SAF-RC-238
Characterization of Surface Soils
At 100-K-64 & 100-K-111
FINAL DATA PACKAGE

COMPLETE COPY OF DATA PACKAGE TO:

Kathy Wendt H4-21 KW 9/26/13
INITIAL/DATE

COMMENTS:

SDG JP0634 SAF-RC-238

Rad only Chem only ☑ Rad & Chem

☑ Complete Partial

Sample Location: 100-K-64 Focused Samples

Analytical Data Package Prepared For

Washington Closure Hanford

Radiochemical Analysis By

TestAmerica Inc

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

Assigned Laboratory Code: TARL

Data Package Contains 66 *Pages*

Report No.: 57084

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.
JP0634	RC-238	J1RPX6	J3I170409-1	M10LP1AG	9M10LP10	3260033
		J1RPX6	J3I170409-1	M10LP1AC	9M10LP10	3260034
		J1RPX6	J3I170409-1	M10LP1AH	9M10LP10	3260035
		J1RPX6	J3I170409-1	M10LP1AF	9M10LP10	3260036
		J1RPX6	J3I170409-1	M10LP1AD	9M10LP10	3260037
		J1RPX6	J3I170409-1	M10LP1AE	9M10LP10	3260038
		J1RPX6	J3I170409-1	M10LP1AA	9M10LP10	3260076
		J1RPX7	J3I170409-2	M10LQ1AG	9M10LQ10	3260033
		J1RPX7	J3I170409-2	M10LQ1AC	9M10LQ10	3260034
		J1RPX7	J3I170409-2	M10LQ1AH	9M10LQ10	3260035
		J1RPX7	J3I170409-2	M10LQ1AF	9M10LQ10	3260036
		J1RPX7	J3I170409-2	M10LQ1AD	9M10LQ10	3260037
		J1RPX7	J3I170409-2	M10LQ1AE	9M10LQ10	3260038
		J1RPX7	J3I170409-2	M10LQ1AA	9M10LQ10	3260076

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Certificate of Analysis

Washington Hanford Closure
2620 Fermi Avenue
Richland, WA 99354

September 24, 2013

Attention: Joan Kessner

SAF Number	:	RC-238
Date SDG Closed	:	September 17, 2013
Number of Samples	:	Two (2)
Sample Type	:	Soil
SDG Number	:	JP0634
Data Deliverable	:	7– Day / Summary

CASE NARRATIVE

I. Introduction

On September 17, 2013, two soil samples were received at TestAmerica for radiochemical analysis. Upon receipt, the samples were assigned the following laboratory ID number to correspond with the Washington Closure Hanford (WCH) specific ID:

WCH ID#	TARL ID#	MATRIX	DATE OF RECEIPT
J1RPX6	M10LP	SOIL	09/17/13
J1RPX7	M10LQ	SOIL	09/17/13

II. Sample Receipt

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

III. Analytical Results/Methodology

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

The requested analyses were:

Alpha Spectroscopy
Plutonium-238, -239/240 by method RL-ALP-002
Gas Proportional Counting
Strontium-90 by method RL-GPC-010

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

IV. Quality Control

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

QC and sample results are reported in the same units.

V. Comments

Alpha Spectroscopy
Plutonium-238, -239/240 by method RL-ALP-002:
The LCS tracer yield was slightly elevated in the original count. A recount brought it within limits. Except as noted; the LCS, batch blank, samples and sample duplicate (J1RPX6) results are within contractual requirements.

Gas Proportional Counting
Strontium-90 by method RL-GPC-010:
The LCS, batch blank, samples and sample duplicate (J1RPX7) results are within contractual requirements.

Gamma Spectroscopy
Gamma Spec by method RL-GAM-001:
The CRDL was not met for some of the analytes. Except as noted, the LCS, batch blank, samples and sample duplicate (J1RPX6) results are within contractual requirements.

Liquid Scintillation Counting
Tritium by method RL-LSC-005:
The LCS, batch blank, samples and sample duplicate (J1RPX7) results are within contractual requirements.

Carbon-14 by method RL-LSC-008:
The LCS, batch blank, samples and sample duplicate (J1RPX6) results are within contractual requirements.

Nickel-63 by method RL-LCS-017:
The LCS, batch blank, samples and sample duplicate (J1RPX6) results are within contractual requirements.

Chemical Analysis
Hexavalent Chromium by EPA method 7196A
The LCS, batch blank, samples, sample duplicate (J1RPX6) and sample matrix spike (J1RPX6) 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: 24-Sep-13

TestAmerica Inc TARL

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

Report No. : 57084

SDG No: JP0634

Batch	Client Id Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	MDL	CRDL	RPD
3260035 C14_LSC									
J1RPX6									
	M10LP1AH	C-14	5.69E-04 +- 2.2E-01	U	pCi/g	100%	4.77E-01	5.00E+01	
J1RPX6 DUP									
	M10LP1AK	C-14	-2.27E-02 +- 2.2E-01	U	pCi/g	100%	4.80E-01	5.00E+01	-210.3
J1RPX7									
	M10LQ1AH	C-14	-2.07E-02 +- 2.2E-01	U	pCi/g	100%	4.79E-01	5.00E+01	
3260038 PUISO_PLATE_AEA									
J1RPX6									
	M10LP1AE	Pu-238	-2.69E-03 +- 2.7E-02	U	pCi/g	100%	6.44E-02	1.00E+00	
		PU239/40	-5.93E-03 +- 2.7E-02	U	pCi/g	100%	7.79E-02	1.00E+00	
J1RPX6 DUP									
	M10LP1AM	Pu-238	-6.70E-04 +- 3.3E-02	U	pCi/g	100%	6.08E-02	1.00E+00	-120.4
		PU239/40	-4.02E-03 +- 3.4E-02	U	pCi/g	100%	8.34E-02	1.00E+00	-38.4
J1RPX7									
	M10LQ1AE	Pu-238	-1.69E-03 +- 2.8E-02	U	pCi/g	100%	6.09E-02	1.00E+00	
		PU239/40	1.81E-01 +- 1.1E-01		pCi/g	100%	6.44E-02	1.00E+00	
3260033 GAMMA_GS									
J1RPX6									
	M10LP1AG	CO-60	4.78E-03 +- 2.3E-02	U	pCi/g		4.26E-02	5.00E-02	
		CS-137	-3.84E-02 +- 2.7E-02	U	pCi/g		4.17E-02	1.00E-01	
		EU-152	-4.18E-03 +- 6.7E-02	U	pCi/g		1.06E-01	1.00E-01	
		EU-154	-4.58E-02 +- 8.6E-02	U	pCi/g		1.42E-01	1.00E-01	
		EU-155	1.01E-01 +- 6.7E-02	U	pCi/g		1.16E-01	1.00E-01	
		K-40	1.74E+01 +- 2.3E+00		pCi/g		3.79E-01		
J1RPX6 DUP									
	M10LP1AJ	CO-60	1.77E-02 +- 1.7E-02	U	pCi/g		3.27E-02	5.00E-02	115.0
		CS-137	-1.93E-02 +- 1.6E-02	U	pCi/g		2.57E-02	1.00E-01	-66.1
		EU-152	4.60E-03 +- 3.4E-02	U	pCi/g		5.82E-02	1.00E-01	4198.8
		EU-154	-3.66E-02 +- 5.9E-02	U	pCi/g		9.76E-02	1.00E-01	-22.3
		EU-155	4.64E-02 +- 3.1E-02	U	pCi/g		5.51E-02	1.00E-01	74.2
		K-40	1.70E+01 +- 2.0E+00		pCi/g		2.73E-01		2.2
J1RPX7									
	M10LQ1AG	CO-60	2.91E-02 +- 2.1E-02	U	pCi/g		4.08E-02	5.00E-02	
		CS-137	3.47E+00 +- 4.1E-01		pCi/g		3.57E-02	1.00E-01	
		EU-152	1.52E+00 +- 2.0E-01		pCi/g		8.21E-02	1.00E-01	
		EU-154	1.96E-01 +- 7.8E-02	U	pCi/g		1.49E-01	1.00E-01	
		EU-155	7.73E-02 +- 4.1E-02	U	pCi/g		7.18E-02	1.00E-01	
		K-40	1.68E+01 +- 2.0E+00		pCi/g		2.88E-01		

TestAmerica Inc

rptSTLRchSaSummary2 V5.2.24 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.

Sample Results Summary

TestAmerica Inc TARL

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

Date: 24-Sep-13

Report No. : 57084

SDG No: JP0634

Batch	Client Id Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	MDL	CRDL	RPD
3260034 SRTOT_SEP_PRECIP_GPC									
J1RPX6									
	M10LP1AC	STRONTIUM	4.24E-02 +- 9.4E-02	U	pCi/g	88%	2.11E-01		
J1RPX7									
	M10LQ1AC	STRONTIUM	6.24E-01 +- 2.0E-01		pCi/g	93%	1.94E-01		
J1RPX7 DUP									
	M10LQ1AJ	STRONTIUM	6.15E-01 +- 2.0E-01		pCi/g	93%	2.06E-01		1.6
3260036 906.0_H3_LSC									
J1RPX6									
	M10LP1AF	H-3	1.79E-02 +- 3.3E-02	U	pCi/g	100%	7.00E-02	4.00E+02	
J1RPX7									
	M10LQ1AF	H-3	1.24E-02 +- 3.6E-02	U	pCi/g	100%	7.70E-02	4.00E+02	
J1RPX7 DUP									
	M10LQ1AK	H-3	2.37E-02 +- 3.7E-02	U	pCi/g	100%	8.07E-02	4.00E+02	62.9
3260037 NI63_LSC									
J1RPX6									
	M10LP1AD	Ni-63	2.12E+00 +- 3.9E+00	U	pCi/g	84%	7.04E+00	3.00E+01	
J1RPX6 DUP									
	M10LP1AL	Ni-63	2.41E+00 +- 3.8E+00	U	pCi/g	85%	6.81E+00	3.00E+01	12.6
J1RPX7									
	M10LQ1AD	Ni-63	1.04E+01 +- 4.6E+00		pCi/g	89%	6.94E+00	3.00E+01	
3260076 7196_CR6									
J1RPX6									
	M10LP1AA	HEXCHROME	1.55E-01 +- 0.0E+00	U	mg/kg	N/A	1.55E-01	1.55E-01	
	M10LP1AP	HEXCHROME	1.55E-01 +- 0.0E+00	U	mg/kg	N/A	1.55E-01	3.50E-01	0.0
J1RPX7									
	M10LQ1AA	HEXCHROME	2.18E+00 +- 0.0E+00		mg/kg	N/A	1.55E-01	1.55E-01	

No. of Results: 39

TestAmerica Inc

rptSTLRchSaSummary2 V5.2.24 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 Inc TARL

Ordered by Method, Batch No, QC Type,.

Date: 24-Sep-13

Report No. : 57084

SDG No.: JP0634

Batch Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	LCS Recovery	Bias	MDL
C14_LSC								
3260035 BLANK QC,								
M10LW1AA	C-14	2.01E-01 +- 2.3E-01	U	pCi/g	100%			4.75E-01
3260035 LCS,								
M10LW1AC	C-14	7.37E+00 +- 6.1E-01		pCi/g	100%	101%	0.0	4.79E-01
PUISO_PLATE_AEA								
3260038 BLANK QC,								
M10L11AA	Pu-238	0.00E+00 +- 3.2E-02	U	pCi/g	100%			5.86E-02
	PU239/40	-1.29E-03 +- 3.2E-02	U	pCi/g	100%			6.48E-02
3260038 LCS,								
M10L12AC	PU239/40	6.90E+00 +- 1.3E+00		pCi/g	100%	106%	0.1	7.65E-02
GAMMA_GS								
3260033 BLANK QC,								
M10LT1AA	CO-60	-1.51E-02 +- 1.5E-02	U	pCi/g				2.46E-02
	CS-137	-3.07E-03 +- 1.2E-02	U	pCi/g				2.14E-02
	EU-152	-1.16E-03 +- 3.3E-02	U	pCi/g				5.77E-02
	EU-154	-3.20E-02 +- 4.5E-02	U	pCi/g				7.31E-02
	EU-155	7.42E-03 +- 3.2E-02	U	pCi/g				5.47E-02
	K-40	-2.96E-01 +- 3.6E-01	U	pCi/g				7.02E-01
3260033 LCS,								
M10LT1AC	CS-137	1.00E+00 +- 1.3E-01		pCi/g		98%	0.0	2.39E-02
	RA-226	9.11E-01 +- 1.3E-01		pCi/g		80%	-0.2	4.49E-02
	RA-228	7.10E-01 +- 1.4E-01		pCi/g		102%	0.0	8.05E-02
	U-238	9.43E-01 +- 1.2E-01		pCi/g		78%	-0.2	4.14E-02
SRTOT_SEP_PRECIP_GPC								
3260034 BLANK QC,								
M10LV1AA	STRONTIUM	5.04E-02 +- 9.7E-02	U	pCi/g	97%			2.15E-01
3260034 LCS,								
M10LV1AC	STRONTIUM	2.46E+00 +- 6.1E-01		pCi/g	100%	109%	0.1	1.82E-01
906.0_H3_LSC								
3260036 BLANK QC,								
M10LX1AA	H-3	-2.76E-03 +- 4.3E-02	U	pCi/g	100%			9.67E-02
3260036 LCS,								
M10LX1AC	H-3	5.23E-01 +- 6.3E-02		pCi/g	100%	98%	0.0	8.53E-02
NI63_LSC								
3260037 BLANK QC,								
M10L01AA	Ni-63	2.34E+00 +- 4.3E+00	U	pCi/g	82%			7.99E+00
3260037 LCS,								
M10L01AC	Ni-63	2.79E+02 +- 2.9E+01		pCi/g	88%	93%	-0.1	6.94E+00
7196_CR6								
3260076 MATRIX SPIKE, J1RPX6								
M10LP1AN	HEXCHROME	2.63E+01 +- 0.0E+00		mg/kg	N/A	90%	-0.1	1.55E-01
3260076 LCS,								

TestAmerica Inc

rptSTLRchQcSummary V5.2.24
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.

QC Results Summary

Date: 24-Sep-13

TestAmerica Inc TARL

Ordered by Method, Batch No, QC Type,.

