0096055

SAF-RC-054
100K Burial Grounds – Soil In-Process
FINAL DATA PACKAGE

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Kathy Wendt H4-21 KW 5/3/11
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COMMENTS:

SDG JP0147 **SAF-RC-054**

Rad only Chem only ☑ Rad & Chem

☑ Complete Partial

Waste Site: 118-K-1 Trench N

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

Job Number: 280-14078-1

SDG Number: JP0147

Job Description: SAF# RC-054

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

Attention: Joan H Kessner

Approved for release.
Kae E Yoder
Project Manager II
4/27/2011 2:30 PM

Kae E Yoder
Project Manager II
kae.yoder@testamericainc.com
04/27/2011

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

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CASE NARRATIVE

Client: Washington Closure Hanford

Project: WASHINGTON CLOSURE HANFORD

Report Number: 280-14078-1

SDG #: JP0147
SAF#: RC-054

Date SDG Closed: March 31, 2011
Data Deliverable: 3 Day / Summary

CLIENT ID	LAB ID	ANALYSES REQUESTED	ANALYSES PERFORMED
J1H052	280-14078-1	6010/7471/1311-6010-7470	6010B/7471A/1311-6010B-7470A

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 sample was received on 3/31/2011; the sample arrived in good condition, properly preserved and on ice. The temperature of the cooler at receipt was 5.3 C.

TOTAL METALS - SW846 6010B/7471A
Serial dilution of a digestate in batch 280-60184 indicates that physical and chemical interferences are present for several elements. Results have been flagged with an "X".

Low levels of Barium, Calcium, Manganese and Zinc are present in the method blank associated with batch 280-60184. Because the concentrations in the method blank are not present at levels greater than the reporting limits, corrective action is deemed unnecessary.

Silicon was recovered outside the control limits, biased high, in the LCS associated with batch 280-60184, and the associated sample result has been flagged "N". Silicon is a poor performer and has a history of reacting inconsistently. Data are reported as is.

It can be noted that the sample amount was greater than four times the spike amount for Aluminum, Iron and Manganese in the Matrix Spike performed on sample J1H052; therefore, control limits are not applicable.

The Matrix Spike performed on sample J1H052 exhibited percent recoveries outside the control limits for Arsenic and Boron, 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.

The duplicate analysis of sample J1H052 exhibited RPD data outside the control limits for Copper, Lead and Sodium, and the associated sample results have been flagged "M". 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.

TCLP METALS - SW846 1311/6010B/7470A

Serial dilution of a digestate in batch 280-60400 indicates that physical and chemical interferences are present for Barium. Results have been flagged with an "X".

Low levels of Barium are present in the method blank associated with batch 280-60400. Because the concentration in the method blank is not present at a level greater than the reporting limit, corrective action is deemed unnecessary.

No other anomalies were encountered.

DATA REPORTING QUALIFIERS

Client: Washington Closure Hanford

Job Number: 280-14078-1
Sdg Number: JP0147

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.
	N	Recovery exceeds upper or lower control limits
	M	Sample duplicate precision not met.
	X	Serial dilution in the analytical batch indicates that physical and chemical interferences are present.
	C	The analyte was detected in both the sample and the assoicated QC blank, and the sample concentration was </= 5X the blank concentration.

METHOD SUMMARY

Client: Washington Closure Hanford

Job Number: 280-14078-1
Sdg Number: JP0147

Description	Lab Location	Method	Preparation Method
Matrix: Solid			
Metals (ICP)	TAL DEN	SW846 6010B	
Preparation, Metals	TAL DEN		SW846 3050B
TCLP Metals (ICP)	TAL DEN	SW846 6010B	
TCLP Extraction	TAL DEN		SW846 1311
Preparation, Total Metals	TAL DEN		SW846 3010A
TCLP Mercury	TAL DEN	SW846 7470A	
TCLP Extraction	TAL DEN		SW846 1311
Preparation, Mercury	TAL DEN		SW846 7470A
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: 280-14078-1
Sdg Number: JP0147

Method	Analyst	Analyst ID
SW846 6010B	Harre, John K	JKH
SW846 6010B	Trudell, Lynn-Anne	LT
SW846 7470A	Stoltz, Katie	KS
SW846 7471A	Stoltz, Katie	KS
ASTM D-2216	Berry III, Paul B	PBB

SAMPLE SUMMARY

Client: Washington Closure Hanford

Job Number: 280-14078-1
Sdg Number: JP0147

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
280-14078-1	J1H052	Solid	03/28/2011 0924	03/31/2011 0900

SAMPLE RESULTS

Client: Washington Closure Hanford

Job Number: 280-14078-1
Sdg Number: JP0147

Client Sample ID: **J1H052**

Lab Sample ID: 280-14078-1
Client Matrix: Solid
% Moisture: 7.6

Date Sampled: 03/28/2011 0924
Date Received: 03/31/2011 0900

6010B Metals (ICP)

Analysis Method:	6010B	Analysis Batch:	280-60512	Instrument ID:	MT_025
Prep Method:	3050B	Prep Batch:	280-60184	Lab File ID:	25A3040111.asc
Dilution:	1.0			Initial Weight/Volume:	1.14 g
Analysis Date:	04/01/2011 1722			Final Weight/Volume:	100 mL
Prep Date:	04/01/2011 1100				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		4660	X	1.5	4.7
Antimony		0.36	U	0.36	0.57
Arsenic		1.6	N	0.63	0.95
Barium		63.1	X	0.072	0.47
Beryllium		0.031	U	0.031	0.19
Boron		2.1	N	0.93	1.9
Cadmium		0.039	U	0.039	0.19
Calcium		5680	X	13.4	47.5
Chromium		4.3	X	0.055	0.19
Cobalt		10.4	X	0.095	0.95
Copper		26.4	M X	0.21	0.95
Iron		22800	X	3.6	4.7
Lead		3.1	M	0.26	0.47
Magnesium		3500	X	3.5	19.0
Manganese		257	X	0.095	0.95
Molybdenum		0.25	B	0.25	1.9
Nickel		6.9	X	0.12	3.8
Potassium		620		38.9	285
Selenium		0.82	U	0.82	0.95
Silicon		310	N X	5.4	9.5
Silver		0.15	U	0.15	0.19
Sodium		380	M	56.0	114
Vanadium		59.4	X	0.089	1.9
Zinc		47.4	X	0.38	0.95

6010B TCLP Metals (ICP)-TCLP

Analysis Method:	6010B	Analysis Batch:	280-60525	Instrument ID:	MT_026
Prep Method:	3010A	Prep Batch:	280-60400	Lab File ID:	26A040111.asc
Dilution:	1.0	Leach Batch:	280-60240	Initial Weight/Volume:	10 mL
Analysis Date:	04/01/2011 2137			Final Weight/Volume:	50 mL
Prep Date:	04/01/2011 1530				
Leach Date:	03/31/2011 1910				

Analyte	DryWt Corrected: N	Result (mg/L)	Qualifier	MDL	RL
Arsenic		0.022	U	0.022	0.50
Barium		0.13	B X C	0.0020	1.0
Cadmium		0.0020	U	0.0020	0.10
Chromium		0.0030	U	0.0030	0.50
Lead		0.013	U	0.013	0.50
Selenium		0.024	U	0.024	0.10
Silver		0.0040	U	0.0040	0.50

Client: Washington Closure Hanford

Job Number: 280-14078-1
Sdg Number: JP0147

Client Sample ID: **J1H052**

Lab Sample ID: 280-14078-1
Client Matrix: Solid

Date Sampled: 03/28/2011 0924
Date Received: 03/31/2011 0900

7470A TCLP Mercury-TCLP

Analysis Method:	7470A	Analysis Batch:	280-60545	Instrument ID:	MT_033
Prep Method:	7470A	Prep Batch:	280-60421	Lab File ID:	110401AD.txt
Dilution:	1.0	Leach Batch:	280-60240	Initial Weight/Volume:	30 mL
Analysis Date:	04/01/2011 2044			Final Weight/Volume:	30 mL
Prep Date:	04/01/2011 1550				
Leach Date:	03/31/2011 1910				

Analyte	DryWt Corrected: N	Result (mg/L)	Qualifier	MDL	RL
Mercury		0.000030	U	0.000030	0.0020

7471A Mercury (CVAA)

Analysis Method:	7471A	Analysis Batch:	280-60413	Instrument ID:	MT_033
Prep Method:	7471A	Prep Batch:	280-60299	Lab File ID:	110401AB.txt
Dilution:	1.0			Initial Weight/Volume:	0.68 g
Analysis Date:	04/01/2011 1416			Final Weight/Volume:	50 mL
Prep Date:	04/01/2011 1045				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.0083	B	0.0053	0.016

Client: Washington Closure Hanford

Job Number: 280-14078-1
Sdg Number: JP0147

General Chemistry

Client Sample ID: **J1H052**

Lab Sample ID: 280-14078-1
Client Matrix: Solid

Date Sampled: 03/28/2011 0924
Date Received: 03/31/2011 0900

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Percent Moisture	7.6		%	0.10	0.10	1.0	D-2216

Analysis Batch: 280-60196 Analysis Date: 03/31/2011 1442 DryWt Corrected: N

QUALITY CONTROL RESULTS

Client: Washington Closure Hanford

Job Number: 280-14078-1
Sdg Number: JP0147

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
Metals					
Prep Batch: 280-60184					
LCS 280-60184/2-A	Lab Control Sample	T	Solid	3050B	
MB 280-60184/1-A	Method Blank	T	Solid	3050B	
280-14078-1	J1H052	T	Solid	3050B	
280-14078-1DU	Duplicate	T	Solid	3050B	
280-14078-1MS	Matrix Spike	T	Solid	3050B	
Prep Batch: 280-60240					
LCS 280-60240/2-B	Lab Control Sample	P	Solid	1311	
LCS 280-60240/2-C	Lab Control Sample	P	Solid	1311	
LB 280-60240/1-B	TCLP SPLPE Leachate Blank	P	Solid	1311	
LB 280-60240/1-C	TCLP SPLPE Leachate Blank	P	Solid	1311	
280-14078-1	J1H052	P	Solid	1311	
280-14078-1DU	Duplicate	P	Solid	1311	
280-14078-1MS	Matrix Spike	P	Solid	1311	
Prep Batch: 280-60299					
LCS 280-60299/2-A	Lab Control Sample	T	Solid	7471A	
MB 280-60299/1-A	Method Blank	T	Solid	7471A	
280-14078-1	J1H052	T	Solid	7471A	
280-14078-1DU	Duplicate	T	Solid	7471A	
280-14078-1MS	Matrix Spike	T	Solid	7471A	
Prep Batch: 280-60400					
LCS 280-60240/2-B	Lab Control Sample	P	Solid	3010A	280-60240
LB 280-60240/1-B	TCLP SPLPE Leachate Blank	P	Solid	3010A	280-60240
280-14078-1	J1H052	P	Solid	3010A	280-60240
280-14078-1DU	Duplicate	P	Solid	3010A	280-60240
280-14078-1MS	Matrix Spike	P	Solid	3010A	280-60240
Analysis Batch:280-60413					
LCS 280-60299/2-A	Lab Control Sample	T	Solid	7471A	280-60299
MB 280-60299/1-A	Method Blank	T	Solid	7471A	280-60299
280-14078-1	J1H052	T	Solid	7471A	280-60299
280-14078-1DU	Duplicate	T	Solid	7471A	280-60299
280-14078-1MS	Matrix Spike	T	Solid	7471A	280-60299
Prep Batch: 280-60421					
LCS 280-60240/2-C	Lab Control Sample	P	Solid	7470A	280-60240
LB 280-60240/1-C	TCLP SPLPE Leachate Blank	P	Solid	7470A	280-60240
280-14078-1	J1H052	P	Solid	7470A	280-60240
280-14078-1DU	Duplicate	P	Solid	7470A	280-60240
280-14078-1MS	Matrix Spike	P	Solid	7470A	280-60240

