SAF-RC-075
100-D/DR Burial Grounds & Remaining Sites – Soil Full Protocol
FINAL VALIDATION PACKAGE

COMPLETE COPY OF FINAL VALIDATION PACKAGE TO:

Kathy Wendt H4-21

COMMENTS:

SDG JP0398 SAF-RC-075

Waste Site: 100-D-14

Date: 1 August 2012
To: Washington Closure Hanford Inc. (technical representative)
From: ELR Consulting
Project: 100-D/DR Burial Grounds & Remaining Sites – Soil Full Protocol - Waste Site 100-D-14
Subject: Inorganics - Data Package No. JP0398-TAL

INTRODUCTION

This memo presents the results of data validation on Data Package No. JP0398 prepared by TestAmerica Laboratories (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
J1PVV9	7/17/12	Soil	C	See note 1
J1PVW0	7/17/12	Soil	C	See note 1
J1PVW1	7/17/12	Soil	C	See note 1
J1PVW2	7/17/12	Soil	C	See note 1
J1PVW3	7/17/12	Soil	C	See note 1
J1PVW4	7/17/12	Soil	C	See note 1
J1PVW5	7/17/12	Soil	C	See note 1
J1PVW6	7/17/12	Soil	C	See note 1
J1PVW7	7/17/12	Soil	C	See note 1
J1PVW8	7/17/12	Soil	C	See note 1
J1PVW9	7/17/12	Soil	C	See note 1
J1PVX0	7/17/12	Soil	C	See note 1
J1PVX1	7/17/12	Soil	C	See note 1

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

Data validation was conducted in accordance with the Washington Closure Hanford (WCH) validation statement of work and the 100 Area Remedial Action Sampling and Analysis Plan (DOE/RL-96-22, September 2009). 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 6 months for ICP metals and 28 days for mercury.

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

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 70% to 130%. 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 matrix spike recoveries outside QC limits, all antimony (53%), calcium (131%) and silicon (-0.07%) results were qualified as estimates and flagged "J".

Due to an LCS recovery outside QC limits, all silicon (20%) 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 (J1PVW5/J1PVX1) 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 100 Area RQLs to ensure that laboratory detection levels meet the required criteria. All results met the RQL.

Completeness

Data package No. JP0398 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 (53%), calcium (131%) and silicon (-0.07%) results were qualified as estimates and flagged "J".

- Due to an LCS recovery outside QC limits, all silicon (20%) 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-96-22, Rev. 5, *100 Area Remedial Action Sampling and Analysis Plan*, U.S. Department of Energy, September 2009.

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

INORGANIC DATA QUALIFICATION SUMMARY*

SDG: JP0398	**REVIEWER: ELR**	**Project: 100-D-14**	**PAGE 1 OF 1**
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Antimony Calcium 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: 280-31256-1
Sdg Number: JP0398

Client Sample ID: J1PVV9

Lab Sample ID: 280-31256-1
Client Matrix: Solid

% Moisture: 2.4

Date Sampled: 07/17/2012 1325
Date Received: 07/19/2012 0900

6010B Metals (ICP)

Analysis Method: 6010B
Prep Method: 3050B
Dilution: 1.0
Analysis Date: 07/20/2012 2244
Prep Date: 07/20/2012 1400

Analysis Batch: 280-128904
Prep Batch: 280-128612

Instrument ID: MT_025
Lab File ID: 25b072012.asc
Initial Weight/Volume: 1.03 g
Final Weight/Volume: 100 mL

V 7/31/12

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Antimony		0.38	U J	0.38	0.60
Arsenic		3.3		0.66	0.99
Beryllium		0.23		0.033	0.20
Boron		1.5	B	0.97	2.0
Cadmium		0.11	B	0.041	0.20
Calcium		7330	J	14.0	49.7
Chromium		12.1		0.058	0.20
Cobalt		6.6	X	0.099	0.99
Copper		16.6		0.22	0.99
Lead		4.2		0.27	0.50
Magnesium		4680		3.7	19.9
Manganese		318		0.099	0.99
Molybdenum		0.28	B	0.26	2.0
Nickel		11.6	X	0.12	4.0
Selenium		0.86	U	0.86	0.99
Silicon		635	N X J	5.6	9.9
Silver		0.16	U	0.16	0.20
Vanadium		48.3		0.094	2.0
Zinc		39.7		0.40	0.99

Analysis Method: 6010B
Prep Method: 3050B
Dilution: 1.0
Analysis Date: 07/24/2012 1210
Prep Date: 07/20/2012 1400

Analysis Batch: 280-129271
Prep Batch: 280-128612

Instrument ID: MT_025
Lab File ID: 25A2072412.asc
Initial Weight/Volume: 1.03 g
Final Weight/Volume: 100 mL

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		7480		1.5	5.0
Barium		68.5		0.076	0.50
Iron		17900		3.8	5.0
Potassium		1320		40.8	298
Sodium		190		58.7	119

7471A Mercury (CVAA)

Analysis Method: 7471A
Prep Method: 7471A
Dilution: 1.0
Analysis Date: 07/20/2012 2118
Prep Date: 07/20/2012 1500

Analysis Batch: 280-128912
Prep Batch: 280-128698

Instrument ID: MT_033
Lab File ID: 120720ad.txt
Initial Weight/Volume: 0.49 g
Final Weight/Volume: 50 mL

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.0069	U	0.0069	0.021

Client: Washington Closure Hanford

Job Number: 280-31256-1
Sdg Number: JP0398

Client Sample ID: J1PVW0

Lab Sample ID: 280-31256-2
Client Matrix: Solid

% Moisture: 3.8

Date Sampled: 07/17/2012 1320
Date Received: 07/19/2012 0900

6010B Metals (ICP)

Analysis Method: 6010B
Prep Method: 3050B
Dilution: 1.0
Analysis Date: 07/20/2012 2254
Prep Date: 07/20/2012 1400

Analysis Batch: 280-128904
Prep Batch: 280-128612

Instrument ID: MT_025
Lab File ID: 25b072012.asc
Initial Weight/Volume: 1.02 g
Final Weight/Volume: 100 mL

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Antimony		0.39	U J	0.39	0.61
Arsenic		4.3		0.67	1.0
Beryllium		0.22		0.034	0.20
Boron		1.0	U	1.0	2.0
Cadmium		0.14	B J	0.042	0.20
Calcium		12000		14.4	50.9
Chromium		14.7		0.059	0.20
Cobalt		6.4	X	0.10	1.0
Copper		15.7		0.22	1.0
Lead		3.8		0.28	0.51
Magnesium		5470		3.8	20.4
Manganese		299		0.10	1.0
Molybdenum		0.26	U	0.26	2.0
Nickel		13.2	X	0.13	4.1
Selenium		1.4		0.88	1.0
Silicon		444	X J	5.8	10.2
Silver		0.16	U	0.16	0.20
Vanadium		40.5		0.096	2.0
Zinc		35.8		0.41	1.0

Analysis Method: 6010B
Prep Method: 3050B
Dilution: 1.0
Analysis Date: 07/24/2012 1219
Prep Date: 07/20/2012 1400

Analysis Batch: 280-129271
Prep Batch: 280-128612

Instrument ID: MT_025
Lab File ID: 25A2072412.asc
Initial Weight/Volume: 1.02 g
Final Weight/Volume: 100 mL

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		7260		1.6	5.1
Barium		67.0		0.077	0.51
Iron		16700		3.9	5.1
Potassium		1190		41.8	306
Sodium		234		60.1	122

7471A Mercury (CVAA)

Analysis Method: 7471A
Prep Method: 7471A
Dilution: 1.0
Analysis Date: 07/20/2012 2130
Prep Date: 07/20/2012 1500

Analysis Batch: 280-128912
Prep Batch: 280-128698

Instrument ID: MT_033
Lab File ID: 120720ad.txt
Initial Weight/Volume: 0.53 g
Final Weight/Volume: 50 mL

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.0065	U	0.0065	0.020

Client: Washington Closure Hanford

Job Number: 280-31256-1
Sdg Number: JP0398

Client Sample ID: J1PVW1

Lab Sample ID: 280-31256-3
Client Matrix: Solid

% Moisture: 2.2

Date Sampled: 07/17/2012 1315
Date Received: 07/19/2012 0900

6010B Metals (ICP)

Analysis Method: 6010B
Prep Method: 3050B
Dilution: 1.0
Analysis Date: 07/20/2012 2256
Prep Date: 07/20/2012 1400

Analysis Batch: 280-128904
Prep Batch: 280-128612

V 7/31/12

Instrument ID: MT_025
Lab File ID: 25b072012.asc
Initial Weight/Volume: 1.05 g
Final Weight/Volume: 100 mL

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Antimony		0.37	U J	0.37	0.58
Arsenic		3.3		0.64	0.97
Beryllium		0.20		0.032	0.19
Boron		1.3	B	0.95	1.9
Cadmium		0.11	B J	0.040	0.19
Calcium		9420		13.7	48.7
Chromium		10.9		0.056	0.19
Cobalt		6.5	X	0.097	0.97
Copper		15.5		0.21	0.97
Lead		4.2		0.26	0.49
Magnesium		4570		3.6	19.5
Manganese		303		0.097	0.97
Molybdenum		0.25	U	0.25	1.9
Nickel		11.0	X	0.12	3.9
Selenium		0.84	U	0.84	0.97
Silicon		472	X J	5.5	9.7
Silver		0.16	U	0.16	0.19
Vanadium		48.2		0.092	1.9
Zinc		39.3		0.39	0.97

Analysis Method: 6010B
Prep Method: 3050B
Dilution: 1.0
Analysis Date: 07/24/2012 1222
Prep Date: 07/20/2012 1400

Analysis Batch: 280-129271
Prep Batch: 280-128612

Instrument ID: MT_025
Lab File ID: 25A2072412.asc
Initial Weight/Volume: 1.05 g
Final Weight/Volume: 100 mL

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		7050		1.5	4.9
Barium		64.8		0.074	0.49
Iron		18100		3.7	4.9
Potassium		1060		39.9	292
Sodium		281		57.4	117

7471A Mercury (CVAA)

Analysis Method: 7471A
Prep Method: 7471A
Dilution: 1.0
Analysis Date: 07/20/2012 2132
Prep Date: 07/20/2012 1500

Analysis Batch: 280-128912
Prep Batch: 280-128698

Instrument ID: MT_033
Lab File ID: 120720ad.txt
Initial Weight/Volume: 0.60 g
Final Weight/Volume: 50 mL

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.0057	U	0.0057	0.017

Client: Washington Closure Hanford

Job Number: 280-31256-1
Sdg Number: JP0398

Client Sample ID: J1PVW2

Lab Sample ID: 280-31256-4
Client Matrix: Solid

% Moisture: 2.9

Date Sampled: 07/17/2012 1310
Date Received: 07/19/2012 0900

6010B Metals (ICP)

Analysis Method: 6010B
Prep Method: 3050B
Dilution: 1.0
Analysis Date: 07/20/2012 2259
Prep Date: 07/20/2012 1400

Analysis Batch: 280-128904
Prep Batch: 280-128612

V 7/31/12

Instrument ID: MT_025
Lab File ID: 25b072012.asc
Initial Weight/Volume: 1.10 g
Final Weight/Volume: 100 mL

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Antimony		0.36	U J	0.36	0.56
Arsenic		3.6		0.62	0.94
Beryllium		0.22		0.031	0.19
Boron		1.1	B	0.92	1.9
Cadmium		0.098	B	0.038	0.19
Calcium		13700	J	13.2	46.8
Chromium		11.9		0.054	0.19
Cobalt		6.4	X	0.094	0.94
Copper		15.7		0.20	0.94
Lead		3.7		0.25	0.47
Magnesium		4730		3.5	18.7
Manganese		296		0.094	0.94
Molybdenum		0.24	U	0.24	1.9
Nickel		11.4	X	0.12	3.7
Selenium		0.80	U	0.80	0.94
Silicon		415	X J	5.3	9.4
Silver		0.15	U	0.15	0.19
Vanadium		41.1		0.088	1.9
Zinc		34.3		0.37	0.94

Analysis Method: 6010B
Prep Method: 3050B
Dilution: 1.0
Analysis Date: 07/24/2012 1224
Prep Date: 07/20/2012 1400

Analysis Batch: 280-129271
Prep Batch: 280-128612

Instrument ID: MT_025
Lab File ID: 25A2072412.asc
Initial Weight/Volume: 1.10 g
Final Weight/Volume: 100 mL

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		7530		1.5	4.7
Barium		74.6		0.071	0.47
Iron		17100		3.6	4.7
Potassium		1030		38.4	281
Sodium		238		55.2	112

7471A Mercury (CVAA)

Analysis Method: 7471A
Prep Method: 7471A
Dilution: 1.0
Analysis Date: 07/20/2012 2134
Prep Date: 07/20/2012 1500

Analysis Batch: 280-128912
Prep Batch: 280-128698

Instrument ID: MT_033
Lab File ID: 120720ad.txt
Initial Weight/Volume: 0.54 g
Final Weight/Volume: 50 mL

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.0063	U	0.0063	0.019

Client: Washington Closure Hanford

Job Number: 280-31256-1
Sdg Number: JP0398

Client Sample ID: J1PVW3

Lab Sample ID: 280-31256-5
Client Matrix: Solid

% Moisture: 3.9

Date Sampled: 07/17/2012 1305
Date Received: 07/19/2012 0900

6010B Metals (ICP)

Analysis Method: 6010B
Prep Method: 3050B
Dilution: 1.0
Analysis Date: 07/20/2012 2301
Prep Date: 07/20/2012 1400

Analysis Batch: 280-128904
Prep Batch: 280-128612

Instrument ID: MT_025
Lab File ID: 25b072012.asc
Initial Weight/Volume: 1.01 g
Final Weight/Volume: 100 mL

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Antimony		0.39	U J	0.39	0.62
Arsenic		4.4		0.68	1.0
Beryllium		0.25		0.034	0.21
Boron		1.2	B	1.0	2.1
Cadmium		0.16	B J	0.042	0.21
Calcium		12900		14.5	51.5
Chromium		16.0		0.060	0.21
Cobalt		7.0	X	0.10	1.0
Copper		20.5		0.22	1.0
Lead		4.9		0.28	0.52
Magnesium		6000		3.8	20.6
Manganese		326		0.10	1.0
Molybdenum		0.27	U	0.27	2.1
Nickel		13.6	X	0.13	4.1
Selenium		0.89	U	0.89	1.0
Silicon		471	X J	5.8	10.3
Silver		0.16	U	0.16	0.21
Vanadium		46.9		0.097	2.1
Zinc		38.5		0.41	1.0

Analysis Method: 6010B
Prep Method: 3050B
Dilution: 1.0
Analysis Date: 07/24/2012 1227
Prep Date: 07/20/2012 1400

Analysis Batch: 280-129271
Prep Batch: 280-128612

Instrument ID: MT_025
Lab File ID: 25A2072412.asc
Initial Weight/Volume: 1.01 g
Final Weight/Volume: 100 mL

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		8560		1.6	5.2
Barium		69.7		0.078	0.52
Iron		18700		3.9	5.2
Potassium		1240		42.3	309
Sodium		348		60.8	124

7471A Mercury (CVAA)

Analysis Method: 7471A
Prep Method: 7471A
Dilution: 1.0
Analysis Date: 07/20/2012 2137
Prep Date: 07/20/2012 1500

Analysis Batch: 280-128912
Prep Batch: 280-128698

Instrument ID: MT_033
Lab File ID: 120720ad.txt
Initial Weight/Volume: 0.66 g
Final Weight/Volume: 50 mL

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.0052	U	0.0052	0.016

Client: Washington Closure Hanford

Job Number: 280-31256-1
Sdg Number: JP0398

Client Sample ID: **J1PVW4**

Lab Sample ID: 280-31256-6
Client Matrix: Solid

% Moisture: 1.4

Date Sampled: 07/17/2012 1300
Date Received: 07/19/2012 0900

6010B Metals (ICP)

Analysis Method: 6010B
Prep Method: 3050B
Dilution: 1.0
Analysis Date: 07/20/2012 2313
Prep Date: 07/20/2012 1400

Analysis Batch: 280-128904
Prep Batch: 280-128612

Instrument ID: MT_025
Lab File ID: 25b072012.asc
Initial Weight/Volume: 1.10 g
Final Weight/Volume: 100 mL

7/31/12

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Antimony		0.35	U J	0.35	0.55
Arsenic		3.7		0.61	0.92
Beryllium		0.19		0.030	0.18
Boron		0.95	B	0.90	1.8
Cadmium		0.090	B J	0.038	0.18
Calcium		8980		13.0	46.1
Chromium		11.4		0.053	0.18
Cobalt		6.5	X	0.092	0.92
Copper		14.0		0.20	0.92
Lead		3.7		0.25	0.46
Magnesium		4730		3.4	18.4
Manganese		297		0.092	0.92
Molybdenum		0.24	U	0.24	1.8
Nickel		10.9	X	0.11	3.7
Selenium		0.83	B	0.79	0.92
Silicon		432	X J	5.2	9.2
Silver		0.15	U	0.15	0.18
Vanadium		49.9		0.087	1.8
Zinc		35.6		0.37	0.92

Analysis Method: 6010B
Prep Method: 3050B
Dilution: 1.0
Analysis Date: 07/24/2012 1238
Prep Date: 07/20/2012 1400

Analysis Batch: 280-129271
Prep Batch: 280-128612

Instrument ID: MT_025
Lab File ID: 25A2072412.asc
Initial Weight/Volume: 1.10 g
Final Weight/Volume: 100 mL

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		6670		1.4	4.6
Barium		58.3		0.070	0.46
Iron		18400		3.5	4.6
Potassium		914		37.8	276
Sodium		297		54.4	111

7471A Mercury (CVAA)

Analysis Method: 7471A
Prep Method: 7471A
Dilution: 1.0
Analysis Date: 07/20/2012 2139
Prep Date: 07/20/2012 1500

Analysis Batch: 280-128912
Prep Batch: 280-128698

Instrument ID: MT_033
Lab File ID: 120720ad.txt
Initial Weight/Volume: 0.63 g
Final Weight/Volume: 50 mL

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

Client: Washington Closure Hanford

Job Number: 280-31256-1
Sdg Number: JP0398

Client Sample ID: J1PVW5

Lab Sample ID: 280-31256-7
Client Matrix: Solid

% Moisture: 3.0

Date Sampled: 07/17/2012 1240
Date Received: 07/19/2012 0900

6010B Metals (ICP)

Analysis Method: 6010B
Prep Method: 3050B
Dilution: 1.0
Analysis Date: 07/20/2012 2315
Prep Date: 07/20/2012 1400

Analysis Batch: 280-128904
Prep Batch: 280-128612

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Instrument ID: MT_025
Lab File ID: 25b072012.asc
Initial Weight/Volume: 1.01 g
Final Weight/Volume: 100 mL

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Antimony		0.39	U J	0.39	0.61
Arsenic		4.2		0.67	1.0
Beryllium		0.21		0.034	0.20
Boron		1.0	B	1.0	2.0
Cadmium		0.10	B	0.042	0.20
Calcium		15800	J	14.4	51.0
Chromium		13.0		0.059	0.20
Cobalt		6.0	X	0.10	1.0
Copper		15.2		0.22	1.0
Lead		3.6		0.28	0.51
Magnesium		4950		3.8	20.4
Manganese		279		0.10	1.0
Molybdenum		0.27	U	0.27	2.0
Nickel		12.7	X	0.13	4.1
Selenium		1.2		0.88	1.0
Silicon		433	X J	5.8	10.2
Silver		0.16	U	0.16	0.20
Vanadium		40.6		0.096	2.0
Zinc		32.9		0.41	1.0

Analysis Method: 6010B
Prep Method: 3050B
Dilution: 1.0
Analysis Date: 07/24/2012 1241
Prep Date: 07/20/2012 1400

Analysis Batch: 280-129271
Prep Batch: 280-128612

Instrument ID: MT_025
Lab File ID: 25A2072412.asc
Initial Weight/Volume: 1.01 g
Final Weight/Volume: 100 mL

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		6930		1.6	5.1
Barium		64.4		0.078	0.51
Iron		15900		3.9	5.1
Potassium		907		41.8	306
Sodium		247		60.2	122

7471A Mercury (CVAA)

Analysis Method: 7471A
Prep Method: 7471A
Dilution: 1.0
Analysis Date: 07/20/2012 2141
Prep Date: 07/20/2012 1500

Analysis Batch: 280-128912
Prep Batch: 280-128698

Instrument ID: MT_033
Lab File ID: 120720ad.txt
Initial Weight/Volume: 0.58 g
Final Weight/Volume: 50 mL

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.0068	B	0.0059	0.018

Client: Washington Closure Hanford

Job Number: 280-31256-1
Sdg Number: JP0398

Client Sample ID: J1PVW6

Lab Sample ID: 280-31256-8
Client Matrix: Solid

% Moisture: 0.7

Date Sampled: 07/17/2012 1235
Date Received: 07/19/2012 0900

6010B Metals (ICP)

Analysis Method: 6010B
Prep Method: 3050B
Dilution: 1.0
Analysis Date: 07/20/2012 2317
Prep Date: 07/20/2012 1400

Analysis Batch: 280-128904
Prep Batch: 280-128612

Instrument ID: MT_025
Lab File ID: 25b072012.asc
Initial Weight/Volume: 1.06 g
Final Weight/Volume: 100 mL

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Antimony		0.36	U J	0.36	0.57
Arsenic		3.7		0.63	0.95
Beryllium		0.28		0.031	0.19
Boron		1.2	B	0.93	1.9
Cadmium		0.099	B	0.039	0.19
Calcium		4310	J	13.4	47.5
Chromium		13.2		0.055	0.19
Cobalt		7.4	X	0.095	0.95
Copper		17.3		0.21	0.95
Lead		4.6		0.26	0.47
Magnesium		5000		3.5	19.0
Manganese		336		0.095	0.95
Molybdenum		0.25	U	0.25	1.9
Nickel		13.6	X	0.12	3.8
Selenium		0.88	B	0.82	0.95
Silicon		464	X J	5.4	9.5
Silver		0.16	B	0.15	0.19
Vanadium		47.8		0.089	1.9
Zinc		39.0		0.38	0.95

Analysis Method: 6010B
Prep Method: 3050B
Dilution: 1.0
Analysis Date: 07/24/2012 1243
Prep Date: 07/20/2012 1400

Analysis Batch: 280-129271
Prep Batch: 280-128612

Instrument ID: MT_025
Lab File ID: 25A2072412.asc
Initial Weight/Volume: 1.06 g
Final Weight/Volume: 100 mL

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		8840		1.5	4.7
Barium		80.4		0.072	0.47
Iron		19700		3.6	4.7
Potassium		1680		38.9	285
Sodium		188		56.0	114

7471A Mercury (CVAA)

Analysis Method: 7471A
Prep Method: 7471A
Dilution: 1.0
Analysis Date: 07/20/2012 2143
Prep Date: 07/20/2012 1500

Analysis Batch: 280-128912
Prep Batch: 280-128698

Instrument ID: MT_033
Lab File ID: 120720ad.txt
Initial Weight/Volume: 0.70 g
Final Weight/Volume: 50 mL

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.0048	U	0.0048	0.015

Client: Washington Closure Hanford

Job Number: 280-31256-1
Sdg Number: JP0398

Client Sample ID: J1PVW7

Lab Sample ID: 280-31256-9
Client Matrix: Solid % Moisture: 3.2

Date Sampled: 07/17/2012 1230
Date Received: 07/19/2012 0900

6010B Metals (ICP)

Analysis Method:	6010B	Analysis Batch:	280-128904	Instrument ID:	MT_025
Prep Method:	3050B	Prep Batch:	280-128612	Lab File ID:	25b072012.asc
Dilution:	1.0			Initial Weight/Volume:	1.09 g
Analysis Date:	07/20/2012 2320			Final Weight/Volume:	100 mL
Prep Date:	07/20/2012 1400				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Antimony		0.36	U J	0.36	0.57
Arsenic		3.8		0.63	0.95
Beryllium		0.25		0.031	0.19
Boron		0.94	B	0.93	1.9
Cadmium		0.092	B	0.039	0.19
Calcium		7670	J	13.4	47.4
Chromium		13.0		0.055	0.19
Cobalt		6.6	X	0.095	0.95
Copper		17.2		0.21	0.95
Lead		3.9		0.26	0.47
Magnesium		4690		3.5	19.0
Manganese		301		0.095	0.95
Molybdenum		0.25	U	0.25	1.9
Nickel		12.5	X	0.12	3.8
Selenium		0.82	U	0.82	0.95
Silicon		463	X J	5.4	9.5
Silver		0.15	U	0.15	0.19
Vanadium		44.2		0.089	1.9
Zinc		35.9		0.38	0.95

Analysis Method:	6010B	Analysis Batch:	280-129271	Instrument ID:	MT_025
Prep Method:	3050B	Prep Batch:	280-128612	Lab File ID:	25A2072412.asc
Dilution:	1.0			Initial Weight/Volume:	1.09 g
Analysis Date:	07/24/2012 1246			Final Weight/Volume:	100 mL
Prep Date:	07/20/2012 1400				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		7830		1.5	4.7
Barium		75.0		0.072	0.47
Iron		17600		3.6	4.7
Potassium		1130		38.9	284
Sodium		219		55.9	114

7471A Mercury (CVAA)

Analysis Method:	7471A	Analysis Batch:	280-128912	Instrument ID:	MT_033
Prep Method:	7471A	Prep Batch:	280-128698	Lab File ID:	120720ad.txt
Dilution:	1.0			Initial Weight/Volume:	0.60 g
Analysis Date:	07/20/2012 2146			Final Weight/Volume:	50 mL
Prep Date:	07/20/2012 1500				

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

Client: Washington Closure Hanford

Job Number: 280-31256-1
Sdg Number: JP0398

Client Sample ID: J1PVW8

Lab Sample ID: 280-31256-10
Client Matrix: Solid

% Moisture: 1.4

Date Sampled: 07/17/2012 1225
Date Received: 07/19/2012 0900

6010B Metals (ICP)

Analysis Method:	6010B	Analysis Batch:	280-128904	Instrument ID:	MT_025
Prep Method:	3050B	Prep Batch:	280-128612	Lab File ID:	25b072012.asc
Dilution:	1.0			Initial Weight/Volume:	1.07 g
Analysis Date:	07/20/2012 2322			Final Weight/Volume:	100 mL
Prep Date:	07/20/2012 1400				

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Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Antimony		0.36	U J	0.36	0.57
Arsenic		3.0		0.63	0.95
Beryllium		0.24		0.031	0.19
Boron		1.0	B	0.93	1.9
Cadmium		0.10	B	0.039	0.19
Calcium		3990	J	13.4	47.4
Chromium		11.9		0.055	0.19
Cobalt		6.8	X	0.095	0.95
Copper		14.5		0.21	0.95
Lead		3.9		0.26	0.47
Magnesium		4630		3.5	19.0
Manganese		314		0.095	0.95
Molybdenum		0.25	U	0.25	1.9
Nickel		12.6	X	0.12	3.8
Selenium		0.82	U	0.82	0.95
Silicon		444	X J	5.4	9.5
Silver		0.15	U	0.15	0.19
Vanadium		45.8		0.089	1.9
Zinc		36.5		0.38	0.95

Analysis Method:	6010B	Analysis Batch:	280-129271	Instrument ID:	MT_025
Prep Method:	3050B	Prep Batch:	280-128612	Lab File ID:	25A2072412.asc
Dilution:	1.0			Initial Weight/Volume:	1.07 g
Analysis Date:	07/24/2012 1248			Final Weight/Volume:	100 mL
Prep Date:	07/20/2012 1400				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		7960		1.5	4.7
Barium		67.8		0.072	0.47
Iron		18500		3.6	4.7
Potassium		1360		38.9	284
Sodium		203		55.9	114

7471A Mercury (CVAA)

Analysis Method:	7471A	Analysis Batch:	280-128912	Instrument ID:	MT_033
Prep Method:	7471A	Prep Batch:	280-128698	Lab File ID:	120720ad.txt
Dilution:	1.0			Initial Weight/Volume:	0.66 g
Analysis Date:	07/20/2012 2148			Final Weight/Volume:	50 mL
Prep Date:	07/20/2012 1500				

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

Client: Washington Closure Hanford

Job Number: 280-31256-1
Sdg Number: JP0398

Client Sample ID: J1PVW9

Lab Sample ID: 280-31256-11
Client Matrix: Solid % Moisture: 2.4

Date Sampled: 07/17/2012 1220
Date Received: 07/19/2012 0900

6010B Metals (ICP)

Analysis Method: 6010B
Prep Method: 3050B
Dilution: 1.0
Analysis Date: 07/20/2012 2325
Prep Date: 07/20/2012 1400

Analysis Batch: 280-128904
Prep Batch: 280-128612

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Instrument ID: MT_025
Lab File ID: 25b072012.asc
Initial Weight/Volume: 1.05 g
Final Weight/Volume: 100 mL

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Antimony		0.37	U J	0.37	0.59
Arsenic		3.1		0.64	0.98
Beryllium		0.24		0.032	0.20
Boron		1.1	B	0.96	2.0
Cadmium		0.089	B	0.040	0.20
Calcium		5710	J	13.8	48.8
Chromium		12.8		0.057	0.20
Cobalt		6.9	X	0.098	0.98
Copper		16.5		0.21	0.98
Lead		4.1		0.26	0.49
Magnesium		4660		3.6	19.5
Manganese		321		0.098	0.98
Molybdenum		0.25	U	0.25	2.0
Nickel		11.8	X	0.12	3.9
Selenium		0.84	U	0.84	0.98
Silicon		646	X J	5.5	9.8
Silver		0.16	U	0.16	0.20
Vanadium		45.3		0.092	2.0
Zinc		38.5		0.39	0.98

Analysis Method: 6010B
Prep Method: 3050B
Dilution: 1.0
Analysis Date: 07/24/2012 1250
Prep Date: 07/20/2012 1400

Analysis Batch: 280-129271
Prep Batch: 280-128612

Instrument ID: MT_025
Lab File ID: 25A2072412.asc
Initial Weight/Volume: 1.05 g
Final Weight/Volume: 100 mL

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		8130		1.5	4.9
Barium		69.7		0.074	0.49
Iron		18600		3.7	4.9
Potassium		1320		40.0	293
Sodium		231		57.6	117

7471A Mercury (CVAA)

Analysis Method: 7471A
Prep Method: 7471A
Dilution: 1.0
Analysis Date: 07/20/2012 2155
Prep Date: 07/20/2012 1500

Analysis Batch: 280-128912
Prep Batch: 280-128698

Instrument ID: MT_033
Lab File ID: 120720ad.txt
Initial Weight/Volume: 0.59 g
Final Weight/Volume: 50 mL

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

Client: Washington Closure Hanford

Job Number: 280-31256-1
Sdg Number: JP0398

Client Sample ID: J1PVX0

Lab Sample ID: 280-31256-12
Client Matrix: Solid
% Moisture: 0.9

Date Sampled: 07/17/2012 1215
Date Received: 07/19/2012 0900

6010B Metals (ICP)

Analysis Method: 6010B
Prep Method: 3050B
Dilution: 1.0
Analysis Date: 07/20/2012 2327
Prep Date: 07/20/2012 1400

Analysis Batch: 280-128904
Prep Batch: 280-128612

Instrument ID: MT_025
Lab File ID: 25b072012.asc
Initial Weight/Volume: 1.03 g
Final Weight/Volume: 100 mL

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Antimony		0.37	U J	0.37	0.59
Arsenic		3.6		0.65	0.98
Beryllium		0.26		0.032	0.20
Boron		1.9	B	0.96	2.0
Cadmium		0.11	B	0.040	0.20
Calcium		6870	J	13.8	49.0
Chromium		13.1		0.057	0.20
Cobalt		6.9	X	0.098	0.98
Copper		16.2		0.21	0.98
Lead		4.4		0.26	0.49
Magnesium		4700		3.6	19.6
Manganese		307		0.098	0.98
Molybdenum		0.25	U	0.25	2.0
Nickel		12.4	X	0.12	3.9
Selenium		1.0		0.84	0.98
Silicon		544	X J	5.5	9.8
Silver		0.16	U	0.16	0.20
Vanadium		44.3		0.092	2.0
Zinc		36.6		0.39	0.98

Analysis Method: 6010B
Prep Method: 3050B
Dilution: 1.0
Analysis Date: 07/24/2012 1253
Prep Date: 07/20/2012 1400

Analysis Batch: 280-129271
Prep Batch: 280-128612

Instrument ID: MT_025
Lab File ID: 25A2072412.asc
Initial Weight/Volume: 1.03 g
Final Weight/Volume: 100 mL

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		8280		1.5	4.9
Barium		68.3		0.074	0.49
Iron		18600		3.7	4.9
Potassium		2040		40.2	294
Sodium		195		57.8	118

7471A Mercury (CVAA)

Analysis Method: 7471A
Prep Method: 7471A
Dilution: 1.0
Analysis Date: 07/20/2012 2157
Prep Date: 07/20/2012 1500

Analysis Batch: 280-128912
Prep Batch: 280-128698

Instrument ID: MT_033
Lab File ID: 120720ad.txt
Initial Weight/Volume: 0.71 g
Final Weight/Volume: 50 mL

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.0047	U	0.0047	0.014

Client: Washington Closure Hanford

Job Number: 280-31256-1
Sdg Number: JP0398

Client Sample ID: J1PVX1

Lab Sample ID: 280-31256-13
Client Matrix: Solid

% Moisture: 3.5

Date Sampled: 07/17/2012 1240
Date Received: 07/19/2012 0900

6010B Metals (ICP)

Analysis Method:	6010B	Analysis Batch:	280-128904	Instrument ID:	MT_025
Prep Method:	3050B	Prep Batch:	280-128612	Lab File ID:	25b072012.asc
Dilution:	1.0			Initial Weight/Volume:	1.11 g
Analysis Date:	07/20/2012 2329			Final Weight/Volume:	100 mL
Prep Date:	07/20/2012 1400				

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Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Antimony		0.35	U J	0.35	0.56
Arsenic		3.9		0.62	0.93
Beryllium		0.20		0.031	0.19
Boron		0.91	U	0.91	1.9
Cadmium		0.12	B	0.038	0.19
Calcium		15600	J	13.2	46.7
Chromium		13.5		0.054	0.19
Cobalt		5.9	X	0.093	0.93
Copper		15.6		0.20	0.93
Lead		3.5		0.25	0.47
Magnesium		4970		3.5	18.7
Manganese		283		0.093	0.93
Molybdenum		0.24	U	0.24	1.9
Nickel		12.4	X	0.11	3.7
Selenium		0.92	B J	0.80	0.93
Silicon		361	X	5.3	9.3
Silver		0.18	B	0.15	0.19
Vanadium		39.2		0.088	1.9
Zinc		32.2		0.37	0.93

Analysis Method:	6010B	Analysis Batch:	280-129271	Instrument ID:	MT_025
Prep Method:	3050B	Prep Batch:	280-128612	Lab File ID:	25A2072412.asc
Dilution:	1.0			Initial Weight/Volume:	1.11 g
Analysis Date:	07/24/2012 1255			Final Weight/Volume:	100 mL
Prep Date:	07/20/2012 1400				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		6940		1.4	4.7
Barium		60.7		0.071	0.47
Iron		15300		3.5	4.7
Potassium		895		38.3	280
Sodium		225		55.1	112

7471A Mercury (CVAA)

Analysis Method:	7471A	Analysis Batch:	280-128912	Instrument ID:	MT_033
Prep Method:	7471A	Prep Batch:	280-128698	Lab File ID:	120720ad.txt
Dilution:	1.0			Initial Weight/Volume:	0.51 g
Analysis Date:	07/20/2012 2200			Final Weight/Volume:	50 mL
Prep Date:	07/20/2012 1500				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.0067	U	0.0067	0.021

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

CASE NARRATIVE

Client: Washington Closure Hanford

Project: WASHINGTON CLOSURE HANFORD

Report Number: 280-31256-1

SDG #: JP0398
SAF#: RC-075

Date SDG Closed: July 19, 2012
Data Deliverable: 7 Day / Summary

CLIENT ID	LAB ID	ANALYSES REQUESTED	ANALYSES PERFORMED
J1PVV9	280-31256-1	6010/7471/9056M/353.2/9045/8270A/8082/8081	6010B/7471A/9056M/353.2/9045C/8270C/8082/8081A
J1PVW0	280-31256-2	6010/7471/9056M/353.2/9045/8270A/8082/8081	6010B/7471A/9056M/353.2/9045C/8270C/8082/8081A
J1PVW1	280-31256-3	6010/7471/9056M/353.2/9045/8270A/8082/8081	6010B/7471A/9056M/353.2/9045C/8270C/8082/8081A
J1PVW2	280-31256-4	6010/7471/9056M/353.2/9045/8270A/8082/8081	6010B/7471A/9056M/353.2/9045C/8270C/8082/8081A
J1PVW3	280-31256-5	6010/7471/9056M/353.2/9045/8270A/8082/8081	6010B/7471A/9056M/353.2/9045C/8270C/8082/8081A
J1PVW4	280-31256-6	6010/7471/9056M/353.2/9045/8270A/8082/8081	6010B/7471A/9056M/353.2/9045C/8270C/8082/8081A
J1PVW5	280-31256-7	6010/7471/9056M/353.2/9045/8270A/8082/8081	6010B/7471A/9056M/353.2/9045C/8270C/8082/8081A
J1PVW6	280-31256-8	6010/7471/9056M/353.2/9045/8270A/8082/8081	6010B/7471A/9056M/353.2/9045C/8270C/8082/8081A
J1PVW7	280-31256-9	6010/7471/9056M/353.2/9045/8270A/8082/8081	6010B/7471A/9056M/353.2/9045C/8270C/8082/8081A
J1PVW8	280-31256-10	6010/7471/9056M/353.2/9045/8270A/8082/8081	6010B/7471A/9056M/353.2/9045C/8270C/8082/8081A
J1PVW9	280-31256-11	6010/7471/9056M/353.2/9045/8270A/8082/8081	6010B/7471A/9056M/353.2/9045C/8270C/8082/8081A
J1PVX0	280-31256-12	6010/7471/9056M/353.2/9045/8270A/8082/8081	6010B/7471A/9056M/353.2/9045C/8270C/8082/8081A
J1PVX1	280-31256-13	6010/7471/9056M/353.2/9045/8270A/8082/8081	6010B/7471A/9056M/353.2/9045C/8270C/8082/8081A

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 7/19/2012 9:00 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 3 coolers at receipt time were 3.1° C, 4.2° C and 4.8° C.

GC/MS SEMIVOLATILES - SW846 8270C
The MS/MSD performed on sample J1PVX1 exhibited the percent recovery outside the control limits for 2,4-Dinitrophenol, and the associated sample result has been flagged "T". The acceptable LCS analysis data indicated that the analytical system was operating within control; therefore, corrective action is deemed unnecessary.

No other anomalies were encountered.

GC SEMIVOLATILES - SW846 8081A - PESTICIDES
The MSD aliquot of the MS/MSD performed on sample J1PVW4 exhibited spike compound recoveries outside the control limits, and the associated sample results have been flagged "N". In addition, RPD limits were exceeded. The acceptable LCS analysis data indicated that the analytical system was operating within control; therefore, corrective action is deemed unnecessary.

No other anomalies were encountered.

GC SEMIVOLATILES - SW846 8082 - PCBs
No anomalies were encountered.

TOTAL METALS - SW846 6010B/7471A
Serial dilution of a digestate in batch 280-128612 indicates that physical and chemical interferences are present for Cobalt, Nickel and Silicon. Results have been flagged with an "X".

Low levels of Barium are present in the method blank associated with batch 280-128612. Because the concentration in the method blank is not present at a level greater than half the reporting limit, corrective action is deemed unnecessary.

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 J1PVV9; therefore, control limits are not applicable.

Silicon was recovered outside the control limits in the Matrix Spike performed on sample J1PVV9, 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.

