SAF-RC-148
300 Area D4 Waste Sites – Soil Full Protocol
FINAL DATA PACKAGE

COMPLETE COPY OF DATA PACKAGE TO:

Kathy Wendt H4-21 KW 11/20/12
INITIAL/DATE

COMMENTS:

SDG J01610 SAF-RC-148

Rad only Chem only ☑ Rad & Chem

☑ Complete Partial

Sample Location/Waste Site: 300-46 Waste Site (3706 Bldg) Verification

Analytical Data Package Prepared For

Washington Closure Hanford

Radiochemical Analysis By

TestAmerica

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

Assigned Laboratory Code: TARL

Data Package Contains 80 *Pages*

Report No.: 53726

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.
J01610	RC-148	J1R432	J2J240450-1	MW4D01AA	9MW4D010	2299055
		J1R432	J2J240450-1	MW4D01AJ	9MW4D010	2299063
		J1R432	J2J240450-1	MW4D01AH	9MW4D010	2299065
		J1R432	J2J240450-1	MW4D01AG	9MW4D010	2299066
		J1R432	J2J240450-1	MW4D01AE	9MW4D010	2299067
		J1R432	J2J240450-1	MW4D01AC	9MW4D010	2299068
		J1R432	J2J240450-1	MW4D01AF	9MW4D010	2299069
		J1R432	J2J240450-1	MW4D02AD	9MW4D020	2311041

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Certificate of Analysis

Washington Hanford Closure
2620 Fermi Avenue
Richland, WA 99354

TestAmerica Laboratories, Inc.

November 14, 2012

Attention: Joan Kessner

SAF Number	:	RC-148
Date SDG Closed	:	October 24, 2012
Number of Samples	:	One (1)
Sample Type	:	Soil
SDG Number	:	J01610
Data Deliverable	:	21– Day / Summary

CASE NARRATIVE

I. Introduction

On October 24, 2012, one soil sample was received at TestAmerica for radiochemical and chemical analysis. Upon receipt, the sample was assigned the following laboratory ID number to correspond with the Washington Closure Hanford (WCH) specific ID:

WCH ID#	TARL ID#	MATRIX	DATE OF RECEIPT
J1R432	MW4D0	SOIL	10/24/12

II. Sample Receipt

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

III. Analytical Results/Methodology

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

The requested analyses were:

Alpha Spectroscopy
Plutonium-238, -239/240 by method RL-ALP-002
Uranium 234, 235 and 238 by method RL-ALP-015
Gas Proportional Counting
Strontium-90 by method RL-GPC-003
Gamma Spectroscopy
Gamma Spec by method RL-GAM-001

Liquid Scintillation Counting
Technetium-99 by method RL-LSC-013
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, batch blank, sample and sample duplicate (J1R432) results are within contractual requirements.

Uranium 234, 235 and 238 by method RL-ALP-015:
The LCS, batch blank, sample and sample duplicate (J1R432) results are within contractual requirements.

Gas Proportional Counting
Strontium-90 by method RL-GPC-003:
The sample duplicate and batch blank were inadvertently spilled during separations. The batch was reanalyzed for acceptable results. Except as noted; the LCS, batch blank, sample and sample duplicate (J1R432) results are within contractual requirements.

Gamma Spectroscopy
Gamma Spec by method RL-GAM-001:
The LCS, batch blank, sample and sample duplicate (J1R432) results are within contractual requirements.

Liquid Scintillation Counting
Technetium-99 by method RL-LSC-013:
The LCS, batch blank, sample, sample duplicate (J1R432), and sample matrix spike (J1R432) results are within contractual requirements.

Tritium by method RL-LSC-005:
The LCS, batch blank, sample and sample duplicate (J1R432) results are within contractual requirements.

Carbon-14 by method RL-LSC-008:

On October 25, 2012 the sample was shipped to the St Louis laboratory for analysis per the client's request. See Appendix – A for the C14 results.

Nickel-63 by method RL-LCS-017:
The LCS, batch blank, sample and sample duplicate (J1R432) results are within contractual requirements.

Chemical Analysis
Hexavalent Chromium by EPA method 7196A
The LCS, batch blank, sample, sample duplicate (J1R432) and sample matrix spike (J1R432) 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

TestAmerica TARL

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

Date: 14-Nov-12

Report No. : 53726

SDG No: J01610

Batch	Client Id Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	MDL	CRDL	RPD
2299069 PUISO_PLATE_AEA									
J1R432									
	MW4D01AF	PU-238	1.33E-02 +- 2.8E-02	U	pCi/g	100%	5.05E-02	1.00E+00	
		PU239/40	-2.22E-03 +- 2.8E-02	U	pCi/g	100%	6.34E-02	1.00E+00	
J1R432 DUP									
	MW4D01A	PU-238	-4.62E-03 +- 3.3E-02	U	pCi/g	92%	8.52E-02	1.00E+00	412.2
		PU239/40	-1.98E-03 +- 3.3E-02	U	pCi/g	92%	7.12E-02	1.00E+00	-11.6
2299068 UISO_IE_PLATE_AEA									
J1R432									
	MW4D01AC	U-234	4.92E-01 +- 1.7E-01		pCi/g	91%	5.64E-02	1.00E+00	
		U-235	1.18E-02 +- 2.4E-02	U	pCi/g	91%	4.29E-02	1.00E+00	
		U-238	3.61E-01 +- 1.5E-01		pCi/g	91%	6.29E-02	1.00E+00	
J1R432 DUP									
	MW4D01AV	U-234	3.10E-01 +- 1.4E-01		pCi/g	88%	5.61E-02	1.00E+00	45.4
		U-235	3.79E-02 +- 4.5E-02	U	pCi/g	88%	5.23E-02	1.00E+00	105.2
		U-238	2.98E-01 +- 1.3E-01		pCi/g	88%	5.23E-02	1.00E+00	19.3
2299063 GAMMA_GS									
J1R432									
	MW4D01AJ	AMERICIUM 241	4.67E-03 +- 1.9E-02	U	pCi/g		3.23E-02		
		CE-144	-1.14E-02 +- 5.7E-02	U	pCi/g		9.67E-02		
		CO-60	1.06E-02 +- 1.6E-02	U	pCi/g		2.91E-02	5.00E-02	
		CS-134	2.11E-02 +- 1.7E-02	U	pCi/g		3.07E-02		
		CS-137	5.72E-03 +- 1.4E-02	U	pCi/g		2.45E-02	1.00E-01	
		EU-152	-8.63E-03 +- 3.0E-02	U	pCi/g		5.06E-02	1.00E-01	
		EU-154	2.00E-02 +- 4.7E-02	U	pCi/g		8.60E-02	1.00E-01	
		EU-155	1.70E-02 +- 2.9E-02	U	pCi/g		4.88E-02	1.00E-01	
		RA-226	4.40E-01 +- 8.0E-02		pCi/g		4.22E-02		
		RA-228	7.04E-01 +- 1.5E-01		pCi/g		9.04E-02		
		RU-106	5.87E-02 +- 1.1E-01	U	pCi/g		2.00E-01		
		SB-125	-5.91E-03 +- 3.2E-02	U	pCi/g		5.26E-02		
		U-235	1.98E-02 +- 5.8E-02	U	pCi/g		1.01E-01	1.00E+00	
		U-238-TH	3.77E-01 +- 1.9E-01		pCi/g		2.38E-01		
		ZN-65	2.32E-03 +- 4.0E-02	U	pCi/g		5.81E-02		
J1R432 DUP									
	MW4D01AN	AMERICIUM 241	1.28E-02 +- 1.8E-02	U	pCi/g		3.18E-02		93.1
		CE-144	6.14E-02 +- 5.3E-02	U	pCi/g		9.41E-02		291.0
		CO-60	-1.98E-02 +- 1.6E-02	U	pCi/g		2.45E-02	5.00E-02	-664.4
		CS-134	2.73E-02 +- 1.6E-02	U	pCi/g		3.05E-02		25.5
		CS-137	7.95E-03 +- 1.3E-02	U	pCi/g		2.36E-02	1.00E-01	32.6

TestAmerica

rptSTLRchSaSummary2 V5.2.22 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 TARL

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

Date: 14-Nov-12

Report No. : 53726

SDG No: J01610

Batch	Client Id Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	MDL	CRDL	RPD
2299063 GAMMA_GS									
J1R432 DUP									
	MW4D01AN	EU-152	-6.55E-03 +- 3.0E-02	U	pCi/g		5.04E-02	1.00E-01	-27.4
		EU-154	-9.50E-04 +- 4.6E-02	U	pCi/g		7.99E-02	1.00E-01	219.9
		EU-155	6.03E-02 +- 2.9E-02	U	pCi/g		4.96E-02	1.00E-01	111.9
		RA-226	4.60E-01 +- 7.6E-02		pCi/g		4.21E-02		4.5
		RA-228	7.80E-01 +- 1.5E-01		pCi/g		9.67E-02		10.3
		RU-106	2.81E-03 +- 1.1E-01	U	pCi/g		1.84E-01		181.7
		SB-125	3.33E-03 +- 2.9E-02	U	pCi/g		5.00E-02		-715.8
		U-235	2.43E-02 +- 5.6E-02	U	pCi/g		9.78E-02	1.00E+00	20.4
		U-238-TH	3.28E-01 +- 2.1E-01		pCi/g		2.39E-01		14.1
		ZN-65	1.02E-02 +- 3.7E-02	U	pCi/g		5.63E-02		126.2
2311041 SRTOT_SEP_PRECIP_GPC									
J1R432									
	MW4D02AD	STRONTIUM	5.73E-02 +- 7.9E-02	U	pCi/g	60%	1.63E-01		
J1R432 DUP									
	MW4D02AP	STRONTIUM	6.78E-02 +- 8.1E-02	U	pCi/g	58%	1.66E-01		16.8
2299055 7196_CR6									
J1R432									
	MW4D01AA	HEXCHROME	1.55E-01 +- 0.0E+00	U	mg/kg	N/A	1.55E-01	1.55E-01	
	MW4D01AM	HEXCHROME	1.55E-01 +- 0.0E+00	U	mg/kg	N/A	1.55E-01	3.50E-01	0.0
2299065 906.0_H3_LSC									
J1R432									
	MW4D01AH	H-3	1.50E-02 +- 1.7E-02	U	pCi/g	100%	3.55E-02	4.00E+02	
J1R432 DUP									
	MW4D01AQ	H-3	7.70E-03 +- 1.6E-02	U	pCi/g	100%	3.42E-02	4.00E+02	64.5
2299066 TC99_ETVDSK_LSC									
J1R432									
	MW4D01AG	TC-99	9.62E-02 +- 3.5E-01	U	pCi/g	100%	6.13E-01	1.50E+01	
J1R432 DUP									
	MW4D01AT	TC-99	3.94E-01 +- 3.6E-01	U	pCi/g	100%	6.19E-01	1.50E+01	121.5
2299067 NI63_LSC									
J1R432									
	MW4D01AE	NI-63	1.81E+00 +- 7.4E+00	U	pCi/g	90%	1.46E+01	3.00E+01	
J1R432 DUP									
	MW4D01AU	NI-63	3.71E+01 +- 9.8E+00		pCi/g	95%	1.35E+01	3.00E+01	181.4

No. of Results: 50

TestAmerica

rptSTLRchSaSummary2 V5.2.22 A2002

RPD - Relative Percent Difference.

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

QC Results Summary

TestAmerica TARL

Ordered by Method, Batch No, QC Type,.

Date: 14-Nov-12

Report No. : 53726

SDG No.: J01610

Batch Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	LCS Recovery	Bias	MDL
PUISO_PLATE_AEA								
2299069 BLANK QC,								
MW4ME1AA	PU-238	-2.09E-03 +- 3.5E-02	U	pCi/g	91%			7.51E-02
	PU239/40	-4.17E-03 +- 3.5E-02	U	pCi/g	91%			8.66E-02
2299069 LCS,								
MW4ME1AC	PU239/40	6.49E+00 +- 1.3E+00		pCi/g	100%	96%	0.0	9.25E-02
UISO_IE_PLATE_AEA								
2299068 BLANK QC,								
MW4MA1AA	U-234	6.25E-03 +- 2.9E-02	U	pCi/g	80%			8.82E-02
	U-235	1.14E-02 +- 2.9E-02	U	pCi/g	80%			6.82E-02
	U-238	1.42E-02 +- 4.1E-02	U	pCi/g	80%			1.05E-01
2299068 LCS,								
MW4MA1AC	U-234	3.44E+00 +- 7.5E-01		pCi/g	86%	109%	0.1	7.65E-02
	U-238	3.41E+00 +- 7.4E-01		pCi/g	86%	103%	0.0	8.43E-02
GAMMA_GS								
2299063 BLANK QC,								
MW4LV1AA	AMERICIUM 241	-8.61E-03 +- 1.3E-02	U	pCi/g				2.17E-02
	CE-144	3.81E-02 +- 4.3E-02	U	pCi/g				7.76E-02
	CO-60	6.01E-03 +- 9.7E-03	U	pCi/g				1.95E-02
	CS-134	1.04E-02 +- 1.1E-02	U	pCi/g				2.19E-02
	CS-137	-4.93E-03 +- 9.4E-03	U	pCi/g				1.59E-02
	EU-152	-1.73E-02 +- 2.5E-02	U	pCi/g				4.27E-02
	EU-154	-2.84E-02 +- 2.7E-02	U	pCi/g				4.19E-02
	EU-155	3.12E-03 +- 1.9E-02	U	pCi/g				3.38E-02
	RA-226	6.80E-02 +- 3.7E-02	U	pCi/g				5.48E-02
	RA-228	1.13E-02 +- 4.9E-02	U	pCi/g				8.78E-02
	RU-106	-3.02E-02 +- 8.8E-02	U	pCi/g				1.51E-01
	SB-125	9.30E-03 +- 2.4E-02	U	pCi/g				4.30E-02
	U-235	-7.97E-03 +- 4.4E-02	U	pCi/g				7.36E-02
	U-238-TH	-6.27E-02 +- 1.1E-01	U	pCi/g				1.76E-01
	ZN-65	-3.10E-02 +- 2.3E-02	U	pCi/g				3.48E-02
2299063 LCS,								
MW4LV1AC	CS-137	1.03E+00 +- 1.3E-01		pCi/g		98%	0.0	2.78E-02
	RA-226	9.83E-01 +- 1.4E-01		pCi/g		86%	-0.1	4.31E-02
	RA-228	7.99E-01 +- 1.6E-01		pCi/g		103%	0.0	8.19E-02
	U-238-TH	9.88E-01 +- 2.8E-01		pCi/g		82%	-0.2	2.92E-01
SRTOT_SEP_PRECIP_GPC								
2311041 BLANK QC,								
MW4LW2AA	STRONTIUM	-2.45E-02 +- 5.2E-02	U	pCi/g	83%			1.26E-01
2311041 LCS,								
MW4LW2AC	STRONTIUM	9.57E-01 +- 2.8E-01		pCi/g	79%	86%	-0.1	1.34E-01

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

rptSTLRchQcSummary V5.2.22 A2002

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: 14-Nov-12

TestAmerica TARL

Ordered by Method, Batch No, QC Type,.

Report No. : 53726

SDG No.: J01610

Batch Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	LCS Recovery	Bias	MDL
7196_CR6								
229055 LCS,								
MW4JG1AC	HEXCHROME	1.78E+01 +- 0.0E+00		mg/kg	N/A	94%	-0.1	1.55E-01
229055 BLANK QC,								
MW4JG1AA	HEXCHROME	1.55E-01 +- 0.0E+00	U	mg/kg	N/A			1.55E-01
7196_CR6								
2299055 MATRIX SPIKE, J1R432								
MW4D01AL	HEXCHROME	2.55E+01 +- 0.0E+00		mg/kg	N/A	88%	-0.1	1.55E-01
906.0_H3_LSC								
2299065 BLANK QC,								
MW4L01AA	H-3	-7.80E-03 +- 1.2E-02	U	pCi/g	100%			2.57E-02
2299065 LCS,								
MW4L01AC	H-3	2.39E-01 +- 2.1E-02		pCi/g	100%	103%	0.0	2.68E-02
TC99_ETVDSK_LSC								
2299066 BLANK QC,								
MW4L31AA	TC-99	3.06E-01 +- 3.6E-01	U	pCi/g	100%			6.19E-01
2299066 LCS,								
MW4L31AC	TC-99	5.85E+01 +- 3.5E+00		pCi/g	100%	88%	-0.1	6.14E-01
2299066 MATRIX SPIKE, J1R432								
MW4D01AR	TC-99	1.71E+02 +- 9.8E+00		pCi/g	100%	76%	-0.2	6.20E-01
NI63_LSC								
2299067 BLANK QC,								
MW4L61AA	NI-63	1.88E+00 +- 7.1E+00	U	pCi/g	93%			1.39E+01
2299067 LCS,								
MW4L61AC	NI-63	5.36E+02 +- 5.7E+01		pCi/g	74%	88%	-0.1	1.73E+01

No. of Results: 39

TestAmerica

rptSTLRchQcSummary V5.2.22 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: 14-Nov-12

Lab Name: TestAmerica | **SDG:** J01610 | **Collection Date:** 10/18/2012 12:04:00 PM

Lot-Sample No.: J2J240450-1 | **Report No. :** 53726 | **Received Date:** 10/24/2012 3:33:00 PM

Client Sample ID: J1R432 | **COC No. :** RC-148-071 | **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: 2299055	7196_CR6			**Work Order:**	MW4D01AA		**Report DB ID:**	9MW4D010				
HEXCHROME	**1.55E-01**	U		0.0E+00	1.55E-01	mg/kg	N/A 1.55E-01	*1.* *N/A*	10/31/12 10:00 a		2.5085 g	
Batch: 2299063	GAMMA_GS			**Work Order:**	MW4D01AJ		**Report DB ID:**	9MW4D010				
AMERICIUM 241	**4.67E-03**	U	1.9E-02	1.9E-02	3.23E-02	pCi/g		*0.14* *0.5*	10/26/12 03:04 p		358.6 g	GER19$1
CE-144	**-1.14E-02**	U	5.7E-02	5.7E-02	9.67E-02	pCi/g		*-0.12* *-0.4*	10/26/12 03:04 p		358.6 g	GER19$1
CO-60	**1.06E-02**	U	1.6E-02	1.6E-02	2.91E-02	pCi/g	5.00E-02	*0.37* *(1.4)*	10/26/12 03:04 p		358.6 g	GER19$1
CS-134	**2.11E-02**	U	1.7E-02	1.7E-02	3.07E-02	pCi/g		*0.69* *(2.5)*	10/26/12 03:04 p		358.6 g	GER19$1
CS-137	**5.72E-03**	U	1.4E-02	1.4E-02	2.45E-02	pCi/g	1.00E-01	*0.23* *0.84*	10/26/12 03:04 p		358.6 g	GER19$1
EU-152	**-8.63E-03**	U	3.0E-02	3.0E-02	5.06E-02	pCi/g	1.00E-01	*-0.17* *-0.57*	10/26/12 03:04 p		358.6 g	GER19$1
EU-154	**2.00E-02**	U	4.7E-02	4.7E-02	8.60E-02	pCi/g	1.00E-01	*0.23* *0.85*	10/26/12 03:04 p		358.6 g	GER19$1
EU-155	**1.70E-02**	U	2.9E-02	2.9E-02	4.88E-02	pCi/g	1.00E-01	*0.35* *(1.2)*	10/26/12 03:04 p		358.6 g	GER19$1
RA-226	**4.40E-01**		8.0E-02	8.0E-02	4.22E-02	pCi/g		*(10.4)* *(11.1)*	10/26/12 03:04 p		358.6 g	GER19$1

TestAmerica
rptSTLRchSample
V5.2.22 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: 14-Nov-12

Lab Name:	**TestAmerica**	**SDG:**	J01610	**Collection Date:**	10/18/2012 12:04:00 PM
Lot-Sample No.:	**J2J240450-1**	**Report No. :**	53726	**Received Date:**	10/24/2012 3:33:00 PM
Client Sample ID:	**J1R432**	**COC No. :**	RC-148-071	**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
RA-228	**7.04E-01**		1.5E-01	1.5E-01	9.04E-02	pCi/g		*(7.8)*	10/26/12 03:04 p		358.6	GER19$1
								(9.3)			g	
RU-106	**5.87E-02**	U	1.1E-01	1.1E-01	2.00E-01	pCi/g		*0.29*	10/26/12 03:04 p		358.6	GER19$1
								(1.)			g	
SB-125	**-5.91E-03**	U	3.2E-02	3.2E-02	5.26E-02	pCi/g		*-0.11*	10/26/12 03:04 p		358.6	GER19$1
								-0.37			g	
U-235	**1.98E-02**	U	5.8E-02	5.8E-02	1.01E-01	pCi/g		*0.2*	10/26/12 03:04 p		358.6	GER19$1
							1.00E+00	*0.68*			g	
U-238-TH	**3.77E-01**		1.9E-01	1.9E-01	2.38E-01	pCi/g		*(1.6)*	10/26/12 03:04 p		358.6	GER19$1
								(3.9)			g	
ZN-65	**2.32E-03**	U	4.0E-02	4.0E-02	5.81E-02	pCi/g		*0.04*	10/26/12 03:04 p		358.6	GER19$1
								0.12			g	
Batch: 2299065	906.0_H3_LSC			**Work Order:**	MW4D01AH		**Report DB ID:** 9MW4D010					
H-3	**1.50E-02**	U	1.5E-02	1.7E-02	3.55E-02	pCi/g	100%	*0.42*	10/26/12 09:32 p		106.8	LSC8
						1.69E-02	4.00E+02	*(1.7)*			g	
Batch: 2299066	TC99_ETVDSK_LSC			**Work Order:**	MW4D01AG		**Report DB ID:** 9MW4D010					
TC-99	**9.62E-02**	U	2.5E-01	3.5E-01	6.13E-01	pCi/g	100%	*0.16*	11/13/12 11:42 a		2.04	LSC3
						2.94E-01	1.50E+01	*0.56*			g	
Batch: 2299067	NI63_LSC			**Work Order:**	MW4D01AE		**Report DB ID:** 9MW4D010					
NI-63	**1.81E+00**	U	5.9E+00	7.4E+00	1.46E+01	pCi/g	90%	*0.12*	11/9/12 03:02 a		0.25	LSC3
						6.83E+00	3.00E+01	*0.49*			g	

TestAmerica
rptSTLRchSample
V5.2.22 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: 14-Nov-12

Lab Name: TestAmerica | **SDG:** J01610 | **Collection Date:** 10/18/2012 12:04:00 PM

Lot-Sample No.: J2J240450-1 | **Report No. :** 53726 | **Received Date:** 10/24/2012 3:33:00 PM

