0073139

SAF-RC-032
100-F Remaining Sites Burial Grounds - Soil Full Protocol
FINAL DATA PACKAGE

COMPLETE COPY OF DATA PACKAGE TO:

Randy Coffman	X9-07	KW 6/11/07 INITIAL/DATE
Jeanette Duncan	H4-21	KW 6/11/07 INITIAL/DATE

COMMENTS:

SDG J00112 SAF-RC-032

Rad only Chem only X Rad & Chem

X Complete Partial

Waste Site: 118-F-2 Verification / BCL Stockpiles

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JUN 29 2007
EDMC

Analytical Data Package Prepared For

Washington Closure Hanford

RECEIVED
JUN 2007

Radiochemical Analysis By

STL Richland

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

Assigned Laboratory Code: STLRL

Data Package Contains 50 Pages

Report No.: 35508

SDG No.	Order No.	Client Sample ID (List Order)	Lot-Sa No.	Work Order	Report DB ID	Batch No.
J00112	RC-032	J152P3	J7E210184-1	JXD411AG	9JXD4110	7141506
		J152P3	J7E210184-1	JXD411AE	9JXD4110	7141508
		J152P3	J7E210184-1	JXD411AA	9JXD4110	7141510
		J152P3	J7E210184-1	JXD411AD	9JXD4110	7141511
		J152P3	J7E210184-1	JXD411AC	9JXD4110	7141512

SEVERN TRENT STL

STL Richland
2800 George Washington Way
Richland, WA 99354

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Certificate of Analysis

Washington Hanford Closure
2620 Fermi Avenue
Richland, WA 99354

June 5, 2007

Attention: Joan Kessner

SAF Number	:	RC-032
Date SDG Closed	:	May 21, 2007
Number of Samples	:	One (1)
Sample Type	:	Soil
SDG Number	:	J00112
Data Deliverable	:	15 – Day / Summary

CASE NARRATIVE

I. Introduction

On May 21, 2007 one soil sample was received at STL Richland (STLR) for radiochemical analysis. Upon receipt, the sample was assigned the following laboratory ID number to correspond with the Washington Closure Hanford (WCH) specific ID:

WCH ID#	STLR ID#	MATRIX	DATE OF RECEIPT
J152P3	JXD41	SOIL	5/21/07

I. Sample Receipt

The sample was received in good condition and no anomalies were noted during check-in. When the sample was received a seven day turn around time was requested; however per a conversation with Joan Kessner on 5/15/07 all RC-032 SAFs should be a 15 day turn around times.

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 RICH-RC-5010
Uranium 234, 235 and 238 by method RICH-RC-5039
Gas Proportional Counting
Total Strontium by method RICH-RC-5006
Gamma Spectroscopy
Gamma Spec by method RICH-RC-5017
Liquid Scintillation Counter
Nickel-63 by method RICH-RC-5069

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 RICH-RC-5010:
The sample duplicate (J152P3 DUP) had a 18% tracer recovery. The sample results are below the CRDL. The client was contacted and will accept results. Except as noted, the LCS, batch blank, sample and sample duplicate (J152P3) results are within contractual requirements.

Uranium 234, 235 and 238 by method RICH-RC-5039:
The LCS, batch blank, sample and sample duplicate (J152P3) results are within contractual requirements.

Gas Proportional Counting
Total Strontium by method RICH-RC-5006:
The LCS, batch blank, sample and sample duplicate (J152P3) results are within contractual requirements.

Gamma Spectroscopy
Gamma Spec by method RICH-RC-5017:
Insufficient sample size was provided to prepare a duplicate of sample J152P3, therefore the duplicate result (J152P3 DUP) was obtained by recounting sample J152P3 on a different detector. Except as noted, the LCS, batch blank, sample and sample duplicate (J152P3) results are within contractual requirements.

Liquid Scintillation Counter
Nickel-63 by method RICH-RC-5069:
The LCS, batch blank, sample and sample duplicate (J152P3) results are within contractual requirements.

Washington Closure Hanford
June 5, 2007

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:

Sandra Seger
Project Manager

Drinking Water Method Cross References

	DRINKING WATER ASTM METHOD CROSS REFERENCES	
Referenced Method	**Isotope(s)**	**STL Richland's SOP number**
EPA 901.1	Cs-134, I-131	RICH-RC-5017
EPA 900.0	Alpha & Beta	RICH-RC-5014
EPA 903.1	Ra-226	RICH-RC-5005
EPA 904.0	Ra-228	RICH-RC-5005
EPA 905.0	Sr89/90	RICH-RC-5006
ASTM D2460	Total Radium	RICH-RC-5027
Standard Method 7500-U-C & ASTM D5174	Uranium	RICH-RC-5058
EPA 906.0	Tritium	RICH-RC-5007
NOTE:		
The Gross Alpha LCS is prepared with Am-241 (unless otherwise specified in the case narrative)		
The Gross Beta LCS is prepared with Sr/Y-90 (unless otherwise specified in the case narrative)		

Uncertainty Estimation

STL 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/vn), 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 STL Richland.
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 STL Richland "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 STL Richland upon sample receipt.
Sum Rpt Alpha Spec Rst(s)	The sum of the reported alpha spec results for tests derived from the same sample excluding duplicate result where the results are in the same units.
Work Order	The LIMS software assign test specific identifier.
Yield	The recovery of the tracer added to the sample such as Pu-242 used to trace a Pu-239/40 method.

Sample Results Summary

Date: 05-Jun-07

STL Richland STLRL

Ordered by Client Sample ID, Batch No.

Report No. : 35508

SDG No: J00112

Client ID	Work Order Number	Parameter	Result +- Uncertainty (2s)	Qual	Units	Yield	MDC|MDA	RPD
J152P3	JXD411AG	AG-108M	-1.15E-03 +- 7.10E-03	U	pCi/g		1.20E-02	
		CO-60	-5.05E-03 +- 1.08E-02	U	pCi/g		1.81E-02	
		CS-137	1.17E-02 +- 1.03E-02	U	pCi/g		1.83E-02	
		EU-152	-3.78E-02 +- 2.29E-02	U	pCi/g		3.53E-02	
		EU-154	-1.17E-02 +- 3.59E-02	U	pCi/g		6.09E-02	
		EU-155	1.46E-02 +- 2.38E-02	U	pCi/g		4.03E-02	
J152P3	JXD411AE	PU-238	-1.08E-02 +- 5.60E-02	U	pCi/g	24%	1.52E-01	
		PU239/40	-5.38E-03 +- 5.49E-02	U	pCi/g	24%	1.29E-01	
J152P3	JXD411AA	U-234	1.71E-01 +- 8.58E-02		pCi/g	94%	5.20E-02	
		U-235	-7.37E-04 +- 1.85E-02	U	pCi/g	94%	3.70E-02	
		U-238	2.09E-01 +- 9.57E-02		pCi/g	94%	4.91E-02	
J152P3	JXD411AD	NI-63	1.53E-01 +- 4.32E+00	U	pCi/g	91%	6.12E+00	
J152P3	JXD411AC	STRONTIUM	4.95E-02 +- 6.71E-02	U	pCi/g	91%	1.43E-01	
J152P3 DUP	JXD411AH	AG-108M	3.72E-03 +- 6.04E-03	U	pCi/g		1.05E-02	379.7
		CO-60	-1.64E-04 +- 8.14E-03	U	pCi/g		1.44E-02	-187.4
		CS-137	5.97E-03 +- 8.59E-03	U	pCi/g		1.52E-02	65.1
		EU-152	-4.53E-04 +- 2.06E-02	U	pCi/g		3.42E-02	-195.3
		EU-154	-1.18E-02 +- 2.65E-02	U	pCi/g		4.50E-02	-0.6
		EU-155	4.81E-02 +- 2.36E-02	U	pCi/g		3.97E-02	107.0
J152P3 DUP	JXD411AJ	PU-238	-6.92E-03 +- 7.05E-02	U	pCi/g	18%	1.66E-01	-43.5
		PU239/40	-2.07E-02 +- 7.33E-02	U	pCi/g	18%	2.18E-01	-117.6
J152P3 DUP	JXD411AK	U-234	1.88E-01 +- 9.07E-02		pCi/g	88%	4.51E-02	9.6
		U-235	0.00E+00 +- 1.92E-02	U	pCi/g	88%	4.51E-02	-200.0
		U-238	1.75E-01 +- 8.79E-02		pCi/g	88%	5.32E-02	17.4
J152P3 DUP	JXD411AL	NI-63	-9.51E-01 +- 4.09E+00	U	pCi/g	91%	5.86E+00	-276.6
J152P3 DUP	JXD411AM	STRONTIUM	4.65E-02 +- 8.21E-02	U	pCi/g	73%	1.80E-01	6.2

Number of Results: 26

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RPD - Relative Percent Difference.

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

QC Results Summary

STL Richland STLRL

Ordered by QC Type, Batch No.