Client: Washington Closure Hanford

Job Number: 280-14078-1
Sdg Number: JP0147

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
Metals					
Analysis Batch:280-60512					
LCS 280-60184/2-A	Lab Control Sample	T	Solid	6010B	280-60184
MB 280-60184/1-A	Method Blank	T	Solid	6010B	280-60184
280-14078-1	J1H052	T	Solid	6010B	280-60184
280-14078-1DU	Duplicate	T	Solid	6010B	280-60184
280-14078-1MS	Matrix Spike	T	Solid	6010B	280-60184
Analysis Batch:280-60525					
LCS 280-60240/2-B	Lab Control Sample	P	Solid	6010B	280-60400
LB 280-60240/1-B	TCLP SPLPE Leachate Blank	P	Solid	6010B	280-60400
280-14078-1	J1H052	P	Solid	6010B	280-60400
280-14078-1DU	Duplicate	P	Solid	6010B	280-60400
280-14078-1MS	Matrix Spike	P	Solid	6010B	280-60400
Analysis Batch:280-60545					
LCS 280-60240/2-C	Lab Control Sample	P	Solid	7470A	280-60421
LB 280-60240/1-C	TCLP SPLPE Leachate Blank	P	Solid	7470A	280-60421
280-14078-1	J1H052	P	Solid	7470A	280-60421
280-14078-1DU	Duplicate	P	Solid	7470A	280-60421
280-14078-1MS	Matrix Spike	P	Solid	7470A	280-60421

Report Basis
P = TCLP
T = Total

General Chemistry

Analysis Batch:280-60196					
280-14078-1	J1H052	T	Solid	D-2216	
280-14078-1DU	Duplicate	T	Solid	D-2216	

Report Basis
T = Total

Client: Washington Closure Hanford

Job Number: 280-14078-1
Sdg Number: JP0147

Method Blank - Batch: 280-60184

Method: 6010B
Preparation: 3050B

Lab Sample ID:	MB 280-60184/1-A	Analysis Batch:	280-60512	Instrument ID:	MT_025
Client Matrix:	Solid	Prep Batch:	280-60184	Lab File ID:	25A3040111.asc
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1 g
Analysis Date:	04/01/2011 1718	Units:	mg/Kg	Final Weight/Volume:	100 mL
Prep Date:	04/01/2011 1100				
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	0.140	B	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	15.57	B	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
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	0.142	B	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	0.453	B	0.40	1.0

Client: Washington Closure Hanford

Job Number: 280-14078-1
Sdg Number: JP0147

Lab Control Sample - Batch: 280-60184

Method: 6010B
Preparation: 3050B

Lab Sample ID:	LCS 280-60184/2-A	Analysis Batch:	280-60512	Instrument ID:	MT_025
Client Matrix:	Solid	Prep Batch:	280-60184	Lab File ID:	25A3040111.asc
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1 g
Analysis Date:	04/01/2011 1720	Units:	mg/Kg	Final Weight/Volume:	100 mL
Prep Date:	04/01/2011 1100				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Aluminum	200	180.5	90	82 - 116	
Antimony	50.0	46.89	94	82 - 110	
Arsenic	100	91.25	91	85 - 110	
Barium	200	212.4	106	87 - 112	
Beryllium	5.00	4.91	98	84 - 114	
Boron	100	92.66	93	81 - 110	
Cadmium	10.0	10.25	102	87 - 110	
Calcium	5000	4983	100	82 - 114	
Chromium	20.0	18.11	91	84 - 114	
Cobalt	50.0	49.25	99	87 - 110	
Copper	25.0	23.96	96	88 - 110	
Iron	100	105.3	105	87 - 120	
Lead	50.0	44.98	90	86 - 110	
Magnesium	5000	4922	98	90 - 110	
Manganese	50.0	52.94	106	88 - 110	
Molybdenum	100	102.6	103	86 - 110	
Nickel	50.0	49.42	99	87 - 110	
Potassium	5000	5220	104	89 - 110	
Selenium	200	199.8	100	83 - 110	
Silicon	1000	853.4	85	10 - 70	N
Silver	5.00	5.46	109	87 - 114	
Sodium	5000	5329	107	90 - 112	
Vanadium	50.0	53.08	106	88 - 110	
Zinc	50.0	48.51	97	76 - 114	

Client: Washington Closure Hanford

Job Number: 280-14078-1
Sdg Number: JP0147

Matrix Spike - Batch: 280-60184

Method: 6010B
Preparation: 3050B

Lab Sample ID:	280-14078-1	Analysis Batch:	280-60512	Instrument ID:	MT_025
Client Matrix:	Solid	Prep Batch:	280-60184	Lab File ID:	25A3040111.asc
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1.04 g
Analysis Date:	04/01/2011 1729	Units:	mg/Kg	Final Weight/Volume:	100 mL
Prep Date:	04/01/2011 1100				
Leach Date:	N/A				

Analyte	Sample Result/Qual		Spike Amount	Result	% Rec.	Limit	Qual
Aluminum	4660		208	6788	1023	50 - 200	4
Antimony	0.36	U	52.0	30.36	58	20 - 200	
Arsenic	1.6		104	79.85	75	76 - 111	N
Barium	63.1		208	242.4	86	52 - 159	
Beryllium	0.031	U	5.20	4.01	77	72 - 105	
Boron	2.1		104	79.42	74	75 - 107	N
Cadmium	0.039	U	10.4	8.88	85	40 - 130	
Calcium	5680		5200	12860	138	43 - 165	
Chromium	4.3		20.8	19.91	75	70 - 200	
Cobalt	10.4		52.0	51.35	79	72 - 106	
Copper	26.4		26.0	48.37	85	37 - 187	
Iron	22800		104	28790	5785	70 - 200	4
Lead	3.1		52.0	41.10	73	70 - 200	
Magnesium	3500		5200	9062	107	64 - 145	
Manganese	257		52.0	405.9	286	40 - 200	4
Molybdenum	0.25	B	104	85.67	82	75 - 103	
Nickel	6.9		52.0	47.76	79	61 - 126	
Potassium	620		5200	5486	94	56 - 172	
Selenium	0.82	U	208	166.9	80	76 - 104	
Silicon	310		1040	980.2	64	20 - 200	
Silver	0.15	U	5.20	4.70	90	75 - 141	
Sodium	380		5200	5510	99	78 - 111	
Vanadium	59.4		52.0	124.8	126	50 - 169	
Zinc	47.4		52.0	117.5	135	70 - 200	

Quality Control Results

Client: Washington Closure Hanford

Job Number: 280-14078-1
Sdg Number: JP0147

Duplicate - Batch: 280-60184

Method: 6010B
Preparation: 3050B

Lab Sample ID:	280-14078-1	Analysis Batch:	280-60512	Instrument ID:	MT_025
Client Matrix:	Solid	Prep Batch:	280-60184	Lab File ID:	25A3040111.asc
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1.04 g
Analysis Date:	04/01/2011 1727	Units:	mg/Kg	Final Weight/Volume:	100 mL
Prep Date:	04/01/2011 1100				
Leach Date:	N/A				

Analyte	Sample Result/Qual		Result	RPD	Limit	Qual
Aluminum	4660		6360	31	40	
Antimony	0.36	U	0.40	NC	40	U
Arsenic	1.6		1.39	11	30	
Barium	63.1		65.68	4	30	
Beryllium	0.031	U	0.034	NC	30	U
Boron	2.1		2.54	18	30	
Cadmium	0.039	U	0.0531	NC	30	B
Calcium	5680		6765	18	30	
Chromium	4.3		4.10	6	40	
Cobalt	10.4		11.65	11	30	
Copper	26.4		569.0	182	30	M
Iron	22800		27270	18	40	
Lead	3.1		6.38	68	40	M
Magnesium	3500		4319	21	30	
Manganese	257		324.3	23	40	
Molybdenum	0.25	B	0.27	NC	30	U
Nickel	6.9		8.03	15	30	
Potassium	620		805.3	26	40	
Selenium	0.82	U	0.89	NC	30	U
Silicon	310		311.3	0.3	40	N
Silver	0.15	U	0.17	NC	30	U
Sodium	380		521.2	31	30	M
Vanadium	59.4		73.97	22	30	
Zinc	47.4		70.98	40	40	

Client: Washington Closure Hanford

Job Number: 280-14078-1
Sdg Number: JP0147

TCLP SPLPE Leachate Blank - Batch: 280-60400

Method: 6010B
Preparation: 3010A
TCLP

Lab Sample ID:	LB 280-60240/1-B	Analysis Batch:	280-60525	Instrument ID:	MT_026
Client Matrix:	Solid	Prep Batch:	280-60400	Lab File ID:	26A040111.asc
Dilution:	1.0	Leach Batch:	280-60240	Initial Weight/Volume:	10 mL
Analysis Date:	04/01/2011 2132	Units:	mg/L	Final Weight/Volume:	50 mL
Prep Date:	04/01/2011 1530				
Leach Date:	03/31/2011 1910				

Analyte	Result	Qual	MDL	RL
Arsenic	0.022	U	0.022	0.50
Barium	0.0282	B	0.0020	1.0
Cadmium	0.0020	U	0.0020	0.10
Chromium	0.0030	U	0.0030	0.50
Lead	0.013	U	0.013	0.50
Selenium	0.024	U	0.024	0.10
Silver	0.0040	U	0.0040	0.50

Lab Control Sample - Batch: 280-60400

Method: 6010B
Preparation: 3010A
TCLP

Lab Sample ID:	LCS 280-60240/2-B	Analysis Batch:	280-60525	Instrument ID:	MT_026
Client Matrix:	Solid	Prep Batch:	280-60400	Lab File ID:	26A040111.asc
Dilution:	1.0	Leach Batch:	280-60240	Initial Weight/Volume:	10 mL
Analysis Date:	04/01/2011 2135	Units:	mg/L	Final Weight/Volume:	50 mL
Prep Date:	04/01/2011 1530				
Leach Date:	03/31/2011 1910				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Arsenic	4.00	3.96	99	80 - 120	
Barium	12.0	11.69	97	80 - 120	
Cadmium	1.10	1.08	98	80 - 120	
Chromium	5.20	5.02	96	80 - 120	
Lead	5.50	5.37	98	80 - 120	
Selenium	3.00	3.00	100	80 - 120	
Silver	1.05	1.02	97	80 - 120	

Client: Washington Closure Hanford

Job Number: 280-14078-1
Sdg Number: JP0147

Matrix Spike - Batch: 280-60400

Method: 6010B
Preparation: 3010A
TCLP

Lab Sample ID:	280-14078-1	Analysis Batch:	280-60525	Instrument ID:	MT_026
Client Matrix:	Solid	Prep Batch:	280-60400	Lab File ID:	26A040111.asc
Dilution:	1.0	Leach Batch:	280-60240	Initial Weight/Volume:	10 mL
Analysis Date:	04/01/2011 2144	Units:	mg/L	Final Weight/Volume:	50 mL
Prep Date:	04/01/2011 1530				
Leach Date:	03/31/2011 1910				