Client Sample ID: J1R432 | **COC No. :** RC-148-071 | **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: 2299068	UISO_IE_PLATE_AEA			**Work Order:** MW4D01AC			**Report DB ID:** 9MW4D010					
U-234	**4.92E-01**		1.5E-01	1.7E-01	5.64E-02	pCi/g	91%	*(8.7)*	11/8/12 11:13 a		1.04	ALP1
						1.23E-02	1.00E+00	*(5.6)*			g	
U-235	**1.18E-02**	U	2.4E-02	2.4E-02	4.29E-02	pCi/g	91%	*0.27*	11/8/12 11:13 a		1.04	ALP1
						5.48E-03	1.00E+00	*1.*			g	
U-238	**3.61E-01**		1.3E-01	1.5E-01	6.29E-02	pCi/g	91%	*(5.7)*	11/8/12 11:13 a		1.04	ALP1
						1.55E-02	1.00E+00	*(5.)*			g	
							Ratio U-234/238 = 1.4					
Batch: 2299069	PUISO_PLATE_AEA			**Work Order:** MW4D01AF			**Report DB ID:** 9MW4D010					
PU-238	**1.33E-02**	U	2.8E-02	2.8E-02	5.05E-02	pCi/g	100%	*0.26*	11/2/12 01:05 p		1.03	ALP38
						6.46E-03	1.00E+00	*0.96*			g	
PU239/40	**-2.22E-03**	U	2.8E-02	2.8E-02	6.34E-02	pCi/g	100%	*-0.04*	11/2/12 01:05 p		1.03	ALP38
						1.29E-02	1.00E+00	*-0.16*			g	
Batch: 2311041	SRTOT_SEP_PRECIP_GPC			**Work Order:** MW4D02AD			**Report DB ID:** 9MW4D020					
STRONTIUM	**5.73E-02**	U	7.7E-02	7.9E-02	1.63E-01	pCi/g	60%	*0.35*	11/9/12 08:14 a		6.02	GPC31A
						7.59E-02		*(1.5)*			g	

No. of Results: 25 **Comments:**

TestAmerica
rptSTLRchSample
V5.2.22 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: 14-Nov-12

DUPLICATE RESULTS

Lab Name:	TestAmerica	**SDG:**	J01610	**Collection Date:**	10/18/2012 12:04:00 PM
Lot-Sample No.:	J2J240450-1	**Report No. :**	53726	**Received Date:**	10/24/2012 3:33:00 PM
Client Sample ID:	J1R432	**COC No. :**	RC-148-071	**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: 2299055	7196_CR6			**Work Order:** MW4D01AM		**Report DB ID:** MW4D01RE			**Orig Sa DB ID:** 9MW4D010			
HEXCHROME	1.55E-01	U		0.0E+00	1.55E-01	mg/kg	N/A	1.	10/31/12 10:00 a		2.5056	
	1.55E-01	U	**RPD**	**0.0**		3.50E-01		N/A			g	

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

TestAmerica
rptSTLRchDupV5.
2.22 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: 14-Nov-12

DUPLICATE RESULTS

Lab Name:	TestAmerica	**SDG:**	J01610	**Collection Date:**	10/18/2012 12:04:00 PM
Lot-Sample No.:	J2J240450-1	**Report No. :**	53726	**Received Date:**	10/24/2012 3:33:00 PM
Client Sample ID:	J1R432 DUP	**COC No. :**	RC-148-071	**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: 2299063	GAMMA_GS			**Work Order:** MW4D01AN		**Report DB ID:** MW4D01NR			**Orig Sa DB ID:** 9MW4D010			
AMERICIUM 241	1.28E-02	U	1.8E-02	1.8E-02	3.18E-02	pCi/g		0.4	10/26/12 03:05 p		344.1	GER18$1
	4.67E-03	U	**RPD**	**93.1**				(1.4)			g	
CE-144	6.14E-02	U	5.3E-02	5.3E-02	9.41E-02	pCi/g		0.65	10/26/12 03:05 p		344.1	GER18$1
	-1.14E-02	U	**RPD**	**291.0**				(2.3)			g	
CO-60	-1.98E-02	U	1.6E-02	1.6E-02	2.45E-02	pCi/g		-0.81	10/26/12 03:05 p		344.1	GER18$1
	1.06E-02	U	**RPD**	**-664.4**		5.00E-02		-(2.5)			g	
CS-134	2.73E-02	U	1.6E-02	1.6E-02	3.05E-02	pCi/g		0.9	10/26/12 03:05 p		344.1	GER18$1
	2.11E-02	U	**RPD**	**25.5**				(3.4)			g	
CS-137	7.95E-03	U	1.3E-02	1.3E-02	2.36E-02	pCi/g		0.34	10/26/12 03:05 p		344.1	GER18$1
	5.72E-03	U	**RPD**	**32.6**		1.00E-01		(1.2)			g	
EU-152	-6.55E-03	U	3.0E-02	3.0E-02	5.04E-02	pCi/g		-0.13	10/26/12 03:05 p		344.1	GER18$1
	-8.63E-03	U	**RPD**	**-27.4**		1.00E-01		-0.44			g	
EU-154	-9.50E-04	U	4.6E-02	4.6E-02	7.99E-02	pCi/g		-0.01	10/26/12 03:05 p		344.1	GER18$1
	2.00E-02	U	**RPD**	**219.9**		1.00E-01		-0.04			g	
EU-155	6.03E-02	U	2.9E-02	2.9E-02	4.96E-02	pCi/g		(1.2)	10/26/12 03:05 p		344.1	GER18$1
	1.70E-02	U	**RPD**	**111.9**		1.00E-01		(4.2)			g	
RA-226	4.60E-01		7.6E-02	7.6E-02	4.21E-02	pCi/g		(10.9)	10/26/12 03:05 p		344.1	GER18$1
	4.40E-01		**RPD**	**4.5**				(12.)			g	
RA-228	7.80E-01		1.5E-01	1.5E-01	9.67E-02	pCi/g		(8.1)	10/26/12 03:05 p		344.1	GER18$1
	7.04E-01		**RPD**	**10.3**				(10.4)			g	
RU-106	2.81E-03	U	1.1E-01	1.1E-01	1.84E-01	pCi/g		0.02	10/26/12 03:05 p		344.1	GER18$1
	5.87E-02	U	**RPD**	**181.7**				0.05			g	

TestAmerica
rptSTLRchDupV5.
2.22 A2002

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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: 14-Nov-12

DUPLICATE RESULTS

Lab Name:	**TestAmerica**	**SDG:**	J01610	**Collection Date:**	10/18/2012 12:04:00 PM
Lot-Sample No.:	**J2J240450-1**	**Report No. :**	53726	**Received Date:**	10/24/2012 3:33:00 PM
Client Sample ID:	**J1R432 DUP**	**COC No. :**	RC-148-071	**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
SB-125	3.33E-03	U	2.9E-02	2.9E-02	5.00E-02	pCi/g		0.07	10/26/12 03:05 p		344.1	GER18$1
	-5.91E-03	U	**RPD**	**-715.8**				0.23			g	
U-235	2.43E-02	U	5.6E-02	5.6E-02	9.78E-02	pCi/g		0.25	10/26/12 03:05 p		344.1	GER18$1
	1.98E-02	U	**RPD**	**20.4**		1.00E+00		0.87			g	
U-238-TH	3.28E-01		2.1E-01	2.1E-01	2.39E-01	pCi/g		(1.4)	10/26/12 03:05 p		344.1	GER18$1
	3.77E-01		**RPD**	**14.1**				(3.1)			g	
ZN-65	1.02E-02	U	3.7E-02	3.7E-02	5.63E-02	pCi/g		0.18	10/26/12 03:05 p		344.1	GER18$1
	2.32E-03	U	**RPD**	**126.2**				0.56			g	
Batch: 2299065	906.0_H3_LSC			**Work Order:** MW4D01AQ		**Report DB ID:** MW4D01QR			**Orig Sa DB ID:** 9MW4D010			
H-3	7.70E-03	U	1.4E-02	1.6E-02	3.42E-02	pCi/g	100%	0.23	10/26/12 10:54 p		107.5	LSC8
	1.50E-02	U	**RPD**	**64.5**		4.00E+02		0.95			g	
Batch: 2299066	TC99_ETVDSK_LSC			**Work Order:** MW4D01AT		**Report DB ID:** MW4D01TR			**Orig Sa DB ID:** 9MW4D010			
TC-99	3.94E-01	U	2.7E-01	3.6E-01	6.19E-01	pCi/g	100%	0.64	11/13/12 01:49 p		2.02	LSC3
	9.62E-02	U	**RPD**	**121.5**		1.50E+01		(2.2)			g	
Batch: 2299067	NI63_LSC			**Work Order:** MW4D01AU		**Report DB ID:** MW4D01UR			**Orig Sa DB ID:** 9MW4D010			
NI-63	3.71E+01		7.3E+00	9.8E+00	1.35E+01	pCi/g	95%	(2.7)	11/9/12 03:25 a		0.25	LSC3
	1.81E+00	U	**RPD**	**181.4**		3.00E+01		(7.6)			g	
Batch: 2299068	UISO_IE_PLATE_AEA			**Work Order:** MW4D01AV		**Report DB ID:** MW4D01VR			**Orig Sa DB ID:** 9MW4D010			

TestAmerica
rptSTLRchDupV5.2.22 A2002

RPD - Relative Percent Difference.
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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: 14-Nov-12

DUPLICATE RESULTS

Lab Name:	**TestAmerica**	**SDG:**	J01610	**Collection Date:**	10/18/2012 12:04:00 PM
Lot-Sample No.:	**J2J240450-1**	**Report No. :**	53726	**Received Date:**	10/24/2012 3:33:00 PM
Client Sample ID:	**J1R432 DUP**	**COC No. :**	RC-148-071	**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
U-234	3.10E-01		1.3E-01	1.4E-01	5.61E-02	pCi/g	88%	(5.5)	11/8/12 11:13 a		1.02	ALP2
	4.92E-01		**RPD**	**45.4**		1.00E+00		(4.5)			g	
U-235	3.79E-02	U	4.5E-02	4.5E-02	5.23E-02	pCi/g	88%	0.73	11/8/12 11:13 a		1.02	ALP2
	1.18E-02	U	**RPD**	**105.2**		1.00E+00		(1.7)			g	
U-238	2.98E-01		1.2E-01	1.3E-01	5.23E-02	pCi/g	88%	(5.7)	11/8/12 11:13 a		1.02	ALP2
	3.61E-01		**RPD**	**19.3**		1.00E+00		(4.4)			g	
						Ratio U-234/238 = 1.0			***Alpha Spec Result Sum = 6.5E-01***			
Batch: 2299069	PUISO_PLATE_AEA			**Work Order:** MW4D01AW		**Report DB ID:** MW4D01WR			**Orig Sa DB ID:** 9MW4D010			
PU-238	-4.62E-03	U	3.3E-02	3.3E-02	8.52E-02	pCi/g	92%	-0.05	11/2/12 01:05 p		1.02	ALP39
	1.33E-02	U	**RPD**	**412.2**		1.00E+00		-0.28			g	
PU239/40	-1.98E-03	U	3.3E-02	3.3E-02	7.12E-02	pCi/g	92%	-0.03	11/2/12 01:05 p		1.02	ALP39
	-2.22E-03	U	**RPD**	**-11.6**		1.00E+00		-0.12			g	
									Alpha Spec Result Sum = 6.4E-01			
Batch: 2311041	SRTOT_SEP_PRECIP_GPC			**Work Order:** MW4D02AP		**Report DB ID:** MW4D02PR			**Orig Sa DB ID:** 9MW4D020			
STRONTIUM	6.78E-02	U	7.9E-02	8.1E-02	1.66E-01	pCi/g	58%	0.41	11/9/12 08:14 a		6.04	GPC31B
	5.73E-02	U	**RPD**	**16.8**				(1.7)			g	
									Alpha Spec Result Sum = 6.4E-01			

No. of Results: 24 **Comments:**

RPD - Relative Percent Difference.

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

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

FORM II

BLANK RESULTS

Date: 14-Nov-12

Lab Name: TestAmerica

Matrix: SOIL

SDG: J01610

Report No. : 53726

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: 229055	7196_CR6			**Work Order:**	MW4JG1AA		**Report DB ID:**	MW4JG1AB				
HEXCHROME	1.55E-01	U		0.0E+00	1.55E-01	mg/kg	N/A	1.	10/31/12 10:00 a		2.5	
						1.55E-01		N/A			g	
Batch: 2299069	PUISO_PLATE_AEA			**Work Order:**	MW4ME1AA		**Report DB ID:**	MW4ME1AB				
PU-238	-2.09E-03	U	3.5E-02	3.5E-02	7.51E-02	pCi/g	91%	-0.03	11/2/12 01:05 p		1.01	ALP40
					1.40E-02	1.00E+00		-0.12			g	
PU239/40	-4.17E-03	U	3.5E-02	3.5E-02	8.66E-02	pCi/g	91%	-0.05	11/2/12 01:05 p		1.01	ALP40
					1.98E-02	1.00E+00		-0.24			g	
Batch: 2299068	UISO_IE_PLATE_AEA			**Work Order:**	MW4MA1AA		**Report DB ID:**	MW4MA1AB				
U-234	6.25E-03	U	2.9E-02	2.9E-02	8.82E-02	pCi/g	80%	0.07	11/8/12 11:13 a		1.03	ALP3
					2.48E-02	1.00E+00		0.43			g	
U-235	1.14E-02	U	2.9E-02	2.9E-02	6.82E-02	pCi/g	80%	0.17	11/8/12 11:13 a		1.03	ALP3
					1.48E-02	1.00E+00		0.79			g	
U-238	1.42E-02	U	4.1E-02	4.1E-02	1.05E-01	pCi/g	80%	0.14	11/8/12 11:13 a		1.03	ALP3
					3.32E-02	1.00E+00		0.7			g	
								Ratio U-234/238 = 0.4				
Batch: 2299067	NI63_LSC			**Work Order:**	MW4L61AA		**Report DB ID:**	MW4L61AB				
NI-63	1.88E+00	U	5.6E+00	7.1E+00	1.39E+01	pCi/g	93%	0.14	11/9/12 03:48 a		0.25	LSC3
					6.49E+00	3.00E+01		0.53			g	
Batch: 2299066	TC99_ETVDSK_LSC			**Work Order:**	MW4L31AA		**Report DB ID:**	MW4L31AB				
TC-99	3.06E-01	U	2.6E-01	3.6E-01	6.19E-01	pCi/g	100%	0.49	11/13/12 02:52 p		2.03	LSC3
					2.97E-01	1.50E+01		(1.7)			g	
Batch: 2299065	906.0_H3_LSC			**Work Order:**	MW4L01AA		**Report DB ID:**	MW4L01AB				

TestAmerica

rptSTLRchBlank
V5.2.22 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: 14-Nov-12

Lab Name: TestAmerica

Matrix: SOIL

SDG: J01610

Report No. : 53726

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
H-3	-7.80E-03	U	1.0E-02	1.2E-02	2.57E-02	pCi/g	100%	-0.3	10/27/12 12:16 a		118.9	LSC8
					1.23E-02	4.00E+02		-(1.3)			g	
Batch: 2299063	GAMMA_GS			**Work Order:**	MW4LV1AA		**Report DB ID:**	MW4LV1AB				
AMERICIUM 241	-8.61E-03	U	1.3E-02	1.3E-02	2.17E-02	pCi/g		-0.4	10/26/12 03:04 p		348.0	GER15$1
								-(1.3)			g	
CE-144	3.81E-02	U	4.3E-02	4.3E-02	7.76E-02	pCi/g		0.49	10/26/12 03:04 p		348.0	GER15$1
								(1.8)			g	
CO-60	6.01E-03	U	9.7E-03	9.7E-03	1.95E-02	pCi/g		0.31	10/26/12 03:04 p		348.0	GER15$1
						5.00E-02		(1.2)			g	
CS-134	1.04E-02	U	1.1E-02	1.1E-02	2.19E-02	pCi/g		0.47	10/26/12 03:04 p		348.0	GER15$1
								(1.9)			g	
CS-137	-4.93E-03	U	9.4E-03	9.4E-03	1.59E-02	pCi/g		-0.31	10/26/12 03:04 p		348.0	GER15$1
						1.00E-01		-(1.)			g	
EU-152	-1.73E-02	U	2.5E-02	2.5E-02	4.27E-02	pCi/g		-0.41	10/26/12 03:04 p		348.0	GER15$1
						1.00E-01		-(1.4)			g	
EU-154	-2.84E-02	U	2.7E-02	2.7E-02	4.19E-02	pCi/g		-0.68	10/26/12 03:04 p		348.0	GER15$1
						1.00E-01		-(2.1)			g	
EU-155	3.12E-03	U	1.9E-02	1.9E-02	3.38E-02	pCi/g		0.09	10/26/12 03:04 p		348.0	GER15$1
						1.00E-01		0.32			g	
RA-226	6.80E-02	U	3.7E-02	3.7E-02	5.48E-02	pCi/g		(1.2)	10/26/12 03:04 p		348.0	GER15$1
								(3.7)			g	
RA-228	1.13E-02	U	4.9E-02	4.9E-02	8.78E-02	pCi/g		0.13	10/26/12 03:04 p		348.0	GER15$1
								0.46			g	
RU-106	-3.02E-02	U	8.8E-02	8.8E-02	1.51E-01	pCi/g		-0.2	10/26/12 03:04 p		348.0	GER15$1
								-0.69			g	

TestAmerica
rptSTLRchBlank
V5.2.22 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: 14-Nov-12

Lab Name: TestAmerica

Matrix: SOIL

SDG: J01610

Report No. : 53726

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
SB-125	9.30E-03	U	2.4E-02	2.4E-02	4.30E-02	pCi/g		0.22 0.78	10/26/12 03:04 p		348.0 g	GER15$1
U-235	-7.97E-03	U	4.4E-02	4.4E-02	7.36E-02	pCi/g 1.00E+00		-0.11 -0.37	10/26/12 03:04 p		348.0 g	GER15$1
U-238-TH	-6.27E-02	U	1.1E-01	1.1E-01	1.76E-01	pCi/g		-0.36 -(1.2)	10/26/12 03:04 p		348.0 g	GER15$1
ZN-65	-3.10E-02	U	2.3E-02	2.3E-02	3.48E-02	pCi/g		-0.89 -(2.7)	10/26/12 03:04 p		348.0 g	GER15$1
Batch: 2311041	SRTOT_SEP_PRECIP_GPC			**Work Order:**	MW4LW2AA		**Report DB ID:**	MW4LW2AB				
STRONTIUM	-2.45E-02	U	5.1E-02	5.2E-02	1.26E-01 5.86E-02	pCi/g	83%	-0.19 -0.95	11/9/12 08:14 a		6.03 g	GPC31D

No. of Results: 25 **Comments:**

TestAmerica
rptSTLRchBlank
V5.2.22 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: 14-Nov-12

Lab Name: TestAmerica

Matrix: SOIL

SDG: J01610

Report No. : 53726

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: 229055	7196_CR6			**Work Order:**	MW4JG1AC		**Report DB ID:**	MW4JG1AS					
HEXCHROME	1.78E+01			0.0E+00	1.55E-01	mg/kg	N/A	1.90E+01		94%	10/31/12 10:00 a	2.5	
							Rec Limits:	80	120	-0.1		g	
Batch: 2299069	PUISO_PLATE_AEA			**Work Order:**	MW4ME1AC		**Report DB ID:**	MW4ME1CS					
PU239/40	6.49E+00		5.9E-01	1.3E+00	9.25E-02	pCi/g	100%	6.76E+00	2.0E-01	96%	11/2/12 01:06 p	1.02	ALP41
							Rec Limits:	70	130	0.0		g	
Batch: 2299068	UISO_IE_PLATE_AEA			**Work Order:**	MW4MA1AC		**Report DB ID:**	MW4MA1CS					
U-234	3.44E+00		4.4E-01	7.5E-01	7.65E-02	pCi/g	86%	3.16E+00	1.7E-02	109%	11/8/12 11:13 a	1.03	ALP4
							Rec Limits:	70	130	0.1		g	
U-238	3.41E+00		4.4E-01	7.4E-01	8.43E-02	pCi/g	86%	3.31E+00	1.7E-02	103%	11/8/12 11:13 a	1.03	ALP4
							Rec Limits:	70	130	0.0		g	
Batch: 2299067	NI63_LSC			**Work Order:**	MW4L61AC		**Report DB ID:**	MW4L61CS					
NI-63	5.36E+02		2.2E+01	5.7E+01	1.73E+01	pCi/g	74%	6.08E+02	1.0E+01	88%	11/9/12 04:11 a	0.25	LSC3
							Rec Limits:	70	130	-0.1		g	
Batch: 2299066	TC99_ETVDSK_LSC			**Work Order:**	MW4L31AC		**Report DB ID:**	MW4L31CS					
TC-99	5.85E+01		1.1E+00	3.5E+00	6.14E-01	pCi/g	100%	6.67E+01	6.9E-01	88%	11/13/12 03:56 p	2.04	LSC3
							Rec Limits:	70	130	-0.1		g	
Batch: 2299065	906.0_H3_LSC			**Work Order:**	MW4L01AC		**Report DB ID:**	MW4L01CS					
H-3	2.39E-01		1.8E-02	2.1E-02	2.68E-02	pCi/g	100%	2.33E-01	7.0E-03	103%	10/27/12 01:38 a	117.2	LSC8
							Rec Limits:	70	130	0.0		g	
Batch: 2299063	GAMMA_GS			**Work Order:**	MW4LV1AC		**Report DB ID:**	MW4LV1CS					
CS-137	1.03E+00		1.3E-01	1.3E-01	2.78E-02	pCi/g		1.05E+00	1.1E-02	98%	10/26/12 03:06 p	350.1	GER16$1
							Rec Limits:	70	130	0.0		g	

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

rptSTLRchLcs
V5.2.22 A2002

FORM II

LCS RESULTS

Date: 14-Nov-12

Lab Name: TestAmerica

Matrix: SOIL

SDG: J01610

Report No. : 53726

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
RA-226	9.83E-01		1.4E-01	1.4E-01	4.31E-02	pCi/g		1.14E+00	1.2E-02	86%	10/26/12 03:06 p	350.1	GER16$1
							Rec Limits:	70	130	-0.1		g	
RA-228	7.99E-01		1.6E-01	1.6E-01	8.19E-02	pCi/g		7.78E-01	8.0E-03	103%	10/26/12 03:06 p	350.1	GER16$1
							Rec Limits:	70	130	0.0		g	
U-238-TH	9.88E-01		2.8E-01	2.8E-01	2.92E-01	pCi/g		1.20E+00	1.2E-02	82%	10/26/12 03:06 p	350.1	GER16$1
							Rec Limits:	70	130	-0.2		g	
Batch: 2311041	SRTOT_SEP_PRECIP_GPC			**Work Order:**	MW4LW2AC		**Report DB ID:**	MW4LW2CS					
STRONTIUM	9.57E-01		1.3E-01	2.8E-01	1.34E-01	pCi/g	79%	1.11E+00	1.3E-02	86%	11/9/12 08:14 a	6.03	GPC32A
							Rec Limits:	70	130	-0.1		g	

No. of Results: 12 **Comments:**

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

rptSTLRchLcs
V5.2.22 A2002

FORM II

MATRIX SPIKE RESULTS

Date: 14-Nov-12

Lab Name: TestAmerica **SDG:** J01610

Lot-Sample No.: J2J240450-1, J1R432 **Report No. :** 53726 **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: 2299055	**Work Order:**	MW4D01AL		**Report DB ID:**	MW4D01CW		**Orig Sa DB ID:**	9MW4D010				
HEXCHROME	2.55E+01			0.0E+00	1.55E-01	mg/kg	N/A	87.95%	2.90E+01	10/31/12 10:00 a	2.5089	7196_CR6
	1.55E-01										g	
Batch: 2299066	**Work Order:**	MW4D01AR		**Report DB ID:**	MW4D01RW		**Orig Sa DB ID:**	9MW4D010				
TC-99	1.71E+02		1.8E+00	9.8E+00	6.20E-01	pCi/g	100%	76.35%	2.25E+02	11/13/12 12:46 p	2.02	TC99_ETVDSK_LSC
	9.62E-02								2.3E+00		g	LSC3

Number of Results: 2

Comments:

TestAmerica
rptSTLRchMs
V5.2.22 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

11/6/2012 3:57:35 PM

Lot No., Due Date: J2J240450; 11/14/2012
Client, Site: 127642; S00X235B00 HANFORD
QC Batch No., Method Test: 2299069; RPUISO Pulso by ALP
SDG, Matrix: J01610; 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 Lisa Anderson **Date** 11/6/12

TestAmerica Richland
QAS_RADCALCv4.8.44

Page 1

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Data Review Checklist
RADIOCHEMISTRY
Second Level Review

Batch Number: 229969

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

Second Level Review: [signature] Date: 11/8/12

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

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Data Review/Verification Checklist

RADIOCHEMISTRY, First Level Review

11/9/2012 8:34:44 AM

Lot No., Due Date: J2J240450; 11/14/2012
Client, Site: 127642; S00X235B00 HANFORD
QC Batch No., Method Test: 2299068; RUISO Uiso by ALP
SDG, Matrix: J01610; 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 John Norton **Date** 11-9-12

TestAmerica Richland
QAS_RADCALCv4.8.44

Page 1

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Data Review Checklist
RADIOCHEMISTRY
Second Level Review

Batch Number: 2299068

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

Second Level Review: [signature] Date: 11/9/12

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

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Data Review/Verification Checklist

RADIOCHEMISTRY, First Level Review

11/9/2012 2:02:05 PM

Lot No., Due Date: J2J240450; 11/14/2012
Client, Site: 127642; S00X235B00 HANFORD
QC Batch No., Method Test: 2311041; RSRTOT SrTot by GPC
SDG, Matrix: J01610; 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:
NCM 10-22244

First Level [signature] **Date** 11/9/12

TestAmerica Richland
QAS_RADCALCv4.8.44

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Data Review Checklist
RADIOCHEMISTRY
Second Level Review

Batch Number: 23 11041

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
SEONCM #: 10-22214

Second Level Review: [signature] Date: 11/9/12

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

Clouseau
Nonconformance Memo

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

NCM #:	10-22244		
NCM Initiated By:	Lisa Antonson	Classification:	**Deficiency**
Date Opened:	11/09/2012	Status:	**PMREVIEW**
Date Closed:		Production Area:	Environmental - Sep
		Tests:	SrTot by GPC
		Lot #'s (Sample #'s):	J2J240450 (1), J2J250000 (64),
		QC Batches:	2299064,
Nonconformance:	Other (describe in detail)		
Subcategory:	Other (explanation required)		

Problem Description / Root Cause

Name	Date	Description
Lisa Antonson	11/09/2012	The blank and dup in the original batch were lost prior to counting. The batch was rerun with good results.