Report No. : 57084

SDG No.: JP0634

Batch Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	LCS Recovery	Bias	MDL
M10QR1AC	HEXCHROME	1.77E+01 +- 0.0E+00		mg/kg	N/A	93%	-0.1	1.55E-01
3260076 BLANK QC,								
M10QR1AA	HEXCHROME	1.55E-01 +- 0.0E+00	U	mg/kg	N/A			1.55E-01

No. of Results: 24

TestAmerica Inc

rptSTLRchQcSummary V5.2.24
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: 24-Sep-13

Lab Name:	**TestAmerica Inc**	**SDG:**	JP0634	**Collection Date:**	9/11/2013 12:17:00 PM
Lot-Sample No.:	**J3I170409-1**	**Report No. :**	57084	**Received Date:**	9/17/2013 9:25:00 AM
Client Sample ID:	**J1RPX6**	**COC No. :**	RC-238-002	**Matrix:**	SOIL

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDL, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDL, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 3260033	GAMMA_GS			**Work Order:**	M10LP1AG		**Report DB ID:**	9M10LP10				
CO-60	**4.78E-03**	U	2.3E-02	2.3E-02	4.26E-02	pCi/g		*0.11*	9/19/13 12:53 p		324.5	GER7$1
							5.00E-02	*0.41*			g	
CS-137	**-3.84E-02**	U	2.7E-02	2.7E-02	4.17E-02	pCi/g		*-0.92*	9/19/13 12:53 p		324.5	GER7$1
							1.00E-01	*-(2.9)*			g	
EU-152	**-4.18E-03**	U	6.7E-02	6.7E-02	1.06E-01	pCi/g		*-0.04*	9/19/13 12:53 p		324.5	GER7$1
							1.00E-01	*-0.12*			g	
EU-154	**-4.58E-02**	U	8.6E-02	8.6E-02	1.42E-01	pCi/g		*-0.32*	9/19/13 12:53 p		324.5	GER7$1
							1.00E-01	*-(1.1)*			g	
EU-155	**1.01E-01**	U	6.7E-02	6.7E-02	1.16E-01	pCi/g		*0.87*	9/19/13 12:53 p		324.5	GER7$1
							1.00E-01	*(3.)*			g	
K-40	**1.74E+01**		2.3E+00	2.3E+00	3.79E-01	pCi/g		*(45.8)*	9/19/13 12:53 p		324.5	GER7$1
								(15.)			g	
Batch: 3260034	SRTOT_SEP_PRECIP_GPC			**Work Order:**	M10LP1AC		**Report DB ID:**	9M10LP10				
STRONTIUM	**4.24E-02**	U	9.4E-02	9.4E-02	2.11E-01	pCi/g	88%	*0.2*	9/20/13 08:12 a		2.98	GPC31B
						9.80E-02		*0.9*			g	
Batch: 3260035	C14_LSC			**Work Order:**	M10LP1AH		**Report DB ID:**	9M10LP10				
C-14	**5.69E-04**	U	1.9E-01	2.2E-01	4.77E-01	pCi/g	100%	*0.*	9/19/13 07:39 p		5.037	LSC9
						2.25E-01	5.00E+01	*0.01*			g	
Batch: 3260036	906.0_H3_LSC			**Work Order:**	M10LP1AF		**Report DB ID:**	9M10LP10				
H-3	**1.79E-02**	U	2.9E-02	3.3E-02	7.00E-02	pCi/g	100%	*0.26*	9/20/13 09:51 p		42.6	LSC8
						3.27E-02	4.00E+02	*(1.1)*			g	

TestAmerica Inc
rptSTLRchSample
V5.2.24 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 I

SAMPLE RESULTS

Date: 24-Sep-13

Lab Name:	TestAmerica Inc	**SDG:**	JP0634	**Collection Date:**	9/11/2013 12:17:00 PM
Lot-Sample No.:	J3I170409-1	**Report No. :**	57084	**Received Date:**	9/17/2013 9:25:00 AM
Client Sample ID:	J1RPX6	**COC No. :**	RC-238-002	**Matrix:**	SOIL

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDL, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDL, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 3260037	NI63_LSC			**Work Order:**	M10LP1AD		**Report DB ID:**	9M10LP10				
Ni-63	**2.12E+00**	U	2.8E+00	3.9E+00	7.04E+00	pCi/g	84%	*0.3*	9/21/13 08:11 a		0.53	LSC9
						3.36E+00	3.00E+01	*(1.1)*			g	
Batch: 3260038	PUISO_PLATE_AEA			**Work Order:**	M10LP1AE		**Report DB ID:**	9M10LP10				
Pu-238	**-2.69E-03**	U	2.7E-02	2.7E-02	6.44E-02	pCi/g	100%	*-0.04*	9/20/13 01:37 p		1.02	ALP41
						1.40E-02	1.00E+00	*-0.2*			g	
PU239/40	**-5.93E-03**	U	2.7E-02	2.7E-02	7.79E-02	pCi/g	100%	*-0.08*	9/20/13 01:37 p		1.02	ALP41
						2.08E-02	1.00E+00	*-0.44*			g	
Batch: 3260076	7196_CR6			**Work Order:**	M10LP1AA		**Report DB ID:**	9M10LP10				
HEXCHROME	**1.55E-01**	U		0.0E+00	1.55E-01	mg/kg	N/A	*1.*	9/23/13 08:00 a		2.5084	
							1.55E-01	*N/A*			g	

No. of Results: 13 **Comments:**

TestAmerica Inc
rptSTLRchSample
V5.2.24 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 I

SAMPLE RESULTS

Date: 24-Sep-13

Lab Name:	TestAmerica Inc	**SDG:**	JP0634	**Collection Date:**	9/11/2013 12:25:00 PM
Lot-Sample No.:	J3I170409-2	**Report No. :**	57084	**Received Date:**	9/17/2013 9:25:00 AM
Client Sample ID:	J1RPX7	**COC No. :**	RC-238-002	**Matrix:**	SOIL

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDL, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDL, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 3260033	GAMMA_GS			**Work Order:**	M10LQ1AG		**Report DB ID:**	9M10LQ10				
CO-60	**2.91E-02**	U	2.1E-02	2.1E-02	4.08E-02	pCi/g		*0.71*	9/19/13 11:14 a		286.8	GER18$1
							5.00E-02	*(2.7)*			g	
CS-137	**3.47E+00**		4.1E-01	4.1E-01	3.57E-02	pCi/g		*(97.1)*	9/19/13 11:14 a		286.8	GER18$1
							1.00E-01	*(16.9)*			g	
EU-152	**1.52E+00**		2.0E-01	2.0E-01	8.21E-02	pCi/g		*(18.5)*	9/19/13 11:14 a		286.8	GER18$1
							1.00E-01	*(14.9)*			g	
EU-154	**1.96E-01**	U	7.8E-02	7.8E-02	1.49E-01	pCi/g		*(1.3)*	9/19/13 11:14 a		286.8	GER18$1
							1.00E-01	*(5.)*			g	
EU-155	**7.73E-02**	U	4.1E-02	4.1E-02	7.18E-02	pCi/g		*(1.1)*	9/19/13 11:14 a		286.8	GER18$1
							1.00E-01	*(3.8)*			g	
K-40	**1.68E+01**		2.0E+00	2.0E+00	2.88E-01	pCi/g		*(58.3)*	9/19/13 11:14 a		286.8	GER18$1
								(16.5)			g	
Batch: 3260034	SRTOT_SEP_PRECIP_GPC			**Work Order:**	M10LQ1AC		**Report DB ID:**	9M10LQ10				
STRONTIUM	**6.24E-01**		1.4E-01	2.0E-01	1.94E-01	pCi/g	93%	*(3.2)*	9/20/13 08:12 a		3.03	GPC31D
						8.99E-02		*(6.2)*			g	
Batch: 3260035	C14_LSC			**Work Order:**	M10LQ1AH		**Report DB ID:**	9M10LQ10				
C-14	**-2.07E-02**	U	1.9E-01	2.2E-01	4.79E-01	pCi/g	100%	*-0.04*	9/19/13 08:23 p		5.019	LSC9
						2.25E-01	5.00E+01	*-0.19*			g	
Batch: 3260036	906.0_H3_LSC			**Work Order:**	M10LQ1AF		**Report DB ID:**	9M10LQ10				
H-3	**1.24E-02**	U	3.2E-02	3.6E-02	7.70E-02	pCi/g	100%	*0.16*	9/20/13 10:33 p		45.5	LSC8
						3.60E-02	4.00E+02	*0.69*			g	

TestAmerica Inc
rptSTLRchSample
V5.2.24 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 I

SAMPLE RESULTS

Date: 24-Sep-13

Lab Name:	TestAmerica Inc	**SDG:**	JP0634	**Collection Date:**	9/11/2013 12:25:00 PM
Lot-Sample No.:	J3I170409-2	**Report No. :**	57084	**Received Date:**	9/17/2013 9:25:00 AM
Client Sample ID:	J1RPX7	**COC No. :**	RC-238-002	**Matrix:**	SOIL

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDL, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDL, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 3260037	NI63_LSC			**Work Order:**	M10LQ1AD		**Report DB ID:**	9M10LQ10				
Ni-63	1.04E+01		3.2E+00	4.6E+00	6.94E+00	pCi/g	89%	*(1.5)*	9/21/13 08:53 a		0.51	LSC9
						3.31E+00	3.00E+01	*(4.5)*			g	
Batch: 3260038	PUISO_PLATE_AEA			**Work Order:**	M10LQ1AE		**Report DB ID:**	9M10LQ10				
Pu-238	-1.69E-03	U	2.8E-02	2.8E-02	6.09E-02	pCi/g	100%	*-0.03*	9/20/13 01:38 p		1.01	ALP43
						1.14E-02	1.00E+00	*-0.12*			g	
PU239/40	1.81E-01		1.0E-01	1.1E-01	6.44E-02	pCi/g	100%	*(2.8)*	9/20/13 01:38 p		1.01	ALP43
						1.31E-02	1.00E+00	*(3.4)*			g	
Batch: 3260076	7196_CR6			**Work Order:**	M10LQ1AA		**Report DB ID:**	9M10LQ10				
HEXCHROME	2.18E+00			0.0E+00	1.55E-01	mg/kg	N/A	*(14.)*	9/23/13 08:00 a		2.5016	
							1.55E-01	*N/A*			g	

No. of Results: 13 **Comments:**

TestAmerica Inc
rptSTLRchSample
V5.2.24 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: 24-Sep-13

DUPLICATE RESULTS

Lab Name:	TestAmerica Inc	**SDG:**	JP0634	**Collection Date:**	9/11/2013 12:17:00 PM
Lot-Sample No.:	J3I170409-1	**Report No. :**	57084	**Received Date:**	9/17/2013 9:25:00 AM
Client Sample ID:	J1RPX6	**COC No. :**	RC-238-002	**Matrix:**	SOIL

Parameter	Result, Orig Rst	Qual	Count Error (2 s)	Total Uncert(2 s)	MDL, Action Lev	Rpt Unit, CRDL	Yield	Rst/MDL, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 3260076	7196_CR6			**Work Order:** M10LP1AP		**Report DB ID:** M10LP1ER			**Orig Sa DB ID:** 9M10LP10			
HEXCHROME	1.55E-01	U		0.0E+00	1.55E-01	mg/kg	N/A	1.	9/23/13 08:00 a		2.5063	
	1.55E-01	U	**RPD**	**0.0**		3.50E-01		N/A			g	

No. of Results: 1 **Comments:**

TestAmerica Inc
rptSTLRchDupV5.
2.24 A2002

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

Date: 24-Sep-13

DUPLICATE RESULTS

Lab Name:	TestAmerica Inc	**SDG:**	JP0634	**Collection Date:**	9/11/2013 12:17:00 PM
Lot-Sample No.:	J3I170409-1	**Report No. :**	57084	**Received Date:**	9/17/2013 9:25:00 AM
Client Sample ID:	J1RPX6 DUP	**COC No. :**	RC-238-002	**Matrix:**	SOIL

Parameter	Result, Orig Rst	Qual	Count Error (2 s)	Total Uncert(2 s)	MDL, Action Lev	Rpt Unit, CRDL	Yield	Rst/MDL, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 3260033	GAMMA_GS			**Work Order:** M10LP1AJ		**Report DB ID:** M10LP1JR			**Orig Sa DB ID:** 9M10LP10			
CO-60	1.77E-02	U	1.7E-02	1.7E-02	3.27E-02	pCi/g		0.54	9/19/13 06:29 p		324.5	GER18$1
	4.78E-03	U	**RPD**	**115.0**		5.00E-02		(2.1)			g	
CS-137	-1.93E-02	U	1.6E-02	1.6E-02	2.57E-02	pCi/g		-0.75	9/19/13 06:29 p		324.5	GER18$1
	-3.84E-02	U	**RPD**	**-66.1**		1.00E-01		-(2.4)			g	
EU-152	4.60E-03	U	3.4E-02	3.4E-02	5.82E-02	pCi/g		0.08	9/19/13 06:29 p		324.5	GER18$1
	-4.18E-03	U	**RPD**	**4198.8**		1.00E-01		0.27			g	
EU-154	-3.66E-02	U	5.9E-02	5.9E-02	9.76E-02	pCi/g		-0.38	9/19/13 06:29 p		324.5	GER18$1
	-4.58E-02	U	**RPD**	**-22.3**		1.00E-01		-(1.2)			g	
EU-155	4.64E-02	U	3.1E-02	3.1E-02	5.51E-02	pCi/g		0.84	9/19/13 06:29 p		324.5	GER18$1
	1.01E-01	U	**RPD**	**74.2**		1.00E-01		(3.)			g	
K-40	1.70E+01		2.0E+00	2.0E+00	2.73E-01	pCi/g		(62.2)	9/19/13 06:29 p		324.5	GER18$1
	1.74E+01		**RPD**	**2.2**				(16.8)			g	
Batch: 3260035	C14_LSC			**Work Order:** M10LP1AK		**Report DB ID:** M10LP1KR			**Orig Sa DB ID:** 9M10LP10			
C-14	-2.27E-02	U	1.9E-01	2.2E-01	4.80E-01	pCi/g	100%	-0.05	9/19/13 08:01 p		5.009	LSC9
	5.69E-04	U	**RPD**	**-210.3**		5.00E+01		-0.21			g	
Batch: 3260037	NI63_LSC			**Work Order:** M10LP1AL		**Report DB ID:** M10LP1LR			**Orig Sa DB ID:** 9M10LP10			
Ni-63	2.41E+00	U	2.7E+00	3.8E+00	6.81E+00	pCi/g	85%	0.35	9/21/13 08:32 a		0.54	LSC9
	2.12E+00	U	**RPD**	**12.6**		3.00E+01		(1.3)			g	
Batch: 3260038	PUISO_PLATE_AEA			**Work Order:** M10LP1AM		**Report DB ID:** M10LP1MR			**Orig Sa DB ID:** 9M10LP10			

