0097262

SAF-RC-107
100-H Remaining Sites Burial Grounds – Soil Full Protocol
FINAL VALIDATION PACKAGE

COMPLETE COPY OF FINAL VALIDATION PACKAGE TO:

Kathy Wendt H4-21

COMMENTS:

SDG JP0186 SAF-RC-107

Waste Site: 118-H-1:2

RECEIVED
JUN 23 2011
EDMC

Date: 13 June 2011
To: Washington Closure Hanford Inc. (technical representative)
From: ELR Consulting
Project: 100-H Remaining Sites Burial Grounds – Soil Full Protocol - Waste Subsite 118-H-1:2
Subject: Wet Chemistry - Data Package No. JP0186-TAL

INTRODUCTION

This memo presents the results of data validation on Data Package No. JP0186 prepared by TestAmerica Laboratory Inc. (TAL). A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample Date	Media	Validation	Analyte
J1J9T7	5/17/11	Soil	C	See note 1
J1J9T8	5/17/11	Soil	C	See note 1
J1J9T9	5/17/11	Soil	C	See note 1
J1J9V0	5/17/11	Soil	C	See note 1
J1J9V1	5/17/11	Soil	C	See note 1
J1J9V2	5/17/11	Soil	C	See note 1
J1J9V3	5/17/11	Soil	C	See note 1
J1J9V4	5/17/11	Soil	C	See note 1
J1J9V5	5/17/11	Soil	C	See note 1
J1J9V6	5/17/11	Soil	C	See note 1
J1J9V7	5/17/11	Soil	C	See note 1
J1J9V8	5/17/11	Soil	C	See note 1
J1J9V9	5/17/11	Soil	C	See note 1
J1J9W1	5/17/11	Soil	C	See note 1
J1J9W2	5/17/11	Soil	C	See note 1
J1J9W3	5/17/11	Soil	C	See note 1

1 – Chromium VI by 7196A.

Data validation was conducted in accordance with the Washington Closure Hanford Incorporated (WCH) validation statement of work and the 100 Area Burial Grounds Remedial Action Sampling and Analysis Plan (DOE/RL-2001-35, December 2001). Appendices 1 through 6 provide the following information as indicated below:

Appendix 1. Glossary of Data Reporting Qualifiers
Appendix 2. Summary of Data Qualification
Appendix 3. Annotated Laboratory Reports
Appendix 4. Laboratory Narrative and Chain-of-Custody Documentation
Appendix 5. Data Validation Supporting Documentation
Appendix 6. Additional Documentation Requested by Client

DATA QUALITY PARAMETERS

- **Holding Times**

Analytical holding times for metals are assessed to ascertain whether the holding time requirements were met by the laboratory. The holding time requirements are as follows: Soil samples must be analyzed within 30 days for chromium VI.

If holding times are exceeded, but not by greater than two times the limit, all associated sample results are qualified as estimates and flagged "J" for detects and "UJ" for non-detects. If holding times are exceeded by greater than two times the limit, all associated detectable sample results are qualified as estimates and flagged "J" and all non-detects are rejected and flagged "UR".

All holding times were acceptable.

- **Method Blanks**

Method Blanks

Method blank analyses are performed to determine the extent of laboratory contamination introduced through sampling, sample preparation and analysis. At least one acceptable method blank analysis must be conducted for every 20 samples. No contaminants should be present in the method blank. All blank results must fall below the contract required detection limit (CRQL) to be acceptable.

All method blank results were acceptable.

Field Blanks

No field blanks were submitted for analysis.

- **Accuracy**

Matrix Spike and Laboratory Control Sample

Matrix spike (MS) and laboratory control sample (LCS) analyses are used to assess the analytical accuracy of the reported data. The matrix spike is used to assess the effect of the matrix on the ability to accurately quantify sample concentrations. Recoveries must fall within the range of 65% to 135%. Samples with a recovery of less than 30% and a sample result below the IDL are rejected and flagged "UR". Samples with a recovery of 30% to 69% and a sample result less than the IDL are qualified "UJ". Samples with a recovery of greater than 130% or less than 70% and a sample result greater than the IDL are qualified as estimates and flagged "J". Finally, for samples with a recovery greater than 130% and a sample result less than the IDL, no qualification is required.

Due to a matrix spike recovery outside QC limits (60%), all chromium VI results were qualified as estimates and flagged "J".

All other accuracy results were acceptable.

- **Precision**

Laboratory Duplicate Samples

Analytical precision is expressed by the relative percent differences (RPD) between the recoveries of matrix spike duplicate (MSD) analyses performed on a sample in the analytical batch. Precision may alternatively be assessed using unspiked duplicate analyses performed on a sample in the analytical batch. If both sample and replicate activities (concentrations) are greater than five times the CRDL and the RPD is less than 35, no qualification is required. If either activity (concentration) is less than five times the CRDL, the RPD control limit is less than or equal to two times the CRDL. If the RPD is outside the applicable control limit, associated results are qualified as estimated detects or estimated non-detects.

All laboratory duplicate results were acceptable.

Field Duplicate

One set of field duplicates (J1J9V1/J1J9V9) was submitted for analysis. Field duplicates are compared using the same criteria as for laboratory duplicates. All field duplicate results were acceptable.

- **Analytical Detection Levels**

Reported analytical detection levels are compared against the required quantitation limits (RQLs) to ensure that laboratory detection levels meet the required criteria. All analytes met the RQL.

- **Completeness**

Data package JP0186 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 100%.

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

The following minor deficiency was noted:

- Due to a matrix spike recovery outside QC limits (60%), all chromium VI results were qualified as estimates and flagged "J".

Data flagged "J" indicates that the associated concentration is an estimate, but under the WCH statement of work, the data may be usable for decision-making purposes. All other validated results are considered accurate within the standard error associated with the methods.

REFERENCES

Washington Closure Hanford Contract #S00W307A00 (March 2008), *Data Validation Services*, March 2008.

DOE/RL-2001-35, Rev. 0, *100 Area Burial Grounds Remedial Action Sampling and Analysis Plan*, U.S. Department of Energy, December 2001.

Appendix 1

Glossary of Data Reporting Qualifiers

Qualifiers which may be applied by data validators in compliance with WCH validation SOW are as follows:

U - Indicates the compound or analyte was analyzed for and not detected in the sample. The value reported is the sample quantitation limit corrected for sample dilution and moisture content by the laboratory.

UJ - Indicates the compound or analyte was analyzed for and not detected in the sample. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.

J - Indicates the compound or analyte was analyzed for and detected. Due to a minor QC deficiency identified during the data validation, the associated concentration is an estimate, but the data are usable for decision-making purposes.

BJ - Applied to inorganic analyses only. Indicates the analyte concentration was greater than the IDL but less than the CRDL and is considered an estimated value.

R - Indicates the compound or analyte was analyzed for, detected, and due to an identified major QC deficiency, the data are unusable.

UR - Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified major QC deficiency.

NJ - Indicates presumptive evidence of a compound at an estimated value. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

N - Indicates presumptive evidence of a compound. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

Appendix 2

Summary of Data Qualification

WET CHEMISTRY DATA QUALIFICATION SUMMARY*

SDG: JP0186	REVIEWER: ELR	Project: 118-H-1:2	PAGE 1 OF 1
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Chromium VI	J	All	MS recovery

* - The Qualified Data Summary Table includes laboratory applied "U" qualifiers not specifically identified here. The laboratory applied "U" qualifiers are included to minimize misinterpretation of results contained in the table.

Appendix 3

Annotated Laboratory Reports

Sample Results Summary

Date: 31-May-11

TestAmerica TARL

Ordered by Method, Batch No., Client Sample ID.

Report No. : 46787

K 6/16/11

SDG No: JP0186

Batch	Client Id Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	MDC or MDA	CRDL	RPD
1140055	SRTOT_SEP_PRECIP_GPC								
	J1J9V7								
	MJLM01AC	STRONTIUM	8.44E-02 +- 9.3E-02	U	pCi/g	57%	1.92E-01		
	J1J9V8								
	MJLM41AC	STRONTIUM	8.57E-02 +- 8.8E-02	U	pCi/g	56%	1.78E-01		
	J1J9V9								
	MJLM51AC	STRONTIUM	1.32E-01 +- 9.6E-02	U	pCi/g	55%	1.75E-01		
	J1J9W0								
	MJLM61AC	STRONTIUM	-4.05E-03 +- 6.9E-02	U	pCi/g	61%	1.66E-01		
	J1J9W1								
	MJLM71AC	STRONTIUM	3.59E-02 +- 8.4E-02	U	pCi/g	58%	1.88E-01		
	J1J9W2								
	MJLNA1AC	STRONTIUM	-1.75E-03 +- 7.5E-02	U	pCi/g	64%	1.79E-01		
	J1J9W3								
	MJLNC1AC	STRONTIUM	1.57E-02 +- 7.4E-02	U	pCi/g	62%	1.73E-01		
1139266	7196_CR6								
	J1J9T7								
	MJLMF1AA	HEXCHROME	4.61E-01 +- 0.0E+00	J	mg/kg	N/A	1.54E-01	1.55E-01	
	MJLMF1AJ	HEXCHROME	5.29E-01 +- 0.0E+00		mg/kg	N/A	1.54E-01	3.50E-01	13.7
	J1J9T8								
	MJLMJ1AA	HEXCHROME	4.82E-01 +- 0.0E+00	J	mg/kg	N/A	1.54E-01	1.55E-01	
	J1J9T9								
	MJLMK1AA	HEXCHROME	4.80E-01 +- 0.0E+00		mg/kg	N/A	1.55E-01	1.55E-01	
	J1J9V0								
	MJLML1AA	HEXCHROME	4.86E-01 +- 0.0E+00		mg/kg	N/A	1.55E-01	1.55E-01	
	J1J9V1								
	MJLMM1AA	HEXCHROME	4.90E-01 +- 0.0E+00		mg/kg	N/A	1.54E-01	1.55E-01	
	J1J9V2								
	MJLMN1AA	HEXCHROME	4.60E-01 +- 0.0E+00		mg/kg	N/A	1.55E-01	1.55E-01	
	J1J9V3								
	MJLMP1AA	HEXCHROME	5.43E-01 +- 0.0E+00		mg/kg	N/A	1.55E-01	1.55E-01	
	J1J9V4								
	MJLMR1AA	HEXCHROME	5.40E-01 +- 0.0E+00		mg/kg	N/A	1.54E-01	1.55E-01	
	J1J9V5								
	MJLMT1AA	HEXCHROME	5.38E-01 +- 0.0E+00		mg/kg	N/A	1.54E-01	1.55E-01	
	J1J9V6								
	MJLMV1AA	HEXCHROME	2.09E-01 +- 0.0E+00		mg/kg	N/A	1.55E-01	1.55E-01	
	J1J9V7								
	MJLM01AA	HEXCHROME	2.51E-01 +- 0.0E+00		mg/kg	N/A	1.55E-01	1.55E-01	
	J1J9V8								

TestAmerica

rptSTLRchSaSummary2 V5.2.14
A2002

RPD - Relative Percent Difference.

U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda/Mdl, Total Uncert, CRDL, RDL or not identified by gamma scan software.

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Sample Results Summary

TestAmerica TARL

Ordered by Method, Batch No., Client Sample ID.

Date: 31-May-11

Report No. : 46787

SDG No: JP0186

Batch	Client Id Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	MDC or MDA	CRDL	RPD
1139266 7196_CR6									
	J1J9V8								
	MJLM41AA	HEXCHROME	2.06E-01 +- 0.0E+00	J	mg/kg	N/A	1.55E-01	1.55E-01	
1139266-2 7196_CR6									
	J1J9V9								
	MJLM51AA	HEXCHROME	8.15E-01 +- 0.0E+00		mg/kg	N/A	1.54E-01	1.55E-01	
	J1J9W0								
	MJLM61AA	HEXCHROME	2.06E-01 +- 0.0E+00		mg/kg	N/A	1.54E-01	1.55E-01	
	J1J9W1								
	MJLM71AA	HEXCHROME	2.78E-01 +- 0.0E+00		mg/kg	N/A	1.54E-01	1.55E-01	
	J1J9W2								
	MJLNA1AA	HEXCHROME	3.69E-01 +- 0.0E+00		mg/kg	N/A	1.55E-01	1.55E-01	
	J1J9W3								
	MJLMC1AA	HEXCHROME	2.54E-01 +- 0.0E+00		mg/kg	N/A	1.54E-01		
1140050 906.0_H3_LSC									
	J1J9T7								
	MJLMF1AE	H-3	6.44E-02 +- 1.6E-02		pCi/g	100%	3.10E-02	4.00E+02	
	J1J9T8								
	MJLMJ1AE	H-3	1.77E-02 +- 1.5E-02	U	pCi/g	100%	3.30E-02	4.00E+02	
	J1J9T9								
	MJLMK1AE	H-3	-1.78E-03 +- 1.2E-02	U	pCi/g	100%	2.70E-02	4.00E+02	
	J1J9T9 DUP								
	MJLMK1AH	H-3	6.26E-03 +- 1.3E-02	U	pCi/g	100%	2.92E-02	4.00E+02	359.5
	J1J9V0								
	MJLML1AE	H-3	-2.71E-04 +- 1.1E-02	U	pCi/g	100%	2.59E-02	4.00E+02	
	J1J9V1								
	MJLMM1AE	H-3	-1.62E-03 +- 1.2E-02	U	pCi/g	100%	2.63E-02	4.00E+02	
	J1J9V2								
	MJLMN1AE	H-3	1.18E-03 +- 9.1E-03	U	pCi/g	100%	2.06E-02	4.00E+02	
	J1J9V3								
	MJLMP1AE	H-3	1.67E-03 +- 1.2E-02	U	pCi/g	100%	2.78E-02	4.00E+02	
	J1J9V4								
	MJLMR1AE	H-3	-1.49E-03 +- 1.1E-02	U	pCi/g	100%	2.42E-02	4.00E+02	
	J1J9V5								
	MJLMT1AE	H-3	2.45E-02 +- 1.1E-02		pCi/g	100%	2.28E-02	4.00E+02	
	J1J9V6								
	MJLMV1AE	H-3	-6.53E-05 +- 5.6E-03	U	pCi/g	100%	1.27E-02	4.00E+02	
	J1J9V7								
	MJLM01AE	H-3	-2.50E-04 +- 5.5E-03	U	pCi/g	100%	1.24E-02	4.00E+02	
	J1J9V8								

TestAmerica

rptSTLRchSaSummary2 V5.2.14 A2002

RPD - Relative Percent Difference.

U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda/Mdl, Total Uncert, CRDL, RDL or not identified by gamma scan software.

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Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Certificate of Analysis

Washington Hanford Closure
2620 Fermi Avenue
Richland, WA 99354

TestAmerica Laboratories, Inc.

May 31, 2011

Attention: Joan Kessner

SAF Number	:	RC-107
Date SDG Closed	:	May 19, 2011
Number of Samples	:	Seventeen (17)
Sample Type	:	Soil
SDG Number	:	J0P0186
Data Deliverable	:	7– Day / Summary

CASE NARRATIVE

I. Introduction

On May 19, 2011 seventeen soil samples were received at TestAmerica for radiochemical analysis. Upon receipt, the samples were assigned the following laboratory ID number to correspond with the Washington Closure Hanford (WCH) specific ID:

WCH ID#	TARL ID#	MATRIX	DATE OF RECEIPT
J1J9T7	MJLMF	SOIL	5/19/11
J1J9T8	MJLMJ	SOIL	5/19/11
J1J9T9	MJLMK	SOIL	5/19/11
J1J9V0	MJLML	SOIL	5/19/11
J1J9V1	MJLMM	SOIL	5/19/11
J1J9V2	MJLMN	SOIL	5/19/11
J1J9V3	MJLMP	SOIL	5/19/11
J1J9V4	MJLMR	SOIL	5/19/11
J1J9V5	MJLMT	SOIL	5/19/11
J1J9V6	MJLMV	SOIL	5/19/11
J1J9V7	MJLM0	SOIL	5/19/11
J1J9V8	MJLM4	SOIL	5/19/11
J1J9V9	MJLM5	SOIL	5/19/11
J1J9W0	MJLM6	SOIL	5/19/11
J1J9W1	MJLM7	SOIL	5/19/11
J1J9W2	MJLNA	SOIL	5/19/11
J1J9W3	MJLNC	SOIL	5/19/11

2800 George Washington Way Richland, WA 99354 tel 509.375.3131 fax 509.375.5590 www.testamericainc.com

II. Sample Receipt

The samples were received in good condition and no anomalies were noted during check-in.

III. Analytical Results/Methodology

The analytical results for this report are presented by laboratory sample ID. Each set of data includes sample identification information, analytical results and the appropriate associated statistical errors.

The requested analyses were:

Gas Proportional Counting
Strontium-90 by method RL-GPC-003
Gamma Spectroscopy
Gamma Spec by method RL-GAM-001
Liquid Scintillation Counting
Tritium by method RL-LSC-005
Nickel-63 by method RL-LCS-017
Carbon-14 by method RL-LSC-008
Chemical Analysis
Hexavalent Chromium by EPA method 7196A

IV. Quality Control

The analytical results for each analysis performed includes a minimum of one laboratory control sample (LCS), one method (reagent) blank, and one duplicate sample analysis. Any exceptions have been noted in the "Comments" section.

QC and sample results are reported in the same units.

V. Comments

Gas Proportional Counting
Strontium-90 by method RL-GPC-003:
The LCS, batch blank, samples and sample duplicate (J1J9V1) results are within contractual requirements.

Gamma Spectroscopy
Gamma Spec by method RL-GAM-001:
The CRDL was not met on some analytes. Except as noted, the LCS, batch blank, samples and sample duplicate (J1J9V0) results are within contractual requirements.

Liquid Scintillation Counting
Tritium by method RL-LSC-005:
The LCS, batch blank, samples and sample duplicate (J1J9T9) results are within contractual

requirements.

Carbon-14 by method RL-LSC-008:
The LCS, batch blank, samples and sample duplicate (J1J9T7) results are within contractual requirements.

Nickel-63 by method RL-LCS-017:
The LCS, batch blank, samples and sample duplicate (J1J9T8) results are within contractual requirements.

Chemical Analysis
Hexavalent Chromium by EPA method 7196A
The matrix spike recovered low at 60.5%. The post digestive matrix spike recovered at 94.2% and the insoluble matrix spike recovered at 102%. This implies strong reducing capacity in the sample, but not enough to exhaust the more copious insoluble matrix spike. Except as noted, the LCS, batch blank, sample, sample duplicate (J1J9T7) and sample matrix spike (J1J9T7) results are within contractual requirements.

I certify that this Certificate of Analysis 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 hard copy data package has been authorized by the Laboratory Manager, or a designee as verified by the following signature.

Reviewed and approved:

Rhonda Wagar
Project Manager

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-107-072	Page 1 of 4
Collector: K. Lucas	Company Contact: Joan Kessner; Telephone No.: 509-375-4688	Project Coordinator: KESSNER, JH	Price Code: 8L, 8B; Data Turnaround: 21 Days
Project Designation: 100-H Remaining Sites Burial Grounds - Soil Full Protocol	Sampling Location: 118-H-1:2 Verification Sampling	SAF No.: RC-107	
Ice Chest No.: NA	Field Logbook No.: EL 1627-05; COA: R118H12000	Method of Shipment: Government Vehicle/FedEx	
Shipped To: TestAmerica Incorporated, Richland	Offsite Property No.: NA	Bill of Lading/Air Bill No.: NA	

POSSIBLE SAMPLE HAZARDS/REMARKS
Possible RAD <DOT

Special Handling and/or Storage Lot#JTE190511
Cool to 4 deg C SDG#JP0186
CKS-19-11 Due 5-26-11

016

Preservation	None	Cool 4C	Cool 4C	Cool 4C	None	None	None	None		
Type of Container	G/P	G/P	G	aG	G/P	G/P	G/P	G/P		
No. of Container(s)	1	1	1	1	1	1	0	1		
Volume	60mL	60mL	120mL	120mL	120mL	500mL	60mL	60g		
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Chromium Hex - 7196	TPH-Diesel Range - WTPH-D +	PAHs - 8310	Carbon-14; Tritium - HI Low Level Soil	See item (2) in Special Instructions.	Nickel-63; Strontium-89,90 -- Total Sr	RCF GEA Shipping Screen		
Sample No.	Matrix *	Sample Date	Sample Time								
J1J9T7 MJLMF	SOIL	5/17/11	0805		X			X	X	X	
J1J9T8 MJLMJ	SOIL	5/17/11	0815		X			X	X	X	
J1J9T9 MJLMK	SOIL	5/17/11	0825		X			X	X	X	
J1J9V0 MJLML	SOIL	5/17/11	0835		X			X	X	X	
J1J9V1 MJLMM	SOIL	5/17/11	0845		X			X	X	X	

CHAIN OF POSSESSION — **Sign/Print Names**

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
K Lucas Kevin Lucas	5-17-11 1110	JV Fullmer	1110 5/17/11
JV Fullmer	5/17/11 1545	1060, Fridge 1A A. Freier	1545 5-17-11
A. Freier	5-19-11 1305	TALA Cameron Krona	1305 5-19-11

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Close-out List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc); Mercury - 7471 - (CV)
(2) Gamma Spec - Client List (Americium-241, Barium-133, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Silver-108 metastable), Nickel-63, Strontium-90

REVIEWED BY CMB DATE 5/19/11

JP0186

Matrix *
S=Soil
SE=Sediment
SO=Solid
Sl=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
Wi=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-107-072	Page 2 of 4
Collector: K. Lucas	Company Contact: Joan Kessner; Telephone No.: 509-375-4688	Project Coordinator: KESSNER, JH	Price Code: QNR 5/16/11 8L 8S; Data Turnaround: 5/16/11 21 Days 7
Project Designation: 100-H Remaining Sites Burial Grounds - Soil Full Protocol	Sampling Location: 118-H-1:2 Verification Sampling	SAF No.: RC-107	
Ice Chest No.: NA	Field Logbook No.: EL 1627-05; COA: R118H12000	Method of Shipment: Government Vehicle/FedEx	
Shipped To: TestAmerica Incorporated, Richland	Offsite Property No.: NA	Bill of Lading/Air Bill No.: NA	

POSSIBLE SAMPLE HAZARDS/REMARKS

Possible RAD <DOT

Lot#J1E190511
SDG#JP0186
Due 5-26-11

Special Handling and/or Storage

Cool to 4 deg C

Preservation	None	Cool 4C	Cool 4C	Cool 4C	None	None	None	None		
Type of Container	G/P	G/P	G	aG	G/P	G/P	G/P	G/P		
No. of Container(s)	1	1	1	1	1	1	0	1		
Volume	60mL	60mL	120mL	120mL	120mL	500mL	60mL	60g		
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Chromium Hex - 7196	TPH-Diesel Range - WTPH-D +	PAHs - 8310	Carbon-14; Tritium - HG Low Level Soil	See item (2) in Special Instructions.	Nickel-63; Strontium-89,90 -- Total Sr	RGS/EEA Shipping Screen		
017										

Sample No.	Matrix *	Sample Date	Sample Time										
J1J9V2 MJLMN	SOIL	5/17/11	0900		X			X	X	X			
J1J9V3 MJLMP	SOIL	5/17/11	0915		X			X	X	X			
J1J9V4 MJLMR	SOIL	5/17/11	0925		X			X	X	X			
J1J9V5 MJLMT	SOIL	5/17/11	0930		X			X	X	X			
J1J9V6 MJLMV	SOIL	5/17/11	0940		X			X	X	X			

CHAIN OF POSSESSION — **Sign/Print Names**

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
K. Lucas Joan Lucas	5-17-11 1110	JV Fullmer	1110 5/17/11
JV Fullmer	5/17/11 1545	1060, fridge 1A A. Freier	1545 5-17-11
A. Freier 1060 fridge 1A	5-19-11 1305	TALP Carolyn Krogh	1205 5-19-11

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Close-out List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc); Mercury - 7471 - (CV)
(2) Gamma Spec - Client List (Americium-241, Barium-133, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Silver-108 metastable), Nickel 63, Strontium 90

QNR 5/24

REVIEWED BY CMB DATE 5/19/11

JP0186

Matrix *: S=Soil; SB=Sediment; SO=Solid; Sl=Sludge; W=Water; O=Oil; A=Air; DS=Drum Solids; DL=Drum Liquids; T=Tissue; Wi=Wipe; L=Liquid; V=Vegetation; X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-107-072	Page 3 of 4

Collector K. Lucas	Company Contact Joan Kessner	Telephone No. 509-375-4688	Project Coordinator KESSNER, JH	Price Code 81 88	Data Turnaround 21 Days
Project Designation 100-H Remaining Sites Burial Grounds - Soil Full Protocol	Sampling Location 118-H-1:2 Verification Sampling		SAF No. RC-107		
Ice Chest No. NA	Field Logbook No. EL 1627-05	COA R118H12000	Method of Shipment (Government Vehicle) FedEx		
Shipped To TestAmerica Incorporated, Richland	Offsite Property No. NA		Bill of Lading/Air Bill No. NA		

POSSIBLE SAMPLE HAZARDS/REMARKS

Possible RAD <DOT

Lot# J1E190571
SDG# JP0186
Due 5-26-11

Special Handling and/or Storage

Cool to 4 deg C

Preservation	None	Cool 4C	Cool 4C	Cool 4C	None	None	None	None		
Type of Container	G/P	G/P	G	aG	G/P	G/P	G/P	G/P		
No. of Container(s)	1	1	1	1	1	1	0	1		
Volume	60mL	60mL	120mL	120mL	120mL	500mL	60mL	60g		
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Chromium Hex - 7196	TPH-Diesel Range - WTPH-D+	PAHs - 8310	Carbon-14; Tritium - HG Low Level Soil	See item (2) in Special Instructions.	Nickel-63; Strontium-89,90 -- Total Sr	RCF GEA Shipping Screen		

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Sample No.	Matrix *	Sample Date	Sample Time								
J1J9V7 MJLM0	SOIL	5/17/11	0955		X			X	X	X	
J1J9V8 MJLM4	SOIL	5/17/11	1000		X			X	X	X	
J1J9V9 MJLM5	SOIL	5/17/11	0845		X			X	X	X	
J1J9W0 MJLM6	SOIL	5/17/11	1020		X			X	X	X	
J1J9W1 MJLM7	SOIL	5/17/11	1035		X			X	X	X	

CHAIN OF POSSESSION

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
K Lucas Kevin Lucas	5-17-11 1110	JV Fullmer	1110 5/17/11
JV Fullmer	5/17/11 1545	1060, fridge 1A A. Freier	1545 5-17-11
A. Freier (WCH 1060 fridge 1A)	1305 5-19-11	THLP Cameron Krane	1305 5.19.11

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Close-out List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc}; Mercury - 7471 - (CV)
(2) Gamma Spec - Cleat List {Americium-241, Barium-133, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Silver-108 metastable}, Nickel-63, Strontium 90

REVIEWED BY CMB DATE 5/19/11

JP0186

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

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-107-072	Page 4 of 4
Collector: K. Lucas	Company Contact: Joan Kessner; Telephone No.: 509-375-4688	Project Coordinator: KESSNER, JH	Price Code: 8L, 8B; Data Turnaround: 21 Days
Project Designation: 100-H Remaining Sites Burial Grounds - Soil Full Protocol	Sampling Location: 118-H-1:2 Verification Sampling	SAF No.: RC-107	
Ice Chest No.: NA	Field Logbook No.: EL 1627-05; COA: R118H12000	Method of Shipment: Government Vehicle/FedEx	
Shipped To: TestAmerica Incorporated, Richland	Offsite Property No.: NA	Bill of Lading/Air Bill No.: NA	

POSSIBLE SAMPLE HAZARDS/REMARKS

Possible RAD <DOT

Lot#J1E190511
SDG#JPC186
Due 5-26-11

Special Handling and/or Storage

Cool to 4 deg C

Preservation	None	Cool 4C	Cool 4C	Cool 4C	None	None	None	None		
Type of Container	G/P	G/P	G	aG	G/P	G/P	G/P	G/P		
No. of Container(s)	1	1	1	1	1	1	0	1		
Volume	60mL	60mL	120mL	120mL	120mL	500mL	60mL	60g		
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Chromium Hex - 7196	TPH-Diesel Range - WTPH-D	PAHs - 8310	Carbon-14; Tritium - H3 Low Level Soil	See item (2) in Special Instructions.	Nickel-63; Strontium-89,90 -- Total Sr	RCRA EA Shipping Screen		

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Sample No.	Matrix *	Sample Date	Sample Time									
J1J9W2 MJLNA	SOIL	5/17/11	1045		X			X	X	X		
J1J9W3 MJLNC	SOIL	5/17/11	1100		X			X	X	X		
J1J9W4	SOIL	5/17/11	1545									

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From: Kyucas Bernan Lucas	Date/Time 5-17-11 1110	Received By/Stored In: JV Fullmer	Date/Time 1110 5/17/11
Relinquished By/Removed From: JV Fullmer	Date/Time 1545 5/17/11	Received By/Stored In: 1060, fridge A. Freier	Date/Time 1545 5-17-11
Relinquished By/Removed From: WCH A Freier 1060 fridge 14	Date/Time 1305 5-19-11	Received By/Stored In: TALR Cameron Krone	Date/Time 1305 5-19-11
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Close-out List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc}; Mercury - 7471 - (CV)
(2) Gamma Spec - Client List {Americium-241, Barium-133, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Silver-108 metastable}, Nickel-63, Strontium-90

REVIEWED BY CMB DATE 5/19/11

JP0186

Matrix *
S=Soil
SE=Sediment
SO=Solid
Sl=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
Wi=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Appendix 5

Data Validation Supporting Documentation

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	C	D	E
PROJECT:	118-H-1:2		DATA PACKAGE:	JP0182	
VALIDATOR:	ELR	LAB: TAL		DATE: 6/11/11	
			SDG:	JP0182	

ANALYSES PERFORMED					
Anions/IC	TOC	TOX	TPH-418.1	Oil and Grease	Alkalinity
Ammonia	BOD/COD	Chloride	Chromium-VI	pH	NO_3/NO_2
Sulfate	TDS	TKN	Phosphate		

SAMPLES/MATRIX				
J1J9T7	J1J9T8	J1J9T9	J1J9V0	J1J9V1
J1J9V2	J1J9V3	J1J9V4	J1J9V5	J1J9V6
J1J9V7	J1J9V8	J1J9V9	J1J9W0	J1J9W1
J1J9W2	J1J9W3			
				Soil

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

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

Comments:

2. INSTRUMENT PERFORMANCE AND CALIBRATIONS (Levels D and E)

Initial calibrations performed on all instruments? ..... Yes No N/A

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

ICV and CCV checks performed on all instruments? ..... Yes No N/A

ICV and CCV checks acceptable? ..... Yes No N/A

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

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

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

Comments:

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

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

ICB and CCB checks performed for all applicable analyses? (Levels D, E) ..... Yes No N/A

ICB and CCB results acceptable? (Levels D, E) ..... Yes No N/A

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

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

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

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

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

Comments: no PB

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

Spike samples analyzed? ..... Yes No N/A

Spike recoveries acceptable? ..... Yes No N/A

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

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

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

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

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

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

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

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

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

Comments: MS - 60% - J all no PAS

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

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

Duplicate RPD values acceptable? ..... Yes No N/A

Duplicate results acceptable? ..... Yes No N/A

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

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

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

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

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

Comments:

6. HOLDING TIMES (all levels)

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

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

Comments:

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

7. RESULT QUANTITATION AND DETECTION LIMITS (all levels)

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

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

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

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

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

Comments: _____

Appendix 6

Additional Documentation Requested by Client

QC Results Summary

TestAmerica TARL

Ordered by Method, Batch No, QC Type,.

Date: 31-May-11

Report No. : 46787

SDG No.: JP0186

Batch Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	LCS Recovery	Bias	MDC|MDA
GAMMA_GS								
1140048 BLANK QC,								
MJLW51AA	AG-108M	9.84E-05 +- 7.4E-03	U	pCi/g				1.31E-02
	AMERICIUM 241	3.07E-02 +- 4.9E-02	U	pCi/g				9.03E-02
	BA-133	-4.86E-03 +- 8.7E-03	U	pCi/g				1.44E-02
	CO-60	-9.11E-04 +- 7.8E-03	U	pCi/g				1.46E-02
	CS-137	4.20E-04 +- 8.8E-03	U	pCi/g				1.57E-02
	EU-152	1.02E-02 +- 2.3E-02	U	pCi/g				4.09E-02
	EU-154	-1.31E-02 +- 2.7E-02	U	pCi/g				4.63E-02
	EU-155	1.53E-04 +- 2.0E-02	U	pCi/g				3.60E-02
1140048 LCS,								
MJLW51AC	CS-137	1.04E+00 +- 1.6E-01		pCi/g		96%	0.0	4.45E-02
SRTOT_SEP_PRECIP_GPC								
1140055 BLANK QC,								
MJLXC1AA	STRONTIUM	1.61E-02 +- 5.2E-02	U	pCi/g	93%			1.18E-01
1140055 LCS,								
MJLXC1AC	STRONTIUM	1.00E+00 +- 2.9E-01		pCi/g	92%	88%	-0.1	1.28E-01
7196_CR6								
1139266 MATRIX SPIKE, J1J9T7								
MJLMF1AH	HEXCHROME	6.36E+00 +- 0.0E+00		mg/kg	N/A	60%	-0.4	1.54E-01
1139266 LCS,								
MJLRW1AC	HEXCHROME	1.86E+01 +- 0.0E+00		mg/kg	N/A	93%	-0.1	1.55E-01
1139266 BLANK QC,								
MJLRW1AA	HEXCHROME	1.55E-01 +- 0.0E+00	U	mg/kg	N/A			1.55E-01
906.0_H3_LSC								
1140050 BLANK QC,								
MJLW71AA	H-3	-2.94E-03 +- 1.7E-02	U	pCi/g	100%			3.80E-02
1140050 LCS,								
MJLW71AC	H-3	3.60E-01 +- 3.6E-02		pCi/g	100%	85%	-0.2	5.22E-02
NI63_LSC								
1140053 BLANK QC,								
MJLW91AA	NI-63	2.76E+00 +- 5.8E+00	U	pCi/g	100%			1.19E+01
1140053 LCS,								
MJLW91AC	NI-63	5.24E+02 +- 5.3E+01		pCi/g	97%	82%	-0.2	1.33E+01
C14_CHEM_LSC								
1140054 BLANK QC,								
MJLXA1AA	C-14	1.08E-03 +- 5.1E-03	U	pCi/g	100%			1.13E-02
1140054 LCS,								
MJLXA1AC	C-14	7.61E+00 +- 5.3E-01		pCi/g	100%	103%	0.0	4.53E-01

No. of Results: 20

TestAmerica

rptSTLRchQcSummary V5.2.14
A2002

Bias - (Result/Expected)-1 as defined by ANSI N13.30.