Corrective Action

Name	Date	Corrective Action
Lisa Antonson	11/09/2012	The batch was rerun.

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: 11/9/2012

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Data Review/Verification Checklist

RADIOCHEMISTRY, First Level Review

10/30/2012 10:26:07 AM

Lot No., Due Date: J2J240450; 11/14/2012
Client, Site: 127642; S00X235B00 HANFORD
QC Batch No., Method Test: 2299063; RGAMMA Gamma by GER
SDG, Matrix: J01610; 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:

First Level John Norton **Date** 10-30-12

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: 2290063

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

Second Level Review: [signature] Date: 10/30/12

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

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Data Review/Verification Checklist

RADIOCHEMISTRY, First Level Review

11/14/2012 10:36:15 AM

Lot No., Due Date: J2J240450; 11/14/2012
Client, Site: 127642; S00X235B00 HANFORD
QC Batch No., Method Test: 2299066; RTC99 Tc-99 by LSC
SDG, Matrix: J01610; 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 John Vorhes **Date** 11-14-12

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: 2299016

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 = 15 pCi/g

Second Level Review: Rhonda Wyatt Date: 11/14/12

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

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Data Review/Verification Checklist

RADIOCHEMISTRY, First Level Review

10/30/2012 10:29:38 AM

Lot No., Due Date: J2J240450; 11/14/2012
Client, Site: 127642; S00X235B00 HANFORD
QC Batch No., Method Test: 2299065; RTRITIUM H-3 by LSC
SDG, Matrix: J01610; 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 John Norton **Date** 10-30-12

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: 2299065

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 = 10 pCi/g

Second Level Review: [signature] Date: 10/30/12

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

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Data Review/Verification Checklist

RADIOCHEMISTRY, First Level Review

11/12/2012 2:43:30 PM

Lot No., Due Date: J2J240450; 11/14/2012
Client, Site: 127642; S00X235B00 HANFORD
QC Batch No., Method Test: 2299067; RNI63 Ni-63 by LSC
SDG, Matrix: J01610; 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:

First Level John Norton **Date** 11-12-12

TestAmerica Richland
QAS_RADCALCv4.8.44

Page 1

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Data Review Checklist
RADIOCHEMISTRY
Second Level Review

Batch Number: 229907

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: SRDL = 30.0pci/g

Second Level Review: Rhonda [illegible] Date: 11/12/12

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

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Richland Laboratory
Data Review Check List
Hexavalent Chromium

Batch Number(s):	2299055	Lab Sample Numbers or SDG:	J01610

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?	✓			X
2. Correlation coefficient greater than 0.97?	✓			X
3. Initial calibration verification (ICV) analyzed immediately after calibration and results within 10% of expected?	✓			X
4. Initial calibration blank (ICB) analyzed immediately after ICV and concentrations of all parameters ≤ reporting limit?	✓			X
B. Continuing Calibration 1. CCV analyzed at required frequency and all parameters within 10% of expected?	✓			X
2. CCB analyzed at required frequency and all results ≤ reporting limit?	✓			X
C. Sample Analysis 1. Were any samples with concentrations above the linear range diluted and reanalyzed?		✓		X
2. Were all sample holding times met?	✓			X
D. QC Samples 1. All results for the preparation blank below limits?	✓			X
2. LCS percent recovery within 85-115%	✓			X
3. $PbCrO_4$ percent recovery within 75-125%?	✓			X
4. Sample and Duplicate within 20% (aqueous) or 35% (solid) RPD?	✓			X
5. MS or MS/MSD recoveries within 85-115% (aqueous) or 75-125% (solid)?	✓			X
6. On MS failure, PDMS within 85-115%?			✓	X
E. Other 1. Are all nonconformances included and noted?			✓	X
2. Is the correct date and time of analysis shown?	✓			X
3. Did the analyst sign and date the front page of the analytical run?	✓			X
4. Correct methodology used?	✓			X
5. Transcriptions checked?	✓			X
6. Calculations checked at minimum frequency?	✓			X
7. Units checked?	✓			X

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

Analyst H. Rahavi Date 10/31/12 2nd Review [signature] Date 10/31/12

CG-231 Rev 1 5/12

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-148-071	Page 1 of 2

Collector Simonds, M	**Company Contact** Joan Kessner	**Telephone No.** 509-375-4688	**Project Coordinator** KESSNER, JH	**Price Code** 8L	**Data Turnaround** 21 Days
Project Designation 300 Area D4 Waste Sites - Soil Full Protocol	**Sampling Location** 300 - 46 Waste Site [3706 Bldg] Verification		**SAF No.** RC-148		
Ice Chest No. NA	**Field Logbook No.** EL-1663-04	**COA** R300462000	**Method of Shipment** Hand Deliver/Government Vehicle/~~FedEx~~ AJ 10-18-12		
Shipped To TestAmerica Incorporated, Richland	**Offsite Property No.** NA		**Bill of Lading/Air Bill No.** ~~See OSPG~~ AJ 10-18-12 NA		

POSSIBLE SAMPLE HAZARDS/REMARKS

Potential Radioactive < DOT Limits AJ 10-24-12

Special Handling and/or Storage

~~Cool 4C~~ NONE AJ 10-18-12

J2J240450

J2J240450
J01610
Due 11-14-12

Preservation	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None	None	None
Type of Container	G/P	G/P	G/P	aG	aG	aG	G/P	G/P	G/P	G/P
No. of Container(s)	1	1 AJ 10-24-12	1	1	1	1	1	1	1	1
Volume	60mL	~~15mL~~ 60mL	60mL	120mL	120mL	120mL	500ml	60mL	60mL	60mL
	See item (1) in Special Instructions.	Chromium Hex - 7196 *	IC Anions - 300.0; NO2/NO3 - 353.2	Semi-VOA - 8270A (TCL) RCF 34726	PCBs - 8082	PAHs - 8310	See item (2) in Special Instructions.	Isotopic Uranium	Isotopic Plutonium	Strontium-89,90 – Total Sr

Sample No.	Matrix *	Sample Date	Sample Time									
J1R432 MW400	SOIL	10/18/12	1204		X					✓	✓	✓	✓
~~J1R433~~	10/18/12 SOIL											

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

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
LVI U. LANDA SIMONDS	10/18/12 1350	DAVID BECKER	10/18/12 1350
DAVID BECKER	10/18/12 1550	1060 #3 A. Freier	10-18-12 1550
WCH A. Freier	1060#3 10-24-12 1533	TALL	1533 10-24-12

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Client List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Uranium, Vanadium, Zinc, Zirconium}; Mercury - 7471 - (CV)
(2) Gamma Spec (Client List) {Americium-241, Antimony-125, Cerium-144, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Radium-226, Radium-228, Ruthenium-106, Uranium-235, Uranium-238, Zinc-65}

* Please include Hex Chrome analysis on Sample J1R432. AJ 10-24-12

REVIEWED BY CMB DATE 10-24-12

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

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

WCH-EE-011

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-148-071	Page 2 of 2

Collector Simonds, M	**Company Contact** Joan Kessner	**Telephone No.** 509-375-4688	**Project Coordinator** KESSNER, JH
Price Code 8L	**Data Turnaround** 21 Days		
Project Designation 300 Area D4 Waste Sites - Soil Full Protocol	**Sampling Location** 300 - 46 Waste Site [3706 Bldg] Verification		**SAF No.** RC-148
Ice Chest No. NA	**Field Logbook No.** EL-1663-04	**COA** R300462000	**Method of Shipment** Hand Deliver/Government Vehicle/~~FedEx~~ AJ 10-18-12
Shipped To TestAmerica Incorporated, Richland	**Offsite Property No.** NA		**Bill of Lading/Air Bill No.** ~~See OSPC~~ AJ 10-18-12 NA

POSSIBLE SAMPLE HAZARDS/REMARKS

Potential Radioactive 1 DOT Limits AJ 10-24-12

Special Handling and/or Storage

~~Cool 4C~~ None AJ 10-18-12

J2J240450
J01610
Due 11-14-12

SAMPLE ANALYSIS

			Preservation	None	None	None	None	None					
			Type of Container	G/P	G/P	G/P	G/P	G/P					
			No. of Container(s)	1	1	1	1	1					
			Volume	60mL	60mL	60mL	60mL	60g					
				Technetium-99	Carbon-14 Low Level	Tritium - H3 Low Level Soil	Nickel-63	RCF GEA Shipping Screen					
Sample No.	Matrix *	Sample Date	Sample Time					RCF					
J1R432 MW400	SOIL	10/18/12	1204	✓	✓	✓	✓	34726					
J1R433 AJ 10-18-12	SOIL												

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From MIRANDA SIMONDS	10/18/12 1350	Received By/Stored In DAVID BECKER	10/18/12 1350
Relinquished By/Removed From DAVID BECKER	10/18/12 1550	Received By/Stored In 1060#3 A. Freier	10-18-12 1550
Relinquished By/Removed From WCH A. Freier	1060#3 10-24-12 1533	Received By/Stored In	1533 10-24-12
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

REVIEWED BY CMB DATE 10-24-12

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

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

WCH-EE-011

Analysis Report for RCF34726

J1R401 SAF:RC-148 FF2/300-46 Waste Site {3706 Bldg} Verification

GAMMA SPECTRUM ANALYSIS

Sample Identification	: RCF34726
Sample Description	: J1R401 SAF:RC-148 FF2/300-46 Waste Site {3706 Bldg} Verification
Sample Type	: 80g pillbox
Sample Size	: 6.900E+01 grams
Facility	: Default
Sample Taken On	: 10/18/2012 12:02:00PM
Acquisition Started	: 10/22/2012 1:12:31PM
Procedure	: 80 Gram Pill Box
Operator	: RCT
Detector Name	: NEWBEGE
Geometry	: 80 Gram Pill Box
Live Time	: 1800.0 seconds
Real Time	: 1800.3 seconds
Dead Time	: 0.01 %
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	: 7/18/2012
Efficiency Calibration Used Done On	: 3/9/2012
Efficiency Calibration Description	: NBEGE 80gPB EC030712 SN85269-238
Sample Number	: 28638

INTERFERENCE CORRECTED REPORT

Nuclide Name		Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
K-40		0.907	1.70E+01	3.72E+00	
PB-212		0.709	9.29E-01	1.98E-01	
RA-226d	@	0.626	6.43E-01	1.44E-01	
TH-232d		0.443	9.29E-01	1.88E-01	

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THE LEADER IN ENVIRONMENTAL TESTING

Sample Check-in List

Date/Time Received: 10-24-12 / 1533 Container GM Screen Result: (Airlock) .10 Initials [JB]
Sample GM Screen Result (Sample Receiving) .06 Initials [JB]

Client: WCH SDG #: J01610 NA [ ] SAF #: RC-148 NA [ ]

Lot Number: J2J240450

Chain of Custody # RC-148-071

Shipping Container ID: hand deliv. NA [JW] Air Bill Number: NA [JB]

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: 6.9 °C On Ice [ ]
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): 1
7. Containers received: 1 x 500mLp; 8 x 60 mLAG
8. Sample holding times exceeded? NA [ ] Yes [ ] No [JB]
9. Samples have:
   - ____ tape
   - JB custody seals
   - ____ hazard labels
   - JB appropriate sample labels
10. Matrix:
    - JB A (FLT, Wipe, Solid, Soil)
    - ____ S (Air, Niosh 7400)
    - ____ I (Water)
    - ____ T (Biological, Ni-63)
11. Samples:
    - JB are in good condition
    - ____ are broken
    - ____ are leaking
    - ____ 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, then document sample ID, initial pH, amount of HNO_3 added and pH after addition on table overleaf)

    RPL ID # of preservative used :
13. Were any anomalies identified in sample receipt? Yes [ ] No [JB]
14. Description of anomalies (include sample numbers): NA [JB]

LS-023, Rev. 15, 07/11 See over for additional information.

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THE LEADER IN ENVIRONMENTAL TESTING

15. Sample Location, Sample Collector Listed on COC? * Yes [✓] No [ ]
*For documentation only. No corrective action needed.

16. Additional Information:

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

Sample Custodian: Julie Bock Date: 10-24-12

Client Informed on _____ by _____ Person contacted _____

[X] No action necessary; process as is

Project Manager [signature] Date 10/25/12

SAMPLE ID	Initial pH	Acid Amt	Final pH	SAMPLE ID	Initial pH	Acid Amt	Final pH

B 10-24-12

B 10-24-12

B 10-24-12

J2J240450 PW 10/25/12

LS-023, Rev. 15, 07/11

See over for additional information.

10/26/2012 10:47:26 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

Pipet #: _____

AnalyDueDate: 11/14/2012

Sep1 DT/Tm Tech:

Batch: 2299069 SOIL pCi/g

PM, Quote: RW2, 27038

Sep2 DT/Tm Tech:

SEQ Batch, Test: None

Prep Tech: ,SannohS

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 MW4D0-1-AF			1.03g,in	1.03g	PUTC13196				100				
J2J240450-1-SAMP					08/28/12,pd 01/01/10,r								
10/18/2012 12:04			AmtRec: 1X500MLP;8X60MLAG		#Containers: 9				Scr:		Alpha:		Beta:
2 MW4D0-1-AW-X			1.02g,in	1.02g	PUTC13197								
J2J240450-1-DUP					08/28/12,pd 01/01/10,r								
10/18/2012 12:04			AmtRec: 1X500MLP;8X60MLAG		#Containers: 9				Scr:		Alpha:		Beta:
3 MW4ME-1-AA-B			1.01g,in	1.01g	PUTC13198								
J2J250000-69-BLK					08/28/12,pd 01/01/10,r								
10/25/2012 10:22 pd			AmtRec:		#Containers: 1				Scr:		Alpha:		Beta:
4 MW4ME-1-AC-C			1.02g,in	1.02g	PUSK0959								
J2J250000-69-LCS					08/17/12,pd 01/01/10,r								
10/25/2012 10:22 pd			AmtRec:		#Containers: 1				Scr:		Alpha:		Beta:

Comments:

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

MW4D01AF-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						

MW4ME1AA-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						

MW4ME1AC-LCS:

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

10/26/2012 10:47:27 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 #: _____

Sep1 DT/Tm Tech:

Sep2 DT/Tm Tech:

Prep Tech: ,SannohS

AnalyDueDate: 11/14/2012

Batch: 2299069 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:

```
MW4D01AF-SAMP Calc Info:
     Uncert Level (#s).: 2     Decay to SaDt: Y     Blk Subt.: N     Sci.Not.: Y     ODRs: B
MW4ME1AA-BLK:
     Uncert Level (#s).: 2     Decay to SaDt: Y     Blk Subt.: N     Sci.Not.: Y     ODRs: B
MW4ME1AC-LCS:
     Uncert Level (#s).: 2     Decay to SaDt: Y     Blk Subt.: N     Sci.Not.: Y     ODRs: B
```

11/6/2012 3:56:58 PM

ICOC Fraction Transfer/Status Report

ByDate: 11/7/2011, 11/11/2012, Batch: '2299069', User: *ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting			Comments
2299069						
AC		**Rev1C**	**SannohS**	10/26/2012 10:39:18		
SC			davilan	IsBatched	10/25/2012 10:27:14 AM	ICOC_RADCALC v4.8.49
SC			SannohS	InPrep	10/26/2012 10:39:18 AM	RL-PRP-003 REVISION 2
SC			SannohS	Prep1C	10/30/2012 8:54:47 AM	RL-PRP-003 REVISION 2
SC			HayesA	Sep1C	11/1/2012 2:05:59 PM	RL-ALP-001 REVISION 3
SC			HayesA	Sep2C	11/2/2012 10:55:33 AM	RL-ALP-016 REVISION 2
SC			DawkinsO	CalcC	11/2/2012 8:23:50 PM	RL-CI-008 REV. 2
SC			antonsonl	Rev1C	11/6/2012 3:56:18 PM	RL-DR-001 Rev 2
AC			**SannohS**	10/30/2012 8:54:47		
AC			**HayesA**	11/1/2012 2:05:59 PM		
AC			**HayesA**	11/2/2012 10:55:33		
AC			**DawkinsO**	11/2/2012 8:23:50 PM		
AC			**antonsonl**	11/6/2012 3:56:18 PM		

AC: Accepting Entry; SC: Status Change

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Grp Rec Cnt: 6

ICOCFractions v4.8.44

10/26/2012 10:32:38 AM

Sample Preparation/Analysis

Balance Id:1120373922

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

7S Uiso Prp PRP003/PRP005, Sep ALP009(ALP015)
SR Uranium-234,235,238 by Alpha Spec
5I CLIENT: HANFORD

Pipet #: _____

AnalyDueDate: 11/14/2012

Sep1 DT/Tm Tech:

Batch: 2299068 SOIL pCi/g PM, Quote: RW2, 27038

Sep2 DT/Tm Tech:

SEQ Batch, Test: None

Prep Tech: ,SannohS

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 MW4D0-1-AC			1.04g,in	1.04g	UITC29288								
J2J240450-1-SAMP					07/13/12,pd 06/15/01,r				100min				
10/18/2012 12:04			AmtRec: 1X500MLP;8X60MLAG		#Containers: 9					Scr:	Alpha:		Beta:
2 MW4D0-1-AV-X			1.02g,in	1.02g	UITC29289								
J2J240450-1-DUP					07/13/12,pd 06/15/01,r								
10/18/2012 12:04			AmtRec: 1X500MLP;8X60MLAG		#Containers: 9					Scr:	Alpha:		Beta:
3 MW4MA-1-AA-B			1.03g,in	1.03g	UITC29290								
J2J250000-68-BLK					07/13/12,pd 06/15/01,r								
10/25/2012 10:22 pd			AmtRec:		#Containers: 1					Scr:	Alpha:		Beta:
4 MW4MA-1-AC-C			1.03g,in	1.03g	UISH1638								
J2J250000-68-LCS					05/30/12,pd 06/15/01,r								
10/25/2012 10:22 pd			AmtRec:		#Containers: 1					Scr:	Alpha:		Beta:

Comments:

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

MW4D01AC-SAMP Constituent List:

U-232	RDL:	pCi/g	LCL:20	UCL:105	RPD:35	U-234	RDL:1.00E+00	pCi/g	LCL:	UCL:	RPD:
U-235	RDL:1.00E+00	pCi/g	LCL:	UCL:	RPD:	U-238	RDL:1.00E+00	pCi/g	LCL:	UCL:	RPD:

MW4MA1AA-BLK:

U-232	RDL:	pCi/g	LCL:20	UCL:105	RPD:35	U-234	RDL:1.00E+00	pCi/g	LCL:	UCL:	RPD:
U-235	RDL:1.00E+00	pCi/g	LCL:	UCL:	RPD:	U-238	RDL:1.00E+00	pCi/g	LCL:	UCL:	RPD:

10/26/2012 10:32:39 AM

Sample Preparation/Analysis

7S Ulso Prp PRP003/PRP005, Sep ALP009(ALP015)
SR Uranium-234,235,238 by Alpha Spec
5I CLIENT: HANFORD

Balance Id:1120373922

Pipet #: _____

Sep1 DT/Tm Tech:

Sep2 DT/Tm Tech:

Prep Tech: ,SannohS

AnalyDueDate: 11/14/2012

Batch: 2299068 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:

```
MW4MA1AC-LCS:
 U-232      RDL:          pCi/g    LCL:20    UCL:105    RPD:35      Uranium    RDL:          pCi/g    LCL:70    UCL:130    RPD:35

MW4D01AC-SAMP Calc Info:
    Uncert Level (#s).: 2    Decay to SaDt: Y    Blk Subt.: N    Sci.Not.: Y    ODRs: B
MW4MA1AA-BLK:
    Uncert Level (#s).: 2    Decay to SaDt: Y    Blk Subt.: N    Sci.Not.: Y    ODRs: B
MW4MA1AC-LCS:
    Uncert Level (#s).: 2    Decay to SaDt: Y    Blk Subt.: N    Sci.Not.: Y    ODRs: B
```

11/9/2012 8:32:32 AM

ICOC Fraction Transfer/Status Report

ByDate: 11/10/2011, 11/14/2012, Batch: '2299068', User: *ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting			Comments
2299068						
AC		**Rev1C**	**SannohS**	10/26/2012 10:28:17		
SC			davilan	IsBatched	10/25/2012 10:27:10 AM	ICOC_RADCALC v4.8.49
SC			SannohS	InPrep	10/26/2012 10:28:17 AM	RL-PRP-003 REVISION 2
SC			SannohS	Prep1C	10/30/2012 8:55:19 AM	RL-PRP-003 REVISION 2
SC			AshworthA	Sep1C	10/30/2012 8:34:39 PM	RL-ALP-004 REVISION 4
SC			HayesA	Sep1C	11/6/2012 11:57:07 AM	RL-ALP-015 REVISION 5
SC			ClarkR	InCnt1	11/6/2012 12:02:18 PM	RL-CI-008 REV. 2
SC			ClarkR	CalcC	11/8/2012 1:12:44 PM	RL-CI-008 REV. 2
SC			NortonJ	Rev1C	11/9/2012 8:32:25 AM	RL-DR-001 Rev 2
AC			**SannohS**	10/30/2012 8:55:19		
AC			**AshworthA**	10/30/2012 8:34:39		
AC			**HayesA**	11/6/2012 11:57:07		
AC			**ClarkR**	11/6/2012 12:02:18		
AC			**ClarkR**	11/8/2012 1:12:44 PM		
AC			**NortonJ**	11/9/2012 8:32:25		

AC: Accepting Entry; SC: Status Change

TestAmerica Richland

Richland Wa.