Analyte	Sample Result/Qual		Spike Amount	Result	% Rec.	Limit	Qual
Arsenic	0.022	U	4.00	4.47	112	80 - 120	
Barium	0.13	B	12.0	12.90	106	80 - 120	
Cadmium	0.0020	U	1.10	1.19	108	80 - 120	
Chromium	0.0030	U	5.20	5.58	107	80 - 120	
Lead	0.013	U	5.50	6.03	110	80 - 120	
Selenium	0.024	U	3.00	3.39	113	80 - 120	
Silver	0.0040	U	1.05	1.10	105	80 - 120	

Duplicate - Batch: 280-60400

Method: 6010B
Preparation: 3010A
TCLP

Lab Sample ID:	280-14078-1	Analysis Batch:	280-60525	Instrument ID:	MT_026
Client Matrix:	Solid	Prep Batch:	280-60400	Lab File ID:	26A040111.asc
Dilution:	1.0	Leach Batch:	280-60240	Initial Weight/Volume:	10 mL
Analysis Date:	04/01/2011 2142	Units:	mg/L	Final Weight/Volume:	50 mL
Prep Date:	04/01/2011 1530				
Leach Date:	03/31/2011 1910				

Analyte	Sample Result/Qual		Result	RPD	Limit	Qual
Arsenic	0.022	U	0.022	NC	20	U
Barium	0.13	B	0.137	2	20	B
Cadmium	0.0020	U	0.0020	NC	20	U
Chromium	0.0030	U	0.0030	NC	20	U
Lead	0.013	U	0.013	NC	20	U
Selenium	0.024	U	0.024	NC	20	U
Silver	0.0040	U	0.0040	NC	20	U

Client: Washington Closure Hanford

Job Number: 280-14078-1
Sdg Number: JP0147

TCLP SPLPE Leachate Blank - Batch: 280-60421

Method: 7470A
Preparation: 7470A
TCLP

Lab Sample ID:	LB 280-60240/1-C	Analysis Batch:	280-60545	Instrument ID:	MT_033
Client Matrix:	Solid	Prep Batch:	280-60421	Lab File ID:	110401AD.txt
Dilution:	1.0	Leach Batch:	280-60240	Initial Weight/Volume:	30 mL
Analysis Date:	04/01/2011 2039	Units:	mg/L	Final Weight/Volume:	30 mL
Prep Date:	04/01/2011 1550				
Leach Date:	03/31/2011 1910				

Analyte	Result	Qual	MDL	RL
Mercury	0.000030	U	0.000030	0.0020

Lab Control Sample - Batch: 280-60421

Method: 7470A
Preparation: 7470A
TCLP

Lab Sample ID:	LCS 280-60240/2-C	Analysis Batch:	280-60545	Instrument ID:	MT_033
Client Matrix:	Solid	Prep Batch:	280-60421	Lab File ID:	110401AD.txt
Dilution:	1.0	Leach Batch:	280-60240	Initial Weight/Volume:	30 mL
Analysis Date:	04/01/2011 2041	Units:	mg/L	Final Weight/Volume:	30 mL
Prep Date:	04/01/2011 1550				
Leach Date:	03/31/2011 1910				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Mercury	0.00500	0.00528	106	90 - 116	

Matrix Spike - Batch: 280-60421

Method: 7470A
Preparation: 7470A
TCLP

Lab Sample ID:	280-14078-1	Analysis Batch:	280-60545	Instrument ID:	MT_033
Client Matrix:	Solid	Prep Batch:	280-60421	Lab File ID:	110401AD.txt
Dilution:	1.0	Leach Batch:	280-60240	Initial Weight/Volume:	30 mL
Analysis Date:	04/01/2011 2048	Units:	mg/L	Final Weight/Volume:	30 mL
Prep Date:	04/01/2011 1550				
Leach Date:	03/31/2011 1910				

Analyte	Sample Result/Qual		Spike Amount	Result	% Rec.	Limit	Qual
Mercury	0.000030	U	0.00500	0.00494	99	90 - 116	

Quality Control Results

Client: Washington Closure Hanford

Job Number: 280-14078-1
Sdg Number: JP0147

Duplicate - Batch: 280-60421

Method: 7470A
Preparation: 7470A
TCLP

Lab Sample ID:	280-14078-1	Analysis Batch:	280-60545	Instrument ID:	MT_033
Client Matrix:	Solid	Prep Batch:	280-60421	Lab File ID:	110401AD.txt
Dilution:	1.0	Leach Batch:	280-60240	Initial Weight/Volume:	30 mL
Analysis Date:	04/01/2011 2046	Units:	mg/L	Final Weight/Volume:	30 mL
Prep Date:	04/01/2011 1550				
Leach Date:	03/31/2011 1910				

Analyte	Sample Result/Qual		Result	RPD	Limit	Qual
Mercury	0.000030	U	0.000030	NC	20	U

Client: Washington Closure Hanford

Job Number: 280-14078-1
Sdg Number: JP0147

Method Blank - Batch: 280-60299

Method: 7471A
Preparation: 7471A

Lab Sample ID:	MB 280-60299/1-A	Analysis Batch:	280-60413	Instrument ID:	MT_033
Client Matrix:	Solid	Prep Batch:	280-60299	Lab File ID:	110401AB.txt
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	0.60 g
Analysis Date:	04/01/2011 1411	Units:	mg/Kg	Final Weight/Volume:	50 mL
Prep Date:	04/01/2011 1045				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Mercury	0.0055	U	0.0055	0.017

Lab Control Sample - Batch: 280-60299

Method: 7471A
Preparation: 7471A

Lab Sample ID:	LCS 280-60299/2-A	Analysis Batch:	280-60413	Instrument ID:	MT_033
Client Matrix:	Solid	Prep Batch:	280-60299	Lab File ID:	110401AB.txt
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	0.60 g
Analysis Date:	04/01/2011 1414	Units:	mg/Kg	Final Weight/Volume:	50 mL
Prep Date:	04/01/2011 1045				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Mercury	0.417	0.391	94	87 - 111	

Matrix Spike - Batch: 280-60299

Method: 7471A
Preparation: 7471A

Lab Sample ID:	280-14078-1	Analysis Batch:	280-60413	Instrument ID:	MT_033
Client Matrix:	Solid	Prep Batch:	280-60299	Lab File ID:	110401AB.txt
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	0.68 g
Analysis Date:	04/01/2011 1421	Units:	mg/Kg	Final Weight/Volume:	50 mL
Prep Date:	04/01/2011 1045				
Leach Date:	N/A				

Analyte	Sample Result/Qual		Spike Amount	Result	% Rec.	Limit	Qual
Mercury	0.0083	B	0.398	0.377	93	87 - 111	

Client: Washington Closure Hanford

Job Number: 280-14078-1
Sdg Number: JP0147

Duplicate - Batch: 280-60299

Method: 7471A
Preparation: 7471A

Lab Sample ID:	280-14078-1	Analysis Batch:	280-60413	Instrument ID:	MT_033
Client Matrix:	Solid	Prep Batch:	280-60299	Lab File ID:	110401AB.txt
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	0.67 g
Analysis Date:	04/01/2011 1418	Units:	mg/Kg	Final Weight/Volume:	50 mL
Prep Date:	04/01/2011 1045				
Leach Date:	N/A				

Analyte	Sample Result/Qual		Result	RPD	Limit	Qual
Mercury	0.0083	B	0.00832	0.5	20	B

Quality Control Results

Client: Washington Closure Hanford

Job Number: 280-14078-1
Sdg Number: JP0147

Duplicate - Batch: 280-60196

Method: D-2216
Preparation: N/A

Lab Sample ID:	280-14078-1	Analysis Batch:	280-60196	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:	03/31/2011 1442	Units:	%	Final Weight/Volume:	
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Percent Moisture	7.6	7.3	4	20	

5.3 ac 4 3311 IR

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-054-060 | Page 1 of 1

Collector Sam Engelhard	**Company Contact** Doug Bowers	**Telephone No.** 531-0701	**Project Coordinator** KESSNER, JH
Project Designation 100K Burial Grounds - Soil In-Process	**Sampling Location** 118-K-1 trench N		**SAF No.** RC-054
Ice Chest No. WCH-11-020	**Field Logbook No.** EL-1602-09	**COA** R118K1Y000	**Method of Shipment** Fed Ex
Shipped To AF 3-28-11 TestAmerica Incorporated. ~~Richland~~ Denver	**Offsite Property No.** SEE RSR		**Bill of Lading/Air Bill No.** ~~See OSPG~~ TRE 3-29-11 SEE RSR

Price Code 8L

Data Turnaround ~~21 Days~~ 3-28-11 ASAP

POSSIBLE SAMPLE HAZARDS/REMARKS
Potential RAD POT Regulated
JEB 3-29-11

Special Handling and/or Storage
Cool 4 Deg C

Preservation	Cool 4C	None	None	None	None						
Type of Container	aG	aG	aG	aG	Snap Vial						
No. of Container(s)	1	1	1	1	1						
Volume	250mL	250mL	~~1000mL~~ 500	1000mL	60g						
SAMPLE ANALYSIS	See item (1) in Special Instructions.	See item (2) in Special Instructions.	See item (3) in Special Instructions.	Carbon-14; Tritium - H3	RCF GEA Shipping Screen						
Sample No.	**Matrix ***	**Sample Date**	**Sample Time**								
J1H052	SOIL	3-28-11	0924	X	X						

CHAIN OF POSSESSION

Relinquished By/Removed From	Date Time	Received By/Stored In	Date/Time
Sam Engelhard	3/28/11 1045	Doug Bowers	3-28-11/1045
Doug Bowers	3-28-11/1205	A. Freier	3-28-11 1205
A. Freier	3-29-11 1030	FED EX	
			3/31/11 0950

Sign/Print Names

SPECIAL INSTRUCTIONS
Run samples for Richlands metals list. Contact Joan Kessner with any questions.

(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}
(3) Gamma Spec (Client List) {Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Silver-108 metastable}

JP0147

REVIEWED BY JEB DATE 3-29-11

Matrix *
S Soil
SE Sediment
SL Sludge
W Water
O Oil
A Air
DS Drum Solids
DL Drum Liquids
T Tissue
WI Wipe
F Foam
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 -60107 -Solid.

Analytical Due:

Report Due: ~~4/4/11~~ MS 3/31/11 (Rush 5 day TAT) 4/4/11

Sample Check-in List

Date/Time Received: 3/31/11 900 GM Screen Result 12 microR/hr

Client: Washington Closure Hanford SDG #: JP0147 NA[ ] SAF #: RC-054 NA [ ]

Job Number: 14078 Chain of Custody # RC-054-060

Shipping Container ID: WCH-11-020 Air Bill # 7945916312 13

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: 5.3 NA [ ] 5. Vermiculite/packing materials is NA [ ] Wet [ ] Dry [✓]
6. Number of samples in shipping container: 1
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: Date: 3/31/11

Client Sample ID	Analysis Requested	Condition	Comments/Action

Client Informed on _____ by _____ Person Contacted _____

[ ] No action necessary; process as is.

Project Manager _____ Date 3/31/11

LS-023, Rev. 7, 1/08

From: (509) 948-8197 Origin ID: PSCA
Jeff Ehlis
U.S. DOE CO MISSION SUPPORT ALLIANC
2355 STEVENS DRIVE

RICHLAND, WA 99354

J11151102250225

Ship Date: 30MAR11
ActWgt: 31.0 LB
CAD: 5851986/INET3130

Delivery Address Bar Code

Ref # R118K1Y000 / RMWC-7632
Invoice #
PO #
Dept #

SHIP TO: (303) 736-1000 BILL THIRD PARTY

KAE YODER
TEST AMERICA
4955 YARROW ST

ARVADA, CO 80002

THU - 31 MAR A1
PRIORITY OVERNIGHT

TRK# 0201 7945 9163 1213

XH WHHA

80002
CO-US
DEN

UN2910 RADIOACTIVE MATERIAL , EXCEPTED PACKAGE - LIMITED QUANTITY OF MATERIAL

50DG3/26A8/7EFB

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.

