0096157

SAF-RC-182
ARRA 100-F Remaining Sites Remediation – Soil In-Process FINAL DATA PACKAGE

COMPLETE COPY OF DATA PACKAGE TO:

Kathy Wendt H4-21 KW 5/5/11
INITIAL/DATE

COMMENTS:

SDG J01050 SAF-RC-182

Rad only ☑ Chem only Rad & Chem

☑ Complete Partial

Sample Location: 100-F-56 S of Reactor

RECEIVED
MAY 11 2011
EDMC

TestAmerica

ANALYTICAL REPORT

Job Number: 280-13864-1

SDG Number: J01050

Job Description: SAF# RC-182

For:
Washington Closure Hanford
2620 Fermi Avenue
Richland, WA 99354

Attention: Joan H Kessner

RECEIVED

Approved for release
Kae E Yoder
Project Manager II
4/26/2011 3:30 PM

Kae E Yoder
Project Manager II
kae.yoder@testamericainc.com
04/26/2011

The test results in this report relate only to the samples in this report and meet all requirements of NELAC, with any exceptions noted. Pursuant to NELAP, this report shall not be reproduced except in full, without the written approval of the laboratory. All questions regarding this report should be directed to the TestAmerica Denver Project Manager.

The Lab Certification ID# is E87667.

Reporting limits are adjusted for sample size used, dilutions and moisture content if applicable.

TestAmerica Laboratories, Inc.
TestAmerica Denver 4955 Yarrow Street, Arvada, CO 80002
Tel (303) 736-0100 Fax (303) 431-7171 www.testamericainc.com

ACCREDITED IN ACCORDANCE WITH nelac

Table of Contents

Cover Title Page 1

Report Narrative 3

Data Qualifiers 4

Method Summary 5

Method / Analyst Summary 6

Sample Summary 7

Sample Results 8

Sample Datasheets 9

QC Results 17

Qc Association Summary 18

Qc Reports 20

Client Chain of Custody 27

Sample Receipt Checklist 28

CASE NARRATIVE

Client: Washington Closure Hanford

Project: WASHINGTON CLOSURE HANFORD

Report Number: 280-13864-1

SDG #: J01050
SAF#: RC-182

Date SDG Closed: March 24, 2011
Data Deliverable: 15 Day / Summary

CLIENT ID	LAB ID	ANALYSES REQUESTED	ANALYSES PERFORMED
J1FKJ7	280-13864-1	6010/7471/1311-6010-7470	6010B/7471A
J1FKJ8	280-13864-2	6010/7471/1311-6010-7470	6010B/7471A
J1FKJ9	280-13864-3	6010/7471/1311-6010-7470	6010B/7471A
J1FKK0	280-13864-4	6010/7471/1311-6010-7470	6010B/7471A

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 3/24/2011; the samples arrived in good condition, properly preserved and on ice. The temperature of the cooler at receipt was 1.2 C.

Samples requesting TCLP Metals 1311/6010B/7470A analyses were leached and placed on hold, as instructed on the chain-of-custody. On 4/26/2011, the client instructed the laboratory to cancel all requested TCLP analyses.

TOTAL METALS - SW846 6010B/7471A
Serial dilution of a digestate in batch 280-59238 indicates that physical and chemical interferences are present for several elements. Results have been flagged with an "X".

Low levels of Chromium and Zinc are present in the method blank associated with batch 280-59238. Because the concentrations in the method blank are not present at levels greater than the reporting limits, 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 J1FKJ9; therefore, control limits are not applicable.

No other anomalies were encountered.

DATA REPORTING QUALIFIERS

Client: Washington Closure Hanford

Job Number: 280-13864-1
Sdg Number: J01050

Lab Section	Qualifier	Description
Metals		
	U	Analyzed for but not detected.
	B	Estimated result. Result is less than the RL, but greater than MDL
	4	MS, MSD: The analyte present in the original sample is 4 times greater than the matrix spike concentration; therefore, control limits are not applicable.
	X	Serial dilution in the analytical batch indicates that physical and chemical interferences are present.