GENERAL CHEMISTRY - MCAWW 353.2 - NITRATE+NITRITE as N
No anomalies were encountered.

GENERAL CHEMISTRY - SW846 9056M - ANIONS
Low levels of Sulfate are present in the method blank associated with batch 280-129000. Because the concentration in the method blank is not present at a level greater than half the reporting limit, corrective action is deemed unnecessary.

The Matrix Spike performed on sample J1PVV9 exhibited percent recoveries outside the control limits for Orthophosphate as P and Fluoride, and the associated sample results have 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.

GENERAL CHEMISTRY - SW846 9045C - PH
No anomalies were encountered.

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-075-307	Page 1 of 3

Collector: ~~G Stowe~~ H WEBER 7-17-12	Company Contact: J Kessner; Telephone No.: 509-375-4688	Project Coordinator: KESSNER, JH	Price Code: ~~8L~~ 8B 7-17-12; Data Turnaround: ~~21~~ 7 Days
Project Designation: 100-D/DR Burial Grounds & Remaining Sites - Soil Full Prot	Sampling Location: 100-D-14 Waste Sites- Excavation	SAF No.: RC-075	
Ice Chest No.: RCC-08-028	Field Logbook No.: EL-1607-14; COA: 000D142000	Method of Shipment: Fed Ex 7-17-12	
Shipped To: TestAmerica Incorporated, ~~Richland~~ DNR 7-17-12	Offsite Property No.	Bill of Lading/Air Bill No.: SEE OSPL	

POSSIBLE SAMPLE HAZARDS/REMARKS

None

Special Handling and/or Storage

Cool 4 Deg C

Preservation				Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C			
Type of Container				G/P	G/P	G/P	aG	aG	aG			
No. of Container(s)				1	1	1	1	1	1			
Volume				125mL	125mL	125mL	125mL	120mL	125mL			
SAMPLE ANALYSIS				See item (1) in Special Instructions.	Chromium Hex - 7196 (struck through, 7-17)	IC Anions - 9056 Modified; NO2/NO3 - 353.2; pH (Soil) - 9045	Semi-VOA - 8270A (TCL)	PCBs - 8082	Pesticides - 8081			
Sample No.	**Matrix ***	**Sample Date**	**Sample Time**									
J1PVV9	SOIL	7-17-12	1325	X		X	X	X	X			
J1PVW0	SOIL	7-17-12	1320	X		X	X	X	X			
J1PVW1	SOIL	7-17-12	1315	X		X	X	X	X			
J1PVW2	SOIL	7-17-12	1310	X		X	X	X	X			
J1PVW3	SOIL	7-17-12	1305	X		X	X	X	X			

CHAIN OF POSSESSION	Date/Time	Sign/Print Names: Received By/Stored In	Date/Time
Relinquished By/Removed From: Heather Weber [signature]	7-17-12 1420	D Wooley [signature]	7-17-12 1420
Relinquished By/Removed From: D Wooley [signature]	7-17-12 1615	A. Frerer [signature] (1060#1)	7-17-12 1615
Relinquished By/Removed From: A-Frerer [signature] (WCH 1060#1)	7-18-12 1025	Fed Ex	
Relinquished By/Removed From		[signature]	7/19/12 0900
Relinquished By/Removed From			
Relinquished By/Removed From			

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) {Mercury}

JP0398

REVIEWED BY [initials] DATE 7/18/12

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

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Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		RC-075-307	Page 2 of 3
Collector ~~Q. Stowe~~ H WEBER 7-17-12	Company Contact J Kessner	Telephone No. 509-375-4688	Project Coordinator KESSNER, JH	Price Code 8L 8B 7-17-12	Data Turnaround 21 Days 7
Project Designation 100-D/DR Burial Grounds & Remaining Sites - Soil Full Prot	Sampling Location 100-D-14 Waste Sites- Excavation		SAF No. RC-075		
Ice Chest No. RCC-08-028 7-17-12	Field Logbook No. EL-1607-14	COA 000D142000	Method of Shipment FED EX	7-17-12
Shipped To TestAmerica Incorporated, ~~Richland~~ DVR	Offsite Property No.		Bill of Lading/Air Bill No. SEE OSPL	

POSSIBLE SAMPLE HAZARDS/REMARKS
None

Special Handling and/or Storage
Cool 4 Deg C

Preservation	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C				
Type of Container	G/P	G/P	G/P	aG	aG	aG				
No. of Container(s)	1	1	1	1	1	1				
Volume	125mL	125mL	125mL	125mL	120mL	125mL				
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Chromium Hex - 7196 7-17-12	IC Anions - 9056 Modified; NO2/NO3 - 353.2; pH (Soil) - 9045	Semi-VOA - 8270A (TCL)	PCBs - 8082	Pesticides - 8081				
Sample No.	Matrix *	Sample Date	Sample Time							
J1PVW4	SOIL	7-17-12	1300	X		X	X	X	X	
J1PVW5	SOIL	7-17-12	1240	X		X	X	X	X	
J1PVW6	SOIL	7-17-12	1235	X		X	X	X	X	
J1PVW7	SOIL	7-17-12	1230	X		X	X	X	X	
J1PVW8	SOIL	7-17-12	1225	X		X	X	X	X	

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Heather Weber/Katherine	7-17-12 1420	Dwoolery	7-17-12 1420
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Dwoolery	7-17-12 1615	A. Freier A. Freier	7-17-12 1615
Relinquished By/Removed From WCH	Date/Time 10604#1	Received By/Stored In	Date/Time
A. Freier A. Freier	7-18-12 1025	Fed Ex	
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
			7/19/12 0900
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) {Mercury}

JP0398

REVIEWED BY 7/18/12 DATE

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

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		RC-075-307	Page 3 of 3
Collector: ~~Q Stowe~~ H WEBER	Company Contact: J Kessner	Telephone No.: 509-375-4688	Project Coordinator: KESSNER, JH	Price Code: 8L 8B D 7-17-12	Data Turnaround: 21 7 Days
Project Designation: 100-D/DR Burial Grounds & Remaining Sites - Soil Full Prot	Sampling Location: 100-D-14 Waste Sites- Excavation		SAF No.: RC-075	
Ice Chest No.: RCC-08-028 D 7-17-12	Field Logbook No.: EL-1607-14	COA: 000D142000	Method of Shipment: FED EX	D 7-17-12
Shipped To: TestAmerica Incorporated, ~~Richland~~ DVR	Offsite Property No.		Bill of Lading/Air Bill No.: SEE OSPL	

POSSIBLE SAMPLE HAZARDS/REMARKS

None

Special Handling and/or Storage

Cool 4 Deg C

Preservation	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C				
Type of Container	G/P	G/P	G/P	aG	aG	aG				
No. of Container(s)	1	1	1	1	1	1				
Volume	125mL	125mL	125mL	125mL	120mL	125mL				
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Chromium Hex - 196	IC Anions - 9056 Modified; NO2/NO3 - 353.2; pH (Soil) - 9045	Semi-VOA - 8270A (TCL)	PCBs - 8082	Pesticides - 8081				
Sample No.	Matrix *	Sample Date	Sample Time							
J1PVW9	SOIL	7-17-12	1220	X		X	X	X	X	
J1PVX0	SOIL	7-17-12	1215	X		X	X	X	X	
J1PVX1	SOIL	7-17-12	1240	X		X	X	X	X	

Page 141 of 145

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Heather Weber/Heather Weber	7-17-12 1420	DWOOLERY	7-17-12 1420
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
DWOOLERY	7-17-12 1615	1060#1 A. Freier	1615 7-17-12
Relinquished By/Removed From WCH	Date/Time 1060#1	Received By/Stored In	Date/Time
A. Freier A. Freier	7-18-12 1025	Fed Ex	
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
			7/19/12 0900
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 - 471 - (CV) {Mercury}

JP0398

REVIEWED BY DATE 7/18/12

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: 100-D-14			DATA PACKAGE: JP0398		
VALIDATOR: ELR		LAB: TAL		DATE: 7/31/12	
			SDG: JP0398		

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

SAMPLES/MATRIX				
JIPVW9	JIPVW0	JIPVC1	JIPVC2	JIPVW3
JIPVW4	JIPVW5	JIPVWC	JIPVW7	JIPVW8
JIPVW9	JIPVX0	JIPVX1		
				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: no FB

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 - silicon (20%) - J all
MS - antimony (53%) silicon (0.07%) calcium (13%) - Jall

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: 280-31256-1
Sdg Number: JP0398

Method Blank - Batch: 280-128612

Method: 6010B
Preparation: 3050B

Lab Sample ID:	MB 280-128612/1-A	Analysis Batch:	280-128904	Instrument ID:	MT_025
Client Matrix:	Solid	Prep Batch:	280-128612	Lab File ID:	25b072012.asc
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1 g
Analysis Date:	07/20/2012 2240	Units:	mg/Kg	Final Weight/Volume:	100 mL
Prep Date:	07/20/2012 1400				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Antimony	0.38	U	0.38	0.60
Arsenic	0.66	U	0.66	1.0
Beryllium	0.033	U	0.033	0.20
Boron	0.98	U	0.98	2.0
Cadmium	0.041	U	0.041	0.20
Calcium	14.1	U	14.1	50.0
Chromium	0.058	U	0.058	0.20
Cobalt	0.10	U	0.10	1.0
Copper	0.22	U	0.22	1.0
Lead	0.27	U	0.27	0.50
Magnesium	3.7	U	3.7	20.0
Manganese	0.10	U	0.10	1.0
Molybdenum	0.26	U	0.26	2.0
Nickel	0.12	U	0.12	4.0
Selenium	0.86	U	0.86	1.0
Silicon	5.7	U	5.7	10.0
Silver	0.16	U	0.16	0.20
Vanadium	0.094	U	0.094	2.0
Zinc	0.40	U	0.40	1.0

Method Blank - Batch: 280-128612

Method: 6010B
Preparation: 3050B

Lab Sample ID:	MB 280-128612/1-A	Analysis Batch:	280-129271	Instrument ID:	MT_025
Client Matrix:	Solid	Prep Batch:	280-128612	Lab File ID:	25A2072412.asc
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1 g
Analysis Date:	07/24/2012 1205	Units:	mg/Kg	Final Weight/Volume:	100 mL
Prep Date:	07/20/2012 1400				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Aluminum	1.6	U	1.6	5.0
Barium	0.113	B	0.076	0.50
Iron	3.8	U	3.8	5.0
Potassium	41.0	U	41.0	300
Sodium	59.0	U	59.0	120

Client: Washington Closure Hanford

Job Number: 280-31256-1
Sdg Number: JP0398

Lab Control Sample - Batch: 280-128612

Method: 6010B
Preparation: 3050B

Lab Sample ID:	LCS 280-128612/2-A	Analysis Batch:	280-128904	Instrument ID:	MT_025
Client Matrix:	Solid	Prep Batch:	280-128612	Lab File ID:	25b072012.asc
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1 g
Analysis Date:	07/20/2012 2242	Units:	mg/Kg	Final Weight/Volume:	100 mL
Prep Date:	07/20/2012 1400				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Antimony	50.0	50.74	101	82 - 110	
Arsenic	100	100.7	101	85 - 110	
Beryllium	5.00	5.34	107	84 - 114	
Boron	100	99.45	99	81 - 110	
Cadmium	10.0	10.62	106	87 - 110	
Calcium	5000	5315	106	82 - 114	
Chromium	20.0	21.10	105	84 - 114	
Cobalt	50.0	51.78	104	87 - 110	
Copper	25.0	27.29	109	88 - 110	
Lead	50.0	48.34	97	86 - 110	
Magnesium	5000	5146	103	90 - 110	
Manganese	50.0	52.79	106	88 - 110	
Molybdenum	100	105.6	106	86 - 110	
Nickel	50.0	52.14	104	87 - 110	
Selenium	200	208.1	104	83 - 110	
Silicon	1000	199.6	20	10 - 70	
Silver	5.00	5.50	110	87 - 114	
Vanadium	50.0	53.84	108	88 - 110	
Zinc	50.0	49.93	100	76 - 114	

Lab Control Sample - Batch: 280-128612

Method: 6010B
Preparation: 3050B

Lab Sample ID:	LCS 280-128612/2-A	Analysis Batch:	280-129271	Instrument ID:	MT_025
Client Matrix:	Solid	Prep Batch:	280-128612	Lab File ID:	25A2072412.asc
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1 g
Analysis Date:	07/24/2012 1208	Units:	mg/Kg	Final Weight/Volume:	100 mL
Prep Date:	07/20/2012 1400				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Aluminum	200	194.3	97	82 - 116	
Barium	200	201.7	101	87 - 112	
Iron	100	105.5	105	87 - 120	
Potassium	5000	5129	103	89 - 110	
Sodium	5000	5270	105	90 - 112	

Client: Washington Closure Hanford

Job Number: 280-31256-1
Sdg Number: JP0398

Matrix Spike - Batch: 280-128612

Method: 6010B
Preparation: 3050B

Lab Sample ID:	280-31256-1	Analysis Batch:	280-128904	Instrument ID:	MT_025
Client Matrix:	Solid	Prep Batch:	280-128612	Lab File ID:	25b072012.asc
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1.11 g
Analysis Date:	07/20/2012 2251	Units:	mg/Kg	Final Weight/Volume:	100 mL
Prep Date:	07/20/2012 1400				
Leach Date:	N/A				

Analyte	Sample Result/Qual		Spike Amount	Result	% Rec.	Limit	Qual
Antimony	0.38	U	46.2	24.26	53	20 - 200	
Arsenic	3.3		92.3	88.73	92	76 - 111	
Beryllium	0.23		4.62	4.78	99	72 - 105	
Boron	1.5	B	92.3	83.83	89	75 - 107	
Cadmium	0.11	B	9.23	9.30	100	40 - 130	
Calcium	7330		4620	13390	131	43 - 165	
Chromium	12.1		18.5	31.91	107	70 - 200	
Cobalt	6.6		46.2	49.97	94	72 - 106	
Copper	16.6		23.1	40.50	104	37 - 187	
Lead	4.2		46.2	43.72	86	70 - 200	
Magnesium	4680		4620	9438	103	64 - 145	
Manganese	318		46.2	374.4	123	40 - 200	4
Molybdenum	0.28	B	92.3	87.01	94	75 - 103	
Nickel	11.6		46.2	54.58	93	61 - 126	
Selenium	0.86	U	185	176.5	96	76 - 104	
Silicon	635		923	634.0	-0.07	20 - 200	N
Silver	0.16	U	4.62	4.83	105	75 - 141	
Vanadium	48.3		46.2	99.47	111	50 - 169	
Zinc	39.7		46.2	80.76	89	70 - 200	

Matrix Spike - Batch: 280-128612

Method: 6010B
Preparation: 3050B

Lab Sample ID:	280-31256-1	Analysis Batch:	280-129271	Instrument ID:	MT_025
Client Matrix:	Solid	Prep Batch:	280-128612	Lab File ID:	25A2072412.asc
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1.11 g
Analysis Date:	07/24/2012 1217	Units:	mg/Kg	Final Weight/Volume:	100 mL
Prep Date:	07/20/2012 1400				
Leach Date:	N/A				

Analyte	Sample Result/Qual	Spike Amount	Result	% Rec.	Limit	Qual
Aluminum	7480	185	9872	1294	50 - 200	4
Barium	68.5	185	241.9	94	52 - 159	
Iron	17900	92.3	18980	1131	70 - 200	4
Potassium	1320	4620	5948	100	56 - 172	
Sodium	190	4620	4808	100	78 - 111	

Client: Washington Closure Hanford

Job Number: 280-31256-1
Sdg Number: JP0398

Duplicate - Batch: 280-128612

Method: 6010B
Preparation: 3050B

Lab Sample ID:	280-31256-1	Analysis Batch:	280-128904	Instrument ID:	MT_025
Client Matrix:	Solid	Prep Batch:	280-128612	Lab File ID:	25b072012.asc
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1.07 g
Analysis Date:	07/20/2012 2249	Units:	mg/Kg	Final Weight/Volume:	100 mL
Prep Date:	07/20/2012 1400				
Leach Date:	N/A				

Analyte	Sample Result/Qual		Result	RPD	Limit	Qual
Antimony	0.38	U	0.36	NC	40	U
Arsenic	3.3		3.94	16	30	
Beryllium	0.23		0.230	0.4	30	
Boron	1.5	B	1.48	2	30	B
Cadmium	0.11	B	0.114	7	30	B
Calcium	7330		7754	6	30	
Chromium	12.1		12.44	3	40	
Cobalt	6.6		6.91	4	30	
Copper	16.6		16.69	0.5	30	
Lead	4.2		4.27	0.8	40	
Magnesium	4680		4812	3	30	
Manganese	318		318.8	0.3	40	
Molybdenum	0.28	B	0.25	NC	30	U
Nickel	11.6		12.19	5	30	
Selenium	0.86	U	0.865	NC	30	B
Silicon	635		743.6	16	40	
Silver	0.16	U	0.15	NC	30	U
Vanadium	48.3		47.25	2	30	
Zinc	39.7		39.45	0.7	40	

Duplicate - Batch: 280-128612

Method: 6010B
Preparation: 3050B

Lab Sample ID:	280-31256-1	Analysis Batch:	280-129271	Instrument ID:	MT_025
Client Matrix:	Solid	Prep Batch:	280-128612	Lab File ID:	25A2072412.asc
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1.07 g
Analysis Date:	07/24/2012 1215	Units:	mg/Kg	Final Weight/Volume:	100 mL
Prep Date:	07/20/2012 1400				
Leach Date:	N/A				

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Aluminum	7480	7821	4	40	
Barium	68.5	69.56	2	30	
Iron	17900	19000	6	40	
Potassium	1320	1385	5	40	
Sodium	190	195.7	3	30	

Client: Washington Closure Hanford

Job Number: 280-31256-1
Sdg Number: JP0398

Method Blank - Batch: 280-128698

Method: 7471A
Preparation: 7471A

Lab Sample ID:	MB 280-128698/1-A	Analysis Batch:	280-128912	Instrument ID:	MT_033
Client Matrix:	Solid	Prep Batch:	280-128698	Lab File ID:	120720ad.txt
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	0.6 g
Analysis Date:	07/20/2012 2113	Units:	mg/Kg	Final Weight/Volume:	50 mL
Prep Date:	07/20/2012 1500				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Mercury	0.0055	U	0.0055	0.017

Lab Control Sample - Batch: 280-128698

Method: 7471A
Preparation: 7471A

Lab Sample ID:	LCS 280-128698/2-A	Analysis Batch:	280-128912	Instrument ID:	MT_033
Client Matrix:	Solid	Prep Batch:	280-128698	Lab File ID:	120720ad.txt
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	0.6 g
Analysis Date:	07/20/2012 2116	Units:	mg/Kg	Final Weight/Volume:	50 mL
Prep Date:	07/20/2012 1500				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Mercury	0.417	0.395	95	87 - 111	

Matrix Spike - Batch: 280-128698

Method: 7471A
Preparation: 7471A

Lab Sample ID:	280-31256-1	Analysis Batch:	280-128912	Instrument ID:	MT_033
Client Matrix:	Solid	Prep Batch:	280-128698	Lab File ID:	120720ad.txt
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	0.64 g
Analysis Date:	07/20/2012 2127	Units:	mg/Kg	Final Weight/Volume:	50 mL
Prep Date:	07/20/2012 1500				
Leach Date:	N/A				

Analyte	Sample Result/Qual		Spike Amount	Result	% Rec.	Limit	Qual
Mercury	0.0069	U	0.400	0.378	94	87 - 111	

Client: Washington Closure Hanford

Job Number: 280-31256-1
Sdg Number: JP0398

Duplicate - Batch: 280-128698

Method: 7471A
Preparation: 7471A

Lab Sample ID:	280-31256-1	Analysis Batch:	280-128912	Instrument ID:	MT_033
Client Matrix:	Solid	Prep Batch:	280-128698	Lab File ID:	120720ad.txt
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	0.60 g
Analysis Date:	07/20/2012 2120	Units:	mg/Kg	Final Weight/Volume:	50 mL
Prep Date:	07/20/2012 1500				
Leach Date:	N/A				

Analyte	Sample Result/Qual		Result	RPD	Limit	Qual
Mercury	0.0069	U	0.0057	NC	20	U

Date: 1 August 2012
To: Washington Closure Hanford Inc. (technical representative)
From: ELR Consulting
Project: 100-D/DR Burial Grounds & Remaining Sites – Soil Full Protocol - Waste Site 100-D-14
Subject: Pesticide/PCB - Data Package No. JP0398-TAL

INTRODUCTION

This memo presents the results of data validation on Data Package No. JP0398 prepared by TestAmerica Laboratories (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
J1PVV9	7/17/12	Soil	C	See note 1
J1PVW0	7/17/12	Soil	C	See note 1
J1PVW1	7/17/12	Soil	C	See note 1
J1PVW2	7/17/12	Soil	C	See note 1
J1PVW3	7/17/12	Soil	C	See note 1
J1PVW4	7/17/12	Soil	C	See note 1
J1PVW5	7/17/12	Soil	C	See note 1
J1PVW6	7/17/12	Soil	C	See note 1
J1PVW7	7/17/12	Soil	C	See note 1
J1PVW8	7/17/12	Soil	C	See note 1
J1PVW9	7/17/12	Soil	C	See note 1
J1PVX0	7/17/12	Soil	C	See note 1
J1PVX1	7/17/12	Soil	C	See note 1

1 – Pesticides by 8081A & PCBs by 8082.

Data validation was conducted in accordance with the Washington Closure Hanford (WCH) validation statement of work and the 100 Area Remedial Action Sampling and Analysis Plan (DOE/RL-96-22, September 2009). 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: Analytes must be extracted within 14 days of the date of sample collection and analyzed within 40 days from the date of extraction. Holding times are not applicable for PCB analysis.

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 Blank

Method blank analyses are performed to determine the extent of laboratory contamination introduced through sampling, sample preparation or analysis. At least one method blank analysis must be conducted for every 20 samples. Method blanks should not contain target compounds at a concentration greater than required quantitation limit (RQL). If target compounds are present, sample results less than five times the blank concentration are qualified as undetected and flagged "U". If the sample result is less than five times the blank concentration and less than RQL, the result is qualified as undetected and elevated to the RQL.

All method blank results were acceptable.

Field Blanks

No field blanks were submitted for analysis.

Accuracy

Matrix Spike & 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 50% to 150%. If spike recoveries are outside control limits, detected sample results less than five times the spike concentration are qualified as

estimates and flagged "J". Non-detected sample results with spike recoveries outside control limits are qualified as estimates and flagged "UJ". Sample results greater than five times the spike concentration require no qualification.

Due to matrix spike duplicate recoveries outside QC limits, all endosulfan II (48%), endosulfan sulfate (26%) and methoxychlor (9%) results were qualified as estimates and flagged "J".

Due to the lack of a matrix spike, matrix spike duplicate and LCS analysis, all toxaphene results were qualified as estimates and flagged "J".

All other accuracy results were acceptable.

Surrogate Recovery

The analysis of surrogate compounds provides a measure of performance for individual samples. Matrix-specific surrogate compound recovery control windows have been established by the laboratory. When a surrogate compound recovery is outside the control window, all positively identified target compounds associated with the unacceptable surrogate recoveries are qualified as estimates and flagged "J". Non-detected compounds with surrogate recoveries less than the lower control limit are qualified as having an estimated detection limit and flagged "UJ". Non-detected compounds with surrogate recoveries above the upper control limit require no qualification.

All surrogate results were acceptable.

Precision

Matrix Spike/Matrix Spike Duplicate Samples

Matrix spike/matrix spike duplicate results provide matrix-specific information on the precision of the method for specific target compound classes. Precision is expressed as the relative percent difference (RPD) between the recoveries of duplicate matrix spike analyses performed on a sample. For soil samples, results must be within RPD limits of plus/minus 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.

Due to RPDs outside QC limits, all endosulfan II (72%), endosulfan sulfate (117%), endrin aldehyde (53%), endrin ketone (35%) and methoxychlor (161%) results were qualified as estimates and flagged "J".

Due to the lack of a matrix spike and matrix spike duplicate analysis, all toxaphene results were qualified as estimates and flagged "J".

Field Duplicate Samples

One set field duplicates (J1PVW5/J1PVX1) were submitted for analysis. Laboratory duplicates are compared using the same criteria as for laboratory results. All field duplicate results are acceptable.

Analytical Detection Levels

Reported analytical detection levels are compared against the 100 Area RQLs to ensure that laboratory detection levels meet the required criteria. All results met the RQL.

Completeness

Data Package No. JP0398 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 duplicate recoveries outside QC limits, all endosulfan II (48%), endosulfan sulfate (26%) and methoxychlor (9%) results were qualified as estimates and flagged "J".
- Due to the lack of a matrix spike, matrix spike duplicate and LCS analysis, all toxaphene results were qualified as estimates and flagged "J".
- Due to RPDs outside QC limits, all endosulfan II (72%), endosulfan sulfate (117%), endrin aldehyde (53%), endrin ketone (35%) and methoxychlor (161%) 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-96-22, Rev. 5, *100 Area Remedial Action Sampling and Analysis Plan*, U.S. Department of Energy, September 2009.

Appendix 1

Glossary of Data Reporting Qualifiers

Qualifiers which may be applied by data validators in compliance with the procedures herein 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 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 (i.e., usable for decision-making purposes).

Appendix 2

Summary of Data Qualification

PESTICIDE/PCB DATA QUALIFICATION SUMMARY*

SDG: JP0398	**REVIEWER: ELR**	**Project: 100-D-14**	**PAGE 1 OF 1**
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Endosulfan II Endosulfan sulfate Methoxychlor	J	All	MSD recovery
Endosulfan II Endosulfan sulfate Endrin aldehyde Endrin ketone Methoxychlor	J	All	RPD
Toxaphene	J	All	No MS, MSD or LCS 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

Client: Washington Closure Hanford

Job Number: 280-31256-1
Sdg Number: JP0398

Client Sample ID: J1PVV9

Lab Sample ID: 280-31256-1
Client Matrix: Solid

% Moisture: 2.4

Date Sampled: 07/17/2012 1325
Date Received: 07/19/2012 0900

8081A Organochlorine Pesticides (GC)

Analysis Method: 8081A
Prep Method: 3550C
Dilution: 1.0
Analysis Date: 07/24/2012 1819
Prep Date: 07/19/2012 2203

Analysis Batch: 280-129090
Prep Batch: 280-128592

Instrument ID: SGC_P1
Initial Weight/Volume: 31.0 g
Final Weight/Volume: 10000 uL
Injection Volume: 1 uL
Result Type: PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
4,4'-DDD		0.54	U	0.54	1.7
4,4'-DDE		0.24	U	0.24	1.7
4,4'-DDT		0.59	U	0.59	1.7
Aldrin		0.25	U	0.25	1.6
alpha-BHC		0.21	U	0.21	1.6
beta-BHC		0.66	U	0.66	1.6
delta-BHC		0.40	U	0.40	1.6
gamma-BHC (Lindane)		0.46	U	0.46	1.6
Heptachlor		0.21	U	0.21	1.6
Heptachlor epoxide		0.42	U	0.42	1.6
Endosulfan I		0.17	U	0.17	1.6
Endosulfan II		0.28	U J	0.28	1.7
Endosulfan sulfate		0.27	U J	0.27	1.7
Endrin		0.30	U	0.30	1.7
Endrin aldehyde		0.17	U J	0.17	1.7
Endrin ketone		0.48	U J	0.48	1.7
gamma-Chlordane		0.26	U	0.26	1.7
Methoxychlor		0.45	U J	0.45	3.3
alpha-Chlordane		0.32	U	0.32	1.7
Dieldrin		0.21	U	0.21	1.7
Toxaphene		16	U J	16	160

Surrogate	%Rec	Qualifier	Acceptance Limits
Tetrachloro-m-xylene	102		59 - 115
Decachlorobiphenyl	107		63 - 124

7/31/12

Client: Washington Closure Hanford

Job Number: 280-31256-1
Sdg Number: JP0398

Client Sample ID: J1PVW0

Lab Sample ID: 280-31256-2
Client Matrix: Solid

% Moisture: 3.8

Date Sampled: 07/17/2012 1320
Date Received: 07/19/2012 0900

8081A Organochlorine Pesticides (GC)

Analysis Method: 8081A
Prep Method: 3550C
Dilution: 1.0
Analysis Date: 07/24/2012 1836
Prep Date: 07/19/2012 2203

Analysis Batch: 280-129090
Prep Batch: 280-128592

Instrument ID: SGC_P1
Initial Weight/Volume: 30.4 g
Final Weight/Volume: 10000 uL
Injection Volume: 1 uL
Result Type: PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
4,4'-DDD		0.56	U	0.56	1.7
4,4'-DDE		0.24	U	0.24	1.7
4,4'-DDT		0.61	U	0.61	1.7
Aldrin		0.26	U	0.26	1.7
alpha-BHC		0.22	U	0.22	1.7
beta-BHC		0.68	U	0.68	1.7
delta-BHC		0.41	U	0.41	1.7
gamma-BHC (Lindane)		0.48	U	0.48	1.7
Heptachlor		0.22	U	0.22	1.7
Heptachlor epoxide		0.44	U	0.44	1.7
Endosulfan I		0.18	U	0.18	1.7
Endosulfan II		0.29	U J	0.29	1.7
Endosulfan sulfate		0.28	U J	0.28	1.7
Endrin		0.31	U	0.31	1.7
Endrin aldehyde		0.18	U J	0.18	1.7
Endrin ketone		0.50	U J	0.50	1.7
gamma-Chlordane		0.27	U	0.27	1.7
Methoxychlor		0.46	U J	0.46	3.4
alpha-Chlordane		0.33	U	0.33	1.7
Dieldrin		0.22	U	0.22	1.7
Toxaphene		16	U J	16	170

Surrogate	%Rec	Qualifier	Acceptance Limits
Tetrachloro-m-xylene	109		59 - 115
Decachlorobiphenyl	113		63 - 124

7/31/12

Client: Washington Closure Hanford

Job Number: 280-31256-1
Sdg Number: JP0398

Client Sample ID: J1PVW1

Lab Sample ID: 280-31256-3
Client Matrix: Solid

% Moisture: 2.2

Date Sampled: 07/17/2012 1315
Date Received: 07/19/2012 0900

8081A Organochlorine Pesticides (GC)

Analysis Method:	8081A	Analysis Batch:	280-129090	Instrument ID:	SGC_P1
Prep Method:	3550C	Prep Batch:	280-128592	Initial Weight/Volume:	31.7 g
Dilution:	1.0			Final Weight/Volume:	10000 uL
Analysis Date:	07/24/2012 1854			Injection Volume:	1 uL
Prep Date:	07/19/2012 2203			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
4,4'-DDD		0.53	U	0.53	1.6
4,4'-DDE		0.23	U	0.23	1.6
4,4'-DDT		0.57	U	0.57	1.6
Aldrin		0.24	U	0.24	1.6
alpha-BHC		0.21	U	0.21	1.6
beta-BHC		0.64	U	0.64	1.6
delta-BHC		0.39	U	0.39	1.6
gamma-BHC (Lindane)		0.45	U	0.45	1.6
Heptachlor		0.21	U	0.21	1.6
Heptachlor epoxide		0.41	U	0.41	1.6
Endosulfan I		0.17	U	0.17	1.6
Endosulfan II		0.28	U J	0.28	1.6
Endosulfan sulfate		0.27	U J	0.27	1.6
Endrin		0.30	U	0.30	1.6
Endrin aldehyde		0.17	U J	0.17	1.6
Endrin ketone		0.47	U J	0.47	1.6
gamma-Chlordane		0.26	U	0.26	1.6
Methoxychlor		0.44	U J	0.44	3.2
alpha-Chlordane		0.31	U	0.31	1.6
Dieldrin		0.20	U	0.20	1.6
Toxaphene		15	U J	15	160

Surrogate	%Rec	Qualifier	Acceptance Limits
Tetrachloro-m-xylene	108		59 - 115
Decachlorobiphenyl	116		63 - 124

7/31/12

13

Client: Washington Closure Hanford

Job Number: 280-31256-1
Sdg Number: JP0398

Client Sample ID: J1PVW2

Lab Sample ID: 280-31256-4
Client Matrix: Solid

% Moisture: 2.9

Date Sampled: 07/17/2012 1310
Date Received: 07/19/2012 0900

8081A Organochlorine Pesticides (GC)

Analysis Method:	8081A	Analysis Batch:	280-129090	Instrument ID:	SGC_P1
Prep Method:	3550C	Prep Batch:	280-128592	Initial Weight/Volume:	29.8 g
Dilution:	1.0			Final Weight/Volume:	10000 uL
Analysis Date:	07/24/2012 1911			Injection Volume:	1 uL
Prep Date:	07/19/2012 2203			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
4,4'-DDD		0.57	U	0.57	1.8
4,4'-DDE		0.25	U	0.25	1.8
4,4'-DDT		0.61	U	0.61	1.8
Aldrin		0.26	U	0.26	1.7
alpha-BHC		0.22	U	0.22	1.7
beta-BHC		0.69	U	0.69	1.7
delta-BHC		0.42	U	0.42	1.7
gamma-BHC (Lindane)		0.48	U	0.48	1.7
Heptachlor		0.22	U	0.22	1.7
Heptachlor epoxide		0.44	U	0.44	1.7
Endosulfan I		0.18	U	0.18	1.7
Endosulfan II		0.30	U J	0.30	1.8
Endosulfan sulfate		0.29	U J	0.29	1.8
Endrin		0.32	U	0.32	1.8
Endrin aldehyde		0.18	U J	0.18	1.8
Endrin ketone		0.51	U J	0.51	1.8
gamma-Chlordane		0.28	U	0.28	1.8
Methoxychlor		0.47	U J	0.47	3.4
alpha-Chlordane		0.33	U	0.33	1.8
Dieldrin		0.22	U	0.22	1.8
Toxaphene		16	U J	16	170

Surrogate	%Rec	Qualifier	Acceptance Limits
Tetrachloro-m-xylene	98		59 - 115
Decachlorobiphenyl	108		63 - 124

7/31/12

Client: Washington Closure Hanford

Job Number: 280-31256-1
Sdg Number: JP0398

Client Sample ID: **J1PVW3**

Lab Sample ID: 280-31256-5
Client Matrix: Solid

% Moisture: 3.9

Date Sampled: 07/17/2012 1305
Date Received: 07/19/2012 0900

8081A Organochlorine Pesticides (GC)

Analysis Method: 8081A
Prep Method: 3550C
Dilution: 1.0
Analysis Date: 07/24/2012 1929
Prep Date: 07/19/2012 2203

Analysis Batch: 280-129090
Prep Batch: 280-128592

Instrument ID: SGC_P1
Initial Weight/Volume: 30.0 g
Final Weight/Volume: 10000 uL
Injection Volume: 1 uL
Result Type: PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
4,4'-DDD		0.57	U	0.57	1.8
4,4'-DDE		0.25	U	0.25	1.8
4,4'-DDT		0.61	U	0.61	1.8
Aldrin		0.26	U	0.26	1.7
alpha-BHC		0.22	U	0.22	1.7
beta-BHC		0.69	U	0.69	1.7
delta-BHC		0.42	U	0.42	1.7
gamma-BHC (Lindane)		0.48	U	0.48	1.7
Heptachlor		0.22	U	0.22	1.7
Heptachlor epoxide		0.44	U	0.44	1.7
Endosulfan I		0.18	U	0.18	1.7
Endosulfan II		0.30	U J	0.30	1.8
Endosulfan sulfate		0.29	U J	0.29	1.8
Endrin		0.32	U	0.32	1.8
Endrin aldehyde		0.18	U J	0.18	1.8
Endrin ketone		0.51	U J	0.51	1.8
gamma-Chlordane		0.28	U	0.28	1.8
Methoxychlor		0.47	U J	0.47	3.4
alpha-Chlordane		0.34	U	0.34	1.8
Dieldrin		0.22	U	0.22	1.8
Toxaphene		16	U J	16	170

Surrogate	%Rec	Qualifier	Acceptance Limits
Tetrachloro-m-xylene	104		59 - 115
Decachlorobiphenyl	109		63 - 124

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Client: Washington Closure Hanford

Job Number: 280-31256-1
Sdg Number: JP0398

Client Sample ID: J1PVW4

Lab Sample ID: 280-31256-6
Client Matrix: Solid

% Moisture: 1.4

Date Sampled: 07/17/2012 1300
Date Received: 07/19/2012 0900

8081A Organochlorine Pesticides (GC)

Analysis Method: 8081A
Prep Method: 3550C
Dilution: 1.0
Analysis Date: 07/24/2012 2040
Prep Date: 07/19/2012 2203

Analysis Batch: 280-129090
Prep Batch: 280-128592

Instrument ID: SGC_P1
Initial Weight/Volume: 31.8 g
Final Weight/Volume: 10000 uL
Injection Volume: 1 uL
Result Type: PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
4,4'-DDD		0.52	U	0.52	1.6
4,4'-DDE		0.23	U	0.23	1.6
4,4'-DDT		0.56	U	0.56	1.6
Aldrin		0.24	U	0.24	1.6
alpha-BHC		0.20	U	0.20	1.6
beta-BHC		0.64	U	0.64	1.6
delta-BHC		0.38	U	0.38	1.6
gamma-BHC (Lindane)		0.44	U	0.44	1.6
Heptachlor		0.20	U	0.20	1.6
Heptachlor epoxide		0.41	U	0.41	1.6
Endosulfan I		0.17	U	0.17	1.6
Endosulfan II		0.27	U N J	0.27	1.6
Endosulfan sulfate		0.26	U N J	0.26	1.6
Endrin		0.29	U	0.29	1.6
Endrin aldehyde		0.16	U J	0.16	1.6
Endrin ketone		0.47	U J	0.47	1.6
gamma-Chlordane		0.25	U	0.25	1.6
Methoxychlor		0.43	U N J	0.43	3.2
alpha-Chlordane		0.31	U	0.31	1.6
Dieldrin		0.20	U	0.20	1.6
Toxaphene		15	U J	15	160

Surrogate	%Rec	Qualifier	Acceptance Limits
Tetrachloro-m-xylene	97		59 - 115
Decachlorobiphenyl	109		63 - 124

7/31/12

Client: Washington Closure Hanford

Job Number: 280-31256-1
Sdg Number: JP0398

Client Sample ID: J1PVW5

Lab Sample ID: 280-31256-7
Client Matrix: Solid

% Moisture: 3.0

Date Sampled: 07/17/2012 1240
Date Received: 07/19/2012 0900

8081A Organochlorine Pesticides (GC)

Analysis Method: 8081A
Prep Method: 3550C
Dilution: 1.0
Analysis Date: 07/24/2012 2132
Prep Date: 07/19/2012 2203

Analysis Batch: 280-129090
Prep Batch: 280-128592

Instrument ID: SGC_P1
Initial Weight/Volume: 31.2 g
Final Weight/Volume: 10000 uL
Injection Volume: 1 uL
Result Type: PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
4,4'-DDD		0.54	U	0.54	1.7
4,4'-DDE		0.24	U	0.24	1.7
4,4'-DDT		0.58	U	0.58	1.7
Aldrin		0.25	U	0.25	1.6
alpha-BHC		0.21	U	0.21	1.6
beta-BHC		0.66	U	0.66	1.6
delta-BHC		0.40	U	0.40	1.6
gamma-BHC (Lindane)		0.46	U	0.46	1.6
Heptachlor		0.21	U	0.21	1.6
Heptachlor epoxide		0.42	U	0.42	1.6
Endosulfan I		0.17	U	0.17	1.6
Endosulfan II		0.28	U J	0.28	1.7
Endosulfan sulfate		0.27	U J	0.27	1.7
Endrin		0.30	U	0.30	1.7
Endrin aldehyde		0.17	U J	0.17	1.7
Endrin ketone		0.48	U J	0.48	1.7
gamma-Chlordane		0.26	U	0.26	1.7
Methoxychlor		0.45	U J	0.45	3.3
alpha-Chlordane		0.32	U	0.32	1.7
Dieldrin		0.21	U	0.21	1.7
Toxaphene		16	U J	16	160