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Grp Rec Cnt: 7

ICOCFractions v4.8.44

11/8/2012 7:38:19 PM

Sample Preparation/Analysis

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

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

AnalyDueDate: 11/14/2012

Balance Id:1120373922

Pipet #: _____

Sep1 DT/Tm Tech: 1735 11/8/12 APA

Sep2 DT/Tm Tech:

Prep Tech: SannohS

Batch: 2311041 SOIL pCi/g PM, Quote: RW2, 27038

SEQ Batch, Test: None All Tests: 5SS3, 2299055 DWEA, 2299063 AXTA, 2299064 CHTH, 2299065 ATS6, 2299066 ANS5, 2299067 AFS4, 2299068 7SSR, 2299069 6ASO, 2311041 CHTH,

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 MW4D0-2-AD J2J240450-1-SAMP 10/18/2012 12:04			6.02g,in AmtRec: 1X500MLP;8X60MLAG	6.02g #Containers: 9	SRTA23673 08/10/12		1.5"	59.9mg Scr:	50 Alpha:	31A	0839	11/9/12 CJH Beta:	
2 MW4D0-2-AP-X J2J240450-1-DUP 10/18/2012 12:04			6.04g,in AmtRec: 1X500MLP;8X60MLAG	6.04g #Containers: 9	SRTA23674 08/10/12			58.0mg Scr:	Alpha:	31B		Beta:	
3 MW4LW-2-AA-B J2J250000-64-BLK 11/06/2012 10:46 pd			6.03g,in AmtRec:	6.03g #Containers: 1	SRTA23675 08/10/12			83.2mg Scr:	Alpha:	31D		Beta:	
4 MW4LW-2-AC-C J2J250000-64-LCS 11/06/2012 10:46 pd			6.03g,in AmtRec:	6.03g #Containers: 1	STSB1883 08/08/12			78.6mg Scr:	Alpha:	32A		Beta:	

Comments: MW4LW-BLK Comments,P-12-00448,S-12-00228,P-12-00565,S-12-00251,S-12-00174,S-12-00252,P-12-00046,P-12-00379,P-12-00472,P-12-00044,P-12-00045,S-11-00351,S-12-00263

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

MW4D02AD-SAMP Constituent List:
  Sr-90       RDL:1          pCi/g     LCL:70      UCL:130     RPD:35
MW4LW2AA-BLK:
  Sr-90       RDL:1          pCi/g     LCL:        UCL:        RPD:
MW4LW2AC-LCS:
  Sr-90       RDL:1          pCi/g     LCL:70      UCL:130     RPD:35
```

11/8/2012 7:38:20 PM

Sample Preparation/Analysis

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

Balance Id:1120373922

Pipet #: _____

Sep1 DT/Tm Tech:

Sep2 DT/Tm Tech:

Prep Tech: AshworthA,SannohS

AnalyDueDate: 11/14/2012

Batch: 2311041 **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:

```
MW4D02AD-SAMP Calc Info:
    Uncert Level (#s).: 2     Decay to SaDt: Y     Blk Subt.: N     Sci.Not.: Y     ODRs: B
MW4LW2AA-BLK:
    Uncert Level (#s).: 2     Decay to SaDt: Y     Blk Subt.: N     Sci.Not.: Y     ODRs: B
MW4LW2AC-LCS:
    Uncert Level (#s).: 2     Decay to SaDt: Y     Blk Subt.: N     Sci.Not.: Y     ODRs: B
```


Key: In - Initial Amt, fi - Final Amt, di - Diluted Amt, s1 - Sep1, s2 - Sep2 Page 2
pd - Prep Dt, dc - Date Chg, r - Reference Dt, ec-Enrichment Cell, ct-Cocktailed Added

ISV - Insufficient Volume for Analysis

WO Cnt: 4
Prep_SamplePrep v4.8.59

11/9/2012 1:45:44 PM

ICOC Fraction Transfer/Status Report

ByDate: 11/10/2011, 11/14/2012, Batch: '2311041', User: *ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting			Comments
2311041						
AC		Rev1C	SannohS	11/7/2012 10:46:51		
SC			Sannohs	IsBatched	11/6/2012 11:10:54 AM	ICOC_RADCALC v4.8.49
SC			SannohS	Prep1C	11/7/2012 10:46:51 AM	RL-LSC-018 REVISION 2
SC			AshworthA	Sep2C	11/8/2012 7:44:14 PM	RL-GPC-003 REV. 2
SC			ClarkR	CalcC	11/9/2012 10:25:06 AM	RL-CI-006 REVISION 3
SC			antonsonl	Rev1C	11/9/2012 1:45:24 PM	RL-DR-001 Rev 2
AC			AshworthA	11/8/2012 7:44:14 PM		
AC			ClarkR	11/9/2012 10:25:06		
AC			antonsonl	11/9/2012 1:45:24 PM		

AC: Accepting Entry; SC: Status Change

TestAmerica Richland

Richland Wa.

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Grp Rec Cnt: 4

ICOCFractions v4.8.44

10/26/2012 1:44:53 PM

Sample Preparation/Analysis

Balance Id:1120421763

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

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

PRIORITY

Pipet #: _____

AnalyDueDate: 11/14/2012

Sep1 DT/Tm Tech:

Batch: 2299063 SOIL pCi/g PM, Quote: RW2, 27038

Sep2 DT/Tm Tech:

SEQ Batch, Test: None All Tests: 5SS3, 2299055 DWEA, 2299063 AXTA, 2299064 CHTH, 2299065 ATS6, 2299066 ANS5, 2299067 AFS4, 2299068 7SSR, 2299069 6ASO,

Prep Tech: ,SannohS

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 MW4D0-1-AJ J2J240450-1-SAMP 10/18/2012 12:04			358.60g,in AmtRec: 1X500MLP;8X60MLAG	358.60g #Containers: 9					5200	200 min	G19	1824 10/26/12	Scr: Alpha: Beta:
2 MW4D0-1-AN-X J2J240450-1-DUP 10/18/2012 12:04			344.10g,in AmtRec: 1X500MLP;8X60MLAG	344.10g #Containers: 9							G14	1825	Scr: Alpha: Beta:
3 MW4LV-1-AA-B J2J250000-63-BLK 10/25/2012 10:22 pd			348.00g,in AmtRec:	348.00g #Containers: 1							G15	1825	Scr: Alpha: Beta:
4 MW4LV-1-AC-C J2J250000-63-LCS 10/25/2012 10:22 pd			350.10g,in AmtRec:	350.10g #Containers: 1	QC20009 08/04/09,pd 09/01/09,r						G16	1826	Scr: Alpha: Beta:

Comments:

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

MW4D01AJ-SAMP Constituent List:

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

MW4LV1AA-BLK:

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

10/26/2012 1:44:54 PM

Sample Preparation/Analysis

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

Balance Id:1120421763

Pipet #: _____

AnalyDueDate: 11/14/2012

Sep1 DT/Tm Tech:

Batch: 2299063 pCi/g

Sep2 DT/Tm Tech:

SEQ Batch, Test: None

Prep Tech: SannohS

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:

```
 Eu-154      RDL:1.00E-01   pCi/g   LCL:      UCL:      RPD:      Eu-155      RDL:1.00E-01   pCi/g   LCL:      UCL:      RPD:

MW4LV1AC-LCS:
 Cs-137      RDL:0.1        pCi/g   LCL:70    UCL:130   RPD:35    Cs-137DA    RDL:0.1        pCi/g   LCL:70    UCL:130   RPD:35
 K-40        RDL:--         pCi/g   LCL:70    UCL:130   RPD:35    Ra-226      RDL:0.1        pCi/g   LCL:70    UCL:130   RPD:35
 RA-228      RDL:0.2        pCi/g   LCL:70    UCL:130   RPD:35    RA-228DA    RDL:0.2        pCi/g   LCL:70    UCL:130   RPD:35
 U-238       RDL:           pCi/g   LCL:70    UCL:130   RPD:35
MW4D01AJ-SAMP Calc Info:
     Uncert Level (#s).: 2    Decay to SaDt: Y    Blk Subt.: N    Sci.Not.: Y    ODRs: B
MW4LV1AA-BLK:
     Uncert Level (#s).: 2    Decay to SaDt: Y    Blk Subt.: N    Sci.Not.: Y    ODRs: B
MW4LV1AC-LCS:
     Uncert Level (#s).: 2    Decay to SaDt: Y    Blk Subt.: N    Sci.Not.: Y    ODRs: B
```

10/30/2012 10:24:27 AM

ICOC Fraction Transfer/Status Report

ByDate: 10/31/2011, 11/4/2012, Batch: '2299063', User: *ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting			Comments
2299063						
AC		**Rev1C**	**SannohS**	10/25/2012 11:28:20		
SC			davilan	IsBatched	10/25/2012 10:24:32 AM	ICOC_RADCALC v4.8.49
SC			SannohS	InPrep	10/25/2012 11:28:20 AM	RL-GAM-001 Revision 2
SC			SannohS	Prep1C	10/26/2012 1:46:30 PM	RL-GAM-001 REVISION 2
SC			ClarkR	InCnt1	10/26/2012 1:52:19 PM	RL-CI-007 REV. 2
SC			DawkinsO	CalcC	10/26/2012 11:27:31 PM	RL-CI-007 REV. 2
SC			NortonJ	Rev1C	10/30/2012 10:17:52 AM	RL-DR-001 Rev 2
AC			**SannohS**	10/26/2012 1:46:30		
AC			**ClarkR**	10/26/2012 1:52:19		
AC			**DawkinsO**	10/26/2012 11:27:31		
AC			**NortonJ**	10/30/2012 10:17:52		

AC: Accepting Entry; SC: Status Change

TestAmerica Richland

Richland Wa.

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Grp Rec Cnt: 5

ICOCFractions v4.8.44

10/26/2012 10:02:28 AM

Sample Preparation/Analysis

Balance Id:1120373922

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

AN Tc-99 Prp/Sep PRP003/LSC013
S5 Technetium-99 by Liquid Scint
5I CLIENT: HANFORD

Pipet #: _____

AnalyDueDate: 11/14/2012

Sep1 DT/Tm Tech:

Batch: 2299066 SOIL pCi/g PM, Quote: RW2, 27038

Sep2 DT/Tm Tech:

SEQ Batch, Test: None All Tests: 5SS3, 2299055 DWEA, 2299063 AXTA, 2299064 CHTH, 2299065 ATS6, 2299066 ANS5, 2299067 AFS4, 2299068 7SSR, 2299069 6ASO,

Prep Tech: ,SannohS

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 MW4D0-1-AG			2.04g,in	2.04g									
J2J240450-1-SAMP													
10/18/2012 12:04			AmtRec: 1X500MLP;8X60MLAG		#Containers: 9				Scr:		Alpha:		Beta:
2 MW4D0-1-AR-S			2.02g,in	2.02g	TCSG3335 09/04/12,pd 07/01/05,r								
J2J240450-1-MS													
10/18/2012 12:04			AmtRec: 1X500MLP;8X60MLAG		#Containers: 9				Scr:		Alpha:		Beta:
3 MW4D0-1-AT-X			2.02g,in	2.02g									
J2J240450-1-DUP													
10/18/2012 12:04			AmtRec: 1X500MLP;8X60MLAG		#Containers: 9				Scr:		Alpha:		Beta:
4 MW4L3-1-AA-B			2.03g,in	2.03g									
J2J250000-66-BLK													
10/25/2012 10:22 pd			AmtRec:		#Containers: 1				Scr:		Alpha:		Beta:
5 MW4L3-1-AC-C			2.04g,in	2.04g	TCSF2475 05/29/12,pd 07/01/05,r								
J2J250000-66-LCS													
10/25/2012 10:22 pd			AmtRec:		#Containers: 1				Scr:		Alpha:		Beta:
6 MW4L3-1-AD-BN													
J2J250000-66-IBLK													
10/25/2012 10:22 pd			AmtRec:		#Containers: 1				Scr:		Alpha:		Beta:

10/26/2012 10:02:30 AM

Sample Preparation/Analysis

AN Tc-99 Prp/Sep PRP003/LSC013
S5 Technetium-99 by Liquid Scint
5I CLIENT: HANFORD

AnalyDueDate: 11/14/2012

Batch: 2299066 **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

MW4D01AG-SAMP Constituent List:
  Tc-99       RDL:15          pCi/g     LCL:70      UCL:130     RPD:35
MW4D01AR-MS Constituent List:

MW4L31AA-BLK:
  Tc-99       RDL:15          pCi/g     LCL:        UCL:        RPD:
MW4L31AC-LCS:
  Tc-99       RDL:15          pCi/g     LCL:70      UCL:130     RPD:35
MW4L31AD-IBLK:
  Tc-99       RDL:15          pCi/g     LCL:        UCL:        RPD:

MW4D01AG-SAMP Calc Info:
     Uncert Level (#s).: 2     Decay to SaDt: Y     Blk Subt.: N     Sci.Not.: Y     ODRs: B
MW4D01AR-MS Calc Info:
     Uncert Level (#s).: 2     Decay to SaDt: Y     Blk Subt.: N     Sci.Not.: Y     ODRs: B
MW4L31AA-BLK:
     Uncert Level (#s).: 2     Decay to SaDt: Y     Blk Subt.: N     Sci.Not.: Y     ODRs: B
MW4L31AC-LCS:
     Uncert Level (#s).: 2     Decay to SaDt: Y     Blk Subt.: N     Sci.Not.: Y     ODRs: B
MW4L31AD-IBLK:
     Uncert Level (#s).: 2     Decay to SaDt: Y     Blk Subt.: N     Sci.Not.: Y     ODRs: B
```

11/14/2012 10:34:52 AM

ICOC Fraction Transfer/Status Report

ByDate: 11/15/2011, 11/19/2012, Batch: '2299066', User: *ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting			Comments
2299066						
AC		**Rev1C**	**SannohS**	10/26/2012 8:18:45		
SC			davilan	IsBatched	10/25/2012 10:25:12 AM	ICOC_RADCALC v4.8.49
SC			SannohS	InPrep	10/26/2012 8:18:45 AM	RL-PRP-003 REVISION 2
SC			JorgensonD	Sep2C	11/12/2012 5:44:56 PM	RL-LSC-013 REVISION 2
SC			DawkinsO	InCnt1	11/12/2012 6:38:15 PM	RL-CI-005 REV. 2
SC			HiattC	CalcC	11/14/2012 10:03:15 AM	RL-CI-005 REV. 2
SC			NortonJ	Rev1C	11/14/2012 10:34:47 AM	RL-DR-001 Rev 2
AC			**JorgensonD**	11/12/2012 5:44:56		
AC			**DawkinsO**	11/12/2012 6:38:15		
AC			**HiattC**	11/14/2012 10:03:15		
AC			**NortonJ**	11/14/2012 10:34:47		

AC: Accepting Entry; SC: Status Change

TestAmerica Richland

Richland Wa.

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Grp Rec Cnt: 5

ICOCFractions v4.8.44

10/25/2012 10:22:38 AM

Sample Preparation/Analysis

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

AnalyDueDate: 11/14/2012

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

PRIORITY

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

Batch: 2299065 SOIL pCi/g
SEQ Batch, Test: None

PM, Quote: RW2, 27038

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 MW4D0-1-AH J2J240450-1-SAMP 10/18/2012 12:04			AmtRec: 1X500MLP;8X60MLAG	#Containers: 9					Scr:		Alpha:		Beta:
2 MW4D0-1-AQ-X J2J240450-1-DUP 10/18/2012 12:04			AmtRec: 1X500MLP;8X60MLAG	#Containers: 9					Scr:		Alpha:		Beta:
3 MW4L0-1-AA-B J2J250000-65-BLK 10/25/2012 10:22 pd			AmtRec:	#Containers: 1					Scr:		Alpha:		Beta:
4 MW4L0-1-AC-C J2J250000-65-LCS 10/25/2012 10:22 pd			AmtRec:	#Containers: 1					Scr:		Alpha:		Beta:
5 MW4L0-1-AD-BN J2J250000-65-IBLK 10/25/2012 10:22 pd			AmtRec:	#Containers: 1					Scr:		Alpha:		Beta:

Comments:

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

MW4D01AH-SAMP Constituent List:
H-3 RDL:400 pCi/g LCL:70 UCL:130 RPD:35

10/25/2012 10:22:38 AM

Sample Preparation/Analysis

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

AnalyDueDate: 11/14/2012

Batch: 2299065 **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:

```
MW4L01AA-BLK:

MW4L01AC-LCS:

MW4L01AD-IBLK:

MW4D01AH-SAMP Calc Info:
     Uncert Level (#s).: 2     Decay to SaDt: Y     Blk Subt.: N     Sci.Not.: Y     ODRs: B
MW4L01AA-BLK:
     Uncert Level (#s).: 2     Decay to SaDt: Y     Blk Subt.: N     Sci.Not.: Y     ODRs: B
MW4L01AC-LCS:
     Uncert Level (#s).: 2     Decay to SaDt: Y     Blk Subt.: N     Sci.Not.: Y     ODRs: B
MW4L01AD-IBLK:
     Uncert Level (#s).: 2     Decay to SaDt: Y     Blk Subt.: N     Sci.Not.: Y     ODRs: B
```

10/30/2012 10:28:38 AM

ICOC Fraction Transfer/Status Report

ByDate: 10/31/2011, 11/4/2012, Batch: '2299065', User: *ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting			Comments
2299065						
AC		**Rev1C**	**NortonP**	10/26/2012 12:08:15		
SC			davllan	IsBatched	10/25/2012 10:24:48 AM	ICOC_RADCALC v4.8.49
SC			NortonP	Sep1C	10/26/2012 12:08:15 PM	RL-LSC-002 REVISION 2
SC			ClarkR	InCnt1	10/26/2012 1:17:29 PM	RL-CI-005 REV. 2
SC			ClarkR	CalcC	10/27/2012 12:01:01 PM	RL-CI-005 REV. 2
SC			NortonJ	Rev1C	10/30/2012 10:28:22 AM	RL-DR-001 Rev 2
AC			**ClarkR**	10/26/2012 1:17:29		
AC			**ClarkR**	10/27/2012 12:01:01		
AC			**NortonJ**	10/30/2012 10:28:22		

AC: Accepting Entry; SC: Status Change

TestAmerica Richland

Richland Wa.

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Grp Rec Cnt: 4

ICOCFractions v4.8.44

11/5/2012 10:03:52 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

Pipet #: _____

AnalyDueDate: 11/14/2012

Sep1 DT/Tm Tech:

Batch: 2299067 SOIL pCi/g PM, Quote: RW2, 27038

SEQ Batch, Test: None

Sep2 DT/Tm Tech:

Prep Tech: SannohS

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 MW4D0-1-AE J2J240450-1-SAMP 10/18/2012 12:04			0.25g,in AmtRec: 1X500MLP;8X60MLAG	0.25g #Containers: 9	NITA8186 10/01/12				20 min Scr:		Alpha:		Beta:
2 MW4D0-1-AU-X J2J240450-1-DUP 10/18/2012 12:04			0.25g,in AmtRec: 1X500MLP;8X60MLAG	0.25g #Containers: 9	NITA8187 10/01/12				Scr:		Alpha:		Beta:
3 MW4L6-1-AA-B J2J250000-67-BLK 10/25/2012 10:22 pd			0.25g,in AmtRec:	0.25g #Containers: 1	NITA8188 10/01/12				Scr:		Alpha:		Beta:
4 MW4L6-1-AC-C J2J250000-67-LCS 10/25/2012 10:22 pd			0.25g,in AmtRec:	0.25g #Containers: 1	NISA1770 09/14/12				Scr:		Alpha:		Beta:
5 MW4L6-1-AD-BN J2J250000-67-IBLK 10/25/2012 10:22 pd			AmtRec:	#Containers: 1					Scr:		Alpha:		Beta:

Comments:

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

MW4D01AE-SAMP Constituent List:
Ni-63 RDL:30 pCi/g LCL:70 UCL:130 RPD:35

11/5/2012 10:03:54 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

Balance Id:

Pipet #:

Sep1 DT/Tm Tech:

Sep2 DT/Tm Tech:

Prep Tech:

AnalyDueDate: 11/14/2012

Batch: 2299067 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:

```
MW4L61AA-BLK:
  Ni-63        RDL:30          pCi/g     LCL:        UCL:        RPD:
MW4L61AC-LCS:
  Ni-63        RDL:30          pCi/g     LCL:70      UCL:130     RPD:35
MW4L61AD-IBLK:
  Ni-63        RDL:30          pCi/g     LCL:        UCL:        RPD:
MW4D01AE-SAMP Calc Info:
     Uncert Level (#s).: 2     Decay to SaDt: Y     Blk Subt.: N     Sci.Not.: Y     ODRs: B
MW4L61AA-BLK:
     Uncert Level (#s).: 2     Decay to SaDt: Y     Blk Subt.: N     Sci.Not.: Y     ODRs: B
MW4L61AC-LCS:
     Uncert Level (#s).: 2     Decay to SaDt: Y     Blk Subt.: N     Sci.Not.: Y     ODRs: B
MW4L61AD-IBLK:
     Uncert Level (#s).: 2     Decay to SaDt: Y     Blk Subt.: N     Sci.Not.: Y     ODRs: B
```

11/12/2012 2:42:40 PM

ICOC Fraction Transfer/Status Report

ByDate: 11/13/2011, 11/17/2012, Batch: '2299067', User: *ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting			Comments
2299067						
AC		**Rev1C**	**SannohS**	10/26/2012 10:19:17		
SC			davilan	IsBatched	10/25/2012 10:27:04 AM	ICOC_RADCALC v4.8.49
SC			SannohS	InPrep	10/26/2012 10:19:17 AM	RL-PRP-003 REVISION 2
SC			SannohS	Prep1C	10/30/2012 8:55:32 AM	RL-PRP-003 REVISION 2
SC			SannohS	Prep1C	11/6/2012 8:03:14 AM	RL-PRP-003 REVISION 2
SC			HayesA	Sep2C	11/8/2012 1:25:04 PM	RL-LSC-017 REVISION 3
SC			ClarkR	InCnt1	11/8/2012 4:17:50 PM	RL-CI-005 REV. 2
SC			ClarkR	CalcC	11/12/2012 11:44:52 AM	RL-CI-005 REV. 2
SC			NortonJ	Rev1C	11/12/2012 2:42:34 PM	RL-DR-001 Rev 2
AC			**SannohS**	10/30/2012 8:55:32		
AC			**SannohS**	11/6/2012 8:03:14		
AC			**HayesA**	11/8/2012 1:25:04 PM		
AC			**ClarkR**	11/8/2012 4:17:50 PM		
AC			**ClarkR**	11/12/2012 11:44:52		
AC			**NortonJ**	11/12/2012 2:42:34		

AC: Accepting Entry; SC: Status Change

TestAmerica Richland

Richland Wa.