METHOD SUMMARY

Client: Washington Closure Hanford

Job Number: 280-13864-1
Sdg Number: J01050

Description	Lab Location	Method	Preparation Method
Matrix: Solid			
Metals (ICP)	TAL DEN	SW846 6010B	
Preparation, Metals	TAL DEN		SW846 3050B
Mercury (CVAA)	TAL DEN	SW846 7471A	
Preparation, Mercury	TAL DEN		SW846 7471A
ASTM D-2216	TAL DEN	ASTM D-2216	

Lab References:

TAL DEN = TestAmerica Denver

Method References:

ASTM = ASTM International

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

METHOD / ANALYST SUMMARY

Client: Washington Closure Hanford

Job Number: 280-13864-1
Sdg Number: J01050

Method	Analyst	Analyst ID
SW846 6010B	Harre, John K	JKH
SW846 7471A	Stoltz, Katie	KS
ASTM D-2216	Berry III, Paul B	PBB

SAMPLE SUMMARY

Client: Washington Closure Hanford

Job Number: 280-13864-1
Sdg Number: J01050

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
280-13864-1	J1FKJ7	Solid	03/22/2011 1000	03/24/2011 1000
280-13864-2	J1FKJ8	Solid	03/22/2011 1005	03/24/2011 1000
280-13864-3	J1FKJ9	Solid	03/22/2011 1010	03/24/2011 1000
280-13864-4	J1FKK0	Solid	03/22/2011 1015	03/24/2011 1000

SAMPLE RESULTS

Client: Washington Closure Hanford

Job Number: 280-13864-1
Sdg Number: J01050

Client Sample ID: **J1FKJ7**

Lab Sample ID: 280-13864-1
Client Matrix: Solid
% Moisture: 6.4

Date Sampled: 03/22/2011 1000
Date Received: 03/24/2011 1000

6010B Metals (ICP)

Analysis Method:	6010B	Analysis Batch:	280-59720	Instrument ID:	MT_025
Prep Method:	3050B	Prep Batch:	280-59238	Lab File ID:	25A2032811.asc
Dilution:	1.0			Initial Weight/Volume:	1.08 g
Analysis Date:	03/28/2011 1244			Final Weight/Volume:	100 mL
Prep Date:	03/25/2011 1430				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		6050	X	1.5	4.9
Antimony		0.38	U	0.38	0.59
Arsenic		2.9		0.65	0.99
Barium		80.2		0.075	0.49
Beryllium		0.033	U	0.033	0.20
Boron		1.3	B	0.97	2.0
Cadmium		0.11	B	0.041	0.20
Calcium		3970	X	14.0	49.5
Chromium		8.2	X	0.057	0.20
Cobalt		7.6	X	0.099	0.99
Copper		15.2		0.21	0.99
Iron		20300	X	3.8	4.9
Lead		12.6	X	0.27	0.49
Magnesium		3790		3.7	19.8
Manganese		296		0.099	0.99
Molybdenum		0.31	B	0.26	2.0
Nickel		10	X	0.12	4.0
Potassium		1010		40.6	297
Selenium		0.85	U	0.85	0.99
Silicon		310		5.6	9.9
Silver		0.16	U	0.16	0.20
Sodium		237		58.4	119
Vanadium		56.4		0.093	2.0
Zinc		48.9	X	0.39	0.99

7471A Mercury (CVAA)

Analysis Method:	7471A	Analysis Batch:	280-60080	Instrument ID:	MT_033
Prep Method:	7471A	Prep Batch:	280-59231	Lab File ID:	110330AB.txt
Dilution:	1.0			Initial Weight/Volume:	0.61 g
Analysis Date:	03/30/2011 1532			Final Weight/Volume:	50 mL
Prep Date:	03/30/2011 0830				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.0067	B	0.0058	0.018

Client: Washington Closure Hanford

Job Number: 280-13864-1
Sdg Number: J01050

Client Sample ID: **J1FKJ8**

Lab Sample ID: 280-13864-2
Client Matrix: Solid
% Moisture: 7.7

Date Sampled: 03/22/2011 1005
Date Received: 03/24/2011 1000

6010B Metals (ICP)

Analysis Method:	6010B	Analysis Batch:	280-59720	Instrument ID:	MT_025
Prep Method:	3050B	Prep Batch:	280-59238	Lab File ID:	25A2032811.asc
Dilution:	1.0			Initial Weight/Volume:	1.16 g
Analysis Date:	03/28/2011 1247			Final Weight/Volume:	100 mL
Prep Date:	03/25/2011 1430				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		7130	X	1.4	4.7
Antimony		0.35	U	0.35	0.56
Arsenic		2.7		0.62	0.93
Barium		74.7		0.071	0.47
Beryllium		0.031	U	0.031	0.19
Boron		2.0		0.92	1.9
Cadmium		0.088	B	0.038	0.19
Calcium		3470	X	13.2	46.7
Chromium		12.0	X	0.054	0.19
Cobalt		7.7	X	0.093	0.93
Copper		17.7		0.20	0.93
Iron		19800	X	3.5	4.7
Lead		5.4	X	0.25	0.47
Magnesium		4020		3.5	18.7
Manganese		321		0.093	0.93
Molybdenum		0.24	U	0.24	1.9
Nickel		11.9	X	0.11	3.7
Potassium		1880		38.3	280
Selenium		0.80	U	0.80	0.93
Silicon		279		5.3	9.3
Silver		0.15	U	0.15	0.19
Sodium		170		55.1	112
Vanadium		50.8		0.088	1.9
Zinc		41.9	X	0.37	0.93