Surrogate	%Rec	Qualifier	Acceptance Limits
Tetrachloro-m-xylene	101		59 - 115
Decachlorobiphenyl	108		63 - 124

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Client: Washington Closure Hanford

Job Number: 280-31256-1
Sdg Number: JP0398

Client Sample ID: **J1PVW6**

Lab Sample ID: 280-31256-8
Client Matrix: Solid

% Moisture: 0.7

Date Sampled: 07/17/2012 1235
Date Received: 07/19/2012 0900

8081A Organochlorine Pesticides (GC)

Analysis Method:	8081A	Analysis Batch:	280-129090	Instrument ID:	SGC_P1
Prep Method:	3550C	Prep Batch:	280-128592	Initial Weight/Volume:	30.2 g
Dilution:	1.0			Final Weight/Volume:	10000 uL
Analysis Date:	07/24/2012 2150			Injection Volume:	1 uL
Prep Date:	07/19/2012 2203			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
4,4'-DDD		0.55	U	0.55	1.7
4,4'-DDE		0.24	U	0.24	1.7
4,4'-DDT		0.59	U	0.59	1.7
Aldrin		0.25	U	0.25	1.7
alpha-BHC		0.21	U	0.21	1.7
beta-BHC		0.66	U	0.66	1.7
delta-BHC		0.40	U	0.40	1.7
gamma-BHC (Lindane)		0.46	U	0.46	1.7
Heptachlor		0.21	U	0.21	1.7
Heptachlor epoxide		0.43	U	0.43	1.7
Endosulfan I		0.18	U	0.18	1.7
Endosulfan II		0.29	U J	0.29	1.7
Endosulfan sulfate		0.28	U J	0.28	1.7
Endrin		0.31	U	0.31	1.7
Endrin aldehyde		0.17	U J	0.17	1.7
Endrin ketone		0.49	U J	0.49	1.7
gamma-Chlordane		0.27	U	0.27	1.7
Methoxychlor		0.45	U J	0.45	3.3
alpha-Chlordane		0.32	U	0.32	1.7
Dieldrin		0.21	U	0.21	1.7
Toxaphene		16	U J	16	170

Surrogate	%Rec	Qualifier	Acceptance Limits
Tetrachloro-m-xylene	103		59 - 115
Decachlorobiphenyl	106		63 - 124

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Client: Washington Closure Hanford

Job Number: 280-31256-1
Sdg Number: JP0398

Client Sample ID: **J1PVW7**

Lab Sample ID: 280-31256-9
Client Matrix: Solid

% Moisture: 3.2

Date Sampled: 07/17/2012 1230
Date Received: 07/19/2012 0900

8081A Organochlorine Pesticides (GC)

Analysis Method:	8081A	Analysis Batch:	280-129090	Instrument ID:	SGC_P1
Prep Method:	3550C	Prep Batch:	280-128592	Initial Weight/Volume:	30.1 g
Dilution:	1.0			Final Weight/Volume:	10000 uL
Analysis Date:	07/24/2012 2207			Injection Volume:	1 uL
Prep Date:	07/19/2012 2203			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
4,4'-DDD		0.56	U	0.56	1.8
4,4'-DDE		0.25	U	0.25	1.8
4,4'-DDT		0.61	U	0.61	1.8
Aldrin		0.26	U	0.26	1.7
alpha-BHC		0.22	U	0.22	1.7
beta-BHC		0.68	U	0.68	1.7
delta-BHC		0.41	U	0.41	1.7
gamma-BHC (Lindane)		0.48	U	0.48	1.7
Heptachlor		0.22	U	0.22	1.7
Heptachlor epoxide		0.44	U	0.44	1.7
Endosulfan I		0.18	U	0.18	1.7
Endosulfan II		0.30	U J	0.30	1.8
Endosulfan sulfate		0.28	U J	0.28	1.8
Endrin		0.32	U	0.32	1.8
Endrin aldehyde		0.18	U J	0.18	1.8
Endrin ketone		0.50	U J	0.50	1.8
gamma-Chlordane		0.27	U	0.27	1.8
Methoxychlor		0.46	U J	0.46	3.4
alpha-Chlordane		0.33	U	0.33	1.8
Dieldrin		0.22	U	0.22	1.8
Toxaphene		16	U J	16	170

Surrogate	%Rec	Qualifier	Acceptance Limits
Tetrachloro-m-xylene	101		59 - 115
Decachlorobiphenyl	106		63 - 124

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Client: Washington Closure Hanford

Job Number: 280-31256-1
Sdg Number: JP0398

Client Sample ID: **J1PVW8**

Lab Sample ID: 280-31256-10
Client Matrix: Solid

% Moisture: 1.4

Date Sampled: 07/17/2012 1225
Date Received: 07/19/2012 0900

8081A Organochlorine Pesticides (GC)

Analysis Method:	8081A	Analysis Batch:	280-129090	Instrument ID:	SGC_P1
Prep Method:	3550C	Prep Batch:	280-128592	Initial Weight/Volume:	31.4 g
Dilution:	1.0			Final Weight/Volume:	10000 uL
Analysis Date:	07/24/2012 2225			Injection Volume:	1 uL
Prep Date:	07/19/2012 2203			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
4,4'-DDD		0.53	U	0.53	1.6
4,4'-DDE		0.23	U	0.23	1.6
4,4'-DDT		0.57	U	0.57	1.6
Aldrin		0.24	U	0.24	1.6
alpha-BHC		0.21	U	0.21	1.6
beta-BHC		0.64	U	0.64	1.6
delta-BHC		0.39	U	0.39	1.6
gamma-BHC (Lindane)		0.45	U	0.45	1.6
Heptachlor		0.21	U	0.21	1.6
Heptachlor epoxide		0.41	U	0.41	1.6
Endosulfan I		0.17	U	0.17	1.6
Endosulfan II		0.28	U J	0.28	1.6
Endosulfan sulfate		0.27	U J	0.27	1.6
Endrin		0.30	U	0.30	1.6
Endrin aldehyde		0.17	U J	0.17	1.6
Endrin ketone		0.47	U J	0.47	1.6
gamma-Chlordane		0.26	U	0.26	1.6
Methoxychlor		0.44	U J	0.44	3.2
alpha-Chlordane		0.31	U	0.31	1.6
Dieldrin		0.20	U	0.20	1.6
Toxaphene		15	U J	15	160

Surrogate	%Rec	Qualifier	Acceptance Limits
Tetrachloro-m-xylene	107		59 - 115
Decachlorobiphenyl	108		63 - 124

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Client: Washington Closure Hanford

Job Number: 280-31256-1
Sdg Number: JP0398

Client Sample ID: **J1PVW9**

Lab Sample ID: 280-31256-11
Client Matrix: Solid

% Moisture: 2.4

Date Sampled: 07/17/2012 1220
Date Received: 07/19/2012 0900

8081A Organochlorine Pesticides (GC)

Analysis Method: 8081A
Prep Method: 3550C
Dilution: 1.0
Analysis Date: 07/24/2012 2242
Prep Date: 07/19/2012 2203

Analysis Batch: 280-129090
Prep Batch: 280-128592

Instrument ID: SGC_P1
Initial Weight/Volume: 30.4 g
Final Weight/Volume: 10000 uL
Injection Volume: 1 uL
Result Type: PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
4,4'-DDD		0.55	U	0.55	1.7
4,4'-DDE		0.24	U	0.24	1.7
4,4'-DDT		0.60	U	0.60	1.7
Aldrin		0.25	U	0.25	1.7
alpha-BHC		0.22	U	0.22	1.7
beta-BHC		0.67	U	0.67	1.7
delta-BHC		0.41	U	0.41	1.7
gamma-BHC (Lindane)		0.47	U	0.47	1.7
Heptachlor		0.22	U	0.22	1.7
Heptachlor epoxide		0.43	U	0.43	1.7
Endosulfan I		0.18	U	0.18	1.7
Endosulfan II		0.29	U J	0.29	1.7
Endosulfan sulfate		0.28	U J	0.28	1.7
Endrin		0.31	U	0.31	1.7
Endrin aldehyde		0.17	U J	0.17	1.7
Endrin ketone		0.49	U J	0.49	1.7
gamma-Chlordane		0.27	U	0.27	1.7
Methoxychlor		0.45	U J	0.45	3.3
alpha-Chlordane		0.33	U	0.33	1.7
Dieldrin		0.21	U	0.21	1.7
Toxaphene		16	U J	16	170

Surrogate	%Rec	Qualifier	Acceptance Limits
Tetrachloro-m-xylene	98		59 - 115
Decachlorobiphenyl	105		63 - 124

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Client: Washington Closure Hanford

Job Number: 280-31256-1
Sdg Number: JP0398

Client Sample ID: J1PVX0
Lab Sample ID: 280-31256-12
Client Matrix: Solid

% Moisture: 0.9

Date Sampled: 07/17/2012 1215
Date Received: 07/19/2012 0900

8081A Organochlorine Pesticides (GC)

Analysis Method: 8081A
Prep Method: 3550C
Dilution: 1.0
Analysis Date: 07/24/2012 2300
Prep Date: 07/19/2012 2203

Analysis Batch: 280-129090
Prep Batch: 280-128592

Instrument ID: SGC_P1
Initial Weight/Volume: 30.1 g
Final Weight/Volume: 10000 uL
Injection Volume: 1 uL
Result Type: PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
4,4'-DDD		0.55	U	0.55	1.7
4,4'-DDE		0.24	U	0.24	1.7
4,4'-DDT		0.59	U	0.59	1.7
Aldrin		0.25	U	0.25	1.7
alpha-BHC		0.22	U	0.22	1.7
beta-BHC		0.67	U	0.67	1.7
delta-BHC		0.40	U	0.40	1.7
gamma-BHC (Lindane)		0.47	U	0.47	1.7
Heptachlor		0.22	U	0.22	1.7
Heptachlor epoxide		0.43	U	0.43	1.7
Endosulfan I		0.18	U	0.18	1.7
Endosulfan II		0.29	U J	0.29	1.7
Endosulfan sulfate		0.28	U J	0.28	1.7
Endrin		0.31	U	0.31	1.7
Endrin aldehyde		0.17	U J	0.17	1.7
Endrin ketone		0.49	U J	0.49	1.7
gamma-Chlordane		0.27	U	0.27	1.7
Methoxychlor		0.45	U J	0.45	3.3
alpha-Chlordane		0.32	U	0.32	1.7
Dieldrin		0.21	U	0.21	1.7
Toxaphene		16	U J	16	170

Surrogate	%Rec	Qualifier	Acceptance Limits
Tetrachloro-m-xylene	104		59 - 115
Decachlorobiphenyl	106		63 - 124

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Client: Washington Closure Hanford

Job Number: 280-31256-1
Sdg Number: JP0398

Client Sample ID: J1PVX1

Lab Sample ID: 280-31256-13
Client Matrix: Solid

% Moisture: 3.5

Date Sampled: 07/17/2012 1240
Date Received: 07/19/2012 0900

8081A Organochlorine Pesticides (GC)

Analysis Method: 8081A
Prep Method: 3550C
Dilution: 1.0
Analysis Date: 07/24/2012 2317
Prep Date: 07/19/2012 2203

Analysis Batch: 280-129090
Prep Batch: 280-128592

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Instrument ID: SGC_P1
Initial Weight/Volume: 30.8 g
Final Weight/Volume: 10000 uL
Injection Volume: 1 uL
Result Type: PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
4,4'-DDD		0.55	U	0.55	1.7
4,4'-DDE		0.24	U	0.24	1.7
4,4'-DDT		0.60	U	0.60	1.7
Aldrin		0.25	U	0.25	1.7
alpha-BHC		0.22	U	0.22	1.7
beta-BHC		0.67	U	0.67	1.7
delta-BHC		0.40	U	0.40	1.7
gamma-BHC (Lindane)		0.47	U	0.47	1.7
Heptachlor		0.22	U	0.22	1.7
Heptachlor epoxide		0.43	U	0.43	1.7
Endosulfan I		0.18	U	0.18	1.7
Endosulfan II		0.29	U J	0.29	1.7
Endosulfan sulfate		0.28	U J	0.28	1.7
Endrin		0.31	U	0.31	1.7
Endrin aldehyde		0.17	U J	0.17	1.7
Endrin ketone		0.49	U J	0.49	1.7
gamma-Chlordane		0.27	U	0.27	1.7
Methoxychlor		0.45	U J	0.45	3.3
alpha-Chlordane		0.33	U	0.33	1.7
Dieldrin		0.21	U	0.21	1.7
Toxaphene		16	U J	16	170

Surrogate	%Rec	Qualifier	Acceptance Limits
Tetrachloro-m-xylene	99		59 - 115
Decachlorobiphenyl	106		63 - 124

Client: Washington Closure Hanford

Job Number: 280-31256-1
Sdg Number: JP0398

Client Sample ID: J1PVV9

Lab Sample ID: 280-31256-1
Client Matrix: Solid

% Moisture: 2.4

Date Sampled: 07/17/2012 1325
Date Received: 07/19/2012 0900

8082 Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analysis Method:	8082	Analysis Batch:	280-128850	Instrument ID:	GCS_W
Prep Method:	3550C	Prep Batch:	280-128580	Initial Weight/Volume:	30.2 g
Dilution:	1.0			Final Weight/Volume:	5000 uL
Analysis Date:	07/21/2012 1005			Injection Volume:	1 uL
Prep Date:	07/19/2012 2100			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Aroclor 1016		2.8	U	2.8	10
Aroclor 1221		8.2	U	8.2	17
Aroclor 1232		2.0	U	2.0	10
Aroclor 1242		4.7	U	4.7	10
Aroclor 1248		4.7	U	4.7	10
Aroclor 1254		2.6	U	2.6	10
Aroclor 1260		2.6	U	2.6	10

Surrogate	%Rec	Qualifier	Acceptance Limits
Decachlorobiphenyl	110		59 - 130
Tetrachloro-m-xylene	96		53 - 128

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Client: Washington Closure Hanford

Job Number: 280-31256-1
Sdg Number: JP0398

Client Sample ID: **J1PVW0**

Lab Sample ID: 280-31256-2
Client Matrix: Solid

% Moisture: 3.8

Date Sampled: 07/17/2012 1320
Date Received: 07/19/2012 0900

8082 Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analysis Method:	8082	Analysis Batch:	280-128850	Instrument ID:	GCS_W
Prep Method:	3550C	Prep Batch:	280-128580	Initial Weight/Volume:	30.9 g
Dilution:	1.0			Final Weight/Volume:	5000 uL
Analysis Date:	07/21/2012 1028			Injection Volume:	1 uL
Prep Date:	07/19/2012 2100			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Aroclor 1016		2.8	U	2.8	10
Aroclor 1221		8.1	U	8.1	17
Aroclor 1232		2.0	U	2.0	10
Aroclor 1242		4.7	U	4.7	10
Aroclor 1248		4.7	U	4.7	10
Aroclor 1254		2.6	U	2.6	10
Aroclor 1260		2.6	U	2.6	10

Surrogate	%Rec	Qualifier	Acceptance Limits
Decachlorobiphenyl	110		59 - 130
Tetrachloro-m-xylene	98		53 - 128

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Client: Washington Closure Hanford

Job Number: 280-31256-1
Sdg Number: JP0398

Client Sample ID: **J1PVW1**

Lab Sample ID: 280-31256-3
Client Matrix: Solid % Moisture: 2.2

Date Sampled: 07/17/2012 1315
Date Received: 07/19/2012 0900

8082 Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analysis Method:	8082	Analysis Batch:	280-128850	Instrument ID:	GCS_W
Prep Method:	3550C	Prep Batch:	280-128580	Initial Weight/Volume:	31.6 g
Dilution:	1.0			Final Weight/Volume:	5000 uL
Analysis Date:	07/21/2012 1051			Injection Volume:	1 uL
Prep Date:	07/19/2012 2100			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Aroclor 1016		2.7	U	2.7	9.7
Aroclor 1221		7.8	U	7.8	16
Aroclor 1232		1.9	U	1.9	9.7
Aroclor 1242		4.5	U	4.5	9.7
Aroclor 1248		4.5	U	4.5	9.7
Aroclor 1254		2.5	U	2.5	9.7
Aroclor 1260		2.5	U	2.5	9.7

Surrogate	%Rec	Qualifier	Acceptance Limits
Decachlorobiphenyl	112		59 - 130
Tetrachloro-m-xylene	93		53 - 128

7/31/12

Client: Washington Closure Hanford

Job Number: 280-31256-1
Sdg Number: JP0398

Client Sample ID: **J1PVW2**

Lab Sample ID: 280-31256-4
Client Matrix: Solid

% Moisture: 2.9

Date Sampled: 07/17/2012 1310
Date Received: 07/19/2012 0900

8082 Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analysis Method:	8082	Analysis Batch:	280-128850	Instrument ID:	GCS_W
Prep Method:	3550C	Prep Batch:	280-128580	Initial Weight/Volume:	30.2 g
Dilution:	1.0			Final Weight/Volume:	5000 uL
Analysis Date:	07/21/2012 1114			Injection Volume:	1 uL
Prep Date:	07/19/2012 2100			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Aroclor 1016		2.8	U	2.8	10
Aroclor 1221		8.2	U	8.2	17
Aroclor 1232		2.0	U	2.0	10
Aroclor 1242		4.8	U	4.8	10
Aroclor 1248		4.8	U	4.8	10
Aroclor 1254		2.7	U	2.7	10
Aroclor 1260		2.7	U	2.7	10

Surrogate	%Rec	Qualifier	Acceptance Limits
Decachlorobiphenyl	110		59 - 130
Tetrachloro-m-xylene	96		53 - 128

7/31/12

Client: Washington Closure Hanford

Job Number: 280-31256-1
Sdg Number: JP0398

Client Sample ID: J1PVW3

Lab Sample ID: 280-31256-5
Client Matrix: Solid % Moisture: 3.9

Date Sampled: 07/17/2012 1305
Date Received: 07/19/2012 0900

8082 Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analysis Method:	8082	Analysis Batch:	280-128850	Instrument ID:	GCS_W
Prep Method:	3550C	Prep Batch:	280-128580	Initial Weight/Volume:	30.3 g
Dilution:	1.0			Final Weight/Volume:	5000 uL
Analysis Date:	07/21/2012 1137			Injection Volume:	1 uL
Prep Date:	07/19/2012 2100			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Aroclor 1016		2.9	U	2.9	10
Aroclor 1221		8.3	U	8.3	17
Aroclor 1232		2.1	U	2.1	10
Aroclor 1242		4.8	U	4.8	10
Aroclor 1248		4.8	U	4.8	10
Aroclor 1254		2.7	U	2.7	10
Aroclor 1260		2.7	U	2.7	10

Surrogate	%Rec	Qualifier	Acceptance Limits
Decachlorobiphenyl	112		59 - 130
Tetrachloro-m-xylene	91		53 - 128

7/31/12

Client: Washington Closure Hanford

Job Number: 280-31256-1
Sdg Number: JP0398

Client Sample ID: **J1PVW4**

Lab Sample ID: 280-31256-6
Client Matrix: Solid

% Moisture: 1.4

Date Sampled: 07/17/2012 1300
Date Received: 07/19/2012 0900

8082 Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analysis Method:	8082	Analysis Batch:	280-128850	Instrument ID:	GCS_W
Prep Method:	3550C	Prep Batch:	280-128580	Initial Weight/Volume:	30.9 g
Dilution:	1.0			Final Weight/Volume:	5000 uL
Analysis Date:	07/21/2012 1247			Injection Volume:	1 uL
Prep Date:	07/19/2012 2100			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Aroclor 1016		2.7	U	2.7	9.8
Aroclor 1221		7.9	U	7.9	16
Aroclor 1232		2.0	U	2.0	9.8
Aroclor 1242		4.6	U	4.6	9.8
Aroclor 1248		4.6	U	4.6	9.8
Aroclor 1254		2.6	U	2.6	9.8
Aroclor 1260		2.6	U	2.6	9.8

Surrogate	%Rec	Qualifier	Acceptance Limits
Decachlorobiphenyl	113		59 - 130
Tetrachloro-m-xylene	94		53 - 128

7/31/12

Client: Washington Closure Hanford

Job Number: 280-31256-1
Sdg Number: JP0398

Client Sample ID: **J1PVW5**

Lab Sample ID: 280-31256-7
Client Matrix: Solid

% Moisture: 3.0

Date Sampled: 07/17/2012 1240
Date Received: 07/19/2012 0900

8082 Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analysis Method:	8082	Analysis Batch:	280-128850	Instrument ID:	GCS_W
Prep Method:	3550C	Prep Batch:	280-128580	Initial Weight/Volume:	30.7 g
Dilution:	1.0			Final Weight/Volume:	5000 uL
Analysis Date:	07/21/2012 1333			Injection Volume:	1 uL
Prep Date:	07/19/2012 2100			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Aroclor 1016		2.8	U	2.8	10
Aroclor 1221		8.1	U	8.1	17
Aroclor 1232		2.0	U	2.0	10
Aroclor 1242		4.7	U	4.7	10
Aroclor 1248		4.7	U	4.7	10
Aroclor 1254		2.6	U	2.6	10
Aroclor 1260		2.6	U	2.6	10

Surrogate	%Rec	Qualifier	Acceptance Limits
Decachlorobiphenyl	114		59 - 130
Tetrachloro-m-xylene	96		53 - 128

7/31/12

Client: Washington Closure Hanford

Job Number: 280-31256-1
Sdg Number: JP0398

Client Sample ID: **J1PVW6**

Lab Sample ID: 280-31256-8
Client Matrix: Solid % Moisture: 0.7

Date Sampled: 07/17/2012 1235
Date Received: 07/19/2012 0900

8082 Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analysis Method:	8082	Analysis Batch:	280-128850	Instrument ID:	GCS_W
Prep Method:	3550C	Prep Batch:	280-128580	Initial Weight/Volume:	31.0 g
Dilution:	1.0			Final Weight/Volume:	5000 uL
Analysis Date:	07/21/2012 1356			Injection Volume:	1 uL
Prep Date:	07/19/2012 2100			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Aroclor 1016		2.7	U	2.7	9.7
Aroclor 1221		7.8	U	7.8	16
Aroclor 1232		1.9	U	1.9	9.7
Aroclor 1242		4.5	U	4.5	9.7
Aroclor 1248		4.5	U	4.5	9.7
Aroclor 1254		2.5	U	2.5	9.7
Aroclor 1260		2.5	U	2.5	9.7

Surrogate	%Rec	Qualifier	Acceptance Limits
Decachlorobiphenyl	114		59 - 130
Tetrachloro-m-xylene	97		53 - 128

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Client: Washington Closure Hanford

Job Number: 280-31256-1
Sdg Number: JP0398

Client Sample ID: **J1PVW7**

Lab Sample ID: 280-31256-9
Client Matrix: Solid % Moisture: 3.2

Date Sampled: 07/17/2012 1230
Date Received: 07/19/2012 0900

8082 Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analysis Method:	8082	Analysis Batch:	280-128850	Instrument ID:	GCS_W
Prep Method:	3550C	Prep Batch:	280-128580	Initial Weight/Volume:	30.1 g
Dilution:	1.0			Final Weight/Volume:	5000 uL
Analysis Date:	07/21/2012 1420			Injection Volume:	1 uL
Prep Date:	07/19/2012 2100			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Aroclor 1016		2.9	U	2.9	10
Aroclor 1221		8.3	U	8.3	17
Aroclor 1232		2.1	U	2.1	10
Aroclor 1242		4.8	U	4.8	10
Aroclor 1248		4.8	U	4.8	10
Aroclor 1254		2.7	U	2.7	10
Aroclor 1260		2.7	U	2.7	10

Surrogate	%Rec	Qualifier	Acceptance Limits
Decachlorobiphenyl	114		59 - 130
Tetrachloro-m-xylene	95		53 - 128

Client: Washington Closure Hanford

Job Number: 280-31256-1
Sdg Number: JP0398

Client Sample ID: J1PVW8

Lab Sample ID: 280-31256-10
Client Matrix: Solid

% Moisture: 1.4

Date Sampled: 07/17/2012 1225
Date Received: 07/19/2012 0900

8082 Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analysis Method:	8082	Analysis Batch:	280-128850	Instrument ID:	GCS_W
Prep Method:	3550C	Prep Batch:	280-128580	Initial Weight/Volume:	30.2 g
Dilution:	1.0			Final Weight/Volume:	5000 uL
Analysis Date:	07/21/2012 1443			Injection Volume:	1 uL
Prep Date:	07/19/2012 2100			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Aroclor 1016		2.8	U	2.8	10
Aroclor 1221		8.1	U	8.1	17
Aroclor 1232		2.0	U	2.0	10
Aroclor 1242		4.7	U	4.7	10
Aroclor 1248		4.7	U	4.7	10
Aroclor 1254		2.6	U	2.6	10
Aroclor 1260		2.6	U	2.6	10

Surrogate	%Rec	Qualifier	Acceptance Limits
Decachlorobiphenyl	115		59 - 130
Tetrachloro-m-xylene	97		53 - 128

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Client: Washington Closure Hanford

Job Number: 280-31256-1
Sdg Number: JP0398

Client Sample ID: **J1PVW9**

Lab Sample ID: 280-31256-11
Client Matrix: Solid % Moisture: 2.4

Date Sampled: 07/17/2012 1220
Date Received: 07/19/2012 0900

8082 Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analysis Method:	8082	Analysis Batch:	280-128850	Instrument ID:	GCS_W
Prep Method:	3550C	Prep Batch:	280-128580	Initial Weight/Volume:	30.1 g
Dilution:	1.0			Final Weight/Volume:	5000 uL
Analysis Date:	07/21/2012 1506			Injection Volume:	1 uL
Prep Date:	07/19/2012 2100			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Aroclor 1016		2.8	U	2.8	10
Aroclor 1221		8.2	U	8.2	17
Aroclor 1232		2.0	U	2.0	10
Aroclor 1242		4.8	U	4.8	10
Aroclor 1248		4.8	U	4.8	10
Aroclor 1254		2.7	U	2.7	10
Aroclor 1260		2.7	U	2.7	10

Surrogate	%Rec	Qualifier	Acceptance Limits
Decachlorobiphenyl	116		59 - 130
Tetrachloro-m-xylene	94		53 - 128

7/31/12

Client: Washington Closure Hanford

Job Number: 280-31256-1
Sdg Number: JP0398

Client Sample ID: J1PVX0

Lab Sample ID: 280-31256-12
Client Matrix: Solid % Moisture: 0.9

Date Sampled: 07/17/2012 1215
Date Received: 07/19/2012 0900

8082 Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analysis Method:	8082	Analysis Batch:	280-128850	Instrument ID:	GCS_W
Prep Method:	3550C	Prep Batch:	280-128580	Initial Weight/Volume:	30.1 g
Dilution:	1.0			Final Weight/Volume:	5000 uL
Analysis Date:	07/21/2012 1529			Injection Volume:	1 uL
Prep Date:	07/19/2012 2100			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Aroclor 1016		2.8	U	2.8	10
Aroclor 1221		8.1	U	8.1	17
Aroclor 1232		2.0	U	2.0	10
Aroclor 1242		4.7	U	4.7	10
Aroclor 1248		4.7	U	4.7	10
Aroclor 1254		2.6	U	2.6	10
Aroclor 1260		2.6	U	2.6	10

Surrogate	%Rec	Qualifier	Acceptance Limits
Decachlorobiphenyl	115		59 - 130
Tetrachloro-m-xylene	88		53 - 128

7/31/12

Client: Washington Closure Hanford

Job Number: 280-31256-1
Sdg Number: JP0398

Client Sample ID: J1PVX1

Lab Sample ID: 280-31256-13
Client Matrix: Solid % Moisture: 3.5

Date Sampled: 07/17/2012 1240
Date Received: 07/19/2012 0900

8082 Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analysis Method:	8082	Analysis Batch:	280-128850	Instrument ID:	GCS_W
Prep Method:	3550C	Prep Batch:	280-128580	Initial Weight/Volume:	31.2 g
Dilution:	1.0			Final Weight/Volume:	5000 uL
Analysis Date:	07/21/2012 1552			Injection Volume:	1 uL
Prep Date:	07/19/2012 2100			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Aroclor 1016		2.8	U	2.8	10
Aroclor 1221		8.0	U	8.0	16
Aroclor 1232		2.0	U	2.0	10
Aroclor 1242		4.6	U	4.6	10
Aroclor 1248		4.6	U	4.6	10
Aroclor 1254		2.6	U	2.6	10
Aroclor 1260		2.6	U	2.6	10

Surrogate	%Rec	Qualifier	Acceptance Limits
Decachlorobiphenyl	118		59 - 130
Tetrachloro-m-xylene	98		53 - 128

7/31/12

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

CASE NARRATIVE

Client: Washington Closure Hanford

Project: WASHINGTON CLOSURE HANFORD

Report Number: 280-31256-1

SDG #: JP0398
SAF#: RC-075

Date SDG Closed: July 19, 2012
Data Deliverable: 7 Day / Summary

CLIENT ID	LAB ID	ANALYSES REQUESTED	ANALYSES PERFORMED
J1PVV9	280-31256-1	6010/7471/9056M/353.2/9045/8270A/8082/8081	6010B/7471A/9056M/353.2/9045C/8270C/8082/8081A
J1PVW0	280-31256-2	6010/7471/9056M/353.2/9045/8270A/8082/8081	6010B/7471A/9056M/353.2/9045C/8270C/8082/8081A
J1PVW1	280-31256-3	6010/7471/9056M/353.2/9045/8270A/8082/8081	6010B/7471A/9056M/353.2/9045C/8270C/8082/8081A
J1PVW2	280-31256-4	6010/7471/9056M/353.2/9045/8270A/8082/8081	6010B/7471A/9056M/353.2/9045C/8270C/8082/8081A
J1PVW3	280-31256-5	6010/7471/9056M/353.2/9045/8270A/8082/8081	6010B/7471A/9056M/353.2/9045C/8270C/8082/8081A
J1PVW4	280-31256-6	6010/7471/9056M/353.2/9045/8270A/8082/8081	6010B/7471A/9056M/353.2/9045C/8270C/8082/8081A
J1PVW5	280-31256-7	6010/7471/9056M/353.2/9045/8270A/8082/8081	6010B/7471A/9056M/353.2/9045C/8270C/8082/8081A
J1PVW6	280-31256-8	6010/7471/9056M/353.2/9045/8270A/8082/8081	6010B/7471A/9056M/353.2/9045C/8270C/8082/8081A
J1PVW7	280-31256-9	6010/7471/9056M/353.2/9045/8270A/8082/8081	6010B/7471A/9056M/353.2/9045C/8270C/8082/8081A
J1PVW8	280-31256-10	6010/7471/9056M/353.2/9045/8270A/8082/8081	6010B/7471A/9056M/353.2/9045C/8270C/8082/8081A
J1PVW9	280-31256-11	6010/7471/9056M/353.2/9045/8270A/8082/8081	6010B/7471A/9056M/353.2/9045C/8270C/8082/8081A
J1PVX0	280-31256-12	6010/7471/9056M/353.2/9045/8270A/8082/8081	6010B/7471A/9056M/353.2/9045C/8270C/8082/8081A
J1PVX1	280-31256-13	6010/7471/9056M/353.2/9045/8270A/8082/8081	6010B/7471A/9056M/353.2/9045C/8270C/8082/8081A

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 7/19/2012 9:00 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 3 coolers at receipt time were 3.1° C, 4.2° C and 4.8° C.

GC/MS SEMIVOLATILES - SW846 8270C
The MS/MSD performed on sample J1PVX1 exhibited the percent recovery outside the control limits for 2,4-Dinitrophenol, and the associated sample result has been flagged "T". The acceptable LCS analysis data indicated that the analytical system was operating within control; therefore, corrective action is deemed unnecessary.

No other anomalies were encountered.

GC SEMIVOLATILES - SW846 8081A - PESTICIDES
The MSD aliquot of the MS/MSD performed on sample J1PVW4 exhibited spike compound recoveries outside the control limits, and the associated sample results have been flagged "N". In addition, RPD limits were exceeded. The acceptable LCS analysis data indicated that the analytical system was operating within control; therefore, corrective action is deemed unnecessary.

No other anomalies were encountered.

GC SEMIVOLATILES - SW846 8082 - PCBs
No anomalies were encountered.

TOTAL METALS - SW846 6010B/7471A
Serial dilution of a digestate in batch 280-128612 indicates that physical and chemical interferences are present for Cobalt, Nickel and Silicon. Results have been flagged with an "X".

Low levels of Barium are present in the method blank associated with batch 280-128612. Because the concentration in the method blank is not present at a level greater than half the reporting limit, corrective action is deemed unnecessary.

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 J1PVV9; therefore, control limits are not applicable.

Silicon was recovered outside the control limits in the Matrix Spike performed on sample J1PVV9, 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.

GENERAL CHEMISTRY - MCAWW 353.2 - NITRATE+NITRITE as N
No anomalies were encountered.

GENERAL CHEMISTRY - SW846 9056M - ANIONS
Low levels of Sulfate are present in the method blank associated with batch 280-129000. Because the concentration in the method blank is not present at a level greater than half the reporting limit, corrective action is deemed unnecessary.

The Matrix Spike performed on sample J1PVV9 exhibited percent recoveries outside the control limits for Orthophosphate as P and Fluoride, and the associated sample results have 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.

GENERAL CHEMISTRY - SW846 9045C - PH
No anomalies were encountered.

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		RC-075-307	Page 1 of 3
Collector ~~Q. Stowe~~ H WEBER 7-17-12	Company Contact J Kessner	Telephone No. 509-375-4688	Project Coordinator KESSNER, JH	Price Code 8L 8B 7-17-12	Data Turnaround 21 Days 7 7-17-12
Project Designation 100-D/DR Burial Grounds & Remaining Sites - Soil Full Prot	Sampling Location 100-D-14 Waste Sites- Excavation		SAF No. RC-075		
Ice Chest No. RCC-08-028	Field Logbook No. EL-1607-14	COA 000D142000	Method of Shipment FED EX		
Shipped To 7-17-12 TestAmerica Incorporated, ~~Richland~~ DNR	Offsite Property No.		Bill of Lading/Air Bill No. SEE OSPL		

POSSIBLE SAMPLE HAZARDS/REMARKS
None

Special Handling and/or Storage
Cool 4 Deg C

Preservation	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C				
Type of Container	G/P	G/P	G/P	aG	aG	aG				
No. of Container(s)	1	1	1	1	1	1				
Volume	125mL	125mL	125mL	125mL	120mL	125mL				
SAMPLE ANALYSIS	See item (1) in Special Instructions	Chromium Hex - 7196 7-17-	IC Anions - 9056 Modified; NO2/NO3 - 353.2; pH (Soil) - 9045	Semi-VOA - 8270A (TCL)	PCBs - 8082	Pesticides - 8081				
40										

Sample No.	Matrix *	Sample Date	Sample Time									
J1PVV9	SOIL	7-17-12	1325	X		X	X	X	X			
J1PVW0	SOIL	7-17-12	1320	X		X	X	X	X			
J1PVW1	SOIL	7-17-12	1315	X		X	X	X	X			
J1PVW2	SOIL	7-17-12	1310	X		X	X	X	X			
J1PVW3	SOIL	7-17-12	1305	X		X	X	X	X			

Page 139 of 145

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
H Weber	7-17-12 1420	DWOOLEY	7-17-12 1420
Relinquished By/Removed From	Date/Time	Received By/Stored In 1060#1	Date/Time 1615
DWOOLEY	7-17-12 1615	A. Freier	7-17-12
Relinquished By/Removed From WCH	Date/Time 1060#1	Received By/Stored In	Date/Time
A. Freier	7-18-12 1025	Fed Ex	
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
			7/19/12 0900
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 - 771 - (CV) {Mercury}

JP0398

REVIEWED BY DJR DATE 7/18/12

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

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		RC-075-307	Page 2 of 3
Collector: ~~Q. Stowe~~ H WEBER 7-17-12	Company Contact: J Kessner	Telephone No.: 509-375-4688	Project Coordinator: KESSNER, JH	Price Code: 8L 8B 7-17-12	Data Turnaround: 21 Days 7
Project Designation: 100-D/DR Burial Grounds & Remaining Sites - Soil Full Prot	Sampling Location: 100-D-14 Waste Sites- Excavation		SAF No.: RC-075		
Ice Chest No.: RCC-08-028 7-17-12	Field Logbook No.: EL-1607-14	COA: 000D142000	Method of Shipment: FED EX	7-17-12
Shipped To: TestAmerica Incorporated, ~~Richland~~ DVR	Offsite Property No.		Bill of Lading/Air Bill No.: SEE OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS
None

Special Handling and/or Storage
Cool 4 Deg C

41

SAMPLE ANALYSIS

Sample No.	Matrix *	Sample Date	Sample Time	Preservation: Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C				
				Type of Container: G/P	G/P	G/P	aG	aG	aG				
				No. of Container(s): 1	1	1	1	1	1				
				Volume: 125mL	125mL	125mL	125mL	120mL	125mL				
				See item (1) in Special Instructions.	Chromium Hex - 7196 7-17-12	IC Anions - 9056 Modified; NO2/NO3 - 353.2; pH (Soil) - 9045	Semi-VOA - 8270A (TCL)	PCBs - 8082	Pesticides - 8081				
J1PVW4	SOIL	7-17-12	1300	X		X	X	X	X				
J1PVW5	SOIL	7-17-12	1240	X		X	X	X	X				
J1PVW6	SOIL	7-17-12	1235	X		X	X	X	X				
J1PVW7	SOIL	7-17-12	1230	X		X	X	X	X				
J1PVW8	SOIL	7-17-12	1225	X		X	X	X	X				

CHAIN OF POSSESSION

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Heather Weber/Matthew Cox	7-17-12 1420	DWOOLSEY	7-17-12 1420
DWOOLSEY	7-17-12 1615	10604 A. Freier A. Freier	1615 7-17-12
WCH A. Freier A. Freier	10604 7-18-12 1025	Fed Ex	
		7/19/12 0900	

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) {Mercury}

REVIEWED BY 7/18/12 DATE

JP0398

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-075-307	Page 3 of 3
Collector ~~Q. Stowe~~ H WEBER	Company Contact J Kessner	Telephone No. 509-375-4688	Project Coordinator KESSNER, JH	Price Code 8L 8B 7-17-12	Data Turnaround 21 Days 7 7-17-12
Project Designation 100-D/DR Burial Grounds & Remaining Sites - Soil Full Prot	Sampling Location 100-D-14 Waste Sites- Excavation		SAF No. RC-075		
Ice Chest No. RCC-08-028 7-17-12	Field Logbook No. EL-1607-14	COA 000D142000	Method of Shipment FED EX	7-17-12
Shipped To TestAmerica Incorporated, ~~Richland~~ DVR	Offsite Property No.		Bill of Lading/Air Bill No. SEE OSPL	

POSSIBLE SAMPLE HAZARDS/REMARKS											
None	Preservation	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C				
Special Handling and/or Storage	Type of Container	G/P	G/P	G/P	aG	aG	aG				
Cool 4 Deg C	No. of Container(s)	1	1	1	1	1	1				
	Volume	125mL	125mL	125mL	125mL	120mL	125mL				
SAMPLE ANALYSIS		See item (1) in Special Instructions.	Chromium Hex - 7196	IC Anions - 9056 Modified; NO2/NO3 - 353.2; pH (Soil) - 9045	Semi-VOA - 8270A (TCL)	PCBs - 8082	Pesticides - 8081				
24											
Sample No.	Matrix *	Sample Date	Sample Time								
J1PVW9	SOIL	7-17-12	1220	X		X	X	X	X		
J1PVX0	SOIL	7-17-12	1215	X		X	X	X	X		
J1PVX1	SOIL	7-17-12	1240	X		X	X	X	X		

page 141 of 145

CHAIN OF POSSESSION		Sign/Print Names	
Relinquished By/Removed From Heather Weber/Stowe	Date/Time 7-17-12 1420	Received By/Stored In DWOOLEY	Date/Time 7-17-12 1420
Relinquished By/Removed From DWOOLEY	Date/Time 7-17-12 1615	Received By/Stored In A. Freier	Date/Time 7-17-12 1615
Relinquished By/Removed From A. Freier	Date/Time 7-18-12 1025	Received By/Stored In Fed Ex	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time 7/19/12 0900
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) {Mercury}