Date: 05-Jun-07

Report No. : 35508

SDG No.: J00112

QC Type	Work Order Number	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	LCS Recovery	Bias	MDC|MDA
BLANK QC	JXEGE1AA	AG-108M	2.67E-04 +- 2.64E-03	U	pCi/g				4.70E-03
		CO-60	1.64E-03 +- 2.85E-03	U	pCi/g				6.10E-03
		CS-137	-2.82E-03 +- 3.14E-03	U	pCi/g				5.09E-03
		EU-152	-6.46E-04 +- 9.37E-03	U	pCi/g				1.63E-02
		EU-154	-5.40E-03 +- 9.24E-03	U	pCi/g				1.59E-02
		EU-155	3.92E-04 +- 9.66E-03	U	pCi/g				1.64E-02
BLANK QC	JXEGL1AA	PU-238	-3.24E-03 +- 3.31E-02	U	pCi/g	41%			7.76E-02
		PU239/40	-6.48E-03 +- 3.37E-02	U	pCi/g	41%			9.16E-02
BLANK QC	JXEGL1AD	PU-238	0.00E+00 +- 1.58E-02	U	pCi/g	85%			3.72E-02
		PU239/40	6.21E-03 +- 1.59E-02	U	pCi/g	85%			3.72E-02
BLANK QC	JXEGW1AA	U-234	0.00E+00 +- 1.42E-02	U	pCi/g	95%			3.34E-02
		U-235	0.00E+00 +- 1.42E-02	U	pCi/g	95%			3.34E-02
		U-238	0.00E+00 +- 1.42E-02	U	pCi/g	95%			3.34E-02
BLANK QC	JXEG01AA	NI-63	-2.82E-01 +- 1.03E+00	U	pCi/g	93%			1.48E+00
BLANK QC	JXEG31AA	STRONTIUM	1.01E-01 +- 8.91E-02	U	pCi/g	70%			1.75E-01
LCS	JXEGE1AC	CS-137	2.74E-01 +- 5.35E-02		pCi/g		106%	0.1	3.00E-02
		K-40	1.90E+01 +- 2.41E+00		pCi/g		97%	0.0	2.42E-01
LCS	JXEGL1AC	PU239/40	7.37E+00 +- 1.37E+00		pCi/g	61%	108%	0.1	5.35E-02
LCS	JXEGL1AE	PU239/40	6.47E+00 +- 1.15E+00		pCi/g	74%	99%	0.0	4.85E-02
LCS	JXEGW1AC	U-234	3.40E+00 +- 6.56E-01		pCi/g	95%	105%	0.0	3.32E-02
		U-235	1.04E-01 +- 5.66E-02		pCi/g	95%	70%	-0.3	3.32E-02
		U-238	3.42E+00 +- 6.59E-01		pCi/g	95%	101%	0.0	3.32E-02
LCS	JXEG01AC	NI-63	1.30E+02 +- 9.97E+00		pCi/g	82%	86%	-0.1	1.72E+00
LCS	JXEG31AC	STRONTIUM	1.41E+00 +- 4.03E-01		pCi/g	81%	121%	0.2	1.78E-01

Number of Results: 24

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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 or Total Uncert or not identified by gamma scan software.

STL RICHLAND

FORM I

SAMPLE RESULTS

Date: 05-Jun-07

Lab Name:	STL Richland	SDG:	J00112	Collection Date:	5/17/2007 7:50:00 AM
Lot-Sample No.:	J7E210184-1	Report No. :	35508	Received Date:	5/21/2007 12:15:00 PM
Client Sample ID:	J152P3	COC No. :	RC-032-114	Matrix:	SOIL

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 7141506	Work Order: JXD411AG			Report DB ID: 9JXD4110								
AG-108M	***-1.15E-03***	U	7.1E-03	7.1E-03	1.20E-02	pCi/g		*-0.1*	5/22/07 11:24 a		789.4	GAMMA_GS
						5.99E-03		*-0.32*			g	GER6$1
CO-60	***-5.05E-03***	U	1.1E-02	1.1E-02	1.81E-02	pCi/g		*-0.28*	5/22/07 11:24 a		789.4	GAMMA_GS
							5.00E-02	*-0.94*			g	GER6$1
CS-137	***1.17E-02***	U	1.0E-02	1.0E-02	1.83E-02	pCi/g		*0.64*	5/22/07 11:24 a		789.4	GAMMA_GS
							1.00E-01	*(2.3)*			g	GER6$1
EU-152	***-3.78E-02***	U	2.3E-02	2.3E-02	3.53E-02	pCi/g		*-(1.1)*	5/22/07 11:24 a		789.4	GAMMA_GS
							1.00E-01	*-(3.3)*			g	GER6$1
EU-154	***-1.17E-02***	U	3.6E-02	3.6E-02	6.09E-02	pCi/g		*-0.19*	5/22/07 11:24 a		789.4	GAMMA_GS
							1.00E-01	*-0.65*			g	GER6$1
EU-155	***1.46E-02***	U	2.4E-02	2.4E-02	4.03E-02	pCi/g		*0.36*	5/22/07 11:24 a		789.4	GAMMA_GS
							1.00E-01	*(1.2)*			g	GER6$1
Batch: 7141508	Work Order: JXD411AE			Report DB ID: 9JXD4110								
PU-238	***-1.08E-02***	U	5.6E-02	5.6E-02	1.52E-01	pCi/g	24%	*-0.07*	5/31/07 03:24 p		1.05	RICHRC5010
						3.96E-02	1.00E+00	*-0.38*			G	ALP37
PU239/40	***-5.38E-03***	U	5.5E-02	5.5E-02	1.29E-01	pCi/g	24%	*-0.04*	5/31/07 03:24 p		1.05	RICHRC5010
						2.80E-02	1.00E+00	*-0.2*			G	ALP37
Batch: 7141510	Work Order: JXD411AA			Report DB ID: 9JXD4110								
U-234	***1.71E-01***		8.0E-02	8.6E-02	5.20E-02	pCi/g	94%	*(3.3)*	5/31/07 10:53 p		1.02	UISO_IE_PLATE_AE
						1.35E-02	1.00E+00	*(4.)*			G	ALP85

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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 or Total Uncert or not identified by gamma scan software.

FORM I

SAMPLE RESULTS

Date: 05-Jun-07

Lab Name:	STL Richland	SDG:	J00112	Collection Date:	5/17/2007 7:50:00 AM
Lot-Sample No.:	J7E210184-1	Report No. :	35508	Received Date:	5/21/2007 12:15:00 PM
Client Sample ID:	J152P3	COC No. :	RC-032-114	Matrix:	SOIL

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
U-235	***-7.37E-04***	U	1.8E-02	1.8E-02	3.70E-02	pCi/g	94%	*-0.02*	5/31/07 10:53 p		1.02	UISO_IE_PLATE_AE
						6.06E-03	1.00E+00	*-0.08*			G	ALP85
U-238	***2.09E-01***		8.8E-02	9.6E-02	4.91E-02	pCi/g	94%	*(4.2)*	5/31/07 10:53 p		1.02	UISO_IE_PLATE_AE
						1.21E-02	1.00E+00	*(4.4)*			G	ALP85
								Ratio U-234/238 = 0.8				
Batch: 7141511	**Work Order:** JXD411AD			**Report DB ID:** 9JXD4110								
NI-63	***1.53E-01***	U	2.5E+00	4.3E+00	6.12E+00	pCi/g	91%	*0.02*	5/31/07 05:57 p		0.25	NI63_LSC
						2.97E+00	3.00E+01	*0.07*			G	LSC3
Batch: 7141512	**Work Order:** JXD411AC			**Report DB ID:** 9JXD4110								
STRONTIUM	***4.95E-02***	U	6.6E-02	6.7E-02	1.43E-01	pCi/g	91%	*0.35*	5/24/07 05:26 p		6.06	SRTOT_SEP_PRECIP
						6.62E-02		*(1.5)*			G	GPC32A

Number of Results: 13

Comments:

STL Richland
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V5.1.3 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 or Total Uncert or not identified by gamma scan software.

FORM II

Date: 05-Jun-07

DUPLICATE RESULTS

Lab Name:	STL Richland	SDG:	J00112	Collection Date:	5/17/2007 7:50:00 AM
Lot-Sample No.:	J7E210184-1	Report No. :	35508	Received Date:	5/21/2007 12:15:00 PM
Client Sample ID:	J152P3 DUP	COC No. :	RC-032-114	Matrix:	SOIL

Parameter	Result, Orig Rst	Qual		Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, CRDL	Yield	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 7141506	Work Order: JXD411AH				Report DB ID: JXD411HR		Orig Sa DB ID: 9JXD4110						
AG-108M	3.72E-03	U		6.0E-03	6.0E-03	1.05E-02	pCi/g		0.35	5/22/07 02:48 p		789.4	GAMMA_GS
	-1.15E-03	U	RPD	379.7					(1.2)			g	GER8$1
CO-60	-1.64E-04	U		8.1E-03	8.1E-03	1.44E-02	pCi/g		-0.01	5/22/07 02:48 p		789.4	GAMMA_GS
	-5.05E-03	U	RPD	-187.4			5.00E-02		-0.04			g	GER8$1
CS-137	5.97E-03	U		8.6E-03	8.6E-03	1.52E-02	pCi/g		0.39	5/22/07 02:48 p		789.4	GAMMA_GS
	1.17E-02	U	RPD	65.1			1.00E-01		(1.4)			g	GER8$1
EU-152	-4.53E-04	U		2.1E-02	2.1E-02	3.42E-02	pCi/g		-0.01	5/22/07 02:48 p		789.4	GAMMA_GS
	-3.78E-02	U	RPD	-195.3			1.00E-01		-0.04			g	GER8$1
EU-154	-1.18E-02	U		2.7E-02	2.7E-02	4.50E-02	pCi/g		-0.26	5/22/07 02:48 p		789.4	GAMMA_GS
	-1.17E-02	U	RPD	-0.6			1.00E-01		-0.89			g	GER8$1
EU-155	4.81E-02	U		2.4E-02	2.4E-02	3.97E-02	pCi/g		(1.2)	5/22/07 02:48 p		789.4	GAMMA_GS
	1.46E-02	U	RPD	107.0			1.00E-01		(4.1)			g	GER8$1
Batch: 7141508	Work Order: JXD411AJ				Report DB ID: JXD411JR		Orig Sa DB ID: 9JXD4110						
PU-238	-6.92E-03	U		7.0E-02	7.0E-02	1.66E-01	pCi/g	18%	-0.04	5/31/07 03:24 p		1.04	RICHRC5010
	-1.08E-02	U	RPD	-43.5			1.00E+00		-0.2			G	ALP39
PU239/40	-2.07E-02	U		7.3E-02	7.3E-02	2.18E-01	pCi/g	18%	-0.1	5/31/07 03:24 p		1.04	RICHRC5010
	-5.38E-03	U	RPD	-117.6			1.00E+00		-0.57			G	ALP39
Batch: 7141510	Work Order: JXD411AK				Report DB ID: JXD411KR		Orig Sa DB ID: 9JXD4110						
U-234	1.88E-01			8.4E-02	9.1E-02	4.51E-02	pCi/g	88%	(4.2)	5/31/07 10:53 p		1.02	UISO_IE_PLATE_AE
	1.71E-01		RPD	9.6			1.00E+00		(4.2)			G	ALP86
U-235	0.00E+00	U		0.0E+00	1.9E-02	4.51E-02	pCi/g	88%	0.	5/31/07 10:53 p		1.02	UISO_IE_PLATE_AE
	-7.37E-04	U	RPD	-200.0			1.00E+00		0.			G	ALP86