7471A Mercury (CVAA)

Analysis Method:	7471A	Analysis Batch:	280-60080	Instrument ID:	MT_033
Prep Method:	7471A	Prep Batch:	280-59231	Lab File ID:	110330AB.txt
Dilution:	1.0			Initial Weight/Volume:	0.69 g
Analysis Date:	03/30/2011 1534			Final Weight/Volume:	50 mL
Prep Date:	03/30/2011 0830				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.014	B	0.0052	0.016

Analytical Data

Client: Washington Closure Hanford

Job Number: 280-13864-1
Sdg Number: J01050

Client Sample ID: **J1FKJ9**

Lab Sample ID: 280-13864-3
Client Matrix: Solid

% Moisture: 6.4

Date Sampled: 03/22/2011 1010
Date Received: 03/24/2011 1000

6010B Metals (ICP)

Analysis Method:	6010B	Analysis Batch:	280-59720	Instrument ID:	MT_025
Prep Method:	3050B	Prep Batch:	280-59238	Lab File ID:	25A2032811.asc
Dilution:	1.0			Initial Weight/Volume:	1.19 g
Analysis Date:	03/28/2011 1249			Final Weight/Volume:	100 mL
Prep Date:	03/25/2011 1430				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		5410	X	1.4	4.5
Antimony		0.34	U	0.34	0.54
Arsenic		2.5		0.59	0.90
Barium		56.4		0.068	0.45
Beryllium		0.030	U	0.030	0.18
Boron		0.88	U	0.88	1.8
Cadmium		0.092	B	0.037	0.18
Calcium		3700	X	12.7	44.9
Chromium		9.2	X	0.052	0.18
Cobalt		7.3	X	0.090	0.90
Copper		15.6		0.19	0.90
Iron		19000	X	3.4	4.5
Lead		16.3	X	0.24	0.45
Magnesium		3700		3.3	18.0
Manganese		280		0.090	0.90
Molybdenum		0.28	B	0.23	1.8
Nickel		10.3	X	0.11	3.6
Potassium		1060		36.8	269
Selenium		0.77	U	0.77	0.90
Silicon		228		5.1	9.0
Silver		0.14	U	0.14	0.18
Sodium		202		53.0	108
Vanadium		53.7		0.084	1.8
Zinc		51.0	X	0.36	0.90

7471A Mercury (CVAA)

Analysis Method:	7471A	Analysis Batch:	280-60080	Instrument ID:	MT_033
Prep Method:	7471A	Prep Batch:	280-59231	Lab File ID:	110330AB.txt
Dilution:	1.0			Initial Weight/Volume:	0.65 g
Analysis Date:	03/30/2011 1536			Final Weight/Volume:	50 mL
Prep Date:	03/30/2011 0830				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.052		0.0055	0.017

Client: Washington Closure Hanford

Job Number: 280-13864-1
Sdg Number: J01050

Client Sample ID: **J1FKK0**

Lab Sample ID: 280-13864-4
Client Matrix: Solid
% Moisture: 7.2

Date Sampled: 03/22/2011 1015
Date Received: 03/24/2011 1000

6010B Metals (ICP)

Analysis Method:	6010B	Analysis Batch:	280-59720	Instrument ID:	MT_025
Prep Method:	3050B	Prep Batch:	280-59238	Lab File ID:	25A2032811.asc
Dilution:	1.0			Initial Weight/Volume:	1.16 g
Analysis Date:	03/28/2011 1259			Final Weight/Volume:	100 mL
Prep Date:	03/25/2011 1430				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		7510	X	1.4	4.6
Antimony		0.35	U	0.35	0.56
Arsenic		2.6		0.61	0.93
Barium		72.2		0.071	0.46
Beryllium		0.031	U	0.031	0.19
Boron		0.95	B	0.91	1.9
Cadmium		0.088	B	0.038	0.19
Calcium		3820	X	13.1	46.4
Chromium		9.8	X	0.054	0.19
Cobalt		7.7	X	0.093	0.93
Copper		13.7		0.20	0.93
Iron		19700	X	3.5	4.6
Lead		5.5	X	0.25	0.46
Magnesium		4160		3.4	18.6
Manganese		323		0.093	0.93
Molybdenum		0.24	U	0.24	1.9
Nickel		11.3	X	0.11	3.7
Potassium		1450		38.1	279
Selenium		0.80	U	0.80	0.93
Silicon		275		5.3	9.3
Silver		0.15	U	0.15	0.19
Sodium		191		54.8	111
Vanadium		51.8		0.087	1.9
Zinc		41.1	X	0.37	0.93