JP0398

REVIEWED BY DATE 7/19/12

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

PCB DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	C	D	E
PROJECT: 100-D-14			DATA PACKAGE: JP0398		
VALIDATOR: ELR		LAB: TAL		DATE: 7/31/12	
			SDG: JP0398		
ANALYSES PERFORMED					
SW-846 8081	SW-846 8081 (TCLP)	SW-846 8082	SW-846 8081 (TCLP)		
SAMPLES/MATRIX					
JIPVW9	JIPVW0	JIPVW1	JIPVW2	JIPVW3	
JIPVW4	JIPVW5	JIPVW6	JIPVW7	JIPVW8	
JIPVW9	JIPVX0	JIPVX1			
					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 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)

DDT and endrin breakdowns acceptable? ..... Yes No (N/A)

Comments: _____

PCB 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 analyzed? ..... Yes No N/A
Surrogate 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: MSD - prst - 3 out - Jalf

no toy MS/MSD/LCS - Jalf no PAS

PCB 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: RPD - post - TTH — J all

no MS/MSD - J all

6. SYSTEM PERFORMANCE (Levels D and E)

Chromatographic performance acceptable? ..... Yes No (N/A)

Positive results resolved acceptably? ..... Yes No (N/A)

Comments:

7. HOLDING TIMES (all levels)

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

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

Comments:

PCB DATA VALIDATION CHECKLIST

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

Compound identification acceptable? (Levels D, E) ..... Yes No N/A
Compound quantitation acceptable? (Levels D, E) ..... Yes No N/A
Results reported for all requested analyses? ..... Yes No N/A
Results supported in the raw data? (Levels D, E) ..... Yes No N/A
Samples properly prepared? (Levels D, E) ..... Yes No N/A
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 absorbent) cleanup performed? ..... Yes No N/A
Lot check performed? ..... Yes No N/A
Check recoveries acceptable? ..... Yes No N/A
GPC cleanup performed? ..... Yes No N/A
GPC check performed? ..... Yes No N/A
GPC check recoveries acceptable? ..... Yes No N/A
GPC calibration performed? ..... Yes No N/A
GPC calibration check performed? ..... Yes No N/A
GPC calibration check retention times acceptable? ..... Yes No N/A
Check/calibration materials traceable? ..... Yes No N/A
Check/calibration materials Expired? ..... Yes No N/A
Analytical batch QC given similar cleanup? ..... Yes No N/A
Transcription/Calculation Errors? ..... Yes No N/A
Comments: _____

Appendix 6

Additional Documentation Requested by Client

Client: Washington Closure Hanford

Job Number: 280-31256-1
Sdg Number: JP0398

Method Blank - Batch: 280-128592

Method: 8081A
Preparation: 3550C

Lab Sample ID:	MB 280-128592/1-A	Analysis Batch:	280-129090	Instrument ID:	SGC_P1
Client Matrix:	Solid	Prep Batch:	280-128592	Lab File ID:	07240033.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	31.0 g
Analysis Date:	07/24/2012 1743	Units:	ug/Kg	Final Weight/Volume:	10000 uL
Prep Date:	07/19/2012 2203			Injection Volume:	1 uL
Leach Date:	N/A			Column ID:	PRIMARY

Analyte	Result	Qual	MDL	RL
4,4'-DDD	0.53	U	0.53	1.6
4,4'-DDE	0.23	U	0.23	1.6
4,4'-DDT	0.57	U	0.57	1.6
Aldrin	0.24	U	0.24	1.6
alpha-BHC	0.21	U	0.21	1.6
beta-BHC	0.64	U	0.64	1.6
delta-BHC	0.39	U	0.39	1.6
gamma-BHC (Lindane)	0.45	U	0.45	1.6
Heptachlor	0.21	U	0.21	1.6
Heptachlor epoxide	0.41	U	0.41	1.6
Endosulfan I	0.17	U	0.17	1.6
Endosulfan II	0.28	U	0.28	1.6
Endosulfan sulfate	0.27	U	0.27	1.6
Endrin	0.30	U	0.30	1.6
Endrin aldehyde	0.17	U	0.17	1.6
Endrin ketone	0.47	U	0.47	1.6
gamma-Chlordane	0.26	U	0.26	1.6
Methoxychlor	0.44	U	0.44	3.2
alpha-Chlordane	0.31	U	0.31	1.6
Dieldrin	0.20	U	0.20	1.6
Toxaphene	15	U	15	160

Surrogate	% Rec	Acceptance Limits
Tetrachloro-m-xylene	107	59 - 115
Decachlorobiphenyl	119	63 - 124

Client: Washington Closure Hanford

Job Number: 280-31256-1
Sdg Number: JP0398

Lab Control Sample - Batch: 280-128592

Method: 8081A
Preparation: 3550C

Lab Sample ID:	LCS 280-128592/2-A	Analysis Batch:	280-129090	Instrument ID:	SGC_P1
Client Matrix:	Solid	Prep Batch:	280-128592	Lab File ID:	07240034.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	31.0 g
Analysis Date:	07/24/2012 1801	Units:	ug/Kg	Final Weight/Volume:	10000 uL
Prep Date:	07/19/2012 2203			Injection Volume:	1 uL
Leach Date:	N/A			Column ID:	PRIMARY

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
4,4'-DDD	16.1	15.5	96	54 - 130	
4,4'-DDE	16.1	17.6	109	58 - 121	
4,4'-DDT	16.1	16.3	101	57 - 133	
Aldrin	16.1	17.2	106	63 - 115	
alpha-BHC	16.1	16.8	104	64 - 116	
beta-BHC	16.1	16.7	103	67 - 115	
delta-BHC	16.1	17.3	107	67 - 115	
gamma-BHC (Lindane)	16.1	16.8	104	63 - 118	
Heptachlor	16.1	17.0	105	68 - 115	
Heptachlor epoxide	16.1	16.8	104	66 - 117	
Endosulfan I	16.1	16.5	102	65 - 118	
Endosulfan II	16.1	17.2	107	71 - 118	
Endosulfan sulfate	16.1	16.7	104	67 - 123	
Endrin	16.1	19.4	120	77 - 134	
Endrin aldehyde	16.1	15.3	95	47 - 115	
Endrin ketone	16.1	16.0	99	62 - 115	
gamma-Chlordane	16.1	16.8	104	65 - 117	
Methoxychlor	16.1	16.2	100	67 - 130	
alpha-Chlordane	16.1	17.1	106	63 - 120	
Dieldrin	16.1	17.3	107	65 - 127	

Surrogate	% Rec	Acceptance Limits
Tetrachloro-m-xylene	103	59 - 115
Decachlorobiphenyl	116	63 - 124

Client: Washington Closure Hanford

Job Number: 280-31256-1
Sdg Number: JP0398

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 280-128592

Method: 8081A
Preparation: 3550C

MS Lab Sample ID:	280-31256-6	Analysis Batch:	280-129090	Instrument ID:	SGC_P1
Client Matrix:	Solid	Prep Batch:	280-128592	Lab File ID:	07240044.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	31.1 g
Analysis Date:	07/24/2012 2057			Final Weight/Volume:	10000 uL
Prep Date:	07/19/2012 2203			Injection Volume:	1 uL
Leach Date:	N/A			Column ID:	PRIMARY

MSD Lab Sample ID:	280-31256-6	Analysis Batch:	280-129090	Instrument ID:	SGC_P1
Client Matrix:	Solid	Prep Batch:	280-128592	Lab File ID:	07240045.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	31.3 g
Analysis Date:	07/24/2012 2115			Final Weight/Volume:	10000 uL
Prep Date:	07/19/2012 2203			Injection Volume:	1 uL
Leach Date:	N/A			Column ID:	PRIMARY

	% Rec.					
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
4,4'-DDD	93	91	54 - 130	3	20		
4,4'-DDE	107	109	58 - 121	1	15		
4,4'-DDT	93	73	57 - 133	24	29		
Aldrin	103	106	63 - 115	2	50		
alpha-BHC	100	101	64 - 116	0	17		
beta-BHC	100	98	67 - 115	3	17		
delta-BHC	103	95	67 - 115	9	19		
gamma-BHC (Lindane)	100	102	63 - 118	1	24		
Heptachlor	101	102	68 - 115	0	18		
Heptachlor epoxide	101	104	66 - 117	2	18		
Endosulfan I	100	102	65 - 118	1	26		
Endosulfan II	101	48	71 - 118	72	20		N *
Endosulfan sulfate	98	26	67 - 123	117	22		N *
Endrin	114	115	77 - 134	0	30		
Endrin aldehyde	90	53	47 - 115	53	29		*
Endrin ketone	96	67	62 - 115	35	20		*
gamma-Chlordane	102	105	65 - 117	2	21		
Methoxychlor	88	9	67 - 130	161	23		J N *
alpha-Chlordane	104	106	63 - 120	2	18		
Dieldrin	104	104	65 - 127	1	25		

Surrogate	MS % Rec	MSD % Rec	Acceptance Limits
Tetrachloro-m-xylene	98	101	59 - 115
Decachlorobiphenyl	108	110	63 - 124

Client: Washington Closure Hanford

Job Number: 280-31256-1
Sdg Number: JP0398

Method Blank - Batch: 280-128580

Method: 8082
Preparation: 3550C

Lab Sample ID:	MB 280-128580/1-A	Analysis Batch:	280-128850	Instrument ID:	GCS_W
Client Matrix:	Solid	Prep Batch:	280-128580	Lab File ID:	004F0401.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	30.5 g
Analysis Date:	07/21/2012 0919	Units:	ug/Kg	Final Weight/Volume:	5000 uL
Prep Date:	07/19/2012 2100			Injection Volume:	1 uL
Leach Date:	N/A			Column ID:	PRIMARY

Analyte	Result	Qual	MDL	RL
Aroclor 1016	2.7	U	2.7	9.8
Aroclor 1221	7.9	U	7.9	16
Aroclor 1232	2.0	U	2.0	9.8
Aroclor 1242	4.6	U	4.6	9.8
Aroclor 1248	4.6	U	4.6	9.8
Aroclor 1254	2.6	U	2.6	9.8
Aroclor 1260	2.6	U	2.6	9.8

Surrogate	% Rec	Acceptance Limits
Decachlorobiphenyl	112	59 - 130
Tetrachloro-m-xylene	96	53 - 128

Lab Control Sample - Batch: 280-128580

Method: 8082
Preparation: 3550C

Lab Sample ID:	LCS 280-128580/2-A	Analysis Batch:	280-128850	Instrument ID:	GCS_W
Client Matrix:	Solid	Prep Batch:	280-128580	Lab File ID:	005F0501.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	31.5 g
Analysis Date:	07/21/2012 0942	Units:	ug/Kg	Final Weight/Volume:	5000 uL
Prep Date:	07/19/2012 2100			Injection Volume:	1 uL
Leach Date:	N/A			Column ID:	PRIMARY

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Aroclor 1016	31.7	36.7	116	54 - 132	
Aroclor 1260	31.7	37.9	119	62 - 129	

Surrogate	% Rec	Acceptance Limits
Decachlorobiphenyl	111	59 - 130
Tetrachloro-m-xylene	100	53 - 128

Client: Washington Closure Hanford

Job Number: 280-31256-1
Sdg Number: JP0398

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 280-128580

Method: 8082
Preparation: 3550C

MS Lab Sample ID:	280-31256-5	Analysis Batch:	280-128850	Instrument ID:	GCS_W
Client Matrix:	Solid	Prep Batch:	280-128580	Lab File ID:	011F1101.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	30.5 g
Analysis Date:	07/21/2012 1201			Final Weight/Volume:	5000 uL
Prep Date:	07/19/2012 2100			Injection Volume:	1 uL
Leach Date:	N/A			Column ID:	PRIMARY

MSD Lab Sample ID:	280-31256-5	Analysis Batch:	280-128850	Instrument ID:	GCS_W
Client Matrix:	Solid	Prep Batch:	280-128580	Lab File ID:	012F1201.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	30.3 g
Analysis Date:	07/21/2012 1224			Final Weight/Volume:	5000 uL
Prep Date:	07/19/2012 2100			Injection Volume:	1 uL
Leach Date:	N/A			Column ID:	PRIMARY

Analyte	% Rec. MS	% Rec. MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Aroclor 1016	112	110	54 - 132	1	26		
Aroclor 1260	121	120	62 - 129	0	26		

Surrogate	MS % Rec	MSD % Rec	Acceptance Limits
Decachlorobiphenyl	112	112	59 - 130
Tetrachloro-m-xylene	96	93	53 - 128

Date: 1 August 2012
To: Washington Closure Hanford Inc. (technical representative)
From: ELR Consulting
Project: 100-D/DR Burial Grounds & Remaining Sites – Soil Full Protocol - Waste Site 100-D-14
Subject: Wet Chemistry - Data Package No. JP0398-TAL

INTRODUCTION

This memo presents the results of data validation on Data Package No. JP0398 prepared by TestAmerica Laboratories (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
J1PVV9	7/17/12	Soil	C	See note 1
J1PVW0	7/17/12	Soil	C	See note 1
J1PVW1	7/17/12	Soil	C	See note 1
J1PVW2	7/17/12	Soil	C	See note 1
J1PVW3	7/17/12	Soil	C	See note 1
J1PVW4	7/17/12	Soil	C	See note 1
J1PVW5	7/17/12	Soil	C	See note 1
J1PVW6	7/17/12	Soil	C	See note 1
J1PVW7	7/17/12	Soil	C	See note 1
J1PVW8	7/17/12	Soil	C	See note 1
J1PVW9	7/17/12	Soil	C	See note 1
J1PVX0	7/17/12	Soil	C	See note 1
J1PVX1	7/17/12	Soil	C	See note 1

1 – Chromium Vi by 7196A, IC anions by 300.0, pH by 9045C and nitrate/nitrite by 353.2.

Data validation was conducted in accordance with the Washington Closure Hanford (WCH) validation statement of work and the 100 Area Remedial Action Sampling and Analysis Plan (DOE/RL-96-22, September 2009). 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: 30 days for chromium VI, 28 days for chloride, fluoride, bromide, sulfate and nitrate/nitrite and 2 days for nitrate, nitrite and phosphate and immediate for pH (24 hours).

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".

Due to the holding time being exceeded by less than twice the limit, all nitrate, nitrite and orthophosphate results were qualified as estimates and flagged "J".

Due to the holding time being exceeded by greater than twice the limit, all pH results were qualified as estimates and flagged "J".

All other 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.

Due to method blank contamination, the sulfate results in samples J1PVV9, J1PVW5, J1PVW6, J1PVW7, J1PVW8, J1PVW9, J1PVX0 and J1PVX1 were qualified as undetected and flagged "U".

All other method blank results were acceptable.

Field (Equipment) Blank

No field blank was 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 70% to 130%. 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.

All 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 field duplicates (J1PVW5/J1PVX1) were submitted for analysis. Laboratory duplicates are compared using the same criteria as for laboratory results. All field duplicate results are 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 JP0398 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 the holding time being exceeded by less than twice the limit, all nitrate, nitrite and orthophosphate results were qualified as estimates and flagged "J".
- Due to the holding time being exceeded by greater than twice the limit, all pH results were qualified as estimates and flagged "J".
- Due to method blank contamination, the sulfate results in samples J1PVV9, J1PVW5, J1PVW6, J1PVW7, J1PVW8, J1PVW9, J1PVX0 and J1PVX1 were qualified as undetected and flagged "U".

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*.

DOE/RL-96-22, Rev. 4, *100 Area Remedial Action Sampling and Analysis Plan*, U.S. Department of Energy, February 2005.

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: JP0398	REVIEWER: ELR	Project: 100-D-14	PAGE_1_OF_1
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
pH Nitrate Nitrite Orthophosphate	J	All	Hold time
Sulfate	U	J1PVV9, J1PVW5 J1PVW6, J1PVW7 J1PVW8, J1PVW9 J1PVX0, J1PVX1	Method blank contamination

* - 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

Date: 19-Jul-12

Sample Results Summary

TestAmerica TARL

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

Report No. : 52391

SDG No: JP0398

Batch	Client Id / Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	MDL	CRDL	RPD
2200113	7196_CR6								
	J1PVV9								
	MVNDK1AA	HEXCHROME	1.55E-01 +- 0.0E+00	U	mg/kg	N/A	1.55E-01	1.55E-01	
	MVNDK1AD	HEXCHROME	1.55E-01 +- 0.0E+00	U	mg/kg	N/A	1.55E-01	3.50E-01	0.0
	J1PVW0								
	MVNDL1AA	HEXCHROME	1.55E-01 +- 0.0E+00	U	mg/kg	N/A	1.55E-01	1.55E-01	
	J1PVW1								
	MVNDM1AA	HEXCHROME	1.55E-01 +- 0.0E+00	U	mg/kg	N/A	1.55E-01	1.55E-01	
	J1PVW2								
	MVNDN1AA	HEXCHROME	1.55E-01 +- 0.0E+00	U	mg/kg	N/A	1.55E-01	1.55E-01	
	J1PVW3								
	MVNDP1AA	HEXCHROME	1.55E-01 +- 0.0E+00	U	mg/kg	N/A	1.55E-01	1.55E-01	
	J1PVW4								
	MVNDQ1AA	HEXCHROME	1.55E-01 +- 0.0E+00	U	mg/kg	N/A	1.55E-01	1.55E-01	
	J1PVW5								
	MVNDR1AA	HEXCHROME	1.55E-01 +- 0.0E+00	U	mg/kg	N/A	1.55E-01	1.55E-01	
	J1PVW6								
	MVNDT1AA	HEXCHROME	1.55E-01 +- 0.0E+00	U	mg/kg	N/A	1.55E-01	1.55E-01	
	J1PVW7								
	MVNDV1AA	HEXCHROME	1.55E-01 +- 0.0E+00	U	mg/kg	N/A	1.55E-01	1.55E-01	
	J1PVW8								
	MVNDW1A	HEXCHROME	1.55E-01 +- 0.0E+00	U	mg/kg	N/A	1.55E-01	1.55E-01	
	J1PVW9								
	MVNDX1A	HEXCHROME	1.89E-01 +- 0.0E+00		mg/kg	N/A	1.55E-01		
	J1PVX0								
	MVND01AA	HEXCHROME	3.80E-01 +- 0.0E+00		mg/kg	N/A	1.55E-01	1.55E-01	
	J1PVX1								
	MVND11AA	HEXCHROME	1.55E-01 +- 0.0E+00	U	mg/kg	N/A	1.55E-01	1.55E-01	

No. of Results: 14

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TestAmerica

rptSTLRchSaSummary2 V6.2.20 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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General Chemistry

Client Sample ID: J1PVV9

Lab Sample ID: 280-31256-1
Client Matrix: Solid

% Moisture: 2.4

Date Sampled: 07/17/2012 1325
Date Received: 07/19/2012 0900

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Nitrate Nitrite as N-Soluble	3.8		mg/Kg	0.30	0.75	1.0	353.2
Analysis Batch: 280-129326	Analysis Date: 07/24/2012 1123						DryWt Corrected: Y
Chloride-Soluble	4.3	B	mg/Kg	2.0	5.0	1.0	9056M
Analysis Batch: 280-129000	Analysis Date: 07/20/2012 2134						DryWt Corrected: Y
Nitrate as N-Soluble	3.5	J	mg/Kg	0.31	2.5	1.0	9056M
Analysis Batch: 280-128999	Analysis Date: 07/20/2012 2134						DryWt Corrected: Y
Bromide-Soluble	0.39	U	mg/Kg	0.39	2.0	1.0	9056M
Analysis Batch: 280-129000	Analysis Date: 07/20/2012 2134						DryWt Corrected: Y
Nitrite as N-Soluble	0.64	B J	mg/Kg	0.33	2.5	1.0	9056M
Analysis Batch: 280-128999	Analysis Date: 07/20/2012 2134						DryWt Corrected: Y
Orthophosphate as P-Soluble	1.2	U N J	mg/Kg	1.2	5.0	1.0	9056M
Analysis Batch: 280-128999	Analysis Date: 07/20/2012 2134						DryWt Corrected: Y
Sulfate-Soluble	6.5	C U	mg/Kg	1.7	5.0	1.0	9056M
Analysis Batch: 280-129000	Analysis Date: 07/20/2012 2134						DryWt Corrected: Y
Fluoride-Soluble	0.82	U N	mg/Kg	0.82	5.0	1.0	9056M
Analysis Batch: 280-129000	Analysis Date: 07/20/2012 2134						DryWt Corrected: Y

Analyte	Result	Qual	Units	RL	RL	Dil	Method
pH adj. to 25 deg C-Soluble	8.91	J	SU	0.100	0.100	1.0	9045C
Analysis Batch: 280-128599	Analysis Date: 07/19/2012 2129						DryWt Corrected: N
Percent Moisture	2.4		%	0.10	0.10	1.0	D-2216
Analysis Batch: 280-128792	Analysis Date: 07/20/2012 1947						DryWt Corrected: N

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General Chemistry

Client Sample ID: J1PVW0

Lab Sample ID: 280-31256-2
Client Matrix: Solid

% Moisture: 3.8

Date Sampled: 07/17/2012 1320
Date Received: 07/19/2012 0900

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Nitrate Nitrite as N-Soluble	1.8		mg/Kg	0.30	0.75	1.0	353.2
Analysis Batch: 280-129326	Analysis Date: 07/24/2012 1128						DryWt Corrected: Y
Chloride-Soluble	62.3		mg/Kg	2.0	5.0	1.0	9056M
Analysis Batch: 280-129000	Analysis Date: 07/20/2012 2258						DryWt Corrected: Y
Nitrate as N-Soluble	2.4	B J	mg/Kg	0.32	2.5	1.0	9056M
Analysis Batch: 280-128999	Analysis Date: 07/20/2012 2258						DryWt Corrected: Y
Bromide-Soluble	0.74	B	mg/Kg	0.39	2.0	1.0	9056M
Analysis Batch: 280-129000	Analysis Date: 07/20/2012 2258						DryWt Corrected: Y
Nitrite as N-Soluble	0.34	U J	mg/Kg	0.34	2.5	1.0	9056M
Analysis Batch: 280-128999	Analysis Date: 07/20/2012 2258						DryWt Corrected: Y
Orthophosphate as P-Soluble	1.3	U J	mg/Kg	1.3	5.0	1.0	9056M
Analysis Batch: 280-128999	Analysis Date: 07/20/2012 2258						DryWt Corrected: Y
Sulfate-Soluble	42.0		mg/Kg	1.7	5.0	1.0	9056M
Analysis Batch: 280-129000	Analysis Date: 07/20/2012 2258						DryWt Corrected: Y
Fluoride-Soluble	1.4	B	mg/Kg	0.83	5.0	1.0	9056M
Analysis Batch: 280-129000	Analysis Date: 07/20/2012 2258						DryWt Corrected: Y

Analyte	Result	Qual	Units	RL	RL	Dil	Method
pH adj. to 25 deg C-Soluble	8.55	J	SU	0.100	0.100	1.0	9045C
Analysis Batch: 280-128599	Analysis Date: 07/19/2012 2136						DryWt Corrected: N
Percent Moisture	3.8		%	0.10	0.10	1.0	D-2216
Analysis Batch: 280-128792	Analysis Date: 07/20/2012 1947						DryWt Corrected: N

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General Chemistry

Client Sample ID: J1PVW1

Lab Sample ID: 280-31256-3
Client Matrix: Solid

% Moisture: 2.2

Date Sampled: 07/17/2012 1315
Date Received: 07/19/2012 0900

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Nitrate Nitrite as N-Soluble	2.8		mg/Kg	0.30	0.74	1.0	353.2
Analysis Batch: 280-129326	Analysis Date: 07/24/2012 1132						DryWt Corrected: Y
Chloride-Soluble	3.0	B	mg/Kg	1.9	4.8	1.0	9056M
Analysis Batch: 280-129000	Analysis Date: 07/20/2012 2315						DryWt Corrected: Y
Nitrate as N-Soluble	2.6	J	mg/Kg	0.30	2.4	1.0	9056M
Analysis Batch: 280-128999	Analysis Date: 07/20/2012 2315						DryWt Corrected: Y
Bromide-Soluble	0.37	U	mg/Kg	0.37	1.9	1.0	9056M
Analysis Batch: 280-129000	Analysis Date: 07/20/2012 2315						DryWt Corrected: Y
Nitrite as N-Soluble	0.60	B J	mg/Kg	0.32	2.4	1.0	9056M
Analysis Batch: 280-128999	Analysis Date: 07/20/2012 2315						DryWt Corrected: Y
Orthophosphate as P-Soluble	1.2	U J	mg/Kg	1.2	4.8	1.0	9056M
Analysis Batch: 280-128999	Analysis Date: 07/20/2012 2315						DryWt Corrected: Y
Sulfate-Soluble	45.5		mg/Kg	1.7	4.8	1.0	9056M
Analysis Batch: 280-129000	Analysis Date: 07/20/2012 2315						DryWt Corrected: Y
Fluoride-Soluble	1.3	B	mg/Kg	0.79	4.8	1.0	9056M
Analysis Batch: 280-129000	Analysis Date: 07/20/2012 2315						DryWt Corrected: Y

Analyte	Result	Qual	Units	RL	RL	Dil	Method
pH adj. to 25 deg C-Soluble	9.19	J	SU	0.100	0.100	1.0	9045C
Analysis Batch: 280-128599	Analysis Date: 07/19/2012 2139						DryWt Corrected: N
Percent Moisture	2.2		%	0.10	0.10	1.0	D-2216
Analysis Batch: 280-128792	Analysis Date: 07/20/2012 1947						DryWt Corrected: N

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General Chemistry

Client Sample ID: J1PVW2

Lab Sample ID: 280-31256-4
Client Matrix: Solid

% Moisture: 2.9

Date Sampled: 07/17/2012 1310
Date Received: 07/19/2012 0900

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Nitrate Nitrite as N-Soluble	0.79		mg/Kg	0.30	0.76	1.0	353.2
Analysis Batch: 280-129326		Analysis Date: 07/24/2012 1134					DryWt Corrected: Y
Chloride-Soluble	2.4	B	mg/Kg	2.0	5.1	1.0	9056M
Analysis Batch: 280-129000		Analysis Date: 07/20/2012 2332					DryWt Corrected: Y
Nitrate as N-Soluble	1.2	B J	mg/Kg	0.32	2.5	1.0	9056M
Analysis Batch: 280-128999		Analysis Date: 07/20/2012 2332					DryWt Corrected: Y
Bromide-Soluble	0.40	U	mg/Kg	0.40	2.0	1.0	9056M
Analysis Batch: 280-129000		Analysis Date: 07/20/2012 2332					DryWt Corrected: Y
Nitrite as N-Soluble	0.43	B J	mg/Kg	0.34	2.5	1.0	9056M
Analysis Batch: 280-128999		Analysis Date: 07/20/2012 2332					DryWt Corrected: Y
Orthophosphate as P-Soluble	1.3	U J	mg/Kg	1.3	5.1	1.0	9056M
Analysis Batch: 280-128999		Analysis Date: 07/20/2012 2332					DryWt Corrected: Y
Sulfate-Soluble	14.1		mg/Kg	1.8	5.1	1.0	9056M
Analysis Batch: 280-129000		Analysis Date: 07/20/2012 2332					DryWt Corrected: Y
Fluoride-Soluble	1.9	B	mg/Kg	0.84	5.1	1.0	9056M
Analysis Batch: 280-129000		Analysis Date: 07/20/2012 2332					DryWt Corrected: Y

Analyte	Result	Qual	Units	RL	RL	Dil	Method
pH adj. to 25 deg C-Soluble	9.11	J	SU	0.100	0.100	1.0	9045C
Analysis Batch: 280-128599		Analysis Date: 07/19/2012 2142					DryWt Corrected: N
Percent Moisture	2.9		%	0.10	0.10	1.0	D-2216
Analysis Batch: 280-128792		Analysis Date: 07/20/2012 1947					DryWt Corrected: N

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General Chemistry

Client Sample ID: J1PVW3

Lab Sample ID: 280-31256-5
Client Matrix: Solid

% Moisture: 3.9

Date Sampled: 07/17/2012 1305
Date Received: 07/19/2012 0900

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Nitrate Nitrite as N-Soluble	0.50	B	mg/Kg	0.31	0.77	1.0	353.2
Analysis Batch: 280-129326	Analysis Date: 07/24/2012 1144						DryWt Corrected: Y
Chloride-Soluble	6.9		mg/Kg	2.0	5.2	1.0	9056M
Analysis Batch: 280-129000	Analysis Date: 07/20/2012 2349						DryWt Corrected: Y
Nitrate as N-Soluble	1.1	B J	mg/Kg	0.32	2.6	1.0	9056M
Analysis Batch: 280-128999	Analysis Date: 07/20/2012 2349						DryWt Corrected: Y
Bromide-Soluble	0.40	U	mg/Kg	0.40	2.1	1.0	9056M
Analysis Batch: 280-129000	Analysis Date: 07/20/2012 2349						DryWt Corrected: Y
Nitrite as N-Soluble	0.40	B J	mg/Kg	0.35	2.6	1.0	9056M
Analysis Batch: 280-128999	Analysis Date: 07/20/2012 2349						DryWt Corrected: Y
Orthophosphate as P-Soluble	1.3	U J	mg/Kg	1.3	5.2	1.0	9056M
Analysis Batch: 280-128999	Analysis Date: 07/20/2012 2349						DryWt Corrected: Y
Sulfate-Soluble	93.5		mg/Kg	1.8	5.2	1.0	9056M
Analysis Batch: 280-129000	Analysis Date: 07/20/2012 2349						DryWt Corrected: Y
Fluoride-Soluble	1.8	B	mg/Kg	0.85	5.2	1.0	9056M
Analysis Batch: 280-129000	Analysis Date: 07/20/2012 2349						DryWt Corrected: Y

Analyte	Result	Qual	Units	RL	RL	Dil	Method
pH adj. to 25 deg C-Soluble	9.18	J	SU	0.100	0.100	1.0	9045C
Analysis Batch: 280-128599	Analysis Date: 07/19/2012 2145						DryWt Corrected: N
Percent Moisture	3.9		%	0.10	0.10	1.0	D-2216
Analysis Batch: 280-128792	Analysis Date: 07/20/2012 1947						DryWt Corrected: N

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General Chemistry

Client Sample ID: J1PVW4

Lab Sample ID: 280-31256-6
Client Matrix: Solid

% Moisture: 1.4

Date Sampled: 07/17/2012 1300
Date Received: 07/19/2012 0900

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Nitrate Nitrite as N-Soluble	1.3		mg/Kg	0.30	0.76	1.0	353.2
Analysis Batch: 280-129326	Analysis Date: 07/24/2012 1146						DryWt Corrected: Y
Chloride-Soluble	5.0		mg/Kg	1.8	4.7	1.0	9056M
Analysis Batch: 280-129000	Analysis Date: 07/21/2012 0006						DryWt Corrected: Y
Nitrate as N-Soluble	1.8	B J	mg/Kg	0.29	2.3	1.0	9056M
Analysis Batch: 280-128999	Analysis Date: 07/21/2012 0006						DryWt Corrected: Y
Bromide-Soluble	0.36	U	mg/Kg	0.36	1.9	1.0	9056M
Analysis Batch: 280-129000	Analysis Date: 07/21/2012 0006						DryWt Corrected: Y
Nitrite as N-Soluble	0.38	B J	mg/Kg	0.32	2.3	1.0	9056M
Analysis Batch: 280-128999	Analysis Date: 07/21/2012 0006						DryWt Corrected: Y
Orthophosphate as P-Soluble	1.2	U J	mg/Kg	1.2	4.7	1.0	9056M
Analysis Batch: 280-128999	Analysis Date: 07/21/2012 0006						DryWt Corrected: Y
Sulfate-Soluble	241		mg/Kg	1.6	4.7	1.0	9056M
Analysis Batch: 280-129000	Analysis Date: 07/21/2012 0006						DryWt Corrected: Y
Fluoride-Soluble	1.1	B	mg/Kg	0.77	4.7	1.0	9056M
Analysis Batch: 280-129000	Analysis Date: 07/21/2012 0006						DryWt Corrected: Y

Analyte	Result	Qual	Units	RL	RL	Dil	Method
pH adj. to 25 deg C-Soluble	8.74	J	SU	0.100	0.100	1.0	9045C
Analysis Batch: 280-128599	Analysis Date: 07/19/2012 2148						DryWt Corrected: N
Percent Moisture	1.4		%	0.10	0.10	1.0	D-2216
Analysis Batch: 280-128792	Analysis Date: 07/20/2012 1947						DryWt Corrected: N

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General Chemistry

Client Sample ID: **J1PVW5**

Lab Sample ID: 280-31256-7
Client Matrix: Solid

% Moisture: 3.0

Date Sampled: 07/17/2012 1240
Date Received: 07/19/2012 0900

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Nitrate Nitrite as N-Soluble	0.31	U	mg/Kg	0.31	0.77	1.0	353.2
Analysis Batch: 280-129326	Analysis Date: 07/24/2012 1147						DryWt Corrected: Y
Chloride-Soluble	2.0	U	mg/Kg	2.0	5.0	1.0	9056M
Analysis Batch: 280-129000	Analysis Date: 07/21/2012 0022						DryWt Corrected: Y
Nitrate as N-Soluble	0.64	B J	mg/Kg	0.31	2.5	1.0	9056M
Analysis Batch: 280-128999	Analysis Date: 07/21/2012 0022						DryWt Corrected: Y
Bromide-Soluble	0.38	U	mg/Kg	0.38	2.0	1.0	9056M
Analysis Batch: 280-129000	Analysis Date: 07/21/2012 0022						DryWt Corrected: Y
Nitrite as N-Soluble	0.38	B J	mg/Kg	0.33	2.5	1.0	9056M
Analysis Batch: 280-128999	Analysis Date: 07/21/2012 0022						DryWt Corrected: Y
Orthophosphate as P-Soluble	1.2	U J	mg/Kg	1.2	5.0	1.0	9056M
Analysis Batch: 280-128999	Analysis Date: 07/21/2012 0022						DryWt Corrected: Y
Sulfate-Soluble	3.7	B C	mg/Kg	1.7	5.0	1.0	9056M
Analysis Batch: 280-129000	Analysis Date: 07/21/2012 0022						DryWt Corrected: Y
Fluoride-Soluble	1.8	B	mg/Kg	0.81	5.0	1.0	9056M
Analysis Batch: 280-129000	Analysis Date: 07/21/2012 0022						DryWt Corrected: Y

Analyte	Result	Qual	Units	RL	RL	Dil	Method
pH adj. to 25 deg C-Soluble	9.21	J	SU	0.100	0.100	1.0	9045C
Analysis Batch: 280-128599	Analysis Date: 07/19/2012 2151						DryWt Corrected: N
Percent Moisture	3.0		%	0.10	0.10	1.0	D-2216
Analysis Batch: 280-128792	Analysis Date: 07/20/2012 1947						DryWt Corrected: N

7/31/12

General Chemistry

Client Sample ID: **J1PVW6**

Lab Sample ID: 280-31256-8
Client Matrix: Solid

% Moisture: 0.7

Date Sampled: 07/17/2012 1235
Date Received: 07/19/2012 0900

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Nitrate Nitrite as N-Soluble	0.54	B	mg/Kg	0.29	0.72	1.0	353.2
Analysis Batch: 280-129326	Analysis Date: 07/24/2012 1149						DryWt Corrected: Y
Chloride-Soluble	2.0	B	mg/Kg	1.9	4.9	1.0	9056M
Analysis Batch: 280-129000	Analysis Date: 07/21/2012 0039						DryWt Corrected: Y
Nitrate as N-Soluble	1.1	B J	mg/Kg	0.31	2.4	1.0	9056M
Analysis Batch: 280-128999	Analysis Date: 07/21/2012 0039						DryWt Corrected: Y
Bromide-Soluble	0.38	U	mg/Kg	0.38	2.0	1.0	9056M
Analysis Batch: 280-129000	Analysis Date: 07/21/2012 0039						DryWt Corrected: Y
Nitrite as N-Soluble	0.38	B J	mg/Kg	0.33	2.4	1.0	9056M
Analysis Batch: 280-128999	Analysis Date: 07/21/2012 0039						DryWt Corrected: Y
Orthophosphate as P-Soluble	1.2	U J	mg/Kg	1.2	4.9	1.0	9056M
Analysis Batch: 280-128999	Analysis Date: 07/21/2012 0039						DryWt Corrected: Y
Sulfate-Soluble	4.2	B C U	mg/Kg	1.7	4.9	1.0	9056M
Analysis Batch: 280-129000	Analysis Date: 07/21/2012 0039						DryWt Corrected: Y
Fluoride-Soluble	0.80	U	mg/Kg	0.80	4.9	1.0	9056M
Analysis Batch: 280-129000	Analysis Date: 07/21/2012 0039						DryWt Corrected: Y

Analyte	Result	Qual	Units	RL	RL	Dil	Method
pH adj. to 25 deg C-Soluble	9.02	J	SU	0.100	0.100	1.0	9045C
Analysis Batch: 280-128599	Analysis Date: 07/19/2012 2157						DryWt Corrected: N
Percent Moisture	0.69		%	0.10	0.10	1.0	D-2216
Analysis Batch: 280-128792	Analysis Date: 07/20/2012 1947						DryWt Corrected: N

7/31/12

General Chemistry

Client Sample ID: **J1PVW7**

Lab Sample ID: 280-31256-9
Client Matrix: Solid

% Moisture: 3.2

Date Sampled: 07/17/2012 1230
Date Received: 07/19/2012 0900

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Nitrate Nitrite as N-Soluble	0.52	B	mg/Kg	0.30	0.75	1.0	353.2
Analysis Batch: 280-129326	Analysis Date: 07/24/2012 1150						DryWt Corrected: Y
Chloride-Soluble	1.9	B	mg/Kg	1.9	4.9	1.0	9056M
Analysis Batch: 280-129000	Analysis Date: 07/21/2012 0056						DryWt Corrected: Y
Nitrate as N-Soluble	1.0	B J	mg/Kg	0.31	2.5	1.0	9056M
Analysis Batch: 280-128999	Analysis Date: 07/21/2012 0056						DryWt Corrected: Y
Bromide-Soluble	0.38	U	mg/Kg	0.38	2.0	1.0	9056M
Analysis Batch: 280-129000	Analysis Date: 07/21/2012 0056						DryWt Corrected: Y
Nitrite as N-Soluble	0.40	B J	mg/Kg	0.33	2.5	1.0	9056M
Analysis Batch: 280-128999	Analysis Date: 07/21/2012 0056						DryWt Corrected: Y
Orthophosphate as P-Soluble	1.2	U J	mg/Kg	1.2	4.9	1.0	9056M
Analysis Batch: 280-128999	Analysis Date: 07/21/2012 0056						DryWt Corrected: Y
Sulfate-Soluble	4.5	B C U	mg/Kg	1.7	4.9	1.0	9056M
Analysis Batch: 280-129000	Analysis Date: 07/21/2012 0056						DryWt Corrected: Y
Fluoride-Soluble	1.1	B	mg/Kg	0.81	4.9	1.0	9056M
Analysis Batch: 280-129000	Analysis Date: 07/21/2012 0056						DryWt Corrected: Y