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Grp Rec Cnt: 7

ICOCFractions v4.8.44

10/25/2012 1:29:44 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

AnalyDueDate: 11/14/2012

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

Batch: 2299055 SOIL mg/kg PM, Quote: RW2, 27038

SEQ Batch, Test: None All Tests: 5SS3, 2299055 DWEA, 2299063 AXTA, 2299064 CHTH, 2299065 ATS6, 2299066 ANS5, 2299067 AFS4, 2299068 7SSR, 2299069 6ASO,

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 MW4D0-1-AA													
J2J240450-1-SAMP													
10/18/2012 12:04			AmtRec: 1X500MLP;8X60MLAG		#Containers: 9				Scr:		Alpha:		Beta:
2 MW4D0-1-AL-S													
J2J240450-1-MS													
10/18/2012 12:04			AmtRec: 1X500MLP;8X60MLAG		#Containers: 9				Scr:		Alpha:		Beta:
3 MW4D0-1-AM-X													
J2J240450-1-DUP													
10/18/2012 12:04			AmtRec: 1X500MLP;8X60MLAG		#Containers: 9				Scr:		Alpha:		Beta:
4 MW4JG-1-AA-B													
J2J250000-55-BLK													
10/25/2012 13:29 pd			AmtRec:		#Containers: 1				Scr:		Alpha:		Beta:
5 MW4JG-1-AC-C													
J2J250000-55-LCS													
10/25/2012 13:29 pd			AmtRec:		#Containers: 1				Scr:		Alpha:		Beta:

Comments:

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

MW4D01AA-SAMP Constituent List:
HEXCHROME RDL:.1548 mg/kg LCL:80 UCL:120 RPD:20

10/25/2012 1:29:45 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: 11/14/2012

Batch: 2299055 **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:

```
MW4D01AL-MS Constituent List:

MW4JG1AA-BLK:

MW4JG1AC-LCS:

MW4D01AA-SAMP Calc Info:
     Uncert Level (#s).: 2     Decay to SaDt: Y     Blk Subt.: N     Sci.Not.: Y     ODRs: B
MW4D01AL-MS Calc Info:
     Uncert Level (#s).: 2     Decay to SaDt: Y     Blk Subt.: N     Sci.Not.: Y     ODRs: B
MW4JG1AA-BLK:
     Uncert Level (#s).: 2     Decay to SaDt: Y     Blk Subt.: N     Sci.Not.: Y     ODRs: B
MW4JG1AC-LCS:
     Uncert Level (#s).: 2     Decay to SaDt: Y     Blk Subt.: N     Sci.Not.: Y     ODRs: B
```

APPENDIX - A

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

ANALYTICAL REPORT

PROJECT NO. SDG J01610

Washington Closure Hanford

Lot #: F2J260426

Rhonda Wagar

TestAmerica Richland
2800 George Washington Way
Richland, WA 99354-1613

TESTAMERICA LABORATORIES, INC.

Jayna Awalt
Project Manager

November 9, 2012

Case Narrative
LOT NUMBER: F2J260426

This report contains the analytical results for the sample received under chain of custody by TestAmerica St. Louis on October 26, 2012. This sample is associated with your Washington Closure Hanford project.

The analytical results included in this report meet all applicable quality control procedure requirements except as noted in the following case narrative.

The test results in this report meet all NELAP requirements for parameters in which accreditations are held by TestAmerica St. Louis. Any exceptions to NELAP requirements are noted in the case narrative. **TestAmerica St. Louis' Florida certification number is E87689.** The case narrative is an integral part of this report.

This report shall not be reproduced, except in full, without the written approval of the laboratory.

All chemical analysis results are based upon sample as received, wet weight, unless noted otherwise. All radiochemistry results are based upon sample as dried and ground with the exception of tritium, unless requested wet weight by the client.

Observations/Nonconformances

Reference the chain of custody and condition upon receipt report for any variations on receipt conditions and temperature of samples on receipt.

There are no observations or non-conformances associated with the analysis contained in this report.

METHODS SUMMARY

F2J260426

PARAMETER	ANALYTICAL METHOD	PREPARATION METHOD
Carbon 14 by LSC	EERF C-01-1	

References:

EERF EERF

SAMPLE SUMMARY

F2J260426

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
MW5K6	001	J1R432	10/18/12	12:04

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

TestAmerica Richland

Client Sample ID: J1R432

Radiochemistry

Lab Sample ID: F2J260426-001
Work Order: MW5K6
Matrix: SOLID

Date Collected: 10/18/12 1204
Date Received: 10/26/12 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	MDC	Prep Date	Analysis Date
Carbon 14 by EERF C-01-1				pCi/g		Batch # 2312026	Yld %
Carbon 14	-0.31	U	0.33	1.00	0.58	11/07/12	11/08/12

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

U Result is less than the sample detection limit.

METHOD BLANK REPORT

Radiochemistry

Client Lot ID: F2J260426
Matrix: SOLID

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	MDC		Prep Date	Lab Sample ID Analysis Date
Carbon 14 by EERF C-01-1			pCi/g	Batch # 2312026		Yld %		F2K070000-026B
Carbon 14	0.01	U	0.36	1.00	0.62		11/07/12	11/07/12

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined using instrument performance only
Bold results are greater than the MDC.

U Result is less than the sample detection limit.

Laboratory Control Sample Report

Radiochemistry

Client Lot ID: F2J260426
Matrix: SOLID

Parameter	Spike Amount	Result	Total Uncert. (2 σ+/-)	MDC	% Yld	% Rec	Lab Sample ID QC Control Limits
Carbon 14 by EERF C-01-1		pCi/g		C-01-1			F2K070000-026C
Carbon 14	84.5	81.1	8.9	0.6		96	(67 - 124)
	Batch #:	2312026		Analysis Date:	11/07/12		

NOTE(S)

MDC is determined by instrument performance only
Calculations are performed before rounding to avoid round-off error in calculated results

MATRIX SPIKE REPORT

Radiochemistry

Client Lot Id: F2J260426
Matrix: SOLID

Date Sampled: 10/18/12
Date Received: 10/26/12

Parameter	Spike Amount	Spike Result	Total Uncert. (2σ +/-)	Spike Yld.	Sample Result	Total Uncert. (2 σ +/-)	QC Sample ID %YLD	QC Sample ID %REC	QC Control Limits
Carbon 14 by EERF C-01-1			pCi/g		C-01-1			F2J260426-001	
Carbon 14	82.8	32.2	3.7		-0.31	0.33		39	(29-128)
	Batch #:	2312026		Analysis Date:		11/08/12			

NOTE(S)

Data are incomplete without the case narrative.

Calculations are performed before rounding to avoid round-off errors in calculated results.

DUPLICATE EVALUATION REPORT

Radiochemistry

Client Lot ID: F2J260426 Date Sampled: 10/18/12
Matrix: SOLID Date Received: 10/26/12

Parameter	SAMPLE Result		Total Uncert. (2σ+/-)	% Yld	DUPLICATE Result		Total Uncert. (2 σ+/-)	% Yld	QC Sample ID Precision	
Carbon 14 by EERF C-01-1				pCi/g	C-01-1				F2J260426-001	
Carbon 14	-0.31	U	0.33		-0.42	U	0.34		31	%RPD
	Batch #:		2312026 (Sample)		2312026 (Duplicate)					

NOTE(S)

Data are incomplete without the case narrative.
Calculations are performed before rounding to avoid round-off error in calculated results

U Result is less than the sample detection limit.

F2J260426 CLIENT ANALYSIS SUMMARY

Storage Loc: RAD
Date Received: 2012-10-26
Analytical Due Date: 2012-11-08
Report Due Date: 2012-11-09
Report Type: B Standard Report
EDD Code: 00

Project Manager: JKA Quote #: 90935 SDG: J01610
Project: SDG J01610 Washington Closure Hanford
PO#: Report to: Rhonda Wagar
Client: 800 TestAmerica Richland #SMPS In LOT: 1

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
1	J1R432			2012-10-18/ 1204	MW5K6	SOLID

SAMPLE COMMENTS:

	XX	4E	EERF	C-01-1	SOLID, Carbon 14	G8	Distillation and Suspended in LSC Cocktail	01	STANDARD TEST SET	PROT: A	WRK LOC	06
S	XX	4E	EERF	C-01-1	SOLID, Carbon 14	G8	Distillation and Suspended in LSC Cocktail	01	STANDARD TEST SET	PROT: A	WRK LOC	06
X	XX	4E	EERF	C-01-1	SOLID, Carbon 14	G8	Distillation and Suspended in LSC Cocktail	01	STANDARD TEST SET	PROT: A	WRK LOC	06

CUR 102

FZJ260426

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-148-071	Page 1 of 12

Collector: Simonds, M	Company Contact: Joan Kessner — Telephone No.: 509-375-4688	Project Coordinator: KESSNER, JH	Price Code: 8L — Data Turnaround: 21 Days
Project Designation: 300 Area D4 Waste Sites – Soil Full Protocol	Sampling Location: 300 - 46 Waste Site [3706 Bldg] Verification	SAF No.: RC-148	
Ice Chest No.: NA	Field Logbook No.: ~~EL-1663-04~~ — COA: RS00462000	~~Method of Shipment~~: Hand Deliver/Government Vehicle/~~FedEx~~ AJ 10-18-12	
Shipped To: TestAmerica Incorporated, Richland	Offsite Property No.: NA	Bill of Lading/Air Bill No.: ~~See OSPC~~ AJ 10-18-12 NA	

POSSIBLE SAMPLE HAZARDS/REMARKS

Potential Radioactive 1 DOT Limits AJ 10-24-12

Special Handling and/or Storage

~~Cool 4C~~ None AJ 10-18-12

Preservation	None	None	None	None	None	
Type of Container	G/P	G/P	G/P	G/P	G/P	
No. of Container(s)	1	1	1	1	1	
Volume	60mL	60mL	60mL	60mL	60g	
SAMPLE ANALYSIS	Technetium-99	Carbon-14 Low Level	Tritium – H3 Low Level Soil	Nickel-63	RCRA GEA Shipping Screen	

~~J2J240450~~ 10/26/12 J01610 ~~Due 11-14-12~~

Sample No.	Matrix *	Sample Date	Sample Time					RCG					
J1R432 ~~MW400~~	SOIL	10/18/12	1204	✓	✓	✓	✓	34726					
J1R433 AJ 10-18-12	SOIL												

CHAIN OF POSSESSION	Sign/Print Names	SPECIAL INSTRUCTIONS
Relinquished By/Removed From: Miranda Simonds — Date/Time: 10/18/12 1350	Received By/Stored In: DAVID BECKER — Date/Time: 10/18/12 1350	⊗ Please analyze for C-14. DL=1.0pCi/g See Jayna Avant with questions. SDG #: J01610
Relinquished By/Removed From: DAVID BECKER — Date/Time: 10/18/12 1550	Received By/Stored In: 1060#3 A. Freier — Date/Time: 10-18-12 1550	
Relinquished By/Removed From: WCH A. Freier — Date/Time: 1060#3 10-24-12 1533	Received By/Stored In: TAL — Date/Time: 10-24-12 1533	
Relinquished By/Removed From: Vilay Luna Velazquez TAL — Date/Time: 1400 10-25-12	Received By/Stored In: Steven Clayton TASL — Date/Time: 10-25-12 0928	
Relinquished By/Removed From: FedEx — Date/Time:	Received By/Stored In: Steven Clayton — Date/Time:	
Relinquished By/Removed From: — Date/Time:	Received By/Stored In: — Date/Time:	

REVIEWED BY JMB DATE 10-24-12

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

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

WCH-EE-011

TestAmerica - St. Louis

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Lot #(s): F2J260426
160-806

CUR Form #: 1 0 2

CONDITION UPON RECEIPT FORM

Client: CHPRC

Quote No: 90935

COC/RFA No: RC-143-071, I13-002-143, X13-002-005

Initiated By: SC Date: 10-26-12 Time: 0920

Shipping Information

Shipper: FedEx UPS DHL Courier Client Other: _____ Multiple Packages: Y N

Shipping # (s):*		Sample Temperature (s):**	
1. 7939 3541 2526	6.	1. ambient	6.
2. 3342 5990	7.	2. 4	7.
3.	8.	3.	8.
4.	9.	4.	9.
5.	10.	5.	10.

*Numbered shipping lines correspond to Numbered Sample Temp lines

**Sample must be received at 4°C ± 2°C- If not, note contents below. Temperature variance does NOT affect the following: Metals-Liquid; Rad tests- Liquid or Solids; Perchlorate

Condition (Circle "Y" for yes, "N" for no and "N/A" for not applicable):

1.	Y N	Are there custody seals present on the cooler?	8.	Y N	Are there custody seals present on bottles?
2.	Y N N/A	Do custody seals on cooler appear to be tampered with?	9.	Y N N/A	Do custody seals on bottles appear to be tampered with?
3.	Y N	Were contents of cooler frisked after opening, but before unpacking?	10.	Y N N/A	Was sample received with proper pH[1]? (If not, make note below)
4.	Y N	Sample received with Chain of Custody?	11.	Y N N/A	Containers for C-14, H-3 & I-129/131 marked with "Do Not Preserve" label?
5.	Y N N/A	Does the Chain of Custody match sample ID's on the container(s)?	12.	Y N	Sample received in proper containers?
6.	Y N	Was sample received broken?	13.	Y N N/A	Headspace in VOA or TOX liquid samples? (If Yes, note sample ID's below)
7.	Y N	Is sample volume sufficient for analysis?	14.	Y N N/A	Was Internal COC/Workshare received?

[1] For DOE-AL (Pantex, LANL, Sandia) sites, pH of ALL containers received must be verified, EXCEPT VOA, TOX, Oil & Grease and soils.

Notes:

Corrective Action:

☐ Client Contact Name: _____ Informed by: _____

☐ Sample(s) processed "as is"

☐ Sample(s) on hold until: _____ If released, notify: _____

Project Management Review: Joanne Kwalt Date: 10-29-12

THIS FORM MUST BE COMPLETED AT THE TIME THE ITEMS ARE BEING CHECKED IN. IF ANY ITEM IS COMPLETED BY SOMEONE OTHER THAN THE INITIATOR, THEN THAT PERSON IS REQUIRED TO APPLY THEIR INITIAL AND THE DATE NEXT TO THAT ITEM.

ADMIN-0004 rev13, REVISED 05/27/11 \\Slsvr01\QA\FORMS\ST-LOUIS\ADMIN\Admin-0004 CUR.doc

ANALYTICAL REPORT

Job Number: 280-35075-1

SDG Number: J01610

Job Description: SAF# RC-148

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

Attention: Joan H Kessner

Approved for release.
Kae E Yoder
Project Manager II
11/15/2012 10:45 AM

Kae E Yoder
Project Manager II
kae.yoder@testamericainc.com
11/15/2012

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: 280-35075-1

SDG #: J01610
SAF#: RC-148

Date SDG Closed: October 25, 2012
Data Deliverable: 21 Day / Summary

CLIENT ID	LAB ID	ANALYSES REQUESTED	ANALYSES PERFORMED
J1R432	280-35075-1	6010/7471/300.0/353.2/8270A/8082/8310	6010B/6020/7471A/9056M/353.2/8270C/8082/8310

The Uranium and Anions method substitutions noted above, as agreed to by all parties, have no technical impact on the data.

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

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

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

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

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

RECEIPT
The sample was received on 10/25/2012 9:30 AM; the sample arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.8º C.

GC/MS SEMIVOLATILES - SW846 8270C
Low levels of Bis(2-ethylhexyl) phthalate, a common laboratory contaminant, are present in the method blank associated with batch 280-144364. Because the concentration in the method blank is not present at a level greater than the reporting limit, corrective action is deemed unnecessary. Associated sample results present above the MDL and/or RL have been flagged with a "B".

No other anomalies were encountered.

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

HPLC - SW846 8310 - PAHs
No anomalies were encountered.

TOTAL METALS - SW846 6010B/6020/7471A
Serial dilution of a digestate in batch 280-144558 indicates that physical and chemical interferences are present for several elements. Results have been flagged with an "X".

Low levels of Uranium are present in the method blank associated with batch 280-144875. 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 J1R432; therefore, control limits are not applicable.

Mercury was recovered outside the control limits, biased high, in the LCS associated with batch 280-146890 and in the Matrix Spike performed on sample J1R432 in batch 280-146890. The associated sample result has been flagged “N”. This is an indicator that data may be biased high. As no detectable concentration of Mercury is present in the associated sample, corrective action is deemed unnecessary.

No other anomalies were encountered.

GENERAL CHEMISTRY - MCAWW 353.2 - NITRATE NITRITE as N

Low levels of Nitrate Nitrite as N are present in the method blank associated with batch 280-146219. Because the concentration in the method blank is not present at a level greater than half the reporting limit, corrective action is deemed unnecessary.

No other anomalies were encountered.

GENERAL CHEMISTRY - SW846 9056M - ANIONS

The Orthophosphate as P Matrix Spike performed on sample J1R432 exhibited the percent recovery outside the control limits, 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.

The Sulfate duplicate analysis of sample J1R432 exceeded the RPD limit, and the associated sample result has been flagged “M”. There is no indication that the analytical system was operating out of control, and method accuracy has been verified by the acceptable LCS analysis data; therefore, corrective action is deemed unnecessary.

No other anomalies were encountered.

DATA REPORTING QUALIFIERS

Client: Washington Closure Hanford

Job Number: 280-35075-1
Sdg Number: J01610

Lab Section	Qualifier	Description
GC/MS Semi VOA		
	B	Analyte was found in the associated method blank as well as in the sample.
	U	Analyzed for but not detected.
	J	Indicates an Estimated Value for TICs
	N	Presumptive evidence of material.
	J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
GC Semi VOA		
	U	Analyzed for but not detected.
HPLC/IC		
	U	Analyzed for but not detected.
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.
General Chemistry		
	U	Analyzed for but not detected.
	B	Estimated result. Result is less than the RL, but greater than MDL
	N	MS, MSD: Spike recovery exceeds upper or lower control limits.
	M	Sample duplicate precision not met.
	C	The analyte was detected in both the sample and the assoicated QC blank, and the sample concentration was </= 5X the blank concentration.

SAMPLE SUMMARY

Client: Washington Closure Hanford

Job Number: 280-35075-1
Sdg Number: J01610

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
280-35075-1	J1R432	Solid	10/18/2012 1204	10/25/2012 0930

METHOD SUMMARY

Client: Washington Closure Hanford

Job Number: 280-35075-1
Sdg Number: J01610

Description	Lab Location	Method	Preparation Method
Matrix: Solid			
Semivolatile Organic Compounds (GC/MS)	TAL DEN	SW846 8270C	
Ultrasonic Extraction	TAL DEN		SW846 3550C
Polychlorinated Biphenyls (PCBs) by Gas Chromatography	TAL DEN	SW846 8082	
Ultrasonic Extraction	TAL DEN		SW846 3550C
PAHs (HPLC)	TAL DEN	SW846 8310	
Ultrasonic Extraction	TAL DEN		SW846 3550C
Metals (ICP)	TAL DEN	SW846 6010B	
Preparation, Metals	TAL DEN		SW846 3050B
Metals (ICP/MS)	TAL DEN	SW846 6020	
Preparation, Metals	TAL DEN		SW846 3050B
Mercury (CVAA)	TAL DEN	SW846 7471A	
Preparation, Mercury	TAL DEN		SW846 7471A
Nitrogen, Nitrate-Nitrite	TAL DEN	MCAWW 353.2	
Deionized Water Leaching Procedure	TAL DEN		ASTM DI Leach
Anions, Ion Chromatography	TAL DEN	SW846 9056M	
Deionized Water Leaching Procedure	TAL DEN		ASTM DI Leach
ASTM D-2216	TAL DEN	ASTM D-2216	

Lab References:

TAL DEN = TestAmerica Denver

Method References:

ASTM = ASTM International

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

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: 280-35075-1
Sdg Number: J01610

Method	Analyst	Analyst ID
SW846 8270C	Schiller, Jon	JS
SW846 8082	Jackson, Todd D	TDJ
SW846 6010B	Bowen, Heidi E	HEB
SW846 6020	Trudell, Lynn-Anne	LT
SW846 7471A	Mooney, Joseph C	JM
MCAWW 353.2	Scott, Samantha J	SJS
SW846 9056M	Kudla, Ewa	EK
ASTM D-2216	Graham, Shane	SG
SW846 8310	Fiedler, Heather K	HKF

SAMPLE RESULTS

Client: Washington Closure Hanford

Job Number: 280-35075-1
Sdg Number: J01610

Client Sample ID: **J1R432**

Lab Sample ID: 280-35075-1
Client Matrix: Solid
% Moisture: 2.0

Date Sampled: 10/18/2012 1204
Date Received: 10/25/2012 0930

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	280-145341	Instrument ID:	SMS_K
Prep Method:	3550C	Prep Batch:	280-144364	Lab File ID:	K8124.D
Dilution:	1.0			Initial Weight/Volume:	31.5 g
Analysis Date:	11/02/2012 0328			Final Weight/Volume:	1000 uL
Prep Date:	10/26/2012 1600			Injection Volume:	0.5 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Acenaphthene		10	U	10	320
Acenaphthylene		17	U	17	320
Anthracene		17	U	17	320
Benzo[a]anthracene		19	U	19	320
Benzo[a]pyrene		19	U	19	320
Benzo[b]fluoranthene		25	U	25	320
Benzo[ghi]perylene		16	U	16	320
Benzo[k]fluoranthene		39	U	39	320
Bis(2-chloroethoxy)methane		22	U	22	320
Bis(2-chloroethyl)ether		16	U	16	320
bis (2-chloroisopropyl) ether		22	U	22	320
Bis(2-ethylhexyl) phthalate		68	J B	45	320
4-Bromophenyl phenyl ether		18	U	18	320
Butyl benzyl phthalate		42	U	42	320
Carbazole		35	U	35	320
4-Chloroaniline		80	U	80	320
4-Chloro-3-methylphenol		64	U	64	320
2-Chloronaphthalene		9.7	U	9.7	320
2-Chlorophenol		20	U	20	320
4-Chlorophenyl phenyl ether		20	U	20	320
Chrysene		26	U	26	320
Dibenz(a,h)anthracene		18	U	18	320
Dibenzofuran		19	U	19	320
1,2-Dichlorobenzene		21	U	21	320
1,3-Dichlorobenzene		12	U	12	320
1,4-Dichlorobenzene		13	U	13	320
3,3'-Dichlorobenzidine		87	U	87	640
2,4-Dichlorophenol		9.7	U	9.7	320
Diethyl phthalate		25	U	25	320
2,4-Dimethylphenol		64	U	64	320
Dimethyl phthalate		22	U	22	320
Di-n-butyl phthalate		28	U	28	320
4,6-Dinitro-2-methylphenol		320	U	320	640
2,4-Dinitrophenol		320	U	320	800
2,4-Dinitrotoluene		64	U	64	320
2,6-Dinitrotoluene		27	U	27	320
Di-n-octyl phthalate		14	U	14	320
Fluoranthene		35	U	35	320
Fluorene		17	U	17	320
Hexachlorobenzene		28	U	28	320
Hexachlorobutadiene		9.7	U	9.7	320
Hexachlorocyclopentadiene		49	U	49	320
Hexachloroethane		21	U	21	320
Indeno[1,2,3-cd]pyrene		21	U	21	320
Isophorone		17	U	17	320
2-Methylnaphthalene		18	U	18	320

Client: Washington Closure Hanford

Job Number: 280-35075-1
Sdg Number: J01610

Client Sample ID: **J1R432**

Lab Sample ID: 280-35075-1
Client Matrix: Solid
% Moisture: 2.0

Date Sampled: 10/18/2012 1204
Date Received: 10/25/2012 0930

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	280-145341	Instrument ID:	SMS_K
Prep Method:	3550C	Prep Batch:	280-144364	Lab File ID:	K8124.D
Dilution:	1.0			Initial Weight/Volume:	31.5 g
Analysis Date:	11/02/2012 0328			Final Weight/Volume:	1000 uL
Prep Date:	10/26/2012 1600			Injection Volume:	0.5 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
2-Methylphenol		13	U	13	320
3 & 4 Methylphenol		32	U	32	320
Naphthalene		30	U	30	320
2-Nitroaniline		49	U	49	320
3-Nitroaniline		71	U	71	320
4-Nitroaniline		70	U	70	320
Nitrobenzene		21	U	21	320
2-Nitrophenol		9.7	U	9.7	320
4-Nitrophenol		94	U	94	640
N-Nitrosodi-n-propylamine		30	U	30	320
N-Nitrosodiphenylamine		20	U	20	320
Pentachlorophenol		320	U	320	640
Phenanthrene		17	U	17	320
Phenol		17	U	17	320
Pyrene		12	U	12	320
1,2,4-Trichlorobenzene		27	U	27	320
2,4,5-Trichlorophenol		9.7	U	9.7	320
2,4,6-Trichlorophenol		9.7	U	9.7	320