STL Richland
rptSTLRchDupV5.1
.3 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 or Total Uncert or not identified by gamma scan software.

FORM II

Date: 05-Jun-07

DUPLICATE RESULTS

Lab Name:	STL Richland	**SDG:**	J00112	**Collection Date:**	5/17/2007 7:50:00 AM
Lot-Sample No.:	J7E210184-1	**Report No. :**	35508	**Received Date:**	5/21/2007 12:15:00 PM
Client Sample ID:	J152P3 DUP	**COC No. :**	RC-032-114	**Matrix:**	SOIL

Parameter	Result, Orig Rst	Qual		Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, CRDL	Yield	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
U-238	1.75E-01			8.2E-02	8.8E-02	5.32E-02	pCi/g	88%	(3.3)	5/31/07 10:53 p		1.02	UISO_IE_PLATE_AE
	2.09E-01		RPD	17.4			1.00E+00		(4.)			G	ALP86
												Alpha Spec Result Sum = 1.8E-01	
Batch: 7141511	**Work Order:** JXD411AL				**Report DB ID:** JXD411LR		**Orig Sa DB ID:** 9JXD4110						
NI-63	-9.51E-01	U		2.4E+00	4.1E+00	5.86E+00	pCi/g	91%	-0.16	5/31/07 07:40 p		0.26	NI63_LSC
	1.53E-01	U	RPD	-276.6			3.00E+01		-0.47			G	LSC3
												Alpha Spec Result Sum = 1.8E-01	
Batch: 7141512	**Work Order:** JXD411AM				**Report DB ID:** JXD411MR		**Orig Sa DB ID:** 9JXD4110						
STRONTIUM	4.65E-02	U		8.1E-02	8.2E-02	1.80E-01	pCi/g	73%	0.26	5/24/07 05:26 p		6.02	SRTOT_SEP_PRECIP
	4.95E-02	U	RPD	6.2					(1.1)			G	GPC32B
												Alpha Spec Result Sum = 1.8E-01	

Number of Results: 13

Comments:

STL Richland
rptSTLRchDupV5.1
.3 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 or Total Uncert or not identified by gamma scan software.

STL RICHLAND

FORM II

BLANK RESULTS

Date: 05-Jun-07

Lab Name: STL Richland SDG: J00112

Lot-Sample No.: J7E210000-506 Report No. : 35508 Matrix: SOIL

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA ,	Rpt Unit, CRDL	Yield	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 7141506	Work Order: JXEGE1AA			Report DB ID: JXEGE1AB								
AG-108M	2.67E-04	U	2.6E-03	2.6E-03	4.70E-03	pCi/g		0.06	5/22/07 11:25 a		859.27	GAMMA_GS
					2.36E-03			0.2			g	GER8$1
CO-60	1.64E-03	U	2.8E-03	2.8E-03	6.10E-03	pCi/g		0.27	5/22/07 11:25 a		859.27	GAMMA_GS
						5.00E-02		(1.2)			g	GER8$1
CS-137	-2.82E-03	U	3.1E-03	3.1E-03	5.09E-03	pCi/g		-0.55	5/22/07 11:25 a		859.27	GAMMA_GS
						1.00E-01		-(1.8)			g	GER8$1
EU-152	-6.46E-04	U	9.4E-03	9.4E-03	1.63E-02	pCi/g		-0.04	5/22/07 11:25 a		859.27	GAMMA_GS
						1.00E-01		-0.14			g	GER8$1
EU-154	-5.40E-03	U	9.2E-03	9.2E-03	1.59E-02	pCi/g		-0.34	5/22/07 11:25 a		859.27	GAMMA_GS
						1.00E-01		-(1.2)			g	GER8$1
EU-155	3.92E-04	U	9.7E-03	9.7E-03	1.64E-02	pCi/g		0.02	5/22/07 11:25 a		859.27	GAMMA_GS
						1.00E-01		0.08			g	GER8$1

Number of Results: 6

Comments:

STL Richland
rptSTLRchBlank
V5.1.3 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 or Total Uncert or not identified by gamma scan software.

FORM II

BLANK RESULTS

Date: 05-Jun-07

Lab Name: STL Richland SDG: J00112

Lot-Sample No.: J7E210000-508 Report No. : 35508 Matrix: SOIL

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA ,	Rpt Unit, CRDL	Yield	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 7141508	Work Order: JXEGL1AA			Report DB ID: JXEGL1AB								
PU-238	-3.24E-03	U	3.3E-02	3.3E-02	7.76E-02	pCi/g	41%	-0.04	5/31/07 03:25 p		1.0	RICHRC5010
					1.69E-02	1.00E+00		-0.2			G	ALP40
PU239/40	-6.48E-03	U	3.4E-02	3.4E-02	9.16E-02	pCi/g	41%	-0.07	5/31/07 03:25 p		1.0	RICHRC5010
					2.38E-02	1.00E+00		-0.38			G	ALP40
Batch: 7141508	Work Order: JXEGL1AD			Report DB ID: JXEGL1DX								
PU-238	0.00E+00	U	0.0E+00	1.6E-02	3.72E-02	pCi/g	85%	0.	5/31/07 03:25 p		1.04	RICHRC5010
					8.08E-03	1.00E+00		0.			G	ALP42
PU239/40	6.21E-03	U	1.6E-02	1.6E-02	3.72E-02	pCi/g	85%	0.17	5/31/07 03:25 p		1.04	RICHRC5010
					8.08E-03	1.00E+00		0.78			G	ALP42

Number of Results: 4

Comments:

STL Richland
rptSTLRchBlank
V5.1.3 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 or Total Uncert or not identified by gamma scan software.

FORM II

BLANK RESULTS

Date: 05-Jun-07

Lab Name: STL Richland SDG: J00112

Lot-Sample No.: J7E210000-510 Report No. : 35508 Matrix: SOIL

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA ,	Rpt Unit, CRDL	Yield	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 7141510	Work Order: JXEGW1AA			Report DB ID: JXEGW1AB								
U-234	0.00E+00	U	0.0E+00	1.4E-02	3.34E-02	pCi/g	95%	0.	5/31/07 10:53 p		1.0	UISO_IE_PLATE_AE
					7.25E-03	1.00E+00		0.			G	ALP87
U-235	0.00E+00	U	0.0E+00	1.4E-02	3.34E-02	pCi/g	95%	0.	5/31/07 10:53 p		1.0	UISO_IE_PLATE_AE
					7.25E-03	1.00E+00		0.			G	ALP87
U-238	0.00E+00	U	0.0E+00	1.4E-02	3.34E-02	pCi/g	95%	0.	5/31/07 10:53 p		1.0	UISO_IE_PLATE_AE
					7.25E-03	1.00E+00		0.			G	ALP87

Number of Results: 3

Comments:

STL Richland
rptSTLRchBlank
V5.1.3 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 or Total Uncert or not identified by gamma scan software.

FORM II

BLANK RESULTS

Date: 05-Jun-07

Lab Name: STL Richland SDG: J00112

Lot-Sample No.: J7E210000-511 Report No. : 35508 Matrix: SOIL

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA ,	Rpt Unit, CRDL	Yield	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 7141511	Work Order: JXEG01AA			Report DB ID: JXEG01AB								
NI-63	-2.82E-01	U	6.1E-01	1.0E+00	1.48E+00	pCi/g	93%	-0.19	5/31/07 09:23 p		1.0	NI63_LSC
					7.19E-01	3.00E+01		-0.55			G	LSC3

Number of Results: 1

Comments:

STL Richland
rptSTLRchBlank
V5.1.3 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 or Total Uncert or not identified by gamma scan software.

FORM II

BLANK RESULTS

Date: 05-Jun-07

Lab Name: STL Richland **SDG:** J00112

Lot-Sample No.: J7E210000-512 **Report No. :** 35508 **Matrix:** SOIL

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA ,	Rpt Unit, CRDL	Yield	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 7141512	Work Order: JXEG31AA			Report DB ID: JXEG31AB								
STRONTIUM	1.01E-01	U	8.5E-02	8.9E-02	1.75E-01	pCi/g	70%	0.58	5/24/07 05:26 p		6.0	SRTOT_SEP_PRECIP
					8.08E-02			(2.3)			G	GPC32C

Number of Results: 1

Comments:

STL Richland
rptSTLRchBlank
V5.1.3 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 or Total Uncert or not identified by gamma scan software.