Analytical Data Package Prepared For

Washington Closure Hanford

Radiochemical Analysis By

TestAmerica

2800 G.W. Way, Richland Wa, 99354, (509)-375-3131.

Assigned Laboratory Code: TARL

Data Package Contains 29 *Pages*

Report No.: 46167

Results in this report relate only to the sample(s) analyzed.

SDG No.	Order No.	Client Sample ID (List Order)	Lot-Sa No.	Work Order	Report DB ID	Batch No.
JP0147	RC-054	J1H052	J1C290543-1	MGAQT1AA	9MGAQT10	1088287
		J1H052	J1C290543-1	MGAQT2AC	9MGAQT20	1094320

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Certificate of Analysis

Washington Hanford Closure
2620 Fermi Avenue
Richland, WA 99354

TestAmerica Laboratories, Inc.

April 11, 2011

Attention: Joan Kessner

SAF Number	:	RC-054
Date SDG Closed	:	March 29, 2011
Number of Samples	:	One (1)
Sample Type	:	Soil
SDG Number	:	JP0147
Data Deliverable	:	7– Day / Summary

CASE NARRATIVE

I. Introduction

On March 29, 2011 one soil sample was received at TestAmerica for radiochemical analysis. Upon receipt, the sample was assigned the following laboratory ID number to correspond with the Washington Closure Hanford (WCH) specific ID:

WCH ID#	TARL ID#	MATRIX	DATE OF RECEIPT
J1H052	MGAQT	SOIL	03/29/11

II. Sample Receipt

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

III. Analytical Results/Methodology

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

The requested analyses were:

Gamma Spectroscopy
Gamma Spec by method RL-GAM-001
Liquid Scintillation Counting
Tritium by method RL-LSC-005

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

Gamma Spectroscopy

Gamma Spec by method RL-GAM-001 :

The batch was reanalyzed due to the high sample activity in the original batch. There was insufficient volume for a duplicate. Sample J1H052 was recounted on a different detector for the duplicate (J1H052 DUP). The CRDL was not met on some analytes due to the reduced sample aliquots and reduced count time. The count time was reduced to meet the priority turn around time. Except as noted, the LCS, batch blank, sample and sample duplicate (J1H052) results are within contractual requirements.

Liquid Scintillation Counting

Tritium by method RL-LSC-005 :

The LCS, batch blank, sample and sample duplicate (J1H052) 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

Drinking Water Method Cross References

	DRINKING WATER ASTM METHOD CROSS REFERENCES	
Referenced Method	**Isotope(s)**	**TestAmerica Richland's SOP No.**
EPA 901.1	Cs-134, I-131	RL-GAM-001
EPA 900.0	Alpha & Beta	RL-GPC-001
EPA 00-02	Gross Alpha (Coprecipitation)	RL-GPC-002
EPA 903.0	Total Alpha Radium (Ra-226)	RL-RA-002
EPA 903.1	Ra-226	RL-RA-001
EPA 904.0	Ra-228	RL-RA-001
EPA 905.0	Sr-89/90	RL-GPC-003
ASTM D5174	Uranium	RL-KPA-003
EPA 906.0	Tritium	RL-LSC-005

Results in this report relate only to the sample(s) analyzed.

Uncertainty Estimation

TestAmerica Richland has adopted the internationally accepted approach to estimating uncertainties described in "NIST Technical Note 1297, 1994 Edition". The approach, "Law of Propagation of Errors", involves the identification of all variables in an analytical method which are used to derive a result. These variables are related to the analytical result (R) by some functional relationship, R = constants * f(x,y,z,...). The components (x,y,z) are evaluated to determine their contribution to the overall method uncertainty. The individual component uncertainties (u_i) are then combined using a statistical model that provides the most probable overall uncertainty value. All component uncertainties are categorized as type A, evaluated by statistical methods, or type B, evaluated by other means. Uncertainties not included in the components, such as sample homogeneity, are combined with the component uncertainty as the square root of the sum-of-the-squares of the individual uncertainties. The uncertainty associated with the derived result is the combined uncertainty (u_c) multiplied by the coverage factor (1,2, or 3).

When three or more sample replicates are used to derive the analytical result, the type A uncertainty is the standard deviation of the mean value (S/? n), where S is the standard deviation of the derived results. The type B uncertainties are all other random or non-random components that are not included in the standard deviation.

The derivation of the general "Law of Propagation of Errors" equations and specific example are available on request.

Report Definitions

Action Lev	An agreed upon activity level used to trigger some action when the final result is greater than or equal to the Action Level. Often the Action Level is related to the Decision Limit.
Batch	The QC preparation batch number that relates laboratory samples to QC samples that were prepared and analyzed together.
Bias	Defined by the equation (Result/Expected)-1 as defined by ANSI N13.30.
COC No	Chain of Custody Number assigned by the Client or TestAmerica.
Count Error (#s)	Poisson counting statistics of the gross sample count and background. The uncertainty is absolute and in the same units as the result. For Liquid Scintillation Counting (LSC) the batch blank count is the background.
Total Uncert (#s) ***u_c - Combined Uncertainty.***	All known uncertainties associated with the preparation and analysis of the sample are propagated to give a measure of the uncertainty associated with the result, ***u_c the combined uncertainty.*** The uncertainty is absolute and in the same units as the result.
(#s), Coverage Factor	The coverage factor defines the width of the confidence interval, 1, 2 or 3 standard deviations.
CRDL (RL)	Contractual Required Detection Limit as defined in the Client's Statement Of Work or TestAmerica "default" nominal detection limit. Often referred to the reporting level (RL)
Lc	Decision Level based on instrument background or blank, adjusted by the Efficiency, Chemical Yield, and Volume associated with the sample. The Type I error probability is approximately 5%. Lc=(1.645 * Sqrt(2*(BkgrndCnt/BkgrndCntMin)/SCntMin)) * (ConvFct/(Eff*Yld*Abn*Vol) * IngrFct). For LSC methods the batch blank is used as a measure of the background variability. Lc cannot be calculated when the background count is zero.
Lot-Sample No	The number assigned by the LIMS software to track samples received on the same day for a given client. The sample number is a sequential number assigned to each sample in the Lot.
MDC|MDA	Detection Level based on instrument background or blank, adjusted by the Efficiency, Chemical Yield, and Volume with a Type I and II error probability of approximately 5%. MDC = (4.65 * Sqrt((BkgrndCnt/BkgrndCntMin)/SCntMin) + 2.71/SCntMin) * (ConvFct/(Eff * Yld * Abn * Vol) * IngrFct). For LSC methods the batch blank is used as a measure of the background variability.
Primary Detector	The instrument identifier associated with the analysis of the sample aliquot.
Ratio U-234/U-238	The U-234 result divided by the U-238 result. The U-234/U-238 ratio for natural uranium in NIST SRM 4321C is 1.038.
Rst/MDC	Ratio of the Result to the MDC. A value greater than 1 may indicate activity above background at a high level of confidence. Caution should be used when applying this factor and it should be used in concert with the qualifiers associated with the result.
Rst/TotUcert	Ratio of the Result to the Total Uncertainty. If the uncertainty has a coverage factor of 2 a value greater than 1 may indicate activity above background at approximately the 95% level of confidence assuming a two-sided confidence interval. Caution should be used when applying this factor and it should be used in concert with the qualifiers associated with the result.
Report DB No	Sample Identifier used by the report system. The number is based upon the first five digits of the **Work Order** Number.
RER	The equation Replicate Error Ratio = (S-D)/[sqrt($TPUs^2$ + $TPUd^2$)] as defined by ICPT BOA where S is the original sample result, D is the result of the duplicate, TPUs is the total uncertainty of the original sample and TPUd is the total uncertainty of the duplicate sample.
SDG	Sample Delivery Group Number assigned by the Client or assigned by TestAmerica upon sample receipt.
Sum Rpt Alpha Spec Rst(s)	The sum of the reported alpha spec results for tests derived from the same sample excluding duplicate result where the results are in the same units.
Work Order	The LIMS software assign test specific identifier.
Yield	The recovery of the tracer added to the sample such as Pu-242 used to trace a Pu-239/40 method.

Sample Results Summary

Date: 11-Apr-11

TestAmerica TARL

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

Report No. : 46167

SDG No: JP0147

Batch	Client Id Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	MDC or MDA	CRDL	RPD
1094320 GAMMA_GS									
J1H052									
	MGAQT2AC	AG-108M	-3.02E-01 +- 5.5E-01	U	pCi/g		8.98E-01		
		AMERICIUM 241	3.98E+01 +- 5.1E+00		pCi/g		1.41E+00		
		CO-60	9.78E+00 +- 2.0E+00		pCi/g		1.40E-01	5.00E-02	
		CS-137	1.16E+03 +- 1.6E+02		pCi/g		5.76E-01	1.00E-01	
		EU-152	-3.36E-01 +- 1.3E+00	U	pCi/g		2.14E+00	1.00E-01	
		EU-154	1.67E+00 +- 5.2E-01		pCi/g		4.18E-01	1.00E-01	
		EU-155	3.69E-01 +- 7.2E-01	U	pCi/g		1.21E+00	1.00E-01	
J1H052 DUP									
	MGAQT2AD	AG-108M	-6.41E-02 +- 3.4E-01	U	pCi/g		5.70E-01		-129.9
		AMERICIUM 241	3.84E+01 +- 5.3E+00		pCi/g		2.21E+00		3.6
		CO-60	1.08E+01 +- 1.4E+00		pCi/g		1.01E-01	5.00E-02	9.6
		CS-137	1.14E+03 +- 1.5E+02		pCi/g		4.06E-01	1.00E-01	2.0
		EU-152	3.37E-01 +- 8.5E-01	U	pCi/g		1.40E+00	1.00E-01	101659.5
		EU-154	1.63E+00 +- 4.6E-01	U	pCi/g		5.80E-01	1.00E-01	2.5
		EU-155	3.79E-01 +- 5.7E-01	U	pCi/g		9.75E-01	1.00E-01	2.7
1088287 906.0_H3_LSC									
J1H052									
	MGAQT1AA	H-3	4.68E+02 +- 1.3E+01		pCi/g	100%	1.95E-02	4.00E+02	
J1H052 DUP									
	MGAQT1AE	H-3	5.22E+02 +- 1.5E+01		pCi/g	100%	2.07E-02	4.00E+02	10.8

No. of Results: 16

TestAmerica

rptSTLRchSaSummary2 V5.2.12
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.

QC Results Summary

TestAmerica TARL

Ordered by Method, Batch No, QC Type,.