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Fluorobiphenyl	79		50 - 120
2-Fluorophenol	84		53 - 120
Nitrobenzene-d5	85		50 - 120
Phenol-d5	86		52 - 120
Terphenyl-d14	83		55 - 120
2,4,6-Tribromophenol	89		51 - 120

Client: Washington Closure Hanford

Job Number: 280-35075-1
Sdg Number: J01610

Client Sample ID: **J1R432**

Lab Sample ID: 280-35075-1
Client Matrix: Solid
% Moisture: 2.0

Date Sampled: 10/18/2012 1204
Date Received: 10/25/2012 0930

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	280-145341	Instrument ID:	SMS_K
Prep Method:	3550C	Prep Batch:	280-144364	Lab File ID:	K8124.D
Dilution:	1.0			Initial Weight/Volume:	31.5 g
Analysis Date:	11/02/2012 0328			Final Weight/Volume:	1000 uL
Prep Date:	10/26/2012 1600			Injection Volume:	0.5 uL

Tentatively Identified Compounds **Number TIC's Found:** **2**

Cas Number	Analyte	RT	Est. Result (ug/Kg)	Qualifier
	Unknown	1.82	150	N J
	Unknown	3.18	6800	N J

Client: Washington Closure Hanford

Job Number: 280-35075-1
Sdg Number: J01610

Client Sample ID: **J1R432**

Lab Sample ID: 280-35075-1
Client Matrix: Solid
% Moisture: 2.0

Date Sampled: 10/18/2012 1204
Date Received: 10/25/2012 0930

8082 Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analysis Method:	8082	Analysis Batch:	280-146984	Instrument ID:	GCS_W
Prep Method:	3550C	Prep Batch:	280-144982	Initial Weight/Volume:	31.2 g
Dilution:	1.0			Final Weight/Volume:	5000 uL
Analysis Date:	11/09/2012 1116			Injection Volume:	1 uL
Prep Date:	10/31/2012 0949			Result Type:	PRIMARY

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

Surrogate	%Rec	Qualifier	Acceptance Limits
Decachlorobiphenyl	67		59 - 130
Tetrachloro-m-xylene	94		53 - 128

Client: Washington Closure Hanford

Job Number: 280-35075-1
Sdg Number: J01610

Client Sample ID: **J1R432**

Lab Sample ID: 280-35075-1
Client Matrix: Solid
% Moisture: 2.0

Date Sampled: 10/18/2012 1204
Date Received: 10/25/2012 0930

8310 PAHs (HPLC)

Analysis Method:	8310	Analysis Batch:	280-146588	Instrument ID:	CHHPLC_G
Prep Method:	3550C	Prep Batch:	280-144374	Initial Weight/Volume:	31.6 g
Dilution:	1.0			Final Weight/Volume:	4000 uL
Analysis Date:	11/09/2012 1545			Injection Volume:	20 uL
Prep Date:	10/26/2012 1556			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Acenaphthene		9.7	U	9.7	97
Acenaphthylene		8.7	U	8.7	97
Anthracene		3.0	U	3.0	19
Benzo[a]anthracene		3.1	U	3.1	15
Benzo[a]pyrene		6.2	U	6.2	15
Benzo[b]fluoranthene		4.1	U	4.1	15
Benzo[g,h,i]perylene		7.0	U	7.0	29
Benzo[k]fluoranthene		3.8	U	3.8	15
Chrysene		4.7	U	4.7	39
Dibenzo(a,h)anthracene		11	U	11	29
Fluoranthene		13	U	13	39
Fluorene		5.1	U	5.1	29
Indeno[1,2,3-cd]pyrene		12	U	12	29
Naphthalene		12	U	12	97
Phenanthrene		12	U	12	39
Pyrene		12	U	12	39

Surrogate	%Rec	Qualifier	Acceptance Limits
Terphenyl-d14 (SUR)	93		72 - 115

Client: Washington Closure Hanford

Job Number: 280-35075-1
Sdg Number: J01610

Client Sample ID: **J1R432**

Lab Sample ID: 280-35075-1
Client Matrix: Solid
% Moisture: 2.0

Date Sampled: 10/18/2012 1204
Date Received: 10/25/2012 0930

6010B Metals (ICP)

Analysis Method:	6010B	Analysis Batch:	280-146066	Instrument ID:	MT_026
Prep Method:	3050B	Prep Batch:	280-144558	Lab File ID:	26c110612.asc
Dilution:	1.0			Initial Weight/Volume:	1.11 g
Analysis Date:	11/06/2012 2318			Final Weight/Volume:	100 mL
Prep Date:	11/01/2012 0700				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		6590	X	1.4	4.6
Antimony		0.35	U	0.35	0.55
Arsenic		2.6		0.61	0.92
Beryllium		0.50		0.030	0.18
Boron		1.2	B	0.90	1.8
Cadmium		0.10	B	0.038	0.18
Calcium		3670	X	13.0	46.0
Chromium		9.2		0.053	0.18
Cobalt		6.7		0.092	0.92
Copper		9.2		0.20	0.92
Iron		21400	X	3.5	4.6
Lead		3.8		0.25	0.46
Magnesium		3840	X	3.4	18.4
Manganese		312	X	0.092	0.92
Molybdenum		0.26	B	0.24	1.8
Nickel		9.9	X	0.11	3.7
Selenium		0.79	U	0.79	0.92
Silicon		309	X	5.2	9.2
Silver		0.15	U	0.15	0.18
Vanadium		48.3		0.086	1.8
Zinc		37.3	X	0.37	0.92

Analysis Method:	6010B	Analysis Batch:	280-146278	Instrument ID:	MT_026
Prep Method:	3050B	Prep Batch:	280-144558	Lab File ID:	26A110712.asc
Dilution:	1.0			Initial Weight/Volume:	1.11 g
Analysis Date:	11/07/2012 1415			Final Weight/Volume:	100 mL
Prep Date:	11/01/2012 0700				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Barium		64.7		0.070	0.46
Lithium		7.1		0.28	2.3
Potassium		1270		37.7	276
Sodium		178		54.2	110
Zirconium		15.7		0.33	2.3

6020 Metals (ICP/MS)

Analysis Method:	6020	Analysis Batch:	280-145383	Instrument ID:	MT_077
Prep Method:	3050B	Prep Batch:	280-144875	Lab File ID:	022SMPL.d
Dilution:	1.0			Initial Weight/Volume:	1.04 g
Analysis Date:	11/01/2012 1123			Final Weight/Volume:	100 mL
Prep Date:	10/31/2012 1300				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL

Client: Washington Closure Hanford

Job Number: 280-35075-1
Sdg Number: J01610

Client Sample ID: **J1R432**

Lab Sample ID: 280-35075-1
Client Matrix: Solid
% Moisture: 2.0

Date Sampled: 10/18/2012 1204
Date Received: 10/25/2012 0930

6020 Metals (ICP/MS)

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Uranium		0.40		0.0015	0.098

7471A Mercury (CVAA)

Analysis Method:	7471A	Analysis Batch:	280-147220	Instrument ID:	MT_033
Prep Method:	7471A	Prep Batch:	280-146890	Lab File ID:	121112aa.txt
Dilution:	1.0			Initial Weight/Volume:	0.58 g
Analysis Date:	11/12/2012 2234			Final Weight/Volume:	50 mL
Prep Date:	11/12/2012 1345				

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

General Chemistry

Client Sample ID: **J1R432**

Lab Sample ID: 280-35075-1
Client Matrix: Solid
% Moisture: 2.0
Date Sampled: 10/18/2012 1204
Date Received: 10/25/2012 0930

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Nitrate Nitrite as N-Soluble	0.67	B C	mg/Kg	0.29	0.74	1.0	353.2
Analysis Batch: 280-146219	Analysis Date: 11/07/2012 1530						DryWt Corrected: Y
Chloride-Soluble	4.4	B	mg/Kg	2.0	5.0	1.0	9056M
Analysis Batch: 280-146264	Analysis Date: 11/06/2012 1805						DryWt Corrected: Y
Nitrate as N-Soluble	0.77	B	mg/Kg	0.31	2.5	1.0	9056M
Analysis Batch: 280-146261	Analysis Date: 11/06/2012 1805						DryWt Corrected: Y
Bromide-Soluble	0.38	U	mg/Kg	0.38	2.0	1.0	9056M
Analysis Batch: 280-146264	Analysis Date: 11/06/2012 1805						DryWt Corrected: Y
Nitrite as N-Soluble	0.33	U	mg/Kg	0.33	2.5	1.0	9056M
Analysis Batch: 280-146261	Analysis Date: 11/06/2012 1805						DryWt Corrected: Y
Orthophosphate as P-Soluble	1.6	B N	mg/Kg	1.2	5.0	1.0	9056M
Analysis Batch: 280-146261	Analysis Date: 11/06/2012 1805						DryWt Corrected: Y
Sulfate-Soluble	3.2	B M	mg/Kg	1.7	5.0	1.0	9056M
Analysis Batch: 280-146264	Analysis Date: 11/06/2012 1805						DryWt Corrected: Y
Fluoride-Soluble	0.81	U	mg/Kg	0.81	5.0	1.0	9056M
Analysis Batch: 280-146264	Analysis Date: 11/06/2012 1805						DryWt Corrected: Y

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Percent Moisture	2.0		%	0.10	0.10	1.0	D-2216
Analysis Batch: 280-144243	Analysis Date: 10/26/2012 0924						DryWt Corrected: N

QUALITY CONTROL RESULTS

Client: Washington Closure Hanford

Job Number: 280-35075-1
Sdg Number: J01610

Method Blank - Batch: 280-144364

Method: 8270C
Preparation: 3550C

Lab Sample ID:	MB 280-144364/1-A	Analysis Batch:	280-145341	Instrument ID:	SMS_K
Client Matrix:	Solid	Prep Batch:	280-144364	Lab File ID:	K8099.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	30.8 g
Analysis Date:	11/01/2012 1850	Units:	ug/Kg	Final Weight/Volume:	1000 uL
Prep Date:	10/26/2012 1600			Injection Volume:	0.5 uL
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Acenaphthene	10	U	10	320
Acenaphthylene	17	U	17	320
Anthracene	17	U	17	320
Benzo[a]anthracene	19	U	19	320
Benzo[a]pyrene	19	U	19	320
Benzo[b]fluoranthene	26	U	26	320
Benzo[ghi]perylene	16	U	16	320
Benzo[k]fluoranthene	39	U	39	320
Bis(2-chloroethoxy)methane	22	U	22	320
Bis(2-chloroethyl)ether	16	U	16	320
bis (2-chloroisopropyl) ether	22	U	22	320
Bis(2-ethylhexyl) phthalate	63.7	J	45	320
4-Bromophenyl phenyl ether	19	U	19	320
Butyl benzyl phthalate	42	U	42	320
Carbazole	35	U	35	320
4-Chloroaniline	80	U	80	320
4-Chloro-3-methylphenol	64	U	64	320
2-Chloronaphthalene	9.7	U	9.7	320
2-Chlorophenol	20	U	20	320
4-Chlorophenyl phenyl ether	20	U	20	320
Chrysene	26	U	26	320
Dibenz(a,h)anthracene	19	U	19	320
Dibenzofuran	19	U	19	320
1,2-Dichlorobenzene	21	U	21	320
1,3-Dichlorobenzene	12	U	12	320
1,4-Dichlorobenzene	13	U	13	320
3,3'-Dichlorobenzidine	88	U	88	640
2,4-Dichlorophenol	9.7	U	9.7	320
Diethyl phthalate	25	U	25	320
2,4-Dimethylphenol	64	U	64	320
Dimethyl phthalate	22	U	22	320
Di-n-butyl phthalate	28	U	28	320
4,6-Dinitro-2-methylphenol	320	U	320	640
2,4-Dinitrophenol	320	U	320	800
2,4-Dinitrotoluene	64	U	64	320
2,6-Dinitrotoluene	27	U	27	320
Di-n-octyl phthalate	14	U	14	320
Fluoranthene	35	U	35	320
Fluorene	18	U	18	320
Hexachlorobenzene	28	U	28	320
Hexachlorobutadiene	9.7	U	9.7	320
Hexachlorocyclopentadiene	49	U	49	320
Hexachloroethane	21	U	21	320
Indeno[1,2,3-cd]pyrene	21	U	21	320
Isophorone	17	U	17	320

Client: Washington Closure Hanford

Job Number: 280-35075-1
Sdg Number: J01610

Method Blank - Batch: 280-144364

Method: 8270C
Preparation: 3550C

Lab Sample ID:	MB 280-144364/1-A	Analysis Batch:	280-145341	Instrument ID:	SMS_K
Client Matrix:	Solid	Prep Batch:	280-144364	Lab File ID:	K8099.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	30.8 g
Analysis Date:	11/01/2012 1850	Units:	ug/Kg	Final Weight/Volume:	1000 uL
Prep Date:	10/26/2012 1600			Injection Volume:	0.5 uL
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
2-Methylnaphthalene	19	U	19	320
2-Methylphenol	13	U	13	320
3 & 4 Methylphenol	32	U	32	320
Naphthalene	30	U	30	320
2-Nitroaniline	49	U	49	320
3-Nitroaniline	71	U	71	320
4-Nitroaniline	71	U	71	320
Nitrobenzene	21	U	21	320
2-Nitrophenol	9.7	U	9.7	320
4-Nitrophenol	94	U	94	640
N-Nitrosodi-n-propylamine	30	U	30	320
N-Nitrosodiphenylamine	20	U	20	320
Pentachlorophenol	320	U	320	640
Phenanthrene	17	U	17	320
Phenol	18	U	18	320
Pyrene	12	U	12	320
1,2,4-Trichlorobenzene	27	U	27	320
2,4,5-Trichlorophenol	9.7	U	9.7	320
2,4,6-Trichlorophenol	9.7	U	9.7	320

Surrogate	% Rec	Acceptance Limits
2-Fluorobiphenyl	84	50 - 120
2-Fluorophenol	87	53 - 120
Nitrobenzene-d5	88	50 - 120
Phenol-d5	88	52 - 120
Terphenyl-d14	92	55 - 120
2,4,6-Tribromophenol	87	51 - 120

Method Blank TICs- Batch: 280-144364

Cas Number	Analyte	RT	Est. Result	Qual
141-79-7	3-Penten-2-one, 4-methyl-	2.80	149	N J
100-51-6	Benzyl alcohol	4.78	12.9	J N
	Unknown	1.82	326	N J
	Unknown	3.18	7540	N J

Client: Washington Closure Hanford

Job Number: 280-35075-1
Sdg Number: J01610

Lab Control Sample - Batch: 280-144364

Method: 8270C
Preparation: 3550C

Lab Sample ID:	LCS 280-144364/2-A	Analysis Batch:	280-145341	Instrument ID:	SMS_K
Client Matrix:	Solid	Prep Batch:	280-144364	Lab File ID:	K8100.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	31.5 g
Analysis Date:	11/01/2012 1911	Units:	ug/Kg	Final Weight/Volume:	1000 uL
Prep Date:	10/26/2012 1600			Injection Volume:	0.5 uL
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Acenaphthene	2540	2180	86	60 - 120	
Acenaphthylene	2540	2270	90	64 - 120	
Anthracene	2540	2350	93	63 - 120	
Benzo[a]anthracene	2540	2320	91	65 - 120	
Benzo[a]pyrene	2540	2150	85	59 - 120	
Benzo[b]fluoranthene	2540	2350	93	47 - 129	
Benzo[ghi]perylene	2540	2470	97	55 - 126	
Benzo[k]fluoranthene	2540	2210	87	48 - 130	
Bis(2-chloroethoxy)methane	2540	2220	88	56 - 120	
Bis(2-chloroethyl)ether	2540	2230	88	51 - 120	
bis (2-chloroisopropyl) ether	2540	2020	80	49 - 120	
Bis(2-ethylhexyl) phthalate	2540	2300	91	65 - 120	
4-Bromophenyl phenyl ether	2540	2330	92	64 - 120	
Butyl benzyl phthalate	2540	2360	93	65 - 120	
Carbazole	2540	2350	92	64 - 120	
4-Chloroaniline	2540	1460	58	28 - 120	
4-Chloro-3-methylphenol	2540	2360	93	63 - 120	
2-Chloronaphthalene	2540	2170	86	59 - 120	
2-Chlorophenol	2540	2160	85	57 - 120	
4-Chlorophenyl phenyl ether	2540	2260	89	64 - 120	
Chrysene	2540	2310	91	64 - 120	
Dibenz(a,h)anthracene	2540	2410	95	50 - 133	
Dibenzofuran	2540	2230	88	61 - 120	
1,2-Dichlorobenzene	2540	2080	82	53 - 120	
1,3-Dichlorobenzene	2540	2040	80	52 - 120	
1,4-Dichlorobenzene	2540	2030	80	52 - 120	
3,3'-Dichlorobenzidine	2540	1590	63	30 - 120	
2,4-Dichlorophenol	2540	2270	89	60 - 120	
Diethyl phthalate	2540	2350	92	66 - 120	
2,4-Dimethylphenol	2540	2090	82	54 - 120	
Dimethyl phthalate	2540	2320	91	65 - 120	
Di-n-butyl phthalate	2540	2410	95	67 - 120	
4,6-Dinitro-2-methylphenol	2540	2390	94	57 - 120	
2,4-Dinitrophenol	2540	2360	93	46 - 120	
2,4-Dinitrotoluene	2540	2560	101	68 - 120	
2,6-Dinitrotoluene	2540	2360	93	64 - 120	
Di-n-octyl phthalate	2540	2360	93	66 - 120	
Fluoranthene	2540	2390	94	66 - 120	
Fluorene	2540	2250	88	64 - 120	
Hexachlorobenzene	2540	2320	91	62 - 120	
Hexachlorobutadiene	2540	2060	81	53 - 120	

Client: Washington Closure Hanford

Job Number: 280-35075-1
Sdg Number: J01610

Lab Control Sample - Batch: 280-144364

Method: 8270C
Preparation: 3550C

Lab Sample ID:	LCS 280-144364/2-A	Analysis Batch:	280-145341	Instrument ID:	SMS_K
Client Matrix:	Solid	Prep Batch:	280-144364	Lab File ID:	K8100.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	31.5 g
Analysis Date:	11/01/2012 1911	Units:	ug/Kg	Final Weight/Volume:	1000 uL
Prep Date:	10/26/2012 1600			Injection Volume:	0.5 uL
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Hexachlorocyclopentadiene	2540	2310	91	47 - 120	
Hexachloroethane	2540	2090	82	51 - 120	
Indeno[1,2,3-cd]pyrene	2540	2390	94	63 - 120	
Isophorone	2540	2250	89	56 - 120	
2-Methylnaphthalene	2540	2130	84	57 - 120	
2-Methylphenol	2540	2120	83	56 - 120	
3 & 4 Methylphenol	5080	4350	86	53 - 120	
Naphthalene	2540	2170	85	57 - 120	
2-Nitroaniline	2540	2400	95	63 - 120	
3-Nitroaniline	2540	1890	75	47 - 120	
4-Nitroaniline	2540	2390	94	64 - 120	
Nitrobenzene	2540	2150	84	54 - 120	
2-Nitrophenol	2540	2250	89	56 - 120	
4-Nitrophenol	2540	2620	103	63 - 121	
N-Nitrosodi-n-propylamine	2540	2150	85	51 - 120	
N-Nitrosodiphenylamine	2170	2010	93	61 - 120	
Pentachlorophenol	2540	2110	83	56 - 120	
Phenanthrene	2540	2320	91	64 - 120	
Phenol	2540	2190	86	56 - 120	
Pyrene	2540	2270	89	64 - 120	
1,2,4-Trichlorobenzene	2540	2070	81	52 - 120	
2,4,5-Trichlorophenol	2540	2380	94	64 - 120	
2,4,6-Trichlorophenol	2540	2310	91	61 - 120	

Surrogate	% Rec	Acceptance Limits
2-Fluorobiphenyl	81	50 - 120
2-Fluorophenol	83	53 - 120
Nitrobenzene-d5	84	50 - 120
Phenol-d5	85	52 - 120
Terphenyl-d14	88	55 - 120
2,4,6-Tribromophenol	93	51 - 120

Client: Washington Closure Hanford

Job Number: 280-35075-1
Sdg Number: J01610

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 280-144364

Method: 8270C
Preparation: 3550C

MS Lab Sample ID:	280-35075-1	Analysis Batch:	280-145341	Instrument ID:	SMS_K
Client Matrix:	Solid	Prep Batch:	280-144364	Lab File ID:	K8125.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	32.7 g
Analysis Date:	11/02/2012 0349			Final Weight/Volume:	1000 uL
Prep Date:	10/26/2012 1600			Injection Volume:	0.5 uL
Leach Date:	N/A				

MSD Lab Sample ID:	280-35075-1	Analysis Batch:	280-145341	Instrument ID:	SMS_K
Client Matrix:	Solid	Prep Batch:	280-144364	Lab File ID:	K8126.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	31.0 g
Analysis Date:	11/02/2012 0409			Final Weight/Volume:	1000 uL
Prep Date:	10/26/2012 1600			Injection Volume:	0.5 uL
Leach Date:	N/A				

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Acenaphthene	79	81	60 - 120	8	30		
Acenaphthylene	83	85	64 - 120	8	30		
Anthracene	87	88	63 - 120	6	30		
Benzo[a]anthracene	88	87	65 - 120	3	30		
Benzo[a]pyrene	80	79	59 - 120	3	30		
Benzo[b]fluoranthene	92	91	47 - 129	4	44		
Benzo[ghi]perylene	86	86	55 - 126	5	31		
Benzo[k]fluoranthene	77	78	48 - 130	7	30		
Bis(2-chloroethoxy)methane	80	81	56 - 120	7	30		
Bis(2-chloroethyl)ether	83	84	51 - 120	6	30		
bis (2-chloroisopropyl) ether	77	78	49 - 120	6	30		
Bis(2-ethylhexyl) phthalate	87	86	65 - 120	4	30		
4-Bromophenyl phenyl ether	86	88	64 - 120	7	30		
Butyl benzyl phthalate	96	88	65 - 120	4	30		
Carbazole	87	89	64 - 120	8	30		
4-Chloroaniline	59	56	28 - 120	1	30		
4-Chloro-3-methylphenol	87	88	63 - 120	7	30		
2-Chloronaphthalene	78	81	59 - 120	9	30		
2-Chlorophenol	80	83	57 - 120	9	30		
4-Chlorophenyl phenyl ether	84	85	64 - 120	7	30		
Chrysene	86	85	64 - 120	4	35		
Dibenz(a,h)anthracene	85	87	50 - 133	7	30		
Dibenzofuran	82	83	61 - 120	6	30		
1,2-Dichlorobenzene	78	80	53 - 120	8	30		
1,3-Dichlorobenzene	75	76	52 - 120	7	32		
1,4-Dichlorobenzene	75	77	52 - 120	7	30		
3,3'-Dichlorobenzidine	77	75	30 - 120	3	30		
2,4-Dichlorophenol	83	84	60 - 120	7	30		
Diethyl phthalate	87	87	66 - 120	5	30		
2,4-Dimethylphenol	76	81	54 - 120	12	30		
Dimethyl phthalate	85	86	65 - 120	6	30		
Di-n-butyl phthalate	90	91	67 - 120	6	30		