FORM II

LCS RESULTS

Date: 05-Jun-07

Lab Name: STL Richland

SDG: J00112

Lot-Sample No.: J7E210000-506

Report No. : 35508

Matrix: SOIL

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA	Report Unit	Yield	Expected	Expected Uncert	Recovery, Bias	Analysis, Prep Date	Aliquot Size	Analy Method, Primary Detector
Batch: 7141506	Work Order: JXEGE1AC			Report DB ID: JXEGE1CS									
CS-137	2.74E-01		5.4E-02	5.4E-02	3.00E-02	pCi/g		2.59E-01	1.2E-02	106%	5/22/07 11:25 a	457.78	GAMMA_GS
							Rec Limits:	70.	130.	0.1		g	GER7$1
K-40	1.90E+01		2.4E+00	2.4E+00	2.42E-01	pCi/g		1.95E+01	1.9E+00	97%	5/22/07 11:25 a	457.78	GAMMA_GS
							Rec Limits:	70.	130.	0.0		g	GER7$1

Number of Results: 2

Comments:

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

rptSTLRchLcs
V5.1.3 A2002

FORM II

LCS RESULTS

Date: 05-Jun-07

Lab Name: STL Richland

SDG: J00112

Lot-Sample No.: J7E210000-508

Report No. : 35508

Matrix: SOIL

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA	Report Unit	Yield	Expected	Expected Uncert	Recovery, Bias	Analysis, Prep Date	Aliquot Size	Analy Method, Primary Detector
Batch: 7141508	Work Order: JXEGL1AC			Report DB ID: JXEGL1CS									
PU239/40	7.37E+00		5.7E-01	1.4E+00	5.35E-02	pCi/g	61.38%	6.85E+00	2.3E-01	108%	5/31/07 03:25 p	1.0	RICHRC5010
							Rec Limits:	70.	130.	0.1		G	ALP41
Batch: 7141508	Work Order: JXEGL1AE			Report DB ID: JXEGL1EM									
PU239/40	6.47E+00		4.7E-01	1.2E+00	4.85E-02	pCi/g	74.01%	6.56E+00	2.2E-01	99%	5/31/07 03:25 p	1.05	RICHRC5010
							Rec Limits:	70.	130.	0.0		G	ALP44

Number of Results: 2

Comments:

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

rptSTLRchLcs
V5.1.3 A2002

FORM II

LCS RESULTS

Date: 05-Jun-07

Lab Name: STL Richland **SDG:** J00112

Lot-Sample No.: J7E210000-510 **Report No. :** 35508 **Matrix:** SOIL

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA	Report Unit	Yield	Expected	Expected Uncert	Recovery, Bias	Analysis, Prep Date	Aliquot Size	Analy Method, Primary Detector
Batch: 7141510	Work Order: JXEGW1AC			Report DB ID: JXEGW1CS									
U-234	3.40E+00		3.1E-01	6.6E-01	3.32E-02	pCi/g	95.05%	3.25E+00	1.8E-02	105%	5/31/07 10:54 p	1.0	UISO_IE_PLATE_AE
							Rec Limits:	70.	130.	0.0		G	ALP88
U-235	1.04E-01		5.4E-02	5.7E-02	3.32E-02	pCi/g	95.05%	1.48E-01	8.3E-04	70%	5/31/07 10:54 p	1.0	UISO_IE_PLATE_AE
							Rec Limits:	70.	130.	-0.3		G	ALP88
U-238	3.42E+00		3.1E-01	6.6E-01	3.32E-02	pCi/g	95.05%	3.40E+00	1.9E-02	101%	5/31/07 10:54 p	1.0	UISO_IE_PLATE_AE
							Rec Limits:	70.	130.	0.0		G	ALP88

Number of Results: 3

Comments:

FORM II

LCS RESULTS

Date: 05-Jun-07

Lab Name: STL Richland

SDG: J00112

Lot-Sample No.: J7E210000-511

Report No. : 35508

Matrix: SOIL

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA	Report Unit	Yield	Expected	Expected Uncert	Recovery, Bias	Analysis, Prep Date	Aliquot Size	Analy Method, Primary Detector
Batch: 7141511	Work Order: JXEG01AC			Report DB ID: JXEG01CS									
Ni-63	1.30E+02		2.3E+00	1.0E+01	1.72E+00	pCi/g	81.95%	1.52E+02	5.1E+00	86%	5/31/07 11:05 p	1.0	Ni63_LSC
							Rec Limits:	70.	130.	-0.1		G	LSC3

Number of Results: 1

Comments:

FORM II

LCS RESULTS

Date: 05-Jun-07

Lab Name: STL Richland SDG: J00112

Lot-Sample No.: J7E210000-512 Report No. : 35508 Matrix: SOIL

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA	Report Unit	Yield	Expected	Expected Uncert	Recovery, Bias	Analysis, Prep Date	Aliquot Size	Analy Method, Primary Detector
Batch: 7141512	Work Order: JXEG31AC			Report DB ID: JXEG31CS									
STRONTIUM	1.41E+00		1.7E-01	4.0E-01	1.78E-01	pCi/g	81.00%	1.16E+00	8.3E-03	121%	5/24/07 05:26 p	6.0	SRTOT_SEP_PRECIP
							Rec Limits:	70.	130.	0.2		G	GPC32D

Number of Results: 1

Comments:

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

rptSTLRchLcs
V5.1.3 A2002

SEVERN TRENT STL

Data Review/Verification Checklist

RADIOCHEMISTRY, First Level Review

6/5/2007 1:51:32 PM

Lot No., Due Date: J7E210184; 06/05/2007

Client, Site: 127642; HANFORD

QC Batch No., Method Test: 7141508; RPUISO Pulso by ALP

SDG, Matrix: J00112; 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 10-10041

First Level Review Lisa Anderson **Date** 6/5/07

SEVERN TRENT **STL**

Data Review Checklist
RADIOCHEMISTRY
Second Level Review

QC Batch Number: 7141808

Review Item	Yes (√)	No (√)	N/A (√)
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 with contract acceptance criteria?	√		
7. Is the LCS Minimum Detectable Activity ≤ the Contract Detection Limit?	√		
8. Do the MS/MSD results and yields meet acceptance criteria?			√
9. Do the duplicate sample results and yields meet acceptance criteria?		√	
C. Other 1. Are all Nonconformances 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: See Nom

Second Level Review: Erika Ford Date: 4/5/7

Clouseau
Nonconformance Memo

STL

NCM #: 10-10041
NCM Initiated By: Lisa Antonson
Date Opened: 06/05/2007
Date Closed:

Classification: **Anomaly**
Status: **GLREVIEW**
Production Area: Environmental - Prep
Tests: Pulso by ALP
Lot #'s (Sample #'s): J7E210000 (508), J7E210184 (1),
QC Batches: 7141508,

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

Problem Description / Root Cause

Name	Date	Description
Lisa Antonson	06/05/2007	In this Pu batch, the tracer was recovered low at 18% in the dup. The sample results are below CRDL. The client was contacted and will accept the results.

Corrective Action

Name	Date	Corrective Action
Lisa Antonson	06/05/2007	None.

Client Notification Summary

Client	Project Manager	Notified	Response	How Notified	Note	Response	Response Note

Quality Assurance Verification

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

Approval History

Date Approved	Approved By	Position

Date Printed: 6/5/2007

SEVERN TRENT **STL**

Data Review/Verification Checklist

RADIOCHEMISTRY, First Level Review

6/4/2007 3:47:57 PM

Lot No., Due Date: J7E210184; 06/05/2007

Client, Site: 127642; HANFORD

QC Batch No., Method Test: 7141510; RUISO Uiso by ALP

SDG, Matrix: J00112; 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 Review Steven E. Rholand **Date** 6/4/07

SEVERN TRENT STL

Data Review Checklist
RADIOCHEMISTRY
Second Level Review

QC Batch Number: 7141510

Review Item	Yes (√)	No (√)	N/A (√)
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 with contract acceptance criteria?	√		
7. Is the LCS Minimum Detectable Activity ≤ the Contract Detection Limit?	√		
8. Do the MS/MSD results and yields meet acceptance criteria?			√
9. Do the duplicate sample results and yields meet acceptance criteria?	√		
C. Other 1. Are all Nonconformances 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: _____

Second Level Review: Erika Nolan Date: 6/4/7

STL RICHLAND

SEVERN TRENT STL

Data Review/Verification Checklist

RADIOCHEMISTRY, First Level Review

5/31/2007 2:04:26 PM

Lot No., Due Date: J7E210184; 06/05/2007

Client, Site: 127642; HANFORD

QC Batch No., Method Test: 7141512; RSRTOT SrTot by GPC

SDG, Matrix: J00112; 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 Review Kim Antonson **Date** 5/31/07

SEVERN TRENT STL

Data Review Checklist
RADIOCHEMISTRY
Second Level Review

QC Batch Number: 714151 2

Review Item	Yes (√)	No (√)	N/A (√)
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 with contract acceptance criteria?	✓		
7. Is the LCS Minimum Detectable Activity ≤ the Contract Detection Limit?	✓		
8. Do the MS/MSD results and yields meet acceptance criteria?			✓
9. Do the duplicate sample results and yields meet acceptance criteria?	✓		
C. Other 1. Are all Nonconformances 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:

Second Level Review: Sheryl A. Adam Date: 5-31-07

SEVERN TRENT STL

Data Review/Verification Checklist

RADIOCHEMISTRY, First Level Review

5/31/2007 8:23:07 AM

Lot No., Due Date: J7E210184; 06/05/2007

Client, Site: 127642; HANFORD

QC Batch No., Method Test: 7141506; RGAMMA Gamma by GER

SDG, Matrix: J00112; 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 Review Lisa Autonson **Date** 5/31/07

SEVERN TRENT STL

Data Review Checklist
RADIOCHEMISTRY
Second Level Review

QC Batch Number: 7141506

Review Item	Yes (√)	No (√)	N/A (√)
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 with contract acceptance criteria?	✓		
7. Is the LCS Minimum Detectable Activity ≤ the Contract Detection Limit?	✓		
8. Do the MS/MSD results and yields meet acceptance criteria?			✓
9. Do the duplicate sample results and yields meet acceptance criteria?	✓		
C. Other 1. Are all Nonconformances 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:

Second Level Review: [signature] Date: 5-31-07

SEVERN TRENT STL

Data Review/Verification Checklist

RADIOCHEMISTRY, First Level Review

6/4/2007 3:52:22 PM

Lot No., Due Date: J7E210184; 06/05/2007

Client, Site: 127642; HANFORD

QC Batch No., Method Test: 7141511; RNI63 Ni-63 by LSC

SDG, Matrix: J00112; 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 Review [signature] **Date** 6/4/07

SEVERN TRENT STL

Data Review Checklist
RADIOCHEMISTRY
Second Level Review

QC Batch Number: 7141511

Review Item	Yes (√)	No (√)	N/A (√)
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 with contract acceptance criteria?	√		
7. Is the LCS Minimum Detectable Activity ≤ the Contract Detection Limit?	√		
8. Do the MS/MSD results and yields meet acceptance criteria?			√
9. Do the duplicate sample results and yields meet acceptance criteria?	√		
C. Other 1. Are all Nonconformances 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:

Second Level Review: Erika Jade Date: 6/4/7

STL RICHLAND

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-032-114	Page 1 of 1

Collector: Coffman/DeBuigne J7E210184	Company Contact: R.T. Coffman	Telephone No.: 528-6409	Project Coordinator: KESSNER, JH
Price Code: 8F	Data Turnaround: 7 DAY		
Project Designation: J00112 — 100-F Remaining Sites Burial Grounds - Soil Full Protocol	Sampling Location: 118-F-2 Verification/BCL Stockpiles	SAF No.: RC-032	
Ice Chest No.: Due: ~~05-29-07~~ 6/5/07	Field Logbook No.: EFL-1174-2	COA: R118F22000	Method of Shipment: FED EX
Shipped To: Severn Trent Incorporated, Richland	Offsite Property No.: NA		Bill of Lading/Air Bill No.: NA

POSSIBLE SAMPLE HAZARDS/REMARKS

NA

Special Handling and/or Storage

NA

Preservation	None	None	None	None	None						
Type of Container	P	P	P	P	P						
No. of Container(s)	1	1	1	1	1						
Volume	125mL	500mL	125mL	125mL	125mL						
SAMPLE ANALYSIS	See item (1) in Special Instructions.	See item (2) in Special Instructions.	Nickel-63; Strontium-89,90 -- Total Sr	Isotopic Plutonium	Isotopic Uranium						

Sample No.	Matrix *	Sample Date	Sample Time										
J152P3	SOIL	5-17-07	~~0750~~ 0750	X	X	X	X		JXD41				5

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From	Date/Time 1315	Received By/Stored In	Date/Time 1315
JPDeBuigne JPDeBuigne	5-17-07	3728/3A	5-17-07
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time 5-21-07
3728/3A 5-21-07	1030	BMSingleton	1030
Relinquished By/Removed From	Date/Time 1215	Received By/Stored In	Date/Time 12:15
BMSingleton 5-21-07		S. Smith	05-21-07
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010 (Client List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc}; Mercury - 7471 - (CV)
(2) Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Silver-108 metastable}

Sampler unavailable to relinquish samples from 3728 Ref # 3A. 3728 Custodian removed samples for shipping on 5/21/07

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

SEVERN TRENT STL

Sample Check-in List

Date/Time Received: 05 21 07 12:15

Client: WCH SDG #: J00112 NA [ ] SAF #: RC-032 NA [ ]

Work Order Number: J7E210184 Chain of Custody # RC-032-114

Shipping Container ID: _____ Air Bill # _____

1. Custody Seals on shipping container intact? NA [ ] Yes [✓] No [ ]
2. Custody Seals dated and signed? NA [ ] Yes [✓] No [ ]
3. Chain of Custody record present? Yes [✓] No [ ]
4. Cooler temperature: _____ NA [✓] 5. Vermiculite/packing materials is NA [✓] Wet [ ] Dry [ ]
6. Number of samples in shipping container: 1
7. Sample holding times exceeded? NA [✓] Yes [ ] No [ ]
8. Samples have:
   _____tape _____hazard labels
   _____custody seals 1 appropriate samples labels
9. Samples are:
   1 in good condition _____leaking
   _____broken _____have air bubbles
   (Only for samples requiring head space)
10. Sample pH taken? Soil NA [✓] pH<2 [ ] pH>2 [ ] pH>9 [ ]
11. Sample Location, Sample Collector Listed? * Yes [✓] No [ ]
    *For documentation only. No corrective action needed.
12. Were any anomalies identified in sample receipt? Yes [ ] No [✓]
13. Description of anomalies (include sample numbers): _____

Sample Custodian: L. Smith Date: 05-21-07

Client Sample ID	Analysis Requested	Condition	Comments/Action

Client Informed on_____ by_____ Person contacted_____

[ ] No action necessary; process as is.

Project Manager_____ Date_____

LS-023, 9/03, Rev. 5

STL RICHLAND

5/24/2007 12:05:32 PM

127642, Washington Closure Hanford
Bechtel Hanford, Inc.

AnalyDueDate: 06/05/2007

Sample Preparation/Analysis

6A Pu PrpRC5013/RC5019, SepRC5010(5039)
SO Plutonium-238,239/40 by Alpha Spec
5I CLIENT: HANFORD

PRIORITY

Balance Id:1120373922

Pipet #: _____

Sep1 DT/Tm Tech:

Sep2 DT/Tm Tech:

Prep Tech: ,WoodT

Batch: 7141508 **SOIL** **pCi/g** **PM, Quote: SS , 27038**
SEQ Batch, Test: None

[redacted]

Work Order, Lot, Sample DateTime	Total Amt/Unit	Initial Aliquot Amt/Unit	QC Tracer Prep Date	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:
1 JXD41-1-AE J7E210184-1-SAMP [redacted] 05/17/2007 07:50	AmtRec: 3X125ML,500ML	1.05g,in #Containers: 4	PUTC10596 03/13/07,pd 08/04/06,r	200		Scr:	Alpha:	Beta:
2 JXD41-1-AJ-X J7E210184-1-DUP [redacted] 05/17/2007 07:50	AmtRec: 3X125ML,500ML	1.04g,in #Containers: 4	PUTC10696 04/10/07,pd 03/13/07,r			Scr:	Alpha:	Beta:
3 JXEGL-1-AA-B J7E210000-508-BLK [redacted] 05/17/2007 07:50	AmtRec:	1.00g,in #Containers: 1	PUTC10697 04/10/07,pd 03/13/07,r			Scr:	Alpha:	Beta:
4 JXEGL-1-AC-C J7E210000-508-LCS [redacted] 05/17/2007 07:50	AmtRec:	1.00g,in #Containers: 1	PUSK0701 04/10/07,pd 10/06/86,r			Scr:	Alpha:	Beta:
5 JXEGL-1-AD-BX J7E210000-508-MBLK [redacted] 05/17/2007 07:50	AmtRec:	1.04g,in #Containers: 1	PUTC10698 04/10/07,pd 03/13/07,r			Scr:	Alpha:	Beta:
6 JXEGL-1-AE-CM J7E210000-508-MLCS [redacted] 05/17/2007 07:50	AmtRec:	1.05g,in #Containers: 1	PUSK0702 05/22/07,pd 10/06/86,r			Scr:	Alpha:	Beta:

36

Sample Preparation/Analysis

6A Pu PrpRC5013/RC5019, SepRC5010(5039)
SO Plutonium-238,239/40 by Alpha Spec
5I CLIENT: HANFORD

Balance Id:1120373922
Pipet #: _____

PRIORITY

AnalyDueDate: 06/05/2007

Sep1 DT/Tm Tech:

Batch: 7141508 pCi/g
SEQ Batch, Test: None

Sep2 DT/Tm Tech:

Prep Tech: ,WoodT

[redacted]

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

Comments: Samples have been muffled & bombed 5/24/07 KW

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

JXD411AE-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						

JXEGL1AA-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						

JXEGL1AC-LCS:

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

JXEGL1AD-MBLK:

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						

JXEGL1AE-MLCS:

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

JXD411AE-SAMP Calc Info:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

JXEGL1AA-BLK:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

JXEGL1AC-LCS:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

JXEGL1AD-MBLK:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

JXEGL1AE-MLCS:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

Approved By _____ Date: _____

STL RICHLAND

6/5/2007 1:50:10 PM

ICOC Fraction Transfer/Status Report

ByDate: 6/5/2006, 6/10/2007, Batch: '7141508', User: *ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting			Comments
7141508						
AC		CalcC	WoodT	5/22/2007 6:26:07 PM		
SC			wagarr	IsBatched	5/21/2007 2:20:14 PM	ICOC_RADCALC v4.8.26
SC			WoodT	InPrep	5/22/2007 6:26:07 PM	RICH-RC-5016 Revision 5
SC			WoodT	Prep2C	5/24/2007 12:06:08 PM	RICH-RC-5019 REVISION 5
SC			FABREM	Sep1C	5/30/2007 8:47:54 AM	RICH-RC-5010 REVISION 4
SC			ManisD	InSep2	5/31/2007 8:47:24 AM	RICH-RC-5039 REV 5
SC			ManisD	Sep2C	5/31/2007 12:47:10 PM	RICH-RC-5039 REV 5
SC			DAWKINSO	CalcC	5/31/2007 10:32:19 PM	RICH-RD-0008 REVISION 4
AC			WoodT	5/24/2007 12:06:08		
AC			FABREM	5/30/2007 8:47:54		
AC			ManisD	5/31/2007 8:47:24		
AC			ManisD	5/31/2007 12:47:10		
AC			DAWKINSO	5/31/2007 10:32:19		

AC: Accepting Entry; SC: Status Change

STL RICHLAND

5/29/2007 1:41:49 PM

Sample Preparation/Analysis

Balance Id:1120373922

127642, Washington Closure Hanford
Bechtel Hanford, Inc.

