Batch# 00023724

Reviewer Signature **Date**

Units shown for QC (BLK/BKG) may not reflect the actual units.

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N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00023724

Seq	Sample#	QC Type	Assoc. Sample	Sample Group	Customer Id	Specification
1	S1011020033	STD				
2	S1010250024	BLNK-PREP				
3	S10V001619	SAMPLE		20100556	B26JK6	C Farm WMC 2010-2
4	S10V001647	SAMPLE		20100556	B26JK7	C Farm WMC 2010-2
5	S10V001667	SAMPLE		20100556	B29612	C Farm WMC 2010-2
6	S10V001707	SAMPLE		20100556	B26CC4	C Farm WMC 2010-2
7	S10V001727	SAMPLE		20100556	B29613	C Farm WMC 2010-2
8	S10V001777	SAMPLE		20100556	B26CD0	C Farm WMC 2010-2
9	S10V001797	SAMPLE		20100556	B26CD2	C Farm WMC 2010-2
10	S10V001817	SAMPLE		20100556	B26CD4	C Farm WMC 2010-2
11	S1010250025	DUP	S10V001817			

Units shown for QC (BLK/BKG) may not reflect the actual units.

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LABCORE Completed Batch Report for Batch# 00023599

Analyst: LaPlant, Gary **Book#:** 82B64

Instrument: GEA06 B-1F

Method: IODINE-129 in SOIL, LA-378-105 Rev/Mod D-0

Specification: C Farm WMC 2010-2

Prep Batch:

Batch Comment:

C-Farm WMC 2010-2 for I129 in Soil. gll

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
Sample Sequence 1																	
1	STD	S1010280001		0 0			Iodine-129	LIQUID	.00319699978 591415	3.2830E-03		4.54	7.50E-06	uCi/mL	102.69	% Recovery	
1	STD	S1010280001		0 0			Iodine-C	LIQUID		85.35				% Recovery	N/A		
Sample Sequence 2																	
2	BLNK	S1010280002		0 0			Iodine-129	SOLID		<1.6308E-07			1.63E-07	uCi/g			
2	BLNK	S1010280002		0 0			Iodine-C	SOLID		85.35				% Recovery			
Sample Sequence 3																	
3	SAMPLE	S10V001608		0 0			Iodine-129	SOLID	N/A	<1.5725E-07			1.57E-07	uCi/g			U
3	SAMPLE	S10V001608		0 0			Iodine-C	SOLID		86.006				% Recovery			
Sample Sequence 4																	
4	SAMPLE	S10V001625		0 0			Iodine-129	SOLID	N/A	<1.3066E-07			1.31E-07	uCi/g			U
4	SAMPLE	S10V001625		0 0			Iodine-C	SOLID		96.839				% Recovery			
Sample Sequence 5																	
5	SAMPLE	S10V001656		0 0		*	Iodine-129	SOLID	N/A	<9.1056E-08			9.11E-08	uCi/g			U
5	SAMPLE	S10V001656		0 0		*	Iodine-C	SOLID		122.44				% Recovery			
Sample Sequence 6																	
6	DUP	S1010280003	S10V001656	0 0		*	Iodine-129	SOLID		<8.9482E-08			8.95E-08	uCi/g			
6	DUP	S1010280003	S10V001656	0 0		*	Iodine-C	SOLID		138.53				% Recovery			
Sample Sequence 7																	
7	SAMPLE	S10V001696		0 0		*	Iodine-129	SOLID	N/A	<7.9998E-08			8.00E-08	uCi/g			U
7	SAMPLE	S10V001696		0 0		*	Iodine-C	SOLID		140.5				% Recovery			
Sample Sequence 8																	
8	SAMPLE	S10V001716		0 0		*	Iodine-129	SOLID	N/A	<1.0647E-07			1.06E-07	uCi/g			U
8	SAMPLE	S10V001716		0 0		*	Iodine-C	SOLID		129.34				% Recovery			
Sample Sequence 9																	
9	SAMPLE	S10V001766		0 0		*	Iodine-129	SOLID	N/A	<1.1109E-07			1.11E-07	uCi/g			U
9	SAMPLE	S10V001766		0 0		*	Iodine-C	SOLID		113.58				% Recovery			
Sample Sequence 10																	
10	SAMPLE	S10V001786		0 0		*	Iodine-129	SOLID	N/A	<1.1873E-07			1.19E-07	uCi/g			U
10	SAMPLE	S10V001786		0 0		*	Iodine-C	SOLID		115.22				% Recovery			
Sample Sequence 11																	
11	SAMPLE	S10V001806		0 0		*	Iodine-129	SOLID	N/A	<1.0452E-07			1.05E-07	uCi/g			U
11	SAMPLE	S10V001806		0 0		*	Iodine-C	SOLID		129.34				% Recovery			