U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda/Mdl, Total Uncert, CRDL, RDL or not identified by gamma scan software.

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Date: 13 June 2011
To: Washington Closure Hanford Inc. (technical representative)
From: ELR Consulting
Project: 100-H Remaining Sites Burial Grounds – Soil Full Protocol - Waste Subsite 118-H-1:2
Subject: Radiochemistry - Data Package No. JP0186-TAL

INTRODUCTION

This memo presents the results of data validation on Data Package No. JP0186 prepared by TestAmerica Laboratory Inc. (TAL). A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample Date	Media	Validation	Analyte
J1J9T7	5/17/11	Soil	C	See note 1
J1J9T8	5/17/11	Soil	C	See note 1
J1J9T9	5/17/11	Soil	C	See note 1
J1J9V0	5/17/11	Soil	C	See note 1
J1J9V1	5/17/11	Soil	C	See note 1
J1J9V2	5/17/11	Soil	C	See note 1
J1J9V3	5/17/11	Soil	C	See note 1
J1J9V4	5/17/11	Soil	C	See note 1
J1J9V5	5/17/11	Soil	C	See note 1
J1J9V6	5/17/11	Soil	C	See note 1
J1J9V7	5/17/11	Soil	C	See note 1
J1J9V8	5/17/11	Soil	C	See note 1
J1J9V9	5/17/11	Soil	C	See note 1
J1J9W1	5/17/11	Soil	C	See note 1
J1J9W2	5/17/11	Soil	C	See note 1
J1J9W3	5/17/11	Soil	C	See note 1

1 – Gamma spectroscopy, strontium-90, nickel-63, tritium, carbon-14.

Data validation was conducted in accordance with the Washington Closure Hanford Incorporated (WCH) validation statement of work and the 100 Area Burial Grounds Remedial Action Sampling and Analysis Plan (DOE/RL-2001-35, December 2001). 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 Data Requested by Client

DATA QUALITY PARAMETERS

· Holding Times

Holding times are calculated from Chain-of-Custody forms to determine the validity of the results. The maximum holding time for radiochemical analysis is 6 months.

All holding times were acceptable.

· Preparation (Method) Blanks

Laboratory Blanks

Blank samples are analyzed to determine if positive results are due to laboratory reagent, sample container, or detector contamination. If blank analysis results indicate the presence of an analyte above the minimum detectable activity (MDA), the following qualifiers are applied: All positive sample results less than five times the highest blank concentration are qualified as estimates and flagged "J"; sample results below the MDA are qualified as undetected and flagged "U"; sample results above the MDA and greater than five times the highest blank concentration are not qualified.

All laboratory blank results were acceptable.

Field (Equipment) Blank

No equipment blanks were submitted for analysis.

· Accuracy

Accuracy is evaluated from laboratory control sample (LCS) or blank spike sample (BSS) batch samples and spiked samples from the analytical batch. Measured activities are compared to the known added amounts. The acceptable LCS or BSS and matrix spike (MS) recovery range is 65-135%. In addition, samples may be spiked with a radiochemical tracer to assist in isolating the radioisotope of interest with the yield of the tracer being used in calculating sample activity. The acceptable range for tracer recovery is 20% to 105%. Spike sample results outside the above ranges result in associated sample results being qualified as estimates, or not qualified, depending on the activity of the individual sample. Results are rejected for LCS/BSS recoveries of less than 30% and tracer recoveries of less than 20%, and tracer recoveries of greater than 115% for detected results.

Due to the lack of a matrix spike analysis, all tritium and carbon-14 results were qualified as estimates and flagged "J".

All other accuracy results were acceptable.

- **Laboratory Duplicates**

Analytical precision is expressed by the relative percent differences (RPD) between the recoveries of duplicate matrix spike analyses performed on a sample in the analytical batch. Precision may alternatively be assessed using unspiked duplicate analyses performed on a sample in the analytical batch. If both sample and replicate activities (concentrations) are greater than five times the contract required detection limit (CRDL) and the RPD is less than 35%, no qualification is required. If either activity (concentration) is less than five times the CRDL, the RPD control limit is less than or equal to two times the CRDL. If the RPD is outside the applicable control limit, associated results are qualified as estimated detects or estimated non-detects.

All duplicate results were acceptable.

Field Duplicates

One set of field duplicates (J1J9V1/J1J9V9) was submitted for analysis. Field duplicates are compared using the same criteria as for laboratory duplicates. All field duplicate results were acceptable.

- **Detection Levels**

Reported analytical detection levels for undetected analytes are compared against the project RQLs to ensure that laboratory detection levels meet the required criteria. All analytes met the RQL.

- **Completeness**

Data package No. JP0186 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 100%.

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

The following minor deficiency was noted:

- Due to the lack of a matrix spike analysis, all tritium and carbon-14 results were qualified as estimates and flagged "J".

Data flagged "J" indicates that the associated concentration is an estimate, but under the WCH statement of work, the data may be usable for decision-making purposes. All other validated results are considered accurate within the standard error associated with the methods.

REFERENCES

Washington Closure Hanford Contract #S00W307A00 (March 2008), *Data Validation Services*, March 2008.

DOE/RL-2001-35, Rev. 0, *100 Area Burial Grounds Remedial Action Sampling and Analysis Plan*, U.S. Department of Energy, December 2001.

Appendix 1

Glossary of Data Reporting Qualifiers

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

U - Indicates the compound or analyte was analyzed for and not detected above the minimum detectable activity (MDA) in the sample. The value reported is the sample result corrected for sample dilution and moisture content by the laboratory. The data is usable for decision making purposes.

UJ - Indicates the compound or analyte was analyzed for and not detected at concentrations above the minimum detectable activity (MDA) in the sample. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate, but is usable for decision making purposes.

J - Indicates the compound or analyte was analyzed for and detected. Due to a minor QC deficiency identified during the data validation, the associated concentration is an estimate, but the data are usable for decision-making purposes.

R - Indicates the compound or analyte was analyzed for, detected, and due to an identified major QC deficiency, the data are unusable.

UR - Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified major QC deficiency.

Appendix 2

Summary of Data Qualification

RADIOCHEMISTRY DATA QUALIFICATION SUMMARY*

SDG: JP0186	REVIEWER: ELR	Project: 118-H-1:2	PAGE 1 OF 1
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Tritium Carbon-14	J	All	No MS analysis

* - The Qualified Data Summary Table includes laboratory applied "U" qualifiers not specifically identified here. The laboratory applied "U" qualifiers are included to minimize misinterpretation of results contained in the table.

Appendix 3

Annotated Laboratory Reports

Sample Results Summary

TestAmerica TARL

Ordered by Method, Batch No., Client Sample ID.

Date: 31-May-11

Report No. : 46787

SDG No: JP0186

Batch	Client Id Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	MDC or MDA	CRDL	RPD
1140048 GAMMA_GS									
J1J9T7									
	MJLMF1AF	AG-108M	-1.20E-02 +- 1.8E-02	U	pCi/g		3.00E-02		
		AMERICIUM 241	-2.21E-02 +- 4.1E-02	U	pCi/g		6.70E-02		
		BA-133	-1.68E-02 +- 2.9E-02	U	pCi/g		4.12E-02		
		CO-60	-1.70E-03 +- 2.5E-02	U	pCi/g		4.33E-02	5.00E-02	
		CS-137	3.31E-02 +- 2.4E-02	U	pCi/g		4.51E-02	1.00E-01	
		EU-152	6.80E-03 +- 6.1E-02	U	pCi/g		9.90E-02	1.00E-01	
		EU-154	-5.45E-03 +- 6.8E-02	U	pCi/g		1.19E-01	1.00E-01	
		EU-155	8.68E-02 +- 5.5E-02	U	pCi/g		9.64E-02	1.00E-01	
J1J9T8									
	MJLMJ1AF	AG-108M	4.67E-03 +- 1.2E-02	U	pCi/g		2.16E-02		
		AMERICIUM 241	-2.96E-04 +- 1.0E-01	U	pCi/g		1.74E-01		
		BA-133	-6.89E-04 +- 2.0E-02	U	pCi/g		2.88E-02		
		CO-60	5.35E-03 +- 1.7E-02	U	pCi/g		3.11E-02	5.00E-02	
		CS-137	2.17E-02 +- 1.8E-02	U	pCi/g		3.21E-02	1.00E-01	
		EU-152	-2.20E-03 +- 3.9E-02	U	pCi/g		6.57E-02	1.00E-01	
		EU-154	-2.79E-02 +- 6.0E-02	U	pCi/g		1.00E-01	1.00E-01	
		EU-155	1.85E-02 +- 4.5E-02	U	pCi/g		7.88E-02	1.00E-01	
J1J9T9									
	MJLMK1AF	AG-108M	2.83E-03 +- 2.1E-02	U	pCi/g		3.55E-02		
		AMERICIUM 241	-3.91E-02 +- 4.8E-02	U	pCi/g		7.82E-02		
		BA-133	3.78E-03 +- 3.1E-02	U	pCi/g		4.61E-02		
		CO-60	-6.77E-03 +- 2.2E-02	U	pCi/g		3.86E-02	5.00E-02	
		CS-137	1.78E-02 +- 2.7E-02	U	pCi/g		4.69E-02	1.00E-01	
		EU-152	-9.24E-02 +- 8.0E-02	U	pCi/g		1.11E-01	1.00E-01	
		EU-154	-3.75E-02 +- 6.9E-02	U	pCi/g		1.16E-01	1.00E-01	
		EU-155	4.15E-02 +- 6.6E-02	U	pCi/g		1.11E-01	1.00E-01	
J1J9V0									
	MJLML1AF	AG-108M	8.99E-04 +- 1.5E-02	U	pCi/g		2.55E-02		
		AMERICIUM 241	-3.82E-03 +- 8.9E-02	U	pCi/g		1.47E-01		
		BA-133	2.92E-02 +- 2.7E-02	U	pCi/g		3.99E-02		
		CO-60	5.53E-03 +- 1.8E-02	U	pCi/g		3.21E-02	5.00E-02	
		CS-137	5.36E-03 +- 1.9E-02	U	pCi/g		3.26E-02	1.00E-01	
		EU-152	-2.94E-02 +- 8.7E-02	U	pCi/g		8.43E-02	1.00E-01	
		EU-154	-2.16E-02 +- 5.8E-02	U	pCi/g		9.83E-02	1.00E-01	
		EU-155	7.10E-02 +- 6.4E-02	U	pCi/g		1.10E-01	1.00E-01	
J1J9V0 DUP									
	MJLML1AH	AG-108M	-6.08E-03 +- 1.5E-02	U	pCi/g		2.42E-02		-269.4

TestAmerica

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RPD - Relative Percent Difference.

U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda/Mdl, Total Uncert, CRDL, RDL or not identified by gamma scan software.

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Sample Results Summary

Date: 31-May-11

TestAmerica TARL

Ordered by Method, Batch No., Client Sample ID.

Report No. : 46787

SDG No: JP0186

Batch	Client Id Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	MDC or MDA	CRDL	RPD
1140048	GAMMA_GS								
	J1J9V0 DUP								
	MJLML1AH	AMERICIUM 241	-1.26E-01 +- 1.9E-01	U	pCi/g		3.15E-01		-188.3
		BA-133	-1.48E-03 +- 2.4E-02	U	pCi/g		3.49E-02		221.4
		CO-60	2.68E-03 +- 1.8E-02	U	pCi/g		3.14E-02	5.00E-02	69.4
		CS-137	-8.23E-03 +- 2.0E-02	U	pCi/g		3.33E-02	1.00E-01	-947.9
		EU-152	-6.19E-02 +- 5.1E-02	U	pCi/g		8.18E-02	1.00E-01	-71.2
		EU-154	-4.71E-02 +- 6.4E-02	U	pCi/g		1.06E-01	1.00E-01	-74.1
		EU-155	7.80E-02 +- 6.1E-02	U	pCi/g		1.06E-01	1.00E-01	9.5
	J1J9V1								
	MJLMM1AF	AG-108M	5.45E-03 +- 1.7E-02	U	pCi/g		2.90E-02		
		AMERICIUM 241	-5.16E-02 +- 7.6E-02	U	pCi/g		1.24E-01		
		BA-133	8.43E-03 +- 2.8E-02	U	pCi/g		4.14E-02		
		CO-60	-3.32E-03 +- 2.2E-02	U	pCi/g		3.80E-02	5.00E-02	
		CS-137	2.54E-02 +- 2.3E-02	U	pCi/g		4.21E-02	1.00E-01	
		EU-152	-7.37E-03 +- 5.6E-02	U	pCi/g		9.66E-02	1.00E-01	
		EU-154	-2.08E-02 +- 7.1E-02	U	pCi/g		1.22E-01	1.00E-01	
		EU-155	2.61E-02 +- 5.7E-02	U	pCi/g		9.77E-02	1.00E-01	
	J1J9V2								
	MJLMN1AF	AG-108M	7.95E-03 +- 1.4E-02	U	pCi/g		2.45E-02		
		AMERICIUM 241	-1.01E-01 +- 1.8E-01	U	pCi/g		2.92E-01		
		BA-133	-1.81E-03 +- 2.2E-02	U	pCi/g		3.25E-02		
		CO-60	4.66E-03 +- 1.8E-02	U	pCi/g		3.26E-02	5.00E-02	
		CS-137	2.21E-03 +- 1.8E-02	U	pCi/g		3.16E-02	1.00E-01	
		EU-152	-7.71E-02 +- 4.7E-02	U	pCi/g		7.41E-02	1.00E-01	
		EU-154	-1.37E-02 +- 5.6E-02	U	pCi/g		9.65E-02	1.00E-01	
		EU-155	-1.70E-02 +- 5.7E-02	U	pCi/g		9.71E-02	1.00E-01	
	J1J9V3								
	MJLMP1AF	AG-108M	-9.03E-03 +- 1.6E-02	U	pCi/g		2.57E-02		
		AMERICIUM 241	-2.69E-02 +- 8.9E-02	U	pCi/g		1.47E-01		
		BA-133	1.75E-02 +- 2.7E-02	U	pCi/g		3.93E-02		
		CO-60	5.08E-03 +- 1.8E-02	U	pCi/g		3.27E-02	5.00E-02	
		CS-137	5.13E-02 +- 2.2E-02	U	pCi/g		3.92E-02	1.00E-01	
		EU-152	-2.10E-02 +- 1.3E-01	U	pCi/g		8.59E-02	1.00E-01	
		EU-154	-4.14E-02 +- 5.7E-02	U	pCi/g		9.42E-02	1.00E-01	
		EU-155	4.18E-02 +- 6.3E-02	U	pCi/g		1.08E-01	1.00E-01	
	J1J9V4								
	MJLMR1AF	AG-108M	4.65E-03 +- 1.7E-02	U	pCi/g		2.99E-02		
		AMERICIUM 241	6.47E-02 +- 7.8E-02	U	pCi/g		1.33E-01		

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Sample Results Summary

TestAmerica TARL

Ordered by Method, Batch No., Client Sample ID.

Date: 31-May-11

Report No. : 46787

6/11/11

SDG No: JP0186

Batch	Client Id Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	MDC or MDA	CRDL	RPD
1140048 GAMMA_GS									
J1J9V4									
	MJLMR1AF	BA-133	1.18E-03 +- 2.7E-02	U	pCi/g		3.93E-02		
		CO-60	1.26E-02 +- 2.3E-02	U	pCi/g		4.35E-02	5.00E-02	
		CS-137	-9.14E-03 +- 2.2E-02	U	pCi/g		3.74E-02	1.00E-01	
		EU-152	2.62E-02 +- 6.0E-02	U	pCi/g		9.81E-02	1.00E-01	
		EU-154	-6.21E-02 +- 7.0E-02	U	pCi/g		1.15E-01	1.00E-01	
		EU-155	3.50E-02 +- 5.6E-02	U	pCi/g		9.65E-02	1.00E-01	
J1J9V5									
	MJLMT1AF	AG-108M	-1.31E-02 +- 2.0E-02	U	pCi/g		3.37E-02		
		AMERICIUM 241	-4.70E-04 +- 5.0E-02	U	pCi/g		8.27E-02		
		BA-133	-1.84E-03 +- 3.3E-02	U	pCi/g		4.73E-02		
		CO-60	-1.42E-03 +- 2.2E-02	U	pCi/g		3.91E-02	5.00E-02	
		CS-137	2.51E-02 +- 2.6E-02	U	pCi/g		4.67E-02	1.00E-01	
		EU-152	-3.25E-02 +- 6.8E-02	U	pCi/g		1.06E-01	1.00E-01	
		EU-154	4.32E-02 +- 7.3E-02	U	pCi/g		1.34E-01	1.00E-01	
		EU-155	5.98E-02 +- 6.9E-02	U	pCi/g		1.16E-01	1.00E-01	
J1J9V6									
	MJLMV1AF	AG-108M	-7.51E-03 +- 1.0E-02	U	pCi/g		1.70E-02		
		AMERICIUM 241	1.16E-02 +- 8.7E-02	U	pCi/g		1.48E-01		
		BA-133	2.79E-03 +- 1.6E-02	U	pCi/g		2.34E-02		
		CO-60	3.01E-03 +- 1.4E-02	U	pCi/g		2.54E-02	5.00E-02	
		CS-137	2.02E-02 +- 1.5E-02	U	pCi/g		2.71E-02	1.00E-01	
		EU-152	3.90E-02 +- 3.4E-02	U	pCi/g		6.02E-02	1.00E-01	
		EU-154	1.15E-02 +- 5.1E-02	U	pCi/g		9.03E-02	1.00E-01	
		EU-155	2.00E-02 +- 3.8E-02	U	pCi/g		6.65E-02	1.00E-01	
J1J9V7									
	MJLM01AF	AG-108M	-7.80E-03 +- 1.4E-02	U	pCi/g		2.33E-02		
		AMERICIUM 241	-4.18E-03 +- 3.0E-02	U	pCi/g		5.02E-02		
		BA-133	-3.15E-03 +- 2.1E-02	U	pCi/g		3.02E-02		
		CO-60	-4.30E-04 +- 1.7E-02	U	pCi/g		3.07E-02	5.00E-02	
		CS-137	1.46E-02 +- 1.7E-02	U	pCi/g		3.08E-02	1.00E-01	
		EU-152	2.89E-03 +- 4.6E-02	U	pCi/g		7.80E-02	1.00E-01	
		EU-154	-8.32E-03 +- 5.5E-02	U	pCi/g		9.64E-02*	1.00E-01	
		EU-155	-6.21E-03 +- 4.2E-02	U	pCi/g		7.03E-02	1.00E-01	
J1J9V8									
	MJLM41AF	AG-108M	-9.39E-03 +- 1.3E-02	U	pCi/g		2.06E-02		
		AMERICIUM 241	5.84E-03 +- 1.6E-01	U	pCi/g		2.72E-01		
		BA-133	1.92E-02 +- 2.0E-02	U	pCi/g		3.13E-02		

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Sample Results Summary

Date: 31-May-11

TestAmerica TARL

Ordered by Method, Batch No., Client Sample ID.

Report No. : 46787

6/11/11

SDG No: JP0186

Batch	Client Id Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	MDC or MDA	CRDL	RPD
1140048 GAMMA_GS									
J1J9V8									
	MJLM41AF	CO-60	-5.60E-03 +- 1.6E-02	U	pCi/g		2.77E-02	5.00E-02	
		CS-137	6.02E-03 +- 1.6E-02	U	pCi/g		2.71E-02	1.00E-01	
		EU-152	1.27E-02 +- 4.5E-02	U	pCi/g		7.26E-02	1.00E-01	
		EU-154	9.93E-04 +- 5.5E-02	U	pCi/g		9.58E-02	1.00E-01	
		EU-155	3.78E-02 +- 4.9E-02	U	pCi/g		8.59E-02	1.00E-01	
J1J9V9									
	MJLM51AF	AG-108M	-1.90E-02 +- 1.5E-02	U	pCi/g		2.42E-02		
		AMERICIUM 241	-9.01E-02 +- 8.8E-02	U	pCi/g		1.41E-01		
		BA-133	2.42E-02 +- 2.6E-02	U	pCi/g		3.94E-02		
		CO-60	-3.72E-03 +- 1.7E-02	U	pCi/g		3.01E-02	5.00E-02	
		CS-137	-3.09E-03 +- 2.0E-02	U	pCi/g		3.37E-02	1.00E-01	
		EU-152	-5.97E-02 +- 1.4E-01	U	pCi/g		8.66E-02	1.00E-01	
		EU-154	-3.53E-02 +- 6.1E-02	U	pCi/g		1.01E-01	1.00E-01	
		EU-155	1.82E-02 +- 6.3E-02	U	pCi/g		1.07E-01	1.00E-01	
J1J9W0									
	MJLM61AF	AG-108M	-4.72E-03 +- 1.6E-02	U	pCi/g		2.66E-02		
		AMERICIUM 241	-2.24E-03 +- 6.9E-02	U	pCi/g		1.15E-01		
		BA-133	2.01E-03 +- 2.7E-02	U	pCi/g		4.04E-02		
		CO-60	3.92E-03 +- 2.0E-02	U	pCi/g		3.67E-02	5.00E-02	
		CS-137	-4.89E-03 +- 1.9E-02	U	pCi/g		3.23E-02	1.00E-01	
		EU-152	-2.70E-02 +- 5.1E-02	U	pCi/g		8.60E-02	1.00E-01	
		EU-154	-7.62E-02 +- 6.9E-02	U	pCi/g		1.10E-01	1.00E-01	
		EU-155	5.40E-02 +- 5.3E-02	U	pCi/g		9.28E-02	1.00E-01	
J1J9W1									
	MJLM71AF	AG-108M	2.89E-03 +- 1.6E-02	U	pCi/g		2.83E-02		
		AMERICIUM 241	-5.52E-02 +- 4.0E-02	U	pCi/g		6.34E-02		
		BA-133	-6.16E-03 +- 2.6E-02	U	pCi/g		3.73E-02		
		CO-60	9.07E-04 +- 2.0E-02	U	pCi/g		3.65E-02	5.00E-02	
		CS-137	-1.19E-02 +- 2.2E-02	U	pCi/g		3.64E-02	1.00E-01	
		EU-152	-3.47E-02 +- 6.3E-02	U	pCi/g		9.34E-02	1.00E-01	
		EU-154	3.58E-02 +- 6.5E-02	U	pCi/g		1.19E-01	1.00E-01	
		EU-155	6.73E-02 +- 5.5E-02	U	pCi/g		9.39E-02	1.00E-01	
J1J9W2									
	MJLNA1AF	AG-108M	-1.99E-03 +- 1.0E-02	U	pCi/g		1.72E-02		
		AMERICIUM 241	-3.82E-02 +- 8.5E-02	U	pCi/g		1.42E-01		
		BA-133	-2.23E-03 +- 1.7E-02	U	pCi/g		2.38E-02		
		CO-60	-1.48E-03 +- 1.6E-02	U	pCi/g		2.74E-02	5.00E-02	

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RPD - Relative Percent Difference.

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Sample Results Summary

Date: 31-May-11

TestAmerica TARL

Ordered by Method, Batch No., Client Sample ID.

Report No. : 46787

SDG No: JP0186

Batch	Client Id Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	MDC or MDA	CRDL	RPD
1140048 GAMMA_GS									
J1J9W2									
	MJLNA1AF	CS-137	1.56E-02 +- 2.2E-02	U	pCi/g		2.74E-02	1.00E-01	
		EU-152	1.90E-02 +- 3.3E-02	U	pCi/g		5.81E-02	1.00E-01	
		EU-154	1.33E-02 +- 4.9E-02	U	pCi/g		8.63E-02	1.00E-01	
		EU-155	1.27E-02 +- 3.8E-02	U	pCi/g		6.58E-02	1.00E-01	
J1J9W3									
	MJLNC1AF	AG-108M	3.84E-03 +- 1.4E-02	U	pCi/g		2.52E-02		
		AMERICIUM 241	4.43E-03 +- 3.3E-02	U	pCi/g		5.49E-02		
		BA-133	2.93E-02 +- 2.1E-02	U	pCi/g		3.43E-02		
		CO-60	-1.17E-03 +- 1.6E-02	U	pCi/g		2.91E-02	5.00E-02	
		CS-137	3.32E-02 +- 2.1E-02	U	pCi/g		3.93E-02	1.00E-01	
		EU-152	1.85E-02 +- 4.8E-02	U	pCi/g		8.22E-02	1.00E-01	
		EU-154	2.15E-02 +- 5.8E-02	U	pCi/g		1.05E-01	1.00E-01	
		EU-155	6.63E-02 +- 4.5E-02	U	pCi/g		7.96E-02	1.00E-01	
1140055 SRTOT_SEP_PRECIP_GPC									
J1J9T7									
	MJLMF1AC	STRONTIUM	1.72E-02 +- 8.6E-02	U	pCi/g	58%	1.98E-01		
J1J9T8									
	MJLMJ1AC	STRONTIUM	1.16E-01 +- 9.7E-02	U	pCi/g	59%	1.89E-01		
J1J9T9									
	MJLMK1AC	STRONTIUM	6.05E-02 +- 8.2E-02	U	pCi/g	58%	1.75E-01		
J1J9V0									
	MJLML1AC	STRONTIUM	3.33E-03 +- 7.0E-02	U	pCi/g	59%	1.68E-01		
J1J9V1									
	MJLMM1AC	STRONTIUM	1.31E-02 +- 8.4E-02	U	pCi/g	55%	1.95E-01		
J1J9V1 DUP									
	MJLMM1AH	STRONTIUM	-4.09E-02 +- 8.0E-02	U	pCi/g	57%	1.99E-01		-388.8
J1J9V2									
	MJLMN1AC	STRONTIUM	2.52E-02 +- 8.0E-02	U	pCi/g	56%	1.82E-01		
J1J9V3									
	MJLMP1AC	STRONTIUM	1.30E-02 +- 8.6E-02	U	pCi/g	52%	2.00E-01		
J1J9V4									
	MJLMR1AC	STRONTIUM	1.11E-01 +- 9.7E-02	U	pCi/g	52%	1.90E-01		
J1J9V5									
	MJLMT1AC	STRONTIUM	3.08E-02 +- 8.8E-02	U	pCi/g	54%	2.00E-01		
J1J9V6									
	MJLMV1AC	STRONTIUM	1.39E-01 +- 1.0E-01	U	pCi/g	58%	1.95E-01		
J1J9V7									

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rptSTLRchSaSummary2 V5.2.14 A2002

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014

Sample Results Summary

TestAmerica TARL

Ordered by Method, Batch No., Client Sample ID.

Date: 31-May-11

Report No. : 46787

K 6/6/11

SDG No: JP0186

Batch	Client Id / Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	MDC or MDA	CRDL	RPD
1140055	SRTOT_SEP_PRECIP_GPC								
	J1J9V7								
	MJLM01AC	STRONTIUM	8.44E-02 +- 9.3E-02	U	pCi/g	57%	1.92E-01		
	J1J9V8								
	MJLM41AC	STRONTIUM	8.57E-02 +- 8.8E-02	U	pCi/g	56%	1.78E-01		
	J1J9V9								
	MJLM51AC	STRONTIUM	1.32E-01 +- 9.6E-02	U	pCi/g	55%	1.75E-01		
	J1J9W0								
	MJLM61AC	STRONTIUM	-4.05E-03 +- 6.9E-02	U	pCi/g	61%	1.66E-01		
	J1J9W1								
	MJLM71AC	STRONTIUM	3.59E-02 +- 8.4E-02	U	pCi/g	58%	1.88E-01		
	J1J9W2								
	MJLNA1AC	STRONTIUM	-1.75E-03 +- 7.5E-02	U	pCi/g	64%	1.79E-01		
	J1J9W3								
	MJLNC1AC	STRONTIUM	1.57E-02 +- 7.4E-02	U	pCi/g	62%	1.73E-01		
1139266	7196_CR6								
	J1J9T7								
	MJLMF1AA	HEXCHROME	4.61E-01 +- 0.0E+00		mg/kg	N/A	1.54E-01	1.55E-01	
	MJLMF1AJ	HEXCHROME	5.29E-01 +- 0.0E+00		mg/kg	N/A	1.54E-01	3.50E-01	13.7
	J1J9T8								
	MJLMJ1AA	HEXCHROME	4.82E-01 +- 0.0E+00		mg/kg	N/A	1.54E-01	1.55E-01	
	J1J9T9								
	MJLMK1AA	HEXCHROME	4.80E-01 +- 0.0E+00		mg/kg	N/A	1.55E-01	1.55E-01	
	J1J9V0								
	MJLML1AA	HEXCHROME	4.86E-01 +- 0.0E+00		mg/kg	N/A	1.55E-01	1.55E-01	
	J1J9V1								
	MJLMM1AA	HEXCHROME	4.90E-01 +- 0.0E+00		mg/kg	N/A	1.54E-01	1.55E-01	
	J1J9V2								
	MJLMN1AA	HEXCHROME	4.60E-01 +- 0.0E+00		mg/kg	N/A	1.55E-01	1.55E-01	
	J1J9V3								
	MJLMP1AA	HEXCHROME	5.43E-01 +- 0.0E+00		mg/kg	N/A	1.55E-01	1.55E-01	
	J1J9V4								
	MJLMR1AA	HEXCHROME	5.40E-01 +- 0.0E+00		mg/kg	N/A	1.54E-01	1.55E-01	
	J1J9V5								
	MJLMT1AA	HEXCHROME	5.38E-01 +- 0.0E+00		mg/kg	N/A	1.54E-01	1.55E-01	
	J1J9V6								
	MJLMV1AA	HEXCHROME	2.09E-01 +- 0.0E+00		mg/kg	N/A	1.55E-01	1.55E-01	
	J1J9V7								
	MJLM01AA	HEXCHROME	2.51E-01 +- 0.0E+00		mg/kg	N/A	1.55E-01	1.55E-01	
	J1J9V8								

K 6/6/11

TestAmerica

rptSTLRchSaSummary2 V5.2.14 A2002

RPD - Relative Percent Difference.

U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda/Mdl, Total Uncert, CRDL, RDL or not identified by gamma scan software.

015

Sample Results Summary

TestAmerica TARL

Ordered by Method, Batch No., Client Sample ID.

Date: 31-May-11

Report No. : 46787

SDG No: JP0186

Batch	Client Id / Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	MDC or MDA	CRDL	RPD
1139266 7196_CR6									
	J1J9V8								
	MJLM41AA	HEXCHROME	2.06E-01 +- 0.0E+00		mg/kg	N/A	1.55E-01	1.55E-01	
1139266-2 7196_CR6									
	J1J9V9								
	MJLM51AA	HEXCHROME	8.15E-01 +- 0.0E+00		mg/kg	N/A	1.54E-01	1.55E-01	
	J1J9W0								
	MJLM61AA	HEXCHROME	2.06E-01 +- 0.0E+00		mg/kg	N/A	1.54E-01	1.55E-01	
	J1J9W1								
	MJLM71AA	HEXCHROME	2.78E-01 +- 0.0E+00		mg/kg	N/A	1.54E-01	1.55E-01	
	J1J9W2								
	MJLNA1AA	HEXCHROME	3.69E-01 +- 0.0E+00		mg/kg	N/A	1.55E-01	1.55E-01	
	J1J9W3								
	MJLMC1AA	HEXCHROME	2.54E-01 +- 0.0E+00		mg/kg	N/A	1.54E-01		
1140050 906.0_H3_LSC									
	J1J9T7								
	MJLMF1AE	H-3	6.44E-02 +- 1.6E-02	J	pCi/g	100%	3.10E-02	4.00E+02	
	J1J9T8								
	MJLMJ1AE	H-3	1.77E-02 +- 1.5E-02	U J	pCi/g	100%	3.30E-02	4.00E+02	
	J1J9T9								
	MJLMK1AE	H-3	-1.78E-03 +- 1.2E-02	U J	pCi/g	100%	2.70E-02	4.00E+02	
	J1J9T9 DUP								
	MJLMK1AH	H-3	6.26E-03 +- 1.3E-02	U	pCi/g	100%	2.92E-02	4.00E+02	359.5
	J1J9V0								
	MJLML1AE	H-3	-2.71E-04 +- 1.1E-02	U J	pCi/g	100%	2.59E-02	4.00E+02	
	J1J9V1								
	MJLMM1AE	H-3	-1.62E-03 +- 1.2E-02	U J	pCi/g	100%	2.63E-02	4.00E+02	
	J1J9V2								
	MJLMN1AE	H-3	1.18E-03 +- 9.1E-03	U J	pCi/g	100%	2.06E-02	4.00E+02	
	J1J9V3								
	MJLMP1AE	H-3	1.67E-03 +- 1.2E-02	U J	pCi/g	100%	2.78E-02	4.00E+02	
	J1J9V4								
	MJLMR1AE	H-3	-1.49E-03 +- 1.1E-02	U J	pCi/g	100%	2.42E-02	4.00E+02	
	J1J9V5								
	MJLMT1AE	H-3	2.45E-02 +- 1.1E-02	J	pCi/g	100%	2.28E-02	4.00E+02	
	J1J9V6								
	MJLMV1AE	H-3	-6.53E-05 +- 5.6E-03	U J	pCi/g	100%	1.27E-02	4.00E+02	
	J1J9V7								
	MJLM01AE	H-3	-2.50E-04 +- 5.5E-03	U J	pCi/g	100%	1.24E-02	4.00E+02	
	J1J9V8								

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rptSTLRchSaSummary2 V5.2.14
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RPD - Relative Percent Difference.

U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda/Mdl, Total Uncert, CRDL, RDL or not identified by gamma scan software.

016

Sample Results Summary

Date: 31-May-11

TestAmerica TARL

Ordered by Method, Batch No., Client Sample ID.