7471A Mercury (CVAA)

Analysis Method:	7471A	Analysis Batch:	280-60080	Instrument ID:	MT_033
Prep Method:	7471A	Prep Batch:	280-59231	Lab File ID:	110330AB.txt
Dilution:	1.0			Initial Weight/Volume:	0.64 g
Analysis Date:	03/30/2011 1543			Final Weight/Volume:	50 mL
Prep Date:	03/30/2011 0830				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.080		0.0056	0.017

Client: Washington Closure Hanford

Job Number: 280-13864-1
Sdg Number: J01050

General Chemistry

Client Sample ID: **J1FKJ7**

Lab Sample ID: 280-13864-1
Client Matrix: Solid

Date Sampled: 03/22/2011 1000
Date Received: 03/24/2011 1000

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Percent Moisture	6.4		%	0.10	0.10	1.0	D-2216

Analysis Batch: 280-59332 Analysis Date: 03/25/2011 0903 DryWt Corrected: N

Client: Washington Closure Hanford

Job Number: 280-13864-1
Sdg Number: J01050

General Chemistry

Client Sample ID: **J1FKJ8**

Lab Sample ID: 280-13864-2
Client Matrix: Solid

Date Sampled: 03/22/2011 1005
Date Received: 03/24/2011 1000

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Percent Moisture	7.7		%	0.10	0.10	1.0	D-2216

Analysis Batch: 280-59332 Analysis Date: 03/25/2011 0903 DryWt Corrected: N

General Chemistry

Client Sample ID: **J1FKJ9**

Lab Sample ID: 280-13864-3
Client Matrix: Solid

Date Sampled: 03/22/2011 1010
Date Received: 03/24/2011 1000

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Percent Moisture	6.4		%	0.10	0.10	1.0	D-2216

Analysis Batch: 280-59332 Analysis Date: 03/25/2011 0903 DryWt Corrected: N

General Chemistry

Client Sample ID: **J1FKK0**

Lab Sample ID: 280-13864-4
Client Matrix: Solid

Date Sampled: 03/22/2011 1015
Date Received: 03/24/2011 1000

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Percent Moisture	7.2		%	0.10	0.10	1.0	D-2216

Analysis Batch: 280-59332 Analysis Date: 03/25/2011 0903 DryWt Corrected: N

QUALITY CONTROL RESULTS

Client: Washington Closure Hanford

Job Number: 280-13864-1
Sdg Number: J01050

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
Metals					
Prep Batch: 280-59231					
LCS 280-59231/2-A	Lab Control Sample	T	Solid	7471A	
MB 280-59231/1-A	Method Blank	T	Solid	7471A	
280-13864-1	J1FKJ7	T	Solid	7471A	
280-13864-2	J1FKJ8	T	Solid	7471A	
280-13864-3	J1FKJ9	T	Solid	7471A	
280-13864-3DU	Duplicate	T	Solid	7471A	
280-13864-3MS	Matrix Spike	T	Solid	7471A	
280-13864-4	J1FKK0	T	Solid	7471A	
Prep Batch: 280-59238					
LCS 280-59238/2-A	Lab Control Sample	T	Solid	3050B	
MB 280-59238/1-A	Method Blank	T	Solid	3050B	
280-13864-1	J1FKJ7	T	Solid	3050B	
280-13864-2	J1FKJ8	T	Solid	3050B	
280-13864-3	J1FKJ9	T	Solid	3050B	
280-13864-3DU	Duplicate	T	Solid	3050B	
280-13864-3MS	Matrix Spike	T	Solid	3050B	
280-13864-4	J1FKK0	T	Solid	3050B	
Analysis Batch:280-59720					
LCS 280-59238/2-A	Lab Control Sample	T	Solid	6010B	280-59238
MB 280-59238/1-A	Method Blank	T	Solid	6010B	280-59238
280-13864-1	J1FKJ7	T	Solid	6010B	280-59238
280-13864-2	J1FKJ8	T	Solid	6010B	280-59238
280-13864-3	J1FKJ9	T	Solid	6010B	280-59238
280-13864-3DU	Duplicate	T	Solid	6010B	280-59238
280-13864-3MS	Matrix Spike	T	Solid	6010B	280-59238
280-13864-4	J1FKK0	T	Solid	6010B	280-59238
Analysis Batch:280-60080					
LCS 280-59231/2-A	Lab Control Sample	T	Solid	7471A	280-59231
MB 280-59231/1-A	Method Blank	T	Solid	7471A	280-59231
280-13864-1	J1FKJ7	T	Solid	7471A	280-59231
280-13864-2	J1FKJ8	T	Solid	7471A	280-59231
280-13864-3	J1FKJ9	T	Solid	7471A	280-59231
280-13864-3DU	Duplicate	T	Solid	7471A	280-59231
280-13864-3MS	Matrix Spike	T	Solid	7471A	280-59231
280-13864-4	J1FKK0	T	Solid	7471A	280-59231