7S Uiso PrpRC5013/RC5019, Sep~~RC5079~~(5039) 5086/5067
SR Uranium-234,235,238 by Alpha Spec
5I CLIENT: HANFORD

Pipet #:

AnalyDueDate: 06/05/2007

PRIORITY

Sep1 DT/Tm Tech:

Batch: 7141510 SOIL pCi/g PM, Quote: SS , 27038

Sep2 DT/Tm Tech:

SEQ Batch, Test: None

Prep Tech: ,WoodT

[redacted]

Work Order, Lot, Sample DateTime	Total Amt/Unit	Initial Aliquot Amt/Unit	QC Tracer Prep Date	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:
1 JXD41-1-AA J7E210184-1-SAMP [redacted] 05/17/2007 07:50	AmtRec: 3X125ML,500ML #Containers: 4	1.02g,in	UITC17303 04/25/07,pd 01/20/04,r	200		Scr:	Alpha:	Beta:
2 JXD41-1-AK-X J7E210184-1-DUP [redacted] 05/17/2007 07:50	AmtRec: 3X125ML,500ML #Containers: 4	1.02g,in	UITC17304 04/25/07,pd 01/20/04,r			Scr:	Alpha:	Beta:
3 JXEGW-1-AA-B J7E210000-510-BLK [redacted] 05/17/2007 07:50	AmtRec: #Containers: 1	1.00g,in	UITC17305 04/25/07,pd 01/20/04,r			Scr:	Alpha:	Beta:
4 JXEGW-1-AC-C J7E210000-510-LCS [redacted] 05/17/2007 07:50	AmtRec: #Containers: 1	1.00g,in	UISH0487 05/16/07,pd 03/22/05,r			Scr:	Alpha:	Beta:

Comments: Samples have been muffled, bombed & crushed 5/29/07 JGW

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

JXD411AA-SAMP Constituent List:

U-232	RDL:	pCi/g	LCL:20	UCL:105	RPD:35	U-234	RDL:1	pCi/g	LCL:	UCL:	RPD:
U-235	RDL:1	pCi/g	LCL:	UCL:	RPD:	U-238	RDL:1	pCi/g	LCL:	UCL:	RPD:

JXEGW1AA-BLK:

U-232	RDL:	pCi/g	LCL:20	UCL:105	RPD:35	U-234	RDL:1	pCi/g	LCL:	UCL:	RPD:
U-235	RDL:1	pCi/g	LCL:	UCL:	RPD:	U-238	RDL:1	pCi/g	LCL:	UCL:	RPD:

5/29/2007 1:41:56 PM

Sample Preparation/Analysis

7S Uiso PrpRC5013/RC5019, SepRC5079(5039)
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: ,WoodT

PRIORITY

AnalyDueDate: 06/05/2007

Batch: 7141510 pCi/g
SEQ Batch, Test: None

[redacted]

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

JXEGW1AC-LCS:
U-232 RDL: pCi/g LCL:20 UCL:105 RPD:35 Uranium RDL: pCi/g LCL:70 UCL:130 RPD:35

JXD411AA-SAMP Calc Info:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
JXEGW1AA-BLK:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
JXEGW1AC-LCS:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

Approved By _____ Date: _____

6/4/2007 3:37:24 PM

ICOC Fraction Transfer/Status Report

ByDate: 6/4/2006, 6/9/2007, Batch: '7141510', User: *ALL Order By DateTimeAccepting

Q	Batch	Work Ord	CurStatus	Accepting			Comments
7141510							
AC			CalcC	WoodT	5/22/2007 6:44:24 PM		
SC				wagarr	IsBatched	5/21/2007 2:20:14 PM	ICOC_RADCALC v4.8.26
SC				WoodT	InPrep	5/22/2007 6:44:24 PM	RICH-RC-5016 Revision 5
SC				WoodT	Prep1C	5/29/2007 1:41:00 PM	RICH-RC-5086 REVISION 2
SC				HarveyK	Sep1C	5/31/2007 1:57:14 PM	RICH-RC-5067 REV6
SC				HarveyK	Sep2C	5/31/2007 8:15:26 PM	RICH-RC-5039 REV5
SC				DAWKINSO	InCnt1	5/31/2007 9:19:55 PM	RICH-RD-0008 REVISION 4
SC				BlackCL	CalcC	6/1/2007 7:21:42 AM	RICH-RD-0008 REVISION 4
AC				WoodT	5/29/2007 1:41:00 PM		
AC				HarveyK	5/31/2007 1:57:14 PM		
AC				HarveyK	5/31/2007 8:15:26 PM		
AC				DAWKINSO	5/31/2007 9:19:55 PM		
AC				BlackCL	6/1/2007 7:21:42 AM		

AC: Accepting Entry; SC: Status Change

STL Richland

Richland Wa.

Grp Rec Cnt: 6

ICOCFractions v4.8.26

STL RICHLAND

5/24/2007 3:33:01 PM

Sample Preparation/Analysis

Balance Id:1120373922

127642, Washington Closure Hanford
Bechtel Hanford, Inc.

CH Sr-Total PrpRC5013, SepRC5006
TH Total Strontium by GPC
5I CLIENT: HANFORD

Pipet #: _____

AnalyDueDate: 06/05/2007

Sep1 DT/Tm Tech: 05/24/2007 14:10,ManisD

Batch: 7141512 SOIL pCi/g PM, Quote: SS , 27038

Sep2 DT/Tm Tech:

SEQ Batch, Test: None

[redacted]

Prep Tech: ,WoodT

Work Order, Lot, Sample DateTime	Total Amt/Unit	Initial Aliquot Amt/Unit	QC Tracer Prep Date	Dish Size	Ppt or Geometry	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:
1 JXD41-1-AC J7E210184-1-SAMP [redacted] 05/17/2007 07:50		6.06g,in AmtRec: 3X125ML,500ML	SRTA16884 05/10/07,pd 09/11/06,r #Containers: 4	1.5 05/24/2007 14:10,s1	91.4	50	32a Scr:	1752 Alpha:	5/24/07 R	Beta:
2 JXD41-1-AM-X J7E210184-1-DUP [redacted] 05/17/2007 07:50		6.02g,in AmtRec: 3X125ML,500ML	SRTA16885 05/22/07,pd 09/11/06,r #Containers: 4	1.5 05/24/2007 14:10,s1	73	50	32b Scr:	Alpha:		Beta:
3 JXEG3-1-AA-B J7E210000-512-BLK [redacted] 05/17/2007 07:50		6.00g,in AmtRec:	SRTA16886 05/22/07,pd 09/11/06,r #Containers: 1	1.5 05/24/2007 14:10,s1	69.6	50	32c Scr:	Alpha:		Beta:
4 JXEG3-1-AC-C J7E210000-512-LCS [redacted] 05/17/2007 07:50		6.00g,in AmtRec:	STSB1215 05/22/07,pd 09/11/06,r #Containers: 1	1.5 05/24/2007 14:10,s1	81	50	32d Scr:	Alpha:		Beta:

Comments:

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

JXD411AC-SAMP Constituent List:

Sr-90	RDL:1	pCi/g	LCL:70	UCL:130	RPD:35

JXEG31AA-BLK:

Sr-90	RDL:1	pCi/g	LCL:	UCL:	RPD:

JXEG31AC-LCS:

Sr-90	RDL:1	pCi/g	LCL:70	UCL:130	RPD:35

JXD411AC-SAMP Calc Info:

42

Sample Preparation/Analysis

CH Sr-Total PrpRC5013, SepRC5006
TH Total Strontium by GPC
5I CLIENT: HANFORD

Balance Id:1120373922
Pipet #: _____

AnalyDueDate: 06/05/2007

Sep1 DT/Tm Tech: 05/24/2007 14:10,ManisD

Batch: 7141512 pCi/g

SEQ Batch, Test: None

Sep2 DT/Tm Tech:

Prep Tech: ,WoodT

[redacted]

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

```
    Uncert Level (#s).: 2     Decay to SaDt: Y     Blk Subt.: N     Sci.Not.: Y     ODRs: B
JXEG31AA-BLK:
    Uncert Level (#s).: 2     Decay to SaDt: Y     Blk Subt.: N     Sci.Not.: Y     ODRs: B
JXEG31AC-LCS:
    Uncert Level (#s).: 2     Decay to SaDt: Y     Blk Subt.: N     Sci.Not.: Y     ODRs: B
```