TestAmerica Inc
rptSTLRchDupV5.
2.24 A2002

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

Date: 24-Sep-13

DUPLICATE RESULTS

Lab Name:	**TestAmerica Inc**	**SDG:**	JP0634	**Collection Date:**	9/11/2013 12:17:00 PM
Lot-Sample No.:	**J3I170409-1**	**Report No. :**	57084	**Received Date:**	9/17/2013 9:25:00 AM
Client Sample ID:	**J1RPX6 DUP**	**COC No. :**	RC-238-002	**Matrix:**	SOIL

Parameter	Result, Orig Rst	Qual	Count Error (2 s)	Total Uncert(2 s)	MDL, Action Lev	Rpt Unit, CRDL	Yield	Rst/MDL, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Pu-238	-6.70E-04	U	3.3E-02	3.3E-02	6.08E-02	pCi/g	100%	-0.01	9/20/13 01:38 p		0.99	ALP42
	-2.69E-03	U	**RPD**	**-120.4**		1.00E+00		-0.04			g	
PU239/40	-4.02E-03	U	3.4E-02	3.4E-02	8.34E-02	pCi/g	100%	-0.05	9/20/13 01:38 p		0.99	ALP42
	-5.93E-03	U	**RPD**	**-38.4**		1.00E+00		-0.24			g	

No. of Results: 10 **Comments:**

TestAmerica Inc
rptSTLRchDupV5.
2.24 A2002

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

Date: 24-Sep-13

DUPLICATE RESULTS

Lab Name:	**TestAmerica Inc**	**SDG:**	JP0634	**Collection Date:**	9/11/2013 12:25:00 PM
Lot-Sample No.:	**J3I170409-2**	**Report No. :**	57084	**Received Date:**	9/17/2013 9:25:00 AM
Client Sample ID:	**J1RPX7 DUP**	**COC No. :**	RC-238-002	**Matrix:**	SOIL

Parameter	Result, Orig Rst	Qual	Count Error (2 s)	Total Uncert(2 s)	MDL, Action Lev	Rpt Unit, CRDL	Yield	Rst/MDL, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 3260034	SRTOT_SEP_PRECIP_GPC			**Work Order:** M10LQ1AJ		**Report DB ID:** M10LQ1JR			**Orig Sa DB ID:** 9M10LQ10			
STRONTIUM	6.15E-01		1.4E-01	2.0E-01	2.06E-01	pCi/g	93%	(3.)	9/20/13 08:12 a		2.98	GPC32C
	6.24E-01		**RPD**	**1.6**				(6.1)			g	
Batch: 3260036	906.0_H3_LSC			**Work Order:** M10LQ1AK		**Report DB ID:** M10LQ1KR			**Orig Sa DB ID:** 9M10LQ10			
H-3	2.37E-02	U	3.3E-02	3.7E-02	8.07E-02	pCi/g	100%	0.29	9/20/13 11:15 p		45.5	LSC8
	1.24E-02	U	**RPD**	**62.9**		4.00E+02		(1.3)			g	

No. of Results: 2 **Comments:**

TestAmerica Inc
rptSTLRchDupV5.2.24 A2002

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: 24-Sep-13

Lab Name: TestAmerica Inc

Matrix: SOIL

SDG: JP0634

Report No. : 57084

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDL, Lc	Rpt Unit, CRDL	Yield	Rst/MDL, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 3260076	7196_CR6			**Work Order:**	M10QR1AA		**Report DB ID:**	M10QR1AB				
HEXCHROME	1.55E-01	U		0.0E+00	1.55E-01	mg/kg	N/A	1.	9/23/13 08:00 a		2.5	
						1.55E-01		N/A			g	
Batch: 3260035	C14_LSC			**Work Order:**	M10LW1AA		**Report DB ID:**	M10LW1AB				
C-14	2.01E-01	U	2.0E-01	2.3E-01	4.75E-01	pCi/g	100%	0.42	9/19/13 08:45 p		5.058	LSC9
					2.24E-01	5.00E+01		(1.7)			g	
Batch: 3260038	PUISO_PLATE_AEA			**Work Order:**	M10L11AA		**Report DB ID:**	M10L11AB				
Pu-238	0.00E+00	U	0.0E+00	3.2E-02	5.86E-02	pCi/g	100%	0.	9/20/13 01:38 p		1.05	ALP44
					7.49E-03	1.00E+00		0.			g	
PU239/40	-1.29E-03	U	3.2E-02	3.2E-02	6.48E-02	pCi/g	100%	-0.02	9/20/13 01:38 p		1.05	ALP44
					1.06E-02	1.00E+00		-0.08			g	
Batch: 3260037	NI63_LSC			**Work Order:**	M10L01AA		**Report DB ID:**	M10L01AB				
Ni-63	2.34E+00	U	3.1E+00	4.3E+00	7.99E+00	pCi/g	82%	0.29	9/21/13 09:14 a		0.48	LSC9
					3.82E+00	3.00E+01		(1.1)			g	
Batch: 3260036	906.0_H3_LSC			**Work Order:**	M10LX1AA		**Report DB ID:**	M10LX1AB				
H-3	-2.76E-03	U	3.8E-02	4.3E-02	9.67E-02	pCi/g	100%	-0.03	9/20/13 11:57 p		51.9	LSC8
					4.52E-02	4.00E+02		-0.13			g	
Batch: 3260033	GAMMA_GS			**Work Order:**	M10LT1AA		**Report DB ID:**	M10LT1AB				
CO-60	-1.51E-02	U	1.5E-02	1.5E-02	2.46E-02	pCi/g		-0.62	9/19/13 06:29 p		348.0	GER7$1
						5.00E-02		-(2.)			g	
CS-137	-3.07E-03	U	1.2E-02	1.2E-02	2.14E-02	pCi/g		-0.14	9/19/13 06:29 p		348.0	GER7$1
						1.00E-01		-0.51			g	

TestAmerica Inc
rptSTLRchBlank
V5.2.24 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

BLANK RESULTS

Date: 24-Sep-13

Lab Name: TestAmerica Inc

SDG: JP0634

Matrix: SOIL

Report No. : 57084

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDL, Lc	Rpt Unit, CRDL	Yield	Rst/MDL, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
EU-152	-1.16E-03	U	3.3E-02	3.3E-02	5.77E-02	pCi/g		-0.02	9/19/13 06:29 p		348.0	GER7$1
						1.00E-01		-0.07			g	
EU-154	-3.20E-02	U	4.5E-02	4.5E-02	7.31E-02	pCi/g		-0.44	9/19/13 06:29 p		348.0	GER7$1
						1.00E-01		-(1.4)			g	
EU-155	7.42E-03	U	3.2E-02	3.2E-02	5.47E-02	pCi/g		0.14	9/19/13 06:29 p		348.0	GER7$1
						1.00E-01		0.47			g	
K-40	-2.96E-01	U	3.6E-01	3.6E-01	7.02E-01	pCi/g		-0.42	9/19/13 06:29 p		348.0	GER7$1
								-(1.6)			g	
Batch: 3260034	SRTOT_SEP_PRECIP_GPC			**Work Order:**	M10LV1AA		**Report DB ID:**	M10LV1AB				
STRONTIUM	5.04E-02	U	9.6E-02	9.7E-02	2.15E-01	pCi/g	97%	0.23	9/20/13 08:12 a		3.04	GPC32D
					1.01E-01			(1.)			g	

No. of Results: 13 **Comments:**

TestAmerica Inc
rptSTLRchBlank
V5.2.24 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

LCS RESULTS

Date: 24-Sep-13

Lab Name: TestAmerica Inc

Matrix: SOIL

SDG: JP0634

Report No. : 57084

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDL	Report Unit	Yield	Expected	Expected Uncert	Recovery, Bias	Analysis, Prep Date	Aliquot Size	Primary Detector
Batch: 3260076	7196_CR6			**Work Order:**	M10QR1AC		**Report DB ID:**	M10QR1AS					
HEXCHROME	1.77E+01			0.0E+00	1.55E-01	mg/kg	N/A	1.90E+01		93%	9/23/13 08:00 a	2.5	
							Rec Limits:	80	120	-0.1		g	
Batch: 3260035	C14_LSC			**Work Order:**	M10LW1AC		**Report DB ID:**	M10LW1CS					
C-14	7.37E+00		4.4E-01	6.1E-01	4.79E-01	pCi/g	100%	7.33E+00	1.5E-01	101%	9/19/13 09:07 p	5.02	LSC9
							Rec Limits:			0.0		g	
Batch: 3260038	PUISO_PLATE_AEA			**Work Order:**	M10L12AC		**Report DB ID:**	M10L12CS					
PU239/40	6.90E+00		6.0E-01	1.3E+00	7.65E-02	pCi/g	100%	6.54E+00	2.0E-01	106%	9/23/13 10:29 p	1.04	ALP41
							Rec Limits:	70	130	0.1		g	
Batch: 3260037	NI63_LSC			**Work Order:**	M10L01AC		**Report DB ID:**	M10L01CS					
Ni-63	2.79E+02		9.9E+00	2.9E+01	6.94E+00	pCi/g	88%	2.99E+02	5.0E+00	93%	9/21/13 09:35 a	0.51	LSC9
							Rec Limits:	70	130	-0.1		g	
Batch: 3260036	906.0_H3_LSC			**Work Order:**	M10LX1AC		**Report DB ID:**	M10LX1CS					
H-3	5.23E-01		5.7E-02	6.3E-02	8.53E-02	pCi/g	100%	5.33E-01	1.6E-02	98%	9/21/13 12:38 a	51.4	LSC8
							Rec Limits:	70	130	0.0		g	
Batch: 3260033	GAMMA_GS			**Work Order:**	M10LT1AC		**Report DB ID:**	M10LT1CS					
CS-137	1.00E+00		1.3E-01	1.3E-01	2.39E-02	pCi/g		1.02E+00	1.1E-02	98%	9/20/13 08:00 a	350.1	GER16$1
							Rec Limits:	70	130	0.0		g	
RA-226	9.11E-01		1.3E-01	1.3E-01	4.49E-02	pCi/g		1.14E+00	1.2E-02	80%	9/20/13 08:00 a	350.1	GER16$1
							Rec Limits:	70	130	-0.2		g	
RA-228	7.10E-01		1.4E-01	1.4E-01	8.05E-02	pCi/g		6.98E-01	7.2E-03	102%	9/20/13 08:00 a	350.1	GER16$1
							Rec Limits:	70	130	0.0		g	

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

rptSTLRchLcs
V5.2.24 A2002

FORM II

LCS RESULTS

Date: 24-Sep-13

Lab Name: TestAmerica Inc

SDG: JP0634

Matrix: SOIL

Report No. : 57084

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDL	Report Unit	Yield	Expected	Expected Uncert	Recovery, Bias	Analysis, Prep Date	Aliquot Size	Primary Detector
U-238	9.43E-01		1.2E-01	1.2E-01	4.14E-02	pCi/g		1.20E+00	1.2E-02	78%	9/20/13 08:00 a	350.1	GER16$1
							Rec Limits:	70	130	-0.2		g	
Batch: 3260034	SRTOT_SEP_PRECIP_GPC			**Work Order:**	M10LV1AC		**Report DB ID:**	M10LV1CS					
STRONTIUM	2.46E+00		2.3E-01	6.1E-01	1.82E-01	pCi/g	100%	2.26E+00	4.7E-02	109%	9/20/13 09:09 a	3.01	GPC31B
							Rec Limits:	70	130	0.1		g	

No. of Results: 10 **Comments:**

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

rptSTLRchLcs
V5.2.24 A2002

FORM II

MATRIX SPIKE RESULTS

Date: 24-Sep-13

Lab Name: TestAmerica Inc **SDG:** JP0634

Lot-Sample No.: J3I170409-1, J1RPX6 **Report No. :** 57084 **Matrix:** SOIL

Parameter	SpikeResult, Orig Rst	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA	Rpt Unit, CRDL	Yield	Rec-overy	Expected, Uncert	Analysis, Prep Date	Aliquot Size	Analy Method, Primary Detector
Batch: 3260076	**Work Order:** M10LP1AN			**Report DB ID:** M10LP1CW			**Orig Sa DB ID:** 9M10LP10					
HEXCHROME	2.63E+01			0.0E+00	1.55E-01	mg/kg	N/A	89.52%	2.94E+01	9/23/13 08:00 a	2.5074	7196_CR6
	1.55E-01										g	

Number of Results: 1

Comments:

TestAmerica Inc
rptSTLRchMs
V5.2.24 A2002

RER - Replicate Error Ratio = (S-D)/[sqrt(sq(TPUs)+sq(TPUd))] as defined by ICPT BOA.
Bias - (Result/Expected)-1 as defined by ANSI N13.30.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Data Review/Verification Checklist

RADIOCHEMISTRY, First Level Review

9/24/2013 2:03:22 PM

Lot No., Due Date: J3I170409; 09/24/2013
Client, Site: 127642; S00X235B00 HANFORD
QC Batch No., Method Test: 3260038; RPUISO Pulso by ALP
SDG, Matrix: JP0634; SOIL

1.0 COC

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

2.0 QC Batch

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

3.0 QC & Samples

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

4.0 Raw Data

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

5.0 Other

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

6.0 Comments on any No response:
NCM 10-24758

First Level Lisa Antoson **Date** 9/24/13

TestAmerica Richland
QAS_RADCALCv4.8.44

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TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Data Review Checklist

RADIOCHEMISTRY

Second Level Review

Batch Number: 3260038

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 = 1.0 pCi/g
SCENCM #: 10-21758

Second Level Review: Rhonda Wyatt Date: 9/24/12

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

Clouseau
Nonconformance Memo

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

NCM #: **10-24758**
NCM Initiated By: Lisa Antonson
Date Opened: 09/24/2013
Date Closed:

Classification: **Anomaly**
Status: **PMREVIEW**
Production Area: Counting
Tests: Pulso by ALP
Lot #'s (Sample #'s): J3I170000 (38), J3I170409 (1,2),
QC Batches: 3260038,

Nonconformance: Other (describe in detail)
Subcategory: Other (explanation required)

Problem Description / Root Cause

Name	Date	Description
Lisa Antonson	09/24/2013	The tracer on the LCS was slightly high in the original count. A recount brought it within limits.