Report No. : 46787

SDG No: JP0186

Batch	Client Id Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	MDC or MDA	CRDL	RPD
1140050 906.0_H3_LSC									
	J1J9V8								
	MJLM41AE	H-3	2.10E-03 +- 6.1E-03	U J	pCi/g	100%	1.36E-02	4.00E+02	
	J1J9V9								
	MJLM51AE	H-3	3.47E-03 +- 1.2E-02	U J	pCi/g	100%	2.64E-02	4.00E+02	
	J1J9W0								
	MJLM61AE	H-3	5.09E-04 +- 4.3E-03	U J	pCi/g.	100%	9.79E-03	4.00E+02	
	J1J9W1								
	MJLM71AE	H-3	-2.87E-03 +- 7.0E-03	U J	pCi/g	100%	1.63E-02	4.00E+02	
	J1J9W2								
	MJLNA1AE	H-3	-2.69E-03 +- 6.1E-03	U J	pCi/g	100%	1.41E-02	4.00E+02	
	J1J9W3								
	MJLNC1AE	H-3	-1.77E-04 +- 5.3E-03	U J	pCi/g	100%	1.22E-02	4.00E+02	
1140053 NI63_LSC									
	J1J9T7								
	MJLMF1AD	NI-63	2.37E+00 +- 5.9E+00	U	pCi/g	97%	1.24E+01	3.00E+01	
	J1J9T8								
	MJLMJ1AD	NI-63	2.14E+00 +- 6.5E+00	U	pCi/g	92%	1.35E+01	3.00E+01	
	J1J9T8 DUP								
	MJLMJ1AH	NI-63	3.05E+00 +- 6.4E+00	U	pCi/g	94%	1.32E+01	3.00E+01	35.4
	J1J9T9								
	MJLMK1AD	NI-63	1.84E-01 +- 6.1E+00	U	pCi/g	95%	1.36E+01	3.00E+01	
	J1J9V0								
	MJLML1AD	NI-63	-2.29E+00 +- 6.2E+00	U	pCi/g	91%	1.37E+01	3.00E+01	
	J1J9V1								
	MJLMM1AD	NI-63	1.74E+00 +- 6.2E+00	U	pCi/g	92%	1.29E+01	3.00E+01	
	J1J9V2								
	MJLMN1AD	NI-63	9.11E-01 +- 5.9E+00	U	pCi/g	96%	1.25E+01	3.00E+01	
	J1J9V3								
	MJLMP1AD	NI-63	1.25E+00 +- 6.1E+00	U	pCi/g	97%	1.29E+01	3.00E+01	
	J1J9V4								
	MJLMR1AD	NI-63	-3.66E-02 +- 6.1E+00	U	pCi/g	92%	1.30E+01	3.00E+01	
	J1J9V5								
	MJLMT1AD	NI-63	-3.10E+00 +- 6.0E+00	U	pCi/g	95%	1.33E+01	3.00E+01	
	J1J9V6								
	MJLMV1AD	NI-63	2.02E+00 +- 6.4E+00	U	pCi/g	100%	1.42E+01	3.00E+01	
	J1J9V7								
	MJLM01AD	NI-63	-3.14E+00 +- 6.2E+00	U	pCi/g	97%	1.44E+01	3.00E+01	
	J1J9V8								
	MJLM41AD	NI-63	5.25E-01 +- 6.0E+00	U	pCi/g	94%	1.27E+01	3.00E+01	

TestAmerica

rptSTLRchSaSummary2 V5.2.14 A2002

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017

Sample Results Summary

TestAmerica TARL

Ordered by Method, Batch No., Client Sample ID.

Date: 31-May-11

Report No. : 46787

6/11/11

SDG No: JP0186

Batch	Client Id Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	MDC or MDA	CRDL	RPD
1140053 NI63_LSC									
J1J9V9									
	MJLM51AD	NI-63	1.66E+00 +- 6.5E+00	U	pCi/g	91%	1.36E+01	3.00E+01	
J1J9W0									
	MJLM61AD	NI-63	4.60E+00 +- 6.1E+00	U	pCi/g	100%	1.24E+01	3.00E+01	
J1J9W1									
	MJLM71AD	NI-63	3.05E-01 +- 6.0E+00	U	pCi/g	100%	1.36E+01	3.00E+01	
J1J9W2									
	MJLNA1AD	NI-63	-1.54E+00 +- 5.9E+00	U	pCi/g	97%	1.30E+01	3.00E+01	
J1J9W3									
	MJLNC1AD	NI-63	-1.53E+00 +- 5.9E+00	U	pCi/g	94%	1.35E+01	3.00E+01	
1140054 C14_CHEM_LSC									
J1J9T7									
	MJLMF1AG	C-14	1.20E-01 +- 2.1E-01	U J	pCi/g	100%	4.50E-01	5.00E+01	
J1J9T7 DUP									
	MJLMF1AK	C-14	-1.13E-01 +- 1.9E-01	U	pCi/g	100%	4.48E-01	5.00E+01	6867.5
J1J9T8									
	MJLMJ1AG	C-14	3.20E-01 +- 2.2E-01	U J	pCi/g	100%	4.47E-01	5.00E+01	
J1J9T9									
	MJLMK1AG	C-14	2.50E-01 +- 2.1E-01	U	pCi/g	100%	4.51E-01	5.00E+01	
J1J9V0									
	MJLML1AG	C-14	1.46E-02 +- 2.0E-01	U	pCi/g	100%	4.50E-01	5.00E+01	
J1J9V1									
	MJLMM1AG	C-14	1.04E-02 +- 2.0E-01	U	pCi/g	100%	4.49E-01	5.00E+01	
J1J9V2									
	MJLMN1AG	C-14	2.01E-01 +- 2.1E-01	U	pCi/g	100%	4.48E-01	5.00E+01	
J1J9V3									
	MJLMP1AG	C-14	1.18E-01 +- 2.1E-01	U	pCi/g	100%	4.51E-01	5.00E+01	
J1J9V4									
	MJLMR1AG	C-14	1.90E-01 +- 2.1E-01	U	pCi/g	100%	4.50E-01	5.00E+01	
J1J9V5									
	MJLMT1AG	C-14	2.35E-02 +- 2.0E-01	U	pCi/g	100%	4.51E-01	5.00E+01	
J1J9V6									
	MJLMV1AG	C-14	7.72E-02 +- 2.0E-01	U	pCi/g	100%	4.49E-01	5.00E+01	
J1J9V7									
	MJLM01AG	C-14	2.85E-02 +- 2.0E-01	U	pCi/g	100%	4.52E-01	5.00E+01	
J1J9V8									
	MJLM41AG	C-14	9.15E-02 +- 2.0E-01	U	pCi/g	100%	4.48E-01	5.00E+01	
J1J9V9									
	MJLM51AG	C-14	1.89E-01 +- 2.1E-01	U	pCi/g	100%	4.48E-01	5.00E+01	

TestAmerica

rptSTLRchSaSummary2 V5.2.14 A2002

RPD - Relative Percent Difference.

U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda/Mdl, Total Uncert, CRDL, RDL or not identified by gamma scan software.

018

Sample Results Summary

TestAmerica TARL

Ordered by Method, Batch No., Client Sample ID.

Date: 31-May-11

Report No. : 46787

SDG No: JP0186

Batch	Client Id Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	MDC or MDA	CRDL	RPD
1140054	C14_CHEM_LSC								
J1J9W0									
	MJLM61AG	C-14	3.44E-01 +- 2.2E-01	U J	pCi/g	100%	4.47E-01	5.00E+01	
J1J9W1									
	MJLM71AG	C-14	8.06E-01 +- 2.4E-01	J	pCi/g	100%	4.50E-01	5.00E+01	
J1J9W2									
	MJLNA1AG	C-14	3.16E-01 +- 2.2E-01	U J	pCi/g	100%	4.52E-01	5.00E+01	
J1J9W3									
	MJLNC1AG	C-14	1.22E-01 +- 2.1E-01	U J	pCi/g	100%	4.52E-01	5.00E+01	

No. of Results: 234

TestAmerica

rptSTLRchSaSummary2 V5.2.14 A2002

RPD - Relative Percent Difference.

U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mde/Mda/Mdl, Total Uncert, CRDL, RDL or not identified by gamma scan software.

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Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Certificate of Analysis

Washington Hanford Closure
2620 Fermi Avenue
Richland, WA 99354

TestAmerica Laboratories, Inc.

May 31, 2011

Attention: Joan Kessner

SAF Number	:	RC-107
Date SDG Closed	:	May 19, 2011
Number of Samples	:	Seventeen (17)
Sample Type	:	Soil
SDG Number	:	J0P0186
Data Deliverable	:	7– Day / Summary

CASE NARRATIVE

I. Introduction

On May 19, 2011 seventeen soil samples were received at TestAmerica for radiochemical analysis. Upon receipt, the samples were assigned the following laboratory ID number to correspond with the Washington Closure Hanford (WCH) specific ID:

WCH ID#	TARL ID#	MATRIX	DATE OF RECEIPT
J1J9T7	MJLMF	SOIL	5/19/11
J1J9T8	MJLMJ	SOIL	5/19/11
J1J9T9	MJLMK	SOIL	5/19/11
J1J9V0	MJLML	SOIL	5/19/11
J1J9V1	MJLMM	SOIL	5/19/11
J1J9V2	MJLMN	SOIL	5/19/11
J1J9V3	MJLMP	SOIL	5/19/11
J1J9V4	MJLMR	SOIL	5/19/11
J1J9V5	MJLMT	SOIL	5/19/11
J1J9V6	MJLMV	SOIL	5/19/11
J1J9V7	MJLM0	SOIL	5/19/11
J1J9V8	MJLM4	SOIL	5/19/11
J1J9V9	MJLM5	SOIL	5/19/11
J1J9W0	MJLM6	SOIL	5/19/11
J1J9W1	MJLM7	SOIL	5/19/11
J1J9W2	MJLNA	SOIL	5/19/11
J1J9W3	MJLNC	SOIL	5/19/11

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II. Sample Receipt

The samples were received in good condition and no anomalies were noted during check-in.

III. Analytical Results/Methodology

The analytical results for this report are presented by laboratory sample ID. Each set of data includes sample identification information, analytical results and the appropriate associated statistical errors.

The requested analyses were:

Gas Proportional Counting
Strontium-90 by method RL-GPC-003
Gamma Spectroscopy
Gamma Spec by method RL-GAM-001
Liquid Scintillation Counting
Tritium by method RL-LSC-005
Nickel-63 by method RL-LCS-017
Carbon-14 by method RL-LSC-008
Chemical Analysis
Hexavalent Chromium by EPA method 7196A

IV. Quality Control

The analytical results for each analysis performed includes a minimum of one laboratory control sample (LCS), one method (reagent) blank, and one duplicate sample analysis. Any exceptions have been noted in the "Comments" section.

QC and sample results are reported in the same units.

V. Comments

Gas Proportional Counting
Strontium-90 by method RL-GPC-003:
The LCS, batch blank, samples and sample duplicate (J1J9V1) results are within contractual requirements.

Gamma Spectroscopy
Gamma Spec by method RL-GAM-001:
The CRDL was not met on some analytes. Except as noted, the LCS, batch blank, samples and sample duplicate (J1J9V0) results are within contractual requirements.

Liquid Scintillation Counting
Tritium by method RL-LSC-005:
The LCS, batch blank, samples and sample duplicate (J1J9T9) results are within contractual

requirements.

Carbon-14 by method RL-LSC-008:
The LCS, batch blank, samples and sample duplicate (J1J9T7) results are within contractual requirements.

Nickel-63 by method RL-LCS-017:
The LCS, batch blank, samples and sample duplicate (J1J9T8) results are within contractual requirements.

Chemical Analysis
Hexavalent Chromium by EPA method 7196A
The matrix spike recovered low at 60.5%. The post digestive matrix spike recovered at 94.2% and the insoluble matrix spike recovered at 102%. This implies strong reducing capacity in the sample, but not enough to exhaust the more copious insoluble matrix spike. Except as noted, the LCS, batch blank, sample, sample duplicate (J1J9T7) and sample matrix spike (J1J9T7) results are within contractual requirements.

I certify that this Certificate of Analysis 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 hard copy data package has been authorized by the Laboratory Manager, or a designee as verified by the following signature.

Reviewed and approved:

Rhonda Wagar
Project Manager

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Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-107-072	Page 1 of 4
Collector: K. Lucas	Company Contact: Joan Kessner; Telephone No.: 509-375-4688	Project Coordinator: KESSNER, JH	Price Code: 8L, 8B; Data Turnaround: 21 Days
Project Designation: 100-H Remaining Sites Burial Grounds - Soil Full Protocol	Sampling Location: 118-H-1:2 Verification Sampling	SAF No.: RC-107	
Ice Chest No.: NA	Field Logbook No.: EL 1627-05; COA: R118H12000	Method of Shipment: Government Vehicle / FedEx	
Shipped To: TestAmerica Incorporated, Richland	Offsite Property No.: NA	Bill of Lading/Air Bill No.: NA	

POSSIBLE SAMPLE HAZARDS/REMARKS
Possible RAD <DOT

Special Handling and/or Storage Lot#JIE190511
Cool to 4 deg C
SDG# JP0186
CKS-19-11 Due 5-26-11

Preservation	None	Cool 4C	Cool 4C	Cool 4C	None	None	None	None		
Type of Container	G/P	G/P	G	aG	G/P	G/P	G/P	G/P		
No. of Container(s)	1	1	1	1	1	1	0	1		
Volume	60mL	60mL	120mL	120mL	120mL	500mL	60mL	60g		
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Chromium Hex - 7196	TPH-Diesel Range - WTPH-D +	PAHs - 8310	Carbon-14, Tritium - HG Low Level Soil	See item (2) in Special Instructions.	Nickel-63; Strontium-89,90 -- Total Sr	RCF GEA Shipping Screen		
024										

Sample No.	Matrix *	Sample Date	Sample Time										
J1J9T7 MJLMF	SOIL	5/17/11	0805		X			X	X	X			
J1J9T8 MJLMJ	SOIL	5/17/11	0815		X			X	X	X			
J1J9T9 MJLMK	SOIL	5/17/11	0825		X			X	X	X			
J1J9V0 MJLML	SOIL	5/17/11	0835		X			X	X	X			
J1J9V1 MJLMM	SOIL	5/17/11	0845		X			X	X	X			

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
K Lucas Kevin Lucas	5-17-11 1110	JV Fullmer	1110 5/17/11
JV Fullmer	5/17/11 1545	1060 fridge 14 A. Freier	1545 5-17-11
A. Freier	WCH 1060 Bridge 14 5-19-11 1305	TMCP Cameron Krona	1305 5.19.11

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Close-out List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc); Mercury - 7471 - (CV)
(2) Gamma Spec - Client List (Americium-241, Barium-133, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Silver-108 metastable), Nickel 63, Strontium-90

REVIEWED BY CMB DATE 5/19/11

JP0186

Matrix *: S=Soil; SE=Sediment; SO=Solid; SI=Sludge; W=Water; O=Oil; A=Air; DS=Drum Solids; DL=Drum Liquids; T=Tissue; WI=Wipe; L=Liquid; V=Vegetation; X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

TestAmerica Laboratories, Inc.

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TestAmerica Laboratories, Inc.

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-107-072	Page 2 of 4

Collector K. Lucas	Company Contact Joan Kessner	Telephone No. 509-375-4688	Project Coordinator KESSNER, JH
Price Code 8L 8S	Data Turnaround 21 Days 7		
Project Designation 100-H Remaining Sites Burial Grounds - Soil Full Protocol	Sampling Location 118-H-1:2 Verification Sampling		SAF No. RC-107
Ice Chest No. NA	Field Logbook No. EL 1627-05	COA R118H12000	Method of Shipment Government Vehicle/FedEx
Shipped To TestAmerica Incorporated, Richland	Offsite Property No. NA		Bill of Lading/Air Bill No. NA

POSSIBLE SAMPLE HAZARDS/REMARKS

Possible RAD <DOT

Lot#J1E190511
SDG#JP0186
Due 5-26-11

Special Handling and/or Storage

Cool to 4 deg C

Preservation	None	Cool 4C	Cool 4C	Cool 4C	None	None	None	None		
Type of Container	G/P	G/P	G	aG	G/P	G/P	G/P	G/P		
No. of Container(s)	1	1	1		1	1	0	1		
Volume	60mL	60mL	120mL	120mL	120mL	500mL	60mL	60g		
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Chromium Hex - 7196	TPH-Diesel Range - WTPH-D +	PAHs - 8310	Carbon-14; Tritium - H3 Low Level Soil	See item (2) in Special Instructions.	Nickel-63; Strontium-89,90 -- Total Sr	RGS GEA Shipping Screen		

02 51

Sample No.	Matrix *	Sample Date	Sample Time										
J1J9V2 MJLMN	SOIL	5/17/11	0900		X			X	X	X			
J1J9V3 MJLMP	SOIL	5/17/11	0915		X			X	X	X			
J1J9V4 MJLMR	SOIL	5/17/11	0925		X			X	X	X			
J1J9V5 MJLMT	SOIL	5/17/11	0930		X			X	X	X			
J1J9V6 MJLMV	SOIL	5/17/11	0940		X			X	X	X			

CHAIN OF POSSESSION — **Sign/Print Names**

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
K. Lucas Kenner Lucas	5-17-11 1110	JV Fullmer	1110 5/17/11
JV Fullmer	1545 5/17/11	1060, fridge 1A A. Freier	1545 5-17-11
1060 Bridge 1A A. Freier	1205 5-19-11	TALR Carmen Krogh	1205 5-19-11

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Close-out List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc}; Mercury - 7471 - (CV)
(2) Gamma Spec - Client List {Americium-241, Barium-133, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Silver-108 metastable}, Nickel 63, Strontium 90

REVIEWED BY CMB DATE 5/19/11

JP0186

Matrix *

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

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-107-072	Page 3 of 4
Collector: K. Lucas	Company Contact: Joan Kessner; Telephone No.: 509-375-4688	Project Coordinator: KESSNER, JH	Price Code: 8L 8R; Data Turnaround: 21 Days
Project Designation: 100-H Remaining Sites Burial Grounds - Soil Full Protocol	Sampling Location: 118-H-1:2 Verification Sampling	SAF No.: RC-107	
Ice Chest No.: NA	Field Logbook No.: EL 1627-05; COA: R118H12000	Method of Shipment: Government Vehicle/FedEx	
Shipped To: TestAmerica Incorporated, Richland	Offsite Property No.: NA	Bill of Lading/Air Bill No.: NA	

POSSIBLE SAMPLE HAZARDS/REMARKS

Possible RAD <DOT

Lot# J1E190511
SDG# JP0186
Due 5-26-11

Special Handling and/or Storage

Cool to 4 deg C

Preservation	None	Cool 4C	Cool 4C	Cool 4C	None	None	None	None		
Type of Container	G/P	G/P	G	aG	G/P	G/P	G/P	G/P		
No. of Container(s)	1	1	1	1	1	1	0	1		
Volume	60mL	60mL	120mL	120mL	120mL	500mL	60mL	60g		
SAMPLE ANALYSIS	See items (1) in Special Instructions.	Chromium Hex - 7196	TPH-Diesel Range - WTPH-D +	PAHs - 8310	Carbon-14; Tritium - H3 Low Level Soil	See items (2) in Special Instructions.	Nickel-63; Strontium-89,90 -- Total Sr	RCP GEA Shipping Screen		

026

Sample No.	Matrix *	Sample Date	Sample Time								
J1J9V7 MJLM0	SOIL	5/17/11	0955		X			X	X	X	
J1J9V8 MJLM4	SOIL	5/17/11	1000		X			X	X	X	
J1J9V9 MJLM5	SOIL	5/17/11	0845		X			X	X	X	
J1J9W0 MJLM6	SOIL	5/17/11	1020		X			X	X	X	
J1J9W1 MJLM7	SOIL	5/17/11	1035		X			X	X	X	

CHAIN OF POSSESSION — **Sign/Print Names**

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
K. Lucas Kevin Lucas	5-17-11 1110	JV Fullmer	1110 5/17/11
JV Fullmer	5/17/11 1545	1060, fridge 1A A. Freier	1545 5-17-11
A. Freier WCH 1060 fridge 1A	1305 5-19-11	THLP Carlos Camerin Krage	1305 5-19-11

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Close-out List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc}; Mercury - 7471 - (CV)
(2) Gamma Spec - Client List {Americium-241, Barium-133, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Silver-108 metastable}, Nickel-63, Strontium 90

REVIEWED BY CMB DATE 5/19/11

JP0186

Matrix *

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

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-107-072	Page 1 of 1
Collector: K. Lucas	Company Contact: Joan Kessner; Telephone No.: 509-375-4688	Project Coordinator: KESSNER, JH	Price Code: 8L, 8B; Data Turnaround: 21 Days
Project Designation: 100-H Remaining Sites Burial Grounds - Soil Full Protocol	Sampling Location: 118-H-1:2 Verification Sampling	SAF No.: RC-107	
Ice Chest No.: NA	Field Logbook No.: EL 1627-05; COA: R118H12000	Method of Shipment: Government Vehicle/FedEx	
Shipped To: TestAmerica Incorporated, Richland	Offsite Property No.: NA	Bill of Lading/Air Bill No.: NA	

POSSIBLE SAMPLE HAZARDS/REMARKS

Possible RAD <DOT

Lot#J1E190511
SDG#JP0186
Due 5-26-11

Special Handling and/or Storage

Cool to 4 deg C

027

Preservation	None	Cool 4C	Cool 4C	Cool 4C	None	None	None	None		
Type of Container	G/P	G/P	G	aG	G/P	G/P	G/P	G/P		
No. of Container(s)	1	1	1	1	1	1	0	1		
Volume	60mL	60mL	120mL	120mL	120mL	500mL	60mL	60g		
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Chromium Hex - 7196	TPH-Diesel Range - WTPH-D	PAHs - 8310	Carbon-14; Tritium - H3 Low Level Soil	See item (2) in Special Instructions.	Nickel-63; Strontium-89,90 -- Total Sr	RCRA EA Screen		

Sample No.	Matrix *	Sample Date	Sample Time									
J1J9W2 MJLNA	SOIL	5/17/11	1045		X			X	X	X		
J1J9W3 MJLNC	SOIL	5/17/11	1100		X			X	X	X		
~~J1J9W4~~	~~SOIL~~	~~5/17/11~~	~~1055~~									

CHAIN OF POSSESSION	Date/Time	Sign/Print Names: Received By/Stored In	Date/Time
Relinquished By/Removed From: K. Lucas Kenneth Lucas	5-17-11 1110	Received By/Stored In: JV Fullmer	1110 5/17/11
Relinquished By/Removed From: JV Fullmer	5/17/11 1545	Received By/Stored In: 1060, fridge 1A A. Freier	1545 5-17-11
Relinquished By/Removed From: WCH 1060 fridge 1A A Freier	1305 5-19-11	Received By/Stored In: TALR Cameron Kopp	1305 5-19-11
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Close-out List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc}; Mercury - 7471 - (CV)
(2) Gamma Spec - Client List {Americium-241, Barium-133, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Silver-108 metastable}, Nickel-63, Strontium-90

REVIEWED BY CMB DATE 5/19/11

JP0186

Matrix *

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

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Appendix 5

Data Validation Supporting Documentation

APPENDIX A

RADIOCHEMICAL DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	C	D	E
PROJECT: 118-H-12			DATA PACKAGE: JP0186		
VALIDATOR:		LAB: TAL		DATE: 6/11/11	
			SDG: JP0186		
ANALYSES PERFORMED					
☐ Gross Alpha/Beta	☒ Strontium-90	☐ Technetium-99	☐ Alpha Spectroscopy	☒ Gamma Spectroscopy	
☐ Total Uranium	☐ Radium-22	☒ Tritium	X-Ni-63	X-C-14	
SAMPLES/MATRIX					
J1J9T7	J1J9T8	J1J9T9	J1J9U0	J1J9U1	
J1J9V2	J1J9V3	J1J9V4	J1J9V5	J1J9V6	
J1J9V7	J1J9V8	J1J9V9	J1J9W0	J1J9W1	
J1J9W2	J1J9W3				
					Soil

1. Completeness ..... ☐ N/A

Technical verification forms present? ..... Yes No N/A

Comments: _____

2. Initial Calibration (Levels D, E) ..... ☒ N/A

Instruments/detectors calibrated? ..... Yes No N/A

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

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

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

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

Comments: _____

3. Continuing Calibration (Levels D, E) ☒ N/A

Calibration checked within required frequency? ..... Yes No N/A

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

Calibration check standards traceable? ..... Yes No N/A

Calibration check standards expired? ..... Yes No N/A

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

Comments: _____

_____

_____

_____

_____

4. Background Counts (Levels D, E) ..... ☒ N/A

Background Counts checked within required frequency? ..... Yes No N/A

Background Counts acceptable? ..... Yes No N/A

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

Comments: _____

_____

_____

_____

_____

5. Blanks (Levels B, C, D, E) ..... ☐ N/A

Method blank analyzed within required frequency? ..... Yes No N/A

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

Analytes detected in method blank? ..... Yes No N/A

Field blank(s) analyzed? ..... Yes No N/A

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

Analytes detected in field blank(s)? ..... Yes No N/A

Transcription/Calculation Errors? (Levels D, E) ..... Yes No N/A

Comments: no FB

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:

7. Chemical Carrier Recovery (Levels C, D, E) ..... ☒ N/A

Chemical carrier added? ..... Yes No N/A

Chemical recovery acceptable? ..... Yes No N/A

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

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

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

Comments: _____

8. Tracer Recovery (Levels C, D, E) ..... ☐ N/A

Tracer added? ..... Yes No N/A

Tracer recovery acceptable? ..... Yes No N/A

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

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

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

Comments: _____

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: J all 3H + C-14

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: _____

11. Field QC Samples (Levels C, D E) ..... ☐ N/A

Field duplicate sample(s) analyzed? ..... Yes No N/A

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

Field split sample(s) analyzed? ..... Yes No N/A

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

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

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

Comments: no FS or PAS

12. Holding Times (All levels)

Are sample holding times acceptable? ..... Yes No N/A

Comments: _____

13. Results and Detection Limits (All Levels) ☐ N/A

Results reported for all required sample analyses? Yes No N/A

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

Results Acceptable? (Levels D, E) Yes No N/A

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

MDA's meet required detection limits? Yes No N/A

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

Comments:

Appendix 6

Additional Documentation Requested by Client

QC Results Summary
TestAmerica TARL

Ordered by Method, Batch No, QC Type,.

Date: 31-May-11

Report No. : 46787

SDG No.: JP0186

Batch Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	LCS Recovery	Bias	MDC|MDA
GAMMA_GS								
1140048 BLANK QC,								
MJLW51AA	AG-108M	9.84E-05 +- 7.4E-03	U	pCi/g				1.31E-02
	AMERICIUM 241	3.07E-02 +- 4.9E-02	U	pCi/g				9.03E-02
	BA-133	-4.86E-03 +- 8.7E-03	U	pCi/g				1.44E-02
	CO-60	-9.11E-04 +- 7.8E-03	U	pCi/g				1.46E-02
	CS-137	4.20E-04 +- 8.8E-03	U	pCi/g				1.57E-02
	EU-152	1.02E-02 +- 2.3E-02	U	pCi/g				4.09E-02
	EU-154	-1.31E-02 +- 2.7E-02	U	pCi/g				4.63E-02
	EU-155	1.53E-04 +- 2.0E-02	U	pCi/g				3.60E-02
1140048 LCS,								
MJLW51AC	CS-137	1.04E+00 +- 1.6E-01		pCi/g		96%	0.0	4.45E-02
SRTOT_SEP_PRECIP_GPC								
1140055 BLANK QC,								
MJLXC1AA	STRONTIUM	1.61E-02 +- 5.2E-02	U	pCi/g	93%			1.18E-01
1140055 LCS,								
MJLXC1AC	STRONTIUM	1.00E+00 +- 2.9E-01		pCi/g	92%	88%	-0.1	1.28E-01
7196_CR6								
1139266 MATRIX SPIKE, J1J9T7								
MJLMF1AH	HEXCHROME	6.36E+00 +- 0.0E+00		mg/kg	N/A	60%	-0.4	1.54E-01
1139266 LCS,								
MJLRW1AC	HEXCHROME	1.86E+01 +- 0.0E+00		mg/kg	N/A	93%	-0.1	1.55E-01
1139266 BLANK QC,								
MJLRW1AA	HEXCHROME	1.55E-01 +- 0.0E+00	U	mg/kg	N/A			1.55E-01
906.0_H3_LSC								
1140050 BLANK QC,								
MJLW71AA	H-3	-2.94E-03 +- 1.7E-02	U	pCi/g	100%			3.80E-02
1140050 LCS,.								
MJLW71AC	H-3	3.60E-01 +- 3.6E-02		pCi/g	100%	85%	-0.2	5.22E-02
NI63_LSC								
1140053 BLANK QC,								
MJLW91AA	NI-63	2.76E+00 +- 5.8E+00	U	pCi/g	100%			1.19E+01
1140053 LCS,								
MJLW91AC	NI-63	5.24E+02 +- 5.3E+01		pCi/g	97%	82%	-0.2	1.33E+01
C14_CHEM_LSC								
1140054 BLANK QC,								
MJLXA1AA	C-14	1.08E-03 +- 5.1E-03	U	pCi/g	100%			1.13E-02
1140054 LCS,								
MJLXA1AC	C-14	7.61E+00 +- 5.3E-01		pCi/g	100%	103%	0.0	4.53E-01

No. of Results: 20

TestAmerica

rptSTLRchQcSummary V5.2.14
A2002

Bias - (Result/Expected)-1 as defined by ANSI N13.30.

U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda/Mdl, Total Uncert, CRDL, RDL or not identified by gamma scan software.

036

Date: 13 June 2011
To: Washington Closure Hanford Inc. (technical representative)
From: ELR Consulting
Project: 100-H Remaining Sites Burial Grounds – Soil Full Protocol - Waste Site 118-H-1:2
Subject: Polyaromatic Hydrocarbons - Data Package No. JP0186-TAL

INTRODUCTION

This memo presents the results of data validation on Data Package No. JP0186 prepared by TestAmerica Laboratories, Inc. (TAL). A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample Date	Media	Validation	Analyte
J1J9T7	5/17/11	Soil	C	See note 1
J1J9T8	5/17/11	Soil	C	See note 1
J1J9T9	5/17/11	Soil	C	See note 1
J1J9V0	5/17/11	Soil	C	See note 1
J1J9V1	5/17/11	Soil	C	See note 1
J1J9V2	5/17/11	Soil	C	See note 1
J1J9V3	5/17/11	Soil	C	See note 1
J1J9V4	5/17/11	Soil	C	See note 1
J1J9V5	5/17/11	Soil	C	See note 1
J1J9V6	5/17/11	Soil	C	See note 1
J1J9V7	5/17/11	Soil	C	See note 1
J1J9V8	5/17/11	Soil	C	See note 1
J1J9V9	5/17/11	Soil	C	See note 1
J1J9W1	5/17/11	Soil	C	See note 1
J1J9W2	5/17/11	Soil	C	See note 1
J1J9W3	5/17/11	Soil	C	See note 1
J1J9W4	5/17/11	Soil	C	See note 1

1 – Polyaromatic hydrocarbons by 8310.

Data validation was conducted in accordance with the Washington Closure Hanford Incorporated (WCH) validation statement of work and the 100 Area Burial Grounds Remedial Action Sampling and Analysis Plan (DOE/RL-2001-35, December 2001). 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

Analytical holding times were assessed to ascertain whether the holding time requirements were met by the laboratory. The holding time requirements are as follows: Samples must be extracted within 14 days of the date of sample collection and analyzed within 40 days from the date of extraction.

If holding times are exceeded, but not by greater than two times the limit, all associated sample results are qualified as estimates and flagged "J" for detects and "UJ" for non-detects. If holding times are exceeded by greater than two times the limit, all associated detectable sample results are qualified as estimates and flagged "J" and all non-detects are rejected and flagged "UR".

All holding times were met.

Method Blanks

Method blank analyses are conducted to determine the extent of laboratory contamination introduced through sampling, sample preparation and analysis. At least one acceptable method blank analysis must be conducted for every 20 samples. No contaminants should be present in the method blank. Analytical results for analytes present in any sample at less than five times the concentration of that analyte found in the associated blank are qualified as non-detects and flagged "U". Common laboratory contaminants present in samples at less than ten times the concentration of that analyte found in the associated blank are qualified as non-detects. If a sample result is less than the CRQL and is less than five times (or less than ten times for lab contaminants) the highest associated blank result, the sample result value is raised to the CRQL level and qualified as undetected "U".

All method blank results were acceptable.

Field Blanks

One field blank (J1J9W4) was submitted for analysis. No analytes were detected in the field blank.

Accuracy

Matrix Spike/Matrix Spike Duplicate & Blank Spike Recoveries

Matrix spike/matrix spike duplicate analyses are used to assess the analytical accuracy of the reported data and the effect of the matrix on the ability to accurately quantify

sample concentrations. Matrix spike/matrix spike duplicate analyses are performed in duplicate using five compounds for which percent recoveries must be within a range of 50-150% or within laboratory control limits. If spike recoveries are outside control limits, detected sample results less than five times the spike concentration are qualified as estimates and flagged "J". Undetected sample results with spike recoveries below control limits are qualified as estimates and flagged "UJ". Undetected sample results are not qualified if the spike recovery is above control limits. Sample results greater than five times the spike concentration require no qualification.

All accuracy results were acceptable.

Surrogate Recovery

The analyses of surrogate compounds provide a measure of performance for individual samples. Matrix-specific surrogate compound recovery control windows have been established by the EPA CLP program. If two surrogates of the same class of compounds (base/neutral or acid) are out of control limits, all associated sample results greater than the contract required quantitation limit (CRQL) are qualified as estimates and flagged "J". Sample results less than the CRQL and below the lower control limit are qualified as estimates and flagged "UJ". Sample results less than the CRQL with recoveries above the upper control limit require no qualification. If a surrogate recovery is less than 10%, detects are qualified as estimates and flagged "J" and nondetects are rejected and flagged "UR".

All surrogate results were acceptable.

- **Precision**

Matrix Spike/Matrix Spike Duplicate Samples

Matrix spike (MS)/matrix spike duplicate (MSD) results provide matrix-specific information on the precision of the method for specific target compound classes. Precision is expressed by the relative percent difference (RPD) between the recoveries of duplicate matrix spike analyses performed on a sample. Samples results must be within RPD limits of +/-30%. If RPD values are out of specification and the sample concentration is less than five times the spike concentration, all associated detected sample results are qualified as estimates and flagged "J". If RPD values are out of specification and the sample concentration is greater than five times the spike concentration, no qualification is required.

All duplicate results were acceptable.

Field Duplicate Samples

One set of field duplicates (J1J9V1/J1J9V9) were submitted for analysis. Laboratory duplicates are compared using the same criteria as for laboratory duplicates. All field duplicate results were acceptable.

- **Analytical Detection Levels**

Reported analytical detection levels are compared against the required quantitation limits (RQL's) to ensure that laboratory detection levels meet the required criteria. No RQLs were specified.

- **Completeness**

Data package No. JP0186 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 100%.

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

None found.

REFERENCES

Washington Closure Hanford Contract #S00W307A00 (March 2008), *Data Validation Services*, March 2008.