Report Basis
T = Total

Client: Washington Closure Hanford

Job Number: 280-13864-1
Sdg Number: J01050

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
General Chemistry					
Analysis Batch:280-59332					
280-13864-1	J1FKJ7	T	Solid	D-2216	
280-13864-1DU	Duplicate	T	Solid	D-2216	
280-13864-2	J1FKJ8	T	Solid	D-2216	
280-13864-3	J1FKJ9	T	Solid	D-2216	
280-13864-4	J1FKK0	T	Solid	D-2216	

Report Basis
T = Total

Client: Washington Closure Hanford

Job Number: 280-13864-1
Sdg Number: J01050

Method Blank - Batch: 280-59238

Method: 6010B
Preparation: 3050B

Lab Sample ID:	MB 280-59238/1-A	Analysis Batch:	280-59720	Instrument ID:	MT_025
Client Matrix:	Solid	Prep Batch:	280-59238	Lab File ID:	25A2032811.asc
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1 g
Analysis Date:	03/28/2011 1240	Units:	mg/Kg	Final Weight/Volume:	100 mL
Prep Date:	03/25/2011 1430				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Aluminum	1.6	U	1.6	5.0
Antimony	0.38	U	0.38	0.60
Arsenic	0.66	U	0.66	1.0
Barium	0.076	U	0.076	0.50
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	0.245	B	0.22	1.0
Iron	3.8	U	3.8	5.0
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
Potassium	41.0	U	41.0	300
Selenium	0.86	U	0.86	1.0
Silicon	5.7	U	5.7	10.0
Silver	0.16	U	0.16	0.20
Sodium	59.0	U	59.0	120
Vanadium	0.094	U	0.094	2.0
Zinc	0.421	B	0.40	1.0

Client: Washington Closure Hanford

Job Number: 280-13864-1
Sdg Number: J01050

Lab Control Sample - Batch: 280-59238

Method: 6010B
Preparation: 3050B

Lab Sample ID:	LCS 280-59238/2-A	Analysis Batch:	280-59720	Instrument ID:	MT_025
Client Matrix:	Solid	Prep Batch:	280-59238	Lab File ID:	25A2032811.asc
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1 g
Analysis Date:	03/28/2011 1242	Units:	mg/Kg	Final Weight/Volume:	100 mL
Prep Date:	03/25/2011 1430				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Aluminum	200	200.8	100	82 - 116	
Antimony	50.0	48.98	98	82 - 110	
Arsenic	100	96.62	97	85 - 110	
Barium	200	204.0	102	87 - 112	
Beryllium	5.00	4.98	100	84 - 114	
Boron	100	98.55	99	81 - 110	
Cadmium	10.0	10.46	105	87 - 110	
Calcium	5000	5028	101	82 - 114	
Chromium	20.0	20.55	103	84 - 114	
Cobalt	50.0	49.93	100	87 - 110	
Copper	25.0	24.68	99	88 - 110	
Iron	100	97.74	98	87 - 120	
Lead	50.0	48.75	98	86 - 110	
Magnesium	5000	4896	98	90 - 110	
Manganese	50.0	49.78	100	88 - 110	
Molybdenum	100	101.7	102	86 - 110	
Nickel	50.0	50.14	100	87 - 110	
Potassium	5000	5142	103	89 - 110	
Selenium	200	196.3	98	83 - 110	
Silicon	1000	191.4	19	10 - 70	
Silver	5.00	5.16	103	87 - 114	
Sodium	5000	5148	103	90 - 112	
Vanadium	50.0	50.65	101	88 - 110	
Zinc	50.0	49.60	99	76 - 114	