Corrective Action

Name	Date	Corrective Action
Lisa Antonson	09/24/2013	The LCS was recounted

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

Date Printed: 9/24/2013

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TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Data Review/Verification Checklist

RADIOCHEMISTRY, First Level Review

9/20/2013 2:16:27 PM

Lot No., Due Date: J3I170409; 09/24/2013
Client, Site: 127642; S00X235B00 HANFORD
QC Batch No., Method Test: 3260034; RSRTOT SrTot by GPC
SDG, Matrix: JP0634; SOIL

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

6.0 Comments on any No response:

Thomas D M[illegible]

First Level _____ **Date** 9/20/13

TestAmerica Richland
QAS_RADCALCv4.8.44

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TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Data Review Checklist

RADIOCHEMISTRY

Second Level Review

Batch Number: 3260034

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 = 1.0pCi/g

Second Level Review: [signature] Date: 9/23/13

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

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Data Review/Verification Checklist

RADIOCHEMISTRY, First Level Review

9/23/2013 4:56:13 PM

Lot No., Due Date: J3I170409; 09/24/2013
Client, Site: 127642; S00X235B00 HANFORD
QC Batch No., Method Test: 3260033; RGAMMA Gamma by GER
SDG, Matrix: JP0634; SOIL

1.0 COC

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

2.0 QC Batch

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

3.0 QC & Samples

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

4.0 Raw Data

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

5.0 Other

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

6.0 Comments on any No response:
NCM 10-24739

First Level Lisa Antonson Date 9/23/13

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Data Review Checklist

RADIOCHEMISTRY

Second Level Review

Batch Number: 32100033

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 # 10-21739

Second Level Review: [signature] Date: 9/24/13

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

Clouseau
Nonconformance Memo

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

NCM #: **10-24739**
NCM Initiated By: Lisa Antonson
Date Opened: 09/23/2013
Date Closed:

Classification: **Anomaly**
Status: **PMREVIEW**
Production Area: Counting
Tests: Gamma by GER
Lot #'s (Sample #'s): J3I170000 (33), J3I170409 (1,2),
QC Batches: 3260033,

Nonconformance: MDA not met
Subcategory: Data accepted

Problem Description / Root Cause

Name	Date	Description
Lisa Antonson	09/23/2013	Sample M10LP does not meet CRDL for Eu-152, Eu-154 and Eu-155. Sample M10LQ does not meet CRDL for Eu-154

Corrective Action

Name	Date	Corrective Action
Lisa Antonson	09/23/2013	None

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

Date Printed: 9/23/2013

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Data Review/Verification Checklist

RADIOCHEMISTRY, First Level Review

9/23/2013 9:30:42 AM

Lot No., Due Date: J3I170409; 09/24/2013
Client, Site: 127642; S00X235B00 HANFORD
QC Batch No., Method Test: 3260036; RTRITIUM H-3 by LSC
SDG, Matrix: JP0634; 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:			

Thomas D McGee

First Level _____ **Date** 9/23/13

TestAmerica Richland
QAS_RADCALCv4.8.44

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TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Data Review Checklist

RADIOCHEMISTRY

Second Level Review

Batch Number: 3260036

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: SPDL = 400pCi/g

Second Level Review: [signature] Date: 9/23/13

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

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Data Review/Verification Checklist

RADIOCHEMISTRY, First Level Review

9/20/2013 3:35:05 PM

Lot No., Due Date: J3I170409; 09/24/2013
Client, Site: 127642; S00X235B00 HANFORD
QC Batch No., Method Test: 3260035; RC14LSCC C-14 Digestion
SDG, Matrix: JP0634; 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 Thomas D McKee **Date** 9/20/13

TestAmerica Richland
QAS_RADCALCv4.8.44

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Data Review Checklist

RADIOCHEMISTRY

Second Level Review

Batch Number: 3260035

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: CRDC = 50 pCi/g

Second Level Review: [signature] Date: 9/23/13

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

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Data Review/Verification Checklist

RADIOCHEMISTRY, First Level Review

9/24/2013 7:38:04 AM

Lot No., Due Date: J3I170409; 09/24/2013
Client, Site: 127642; S00X235B00 HANFORD
QC Batch No., Method Test: 3260037; RNI63 Ni-63 by LSC
SDG, Matrix: JP0634; SOIL

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

6.0 Comments on any No response:

Thomas DM Eg

First Level _____ **Date** 9/24/13

TestAmerica Richland
QAS_RADCALCv4.8.44

Page 1

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Data Review Checklist
RADIOCHEMISTRY
Second Level Review

Batch Number: 3260037

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 = 30pci/g

Second Level Review: [signature] Date: 9/24/13

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

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Richland Laboratory
Data Review Check List
Hexavalent Chromium

Batch Number(s):	3260076	Lab Sample Numbers or SDG:	JP0634
Method/Test/Parameter: Cr+6 ☐ RL-WC-003(Aqueous) ☒ RL-WC-004(Solid)			

Review Item	Yes (✓)	No (✓)	N/A (✓)	2nd Level Review (✓)
A. Initial Calibration 1. Performed at required frequency with required number of levels?	✓			✓
2. Correlation coefficient greater than 0.97?	✓			✓
3. Initial calibration verification (ICV) analyzed immediately after calibration and results within 10% of expected?	✓			✓
4. Initial calibration blank (ICB) analyzed immediately after ICV and concentrations of all parameters ≤ reporting limit?	✓			✓
B. Continuing Calibration 1. CCV analyzed at required frequency and all parameters within 10% of expected?	✓			✓
2. CCB analyzed at required frequency and all results ≤ reporting limit?	✓			✓
C. Sample Analysis 1. Were any samples with concentrations above the linear range diluted and reanalyzed?			✓	✓
2. Were all sample holding times met?	✓			✓
D. QC Samples 1. All results for the preparation blank below limits?	✓			✓
2. LCS percent recovery within 85-115%	✓			✓
3. $PbCrO_4$ percent recovery within 75-125%?	✓			✓
4. Sample and Duplicate within 20% (aqueous) or 35% (solid) RPD?			✓	✓
5. MS or MS/MSD recoveries within 85-115% (aqueous) or 75-125% (solid)?	✓			✓
6. On MS failure, PDMS within 85-115%?			✓	✓
E. Other 1. Are all nonconformances included and noted?			✓	✓
2. Is the correct date and time of analysis shown?	✓			✓
3. Did the analyst sign and date the front page of the analytical run?	✓			✓
4. Correct methodology used?	✓			✓
5. Transcriptions checked?	✓			✓
6. Calculations checked at minimum frequency?	✓			✓
7. Units checked?	✓			✓

Comments on any "No" response or list NCM number:

Analyst H. Rahari Date 9/23/13 2nd Review [illegible] Date 9/23/13

CG-231 Rev 1 5/12

TestAmerica Laboratories, Inc.

Washington Closure Hanford — CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-238-002 | Page 1 of 2

Collector: WHITE, EC	Company Contact: Joan Kessner	Telephone No.: 375-4688	Project Coordinator: KESSNER, JH
Price Code: 8C	Data Turnaround: 7 ~~15~~ Days JK 9-11-13		
Project Designation: 100K Shoreline Characterization	Sampling Location: 100-K-64 - 100-K-64 Focused Samples		SAF No.: RC-238
Ice Chest No.: NA	Field Logbook No.: EL-1668	COA: 0ESKSH6250	Method of Shipment: Local Delivery
Shipped To: TestAmerica - Richland	Offsite Property No.: NA		Bill of Lading/Air Bill No.: NA

POSSIBLE SAMPLE HAZARDS/REMARKS
RAD < Dot limits 9-16-13 CMB
METALS (Pb, Cd, Cr, Be)

Special Handling and/or Storage
All Test America Cr-VI analyses must be processed at the Richland facility
Cool 4C 9-16-13 CMB

Preservation	Cool 4C	None	None	None							
Type of Container	G/P	G/P	G/P	G/P							
No. of Container(s)	1	1	1	1							
Volume	250mL	500mL	250mL	250mL							
SAMPLE ANALYSIS	Chromium Hex - 7196 {Hexavalent Chromium}	See item (2) in Special Instructions	Isotopic Plutonium; Nickel-63; Strontium-89,90 – Total Sr	Carbon-14; Tritium - H3			RCF				
Sample No. / Matrix / Sample Date / Sample Time											
JIRPX6 / SOIL / 9.11.13 / 1217	X	X	X	X	CA-3A	2	36135	MIOLP			
JIRPX7 / SOIL / 9.11.13 / 1225	X	X	X	X	CA-3A	4	36136	MIOLP			
SOIL											
SOIL											
SOIL											

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
E. White	9-11-13 1315	John Horizia	9.11.13 1315
John Horizia	9.11.13 1425	C.A. Hall / Chas A. Hall	9-11-2013 1425 *
Cindra Bingham	9-11-13 1716	1060 Battelle, Fridge 2B	9-11-13 1716
1060 Battelle, fridge 2B	9-16-13 1410	Cindra Bingham	9-16-13 1410
Cindra Bingham	9-16-13 1550	1060 Battelle, fridge 2B	9-16-13 1550
1060 Battelle, fridge 2B	9-17-13 0815	Cindra Bingham	9-17-13 0815
Cindra Bingham	9-17-13 0925	J. Beck / Beck THALE	9-17-13 0925

FINAL SAMPLE DISPOSITION: Disposal Method | Disposed By | Date/Time

SPECIAL INSTRUCTIONS
All test America Cr-VI analyses must be processed a the Richland Facility
The 500 ml GEA samples will be sent to RCF for shipping screen then foward on to the rad lab.

(2) Gamma Spec (Client List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}

* Custodian unavailable to remove samples from controlled storage. Shipper removed samples, taking custody for shipment to lal

J3I170409
JP0634
Due 9-24-13

*Samples were correctly transferred to, received/stored by shipping custodians C.Hall/ C.Bingham. The samples were maintained, at all times, in the locked and secured sampl storage shipping facility.

J3I170409

JP0634

REVIEWED BY Dwshea DATE 9/16/13

WCH-EE-011

Generated Date/Time: 06/26/2013 06:32, PDT

Washington Closure Hanford — CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-238-002 | Page 2 of 2

Collector: WHITE, EC	Company Contact: Joan Kessner	Telephone No.: 375-4688	Project Coordinator: KESSNER, JH
Price Code: 8C	Data Turnaround: 7 ~~15~~ Days JH 9-11-13		
Project Designation: 100K Shoreline Characterization	Sampling Location: 100-K-64 - 100-K-64 Focused Samples		SAF No.: RC-238
Ice Chest No.: NA	Field Logbook No.: EL-1668	COA: 0ESKSH6250	Method of Shipment: Local Delivery
Shipped To: Radiological Counting Facility / TAIR	Offsite Property No.: NA		Bill of Lading/Air Bill No.: NA

POSSIBLE SAMPLE HAZARDS/REMARKS
RAD & DOT limits 9-16-13 CMB
metals (Pb, Cd, Cr, Be)

Special Handling and/or Storage
All Test America Cr-VI analyses must be processed at the Richland facility

J3I170409

JP0634
Due 9-24-13

Preservation	None											
Type of Container	G/P											
No. of Container(s)	1											
Volume	~~500 ml~~ ~~60g~~ JH 9-11-13											
SAMPLE ANALYSIS	RCF GEA Shipping Screen											
Sample No.	Matrix	Sample Date	Sample Time									
J1RPX6	SOIL	9-11-13	1217	X	36135	348g	CA-3A	L				
J1RPX7	SOIL	9-11-13	1225	X	36136	334g	CA-3A	U				
	SOIL											
	SOIL											
	SOIL											

CHAIN OF POSSESSION	Sign/Print Names
Relinquished By/Removed From: E White — Date/Time: 9-11-13 1315	Received By/Stored In: John Harrison — Date/Time: 1315 9-11-13
Relinquished By/Removed From: John Harrison — Date/Time: 1425 9-11-13	Received By/Stored In: CA Hall Char A Hall — Date/Time: 14:25 * 9-11-2013
Relinquished By/Removed From: Cindra Bingham — Date/Time: 9-11-13 1716	Received By/Stored In: 1060 Battelle, Frida 2B — Date/Time: 9-11-13 1716
Relinquished By/Removed From: 1060 Battelle, Frida 2B — Date/Time: 0700 9-12-13	Received By/Stored In: Cindra Bingham — Date/Time: 9-12-13 0700
Relinquished By/Removed From: Cindra Bingham — Date/Time: 9-12-13 0930	Received By/Stored In: RCF D. Miller — Date/Time: 0930 9-12-13
Relinquished By/Removed From: RCF D. Miller — Date/Time: 9-16-13 1315	Received By/Stored In: Cindra Bingham — Date/Time: 9-16-13 1315
Relinquished By/Removed From: Cindra Bingham — Date/Time: 9-16-13 1550	Received By/Stored In: 1060 Battelle, Frida 2B — Date/Time: 9-16-13 1550
FINAL SAMPLE DISPOSITION: Disposal Method	Disposed By — Date/Time

9-12-13 CMB

SPECIAL INSTRUCTIONS

All test America Cr-VI analyses must be processed a the Richland Facility
The 500 ml GEA samples will be sent to RCF for shipping screen then foward on to the rad lab

* Custodian unavailable to remove samples from controlled storage. Shipper removed samples, taking custody for shipment to lab

* Samples were correctly transferred to, received/stored by shipping custodians C.Hall/ C.Bingham. The samples were maintained, at all times, in the locked and secured sample storage shipping facility.

REVIEWED BY [illegible] DATE 9/16/13

** Samples transhipped on pg. 1 to TAIR for Gamma Spec.

Relinquished	Received
1060 Battelle, Frida 2B 9-17-13 0815	9-16-13 CMB; Cindra Bingham 9-17-13 0815
Cindra Bingham 0925 WCH 9-17-13	J. Beck TALR 9-17-13 0925

WCH-EE-011

Generated Date/Time: 06/26/2013 06:32 PDT

Analysis Report for RCF36135

J1RPX6 SAF:RC-238 100K/100-K-64 Focused Samples 500ml aG

GAMMA SPECTRUM ANALYSIS

Sample Identification	: RCF36135
Sample Description	: J1RPX6 SAF:RC-238 100K/100-K-64 Focused Samples 500ml aG
Sample Type	: Non Standard Geometry
Sample Size	: 3.480E+02 grams
Facility	: Default
Sample Taken On	: 9/11/2013 12:17:00PM
Acquisition Started	: 9/12/2013 12:38:49PM
Procedure	: Non Standard Geometry
Operator	: eswallac
Detector Name	: NEWBEGE
Geometry	: 50 ml Pill Box
Live Time	: 3600.0 seconds
Real Time	: 3600.8 seconds
Dead Time	: 0.02 %
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	: 6/24/2013
Efficiency Calibration Used Done On	: 2/22/2013
Efficiency Calibration Description	: NBEGE 50ml PB EC022213 SN92492
Sample Number	: 34762

"Qualitative Only"

INTERFERENCE CORRECTED REPORT

Nuclide Name		Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
K-40		1.000	5.45E+00	5.68E-01	
PB-212		0.709	3.25E-01	3.32E-02	
RA-226d	@	0.803	2.95E-01	2.80E-02	
TH-232d		0.998	3.19E-01	2.36E-02	
U-235		0.538	3.36E-02	2.11E-02	

Analysis Report for RCF36136

J1RPX7 SAF:RC-238 100K/100-K-64 Focused Samples 500ml aG

GAMMA SPECTRUM ANALYSIS

Sample Identification	: RCF36136
Sample Description	: J1RPX7 SAF:RC-238 100K/100-K-64 Focused Samples 500ml aG
Sample Type	: Non Standard Geometry
Sample Size	: 3.340E+02 grams
Facility	: Default
Sample Taken On	: 9/11/2013 12:25:00PM
Acquisition Started	: 9/12/2013 12:39:11PM
Procedure	: Non Standard Geometry
Operator	: eswallac
Detector Name	: REGIE2
Geometry	: 50 ml Pill Box
Live Time	: 3600.0 seconds
Real Time	: 3600.8 seconds
Dead Time	: 0.02 %
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	: 7/1/2013
Efficiency Calibration Used Done On	: 3/11/2013
Efficiency Calibration Description	: REGE2 50ml PB EC031113 SN92492
Sample Number	: 34763

"Qualitative Only"

INTERFERENCE CORRECTED REPORT

Nuclide Name		Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
K-40		0.966	5.54E+00	6.42E-01	
CS-137		0.998	9.13E-01	6.13E-02	
EU-152		0.604	2.70E-01	2.85E-02	
PB-212		0.709	2.78E-01	3.38E-02	
RA-226d	@	0.735	2.35E-01	3.36E-02	

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Sample Check-in List

Date/Time Received: 9-17-13 / 0925 Container GM Screen Result: (Airlock) 40 cpm Initials [JB]
Sample GM Screen Result (Sample Receiving) 20 cpm Initials [JB]

Client: WCH SDG #: JP0634 SAF #: RC-238 NA [ ]

Lot Number: 33I170409

Chain of Custody # RC-238-002

Shipping Container ID or Air Bill Number : hand delivered NA [RW]

Samples received inside shipping container/cooler/box Yes [JB] Continue with 1 through 4. Initial appropriate response.
No [ ] Go to 5, add comment to #16.