DOE/RL-2001-35, Rev. 0, *100 Area Burial Grounds Remedial Action Sampling and Analysis Plan*, U.S. Department of Energy, December 2001.

Appendix 1

Glossary of Data Reporting Qualifiers

Qualifiers which may be applied by data validators in compliance with the WCH validation SOW are as follows:

U - Indicates the compound or analyte was analyzed for and not detected in the sample. The value reported is the same quantitation limit corrected for sample dilution and moisture content by the laboratory.

UJ - Indicates the compound or analyte was analyzed for and not detected in the sample. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.

J - Indicates the compound or analyte was analyzed for and detected. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.

R - Indicates the compound or analyte was analyzed for, detected, and due to an identified major QC deficiency, the data are unusable.

UR - Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified major QC deficiency.

NJ - Indicates presumptive evidence of a compound at an estimated value. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

N - Indicates presumptive evidence of a compound. The data may not be valid for some specific applications usable for decision-making purposes).

Appendix 2

Summary of Data Qualification

POLYAROMATIC HYDROCARBON DATA QUALIFICATION SUMMARY*

SDG: JP0186	REVIEWER: ELR	Project: 118-H-1:2	PAGE 1 OF 1
COMMENTS: No qualifiers assigned			

* - The Qualified Data Summary Table includes laboratory applied "U" qualifiers not specifically identified here. The laboratory applied "U" qualifiers are included to minimize misinterpretation of results contained in the table.

Appendix 3

Annotated Laboratory Reports

Client: Washington Closure Hanford

Job Number: 280-16088-1
Sdg Number: JP0186

Client Sample ID: **J1J9T7**

Lab Sample ID: 280-16088-1
Client Matrix: Solid

% Moisture: 6.4

Date Sampled: 05/17/2011 0805
Date Received: 05/20/2011 0930

8310 PAHs (HPLC)

Analysis Method:	8310	Analysis Batch:	280-68591	Instrument ID:	CHHPLC_G
Prep Method:	3550C	Prep Batch:	280-68435	Initial Weight/Volume:	30.1 g
Dilution:	1.0			Final Weight/Volume:	4000 uL
Analysis Date:	05/23/2011 1447			Injection Volume:	20 uL
Prep Date:	05/20/2011 2040			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Acenaphthene		11	U	11	110
Acenaphthylene		9.6	U	9.6	110
Anthracene		3.2	U	3.2	21
Benzo[a]anthracene		3.4	U	3.4	16
Benzo[a]pyrene		6.8	U	6.8	16
Benzo[b]fluoranthene		4.5	U	4.5	16
Benzo[g,h,i]perylene		7.7	U	7.7	32
Benzo[k]fluoranthene		4.2	U	4.2	16
Chrysene		5.2	U	5.2	43
Dibenzo(a,h)anthracene		12	U	12	32
Fluoranthene		14	U	14	43
Fluorene		5.6	U	5.6	32
Indeno[1,2,3-cd]pyrene		13	U	13	32
Naphthalene		13	U	13	110
Phenanthrene		13	U	13	43
Pyrene		13	U	13	43

Surrogate	%Rec	Qualifier	Acceptance Limits
Terphenyl-d14 (SUR)	90		72 - 115

Client: Washington Closure Hanford

Job Number: 280-16088-1
Sdg Number: JP0186

Client Sample ID: J1J9T8

Lab Sample ID: 280-16088-2
Client Matrix: Solid

% Moisture: 5.2

Date Sampled: 05/17/2011 0815
Date Received: 05/20/2011 0930

8310 PAHs (HPLC)

Analysis Method:	8310	Analysis Batch:	280-68591	Instrument ID:	CHHPLC_G
Prep Method:	3550C	Prep Batch:	280-68435	Initial Weight/Volume:	30.2 g
Dilution:	1.0			Final Weight/Volume:	4000 uL
Analysis Date:	05/23/2011 1618			Injection Volume:	20 uL
Prep Date:	05/20/2011 2040			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Acenaphthene		10	U	10	100
Acenaphthylene		9.4	U	9.4	100
Anthracene		12	J X	3.2	21
Benzo[a]anthracene		89		3.3	16
Benzo[a]pyrene		110		6.7	16
Benzo[b]fluoranthene		74		4.4	16
Benzo[g,h,i]perylene		60		7.5	31
Benzo[k]fluoranthene		40		4.1	16
Chrysene		96		5.1	42
Dibenzo(a,h)anthracene		12	U	12	31
Fluoranthene		240		14	42
Fluorene		7.3	J X	5.5	31
Indeno[1,2,3-cd]pyrene		68		13	31
Naphthalene		13	U	13	100
Phenanthrene		130		13	42
Pyrene		260		13	42

Surrogate	%Rec	Qualifier	Acceptance Limits
Terphenyl-d14 (SUR)	92		72 - 115

Analytical Data

Client: Washington Closure Hanford

Job Number: 280-16088-1
Sdg Number: JP0186

Client Sample ID: **J1J9T9**

Lab Sample ID: 280-16088-3
Client Matrix: Solid

% Moisture: 6.0

Date Sampled: 05/17/2011 0825
Date Received: 05/20/2011 0930

8310 PAHs (HPLC)

Analysis Method:	8310	Analysis Batch:	280-68591	Instrument ID:	CHHPLC_G
Prep Method:	3550C	Prep Batch:	280-68435	Initial Weight/Volume:	30.1 g
Dilution:	1.0			Final Weight/Volume:	4000 uL
Analysis Date:	05/23/2011 1649			Injection Volume:	20 uL
Prep Date:	05/20/2011 2040			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Acenaphthene		11	U	11	110
Acenaphthylene		9.5	U	9.5	110
Anthracene		3.2	U	3.2	21
Benzo[a]anthracene		16		3.4	16
Benzo[a]pyrene		20		6.8	16
Benzo[b]fluoranthene		14	J	4.5	16
Benzo[g,h,i]perylene		9.8	J X	7.6	32
Benzo[k]fluoranthene		9.3	J	4.2	16
Chrysene		17	J	5.1	42
Dibenzo(a,h)anthracene		12	U	12	32
Fluoranthene		30	J	14	42
Fluorene		5.6	U	5.6	32
Indeno[1,2,3-cd]pyrene		13	U	13	32
Naphthalene		13	U	13	110
Phenanthrene		25	J	13	42
Pyrene		48		13	42

Surrogate	%Rec	Qualifier	Acceptance Limits
Terphenyl-d14 (SUR)	91		72 - 115

012

Analytical Data

Client: Washington Closure Hanford

Job Number: 280-16088-1
Sdg Number: JP0186

Client Sample ID: **J1J9V0**

Lab Sample ID: 280-16088-4
Client Matrix: Solid

% Moisture: 5.5

Date Sampled: 05/17/2011 0835
Date Received: 05/20/2011 0930

8310 PAHs (HPLC)

Analysis Method:	8310	Analysis Batch:	280-68591	Instrument ID:	CHHPLC_G
Prep Method:	3550C	Prep Batch:	280-68435	Initial Weight/Volume:	30.7 g
Dilution:	1.0			Final Weight/Volume:	4000 uL
Analysis Date:	05/23/2011 1719			Injection Volume:	20 uL
Prep Date:	05/20/2011 2040			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Acenaphthene		10	U	10	100
Acenaphthylene		9.3	U	9.3	100
Anthracene		3.2	U	3.2	21
Benzo[a]anthracene		3.3	U	3.3	16
Benzo[a]pyrene		6.6	U	6.6	16
Benzo[b]fluoranthene		4.3	U	4.3	16
Benzo[g,h,i]perylene		7.4	U	7.4	31
Benzo[k]fluoranthene		4.1	U	4.1	16
Chrysene		5.0	U	5.0	41
Dibenzo(a,h)anthracene		11	U	11	31
Fluoranthene		13	U	13	41
Fluorene		5.5	U	5.5	31
Indeno[1,2,3-cd]pyrene		12	U	12	31
Naphthalene		12	U	12	100
Phenanthrene		12	U	12	41
Pyrene		12	U	12	41

Surrogate	%Rec	Qualifier	Acceptance Limits
Terphenyl-d14 (SUR)	88		72 - 115

Client: Washington Closure Hanford

Job Number: 280-16088-1
Sdg Number: JP0186

Client Sample ID: **J1J9V1**

Lab Sample ID: 280-16088-5
Client Matrix: Solid

% Moisture: 6.8

Date Sampled: 05/17/2011 0845
Date Received: 05/20/2011 0930

8310 PAHs (HPLC)

Analysis Method:	8310	Analysis Batch:	280-68591	Instrument ID:	CHHPLC_G
Prep Method:	3550C	Prep Batch:	280-68435	Initial Weight/Volume:	30.4 g
Dilution:	1.0			Final Weight/Volume:	4000 uL
Analysis Date:	05/23/2011 1750			Injection Volume:	20 uL
Prep Date:	05/20/2011 2040			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Acenaphthene		11	U	11	110
Acenaphthylene		9.5	U	9.5	110
Anthracene		3.2	U	3.2	21
Benzo[a]anthracene		3.4	U	3.4	16
Benzo[a]pyrene		6.8	U	6.8	16
Benzo[b]fluoranthene		4.4	U	4.4	16
Benzo[g,h,i]perylene		7.6	U	7.6	32
Benzo[k]fluoranthene		4.2	U	4.2	16
Chrysene		5.1	U	5.1	42
Dibenzo(a,h)anthracene		12	U	12	32
Fluoranthene		14	U	14	42
Fluorene		5.6	U	5.6	32
Indeno[1,2,3-cd]pyrene		13	U	13	32
Naphthalene		13	U	13	110
Phenanthrene		13	U	13	42
Pyrene		13	U	13	42

Surrogate	%Rec	Qualifier	Acceptance Limits
Terphenyl-d14 (SUR)	88		72 - 115

014

Client: Washington Closure Hanford

Job Number: 280-16088-1
Sdg Number: JP0186

6/16/11

Client Sample ID: **J1J9V2**

Lab Sample ID: 280-16088-6
Client Matrix: Solid

% Moisture: 5.3

Date Sampled: 05/17/2011 0900
Date Received: 05/20/2011 0930

8310 PAHs (HPLC)

Analysis Method:	8310	Analysis Batch:	280-68591	Instrument ID:	CHHPLC_G
Prep Method:	3550C	Prep Batch:	280-68435	Initial Weight/Volume:	30.1 g
Dilution:	1.0			Final Weight/Volume:	4000 uL
Analysis Date:	05/23/2011 1820			Injection Volume:	20 uL
Prep Date:	05/20/2011 2040			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Acenaphthene		11	U	11	110
Acenaphthylene		9.5	U	9.5	110
Anthracene		3.2	U	3.2	21
Benzo[a]anthracene		3.4	U	3.4	16
Benzo[a]pyrene		6.7	U	6.7	16
Benzo[b]fluoranthene		4.4	U	4.4	16
Benzo[g,h,i]perylene		7.6	U	7.6	32
Benzo[k]fluoranthene		4.1	U	4.1	16
Chrysene		5.1	U	5.1	42
Dibenzo(a,h)anthracene		12	U	12	32
Fluoranthene		14	U	14	42
Fluorene		5.6	U	5.6	32
Indeno[1,2,3-cd]pyrene		13	U	13	32
Naphthalene		13	U	13	110
Phenanthrene		13	U	13	42
Pyrene		13	U	13	42

Surrogate	%Rec	Qualifier	Acceptance Limits
Terphenyl-d14 (SUR)	89		72 - 115

Analytical Data

Client: Washington Closure Hanford

Job Number: 280-16088-1
Sdg Number: JP0186

K 6/16/11

Client Sample ID: J1J9V3

Lab Sample ID: 280-16088-7
Client Matrix: Solid

% Moisture: 7.4

Date Sampled: 05/17/2011 0915
Date Received: 05/20/2011 0930

8310 PAHs (HPLC)

Analysis Method:	8310	Analysis Batch:	280-68591	Instrument ID:	CHHPLC_G
Prep Method:	3550C	Prep Batch:	280-68435	Initial Weight/Volume:	30.7 g
Dilution:	1.0			Final Weight/Volume:	4000 uL
Analysis Date:	05/23/2011 1921			Injection Volume:	20 uL
Prep Date:	05/20/2011 2040			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Acenaphthene		11	U	11	110
Acenaphthylene		9.5	U	9.5	110
Anthracene		3.2	U	3.2	21
Benzo[a]anthracene		3.4	U	3.4	16
Benzo[a]pyrene		10	J	6.8	16
Benzo[b]fluoranthene		7.0	J	4.4	16
Benzo[g,h,i]perylene		7.6	U	7.6	32
Benzo[k]fluoranthene		4.2	U	4.2	16
Chrysene		5.1	U	5.1	42
Dibenzo(a,h)anthracene		12	U	12	32
Fluoranthene		14	U	14	42
Fluorene		5.6	U	5.6	32
Indeno[1,2,3-cd]pyrene		13	U	13	32
Naphthalene		13	U	13	110
Phenanthrene		13	U	13	42
Pyrene		13	U	13	42

Surrogate	%Rec	Qualifier	Acceptance Limits
Terphenyl-d14 (SUR)	94		72 - 115

016

Client: Washington Closure Hanford

Job Number: 280-16088-1
Sdg Number: JP0186

6/14/11

Client Sample ID: J1J9V4

Lab Sample ID: 280-16088-8
Client Matrix: Solid

% Moisture: 7.6

Date Sampled: 05/17/2011 0925
Date Received: 05/20/2011 0930

8310 PAHs (HPLC)

Analysis Method:	8310	Analysis Batch:	280-68591	Instrument ID:	CHHPLC_G
Prep Method:	3550C	Prep Batch:	280-68435	Initial Weight/Volume:	30.3 g
Dilution:	1.0			Final Weight/Volume:	4000 uL
Analysis Date:	05/23/2011 1952			Injection Volume:	20 uL
Prep Date:	05/20/2011 2040			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Acenaphthene		11	U	11	110
Acenaphthylene		9.6	U	9.6	110
Anthracene		3.3	U	3.3	21
Benzo[a]anthracene		3.4	U	3.4	16
Benzo[a]pyrene		6.9	U	6.9	18
Benzo[b]fluoranthene		4.5	U	4.5	16
Benzo[g,h,i]perylene		7.7	U	7.7	32
Benzo[k]fluoranthene		4.2	U	4.2	16
Chrysene		5.2	U	5.2	43
Dibenzo(a,h)anthracene		12	U	12	32
Fluoranthene		14	U	14	43
Fluorene		5.7	U	5.7	32
Indeno[1,2,3-cd]pyrene		13	U	13	32
Naphthalene		13	U	13	110
Phenanthrene		13	U	13	43
Pyrene		13	U	13	43

Surrogate	%Rec	Qualifier	Acceptance Limits
Terphenyl-d14 (SUR)	91		72 - 115

Client: Washington Closure Hanford

Job Number: 280-16088-1
Sdg Number: JP0186

Client Sample ID: **J1J9V5**

Lab Sample ID: 280-16088-9
Client Matrix: Solid

% Moisture: 6.8

6/11/11

Date Sampled: 05/17/2011 0930
Date Received: 05/20/2011 0930

8310 PAHs (HPLC)

Analysis Method:	8310	Analysis Batch:	280-68591	Instrument ID:	CHHPLC_G
Prep Method:	3550C	Prep Batch:	280-68435	Initial Weight/Volume:	30.1 g
Dilution:	1.0			Final Weight/Volume:	4000 uL
Analysis Date:	05/23/2011 2022			Injection Volume:	20 uL
Prep Date:	05/20/2011 2040			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Acenaphthene		11	U	11	110
Acenaphthylene		9.6	U	9.6	110
Anthracene		11	J X	3.3	21
Benzo[a]anthracene		140	X	3.4	16
Benzo[a]pyrene		220		6.9	16
Benzo[b]fluoranthene		140	X	4.5	16
Benzo[g,h,i]perylene		130		7.7	32
Benzo[k]fluoranthene		84		4.2	16
Chrysene		160		5.2	43
Dibenzo(a,h)anthracene		24	J X	12	32
Fluoranthene		310		14	43
Fluorene		5.6	U	5.6	32
Indeno[1,2,3-cd]pyrene		140		13	32
Naphthalene		13	U	13	110
Phenanthrene		120		13	43
Pyrene		360		13	43

Surrogate	%Rec	Qualifier	Acceptance Limits
Terphenyl-d14 (SUR)	97		72 - 115

Client: Washington Closure Hanford

Job Number: 280-16088-1
Sdg Number: JP0186

6/11/11

Client Sample ID: **J1J9V6**

Lab Sample ID: 280-16088-10
Client Matrix: Solid

% Moisture: 3.6

Date Sampled: 05/17/2011 0940
Date Received: 05/20/2011 0930

8310 PAHs (HPLC)

Analysis Method:	8310	Analysis Batch:	280-68591	Instrument ID:	CHHPLC_G
Prep Method:	3550C	Prep Batch:	280-68435	Initial Weight/Volume:	30.2 g
Dilution:	1.0			Final Weight/Volume:	4000 uL
Analysis Date:	05/23/2011 2053			Injection Volume:	20 uL
Prep Date:	05/20/2011 2040			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Acenaphthene		10	U	10	100
Acenaphthylene		9.3	U	9.3	100
Anthracene		3.1	U	3.1	21
Benzo[a]anthracene		3.3	U	3.3	15
Benzo[a]pyrene		6.6	U	6.6	15
Benzo[b]fluoranthene		4.3	U	4.3	15
Benzo[g,h,i]perylene		7.4	U	7.4	31
Benzo[k]fluoranthene		4.1	U	4.1	15
Chrysene		5.0	U	5.0	41
Dibenzo(a,h)anthracene		11	U	11	31
Fluoranthene		13	U	13	41
Fluorene		5.4	U	5.4	31
Indeno[1,2,3-cd]pyrene		12	U	12	31
Naphthalene		12	U	12	100
Phenanthrene		12	U	12	41
Pyrene		12	U	12	41

Surrogate	%Rec	Qualifier	Acceptance Limits
Terphenyl-d14 (SUR)	91		72 - 115

019

Client: Washington Closure Hanford

Job Number: 280-16088-1
Sdg Number: JP0186

6/11/11

Client Sample ID: **J1J9V7**

Lab Sample ID: 280-16088-11
Client Matrix: Solid

% Moisture: 3.3

Date Sampled: 05/17/2011 0955
Date Received: 05/20/2011 0930

8310 PAHs (HPLC)

Analysis Method:	8310	Analysis Batch:	280-68591	Instrument ID:	CHHPLC_G
Prep Method:	3550C	Prep Batch:	280-68435	Initial Weight/Volume:	30.5 g
Dilution:	1.0			Final Weight/Volume:	4000 uL
Analysis Date:	05/23/2011 2123			Injection Volume:	20 uL
Prep Date:	05/20/2011 2040			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Acenaphthene		10	U	10	100
Acenaphthylene		9.2	U	9.2	100
Anthracene		3.1	U	3.1	20
Benzo[a]anthracene		3.2	U	3.2	15
Benzo[a]pyrene		6.5	U	6.5	15
Benzo[b]fluoranthene		4.3	U	4.3	15
Benzo[g,h,i]perylene		7.3	U	7.3	31
Benzo[k]fluoranthene		4.0	U	4.0	15
Chrysene		4.9	U	4.9	41
Dibenzo(a,h)anthracene		11	U	11	31
Fluoranthene		13	U	13	41
Fluorene		5.4	U	5.4	31
Indeno[1,2,3-cd]pyrene		12	U	12	31
Naphthalene		12	U	12	100
Phenanthrene		12	U	12	41
Pyrene		12	U	12	41

Surrogate	%Rec	Qualifier	Acceptance Limits
Terphenyl-d14 (SUR)	86		72 - 115

020

Client: Washington Closure Hanford

Job Number: 280-16088-1
Sdg Number: JP0186

Client Sample ID: **J1J9V8**

Lab Sample ID: 280-16088-12
Client Matrix: Solid

% Moisture: 3.2

6/11/11

Date Sampled: 05/17/2011 1000
Date Received: 05/20/2011 0930

8310 PAHs (HPLC)

Analysis Method:	8310	Analysis Batch:	280-68591	Instrument ID:	CHHPLC_G
Prep Method:	3550C	Prep Batch:	280-68435	Initial Weight/Volume:	30.5 g
Dilution:	1.0			Final Weight/Volume:	4000 uL
Analysis Date:	05/23/2011 2154			Injection Volume:	20 uL
Prep Date:	05/20/2011 2040			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Acenaphthene		10	U	10	100
Acenaphthylene		9.1	U	9.1	100
Anthracene		3.1	U	3.1	20
Benzo[a]anthracene		3.2	U	3.2	15
Benzo[a]pyrene		6.5	U	6.5	15
Benzo[b]fluoranthene		4.3	U	4.3	15
Benzo[g,h,i]perylene		7.3	U	7.3	30
Benzo[k]fluoranthene		4.0	U	4.0	15
Chrysene		4.9	U	4.9	41
Dibenzo(a,h)anthracene		11	U	11	30
Fluoranthene		13	U	13	41
Fluorene		5.4	U	5.4	30
Indeno[1,2,3-cd]pyrene		12	U	12	30
Naphthalene		12	U	12	100
Phenanthrene		12	U	12	41
Pyrene		12	U	12	41

Surrogate	%Rec	Qualifier	Acceptance Limits
Terphenyl-d14 (SUR)	88		72 - 115

021

Client: Washington Closure Hanford

Job Number: 280-16088-1
Sdg Number: JP0186

Client Sample ID: **J1J9V9**

Lab Sample ID: 280-16088-13
Client Matrix: Solid

% Moisture: 7.2

Date Sampled: 05/17/2011 0845
Date Received: 05/20/2011 0930

8310 PAHs (HPLC)

Analysis Method:	8310	Analysis Batch:	280-68591	Instrument ID:	CHHPLC_G
Prep Method:	3550C	Prep Batch:	280-68435	Initial Weight/Volume:	30.3 g
Dilution:	1.0			Final Weight/Volume:	4000 uL
Analysis Date:	05/23/2011 2224			Injection Volume:	20 uL
Prep Date:	05/20/2011 2040			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Acenaphthene		11	U	11	110
Acenaphthylene		9.6	U	9.6	110
Anthracene		3.3	U	3.3	21
Benzo[a]anthracene		3.4	U	3.4	16
Benzo[a]pyrene		6.9	J X	6.8	16
Benzo[b]fluoranthene		4.5	U	4.5	16
Benzo[g,h,i]perylene		7.7	U	7.7	32
Benzo[k]fluoranthene		4.2	U	4.2	16
Chrysene		5.2	U	5.2	43
Dibenzo(a,h)anthracene		12	U	12	32
Fluoranthene		14	U	14	43
Fluorene		5.6	U	5.6	32
Indeno[1,2,3-cd]pyrene		13	U	13	32
Naphthalene		13	U	13	110
Phenanthrene		13	U	13	43
Pyrene		13	U	13	43

Surrogate	%Rec	Qualifier	Acceptance Limits
Terphenyl-d14 (SUR)	90		72 - 115

Client: Washington Closure Hanford

Job Number: 280-16088-1
Sdg Number: JP0186

V 6/6/11

Client Sample ID: **J1J9W0**

Lab Sample ID: 280-16088-14
Client Matrix: Solid

% Moisture: 3.1

Date Sampled: 05/17/2011 1020
Date Received: 05/20/2011 0930

8310 PAHs (HPLC)

Analysis Method:	8310	Analysis Batch:	280-68591	Instrument ID:	CHHPLC_G
Prep Method:	3550C	Prep Batch:	280-68435	Initial Weight/Volume:	30.3 g
Dilution:	1.0			Final Weight/Volume:	4000 uL
Analysis Date:	05/23/2011 2255			Injection Volume:	20 uL
Prep Date:	05/20/2011 2040			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Acenaphthene		10	U	10	100
Acenaphthylene		9.2	U	9.2	100
Anthracene		3.1	U	3.1	20
Benzo[a]anthracene		6.6	J	3.3	15
Benzo[a]pyrene		8.1	J	6.6	15
Benzo[b]fluoranthene		6.8	J	4.3	15
Benzo[g,h,i]perylene		7.4	U	7.4	31
Benzo[k]fluoranthene		4.0	U	4.0	15
Chrysene		4.9	U	4.9	41
Dibenzo(a,h)anthracene		11	U	11	31
Fluoranthene		13	J	13	41
Fluorene		5.4	U	5.4	31
Indeno[1,2,3-cd]pyrene		12	U	12	31
Naphthalene		12	U	12	100
Phenanthrene		12	U	12	41
Pyrene		12	U	12	41

Surrogate	%Rec	Qualifier	Acceptance Limits
Terphenyl-d14 (SUR)	90		72 - 115

023

Analytical Data

Client: Washington Closure Hanford

Job Number: 280-16088-1
Sdg Number: JP0186

6/11/11

Client Sample ID: J1J9W1

Lab Sample ID: 280-16088-15
Client Matrix: Solid

% Moisture: 4.1

Date Sampled: 05/17/2011 1035
Date Received: 05/20/2011 0930

8310 PAHs (HPLC)

Analysis Method:	8310	Analysis Batch:	280-68591	Instrument ID:	CHHPLC_G
Prep Method:	3550C	Prep Batch:	280-68435	Initial Weight/Volume:	31.2 g
Dilution:	1.0			Final Weight/Volume:	4000 uL
Analysis Date:	05/23/2011 2326			Injection Volume:	20 uL
Prep Date:	05/20/2011 2040			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Acenaphthene		10	U	10	100
Acenaphthylene		9.0	U	9.0	100
Anthracene		3.1	U	3.1	20
Benzo[a]anthracene		7.5	J	3.2	15
Benzo[a]pyrene		9.3	J	6.4	15
Benzo[b]fluoranthene		8.3	J	4.2	15
Benzo[g,h,i]perylene		7.2	U	7.2	30
Benzo[k]fluoranthene		4.0	U	4.0	15
Chrysene		7.6	J	4.9	40
Dibenzo(a,h)anthracene		11	U	11	30
Fluoranthene		15	J	13	40
Fluorene		5.3	U	5.3	30
Indeno[1,2,3-cd]pyrene		12	U	12	30
Naphthalene		12	U	12	100
Phenanthrene		12	U	12	40
Pyrene		12	J X	12	40

Surrogate	%Rec	Qualifier	Acceptance Limits
Terphenyl-d14 (SUR)	88		72 - 115

Client: Washington Closure Hanford

Job Number: 280-16088-1
Sdg Number: JP0186

6/21/11

Client Sample ID: **J1J9W2**

Lab Sample ID: 280-16088-16
Client Matrix: Solid
% Moisture: 4.3

Date Sampled: 05/17/2011 1045
Date Received: 05/20/2011 0930

8310 PAHs (HPLC)

Analysis Method:	8310	Analysis Batch:	280-68591	Instrument ID:	CHHPLC_G
Prep Method:	3550C	Prep Batch:	280-68435	Initial Weight/Volume:	30.3 g
Dilution:	1.0			Final Weight/Volume:	4000 uL
Analysis Date:	05/23/2011 2356			Injection Volume:	20 uL
Prep Date:	05/20/2011 2040			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Acenaphthene		10	U	10	100
Acenaphthylene		9.3	U	9.3	100
Anthracene		3.2	U	3.2	21
Benzo[a]anthracene		3.3	U	3.3	16
Benzo[a]pyrene		6.6	U	6.6	16
Benzo[b]fluoranthene		4.3	U	4.3	16
Benzo[g,h,i]perylene		7.5	U	7.5	31
Benzo[k]fluoranthene		4.1	U	4.1	16
Chrysene		5.0	U	5.0	41
Dibenzo(a,h)anthracene		11	U	11	31
Fluoranthene		13	U	13	41
Fluorene		5.5	U	5.5	31
Indeno[1,2,3-cd]pyrene		12	U	12	31
Naphthalene		12	U	12	100
Phenanthrene		12	U	12	41
Pyrene		12	U	12	41

Surrogate	%Rec	Qualifier	Acceptance Limits
Terphenyl-d14 (SUR)	88		72 - 115

025

Client: Washington Closure Hanford

Job Number: 280-16088-1
Sdg Number: JP0186

Client Sample ID: **J1J9W3**

Lab Sample ID: 280-16088-17
Client Matrix: Solid
% Moisture: 4.3

Date Sampled: 05/17/2011 1100
Date Received: 05/20/2011 0930

8310 PAHs (HPLC)

Analysis Method:	8310	Analysis Batch:	280-68591	Instrument ID:	CHHPLC_G
Prep Method:	3550C	Prep Batch:	280-68435	Initial Weight/Volume:	31.4 g
Dilution:	1.0			Final Weight/Volume:	4000 uL
Analysis Date:	05/24/2011 0057			Injection Volume:	20 uL
Prep Date:	05/20/2011 2040			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Acenaphthene		10	U	10	100
Acenaphthylene		9.0	U	9.0	100
Anthracene		7.6	J	3.0	20
Benzo[a]anthracene		43		3.2	15
Benzo[a]pyrene		33		6.4	15
Benzo[b]fluoranthene		35		4.2	15
Benzo[g,h,i]perylene		11	J X	7.2	30
Benzo[k]fluoranthene		16		3.9	15
Chrysene		35	J	4.8	40
Dibenzo(a,h)anthracene		11	U	11	30
Fluoranthene		83		13	40
Fluorene		5.3	U	5.3	30
Indeno[1,2,3-cd]pyrene		26	J	12	30
Naphthalene		12	U	12	100
Phenanthrene		31	J	12	40
Pyrene		52	X	12	40

Surrogate	%Rec	Qualifier	Acceptance Limits
Terphenyl-d14 (SUR)	91		72 - 115

Analytical Data

Client: Washington Closure Hanford

Job Number: 280-16088-1
Sdg Number: JP0186

Client Sample ID: J1J9W4

Lab Sample ID: 280-16088-18
Client Matrix: Solid % Moisture: 0.0

Date Sampled: 05/17/2011 0755
Date Received: 05/20/2011 0930

8310 PAHs (HPLC)

Analysis Method:	8310	Analysis Batch:	280-68591	Instrument ID:	CHHPLC_G
Prep Method:	3550C	Prep Batch:	280-68435	Initial Weight/Volume:	30.4 g
Dilution:	1.0			Final Weight/Volume:	4000 uL
Analysis Date:	05/24/2011 0128			Injection Volume:	20 uL
Prep Date:	05/20/2011 2040			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Acenaphthene		9.9	U	9.9	99
Acenaphthylene		8.9	U	8.9	99
Anthracene		3.0	U	3.0	20
Benzo[a]anthracene		3.1	U	3.1	15
Benzo[a]pyrene		6.3	U	6.3	15
Benzo[b]fluoranthene		4.1	U	4.1	15
Benzo[g,h,i]perylene		7.1	U	7.1	30
Benzo[k]fluoranthene		3.9	U	3.9	15
Chrysene		4.8	U	4.8	39
Dibenzo(a,h)anthracene		11	U	11	30
Fluoranthene		13	U	13	39
Fluorene		5.2	U	5.2	30
Indeno[1,2,3-cd]pyrene		12	U	12	30
Naphthalene		12	U	12	99
Phenanthrene		12	U	12	39
Pyrene		12	U	12	39

Surrogate	%Rec	Qualifier	Acceptance Limits
Terphenyl-d14 (SUR)	91		72 - 115

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

CASE NARRATIVE

Client: Washington Closure Hanford

Project: WASHINGTON CLOSURE HANFORD

Report Number: 280-16088-1

SDG #: JP0186
SAF#: RC-107

Date SDG Closed: May 20, 2011
Data Deliverable: 7 Day / Summary

CLIENT ID	LAB ID	ANALYSES REQUESTED	ANALYSES PERFORMED
J1J9T7	280-16088-1	6010/7471/WTPH-D+/8310	6010B/7471A/NWTPH-Dx/8310
J1J9T8	280-16088-2	6010/7471/WTPH-D+/8310	6010B/7471A/NWTPH-Dx/8310
J1J9T9	280-16088-3	6010/7471/WTPH-D+/8310	6010B/7471A/NWTPH-Dx/8310
J1J9V0	280-16088-4	6010/7471/WTPH-D+/8310	6010B/7471A/NWTPH-Dx/8310
J1J9V1	280-16088-5	6010/7471/WTPH-D+/8310	6010B/7471A/NWTPH-Dx/8310
J1J9V2	280-16088-6	6010/7471/WTPH-D+/8310	6010B/7471A/NWTPH-Dx/8310
J1J9V3	280-16088-7	6010/7471/WTPH-D+/8310	6010B/7471A/NWTPH-Dx/8310
J1J9V4	280-16088-8	6010/7471/WTPH-D+/8310	6010B/7471A/NWTPH-Dx/8310
J1J9V5	280-16088-9	6010/7471/WTPH-D+/8310	6010B/7471A/NWTPH-Dx/8310
J1J9V6	280-16088-10	6010/7471/WTPH-D+/8310	6010B/7471A/NWTPH-Dx/8310
J1J9V7	280-16088-11	6010/7471/WTPH-D+/8310	6010B/7471A/NWTPH-Dx/8310
J1J9V8	280-16088-12	6010/7471/WTPH-D+/8310	6010B/7471A/NWTPH-Dx/8310
J1J9V9	280-16088-13	6010/7471/WTPH-D+/8310	6010B/7471A/NWTPH-Dx/8310
J1J9W0	280-16088-14	6010/7471/WTPH-D+/8310	6010B/7471A/NWTPH-Dx/8310
J1J9W1	280-16088-15	6010/7471/WTPH-D+/8310	6010B/7471A/NWTPH-Dx/8310
J1J9W2	280-16088-16	6010/7471/WTPH-D+/8310	6010B/7471A/NWTPH-Dx/8310
J1J9W3	280-16088-17	6010/7471/WTPH-D+/8310	6010B/7471A/NWTPH-Dx/8310
J1J9W4	280-16088-18	6010/7471/8310	6010B/7471A/8310

I certify that this data package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed in this Case Narrative. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or a designee, as verified by the signature on the Report Cover.

With exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. All laboratory quality control samples analyzed in conjunction with the samples in this project were within established control limits, with any exceptions noted. Calculations are performed before rounding to avoid round-off errors in calculated results.

This report includes reporting limits (RLs) less than TestAmerica Denver's practical quantitation limits. These reporting limits are being used specifically at the client's request to meet the needs of this project. Please note that data are not normally reported to these levels without qualification, since they are inherently less reliable and potentially less defensible than required by the current NELAC standards.

The results, RLs and MDLs included in this report have been adjusted for dry weight, as appropriate.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT
The samples were received on 5/20/2011; the samples arrived in good condition, properly preserved and on ice. The temperatures of the coolers at receipt were 3.9 C, 5.4 C and 5.2 C.