Date: 11-Apr-11

Report No. : 46167

SDG No.: JP0147

Batch Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	LCS Recovery	Bias	MDC|MDA
GAMMA_GS								
1094320 BLANK QC,								
MGAWW2A	AG-108M	5.07E-02 +- 7.9E-02	U	pCi/g				1.46E-01
	AMERICIUM 241	2.11E-02 +- 2.7E-01	U	pCi/g				4.72E-01
	CO-60	1.92E-02 +- 8.9E-02	U	pCi/g				1.72E-01
	CS-137	3.32E-02 +- 9.2E-02	U	pCi/g				1.70E-01
	EU-152	-7.51E-02 +- 2.6E-01	U	pCi/g				4.29E-01
	EU-154	-5.48E-02 +- 2.8E-01	U	pCi/g				5.09E-01
	EU-155	-7.59E-02 +- 2.0E-01	U	pCi/g				3.48E-01
1094320 LCS,								
MGAWW2A	AMERICIUM 241	4.20E+01 +- 5.0E+00		pCi/g		104%	0.0	5.43E-01
	CO-60	1.86E+01 +- 3.7E+00		pCi/g		95%	-0.1	1.38E-01
	CS-137	4.39E+01 +- 6.1E+00		pCi/g		100%	0.0	2.11E-01
906.0_H3_LSC								
1088287 BLANK QC,								
MGAW21AA	H-3	4.31E-02 +- 2.4E-02	U	pCi/g	100%			4.85E-02
1088287 LCS,								
MGAW21AC	H-3	3.25E-01 +- 2.8E-02		pCi/g	100%	110%	0.1	3.52E-02

No. of Results: 12

TestAmerica
rptSTLRchQcSummary V5.2.12
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.

FORM I

SAMPLE RESULTS

Date: 11-Apr-11

Lab Name:	TestAmerica	**SDG:**	JP0147	**Collection Date:**	3/28/2011 9:24:00 AM
Lot-Sample No.:	J1C290543-1	**Report No. :**	46167	**Received Date:**	3/29/2011 11:45:00 AM
Client Sample ID:	J1H052	**COC No. :**	RC-054-060	**Matrix:**	SOIL

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 1088287	906.0_H3_LSC			**Work Order:**	MGAQT1AA		**Report DB ID:**	9MGAQT10				
H-3	***4.68E+02***		5.8E-01	1.3E+01	1.95E-02	pCi/g	100%	*(24072.4)*	4/3/11 09:10 p		111.8	LSC8
						9.24E-03	4.00E+02	*(70.6)*			g	
Batch: 1094320	GAMMA_GS			**Work Order:**	MGAQT2AC		**Report DB ID:**	9MGAQT20				
AG-108M	***-3.02E-01***	U	5.5E-01	5.5E-01	8.98E-01	pCi/g		*-0.34*	4/7/11 07:06 a		52.6	GER7$1
								-(1.1)			g	
AMERICIUM 241	***3.98E+01***		5.1E+00	5.1E+00	1.41E+00	pCi/g		*(28.2)*	4/7/11 07:06 a		52.6	GER7$1
								(15.6)			g	
CO-60	***9.78E+00***		2.0E+00	2.0E+00	1.40E-01	pCi/g		*(70.)*	4/7/11 07:06 a		52.6	GER7$1
							5.00E-02	*(9.8)*			g	
CS-137	***1.16E+03***		1.6E+02	1.6E+02	5.76E-01	pCi/g		*(2020.9)*	4/7/11 07:06 a		52.6	GER7$1
							1.00E-01	*(14.6)*			g	
EU-152	***-3.36E-01***	U	1.3E+00	1.3E+00	2.14E+00	pCi/g		*-0.16*	4/7/11 07:06 a		52.6	GER7$1
							1.00E-01	*-0.52*			g	
EU-154	***1.67E+00***		5.2E-01	5.2E-01	4.18E-01	pCi/g		*(4.)*	4/7/11 07:06 a		52.6	GER7$1
							1.00E-01	*(6.4)*			g	
EU-155	***3.69E-01***	U	7.2E-01	7.2E-01	1.21E+00	pCi/g		*0.3*	4/7/11 07:06 a		52.6	GER7$1
							1.00E-01	*(1.)*			g	

No. of Results: 8 **Comments:**

TestAmerica
rptSTLRchSample
V5.2.12 A2002

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
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.

FORM II

Date: 11-Apr-11

DUPLICATE RESULTS

Lab Name:	TestAmerica	**SDG:**	JP0147	**Collection Date:**	3/28/2011 9:24:00 AM
Lot-Sample No.:	J1C290543-1	**Report No. :**	46167	**Received Date:**	3/29/2011 11:45:00 AM
Client Sample ID:	J1H052 DUP	**COC No. :**	RC-054-060	**Matrix:**	SOIL

Parameter	Result, Orig Rst	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, CRDL	Yield	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 1088287	906.0_H3_LSC			**Work Order:**	MGAQT1AE	**Report DB ID:**	MGAQT1ER		**Orig Sa DB ID:**	9MGAQT10		
H-3	5.22E+02		6.4E-01	1.5E+01	2.07E-02	pCi/g	100%	(25186.1)	4/3/11 10:33 p		124.0	LSC8
	4.68E+02		**RPD**	**10.8**		4.00E+02		(70.6)			g	
Batch: 1094320	GAMMA_GS			**Work Order:**	MGAQT2AD	**Report DB ID:**	MGAQT2DR		**Orig Sa DB ID:**	9MGAQT20		
AG-108M	-6.41E-02	U	3.4E-01	3.4E-01	5.70E-01	pCi/g		-0.11	4/9/11 02:41 a		52.6	GER11$1
	-3.02E-01	U	**RPD**	**-129.9**				-0.37			g	
AMERICIUM 241	3.84E+01		5.3E+00	5.3E+00	2.21E+00	pCi/g		(17.4)	4/9/11 02:41 a		52.6	GER11$1
	3.98E+01		**RPD**	**3.6**				(14.6)			g	
CO-60	1.08E+01		1.4E+00	1.4E+00	1.01E-01	pCi/g		(106.5)	4/9/11 02:41 a		52.6	GER11$1
	9.78E+00		**RPD**	**9.6**		5.00E-02		(15.7)			g	
CS-137	1.14E+03		1.5E+02	1.5E+02	4.06E-01	pCi/g		(2809.)	4/9/11 02:41 a		52.6	GER11$1
	1.16E+03		**RPD**	**2.0**		1.00E-01		(14.9)			g	
EU-152	3.37E-01	U	8.5E-01	8.5E-01	1.40E+00	pCi/g		0.24	4/9/11 02:41 a		52.6	GER11$1
	-3.36E-01	U	**RPD**	**101659.5**		1.00E-01		0.79			g	
EU-154	1.63E+00	U	4.6E-01	4.6E-01	5.80E-01	pCi/g		(2.8)	4/9/11 02:41 a		52.6	GER11$1
	1.67E+00		**RPD**	**2.5**		1.00E-01		(7.1)			g	
EU-155	3.79E-01	U	5.7E-01	5.7E-01	9.75E-01	pCi/g		0.39	4/9/11 02:41 a		52.6	GER11$1
	3.69E-01	U	**RPD**	**2.7**		1.00E-01		(1.3)			g	

No. of Results: 8 **Comments:**

RPD - Relative Percent Difference.

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.

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.

FORM II

BLANK RESULTS

Date: 11-Apr-11

Lab Name: TestAmerica

Matrix: SOIL

SDG: JP0147

Report No. : 46167

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA ,	Rpt Unit, CRDL	Yield	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 1088287	906.0_H3_LSC			**Work Order:**	MGAW21AA		**Report DB ID:**	MGAW21AB				
H-3	4.31E-02	U	2.1E-02	2.4E-02	4.85E-02	pCi/g	100%	0.89	4/3/11 11:55 p		67.4	LSC8
					2.30E-02	4.00E+02		(3.6)			g	
Batch: 1094320	GAMMA_GS			**Work Order:**	MGAWW2AA		**Report DB ID:**	MGAWW2AB				
AG-108M	5.07E-02	U	7.9E-02	7.9E-02	1.46E-01	pCi/g		0.35	4/8/11 04:09 a		52.0	GER7$1
								(1.3)			g	
AMERICIUM 241	2.11E-02	U	2.7E-01	2.7E-01	4.72E-01	pCi/g		0.04	4/8/11 04:09 a		52.0	GER7$1
								0.15			g	
CO-60	1.92E-02	U	8.9E-02	8.9E-02	1.72E-01	pCi/g		0.11	4/8/11 04:09 a		52.0	GER7$1
						5.00E-02		0.43			g	
CS-137	3.32E-02	U	9.2E-02	9.2E-02	1.70E-01	pCi/g		0.19	4/8/11 04:09 a		52.0	GER7$1
						1.00E-01		0.72			g	
EU-152	-7.51E-02	U	2.6E-01	2.6E-01	4.29E-01	pCi/g		-0.17	4/8/11 04:09 a		52.0	GER7$1
						1.00E-01		-0.59			g	
EU-154	-5.48E-02	U	2.8E-01	2.8E-01	5.09E-01	pCi/g		-0.11	4/8/11 04:09 a		52.0	GER7$1
						1.00E-01		-0.39			g	
EU-155	-7.59E-02	U	2.0E-01	2.0E-01	3.48E-01	pCi/g		-0.22	4/8/11 04:09 a		52.0	GER7$1
						1.00E-01		-0.75			g	

No. of Results: 8 **Comments:**

TestAmerica
rptSTLRchBlank
V5.2.12 A2002

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
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.

TestAmerica Laboratories, Inc.

FORM II

LCS RESULTS

Date: 11-Apr-11

Lab Name: TestAmerica

Matrix: SOIL

SDG: JP0147

Report No. : 46167

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA	Report Unit	Yield	Expected	Expected Uncert	Recovery, Bias	Analysis, Prep Date	Aliquot Size	Primary Detector
Batch: 1088287	906.0_H3_LSC			Work Order:	MGAW21AC		Report DB ID:	MGAW21CS					
H-3	3.25E-01		2.5E-02	2.8E-02	3.52E-02	pCi/g	100%	2.95E-01	8.8E-03	110%	4/4/11 01:17 a	93.2	LSC8
							Rec Limits:	70	130	0.1		g	
Batch: 1094320	GAMMA_GS			Work Order:	MGAWW2AC		Report DB ID:	MGAWW2CS					
AMERICIUM 241	4.20E+01		5.0E+00	5.0E+00	5.43E-01	pCi/g		4.02E+01	5.7E-03	104%	4/8/11 08:54 a	54.51	GER7$1
							Rec Limits:	70	130	0.0		g	
CO-60	1.86E+01		3.7E+00	3.7E+00	1.38E-01	pCi/g		1.96E+01	2.8E-03	95%	4/8/11 08:54 a	54.51	GER7$1
							Rec Limits:	70	130	-0.1		g	
CS-137	4.39E+01		6.1E+00	6.1E+00	2.11E-01	pCi/g		4.39E+01	6.2E-03	100%	4/8/11 08:54 a	54.51	GER7$1
							Rec Limits:	70	130	0.0		g	

No. of Results: 4 Comments:

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

rptSTLRchLcs
V5.2.12 A2002

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Data Review/Verification Checklist
RADIOCHEMISTRY, First Level Review

4/11/2011 4:08:07 PM

Lot No., Due Date: J1C290543; 04/05/2011
Client, Site: 127642; S00N063A00 HANFORD
QC Batch No., Method Test: 1094320; RGAMMA Gamma by GER
SDG, Matrix: JP0147; SOIL