Analyte	Result	Qual	Units	RL	RL	Dil	Method
pH adj. to 25 deg C-Soluble	9.08	J	SU	0.100	0.100	1.0	9045C
Analysis Batch: 280-128599	Analysis Date: 07/19/2012 2204						DryWt Corrected: N
Percent Moisture	3.2		%	0.10	0.10	1.0	D-2216
Analysis Batch: 280-128792	Analysis Date: 07/20/2012 1947						DryWt Corrected: N

7/31/12

General Chemistry

Client Sample ID: **J1PVW8**

Lab Sample ID: 280-31256-10
Client Matrix: Solid

% Moisture: 1.4

Date Sampled: 07/17/2012 1225
Date Received: 07/19/2012 0900

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Nitrate Nitrite as N-Soluble	0.57	B	mg/Kg	0.30	0.75	1.0	353.2
Analysis Batch: 280-129326	Analysis Date: 07/24/2012 1152						DryWt Corrected: Y
Chloride-Soluble	2.2	B	mg/Kg	1.9	4.7	1.0	9056M
Analysis Batch: 280-129000	Analysis Date: 07/21/2012 0113						DryWt Corrected: Y
Nitrate as N-Soluble	1.2	B J	mg/Kg	0.30	2.4	1.0	9056M
Analysis Batch: 280-128999	Analysis Date: 07/21/2012 0113						DryWt Corrected: Y
Bromide-Soluble	0.37	U	mg/Kg	0.37	1.9	1.0	9056M
Analysis Batch: 280-129000	Analysis Date: 07/21/2012 0113						DryWt Corrected: Y
Nitrite as N-Soluble	0.32	U J	mg/Kg	0.32	2.4	1.0	9056M
Analysis Batch: 280-128999	Analysis Date: 07/21/2012 0113						DryWt Corrected: Y
Orthophosphate as P-Soluble	1.2	U J	mg/Kg	1.2	4.7	1.0	9056M
Analysis Batch: 280-128999	Analysis Date: 07/21/2012 0113						DryWt Corrected: Y
Sulfate-Soluble	5.7	C U	mg/Kg	1.6	4.7	1.0	9056M
Analysis Batch: 280-129000	Analysis Date: 07/21/2012 0113						DryWt Corrected: Y
Fluoride-Soluble	0.78	U	mg/Kg	0.78	4.7	1.0	9056M
Analysis Batch: 280-129000	Analysis Date: 07/21/2012 0113						DryWt Corrected: Y

Analyte	Result	Qual	Units	RL	RL	Dil	Method
pH adj. to 25 deg C-Soluble	8.91	J	SU	0.100	0.100	1.0	9045C
Analysis Batch: 280-128599	Analysis Date: 07/19/2012 2206						DryWt Corrected: N
Percent Moisture	1.4		%	0.10	0.10	1.0	D-2216
Analysis Batch: 280-128792	Analysis Date: 07/20/2012 1947						DryWt Corrected: N

7/31/12

General Chemistry

Client Sample ID: J1PVW9

Lab Sample ID: 280-31256-11
Client Matrix: Solid

% Moisture: 2.4

Date Sampled: 07/17/2012 1220
Date Received: 07/19/2012 0900

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Nitrate Nitrite as N-Soluble	1.4		mg/Kg	0.30	0.76	1.0	353.2
Analysis Batch: 280-129326	Analysis Date: 07/24/2012 1153						DryWt Corrected: Y
Chloride-Soluble	1.9	U	mg/Kg	1.9	4.7	1.0	9056M
Analysis Batch: 280-129000	Analysis Date: 07/21/2012 0203						DryWt Corrected: Y
Nitrate as N-Soluble	1.3	B J	mg/Kg	0.30	2.4	1.0	9056M
Analysis Batch: 280-128999	Analysis Date: 07/21/2012 0203						DryWt Corrected: Y
Bromide-Soluble	0.37	U	mg/Kg	0.37	1.9	1.0	9056M
Analysis Batch: 280-129000	Analysis Date: 07/21/2012 0203						DryWt Corrected: Y
Nitrite as N-Soluble	0.43	B J	mg/Kg	0.32	2.4	1.0	9056M
Analysis Batch: 280-128999	Analysis Date: 07/21/2012 0203						DryWt Corrected: Y
Orthophosphate as P-Soluble	1.2	U J	mg/Kg	1.2	4.7	1.0	9056M
Analysis Batch: 280-128999	Analysis Date: 07/21/2012 0203						DryWt Corrected: Y
Sulfate-Soluble	4.1	B C U	mg/Kg	1.6	4.7	1.0	9056M
Analysis Batch: 280-129000	Analysis Date: 07/21/2012 0203						DryWt Corrected: Y
Fluoride-Soluble	0.78	U	mg/Kg	0.78	4.7	1.0	9056M
Analysis Batch: 280-129000	Analysis Date: 07/21/2012 0203						DryWt Corrected: Y

Analyte	Result	Qual	Units	RL	RL	Dil	Method
pH adj. to 25 deg C-Soluble	9.15	J	SU	0.100	0.100	1.0	9045C
Analysis Batch: 280-128599	Analysis Date: 07/19/2012 2209						DryWt Corrected: N
Percent Moisture	2.4		%	0.10	0.10	1.0	D-2216
Analysis Batch: 280-128792	Analysis Date: 07/20/2012 1947						DryWt Corrected: N

7/31/12

General Chemistry

Client Sample ID: J1PVX0

Lab Sample ID: 280-31256-12
Client Matrix: Solid
% Moisture: 0.9

Date Sampled: 07/17/2012 1215
Date Received: 07/19/2012 0900

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Nitrate Nitrite as N-Soluble	0.92		mg/Kg	0.30	0.74	1.0	353.2
Analysis Batch: 280-129326	Analysis Date: 07/24/2012 1155						DryWt Corrected: Y
Chloride-Soluble	1.9	B	mg/Kg	1.9	4.9	1.0	9056M
Analysis Batch: 280-129000	Analysis Date: 07/21/2012 0220						DryWt Corrected: Y
Nitrate as N-Soluble	1.4	B J	mg/Kg	0.31	2.5	1.0	9056M
Analysis Batch: 280-128999	Analysis Date: 07/21/2012 0220						DryWt Corrected: Y
Bromide-Soluble	0.38	U	mg/Kg	0.38	2.0	1.0	9056M
Analysis Batch: 280-129000	Analysis Date: 07/21/2012 0220						DryWt Corrected: Y
Nitrite as N-Soluble	0.40	B J	mg/Kg	0.33	2.5	1.0	9056M
Analysis Batch: 280-128999	Analysis Date: 07/21/2012 0220						DryWt Corrected: Y
Orthophosphate as P-Soluble	1.2	U J	mg/Kg	1.2	4.9	1.0	9056M
Analysis Batch: 280-128999	Analysis Date: 07/21/2012 0220						DryWt Corrected: Y
Sulfate-Soluble	3.8	B C U	mg/Kg	1.7	4.9	1.0	9056M
Analysis Batch: 280-129000	Analysis Date: 07/21/2012 0220						DryWt Corrected: Y
Fluoride-Soluble	0.81	U	mg/Kg	0.81	4.9	1.0	9056M
Analysis Batch: 280-129000	Analysis Date: 07/21/2012 0220						DryWt Corrected: Y

Analyte	Result	Qual	Units	RL	RL	Dil	Method
pH adj. to 25 deg C-Soluble	9.38	J	SU	0.100	0.100	1.0	9045C
Analysis Batch: 280-128599	Analysis Date: 07/19/2012 2213						DryWt Corrected: N
Percent Moisture	0.86		%	0.10	0.10	1.0	D-2216
Analysis Batch: 280-128792	Analysis Date: 07/20/2012 1947						DryWt Corrected: N

7/31/12

General Chemistry

Client Sample ID: **J1PVX1**

Lab Sample ID: 280-31256-13
Client Matrix: Solid

% Moisture: 3.5

Date Sampled: 07/17/2012 1240
Date Received: 07/19/2012 0900

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Nitrate Nitrite as N-Soluble	0.31	U	mg/Kg	0.31	0.77	1.0	353.2
Analysis Batch: 280-129326	Analysis Date: 07/24/2012 1156						DryWt Corrected: Y
Chloride-Soluble	2.0	U	mg/Kg	2.0	5.1	1.0	9056M
Analysis Batch: 280-129000	Analysis Date: 07/21/2012 0237						DryWt Corrected: Y
Nitrate as N-Soluble	0.66	B J	mg/Kg	0.32	2.6	1.0	9056M
Analysis Batch: 280-128999	Analysis Date: 07/21/2012 0237						DryWt Corrected: Y
Bromide-Soluble	0.40	U	mg/Kg	0.40	2.1	1.0	9056M
Analysis Batch: 280-129000	Analysis Date: 07/21/2012 0237						DryWt Corrected: Y
Nitrite as N-Soluble	0.39	B J	mg/Kg	0.34	2.6	1.0	9056M
Analysis Batch: 280-128999	Analysis Date: 07/21/2012 0237						DryWt Corrected: Y
Orthophosphate as P-Soluble	1.3	U J	mg/Kg	1.3	5.1	1.0	9056M
Analysis Batch: 280-128999	Analysis Date: 07/21/2012 0237						DryWt Corrected: Y
Sulfate-Soluble	3.7	B C U	mg/Kg	1.8	5.1	1.0	9056M
Analysis Batch: 280-129000	Analysis Date: 07/21/2012 0237						DryWt Corrected: Y
Fluoride-Soluble	2.0	B	mg/Kg	0.84	5.1	1.0	9056M
Analysis Batch: 280-129000	Analysis Date: 07/21/2012 0237						DryWt Corrected: Y

Analyte	Result	Qual	Units	RL	RL	Dil	Method
pH adj. to 25 deg C-Soluble	9.27	J	SU	0.100	0.100	1.0	9045C
Analysis Batch: 280-128599	Analysis Date: 07/19/2012 2216						DryWt Corrected: N
Percent Moisture	3.5		%	0.10	0.10	1.0	D-2216
Analysis Batch: 280-128792	Analysis Date: 07/20/2012 1947						DryWt Corrected: N

7/31/12

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Certificate of Analysis

TestAmerica Laboratories, Inc.

Washington Hanford Closure
2620 Fermi Avenue
Richland, WA 99354

July 20, 2012

Attention: Joan Kessner

SAF Number	:	RC-075
Date SDG Closed	:	July 18, 2012
Number of Samples	:	Thirteen (13)
Sample Type	:	Soil
SDG Number	:	JP0398
Data Deliverable	:	7– Day / Summary

CASE NARRATIVE

I. Introduction

On July 18, 2012, thirteen soil samples were received at TestAmerica for chemical analysis. Upon receipt, the samples were assigned the following laboratory ID numbers to correspond with the Washington Closure Hanford (WCH) specific ID:

WCH ID#	TARL ID#	MATRIX	DATE OF RECEIPT
J1PVV9	MVNDK	SOIL	7/18/12
J1PVW0	MVNDL	SOIL	7/18/12
J1PVW1	MVNDM	SOIL	7/18/12
J1PVW2	MVNDN	SOIL	7/18/12
J1PVW3	MVNDP	SOIL	7/18/12
J1PVW4	MVNDQ	SOIL	7/18/12
J1PVW5	MVNDR	SOIL	7/18/12
J1PVW6	MVNDT	SOIL	7/18/12
J1PVW7	MVNDV	SOIL	7/18/12
J1PVW8	MVNDW	SOIL	7/18/12
J1PVW9	MVNDX	SOIL	7/18/12
J1PVX0	MVND0	SOIL	7/18/12
J1PVX1	MVND1	SOIL	7/18/12

II. Sample Receipt

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

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

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:

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

Chemical Analysis
Hexavalent Chromium by EPA method 7196A
The LCS, batch blank, samples, sample duplicate (J1PVV9) and sample matrix spike (J1PVV9) 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

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-075-307 | Page 1 of 3

Washington Closure Hanford	**Company Contact** J Kessner	**Telephone No.** 509-375-4688	**Project Coordinator** KESSNER, JH
Collector ~~Q. Stowe~~ H WEBER			**Price Code** 8L 8B 7-17-12
Project Designation 100-D/DR Burial Grounds & Remaining Sites - Soil Full Prot	**Sampling Location** 100-D-14 Waste Sites- Excavation		**SAF No.** RC-075
Ice Chest No. N/A	**Field Logbook No.** EL-1607-14	**COA** 000D142000	**Method of Shipment** HAND DELIVER
Shipped To TestAmerica Incorporated Richland	**Offsite Property No.** N/A		**Bill of Lading/Air Bill No.** N/A

Data Turnaround 21 Days 7 7-17-12

POSSIBLE SAMPLE HAZARDS/REMARKS

None

Special Handling and/or S

Cool 4 Deg C

J2G180473

J2G180473

~~J2G180473~~ 7-18-12

Due 7-25-12

SDG-JP0398

SAMPLE ANALYSIS

Preservation	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C				
Type of Container	G/P	G/P	G/P	aG	aG	aG				
No. of Container(s)	1	1	1	1	1	1				
Volume	125mL	125mL	125mL	125mL	120mL	125mL				
	See item (1) in Special Instructions	Chromium Hex - 7196	IC Anions - 9056 Modified; NO2/NO3 - 353.2; pH (Soil) - 9045	Semi-VOA - 8270A (TCL)	PCBs - 8082	Pesticides - 8081				
Sample No.	Matrix *	Sample Date	Sample Time							
J1PVW9 MVNDL	SOIL	7-17-12	1325		X					
J1PVW0 MVNDL	SOIL	7-17-12	1320		X					
J1PVW1 MVNDM	SOIL	7-17-12	1315		X					
J1PVW2 MVNDN	SOIL	7-17-12	1305		X					
J1PVW3 MVNDP	SOIL	7-17-12	1305		X					

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

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Heather Weber	7-17-12 1420	DWOOLSEY	7-17-12 1420
DWOOLSEY	7-17-12 1615	1060 #1 Dennis Newman	7/17/12 1615
1060 #1 WCH Dennis Newman	7/18/12 1440	J. Sock / Sock TARE	7-18-12 1440

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) {Mercury}

JP0398

REVIEWED BY AT DATE 7-18-12

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

TestAmerica Laboratories, Inc.

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TestAmerica Laboratories, Inc.

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-075-307 | Page 2 of 3

Washington Closure Hanford

Collector ~~Q. Stowe~~ H WEBER 7-17-12	**Company Contact** J Kessner	**Telephone No.** 509-375-4688
Project Coordinator KESSNER, JH	**Price Code** ~~8L~~ 8B 7-17-12	**Data Turnaround** ~~21~~ 7 Days
Project Designation 100-D/DR Burial Grounds & Remaining Sites - Soil Full Prot	**Sampling Location** 100-D-14 Waste Sites- Excavation	**SAF No.** RC-075
Ice Chest No. N/A	**Field Logbook No.** EL-1607-14	**COA** 000D142000
Method of Shipment HAND DELIVER 7-17-12		
Shipped To TestAmerica Incorporated, Richland	**Offsite Property No.** N/A	**Bill of Lading/Air Bill No.** N/A

POSSIBLE SAMPLE HAZARDS/REMARKS
None

Special Handling and/or Storage
Cool 4 Deg C

J2G180473
Due 7-25-12
SDG-JP0398

Preservation	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C
Type of Container	G/P	G/P	G/P	aG	aG	aG
No. of Container(s)	1	1	1	1	1	1
Volume	125mL	125mL	125mL	125mL	120mL	125mL
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Chromium Hex - 7196	IC Anions - 9056 Modified; NO2/NO3 - 353.2; pH (Soil) - 9045	Semi-VOA - 8270A (TCL)	PCB - 8082	Pesticides - 8081

(Columns 1 and 4–6 crossed out: 7-17-12)

Sample No.	Matrix *	Sample Date	Sample Time	ICP Metals	Chromium Hex	IC Anions	Semi-VOA	PCB	Pesticides
J1PVW4 MVNDQ	SOIL	7-17-12	1300		X				
J1PVW5 MVNDR	SOIL	7-17-12	1240		X				
J1PVW6 MVNDT	SOIL	7-17-12	1235		X				
J1PVW7 MVNDV	SOIL	7-17-12	1230		X				
J1PVW8 MVNDW	SOIL	7-17-12	1225		X				

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Heather Weber	7-17-12 1420	DWOOLSEY	7-17-12 1420
DWOOLSEY 1060 #1	7-17-12 1615	1060 #1 Dennis Newman	7-17-12 1615
Dennis Newman WCH	7/18/12 1440	J. Beck TACR	7-18-12 1440

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) {Mercury}

JP0398

REVIEWED BY [initials] DATE 7-18-12

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

TestAmerica Laboratories, Inc.

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Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		RC-075-307	Page 3 of 3
Collector ~~Q Stowe~~ H WEBBER 7-17-12	Company Contact J Kessner	Telephone No. 509-375-4688	Project Coordinator KESSNER, JH	Price Code 8L 8B 7-17-12	Data Turnaround 21 Days 7-17-12
Project Designation 100-D/DR Burial Grounds & Remaining Sites - Soil Full Prot	Sampling Location 100-D-14 Waste Sites- Excavation		SAF No. RC-075		
Ice Chest No. N/A	Field Logbook No. EL-1607-14	COA 000D142000	Method of Shipment HAND DELIVER		
Shipped To TestAmerica Incorporated, Richland	Offsite Property No. N/A		Bill of Lading/Air Bill No. N/A		

POSSIBLE SAMPLE HAZARDS/REMARKS

None

Special Handling and/or Storage

Cool 4 Deg C

J26180473

Due 7-25-12

SDG- JP0398

SAMPLE ANALYSIS

Preservation	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C					
Type of Container	G/P	G/P	G/P	aG	aG	aG					
No. of Container(s)	1	1	1	1	1	1					
Volume	125mL	125mL	125mL	125mL	120mL	125mL					
	See item (1) in Special Instructions.	Chromium Hex - 7196	IC Anions - 9056 Modified; NO2/NO3 - 353.2; pH (Soil) - 9045	Semi-VOA - 8270A (TCL)	PCBs - 8082	Pesticides - 8081					

Sample No.	Matrix *	Sample Date	Sample Time									
J1PVW9 MVNDX	SOIL	7-17-12	1220		X							
J1PVX0 MVNDO	SOIL	7-17-12	1215		X							
J1PVX1 MVND1	SOIL	7-17-12	1240		X							

CHAIN OF POSSESSION	Sign/Print Names	
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Heather Weber	7-17-12 1420	DWOODBAY	7-17-12 1420
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
DWOODBAY	7-17-12 1615	1660, 41 Dennis Newman	7/17/12 1615
Relinquished By/Removed From WCH LOGO #1	Date/Time 7/18/12	Received By/Stored In FAXED	Date/Time
Dennis Newman	1440	Julie Bach	7-18-12 1440
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

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 - 471 - (CV) {Mercury}

JP0398

REVIEWED BY AJ DATE 7-18-12

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

CASE NARRATIVE

Client: Washington Closure Hanford

Project: WASHINGTON CLOSURE HANFORD

Report Number: 280-31256-1

SDG #: JP0398
SAF#: RC-075

Date SDG Closed: July 19, 2012
Data Deliverable: 7 Day / Summary

CLIENT ID	LAB ID	ANALYSES REQUESTED	ANALYSES PERFORMED
J1PVV9	280-31256-1	6010/7471/9056M/353.2/9045/8270A/8082/8081	6010B/7471A/9056M/353.2/9045C/8270C/8082/8081A
J1PVW0	280-31256-2	6010/7471/9056M/353.2/9045/8270A/8082/8081	6010B/7471A/9056M/353.2/9045C/8270C/8082/8081A
J1PVW1	280-31256-3	6010/7471/9056M/353.2/9045/8270A/8082/8081	6010B/7471A/9056M/353.2/9045C/8270C/8082/8081A
J1PVW2	280-31256-4	6010/7471/9056M/353.2/9045/8270A/8082/8081	6010B/7471A/9056M/353.2/9045C/8270C/8082/8081A
J1PVW3	280-31256-5	6010/7471/9056M/353.2/9045/8270A/8082/8081	6010B/7471A/9056M/353.2/9045C/8270C/8082/8081A
J1PVW4	280-31256-6	6010/7471/9056M/353.2/9045/8270A/8082/8081	6010B/7471A/9056M/353.2/9045C/8270C/8082/8081A
J1PVW5	280-31256-7	6010/7471/9056M/353.2/9045/8270A/8082/8081	6010B/7471A/9056M/353.2/9045C/8270C/8082/8081A
J1PVW6	280-31256-8	6010/7471/9056M/353.2/9045/8270A/8082/8081	6010B/7471A/9056M/353.2/9045C/8270C/8082/8081A
J1PVW7	280-31256-9	6010/7471/9056M/353.2/9045/8270A/8082/8081	6010B/7471A/9056M/353.2/9045C/8270C/8082/8081A
J1PVW8	280-31256-10	6010/7471/9056M/353.2/9045/8270A/8082/8081	6010B/7471A/9056M/353.2/9045C/8270C/8082/8081A
J1PVW9	280-31256-11	6010/7471/9056M/353.2/9045/8270A/8082/8081	6010B/7471A/9056M/353.2/9045C/8270C/8082/8081A
J1PVX0	280-31256-12	6010/7471/9056M/353.2/9045/8270A/8082/8081	6010B/7471A/9056M/353.2/9045C/8270C/8082/8081A
J1PVX1	280-31256-13	6010/7471/9056M/353.2/9045/8270A/8082/8081	6010B/7471A/9056M/353.2/9045C/8270C/8082/8081A

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 7/19/2012 9:00 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 3 coolers at receipt time were 3.1° C, 4.2° C and 4.8° C.

GC/MS SEMIVOLATILES - SW846 8270C
The MS/MSD performed on sample J1PVX1 exhibited the percent recovery outside the control limits for 2,4-Dinitrophenol, and the associated sample result has been flagged "T". The acceptable LCS analysis data indicated that the analytical system was operating within control; therefore, corrective action is deemed unnecessary.

No other anomalies were encountered.

GC SEMIVOLATILES - SW846 8081A - PESTICIDES
The MSD aliquot of the MS/MSD performed on sample J1PVW4 exhibited spike compound recoveries outside the control limits, and the associated sample results have been flagged "N". In addition, RPD limits were exceeded. The acceptable LCS analysis data indicated that the analytical system was operating within control; therefore, corrective action is deemed unnecessary.

No other anomalies were encountered.

GC SEMIVOLATILES - SW846 8082 - PCBs
No anomalies were encountered.

TOTAL METALS - SW846 6010B/7471A
Serial dilution of a digestate in batch 280-128612 indicates that physical and chemical interferences are present for Cobalt, Nickel and Silicon. Results have been flagged with an "X".

Low levels of Barium are present in the method blank associated with batch 280-128612. Because the concentration in the method blank is not present at a level greater than half the reporting limit, corrective action is deemed unnecessary.

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 J1PVV9; therefore, control limits are not applicable.

Silicon was recovered outside the control limits in the Matrix Spike performed on sample J1PVV9, 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.

GENERAL CHEMISTRY - MCAWW 353.2 - NITRATE+NITRITE as N
No anomalies were encountered.

GENERAL CHEMISTRY - SW846 9056M - ANIONS
Low levels of Sulfate are present in the method blank associated with batch 280-129000. Because the concentration in the method blank is not present at a level greater than half the reporting limit, corrective action is deemed unnecessary.

The Matrix Spike performed on sample J1PVV9 exhibited percent recoveries outside the control limits for Orthophosphate as P and Fluoride, and the associated sample results have 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.

GENERAL CHEMISTRY - SW846 9045C - PH
No anomalies were encountered.

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-075-307 | Page 1 of 3

Washington Closure Hanford

Collector: ~~Q. Stowe~~ H WEBER 7-17-12
Company Contact: J Kessner | Telephone No.: 509-375-4688
Project Coordinator: KESSNER, JH
Price Code: 8L 8B | Data Turnaround: 21 Days 7 (7-17-12)
Project Designation: 100-D/DR Burial Grounds & Remaining Sites - Soil Full Prot
Sampling Location: 100-D-14 Waste Sites- Excavation
SAF No.: RC-075
Ice Chest No.: RCC-08-028 (7-17-12)
Field Logbook No.: EL-1607-14 | COA: 000D142000
Method of Shipment: FED EX
Shipped To: TestAmerica Incorporated, ~~Richland~~ DNR
Offsite Property No.:
Bill of Lading/Air Bill No.: SEE OSPL

POSSIBLE SAMPLE HAZARDS/REMARKS
None

Special Handling and/or Storage
Cool 4 Deg C

Preservation	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C					
Type of Container	G/P	G/P	G/P	aG	aG	aG					
No. of Container(s)	1	1	1	1	1	1					
Volume	125mL	125mL	125mL	125mL	120mL	125mL					
SAMPLE ANALYSIS	See Item (1) in Special Instructions	Chromium Hex - 7196 (7-17-12)	IC Anions - 9056 Modified; NO2/NO3 - 353.2; pH (Soil) - 9045	Semi-VOA - 8270A (TCL)	PCBs - 8082	Pesticides - 8081					
Sample No.	Matrix *	Sample Date	Sample Time								
J1PVV9	SOIL	7-17-12	1325	X		X	X	X	X		
J1PVW0	SOIL	7-17-12	1320	X		X	X	X	X		
J1PVW1	SOIL	7-17-12	1315	X		X	X	X	X		
J1PVW2	SOIL	7-17-12	1310	X		X	X	X	X		
J1PVW3	SOIL	7-17-12	1305	X		X	X	X	X		

CHAIN OF POSSESSION — Signs/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
H Weber/[illegible]	7-17-12 1420	DWOOLEY	7-17-12 1420
DWOOLEY	7-17-12 1615	A. Freier (WCH) 1060#1	7-17-12 1615
A. Freier (WCH) 1060#1	7-18-12 1025	Fed Ex	
		[illegible]	7/19/12 0900

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 - 471 - (CV) (Mercury)

JP0398

REVIEWED BY DJR DATE 7/18/12

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
	Disposed By	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	

WCH-EE-011

Page 139 of 145

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-075-307	Page 2 of 3
Collector: ~~C. Stowe~~ H WEBER 7-17-12	Company Contact: J Kessner; Telephone No.: 509-375-4688	Project Coordinator: KESSNER, JH	Price Code: ~~8L~~ 8B 7-17-12; Data Turnaround: ~~21~~ 7 Days 7-17-12
Project Designation: 100-D/DR Burial Grounds & Remaining Sites - Soil Full Prot	Sampling Location: 100-D-14 Waste Sites- Excavation	SAF No.: RC-075	
Ice Chest No.: RCC-08-028	Field Logbook No.: EL-1607-14; COA: 000D142000	Method of Shipment: Fed Ex	
Shipped To: TestAmerica Incorporated, ~~Richland~~ DVR 7-17-12	Offsite Property No.	Bill of Lading/Air Bill No.: SEE OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

None

Special Handling and/or Storage

Cool 4 Deg C

Preservation	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C			
Type of Container	G/P	G/P	G/P	aG	aG	aG			
No. of Container(s)	1	1	1	1	1	1			
Volume	125mL	125mL	125mL	125mL	120mL	125mL			
SAMPLE ANALYSIS	See item (1) in Special Instructions.	~~Chromium Hex - 7196~~ 7-17-12	IC Anions - 9056 Modified; NO2/NO3 - 353.2; pH (Soil) - 9045	Semi-VOA - 8270A (TCL)	PCBs - 8082	Pesticides - 8081			

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Sample No.	Matrix *	Sample Date	Sample Time										
J1PVW4	SOIL	7-17-12	1300	X		X	X	X	X				
J1PVW5	SOIL	7-17-12	1240	X		X	X	X	X				
J1PVW6	SOIL	7-17-12	1235	X		X	X	X	X				
J1PVW7	SOIL	7-17-12	1230	X		X	X	X	X				
J1PVW8	SOIL	7-17-12	1225	X		X	X	X	X				

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Heather Weber / [signature]	7-17-12 1420	D Woolery / [signature]	7-17-12 1420
D Woolery / [signature]	7-17-12 1615	A. Freier / [signature] 1060#	7-17-12 1615
A. Freier / [signature] WCH 1060#1	7-18-12 1025	Fed Ex	
		[signature]	7/19/12 0900

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) {Mercury}

JP0398

REVIEWED BY [initials] DATE 7/18/12

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-075-307	Page 3 of 3
Collector: ~~Q. Stowe~~ H WEBER	Company Contact: J Kessner	Telephone No.: 509-375-4688	Project Coordinator: KESSNER, JH	Price Code: 8L, 8B, D 7-17-12	Data Turnaround: 21 Days, 7, D 7-17-12
Project Designation: 100-D/DR Burial Grounds & Remaining Sites - Soil Full Prot	Sampling Location: 100-D-14 Waste Sites- Excavation		SAF No.: RC-075	
Ice Chest No.: RCC-08-028, D 7-17-12	Field Logbook No.: EL-1607-14	COA: 000D142000	Method of Shipment: FED EX	
Shipped To: TestAmerica Incorporated, ~~Richland~~ DVR	Offsite Property No.		Bill of Lading/Air Bill No.: SEE OSPL	

POSSIBLE SAMPLE HAZARDS/REMARKS

None

Special Handling and/or Storage

Cool 4 Deg C

Preservation	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C				
Type of Container	G/P	G/P	G/P	aG	aG	aG				
No. of Container(s)	1	1	1	1	1	1				
Volume	125mL	125mL	125mL	125mL	120mL	125mL				
SAMPLE ANALYSIS	See item (1) in Special Instructions	Chromium Hex - 7196	IC Anions - 9056 Modified; NO2/NO3 - 353.2; pH (Soil) - 9045	Semi-VOA - 8270A (TCL)	PCBs - 8082	Pesticides - 8081				
Sample No.	Matrix *	Sample Date	Sample Time							
J1PVW9	SOIL	7-17-12	1220	X		X	X	X	X	
J1PVX0	SOIL	7-17-12	1215	X		X	X	X	X	
J1PVX1	SOIL	7-17-12	1240	X		X	X	X	X	

CHAIN OF POSSESSION	Sign/Print Names		
	Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
1	Heather Weber/Heather Weber	7-17-12 1420	DWOOLSEY	7-17-12 1420
2	DWOOLSEY	7-17-12 1615	A. Freier	1060#1 Date/Time 1615 7-17-12
3	A. Freier	WCH 1060#1 7-18-12 1025	Fed Ex	Date/Time
4		Date/Time		7/19/12 0900 Date/Time
5		Date/Time		Date/Time
6		Date/Time		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) {Mercury}

JP0398

REVIEWED BY DATE 7/18/12

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

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Appendix 5

Data Validation Supporting Documentation

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	C	D	E
PROJECT: 100-D-1			DATA PACKAGE: JP0398		
VALIDATOR: ELR		LAB: TAL		DATE: 7/3/12	
			SDG: JP0398		

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				
JIPVV4	JIPVW0	JIPVW1	JIPVW2	JIPVW3
JIPVW4	JIPVW5	JIPVW6	JIPVW7	JIPVW8
JIPVW9	JIPVX0	JIPVX4		
				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: Solvate - V9, W5, W6, W7, W8, W9, X0, X1 - U

no FB

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:

no PA

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: _____

WS|X4

6. HOLDING TIMES (all levels)

Samples properly preserved? ..... (Yes) No N/A
Sample holding times acceptable? ..... Yes (No) N/A

Comments: nitrate, nitrite, ortho <2X - J cell
pH >2X - J cell

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

Date: 19-Jul-12

QC Results Summary
TestAmerica TARL
Ordered by Method, Batch No, QC Type,.

Report No. : 52391

SDG No.: JP0398

Batch / Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	LCS Recovery	Bias	MDL
7196_CR6								
2200113 MATRIX SPIKE, J1PVV9								
MVNDK1AC	HEXCHROME	8.96E+00 +- 0.0E+00		mg/kg	N/A	88%	-0.1	1.55E-01
2200113 LCS,								
MVNEC1AC	HEXCHROME	1.94E+01 +- 0.0E+00		mg/kg	N/A	97%	0.0	1.55E-01
2200113 BLANK QC,								
MVNEC1AA	HEXCHROME	1.55E-01 +- 0.0E+00	U	mg/kg	N/A			1.55E-01

No. of Results: 3

TestAmerica
rptSTLRchQcSummary V6.2.20
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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Client: Washington Closure Hanford

Job Number: 280-31256-1
Sdg Number: JP0398

Method Blank - Batch: 280-129326

Method: 353.2
Preparation: N/A

Lab Sample ID:	MB 280-129012/2-A	Analysis Batch:	280-129326	Instrument ID:	WC_Alp 2
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	C:\FLOW_4\0724NXNX
Dilution:	1.0	Leach Batch:	280-129012	Initial Weight/Volume:	1.0 mL
Analysis Date:	07/24/2012 1122	Units:	mg/Kg	Final Weight/Volume:	1.0 mL
Prep Date:	N/A				
Leach Date:	07/23/2012 1526				

Analyte	Result	Qual	MDL	RL
Nitrate Nitrite as N-Soluble	0.29	U	0.29	0.71

Method Reporting Limit Check - Batch: 280-129326

Method: 353.2
Preparation: N/A

Lab Sample ID:	MRL 280-129326/18	Analysis Batch:	280-129326	Instrument ID:	WC_Alp 2
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	C:\FLOW_4\0724NXNX
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	100 mL
Analysis Date:	07/24/2012 1117	Units:	mg/L	Final Weight/Volume:	100 mL
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Nitrate Nitrite as N-Soluble	0.100	0.0948	95	50 - 150	B

Lab Control Sample - Batch: 280-129326

Method: 353.2
Preparation: N/A

Lab Sample ID:	LCS 280-129012/1-A	Analysis Batch:	280-129326	Instrument ID:	WC_Alp 2
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	C:\FLOW_4\0724NXNX
Dilution:	1.0	Leach Batch:	280-129012	Initial Weight/Volume:	1.0 mL
Analysis Date:	07/24/2012 1120	Units:	mg/Kg	Final Weight/Volume:	1.0 mL
Prep Date:	N/A				
Leach Date:	07/23/2012 1526				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Nitrate Nitrite as N-Soluble	50.0	53.60	107	90 - 110	

Client: Washington Closure Hanford

Job Number: 280-31256-1
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Matrix Spike - Batch: 280-129326

Method: 353.2
Preparation: N/A

Lab Sample ID:	280-31256-1	Analysis Batch:	280-129326	Instrument ID:	WC_Alp 2
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	C:\FLOW_4\0724NXNX
Dilution:	1.0	Leach Batch:	280-129012	Initial Weight/Volume:	1.0 mL
Analysis Date:	07/24/2012 1126	Units:	mg/Kg	Final Weight/Volume:	1.0 mL
Prep Date:	N/A				
Leach Date:	07/23/2012 1526				

Analyte	Sample Result/Qual	Spike Amount	Result	% Rec.	Limit	Qual
Nitrate Nitrite as N-Soluble	3.8	39.8	45.42	105	90 - 110	

Matrix Spike - Batch: 280-129326

Method: 353.2
Preparation: N/A

Lab Sample ID:	280-31256-2	Analysis Batch:	280-129326	Instrument ID:	WC_Alp 2
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	C:\FLOW_4\0724NXNX
Dilution:	1.0	Leach Batch:	280-129012	Initial Weight/Volume:	1.0 mL
Analysis Date:	07/24/2012 1131	Units:	mg/Kg	Final Weight/Volume:	1.0 mL
Prep Date:	N/A				
Leach Date:	07/23/2012 1526				

Analyte	Sample Result/Qual	Spike Amount	Result	% Rec.	Limit	Qual
Nitrate Nitrite as N-Soluble	1.8	41.6	45.01	104	90 - 110	

Client: Washington Closure Hanford

Job Number: 280-31256-1
Sdg Number: JP0398

Duplicate - Batch: 280-129326

Method: 353.2
Preparation: N/A

Lab Sample ID:	280-31256-1	Analysis Batch:	280-129326	Instrument ID:	WC_Alp 2
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	C:\FLOW_4\0724NXNX
Dilution:	1.0	Leach Batch:	280-129012	Initial Weight/Volume:	1.0 mL
Analysis Date:	07/24/2012 1125	Units:	mg/Kg	Final Weight/Volume:	1.0 mL
Prep Date:	N/A				
Leach Date:	07/23/2012 1526				

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Nitrate Nitrite as N-Soluble	3.8	3.77	1	10	

Duplicate - Batch: 280-129326

Method: 353.2
Preparation: N/A

Lab Sample ID:	280-31256-2	Analysis Batch:	280-129326	Instrument ID:	WC_Alp 2
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	C:\FLOW_4\0724NXNX
Dilution:	1.0	Leach Batch:	280-129012	Initial Weight/Volume:	1.0 mL
Analysis Date:	07/24/2012 1129	Units:	mg/Kg	Final Weight/Volume:	1.0 mL
Prep Date:	N/A				
Leach Date:	07/23/2012 1526				

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Nitrate Nitrite as N-Soluble	1.8	1.82	3	10	

Client: Washington Closure Hanford

Job Number: 280-31256-1
Sdg Number: JP0398

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 280-128599

Method: 9045C
Preparation: N/A

LCS Lab Sample ID:	LCS 280-128599/4	Analysis Batch:	280-128599	Instrument ID:	WC_Orion 3 Star
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	N/A
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1.0 mL
Analysis Date:	07/19/2012 2124	Units:	SU	Final Weight/Volume:	1.0 mL
Prep Date:	N/A				
Leach Date:	N/A				

LCSD Lab Sample ID:	LCSD 280-128599/5	Analysis Batch:	280-128599	Instrument ID:	WC_Orion 3 Star
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	N/A
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1.0 mL
Analysis Date:	07/19/2012 2126	Units:	SU	Final Weight/Volume:	1.0 mL
Prep Date:	N/A				
Leach Date:	N/A				

	% Rec.						
Analyte	LCS	LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
pH adj. to 25 deg C-Soluble	100	100	97 - 103	0	5		

Duplicate - Batch: 280-128599

Method: 9045C
Preparation: N/A

Lab Sample ID:	280-31256-1	Analysis Batch:	280-128599	Instrument ID:	WC_Orion 3 Star
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	N/A
Dilution:	1.0	Leach Batch:	280-128598	Initial Weight/Volume:	1.0 mL
Analysis Date:	07/19/2012 2133	Units:	SU	Final Weight/Volume:	1.0 mL
Prep Date:	N/A				
Leach Date:	07/19/2012 1745				

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
pH adj. to 25 deg C-Soluble	8.91	8.890	0.2	5	

Duplicate - Batch: 280-128599

Method: 9045C
Preparation: N/A

Lab Sample ID:	280-31256-8	Analysis Batch:	280-128599	Instrument ID:	WC_Orion 3 Star
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	N/A
Dilution:	1.0	Leach Batch:	280-128598	Initial Weight/Volume:	1.0 mL
Analysis Date:	07/19/2012 2201	Units:	SU	Final Weight/Volume:	1.0 mL
Prep Date:	N/A				
Leach Date:	07/19/2012 1745				

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
pH adj. to 25 deg C-Soluble	9.02	9.030	0.1	5	

Client: Washington Closure Hanford

Job Number: 280-31256-1
Sdg Number: JP0398

Method Blank - Batch: 280-128999

Method: 9056M
Preparation: N/A

Lab Sample ID:	MB 280-128749/2-A	Analysis Batch:	280-128999	Instrument ID:	WC_IC8
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	147.TXT
Dilution:	1.0	Leach Batch:	280-128749	Initial Weight/Volume:	1.0 mL
Analysis Date:	07/20/2012 2118	Units:	mg/Kg	Final Weight/Volume:	1.0 mL
Prep Date:	N/A				
Leach Date:	07/20/2012 1419				

Analyte	Result	Qual	MDL	RL
Nitrate as N-Soluble	0.31	U	0.31	2.5
Nitrite as N-Soluble	0.34	U	0.34	2.5
Orthophosphate as P-Soluble	1.2	U	1.2	5.0