Approved By _____ Date: _____

STL RICHLAND

5/31/2007 2:03:35 PM

ICOC Fraction Transfer/Status Report

ByDate: 5/31/2006, 6/5/2007, Batch: '7141512', User: *ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting			Comments
7141512						
AC		**CalcC**	**WoodT**	5/22/2007 6:18:23 PM		
SC			wagarr	IsBatched	5/21/2007 2:20:14 PM	ICOC_RADCALC v4.8.26
SC			WoodT	InPrep	5/22/2007 6:18:23 PM	RICH-RC-5016 Revision 5
SC			WoodT	Prep1C	5/23/2007 5:03:54 PM	RICH-RC-5013 REVISION 5
SC			ManisD	InSep1	5/23/2007 5:39:22 PM	RICH-RC-5006 REVISION 6
SC			ManisD	Sep1C	5/24/2007 2:39:59 PM	RICH-RC-5006 REVISION 6
SC			StringerR	InCnt1	5/24/2007 3:35:53 PM	RICH-RD-0003 REVISION 4
SC			StringerR	CalcC	5/24/2007 6:42:28 PM	RICH-RD-0003 REVISION 4
AC			**WoodT**	5/23/2007 5:03:54 PM		
AC			**ManisD**	5/23/2007 5:39:22 PM		
AC			**ManisD**	5/24/2007 2:39:59 PM		
AC			**StringerR**	5/24/2007 3:35:53 PM		
AC			**StringerR**	5/24/2007 6:42:28 PM		

AC: Accepting Entry; SC: Status Change

STL Richland

Richland Wa.

Grp Rec Cnt:6

ICOCFractions v4.8.26

STL RICHLAND

5/22/2007 11:12:39 AM

Sample Preparation/Analysis

Balance Id:1120421763

127642, Washington Closure Hanford
Bechtel Hanford, Inc.

AX Gamma PrpRC5013/5017
TA Gamma by HPGE
5I CLIENT: HANFORD

PRIORITY

Pipet #: _____

AnalyDueDate: 06/05/2007

Sep1 DT/Tm Tech:

Batch: 7141506 SOIL pCi/g PM, Quote: SS , 27038

Sep2 DT/Tm Tech:

SEQ Batch, Test: None All Tests: 7141506 AXTA, 7141507 88OV, 7141508 6ASO, 7141510 7SSR, 7141511 AFS4, 7141512 CHTH,

Prep Tech: ,WoodT

[redacted]

Work Order, Lot, Sample DateTime	Total Amt/Unit	Initial Aliquot Amt/Unit	QC Tracer Prep Date	Dish Size	Ppt or Geometry	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:
1 JXD41-1-AG J7E210184-1-SAMP [redacted] 05/17/2007 07:50		789.40g,in AmtRec: 3X125ML,500ML	#Containers: 4		SMA	200	66 Scr:	1444 Alpha:	5/22/07 Beta:	
2 JXD41-1-AH-X * See Comments J7E210184-1-DUP [redacted] 05/17/2007 07:50		AmtRec: 3X125ML,500ML	#Containers: 4				68 Scr:	1408 Alpha:	5/22/07 Beta:	
3 JXEGE-1-AA-B J7E210000-506-BLK [redacted] 05/17/2007 07:50		859.27g,in AmtRec:	CAL827 #Containers: 1				68 Scr:	1445 Alpha:	5/22/07 Beta:	
4 JXEGE-1-AC-C J7E210000-506-LCS [redacted] 05/17/2007 07:50		457.78g,in AmtRec:	CAL816 01/01/03,pd 01/01/02,r #Containers: 1		MA		67 Scr:	1445 Alpha:	Beta:	

Comments: * Not enough sample for dup. Please recount on sep. detector. 5/22/07 JBW

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

JXD41IAG-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:

JXEGE1AA-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:

STL RICHLAND

5/22/2007 11:12:44 AM

Sample Preparation/Analysis

Balance Id:1120421763

AX Gamma PrpRC5013/5017
TA Gamma by HPGE
5I CLIENT: HANFORD

Pipet #: _____

PRIORITY

AnalyDueDate: 06/05/2007

Sep1 DT/Tm Tech:

Batch: 7141506 pCi/g

Sep2 DT/Tm Tech:

SEQ Batch, Test: None

Prep Tech: ,WoodT

[redacted]

Work Order, Lot, Sample DateTime	Total Amt/Unit	Initial Aliquot Amt/Unit	QC Tracer Prep Date	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:

JXEGE1AC-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						

JXD411AG-SAMP Calc Info:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

JXEGE1AA-BLK:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

JXEGE1AC-LCS:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

Approved By _____ Date: _____

5/31/2007 8:22:30 AM

ICOC Fraction Transfer/Status Report

ByDate: 5/31/2006, 6/5/2007, Batch: '7141506', User: *ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting			Comments
7141506						
AC		**CalcC**	**WoodT**	5/22/2007 11:09:26		
SC			wagarr	IsBatched	5/21/2007 2:20:14 PM	ICOC_RADCALC v4.8.26
SC			WoodT	InPrep	5/22/2007 11:09:26 AM	RICH-RC-5013 Revision 5
SC			WoodT	Prep1C	5/22/2007 11:13:09 AM	RICH-RC-5017 REVISION 4
SC			BlackCL	InCnt1	5/22/2007 11:22:28 AM	RICH-RD-0007 REVISION 5
SC			DAWKINSO	CalcC	5/22/2007 8:02:40 PM	RICH-RD-0007 REVISION 5
AC			**WoodT**	5/22/2007 11:13:09		
AC			**BlackCL**	5/22/2007 11:22:28		
AC			**DAWKINSO**	5/22/2007 8:02:40 PM		

AC: Accepting Entry; SC: Status Change

STL Richland

Richland Wa.

Grp Rec Cnt:4

ICOCFractions v4.8.26

STL RICHLAND

5/24/2007 12:16:09 PM

Sample Preparation/Analysis

Balance Id:1120373922

127642, Washington Closure Hanford
Bechtel Hanford, Inc.

AF Ni-63 PrpRC5013/5019, SepRC5069
S4 Nickel by ICP and Nickel-63 by Liquid Scint
5I CLIENT: HANFORD

PRIORITY

Pipet #: _____

AnalyDueDate: 06/05/2007

Sep1 DT/Tm Tech:

Batch: 7141511 SOIL pCi/g PM, Quote: SS , 27038

Sep2 DT/Tm Tech:

SEQ Batch, Test: None

Prep Tech: ,WoodT

[redacted]

Work Order, Lot, Sample Date	Total Amt /Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:
1 JXD41-1-AD J7E210184-1-SAMP [redacted] 05/17/2007 07:50			0.25g,in AmtRec: 3X125ML,500ML	0.25g #Containers: 4	NITA2400 03/15/07	100 Scr:	Alpha:		Beta:	
2 JXD41-1-AL-X J7E210184-1-DUP [redacted] 05/17/2007 07:50			0.26g,in AmtRec: 3X125ML,500ML	0.26g #Containers: 4	NITA2401 03/15/07	Scr:	Alpha:		Beta:	
3 JXEG0-1-AA-B J7E210000-511-BLK [redacted] 05/17/2007 07:50			1.00g,in AmtRec:	1.00g #Containers: 1	NITA2402 03/15/07	Scr:	Alpha:		Beta:	
4 JXEG0-1-AC-C J7E210000-511-LCS [redacted] 05/17/2007 07:50			1.00g,in AmtRec:	1.00g #Containers: 1	NISA0749 12/19/06	Scr:	Alpha:		Beta:	
5 JXEG0-1-AD-BN J7E210000-511-IBLK [redacted] 05/17/2007 07:50			AmtRec:	#Containers: 1		Scr:	Alpha:		Beta:	

Comments: Samples have been muffled & bombed 5/24/07

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

JXD41IAD-SAMP Constituent List:
Ni-63 RDL:30 pCi/g LCL:70 UCL:130 RPD:35

STL Richland Key: In - Initial Amt, fi - Final Amt, di - Diluted Amt, s1 - Sep1, s2 - Sep2 Page 1 ISV - Insufficient Volume for Analysis WO Cnt: 5
Richland Wa. pd - Prep Dt, r - Reference Dt, ec-Enrichment Cell, ct-Cocktailed Added Prep_SamplePrep v4.8.26

5/24/2007 12:16:17 PM

Sample Preparation/Analysis

AF Ni-63 PrpRC5013/5019, SepRC5069
S4 Nickel by ICP and Nickel-63 by Liquid Scint
5I CLIENT: HANFORD

PRIORITY

Balance Id:
Pipet #:

AnalyDueDate: 06/05/2007

Sep1 DT/Tm Tech:

Batch: 7141511 pCi/g
SEQ Batch, Test: None

Sep2 DT/Tm Tech:

Prep Tech:

[redacted]

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

```
JXEG01AA-BLK:
  Ni-63        RDL:30          pCi/g     LCL:        UCL:        RPD:
JXEG01AC-LCS:
  Ni-63        RDL:30          pCi/g     LCL:70      UCL:130     RPD:35
JXEG01AD-IBLK:
  Ni-63        RDL:30          pCi/g     LCL:        UCL:        RPD:
JXD411AD-SAMP Calc Info:
     Uncert Level (#s).: 2     Decay to SaDt: Y     Blk Subt.: N     Sci.Not.: Y     ODRs: B
JXEG01AA-BLK:
     Uncert Level (#s).: 2     Decay to SaDt: Y     Blk Subt.: N     Sci.Not.: Y     ODRs: B
JXEG01AC-LCS:
     Uncert Level (#s).: 2     Decay to SaDt: Y     Blk Subt.: N     Sci.Not.: Y     ODRs: B
JXEG01AD-IBLK:
     Uncert Level (#s).: 2     Decay to SaDt: Y     Blk Subt.: N     Sci.Not.: Y     ODRs: B
```