GC SEMIVOLATILES - NWTPH-Dx - DRO
No anomalies were encountered.

029

HPLC - SW846 8310 - PAHs

In some cases, the RPD between the primary and confirmation columns exceeded 40%. The lower of the two values have been reported, as matrix interference is evident. Associated results have been flagged with an "X".

No other anomalies were encountered.

TOTAL METALS - SW846 6010B/7471A

Serial dilution of a digestate in batch 280-68398 indicates that physical and chemical interferences are present for several elements. Results have been flagged with an "X".

Silicon was recovered outside the control limits, biased low, in the LCS associated with batch 280-68398 and in the Matrix Spike performed on sample J1J9T7 in batch 280-68398. The associated sample result has been flagged "N". Silicon is a poor performer and has a history of reacting inconsistently. Data are reported as is.

It can be noted that the sample amount was greater than four times the spike amount for Aluminum, Iron and Manganese in the Matrix Spike performed on sample J1J9T7; therefore, control limits are not applicable.

Mercury was recovered outside the control limits in the Matrix Spike performed on sample J1J9T7, and the associated sample result has been flagged "N". There is no indication that the analytical system was operating out of control, and method accuracy has been verified by the acceptable LCS analysis data; therefore, corrective action is deemed unnecessary.

No other anomalies were encountered.

3.9, 5.4, 3.2°C IRFP MB 5/20/11

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-107-072	Page 1 of 4

Collector K. Lucas	Company Contact Joan Kessner	Telephone No. 509-375-4688	Project Coordinator KESSNER, JH	Price Code 8L BB	Data Turnaround 21 Days 7
Project Designation 100-H Remaining Sites Burial Grounds - Soil Full Protocol	Sampling Location 118-H-1:2 Verification Sampling		SAF No. RC-107		
Ice Chest No. WCH-08-045	Field Logbook No. EL 1627-05	COA R118H12000	Method of Shipment Government Vehicle (FedEx)		
Shipped To TestAmerica Incorporated, ~~Richland~~ Denver	Offsite Property No. NA		Bill of Lading/Air Bill No. 7971 1593 2475		

POSSIBLE SAMPLE HAZARDS/REMARKS

Possible RAD <DOT

Special Handling and/or Storage

Cool to 4 deg C

Preservation	None	Cool 4C	Cool 4C	Cool 4C	None	None	None	None		
Type of Container	G/P	G/P	G	aG	G/P	G/P	G/P	G/P		
No. of Container(s)	1	1	1	1	1	1	0	1		
Volume	60mL	60mL	120mL	120mL	120mL	500mL	60mL	60g		
SAMPLE ANALYSIS	See items (1) in Special Instructions	Chromium Hex - 7196	TPH-Diesel Range - WTPH-D +	PAHs - 8310	Carbon-14; Tritium - H3 Low Level Soil	See item (2) in Special Instructions	Nickel-63; Strontium-90 -- Total Sr	RCF GEA Shipping Screen		
Sample No.	Matrix *	Sample Date	Sample Time							
J1J9T7	SOIL	5/17/11	0805	X		X	X			
J1J9T8	SOIL	5/17/11	0815	X		X	X			
J1J9T9	SOIL	5/17/11	0825	X		X	X			
J1J9V0	SOIL	5/17/11	0835	X		X	X			
J1J9V1	SOIL	5/17/11	0845	X		X	X			

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CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
K Lucas Kenan Lucas	5-17-11 1110	JV Fullmer	1110 5/17/11
JV Fullmer	5/17/11 1545	1060, fridge 2A A. Freier A. Freier	1545 5-17-11
A. Freier A. Freier, 1060 fridge 2A	WCH 1000 5-19-11	Fed Ex	
			5/20/11 930

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Close-out List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc); Mercury - 7471 - (CV)
(2) Gamma Spec - Client List (Americium-241, Barium-133, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Silver-108 metastable)

REVIEWED BY CMB DATE 5/19/11

JP0186

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

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-107-072	Page 2 of 4

Collector: K. Lucas	Company Contact: Joan Kessner — Telephone No.: 509-375-4688	Project Coordinator: KESSNER, JH	Price Code: 8B 8B — Data Turnaround: 21 Days
Project Designation: 100-H Remaining Sites Burial Grounds - Soil Full Protocol	Sampling Location: 118-H-1:2 Verification Sampling	SAF No.: RC-107	
Ice Chest No.: WCH-08-045	Field Logbook No.: EL 1627-05 — COA: R118H12000	Method of Shipment: Government Vehicle/FedEx	
Shipped To: TestAmerica Incorporated, ~~Richland~~ Denver	Offsite Property No.: NA	Bill of Lading/Air Bill No.: 7971 1593 2475	

POSSIBLE SAMPLE HAZARDS/REMARKS

Possible RAD <DOT

Special Handling and/or Storage

Cool to 4 deg C

Preservation	None	Cool 4C	Cool 4C	Cool 4C	None	None	None	None		
Type of Container	G/P	G/P	G	aG	G/P	G/P	G/P	G/P		
No. of Container(s)	1	1	1	1	1	1	0	1		
Volume	60mL	60mL	120mL	120mL	120mL	500mL	60mL	60g		
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Chromium Hex - 196	TPH-Diesel Range - WTPH-D+	PAHs - 8310	Carbon-14; Tritium - H3 Low Level Soil	See item (2) in Special Instructions.	Nickel-63; Strontium-89,90	RCF GEA Shipping Screen		
Sample No. / Matrix * / Sample Date / Sample Time										
J1J9V2 / SOIL / 5/17/11 / 0900	X		X	X						
J1J9V3 / SOIL / 5/17/11 / 0915	X		X	X						
J1J9V4 / SOIL / 5/17/11 / 0925	X		X	X						
J1J9V5 / SOIL / 5/17/11 / 0930	X		X	X						
J1J9V6 / SOIL / 5/17/11 / 0940	X		X	X						

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CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
K. Lucas Kevin Lucas	5-17-11 1110	JV Fullmer	1110 5/17/11
JV Fullmer	1545 5/17/11	1060, frige 2A A. Freier	1545 5/17/11
A Freier 1060, frig 2A	WCH 1000 5-19-11	Fed Ex	
			5/20/11 930

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Close-out List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc); Mercury - 7471 - (CV)
(2) Gamma Spec - Client List (Americium-241, Barium-133, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Silver-108 metastable)

REVIEWED BY CMB DATE 5/19/11

JP0186

Matrix *: S=Soil, SE=Sediment, SO=Solid, Sl=Sludge, W=Water, O=Oil, A=Air, DS=Drum Solids, DL=Drum Liquids, T=Tissue, Wi=Wipe, L=Liquid, V=Vegetation, X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-107-072	Page 3 of 4

Collector K. Lucas	Company Contact Joan Kessner Telephone No. 509-375-4688	Project Coordinator KESSNER, JH	Price Code 8L 88 (QVS 5/16/11) Data Turnaround 21 Days 7 (QVS 5/16/11)
Project Designation 100-H Remaining Sites Burial Grounds - Soil Full Protocol	Sampling Location 118-H-12 Verification Sampling	SAF No. RC-107	
Ice Chest No. WCH-08-045	Field Logbook No. EL 1627-05 COA R118H12000	Method of Shipment Government Vehicle (FedEx)	
Shipped To TestAmerica Incorporated, ~~Richland~~ Donvar (QVS 5/16/11)	Offsite Property No. NA	Bill of Lading/Air Bill No. 7971 1593 2475	

POSSIBLE SAMPLE HAZARDS/REMARKS

Possible RAD <DOT

Special Handling and/or Storage

Cool to 4 deg C

Preservation	None	Cool 4C	Cool 4C	Cool 4C	None	None	None	None		
Type of Container	G/P	G/P	G	aG	G/P	G/P	G/P	G/P		
No. of Container(s)	1	1	1	1	1	1	1	1		
Volume	60mL	60mL	120mL	120mL	120mL	500mL	60mL	60g		
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Chromium Hex - 7196	TPH-Diesel Range - WTPH-D+	PAHs - 8310	Carbon-14; Tritium - H3 Low Level Soil	See item (2) in Special Instructions	Nickel-63; Strontium-90 – Total Sr	RCF GEA Shipping Screen		
Sample No. / Matrix * / Sample Date / Sample Time										
J1J9V7 / SOIL / 5/17/11 / 0955	X		X	X						
J1J9V8 / SOIL / 5/17/11 / 1000	X		X	X						
J1J9V9 / SOIL / 5/17/11 / 0845	X		X	X						
J1J9W0 / SOIL / 5/17/11 / 1020	X		X	X						
J1J9W1 / SOIL / 5/17/11 / 1035	X		X	X						

CHAIN OF POSSESSION 5/17/11

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
K. Lucas [signature]	5-17-11 1110	JV Fullmer [signature]	1110 5/17/11
JV Fullmer [signature]	5/17/11 1545	1040, Bridge 2A A. Freier [signature]	5-17-11 1545
A. Freier [signature] (WCH 1040 Bridge 2A)	1000 5-19-11	Fed Ex	
		[signature]	5/20/11 930

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Close-out List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc); Mercury - 7471 - (CV)
(2) Gamma Spec - Client List (Americium-241, Barium-133, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Silver-108 metastable)

REVIEWED BY CMB DATE 5/19/11

JP0186

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

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-107-072	Page 4 of 4
Collector: K. Lucas	Company Contact: Joan Kessner; Telephone No.: 509-375-4688	Project Coordinator: KESSNER, JH	Price Code: 81 SB; Data Turnaround: 21 Days
Project Designation: 100-H Remaining Sites Burial Grounds - Soil Full Protocol	Sampling Location: 118-H-1:2 Verification Sampling	SAF No.: RC-107	
Ice Chest No.: WCH-08-045	Field Logbook No.: EL 1627-05; COA: R118H12000	Method of Shipment: Government Vehicle/FedEx	
Shipped To: TestAmerica Incorporated, ~~Richland~~ Denver	Offsite Property No.: NA	Bill of Lading/Air Bill No.: 7971 1593 2475	

POSSIBLE SAMPLE HAZARDS/REMARKS

Possible RAD <DOT

Special Handling and/or Storage

Cool to 4 deg C

Preservation	None	Cool 4C	Cool 4C	Cool 4C	None	None	None	None		
Type of Container	G/P	G/P	G	aG	G/P	G/P	G/P	G/P		
No. of Container(s)	1	1	1	1	1	1	0	1		
Volume	60mL	60mL	120mL	120mL	120mL	500mL	60mL	60g		
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Chromium Hex - 196	TPH-Diesel Range - WTPH-D+	PAHs - 8310	Carbon-14; Tritium - H3 Low Level Soil	See item (2) in Special Instructions	Nickel-63; Strontium-89,90 – Total Sr	RCF GEA Shipping Screen		

034

Sample No.	Matrix *	Sample Date	Sample Time										
J1J9W2	SOIL	5/17/11	1045	X		X	X						
J1J9W3	SOIL	5/17/11	1100	X		X	X						
J1J9W4	SOIL	5/17/11	0755	X			X						

CHAIN OF POSSESSION / **Sign/Print Names**

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
K. Lucas Kevin Lucas	5-17-11 1110	JV Fullmer	1110 5/17/11
JV Fullmer	5-17-11 1545	Received By/Stored In: 1060, Bridge 2A A. Freier A. Freier	Date/Time 5-17-11 1545
WCH 1060 Bridge 2A A. Freier A. Freier	5-19-11 1000	Received By/Stored In: Fed Ex	Date/Time
			5/20/11 930

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Close-out List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc}; Mercury - 7471 - (CV)
(2) Gamma Spec - Client List {Americium-241, Barium-133, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Silver-108 metastable}

REVIEWED BY CMB DATE 5/19/11

JP0186

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

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Appendix 5

Data Validation Supporting Documentation

GENERAL ORGANIC DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	C	D	E
PROJECT:	118-H-1:2		DATA PACKAGE:	JP0186	
VALIDATOR:	ELR	LAB: TAL		DATE: 6/16/4	
			SDG:	JP0186	
ANALYSES PERFORMED					
8015	8021	8141	8151	8315	8310
		WTPH-HCID	WTPH-G	WTPH-D	
SAMPLES/MATRIX:					
J1J9T7	J1J9T8	J1J9T9	J1J9V0	J1J9V1	
J1J9V2	J1J9V3	J1J9V4	J1J9V5	J1J9V6	
J1J9V7	J1J9V8	J1J9V9	J1J9W0	J1J9W1	
J1J9W2	J1J9W3				
					soil

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

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

Comments:

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

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:

GENERAL ORGANIC DATA VALIDATION CHECKLIST

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

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

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

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

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

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

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

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

Comments: _____

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 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: no PAS

GENERAL ORGANIC DATA VALIDATION CHECKLIST

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

Duplicate RPD values acceptable? ..... Yes No N/A

Duplicate results acceptable? ..... Yes No N/A

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

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

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

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

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

Comments:

6. HOLDING TIMES (all levels)

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

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

Comments:

GENERAL ORGANIC DATA VALIDATION CHECKLIST

8. COMPOUND IDENTIFICATION, 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: _____

9. SAMPLE CLEANUP (Levels D and E)

Fluoricil ® (or other aborbant) cleanup performed? ..... Yes No N/A

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

Check recoveries aceptable? ..... Yes No N/A

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

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

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

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

Comments: _____

Appendix 6

Additional Documentation Requested by Client

Client: Washington Closure Hanford

Job Number: 280-16088-1
Sdg Number: JP0186

Method Blank - Batch: 280-68435

Method: 8310
Preparation: 3550C

Lab Sample ID:	MB 280-68435/1-A	Analysis Batch:	280-68591	Instrument ID:	CHHPLC_G
Client Matrix:	Solid	Prep Batch:	280-68435	Lab File ID:	G0523008.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	30 g
Analysis Date:	05/23/2011 1346	Units:	ug/Kg	Final Weight/Volume:	4000 uL
Prep Date:	05/20/2011 2040			Injection Volume:	20 uL
Leach Date:	N/A			Column ID:	PRIMARY

Analyte	Result	Qual	MDL	RL
Acenaphthene	10	U	10	100
Acenaphthylene	9.0	U	9.0	100
Anthracene	3.1	U	3.1	20
Benzo[a]anthracene	3.2	U	3.2	15
Benzo[a]pyrene	6.4	U	6.4	15
Benzo[b]fluoranthene	4.2	U	4.2	15
Benzo[g,h,i]perylene	7.2	U	7.2	30
Benzo[k]fluoranthene	3.9	U	3.9	15
Chrysene	4.8	U	4.8	40
Dibenzo(a,h)anthracene	11	U	11	30
Fluoranthene	13	U	13	40
Fluorene	5.3	U	5.3	30
Indeno[1,2,3-cd]pyrene	12	U	12	30
Naphthalene	12	U	12	100
Phenanthrene	12	U	12	40
Pyrene	12	U	12	40

Surrogate	% Rec	Acceptance Limits
Terphenyl-d14 (SUR)	91	72 - 115

041

Client: Washington Closure Hanford

Job Number: 280-16088-1
Sdg Number: JP0186

Lab Control Sample - Batch: 280-68435

Method: 8310
Preparation: 3550C

Lab Sample ID:	LCS 280-68435/2-A	Analysis Batch:	280-68591	Instrument ID:	CHHPLC_G
Client Matrix:	Solid	Prep Batch:	280-68435	Lab File ID:	G0523009.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	30 g
Analysis Date:	05/23/2011 1416	Units:	ug/Kg	Final Weight/Volume:	4000 uL
Prep Date:	05/20/2011 2040			Injection Volume:	20 uL
Leach Date:	N/A			Column ID:	PRIMARY

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Acenaphthene	2000	1960	98	72 - 115	
Acenaphthylene	2000	1980	99	60 - 115	
Anthracene	2000	1850	92	61 - 115	
Benzo[a]anthracene	2000	2180	109	76 - 115	
Benzo[a]pyrene	2000	2140	107	69 - 115	
Benzo[b]fluoranthene	2000	2080	104	81 - 115	
Benzo[g,h,i]perylene	2000	2090	105	71 - 115	
Benzo[k]fluoranthene	2000	2060	103	85 - 115	
Chrysene	2000	2010	100	70 - 115	
Dibenzo(a,h)anthracene	2000	2070	104	79 - 115	
Fluoranthene	2000	2040	102	67 - 115	
Fluorene	2000	2000	100	72 - 115	
Indeno[1,2,3-cd]pyrene	2000	2220	111	76 - 115	
Naphthalene	2000	2030	102	77 - 115	
Phenanthrene	2000	2040	102	79 - 115	
Pyrene	2000	2100	105	77 - 115	

Surrogate	% Rec	Acceptance Limits
Terphenyl-d14 (SUR)	89	72 - 115

042

Client: Washington Closure Hanford

Job Number: 280-16088-1
Sdg Number: JP0186

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 280-68435

Method: 8310
Preparation: 3550C

MS Lab Sample ID:	280-16088-1	Analysis Batch:	280-68591	Instrument ID:	CHHPLC_G
Client Matrix:	Solid	Prep Batch:	280-68435	Lab File ID:	G0523011.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	30.3 g
Analysis Date:	05/23/2011 1517			Final Weight/Volume:	4000 uL
Prep Date:	05/20/2011 2040			Injection Volume:	20 uL
Leach Date:	N/A			Column ID:	PRIMARY

MSD Lab Sample ID:	280-16088-1	Analysis Batch:	280-68591	Instrument ID:	CHHPLC_G
Client Matrix:	Solid	Prep Batch:	280-68435	Lab File ID:	G0523012.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	30.1 g
Analysis Date:	05/23/2011 1548			Final Weight/Volume:	4000 uL
Prep Date:	05/20/2011 2040			Injection Volume:	20 uL
Leach Date:	N/A			Column ID:	PRIMARY

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Acenaphthene	91	91	72 - 115	1	20		
Acenaphthylene	92	92	60 - 115	1	21		
Anthracene	85	86	61 - 115	2	20		
Benzo[a]anthracene	98	100	76 - 115	3	20		
Benzo[a]pyrene	98	100	69 - 115	3	20		
Benzo[b]fluoranthene	94	96	81 - 115	2	20		
Benzo[g,h,i]perylene	96	98	71 - 115	2	20		
Benzo[k]fluoranthene	94	95	85 - 115	2	20		
Chrysene	92	93	70 - 115	2	20		
Dibenzo(a,h)anthracene	95	96	79 - 115	2	20		
Fluoranthene	94	96	67 - 115	2	20		
Fluorene	92	93	72 - 115	1	20		
Indeno[1,2,3-cd]pyrene	101	103	76 - 115	2	20		
Naphthalene	94	95	77 - 115	1	20		
Phenanthrene	94	95	79 - 115	2	20		
Pyrene	97	99	77 - 115	3	20		

Surrogate	MS % Rec	MSD % Rec	Acceptance Limits
Terphenyl-d14 (SUR)	89	90	72 - 115

043

Date: 13 June 2011
To: Washington Closure Hanford Inc. (technical representative)
From: ELR Consulting
Project: 100-H Remaining Sites Burial Grounds – Soil Full Protocol - Waste Subsite 118-H-1:2
Subject: Metals - Data Package No. JP0186-TAL

INTRODUCTION

This memo presents the results of data validation on Data Package No. JP0186 prepared by TestAmerica Laboratory Inc. (TAL). A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample Date	Media	Validation	Analyte
J1J9T7	5/17/11	Soil	C	See note 1
J1J9T8	5/17/11	Soil	C	See note 1
J1J9T9	5/17/11	Soil	C	See note 1
J1J9V0	5/17/11	Soil	C	See note 1
J1J9V1	5/17/11	Soil	C	See note 1
J1J9V2	5/17/11	Soil	C	See note 1
J1J9V3	5/17/11	Soil	C	See note 1
J1J9V4	5/17/11	Soil	C	See note 1
J1J9V5	5/17/11	Soil	C	See note 1
J1J9V6	5/17/11	Soil	C	See note 1
J1J9V7	5/17/11	Soil	C	See note 1
J1J9V8	5/17/11	Soil	C	See note 1
J1J9V9	5/17/11	Soil	C	See note 1
J1J9W1	5/17/11	Soil	C	See note 1
J1J9W2	5/17/11	Soil	C	See note 1
J1J9W3	5/17/11	Soil	C	See note 1
J1J9W4	5/17/11	Soil	C	See note 1

1 - ICP metals (6010B) and mercury (7471A).

Data validation was conducted in accordance with the Washington Closure Hanford Incorporated (WCH) validation statement of work and the 100 Area Burial Grounds Remedial Action Sampling and Analysis Plan (DOE/RL-2001-35, December 2001). Appendices 1 through 6 provide the following information as indicated below:

Appendix 1. Glossary of Data Reporting Qualifiers
Appendix 2. Summary of Data Qualification
Appendix 3. Annotated Laboratory Reports
Appendix 4. Laboratory Narrative and Chain-of-Custody Documentation
Appendix 5. Data Validation Supporting Documentation
Appendix 6. Additional Documentation Requested by Client

DATA QUALITY PARAMETERS

- **Holding Times**

Analytical holding times for metals are assessed to ascertain whether the holding time requirements were met by the laboratory. The holding time requirements are as follows: Soil samples must be analyzed within 28 days for mercury and 6 months for ICP metals.

All holding times were acceptable.

- **Preparation (Method) Blanks**

Preparation Blanks

At least one preparation blank, consisting of deionized distilled water processed through each sample preparation and analysis procedure, must be prepared and analyzed with every sample delivery group. In the case of positive blank results, samples with digestate concentrations less than five times the preparation blank value have had their associated values qualified as non-detected and flagged "UJ". Samples with concentrations of greater than five times the highest blank concentration do not require qualification.

In the case of negative blank results, if the absolute value exceeds the contract required detection limit (CRDL), all nondetects are rejected and flagged "UR" and all detects that are less than ten times the absolute value of the associated preparation blank result are qualified as estimates and flagged "J". If the absolute value of the negative preparation blank is greater than the instrument detection limit (IDL) and less than or equal to the CRDL, all nondetects are qualified as estimates and flagged "UJ" and all detects less than ten times the absolute value of the blank are qualified as estimates and flagged "J". If the sample results are greater than ten times the absolute value of the preparation blank, no qualification is necessary.

All preparation blank results were acceptable.

Field (Equipment) Blank

One field blank (J1J9W4) was submitted for analysis. Aluminum, barium, beryllium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, nickel, potassium, selenium, vanadium and zinc were detected in the field blank. Under the WCH statement of work, no qualification is required.

- **Accuracy**

Matrix Spike and Laboratory Control Sample

Matrix spike (MS) and laboratory control sample (LCS) analyses are used to assess the analytical accuracy of the reported data. The matrix spike is used to assess the effect of the matrix on the ability to accurately quantify sample concentrations. Recoveries must fall within the range of 75% to 125%. Samples with a recovery of less than 30% and a sample result below the IDL are rejected and flagged "UR". Samples with a recovery of 30% to 74% and a sample result less than the IDL are qualified "UJ". Samples with a recovery of greater than 125% or less than 74% and a sample result greater than the IDL are qualified as estimates and flagged "J". Finally, for samples with a recovery greater than 125% and a sample result less than the IDL, no qualification is required.

Due to matrix spike recoveries outside QC limits, all antimony (41%) and silicon (17%) results were qualified as estimates and flagged "J".

Due to an LCS recovery outside QC limits (9%), all silicon results were qualified as estimates and flagged "J".

All other accuracy results were acceptable

- **Precision**

Laboratory Duplicate Samples

Analytical precision is expressed by the relative percent differences (RPD) between the recoveries of matrix spike duplicate (MSD) analyses performed on a sample in the analytical batch. Precision may alternatively be assessed using unspiked duplicate analyses performed on a sample in the analytical batch. If both sample and replicate activities (concentrations) are greater than five times the CRDL and the RPD is less than 30%, no qualification is required. If either activity (concentration) is less than five times the CRDL, the RPD control limit is less than or equal to two times the CRDL. If the RPD is outside the applicable control limit, associated results are qualified as estimated detects or estimated non-detects.

All laboratory duplicate results were acceptable.

Field Duplicate

One set of field duplicates (J1J9V1/J1J9V9) was submitted for analysis. Field duplicates are compared using the same criteria as for laboratory duplicates. All field duplicate results were acceptable.

- **Analytical Detection Levels**

Reported analytical detection levels are compared against the project RQLs to ensure that laboratory detection levels meet the required criteria. All results met the RQL.

- **Completeness**

Data package No. JP0186 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 100%.

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

The following minor deficiencies were noted:

- Due to matrix spike recoveries outside QC limits, all antimony (41%) and silicon (17%) results were qualified as estimates and flagged "J".
- Due to an LCS recovery outside QC limits (9%), all silicon results were qualified as estimates and flagged "J".

Data flagged "J" indicates that the associated concentration is an estimate, but under the WCH statement of work, the data may be usable for decision-making purposes. All other validated results are considered accurate within the standard error associated with the methods.

REFERENCES

Washington Closure Hanford Contract #S00W307A00 (March 2008), *Data Validation Services*, March 2008.

DOE/RL-2001-35, Rev. 0, *100 Area Burial Grounds Remedial Action Sampling and Analysis Plan*, U.S. Department of Energy, December 2001.

Appendix 1

Glossary of Data Reporting Qualifiers

Qualifiers which may be applied by data validators in compliance with WCH validation SOW are as follows:

U - Indicates the compound or analyte was analyzed for and not detected in the sample. The value reported is the sample quantitation limit corrected for sample dilution and moisture content by the laboratory.

UJ - Indicates the compound or analyte was analyzed for and not detected in the sample. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.

J - Indicates the compound or analyte was analyzed for and detected. Due to a minor QC deficiency identified during the data validation, the associated concentration is an estimate, but the data are usable for decision-making purposes.

BJ - Applied to inorganic analyses only. Indicates the analyte concentration was greater than the IDL but less than the CRDL and is considered an estimated value.

R - Indicates the compound or analyte was analyzed for, detected, and due to an identified major QC deficiency, the data are unusable.

UR - Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified major QC deficiency.

NJ - Indicates presumptive evidence of a compound at an estimated value. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

N - Indicates presumptive evidence of a compound. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

Appendix 2

Summary of Data Qualification

METALS DATA QUALIFICATION SUMMARY*

SDG: JP0186	REVIEWER: ELR	Project: 118-H-1:2	PAGE 1 OF 1
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Antimony Silicon	J	All	MS recovery
Silicon	J	All	LCS recovery

* - The Qualified Data Summary Table includes laboratory applied "U" qualifiers not specifically identified here. The laboratory applied "U" qualifiers are included to minimize misinterpretation of results contained in the table.

Appendix 3

Annotated Laboratory Reports

Client: Washington Closure Hanford

Job Number: 280-16088-1
Sdg Number: JP0186

Client Sample ID: J1J9T7

Lab Sample ID: 280-16088-1
Client Matrix: Solid
% Moisture: 6.4

Date Sampled: 05/17/2011 0805
Date Received: 05/20/2011 0930

6010B Metals (ICP)

Analysis Method:	6010B	Analysis Batch:	280-68944	Instrument ID:	MT_026
Prep Method:	3050B	Prep Batch:	280-68398	Lab File ID:	26b052411.asc
Dilution:	1.0			Initial Weight/Volume:	1.13 g
Analysis Date:	05/24/2011 1847			Final Weight/Volume:	100 mL
Prep Date:	05/23/2011 1500				

M 6/11/11

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		11200		1.5	4.7
Antimony		0.36	U J	0.36	0.57
Arsenic		3.0		0.62	0.95
Barium		91.3	X	0.072	0.47
Beryllium		0.22		0.031	0.19
Boron		2.5		0.93	1.9
Cadmium		0.13	B	0.039	0.19
Calcium		3780	X	13.3	47.3
Chromium		13.2		0.055	0.19
Cobalt		7.7	X	0.095	0.95
Copper		15.4		0.21	0.95
Iron		18400	X	3.6	4.7
Lead		6.2		0.26	0.47
Magnesium		4320	X	3.5	18.9
Manganese		348	X	0.095	0.95
Molybdenum		0.40	B	0.25	1.9
Nickel		12.8	X	0.12	3.8
Potassium		2290	X	38.8	284
Selenium		0.81	U	0.81	0.95
Silicon		267	N J	5.4	9.5
Silver		0.15	U	0.15	0.19
Sodium		314		55.8	113
Vanadium		39.1	X	0.089	1.9
Zinc		43.0		0.38	0.95

7471A Mercury (CVAA)

Analysis Method:	7471A	Analysis Batch:	280-68773	Instrument ID:	MT_033
Prep Method:	7471A	Prep Batch:	280-68556	Lab File ID:	110523AA.txt
Dilution:	1.0			Initial Weight/Volume:	0.66 g
Analysis Date:	05/23/2011 1602			Final Weight/Volume:	50 mL
Prep Date:	05/23/2011 1225				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.0054	U N	0.0054	0.017

010

Client: Washington Closure Hanford

Job Number: 280-16088-1
Sdg Number: JP0186

Client Sample ID: J1J9T8

Lab Sample ID: 280-16088-2
Client Matrix: Solid

% Moisture: 5.2

6/11/11

Date Sampled: 05/17/2011 0815
Date Received: 05/20/2011 0930

6010B Metals (ICP)

Analysis Method:	6010B	Analysis Batch:	280-68944	Instrument ID:	MT_026
Prep Method:	3050B	Prep Batch:	280-68398	Lab File ID:	26b052411.asc
Dilution:	1.0			Initial Weight/Volume:	1.09 g
Analysis Date:	05/24/2011 1857			Final Weight/Volume:	100 mL
Prep Date:	05/23/2011 1500				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		10000		1.5	4.8
Antimony		0.37	U J	0.37	0.58
Arsenic		3.2		0.64	0.97
Barium		89.7	X	0.074	0.48
Beryllium		0.19		0.032	0.19
Boron		2.5		0.95	1.9
Cadmium		0.15	B	0.040	0.19
Calcium		3730	X	13.6	48.4
Chromium		12.6		0.056	0.19
Cobalt		7.7	X	0.097	0.97
Copper		14.7		0.21	0.97
Iron		17900	X	3.7	4.8
Lead		7.2		0.26	0.48
Magnesium		4310	X	3.6	19.3
Manganese		334	X	0.097	0.97
Molybdenum		0.25	U	0.25	1.9
Nickel		12.5	X	0.12	3.9
Potassium		2240	X	39.7	290
Selenium		0.83	U	0.83	0.97
Silicon		261	N J	5.5	9.7
Silver		0.15	U	0.15	0.19
Sodium		238		57.1	116
Vanadium		37.7	X	0.091	1.9
Zinc		44.5		0.38	0.97

7471A Mercury (CVAA)

Analysis Method:	7471A	Analysis Batch:	280-68773	Instrument ID:	MT_033
Prep Method:	7471A	Prep Batch:	280-68556	Lab File ID:	110523AA.txt
Dilution:	1.0			Initial Weight/Volume:	0.60 g
Analysis Date:	05/23/2011 1609			Final Weight/Volume:	50 mL
Prep Date:	05/23/2011 1225				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.0058	U	0.0058	0.018

Client: Washington Closure Hanford

Job Number: 280-16088-1
Sdg Number: JP0186

Client Sample ID: J1J9T9

Lab Sample ID: 280-16088-3
Client Matrix: Solid

% Moisture: 6.0

6/11/11

Date Sampled: 05/17/2011 0825
Date Received: 05/20/2011 0930

6010B Metals (ICP)

Analysis Method:	6010B	Analysis Batch:	280-68944	Instrument ID:	MT_026
Prep Method:	3050B	Prep Batch:	280-68398	Lab File ID:	26b052411.asc
Dilution:	1.0			Initial Weight/Volume:	1.16 g
Analysis Date:	05/24/2011 1900			Final Weight/Volume:	100 mL
Prep Date:	05/23/2011 1500				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		10200		1.4	4.6
Antimony		0.35	U J	0.35	0.55
Arsenic		3.5		0.61	0.92
Barium		87.6	X	0.070	0.46
Beryllium		0.19		0.030	0.18
Boron		2.3		0.90	1.8
Cadmium		0.13	B	0.038	0.18
Calcium		3920	X	12.9	45.9
Chromium		13.0		0.053	0.18
Cobalt		7.9	X	0.092	0.92
Copper		15.6		0.20	0.92
Iron		18200	X	3.5	4.6
Lead		7.4		0.25	0.46
Magnesium		4450	X	3.4	18.3
Manganese		339	X	0.092	0.92
Molybdenum		0.24	U	0.24	1.8
Nickel		12.6	X	0.11	3.7
Potassium		2160	X	37.6	275
Selenium		0.79	U	0.79	0.92
Silicon		230	N J	5.2	9.2
Silver		0.15	U	0.15	0.18
Sodium		238		54.1	110
Vanadium		39.3	X	0.086	1.8
Zinc		42.1		0.36	0.92

7471A Mercury (CVAA)

Analysis Method:	7471A	Analysis Batch:	280-68773	Instrument ID:	MT_033
Prep Method:	7471A	Prep Batch:	280-68556	Lab File ID:	110523AA.txt
Dilution:	1.0			Initial Weight/Volume:	0.62 g
Analysis Date:	05/23/2011 1611			Final Weight/Volume:	50 mL
Prep Date:	05/23/2011 1225				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.0057	U	0.0057	0.018

012

Client: Washington Closure Hanford

Job Number: 280-16088-1
Sdg Number: JP0186

Client Sample ID: J1J9V0

Lab Sample ID: 280-16088-4
Client Matrix: Solid

% Moisture: 5.5

6/11/11

Date Sampled: 05/17/2011 0835
Date Received: 05/20/2011 0930

6010B Metals (ICP)

Analysis Method:	6010B	Analysis Batch:	280-68944	Instrument ID:	MT_026
Prep Method:	3050B	Prep Batch:	280-68398	Lab File ID:	26b052411.asc
Dilution:	1.0			Initial Weight/Volume:	1.11 g
Analysis Date:	05/24/2011 1912			Final Weight/Volume:	100 mL
Prep Date:	05/23/2011 1500				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		10600		1.5	4.8
Antimony		0.36	U J	0.36	0.57
Arsenic		3.1		0.63	0.95
Barium		89.2	X	0.072	0.46
Beryllium		0.22		0.031	0.19
Boron		2.0		0.93	1.9
Cadmium		0.13	B	0.039	0.19
Calcium		3750	X	13.4	47.7
Chromium		12.4		0.055	0.19
Cobalt		7.6	X	0.095	0.95
Copper		14.9		0.21	0.95
Iron		18000	X	3.6	4.8
Lead		5.6		0.26	0.48
Magnesium		4250	X	3.5	19.1
Manganese		334	X	0.095	0.95
Molybdenum		0.25	U	0.25	1.9
Nickel		12.3	X	0.12	3.8
Potassium		2150	X	39.1	286
Selenium		0.82	U	0.82	0.95
Silicon		257	N J	5.4	9.5
Silver		0.15	U	0.15	0.19
Sodium		240		56.2	114
Vanadium		36.3	X	0.090	1.9
Zinc		39.8		0.38	0.95