Method Reporting Limit Check - Batch: 280-128999

Method: 9056M
Preparation: N/A

Lab Sample ID:	MRL 280-128999/3	Analysis Batch:	280-128999	Instrument ID:	WC_IC8
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	112.TXT
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1.0 mL
Analysis Date:	07/20/2012 0902	Units:	mg/L	Final Weight/Volume:	5 mL
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Nitrate as N-Soluble	0.200	0.223	112	50 - 150	B
Nitrite as N-Soluble	0.200	0.217	109	50 - 150	B
Orthophosphate as P-Soluble	0.200	0.19	63	50 - 150	U

Lab Control Sample - Batch: 280-128999

Method: 9056M
Preparation: N/A

Lab Sample ID:	LCS 280-128749/1-A	Analysis Batch:	280-128999	Instrument ID:	WC_IC8
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	146.TXT
Dilution:	1.0	Leach Batch:	280-128749	Initial Weight/Volume:	1.0 mL
Analysis Date:	07/20/2012 2043	Units:	mg/Kg	Final Weight/Volume:	1.0 mL
Prep Date:	N/A				
Leach Date:	07/20/2012 1419				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Nitrate as N-Soluble	50.0	51.48	103	90 - 110	
Nitrite as N-Soluble	50.0	50.55	101	90 - 110	
Orthophosphate as P-Soluble	50.0	47.11	94	90 - 110	

Client: Washington Closure Hanford

Job Number: 280-31256-1
Sdg Number: JP0398

Matrix Spike - Batch: 280-128999

Method: 9056M
Preparation: N/A

Lab Sample ID:	280-31256-1	Analysis Batch:	280-128999	Instrument ID:	WC_IC8
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	152.TXT
Dilution:	1.0	Leach Batch:	280-128749	Initial Weight/Volume:	1.0 mL
Analysis Date:	07/20/2012 2242	Units:	mg/Kg	Final Weight/Volume:	1.0 mL
Prep Date:	N/A				
Leach Date:	07/20/2012 1419				

Analyte	Sample Result/Qual		Spike Amount	Result	% Rec.	Limit	Qual
Nitrate as N-Soluble	3.5		50.2	54.64	102	80 - 120	
Nitrite as N-Soluble	0.64	B	50.2	50.73	100	80 - 120	
Orthophosphate as P-Soluble	1.2	U	50.2	35.94	72	80 - 120	N

Duplicate - Batch: 280-128999

Method: 9056M
Preparation: N/A

Lab Sample ID:	280-31256-1	Analysis Batch:	280-128999	Instrument ID:	WC_IC8
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	149.TXT
Dilution:	1.0	Leach Batch:	280-128749	Initial Weight/Volume:	1.0 mL
Analysis Date:	07/20/2012 2151	Units:	mg/Kg	Final Weight/Volume:	1.0 mL
Prep Date:	N/A				
Leach Date:	07/20/2012 1419				

Analyte	Sample Result/Qual		Result	RPD	Limit	Qual
Nitrate as N-Soluble	3.5		3.53	0.3	15	
Nitrite as N-Soluble	0.64	B	0.637	0	15	B
Orthophosphate as P-Soluble	1.2	U	1.2	NC	15	U

Duplicate - Batch: 280-128999

Method: 9056M
Preparation: N/A

Lab Sample ID:	280-31256-13	Analysis Batch:	280-128999	Instrument ID:	WC_IC8
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	167.TXT
Dilution:	1.0	Leach Batch:	280-128749	Initial Weight/Volume:	1.0 mL
Analysis Date:	07/21/2012 0254	Units:	mg/Kg	Final Weight/Volume:	1.0 mL
Prep Date:	N/A				
Leach Date:	07/20/2012 1419				

Analyte	Sample Result/Qual		Result	RPD	Limit	Qual
Nitrate as N-Soluble	0.66	B	0.667	2	15	B
Nitrite as N-Soluble	0.39	B	0.390	0	15	B
Orthophosphate as P-Soluble	1.3	U	1.3	NC	15	U

Client: Washington Closure Hanford

Job Number: 280-31256-1
Sdg Number: JP0398

Method Blank - Batch: 280-129000

Method: 9056M
Preparation: N/A

Lab Sample ID:	MB 280-128749/2-A	Analysis Batch:	280-129000	Instrument ID:	WC_IC8
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	147.TXT
Dilution:	1.0	Leach Batch:	280-128749	Initial Weight/Volume:	1.0 mL
Analysis Date:	07/20/2012 2118	Units:	mg/Kg	Final Weight/Volume:	1.0 mL
Prep Date:	N/A				
Leach Date:	07/20/2012 1419				

Analyte	Result	Qual	MDL	RL
Chloride-Soluble	2.0	U	2.0	5.0
Bromide-Soluble	0.39	U	0.39	2.0
Sulfate-Soluble	2.42	B	1.7	5.0
Fluoride-Soluble	0.82	U	0.82	5.0

Method Reporting Limit Check - Batch: 280-129000

Method: 9056M
Preparation: N/A

Lab Sample ID:	MRL 280-129000/3	Analysis Batch:	280-129000	Instrument ID:	WC_IC8
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	112.TXT
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1.0 mL
Analysis Date:	07/20/2012 0902	Units:	mg/L	Final Weight/Volume:	5 mL
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Chloride-Soluble	1.00	1.07	107	50 - 150	B
Bromide-Soluble	0.200	0.230	115	50 - 150	B
Sulfate-Soluble	1.00	1.08	108	50 - 150	B
Fluoride-Soluble	0.200	0.166	83	50 - 150	B

Lab Control Sample - Batch: 280-129000

Method: 9056M
Preparation: N/A

Lab Sample ID:	LCS 280-128749/1-A	Analysis Batch:	280-129000	Instrument ID:	WC_IC8
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	146.TXT
Dilution:	1.0	Leach Batch:	280-128749	Initial Weight/Volume:	1.0 mL
Analysis Date:	07/20/2012 2043	Units:	mg/Kg	Final Weight/Volume:	1.0 mL
Prep Date:	N/A				
Leach Date:	07/20/2012 1419				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Chloride-Soluble	250	255.3	102	90 - 110	
Bromide-Soluble	50.0	51.16	102	90 - 110	
Sulfate-Soluble	250	258.8	104	90 - 110	
Fluoride-Soluble	50.0	50.11	100	90 - 110	

Client: Washington Closure Hanford

Job Number: 280-31256-1
Sdg Number: JP0398

Matrix Spike - Batch: 280-129000

Method: 9056M
Preparation: N/A

Lab Sample ID:	280-31256-1	Analysis Batch:	280-129000	Instrument ID:	WC_IC8
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	152.TXT
Dilution:	1.0	Leach Batch:	280-128749	Initial Weight/Volume:	1.0 mL
Analysis Date:	07/20/2012 2242	Units:	mg/Kg	Final Weight/Volume:	1.0 mL
Prep Date:	N/A				
Leach Date:	07/20/2012 1419				

Analyte	Sample Result/Qual		Spike Amount	Result	% Rec.	Limit	Qual
Chloride-Soluble	4.3	B	251	256.6	100	80 - 120	
Bromide-Soluble	0.39	U	50.2	50.82	101	80 - 120	
Sulfate-Soluble	6.5		251	258.9	100	80 - 120	
Fluoride-Soluble	0.82	U	50.2	33.04	66	80 - 120	N

Duplicate - Batch: 280-129000

Method: 9056M
Preparation: N/A

Lab Sample ID:	280-31256-1	Analysis Batch:	280-129000	Instrument ID:	WC_IC8
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	149.TXT
Dilution:	1.0	Leach Batch:	280-128749	Initial Weight/Volume:	1.0 mL
Analysis Date:	07/20/2012 2151	Units:	mg/Kg	Final Weight/Volume:	1.0 mL
Prep Date:	N/A				
Leach Date:	07/20/2012 1419				

Analyte	Sample Result/Qual		Result	RPD	Limit	Qual
Chloride-Soluble	4.3	B	4.14	3	15	B
Bromide-Soluble	0.39	U	0.39	NC	15	U
Sulfate-Soluble	6.5		6.33	3	15	
Fluoride-Soluble	0.82	U	0.82	NC	15	U

Duplicate - Batch: 280-129000

Method: 9056M
Preparation: N/A

Lab Sample ID:	280-31256-13	Analysis Batch:	280-129000	Instrument ID:	WC_IC8
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	167.TXT
Dilution:	1.0	Leach Batch:	280-128749	Initial Weight/Volume:	1.0 mL
Analysis Date:	07/21/2012 0254	Units:	mg/Kg	Final Weight/Volume:	1.0 mL
Prep Date:	N/A				
Leach Date:	07/20/2012 1419				

Analyte	Sample Result/Qual		Result	RPD	Limit	Qual
Chloride-Soluble	2.0	U	2.83	NC	15	B
Bromide-Soluble	0.40	U	0.40	NC	15	U
Sulfate-Soluble	3.7	B	3.84	4	15	B
Fluoride-Soluble	2.0	B	2.03	0	15	B

Date: 1 August 2012
To: Washington Closure Hanford Inc. (technical representative)
From: ELR Consulting
Project: 100-D/DR Burial Grounds & Remaining Sites – Soil Full Protocol - Waste Site 100-D-14
Subject: Semivolatile Organics - Data Package No. JP0398-TAL

INTRODUCTION

This memo presents the results of data validation on Data Package No. JP0398 prepared by TestAmerica Laboratories (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
J1PVV9	7/17/12	Soil	C	See note 1
J1PVW0	7/17/12	Soil	C	See note 1
J1PVW1	7/17/12	Soil	C	See note 1
J1PVW2	7/17/12	Soil	C	See note 1
J1PVW3	7/17/12	Soil	C	See note 1
J1PVW4	7/17/12	Soil	C	See note 1
J1PVW5	7/17/12	Soil	C	See note 1
J1PVW6	7/17/12	Soil	C	See note 1
J1PVW7	7/17/12	Soil	C	See note 1
J1PVW8	7/17/12	Soil	C	See note 1
J1PVW9	7/17/12	Soil	C	See note 1
J1PVX0	7/17/12	Soil	C	See note 1
J1PVX1	7/17/12	Soil	C	See note 1

1.– Semivolatile organics by 8270C.

Data validation was conducted in accordance with the Washington Closure Hanford (WCH) validation statement of work and the 100 Area Remedial Action Sampling and Analysis Plan (DOE/RL-96-22, September 2009). 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: Analytes 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 (equipment) Blanks

No field blanks were 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.

Due to an LCS recovery outside QC limits, all 3,3-dichlorbenzidine (49%) results were qualified as estimates and flagged "J".

Due to matrix spike (40%) and matrix spike duplicate (42%) results outside QC limits, all 2,4-dinitrophenol results were qualified as estimates and flagged "J".

All other 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 field duplicates (J1PVW5/J1PVX1) were submitted for analysis. Laboratory duplicates are compared using the same criteria as for laboratory results. All field duplicate results are 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. JP0398 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 an LCS recovery outside QC limits, all 3,3-dichlorbenzidine (49%) results were qualified as estimates and flagged "J".

- Due to matrix spike (40%) and matrix spike duplicate (42%) results outside QC limits, all 2,4-dinitrophenol 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-96-22, Rev. 5, *100 Area Remedial Action Sampling and Analysis Plan*, U.S. Department of Energy, September 2009.

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

SEMIVOLATILE ORGANIC DATA QUALIFICATION SUMMARY*

SDG: JP0398	**REVIEWER: ELR**	**Project: 100-D-14**	**PAGE_1_OF_1**
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
3,3-Dichlorobenzidine	J	All	LCS recovery
2,4-Dinitrophenol	J	All	MS & MSD 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: 280-31256-1
Sdg Number: JP0398

7/3/12

Client Sample ID: J1PVV9

Lab Sample ID: 280-31256-1
Client Matrix: Solid

% Moisture: 2.4

Date Sampled: 07/17/2012 1325
Date Received: 07/19/2012 0900

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method: 8270C
Prep Method: 3550C
Dilution: 1.0
Analysis Date: 07/24/2012 1338
Prep Date: 07/20/2012 2200

Analysis Batch: 280-129144
Prep Batch: 280-128653

Instrument ID: SMS_D
Lab File ID: D1770.D
Initial Weight/Volume: 31.7 g
Final Weight/Volume: 1000 uL
Injection Volume: 0.5 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Acenaphthene		10	U	10	320
Acenaphthylene		16	U	16	320
Anthracene		16	U	16	320
Benzo[a]anthracene		19	U	19	320
Benzo[a]pyrene		19	U	19	320
Benzo[b]fluoranthene		25	U	25	320
Benzo[ghi]perylene		16	U	16	320
Benzo[k]fluoranthene		39	U	39	320
Bis(2-chloroethoxy)methane		22	U	22	320
Bis(2-chloroethyl)ether		16	U	16	320
bis (2-chloroisopropyl) ether		22	U	22	320
Bis(2-ethylhexyl) phthalate		45	U	45	320
4-Bromophenyl phenyl ether		18	U	18	320
Butyl benzyl phthalate		42	U	42	320
Carbazole		35	U	35	320
4-Chloroaniline		79	U	79	320
4-Chloro-3-methylphenol		64	U	64	320
2-Chloronaphthalene		9.7	U	9.7	320
2-Chlorophenol		20	U	20	320
4-Chlorophenyl phenyl ether		20	U	20	320
Chrysene		26	U	26	320
Dibenz(a,h)anthracene		18	U	18	320
Dibenzofuran		19	U	19	320
1,2-Dichlorobenzene		21	U	21	320
1,3-Dichlorobenzene		12	U	12	320
1,4-Dichlorobenzene		13	U	13	320
3,3'-Dichlorobenzidine		87	U J	87	640
2,4-Dichlorophenol		9.7	U	9.7	320
Diethyl phthalate		25	U	25	320
2,4-Dimethylphenol		64	U	64	320
Dimethyl phthalate		22	U	22	320
Di-n-butyl phthalate		28	U	28	320
4,6-Dinitro-2-methylphenol		320	U	320	640
2,4-Dinitrophenol		320	U J	320	800
2,4-Dinitrotoluene		64	U	64	320
2,6-Dinitrotoluene		27	U	27	320
Di-n-octyl phthalate		14	U	14	320
Fluoranthene		35	U	35	320
Fluorene		17	U	17	320
Hexachlorobenzene		28	U	28	320
Hexachlorobutadiene		9.7	U	9.7	320
Hexachlorocyclopentadiene		48	U	48	320
Hexachloroethane		21	U	21	320
Indeno[1,2,3-cd]pyrene		21	U	21	320
Isophorone		16	U	16	320
2-Methylnaphthalene		18	U	18	320

Client: Washington Closure Hanford

7/31/12

Job Number: 280-31256-1
Sdg Number: JP0398

Client Sample ID: J1PVV9

Lab Sample ID: 280-31256-1
Client Matrix: Solid

% Moisture: 2.4

Date Sampled: 07/17/2012 1325
Date Received: 07/19/2012 0900

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method: 8270C
Prep Method: 3550C
Dilution: 1.0
Analysis Date: 07/24/2012 1338
Prep Date: 07/20/2012 2200

Analysis Batch: 280-129144
Prep Batch: 280-128653

Instrument ID: SMS_D
Lab File ID: D1770.D
Initial Weight/Volume: 31.7 g
Final Weight/Volume: 1000 uL
Injection Volume: 0.5 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
2-Methylphenol		13	U	13	320
3 & 4 Methylphenol		32	U	32	320
Naphthalene		30	U	30	320
2-Nitroaniline		48	U	48	320
3-Nitroaniline		71	U	71	320
4-Nitroaniline		70	U	70	320
Nitrobenzene		21	U	21	320
2-Nitrophenol		9.7	U	9.7	320
4-Nitrophenol		94	U	94	640
N-Nitrosodi-n-propylamine		30	U	30	320
N-Nitrosodiphenylamine		20	U	20	320
Pentachlorophenol		320	U	320	640
Phenanthrene		16	U	16	320
Phenol		17	U	17	320
Pyrene		12	U	12	320
1,2,4-Trichlorobenzene		27	U	27	320
2,4,5-Trichlorophenol		9.7	U	9.7	320
2,4,6-Trichlorophenol		9.7	U	9.7	320

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Fluorobiphenyl	79		50 - 120
2-Fluorophenol	83		53 - 120
Nitrobenzene-d5	77		50 - 120
Phenol-d5	85		52 - 120
Terphenyl-d14	106		55 - 120
2,4,6-Tribromophenol	77		51 - 120

Client: Washington Closure Hanford

7/31/12

Job Number: 280-31256-1
Sdg Number: JP0398

Client Sample ID: **J1PVV9**

Lab Sample ID: 280-31256-1
Client Matrix: Solid

% Moisture: 2.4

Date Sampled: 07/17/2012 1325
Date Received: 07/19/2012 0900

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	280-129144	Instrument ID:	SMS_D
Prep Method:	3550C	Prep Batch:	280-128653	Lab File ID:	D1770.D
Dilution:	1.0			Initial Weight/Volume:	31.7 g
Analysis Date:	07/24/2012 1338			Final Weight/Volume:	1000 uL
Prep Date:	07/20/2012 2200			Injection Volume:	0.5 uL

Tentatively Identified Compounds **Number TIC's Found:** 4

Cas Number	Analyte	RT	Est. Result (ug/Kg)	Qualifier
	Unknown	1.76	580	N J
	Unknown	1.89	210	N J
	Unknown	2.94	2200	N J
3855-82-1	1,4-Dichlorobenzene-d4	4.40	2500	N J

Client: Washington Closure Hanford

Job Number: 280-31256-1
Sdg Number: JP0398

Client Sample ID: J1PVW0

Lab Sample ID: 280-31256-2
Client Matrix: Solid

% Moisture: 3.8

Date Sampled: 07/17/2012 1320
Date Received: 07/19/2012 0900

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	280-129144	Instrument ID:	SMS_D
Prep Method:	3550C	Prep Batch:	280-128653	Lab File ID:	D1771.D
Dilution:	1.0			Initial Weight/Volume:	30.2 g
Analysis Date:	07/24/2012 1358			Final Weight/Volume:	1000 uL
Prep Date:	07/20/2012 2200			Injection Volume:	0.5 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Acenaphthene		11	U	11	340
Acenaphthylene		18	U	18	340
Anthracene		18	U	18	340
Benzo[a]anthracene		21	U	21	340
Benzo[a]pyrene		21	U	21	340
Benzo[b]fluoranthene		27	U	27	340
Benzo[ghi]perylene		17	U	17	340
Benzo[k]fluoranthene		41	U	41	340
Bis(2-chloroethoxy)methane		24	U	24	340
Bis(2-chloroethyl)ether		17	U	17	340
bis (2-chloroisopropyl) ether		24	U	24	340
Bis(2-ethylhexyl) phthalate		47	U	47	340
4-Bromophenyl phenyl ether		20	U	20	340
Butyl benzyl phthalate		44	U	44	340
Carbazole		37	U	37	340
4-Chloroaniline		85	U	85	340
4-Chloro-3-methylphenol		68	U	68	340
2-Chloronaphthalene		10	U	10	340
2-Chlorophenol		22	U	22	340
4-Chlorophenyl phenyl ether		22	U	22	340
Chrysene		28	U	28	340
Dibenz(a,h)anthracene		20	U	20	340
Dibenzofuran		21	U	21	340
1,2-Dichlorobenzene		23	U	23	340
1,3-Dichlorobenzene		12	U	12	340
1,4-Dichlorobenzene		14	U	14	340
3,3'-Dichlorobenzidine		93	U J	93	680
2,4-Dichlorophenol		10	U	10	340
Diethyl phthalate		27	U	27	340
2,4-Dimethylphenol		68	U	68	340
Dimethyl phthalate		24	U	24	340
Di-n-butyl phthalate		30	U	30	340
4,6-Dinitro-2-methylphenol		340	U	340	680
2,4-Dinitrophenol		340	U J	340	850
2,4-Dinitrotoluene		68	U	68	340
2,6-Dinitrotoluene		29	U	29	340
Di-n-octyl phthalate		15	U	15	340
Fluoranthene		37	U	37	340
Fluorene		19	U	19	340
Hexachlorobenzene		30	U	30	340
Hexachlorobutadiene		10	U	10	340
Hexachlorocyclopentadiene		52	U	52	340
Hexachloroethane		22	U	22	340
Indeno[1,2,3-cd]pyrene		23	U	23	340
Isophorone		18	U	18	340
2-Methylnaphthalene		20	U	20	340

Client: Washington Closure Hanford

Job Number: 280-31256-1
Sdg Number: JP0398

7/31/12

Client Sample ID: J1PVW0

Lab Sample ID: 280-31256-2
Client Matrix: Solid

% Moisture: 3.8

Date Sampled: 07/17/2012 1320
Date Received: 07/19/2012 0900

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method: 8270C
Prep Method: 3550C
Dilution: 1.0
Analysis Date: 07/24/2012 1358
Prep Date: 07/20/2012 2200

Analysis Batch: 280-129144
Prep Batch: 280-128653

Instrument ID: SMS_D
Lab File ID: D1771.D
Initial Weight/Volume: 30.2 g
Final Weight/Volume: 1000 uL
Injection Volume: 0.5 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
2-Methylphenol		13	U	13	340
3 & 4 Methylphenol		34	U	34	340
Naphthalene		32	U	32	340
2-Nitroaniline		52	U	52	340
3-Nitroaniline		75	U	75	340
4-Nitroaniline		75	U	75	340
Nitrobenzene		23	U	23	340
2-Nitrophenol		10	U	10	340
4-Nitrophenol		100	U	100	680
N-Nitrosodi-n-propylamine		32	U	32	340
N-Nitrosodiphenylamine		22	U	22	340
Pentachlorophenol		340	U	340	680
Phenanthrene		18	U	18	340
Phenol		19	U	19	340
Pyrene		12	U	12	340
1,2,4-Trichlorobenzene		29	U	29	340
2,4,5-Trichlorophenol		10	U	10	340
2,4,6-Trichlorophenol		10	U	10	340

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Fluorobiphenyl	74		50 - 120
2-Fluorophenol	81		53 - 120
Nitrobenzene-d5	76		50 - 120
Phenol-d5	84		52 - 120
Terphenyl-d14	103		55 - 120
2,4,6-Tribromophenol	68		51 - 120

Client: Washington Closure Hanford

Job Number: 280-31256-1
Sdg Number: JP0398

Client Sample ID: J1PVW0

Lab Sample ID: 280-31256-2
Client Matrix: Solid % Moisture: 3.8

7/31/12

Date Sampled: 07/17/2012 1320
Date Received: 07/19/2012 0900

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	280-129144	Instrument ID:	SMS_D
Prep Method:	3550C	Prep Batch:	280-128653	Lab File ID:	D1771.D
Dilution:	1.0			Initial Weight/Volume:	30.2 g
Analysis Date:	07/24/2012 1358			Final Weight/Volume:	1000 uL
Prep Date:	07/20/2012 2200			Injection Volume:	0.5 uL

Tentatively Identified Compounds **Number TIC's Found:** 4

Cas Number	Analyte	RT	Est. Result (ug/Kg)	Qualifier
	Unknown	1.76	500	N J
	Unknown	1.89	140	N J
	Unknown	2.93	2400	N J
2199-69-1	Benzene-1,2,3,4-d4-, 5,6-dichloro-	4.40	2400	N J

Client: Washington Closure Hanford

7/31/12

Job Number: 280-31256-1
Sdg Number: JP0398

Client Sample ID: J1PVW1

Lab Sample ID: 280-31256-3
Client Matrix: Solid

% Moisture: 2.2

Date Sampled: 07/17/2012 1315
Date Received: 07/19/2012 0900

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method: 8270C
Prep Method: 3550C
Dilution: 1.0
Analysis Date: 07/24/2012 1418
Prep Date: 07/20/2012 2200

Analysis Batch: 280-129144
Prep Batch: 280-128653

Instrument ID: SMS_D
Lab File ID: D1772.D
Initial Weight/Volume: 30.4 g
Final Weight/Volume: 1000 uL
Injection Volume: 0.5 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Acenaphthene		10	U	10	330
Acenaphthylene		17	U	17	330
Anthracene		17	U	17	330
Benzo[a]anthracene		20	U	20	330
Benzo[a]pyrene		20	U	20	330
Benzo[b]fluoranthene		26	U	26	330
Benzo[ghi]perylene		16	U	16	330
Benzo[k]fluoranthene		40	U	40	330
Bis(2-chloroethoxy)methane		23	U	23	330
Bis(2-chloroethyl)ether		17	U	17	330
bis (2-chloroisopropyl) ether		23	U	23	330
Bis(2-ethylhexyl) phthalate		46	U	46	330
4-Bromophenyl phenyl ether		19	U	19	330
Butyl benzyl phthalate		43	U	43	330
Carbazole		36	U	36	330
4-Chloroaniline		83	U	83	330
4-Chloro-3-methylphenol		67	U	67	330
2-Chloronaphthalene		10	U	10	330
2-Chlorophenol		21	U	21	330
4-Chlorophenyl phenyl ether		21	U	21	330
Chrysene		27	U	27	330
Dibenz(a,h)anthracene		19	U	19	330
Dibenzofuran		20	U	20	330
1,2-Dichlorobenzene		22	U	22	330
1,3-Dichlorobenzene		12	U	12	330
1,4-Dichlorobenzene		14	U	14	330
3,3'-Dichlorobenzidine		91	U J	91	670
2,4-Dichlorophenol		10	U	10	330
Diethyl phthalate		26	U	26	330
2,4-Dimethylphenol		67	U	67	330
Dimethyl phthalate		23	U	23	330
Di-n-butyl phthalate		29	U	29	330
4,6-Dinitro-2-methylphenol		330	U	330	670
2,4-Dinitrophenol		340	U J	340	830
2,4-Dinitrotoluene		67	U	67	330
2,6-Dinitrotoluene		28	U	28	330
Di-n-octyl phthalate		15	U	15	330
Fluoranthene		36	U	36	330
Fluorene		18	U	18	330
Hexachlorobenzene		29	U	29	330
Hexachlorobutadiene		10	U	10	330
Hexachlorocyclopentadiene		50	U	50	330
Hexachloroethane		21	U	21	330
Indeno[1,2,3-cd]pyrene		22	U	22	330
Isophorone		17	U	17	330
2-Methylnaphthalene		19	U	19	330

Client: Washington Closure Hanford

7/31/12

Job Number: 280-31256-1
Sdg Number: JP0398

Client Sample ID: **J1PVW1**

Lab Sample ID: 280-31256-3
Client Matrix: Solid

% Moisture: 2.2

Date Sampled: 07/17/2012 1315
Date Received: 07/19/2012 0900

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	280-129144	Instrument ID:	SMS_D
Prep Method:	3550C	Prep Batch:	280-128653	Lab File ID:	D1772.D
Dilution:	1.0			Initial Weight/Volume:	30.4 g
Analysis Date:	07/24/2012 1418			Final Weight/Volume:	1000 uL
Prep Date:	07/20/2012 2200			Injection Volume:	0.5 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
2-Methylphenol		13	U	13	330
3 & 4 Methylphenol		33	U	33	330
Naphthalene		31	U	31	330
2-Nitroaniline		50	U	50	330
3-Nitroaniline		74	U	74	330
4-Nitroaniline		73	U	73	330
Nitrobenzene		22	U	22	330
2-Nitrophenol		10	U	10	330
4-Nitrophenol		98	U	98	670
N-Nitrosodi-n-propylamine		31	U	31	330
N-Nitrosodiphenylamine		21	U	21	330
Pentachlorophenol		330	U	330	670
Phenanthrene		17	U	17	330
Phenol		18	U	18	330
Pyrene		12	U	12	330
1,2,4-Trichlorobenzene		28	U	28	330
2,4,5-Trichlorophenol		10	U	10	330
2,4,6-Trichlorophenol		10	U	10	330

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Fluorobiphenyl	75		50 - 120
2-Fluorophenol	79		53 - 120
Nitrobenzene-d5	74		50 - 120
Phenol-d5	83		52 - 120
Terphenyl-d14	105		55 - 120
2,4,6-Tribromophenol	75		51 - 120

Client: Washington Closure Hanford

Job Number: 280-31256-1
Sdg Number: JP0398

Client Sample ID: J1PVW1

Lab Sample ID: 280-31256-3
Client Matrix: Solid

% Moisture: 2.2

Date Sampled: 07/17/2012 1315
Date Received: 07/19/2012 0900

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	280-129144	Instrument ID:	SMS_D
Prep Method:	3550C	Prep Batch:	280-128653	Lab File ID:	D1772.D
Dilution:	1.0			Initial Weight/Volume:	30.4 g
Analysis Date:	07/24/2012 1418			Final Weight/Volume:	1000 uL
Prep Date:	07/20/2012 2200			Injection Volume:	0.5 uL

Tentatively Identified Compounds **Number TIC's Found:** 3

Cas Number	Analyte	RT	Est. Result (ug/Kg)	Qualifier
	Unknown	1.76	530	N J
	Unknown	2.93	2400	N J
2199-69-1	Benzene-1,2,3,4-d4-, 5,6-dichloro-	4.39	2400	N J

Client: Washington Closure Hanford

7/31/12

Job Number: 280-31256-1
Sdg Number: JP0398

Client Sample ID: J1PVW2

Lab Sample ID: 280-31256-4
Client Matrix: Solid

% Moisture: 2.9

Date Sampled: 07/17/2012 1310
Date Received: 07/19/2012 0900

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	280-129144	Instrument ID:	SMS_D
Prep Method:	3550C	Prep Batch:	280-128653	Lab File ID:	D1773.D
Dilution:	1.0			Initial Weight/Volume:	30.9 g
Analysis Date:	07/24/2012 1439			Final Weight/Volume:	1000 uL
Prep Date:	07/20/2012 2200			Injection Volume:	0.5 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Acenaphthene		10	U	10	330
Acenaphthylene		17	U	17	330
Anthracene		17	U	17	330
Benzo[a]anthracene		20	U	20	330
Benzo[a]pyrene		20	U	20	330
Benzo[b]fluoranthene		26	U	26	330
Benzo[ghi]perylene		16	U	16	330
Benzo[k]fluoranthene		40	U	40	330
Bis(2-chloroethoxy)methane		23	U	23	330
Bis(2-chloroethyl)ether		17	U	17	330
bis (2-chloroisopropyl) ether		23	U	23	330
Bis(2-ethylhexyl) phthalate		46	U	46	330
4-Bromophenyl phenyl ether		19	U	19	330
Butyl benzyl phthalate		43	U	43	330
Carbazole		36	U	36	330
4-Chloroaniline		82	U	82	330
4-Chloro-3-methylphenol		66	U	66	330
2-Chloronaphthalene		10	U	10	330
2-Chlorophenol		21	U	21	330
4-Chlorophenyl phenyl ether		21	U	21	330
Chrysene		27	U	27	330
Dibenz(a,h)anthracene		19	U	19	330
Dibenzofuran		20	U	20	330
1,2-Dichlorobenzene		22	U	22	330
1,3-Dichlorobenzene		12	U	12	330
1,4-Dichlorobenzene		14	U	14	330
3,3'-Dichlorobenzidine		90	U J	90	660
2,4-Dichlorophenol		10	U	10	330
Diethyl phthalate		26	U	26	330
2,4-Dimethylphenol		66	U	66	330
Dimethyl phthalate		23	U	23	330
Di-n-butyl phthalate		29	U	29	330
4,6-Dinitro-2-methylphenol		330	U	330	660
2,4-Dinitrophenol		330	U J	330	820
2,4-Dinitrotoluene		66	U	66	330
2,6-Dinitrotoluene		28	U	28	330
Di-n-octyl phthalate		14	U	14	330
Fluoranthene		36	U	36	330
Fluorene		18	U	18	330
Hexachlorobenzene		29	U	29	330
Hexachlorobutadiene		10	U	10	330
Hexachlorocyclopentadiene		50	U	50	330
Hexachloroethane		21	U	21	330
Indeno[1,2,3-cd]pyrene		22	U	22	330
Isophorone		17	U	17	330
2-Methylnaphthalene		19	U	19	330

Client: Washington Closure Hanford

7/31/12

Job Number: 280-31256-1
Sdg Number: JP0398

Client Sample ID: J1PVW2

Lab Sample ID: 280-31256-4
Client Matrix: Solid % Moisture: 2.9

Date Sampled: 07/17/2012 1310
Date Received: 07/19/2012 0900

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	280-129144	Instrument ID:	SMS_D
Prep Method:	3550C	Prep Batch:	280-128653	Lab File ID:	D1773.D
Dilution:	1.0			Initial Weight/Volume:	30.9 g
Analysis Date:	07/24/2012 1439			Final Weight/Volume:	1000 uL
Prep Date:	07/20/2012 2200			Injection Volume:	0.5 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
2-Methylphenol		13	U	13	330
3 & 4 Methylphenol		33	U	33	330
Naphthalene		31	U	31	330
2-Nitroaniline		50	U	50	330
3-Nitroaniline		73	U	73	330
4-Nitroaniline		72	U	72	330
Nitrobenzene		22	U	22	330
2-Nitrophenol		10	U	10	330
4-Nitrophenol		97	U	97	660
N-Nitrosodi-n-propylamine		31	U	31	330
N-Nitrosodiphenylamine		21	U	21	330
Pentachlorophenol		330	U	330	660
Phenanthrene		17	U	17	330
Phenol		18	U	18	330
Pyrene		12	U	12	330
1,2,4-Trichlorobenzene		28	U	28	330
2,4,5-Trichlorophenol		10	U	10	330
2,4,6-Trichlorophenol		10	U	10	330

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Fluorobiphenyl	69		50 - 120
2-Fluorophenol	77		53 - 120
Nitrobenzene-d5	72		50 - 120
Phenol-d5	79		52 - 120
Terphenyl-d14	94		55 - 120
2,4,6-Tribromophenol	69		51 - 120

Client: Washington Closure Hanford

Job Number: 280-31256-1
Sdg Number: JP0398

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Client Sample ID: J1PVW2

Lab Sample ID: 280-31256-4
Client Matrix: Solid

% Moisture: 2.9

Date Sampled: 07/17/2012 1310
Date Received: 07/19/2012 0900

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	280-129144	Instrument ID:	SMS_D
Prep Method:	3550C	Prep Batch:	280-128653	Lab File ID:	D1773.D
Dilution:	1.0			Initial Weight/Volume:	30.9 g
Analysis Date:	07/24/2012 1439			Final Weight/Volume:	1000 uL
Prep Date:	07/20/2012 2200			Injection Volume:	0.5 uL

Tentatively Identified Compounds **Number TIC's Found:** 4

Cas Number	Analyte	RT	Est. Result (ug/Kg)	Qualifier
	Unknown	1.76	540	N J
	Unknown	1.89	230	N J
	Unknown	2.93	1900	N J
	Unknown	4.40	2300	N J
2199-69-1	Benzene-1,2,3,4-d4-, 5,6-dichloro-			

Client: Washington Closure Hanford

Job Number: 280-31256-1
Sdg Number: JP0398

Client Sample ID: J1PVW3

Lab Sample ID: 280-31256-5
Client Matrix: Solid

% Moisture: 3.9

Date Sampled: 07/17/2012 1305
Date Received: 07/19/2012 0900

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	280-129144	Instrument ID:	SMS_D
Prep Method:	3550C	Prep Batch:	280-128653	Lab File ID:	D1774.D
Dilution:	1.0			Initial Weight/Volume:	31.2 g
Analysis Date:	07/24/2012 1459			Final Weight/Volume:	1000 uL
Prep Date:	07/20/2012 2200			Injection Volume:	0.5 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Acenaphthene		10	U	10	330
Acenaphthylene		17	U	17	330
Anthracene		17	U	17	330
Benzo[a]anthracene		20	U	20	330
Benzo[a]pyrene		20	U	20	330
Benzo[b]fluoranthene		26	U	26	330
Benzo[ghi]perylene		16	U	16	330
Benzo[k]fluoranthene		40	U	40	330
Bis(2-chloroethoxy)methane		23	U	23	330
Bis(2-chloroethyl)ether		17	U	17	330
bis (2-chloroisopropyl) ether		23	U	23	330
Bis(2-ethylhexyl) phthalate		46	U	46	330
4-Bromophenyl phenyl ether		19	U	19	330
Butyl benzyl phthalate		43	U	43	330
Carbazole		36	U	36	330
4-Chloroaniline		82	U	82	330
4-Chloro-3-methylphenol		66	U	66	330
2-Chloronaphthalene		10	U	10	330
2-Chlorophenol		21	U	21	330
4-Chlorophenyl phenyl ether		21	U	21	330
Chrysene		27	U	27	330
Dibenz(a,h)anthracene		19	U	19	330
Dibenzofuran		20	U	20	330
1,2-Dichlorobenzene		22	U	22	330
1,3-Dichlorobenzene		12	U	12	330
1,4-Dichlorobenzene		14	U	14	330
3,3'-Dichlorobenzidine		90	U J	90	660
2,4-Dichlorophenol		10	U	10	330
Diethyl phthalate		26	U	26	330
2,4-Dimethylphenol		66	U	66	330
Dimethyl phthalate		23	U	23	330
Di-n-butyl phthalate		29	U	29	330
4,6-Dinitro-2-methylphenol		330	U	330	660
2,4-Dinitrophenol		330	U J	330	830
2,4-Dinitrotoluene		66	U	66	330
2,6-Dinitrotoluene		28	U	28	330
Di-n-octyl phthalate		14	U	14	330
Fluoranthene		36	U	36	330
Fluorene		18	U	18	330
Hexachlorobenzene		29	U	29	330
Hexachlorobutadiene		10	U	10	330
Hexachlorocyclopentadiene		50	U	50	330
Hexachloroethane		21	U	21	330
Indeno[1,2,3-cd]pyrene		22	U	22	330
Isophorone		17	U	17	330
2-Methylnaphthalene		19	U	19	330

Client: Washington Closure Hanford

Job Number: 280-31256-1
Sdg Number: JP0398

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Client Sample ID: J1PVW3

Lab Sample ID: 280-31256-5
Client Matrix: Solid

% Moisture: 3.9

Date Sampled: 07/17/2012 1305
Date Received: 07/19/2012 0900

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	280-129144	Instrument ID:	SMS_D
Prep Method:	3550C	Prep Batch:	280-128653	Lab File ID:	D1774.D
Dilution:	1.0			Initial Weight/Volume:	31.2 g
Analysis Date:	07/24/2012 1459			Final Weight/Volume:	1000 uL
Prep Date:	07/20/2012 2200			Injection Volume:	0.5 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
2-Methylphenol		13	U	13	330
3 & 4 Methylphenol		33	U	33	330
Naphthalene		31	U	31	330
2-Nitroaniline		50	U	50	330
3-Nitroaniline		73	U	73	330
4-Nitroaniline		73	U	73	330
Nitrobenzene		22	U	22	330
2-Nitrophenol		10	U	10	330
4-Nitrophenol		97	U	97	660
N-Nitrosodi-n-propylamine		31	U	31	330
N-Nitrosodiphenylamine		21	U	21	330
Pentachlorophenol		330	U	330	660
Phenanthrene		17	U	17	330
Phenol		18	U	18	330
Pyrene		12	U	12	330
1,2,4-Trichlorobenzene		28	U	28	330
2,4,5-Trichlorophenol		10	U	10	330
2,4,6-Trichlorophenol		10	U	10	330

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Fluorobiphenyl	77		50 - 120
2-Fluorophenol	85		53 - 120
Nitrobenzene-d5	78		50 - 120
Phenol-d5	86		52 - 120
Terphenyl-d14	104		55 - 120
2,4,6-Tribromophenol	71		51 - 120

Client: Washington Closure Hanford

Job Number: 280-31256-1
Sdg Number: JP0398

7/31/12

Client Sample ID: J1PVW3

Lab Sample ID: 280-31256-5
Client Matrix: Solid

% Moisture: 3.9

Date Sampled: 07/17/2012 1305
Date Received: 07/19/2012 0900

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	280-129144	Instrument ID:	SMS_D
Prep Method:	3550C	Prep Batch:	280-128653	Lab File ID:	D1774.D
Dilution:	1.0			Initial Weight/Volume:	31.2 g
Analysis Date:	07/24/2012 1459			Final Weight/Volume:	1000 uL
Prep Date:	07/20/2012 2200			Injection Volume:	0.5 uL