1.0 COC			
1.1 Is the ICOC page complete; includes all applicable analysis, dates, SOP numbers, and revisions?	Yes ✓	No	N/A
2.0 QC Batch			
2.1 Do the Summary/Detailed Reports include a calculated result for each sample listed on the QC Batch Sheet?	Yes ✓	No	N/A
2.2 Are the QC appropriate for the analysis included in the batch?	Yes ✓	No	N/A
2.3 Is the Analytical Batch Worksheet complete; includes as appropriate, volumes, count times, etc?	Yes ✓	No	N/A
2.4 Does the Worksheets include a Tracer Vial label for each sample?	Yes	No	N/A ✓
3.0 QC & Samples			
3.1 Is the blank results, yield, and MDA within contract limits?	Yes ✓	No	N/A
3.2 Is the LCS result, yield, and MDA within contract limits?	Yes ✓	No	N/A
3.3 Are the MS/MSD results, yields, and MDA within contract limits?	Yes	No	N/A ✓
3.4 Are the duplicate result, yields, and MDAs within contract limits?	Yes ✓	No	N/A
3.5 Are the sample yields and MDAs within contract limits?	Yes	No ✓	N/A
4.0 Raw Data			
4.1 Were results calculated in the correct units?	Yes ✓	No	N/A
4.2 Were analysis volumes entered correctly?	Yes ✓	No	N/A
4.3 Were Yields entered correctly?	Yes ✓	No	N/A
4.4 Were spectra reviewed/meet contractual requirements?	Yes ✓	No	N/A
4.5 Were raw counts reviewed for anomalies?	Yes ✓	No	N/A
5.0 Other			
5.1 Are all nonconformances included and noted?	Yes ✓	No	N/A
5.2 Are all required forms filled out?	Yes ✓	No	N/A
5.3 Was the correct methodology used?	Yes ✓	No	N/A
5.4 Was transcription checked?	Yes ✓	No	N/A
5.5 Were all calculations checked at a minimum frequency?	Yes	No	N/A ✓
5.6 Are worksheet entries complete and correct?	Yes ✓	No	N/A

6.0 Comments on any No response:
Please see NCM # 10018019

First Level John Morton Date 4-11-11

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Data Review Checklist

RADIOCHEMISTRY

Second Level Review

Batch Number: 1094320

Review Item	Yes (√)	No (√)	NA (√)
A. Sample Analysis 1. Are the sample yields within acceptance criteria?			✓
2. Is the sample Minimum Detectable Activity < the Contract Detection Limit?	✓	✓	
3. Are the correct isotopes reported?	✓		
B. QC Samples 1. Is the Minimum Detectable Activity for the blank result ≤ the Contract Detection Limit?	✓		
2. Does the blank result meet the Contract criteria?	✓		
3. Is the blank result < the Contract Detection Limit?	✓		
4. Is the blank result > the Contract Detection Limit but the sample result < the Contract Detection Limit?			✓
5. Is the LCS recovery within contract acceptance criteria?	✓		
6. Is the LCS Minimum Detectable Activity ≤ the Contract Detection Limit?		✓	
7. Do the MS/MSD results and yields meet acceptance criteria?			✓
8. Do the duplicate sample results and yields meet acceptance criteria?	✓		
C. Other 1. Are all Non-conformances included and noted?	✓		
2. Are all required forms filled out?	✓		
3. Was the correct methodology used?	✓		
4. Was transcription checked?	✓		
5. Were all calculations checked at a minimum frequency?	✓		
6. Were units checked?	✓		

Comments on any "No" response: CRDL = 0.1 pCi/g
See NCM #: 1001809

Second Level Review: [signature] Date: 4/11/11

LS-038B, Rev. 10, 9/07

Clouseau
Nonconformance Memo

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

NCM #: 10-18019
NCM Initiated By: John Norton
Date Opened: 04/11/2011
Date Closed:

Classification: **Anomaly**
Status: **PMREVIEW**
Production Area: Counting
Tests: Gamma by GER
Lot #'s (Sample #'s): J1C290000 (286), J1C290543 (1),
QC Batches: 1094320,

Nonconformance: MDA not met
Subcategory: Data accepted

Problem Description / Root Cause

Name	Date	Description
John Norton	04/11/2011	These samples did not meet the CRDL due to reduced aliquots caused by high sample activity.

Corrective Action

Name	Date	Corrective Action
John Norton	04/11/2011	In some cases the activity detected in the sample is greater than the MDA.

Client Notification Summary

Client	Project Manager	Notified	Response	How Notified	Note	Response	Response Note

Quality Assurance Verification

Verified By	Due Date	Status	Notes
		This section not yet completed by QA.	

Approval History

Date Approved	Approved By	Position

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Data Review/Verification Checklist
RADIOCHEMISTRY, First Level Review

4/4/2011 1:15:41 PM

Lot No., Due Date: J1C290543; 04/05/2011
Client, Site: 127642; S00N063A00 HANFORD
QC Batch No., Method Test: 1088287; RTRITIUM H-3 by LSC
SDG, Matrix: JP0147; SOIL

1.0 COC

1.1 Is the ICOC page complete; includes all applicable analysis, dates, SOP numbers, and revisions?	Yes ✓	No	N/A

2.0 QC Batch

2.1 Do the Summary/Detailed Reports include a calculated result for each sample listed on the QC Batch Sheet?	Yes ✓	No	N/A
2.2 Are the QC appropriate for the analysis included in the batch?	Yes ✓	No	N/A
2.3 Is the Analytical Batch Worksheet complete; includes as appropriate, volumes, count times, etc?	Yes ✓	No	N/A
2.4 Does the Worksheets include a Tracer Vial label for each sample?	Yes	No	N/A ✓

3.0 QC & Samples

3.1 Is the blank results, yield, and MDA within contract limits?	Yes ✓	No	N/A
3.2 Is the LCS result, yield, and MDA within contract limits?	Yes ✓	No	N/A
3.3 Are the MS/MSD results, yields, and MDA within contract limits?	Yes	No	N/A ✓
3.4 Are the duplicate result, yields, and MDAs within contract limits?	Yes ✓	No	N/A
3.5 Are the sample yields and MDAs within contract limits?	Yes ✓	No	N/A

4.0 Raw Data

4.1 Were results calculated in the correct units?	Yes ✓	No	N/A
4.2 Were analysis volumes entered correctly?	Yes ✓	No	N/A
4.3 Were Yields entered correctly?	Yes	No	N/A ✓
4.4 Were spectra reviewed/meet contractual requirements?	Yes	No	N/A ✓
4.5 Were raw counts reviewed for anomalies?	Yes ✓	No	N/A

5.0 Other

5.1 Are all nonconformances included and noted?	Yes	No	N/A ✓
5.2 Are all required forms filled out?	Yes ✓	No	N/A
5.3 Was the correct methodology used?	Yes ✓	No	N/A
5.4 Was transcription checked?	Yes ✓	No	N/A
5.5 Were all calculations checked at a minimum frequency?	Yes ✓	No	N/A
5.6 Are worksheet entries complete and correct?	Yes ✓	No	N/A

6.0 Comments on any No response:

First Level [signature] Date 4/4/11

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Data Review Checklist

RADIOCHEMISTRY

Second Level Review

Batch Number: 1088287

Review Item	Yes (√)	No (√)	NA (√)
A. Sample Analysis 1. Are the sample yields within acceptance criteria?			✓
2. Is the sample Minimum Detectable Activity < the Contract Detection Limit?	✓		
3. Are the correct isotopes reported?	✓		
B. QC Samples 1. Is the Minimum Detectable Activity for the blank result ≤ the Contract Detection Limit?	✓		
2. Does the blank result meet the Contract criteria?	✓		
3. Is the blank result < the Contract Detection Limit?	✓		
4. Is the blank result > the Contract Detection Limit but the sample result < the Contract Detection Limit?			✓
5. Is the LCS recovery within contract acceptance criteria?	✓		
6. Is the LCS Minimum Detectable Activity ≤ the Contract Detection Limit?	✓		
7. Do the MS/MSD results and yields meet acceptance criteria?			✓
8. Do the duplicate sample results and yields meet acceptance criteria?	✓		
C. Other 1. Are all Non-conformances included and noted?			✓
2. Are all required forms filled out?	✓		
3. Was the correct methodology used?	✓		
4. Was transcription checked?	✓		
5. Were all calculations checked at a minimum frequency?	✓		
6. Were units checked?	✓		

Comments on any "No" response: CRDL = 400 pCi/g

Second Level Review: [signature] Date: 4/4/11

LS-038B, Rev. 10, 9/07

TestAmerica Laboratories, Inc.

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Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-054-060 | Page 1 of 1

Collector Sam Engelhard	**Company Contact** Doug Bowers	**Telephone No.** 531-0701	**Project Coordinator** KESSNER, JH
Project Designation 100K Burial Grounds - Soil In-Process	**Sampling Location** 118-K-1 trench N		**SAF No.** RC-054
Ice Chest No. WCH-11-038	**Field Logbook No.** EL-1602-09	**COA** R118K1Y000	**Method of Shipment** FED EX
Shipped To TestAmerica Incorporated, Richland	**Offsite Property No.** SEE RSR		**Bill of Lading/Air Bill No.** ~~See OSPC~~ JEB 3-29-11 SEE RSR

Price Code 8L

Data Turnaround ~~5-28-11~~ ~~21 Days~~ ~~ASAP~~ 7 day TAT WR 3/29/11

POSSIBLE SAMPLE HAZARDS/REMARKS
~~Potential~~ RAD DOT Regulated
JEB 3-29-11

Special Handling and/or Storage
~~Cool 4 Deg C~~
NONE
JEB 3-29-11

Preservation	Cool 4C	None	None	None	None	
Type of Container	aG	aG	aG	aG	Snap Vial	
No. of Container(s)	1	1	1	~~1~~ 2 JEB 3-29-11	1	
Volume	250mL	250mL	~~1000mL~~ JEB 3-29-11	1000mL JEB 3-28-11	60g	
SAMPLE ANALYSIS	See item (1) in Special Instructions.	See item (2) in Special Instructions.	See item (3) in Special Instructions.	~~Gamma Spec~~ Tritium - H3	HCF GEA Shipping Screen	

J1C290543

Sample No.	Matrix *	Sample Date	Sample Time									
J1H052	SOIL	3-28-11	0924			X	X		MGAQT			

J1C290543 Due 3-30-11

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

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Sam Engelhard	3/29/11 1045	Doug Bowers/Doug Bowers	3-28-11/1045
Doug Bowers/Doug Bowers	3-28-11/1205	A. Freier A. Freier	3-28-11 1205
A Freier A. Freier	3-29-11 1030	JEB 3-29-11 FED EX	
A Freier A Freier	3-29-11 1145	TAR Lucrec Velazquez	3/29/11 1145

SPECIAL INSTRUCTIONS
Run samples for Richlands metals list. Contact Joan Kessner with any questions.