Client: Washington Closure Hanford

Job Number: 280-13864-1
Sdg Number: J01050

Matrix Spike - Batch: 280-59238

Method: 6010B
Preparation: 3050B

Lab Sample ID:	280-13864-3	Analysis Batch:	280-59720	Instrument ID:	MT_025
Client Matrix:	Solid	Prep Batch:	280-59238	Lab File ID:	25A2032811.asc
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1.20 g
Analysis Date:	03/28/2011 1256	Units:	mg/Kg	Final Weight/Volume:	100 mL
Prep Date:	03/25/2011 1430				
Leach Date:	N/A				

Analyte	Sample Result/Qual		Spike Amount	Result	% Rec.	Limit	Qual
Aluminum	5410		178	7139	970	50 - 200	4
Antimony	0.34	U	44.5	24.39	55	20 - 200	
Arsenic	2.5		89.1	78.56	85	76 - 111	
Barium	56.4		178	224.5	94	52 - 159	
Beryllium	0.030	U	4.45	3.81	86	72 - 105	
Boron	0.88	U	89.1	76.83	86	75 - 107	
Cadmium	0.092	B	8.91	8.47	94	40 - 130	
Calcium	3700		4450	9101	121	43 - 165	
Chromium	9.2		17.8	26.53	98	70 - 200	
Cobalt	7.3		44.5	46.60	88	72 - 106	
Copper	15.6		22.3	35.66	90	37 - 187	
Iron	19000		89.1	20720	1919	70 - 200	4
Lead	16.3		44.5	54.99	87	70 - 200	
Magnesium	3700		4450	8192	101	64 - 145	
Manganese	280		44.5	363.1	186	40 - 200	4
Molybdenum	0.28	B	89.1	78.85	88	75 - 103	
Nickel	10.3		44.5	49.48	88	61 - 126	
Potassium	1060		4450	5330	96	56 - 172	
Selenium	0.77	U	178	155.2	87	76 - 104	
Silicon	228		891	402.8	20	20 - 200	
Silver	0.14	U	4.45	4.20	94	75 - 141	
Sodium	202		4450	4653	100	78 - 111	
Vanadium	53.7		44.5	101.0	106	50 - 169	
Zinc	51.0		44.5	92.33	93	70 - 200	

Client: Washington Closure Hanford

Job Number: 280-13864-1
Sdg Number: J01050

Duplicate - Batch: 280-59238

Method: 6010B
Preparation: 3050B

Lab Sample ID:	280-13864-3	Analysis Batch:	280-59720	Instrument ID:	MT_025
Client Matrix:	Solid	Prep Batch:	280-59238	Lab File ID:	25A2032811.asc
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1.06 g
Analysis Date:	03/28/2011 1254	Units:	mg/Kg	Final Weight/Volume:	100 mL
Prep Date:	03/25/2011 1430				
Leach Date:	N/A				

Analyte	Sample Result/Qual		Result	RPD	Limit	Qual
Aluminum	5410		5427	0.3	40	
Antimony	0.34	U	0.38	NC	40	U
Arsenic	2.5		2.39	6	30	
Barium	56.4		59.19	5	30	
Beryllium	0.030	U	0.033	NC	30	U
Boron	0.88	U	0.99	NC	30	U
Cadmium	0.092	B	0.110	18	30	B
Calcium	3700		3742	1	30	
Chromium	9.2		8.78	4	40	
Cobalt	7.3		7.32	0.3	30	
Copper	15.6		15.69	0.3	30	
Iron	19000		19170	0.8	40	
Lead	16.3		21.45	28	40	
Magnesium	3700		3707	0.3	30	
Manganese	280		282.9	0.8	40	
Molybdenum	0.28	B	0.320	12	30	B
Nickel	10.3		10.17	1	30	
Potassium	1060		1067	1	40	
Selenium	0.77	U	0.87	NC	30	U
Silicon	228		212.4	7	40	
Silver	0.14	U	0.16	NC	30	U
Sodium	202		191.9	5	30	
Vanadium	53.7		54.18	0.9	30	
Zinc	51.0		52.89	4	40	