Tentatively Identified Compounds **Number TIC's Found:** 4

Cas Number	Analyte	RT	Est. Result (ug/Kg)	Qualifier
	Unknown	1.76	510	N J
	Unknown	1.89	200	N J
	Unknown	2.93	2400	N J
3855-82-1	1,4-Dichlorobenzene-d4	4.40	2500	N J

Client: Washington Closure Hanford

Job Number: 280-31256-1
Sdg Number: JP0398

Client Sample ID: J1PVW4

Lab Sample ID: 280-31256-6
Client Matrix: Solid

% Moisture: 1.4

Date Sampled: 07/17/2012 1300
Date Received: 07/19/2012 0900

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	280-129144	Instrument ID:	SMS_D
Prep Method:	3550C	Prep Batch:	280-128653	Lab File ID:	D1775.D
Dilution:	1.0			Initial Weight/Volume:	32.5 g
Analysis Date:	07/24/2012 1519			Final Weight/Volume:	1000 uL
Prep Date:	07/20/2012 2200			Injection Volume:	0.5 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Acenaphthene		9.6	U	9.6	310
Acenaphthylene		16	U	16	310
Anthracene		16	U	16	310
Benzo[a]anthracene		19	U	19	310
Benzo[a]pyrene		19	U	19	310
Benzo[b]fluoranthene		25	U	25	310
Benzo[ghi]perylene		15	U	15	310
Benzo[k]fluoranthene		37	U	37	310
Bis(2-chloroethoxy)methane		22	U	22	310
Bis(2-chloroethyl)ether		16	U	16	310
bis (2-chloroisopropyl) ether		22	U	22	310
Bis(2-ethylhexyl) phthalate		43	U	43	310
4-Bromophenyl phenyl ether		18	U	18	310
Butyl benzyl phthalate		40	U	40	310
Carbazole		34	U	34	310
4-Chloroaniline		77	U	77	310
4-Chloro-3-methylphenol		62	U	62	310
2-Chloronaphthalene		9.4	U	9.4	310
2-Chlorophenol		20	U	20	310
4-Chlorophenyl phenyl ether		20	U	20	310
Chrysene		25	U	25	310
Dibenz(a,h)anthracene		18	U	18	310
Dibenzofuran		19	U	19	310
1,2-Dichlorobenzene		21	U	21	310
1,3-Dichlorobenzene		11	U	11	310
1,4-Dichlorobenzene		13	U	13	310
3,3'-Dichlorobenzidine		84	U J	84	620
2,4-Dichlorophenol		9.4	U	9.4	310
Diethyl phthalate		24	U	24	310
2,4-Dimethylphenol		62	U	62	310
Dimethyl phthalate		22	U	22	310
Di-n-butyl phthalate		27	U	27	310
4,6-Dinitro-2-methylphenol		310	U	310	620
2,4-Dinitrophenol		310	U J	310	770
2,4-Dinitrotoluene		62	U	62	310
2,6-Dinitrotoluene		26	U	26	310
Di-n-octyl phthalate		13	U	13	310
Fluoranthene		34	U	34	310
Fluorene		17	U	17	310
Hexachlorobenzene		27	U	27	310
Hexachlorobutadiene		9.4	U	9.4	310
Hexachlorocyclopentadiene		47	U	47	310
Hexachloroethane		20	U	20	310
Indeno[1,2,3-cd]pyrene		21	U	21	310
Isophorone		16	U	16	310
2-Methylnaphthalene		18	U	18	310

Client: Washington Closure Hanford

Job Number: 280-31256-1
Sdg Number: JP0398

Client Sample ID: J1PVW4

Lab Sample ID: 280-31256-6
Client Matrix: Solid

% Moisture: 1.4

Date Sampled: 07/17/2012 1300
Date Received: 07/19/2012 0900

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	280-129144	Instrument ID:	SMS_D
Prep Method:	3550C	Prep Batch:	280-128653	Lab File ID:	D1775.D
Dilution:	1.0			Initial Weight/Volume:	32.5 g
Analysis Date:	07/24/2012 1519			Final Weight/Volume:	1000 uL
Prep Date:	07/20/2012 2200			Injection Volume:	0.5 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
2-Methylphenol		12	U	12	310
3 & 4 Methylphenol		31	U	31	310
Naphthalene		29	U	29	310
2-Nitroaniline		47	U	47	310
3-Nitroaniline		68	U	68	310
4-Nitroaniline		68	U	68	310
Nitrobenzene		21	U	21	310
2-Nitrophenol		9.4	U	9.4	310
4-Nitrophenol		91	U	91	620
N-Nitrosodi-n-propylamine		29	U	29	310
N-Nitrosodiphenylamine		20	U	20	310
Pentachlorophenol		310	U	310	620
Phenanthrene		16	U	16	310
Phenol		17	U	17	310
Pyrene		11	U	11	310
1,2,4-Trichlorobenzene		26	U	26	310
2,4,5-Trichlorophenol		9.4	U	9.4	310
2,4,6-Trichlorophenol		9.4	U	9.4	310

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Fluorobiphenyl	76		50 - 120
2-Fluorophenol	80		53 - 120
Nitrobenzene-d5	77		50 - 120
Phenol-d5	81		52 - 120
Terphenyl-d14	103		55 - 120
2,4,6-Tribromophenol	72		51 - 120

Client: Washington Closure Hanford

Job Number: 280-31256-1
Sdg Number: JP0398

Client Sample ID: J1PVW4

Lab Sample ID: 280-31256-6
Client Matrix: Solid

% Moisture: 1.4

Date Sampled: 07/17/2012 1300
Date Received: 07/19/2012 0900

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	280-129144	Instrument ID:	SMS_D
Prep Method:	3550C	Prep Batch:	280-128653	Lab File ID:	D1775.D
Dilution:	1.0			Initial Weight/Volume:	32.5 g
Analysis Date:	07/24/2012 1519			Final Weight/Volume:	1000 uL
Prep Date:	07/20/2012 2200			Injection Volume:	0.5 uL

Tentatively Identified Compounds **Number TIC's Found:** 4

Cas Number	Analyte	RT	Est. Result (ug/Kg)	Qualifier
	Unknown	1.76	600	N J
	Unknown	1.88	200	N J
	Unknown	2.93	2400	N J
3855-82-1	1,4-Dichlorobenzene-d4	4.40	2300	N J

Client: Washington Closure Hanford

Job Number: 280-31256-1
Sdg Number: JP0398

Client Sample ID: J1PVW5

Lab Sample ID: 280-31256-7
Client Matrix: Solid

% Moisture: 3.0

Date Sampled: 07/17/2012 1240
Date Received: 07/19/2012 0900

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8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method: 8270C
Prep Method: 3550C
Dilution: 1.0
Analysis Date: 07/24/2012 1539
Prep Date: 07/20/2012 2200

Analysis Batch: 280-129144
Prep Batch: 280-128653

Instrument ID: SMS_D
Lab File ID: D1776.D
Initial Weight/Volume: 31.8 g
Final Weight/Volume: 1000 uL
Injection Volume: 0.5 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Acenaphthene		10	U	10	320
Acenaphthylene		17	U	17	320
Anthracene		17	U	17	320
Benzo[a]anthracene		19	U	19	320
Benzo[a]pyrene		19	U	19	320
Benzo[b]fluoranthene		25	U	25	320
Benzo[ghi]perylene		16	U	16	320
Benzo[k]fluoranthene		39	U	39	320
Bis(2-chloroethoxy)methane		22	U	22	320
Bis(2-chloroethyl)ether		16	U	16	320
bis (2-chloroisopropyl) ether		22	U	22	320
Bis(2-ethylhexyl) phthalate		45	U	45	320
4-Bromophenyl phenyl ether		18	U	18	320
Butyl benzyl phthalate		42	U	42	320
Carbazole		35	U	35	320
4-Chloroaniline		80	U	80	320
4-Chloro-3-methylphenol		64	U	64	320
2-Chloronaphthalene		9.7	U	9.7	320
2-Chlorophenol		20	U	20	320
4-Chlorophenyl phenyl ether		20	U	20	320
Chrysene		26	U	26	320
Dibenz(a,h)anthracene		18	U	18	320
Dibenzofuran		19	U	19	320
1,2-Dichlorobenzene		21	U	21	320
1,3-Dichlorobenzene		12	U	12	320
1,4-Dichlorobenzene		13	U	13	320
3,3'-Dichlorobenzidine		88	U J	88	640
2,4-Dichlorophenol		9.7	U	9.7	320
Diethyl phthalate		25	U	25	320
2,4-Dimethylphenol		64	U	64	320
Dimethyl phthalate		22	U	22	320
Di-n-butyl phthalate		28	U	28	320
4,6-Dinitro-2-methylphenol		320	U	320	640
2,4-Dinitrophenol		320	U J	320	800
2,4-Dinitrotoluene		64	U	64	320
2,6-Dinitrotoluene		27	U	27	320
Di-n-octyl phthalate		14	U	14	320
Fluoranthene		35	U	35	320
Fluorene		18	U	18	320
Hexachlorobenzene		28	U	28	320
Hexachlorobutadiene		9.7	U	9.7	320
Hexachlorocyclopentadiene		49	U	49	320
Hexachloroethane		21	U	21	320
Indeno[1,2,3-cd]pyrene		21	U	21	320
Isophorone		17	U	17	320
2-Methylnaphthalene		18	U	18	320

Client: Washington Closure Hanford

Job Number: 280-31256-1
Sdg Number: JP0398

Client Sample ID: J1PVW5

Lab Sample ID: 280-31256-7
Client Matrix: Solid

% Moisture: 3.0

7/31/12

Date Sampled: 07/17/2012 1240
Date Received: 07/19/2012 0900

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	280-129144	Instrument ID:	SMS_D
Prep Method:	3550C	Prep Batch:	280-128653	Lab File ID:	D1776.D
Dilution:	1.0			Initial Weight/Volume:	31.8 g
Analysis Date:	07/24/2012 1539			Final Weight/Volume:	1000 uL
Prep Date:	07/20/2012 2200			Injection Volume:	0.5 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
2-Methylphenol		13	U	13	320
3 & 4 Methylphenol		32	U	32	320
Naphthalene		30	U	30	320
2-Nitroaniline		49	U	49	320
3-Nitroaniline		71	U	71	320
4-Nitroaniline		71	U	71	320
Nitrobenzene		21	U	21	320
2-Nitrophenol		9.7	U	9.7	320
4-Nitrophenol		94	U	94	640
N-Nitrosodi-n-propylamine		30	U	30	320
N-Nitrosodiphenylamine		20	U	20	320
Pentachlorophenol		320	U	320	640
Phenanthrene		17	U	17	320
Phenol		18	U	18	320
Pyrene		12	U	12	320
1,2,4-Trichlorobenzene		27	U	27	320
2,4,5-Trichlorophenol		9.7	U	9.7	320
2,4,6-Trichlorophenol		9.7	U	9.7	320

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Fluorobiphenyl	72		50 - 120
2-Fluorophenol	80		53 - 120
Nitrobenzene-d5	76		50 - 120
Phenol-d5	81		52 - 120
Terphenyl-d14	99		55 - 120
2,4,6-Tribromophenol	65		51 - 120

Client: Washington Closure Hanford

Job Number: 280-31256-1
Sdg Number: JP0398

Client Sample ID: J1PVW5

Lab Sample ID: 280-31256-7
Client Matrix: Solid

% Moisture: 3.0

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Date Sampled: 07/17/2012 1240
Date Received: 07/19/2012 0900

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	280-129144	Instrument ID:	SMS_D
Prep Method:	3550C	Prep Batch:	280-128653	Lab File ID:	D1776.D
Dilution:	1.0			Initial Weight/Volume:	31.8 g
Analysis Date:	07/24/2012 1539			Final Weight/Volume:	1000 uL
Prep Date:	07/20/2012 2200			Injection Volume:	0.5 uL

Tentatively Identified Compounds **Number TIC's Found:** 4

Cas Number	Analyte	RT	Est. Result (ug/Kg)	Qualifier
	Unknown	1.76	740	N J
	Unknown	1.89	330	N J
	Unknown	2.93	1800	N J
3855-82-1	1,4-Dichlorobenzene-d4	4.39	2300	N J

Client: Washington Closure Hanford

Job Number: 280-31256-1
Sdg Number: JP0398

Client Sample ID: J1PVW6

Lab Sample ID: 280-31256-8
Client Matrix: Solid

% Moisture: 0.7

Date Sampled: 07/17/2012 1235
Date Received: 07/19/2012 0900

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method: 8270C
Prep Method: 3550C
Dilution: 1.0
Analysis Date: 07/24/2012 1600
Prep Date: 07/20/2012 2200

Analysis Batch: 280-129144
Prep Batch: 280-128653

Instrument ID: SMS_D
Lab File ID: D1777.D
Initial Weight/Volume: 32.1 g
Final Weight/Volume: 1000 uL
Injection Volume: 0.5 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Acenaphthene		9.7	U	9.7	310
Acenaphthylene		16	U	16	310
Anthracene		16	U	16	310
Benzo[a]anthracene		19	U	19	310
Benzo[a]pyrene		19	U	19	310
Benzo[b]fluoranthene		25	U	25	310
Benzo[ghi]perylene		15	U	15	310
Benzo[k]fluoranthene		38	U	38	310
Bis(2-chloroethoxy)methane		22	U	22	310
Bis(2-chloroethyl)ether		16	U	16	310
bis (2-chloroisopropyl) ether		22	U	22	310
Bis(2-ethylhexyl) phthalate		43	U	43	310
4-Bromophenyl phenyl ether		18	U	18	310
Butyl benzyl phthalate		40	U	40	310
Carbazole		34	U	34	310
4-Chloroaniline		77	U	77	310
4-Chloro-3-methylphenol		62	U	62	310
2-Chloronaphthalene		9.4	U	9.4	310
2-Chlorophenol		20	U	20	310
4-Chlorophenyl phenyl ether		20	U	20	310
Chrysene		25	U	25	310
Dibenz(a,h)anthracene		18	U	18	310
Dibenzofuran		19	U	19	310
1,2-Dichlorobenzene		21	U	21	310
1,3-Dichlorobenzene		11	U	11	310
1,4-Dichlorobenzene		13	U	13	310
3,3'-Dichlorobenzidine		85	U J	85	620
2,4-Dichlorophenol		9.4	U	9.4	310
Diethyl phthalate		24	U	24	310
2,4-Dimethylphenol		62	U	62	310
Dimethyl phthalate		22	U	22	310
Di-n-butyl phthalate		27	U	27	310
4,6-Dinitro-2-methylphenol		310	U	310	620
2,4-Dinitrophenol		310	U J	310	780
2,4-Dinitrotoluene		62	U	62	310
2,6-Dinitrotoluene		26	U	26	310
Di-n-octyl phthalate		14	U	14	310
Fluoranthene		34	U	34	310
Fluorene		17	U	17	310
Hexachlorobenzene		27	U	27	310
Hexachlorobutadiene		9.4	U	9.4	310
Hexachlorocyclopentadiene		47	U	47	310
Hexachloroethane		20	U	20	310
Indeno[1,2,3-cd]pyrene		21	U	21	310
Isophorone		16	U	16	310
2-Methylnaphthalene		18	U	18	310

Client: Washington Closure Hanford

Job Number: 280-31256-1
Sdg Number: JP0398

Client Sample ID: J1PVW6

Lab Sample ID: 280-31256-8
Client Matrix: Solid

% Moisture: 0.7

Date Sampled: 07/17/2012 1235
Date Received: 07/19/2012 0900

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	280-129144	Instrument ID:	SMS_D
Prep Method:	3550C	Prep Batch:	280-128653	Lab File ID:	D1777.D
Dilution:	1.0			Initial Weight/Volume:	32.1 g
Analysis Date:	07/24/2012 1600			Final Weight/Volume:	1000 uL
Prep Date:	07/20/2012 2200			Injection Volume:	0.5 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
2-Methylphenol		12	U	12	310
3 & 4 Methylphenol		31	U	31	310
Naphthalene		29	U	29	310
2-Nitroaniline		47	U	47	310
3-Nitroaniline		69	U	69	310
4-Nitroaniline		68	U	68	310
Nitrobenzene		21	U	21	310
2-Nitrophenol		9.4	U	9.4	310
4-Nitrophenol		91	U	91	620
N-Nitrosodi-n-propylamine		29	U	29	310
N-Nitrosodiphenylamine		20	U	20	310
Pentachlorophenol		310	U	310	620
Phenanthrene		16	U	16	310
Phenol		17	U	17	310
Pyrene		11	U	11	310
1,2,4-Trichlorobenzene		26	U	26	310
2,4,5-Trichlorophenol		9.4	U	9.4	310
2,4,6-Trichlorophenol		9.4	U	9.4	310

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Fluorobiphenyl	70		50 - 120
2-Fluorophenol	76		53 - 120
Nitrobenzene-d5	71		50 - 120
Phenol-d5	78		52 - 120
Terphenyl-d14	99		55 - 120
2,4,6-Tribromophenol	65		51 - 120

Client: Washington Closure Hanford

Job Number: 280-31256-1
Sdg Number: JP0398

Client Sample ID: J1PVW6

Lab Sample ID: 280-31256-8
Client Matrix: Solid

% Moisture: 0.7

Date Sampled: 07/17/2012 1235
Date Received: 07/19/2012 0900

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	280-129144	Instrument ID:	SMS_D
Prep Method:	3550C	Prep Batch:	280-128653	Lab File ID:	D1777.D
Dilution:	1.0			Initial Weight/Volume:	32.1 g
Analysis Date:	07/24/2012 1600			Final Weight/Volume:	1000 uL
Prep Date:	07/20/2012 2200			Injection Volume:	0.5 uL

Tentatively Identified Compounds **Number TIC's Found:** 5

Cas Number	Analyte	RT	Est. Result (ug/Kg)	Qualifier
	Unknown	1.76	590	N J
	Unknown	1.89	190	N J
	Unknown	2.94	2100	N J
	Unknown	4.40	2200	N J
2199-69-1	Benzene-1,2,3,4-d4-, 5,6-dichloro-	11.73	140	N J
301-2-0	9-Octadecenamide, (Z)-			

Client: Washington Closure Hanford

Job Number: 280-31256-1
Sdg Number: JP0398

Client Sample ID: J1PVW7

Lab Sample ID: 280-31256-9
Client Matrix: Solid % Moisture: 3.2

V 7/31/12

Date Sampled: 07/17/2012 1230
Date Received: 07/19/2012 0900

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	280-129144	Instrument ID:	SMS_D
Prep Method:	3550C	Prep Batch:	280-128653	Lab File ID:	D1778.D
Dilution:	1.0			Initial Weight/Volume:	32.2 g
Analysis Date:	07/24/2012 1620			Final Weight/Volume:	1000 uL
Prep Date:	07/20/2012 2200			Injection Volume:	0.5 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Acenaphthene		9.9	U	9.9	320
Acenaphthylene		16	U	16	320
Anthracene		16	U	16	320
Benzo[a]anthracene		19	U	19	320
Benzo[a]pyrene		19	U	19	320
Benzo[b]fluoranthene		25	U	25	320
Benzo[ghi]perylene		15	U	15	320
Benzo[k]fluoranthene		39	U	39	320
Bis(2-chloroethoxy)methane		22	U	22	320
Bis(2-chloroethyl)ether		16	U	16	320
bis (2-chloroisopropyl) ether		22	U	22	320
Bis(2-ethylhexyl) phthalate		44	U	44	320
4-Bromophenyl phenyl ether		18	U	18	320
Butyl benzyl phthalate		41	U	41	320
Carbazole		35	U	35	320
4-Chloroaniline		79	U	79	320
4-Chloro-3-methylphenol		64	U	64	320
2-Chloronaphthalene		9.6	U	9.6	320
2-Chlorophenol		20	U	20	320
4-Chlorophenyl phenyl ether		20	U	20	320
Chrysene		26	U	26	320
Dibenz(a,h)anthracene		18	U	18	320
Dibenzofuran		19	U	19	320
1,2-Dichlorobenzene		21	U	21	320
1,3-Dichlorobenzene		12	U	12	320
1,4-Dichlorobenzene		13	U	13	320
3,3'-Dichlorobenzidine		87	U J	87	640
2,4-Dichlorophenol		9.6	U	9.6	320
Diethyl phthalate		25	U	25	320
2,4-Dimethylphenol		64	U	64	320
Dimethyl phthalate		22	U	22	320
Di-n-butyl phthalate		28	U	28	320
4,6-Dinitro-2-methylphenol		320	U	320	640
2,4-Dinitrophenol		320	U J	320	790
2,4-Dinitrotoluene		64	U	64	320
2,6-Dinitrotoluene		27	U	27	320
Di-n-octyl phthalate		14	U	14	320
Fluoranthene		35	U	35	320
Fluorene		17	U	17	320
Hexachlorobenzene		28	U	28	320
Hexachlorobutadiene		9.6	U	9.6	320
Hexachlorocyclopentadiene		48	U	48	320
Hexachloroethane		21	U	21	320
Indeno[1,2,3-cd]pyrene		21	U	21	320
Isophorone		16	U	16	320
2-Methylnaphthalene		18	U	18	320

Client: Washington Closure Hanford

Job Number: 280-31256-1
Sdg Number: JP0398

Client Sample ID: J1PVW7

Lab Sample ID: 280-31256-9
Client Matrix: Solid

% Moisture: 3.2

Date Sampled: 07/17/2012 1230
Date Received: 07/19/2012 0900

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	280-129144	Instrument ID:	SMS_D
Prep Method:	3550C	Prep Batch:	280-128653	Lab File ID:	D1778.D
Dilution:	1.0			Initial Weight/Volume:	32.2 g
Analysis Date:	07/24/2012 1620			Final Weight/Volume:	1000 uL
Prep Date:	07/20/2012 2200			Injection Volume:	0.5 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
2-Methylphenol		13	U	13	320
3 & 4 Methylphenol		32	U	32	320
Naphthalene		30	U	30	320
2-Nitroaniline		48	U	48	320
3-Nitroaniline		70	U	70	320
4-Nitroaniline		70	U	70	320
Nitrobenzene		21	U	21	320
2-Nitrophenol		9.6	U	9.6	320
4-Nitrophenol		93	U	93	640
N-Nitrosodi-n-propylamine		30	U	30	320
N-Nitrosodiphenylamine		20	U	20	320
Pentachlorophenol		320	U	320	640
Phenanthrene		16	U	16	320
Phenol		17	U	17	320
Pyrene		12	U	12	320
1,2,4-Trichlorobenzene		27	U	27	320
2,4,5-Trichlorophenol		9.6	U	9.6	320
2,4,6-Trichlorophenol		9.6	U	9.6	320

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Fluorobiphenyl	70		50 - 120
2-Fluorophenol	76		53 - 120
Nitrobenzene-d5	73		50 - 120
Phenol-d5	79		52 - 120
Terphenyl-d14	92		55 - 120
2,4,6-Tribromophenol	66		51 - 120

Client: Washington Closure Hanford

Job Number: 280-31256-1
Sdg Number: JP0398

Client Sample ID: J1PVW7

Lab Sample ID: 280-31256-9
Client Matrix: Solid

% Moisture: 3.2

7/31/12

Date Sampled: 07/17/2012 1230
Date Received: 07/19/2012 0900

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	280-129144	Instrument ID:	SMS_D
Prep Method:	3550C	Prep Batch:	280-128653	Lab File ID:	D1778.D
Dilution:	1.0			Initial Weight/Volume:	32.2 g
Analysis Date:	07/24/2012 1620			Final Weight/Volume:	1000 uL
Prep Date:	07/20/2012 2200			Injection Volume:	0.5 uL

Tentatively Identified Compounds **Number TIC's Found:** 4

Cas Number	Analyte	RT	Est. Result (ug/Kg)	Qualifier
	Unknown	1.76	480	N J
	Unknown	1.89	140	N J
	Unknown	2.93	1600	N J
2199-69-1	Benzene-1,2,3,4-d4-, 5,6-dichloro-	4.40	2200	N J

Client: Washington Closure Hanford

Job Number: 280-31256-1
Sdg Number: JP0398

Client Sample ID: J1PVW8

Lab Sample ID: 280-31256-10
Client Matrix: Solid

% Moisture: 1.4

Date Sampled: 07/17/2012 1225
Date Received: 07/19/2012 0900

7/31/12

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	280-129144	Instrument ID:	SMS_D
Prep Method:	3550C	Prep Batch:	280-128653	Lab File ID:	D1779.D
Dilution:	1.0			Initial Weight/Volume:	31.3 g
Analysis Date:	07/24/2012 1640			Final Weight/Volume:	1000 uL
Prep Date:	07/20/2012 2200			Injection Volume:	0.5 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Acenaphthene		10	U	10	320
Acenaphthylene		17	U	17	320
Anthracene		17	U	17	320
Benzo[a]anthracene		19	U	19	320
Benzo[a]pyrene		19	U	19	320
Benzo[b]fluoranthene		25	U	25	320
Benzo[ghi]perylene		16	U	16	320
Benzo[k]fluoranthene		39	U	39	320
Bis(2-chloroethoxy)methane		22	U	22	320
Bis(2-chloroethyl)ether		16	U	16	320
bis (2-chloroisopropyl) ether		22	U	22	320
Bis(2-ethylhexyl) phthalate		45	U	45	320
4-Bromophenyl phenyl ether		18	U	18	320
Butyl benzyl phthalate		42	U	42	320
Carbazole		35	U	35	320
4-Chloroaniline		80	U	80	320
4-Chloro-3-methylphenol		64	U	64	320
2-Chloronaphthalene		9.7	U	9.7	320
2-Chlorophenol		20	U	20	320
4-Chlorophenyl phenyl ether		20	U	20	320
Chrysene		26	U	26	320
Dibenz(a,h)anthracene		18	U	18	320
Dibenzofuran		19	U	19	320
1,2-Dichlorobenzene		21	U	21	320
1,3-Dichlorobenzene		12	U	12	320
1,4-Dichlorobenzene		13	U	13	320
3,3'-Dichlorobenzidine		87	U J	87	640
2,4-Dichlorophenol		9.7	U	9.7	320
Diethyl phthalate		25	U	25	320
2,4-Dimethylphenol		64	U	64	320
Dimethyl phthalate		22	U	22	320
Di-n-butyl phthalate		28	U	28	320
4,6-Dinitro-2-methylphenol		320	U	320	640
2,4-Dinitrophenol		320	U J	320	800
2,4-Dinitrotoluene		64	U	64	320
2,6-Dinitrotoluene		27	U	27	320
Di-n-octyl phthalate		14	U	14	320
Fluoranthene		35	U	35	320
Fluorene		17	U	17	320
Hexachlorobenzene		28	U	28	320
Hexachlorobutadiene		9.7	U	9.7	320
Hexachlorocyclopentadiene		49	U	49	320
Hexachloroethane		21	U	21	320
Indeno[1,2,3-cd]pyrene		21	U	21	320
Isophorone		17	U	17	320
2-Methylnaphthalene		18	U	18	320

Client: Washington Closure Hanford

Job Number: 280-31256-1
Sdg Number: JP0398

Client Sample ID: J1PVW8

Lab Sample ID: 280-31256-10
Client Matrix: Solid

% Moisture: 1.4

Date Sampled: 07/17/2012 1225
Date Received: 07/19/2012 0900

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8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	280-129144	Instrument ID:	SMS_D
Prep Method:	3550C	Prep Batch:	280-128653	Lab File ID:	D1779.D
Dilution:	1.0			Initial Weight/Volume:	31.3 g
Analysis Date:	07/24/2012 1640			Final Weight/Volume:	1000 uL
Prep Date:	07/20/2012 2200			Injection Volume:	0.5 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
2-Methylphenol		13	U	13	320
3 & 4 Methylphenol		32	U	32	320
Naphthalene		30	U	30	320
2-Nitroaniline		49	U	49	320
3-Nitroaniline		71	U	71	320
4-Nitroaniline		70	U	70	320
Nitrobenzene		21	U	21	320
2-Nitrophenol		9.7	U	9.7	320
4-Nitrophenol		94	U	94	640
N-Nitrosodi-n-propylamine		30	U	30	320
N-Nitrosodiphenylamine		20	U	20	320
Pentachlorophenol		320	U	320	640
Phenanthrene		17	U	17	320
Phenol		17	U	17	320
Pyrene		12	U	12	320
1,2,4-Trichlorobenzene		27	U	27	320
2,4,5-Trichlorophenol		9.7	U	9.7	320
2,4,6-Trichlorophenol		9.7	U	9.7	320

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Fluorobiphenyl	72		50 - 120
2-Fluorophenol	76		53 - 120
Nitrobenzene-d5	73		50 - 120
Phenol-d5	77		52 - 120
Terphenyl-d14	90		55 - 120
2,4,6-Tribromophenol	68		51 - 120

Client: Washington Closure Hanford

Job Number: 280-31256-1
Sdg Number: JP0398

7/31/12

Client Sample ID: **J1PVW8**

Lab Sample ID: 280-31256-10
Client Matrix: Solid % Moisture: 1.4

Date Sampled: 07/17/2012 1225
Date Received: 07/19/2012 0900

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	280-129144	Instrument ID:	SMS_D
Prep Method:	3550C	Prep Batch:	280-128653	Lab File ID:	D1779.D
Dilution:	1.0			Initial Weight/Volume:	31.3 g
Analysis Date:	07/24/2012 1640			Final Weight/Volume:	1000 uL
Prep Date:	07/20/2012 2200			Injection Volume:	0.5 uL

Tentatively Identified Compounds **Number TIC's Found:** 3

Cas Number	Analyte	RT	Est. Result (ug/Kg)	Qualifier
	Unknown	1.76	550	N J
	Unknown	2.93	2400	N J
3855-82-1	1,4-Dichlorobenzene-d4	4.40	2300	N J

Client: Washington Closure Hanford

Job Number: 280-31256-1
Sdg Number: JP0398

Client Sample ID: J1PVW9

Lab Sample ID: 280-31256-11
Client Matrix: Solid % Moisture: 2.4

Date Sampled: 07/17/2012 1220
Date Received: 07/19/2012 0900

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	280-129144	Instrument ID:	SMS_D
Prep Method:	3550C	Prep Batch:	280-128653	Lab File ID:	D1780.D
Dilution:	1.0			Initial Weight/Volume:	32.0 g
Analysis Date:	07/24/2012 1700			Final Weight/Volume:	1000 uL
Prep Date:	07/20/2012 2200			Injection Volume:	0.5 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Acenaphthene		9.9	U	9.9	320
Acenaphthylene		16	U	16	320
Anthracene		16	U	16	320
Benzo[a]anthracene		19	U	19	320
Benzo[a]pyrene		19	U	19	320
Benzo[b]fluoranthene		25	U	25	320
Benzo[ghi]perylene		15	U	15	320
Benzo[k]fluoranthene		38	U	38	320
Bis(2-chloroethoxy)methane		22	U	22	320
Bis(2-chloroethyl)ether		16	U	16	320
bis (2-chloroisopropyl) ether		22	U	22	320
Bis(2-ethylhexyl) phthalate		44	U	44	320
4-Bromophenyl phenyl ether		18	U	18	320
Butyl benzyl phthalate		41	U	41	320
Carbazole		35	U	35	320
4-Chloroaniline		79	U	79	320
4-Chloro-3-methylphenol		63	U	63	320
2-Chloronaphthalene		9.6	U	9.6	320
2-Chlorophenol		20	U	20	320
4-Chlorophenyl phenyl ether		20	U	20	320
Chrysene		26	U	26	320
Dibenz(a,h)anthracene		18	U	18	320
Dibenzofuran		19	U	19	320
1,2-Dichlorobenzene		21	U	21	320
1,3-Dichlorobenzene		12	U	12	320
1,4-Dichlorobenzene		13	U	13	320
3,3'-Dichlorobenzidine		86	U J	86	630
2,4-Dichlorophenol		9.6	U	9.6	320
Diethyl phthalate		25	U	25	320
2,4-Dimethylphenol		63	U	63	320
Dimethyl phthalate		22	U	22	320
Di-n-butyl phthalate		28	U	28	320
4,6-Dinitro-2-methylphenol		320	U	320	630
2,4-Dinitrophenol		320	U J	320	790
2,4-Dinitrotoluene		63	U	63	320
2,6-Dinitrotoluene		27	U	27	320
Di-n-octyl phthalate		14	U	14	320
Fluoranthene		35	U	35	320
Fluorene		17	U	17	320
Hexachlorobenzene		28	U	28	320
Hexachlorobutadiene		9.6	U	9.6	320
Hexachlorocyclopentadiene		48	U	48	320
Hexachloroethane		20	U	20	320
Indeno[1,2,3-cd]pyrene		21	U	21	320
Isophorone		16	U	16	320
2-Methylnaphthalene		18	U	18	320

Client: Washington Closure Hanford

Job Number: 280-31256-1
Sdg Number: JP0398

Client Sample ID: J1PVW9

Lab Sample ID: 280-31256-11
Client Matrix: Solid

% Moisture: 2.4

Date Sampled: 07/17/2012 1220
Date Received: 07/19/2012 0900

7/31/12

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	280-129144	Instrument ID:	SMS_D
Prep Method:	3550C	Prep Batch:	280-128653	Lab File ID:	D1780.D
Dilution:	1.0			Initial Weight/Volume:	32.0 g
Analysis Date:	07/24/2012 1700			Final Weight/Volume:	1000 uL
Prep Date:	07/20/2012 2200			Injection Volume:	0.5 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
2-Methylphenol		12	U	12	320
3 & 4 Methylphenol		32	U	32	320
Naphthalene		30	U	30	320
2-Nitroaniline		48	U	48	320
3-Nitroaniline		70	U	70	320
4-Nitroaniline		70	U	70	320
Nitrobenzene		21	U	21	320
2-Nitrophenol		9.6	U	9.6	320
4-Nitrophenol		93	U	93	630
N-Nitrosodi-n-propylamine		30	U	30	320
N-Nitrosodiphenylamine		20	U	20	320
Pentachlorophenol		320	U	320	630
Phenanthrene		16	U	16	320
Phenol		17	U	17	320
Pyrene		12	U	12	320
1,2,4-Trichlorobenzene		27	U	27	320
2,4,5-Trichlorophenol		9.6	U	9.6	320
2,4,6-Trichlorophenol		9.6	U	9.6	320

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Fluorobiphenyl	72		50 - 120
2-Fluorophenol	78		53 - 120
Nitrobenzene-d5	74		50 - 120
Phenol-d5	80		52 - 120
Terphenyl-d14	97		55 - 120
2,4,6-Tribromophenol	70		51 - 120

Client: Washington Closure Hanford

Job Number: 280-31256-1
Sdg Number: JP0398

Client Sample ID: J1PVW9

Lab Sample ID: 280-31256-11
Client Matrix: Solid % Moisture: 2.4

Date Sampled: 07/17/2012 1220
Date Received: 07/19/2012 0900

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	280-129144	Instrument ID:	SMS_D
Prep Method:	3550C	Prep Batch:	280-128653	Lab File ID:	D1780.D
Dilution:	1.0			Initial Weight/Volume:	32.0 g
Analysis Date:	07/24/2012 1700			Final Weight/Volume:	1000 uL
Prep Date:	07/20/2012 2200			Injection Volume:	0.5 uL

Tentatively Identified Compounds **Number TIC's Found:** 2

Cas Number	Analyte	RT	Est. Result (ug/Kg)	Qualifier
	Unknown	2.93	2200	N J
3855-82-1	1,4-Dichlorobenzene-d4	4.40	2200	N J

Client: Washington Closure Hanford

Job Number: 280-31256-1
Sdg Number: JP0398

Client Sample ID: J1PVX0

Lab Sample ID: 280-31256-12
Client Matrix: Solid

% Moisture: 0.9

Date Sampled: 07/17/2012 1215
Date Received: 07/19/2012 0900

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	280-129144	Instrument ID:	SMS_D
Prep Method:	3550C	Prep Batch:	280-128653	Lab File ID:	D1781.D
Dilution:	1.0			Initial Weight/Volume:	33.0 g
Analysis Date:	07/24/2012 1721			Final Weight/Volume:	1000 uL
Prep Date:	07/20/2012 2200			Injection Volume:	0.5 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Acenaphthene		9.4	U	9.4	300
Acenaphthylene		16	U	16	300
Anthracene		16	U	16	300
Benzo[a]anthracene		18	U	18	300
Benzo[a]pyrene		18	U	18	300
Benzo[b]fluoranthene		24	U	24	300
Benzo[ghi]perylene		15	U	15	300
Benzo[k]fluoranthene		37	U	37	300
Bis(2-chloroethoxy)methane		21	U	21	300
Bis(2-chloroethyl)ether		15	U	15	300
bis (2-chloroisopropyl) ether		21	U	21	300
Bis(2-ethylhexyl) phthalate		42	U	42	300
4-Bromophenyl phenyl ether		17	U	17	300
Butyl benzyl phthalate		39	U	39	300
Carbazole		33	U	33	300
4-Chloroaniline		75	U	75	300
4-Chloro-3-methylphenol		61	U	61	300
2-Chloronaphthalene		9.2	U	9.2	300
2-Chlorophenol		19	U	19	300
4-Chlorophenyl phenyl ether		19	U	19	300
Chrysene		25	U	25	300
Dibenz(a,h)anthracene		17	U	17	300
Dibenzofuran		18	U	18	300
1,2-Dichlorobenzene		20	U	20	300
1,3-Dichlorobenzene		11	U	11	300
1,4-Dichlorobenzene		12	U	12	300
3,3'-Dichlorobenzidine		83	U J	83	610
2,4-Dichlorophenol		9.2	U	9.2	300
Diethyl phthalate		24	U	24	300
2,4-Dimethylphenol		61	U	61	300
Dimethyl phthalate		21	U	21	300
Di-n-butyl phthalate		27	U	27	300
4,6-Dinitro-2-methylphenol		300	U	300	610
2,4-Dinitrophenol		310	U J	310	760
2,4-Dinitrotoluene		61	U	61	300
2,6-Dinitrotoluene		26	U	26	300
Di-n-octyl phthalate		13	U	13	300
Fluoranthene		33	U	33	300
Fluorene		17	U	17	300
Hexachlorobenzene		27	U	27	300
Hexachlorobutadiene		9.2	U	9.2	300
Hexachlorocyclopentadiene		46	U	46	300
Hexachloroethane		20	U	20	300
Indeno[1,2,3-cd]pyrene		20	U	20	300
Isophorone		16	U	16	300
2-Methylnaphthalene		17	U	17	300

Client: Washington Closure Hanford

Job Number: 280-31256-1
Sdg Number: JP0398

Client Sample ID: **J1PVX0**

Lab Sample ID: 280-31256-12
Client Matrix: Solid

% Moisture: 0.9

Date Sampled: 07/17/2012 1215
Date Received: 07/19/2012 0900

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	280-129144	Instrument ID:	SMS_D
Prep Method:	3550C	Prep Batch:	280-128653	Lab File ID:	D1781.D
Dilution:	1.0			Initial Weight/Volume:	33.0 g
Analysis Date:	07/24/2012 1721			Final Weight/Volume:	1000 uL
Prep Date:	07/20/2012 2200			Injection Volume:	0.5 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
2-Methylphenol		12	U	12	300
3 & 4 Methylphenol		30	U	30	300
Naphthalene		28	U	28	300
2-Nitroaniline		46	U	46	300
3-Nitroaniline		67	U	67	300
4-Nitroaniline		66	U	66	300
Nitrobenzene		20	U	20	300
2-Nitrophenol		9.2	U	9.2	300
4-Nitrophenol		89	U	89	610
N-Nitrosodi-n-propylamine		28	U	28	300
N-Nitrosodiphenylamine		19	U	19	300
Pentachlorophenol		300	U	300	610
Phenanthrene		16	U	16	300
Phenol		17	U	17	300
Pyrene		11	U	11	300
1,2,4-Trichlorobenzene		26	U	26	300
2,4,5-Trichlorophenol		9.2	U	9.2	300
2,4,6-Trichlorophenol		9.2	U	9.2	300