1. Custody Seals on shipping container intact? Yes [ ] No [ ] No Custody Seal [JB]
2. Custody Seals dated and signed? Yes [ ] No [ ] No Custody Seal [JB]
3. Cooler temperature: 8.7 °C on Ice NA [ ]
4. Vermiculite/packing materials is NA [JB] Wet [ ] Dry [ ]

Item 5 through 16 for samples. Initial appropriate response.

5. Chain of Custody record present? Yes [JB] No [ ]
6. Number of samples received (Each sample may contain multiple bottles): 2
7. Containers received: 2 x 500 mL AG; 8 x 250 mL AG
8. Sample holding times exceeded? NA [ ] Yes [ ] No [JB]
9. Samples have: ____tape ____hazard labels [JB] custody seals [JB] appropriate sample labels
10. Matrix: [JB] A (FLT, Wipe, Solid, Soil) ____I (Water) ____S (Air, Niosh 7400) ____T (Biological, Ni-63)
11. Samples:
    [JB] are in good condition ____are leaking ____are broken
    ____have air bubbles (Only for samples requiring no head space) ____Other ____
12. Sample pH appropriate for analysis requested Yes [ ] No [ ] NA [JB]
    (If acidification is necessary go to pH area & document sample ID, initial pH, amount of HNO_3 added and pH after addition on table)
13. Were any anomalies identified in sample receipt? Yes [ ] No [JB]
14. Description of anomalies (include sample numbers): NA [JB] ____
15. Sample Location, Sample Collector Listed on COC? * Yes [JB] No [ ]
    *For documentation only. No corrective action needed.
16. Additional Information: w/ A

[ ] Client/Courier denied temperature check. [ ] Client/Courier unpack cooler.

Sample Check-in List completed by Sample Custodian:
Signature: [signature] Date: 9-17-13

Client Notification needed? Yes [ ] No [✓] Date: ____
By: ____
Person contacted: ____

[✓] No action necessary; process as is

Project Manager [signature] Date 9/17/13

9/18/2013 1:02:16 AM

Sample Preparation/Analysis

Balance Id:1120373922

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

6A Pu Prp PRP003/PRP005, Sep ALP002(ALP015)
SO Plutonium-238,239/40 by Alpha Spec
5I CLIENT: HANFORD

PRIORITY

Pipet #: _____

AnalyDueDate: 09/24/2013 JP0634

Sep1 DT/Tm Tech:

Batch: 3260038 SOIL pCi/g PM, Quote: RW2, 27038

Sep2 DT/Tm Tech:

SEQ Batch, Test: None

Prep Tech: WoodT

Work Ord, Lot, Sample Date	Total Amt/Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	Tracer Yield	Dish Size	Ppt or Geometry	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:
1 M10LP-1-AE J3I170409-1-SAMP 09/11/2013 12:17			1.02g,in AmtRec: 1X500MLAG;3X250MLAG	1.02g #Containers: 4	PUTC13781 09/10/13,pd 01/01/10,r				100 Scr:	41 Alpha:	1428	9/20/13 AMS Beta:	
2 M10LP-1-AM-X J3I170409-1-DUP 09/11/2013 12:17			0.99g,in AmtRec: 1X500MLAG;3X250MLAG	0.99g #Containers: 4	PUTC13782 09/10/13,pd 01/01/10,r				Scr:	42 Alpha:	1428	Beta:	
3 M10LQ-1-AE J3I170409-2-SAMP 09/11/2013 12:25			1.01g,in AmtRec: 1X500MLAG;3X250MLAG	1.01g #Containers: 4	PUTC13783 09/10/13,pd 01/01/10,r				Scr:	43 Alpha:	1428	Beta:	
4 M10L1-1-AA-B J3I170000-38-BLK 09/17/2013 11:29 pd			1.05g,in AmtRec:	1.05g #Containers: 1	PUTC13784 09/10/13,pd 01/01/10,r				Scr:	44 Alpha:	1428	Beta:	
5 M10L1-1-AC-C J3I170000-38-LCS 09/17/2013 11:29 pd			1.04g,in AmtRec:	1.04g #Containers: 1	PUSK1048 09/10/13,pd 01/01/10,r				Scr:	44 Alpha:		Beta:	

9/18/2013 1:02:17 AM

Sample Preparation/Analysis

6A Pu Prp PRP003/PRP005, Sep ALP002(ALP015)
SO Plutonium-238,239/40 by Alpha Spec
5I CLIENT: HANFORD

Balance Id:1120373922

Pipet #: _____

AnalyDueDate: 09/24/2013

Sep1 DT/Tm Tech:

Batch: 3260038 pCi/g

SEQ Batch, Test: None

Sep2 DT/Tm Tech:

Prep Tech: ,WoodT

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

Comments:

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

M10LP1AE-SAMP Constituent List:

M10L11AA-BLK:

M10L11AC-LCS:

M10LP1AE-SAMP Calc Info:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
M10L11AA-BLK:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
M10L11AC-LCS:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

*** RE-COUNT REQUEST ***

DUE DATE 9/24/13

CUSTOMER WCH

ANALYSIS Pu

MATRIX Soil

LOT NUMBER J3172409

SAMPLE DELIVERY GROUP

OLD BATCH NUMBER 3260038

NEW BATCH NUMBER

LAB SAMPLE ID	CLIENT ID	REASON FOR REQUEST & ANALYSIS COMMENTS
1) M10L1 1AC	(LCS)	1179o tracer 100
2)		
3)		
4)		
5)		
6)		
7)		
8)		
9)		
10)		
11)		
12)		
13)		
14)		
15)		
16)		
17)		
18)		
19)		
20)		

9/23/2013 5:02:27 PM

Sample Preparation/Analysis

Balance Id:1120373922

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

6A Pu Prp PRP003/PRP005, Sep ALP002(ALP015)
SO Plutonium-238,239/40 by Alpha Spec
5I CLIENT: HANFORD

Pipet #: _____

AnalyDueDate: 09/24/2013

Sep1 DT/Tm Tech:

Batch: 3260038 **SOIL** **pCi/g** **PM, Quote: RW2, 27038**

Sep2 DT/Tm Tech:

SEQ Batch, Test: None All Tests: 3260033 AXTA, 3260034 CHTH, 3260035 5STC, 3260036 ATS6, 3260037 AFS4, 3260038 6ASO, 3260076 DWEA,

Prep Tech: BourneD,WoodT

Work Ord, Lot, Sample Date	Total Amt/Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	Tracer Yield	Dish Size	Ppt or Geometry	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:
1 M10LP-1-AE J3I170409-1-SAMP 09/11/2013 12:17			1.02g,in	1.02g	PUTC13781 09/10/13,pd 01/01/10,r AmtRec: 1X500MLAG;3X250MLAG #Containers: 4						Scr:	Alpha:	Beta:
2 M10LP-1-AM-X J3I170409-1-DUP 09/11/2013 12:17			0.99g,in	0.99g	PUTC13782 09/10/13,pd 01/01/10,r AmtRec: 1X500MLAG;3X250MLAG #Containers: 4						Scr:	Alpha:	Beta:
3 M10LQ-1-AE J3I170409-2-SAMP 09/11/2013 12:25			1.01g,in	1.01g	PUTC13783 09/10/13,pd 01/01/10,r AmtRec: 1X500MLAG;3X250MLAG #Containers: 4						Scr:	Alpha:	Beta:
4 M10L1-1-AA-B J3I170000-38-BLK 09/17/2013 11:29 pd			1.05g,in	1.05g	PUTC13784 09/10/13,pd 01/01/10,r AmtRec: #Containers: 1						Scr:	Alpha:	Beta:
5 M10L1-1-AC-C J3I170000-38-LCS 09/17/2013 11:29 pd			1.04g,in	1.04g	PUSK1048 09/10/13,pd 01/01/10,r AmtRec: #Containers: 1						Scr:	Alpha:	Beta:
6 M10L1-2-AC-C J3I170000-38-LCS 09/23/2013 17:02 pd			1.04g	1.04g	PUSK 1048 AmtRec: #Containers: 1				100	41	Scr:	Alpha:	Beta:

TestAmerica Richland Wa. Key: In - Initial Amt, fi - Final Amt, di - Diluted Amt, s1 - Sep1, s2 - Sep2 pd - Prep Dt, dc - Date Chg, r - Reference Dt, ec-Enrichment Cell, ct-Cocktailed Added Page 1 ISV - Insufficient Volume for Analysis WO Cnt: 6 ICOC v4.8.49

9/23/2013 5:02:27 PM

Sample Preparation/Analysis

6A Pu Prp PRP003/PRP005, Sep ALP002(ALP015)
SO Plutonium-238,239/40 by Alpha Spec
5I CLIENT: HANFORD

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

AnalyDueDate: 09/24/2013

Batch: 3260038 pCi/g
SEQ Batch, Test: None

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

Comments: M10L1-BLK CommentsP-13-00319,S-13-00227,,,S-13-00090,S-13-00009,P-13-00453,P-13-00459,P-13-00399,S-13-202,S-13-205,S-13-00122

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

M10LP1AE-SAMP Constituent List:

PU-238	RDL:1	pCi/g	LCL:	UCL:	RPD:	PU-239	RDL:1	pCi/g	LCL:70	UCL:130	RPD:35
Pu-242	RDL:	pCi/g	LCL:20	UCL:105	RPD:35						

M10L11AA-BLK:

PU-238	RDL:1	pCi/g	LCL:	UCL:	RPD:	PU-239	RDL:1	pCi/g	LCL:	UCL:	RPD:
Pu-242	RDL:	pCi/g	LCL:20	UCL:105	RPD:35						

M10L11AC-LCS:

PU-239	RDL:1	pCi/g	LCL:70	UCL:130	RPD:35	Pu-242	RDL:	pCi/g	LCL:20	UCL:105	RPD:35

M10L12AC-LCS:

M10LP1AE-SAMP Calc Info:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
M10L11AA-BLK:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
M10L11AC-LCS:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
M10L12AC-LCS:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

9/24/2013 2:01:02 PM

ICOC Fraction Transfer/Status Report

ByDate: 9/24/2012, 9/29/2013, Batch: '3260038', User: *ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting			Comments
3260038						
AC		**Rev1C**	**WoodT**	9/18/2013 1:00:19		
SC			mcginnlst	IsBatched	9/17/2013 12:05:54 PM	ICOC_RADCALC v4.8.49
SC			WoodT	InPrep	9/18/2013 1:00:19 AM	RL-PRP-003 REVISION 3
SC			WoodT	Prep1C	9/18/2013 1:03:19 AM	RL-PRP-003 REVISION3
SC			BourneD	Sep2C	9/19/2013 11:32:52 AM	RL-ALP-001 REVISION 4
SC			RichardsonB	Sep2C	9/20/2013 7:00:03 AM	RL-ALP-016 REVISION 3
SC			BullJ	InCnt1	9/20/2013 9:18:50 AM	RL-CI-008 REVISION 3
SC			NortonJ	Cnt1C	9/21/2013 6:18:11 PM	RL-CI-008 REVISION 3
SC			NortonJ	InCnt1	9/23/2013 6:30:16 PM	RL-CI-008 REVISION 3
SC			BullJ	CalcC	9/24/2013 1:12:51 PM	RL-CI-008 REVISION 3
SC			antonsonl	Rev1C	9/24/2013 2:00:54 PM	RL-DR-001 Rev 4
AC			**WoodT**	9/18/2013 1:03:19		
AC			**BourneD**	9/19/2013 11:32:52		
AC			**RichardsonB**	9/20/2013 7:00:03		
AC			**BullJ**	9/20/2013 9:18:50		
AC			**NortonJ**	9/21/2013 6:18:11 PM		
AC			**NortonJ**	9/23/2013 6:30:16 PM		
AC			**BullJ**	9/24/2013 1:12:51 PM		
AC			**antonsonl**	9/24/2013 2:00:54 PM		

AC: Accepting Entry; SC: Status Change

TestAmerica Richland

Richland Wa.