Client: Washington Closure Hanford

Job Number: 280-13864-1
Sdg Number: J01050

Method Blank - Batch: 280-59231

Method: 7471A
Preparation: 7471A

Lab Sample ID:	MB 280-59231/1-A	Analysis Batch:	280-60080	Instrument ID:	MT_033
Client Matrix:	Solid	Prep Batch:	280-59231	Lab File ID:	110330AB.txt
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	0.60 g
Analysis Date:	03/30/2011 1527	Units:	mg/Kg	Final Weight/Volume:	50 mL
Prep Date:	03/30/2011 0830				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Mercury	0.0055	U	0.0055	0.017

Lab Control Sample - Batch: 280-59231

Method: 7471A
Preparation: 7471A

Lab Sample ID:	LCS 280-59231/2-A	Analysis Batch:	280-60080	Instrument ID:	MT_033
Client Matrix:	Solid	Prep Batch:	280-59231	Lab File ID:	110330AB.txt
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	0.60 g
Analysis Date:	03/30/2011 1529	Units:	mg/Kg	Final Weight/Volume:	50 mL
Prep Date:	03/30/2011 0830				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Mercury	0.417	0.418	100	87 - 111	

Matrix Spike - Batch: 280-59231

Method: 7471A
Preparation: 7471A

Lab Sample ID:	280-13864-3	Analysis Batch:	280-60080	Instrument ID:	MT_033
Client Matrix:	Solid	Prep Batch:	280-59231	Lab File ID:	110330AB.txt
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	0.65 g
Analysis Date:	03/30/2011 1541	Units:	mg/Kg	Final Weight/Volume:	50 mL
Prep Date:	03/30/2011 0830				
Leach Date:	N/A				

Analyte	Sample Result/Qual	Spike Amount	Result	% Rec.	Limit	Qual
Mercury	0.052	0.411	0.459	99	87 - 111	

Client: Washington Closure Hanford

Job Number: 280-13864-1
Sdg Number: J01050

Duplicate - Batch: 280-59231

Method: 7471A
Preparation: 7471A

Lab Sample ID:	280-13864-3	Analysis Batch:	280-60080	Instrument ID:	MT_033
Client Matrix:	Solid	Prep Batch:	280-59231	Lab File ID:	110330AB.txt
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	0.64 g
Analysis Date:	03/30/2011 1538	Units:	mg/Kg	Final Weight/Volume:	50 mL
Prep Date:	03/30/2011 0830				
Leach Date:	N/A				

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Mercury	0.052	0.0440	16	20	

Client: Washington Closure Hanford

Job Number: 280-13864-1
Sdg Number: J01050

Duplicate - Batch: 280-59332

Method: D-2216
Preparation: N/A

Lab Sample ID:	280-13864-1	Analysis Batch:	280-59332	Instrument ID:	No Equipment
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	N/A
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	
Analysis Date:	03/25/2011 0903	Units:	%	Final Weight/Volume:	
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Percent Moisture	6.4	6.2	3	20	

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-182-061	Page 1 of 1

Collector AJ Ojeda	Company Contact S. Van Den Hende	Telephone No. 509-551-3934	Project Coordinator KESSNER, JH	Price Code ~~8L~~ 8K JR 3/22/11	Data Turnaround JR 3/22/11 ~~21 Days~~ 15 Days
Project Designation ARRA 100F Remaining Sites Remediation - Soil In-Process	Sampling Location 100-F-56 S of Reactor		SAF No. RC-182		
Ice Chest No. ~~NA~~ AF 3-22-11 WCH-08-042	Field Logbook No. EL-1651	COA S00F568100	Method of Shipment Fed Ex ~~Hand Deliver~~ AF 3-22-11		
Shipped To TestAmerica Incorporated ~~Richland~~ JR 3/22/11 Denver	Offsite Property No. ~~N.A.~~		Bill of Lading/Air Bill No. ~~NA~~ AF 3-22-11 7945 6703 1657		

POSSIBLE SAMPLE HAZARDS/REMARKS

None

Special Handling and/or Storage

Cool 4 Degrees C

Preservation	Cool 4C	None	Cool 4C	None							
Type of Container	G/P	G/P	G	G/P							
No. of Container(s)	1	1	1	1							
Volume	60mL	120mL	60mL	60g							
SAMPLE ANALYSIS	See item (1) in Special Instructions.	See item (2) in Special Instructions.	PCBs - 8082	RCF GEA Shipping Screen JR 3/22/11							

Sample No.	Matrix *	Sample Date	Sample Time										Location
~~J1FKJ6~~ JR 3/22/11	~~SOIL~~												
J1FKJ7	SOIL	3-22-11	1000	X	X								1
J1FKJ8	SOIL	3-22-11	1005	X	X								2
J1FKJ9	SOIL	3-22-11	1010	X	X								3
J1FKK0	SOIL	3-22-11	1015	X	X								4