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Fluorobiphenyl	73		50 - 120
2-Fluorophenol	78		53 - 120
Nitrobenzene-d5	75		50 - 120
Phenol-d5	82		52 - 120
Terphenyl-d14	100		55 - 120
2,4,6-Tribromophenol	73		51 - 120

Client: Washington Closure Hanford

Job Number: 280-31256-1
Sdg Number: JP0398

Client Sample ID: J1PVX0

Lab Sample ID: 280-31256-12
Client Matrix: Solid

% Moisture: 0.9

Date Sampled: 07/17/2012 1215
Date Received: 07/19/2012 0900

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	280-129144	Instrument ID:	SMS_D
Prep Method:	3550C	Prep Batch:	280-128653	Lab File ID:	D1781.D
Dilution:	1.0			Initial Weight/Volume:	33.0 g
Analysis Date:	07/24/2012 1721			Final Weight/Volume:	1000 uL
Prep Date:	07/20/2012 2200			Injection Volume:	0.5 uL

Tentatively Identified Compounds **Number TIC's Found:** 4

Cas Number	Analyte	RT	Est. Result (ug/Kg)	Qualifier
	Unknown	1.76	610	N J
	Unknown	2.93	2100	N J
2199-69-1	Benzene-1,2,3,4-d4-, 5,6-dichloro-	4.40	2200	N J
	Unknown	11.74	900	N J

Client: Washington Closure Hanford

Job Number: 280-31256-1
Sdg Number: JP0398

Client Sample ID: J1PVX1

Lab Sample ID: 280-31256-13
Client Matrix: Solid

% Moisture: 3.5

V 7/31/12

Date Sampled: 07/17/2012 1240
Date Received: 07/19/2012 0900

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method: 8270C
Prep Method: 3550C
Dilution: 1.0
Analysis Date: 07/24/2012 1741
Prep Date: 07/20/2012 2200

Analysis Batch: 280-129144
Prep Batch: 280-128653

Instrument ID: SMS_D
Lab File ID: D1782.D
Initial Weight/Volume: 30.6 g
Final Weight/Volume: 1000 uL
Injection Volume: 0.5 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Acenaphthene		10	U	10	340
Acenaphthylene		17	U	17	340
Anthracene		17	U	17	340
Benzo[a]anthracene		20	U	20	340
Benzo[a]pyrene		20	U	20	340
Benzo[b]fluoranthene		27	U	27	340
Benzo[ghi]perylene		16	U	16	340
Benzo[k]fluoranthene		41	U	41	340
Bis(2-chloroethoxy)methane		23	U	23	340
Bis(2-chloroethyl)ether		17	U	17	340
bis (2-chloroisopropyl) ether		23	U	23	340
Bis(2-ethylhexyl) phthalate		47	U	47	340
4-Bromophenyl phenyl ether		19	U	19	340
Butyl benzyl phthalate		44	U	44	340
Carbazole		37	U	37	340
4-Chloroaniline		83	U	83	340
4-Chloro-3-methylphenol		67	U	67	340
2-Chloronaphthalene		10	U	10	340
2-Chlorophenol		21	U	21	340
4-Chlorophenyl phenyl ether		21	U	21	340
Chrysene		27	U	27	340
Dibenz(a,h)anthracene		19	U	19	340
Dibenzofuran		20	U	20	340
1,2-Dichlorobenzene		22	U	22	340
1,3-Dichlorobenzene		12	U	12	340
1,4-Dichlorobenzene		14	U	14	340
3,3'-Dichlorobenzidine		91	U J	91	670
2,4-Dichlorophenol		10	U	10	340
Diethyl phthalate		26	U	26	340
2,4-Dimethylphenol		67	U	67	340
Dimethyl phthalate		23	U	23	340
Di-n-butyl phthalate		29	U	29	340
4,6-Dinitro-2-methylphenol		340	U	340	670
2,4-Dinitrophenol		340	U T J	340	840
2,4-Dinitrotoluene		67	U	67	340
2,6-Dinitrotoluene		28	U	28	340
Di-n-octyl phthalate		15	U	15	340
Fluoranthene		37	U	37	340
Fluorene		18	U	18	340
Hexachlorobenzene		29	U	29	340
Hexachlorobutadiene		10	U	10	340
Hexachlorocyclopentadiene		51	U	51	340
Hexachloroethane		22	U	22	340
Indeno[1,2,3-cd]pyrene		22	U	22	340
Isophorone		17	U	17	340
2-Methylnaphthalene		19	U	19	340

Client: Washington Closure Hanford

Job Number: 280-31256-1
Sdg Number: JP0398

Client Sample ID: J1PVX1

Lab Sample ID: 280-31256-13
Client Matrix: Solid % Moisture: 3.5

Date Sampled: 07/17/2012 1240
Date Received: 07/19/2012 0900

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	280-129144	Instrument ID:	SMS_D
Prep Method:	3550C	Prep Batch:	280-128653	Lab File ID:	D1782.D
Dilution:	1.0			Initial Weight/Volume:	30.6 g
Analysis Date:	07/24/2012 1741			Final Weight/Volume:	1000 uL
Prep Date:	07/20/2012 2200			Injection Volume:	0.5 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
2-Methylphenol		13	U	13	340
3 & 4 Methylphenol		34	U	34	340
Naphthalene		31	U	31	340
2-Nitroaniline		51	U	51	340
3-Nitroaniline		74	U	74	340
4-Nitroaniline		74	U	74	340
Nitrobenzene		22	U	22	340
2-Nitrophenol		10	U	10	340
4-Nitrophenol		99	U	99	670
N-Nitrosodi-n-propylamine		31	U	31	340
N-Nitrosodiphenylamine		21	U	21	340
Pentachlorophenol		340	U	340	670
Phenanthrene		17	U	17	340
Phenol		18	U	18	340
Pyrene		12	U	12	340
1,2,4-Trichlorobenzene		28	U	28	340
2,4,5-Trichlorophenol		10	U	10	340
2,4,6-Trichlorophenol		10	U	10	340

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Fluorobiphenyl	73		50 - 120
2-Fluorophenol	80		53 - 120
Nitrobenzene-d5	73		50 - 120
Phenol-d5	81		52 - 120
Terphenyl-d14	96		55 - 120
2,4,6-Tribromophenol	70		51 - 120

7/31/12

Client: Washington Closure Hanford

Job Number: 280-31256-1
Sdg Number: JP0398

Client Sample ID: J1PVX1

Lab Sample ID: 280-31256-13
Client Matrix: Solid % Moisture: 3.5

Date Sampled: 07/17/2012 1240
Date Received: 07/19/2012 0900

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	280-129144	Instrument ID:	SMS_D
Prep Method:	3550C	Prep Batch:	280-128653	Lab File ID:	D1782.D
Dilution:	1.0			Initial Weight/Volume:	30.6 g
Analysis Date:	07/24/2012 1741			Final Weight/Volume:	1000 uL
Prep Date:	07/20/2012 2200			Injection Volume:	0.5 uL

Tentatively Identified Compounds **Number TIC's Found:** 5

Cas Number	Analyte	RT	Est. Result (ug/Kg)	Qualifier
	Unknown	1.76	490	N J
	Unknown	1.89	170	N J
	Unknown	2.93	1400	N J
	Unknown	4.05	3200	N J
3855-82-1	1,4-Dichlorobenzene-d4	4.40	2300	N J

7/31/12

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

CASE NARRATIVE

Client: Washington Closure Hanford

Project: WASHINGTON CLOSURE HANFORD

Report Number: 280-31256-1

SDG #: JP0398
SAF#: RC-075

Date SDG Closed: July 19, 2012
Data Deliverable: 7 Day / Summary

CLIENT ID	LAB ID	ANALYSES REQUESTED	ANALYSES PERFORMED
J1PVV9	280-31256-1	6010/7471/9056M/353.2/9045/8270A/8082/8081	6010B/7471A/9056M/353.2/9045C/8270C/8082/8081A
J1PVW0	280-31256-2	6010/7471/9056M/353.2/9045/8270A/8082/8081	6010B/7471A/9056M/353.2/9045C/8270C/8082/8081A
J1PVW1	280-31256-3	6010/7471/9056M/353.2/9045/8270A/8082/8081	6010B/7471A/9056M/353.2/9045C/8270C/8082/8081A
J1PVW2	280-31256-4	6010/7471/9056M/353.2/9045/8270A/8082/8081	6010B/7471A/9056M/353.2/9045C/8270C/8082/8081A
J1PVW3	280-31256-5	6010/7471/9056M/353.2/9045/8270A/8082/8081	6010B/7471A/9056M/353.2/9045C/8270C/8082/8081A
J1PVW4	280-31256-6	6010/7471/9056M/353.2/9045/8270A/8082/8081	6010B/7471A/9056M/353.2/9045C/8270C/8082/8081A
J1PVW5	280-31256-7	6010/7471/9056M/353.2/9045/8270A/8082/8081	6010B/7471A/9056M/353.2/9045C/8270C/8082/8081A
J1PVW6	280-31256-8	6010/7471/9056M/353.2/9045/8270A/8082/8081	6010B/7471A/9056M/353.2/9045C/8270C/8082/8081A
J1PVW7	280-31256-9	6010/7471/9056M/353.2/9045/8270A/8082/8081	6010B/7471A/9056M/353.2/9045C/8270C/8082/8081A
J1PVW8	280-31256-10	6010/7471/9056M/353.2/9045/8270A/8082/8081	6010B/7471A/9056M/353.2/9045C/8270C/8082/8081A
J1PVW9	280-31256-11	6010/7471/9056M/353.2/9045/8270A/8082/8081	6010B/7471A/9056M/353.2/9045C/8270C/8082/8081A
J1PVX0	280-31256-12	6010/7471/9056M/353.2/9045/8270A/8082/8081	6010B/7471A/9056M/353.2/9045C/8270C/8082/8081A
J1PVX1	280-31256-13	6010/7471/9056M/353.2/9045/8270A/8082/8081	6010B/7471A/9056M/353.2/9045C/8270C/8082/8081A

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 7/19/2012 9:00 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 3 coolers at receipt time were 3.1° C, 4.2° C and 4.8° C.

GC/MS SEMIVOLATILES - SW846 8270C
The MS/MSD performed on sample J1PVX1 exhibited the percent recovery outside the control limits for 2,4-Dinitrophenol, and the associated sample result has been flagged "T". The acceptable LCS analysis data indicated that the analytical system was operating within control; therefore, corrective action is deemed unnecessary.

No other anomalies were encountered.

GC SEMIVOLATILES - SW846 8081A - PESTICIDES
The MSD aliquot of the MS/MSD performed on sample J1PVW4 exhibited spike compound recoveries outside the control limits, and the associated sample results have been flagged "N". In addition, RPD limits were exceeded. The acceptable LCS analysis data indicated that the analytical system was operating within control; therefore, corrective action is deemed unnecessary.

No other anomalies were encountered.

GC SEMIVOLATILES - SW846 8082 - PCBs
No anomalies were encountered.

TOTAL METALS - SW846 6010B/7471A
Serial dilution of a digestate in batch 280-128612 indicates that physical and chemical interferences are present for Cobalt, Nickel and Silicon. Results have been flagged with an "X".

Low levels of Barium are present in the method blank associated with batch 280-128612. Because the concentration in the method blank is not present at a level greater than half the reporting limit, corrective action is deemed unnecessary.

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 J1PVV9; therefore, control limits are not applicable.

Silicon was recovered outside the control limits in the Matrix Spike performed on sample J1PVV9, 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.

GENERAL CHEMISTRY - MCAWW 353.2 - NITRATE+NITRITE as N
No anomalies were encountered.

GENERAL CHEMISTRY - SW846 9056M - ANIONS
Low levels of Sulfate are present in the method blank associated with batch 280-129000. Because the concentration in the method blank is not present at a level greater than half the reporting limit, corrective action is deemed unnecessary.

The Matrix Spike performed on sample J1PVV9 exhibited percent recoveries outside the control limits for Orthophosphate as P and Fluoride, and the associated sample results have 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.

GENERAL CHEMISTRY - SW846 9045C - PH
No anomalies were encountered.

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		RC-075-307	Page 1 of 3
Collector ~~Q. Stowe~~ H WEBER 7-17-12	Company Contact: J Kessner	Telephone No.: 509-375-4688	Project Coordinator: KESSNER, JH	Price Code 8L 8B 7-17-12	Data Turnaround 21 Days 7 7-17-12
Project Designation: 100-D/DR Burial Grounds & Remaining Sites - Soil Full Prot	Sampling Location: 100-D-14 Waste Sites- Excavation		SAF No.: RC-075		
Ice Chest No. RCC-08-028	Field Logbook No.: EL-1607-14	COA: 000D142000	Method of Shipment: FED EX		
Shipped To: 7-17-12 TestAmerica Incorporated, ~~Richland~~ DNR	Offsite Property No.		Bill of Lading/Air Bill No.: SEE OSPL		

POSSIBLE SAMPLE HAZARDS/REMARKS

None

Special Handling and/or Storage

Cool 4 Deg C

Preservation	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C				
Type of Container	G/P	G/P	G/P	aG	aG	aG				
No. of Container(s)	1	1	1	1	1	1				
Volume	125mL	125mL	125mL	125mL	120mL	125mL				

SAMPLE ANALYSIS

CJ1
C3

Sample No.	Matrix *	Sample Date	Sample Time	See Item (1) in Special Instructions	Chromium Hex - 7196 7-17-12	IC Anions - 9056 Modified; NO2/NO3 - 353.2; pH (Soil) - 9045	Semi-VOA - 8270A (TCL)	PCBs - 8082	Pesticides - 8081				
J1PVV9	SOIL	7-17-12	1325	X		X	X	X	X				
J1PVW0	SOIL	7-17-12	1320	X		X	X	X	X				
J1PVW1	SOIL	7-17-12	1315	X		X	X	X	X				
J1PVW2	SOIL	7-17-12	1310	X		X	X	X	X				
J1PVW3	SOIL	7-17-12	1305	X		X	X	X	X				

Page 136 of 145

CHAIN OF POSSESSION

Sign/Print Names	Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	H Weber / D Weber	7-17-12 1420	DWOOLEY	7-17-12 1420
	DWOOLEY	7-17-12 1615	A. Freier	7-17-12 1615
	A. Freier	7-18-12 1025	Fed Ex	1060#1
				7/19/12 0900

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) {Mercury}

JP0398

REVIEWED BY DJR DATE 7/18/12

Matrix *
S=Soil
SE=Sediment
SO=Solid
SI=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
W1=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-075-307 | Page 2 of 3

Collector: ~~Q. Stowe~~ H WEBER 7-17-12	Company Contact: J Kessner	Telephone No.: 509-375-4688	Project Coordinator: KESSNER, JH
Project Designation: 100-D/DR Burial Grounds & Remaining Sites - Soil Full Prot	Sampling Location: 100-D-14 Waste Sites- Excavation		SAF No.: RC-075
Ice Chest No.: RCC-08-028	Field Logbook No.: EL-1607-14	COA: 000D142000	Method of Shipment: Fed Ex 7-17-12
Shipped To: TestAmerica Incorporated, ~~Richland~~ DVR 7-17-12	Offsite Property No.		Bill of Lading/Air Bill No.: SEE OSPC

Price Code: ~~8L~~ 8B 7-17-12

Data Turnaround: ~~21~~ 7 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

None

Special Handling and/or Storage

Cool 4 Deg C

			Preservation	Cool 4C	~~Cool 4C~~	Cool 4C	Cool 4C	Cool 4C	Cool 4C				
			Type of Container	G/P	~~G/P~~	G/P	aG	aG	aG				
			No. of Container(s)	1	~~1~~	1	1	1	1				
			Volume	125mL	~~125mL~~	125mL	125mL	120mL	125mL				
SAMPLE ANALYSIS				See item (1) in Special Instructions.	~~Chromium Hex - 7196~~ 7-17-12	IC Anions - 9056 Modified; NO2/NO3 - 353.2; pH (Soil) - 9045	Semi-VOA - 8270A (TCL)	PCBs - 8082	Pesticides - 8081				
Sample No.	Matrix *	Sample Date	Sample Time										
J1PVW4	SOIL	7-17-12	1300	X		X	X	X	X				
J1PVW5	SOIL	7-17-12	1240	X		X	X	X	X				
J1PVW6	SOIL	7-17-12	1235	X		X	X	X	X				
J1PVW7	SOIL	7-17-12	1230	X		X	X	X	X				
J1PVW8	SOIL	7-17-12	1225	X		X	X	X	X				

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Heather Weber / [signature]	7-17-12 1420	D Woolery / [signature]	7-17-12 1420
D Woolery / [signature]	7-17-12 1615	A. Freier / [signature] 1060 #	1615 7-17-12
A. Freier / [signature] WCH	1060 #1 7-18-12 1025	Fed Ex	
		[signature]	7/19/12 0900

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) {Mercury}

JP0398

REVIEWED BY [initials] DATE 7/18/12

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-075-307	Page 3 of 3
Collector: ~~Q Stowe~~ H WEBER	Company Contact: J Kessner	Telephone No.: 509-375-4688	Project Coordinator: KESSNER, JH	Price Code: 8L 88 D 7-17-12	Data Turnaround: ~~21~~ 7 Days D 7-17-12
Project Designation: 100-D/DR Burial Grounds & Remaining Sites - Soil Full Prot	Sampling Location: 100-D-14 Waste Sites- Excavation		SAF No.: RC-075	
Ice Chest No.: RCC-08-028 D 7-17-12	Field Logbook No.: EL-1607-14	COA: 000D142000	Method of Shipment: FED EX	
Shipped To: TestAmerica Incorporated, ~~Richland~~ DVR	Offsite Property No.:		Bill of Lading/Air Bill No.: SEE OSPL	

POSSIBLE SAMPLE HAZARDS/REMARKS

None

Special Handling and/or Storage

Cool 4 Deg C

Preservation	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C					
Type of Container	G/P	G/P	G/P	aG	aG	aG					
No. of Container(s)	1	1	1	1	1	1					
Volume	125mL	125mL	125mL	125mL	120mL	125mL					
SAMPLE ANALYSIS	See items (1) in Special Instructions.	Chromium Hex - 7196	IC Anions - 9056 Modified; NO2/NO3 - 353.2; pH (Soil) - 9045	Semi-VOA - 8270A (TCL)	PCBs - 8082	Pesticides - 8081					
Sample No.	Matrix *	Sample Date	Sample Time								
J1PVW9	SOIL	7-17-12	1220	X		X	X	X	X		
J1PVX0	SOIL	7-17-12	1215	X		X	X	X	X		
J1PVX1	SOIL	7-17-12	1240	X		X	X	X	X		

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CHAIN OF POSSESSION

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Heather Weber/Heather Weber	7-17-12 1420	DWOOLERY	7-17-12 1420
DWOOLERY	7-17-12 1615	106041 A. Freier A. Freier	7-17-12 1615
WCH 106041 A. Freier A. Freier	7-18-12 1025	Fed Ex	
			7/19/12 0900

Sign/Print Names

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) (Mercury)

JP0398

REVIEWED BY D/H DATE 7/18/12

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

GC/MS ORGANIC DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	C	D	E
PROJECT: 100-D-14			DATA PACKAGE: JP0398		
VALIDATOR: ELR		LAB: TAL		DATE: 7/31/12	
			SDG: JP0398		

ANALYSES PERFORMED					
SW-846 8260		SW-846 8260 (TCLP)	SW-846 8270		SW-846 8270 (TCLP)

SAMPLES/MATRIX				
JIPVV9	JIPVW0	JIPVW1	JIPVW2	JIPVW3
JIPVW4	JIPVW5	JIPVW6	JIPVW7	JIPVW8
JIPVW9	JIPVX0	JIPVX1		
				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)

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

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

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

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

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

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

Comments: _____

GC/MS 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? (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 - 33 dichlorobenzide - 47% - Jalf
MS/MSD - 2,4-dinitrophenol (40 & 42%) - Jalf

no PAS

GC/MS ORGANIC DATA VALIDATION CHECKLIST

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

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

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

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

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

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

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

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

Comments: _____

6. SYSTEM PERFORMANCE (Levels D and E)

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

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

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

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

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

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

Comments: _____

7. HOLDING TIMES (all levels)

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

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

Comments: _____

GC/MS ORGANIC DATA VALIDATION CHECKLIST

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

Compound identification acceptable? (Levels D, E)	Yes	No	N/A
Compound quantitation acceptable? (Levels D, E)	Yes	No	N/A
Results reported for all requested analyses?	Yes	No	N/A
Results supported in the raw data? (Levels D, E)	Yes	No	N/A
Samples properly prepared? (Levels D, E)	Yes	No	N/A
Laboratory properly identified and coded all TIC? (Levels D, E)	Yes	No	N/A
Detection limits meet RDL?	Yes	No	N/A
Transcription/calculation errors? (Levels D, E)	Yes	No	N/A

Comments:_____

9. SAMPLE CLEANUP (Levels D and E)

GPC cleanup performed?	Yes	No	N/A
GPC check performed?	Yes	No	N/A
GPC check recoveries acceptable?	Yes	No	N/A
GPC calibration performed?	Yes	No	N/A
GPC calibration check performed?	Yes	No	N/A
GPC calibration check retention times acceptable?	Yes	No	N/A
Check/calibration materials traceable?	Yes	No	N/A
Check/calibration materials Expired?	Yes	No	N/A
Analytical batch QC given similar cleanup?	Yes	No	N/A
Transcription/Calculation Errors?	Yes	No	N/A

Comments:_____

Appendix 6

Additional Documentation Requested by Client

Client: Washington Closure Hanford

Job Number: 280-31256-1
Sdg Number: JP0398

Method Blank - Batch: 280-128653

Method: 8270C
Preparation: 3550C

Lab Sample ID:	MB 280-128653/1-A	Analysis Batch:	280-129144	Instrument ID:	SMS_D
Client Matrix:	Solid	Prep Batch:	280-128653	Lab File ID:	D1766.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	30.1 g
Analysis Date:	07/24/2012 1217	Units:	ug/Kg	Final Weight/Volume:	1000 uL
Prep Date:	07/20/2012 2200			Injection Volume:	0.5 uL
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Acenaphthene	10	U	10	330
Acenaphthylene	17	U	17	330
Anthracene	17	U	17	330
Benzo[a]anthracene	20	U	20	330
Benzo[a]pyrene	20	U	20	330
Benzo[b]fluoranthene	26	U	26	330
Benzo[ghi]perylene	16	U	16	330
Benzo[k]fluoranthene	40	U	40	330
Bis(2-chloroethoxy)methane	23	U	23	330
Bis(2-chloroethyl)ether	17	U	17	330
bis (2-chloroisopropyl) ether	23	U	23	330
Bis(2-ethylhexyl) phthalate	46	U	46	330
4-Bromophenyl phenyl ether	19	U	19	330
Butyl benzyl phthalate	43	U	43	330
Carbazole	36	U	36	330
4-Chloroaniline	82	U	82	330
4-Chloro-3-methylphenol	66	U	66	330
2-Chloronaphthalene	10	U	10	330
2-Chlorophenol	21	U	21	330
4-Chlorophenyl phenyl ether	21	U	21	330
Chrysene	27	U	27	330
Dibenz(a,h)anthracene	19	U	19	330
Dibenzofuran	20	U	20	330
1,2-Dichlorobenzene	22	U	22	330
1,3-Dichlorobenzene	12	U	12	330
1,4-Dichlorobenzene	14	U	14	330
3,3'-Dichlorobenzidine	90	U	90	660
2,4-Dichlorophenol	10	U	10	330
Diethyl phthalate	26	U	26	330
2,4-Dimethylphenol	66	U	66	330
Dimethyl phthalate	23	U	23	330
Di-n-butyl phthalate	29	U	29	330
4,6-Dinitro-2-methylphenol	330	U	330	660
2,4-Dinitrophenol	330	U	330	820
2,4-Dinitrotoluene	66	U	66	330
2,6-Dinitrotoluene	28	U	28	330
Di-n-octyl phthalate	14	U	14	330
Fluoranthene	36	U	36	330
Fluorene	18	U	18	330
Hexachlorobenzene	29	U	29	330
Hexachlorobutadiene	10	U	10	330
Hexachlorocyclopentadiene	50	U	50	330
Hexachloroethane	21	U	21	330
Indeno[1,2,3-cd]pyrene	22	U	22	330
Isophorone	17	U	17	330

Client: Washington Closure Hanford

Job Number: 280-31256-1
Sdg Number: JP0398

Method Blank - Batch: 280-128653

Method: 8270C
Preparation: 3550C

Lab Sample ID:	MB 280-128653/1-A	Analysis Batch:	280-129144	Instrument ID:	SMS_D
Client Matrix:	Solid	Prep Batch:	280-128653	Lab File ID:	D1766.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	30.1 g
Analysis Date:	07/24/2012 1217	Units:	ug/Kg	Final Weight/Volume:	1000 uL
Prep Date:	07/20/2012 2200			Injection Volume:	0.5 uL
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
2-Methylnaphthalene	19	U	19	330
2-Methylphenol	13	U	13	330
3 & 4 Methylphenol	33	U	33	330
Naphthalene	31	U	31	330
2-Nitroaniline	50	U	50	330
3-Nitroaniline	73	U	73	330
4-Nitroaniline	72	U	72	330
Nitrobenzene	22	U	22	330
2-Nitrophenol	10	U	10	330
4-Nitrophenol	97	U	97	660
N-Nitrosodi-n-propylamine	31	U	31	330
N-Nitrosodiphenylamine	21	U	21	330
Pentachlorophenol	330	U	330	660
Phenanthrene	17	U	17	330
Phenol	18	U	18	330
Pyrene	12	U	12	330
1,2,4-Trichlorobenzene	28	U	28	330
2,4,5-Trichlorophenol	10	U	10	330
2,4,6-Trichlorophenol	10	U	10	330

Surrogate	% Rec	Acceptance Limits
2-Fluorobiphenyl	75	50 - 120
2-Fluorophenol	78	53 - 120
Nitrobenzene-d5	75	50 - 120
Phenol-d5	80	52 - 120
Terphenyl-d14	105	55 - 120
2,4,6-Tribromophenol	74	51 - 120

Method Blank TICs- Batch: 280-128653

Cas Number	Analyte	RT	Est. Result	Qual
	Tentatively Identified Compound		None	

Client: Washington Closure Hanford

Job Number: 280-31256-1
Sdg Number: JP0398

Lab Control Sample - Batch: 280-128653

Method: 8270C
Preparation: 3550C

Lab Sample ID:	LCS 280-128653/2-A	Analysis Batch:	280-129144	Instrument ID:	SMS_D
Client Matrix:	Solid	Prep Batch:	280-128653	Lab File ID:	D1767.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	30.0 g
Analysis Date:	07/24/2012 1237	Units:	ug/Kg	Final Weight/Volume:	1000 uL
Prep Date:	07/20/2012 2200			Injection Volume:	0.5 uL
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Acenaphthene	2670	2260	85	60 - 120	
Acenaphthylene	2670	2380	89	64 - 120	
Anthracene	2670	2490	93	63 - 120	
Benzo[a]anthracene	2670	2480	93	65 - 120	
Benzo[a]pyrene	2670	2080	78	59 - 120	
Benzo[b]fluoranthene	2670	2280	85	47 - 129	
Benzo[ghi]perylene	2670	2530	95	55 - 126	
Benzo[k]fluoranthene	2670	2270	85	48 - 130	
Bis(2-chloroethoxy)methane	2670	2150	80	56 - 120	
Bis(2-chloroethyl)ether	2670	2260	85	51 - 120	
bis (2-chloroisopropyl) ether	2670	2100	79	49 - 120	
Bis(2-ethylhexyl) phthalate	2670	2490	93	65 - 120	
4-Bromophenyl phenyl ether	2670	2510	94	64 - 120	
Butyl benzyl phthalate	2670	2410	90	65 - 120	
Carbazole	2670	2530	95	64 - 120	
4-Chloroaniline	2670	1480	55	28 - 120	
4-Chloro-3-methylphenol	2670	2510	94	63 - 120	
2-Chloronaphthalene	2670	2200	83	59 - 120	
2-Chlorophenol	2670	2240	84	57 - 120	
4-Chlorophenyl phenyl ether	2670	2400	90	64 - 120	
Chrysene	2670	2450	92	64 - 120	
Dibenz(a,h)anthracene	2670	1950	73	50 - 133	
Dibenzofuran	2670	2360	89	61 - 120	
1,2-Dichlorobenzene	2670	2070	78	53 - 120	
1,3-Dichlorobenzene	2670	2050	77	52 - 120	
1,4-Dichlorobenzene	2670	2080	78	52 - 120	
3,3'-Dichlorobenzidine	2670	1320	49	30 - 120	
2,4-Dichlorophenol	2670	2300	86	60 - 120	
Diethyl phthalate	2670	2660	100	66 - 120	
2,4-Dimethylphenol	2670	2250	84	54 - 120	
Dimethyl phthalate	2670	2540	95	65 - 120	
Di-n-butyl phthalate	2670	2550	95	67 - 120	
4,6-Dinitro-2-methylphenol	2670	2290	86	57 - 120	
2,4-Dinitrophenol	2670	2150	80	46 - 120	
2,4-Dinitrotoluene	2670	2710	102	68 - 120	
2,6-Dinitrotoluene	2670	2560	96	64 - 120	
Di-n-octyl phthalate	2670	2590	97	66 - 120	
Fluoranthene	2670	2470	92	66 - 120	
Fluorene	2670	2370	89	64 - 120	
Hexachlorobenzene	2670	2240	84	62 - 120	
Hexachlorobutadiene	2670	1990	75	53 - 120	

Client: Washington Closure Hanford

Job Number: 280-31256-1
Sdg Number: JP0398

Lab Control Sample - Batch: 280-128653

Method: 8270C
Preparation: 3550C

Lab Sample ID:	LCS 280-128653/2-A	Analysis Batch:	280-129144	Instrument ID:	SMS_D
Client Matrix:	Solid	Prep Batch:	280-128653	Lab File ID:	D1767.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	30.0 g
Analysis Date:	07/24/2012 1237	Units:	ug/Kg	Final Weight/Volume:	1000 uL
Prep Date:	07/20/2012 2200			Injection Volume:	0.5 uL
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Hexachlorocyclopentadiene	2670	1950	73	47 - 120	
Hexachloroethane	2670	1970	74	51 - 120	
Indeno[1,2,3-cd]pyrene	2670	2140	80	63 - 120	
Isophorone	2670	2160	81	56 - 120	
2-Methylnaphthalene	2670	2050	77	57 - 120	
2-Methylphenol	2670	2260	85	56 - 120	
3 & 4 Methylphenol	5330	4910	92	53 - 120	
Naphthalene	2670	2060	77	57 - 120	
2-Nitroaniline	2670	2620	98	63 - 120	
3-Nitroaniline	2670	1760	66	47 - 120	
4-Nitroaniline	2670	2480	93	64 - 120	
Nitrobenzene	2670	2090	78	54 - 120	
2-Nitrophenol	2670	2210	83	56 - 120	
4-Nitrophenol	2670	2650	99	63 - 121	
N-Nitrosodi-n-propylamine	2670	2270	85	51 - 120	
N-Nitrosodiphenylamine	2280	2040	90	61 - 120	
Pentachlorophenol	2670	2360	89	56 - 120	
Phenanthrene	2670	2470	93	64 - 120	
Phenol	2670	2320	87	56 - 120	
Pyrene	2670	2450	92	64 - 120	
1,2,4-Trichlorobenzene	2670	2030	76	52 - 120	
2,4,5-Trichlorophenol	2670	2680	100	64 - 120	
2,4,6-Trichlorophenol	2670	2350	88	61 - 120	

Surrogate	% Rec	Acceptance Limits
2-Fluorobiphenyl	84	50 - 120
2-Fluorophenol	87	53 - 120
Nitrobenzene-d5	81	50 - 120
Phenol-d5	91	52 - 120
Terphenyl-d14	100	55 - 120
2,4,6-Tribromophenol	89	51 - 120

Client: Washington Closure Hanford

Job Number: 280-31256-1
Sdg Number: JP0398

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 280-128653

Method: 8270C
Preparation: 3550C

MS Lab Sample ID:	280-31256-13	Analysis Batch:	280-129144	Instrument ID:	SMS_D
Client Matrix:	Solid	Prep Batch:	280-128653	Lab File ID:	D1783.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	31.3 g
Analysis Date:	07/24/2012 1801			Final Weight/Volume:	1000 uL
Prep Date:	07/20/2012 2200			Injection Volume:	0.5 uL
Leach Date:	N/A				

MSD Lab Sample ID:	280-31256-13	Analysis Batch:	280-129144	Instrument ID:	SMS_D
Client Matrix:	Solid	Prep Batch:	280-128653	Lab File ID:	D1784.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	31.1 g
Analysis Date:	07/24/2012 1821			Final Weight/Volume:	1000 uL
Prep Date:	07/20/2012 2200			Injection Volume:	0.5 uL
Leach Date:	N/A				

Analyte	% Rec. MS	% Rec. MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Acenaphthene	69	71	60 - 120	3	30		
Acenaphthylene	74	76	64 - 120	3	30		
Anthracene	78	77	63 - 120	0	30		
Benzo[a]anthracene	78	77	65 - 120	0	30		
Benzo[a]pyrene	63	63	59 - 120	1	30		
Benzo[b]fluoranthene	68	65	47 - 129	3	44		
Benzo[ghi]perylene	74	73	55 - 126	1	31		
Benzo[k]fluoranthene	70	69	48 - 130	0	30		
Bis(2-chloroethoxy)methane	67	71	56 - 120	7	30		
Bis(2-chloroethyl)ether	57	65	51 - 120	13	30		
bis (2-chloroisopropyl) ether	64	69	49 - 120	7	30		
Bis(2-ethylhexyl) phthalate	81	79	65 - 120	2	30		
4-Bromophenyl phenyl ether	78	78	64 - 120	1	30		
Butyl benzyl phthalate	79	77	65 - 120	2	30		
Carbazole	82	81	64 - 120	0	30		
4-Chloroaniline	62	62	28 - 120	0	30		
4-Chloro-3-methylphenol	80	80	63 - 120	1	30		
2-Chloronaphthalene	69	72	59 - 120	5	30		
2-Chlorophenol	66	72	57 - 120	9	30		
4-Chlorophenyl phenyl ether	76	76	64 - 120	2	30		
Chrysene	77	75	64 - 120	2	35		
Dibenz(a,h)anthracene	59	58	50 - 133	1	30		
Dibenzofuran	73	75	61 - 120	3	30		
1,2-Dichlorobenzene	60	66	53 - 120	10	30		
1,3-Dichlorobenzene	57	65	52 - 120	13	32		
1,4-Dichlorobenzene	58	67	52 - 120	14	30		
3,3'-Dichlorobenzidine	67	65	30 - 120	2	30		
2,4-Dichlorophenol	74	76	60 - 120	4	30		
Diethyl phthalate	83	83	66 - 120	1	30		
2,4-Dimethylphenol	72	75	54 - 120	5	30		
Dimethyl phthalate	79	78	65 - 120	1	30		
Di-n-butyl phthalate	82	81	67 - 120	1	30		

Client: Washington Closure Hanford

Job Number: 280-31256-1
Sdg Number: JP0398

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 280-128653

Method: 8270C
Preparation: 3550C

MS Lab Sample ID:	280-31256-13	Analysis Batch:	280-129144	Instrument ID:	SMS_D
Client Matrix:	Solid	Prep Batch:	280-128653	Lab File ID:	D1783.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	31.3 g
Analysis Date:	07/24/2012 1801			Final Weight/Volume:	1000 uL
Prep Date:	07/20/2012 2200			Injection Volume:	0.5 uL
Leach Date:	N/A				

MSD Lab Sample ID:	280-31256-13	Analysis Batch:	280-129144	Instrument ID:	SMS_D
Client Matrix:	Solid	Prep Batch:	280-128653	Lab File ID:	D1784.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	31.1 g
Analysis Date:	07/24/2012 1821			Final Weight/Volume:	1000 uL
Prep Date:	07/20/2012 2200			Injection Volume:	0.5 uL
Leach Date:	N/A				

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
4,6-Dinitro-2-methylphenol	57	59	57 - 120	4	30		
2,4-Dinitrophenol	40	42	46 - 120	5	34	T	T
2,4-Dinitrotoluene	84	84	68 - 120	0	30		
2,6-Dinitrotoluene	79	80	64 - 120	2	30		
Di-n-octyl phthalate	85	83	66 - 120	1	30		
Fluoranthene	80	78	66 - 120	1	30		
Fluorene	73	74	64 - 120	3	30		
Hexachlorobenzene	73	73	62 - 120	1	30		
Hexachlorobutadiene	59	65	53 - 120	10	30		
Hexachlorocyclopentadiene	60	64	47 - 120	7	30		
Hexachloroethane	59	66	51 - 120	12	30		
Indeno[1,2,3-cd]pyrene	68	67	63 - 120	1	30		
Isophorone	69	72	56 - 120	5	30		
2-Methylnaphthalene	65	69	57 - 120	7	30		
2-Methylphenol	66	74	56 - 120	12	30		
3 & 4 Methylphenol	73	79	53 - 120	8	30		
Naphthalene	63	68	57 - 120	8	30		
2-Nitroaniline	82	84	63 - 120	3	30		
3-Nitroaniline	76	75	47 - 120	1	30		
4-Nitroaniline	84	83	64 - 120	0	30		
Nitrobenzene	63	69	54 - 120	9	30		
2-Nitrophenol	65	71	56 - 120	9	30		
4-Nitrophenol	81	84	63 - 121	4	30		
N-Nitrosodi-n-propylamine	69	74	51 - 120	8	30		
N-Nitrosodiphenylamine	77	77	61 - 120	0	36		
Pentachlorophenol	66	67	56 - 120	2	30		
Phenanthrene	78	77	64 - 120	1	30		
Phenol	70	75	56 - 120	8	30		
Pyrene	79	77	64 - 120	3	38		
1,2,4-Trichlorobenzene	62	67	52 - 120	7	30		
2,4,5-Trichlorophenol	79	79	64 - 120	1	30		
2,4,6-Trichlorophenol	72	76	61 - 120	5	30		

Client: Washington Closure Hanford

Job Number: 280-31256-1
Sdg Number: JP0398

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 280-128653

Method: 8270C
Preparation: 3550C

MS Lab Sample ID:	280-31256-13	Analysis Batch:	280-129144	Instrument ID:	SMS_D
Client Matrix:	Solid	Prep Batch:	280-128653	Lab File ID:	D1783.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	31.3 g
Analysis Date:	07/24/2012 1801			Final Weight/Volume:	1000 uL
Prep Date:	07/20/2012 2200			Injection Volume:	0.5 uL
Leach Date:	N/A				

MSD Lab Sample ID:	280-31256-13	Analysis Batch:	280-129144	Instrument ID:	SMS_D
Client Matrix:	Solid	Prep Batch:	280-128653	Lab File ID:	D1784.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	31.1 g
Analysis Date:	07/24/2012 1821			Final Weight/Volume:	1000 uL
Prep Date:	07/20/2012 2200			Injection Volume:	0.5 uL
Leach Date:	N/A				

Analyte	% Rec. MS	% Rec. MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual

Surrogate	MS % Rec	MSD % Rec	Acceptance Limits
2-Fluorobiphenyl	70	72	50 - 120
2-Fluorophenol	69	75	53 - 120
Nitrobenzene-d5	67	71	50 - 120
Phenol-d5	73	80	52 - 120
Terphenyl-d14	88	84	55 - 120
2,4,6-Tribromophenol	75	76	51 - 120