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Grp Rec Cnt: 9

ICOCFractions v4.8.44

9/18/2013 5:25:54 PM

Sample Preparation/Analysis

Balance Id:1120373922

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

CH Sr-Total Prp PRP003, Sep GPC003
TH Total Strontium by GPC
5I CLIENT: HANFORD

Pipet #: _____

AnalyDueDate: 09/24/2013

Sep1 DT/Tm Tech: 09/18/2013 13:22,JorgensonD

Batch: 3260034 **SOIL** **pCi/g** **PM, Quote: RW2, 27038**

Sep2 DT/Tm Tech:

SEQ Batch, Test: None All Tests: 3260033 AXTA, 3260034 CHTH, 3260035 5STC, 3260036 ATS6, 3260037 AFS4, 3260038 6ASO, 3260076 DWEA,

Prep Tech: WoodT

Work Ord, Lot, Sample Date	Total Amt/Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	Tracer Yield	Dish Size	Ppt or Geometry	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:
1 M10LP-1-AC J3I170409-1-SAMP			2.98g,in	2.98g	SRTC1464 09/05/13			10.6mg	50	31B	837	9/20/13 JB	
09/11/2013 12:17			AmtRec: 1X500MLAG;3X250MLAG		#Containers: 4	09/18/2013 13:22,s1			Scr:		Alpha:		Beta:
2 M10LQ-1-AC J3I170409-2-SAMP			3.03g,in	3.03g	SRTC1465 09/05/13			11.2mg		31D			
09/11/2013 12:25			AmtRec: 1X500MLAG;3X250MLAG		#Containers: 4				Scr:		Alpha:		Beta:
3 M10LQ-1-AJ-X J3I170409-2-DUP			2.98g,in	2.98g	SRTC1466 09/05/13			11.2mg		32C			
09/11/2013 12:25			AmtRec: 1X500MLAG;3X250MLAG		#Containers: 4				Scr:		Alpha:		Beta:
4 M10LV-1-AA-B J3I170000-34-BLK			3.04g,in	3.04g	SRTC1468 09/05/13			11.7mg		32D			
09/17/2013 11:29 pd			AmtRec:		#Containers: 1				Scr:		Alpha:		Beta:
5 M10LV-1-AC-C J3I170000-34-LCS			3.01g,in	3.01g	STSF0282 07/29/13			12.2mg		31B	0934	9/20/13 JB	
09/17/2013 11:29 pd			AmtRec:		#Containers: 1				Scr:		Alpha:		Beta:

9/18/2013 5:25:55 PM

Sample Preparation/Analysis

CH Sr-Total Prp PRP003, Sep GPC003
TH Total Strontium by GPC
5I CLIENT: HANFORD

Balance Id:1120421763,1120373922

Pipet #: _____

AnalyDueDate: 09/24/2013

Sep1 DT/Tm Tech:

Batch: 3260034 pCi/g

SEQ Batch, Test: None

Sep2 DT/Tm Tech:

Prep Tech: ,WoodT

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

Comments:

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

M10LP1AC-SAMP Constituent List:

Sr-90	RDL:1	pCi/g	LCL:70	UCL:130	RPD:35
M10LV1AA-BLK:					
Sr-90	RDL:1	pCi/g	LCL:	UCL:	RPD:
M10LV1AC-LCS:					
Sr-90	RDL:1	pCi/g	LCL:70	UCL:130	RPD:35

M10LP1AC-SAMP Calc Info:

Uncert Level (#s).: 2	Decay to SaDt: Y	Blk Subt.: N	Sci.Not.: Y	ODRs: B
M10LV1AA-BLK:				
Uncert Level (#s).: 2	Decay to SaDt: Y	Blk Subt.: N	Sci.Not.: Y	ODRs: B
M10LV1AC-LCS:				
Uncert Level (#s).: 2	Decay to SaDt: Y	Blk Subt.: N	Sci.Not.: Y	ODRs: B

9/20/2013 2:15:42 PM

ICOC Fraction Transfer/Status Report

ByDate: 9/20/2012, 9/25/2013, Batch: '3260034', User: *ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting			Comments
3260034						
AC		**Rev1C**	**SannohS**	9/17/2013 12:17:41		
SC			mcginnist	IsBatched	9/17/2013 12:05:47 PM	ICOC_RADCALC v4.8.49
SC			SannohS	InPrep	9/17/2013 12:17:41 PM	RL-GAM-001 REV.002
SC			WoodT	InPrep	9/18/2013 12:57:17 AM	RL-PRP-003 REVISION 3
SC			WoodT	Prep1C	9/18/2013 12:59:45 AM	RL-PRP-003 REVISION 3
SC			BourneD	Sep2C	9/18/2013 5:33:01 PM	RL-GPC-010 REVISION 2
SC			NortonJ	InCnt1	9/18/2013 8:41:46 PM	RL-CI-006 REVISION 3
SC			BullJ	CalcC	9/20/2013 1:45:42 PM	RL-CI-006 REVISION 4
SC			mcginnist	Rev1C	9/20/2013 2:15:30 PM	RL-DR-001 Rev 4
AC			**WoodT**	9/18/2013 12:57:17		
AC			**WoodT**	9/18/2013 12:59:45		
AC			**BourneD**	9/18/2013 5:33:01 PM		
AC			**NortonJ**	9/18/2013 8:41:46 PM		
AC			**BullJ**	9/20/2013 1:45:42 PM		
AC			**mcginnist**	9/20/2013 2:15:30 PM		

AC: Accepting Entry; SC: Status Change

TestAmerica Richland

Richland Wa.

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Grp Rec Cnt: 7

ICOCFractions v4.8.44

9/17/2013 11:53:59 PM

Sample Preparation/Analysis

PRIORITY

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

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

Balance Id:1120421763
Pipet #: _____
Sep1 DT/Tm Tech:
Sep2 DT/Tm Tech:
Prep Tech: WoodT

AnalyDueDate: 09/24/2013 JP0634

Batch: 3260033 **SOIL** **pCi/g** **PM, Quote: RW2, 27038**

SEQ Batch, Test: None All Tests: 3260033 AXTA, 3260034 CHTH, 3260035 5STC, 3260036 ATS6, 3260037 AFS4, 3260038 6ASO, 3260076 DWEA,

Work Ord, Lot, Sample Date	Total Amt/Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	Tracer Yield	Dish Size	Ppt or Geometry	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:
1 M10LP-1-AG J3I170409-1-SAMP 09/11/2013 12:17			324.50g,in AmtRec: 1X500MLAG;3X250MLAG	324.50g #Containers: 4				S200	200	G7 Scr:	~~1101~~ ~~9/19/13~~ 1613 9/19/13 Alpha:	Beta:	9/19/13
2 M10LP-1-AJ-X J3I170409-1-DUP 09/11/2013 12:17			ISV AmtRec: 1X500MLAG;3X250MLAG	#Containers: 4						G18 Scr:	21:49 Alpha:	9-19-13 Beta:	
3 M10LQ-1-AG J3I170409-2-SAMP 09/11/2013 12:25			286.80g,in AmtRec: 1X500MLAG;3X250MLAG	286.80g #Containers: 4						G18 Scr:	1434 Alpha:	9/19/13 Beta:	
4 M10LT-1-AA-B J3I170000-33-BLK 09/17/2013 11:29 pd			348.00g,in AmtRec:	348.00g #Containers: 1	OSBK					G7 Scr:	21:49 Alpha:	9-19-13 Beta:	
5 M10LT-1-AC-C J3I170000-33-LCS 09/17/2013 11:29 pd			350.10g,in AmtRec:	350.10g #Containers: 1	QC20009 08/04/09,pd 09/01/09,r					G6 Scr:	1120 Alpha:	9/20/13 Beta:	

TestAmerica Richland Wa. Key: In - Initial Amt, fi - Final Amt, di - Diluted Amt, s1 - Sep1, s2 - Sep2 Page 1
pd - Prep Dt, dc - Date Chg, r - Reference Dt, ec-Enrichment Cell, ct-Cocktailed Added
ISV - Insufficient Volume for Analysis
WO Cnt: 5
Prep_SamplePrep v4.8.65

9/17/2013 11:54:00 PM

Sample Preparation/Analysis

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

Balance Id:1120421763
Pipet #: _____
Sep1 DT/Tm Tech:
Sep2 DT/Tm Tech:
Prep Tech: WoodT

AnalyDueDate: 09/24/2013

Batch: 3260033 **pCi/g**
SEQ Batch, Test: None

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

Comments: M10LT-BLK "Comments M10LQ: Not enough sample for a duplicate, please recount on a seperate detector. tgw 9/17/2013"

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

M10LP1AG-SAMP Constituent List:

M10LT1AA-BLK:

M10LT1AC-LCS:

M10LP1AG-SAMP Calc Info:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
M10LT1AA-BLK:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
M10LT1AC-LCS:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

9/23/2013 4:53:33 PM

ICOC Fraction Transfer/Status Report

ByDate: 9/23/2012, 9/28/2013, Batch: '3260033', User: *ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting			Comments
3260033						
AC		Rev1C	SannohS	9/17/2013 12:18:13		
SC			mcginnist	IsBatched	9/17/2013 12:05:44 PM	ICOC_RADCALC v4.8.49
SC			SannohS	InPrep	9/17/2013 12:18:13 PM	RL-GAM-001 REV.002
SC			WoodT	InPrep	9/17/2013 11:46:35 PM	RL-PRP-003 Revision 3
SC			BullJ	InCnt1	9/18/2013 5:37:05 AM	RL-CI-007 REVISION 3
SC			NortonJ	CalcC	9/20/2013 1:35:09 PM	RL-CI-007 REVISION 3
SC			antonsonl	Rev1C	9/23/2013 4:53:22 PM	RL-DR-001 Rev 4
AC			WoodT	9/17/2013 11:46:35		
AC			BullJ	9/18/2013 5:37:05		
AC			NortonJ	9/20/2013 1:35:09 PM		
AC			antonsonl	9/23/2013 4:53:22 PM		

AC: Accepting Entry; SC: Status Change

TestAmerica Richland

Richland Wa.

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Grp Rec Cnt: 5

ICOCFractions v4.8.44

3

9/17/2013 11:29:29 AM

Sample Preparation/Analysis

127642, Washington Closure Hanford LLC
Bechtel Hanford, Inc.

AnalyDueDate: 09/24/2013

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

PRIORITY

Batch: 3260036 SOIL pCi/g
SEQ Batch, Test: None

PM, Quote: RW2, 27038

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

Work Ord, Lot, Sample Date	Total Amt/Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	Tracer Yield	Dish Size	Ppt or Geometry	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:
1 M10LP-1-AF J3I170409-1-SAMP 09/11/2013 12:17	AmtRec: 1X500MLAG;3X250MLAG	#Containers: 4	Scr:	Alpha:	Beta:								
2 M10LQ-1-AF J3I170409-2-SAMP 09/11/2013 12:25	AmtRec: 1X500MLAG;3X250MLAG	#Containers: 4	Scr:	Alpha:	Beta:								
3 M10LQ-1-AK-X J3I170409-2-DUP 09/11/2013 12:25	AmtRec: 1X500MLAG;3X250MLAG	#Containers: 4	Scr:	Alpha:	Beta:								
4 M10LX-1-AA-B J3I170000-36-BLK 09/17/2013 11:29 pd	AmtRec:	#Containers: 1	Scr:	Alpha:	Beta:								
5 M10LX-1-AC-C J3I170000-36-LCS 09/17/2013 11:29 pd	AmtRec:	#Containers: 1	Scr:	Alpha:	Beta:								
6 M10LX-1-AD-BN J3I170000-36-IBLK 09/17/2013 11:29 pd	AmtRec:	#Containers: 1	Scr:	Alpha:	Beta:								

TestAmerica Richland Wa.

Key: In - Initial Amt, fi - Final Amt, di - Diluted Amt, s1 - Sep1, s2 - Sep2 pd - Prep Dt, dc - Date Chg, r - Reference Dt, ec-Enrichment Cell, ct-Cocktailed Added

Page 1

ISV - Insufficient Volume for Analysis

WO Cnt: 6

ICOC v4.8.49

9/17/2013 11:29:29 AM

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: 09/24/2013

Batch: 3260036 **pCi/g**
SEQ Batch, Test: None

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

Comments:

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

M10LP1AF-SAMP Constituent List:

M10LX1AA-BLK:

M10LX1AC-LCS:

M10LX1AD-IBLK:

M10LP1AF-SAMP Calc Info:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
M10LX1AA-BLK:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
M10LX1AC-LCS:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
M10LX1AD-IBLK:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

9/23/2013 9:30:07 AM

ICOC Fraction Transfer/Status Report

ByDate: 9/23/2012, 9/28/2013, Batch: '3260036', User: *ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting			Comments
3260036						
AC		**Rev1C**	**NortonP**	9/20/2013 4:01:56 PM		
SC			nortonp	IsBatched	9/20/2013 11:13:25 AM	ICOC_RADCALC v4.8.49
SC			NortonP	Sep1C	9/20/2013 4:01:56 PM	RL-LSC-002 REVISION 4
SC			NortonJ	InCnt1	9/20/2013 5:01:09 PM	RL-CI-005 REVISION 3
SC			BullJ	CalcC	9/22/2013 9:33:18 AM	RL-CI-005 REVISION 3
SC			mcginnist	Rev1C	9/23/2013 9:29:56 AM	RL-DR-001 Rev 4
AC			**NortonJ**	9/20/2013 5:01:09 PM		
AC			**BullJ**	9/22/2013 9:33:18		
AC			**mcginnist**	9/23/2013 9:29:56		

AC: Accepting Entry; SC: Status Change

TestAmerica Richland

Richland Wa.