Units shown for QC (BLK/BKG) may not reflect the actual units.

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N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00023599

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
Sample Sequence 12																	
12	SAMPLE	S10V001871		0 0		*	Iodine-129	SOLID	N/A	<9.2793E-08			9.28E-08	uCi/g			U
12	SAMPLE	S10V001871		0 0		*	Iodine-C	SOLID		119.16				% Recovery			

Comments Section:

Data Flagger Status:
Flagging Completed

Final Page for Batch# 00023599

Reviewer Signature **Date**

Units shown for QC (BLK/BKG) may not reflect the actual units.

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LABCORE Completed Batch Report for Batch# 00023599

Seq	Sample#	QC Type	Assoc. Sample	Sample Group	Customer Id	Specification
1	S1010280001	STD				
2	S1010280002	BLNK				
3	S10V001608	SAMPLE		20100556	B26JK6	C Farm WMC 2010-2
4	S10V001625	SAMPLE		20100556	B26JK7	C Farm WMC 2010-2
5	S10V001656	SAMPLE		20100556	B29612	C Farm WMC 2010-2
6	S1010280003	DUP	S10V001656			
7	S10V001696	SAMPLE		20100556	B26CC4	C Farm WMC 2010-2
8	S10V001716	SAMPLE		20100556	B29613	C Farm WMC 2010-2
9	S10V001766	SAMPLE		20100556	B26CD0	C Farm WMC 2010-2
10	S10V001786	SAMPLE		20100556	B26CD2	C Farm WMC 2010-2
11	S10V001806	SAMPLE		20100556	B26CD4	C Farm WMC 2010-2
12	S10V001871	SAMPLE		20100584	B26JK8	C Farm WMC 2010-2

Units shown for QC (BLK/BKG) may not reflect the actual units.

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00023617

Analyst: LaPlant, Gary **Book#:** 120B64

Instrument: A/B Detector 13 B-1A

Method: AMERICIUM, LA-953-104 Rev/Mod H-1

Specification: C Farm WMC 2010-2

Prep Batch: 00023485

Batch Comment:

C Farm WMC 2010-2 Grp 566. ACC

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
Sample Sequence 1																	
1	STD	S1010280050		0 0			Americium-241	LIQUID	.00013692489 6418798	1.3218E-04		5.64	1.24E-05	uCi/mL	96.534	% Recovery	
1	STD	S1010280050		0 0			Americium-243T	LIQUID		92.225				% Recovery	N/A		
Sample Sequence 2																	
2	BLNK-PREP	S1010250022		0 0	E		Curium-243/244	SOLID		<4.1748E-07			4.17E-07	uCi/g			
2	BLNK-PREP	S1010250022		0 0	E		Americium-241	SOLID		<1.0437E-06			1.04E-06	uCi/g			
2	BLNK-PREP	S1010250022		0 0	E		Americium-243T	SOLID		36.134				% Recovery			
2	BLNK-PREP	S1010250022		0 0	E		Curium-242	SOLID		<4.1748E-07			4.17E-07	uCi/g			
Sample Sequence 3																	
3	SAMPLE	S10V001617		0 0	E		Curium-243/244	SOLID	N/A	<2.1906E-07			2.19E-07	uCi/g			U
3	SAMPLE	S10V001617		0 0	E		Americium-241	SOLID	N/A	<5.4764E-07			5.48E-07	uCi/g			U
3	SAMPLE	S10V001617		0 0	E		Americium-243T	SOLID		66.614				% Recovery			
3	SAMPLE	S10V001617		0 0	E		Curium-242	SOLID	N/A	<2.1906E-07			2.19E-07	uCi/g			U
Sample Sequence 4																	
4	SAMPLE	S10V001645		0 0	E		Curium-243/244	SOLID	N/A	<3.2841E-07			3.28E-07	uCi/g			U
4	SAMPLE	S10V001645		0 0	E		Americium-241	SOLID	N/A	<8.2102E-07			8.21E-07	uCi/g			U
4	SAMPLE	S10V001645		0 0	E		Americium-243T	SOLID		55.746				% Recovery			
4	SAMPLE	S10V001645		0 0	E		Curium-242	SOLID	N/A	<3.2841E-07			3.28E-07	uCi/g			U
Sample Sequence 5																	
5	SAMPLE	S10V001665		0 0	E		Curium-243/244	SOLID	N/A	<2.1727E-07			2.17E-07	uCi/g			U
5	SAMPLE	S10V001665		0 0	E		Americium-241	SOLID	N/A	<5.4318E-07			5.43E-07	uCi/g			U
5	SAMPLE	S10V001665		0 0	E		Americium-243T	SOLID		68.744				% Recovery			
5	SAMPLE	S10V001665		0 0	E		Curium-242	SOLID	N/A	<2.1727E-07			2.17E-07	uCi/g			U
Sample Sequence 6																	
6	SAMPLE	S10V001705		0 0	E		Curium-243/244	SOLID	N/A	<1.8610E-07			1.86E-07	uCi/g			U
6	SAMPLE	S10V001705		0 0	E		Americium-241	SOLID	N/A	<4.6526E-07			4.65E-07	uCi/g			U
6	SAMPLE	S10V001705		0 0	E		Americium-243T	SOLID		76.21				% Recovery			
6	SAMPLE	S10V001705		0 0	E		Curium-242	SOLID	N/A	<1.8610E-07			1.86E-07	uCi/g			U
Sample Sequence 7																	
7	SAMPLE	S10V001725		0 0	E		Curium-243/244	SOLID	N/A	<2.0520E-07			2.05E-07	uCi/g			U
7	SAMPLE	S10V001725		0 0	E		Americium-241	SOLID	N/A	<5.1301E-07			5.13E-07	uCi/g			U
7	SAMPLE	S10V001725		0 0	E		Americium-243T	SOLID		78.342				% Recovery			
7	SAMPLE	S10V001725		0 0	E		Curium-242	SOLID	N/A	<2.0520E-07			2.05E-07	uCi/g			U

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LABCORE Completed Batch Report for Batch# 00023617

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
Sample Sequence 8																	
8	SAMPLE	S10V001775		0 0	E	*	Curium-243/244	SOLID	N/A	<1.4979E-04			1.50E-04	uCi/g			U
8	SAMPLE	S10V001775		0 0	E	*	Americium-241	SOLID	N/A	<3.7447E-04			3.74E-04	uCi/g			U
8	SAMPLE	S10V001775		0 0	E	*	Americium-243T	SOLID		0.0031873				% Recovery			
8	SAMPLE	S10V001775		0 0	E	*	Curium-242	SOLID	N/A	<1.4979E-04			1.50E-04	uCi/g			U
Sample Sequence 9																	
9	SAMPLE	S10V001795		0 0	E		Curium-243/244	SOLID	N/A	<2.3857E-07			2.39E-07	uCi/g			U
9	SAMPLE	S10V001795		0 0	E		Americium-241	SOLID	N/A	<5.9642E-07			5.96E-07	uCi/g			U
9	SAMPLE	S10V001795		0 0	E		Americium-243T	SOLID		61.48				% Recovery			
9	SAMPLE	S10V001795		0 0	E		Curium-242	SOLID	N/A	<2.3857E-07			2.39E-07	uCi/g			U
Sample Sequence 10																	
10	SAMPLE	S10V001815		0 0	E		Curium-243/244	SOLID	N/A	<2.1105E-07			2.11E-07	uCi/g			U
10	SAMPLE	S10V001815		0 0	E		Americium-241	SOLID	N/A	<5.2763E-07			5.28E-07	uCi/g			U
10	SAMPLE	S10V001815		0 0	E		Americium-243T	SOLID		83.284				% Recovery			
10	SAMPLE	S10V001815		0 0	E		Curium-242	SOLID	N/A	<2.1105E-07			2.11E-07	uCi/g			U
Sample Sequence 11																	
11	DUP	S1010250023	S10V001815	0 0	E		Curium-243/244	SOLID	<2.1105E-07	<2.3955E-07			2.40E-07	uCi/g			
11	DUP	S1010250023	S10V001815	0 0	E		Americium-241	SOLID	<5.2763E-07	<5.9888E-07			5.99E-07	uCi/g			
11	DUP	S1010250023	S10V001815	0 0	E		Americium-243T	SOLID	83.284	72.113				% Recovery			
11	DUP	S1010250023	S10V001815	0 0	E		Curium-242	SOLID	<2.1105E-07	<2.3955E-07			2.40E-07	uCi/g			