Client: Washington Closure Hanford

Job Number: 280-35075-1
Sdg Number: J01610

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 280-144364

Method: 8270C
Preparation: 3550C

MS Lab Sample ID:	280-35075-1	Analysis Batch:	280-145341	Instrument ID:	SMS_K
Client Matrix:	Solid	Prep Batch:	280-144364	Lab File ID:	K8125.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	32.7 g
Analysis Date:	11/02/2012 0349			Final Weight/Volume:	1000 uL
Prep Date:	10/26/2012 1600			Injection Volume:	0.5 uL
Leach Date:	N/A				

MSD Lab Sample ID:	280-35075-1	Analysis Batch:	280-145341	Instrument ID:	SMS_K
Client Matrix:	Solid	Prep Batch:	280-144364	Lab File ID:	K8126.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	31.0 g
Analysis Date:	11/02/2012 0409			Final Weight/Volume:	1000 uL
Prep Date:	10/26/2012 1600			Injection Volume:	0.5 uL
Leach Date:	N/A				

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
4,6-Dinitro-2-methylphenol	67	72	57 - 120	13	30		
2,4-Dinitrophenol	48	52	46 - 120	14	34		
2,4-Dinitrotoluene	93	93	68 - 120	5	30		
2,6-Dinitrotoluene	87	90	64 - 120	9	30		
Di-n-octyl phthalate	93	93	66 - 120	6	30		
Fluoranthene	89	90	66 - 120	6	30		
Fluorene	83	83	64 - 120	6	30		
Hexachlorobenzene	86	85	62 - 120	4	30		
Hexachlorobutadiene	74	76	53 - 120	9	30		
Hexachlorocyclopentadiene	81	86	47 - 120	11	30		
Hexachloroethane	77	79	51 - 120	8	30		
Indeno[1,2,3-cd]pyrene	85	85	63 - 120	6	30		
Isophorone	84	85	56 - 120	6	30		
2-Methylnaphthalene	77	80	57 - 120	9	30		
2-Methylphenol	80	82	56 - 120	8	30		
3 & 4 Methylphenol	81	82	53 - 120	7	30		
Naphthalene	78	80	57 - 120	8	30		
2-Nitroaniline	91	93	63 - 120	8	30		
3-Nitroaniline	78	75	47 - 120	1	30		
4-Nitroaniline	93	91	64 - 120	4	30		
Nitrobenzene	79	81	54 - 120	7	30		
2-Nitrophenol	82	86	56 - 120	10	30		
4-Nitrophenol	93	95	63 - 121	8	30		
N-Nitrosodi-n-propylamine	80	83	51 - 120	9	30		
N-Nitrosodiphenylamine	87	88	61 - 120	7	36		
Pentachlorophenol	83	84	56 - 120	7	30		
Phenanthrene	87	86	64 - 120	4	30		
Phenol	82	84	56 - 120	9	30		
Pyrene	85	84	64 - 120	4	38		
1,2,4-Trichlorobenzene	77	79	52 - 120	7	30		
2,4,5-Trichlorophenol	88	88	64 - 120	5	30		
2,4,6-Trichlorophenol	85	87	61 - 120	7	30		

Client: Washington Closure Hanford

Job Number: 280-35075-1
Sdg Number: J01610

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 280-144364

Method: 8270C
Preparation: 3550C

MS Lab Sample ID:	280-35075-1	Analysis Batch:	280-145341	Instrument ID:	SMS_K
Client Matrix:	Solid	Prep Batch:	280-144364	Lab File ID:	K8125.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	32.7 g
Analysis Date:	11/02/2012 0349			Final Weight/Volume:	1000 uL
Prep Date:	10/26/2012 1600			Injection Volume:	0.5 uL
Leach Date:	N/A				

MSD Lab Sample ID:	280-35075-1	Analysis Batch:	280-145341	Instrument ID:	SMS_K
Client Matrix:	Solid	Prep Batch:	280-144364	Lab File ID:	K8126.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	31.0 g
Analysis Date:	11/02/2012 0409			Final Weight/Volume:	1000 uL
Prep Date:	10/26/2012 1600			Injection Volume:	0.5 uL
Leach Date:	N/A				

Analyte	% Rec. MS	% Rec. MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual

Surrogate	MS % Rec	MSD % Rec	Acceptance Limits
2-Fluorobiphenyl	75	76	50 - 120
2-Fluorophenol	80	81	53 - 120
Nitrobenzene-d5	80	81	50 - 120
Phenol-d5	82	83	52 - 120
Terphenyl-d14	84	83	55 - 120
2,4,6-Tribromophenol	91	91	51 - 120

Client: Washington Closure Hanford

Job Number: 280-35075-1
Sdg Number: J01610

Method Blank - Batch: 280-144982

Method: 8082
Preparation: 3550C

Lab Sample ID:	MB 280-144982/1-A	Analysis Batch:	280-146984	Instrument ID:	GCS_W
Client Matrix:	Solid	Prep Batch:	280-144982	Lab File ID:	004F0401.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	32.0 g
Analysis Date:	11/09/2012 1029	Units:	ug/Kg	Final Weight/Volume:	5000 uL
Prep Date:	10/31/2012 0949			Injection Volume:	1 uL
Leach Date:	N/A			Column ID:	PRIMARY

Analyte	Result	Qual	MDL	RL
Aroclor 1016	2.6	U	2.6	9.4
Aroclor 1221	7.5	U	7.5	15
Aroclor 1232	1.9	U	1.9	9.4
Aroclor 1242	4.4	U	4.4	9.4
Aroclor 1248	4.4	U	4.4	9.4
Aroclor 1254	2.4	U	2.4	9.4
Aroclor 1260	2.4	U	2.4	9.4

Surrogate	% Rec	Acceptance Limits
Decachlorobiphenyl	63	59 - 130
Tetrachloro-m-xylene	87	53 - 128

Lab Control Sample - Batch: 280-144982

Method: 8082
Preparation: 3550C

Lab Sample ID:	LCS 280-144982/2-A	Analysis Batch:	280-146984	Instrument ID:	GCS_W
Client Matrix:	Solid	Prep Batch:	280-144982	Lab File ID:	005F0501.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	31.2 g
Analysis Date:	11/09/2012 1053	Units:	ug/Kg	Final Weight/Volume:	5000 uL
Prep Date:	10/31/2012 0949			Injection Volume:	1 uL
Leach Date:	N/A			Column ID:	PRIMARY

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Aroclor 1016	32.1	32.3	101	54 - 132	
Aroclor 1260	32.1	31.9	100	62 - 129	

Surrogate	% Rec	Acceptance Limits
Decachlorobiphenyl	65	59 - 130
Tetrachloro-m-xylene	92	53 - 128

Client: Washington Closure Hanford

Job Number: 280-35075-1
Sdg Number: J01610

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 280-144982

Method: 8082
Preparation: 3550C

MS Lab Sample ID:	280-35075-1	Analysis Batch:	280-146984	Instrument ID:	GCS_W
Client Matrix:	Solid	Prep Batch:	280-144982	Lab File ID:	007F0701.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	31.2 g
Analysis Date:	11/09/2012 1139			Final Weight/Volume:	5000 uL
Prep Date:	10/31/2012 0949			Injection Volume:	1 uL
Leach Date:	N/A			Column ID:	PRIMARY

MSD Lab Sample ID:	280-35075-1	Analysis Batch:	280-146984	Instrument ID:	GCS_W
Client Matrix:	Solid	Prep Batch:	280-144982	Lab File ID:	008F0801.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	30.9 g
Analysis Date:	11/09/2012 1202			Final Weight/Volume:	5000 uL
Prep Date:	10/31/2012 0949			Injection Volume:	1 uL
Leach Date:	N/A			Column ID:	PRIMARY

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Aroclor 1016	105	104	54 - 132	0	26		
Aroclor 1260	100	100	62 - 129	1	26		

Surrogate	MS % Rec	MSD % Rec	Acceptance Limits
Decachlorobiphenyl	67	66	59 - 130
Tetrachloro-m-xylene	95	93	53 - 128

Client: Washington Closure Hanford

Job Number: 280-35075-1
Sdg Number: J01610

Method Blank - Batch: 280-144374

Method: 8310
Preparation: 3550C

Lab Sample ID:	MB 280-144374/1-A	Analysis Batch:	280-146588	Instrument ID:	CHHPLC_G
Client Matrix:	Solid	Prep Batch:	280-144374	Lab File ID:	G1109008.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	30.7 g
Analysis Date:	11/09/2012 1444	Units:	ug/Kg	Final Weight/Volume:	4000 uL
Prep Date:	10/26/2012 1556			Injection Volume:	20 uL
Leach Date:	N/A			Column ID:	PRIMARY

Analyte	Result	Qual	MDL	RL
Acenaphthene	9.8	U	9.8	98
Acenaphthylene	8.8	U	8.8	98
Anthracene	3.0	U	3.0	20
Benzo[a]anthracene	3.1	U	3.1	15
Benzo[a]pyrene	6.3	U	6.3	15
Benzo[b]fluoranthene	4.1	U	4.1	15
Benzo[g,h,i]perylene	7.0	U	7.0	29
Benzo[k]fluoranthene	3.9	U	3.9	15
Chrysene	4.7	U	4.7	39
Dibenzo(a,h)anthracene	11	U	11	29
Fluoranthene	13	U	13	39
Fluorene	5.2	U	5.2	29
Indeno[1,2,3-cd]pyrene	12	U	12	29
Naphthalene	12	U	12	98
Phenanthrene	12	U	12	39
Pyrene	12	U	12	39

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

Client: Washington Closure Hanford

Job Number: 280-35075-1
Sdg Number: J01610

Lab Control Sample - Batch: 280-144374

Method: 8310
Preparation: 3550C

Lab Sample ID:	LCS 280-144374/2-A	Analysis Batch:	280-146588	Instrument ID:	CHHPLC_G
Client Matrix:	Solid	Prep Batch:	280-144374	Lab File ID:	G1109009.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	31.8 g
Analysis Date:	11/09/2012 1515	Units:	ug/Kg	Final Weight/Volume:	4000 uL
Prep Date:	10/26/2012 1556			Injection Volume:	20 uL
Leach Date:	N/A			Column ID:	PRIMARY

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Acenaphthene	1890	1790	95	78 - 116	
Acenaphthylene	1890	1640	87	76 - 115	
Anthracene	1890	1650	88	74 - 115	
Benzo[a]anthracene	1890	2000	106	85 - 120	
Benzo[a]pyrene	1890	1620	86	74 - 121	
Benzo[b]fluoranthene	1890	1760	93	85 - 115	
Benzo[g,h,i]perylene	1890	1940	103	85 - 120	
Benzo[k]fluoranthene	1890	1780	94	85 - 115	
Chrysene	1890	1740	92	83 - 115	
Dibenzo(a,h)anthracene	1890	1790	95	83 - 115	
Fluoranthene	1890	1750	93	83 - 115	
Fluorene	1890	1730	92	80 - 115	
Indeno[1,2,3-cd]pyrene	1890	1940	103	85 - 123	
Naphthalene	1890	1720	91	80 - 121	
Phenanthrene	1890	1760	94	80 - 115	
Pyrene	1890	1790	95	75 - 116	

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

Client: Washington Closure Hanford

Job Number: 280-35075-1
Sdg Number: J01610

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 280-144374

Method: 8310
Preparation: 3550C

MS Lab Sample ID:	280-35075-1	Analysis Batch:	280-146588	Instrument ID:	CHHPLC_G
Client Matrix:	Solid	Prep Batch:	280-144374	Lab File ID:	G1109011.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	31.8 g
Analysis Date:	11/09/2012 1616			Final Weight/Volume:	4000 uL
Prep Date:	10/26/2012 1556			Injection Volume:	20 uL
Leach Date:	N/A			Column ID:	PRIMARY

MSD Lab Sample ID:	280-35075-1	Analysis Batch:	280-146588	Instrument ID:	CHHPLC_G
Client Matrix:	Solid	Prep Batch:	280-144374	Lab File ID:	G1109012.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	32.2 g
Analysis Date:	11/09/2012 1646			Final Weight/Volume:	4000 uL
Prep Date:	10/26/2012 1556			Injection Volume:	20 uL
Leach Date:	N/A			Column ID:	PRIMARY

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Acenaphthene	94	96	78 - 116	1	20		
Acenaphthylene	88	89	76 - 115	1	21		
Anthracene	88	91	74 - 115	1	20		
Benzo[a]anthracene	106	108	85 - 120	1	20		
Benzo[a]pyrene	86	89	74 - 121	2	20		
Benzo[b]fluoranthene	93	96	85 - 115	1	20		
Benzo[g,h,i]perylene	103	106	85 - 120	1	20		
Benzo[k]fluoranthene	94	96	85 - 115	1	20		
Chrysene	92	94	83 - 115	1	20		
Dibenzo(a,h)anthracene	95	97	83 - 115	1	20		
Fluoranthene	93	95	83 - 115	1	20		
Fluorene	92	94	80 - 115	1	20		
Indeno[1,2,3-cd]pyrene	103	105	85 - 123	1	20		
Naphthalene	92	93	80 - 121	0	20		
Phenanthrene	94	96	80 - 115	1	20		
Pyrene	95	97	75 - 116	1	20		

Surrogate	MS % Rec	MSD % Rec	Acceptance Limits
Terphenyl-d14 (SUR)	90	91	72 - 115

Client: Washington Closure Hanford

Job Number: 280-35075-1
Sdg Number: J01610

Method Blank - Batch: 280-144558

Method: 6010B
Preparation: 3050B

Lab Sample ID:	MB 280-144558/1-A	Analysis Batch:	280-146066	Instrument ID:	MT_026
Client Matrix:	Solid	Prep Batch:	280-144558	Lab File ID:	26c110612.asc
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1 g
Analysis Date:	11/06/2012 2313	Units:	mg/Kg	Final Weight/Volume:	100 mL
Prep Date:	11/01/2012 0700				
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
Beryllium	0.033	U	0.033	0.20
Boron	0.98	U	0.98	2.0
Cadmium	0.041	U	0.041	0.20
Calcium	14.1	U	14.1	50.0
Chromium	0.058	U	0.058	0.20
Cobalt	0.10	U	0.10	1.0
Copper	0.22	U	0.22	1.0
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
Selenium	0.86	U	0.86	1.0
Silicon	5.7	U	5.7	10.0
Silver	0.16	U	0.16	0.20
Vanadium	0.094	U	0.094	2.0
Zinc	0.40	U	0.40	1.0

Method Blank - Batch: 280-144558

Method: 6010B
Preparation: 3050B

Lab Sample ID:	MB 280-144558/1-A	Analysis Batch:	280-146278	Instrument ID:	MT_026
Client Matrix:	Solid	Prep Batch:	280-144558	Lab File ID:	26A110712.asc
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1 g
Analysis Date:	11/07/2012 1410	Units:	mg/Kg	Final Weight/Volume:	100 mL
Prep Date:	11/01/2012 0700				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Barium	0.076	U	0.076	0.50
Lithium	0.30	U	0.30	2.5
Potassium	41.0	U	41.0	300
Sodium	59.0	U	59.0	120
Zirconium	0.35	U	0.35	2.5

Client: Washington Closure Hanford

Job Number: 280-35075-1
Sdg Number: J01610

Lab Control Sample - Batch: 280-144558

Method: 6010B
Preparation: 3050B

Lab Sample ID:	LCS 280-144558/2-A	Analysis Batch:	280-146066	Instrument ID:	MT_026
Client Matrix:	Solid	Prep Batch:	280-144558	Lab File ID:	26c110612.asc
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1 g
Analysis Date:	11/06/2012 2316	Units:	mg/Kg	Final Weight/Volume:	100 mL
Prep Date:	11/01/2012 0700				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Aluminum	200	193.9	97	82 - 116	
Antimony	50.0	53.66	107	82 - 110	
Arsenic	100	100.1	100	85 - 110	
Beryllium	5.00	5.11	102	84 - 114	
Boron	100	104.9	105	81 - 110	
Cadmium	10.0	10.36	104	87 - 110	
Calcium	5000	5038	101	82 - 114	
Chromium	20.0	20.04	100	84 - 114	
Cobalt	50.0	50.40	101	87 - 110	
Copper	25.0	23.81	95	88 - 110	
Iron	100	114.1	114	87 - 120	
Lead	50.0	51.59	103	86 - 110	
Magnesium	5000	4795	96	90 - 110	
Manganese	50.0	50.64	101	88 - 110	
Molybdenum	100	97.88	98	86 - 110	
Nickel	50.0	50.43	101	87 - 110	
Selenium	200	200.2	100	83 - 110	
Silicon	1000	133.0	13	10 - 70	
Silver	5.00	4.45	89	87 - 114	
Vanadium	50.0	48.12	96	88 - 110	
Zinc	50.0	49.02	98	76 - 114	

Lab Control Sample - Batch: 280-144558

Method: 6010B
Preparation: 3050B

Lab Sample ID:	LCS 280-144558/2-A	Analysis Batch:	280-146278	Instrument ID:	MT_026
Client Matrix:	Solid	Prep Batch:	280-144558	Lab File ID:	26A110712.asc
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1 g
Analysis Date:	11/07/2012 1412	Units:	mg/Kg	Final Weight/Volume:	100 mL
Prep Date:	11/01/2012 0700				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Barium	200	198.2	99	87 - 112	
Lithium	100	99.64	100	90 - 110	
Potassium	5000	5026	101	89 - 110	
Sodium	5000	5225	105	90 - 112	
Zirconium	50.0	49.33	99	90 - 110	

Client: Washington Closure Hanford

Job Number: 280-35075-1
Sdg Number: J01610

Matrix Spike - Batch: 280-144558

Method: 6010B
Preparation: 3050B

Lab Sample ID:	280-35075-1	Analysis Batch:	280-146066	Instrument ID:	MT_026
Client Matrix:	Solid	Prep Batch:	280-144558	Lab File ID:	26c110612.asc
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1.11 g
Analysis Date:	11/06/2012 2323	Units:	mg/Kg	Final Weight/Volume:	100 mL
Prep Date:	11/01/2012 0700				
Leach Date:	N/A				

Analyte	Sample Result/Qual		Spike Amount	Result	% Rec.	Limit	Qual
Aluminum	6590		184	8285	921	50 - 200	4
Antimony	0.35	U	46.0	28.63	62	20 - 200	
Arsenic	2.6		91.9	83.09	88	76 - 111	
Beryllium	0.50		4.60	4.68	91	72 - 105	
Boron	1.2	B	91.9	84.49	91	75 - 107	
Cadmium	0.10	B	9.19	8.63	93	40 - 130	
Calcium	3670		4600	9329	123	43 - 165	
Chromium	9.2		18.4	25.73	90	70 - 200	
Cobalt	6.7		46.0	47.46	89	72 - 106	
Copper	9.2		23.0	28.91	86	37 - 187	
Iron	21400		91.9	22220	842	70 - 200	4
Lead	3.8		46.0	44.96	90	70 - 200	
Magnesium	3840		4600	8202	95	64 - 145	
Manganese	312		46.0	374.1	134	40 - 200	4
Molybdenum	0.26	B	91.9	77.61	84	75 - 103	
Nickel	9.9		46.0	49.40	86	61 - 126	
Selenium	0.79	U	184	161.0	88	76 - 104	
Silicon	309		919	503.1	21	20 - 200	
Silver	0.15	U	4.60	3.50	76	75 - 141	
Vanadium	48.3		46.0	92.38	96	50 - 169	
Zinc	37.3		46.0	76.45	85	70 - 200	

Matrix Spike - Batch: 280-144558

Method: 6010B
Preparation: 3050B

Lab Sample ID:	280-35075-1	Analysis Batch:	280-146278	Instrument ID:	MT_026
Client Matrix:	Solid	Prep Batch:	280-144558	Lab File ID:	26A110712.asc
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1.11 g
Analysis Date:	11/07/2012 1419	Units:	mg/Kg	Final Weight/Volume:	100 mL
Prep Date:	11/01/2012 0700				
Leach Date:	N/A				

Analyte	Sample Result/Qual	Spike Amount	Result	% Rec.	Limit	Qual
Barium	64.7	184	264.5	109	52 - 159	
Lithium	7.1	91.9	89.51	90	84 - 109	
Potassium	1270	4600	5521	93	56 - 172	
Sodium	178	4600	4661	98	78 - 111	
Zirconium	15.7	46.0	57.70	91	75 - 125	

Client: Washington Closure Hanford

Job Number: 280-35075-1
Sdg Number: J01610

Duplicate - Batch: 280-144558

Method: 6010B
Preparation: 3050B

Lab Sample ID:	280-35075-1	Analysis Batch:	280-146066	Instrument ID:	MT_026
Client Matrix:	Solid	Prep Batch:	280-144558	Lab File ID:	26c110612.asc
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1.13 g
Analysis Date:	11/06/2012 2326	Units:	mg/Kg	Final Weight/Volume:	100 mL
Prep Date:	11/01/2012 0700				
Leach Date:	N/A				

Analyte	Sample Result/Qual		Result	RPD	Limit	Qual
Aluminum	6590		6504	1	40	
Antimony	0.35	U	0.34	NC	40	U
Arsenic	2.6		2.31	10	30	
Beryllium	0.50		0.499	0.1	30	
Boron	1.2	B	1.14	8	30	B
Cadmium	0.10	B	0.101	4	30	B
Calcium	3670		3656	0.2	30	
Chromium	9.2		10.34	11	40	
Cobalt	6.7		6.53	2	30	
Copper	9.2		8.73	5	30	
Iron	21400		21830	2	40	
Lead	3.8		4.17	10	40	
Magnesium	3840		3858	0.6	30	
Manganese	312		302.7	3	40	
Molybdenum	0.26	B	0.23	NC	30	U
Nickel	9.9		10.02	0.9	30	
Selenium	0.79	U	0.78	NC	30	U
Silicon	309		316.4	2	40	
Silver	0.15	U	0.14	NC	30	U
Vanadium	48.3		49.77	3	30	
Zinc	37.3		36.87	1	40	

Duplicate - Batch: 280-144558

Method: 6010B
Preparation: 3050B

Lab Sample ID:	280-35075-1	Analysis Batch:	280-146278	Instrument ID:	MT_026
Client Matrix:	Solid	Prep Batch:	280-144558	Lab File ID:	26A110712.asc
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1.13 g
Analysis Date:	11/07/2012 1422	Units:	mg/Kg	Final Weight/Volume:	100 mL
Prep Date:	11/01/2012 0700				
Leach Date:	N/A				

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Barium	64.7	58.71	10	30	
Lithium	7.1	7.42	4	30	
Potassium	1270	1251	1	40	
Sodium	178	171.4	4	30	
Zirconium	15.7	15.58	0.8	30	

Client: Washington Closure Hanford

Job Number: 280-35075-1
Sdg Number: J01610

Method Blank - Batch: 280-144875

Method: 6020
Preparation: 3050B

Lab Sample ID:	MB 280-144875/1-A	Analysis Batch:	280-145383	Instrument ID:	MT_077
Client Matrix:	Solid	Prep Batch:	280-144875	Lab File ID:	020_BLK.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1.00 g
Analysis Date:	11/01/2012 1115	Units:	mg/Kg	Final Weight/Volume:	100 mL
Prep Date:	10/31/2012 1300				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Uranium	0.00250	B	0.0016	0.10