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From: AJ Ojeda AJ Ojeda	3-22-11 @ 1111	Received By/Stored In: Len Russell Len Russell	3/22/11 1111
Relinquished By/Removed From: Len Russell Len Russell	3/22/11 1535	Received By/Stored In: A. Freier A. Freier	3-22-11 1535
Relinquished By/Removed From: WCH A. Freier A. Freier	Date/Time 1450 3-23-11	Received By/Stored In: FED EX	
Relinquished By/Removed From		Received By/~~Stored In~~	3/24/11 0000
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

Please Leach and Hold TCLP Metals per Joan Kessner.

(1) ICP Metals - 6010TR (Client 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}

(2) Metals by ICP (TCLP) - 1311/6010 {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; Mercury (TCLP) - 1311/7470 {Mercury}

SDG# J01050

REVIEWED BY JEB DATE 3-23-11

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
THE LEADER IN ENVIRONMENTAL TESTING

Project 28002142 -6010 TC -5.1

Analytical Due:

Report Due: 4/8/11 (Rush 11 Day TAT)

Sample Check-in List

Date/Time Received: 3/24/11 1000 GM Screen Result 13 microR/hr

Client: Washington Closure Hanford SDG #: J01050 NA[ ] SAF #: RC-182 NA [ ]

Job Number: 13864 Chain of Custody # RC-182-061

Shipping Container ID: WCH-08-0412 Air Bill # 794567931657

1. Custody Seals on shipping container intact? NA [ ] Yes [✓] No [ ]
2. Custody Seals dated and signed? NA [ ] Yes [✓] No [ ]
3. Chain of Custody record present? NA [ ] Yes [✓] No [ ]
4. Cooler Temperature °C: 1.2 NA [ ] 5. Vermiculite/packing materials is NA [ ] Wet [ ] Dry [✓]
6. Number of samples in shipping container: 4
7. Sample holding times exceeded? NA [ ] Yes [ ] No [✓]
8. Samples have:
   - ✓ Tape
   - ✓ Custody Seals
   - ✓ Hazard Lables
   - ✓ Appropriate Sample Lables
9. Samples are:
   - ✓ In Good Condition
   - ____ Broken
   - ____ Leaking
   - ____ Have Air Bubbles
   - (Only for samples requiring no head space.)
10. Sample pH taken? NA [✓] pH<2 [ ] pH>2 [ ] pH>9 [ ] **Amount HNO_3 Added** ____
11. Sample Location, Sample Collector Listed? *
    *For documentation only. No corrective action needed.
12. Were any anomalies identified in sample receipt? Yes [ ] No [✓]
13. Description of anomalies (include sample numbers): ____

Sample Custodian: [signature] **Date:** 3/24/11

Client Sample ID	Analysis Requested	Condition	Comments/Action

Client Informed on ____ by ____ Person Contacted ____

[ ] No action necessary; process as is.

Project Manager [signature] Date 3/25/11

LS-023, Rev. 7, 1/08

From: (509) 375-4640 Origin ID: PSCA
WCH MAILROOM
WASHINGTON CLOSURE HANFORD
2620 FERMI AVE

RICHLAND, WA 99354

FedEx. Express

J1115110225 0225

Ship Date: 23MAR11
ActWgt: 82.0 LB
CAD: 8897843/INET3130

Delivery Address Bar Code

SHIP TO: (303) 736-0100 BILL SENDER

Sample Recieving
Test America Denver
4955 YARROW ST

ARVADA, CO 80002

Ref #
Invoice #
PO #
Dept #

1 of 2

THU - 24 MAR A1
PRIORITY OVERNIGHT

TRK# 7945 6703 1657
0201

MASTER

XH WHHA

80002
CO-US
DEN

50DG2/BDD9/7EFB

After printing this label:
1. Use the 'Print' button on this page to print your label to your laser or inkjet printer.
2. Fold the printed page along the horizontal line.
3. Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

Warning: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your FedEx account number.

Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com.FedEx will not be responsible for any claim in excess of $100 per package, whether the result of loss, damage, delay, non-delivery,misdelivery,or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim.Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic valueof the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental,consequential, or special is limited to the greater of $100 or the authorized declared value. Recovery cannot exceed actual documented loss.Maximum for items of extraordinary value is $500, e.g. jewelry, precious metals, negotiable instruments and other items listed in our ServiceGuide. Written claims must be filed within strict time limits, see current FedEx Service Guide.