Comments Section:

Data Flagger Status:
Flagging Completed

Final Page for Batch# 00023617

Reviewer Signature **Date**

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LABCORE Completed Batch Report for Batch# 00023617

Seq	Sample#	QC Type	Assoc. Sample	Sample Group	Customer Id	Specification
1	S1010280050	STD				
2	S1010250022	BLNK-PREP				
3	S10V001617	SAMPLE		20100556	B26JK6	C Farm WMC 2010-2
4	S10V001645	SAMPLE		20100556	B26JK7	C Farm WMC 2010-2
5	S10V001665	SAMPLE		20100556	B29612	C Farm WMC 2010-2
6	S10V001705	SAMPLE		20100556	B26CC4	C Farm WMC 2010-2
7	S10V001725	SAMPLE		20100556	B29613	C Farm WMC 2010-2
8	S10V001775	SAMPLE		20100556	B26CD0	C Farm WMC 2010-2
9	S10V001795	SAMPLE		20100556	B26CD2	C Farm WMC 2010-2
10	S10V001815	SAMPLE		20100556	B26CD4	C Farm WMC 2010-2
11	S1010250023	DUP	S10V001815			

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LABCORE Completed Batch Report for Batch# 00023877

Analyst: Fabre, Martha **Book#:** 120B64

Instrument: A/B Detector 14 B-1F

Method: AMERICIUM, LA-953-104 Rev/Mod H-1

Specification: C Farm WMC 2010-2

Prep Batch: 00023876

Batch Comment:

C Farm WMC 2010-2 grp 566 for Am. ACC

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
Sample Sequence 1																	
1	STD	S1011220001		0 0			Americium-241	SOLID	.000136914685512702	1.3544E-04		6.35	1.54E-05	uCi/g	98.924	% Recovery	
1	STD	S1011220001		0 0			Americium-243T	SOLID		75.798				% Recovery	N/A		
Sample Sequence 2																	
2	BLNK-PREP	S1011050158		0 0	E		Curium-243/244	SOLID		<2.1054E-07			2.11E-07	uCi/g			
2	BLNK-PREP	S1011050158		0 0	E		Americium-241	SOLID		<5.2635E-07			5.26E-07	uCi/g			
2	BLNK-PREP	S1011050158		0 0	E		Americium-243T	SOLID		60.841				% Recovery			
2	BLNK-PREP	S1011050158		0 0	E		Curium-242	SOLID		<2.1054E-07			2.11E-07	uCi/g			
Sample Sequence 3																	
3	SAMPLE	S10V001775		0 1	E		Curium-243/244	SOLID	N/A	<1.4066E-07			1.41E-07	uCi/g			U
3	SAMPLE	S10V001775		0 1	E		Americium-241	SOLID	N/A	<3.5165E-07			3.52E-07	uCi/g			U
3	SAMPLE	S10V001775		0 1	E		Americium-243T	SOLID		86.054				% Recovery			
3	SAMPLE	S10V001775		0 1	E		Curium-242	SOLID	N/A	<1.4066E-07			1.41E-07	uCi/g			U

Comments Section:

Data Flagger Status:
Flagging Completed

Final Page for Batch# 00023877

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LABCORE Completed Batch Report for Batch# 00023877

Seq	Sample#	QC Type	Assoc. Sample	Sample Group	Customer Id	Specification
1	S1011220001	STD				
2	S1011050158	BLNK-PREP				
3	S10V001775	SAMPLE		20100556	B26CD0	C Farm WMC 2010-2

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