Lab Control Sample - Batch: 280-144875

Method: 6020
Preparation: 3050B

Lab Sample ID:	LCS 280-144875/2-A	Analysis Batch:	280-145383	Instrument ID:	MT_077
Client Matrix:	Solid	Prep Batch:	280-144875	Lab File ID:	021LCS.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1.00 g
Analysis Date:	11/01/2012 1119	Units:	mg/Kg	Final Weight/Volume:	100 mL
Prep Date:	10/31/2012 1300				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Uranium	20.0	19.73	99	85 - 123	

Matrix Spike - Batch: 280-144875

Method: 6020
Preparation: 3050B

Lab Sample ID:	280-35075-1	Analysis Batch:	280-145383	Instrument ID:	MT_077
Client Matrix:	Solid	Prep Batch:	280-144875	Lab File ID:	025SMPL.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1.07 g
Analysis Date:	11/01/2012 1135	Units:	mg/Kg	Final Weight/Volume:	100 mL
Prep Date:	10/31/2012 1300				
Leach Date:	N/A				

Analyte	Sample Result/Qual	Spike Amount	Result	% Rec.	Limit	Qual
Uranium	0.40	19.1	19.41	100	85 - 123	

Client: Washington Closure Hanford

Job Number: 280-35075-1
Sdg Number: J01610

Duplicate - Batch: 280-144875

Method: 6020
Preparation: 3050B

Lab Sample ID:	280-35075-1	Analysis Batch:	280-145383	Instrument ID:	MT_077
Client Matrix:	Solid	Prep Batch:	280-144875	Lab File ID:	024SMPL.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1.04 g
Analysis Date:	11/01/2012 1131	Units:	mg/Kg	Final Weight/Volume:	100 mL
Prep Date:	10/31/2012 1300				
Leach Date:	N/A				

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Uranium	0.40	0.331	19	20	

Client: Washington Closure Hanford

Job Number: 280-35075-1
Sdg Number: J01610

Method Blank - Batch: 280-146890

Method: 7471A
Preparation: 7471A

Lab Sample ID:	MB 280-146890/1-A	Analysis Batch:	280-147220	Instrument ID:	MT_033
Client Matrix:	Solid	Prep Batch:	280-146890	Lab File ID:	121112aa.txt
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	.6 g
Analysis Date:	11/12/2012 2229	Units:	mg/Kg	Final Weight/Volume:	50 mL
Prep Date:	11/12/2012 1345				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Mercury	0.0055	U	0.0055	0.017

Lab Control Sample - Batch: 280-146890

Method: 7471A
Preparation: 7471A

Lab Sample ID:	LCS 280-146890/2-A	Analysis Batch:	280-147220	Instrument ID:	MT_033
Client Matrix:	Solid	Prep Batch:	280-146890	Lab File ID:	121112aa.txt
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	.6 g
Analysis Date:	11/12/2012 2232	Units:	mg/Kg	Final Weight/Volume:	50 mL
Prep Date:	11/12/2012 1345				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Mercury	0.417	0.492	118	87 - 111	N

Matrix Spike - Batch: 280-146890

Method: 7471A
Preparation: 7471A

Lab Sample ID:	280-35075-1	Analysis Batch:	280-147220	Instrument ID:	MT_033
Client Matrix:	Solid	Prep Batch:	280-146890	Lab File ID:	121112aa.txt
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	0.65 g
Analysis Date:	11/12/2012 2239	Units:	mg/Kg	Final Weight/Volume:	50 mL
Prep Date:	11/12/2012 1345				
Leach Date:	N/A				

Analyte	Sample Result/Qual		Spike Amount	Result	% Rec.	Limit	Qual
Mercury	0.0058	U	0.393	0.481	123	87 - 111	N

Client: Washington Closure Hanford

Job Number: 280-35075-1
Sdg Number: J01610

Duplicate - Batch: 280-146890

Method: 7471A
Preparation: 7471A

Lab Sample ID:	280-35075-1	Analysis Batch:	280-147220	Instrument ID:	MT_033
Client Matrix:	Solid	Prep Batch:	280-146890	Lab File ID:	121112aa.txt
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	0.68 g
Analysis Date:	11/12/2012 2236	Units:	mg/Kg	Final Weight/Volume:	50 mL
Prep Date:	11/12/2012 1345				
Leach Date:	N/A				

Analyte	Sample Result/Qual		Result	RPD	Limit	Qual
Mercury	0.0058	U	0.0050	NC	20	U N

Client: Washington Closure Hanford

Job Number: 280-35075-1
Sdg Number: J01610

Method Blank - Batch: 280-146219

Method: 353.2
Preparation: N/A

Lab Sample ID:	MB 280-146153/1-A	Analysis Batch:	280-146219	Instrument ID:	WC_Alp 2
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	C:\FLOW_4\1107NXN
Dilution:	1.0	Leach Batch:	280-146153	Initial Weight/Volume:	1.0 mL
Analysis Date:	11/07/2012 1534	Units:	mg/Kg	Final Weight/Volume:	1.0 mL
Prep Date:	N/A				
Leach Date:	11/07/2012 1228				

Analyte	Result	Qual	MDL	RL
Nitrate Nitrite as N-Soluble	0.338	B	0.30	0.75

Method Reporting Limit Check - Batch: 280-146219

Method: 353.2
Preparation: N/A

Lab Sample ID:	MRL 280-146219/18	Analysis Batch:	280-146219	Instrument ID:	WC_Alp 2
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	C:\FLOW_4\1107NXN
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	100 mL
Analysis Date:	11/07/2012 1204	Units:	mg/L	Final Weight/Volume:	100 mL
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Nitrate Nitrite as N-Soluble	0.100	0.110	110	50 - 150	

Lab Control Sample - Batch: 280-146219

Method: 353.2
Preparation: N/A

Lab Sample ID:	LCS 280-146153/2-A	Analysis Batch:	280-146219	Instrument ID:	WC_Alp 2
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	C:\FLOW_4\1107NXN
Dilution:	1.0	Leach Batch:	280-146153	Initial Weight/Volume:	1.0 mL
Analysis Date:	11/07/2012 1528	Units:	mg/Kg	Final Weight/Volume:	1.0 mL
Prep Date:	N/A				
Leach Date:	11/07/2012 1228				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Nitrate Nitrite as N-Soluble	49.5	52.78	107	90 - 110	

Client: Washington Closure Hanford

Job Number: 280-35075-1
Sdg Number: J01610

Matrix Spike - Batch: 280-146219

Method: 353.2
Preparation: N/A

Lab Sample ID:	280-35075-1	Analysis Batch:	280-146219	Instrument ID:	WC_Alp 2
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	C:\FLOW_4\1107NXN
Dilution:	1.0	Leach Batch:	280-146153	Initial Weight/Volume:	1.0 mL
Analysis Date:	11/07/2012 1533	Units:	mg/Kg	Final Weight/Volume:	1.0 mL
Prep Date:	N/A				
Leach Date:	11/07/2012 1228				

Analyte	Sample Result/Qual		Spike Amount	Result	% Rec.	Limit	Qual
Nitrate Nitrite as N-Soluble	0.67	B	40.8	39.68	96	90 - 110	

Duplicate - Batch: 280-146219

Method: 353.2
Preparation: N/A

Lab Sample ID:	280-35075-1	Analysis Batch:	280-146219	Instrument ID:	WC_Alp 2
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	C:\FLOW_4\1107NXN
Dilution:	1.0	Leach Batch:	280-146153	Initial Weight/Volume:	1.0 mL
Analysis Date:	11/07/2012 1531	Units:	mg/Kg	Final Weight/Volume:	1.0 mL
Prep Date:	N/A				
Leach Date:	11/07/2012 1228				

Analyte	Sample Result/Qual		Result	RPD	Limit	Qual
Nitrate Nitrite as N-Soluble	0.67	B	0.618	7	10	B

Client: Washington Closure Hanford

Job Number: 280-35075-1
Sdg Number: J01610

Method Blank - Batch: 280-146261

Method: 9056M
Preparation: N/A

Lab Sample ID:	MB 280-146000/2-A	Analysis Batch:	280-146261	Instrument ID:	WC_IC3
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	119.TXT
Dilution:	1.0	Leach Batch:	280-146000	Initial Weight/Volume:	1.0 mL
Analysis Date:	11/06/2012 1748	Units:	mg/Kg	Final Weight/Volume:	1.0 mL
Prep Date:	N/A				
Leach Date:	11/06/2012 1619				

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

Method Reporting Limit Check - Batch: 280-146261

Method: 9056M
Preparation: N/A

Lab Sample ID:	MRL 280-146261/3	Analysis Batch:	280-146261	Instrument ID:	WC_IC3
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	102.TXT
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1.0 mL
Analysis Date:	11/06/2012 0951	Units:	mg/L	Final Weight/Volume:	5 mL
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Nitrate as N-Soluble	0.200	0.209	105	50 - 150	B
Nitrite as N-Soluble	0.200	0.197	99	50 - 150	B
Orthophosphate as P-Soluble	0.200	0.249	125	50 - 150	B

Lab Control Sample - Batch: 280-146261

Method: 9056M
Preparation: N/A

Lab Sample ID:	LCS 280-146000/1-A	Analysis Batch:	280-146261	Instrument ID:	WC_IC3
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	118.TXT
Dilution:	1.0	Leach Batch:	280-146000	Initial Weight/Volume:	1.0 mL
Analysis Date:	11/06/2012 1731	Units:	mg/Kg	Final Weight/Volume:	1.0 mL
Prep Date:	N/A				
Leach Date:	11/06/2012 1619				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Nitrate as N-Soluble	50.0	48.08	96	90 - 110	
Nitrite as N-Soluble	50.0	48.41	97	90 - 110	
Orthophosphate as P-Soluble	50.0	47.89	96	90 - 110	

Client: Washington Closure Hanford

Job Number: 280-35075-1
Sdg Number: J01610

Matrix Spike - Batch: 280-146261

Method: 9056M
Preparation: N/A

Lab Sample ID:	280-35075-1	Analysis Batch:	280-146261	Instrument ID:	WC_IC3
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	122.TXT
Dilution:	1.0	Leach Batch:	280-146000	Initial Weight/Volume:	1.0 mL
Analysis Date:	11/06/2012 1838	Units:	mg/Kg	Final Weight/Volume:	1.0 mL
Prep Date:	N/A				
Leach Date:	11/06/2012 1619				

Analyte	Sample Result/Qual		Spike Amount	Result	% Rec.	Limit	Qual
Nitrate as N-Soluble	0.77	B	49.5	49.11	98	80 - 120	
Nitrite as N-Soluble	0.33	U	49.5	49.90	101	80 - 120	
Orthophosphate as P-Soluble	1.6	B	49.5	62.30	123	80 - 120	N

Duplicate - Batch: 280-146261

Method: 9056M
Preparation: N/A

Lab Sample ID:	280-35075-1	Analysis Batch:	280-146261	Instrument ID:	WC_IC3
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	121.TXT
Dilution:	1.0	Leach Batch:	280-146000	Initial Weight/Volume:	1.0 mL
Analysis Date:	11/06/2012 1821	Units:	mg/Kg	Final Weight/Volume:	1.0 mL
Prep Date:	N/A				
Leach Date:	11/06/2012 1619				

Analyte	Sample Result/Qual		Result	RPD	Limit	Qual
Nitrate as N-Soluble	0.77	B	0.703	9	15	B
Nitrite as N-Soluble	0.33	U	0.33	NC	15	U
Orthophosphate as P-Soluble	1.6	B	1.2	NC	15	U

Client: Washington Closure Hanford

Job Number: 280-35075-1
Sdg Number: J01610

Method Blank - Batch: 280-146264

Method: 9056M
Preparation: N/A

Lab Sample ID:	MB 280-146000/2-A	Analysis Batch:	280-146264	Instrument ID:	WC_IC3
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	119.TXT
Dilution:	1.0	Leach Batch:	280-146000	Initial Weight/Volume:	1.0 mL
Analysis Date:	11/06/2012 1748	Units:	mg/Kg	Final Weight/Volume:	1.0 mL
Prep Date:	N/A				
Leach Date:	11/06/2012 1619				

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

Method Reporting Limit Check - Batch: 280-146264

Method: 9056M
Preparation: N/A

Lab Sample ID:	MRL 280-146264/3	Analysis Batch:	280-146264	Instrument ID:	WC_IC3
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	102.TXT
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1.0 mL
Analysis Date:	11/06/2012 0951	Units:	mg/L	Final Weight/Volume:	5 mL
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Chloride-Soluble	1.00	1.22	122	50 - 150	B
Bromide-Soluble	0.200	0.11	54	50 - 150	U
Sulfate-Soluble	1.00	1.17	117	50 - 150	B
Fluoride-Soluble	0.200	0.181	91	50 - 150	B

Lab Control Sample - Batch: 280-146264

Method: 9056M
Preparation: N/A

Lab Sample ID:	LCS 280-146000/1-A	Analysis Batch:	280-146264	Instrument ID:	WC_IC3
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	118.TXT
Dilution:	1.0	Leach Batch:	280-146000	Initial Weight/Volume:	1.0 mL
Analysis Date:	11/06/2012 1731	Units:	mg/Kg	Final Weight/Volume:	1.0 mL
Prep Date:	N/A				
Leach Date:	11/06/2012 1619				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Chloride-Soluble	250	236.4	95	90 - 110	
Bromide-Soluble	50.0	48.92	98	90 - 110	
Sulfate-Soluble	250	243.4	97	90 - 110	
Fluoride-Soluble	50.0	46.69	93	90 - 110	

Client: Washington Closure Hanford

Job Number: 280-35075-1
Sdg Number: J01610

Matrix Spike - Batch: 280-146264

Method: 9056M
Preparation: N/A

Lab Sample ID:	280-35075-1	Analysis Batch:	280-146264	Instrument ID:	WC_IC3
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	122.TXT
Dilution:	1.0	Leach Batch:	280-146000	Initial Weight/Volume:	1.0 mL
Analysis Date:	11/06/2012 1838	Units:	mg/Kg	Final Weight/Volume:	1.0 mL
Prep Date:	N/A				
Leach Date:	11/06/2012 1619				

Analyte	Sample Result/Qual		Spike Amount	Result	% Rec.	Limit	Qual
Chloride-Soluble	4.4	B	248	245.2	97	80 - 120	
Bromide-Soluble	0.38	U	49.5	49.89	101	80 - 120	
Sulfate-Soluble	3.2	B	248	254.4	101	80 - 120	
Fluoride-Soluble	0.81	U	49.5	41.31	83	80 - 120	

Duplicate - Batch: 280-146264

Method: 9056M
Preparation: N/A

Lab Sample ID:	280-35075-1	Analysis Batch:	280-146264	Instrument ID:	WC_IC3
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	121.TXT
Dilution:	1.0	Leach Batch:	280-146000	Initial Weight/Volume:	1.0 mL
Analysis Date:	11/06/2012 1821	Units:	mg/Kg	Final Weight/Volume:	1.0 mL
Prep Date:	N/A				
Leach Date:	11/06/2012 1619				

Analyte	Sample Result/Qual		Result	RPD	Limit	Qual
Chloride-Soluble	4.4	B	2.0	NC	15	U
Bromide-Soluble	0.38	U	0.38	NC	15	U
Sulfate-Soluble	3.2	B	3.80	17	15	B M
Fluoride-Soluble	0.81	U	0.81	NC	15	U

Client: Washington Closure Hanford

Job Number: 280-35075-1
Sdg Number: J01610

Duplicate - Batch: 280-144243

Method: D-2216
Preparation: N/A

Lab Sample ID:	280-35075-1	Analysis Batch:	280-144243	Instrument ID:	No Equipment
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	N/A
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	
Analysis Date:	10/26/2012 0924	Units:	%	Final Weight/Volume:	
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Percent Moisture	2.0	2.0	0.3	20	

Client: Washington Closure Hanford

Job Number: 280-35075-1
Sdg Number: J01610

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
GC/MS Semi VOA					
Prep Batch: 280-144364					
LCS 280-144364/2-A	Lab Control Sample	T	Solid	3550C	
MB 280-144364/1-A	Method Blank	T	Solid	3550C	
280-35075-1	J1R432	T	Solid	3550C	
280-35075-1MS	Matrix Spike	T	Solid	3550C	
280-35075-1MSD	Matrix Spike Duplicate	T	Solid	3550C	
Analysis Batch:280-145341					
LCS 280-144364/2-A	Lab Control Sample	T	Solid	8270C	280-144364
MB 280-144364/1-A	Method Blank	T	Solid	8270C	280-144364
280-35075-1	J1R432	T	Solid	8270C	280-144364
280-35075-1MS	Matrix Spike	T	Solid	8270C	280-144364
280-35075-1MSD	Matrix Spike Duplicate	T	Solid	8270C	280-144364

Report Basis
T = Total

GC Semi VOA					
Prep Batch: 280-144982					
LCS 280-144982/2-A	Lab Control Sample	T	Solid	3550C	
MB 280-144982/1-A	Method Blank	T	Solid	3550C	
280-35075-1	J1R432	T	Solid	3550C	
280-35075-1MS	Matrix Spike	T	Solid	3550C	
280-35075-1MSD	Matrix Spike Duplicate	T	Solid	3550C	
Analysis Batch:280-146984					
LCS 280-144982/2-A	Lab Control Sample	T	Solid	8082	280-144982
MB 280-144982/1-A	Method Blank	T	Solid	8082	280-144982
280-35075-1	J1R432	T	Solid	8082	280-144982
280-35075-1MS	Matrix Spike	T	Solid	8082	280-144982
280-35075-1MSD	Matrix Spike Duplicate	T	Solid	8082	280-144982

Report Basis
T = Total

Client: Washington Closure Hanford

Job Number: 280-35075-1
Sdg Number: J01610

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
Metals					
Prep Batch: 280-144558					
LCS 280-144558/2-A	Lab Control Sample	T	Solid	3050B	
MB 280-144558/1-A	Method Blank	T	Solid	3050B	
280-35075-1	J1R432	T	Solid	3050B	
280-35075-1DU	Duplicate	T	Solid	3050B	
280-35075-1MS	Matrix Spike	T	Solid	3050B	
Prep Batch: 280-144875					
LCS 280-144875/2-A	Lab Control Sample	T	Solid	3050B	
MB 280-144875/1-A	Method Blank	T	Solid	3050B	
280-35075-1	J1R432	T	Solid	3050B	
280-35075-1DU	Duplicate	T	Solid	3050B	
280-35075-1MS	Matrix Spike	T	Solid	3050B	
Analysis Batch:280-145383					
LCS 280-144875/2-A	Lab Control Sample	T	Solid	6020	280-144875
MB 280-144875/1-A	Method Blank	T	Solid	6020	280-144875
280-35075-1	J1R432	T	Solid	6020	280-144875
280-35075-1DU	Duplicate	T	Solid	6020	280-144875
280-35075-1MS	Matrix Spike	T	Solid	6020	280-144875
Analysis Batch:280-146066					
LCS 280-144558/2-A	Lab Control Sample	T	Solid	6010B	280-144558
MB 280-144558/1-A	Method Blank	T	Solid	6010B	280-144558
280-35075-1	J1R432	T	Solid	6010B	280-144558
280-35075-1DU	Duplicate	T	Solid	6010B	280-144558
280-35075-1MS	Matrix Spike	T	Solid	6010B	280-144558
Analysis Batch:280-146278					
LCS 280-144558/2-A	Lab Control Sample	T	Solid	6010B	280-144558
MB 280-144558/1-A	Method Blank	T	Solid	6010B	280-144558
280-35075-1	J1R432	T	Solid	6010B	280-144558
280-35075-1DU	Duplicate	T	Solid	6010B	280-144558
280-35075-1MS	Matrix Spike	T	Solid	6010B	280-144558
Prep Batch: 280-146890					
LCS 280-146890/2-A	Lab Control Sample	T	Solid	7471A	
MB 280-146890/1-A	Method Blank	T	Solid	7471A	
280-35075-1	J1R432	T	Solid	7471A	
280-35075-1DU	Duplicate	T	Solid	7471A	
280-35075-1MS	Matrix Spike	T	Solid	7471A	

Client: Washington Closure Hanford

Job Number: 280-35075-1
Sdg Number: J01610

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
Metals					
Analysis Batch:280-147220					
LCS 280-146890/2-A	Lab Control Sample	T	Solid	7471A	280-146890
MB 280-146890/1-A	Method Blank	T	Solid	7471A	280-146890
280-35075-1	J1R432	T	Solid	7471A	280-146890
280-35075-1DU	Duplicate	T	Solid	7471A	280-146890
280-35075-1MS	Matrix Spike	T	Solid	7471A	280-146890

Report Basis
T = Total

Client: Washington Closure Hanford

Job Number: 280-35075-1
Sdg Number: J01610

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
General Chemistry					
Analysis Batch:280-144243					
280-35075-1	J1R432	T	Solid	D-2216	
280-35075-1DU	Duplicate	T	Solid	D-2216	
Prep Batch: 280-146000					
LCS 280-146000/1-A	Lab Control Sample	S	Solid	DI Leach	
MB 280-146000/2-A	Method Blank	S	Solid	DI Leach	
280-35075-1	J1R432	S	Solid	DI Leach	
280-35075-1DU	Duplicate	S	Solid	DI Leach	
280-35075-1MS	Matrix Spike	S	Solid	DI Leach	
Prep Batch: 280-146153					
LCS 280-146153/2-A	Lab Control Sample	S	Solid	DI Leach	
MB 280-146153/1-A	Method Blank	S	Solid	DI Leach	
280-35075-1	J1R432	S	Solid	DI Leach	
280-35075-1DU	Duplicate	S	Solid	DI Leach	
280-35075-1MS	Matrix Spike	S	Solid	DI Leach	
Analysis Batch:280-146219					
LCS 280-146153/2-A	Lab Control Sample	S	Solid	353.2	
MB 280-146153/1-A	Method Blank	S	Solid	353.2	
280-35075-1	J1R432	S	Solid	353.2	
280-35075-1DU	Duplicate	S	Solid	353.2	
280-35075-1MS	Matrix Spike	S	Solid	353.2	
Analysis Batch:280-146261					
LCS 280-146000/1-A	Lab Control Sample	S	Solid	9056M	
MB 280-146000/2-A	Method Blank	S	Solid	9056M	
280-35075-1	J1R432	S	Solid	9056M	
280-35075-1DU	Duplicate	S	Solid	9056M	
280-35075-1MS	Matrix Spike	S	Solid	9056M	
Analysis Batch:280-146264					
LCS 280-146000/1-A	Lab Control Sample	S	Solid	9056M	
MB 280-146000/2-A	Method Blank	S	Solid	9056M	
280-35075-1	J1R432	S	Solid	9056M	
280-35075-1DU	Duplicate	S	Solid	9056M	
280-35075-1MS	Matrix Spike	S	Solid	9056M	

Report Basis
S = Soluble
T = Total

Client: Washington Closure Hanford

Job Number: 280-35075-1
Sdg Number: J01610

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
HPLC/IC					
Prep Batch: 280-144374					
LCS 280-144374/2-A	Lab Control Sample	T	Solid	3550C	
MB 280-144374/1-A	Method Blank	T	Solid	3550C	
280-35075-1	J1R432	T	Solid	3550C	
280-35075-1MS	Matrix Spike	T	Solid	3550C	
280-35075-1MSD	Matrix Spike Duplicate	T	Solid	3550C	
Analysis Batch:280-146588					
LCS 280-144374/2-A	Lab Control Sample	T	Solid	8310	280-144374
MB 280-144374/1-A	Method Blank	T	Solid	8310	280-144374
280-35075-1	J1R432	T	Solid	8310	280-144374
280-35075-1MS	Matrix Spike	T	Solid	8310	280-144374
280-35075-1MSD	Matrix Spike Duplicate	T	Solid	8310	280-144374

Report Basis
T = Total