7471A Mercury (CVAA)

Analysis Method:	7471A	Analysis Batch:	280-68773	Instrument ID:	MT_033
Prep Method:	7471A	Prep Batch:	280-68556	Lab File ID:	110523AA.txt
Dilution:	1.0			Initial Weight/Volume:	0.61 g
Analysis Date:	05/23/2011 1613			Final Weight/Volume:	50 mL
Prep Date:	05/23/2011 1225				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.0058	U	0.0058	0.018

013

Client: Washington Closure Hanford

Job Number: 280-16088-1
Sdg Number: JP0186

Client Sample ID: J1J9V1

Lab Sample ID: 280-16088-5
Client Matrix: Solid

% Moisture: 6.8

6/11/11

Date Sampled: 05/17/2011 0845
Date Received: 05/20/2011 0930

6010B Metals (ICP)

Analysis Method:	6010B	Analysis Batch:	280-68944	Instrument ID:	MT_026
Prep Method:	3050B	Prep Batch:	280-68398	Lab File ID:	26b052411.asc
Dilution:	1.0			Initial Weight/Volume:	1.12 g
Analysis Date:	05/24/2011 1915			Final Weight/Volume:	100 mL
Prep Date:	05/23/2011 1500				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		10400		1.5	4.8
Antimony		0.36	U J	0.36	0.57
Arsenic		2.5		0.63	0.96
Barium		93.2	X	0.073	0.48
Beryllium		0.19		0.032	0.19
Boron		2.5		0.94	1.9
Cadmium		0.11	B	0.039	0.19
Calcium		3860	X	13.5	47.9
Chromium		12.2		0.056	0.19
Cobalt		7.8	X	0.096	0.96
Copper		14.9		0.21	0.96
Iron		18300	X	3.6	4.8
Lead		6.4		0.26	0.48
Magnesium		4260	X	3.5	19.2
Manganese		338	X	0.096	0.96
Molybdenum		0.25	U	0.25	1.9
Nickel		12.4	X	0.12	3.8
Potassium		1930	X	39.3	287
Selenium		0.82	U	0.82	0.96
Silicon		263	N J	5.4	9.6
Silver		0.15	U	0.15	0.19
Sodium		247		56.5	115
Vanadium		37.8	X	0.090	1.9
Zinc		39.2		0.38	0.96

7471A Mercury (CVAA)

Analysis Method:	7471A	Analysis Batch:	280-68773	Instrument ID:	MT_033
Prep Method:	7471A	Prep Batch:	280-68556	Lab File ID:	110523AA.txt
Dilution:	1.0			Initial Weight/Volume:	0.62 g
Analysis Date:	05/23/2011 1616			Final Weight/Volume:	50 mL
Prep Date:	05/23/2011 1225				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.0057	U	0.0057	0.018

Client: Washington Closure Hanford

Job Number: 280-16088-1
Sdg Number: JP0186

Client Sample ID: J1J9V2

Lab Sample ID: 280-16088-6
Client Matrix: Solid

% Moisture: 5.3

Date Sampled: 05/17/2011 0900
Date Received: 05/20/2011 0930

6010B Metals (ICP)

Analysis Method:	6010B	Analysis Batch:	280-68944	Instrument ID:	MT_026
Prep Method:	3050B	Prep Batch:	280-68398	Lab File ID:	26b052411.asc
Dilution:	1.0			Initial Weight/Volume:	1.13 g
Analysis Date:	05/24/2011 1917			Final Weight/Volume:	100 mL
Prep Date:	05/23/2011 1500				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		9430		1.4	4.7
Antimony		0.36	U J	0.36	0.56
Arsenic		2.5		0.62	0.93
Barium		73.7	X	0.071	0.47
Beryllium		0.17	B	0.031	0.19
Boron		1.7	B	0.92	1.9
Cadmium		0.11	B	0.038	0.19
Calcium		3980	X	13.2	46.7
Chromium		13.4		0.054	0.19
Cobalt		7.8	X	0.093	0.93
Copper		20.8		0.20	0.93
Iron		17800	X	3.6	4.7
Lead		4.8		0.25	0.47
Magnesium		4930	X	3.5	18.7
Manganese		314	X	0.093	0.93
Molybdenum		0.26	B	0.24	1.9
Nickel		14.5	X	0.11	3.7
Potassium		1390	X	38.3	280
Selenium		0.80	U	0.80	0.93
Silicon		300	N J	5.3	9.3
Silver		0.15	U	0.15	0.19
Sodium		245		55.1	112
Vanadium		41.7	X	0.088	1.9
Zinc		39.3		0.37	0.93

7471A Mercury (CVAA)

Analysis Method:	7471A	Analysis Batch:	280-68773	Instrument ID:	MT_033
Prep Method:	7471A	Prep Batch:	280-68556	Lab File ID:	110523AA.txt
Dilution:	1.0			Initial Weight/Volume:	0.64 g
Analysis Date:	05/23/2011 1618			Final Weight/Volume:	50 mL
Prep Date:	05/23/2011 1225				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.0055	U	0.0055	0.017

Client: Washington Closure Hanford

Job Number: 280-16088-1
Sdg Number: JP0186

Client Sample ID: J1J9V3

Lab Sample ID: 280-16088-7
Client Matrix: Solid

% Moisture: 7.4

6/11/11

Date Sampled: 05/17/2011 0915
Date Received: 05/20/2011 0930

6010B Metals (ICP)

Analysis Method:	6010B	Analysis Batch:	280-68944	Instrument ID:	MT_026
Prep Method:	3050B	Prep Batch:	280-68398	Lab File ID:	26b052411.asc
Dilution:	1.0			Initial Weight/Volume:	1.14 g
Analysis Date:	05/24/2011 1920			Final Weight/Volume:	100 mL
Prep Date:	05/23/2011 1500				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		9930		1.5	4.7
Antimony		0.36	U J	0.36	0.57
Arsenic		5.4		0.63	0.95
Barium		91.1	X	0.072	0.47
Beryllium		0.18	B	0.031	0.19
Boron		1.9		0.93	1.9
Cadmium		0.15	B	0.039	0.19
Calcium		4120	X	13.4	47.4
Chromium		13.5		0.055	0.19
Cobalt		8.1	X	0.095	0.95
Copper		15.3		0.21	0.95
Iron		19000	X	3.6	4.7
Lead		10.2		0.26	0.47
Magnesium		4230	X	3.5	19.0
Manganese		345	X	0.095	0.95
Molybdenum		0.25	U	0.25	1.9
Nickel		12.3	X	0.12	3.8
Potassium		2200	X	38.9	284
Selenium		0.81	U	0.81	0.95
Silicon		408	N J	5.4	9.5
Silver		0.15	U	0.15	0.19
Sodium		250		55.9	114
Vanadium		40.8	X	0.089	1.9
Zinc		48.4		0.38	0.95

7471A Mercury (CVAA)

Analysis Method:	7471A	Analysis Batch:	280-68773	Instrument ID:	MT_033
Prep Method:	7471A	Prep Batch:	280-68556	Lab File ID:	110523AA.txt
Dilution:	1.0			Initial Weight/Volume:	0.64 g
Analysis Date:	05/23/2011 1620			Final Weight/Volume:	50 mL
Prep Date:	05/23/2011 1225				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.0056	U	0.0056	0.017

016

Client: Washington Closure Hanford

Job Number: 280-16088-1
Sdg Number: JP0186

Client Sample ID: J1J9V4

Lab Sample ID: 280-16088-8
Client Matrix: Solid

% Moisture: 7.6

Date Sampled: 05/17/2011 0925
Date Received: 05/20/2011 0930

6010B Metals (ICP)

Analysis Method:	6010B	Analysis Batch:	280-68944	Instrument ID:	MT_026
Prep Method:	3050B	Prep Batch:	280-68398	Lab File ID:	26b052411.asc
Dilution:	1.0			Initial Weight/Volume:	1.16 g
Analysis Date:	05/24/2011 1922			Final Weight/Volume:	100 mL
Prep Date:	05/23/2011 1500				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		11100		1.4	4.7
Antimony		0.35	U J	0.35	0.56
Arsenic		3.2		0.62	0.93
Barium		90.5	X	0.071	0.47
Beryllium		0.22		0.031	0.19
Boron		2.1		0.91	1.9
Cadmium		0.14	B	0.038	0.19
Calcium		3670	X	13.2	46.7
Chromium		12.7		0.054	0.19
Cobalt		8.1	X	0.093	0.93
Copper		15.1		0.20	0.93
Iron		19600	X	3.5	4.7
Lead		5.1		0.25	0.47
Magnesium		4550	X	3.5	18.7
Manganese		348	X	0.093	0.93
Molybdenum		0.24	U	0.24	1.9
Nickel		12.9	X	0.11	3.7
Potassium		2440	X	38.3	280
Selenium		0.80	U	0.80	0.93
Silicon		356	N J	5.3	9.3
Silver		0.15	U	0.15	0.19
Sodium		249		55.1	112
Vanadium		39.4	X	0.088	1.9
Zinc		41.4		0.37	0.93

7471A Mercury (CVAA)

Analysis Method:	7471A	Analysis Batch:	280-68773	Instrument ID:	MT_033
Prep Method:	7471A	Prep Batch:	280-68556	Lab File ID:	110523AA.txt
Dilution:	1.0			Initial Weight/Volume:	0.68 g
Analysis Date:	05/23/2011 1627			Final Weight/Volume:	50 mL
Prep Date:	05/23/2011 1225				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.0053	U	0.0053	0.016

017

Client: Washington Closure Hanford

Job Number: 280-16088-1
Sdg Number: JP0186

Client Sample ID: J1J9V5

Lab Sample ID: 280-16088-9
Client Matrix: Solid

% Moisture: 6.8

6/11/11

Date Sampled: 05/17/2011 0930
Date Received: 05/20/2011 0930

6010B Metals (ICP)

Analysis Method:	6010B	Analysis Batch:	280-68944	Instrument ID:	MT_026
Prep Method:	3050B	Prep Batch:	280-68398	Lab File ID:	26b052411.asc
Dilution:	1.0			Initial Weight/Volume:	1.14 g
Analysis Date:	05/24/2011 1925			Final Weight/Volume:	100 mL
Prep Date:	05/23/2011 1500				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		10500		1.5	4.7
Antimony		0.36	U J	0.36	0.56
Arsenic		6.1		0.62	0.94
Barium		88.3	X	0.072	0.47
Beryllium		0.20		0.031	0.19
Boron		2.6		0.92	1.9
Cadmium		0.15	B	0.039	0.19
Calcium		4890	X	13.3	47.1
Chromium		12.9		0.055	0.19
Cobalt		8.5	X	0.094	0.94
Copper		16.0		0.20	0.94
Iron		19500	X	3.6	4.7
Lead		14.0		0.25	0.47
Magnesium		4770	X	3.5	18.8
Manganese		341	X	0.094	0.94
Molybdenum		0.24	U	0.24	1.9
Nickel		13.2	X	0.12	3.8
Potassium		2140	X	38.6	282
Selenium		0.81	U	0.81	0.94
Silicon		428	N J	5.3	9.4
Silver		0.15	U	0.15	0.19
Sodium		242		55.5	113
Vanadium		42.3	X	0.088	1.9
Zinc		46.9		0.37	0.94

7471A Mercury (CVAA)

Analysis Method:	7471A	Analysis Batch:	280-68773	Instrument ID:	MT_033
Prep Method:	7471A	Prep Batch:	280-68556	Lab File ID:	110523AA.txt
Dilution:	1.0			Initial Weight/Volume:	0.60 g
Analysis Date:	05/23/2011 1630			Final Weight/Volume:	50 mL
Prep Date:	05/23/2011 1225				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.0059	U	0.0059	0.018

Client: Washington Closure Hanford

Job Number: 280-16088-1
Sdg Number: JP0186

Client Sample ID: J1J9V6

Lab Sample ID: 280-16088-10
Client Matrix: Solid
% Moisture: 3.6

Date Sampled: 05/17/2011 0940
Date Received: 05/20/2011 0930

6010B Metals (ICP)

Analysis Method:	6010B	Analysis Batch:	280-68944	Instrument ID:	MT_026
Prep Method:	3050B	Prep Batch:	280-68398	Lab File ID:	26b052411.asc
Dilution:	1.0			Initial Weight/Volume:	1.03 g
Analysis Date:	05/24/2011 1928			Final Weight/Volume:	100 mL
Prep Date:	05/23/2011 1500				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		6180		1.6	5.0
Antimony		0.38	U J	0.38	0.60
Arsenic		4.0		0.66	1.0
Barium		58.0	X	0.077	0.50
Beryllium		0.033	U	0.033	0.20
Boron		1.8	B	0.99	2.0
Cadmium		0.10	B	0.041	0.20
Calcium		5250	X	14.2	50.4
Chromium		9.0		0.058	0.20
Cobalt		7.2	X	0.10	1.0
Copper		16.9		0.22	1.0
Iron		16600	X	3.8	5.0
Lead		10.1		0.27	0.50
Magnesium		4270	X	3.7	20.1
Manganese		266	X	0.10	1.0
Molybdenum		0.26	U	0.26	2.0
Nickel		11.7	X	0.12	4.0
Potassium		887	X	41.3	302
Selenium		0.87	U	0.87	1.0
Silicon		276	N J	5.7	10.1
Silver		0.16	U	0.16	0.20
Sodium		262		59.4	121
Vanadium		43.6	X	0.095	2.0
Zinc		36.1		0.40	1.0

7471A Mercury (CVAA)

Analysis Method:	7471A	Analysis Batch:	280-68773	Instrument ID:	MT_033
Prep Method:	7471A	Prep Batch:	280-68556	Lab File ID:	110523AA.txt
Dilution:	1.0			Initial Weight/Volume:	0.68 g
Analysis Date:	05/23/2011 1632			Final Weight/Volume:	50 mL
Prep Date:	05/23/2011 1225				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.010	B	0.0051	0.016

Client: Washington Closure Hanford

Job Number: 280-16088-1
Sdg Number: JP0186

Client Sample ID: J1J9V7

Lab Sample ID: 280-16088-11
Client Matrix: Solid

% Moisture: 3.3

Date Sampled: 05/17/2011 0955
Date Received: 05/20/2011 0930

6010B Metals (ICP)

Analysis Method:	6010B	Analysis Batch:	280-68944	Instrument ID:	MT_026
Prep Method:	3050B	Prep Batch:	280-68398	Lab File ID:	26b052411.asc
Dilution:	1.0			Initial Weight/Volume:	1.03 g
Analysis Date:	05/24/2011 1930			Final Weight/Volume:	100 mL
Prep Date:	05/23/2011 1500				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		6650		1.6	5.0
Antimony		0.38	U J	0.38	0.60
Arsenic		5.1		0.66	1.0
Barium		54.1	X	0.076	0.50
Beryllium		0.033	U	0.033	0.20
Boron		1.3	B	0.98	2.0
Cadmium		0.11	B	0.041	0.20
Calcium		6260	X	14.2	50.2
Chromium		9.6		0.058	0.20
Cobalt		7.6	X	0.10	1.0
Copper		17.9		0.22	1.0
Iron		18100	X	3.8	5.0
Lead		19.7		0.27	0.50
Magnesium		4220	X	3.7	20.1
Manganese		271	X	0.10	1.0
Molybdenum		0.26	U	0.26	2.0
Nickel		10.5	X	0.12	4.0
Potassium		1050	X	41.2	301
Selenium		0.86	U	0.86	1.0
Silicon		202	N J	5.7	10.0
Silver		0.16	U	0.16	0.20
Sodium		278		59.2	120
Vanadium		46.9	X	0.094	2.0
Zinc		38.6		0.40	1.0

7471A Mercury (CVAA)

Analysis Method:	7471A	Analysis Batch:	280-68773	Instrument ID:	MT_033
Prep Method:	7471A	Prep Batch:	280-68556	Lab File ID:	110523AA.txt
Dilution:	1.0			Initial Weight/Volume:	0.61 g
Analysis Date:	05/23/2011 1634			Final Weight/Volume:	50 mL
Prep Date:	05/23/2011 1225				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.0056	U	0.0056	0.017

Client: Washington Closure Hanford

Job Number: 280-16088-1
Sdg Number: JP0186

Client Sample ID: J1J9V8

Lab Sample ID: 280-16088-12
Client Matrix: Solid

% Moisture: 3.2

Date Sampled: 05/17/2011 1000
Date Received: 05/20/2011 0930

6010B Metals (ICP)

Analysis Method:	6010B	Analysis Batch:	280-68944	Instrument ID:	MT_026
Prep Method:	3050B	Prep Batch:	280-68398	Lab File ID:	26b052411.asc
Dilution:	1.0			Initial Weight/Volume:	1.09 g
Analysis Date:	05/24/2011 1943			Final Weight/Volume:	100 mL
Prep Date:	05/23/2011 1500				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		5490		1.5	4.7
Antimony		0.36	U J	0.36	0.57
Arsenic		1.6		0.63	0.95
Barium		62.9	X	0.072	0.47
Beryllium		0.031	U	0.031	0.19
Boron		0.93	U	0.93	1.9
Cadmium		0.094	B	0.039	0.19
Calcium		5970	X	13.4	47.4
Chromium		6.0		0.055	0.19
Cobalt		9.2	X	0.095	0.95
Copper		16.5		0.21	0.95
Iron		21800	X	3.6	4.7
Lead		4.7		0.26	0.47
Magnesium		4310	X	3.5	19.0
Manganese		308	X	0.095	0.95
Molybdenum		0.25	U	0.25	1.9
Nickel		8.9	X	0.12	3.8
Potassium		791	X	38.9	284
Selenium		0.82	U	0.82	0.95
Silicon		188	N J	5.4	9.5
Silver		0.15	U	0.15	0.19
Sodium		295		55.9	114
Vanadium		54.9	X	0.089	1.9
Zinc		41.3		0.38	0.95

7471A Mercury (CVAA)

Analysis Method:	7471A	Analysis Batch:	280-68773	Instrument ID:	MT_033
Prep Method:	7471A	Prep Batch:	280-68556	Lab File ID:	110523AA.txt
Dilution:	1.0			Initial Weight/Volume:	0.64 g
Analysis Date:	05/23/2011 1637			Final Weight/Volume:	50 mL
Prep Date:	05/23/2011 1225				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.0054	U	0.0054	0.016

Client: Washington Closure Hanford

Job Number: 280-16088-1
Sdg Number: JP0186

Client Sample ID: J1J9V9

Lab Sample ID: 280-16088-13
Client Matrix: Solid

% Moisture: 7.2

Date Sampled: 05/17/2011 0845
Date Received: 05/20/2011 0930

6010B Metals (ICP)

Analysis Method:	6010B	Analysis Batch:	280-68944	Instrument ID:	MT_026
Prep Method:	3050B	Prep Batch:	280-68398	Lab File ID:	26b052411.asc
Dilution:	1.0			Initial Weight/Volume:	1.09 g
Analysis Date:	05/24/2011 1945			Final Weight/Volume:	100 mL
Prep Date:	05/23/2011 1500				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		11300		1.5	4.9
Antimony		0.38	U J	0.38	0.59
Arsenic		2.8		0.65	0.99
Barium		96.3	X	0.075	0.49
Beryllium		0.23		0.033	0.20
Boron		2.8		0.97	2.0
Cadmium		0.099	B	0.041	0.20
Calcium		4120	X	13.9	49.4
Chromium		12.9		0.057	0.20
Cobalt		8.2	X	0.099	0.99
Copper		16.1		0.21	0.99
Iron		19000	X	3.8	4.9
Lead		6.1		0.27	0.49
Magnesium		4530	X	3.7	19.8
Manganese		351	X	0.099	0.99
Molybdenum		0.26	U	0.26	2.0
Nickel		13.2	X	0.12	4.0
Potassium		2040	X	40.5	297
Selenium		0.85	U	0.85	0.99
Silicon		253	N J	5.6	9.9
Silver		0.16	U	0.16	0.20
Sodium		273		58.3	119
Vanadium		39.6	X	0.093	2.0
Zinc		42.0		0.39	0.99

7471A Mercury (CVAA)

Analysis Method:	7471A	Analysis Batch:	280-68773	Instrument ID:	MT_033
Prep Method:	7471A	Prep Batch:	280-68556	Lab File ID:	110523AA.txt
Dilution:	1.0			Initial Weight/Volume:	0.67 g
Analysis Date:	05/23/2011 1639			Final Weight/Volume:	50 mL
Prep Date:	05/23/2011 1225				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.0053	U	0.0053	0.016

Client: Washington Closure Hanford

Job Number: 280-16088-1
Sdg Number: JP0186

Client Sample ID: J1J9W0

Lab Sample ID: 280-16088-14
Client Matrix: Solid

% Moisture: 3.1

6/11/11

Date Sampled: 05/17/2011 1020
Date Received: 05/20/2011 0930

6010B Metals (ICP)

Analysis Method:	6010B	Analysis Batch:	280-68944	Instrument ID:	MT_026
Prep Method:	3050B	Prep Batch:	280-68398	Lab File ID:	26b052411.asc
Dilution:	1.0			Initial Weight/Volume:	1.15 g
Analysis Date:	05/24/2011 1948			Final Weight/Volume:	100 mL
Prep Date:	05/23/2011 1500				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		5170		1.4	4.5
Antimony		0.34	U J	0.34	0.54
Arsenic		1.2		0.59	0.90
Barium		35.4	X	0.068	0.45
Beryllium		0.035	B	0.030	0.18
Boron		0.88	U	0.88	1.8
Cadmium		0.077	B	0.037	0.18
Calcium		6690	X	12.7	44.9
Chromium		8.5		0.052	0.18
Cobalt		5.0	X	0.090	0.90
Copper		10.7		0.19	0.90
Iron		11400	X	3.4	4.5
Lead		2.7		0.24	0.45
Magnesium		3510	X	3.3	17.9
Manganese		176	X	0.090	0.90
Molybdenum		0.23	U	0.23	1.8
Nickel		10.8	X	0.11	3.6
Potassium		611	X	36.8	269
Selenium		0.77	U	0.77	0.90
Silicon		169	N J	5.1	9.0
Silver		0.14	U	0.14	0.18
Sodium		251		52.9	108
Vanadium		28.4	X	0.084	1.8
Zinc		24.3		0.36	0.90

7471A Mercury (CVAA)

Analysis Method:	7471A	Analysis Batch:	280-68773	Instrument ID:	MT_033
Prep Method:	7471A	Prep Batch:	280-68556	Lab File ID:	110523AA.txt
Dilution:	1.0			Initial Weight/Volume:	0.69 g
Analysis Date:	05/23/2011 1641			Final Weight/Volume:	50 mL
Prep Date:	05/23/2011 1225				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.0050	U	0.0050	0.015

Client: Washington Closure Hanford

Job Number: 280-16088-1
Sdg Number: JP0186

Client Sample ID: J1J9W1

Lab Sample ID: 280-16088-15
Client Matrix: Solid

% Moisture: 4.1

Date Sampled: 05/17/2011 1035
Date Received: 05/20/2011 0930

6010B Metals (ICP)

Analysis Method:	6010B	Analysis Batch:	280-68944	Instrument ID:	MT_026
Prep Method:	3050B	Prep Batch:	280-68398	Lab File ID:	26b052411.asc
Dilution:	1.0			Initial Weight/Volume:	1.18 g
Analysis Date:	05/24/2011 1950			Final Weight/Volume:	100 mL
Prep Date:	05/23/2011 1500				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		6220		1.4	4.4
Antimony		0.34	U J	0.34	0.53
Arsenic		2.5		0.58	0.88
Barium		44.2	X	0.067	0.44
Beryllium		0.078	B	0.029	0.18
Boron		0.91	B	0.87	1.8
Cadmium		0.094	B	0.036	0.18
Calcium		6370	X	12.5	44.2
Chromium		10.9		0.051	0.18
Cobalt		5.9	X	0.088	0.88
Copper		15.1		0.19	0.88
Iron		13800	X	3.4	4.4
Lead		5.7		0.24	0.44
Magnesium		4090	X	3.3	17.7
Manganese		255	X	0.088	0.88
Molybdenum		0.23	U	0.23	1.8
Nickel		12.0	X	0.11	3.5
Potassium		913	X	36.2	265
Selenium		0.76	U	0.76	0.88
Silicon		215	N J	5.0	8.8
Silver		0.14	U	0.14	0.18
Sodium		220		52.1	106
Vanadium		33.9	X	0.083	1.8
Zinc		32.6		0.35	0.88

7471A Mercury (CVAA)

Analysis Method:	7471A	Analysis Batch:	280-68773	Instrument ID:	MT_033
Prep Method:	7471A	Prep Batch:	280-68556	Lab File ID:	110523AA.txt
Dilution:	1.0			Initial Weight/Volume:	0.65 g
Analysis Date:	05/23/2011 1643			Final Weight/Volume:	50 mL
Prep Date:	05/23/2011 1225				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.0053	U	0.0053	0.016

Client: Washington Closure Hanford

Job Number: 280-16088-1
Sdg Number: JP0186

Client Sample ID: J1J9W2

Lab Sample ID: 280-16088-16
Client Matrix: Solid

% Moisture: 4.3

Date Sampled: 05/17/2011 1045
Date Received: 05/20/2011 0930

6010B Metals (ICP)

Analysis Method:	6010B	Analysis Batch:	280-68944	Instrument ID:	MT_026
Prep Method:	3050B	Prep Batch:	280-68398	Lab File ID:	26b052411.asc
Dilution:	1.0			Initial Weight/Volume:	1.15 g
Analysis Date:	05/24/2011 1953			Final Weight/Volume:	100 mL
Prep Date:	05/23/2011 1500				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		6460		1.4	4.5
Antimony		0.35	U J	0.35	0.55
Arsenic		3.5		0.60	0.91
Barium		44.7	X	0.069	0.45
Beryllium		0.11	B	0.030	0.18
Boron		0.98	B	0.89	1.8
Cadmium		0.12	B	0.037	0.18
Calcium		9270	X	12.8	45.4
Chromium		12.0		0.053	0.18
Cobalt		5.5	X	0.091	0.91
Copper		14.3		0.20	0.91
Iron		12900	X	3.5	4.5
Lead		5.8		0.25	0.45
Magnesium		4190	X	3.4	18.2
Manganese		255	X	0.091	0.91
Molybdenum		0.24	U	0.24	1.8
Nickel		11.5	X	0.11	3.6
Potassium		1020	X	37.3	273
Selenium		0.78	U	0.78	0.91
Silicon		240	N J	5.1	9.1
Silver		0.15	U	0.15	0.18
Sodium		206		53.6	109
Vanadium		30.0	X	0.085	1.8
Zinc		32.1		0.36	0.91

7471A Mercury (CVAA)

Analysis Method:	7471A	Analysis Batch:	280-68773	Instrument ID:	MT_033
Prep Method:	7471A	Prep Batch:	280-68556	Lab File ID:	110523AA.txt
Dilution:	1.0			Initial Weight/Volume:	0.63 g
Analysis Date:	05/23/2011 1646			Final Weight/Volume:	50 mL
Prep Date:	05/23/2011 1225				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.0055	U	0.0055	0.017

Client: Washington Closure Hanford

Job Number: 280-16088-1
Sdg Number: JP0186

Client Sample ID: **J1J9W3**

Lab Sample ID: 280-16088-17
Client Matrix: Solid

% Moisture: 4.3

Date Sampled: 05/17/2011 1100
Date Received: 05/20/2011 0930

6010B Metals (ICP)

Analysis Method:	6010B	Analysis Batch:	280-68944	Instrument ID:	MT_026
Prep Method:	3050B	Prep Batch:	280-68398	Lab File ID:	26b052411.asc
Dilution:	1.0			Initial Weight/Volume:	1.12 g
Analysis Date:	05/24/2011 1955			Final Weight/Volume:	100 mL
Prep Date:	05/23/2011 1500				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		6950		1.4	4.7
Antimony		0.35	U J	0.35	0.56
Arsenic		3.7		0.62	0.93
Barium		53.7	X	0.071	0.47
Beryllium		0.093	B	0.031	0.19
Boron		1.3	B	0.91	1.9
Cadmium		0.11	B	0.038	0.19
Calcium		6400	X	13.2	46.6
Chromium		11.4		0.054	0.19
Cobalt		6.6	X	0.093	0.93
Copper		14.9		0.20	0.93
Iron		15500	X	3.5	4.7
Lead		11.7		0.25	0.47
Magnesium		4390	X	3.5	18.7
Manganese		273	X	0.093	0.93
Molybdenum		0.24	U	0.24	1.9
Nickel		12.2	X	0.11	3.7
Potassium		1170	X	38.2	280
Selenium		0.80	U	0.80	0.93
Silicon		202	N J	5.3	9.3
Silver		0.15	U	0.15	0.19
Sodium		222		55.0	112
Vanadium		37.1	X	0.088	1.9
Zinc		36.8		0.37	0.93

7471A Mercury (CVAA)

Analysis Method:	7471A	Analysis Batch:	280-68773	Instrument ID:	MT_033
Prep Method:	7471A	Prep Batch:	280-68556	Lab File ID:	110523AA.txt
Dilution:	1 0			Initial Weight/Volume:	0.66 g
Analysis Date:	05/23/2011 1648			Final Weight/Volume:	50 mL
Prep Date:	05/23/2011 1225				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.0053	U	0.0053	0.016

026

Client: Washington Closure Hanford

Job Number: 280-16088-1
Sdg Number: JP0186

Client Sample ID: J1J9W4

Lab Sample ID: 280-16088-18
Client Matrix: Solid

% Moisture: 0.0

6/11/11

Date Sampled: 05/17/2011 0755
Date Received: 05/20/2011 0930

6010B Metals (ICP)

Analysis Method:	6010B	Analysis Batch:	280-68944	Instrument ID:	MT_026
Prep Method:	3050B	Prep Batch:	280-68398	Lab File ID:	26b052411.asc
Dilution:	1.0			Initial Weight/Volume:	1.12 g
Analysis Date:	05/24/2011 1958			Final Weight/Volume:	100 mL
Prep Date:	05/23/2011 1500				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		225		1.4	4.5
Antimony		0.34	U J	0.34	0.54
Arsenic		0.59	U	0.59	0.89
Barium		3.4	X	0.068	0.45
Beryllium		0.046	B	0.029	0.18
Boron		0.88	U	0.88	1.8
Cadmium		0.037	U	0.037	0.18
Calcium		46.3	X	12.6	44.6
Chromium		0.14	B	0.052	0.18
Cobalt		0.10	B X	0.089	0.89
Copper		0.36	B	0.19	0.89
Iron		1890	X	3.4	4.5
Lead		0.48		0.24	0.45
Magnesium		28.7	X	3.3	17.9
Manganese		39.5	X	0.089	0.89
Molybdenum		0.23	U	0.23	1.8
Nickel		0.21	B X	0.11	3.6
Potassium		61.7	B X	36.6	268
Selenium		0.77	U	0.77	0.89
Silicon		115	N J	5.1	8.9
Silver		0.14	U	0.14	0.18
Sodium		52.7	U	52.7	107
Vanadium		0.53	B X	0.084	1.8
Zinc		2.5		0.36	0.89

7471A Mercury (CVAA)

Analysis Method:	7471A	Analysis Batch:	280-68773	Instrument ID:	MT_033
Prep Method:	7471A	Prep Batch:	280-68556	Lab File ID:	110523AA.txt
Dilution:	1.0			Initial Weight/Volume:	0.62 g
Analysis Date:	05/23/2011 1655			Final Weight/Volume:	50 mL
Prep Date:	05/23/2011 1225				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.0054	U	0.0054	0.016

027

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

CASE NARRATIVE

Client: Washington Closure Hanford

Project: WASHINGTON CLOSURE HANFORD

Report Number: 280-16088-1

SDG #: JP0186
SAF#: RC-107

Date SDG Closed: May 20, 2011
Data Deliverable: 7 Day / Summary

CLIENT ID	LAB ID	ANALYSES REQUESTED	ANALYSES PERFORMED
J1J9T7	280-16088-1	6010/7471/WTPH-D+/8310	6010B/7471A/NWTPH-Dx/8310
J1J9T8	280-16088-2	6010/7471/WTPH-D+/8310	6010B/7471A/NWTPH-Dx/8310
J1J9T9	280-16088-3	6010/7471/WTPH-D+/8310	6010B/7471A/NWTPH-Dx/8310
J1J9V0	280-16088-4	6010/7471/WTPH-D+/8310	6010B/7471A/NWTPH-Dx/8310
J1J9V1	280-16088-5	6010/7471/WTPH-D+/8310	6010B/7471A/NWTPH-Dx/8310
J1J9V2	280-16088-6	6010/7471/WTPH-D+/8310	6010B/7471A/NWTPH-Dx/8310
J1J9V3	280-16088-7	6010/7471/WTPH-D+/8310	6010B/7471A/NWTPH-Dx/8310
J1J9V4	280-16088-8	6010/7471/WTPH-D+/8310	6010B/7471A/NWTPH-Dx/8310
J1J9V5	280-16088-9	6010/7471/WTPH-D+/8310	6010B/7471A/NWTPH-Dx/8310
J1J9V6	280-16088-10	6010/7471/WTPH-D+/8310	6010B/7471A/NWTPH-Dx/8310
J1J9V7	280-16088-11	6010/7471/WTPH-D+/8310	6010B/7471A/NWTPH-Dx/8310
J1J9V8	280-16088-12	6010/7471/WTPH-D+/8310	6010B/7471A/NWTPH-Dx/8310
J1J9V9	280-16088-13	6010/7471/WTPH-D+/8310	6010B/7471A/NWTPH-Dx/8310
J1J9W0	280-16088-14	6010/7471/WTPH-D+/8310	6010B/7471A/NWTPH-Dx/8310
J1J9W1	280-16088-15	6010/7471/WTPH-D+/8310	6010B/7471A/NWTPH-Dx/8310
J1J9W2	280-16088-16	6010/7471/WTPH-D+/8310	6010B/7471A/NWTPH-Dx/8310
J1J9W3	280-16088-17	6010/7471/WTPH-D+/8310	6010B/7471A/NWTPH-Dx/8310
J1J9W4	280-16088-18	6010/7471/8310	6010B/7471A/8310

I certify that this data package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed in this Case Narrative. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or a designee, as verified by the signature on the Report Cover.

With exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. All laboratory quality control samples analyzed in conjunction with the samples in this project were within established control limits, with any exceptions noted. Calculations are performed before rounding to avoid round-off errors in calculated results.

This report includes reporting limits (RLs) less than TestAmerica Denver's practical quantitation limits. These reporting limits are being used specifically at the client's request to meet the needs of this project. Please note that data are not normally reported to these levels without qualification, since they are inherently less reliable and potentially less defensible than required by the current NELAC standards.

The results, RLs and MDLs included in this report have been adjusted for dry weight, as appropriate.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT
The samples were received on 5/20/2011; the samples arrived in good condition, properly preserved and on ice. The temperatures of the coolers at receipt were 3.9 C, 5.4 C and 5.2 C.

GC SEMIVOLATILES - NWTPH-Dx - DRO
No anomalies were encountered.

029

HPLC - SW846 8310 - PAHs

In some cases, the RPD between the primary and confirmation columns exceeded 40%. The lower of the two values have been reported, as matrix interference is evident. Associated results have been flagged with an "X".

No other anomalies were encountered.

TOTAL METALS - SW846 6010B/7471A

Serial dilution of a digestate in batch 280-68398 indicates that physical and chemical interferences are present for several elements. Results have been flagged with an "X".

Silicon was recovered outside the control limits, biased low, in the LCS associated with batch 280-68398 and in the Matrix Spike performed on sample J1J9T7 in batch 280-68398. The associated sample result has been flagged "N". Silicon is a poor performer and has a history of reacting inconsistently. Data are reported as is.

It can be noted that the sample amount was greater than four times the spike amount for Aluminum, Iron and Manganese in the Matrix Spike performed on sample J1J9T7; therefore, control limits are not applicable.

Mercury was recovered outside the control limits in the Matrix Spike performed on sample J1J9T7, and the associated sample result has been flagged "N". There is no indication that the analytical system was operating out of control, and method accuracy has been verified by the acceptable LCS analysis data; therefore, corrective action is deemed unnecessary.

No other anomalies were encountered.

3.9, 5.4, 3.2°C IRFP HB 5/20/11

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-107-072	Page 1 of 1

Collector: K. Lucas	Company Contact: Joan Kessner — Telephone No.: 509-375-4688	Project Coordinator: KESSNER, JH	Price Code: ~~8L~~ 8B — Data Turnaround: ~~21~~ 7 Days
Project Designation: 100-H Remaining Sites Burial Grounds - Soil Full Protocol	Sampling Location: 118-H-1:2 Verification Sampling	SAF No.: RC-107	
Ice Chest No.: WCH-08-045	Field Logbook No.: EL 1627-05 — COA: R118H12000	Method of Shipment: Government Vehicle (FedEx)	
Shipped To: TestAmerica Incorporated, ~~Richland~~ Denver	Offsite Property No.: NA	Bill of Lading/Air Bill No.: 7971 1593 2475	

POSSIBLE SAMPLE HAZARDS/REMARKS
Possible RAD <DOT

Special Handling and/or Storage
Cool to 4 deg C

Preservation	None	Cool 4C	Cool 4C	Cool 4C	None	None	None	None		
Type of Container	G/P	G/P	G	aG	G/P	G/P	G/P	G/P		
No. of Container(s)	1	1	1	1	1	1	0	1		
Volume	60mL	60mL	120mL	120mL	120mL	500mL	60mL	60g		
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Chromium Hex - 196	TPH-Diesel Range - WTPH-D +	PAHs - 8310	Carbon-14; Tritium - H3 Low Level Soil	See item (2) in Special Instructions.	Nickel-63; Strontium-90 – Total Sr	RCF GEA Shipping Screen		
031										
Sample No.	Matrix *	Sample Date	Sample Time								
J1J9T7	SOIL	5/17/11	0805	X		X	X				
J1J9T8	SOIL	5/17/11	0815	X		X	X				
J1J9T9	SOIL	5/17/11	0825	X		X	X				
J1J9V0	SOIL	5/17/11	0835	X		X	X				
J1J9V1	SOIL	5/17/11	0845	X		X	X				

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
K. Lucas	5-17-11 1110	JV Fullmer	1110 5/17/11
JV Fullmer	5/17/11 1545	1060, fridge 2A A. Freier	1545 5-17-11
A. Freier (WCH)	1000 5-19-11	Fed Ex	
			5/20/11 930

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Close-out List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc); Mercury - 7471 - (CV)
(2) Gamma Spec - Client List (Americium-241, Barium-133, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Silver-108 metastable)

REVIEWED BY CMB DATE 5/19/11

JP0186

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

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-107-072	Page 2 of 4

Collector: K. Lucas	Company Contact: Joan Kessner — Telephone No.: 509-375-4688	Project Coordinator: KESSNER, JH	Price Code: 8B 8B — Data Turnaround: 21 Days
Project Designation: 100-H Remaining Sites Burial Grounds - Soil Full Protocol	Sampling Location: 118-H-1:2 Verification Sampling	SAF No.: RC-107	
Ice Chest No.: WCH-08-045	Field Logbook No.: EL 1627-05 — COA: R118H12000	Method of Shipment: Government Vehicle/FedEx	
Shipped To: TestAmerica Incorporated, ~~Richland~~ Denver	Offsite Property No.: NA	Bill of Lading/Air Bill No.: 7971 1593 2475	

POSSIBLE SAMPLE HAZARDS/REMARKS

Possible RAD <DOT

Special Handling and/or Storage

Cool to 4 deg C

Preservation	None	Cool 4C	Cool 4C	Cool 4C	None	None	None	None		
Type of Container	G/P	G/P	G	aG	G/P	G/P	G/P	G/P		
No. of Container(s)	1	1	1	1	1	1	0	1		
Volume	60mL	60mL	120mL	120mL	120mL	500mL	60mL	60g		
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Chromium Hex - 7196	TPH-Diesel Range - WTPH-D+	PAHs - 8310	Carbon-14; Tritium - H3 Low Level Soil	See item (2) in Special Instructions.	Nickel-63; Strontium-89,90 - Total	RCF GEA Shipping Screen		
Sample No.	Matrix *	Sample Date	Sample Time							
J1J9V2	SOIL	5/17/11	0900	X		X	X			
J1J9V3	SOIL	5/17/11	0915	X		X	X			
J1J9V4	SOIL	5/17/11	0925	X		X	X			
J1J9V5	SOIL	5/17/11	0930	X		X	X			
J1J9V6	SOIL	5/17/11	0940	X		X	X			

032

CHAIN OF POSSESSION	Date/Time	Sign/Print Names: Received By/Stored In	Date/Time
Relinquished By/Removed From: K Lucas Kenson Lucas	5-17-11 1110	Received By/Stored In: JV Fullmer	1110 5/17/11
Relinquished By/Removed From: JV Fullmer	1545 5/17/11	Received By/Stored In: 1060, frige 2A A. Freier	1110 1545 5/17/11
Relinquished By/Removed From: WCH A Freier 1060, frig 2A	1000 5-19-11	Received By/Stored In: Fed Ex	
Relinquished By/Removed From		Received By/Stored In	5/20/11 930
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Close-out List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc); Mercury - 7471 - (CV)
(2) Gamma Spec - Client List (Americium-241, Barium-133, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Silver-108 metastable)

REVIEWED BY CMB DATE 5/19/11

JP0186

Matrix *: S=Soil; SE=Sediment; SO=Solid; Sl=Sludge; W=Water; O=Oil; A=Air; DS=Drum Solids; DL=Drum Liquids; T=Tissue; Wi=Wipe; L=Liquid; V=Vegetation; X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-107-072	Page 3 of 4
Collector: K. Lucas	Company Contact: Joan Kessner; Telephone No.: 509-375-4688	Project Coordinator: KESSNER, JH	Price Code: ~~81~~ 88 (QVB 5/16/11)
Project Designation: 100-H Remaining Sites Burial Grounds - Soil Full Protocol	Sampling Location: 118-H-1:2 Verification Sampling	SAF No.: RC-107	Data Turnaround: ~~21 Days~~ 7 (QVB 5/16/11)
Ice Chest No.: WCH-08-045	Field Logbook No.: EL 1627-05; COA: R118H12000	Method of Shipment: Government Vehicle / FedEx	
Shipped To: TestAmerica Incorporated, ~~Richland~~ Denver (QVB 5/16/11)	Offsite Property No.: NA	Bill of Lading/Air Bill No.: 7971 1593 2475	

POSSIBLE SAMPLE HAZARDS/REMARKS

Possible RAD <DOT

Special Handling and/or Storage

Cool to 4 deg C

Preservation	None	Cool 4C	Cool 4C	Cool 4C	None	None	None	None		
Type of Container	G/P	G/P	G	aG	G/P	G/P	G/P	G/P		
No. of Container(s)	1	1	1	1	1	1	0	1		
Volume	60mL	60mL	120mL	120mL	120mL	500mL	60mL	60g		
SAMPLE ANALYSIS	See item (1) in Special Instructions	Chromium Hex - 7196	TPH-Diesel Range - WTPH-D +	PAHs - 8310	Carbon-14; Tritium - HD Low Level Soil	See item (2) in Special Instructions	Nickel-63; Strontium-90 -- Total Sr	RCF GEA Shipping Screen		
Sample No.	Matrix *	Sample Date	Sample Time							
J1J9V7	SOIL	5/17/11	0955	X		X	X			
J1J9V8	SOIL	5/17/11	1000	X		X	X			
J1J9V9	SOIL	5/17/11	0845	X		X	X			
J1J9W0	SOIL	5/17/11	1020	X		X	X			
J1J9W1	SOIL	5/17/11	1035	X		X	X			

033

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
K. Lucas [signature]	5-17-11 1110	JV Fullmer [signature]	1110 5/17/11
JV Fullmer [signature]	1545 5/17/11	1060, Fridge 2A A. Freier [signature]	1545 5-17-11
A. Freier [signature] WCH 1040 Fridge 2A	1000 5-19-11	Fed Ex	
		[signature]	5/20/11 930

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Close-out List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc}; Mercury - 7471 - (CV)
(2) Gamma Spec - Client List {Americium-241, Barium-133, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Silver-108 metastable}

REVIEWED BY CMB DATE 5/19/11

JP0186

Matrix *: S=Soil; SE=Sediment; SO=Solid; Sl=Sludge; W=Water; O=Oil; A=Air; DS=Drum Solids; DL=Drum Liquids; T=Tissue; WI=Wipe; L=Liquid; V=Vegetation; X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-107-072	Page 4 of 4
Collector: K. Lucas	Company Contact: Joan Kessner; Telephone No.: 509-375-4688	Project Coordinator: KESSNER, JH	Price Code: ~~8L~~ 8S; Data Turnaround: ~~21 Days~~ 7
Project Designation: 100-H Remaining Sites Burial Grounds - Soil Full Protocol	Sampling Location: 118-H-1:2 Verification Sampling	SAF No.: RC-107	
Ice Chest No.: WCH-08-045	Field Logbook No.: EL 1627-05; COA: RI18HI2000	Method of Shipment: Government Vehicle/FedEx	
Shipped To: TestAmerica Incorporated, ~~Richland~~ Denver	Offsite Property No.: NA	Bill of Lading/Air Bill No.: 7971 1593 2475	

POSSIBLE SAMPLE HAZARDS/REMARKS

Possible RAD <DOT

Special Handling and/or Storage

Cool to 4 deg C

Preservation	None	Cool 4C	Cool 4C	Cool 4C	None	None	None	None		
Type of Container	G/P	G/P	G	aG	G/P	G/P	G/P	G/P		
No. of Container(s)	1	1	1	1	1	1	0	1		
Volume	60mL	60mL	120mL	120mL	120mL	500mL	60mL	60g		
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Chromium Hex - 7196	TPH-Diesel Range - WTPH-D +	PAHs - 8310	Carbon-14; Tritium - H3 Low Level Soil	See item (2) in Special Instructions.	Nickel-63; Strontium-89,90 -- Total Sr	RCF GEA Shipping Screen		
Sample No. / Matrix * / Sample Date / Sample Time										
J1J9W2 / SOIL / 5/17/11 / 1045	X		X	X						
J1J9W3 / SOIL / 5/17/11 / 1100	X		X	X						
J1J9W4 / SOIL / 5/17/11 / 0755	X			X						

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Page 106 of 110

CHAIN OF POSSESSION	Date/Time	Sign/Print Names: Received By/Stored In	Date/Time
Relinquished By/Removed From: K Lucas Kevin Lucas	5-17-11 1110	Received By/Stored In: JV Fullmer JV Fullmer	1110 5/17/11
Relinquished By/Removed From: JV Fullmer JV Fullmer	5-17-11 1545	Received By/Stored In: 1060, Bridge 2A A. Freier A. Freier	5-17-11 1545
Relinquished By/Removed From: WCH A. Freier A. Freier 1060 Bridge 2A	5-19-11 1000	Received By/Stored In: Fed Ex	
Relinquished By/Removed From		Received By/Stored In	5/20/11 930
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Close-out List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc}; Mercury - 7471 - (CV)
(2) Gamma Spec - Client List {Americium-241, Barium-133, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Silver-108 metastable}

REVIEWED BY CMB DATE 5/19/11

JP0186

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

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Appendix 5

Data Validation Supporting Documentation

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	C	D	E
PROJECT: 118-H-1:2			DATA PACKAGE: JP0186		
VALIDATOR: ELR		LAB: TAL		DATE: 6/11/4	
			SDG: JP0186		

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

SAMPLES/MATRIX				
J1J9T7	J1J9T8	J1J9T9	J1J9U0	J1J9U1
J1J9U2	J1J9U3	J1J9U4	J1J9U5	J1J9U6
J1J9U7	J1J9U8	J1J9U9	J1J9W0	J1J9W1
J1J9W2	J1J9W3	J1J9W4		
				Soil

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

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

Comments:

2. INSTRUMENT PERFORMANCE AND CALIBRATIONS (Levels D and E)

Initial calibrations performed on all instruments? ..... Yes No N/A

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

ICP interference checks acceptable? ..... Yes No N/A

ICV and CCV checks performed on all instruments? ..... Yes No N/A

ICV and CCV checks acceptable? ..... Yes No N/A

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

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

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

Comments:

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

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

ICB and CCB checks performed for all applicable analyses? (Levels D, E) ..... Yes No N/A

ICB and CCB results acceptable? (Levels D, E) ..... Yes No N/A

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

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

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

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

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

Comments:

FB - 16 detects

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: LCS - silica 7% - J all

MS - antimony (41%) silica (17%) - J all

no PAS

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

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

Duplicate RPD values acceptable? ..... Yes No N/A

Duplicate results acceptable? ..... Yes No N/A

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

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

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

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

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

Comments: _____

6. ICP QUALITY CONTROL (Levels D and E)

ICP serial dilution samples analyzed? ..... Yes No N/A

ICP serial dilution %D values acceptable? ..... Yes No N/A

ICP post digestion spike required? ..... Yes No N/A

ICP post digestion spike values acceptable? ..... Yes No N/A

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

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

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

Comments: _____

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

7. FURNACE AA QUALITY CONTROL (Levels D and E)

Duplicate injections performed as required? ..... Yes No N/A

Duplicate injection %RSD values acceptable? ..... Yes No N/A

Analytical spikes performed as required? ..... Yes No N/A

Analytical spike recoveries acceptable? ..... Yes No N/A

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

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

MSA performed as required? ..... Yes No N/A

MSA results acceptable? ..... Yes No N/A

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

Comments: _____

8. HOLDING TIMES (all levels)

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

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

Comments: _____

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

9. RESULT QUANTITATION AND DETECTION LIMITS (all levels)

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

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

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

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

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

Comments: _____

Appendix 6

Additional Documentation Requested by Client

Client: Washington Closure Hanford

Job Number: 280-16088-1
Sdg Number: JP0186

Method Blank - Batch: 280-68398

Method: 6010B
Preparation: 3050B

Lab Sample ID:	MB 280-68398/1-A	Analysis Batch:	280-68944	Instrument ID:	MT_026
Client Matrix:	Solid	Prep Batch:	280-68398	Lab File ID:	26b052411.asc
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1.0 g
Analysis Date:	05/24/2011 1842	Units:	mg/Kg	Final Weight/Volume:	100 mL
Prep Date:	05/23/2011 1500				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Aluminum	0.016	U	0.016	0.050
Antimony	0.0038	U	0.0038	0.0060
Arsenic	0.0066	U	0.0066	0.010
Barium	0.00076	U	0.00076	0.0050
Beryllium	0.00033	U	0.00033	0.0020
Boron	0.0098	U	0.0098	0.020
Cadmium	0.00041	U	0.00041	0.0020
Calcium	0.14	U	0.14	0.50
Chromium	0.00058	U	0.00058	0.0020
Cobalt	0.0010	U	0.0010	0.010
Copper	0.0022	U	0.0022	0.010
Iron	0.038	U	0.038	0.050
Lead	0.0027	U	0.0027	0.0050
Magnesium	0.037	U	0.037	0.20
Manganese	0.0010	U	0.0010	0.010
Molybdenum	0.0026	U	0.0026	0.020
Nickel	0.0012	U	0.0012	0.040
Potassium	0.41	U	0.41	3.0
Selenium	0.0086	U	0.0086	0.010
Silicon	0.057	U	0.057	0.10
Silver	0.0016	U	0.0016	0.0020
Sodium	0.59	U	0.59	1.2
Vanadium	0.00094	U	0.00094	0.020
Zinc	0.0040	U	0.0040	0.010

Client: Washington Closure Hanford

Job Number: 280-16088-1
Sdg Number: JP0186

Lab Control Sample - Batch: 280-68398

Method: 6010B
Preparation: 3050B

Lab Sample ID:	LCS 280-68398/2-A	Analysis Batch:	280-68944	Instrument ID:	MT_026
Client Matrix:	Solid	Prep Batch:	280-68398	Lab File ID:	26b052411.asc
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1.0 g
Analysis Date:	05/24/2011 1845	Units:	mg/Kg	Final Weight/Volume:	100 mL
Prep Date:	05/23/2011 1500				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Aluminum	2.00	2.02	101	82 - 116	
Antimony	0.500	0.509	102	82 - 110	
Arsenic	1.00	1.00	100	85 - 110	
Barium	2.00	2.04	102	87 - 112	
Beryllium	0.0500	0.0487	97	84 - 114	
Boron	1.00	0.990	99	81 - 110	
Cadmium	0.100	0.105	105	87 - 110	
Calcium	50.0	49.93	100	82 - 114	
Chromium	0.200	0.206	103	84 - 114	
Cobalt	0.500	0.507	101	87 - 110	
Copper	0.250	0.254	101	88 - 110	
Iron	1.00	1.13	113	87 - 120	
Lead	0.500	0.513	103	86 - 110	
Magnesium	50.0	48.86	98	90 - 110	
Manganese	0.500	0.494	99	88 - 110	
Molybdenum	1.00	1.02	102	86 - 110	
Nickel	0.500	0.508	102	87 - 110	
Potassium	50.0	51.44	103	89 - 110	
Selenium	2.00	1.94	97	83 - 110	
Silicon	10.0	0.943	9	10 - 70	N
Silver	0.0500	0.0495	99	87 - 114	
Sodium	50.0	51.72	103	90 - 112	
Vanadium	0.500	0.507	101	88 - 110	
Zinc	0.500	0.493	99	76 - 114	

Client: Washington Closure Hanford

Job Number: 280-16088-1
Sdg Number: JP0186

Matrix Spike - Batch: 280-68398

Method: 6010B
Preparation: 3050B

Lab Sample ID:	280-16088-1	Analysis Batch:	280-68944	Instrument ID:	MT_026
Client Matrix:	Solid	Prep Batch:	280-68398	Lab File ID:	26b052411.asc
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1.06 g
Analysis Date:	05/24/2011 1852	Units:	mg/Kg	Final Weight/Volume:	100 mL
Prep Date:	05/23/2011 1500				
Leach Date:	N/A				

Analyte	Sample Result/Qual		Spike Amount	Result	% Rec.	Limit	Qual
Aluminum	11200		202	14040	1423	50 - 200	4
Antimony	0.36	U	50.4	20.85	41	20 - 200	
Arsenic	3.0		101	95.75	92	76 - 111	
Barium	91.3		202	293.4	100	52 - 159	
Beryllium	0.22		5.04	4.73	90	72 - 105	
Boron	2.5		101	92.47	89	75 - 107	
Cadmium	0.13	B	10.1	10.03	98	40 - 130	
Calcium	3780		5040	9351	110	43 - 165	
Chromium	13.2		20.2	34.52	106	70 - 200	
Cobalt	7.7		50.4	55.48	95	72 - 106	
Copper	15.4		25.2	39.89	97	37 - 187	
Iron	18400		101	20120	1732	70 - 200	4
Lead	6.2		50.4	54.08	95	70 - 200	
Magnesium	4320		5040	9464	102	64 - 145	
Manganese	348		50.4	414.2	131	40 - 200	4
Molybdenum	0.40	B	101	91.92	91	75 - 103	
Nickel	12.8		50.4	60.77	95	61 - 126	
Potassium	2290		5040	7534	104	56 - 172	
Selenium	0.81	U	202	177.2	88	76 - 104	
Silicon	267		1010	440.2	17	20 - 200	N
Silver	0.15	U	5.04	4.55	90	75 - 141	
Sodium	314		5040	5444	102	78 - 111	
Vanadium	39.1		50.4	91.85	105	50 - 169	
Zinc	43.0		50.4	92.16	98	70 - 200	

044

Client: Washington Closure Hanford

Job Number: 280-16088-1
Sdg Number: JP0186

Duplicate - Batch: 280-68398

Method: 6010B
Preparation: 3050B

Lab Sample ID:	280-16088-1	Analysis Batch:	280-68944	Instrument ID:	MT_026
Client Matrix:	Solid	Prep Batch:	280-68398	Lab File ID:	26b052411.asc
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1.10 g
Analysis Date:	05/24/2011 1855	Units:	mg/Kg	Final Weight/Volume:	100 mL
Prep Date:	05/23/2011 1500				
Leach Date:	N/A				

Analyte	Sample Result/Qual		Result	RPD	Limit	Qual
Aluminum	11200		10670	5	40	
Antimony	0.36	U	0.37	NC	40	U
Arsenic	3.0		3.31	8	30	
Barium	91.3		89.22	2	30	
Beryllium	0.22		0.200	8	30	
Boron	2.5		2.57	4	30	
Cadmium	0.13	B	0.137	2	30	B
Calcium	3780		3544	7	30	
Chromium	13.2		13.17	0.1	40	
Cobalt	7.7		7.79	0.5	30	
Copper	15.4		14.70	4	30	
Iron	18400		18370	0.007	40	
Lead	6.2		6.15	0.5	40	
Magnesium	4320		4520	5	30	
Manganese	348		342.0	2	40	
Molybdenum	0.40	B	0.369	9	30	B
Nickel	12.8		14.09	9	30	
Potassium	2290		2295	0.2	40	
Selenium	0.81	U	0.84	NC	30	U
Silicon	267		295.6	10	40	N
Silver	0.15	U	0.16	NC	30	U
Sodium	314		247.8	24	30	
Vanadium	39.1		38.37	2	30	
Zinc	43.0		42.67	0.7	40	

Client: Washington Closure Hanford

Job Number: 280-16088-1
Sdg Number: JP0186

Method Blank - Batch: 280-68556

Method: 7471A
Preparation: 7471A

Lab Sample ID:	MB 280-68556/1-A	Analysis Batch:	280-68773	Instrument ID:	MT_033
Client Matrix:	Solid	Prep Batch:	280-68556	Lab File ID:	110523AA.txt
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	0.60 g
Analysis Date:	05/23/2011 1553	Units:	mg/Kg	Final Weight/Volume:	50 mL
Prep Date:	05/23/2011 1225				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Mercury	0.0055	U	0.0055	0.017

Lab Control Sample - Batch: 280-68556

Method: 7471A
Preparation: 7471A

Lab Sample ID:	LCS 280-68556/2-A	Analysis Batch:	280-68773	Instrument ID:	MT_033
Client Matrix:	Solid	Prep Batch:	280-68556	Lab File ID:	110523AA.txt
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	0.60 g
Analysis Date:	05/23/2011 2010	Units:	mg/Kg	Final Weight/Volume:	50 mL
Prep Date:	05/23/2011 1225				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Mercury	0.417	0.431	104	87 - 111	

Matrix Spike - Batch: 280-68556

Method: 7471A
Preparation: 7471A

Lab Sample ID:	280-16088-1	Analysis Batch:	280-68773	Instrument ID:	MT_033
Client Matrix:	Solid	Prep Batch:	280-68556	Lab File ID:	110523AA.txt
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	0.63 g
Analysis Date:	05/23/2011 1607	Units:	mg/Kg	Final Weight/Volume:	50 mL
Prep Date:	05/23/2011 1225				
Leach Date:	N/A				

Analyte	Sample Result/Qual		Spike Amount	Result	% Rec.	Limit	Qual
Mercury	0.0054	U	0.424	0.488	115	87 - 111	N

Quality Control Results

Client: Washington Closure Hanford

Job Number: 280-16088-1
Sdg Number: JP0186

Duplicate - Batch: 280-68556

Method: 7471A
Preparation: 7471A

Lab Sample ID:	280-16088-1	Analysis Batch:	280-68773	Instrument ID:	MT_033
Client Matrix:	Solid	Prep Batch:	280-68556	Lab File ID:	110523AA.txt
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	0.65 g
Analysis Date:	05/23/2011 1604	Units:	mg/Kg	Final Weight/Volume:	50 mL
Prep Date:	05/23/2011 1225				
Leach Date:	N/A				

Analyte	Sample Result/Qual		Result	RPD	Limit	Qual
Mercury	0.0054	U	0.0055	NC	20	U

047

Date: 13 June 2011
To: Washington Closure Hanford Inc. (technical representative)
From: ELR Consulting
Project: 100-H Remaining Sites Burial Grounds – Soil Full Protocol - Waste Subsite 118-H-1:2
Subject: Diesel Range Organics - Data Package No. JP0186-TAL

INTRODUCTION

This memo presents the results of data validation on Data Package No. JP0186 prepared by TestAmerica Laboratories Inc. (TAL). A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample Date	Media	Validation	Analyte
J1J9T7	5/17/11	Soil	C	See note 1
J1J9T8	5/17/11	Soil	C	See note 1
J1J9T9	5/17/11	Soil	C	See note 1
J1J9V0	5/17/11	Soil	C	See note 1
J1J9V1	5/17/11	Soil	C	See note 1
J1J9V2	5/17/11	Soil	C	See note 1
J1J9V3	5/17/11	Soil	C	See note 1
J1J9V4	5/17/11	Soil	C	See note 1
J1J9V5	5/17/11	Soil	C	See note 1
J1J9V6	5/17/11	Soil	C	See note 1
J1J9V7	5/17/11	Soil	C	See note 1
J1J9V8	5/17/11	Soil	C	See note 1
J1J9V9	5/17/11	Soil	C	See note 1
J1J9W1	5/17/11	Soil	C	See note 1
J1J9W2	5/17/11	Soil	C	See note 1
J1J9W3	5/17/11	Soil	C	See note 1

1 – Diesel range organics by NWTPH-Dx.

Data validation was conducted in accordance with the Washington Closure Hanford Incorporated (WCH) validation statement of work and the 100 Area Burial Grounds Remedial Action Sampling and Analysis Plan (DOE/RL-2001-35, December 2001). 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 Data Requested by Client

DATA QUALITY OBJECTIVES

Holding Times

Analytical holding times were assessed to ascertain whether the holding time requirements were met by the laboratory. The holding time requirements are as follows: Samples must be extracted within 14 days of the date of sample collection and analyzed within 40 days from the date of extraction.

If holding times are exceeded, but not by greater than two times the limit, all associated sample results are qualified as estimates and flagged "J" for detects and "UJ" for non-detects. If holding times are exceeded by greater than two times the limit, all associated detectable sample results are qualified as estimates and flagged "J" and all non-detects are rejected and flagged "UR".

All holding times were acceptable.

Method Blanks

Method blank analyses are conducted to determine the extent of laboratory contamination introduced through sampling, sample preparation and analysis. At least one acceptable method blank analysis must be conducted for every 20 samples. No contaminants should be present in the method blank. Analytical results for analytes present in any sample at less than five times the concentration of that analyte found in the associated blank are qualified as non-detects and flagged "U". Common laboratory contaminants present in samples at less than ten times the concentration of that analyte found in the associated blank are qualified as non-detects. If a sample result is less than the CRQL and is less than five times (or less than ten times for lab contaminants) the highest associated blank result, the sample result value is raised to the CRQL level and qualified as undetected "U".

All method blank results were acceptable.

Field Blanks

No field blank was submitted for analysis.

Accuracy

Matrix Spike/Matrix Spike Duplicate & Blank Spike Recoveries

Matrix spike/matrix spike duplicate analyses are used to assess the analytical accuracy of the reported data and the effect of the matrix on the ability to accurately quantify sample concentrations. Matrix spike/matrix spike duplicate analyses are performed in

duplicate using five compounds for which percent recoveries must be within a range of 50-150% or within laboratory control limits. If spike recoveries are outside control limits, detected sample results less than five times the spike concentration are qualified as estimates and flagged "J". Undetected sample results with spike recoveries below control limits are qualified as estimates and flagged "UJ". Undetected sample results are not qualified if the spike recovery is above control limits. Sample results greater than five times the spike concentration require no qualification.

All accuracy results were acceptable.

Surrogate Recovery

The analyses of surrogate compounds provide a measure of performance for individual samples. Matrix-specific surrogate compound recovery control windows have been established by the EPA CLP program. If two surrogates of the same class of compounds (base/neutral or acid) are out of control limits, all associated sample results greater than the contract required quantitation limit (CRQL) are qualified as estimates and flagged "J". Sample results less than the CRQL and below the lower control limit are qualified as estimates and flagged "UJ". Sample results less than the CRQL with recoveries above the upper control limit require no qualification. If a surrogate recovery is less than 10%, detects are qualified as estimates and flagged "J" and nondetects are rejected and flagged "UR".

All surrogate results were acceptable.

- **Precision**

Matrix Spike/Matrix Spike Duplicate Samples

Matrix spike (MS)/matrix spike duplicate (MSD) results provide matrix-specific information on the precision of the method for specific target compound classes. Precision is expressed by the relative percent difference (RPD) between the recoveries of duplicate matrix spike analyses performed on a sample. Samples results must be within RPD limits of +/-30%. If RPD values are out of specification and the sample concentration is less than five times the spike concentration, all associated detected sample results are qualified as estimates and flagged "J". If RPD values are out of specification and the sample concentration is greater than five times the spike concentration, no qualification is required.

All duplicate results were acceptable.

Field Duplicate Samples

One set of field duplicates (J1J9V1/J1J9V9) were submitted for analysis. Field duplicates are compared using the same criteria as for laboratory duplicates. All field

duplicate results were acceptable.

- **Analytical Detection Levels**

Reported analytical detection levels are compared against the required quantitation limits (RQL's) to ensure that laboratory detection levels meet the required criteria. All analytes met the RQL.

- **Completeness**

Data package No. JP0186 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 100%.

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

None found.

REFERENCES

Washington Closure Hanford Contract #S00W307A00 (March 2008), *Data Validation Services*, March 2008.

DOE/RL-2001-35, Rev. 0, *100 Area Burial Grounds Remedial Action Sampling and Analysis Plan*, U.S. Department of Energy, December 2001.

Appendix 1

Glossary of Data Reporting Qualifiers

Qualifiers which may be applied by data validators in compliance with the WCH validation SOW are as follows:

U - Indicates the compound or analyte was analyzed for and not detected in the sample. The value reported is the same quantitation limit corrected for sample dilution and moisture content by the laboratory.

UJ - Indicates the compound or analyte was analyzed for and not detected in the sample. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.

J - Indicates the compound or analyte was analyzed for and detected. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.

R - Indicates the compound or analyte was analyzed for, detected, and due to an identified major QC deficiency, the data are unusable.

UR - Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified major QC deficiency.

NJ - Indicates presumptive evidence of a compound at an estimated value. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

N - Indicates presumptive evidence of a compound. The data may not be valid for some specific applications usable for decision-making purposes).

Appendix 2

Summary of Data Qualification

DIESEL RANGE ORGANICS DATA QUALIFICATION SUMMARY*

SDG: JP0186	REVIEWER: ELR	Project: 118-H-1:2	PAGE 1 OF 1
COMMENTS: No qualifiers assigned			

* - The Qualified Data Summary Table includes laboratory applied "U" qualifiers not specifically identified here. The laboratory applied "U" qualifiers are included to minimize misinterpretation of results contained in the table.