(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}
(3) Gamma Spec (Client List) {Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Silver-108 metastable}

JP0147

REVIEWED BY JEB DATE 3-29-11

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

Apex™

TAL-R
~845g.
DOT Regulated

Analysis Report for RCF27422

J1H052 SAF:RC-054 100K/118-K-1 TRENCH N

GAMMA SPECTRUM ANALYSIS

Sample Identification	: RCF27422
Sample Description	: J1H052 SAF:RC-054 100K/118-K-1 TRENCH N
Sample Type	: 50g pillbox
Sample Size	: 5.700E+01 grams
Facility	: Default
Sample Taken On	: 3/28/2011 9:24:00AM
Acquisition Started	: 3/28/2011 11:59:35AM
Procedure	: 50 Gram Pill Box
Operator	: RCT
Detector Name	: GEA2703
Geometry	: 50 ml Pill Box
Live Time	: 3600.0 seconds
Real Time	: 3631.2 seconds
Dead Time	: 0.86 %
Peak Locate Threshold	: 3.00
Peak Locate Range (in channels)	: 40 - 4096
Peak Area Range (in channels)	: 40 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 2/2/2011
Efficiency Calibration Used Done On	: 2/2/2011
Efficiency Calibration Description	: GEA2703 50gPB EC 020211 SN82751A-23/8
Sample Number	: 12951

INTERFERENCE CORRECTED REPORT

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
K-40	0.987	9.40E+00	2.80E+00	
CO-60	1.000	1.66E+01	8.88E-01	
CS-137	1.000	2.87E+03	1.50E+02	
EU-154	0.889	4.21E+00	6.71E-01	
EU-155	0.405	1.85E+00	1.70E+00	

MDA 2.78 E+00

Analysis Report for RCF27422

J1H052 SAF:RC-054 100K/118-K-1 TRENCH N

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
AM-241	1.000	7.40E+01	4.65E+00	

? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 2.000 sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 3/28/2011 1:00:21PM
Peak Locate From Channel : 40
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	22.24 UK	1.63807E-01	33.72		
M	2	31.44 Cs-137	2.13563E+00	7.08		
m	3	32.11 Cs-137	7.29853E+00	2.19		
	9	996.53 Eu-154	2.45000E-02	23.33		

(appears as 1 peak)

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000 sigma

UK = unknown

NUCLIDE MDA REPORT

Nuclide Library Used : \\WC98582\ApexRoot\Default\Library\RCF UNKNOWN.NLB

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	K-40	1460.83	*	10.67	9.40E+00	3.36E+00	3.36E+00
+	CO-60	1173.24	*	99.90	1.66E+01	3.67E-01	6.09E-01
		1332.50	*	99.98	1.65E+01		3.67E-01
	NB-94	702.63		99.81	-2.35E-02	4.65E-01	4.65E-01
		871.10		99.89	5.90E-01		6.21E-01
	AG-108m	433.94		90.50	-7.35E-01	5.97E-01	3.29E+00
		614.28		89.80	-4.66E-01		1.81E+00
		722.94		90.80	7.13E-01		5.97E-01
+	CS-137	661.66	*	85.21	2.87E+03	2.50E+00	2.50E+00
	EU-152	40.12		38.40	-1.63E+01	1.63E+00	3.12E+00

RADIOACTIVE SHIPMENT RECORD

3. Page 1 of 1 | 4. Ship Prepaid | 5. Via Site Carrier

1. SHIP FROM U.S. DEPT. OF ENERGY C/O
Company Washington Closure Hanford
Address 1060 Battelle Blvd.
City, State, Zip Richland, WA 99352
Contact Tom Edmundson
Phone 509-376-0925

2. SHIP TO ☐ U.S. DEPT. OF ENERGY C/0
Company TestAmerica
Address 2800 George Washington Way
City, State, Zip Richland, WA 99352
Attention Sandra Seger
Phone 509-375-3131

6. SHIPMENT AUTHORIZATION NUMBER N/A

7. EMERGENCY CONTACT INFO
Telephone 509-947-5192
ERG #s 161
Charge Code R118K1Y000

HM 8. Proper Shipping Name: X Radioactive Material, excepted package-limited quantity of material — PRI HAZ 7 — SUB HAZ — UN ID 2910

9. No. Pkg.	Model Package	COC/Spec	Serial No.	Seal No.	Isotopes	C.S.I.	T.I.	Bq/Package	Gr. Wt. Kg.
1	Poly Cooler	Strong Excep.Pkg.	WCH-11-038	TAPE	Eu-154 Co60, Cs137, Sr90, Am241, Pu-239, Pu-240	N/A	N/A	0.19 MBq	4 Kg

10. Identify for Normal Form Only
Physical Form Solid
Chemical Form Elemental

11.
☐ Highway Route Controlled Quantity
☐ Exclusive Use Shipment with Instructions
☐ Placards Applied
☒ Fissile Excepted, Grams <2grams
☒ UN ID Marking 2910

12. **LABELS APPLIED** N/A

13. **ADDITIONAL LABELS / MARKINGS** Radioactive Material, Excepted Package, UN2910

HM 8. Proper Shipping Name: — PRI HAZ — SUB HAZ — UN ID

9. No. Pkg.	Model Package	COC/Spec	Serial No.	Seal No.	Isotopes	C.S.I.	T.I.	Bq/Package	Gr. Wt. Kg.

10. Identify for Normal Form Only
Physical Form
Chemical Form

11.
☐ Highway Route Controlled Quantity
☐ Exclusive Use Shipment with Instructions
☐ Placards Applied
☐ Fissile Excepted, Grams
☐ UN ID Marking

12. **LABELS APPLIED**

13. **ADDITIONAL LABELS / MARKINGS**

HM 8. Proper Shipping Name: — PRI HAZ — SUB HAZ — UN ID

9. No. Pkg.	Model Package	COC/Spec	Serial No.	Seal No.	Isotopes	C.S.I.	T.I.	Bq/Package	Gr. Wt. Kg.

10. Identify for Normal Form Only
Physical Form
Chemical Form

11.
☐ Highway Route Controlled Quantity
☐ Exclusive Use Shipment with Instructions
☐ Placards Applied
☐ Fissile Excepted, Grams
☐ UN ID Marking

12. **LABELS APPLIED**

13. **ADDITIONAL LABELS / MARKINGS**

14. Shipment DE-CI:

Shipment Totals	C.S.I.	T.I.	Bq/Package	Gr. Wt. Kg.
	N/A	N/A	0.19 MBq	4 Kg

15. Surface Dose Rate of Package
☒ <0.005 or _____ mSv/hr
<0.5 or _____ mrem/hr (N+ß γ)

Dose Rate @ 1 Meter from Surface of Package
☒ <0.005 or _____ mSv/hr
<0.5 or _____ mrem/hr (N+ß γ)

Smears of Outer Container
☒ <4.0 Bq (220 dpm) ß γ /cm²
☒ <0.4 Bq (22 dpm) α /cm²
☐ <Tbl. 2-2 HNF-5173 Limits

TRUCK LOAD OR EXCLUSIVE USE
Surface ☐ <2 mSv/hr (200 mrem/hr)
@ 2 meters ☐ <0.1 mSv/hr (10 mrem/hr)
@ Cab or sleeper ☐ <0.02 mSv/hr (2 mrem/hr) (Using N+ß γ)

Additional Data and Instructions (Inc. Readings on Internal Packaging) none

Bldg. 1060 | Survey No. RSR.RCF11.0007 | Date 3-29-11

16. TRANSPORTER
Vehicle Number 102862
DRIVER SIGNATURE [signature] PRINT NAME Cindra Birgham

17. RECEIVER
RECEIVER SIGNATURE [signature] PRINT NAME Lucas Velazquez Date 3/29/11

18. This is to certify that the above-named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.
Certifier's Signature [signature] Print Name Tom Edmundson On behalf of DOE-RL Date 3-29-11 Organization Sampling & Characterization

19. AUTHORIZATION FOR SHIPMENT
AIR TRANSPORT CERTIFICATION ☐ N/A
CARGO AIRCRAFT ☐ Cargo Aircraft Only Labels Applied
PASSENGER AIRCRAFT ☐ Ltd Qty ☐ Research/Medical Diagnosis ☐ <3 T.I. ☐ Human Medical Research
Pkg. Dimensions (cm)

20. OFFSITE AUTHORIZATION
Survey No. | Date Shipped | Routing | ETA
Approved for Shipment Offsite | Date

A-6003-214.1 (REV 3)

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Sample Check-in List

Date/Time Received: 3·29·11@1145 GM Screen Result (out) .8 (in) 1.0 Initials [✓]

Client: WCH SDG #: JP0147 NA [ ] SAF #: RC-054 NA [ ]

Work Order Number: JIC290543 Chain of Custody # RC-054-060

Shipping Container ID: Hand Delivery NA [✓] Air Bill # _____ NA [✓]

Item 1 through 5 for shipping container only. Initial appropriate response.

1. Custody Seals on shipping container intact? Yes [✓] No [ ] No Custody Seal [ ]
2. Custody Seals dated and signed? Yes [✓] No [ ] No Custody Seal [ ]
3. Chain of Custody record present? Yes [✓] No [ ]
4. Cooler temperature: ICE NA [ ] 5. Vermiculite/packing materials is NA [ ] Wet [ ] Dry [✓]

Item 6 through 10 for samples. Initial appropriate response.

6. Number of samples in shipping container (Each sample may contain multiple bottles): 1 @ 1 JW
7. Sample holding times exceeded? NA [ ] Yes [ ] No [✓]
8. Samples have:
   - ___ tape
   - ✓ custody seals
   - ✓ hazard labels
   - ✓ appropriate sample labels

   J1C290543
9. Samples:
   - ✓ are in good condition (soil)
   - ___ are broken
   - ___ are leaking
   - ___ have air bubbles (Only for samples requiring no head space)
10. Sample pH appropriate for analysis requested Yes [ ] No [ ] N/A [✓] (Note discrepancies in #13)
    (If acidification necessary, then document sample ID, initial pH, amount of HNO_3 added and pH after addition)

    RPL ID # of preservative used : _____
11. Sample Location, Sample Collector Listed? * Yes [✓] No [ ]
    *For documentation only. No corrective action needed.
12. Were any anomalies identified in sample receipt? Yes [ ] No [✓]
13. Description of anomalies (include sample numbers): NA [✓] _____

See other side for additional comments

Sample Custodian: [signature] Date: 3·29·11@1145 TDCR

Client Informed on _____ by _____ Person contacted _____

[✓] No action necessary; process as is

Project Manager: [signature] Date 3/29/11

LS-023, Rev. 12, 10/10

4/5/2011 9:56:18 AM

Sample Preparation/Analysis

Balance Id:1120421763

127642, Washington Closure Hanford LLC , Bechtel Hanford, Inc.

AX Gamma Prp PRP003/GAM001
TA Gamma by HPGE
5I CLIENT: HANFORD

Pipet #:

AnalyDueDate: 04/05/2011

Sep1 DT/Tm Tech:

Batch: 1094320 SOIL pCi/g PM, Quote: RW2, 27038

Sep2 DT/Tm Tech:

SEQ Batch, Test: None All Tests: AXTA, 1088286 AXTA, 1088287 ATS6, 1094320 AXTA,

Prep Tech: BouslaughP

Work Order, Lot, Sample Date	Total Amt /Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	Ppt or Geometry	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:
1 MGAQT-2-AC J1C290543-1-SAMP 03/28/2011 09:24			52.60g,in AmtRec: 1XOTHER	52.60g #Containers: 1		525 geo	200	47	1026	4/7/11 m	
2 MGAQT-2-AD-X J1C290543-1-DUP 03/28/2011 09:24			AmtRec: 1XOTHER	#Containers: 1				611	0601	4/9/11	
3 MGAWW-2-AA-B J1C290000-286-BLK 04/05/2011 08:12 pd			52.00g,in AmtRec:	52.00g #Containers: 1				67	0729	4/5/11	
4 MGAWW-2-AC-C J1C290000-286-LCS 04/05/2011 08:12 pd			54.51g,in AmtRec:	54.51g #Containers: 1	CAL5446 05/19/05,pd 06/08/05,r			67	1214		

Comments: MGAQT-SAMP "ISV. Recount DUP on a different detector."