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Grp Rec Cnt: 4

ICOCFractions v4.8.44

9/19/2013 8:11:27 AM

Sample Preparation/Analysis

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

AnalyDueDate: 09/24/2013

5S C-14 Prp/Sep LSC008
TC C-14 by LSC, Carbosorb
01 STANDARD TEST SET

Balance Id:

Pipet #: _____

Sep1 DT/Tm Tech:

Sep2 DT/Tm Tech:

Batch: 3260035 **SOIL** **pCi/g** **PM, Quote: RW2, 27038**

SEQ Batch, Test: None All Tests: 3260033 AXTA, 3260034 CHTH, 3260035 5STC, 3260036 ATS6, 3260037 AFS4, 3260038 6ASO, 3260076 DWEA,

Prep Tech: WoodT,WindischT

Work Ord, Lot, Sample Date	Total Amt/Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	Tracer Yield	Dish Size	Ppt or Geometry	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:
1 M10LP-1-AH			5.037g,in	5.037g									
J3I170409-1-SAMP													
09/11/2013 12:17			AmtRec: 1X500MLAG;3X250MLAG		#Containers: 4				Scr:		Alpha:		Beta:
2 M10LP-1-AK-X			5.009g,in	5.009g									
J3I170409-1-DUP													
09/11/2013 12:17			AmtRec: 1X500MLAG;3X250MLAG		#Containers: 4				Scr:		Alpha:		Beta:
3 M10LQ-1-AH			5.019g,in	5.019g									
J3I170409-2-SAMP													
09/11/2013 12:25			AmtRec: 1X500MLAG;3X250MLAG		#Containers: 4				Scr:		Alpha:		Beta:
4 M10LW-1-AA-B			5.058g,in	5.058g									
J3I170000-35-BLK													
09/17/2013 11:29 pd			AmtRec:		#Containers: 1				Scr:		Alpha:		Beta:
5 M10LW-1-AC-C			5.02g,in	5.02g	CSB1342 09/18/13,pd 11/08/12,r								
J3I170000-35-LCS													
09/17/2013 11:29 pd			AmtRec:		#Containers: 1				Scr:		Alpha:		Beta:
6 M10LW-1-AD-BN													
J3I170000-35-IBLK													
09/17/2013 11:29 pd			AmtRec:		#Containers: 1				Scr:		Alpha:		Beta:

9/19/2013 8:11:29 AM

Sample Preparation/Analysis

5S C-14 Prp/Sep LSC008
TC C-14 by LSC, Carbosorb
01 STANDARD TEST SET

AnalyDueDate: 09/24/2013

Batch: 3260035 **pCi/g**
SEQ Batch, Test: None

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

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

Comments:

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

M10LP1AH-SAMP Constituent List:
C-14 RDL:5.00E+01 pCi/g LCL: UCL: RPD:
M10LW1AA-BLK:
C-14 RDL:5.00E+01 pCi/g LCL: UCL: RPD:
M10LW1AC-LCS:

M10LW1AD-IBLK:
C-14 RDL:5.00E+01 pCi/g LCL: UCL: RPD:

M10LP1AH-SAMP Calc Info:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
M10LW1AA-BLK:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
M10LW1AC-LCS:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
M10LW1AD-IBLK:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

9/20/2013 3:34:33 PM

ICOC Fraction Transfer/Status Report

ByDate: 9/20/2012, 9/25/2013, Batch: '3260035', User: *ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting			Comments
3260035						
AC		**Rev1C**	**BullJ**	9/19/2013 11:07:14		
SC			WindischT	IsBatched	9/17/2013 1:08:01 PM	ICOC_RADCALC v4.8.49
SC			BullJ	InCnt1	9/19/2013 11:07:14 AM	RL-CI-005 REVISION 3
SC			BullJ	CalcC	9/20/2013 2:41:15 PM	RL-CI-005 REVISION 3
SC			mcginnist	Rev1C	9/20/2013 3:34:26 PM	RL-DR-001 Rev 4
AC			**BullJ**	9/20/2013 2:41:15 PM		
AC			**mcginnist**	9/20/2013 3:34:26 PM		

AC: Accepting Entry; SC: Status Change

TestAmerica Richland

Richland Wa.

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Grp Rec Cnt: 3

ICOCFractions v4.8.44

9/18/2013 12:59:37 AM

Sample Preparation/Analysis

Balance Id:1120373922

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

AF Ni-63 Prp PRP003/PRP005, Sep LSC017
S4 Nickel by ICP and Nickel-63 by Liquid Scint
5I CLIENT: HANFORD

PRIORITY

Pipet #: _____

AnalyDueDate: 09/24/2013 JP0634

Sep1 DT/Tm Tech:

Batch: 3260037 SOIL pCi/g PM, Quote: RW2, 27038

Sep2 DT/Tm Tech:

SEQ Batch, Test: None

Prep Tech: WoodT

Work Ord, Lot, Sample Date	Total Amt/Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	Tracer Yield	Dish Size	Ppt or Geometry	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:
1 **M10LP-1-AD** J3I170409-1-SAMP 09/11/2013 12:17			0.53g,in	0.53g	NITA10463 08/27/13				20				
			AmtRec: 1X500MLAG;3X250MLAG		#Containers: 4				Scr:		Alpha:		Beta:
2 **M10LP-1-AL-X** J3I170409-1-DUP 09/11/2013 12:17			0.54g,in	0.54g	NITA10464 08/27/13								
			AmtRec: 1X500MLAG;3X250MLAG		#Containers: 4				Scr:		Alpha:		Beta:
3 **M10LQ-1-AD** J3I170409-2-SAMP 09/11/2013 12:25			0.51g,in	0.51g	NITA10465 08/27/13								
			AmtRec: 1X500MLAG;3X250MLAG		#Containers: 4				Scr:		Alpha:		Beta:
4 **M10L0-1-AA-B** J3I170000-37-BLK 09/17/2013 11:29 pd			0.48g,in	0.48g	NITA10466 08/27/13								
			AmtRec:		#Containers: 1				Scr:		Alpha:		Beta:
5 **M10L0-1-AC-C** J3I170000-37-LCS 09/17/2013 11:29 pd			0.51g,in	0.51g	NISA1974 08/29/13								
			AmtRec:		#Containers: 1				Scr:		Alpha:		Beta:
6 **M10L0-1-AD-BN** J3I170000-37-IBLK 09/17/2013 11:29 pd													
			AmtRec:		#Containers: 1				Scr:		Alpha:		Beta:

9/18/2013 12:59:38 AM

Sample Preparation/Analysis

AF Ni-63 Prp PRP003/PRP005, Sep LSC017
S4 Nickel by ICP and Nickel-63 by Liquid Scint
5I CLIENT: HANFORD

AnalyDueDate: 09/24/2013

Batch: 3260037 **pCi/g**
SEQ Batch, Test: None

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

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

Comments:

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

M10LP1AD-SAMP Constituent List:

M10L01AA-BLK:

M10L01AC-LCS:

M10L01AD-IBLK:

M10LP1AD-SAMP Calc Info:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
M10L01AA-BLK:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
M10L01AC-LCS:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
M10L01AD-IBLK:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

9/24/2013 7:37:31 AM

ICOC Fraction Transfer/Status Report

ByDate: 9/24/2012, 9/29/2013, Batch: '3260037', User: *ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting			Comments
3260037						
AC		**Rev1C**	**WoodT**	9/18/2013 12:52:45		
SC			mcginnist	IsBatched	9/17/2013 12:05:50 PM	ICOC_RADCALC v4.8.49
SC			WoodT	InPrep	9/18/2013 12:52:45 AM	RL-PRP-003 REVISION 3
SC			WoodT	Prep1C	9/18/2013 12:55:36 AM	RL-PRP-003 REVISION 3
SC			JorgensonD	Sep2C	9/20/2013 6:16:59 PM	RL-LSC-017 REVISION 3
SC			NortonJ	InCnt1	9/23/2013 3:56:55 PM	RL-CI-005 REVISION 3
SC			mcginnist	Rev1C	9/24/2013 7:37:25 AM	RL-DR-001 Rev 4
AC			**WoodT**	9/18/2013 12:55:36		
AC			**JorgensonD**	9/20/2013 6:16:59 PM		
AC			**NortonJ**	9/23/2013 3:56:55 PM		
AC			**mcginnist**	9/24/2013 7:37:25		

AC: Accepting Entry; SC: Status Change

TestAmerica Richland

Richland Wa.

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Grp Rec Cnt: 5

ICOCFractions v4.8.44

9/17/2013 5:30:02 PM

Sample Preparation/Analysis

127642, Washington Closure Hanford LLC
Bechtel Hanford, Inc.

DW Alkaline Digestion by method 3060A
EA Chromium, Hexavalent (7196A)
5I CLIENT: HANFORD

Balance Id:
Pipet #:

AnalyDueDate: 09/24/2013

Sep1 DT/Tm Tech:

Batch: 3260076 **SOIL** **mg/kg** **PM, Quote: RW2, 27038**

Sep2 DT/Tm Tech:

SEQ Batch, Test: None All Tests: 3260033 AXTA, 3260034 CHTH, 3260035 5STC, 3260036 ATS6, 3260037 AFS4, 3260038 6ASO, 3260076 DWEA,

Prep Tech:

Work Ord, Lot, Sample Date	Total Amt/Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	Tracer Yield	Dish Size	Ppt or Geometry	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:
1 **M10LP-1-AA** J3I170409-1-SAMP													
09/11/2013 12:17			AmtRec: 1X500MLAG;3X250MLAG		#Containers: 4				Scr:		Alpha:		Beta:
2 **M10LP-1-AN-S** J3I170409-1-MS													
09/11/2013 12:17			AmtRec: 1X500MLAG;3X250MLAG		#Containers: 4				Scr:		Alpha:		Beta:
3 **M10LP-1-AP-X** J3I170409-1-DUP													
09/11/2013 12:17			AmtRec: 1X500MLAG;3X250MLAG		#Containers: 4				Scr:		Alpha:		Beta:
4 **M10LP-1-AQ-S** J3I170409-1-MS													
09/11/2013 12:17			AmtRec: 1X500MLAG;3X250MLAG		#Containers: 4				Scr:		Alpha:		Beta:
5 **M10LQ-1-AA** J3I170409-2-SAMP													
09/11/2013 12:25			AmtRec: 1X500MLAG;3X250MLAG		#Containers: 4				Scr:		Alpha:		Beta:
6 **M10QR-1-AA-B** J3I170000-76-BLK													
09/17/2013 17:30 pd			AmtRec:		#Containers: 1				Scr:		Alpha:		Beta:
7 **M10QR-1-AC-C** J3I170000-76-LCS													
09/17/2013 17:30 pd			AmtRec:		#Containers: 1				Scr:		Alpha:		Beta:

TestAmerica Richland Wa. Key: In - Initial Amt, fi - Final Amt, di - Diluted Amt, s1 - Sep1, s2 - Sep2 pd - Prep Dt, dc - Date Chg, r - Reference Dt, ec-Enrichment Cell, ct-Cocktailed Added

Page 1

ISV - Insufficient Volume for Analysis

WO Cnt: 7

ICOC v4.8.49

9/17/2013 5:30:02 PM

Sample Preparation/Analysis

DW Alkaline Digestion by method 3060A
EA Chromium, Hexavalent (7196A)
5I CLIENT: HANFORD

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

AnalyDueDate: 09/24/2013

Batch: 3260076 mg/kg
SEQ Batch, Test: None

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

Comments:

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

M10LP1AA-SAMP Constituent List:

M10LP1AN-MS Constituent List:

M10LP1AQ-MS:

M10QR1AA-BLK:

M10QR1AC-LCS:

M10LP1AA-SAMP Calc Info:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
M10LP1AN-MS Calc Info:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
M10LP1AQ-MS:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
M10QR1AA-BLK:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
M10QR1AC-LCS:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

ANALYTICAL REPORT

Job Number: 280-46767-1

SDG Number: JP0634

Job Description: SAF# RC-238

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

Attention: Joan H Kessner

Approved for release.
Kae E Yoder
Project Manager II
9/25/2013 12:43 PM

Kae E Yoder, Project Manager II
4955 Yarrow Street, Arvada, CO, 80002
(303)736-0190
kae.yoder@testamericainc.com
09/25/2013

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.

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CASE NARRATIVE

Client: Washington Closure Hanford

Project: WASHINGTON CLOSURE HANFORD

Report Number: 280-46767-1

SDG #: JP0634
SAF#: RC-238

Date SDG Closed: September 18, 2013
Data Deliverable: 7 Day / Summary

CLIENT ID	LAB ID	ANALYSES REQUESTED	ANALYSES PERFORMED
J1RPX6	280-46767-1	6010/7471	6010B/7471A
J1RPX7	280-46767-2	6010/7471	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 9/18/2013 9:00 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.9º C.

TOTAL METALS - SW846 6010B/7471A
Serial dilution of a digestate in batch 280-192087 indicates that physical and chemical interferences are present for Cobalt. Results have been flagged with an "X".

Low levels of Copper are present in the method blank associated with batch 280-192087. Because the concentration in the method blank is not present at a level greater than half the reporting limit, corrective action is deemed unnecessary.

It can be noted that the sample amount was greater than four times the spike amount for Aluminum, Iron and Manganese in the Matrix Spike performed on sample J1RPX6; therefore, control limits are not applicable.

Silicon was recovered outside the control limits in the Matrix Spike performed on sample J1RPX6, and the associated sample result has been flagged "N". There is no indication that the analytical system was operating out of control, and method accuracy has been verified by the acceptable LCS analysis data; therefore, corrective action is deemed unnecessary.

No other anomalies were encountered.

DATA REPORTING QUALIFIERS

Client: Washington Closure Hanford

Job Number: 280-46767-1
Sdg Number: JP0634

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
	X	Serial dilution in the analytical batch indicates that physical and chemical interferences are present.

SAMPLE SUMMARY

Client: Washington Closure Hanford

Job Number: 280-46767-1
Sdg Number: JP0634

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
280-46767-1	J1RPX6	Solid	09/11/2013 1217	09/18/2013 0900
280-46767-2	J1RPX7	Solid	09/11/2013 1225	09/18/2013 0900

METHOD SUMMARY

Client: Washington Closure Hanford

Job Number: 280-46767-1
Sdg Number: JP0634

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: 280-46767-1
Sdg Number: JP0634

Method	Analyst	Analyst ID
SW846 6010B	Trudell, Lynn-Anne M	LMT
SW846 7471A	Mooney, Joseph C	JM
ASTM D-2216	McKittrick, Ian B	IBM

SAMPLE RESULTS

Client: Washington Closure Hanford

Job Number: 280-46767-1
Sdg Number: JP0634

Client Sample ID: **J1RPX6**

Lab Sample ID: 280-46767-1
Client Matrix: Solid
% Moisture: 4.2

Date Sampled: 09/11/2013 1217
Date Received: 09/18/2013 0900

6010B Metals (ICP)

Analysis Method:	6010B	Analysis Batch:	280-192591	Instrument ID:	MT_026
Prep Method:	3050B	Prep Batch:	280-192087	Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.03 g
Analysis Date:	09/20/2013 1043			Final Weight/Volume:	100 mL
Prep Date:	09/19/2013 1230				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		13200		1.6	5.1
Antimony		0.39	U	0.39	0.61
Arsenic		6.3		0.67	1.0
Barium		137		0.077	0.51
Beryllium		0.35		0.033	0.20
Boron		1.2	B	0.99	2.0
Cadmium		0.17	B	0.042	0.20
Calcium		5010		14.3	50.7
Chromium		22.9		0.059	0.20
Cobalt		8.4	X	0.10	1.0
Copper		19.1		0.22	1.0
Iron		22100		3.9	5.1
Lead		7.7		0.27	0.51
Magnesium		6940		3.7	20.3
Manganese		392		0.10	1.0
Molybdenum		0.26	U	0.26	2.0
Nickel		21.3		0.12	4.1
Potassium		1370		41.5	304
Selenium		0.87	U	0.87	1.0
Silicon		278	N	5.7	10.1
Silver		0.16	U	0.16	0.20
Sodium		225		59.8	122
Vanadium		40.5		0.095	2.0
Zinc		53.9		0.40	1.0

7471A Mercury (CVAA)

Analysis Method:	7471A	Analysis Batch:	280-192429	Instrument ID:	MT_034
Prep Method:	7471A	Prep Batch:	280-192148	Lab File ID:	130919taa.txt
Dilution:	1.0			Initial Weight/Volume:	.63 g
Analysis Date:	09/19/2013 1634			Final Weight/Volume:	50 mL
Prep Date:	09/19/2013 1120				