Appendix 3

Annotated Laboratory Reports

Client: Washington Closure Hanford

Job Number: 280-16088-1
Sdg Number: JP0186

Client Sample ID: J1J9T7

Lab Sample ID: 280-16088-1
Client Matrix: Solid

% Moisture: 6.4

Date Sampled: 05/17/2011 0805
Date Received: 05/20/2011 0930

NWTPH-Dx Northwest - Semi-Volatile Petroleum Products (GC)

Analysis Method:	NWTPH-Dx	Analysis Batch:	280-69009	Instrument ID:	GCS_U2
Prep Method:	3550C	Prep Batch:	280-68445	Lab File ID:	008F0801.D
Dilution:	1.0			Initial Weight/Volume:	30.1 g
Analysis Date:	05/23/2011 1342			Final Weight/Volume:	1000 uL
Prep Date:	05/20/2011 2336			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
C10-C36		1100	U	1100	4300
C10-C28		720	U	720	4300

Surrogate	%Rec	Qualifier	Acceptance Limits
o-Terphenyl	77		49 - 115

010

Client: Washington Closure Hanford

Job Number: 280-16088-1
Sdg Number: JP0186

u/11/11

Client Sample ID: **J1J9T8**

Lab Sample ID: 280-16088-2
Client Matrix: Solid

% Moisture: 5.2

Date Sampled: 05/17/2011 0815
Date Received: 05/20/2011 0930

NWTPH-Dx Northwest - Semi-Volatile Petroleum Products (GC)

Analysis Method:	NWTPH-Dx	Analysis Batch:	280-69009	Instrument ID:	GCS_U2
Prep Method:	3550C	Prep Batch:	280-68445	Lab File ID:	011F1101.D
Dilution:	1.0			Initial Weight/Volume:	30.8 g
Analysis Date:	05/23/2011 1522			Final Weight/Volume:	1000 uL
Prep Date:	05/20/2011 2336			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
C10-C36		1400	J	1000	4100
C10-C28		700	U	700	4100

Surrogate	%Rec	Qualifier	Acceptance Limits
o-Terphenyl	81		49 - 115

Client: Washington Closure Hanford

Job Number: 280-16088-1
Sdg Number: JP0186

6/16/11

Client Sample ID: J1J9T9

Lab Sample ID: 280-16088-3
Client Matrix: Solid

% Moisture: 6.0

Date Sampled: 05/17/2011 0825
Date Received: 05/20/2011 0930

NWTPH-Dx Northwest - Semi-Volatile Petroleum Products (GC)

Analysis Method:	NWTPH-Dx	Analysis Batch:	280-69009	Instrument ID:	GCS_U2
Prep Method:	3550C	Prep Batch:	280-68445	Lab File ID:	012F1201.D
Dilution:	1.0			Initial Weight/Volume:	31.2 g
Analysis Date:	05/23/2011 1556			Final Weight/Volume:	1000 uL
Prep Date:	05/20/2011 2336			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
C10-C36		1800	J	1000	4100
C10-C28		690	U	690	4100

Surrogate	%Rec	Qualifier	Acceptance Limits
o-Terphenyl	75		49 - 115

012

Client: Washington Closure Hanford

Job Number: 280-16088-1
Sdg Number: JP0188

K 6/16/11

Client Sample ID: **J1J9V0**

Lab Sample ID: 280-16088-4
Client Matrix: Solid

% Moisture: 5.5

Date Sampled: 05/17/2011 0835
Date Received: 05/20/2011 0930

NWTPH-Dx Northwest - Semi-Volatile Petroleum Products (GC)

Analysis Method:	NWTPH-Dx	Analysis Batch:	280-69009	Instrument ID:	GCS_U2
Prep Method:	3550C	Prep Batch:	280-68445	Lab File ID:	013F1301.D
Dilution:	1.0			Initial Weight/Volume:	30.3 g
Analysis Date:	05/23/2011 1629			Final Weight/Volume:	1000 uL
Prep Date:	05/20/2011 2336			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
C10-C36		1300	J	1000	4200
C10-C28		710	U	710	4200

Surrogate	%Rec	Qualifier	Acceptance Limits
o-Terphenyl	80		49 - 115

013

Client: Washington Closure Hanford

Job Number: 280-16088-1
Sdg Number: JP0186

6/14/11

Client Sample ID: **J1J9V1**

Lab Sample ID: 280-16088-5
Client Matrix: Solid

% Moisture: 6.8

Date Sampled: 05/17/2011 0845
Date Received: 05/20/2011 0930

NWTPH-Dx Northwest - Semi-Volatile Petroleum Products (GC)

Analysis Method:	NWTPH-Dx	Analysis Batch:	280-69009	Instrument ID:	GCS_U2
Prep Method:	3550C	Prep Batch:	280-68445	Lab File ID:	014F1401.D
Dilution:	1.0			Initial Weight/Volume:	30.1 g
Analysis Date:	05/23/2011 1702			Final Weight/Volume:	1000 uL
Prep Date:	05/20/2011 2336			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
C10-C36		1300	J	1100	4300
C10-C28		730	U	730	4300

Surrogate	%Rec	Qualifier	Acceptance Limits
o-Terphenyl	76		49 - 115

014

Client: Washington Closure Hanford

Job Number: 280-16088-1
Sdg Number: JP0186

Client Sample ID: **J1J9V2**

Lab Sample ID: 280-16088-6
Client Matrix: Solid

% Moisture: 5.3

Date Sampled: 05/17/2011 0900
Date Received: 05/20/2011 0930

NWTPH-Dx Northwest - Semi-Volatile Petroleum Products (GC)

Analysis Method:	NWTPH-Dx	Analysis Batch:	280-69009	Instrument ID:	GCS_U2
Prep Method:	3550C	Prep Batch:	280-68445	Lab File ID:	015F1501.D
Dilution:	1.0			Initial Weight/Volume:	30.3 g
Analysis Date:	05/23/2011 1735			Final Weight/Volume:	1000 uL
Prep Date:	05/20/2011 2336			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
C10-C36		1300	J	1000	4200
C10-C28		710	U	710	4200

Surrogate	%Rec	Qualifier	Acceptance Limits
o-Terphenyl	77		49 - 115

015

Client: Washington Closure Hanford

Job Number: 280-16088-1
Sdg Number: JP0186

6/11/11

Client Sample ID: **J1J9V3**

Lab Sample ID: 280-16088-7
Client Matrix: Solid

% Moisture: 7.4

Date Sampled: 05/17/2011 0915
Date Received: 05/20/2011 0930

NWTPH-Dx Northwest - Semi-Volatile Petroleum Products (GC)

Analysis Method:	NWTPH-Dx	Analysis Batch:	280-69009	Instrument ID:	GCS_U2
Prep Method:	3550C	Prep Batch:	280-68445	Lab File ID:	017F1701.D
Dilution:	1.0			Initial Weight/Volume:	30.8 g
Analysis Date:	05/23/2011 1841			Final Weight/Volume:	1000 uL
Prep Date:	05/20/2011 2336			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
C10-C36		1100	J	1000	4200
C10-C28		710	U	710	4200

Surrogate	%Rec	Qualifier	Acceptance Limits
o-Terphenyl	77		49 - 115

016

Client: Washington Closure Hanford

Job Number: 280-16088-1
Sdg Number: JP0186

Client Sample ID: **J1J9V4**

Lab Sample ID: 280-16088-8
Client Matrix: Solid

% Moisture: 7.6

Date Sampled: 05/17/2011 0925
Date Received: 05/20/2011 0930

NWTPH-Dx Northwest - Semi-Volatile Petroleum Products (GC)

Analysis Method:	NWTPH-Dx	Analysis Batch:	280-69009	Instrument ID:	GCS_U2
Prep Method:	3550C	Prep Batch:	280-68445	Lab File ID:	018F1801.D
Dilution:	1.0			Initial Weight/Volume:	30.1 g
Analysis Date:	05/23/2011 1914			Final Weight/Volume:	1000 uL
Prep Date:	05/20/2011 2336			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
C10-C36		1100	U	1100	4300
C10-C28		730	U	730	4300

Surrogate	%Rec	Qualifier	Acceptance Limits
o-Terphenyl	79		49 - 115

017

Client: Washington Closure Hanford

Job Number: 280-16088-1
Sdg Number: JP0186

6/16/11

Client Sample ID: J1J9V5

Lab Sample ID: 280-16088-9
Client Matrix: Solid
% Moisture: 6.8

Date Sampled: 05/17/2011 0930
Date Received: 05/20/2011 0930

NWTPH-Dx Northwest - Semi-Volatile Petroleum Products (GC)

Analysis Method:	NWTPH-Dx	Analysis Batch:	280-69009	Instrument ID:	GCS_U2
Prep Method:	3550C	Prep Batch:	280-68445	Lab File ID:	019F1901.D
Dilution:	1.0			Initial Weight/Volume:	30.4 g
Analysis Date:	05/23/2011 1946			Final Weight/Volume:	1000 uL
Prep Date:	05/20/2011 2336			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
C10-C36		11000		1100	4200
C10-C28		7600		720	4200

Surrogate	%Rec	Qualifier	Acceptance Limits
o-Terphenyl	86		49 - 115

Analytical Data

Client: Washington Closure Hanford

Job Number: 280-16088-1
Sdg Number: JP0186

Client Sample ID: **J1J9V6**

Lab Sample ID: 280-16088-10
Client Matrix: Solid

% Moisture: 3.6

Date Sampled: 05/17/2011 0940
Date Received: 05/20/2011 0930

NWTPH-Dx Northwest - Semi-Volatile Petroleum Products (GC)

Analysis Method:	NWTPH-Dx	Analysis Batch:	280-69009	Instrument ID:	GCS_U2
Prep Method:	3550C	Prep Batch:	280-68445	Lab File ID:	020F2001.D
Dilution:	1.0			Initial Weight/Volume:	30.3 g
Analysis Date:	05/23/2011 2020			Final Weight/Volume:	1000 uL
Prep Date:	05/20/2011 2336			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
C10-C36		2600	J	1000	4100
C10-C28		700	U	700	4100

Surrogate	%Rec	Qualifier	Acceptance Limits
o-Terphenyl	80		49 - 115

019

Client: Washington Closure Hanford

Job Number: 280-16088-1
Sdg Number: JP0186

6/11/11

Client Sample ID: J1J9V7

Lab Sample ID: 280-16088-11
Client Matrix: Solid
% Moisture: 3.3

Date Sampled: 05/17/2011 0955
Date Received: 05/20/2011 0930

NWTPH-Dx Northwest - Semi-Volatile Petroleum Products (GC)

Analysis Method:	NWTPH-Dx	Analysis Batch:	280-69009	Instrument ID:	GCS_U2
Prep Method:	3550C	Prep Batch:	280-68445	Lab File ID:	021F2101.D
Dilution:	1.0			Initial Weight/Volume:	30.7 g
Analysis Date:	05/23/2011 2052			Final Weight/Volume:	1000 uL
Prep Date:	05/20/2011 2336			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
C10-C36		3400	J	1000	4000
C10-C28		690	U	690	4000

Surrogate	%Rec	Qualifier	Acceptance Limits
o-Terphenyl	77		49 - 115

Client: Washington Closure Hanford

Job Number: 280-16088-1
Sdg Number: JP0186

6/11/11

Client Sample ID: **J1J9V8**

Lab Sample ID: 280-16088-12
Client Matrix: Solid
% Moisture: 3.2

Date Sampled: 05/17/2011 1000
Date Received: 05/20/2011 0930

NWTPH-Dx Northwest - Semi-Volatile Petroleum Products (GC)

Analysis Method:	NWTPH-Dx	Analysis Batch:	280-69009	Instrument ID:	GCS_U2
Prep Method:	3550C	Prep Batch:	280-68445	Lab File ID:	022F2201.D
Dilution:	1.0			Initial Weight/Volume:	30.6 g
Analysis Date:	05/23/2011 2124			Final Weight/Volume:	1000 uL
Prep Date:	05/20/2011 2336			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
C10-C36		2100	J	1000	4100
C10-C28		690	U	690	4100

Surrogate	%Rec	Qualifier	Acceptance Limits
o-Terphenyl	76		49 - 115

Client: Washington Closure Hanford

Job Number: 280-16088-1
Sdg Number: JP0186

6/11/11

Client Sample ID: **J1J9V9**

Lab Sample ID: 280-16088-13
Client Matrix: Solid

% Moisture: 7.2

Date Sampled: 05/17/2011 0845
Date Received: 05/20/2011 0930

NWTPH-Dx Northwest - Semi-Volatile Petroleum Products (GC)

Analysis Method:	NWTPH-Dx	Analysis Batch:	280-69009	Instrument ID:	GCS_U2
Prep Method:	3550C	Prep Batch:	280-68445	Lab File ID:	023F2301.D
Dilution:	1.0			Initial Weight/Volume:	30.4 g
Analysis Date:	05/23/2011 2156			Final Weight/Volume:	1000 uL
Prep Date:	05/20/2011 2336			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
C10-C36		1400	J	1100	4300
C10-C28		720	U	720	4300

Surrogate	%Rec	Qualifier	Acceptance Limits
o-Terphenyl	80		49 - 115

Client: Washington Closure Hanford

Job Number: 280-16088-1
Sdg Number: JP0186

6/11/11

Client Sample ID: J1J9W0

Lab Sample ID: 280-16088-14
Client Matrix: Solid

% Moisture: 3.1

Date Sampled: 05/17/2011 1020
Date Received: 05/20/2011 0930

NWTPH-Dx Northwest - Semi-Volatile Petroleum Products (GC)

Analysis Method:	NWTPH-Dx	Analysis Batch:	280-69009	Instrument ID:	GCS_U2
Prep Method:	3550C	Prep Batch:	280-68445	Lab File ID:	024F2401.D
Dilution:	1.0			Initial Weight/Volume:	31.4 g
Analysis Date:	05/23/2011 2229			Final Weight/Volume:	1000 uL
Prep Date:	05/20/2011 2336			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
C10-C36		1000	J	980	3900
C10-C28		670	U	670	3900

Surrogate	%Rec	Qualifier	Acceptance Limits
o-Terphenyl	76		49 - 115

Client: Washington Closure Hanford

Job Number: 280-16088-1
Sdg Number: JP0186

6/22/11

Client Sample ID: **J1J9W1**

Lab Sample ID: 280-16088-15
Client Matrix: Solid

% Moisture: 4.1

Date Sampled: 05/17/2011 1035
Date Received: 05/20/2011 0930

NWTPH-Dx Northwest - Semi-Volatile Petroleum Products (GC)

Analysis Method:	NWTPH-Dx	Analysis Batch:	280-69009	Instrument ID:	GCS_U2
Prep Method:	3550C	Prep Batch:	280-68445	Lab File ID:	025F2501.D
Dilution:	1.0			Initial Weight/Volume:	30.6 g
Analysis Date:	05/23/2011 2301			Final Weight/Volume:	1000 uL
Prep Date:	05/20/2011 2336			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
C10-C36		2400	J	1000	4100
C10-C28		690	J	690	4100

Surrogate	%Rec	Qualifier	Acceptance Limits
o-Terphenyl	78		49 - 115

Client: Washington Closure Hanford

Job Number: 280-16088-1
Sdg Number: JP0186

6/11/11

Client Sample ID: **J1J9W2**

Lab Sample ID: 280-16088-16
Client Matrix: Solid

% Moisture: 4.3

Date Sampled: 05/17/2011 1045
Date Received: 05/20/2011 0930

NWTPH-Dx Northwest - Semi-Volatile Petroleum Products (GC)

Analysis Method:	NWTPH-Dx	Analysis Batch:	280-69009	Instrument ID:	GCS_U2
Prep Method:	3550C	Prep Batch:	280-68445	Lab File ID:	026F2601.D
Dilution:	1.0			Initial Weight/Volume:	31.0 g
Analysis Date:	05/23/2011 2333			Final Weight/Volume:	1000 uL
Prep Date:	05/20/2011 2336			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
C10-C36		1800	J	1000	4000
C10-C28		690	U	690	4000

Surrogate	%Rec	Qualifier	Acceptance Limits
o-Terphenyl	83		49 - 115

Client: Washington Closure Hanford

Job Number: 280-16088-1
Sdg Number: JP0186

6/6/11

Client Sample ID: J1J9W3

Lab Sample ID: 280-16088-17
Client Matrix: Solid

% Moisture: 4.3

Date Sampled: 05/17/2011 1100
Date Received: 05/20/2011 0930

NWTPH-Dx Northwest - Semi-Volatile Petroleum Products (GC)

Analysis Method:	NWTPH-Dx	Analysis Batch:	280-69009	Instrument ID:	GCS_U2
Prep Method:	3550C	Prep Batch:	280-68445	Lab File ID:	028F2801.D
Dilution:	1.0			Initial Weight/Volume:	30.6 g
Analysis Date:	05/24/2011 0039			Final Weight/Volume:	1000 uL
Prep Date:	05/20/2011 2336			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
C10-C36		4100		1000	4100
C10-C28		2400	J	690	4100

Surrogate	%Rec	Qualifier	Acceptance Limits
o-Terphenyl	82		49 - 115

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

CASE NARRATIVE

Client: Washington Closure Hanford

Project: WASHINGTON CLOSURE HANFORD

Report Number: 280-16088-1

SDG #: JP0186
SAF#: RC-107

Date SDG Closed: May 20, 2011
Data Deliverable: 7 Day / Summary

CLIENT ID	LAB ID	ANALYSES REQUESTED	ANALYSES PERFORMED
J1J9T7	280-16088-1	6010/7471/WTPH-D+/8310	6010B/7471A/NWTPH-Dx/8310
J1J9T8	280-16088-2	6010/7471/WTPH-D+/8310	6010B/7471A/NWTPH-Dx/8310
J1J9T9	280-16088-3	6010/7471/WTPH-D+/8310	6010B/7471A/NWTPH-Dx/8310
J1J9V0	280-16088-4	6010/7471/WTPH-D+/8310	6010B/7471A/NWTPH-Dx/8310
J1J9V1	280-16088-5	6010/7471/WTPH-D+/8310	6010B/7471A/NWTPH-Dx/8310
J1J9V2	280-16088-6	6010/7471/WTPH-D+/8310	6010B/7471A/NWTPH-Dx/8310
J1J9V3	280-16088-7	6010/7471/WTPH-D+/8310	6010B/7471A/NWTPH-Dx/8310
J1J9V4	280-16088-8	6010/7471/WTPH-D+/8310	6010B/7471A/NWTPH-Dx/8310
J1J9V5	280-16088-9	6010/7471/WTPH-D+/8310	6010B/7471A/NWTPH-Dx/8310
J1J9V6	280-16088-10	6010/7471/WTPH-D+/8310	6010B/7471A/NWTPH-Dx/8310
J1J9V7	280-16088-11	6010/7471/WTPH-D+/8310	6010B/7471A/NWTPH-Dx/8310
J1J9V8	280-16088-12	6010/7471/WTPH-D+/8310	6010B/7471A/NWTPH-Dx/8310
J1J9V9	280-16088-13	6010/7471/WTPH-D+/8310	6010B/7471A/NWTPH-Dx/8310
J1J9W0	280-16088-14	6010/7471/WTPH-D+/8310	6010B/7471A/NWTPH-Dx/8310
J1J9W1	280-16088-15	6010/7471/WTPH-D+/8310	6010B/7471A/NWTPH-Dx/8310
J1J9W2	280-16088-16	6010/7471/WTPH-D+/8310	6010B/7471A/NWTPH-Dx/8310
J1J9W3	280-16088-17	6010/7471/WTPH-D+/8310	6010B/7471A/NWTPH-Dx/8310
J1J9W4	280-16088-18	6010/7471/8310	6010B/7471A/8310

I certify that this data package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed in this Case Narrative. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or a designee, as verified by the signature on the Report Cover.

With exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. All laboratory quality control samples analyzed in conjunction with the samples in this project were within established control limits, with any exceptions noted. Calculations are performed before rounding to avoid round-off errors in calculated results.

This report includes reporting limits (RLs) less than TestAmerica Denver's practical quantitation limits. These reporting limits are being used specifically at the client's request to meet the needs of this project. Please note that data are not normally reported to these levels without qualification, since they are inherently less reliable and potentially less defensible than required by the current NELAC standards.

The results, RLs and MDLs included in this report have been adjusted for dry weight, as appropriate.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT
The samples were received on 5/20/2011; the samples arrived in good condition, properly preserved and on ice. The temperatures of the coolers at receipt were 3.9 C, 5.4 C and 5.2 C.

GC SEMIVOLATILES - NWTPH-Dx - DRO
No anomalies were encountered.

HPLC - SW846 8310 - PAHs

In some cases, the RPD between the primary and confirmation columns exceeded 40%. The lower of the two values have been reported, as matrix interference is evident. Associated results have been flagged with an "X".

No other anomalies were encountered.

TOTAL METALS - SW846 6010B/7471A

Serial dilution of a digestate in batch 280-68398 indicates that physical and chemical interferences are present for several elements. Results have been flagged with an "X".

Silicon was recovered outside the control limits, biased low, in the LCS associated with batch 280-68398 and in the Matrix Spike performed on sample J1J9T7 in batch 280-68398. The associated sample result has been flagged "N". Silicon is a poor performer and has a history of reacting inconsistently. Data are reported as is.

It can be noted that the sample amount was greater than four times the spike amount for Aluminum, Iron and Manganese in the Matrix Spike performed on sample J1J9T7; therefore, control limits are not applicable.

Mercury was recovered outside the control limits in the Matrix Spike performed on sample J1J9T7, and the associated sample result has been flagged "N". There is no indication that the analytical system was operating out of control, and method accuracy has been verified by the acceptable LCS analysis data; therefore, corrective action is deemed unnecessary.

No other anomalies were encountered.

3.9, 5.4, 3.2°C IRFP MB 5/20/11

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-107-072	Page 1 of 1

Collector: K. Lucas	Company Contact: Joan Kessner	Telephone No.: 509-375-4688	Project Coordinator: KESSNER, JH
Price Code: ~~8L~~ BB	Data Turnaround: ~~24~~ 7 Days		
Project Designation: 100-H Remaining Sites Burial Grounds - Soil Full Protocol	Sampling Location: 118-H-1:2 Verification Sampling		SAF No.: RC-107
Ice Chest No.: WCH-08-045	Field Logbook No.: EL 1627-05	COA: R118H12000	Method of Shipment: Government Vehicle, FedEx
Shipped To: TestAmerica Incorporated, ~~Richland~~ Denver	Offsite Property No.: NA		Bill of Lading/Air Bill No.: 7971 1593 2475

POSSIBLE SAMPLE HAZARDS/REMARKS

Possible RAD <DOT

Special Handling and/or Storage

Cool to 4 deg C

Preservation	None	Cool 4C	Cool 4C	Cool 4C	None	None	None	None	
Type of Container	G/P	G/P	G	aG	G/P	G/P	G/P	G/P	
No. of Container(s)	1	1	1	1	1	1	0	1	
Volume	60mL	60mL	120mL	120mL	120mL	500mL	60mL	60g	
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Chromium Hex - 7196	TPH-Diesel Range - WTPH-D +	PAHs - 8310	Carbon-14; Tritium - H3 Low Level Soil	See item (2) in Special Instructions.	Nickel-63; Strontium-89,90 – Total Sr	RCF GEA Shipping Screen	

030

Sample No.	Matrix *	Sample Date	Sample Time										
J1J9T7	SOIL	5/17/11	0805	X		X	X						
J1J9T8	SOIL	5/17/11	0815	X		X	X						
J1J9T9	SOIL	5/17/11	0825	X		X	X						
J1J9V0	SOIL	5/17/11	0835	X		X	X						
J1J9V1	SOIL	5/17/11	0845	X		X	X						

CHAIN OF POSSESSION

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
K. Lucas Kevin Lucas	5-17-11 1110	JV Fullmer	1110 5/17/11
JV Fullmer	5/17/11 1545	1060, Bridge 2A A. Freier	1545 5-17-11
WCH A. Freier	1000 1060 Bridge 2A 5-19-11	Fed Ex	
			5/20/11 930

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Close-out List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc}; Mercury - 7471 - (CV)
(2) Gamma Spec - Client List {Americium-241, Barium-133, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Silver-108 metastable}

REVIEWED BY CMB DATE 5/19/11

JP0186

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

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-107-072	Page 2 of 4

Collector: K. Lucas	Company Contact: Joan Kessner — Telephone No.: 509-375-4688	Project Coordinator: KESSNER, JH	Price Code: 8L, 8B — Data Turnaround: 21 Days
Project Designation: 100-H Remaining Sites Burial Grounds - Soil Full Protocol	Sampling Location: 118-H-1:2 Verification Sampling	SAF No.: RC-107	
Ice Chest No.: WCH-08-045	Field Logbook No.: EL 1627-05 — COA: R118H12000	Method of Shipment: Government Vehicle/FedEx	
Shipped To: TestAmerica Incorporated, ~~Richland~~ Denver	Offsite Property No.: NA	Bill of Lading/Air Bill No.: 7971 1593 2475	

POSSIBLE SAMPLE HAZARDS/REMARKS

Possible RAD <DOT

Special Handling and/or Storage

Cool to 4 deg C

Preservation	None	Cool 4C	Cool 4C	Cool 4C	None	None	None	None		
Type of Container	G/P	G/P	G	aG	G/P	G/P	G/P	G/P		
No. of Container(s)	1	1	1	1	1	1	0	1		
Volume	60mL	60mL	120mL	120mL	120mL	500mL	60mL	60g		
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Chromium Hexavalent 7196	TPH-Diesel Range - WTPH-D +	PAHs - 8310	Carbon-14; Tritium - HD Low Level Soil	See item (2) in Special Instructions.	Nickel-63; Strontium-89,90	RCF GEA Shipping Screen		

Sample No.	Matrix *	Sample Date	Sample Time										
J1J9V2	SOIL	5/17/11	0900	X		X	X						
J1J9V3	SOIL	5/17/11	0915	X		X	X						
J1J9V4	SOIL	5/17/11	0925	X		X	X						
J1J9V5	SOIL	5/17/11	0930	X		X	X						
J1J9V6	SOIL	5/17/11	0940	X		X	X						

CHAIN OF POSSESSION

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
K Lucas Joan Kessner	5-17-11 1110	JV Fullmer	1110 5/17/11
JV Fullmer	1545 5/17/11	1060, frige 2A A. Freier	1110 1545 5/17/11
A Freier	1000 5-19-11	Fed Ex	
			5/20/11 930

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Close-out List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc}; Mercury - 7471 - (CV)
(2) Gamma Spec - Client List {Americium-241, Barium-133, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Silver-108 metastable}

REVIEWED BY CMB DATE 5/19/11

JP0186

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

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

031

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-107-072	Page 3 of 4
Collector: K. Lucas	Company Contact: Joan Kessner; Telephone No.: 509-375-4688	Project Coordinator: KESSNER, JH	Price Code: 01 88
Project Designation: 100-H Remaining Sites Burial Grounds - Soil Full Protocol	Sampling Location: 118-H-1:2 Verification Sampling	SAF No.: RC-107	Data Turnaround: 21 Days
Ice Chest No.: WCH-08-045	Field Logbook No.: EL 1627-05; COA: R118H12000	Method of Shipment: Government Vehicle/FedEx	
Shipped To: TestAmerica Incorporated, ~~Richland~~ Donuey	Offsite Property No.: NA	Bill of Ladine/Air Bill No.: 7971 1593 2475	

POSSIBLE SAMPLE HAZARDS/REMARKS

Possible RAD <DOT

Special Handling and/or Storage

Cool to 4 deg C

Preservation	None	Cool 4C	Cool 4C	Cool 4C	None	None	None	None	
Type of Container	G/P	G/P	G	aG	G/P	G/P	G/P	G/P	
No. of Container(s)	1	1	1	1	1	1	0	1	
Volume	60mL	60mL	120mL	120mL	120mL	500mL	60mL	60g	
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Chromium Hex - 7196	TPH-Diesel Range - WTPH-D +	PAHs - 8310	Carbon-14; Tritium - H3 Low Level Soil	See item (2) in Special Instructions	Nickel-63; Strontium-90 -- Total Sr	RCF GEA Shipping Screen	

032

Sample No.	Matrix *	Sample Date	Sample Time										
J1J9V7	SOIL	5/17/11	0955	X		X	X						
J1J9V8	SOIL	5/17/11	1000	X		X	X						
J1J9V9	SOIL	5/17/11	0845	X		X	X						
J1J9W0	SOIL	5/17/11	1020	X		X	X						
J1J9W1	SOIL	5/17/11	1035	X		X	X						

CHAIN OF POSSESSION

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
K. Lucas	5-17-11 1110	JV Fuller	5/17/11 1110
JV Fuller	5/17/11 1545	A. Freier, Fridge 2A	5-17-11 1545
A. Freier, WLH Fridge 2A	5-19-11 1000	Fed Ex	
			5/20/11 930

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Close-out List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc); Mercury - 7471 - (CV)
(2) Gamma Spec - Client List (Americium-241, Barium-133, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Silver-108 metastable)

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

REVIEWED BY CMB DATE 5/19/11

JP0186

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-107-072	Page 4 of 4
Collector: K. Lucas	Company Contact: Joan Kessner; Telephone No.: 509-375-4688	Project Coordinator: KESSNER, JH	Price Code: 81 / 8R; Data Turnaround: 21 Days
Project Designation: 100-H Remaining Sites Burial Grounds - Soil Full Protocol	Sampling Location: 118-H-1:2 Verification Sampling	SAF No.: RC-107	
Ice Chest No.: WCH-08-045	Field Logbook No.: EL 1627-05; COA: R118H12000	Method of Shipment: Government Vehicle/FedEx	
Shipped To: TestAmerica Incorporated, ~~Richland~~ Denver	Offsite Property No.: NA	Bill of Lading/Air Bill No.: 7971 1593 2475	

POSSIBLE SAMPLE HAZARDS/REMARKS

Possible RAD <DOT

Special Handling and/or Storage

Cool to 4 deg C

Preservation	None	Cool 4C	Cool 4C	Cool 4C	None	None	None	None		
Type of Container	G/P	G/P	G	aG	G/P	G/P	G/P	G/P		
No. of Container(s)	1	1	1	1	1	1	0	1		
Volume	60mL	60mL	120mL	120mL	120mL	500mL	60mL	60g		
SAMPLE ANALYSIS	See item (1) in Special Instructions	Chromium Hex - 7196	TPH-Diesel Range - WTPH-D +	PAHs - 8310	Carbon-14; Tritium - H3 Low Level Soil	See item (2) in Special Instructions	Nickel-63; Strontium-89,90 -- Total Sr	RCF GEA Shipping Screen		
Sample No.	Matrix *	Sample Date	Sample Time								
J1J9W2	SOIL	5/17/11	1045	X		X	X				
J1J9W3	SOIL	5/17/11	1100	X		X	X				
J1J9W4	SOIL	5/17/11	0755	X			X				

033

CHAIN OF POSSESSION	Date/Time	Sign/Print Names: Received By/Stored In	Date/Time
Relinquished By/Removed From: K. Lucas Kevin Lucas	5-17-11 1110	JV Fullmer	1110 5/17/11
Relinquished By/Removed From: JV Fullmer	5-17-11 1545	Received By/Stored In: 1060, Bridge 2A A. Freier	5-17-11 1545
Relinquished By/Removed From: WCH A. Freier	1000 5-19-11	Received By/Stored In: Fed Ex	
Relinquished By/Removed From		Received By/Stored In	5/20/11 930
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Close-out List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc); Mercury - 7471 - (CV)
(2) Gamma Spec - Client List (Americium-241, Barium-133, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Silver-108 metastable)

REVIEWED BY CMB DATE 5/19/11

JP0186

Matrix *
S=Soil
SE=Sediment
SO=Solid
SI=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
Wi=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Appendix 5

Data Validation Supporting Documentation

GENERAL ORGANIC DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	C	D	E
PROJECT:	118-H-1:2		DATA PACKAGE:	JP0186	
VALIDATOR:	ELR	LAB: TAL		DATE: 6/11/11	
			SDG:	JP0186	

ANALYSES PERFORMED					
8015	8021	8141	8151	8315	
		WTPH-HCID	WTPH-G	WTPH-D	

SAMPLES/MATRIX:				
J1J9T7	J1J9T8	J1J9T9	J1J9U0	J1J9U1
J1J9U2	J1J9U3	J1J9U4	J1J9U5	J1J9U6
J1J9U7	J1J9U8	J1J9U9	J1J9W0	J1J9W1
J1J9W2	J1J9W3			
				soil

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

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

Comments:

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

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:

GENERAL ORGANIC DATA VALIDATION CHECKLIST

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

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

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

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

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

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

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

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

Comments: no FB

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

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

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

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

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

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

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

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

MS/MSD standards 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: no PA

GENERAL ORGANIC DATA VALIDATION CHECKLIST

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

Duplicate RPD values acceptable? ..... Yes No N/A

Duplicate results acceptable? ..... Yes No N/A

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

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

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

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

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

Comments: _____

6. HOLDING TIMES (all levels)

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

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

Comments: _____

GENERAL ORGANIC DATA VALIDATION CHECKLIST

8. COMPOUND IDENTIFICATION, 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:

9. SAMPLE CLEANUP (Levels D and E)

Fluoricil ® (or other aborbant) cleanup performed? ..... Yes No N/A

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

Check recoveries aceptable? ..... Yes No N/A

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

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

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

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

Comments:

Appendix 6

Additional Documentation Requested by Client

Client: Washington Closure Hanford

Job Number: 280-16088-1
Sdg Number: JP0186

Method Blank - Batch: 280-68445

Method: NWTPH-Dx
Preparation: 3550C

Lab Sample ID:	MB 280-68445/1-A	Analysis Batch:	280-69009	Instrument ID:	GCS_U2
Client Matrix:	Solid	Prep Batch:	280-68445	Lab File ID:	006F0601.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	30 g
Analysis Date:	05/23/2011 1235	Units:	ug/Kg	Final Weight/Volume:	1000 uL
Prep Date:	05/20/2011 2336			Injection Volume:	1 uL
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
C10-C36	1000	U	1000	4000
C10-C28	680	U	680	4000

Surrogate	% Rec	Acceptance Limits
o-Terphenyl	83	49 - 115

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 280-68445

Method: NWTPH-Dx
Preparation: 3550C

LCS Lab Sample ID:	LCS 280-68445/2-A	Analysis Batch:	280-69009	Instrument ID:	GCS_U2
Client Matrix:	Solid	Prep Batch:	280-68445	Lab File ID:	007F0701.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	30 g
Analysis Date:	05/23/2011 1308	Units:	ug/Kg	Final Weight/Volume:	1000 uL
Prep Date:	05/20/2011 2336			Injection Volume:	1 uL
Leach Date:	N/A				

LCSD Lab Sample ID:	LCSD 280-68445/23-A	Analysis Batch:	280-69009	Instrument ID:	GCS_U2
Client Matrix:	Solid	Prep Batch:	280-68445	Lab File ID:	030F3001.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	30 g
Analysis Date:	05/24/2011 0144	Units:	ug/Kg	Final Weight/Volume:	1000 uL
Prep Date:	05/20/2011 2336			Injection Volume:	1 uL
Leach Date:	N/A				

Analyte	% Rec. LCS	% Rec. LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
C10-C36	86	82	57 - 115	4	23		
C10-C28	86	82	53 - 115	4	23		

Surrogate	LCS % Rec	LCSD % Rec	Acceptance Limits
o-Terphenyl	72	73	49 - 115

040

Client: Washington Closure Hanford

Job Number: 280-16088-1
Sdg Number: JP0186

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 280-68445

Method: NWTPH-Dx
Preparation: 3550C

MS Lab Sample ID:	280-16088-1	Analysis Batch:	280-69009	Instrument ID:	GCS_U2
Client Matrix:	Solid	Prep Batch:	280-68445	Lab File ID:	009F0901.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	30.3 g
Analysis Date:	05/23/2011 1415			Final Weight/Volume:	1000 uL
Prep Date:	05/20/2011 2336			Injection Volume:	1 uL
Leach Date:	N/A				

MSD Lab Sample ID:	280-16088-1	Analysis Batch:	280-69009	Instrument ID:	GCS_U2
Client Matrix:	Solid	Prep Batch:	280-68445	Lab File ID:	010F1001.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	30.0 g
Analysis Date:	05/23/2011 1449			Final Weight/Volume:	1000 uL
Prep Date:	05/20/2011 2336			Injection Volume:	1 uL
Leach Date:	N/A				

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
C10-C36	84	82	57 - 115	2	23		
C10-C28	83	81	56 - 115	1	23		

Surrogate	MS % Rec	MSD % Rec	Acceptance Limits
o-Terphenyl	73	72	49 - 115

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