All Clients for Batch:
127642, Washington Closure Hanford LLC Bechtel Hanford, Inc. , RW2, 27038

MGAQT2AC-SAMP Constituent List:

Co-60	RDL:5.00E-02	pCi/g	LCL:	UCL:	RPD:	Cs-137	RDL:1.00E-01	pCi/g	LCL:70	UCL:130	RPD:35
Cs-137DA	RDL:1.00E-01	pCi/g	LCL:70	UCL:130	RPD:35	Eu-152	RDL:1.00E-01	pCi/g	LCL:	UCL:	RPD:
Eu-154	RDL:1.00E-01	pCi/g	LCL:	UCL:	RPD:	Eu-155	RDL:1.00E-01	pCi/g	LCL:	UCL:	RPD:

MGAWW2AA-BLK:

Co-60	RDL:0.05	pCi/g	LCL:	UCL:	RPD:	Cs-137	RDL:0.1	pCi/g	LCL:	UCL:	RPD:

TestAmerica Laboratories, Inc.

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4/5/2011 9:56:18 AM

Sample Preparation/Analysis

AX Gamma Prp PRP003/GAM001
TA Gamma by HPGE
5I CLIENT: HANFORD

Balance Id:1120373922

Pipet #: _____

AnalyDueDate: 04/05/2011

Sep1 DT/Tm Tech:

Batch: 1094320
SEQ Batch, Test: None

pCi/g

Sep2 DT/Tm Tech:

Prep Tech: SannohS,BouslaughP

Work Order, Lot, Sample Date	Total Amt /Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	Ppt or Geometry	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:

```
Cs-137DA    RDL:0.1    pCi/g    LCL:      UCL:      RPD:      Eu-152    RDL:0.1    pCi/g    LCL:      UCL:      RPD:
Eu-154      RDL:0.1    pCi/g    LCL:      UCL:      RPD:      Eu-155    RDL:0.1    pCi/g    LCL:      UCL:      RPD:

MGAWW2AC-LCS:
Cs-137      RDL:0.1    pCi/g    LCL:70    UCL:130   RPD:35    Cs-137DA  RDL:0.1    pCi/g    LCL:70    UCL:130   RPD:35
K-40        RDL:--     pCi/g    LCL:70    UCL:130   RPD:35    Ra-226    RDL:0.1    pCi/g    LCL:70    UCL:130   RPD:35
RA-228      RDL:0.2    pCi/g    LCL:70    UCL:130   RPD:35    RA-228DA  RDL:0.2    pCi/g    LCL:70    UCL:130   RPD:35
U-238       RDL:       pCi/g    LCL:70    UCL:130   RPD:35

MGAQT2AC-SAMP Calc Info:
    Uncert Level (#s).: 2    Decay to SaDt: Y    Blk Subt.: N    Sci.Not.: Y    ODRs: B
MGAWW2AA-BLK:
    Uncert Level (#s).: 2    Decay to SaDt: Y    Blk Subt.: N    Sci.Not.: Y    ODRs: B
MGAWW2AC-LCS:
    Uncert Level (#s).: 2    Decay to SaDt: Y    Blk Subt.: N    Sci.Not.: Y    ODRs: B
```

*** RE-ANALYSIS REQUEST ***

DUE DATE 4/5/11

CUSTOMER WCH

ANALYSIS Gamma

MATRIX Soil

LOT NUMBER J1C290503

SAMPLE DELIVERY GROUP

OLD BATCH NUMBER 1088286

NEW BATCH NUMBER 1094320

LAB SAMPLE ID	CLIENT ID	REASON FOR REQUEST & ANALYSIS COMMENTS
1) all		- high activity - please reanalyze at 1/4 sample size.
2)		
3)		
4)		
5)		
6)		
7)		
8)		
9)		
10)		
11)		
12)		
13)		
14)		
15)		
16)		
17)		
18)		
19)		
20)		
LAB QC ID		Assigned with new batch.

RC-048 Rev 9, 9/10

4/5/2011 8:13:45 AM

Sample Preparation/Analysis

Balance Id:1120421763

127642, Washington Closure Hanford LLC
Bechtel Hanford, Inc.

AX Gamma Prp PRP003/GAM001
TA Gamma by HPGE
5I CLIENT: HANFORD

Pipet #: _____

AnalyDueDate: 04/05/2011

Sep1 DT/Tm Tech:

Batch: 1088286 SOIL pCi/g PM, Quote: RW2, 27038

SEQ Batch, Test: None All Tests: AXTA, 1088286 AXTA, 1088287 ATS6, 1094320 AXTA,

Sep2 DT/Tm Tech:

Prep Tech: BouslaughP

Work Order, Lot, Sample Date	Total Amt /Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	Ppt or Geometry	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:
1 MGAQT-1-AC J1C290543-1-SAMP 03/28/2011 09:24			425.90g,in AmtRec: 1XOTHER	425.90g #Containers: 1	original weights.- please rerun at 1/4 aliquot.					Scr: Alpha: Beta:	
2 MGAQT-1-AD-X J1C290543-1-DUP 03/28/2011 09:24			AmtRec: 1XOTHER	#Containers: 1						Scr: Alpha: Beta:	
3 MGAWW-1-AA-B J1C290000-286-BLK 03/29/2011 14:28 pd			348.00g,in AmtRec:	348.00g #Containers: 1						Scr: Alpha: Beta:	
4 MGAWW-1-AC-C J1C290000-286-LCS 03/29/2011 14:28 pd			350.10g,in AmtRec:	350.10g #Containers: 1	QC20009 08/04/09,pd 09/01/09,r					Scr: Alpha: Beta:	

Comments: MGAQT-SAMP "ISV. Recount DUP on a different detector."

All Clients for Batch:
127642, Washington Closure Hanford LLC Bechtel Hanford, Inc. , RW2, 27038

MGAQT1AC-SAMP Constituent List:

Co-60	RDL:5.00E-02	pCi/g	LCL:	UCL:	RPD:	Cs-137	RDL:1.00E-01	pCi/g	LCL:70	UCL:130	RPD:35
Cs-137DA	RDL:1.00E-01	pCi/g	LCL:70	UCL:130	RPD:35	Eu-152	RDL:1.00E-01	pCi/g	LCL:	UCL:	RPD:
Eu-154	RDL:1.00E-01	pCi/g	LCL:	UCL:	RPD:	Eu-155	RDL:1.00E-01	pCi/g	LCL:	UCL:	RPD:

MGAWW1AA-BLK:

Co-60	RDL:5.00E-02	pCi/g	LCL:	UCL:	RPD:	Cs-137	RDL:1.00E-01	pCi/g	LCL:	UCL:	RPD:

TestAmerica Laboratories, Inc.

4/11/2011 4:03:02 PM

ICOC Fraction Transfer/Status Report

ByDate: 4/11/2010, 4/16/2011, Batch: '1094320', User: *ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting			Comments
1094320						
AC		**Rev1C**	**BouslaughP**	4/5/2011 8:38:01 AM		
SC			bouslaughp	IsBatched	4/5/2011 8:36:11 AM	ICOC_RADCALC v4.8.49
SC			BouslaughP	InPrep	4/5/2011 8:38:01 AM	RL-GAM-001 REVISION 1
SC			BouslaughP	Prep1C	4/5/2011 10:07:18 AM	RL-GAM-001 REVISION 1
SC			ClarkR	InCnt1	4/5/2011 10:09:10 AM	RL-CI-007 REVISION 1
SC			BlackCL	CalcC	4/9/2011 2:40:21 PM	RL-CI-007 REVISION 1
SC			nortonj	Rev1C	4/11/2011 2:27:06 PM	RL-DR-001 Rev 2
AC			**BouslaughP**	4/5/2011 10:07:18		
AC			**ClarkR**	4/5/2011 10:09:10		
AC			**BlackCL**	4/9/2011 2:40:21 PM		
AC			**nortonj**	4/11/2011 2:27:06 PM		

AC: Accepting Entry; SC: Status Change

TestAmerica Richland

Richland Wa.

Grp Rec Cnt: 5

ICOCFractions v4.8.44

53

3/29/2011 2:28:20 PM

Sample Preparation/Analysis

127642, Washington Closure Hanford LLC , Bechtel Hanford, Inc.

AT H-3 Prp/Sep LSC002
S6 Tritium by Liquid Scint
5I CLIENT: HANFORD

Balance Id:
Pipet #:

AnalyDueDate: 04/05/2011

Sep1 DT/Tm Tech:

Batch: 1088287 SOIL pCi/g PM, Quote: RW2, 27038

Sep2 DT/Tm Tech:

SEQ Batch, Test: None

Prep Tech:

Work Order, Lot, Sample DateTime	Total Amt/Unit	Initial Aliquot Amt/Unit	QC Tracer Prep Date	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:
1 MGAQT-1-AA J1C290543-1-SAMP 03/28/2011 09:24	AmtRec: 1XOTHER	#Containers: 1				Scr:	Alpha:	Beta:
2 MGAQT-1-AE-X J1C290543-1-DUP 03/28/2011 09:24	AmtRec: 1XOTHER	#Containers: 1				Scr:	Alpha:	Beta:
3 MGAW2-1-AA-B J1C290000-287-BLK 03/29/2011 14:28 pd	AmtRec:	#Containers: 1				Scr:	Alpha:	Beta:
4 MGAW2-1-AC-C J1C290000-287-LCS 03/29/2011 14:28 pd	AmtRec:	#Containers: 1				Scr:	Alpha:	Beta:
5 MGAW2-1-AD-BN J1C290000-287-IBLK 03/29/2011 14:28 pd	AmtRec:	#Containers: 1				Scr:	Alpha:	Beta:

Comments:

All Clients for Batch:
127642, Washington Closure Hanford LLC Bechtel Hanford, Inc. , RW2, 27038

MGAQT1AA-SAMP Constituent List:

Sample Preparation/Analysis

AT H-3 Prp/Sep LSC002
S6 Tritium by Liquid Scint
5I CLIENT: HANFORD

Balance Id:
Pipet #:
Sep1 DT/Tm Tech:
Sep2 DT/Tm Tech:
Prep Tech:

AnalyDueDate: 04/05/2011

Batch: 1088287 pCi/g
SEQ Batch, Test: None

Work Order, Lot, Sample DateTime	Total Amt/Unit	Initial Aliquot Amt/Unit	QC Tracer Prep Date	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:

MGAW21AA-BLK:

MGAW21AC-LCS:

MGAW21AD-IBLK:

MGAQT1AA-SAMP Calc Info:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
MGAW21AA-BLK:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
MGAW21AC-LCS:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
MGAW21AD-IBLK:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

4/4/2011 1:14:19 PM

ICOC Fraction Transfer/Status Report

ByDate: 4/4/2010, 4/9/2011, Batch: '1088287', User: *ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting			Comments
1088287						
AC		**Rev1C**	**WagnerF**	4/1/2011 7:40:05 AM		
SC			Maucieris	IsBatched	3/29/2011 2:29:13 PM	ICOC_RADCALC v4.8.49
SC			WagnerF	Sep1C	4/1/2011 7:40:05 AM	RL-LSC-002 REVISION 1
SC			BlackCL	InCnt1	4/1/2011 8:53:08 AM	RL-CI-005 REVISION 1
SC			ClarkR	CalcC	4/4/2011 10:11:50 AM	RL-CI-005 REVISION 1
SC			antonsonl	Rev1C	4/4/2011 1:14:11 PM	RL-DR-001 Rev 2
AC			**BlackCL**	4/1/2011 8:53:08 AM		
AC			**ClarkR**	4/4/2011 10:11:50		
AC			**antonsonl**	4/4/2011 1:14:11 PM		

AC: Accepting Entry; SC: Status Change

TestAmerica Richland

Richland Wa.

Page 1

Grp Rec Cnt: 4

ICOCFractions v4.8.44