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

Client: Washington Closure Hanford

Job Number: 280-46767-1
Sdg Number: JP0634

Client Sample ID: **J1RPX7**

Lab Sample ID: 280-46767-2
Client Matrix: Solid
% Moisture: 5.8

Date Sampled: 09/11/2013 1225
Date Received: 09/18/2013 0900

6010B Metals (ICP)

Analysis Method:	6010B	Analysis Batch:	280-192591	Instrument ID:	MT_026
Prep Method:	3050B	Prep Batch:	280-192087	Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.08 g
Analysis Date:	09/20/2013 1053			Final Weight/Volume:	100 mL
Prep Date:	09/19/2013 1230				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		11600		1.5	4.9
Antimony		0.37	U	0.37	0.59
Arsenic		4.8		0.65	0.98
Barium		118		0.075	0.49
Beryllium		0.31		0.032	0.20
Boron		2.3		0.96	2.0
Cadmium		0.31		0.040	0.20
Calcium		4930		13.9	49.2
Chromium		88.1		0.057	0.20
Cobalt		7.6	X	0.098	0.98
Copper		18.6		0.21	0.98
Iron		19900		3.7	4.9
Lead		8.4		0.27	0.49
Magnesium		6080		3.6	19.7
Manganese		573		0.098	0.98
Molybdenum		0.26	U	0.26	2.0
Nickel		18.6		0.12	3.9
Potassium		2420		40.3	295
Selenium		0.85	U	0.85	0.98
Silicon		281		5.6	9.8
Silver		0.16	U	0.16	0.20
Sodium		213		58.0	118
Vanadium		48.2		0.092	2.0
Zinc		63.3		0.39	0.98

7471A Mercury (CVAA)

Analysis Method:	7471A	Analysis Batch:	280-192429	Instrument ID:	MT_034
Prep Method:	7471A	Prep Batch:	280-192148	Lab File ID:	130919taa.txt
Dilution:	1.0			Initial Weight/Volume:	.48 g
Analysis Date:	09/19/2013 1646			Final Weight/Volume:	50 mL
Prep Date:	09/19/2013 1120				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.15		0.0073	0.023

Client: Washington Closure Hanford

Job Number: 280-46767-1
Sdg Number: JP0634

General Chemistry

Client Sample ID: **J1RPX6**

Lab Sample ID: 280-46767-1
Client Matrix: Solid

Date Sampled: 09/11/2013 1217
Date Received: 09/18/2013 0900

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Percent Moisture	4.2		%	0.10	0.10	1.0	D-2216

Analysis Batch: 280-192151 Analysis Date: 09/19/2013 0800 DryWt Corrected: N

Client: Washington Closure Hanford

Job Number: 280-46767-1
Sdg Number: JP0634

General Chemistry

Client Sample ID: **J1RPX7**

Lab Sample ID: 280-46767-2
Client Matrix: Solid

Date Sampled: 09/11/2013 1225
Date Received: 09/18/2013 0900

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Percent Moisture	5.8		%	0.10	0.10	1.0	D-2216

Analysis Batch: 280-192151 Analysis Date: 09/19/2013 0800 DryWt Corrected: N

QUALITY CONTROL RESULTS

Client: Washington Closure Hanford

Job Number: 280-46767-1
Sdg Number: JP0634

Method Blank - Batch: 280-192087

Method: 6010B
Preparation: 3050B

Lab Sample ID:	MB 280-192087/1-A	Analysis Batch:	280-192591	Instrument ID:	MT_026
Client Matrix:	Solid	Prep Batch:	280-192087	Lab File ID:	N/A
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1 g
Analysis Date:	09/20/2013 1038	Units:	mg/Kg	Final Weight/Volume:	100 mL
Prep Date:	09/19/2013 1230				
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	0.341	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	0.40	U	0.40	1.0

Client: Washington Closure Hanford

Job Number: 280-46767-1
Sdg Number: JP0634

Lab Control Sample - Batch: 280-192087

Method: 6010B
Preparation: 3050B

Lab Sample ID:	LCS 280-192087/2-A	Analysis Batch:	280-192591	Instrument ID:	MT_026
Client Matrix:	Solid	Prep Batch:	280-192087	Lab File ID:	N/A
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1 g
Analysis Date:	09/20/2013 1041	Units:	mg/Kg	Final Weight/Volume:	100 mL
Prep Date:	09/19/2013 1230				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Aluminum	200	190.6	95	82 - 116	
Antimony	50.0	49.23	98	82 - 110	
Arsenic	100	99.89	100	85 - 110	
Barium	200	199.1	100	87 - 112	
Beryllium	5.00	4.86	97	84 - 114	
Boron	100	98.43	98	80 - 120	
Cadmium	10.0	10.14	101	87 - 110	
Calcium	5000	4875	98	82 - 114	
Chromium	20.0	19.66	98	84 - 114	
Cobalt	50.0	48.68	97	87 - 110	
Copper	25.0	25.15	101	88 - 110	
Iron	100	98.69	99	87 - 120	
Lead	50.0	49.54	99	86 - 110	
Magnesium	5000	4878	98	90 - 110	
Manganese	50.0	48.36	97	88 - 110	
Molybdenum	100	98.21	98	86 - 110	
Nickel	50.0	48.75	98	87 - 110	
Potassium	5000	4957	99	89 - 110	
Selenium	200	199.4	100	83 - 110	
Silicon	1000	132.1	13	10 - 70	
Silver	5.00	5.04	101	87 - 114	
Sodium	5000	5141	103	90 - 112	
Vanadium	50.0	48.75	97	88 - 110	
Zinc	50.0	48.27	97	76 - 114	

Client: Washington Closure Hanford

Job Number: 280-46767-1
Sdg Number: JP0634

Matrix Spike - Batch: 280-192087

Method: 6010B
Preparation: 3050B

Lab Sample ID:	280-46767-1	Analysis Batch:	280-192591	Instrument ID:	MT_026
Client Matrix:	Solid	Prep Batch:	280-192087	Lab File ID:	N/A
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1.04 g
Analysis Date:	09/20/2013 1050	Units:	mg/Kg	Final Weight/Volume:	100 mL
Prep Date:	09/19/2013 1230				
Leach Date:	N/A				

Analyte	Sample Result/Qual		Spike Amount	Result	% Rec.	Limit	Qual
Aluminum	13200		201	16390	1599	50 - 200	4
Antimony	0.39	U	50.2	16.46	33	20 - 200	
Arsenic	6.3		100	96.01	89	76 - 111	
Barium	137		201	329.5	96	52 - 159	
Beryllium	0.35		5.02	4.78	88	72 - 105	
Boron	1.2	B	100	87.24	86	80 - 120	
Cadmium	0.17	B	10.0	9.39	92	40 - 130	
Calcium	5010		5020	10350	106	43 - 165	
Chromium	22.9		20.1	43.83	104	70 - 200	
Cobalt	8.4		50.2	51.65	86	72 - 106	
Copper	19.1		25.1	41.97	91	37 - 187	
Iron	22100		100	22690	579	70 - 200	4
Lead	7.7		50.2	50.88	86	70 - 200	
Magnesium	6940		5020	11880	98	64 - 145	
Manganese	392		50.2	440.1	95	40 - 200	4
Molybdenum	0.26	U	100	86.48	86	75 - 103	
Nickel	21.3		50.2	64.45	86	61 - 126	
Potassium	1370		5020	6383	100	56 - 172	
Selenium	0.87	U	201	179.4	89	76 - 104	
Silicon	278		1000	452.8	17	20 - 200	N
Silver	0.16	U	5.02	4.78	95	75 - 141	
Sodium	225		5020	5096	97	78 - 111	
Vanadium	40.5		50.2	91.92	103	50 - 169	
Zinc	53.9		50.2	98.47	89	70 - 200	

Client: Washington Closure Hanford

Job Number: 280-46767-1
Sdg Number: JP0634

Duplicate - Batch: 280-192087

Method: 6010B
Preparation: 3050B

Lab Sample ID:	280-46767-1	Analysis Batch:	280-192591	Instrument ID:	MT_026
Client Matrix:	Solid	Prep Batch:	280-192087	Lab File ID:	N/A
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1.01 g
Analysis Date:	09/20/2013 1048	Units:	mg/Kg	Final Weight/Volume:	100 mL
Prep Date:	09/19/2013 1230				
Leach Date:	N/A				

Analyte	Sample Result/Qual		Result	RPD	Limit	Qual
Aluminum	13200		13620	3	40	
Antimony	0.39	U	0.39	NC	40	U
Arsenic	6.3		5.71	10	30	
Barium	137		142.8	4	30	
Beryllium	0.35		0.369	5	30	
Boron	1.2	B	1.00	14	30	B
Cadmium	0.17	B	0.186	8	30	B
Calcium	5010		5203	4	30	
Chromium	22.9		23.79	4	40	
Cobalt	8.4		8.44	0.8	30	
Copper	19.1		19.42	1	30	
Iron	22100		22780	3	40	
Lead	7.7		7.56	2	40	
Magnesium	6940		7080	2	30	
Manganese	392		382.1	3	40	
Molybdenum	0.26	U	0.27	NC	30	U
Nickel	21.3		21.49	1	30	
Potassium	1370		1403	2	40	
Selenium	0.87	U	0.89	NC	30	U
Silicon	278		280.1	0.8	40	
Silver	0.16	U	0.17	NC	30	U
Sodium	225		228.5	2	30	
Vanadium	40.5		42.11	4	30	
Zinc	53.9		55.09	2	40	

Client: Washington Closure Hanford

Job Number: 280-46767-1
Sdg Number: JP0634

Method Blank - Batch: 280-192148

Method: 7471A
Preparation: 7471A

Lab Sample ID:	MB 280-192148/1-A	Analysis Batch:	280-192429	Instrument ID:	MT_034
Client Matrix:	Solid	Prep Batch:	280-192148	Lab File ID:	130919taa.txt
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	.6 g
Analysis Date:	09/19/2013 1629	Units:	mg/Kg	Final Weight/Volume:	50 mL
Prep Date:	09/19/2013 1120				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Mercury	0.0055	U	0.0055	0.017

Lab Control Sample - Batch: 280-192148

Method: 7471A
Preparation: 7471A

Lab Sample ID:	LCS 280-192148/2-A	Analysis Batch:	280-192429	Instrument ID:	MT_034
Client Matrix:	Solid	Prep Batch:	280-192148	Lab File ID:	130919taa.txt
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	.6 g
Analysis Date:	09/19/2013 1632	Units:	mg/Kg	Final Weight/Volume:	50 mL
Prep Date:	09/19/2013 1120				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Mercury	0.417	0.414	99	87 - 111	

Matrix Spike - Batch: 280-192148

Method: 7471A
Preparation: 7471A

Lab Sample ID:	280-46767-1	Analysis Batch:	280-192429	Instrument ID:	MT_034
Client Matrix:	Solid	Prep Batch:	280-192148	Lab File ID:	130919taa.txt
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	.60 g
Analysis Date:	09/19/2013 1639	Units:	mg/Kg	Final Weight/Volume:	50 mL
Prep Date:	09/19/2013 1120				
Leach Date:	N/A				

Analyte	Sample Result/Qual		Spike Amount	Result	% Rec.	Limit	Qual
Mercury	0.0055	U	0.435	0.421	97	87 - 111	

Client: Washington Closure Hanford

Job Number: 280-46767-1
Sdg Number: JP0634

Duplicate - Batch: 280-192148

Method: 7471A
Preparation: 7471A

Lab Sample ID:	280-46767-1	Analysis Batch:	280-192429	Instrument ID:	MT_034
Client Matrix:	Solid	Prep Batch:	280-192148	Lab File ID:	130919taa.txt
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	.61 g
Analysis Date:	09/19/2013 1636	Units:	mg/Kg	Final Weight/Volume:	50 mL
Prep Date:	09/19/2013 1120				
Leach Date:	N/A				

Analyte	Sample Result/Qual		Result	RPD	Limit	Qual
Mercury	0.0055	U	0.0057	NC	20	U

Client: Washington Closure Hanford

Job Number: 280-46767-1
Sdg Number: JP0634

Duplicate - Batch: 280-192151

Method: D-2216
Preparation: N/A

Lab Sample ID:	280-46767-1	Analysis Batch:	280-192151	Instrument ID:	No Equipment Assigned
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	N/A
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	
Analysis Date:	09/19/2013 0800	Units:	%	Final Weight/Volume:	
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Percent Moisture	4.2	4.1	0.8	20	

Client: Washington Closure Hanford

Job Number: 280-46767-1
Sdg Number: JP0634

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
Metals					
Prep Batch: 280-192087					
LCS 280-192087/2-A	Lab Control Sample	T	Solid	3050B	
MB 280-192087/1-A	Method Blank	T	Solid	3050B	
280-46767-1	J1RPX6	T	Solid	3050B	
280-46767-1DU	Duplicate	T	Solid	3050B	
280-46767-1MS	Matrix Spike	T	Solid	3050B	
280-46767-2	J1RPX7	T	Solid	3050B	
Prep Batch: 280-192148					
LCS 280-192148/2-A	Lab Control Sample	T	Solid	7471A	
MB 280-192148/1-A	Method Blank	T	Solid	7471A	
280-46767-1	J1RPX6	T	Solid	7471A	
280-46767-1DU	Duplicate	T	Solid	7471A	
280-46767-1MS	Matrix Spike	T	Solid	7471A	
280-46767-2	J1RPX7	T	Solid	7471A	
Analysis Batch:280-192429					
LCS 280-192148/2-A	Lab Control Sample	T	Solid	7471A	280-192148
MB 280-192148/1-A	Method Blank	T	Solid	7471A	280-192148
280-46767-1	J1RPX6	T	Solid	7471A	280-192148
280-46767-1DU	Duplicate	T	Solid	7471A	280-192148
280-46767-1MS	Matrix Spike	T	Solid	7471A	280-192148
280-46767-2	J1RPX7	T	Solid	7471A	280-192148
Analysis Batch:280-192591					
LCS 280-192087/2-A	Lab Control Sample	T	Solid	6010B	280-192087
MB 280-192087/1-A	Method Blank	T	Solid	6010B	280-192087
280-46767-1	J1RPX6	T	Solid	6010B	280-192087
280-46767-1DU	Duplicate	T	Solid	6010B	280-192087
280-46767-1MS	Matrix Spike	T	Solid	6010B	280-192087
280-46767-2	J1RPX7	T	Solid	6010B	280-192087

Report Basis
T = Total

General Chemistry

Analysis Batch:280-192151					
280-46767-1	J1RPX6	T	Solid	D-2216	
280-46767-1DU	Duplicate	T	Solid	D-2216	
280-46767-2	J1RPX7	T	Solid	D-2216	

Report Basis
T = Total