Approved By _____ Date: _____

6/4/2007 3:48:41 PM

ICOC Fraction Transfer/Status Report

ByDate: 6/4/2006, 6/9/2007, Batch: '7141511', User: *ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting			Comments
7141511						
AC		CalcC	WoodT	5/22/2007 6:50:17 PM		
SC			wagarr	IsBatched	5/21/2007 2:20:14 PM	ICOC_RADCALC v4.8.26
SC			WoodT	InPrep	5/22/2007 6:50:17 PM	RICH-RC-5016 Revision 5
SC			WoodT	Prep2C	5/24/2007 12:05:58 PM	RICH-RC-5019 REVISION 5
SC			FABREM	Sep1C	5/30/2007 7:44:22 PM	RICH-RC-5069 REVISION 5
SC			DAWKINSO	InCnt1	5/30/2007 8:06:17 PM	RICH-RD-0001 REVISION 3
SC			BlackCL	CalcC	6/1/2007 7:43:57 AM	RICH-RD-0001 REVISION 3
AC			WoodT	5/24/2007 12:05:58		
AC			FABREM	5/30/2007 7:44:22 PM		
AC			DAWKINSO	5/30/2007 8:06:17 PM		
AC			BlackCL	6/1/2007 7:43:57 AM		

AC: Accepting Entry; SC: Status Change

STL Richland

Richland Wa.

Grp Rec Cnt: 5

ICOCFractions v4.8.26

STL

STL St. Louis
13715 Rider Trail North
Earth City, MO 63045

Tel: 314 298 8566 Fax: 314 298 8757
www.stl-inc.com

RECEIVED
JUN 2007

ANALYTICAL REPORT

RC-032

Lot #: F7E220167
SDG #: J00112

Joan Kessner

Washington Closure Hanford
2620 Fermi Avenue
MSIN H4-21
Richland, WA 99354

SEVERN TRENT LABORATORIES, INC.

for
Brian O'Donnell
Project Manager

June 6, 2007

Case Narrative
Lot Number: F7E220167
SDG: J00112

This report contains the analytical results for the sample received under chain of custody by STL St. Louis on May 22, 2007. This sample is associated with your RC-032 project.

The analytical results included in this report meet all applicable quality control procedure requirements except as noted below.

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

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.

ICP Metals by SW846 6010B

The MS and/or MSD recoveries for Aluminum, Iron and Manganese are outside the established QC limits. The said analyte concentration in the original sample is greater than four times the amount spiked, making percent recovery information ineffective. Method performance is demonstrated by acceptable LCS recovery.

The MS and/or MSD recoveries for Antimony, Barium, and Calcium are outside the established QC limits. The RPD is within method acceptance criteria indicating a possible matrix interference. Method performance is demonstrated by acceptable LCS recovery.

The MS and/or MSD recovery for Silicon is outside the established QC limits. A matrix interference is physically evident in the sample. Method performance is demonstrated by acceptable LCS recovery.
Affected Samples:
F7E220167 (1): J152P3

There were no observations or nonconformances to report for the following analysis:

Mercury by SW846 7471A

METHODS SUMMARY

F7E220167

PARAMETER	ANALYTICAL METHOD	PREPARATION METHOD
Mercury in Solid Waste (Manual Cold-Vapor)	SW846 7471A	SW846 7471A
Percent Moisture	MCAWW 160.3 MOD	MCAWW 160.3 MOD
Trace Inductively Coupled Plasma (ICP) Metals	SW846 6010B	

References:

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.

SAMPLE SUMMARY

F7E220167

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
JXE99	001	J152P3	05/17/07	07:50

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.

METALS

Washington Closure Hanford

Client Sample ID: J152P3

TOTAL Metals

Lot-Sample #...: F7E220167-001 **Matrix.....:** SOLID
Date Sampled...: 05/17/07 **Date Received..:** 05/22/07
% Moisture.....: 1.9

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 7143061						
Silver	ND	1.0	mg/kg	SW846 6010B	05/23-05/31/07	JXE991A1
		Dilution Factor: 1		MDL.....: 0.37		
Aluminum	**6540 N**	**20.4**	**mg/kg**	**SW846 6010B**	**05/23-06/04/07**	**JXE991AD**
		Dilution Factor: 1		MDL.....: 5.2		
Arsenic	**1.7**	**1.0**	**mg/kg**	**SW846 6010B**	**05/23-05/31/07**	**JXE991AF**
		Dilution Factor: 1		MDL.....: 0.24		
Barium	**102 N**	**5.1**	**mg/kg**	**SW846 6010B**	**05/23-05/31/07**	**JXE991AG**
		Dilution Factor: 1		MDL.....: 0.23		
Beryllium	**0.20 B**	**0.51**	**mg/kg**	**SW846 6010B**	**05/23-05/31/07**	**JXE991AH**
		Dilution Factor: 1		MDL.....: 0.071		
Boron	**3.8 B,C**	**10.2**	**mg/kg**	**SW846 6010B**	**05/23-06/04/07**	**JXE991AJ**
		Dilution Factor: 1		MDL.....: 1.5		
Calcium	**4380 N**	**255**	**mg/kg**	**SW846 6010B**	**05/23-05/31/07**	**JXE991AL**
		Dilution Factor: 1		MDL.....: 8.7		
Cadmium	ND	0.51	mg/kg	SW846 6010B	05/23-05/31/07	JXE991AK
		Dilution Factor: 1		MDL.....: 0.062		
Cobalt	**11.7**	**5.1**	**mg/kg**	**SW846 6010B**	**05/23-05/31/07**	**JXE991AM**
		Dilution Factor: 1		MDL.....: 0.24		
Chromium	**7.5**	**1.0**	**mg/kg**	**SW846 6010B**	**05/23-05/31/07**	**JXE991A5**
		Dilution Factor: 1		MDL.....: 0.23		
Copper	**10.6**	**2.5**	**mg/kg**	**SW846 6010B**	**05/23-05/31/07**	**JXE991AN**
		Dilution Factor: 1		MDL.....: 0.16		
Iron	**21100 N**	**10.2**	**mg/kg**	**SW846 6010B**	**05/23-06/04/07**	**JXE991AP**
		Dilution Factor: 1		MDL.....: 3.8		
Potassium	**1340**	**510**	**mg/kg**	**SW846 6010B**	**05/23-06/04/07**	**JXE991AW**
		Dilution Factor: 1		MDL.....: 93.3		
Magnesium	**4530**	**102**	**mg/kg**	**SW846 6010B**	**05/23-05/31/07**	**JXE991AR**
		Dilution Factor: 1		MDL.....: 9.1		

(Continued on next page)

Washington Closure Hanford

Client Sample ID: J152P3

TOTAL Metals

Lot-Sample #...: F7E220167-001 **Matrix.....:** SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**388 N**	**1.0**	**mg/kg**	**SW846 6010B**	**05/23-05/31/07**	**JXE991AT**
		Dilution Factor: 1		MDL.....: 0.22		
Molybdenum	ND	4.1	mg/kg	SW846 6010B	05/23-05/31/07	JXE991AU
		Dilution Factor: 1		MDL.....: 0.91		
Sodium	**250**	**102**	**mg/kg**	**SW846 6010B**	**05/23-06/04/07**	**JXE991A2**
		Dilution Factor: 1		MDL.....: 5.9		
Nickel	**10.1**	**4.1**	**mg/kg**	**SW846 6010B**	**05/23-05/31/07**	**JXE991AV**
		Dilution Factor: 1		MDL.....: 1.2		
Lead	**3.6**	**1.0**	**mg/kg**	**SW846 6010B**	**05/23-05/31/07**	**JXE991AQ**
		Dilution Factor: 1		MDL.....: 0.099		
Antimony	**1.8 N**	**1.0**	**mg/kg**	**SW846 6010B**	**05/23-05/31/07**	**JXE991AE**
		Dilution Factor: 1		MDL.....: 0.52		
Selenium	ND	1.5	mg/kg	SW846 6010B	05/23-05/31/07	JXE991AX
		Dilution Factor: 1		MDL.....: 0.45		
Silicon	**1040 C,N**	**40.8**	**mg/kg**	**SW846 6010B**	**05/23-06/04/07**	**JXE991A0**
		Dilution Factor: 1		MDL.....: 4.1		
Vanadium	**60.9**	**1.0**	**mg/kg**	**SW846 6010B**	**05/23-05/31/07**	**JXE991A3**
		Dilution Factor: 1		MDL.....: 0.55		
Zinc	**39.4 C**	**5.1**	**mg/kg**	**SW846 6010B**	**05/23-05/31/07**	**JXE991A4**
		Dilution Factor: 1		MDL.....: 1.4		
Prep Batch #...: 7143079						
Mercury	ND	0.034	mg/kg	SW846 7471A	05/29/07	JXE991A6
		Dilution Factor: 1		MDL.....: 0.0068		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

N Spike sample recovery is outside control limits.

B Estimated result. Result is less than RL.

C Method blank contamination. The associated method blank contains the target analyte at a reportable level.

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F7E220167 **Matrix.....:** SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: F7E230000-061 **Prep Batch #...:** 7143061						
Aluminum	ND	20.0	mg/kg	SW846 6010B	05/23-06/04/07	JXG7N1AA
		Dilution Factor: 1				
Antimony	ND	1.0	mg/kg	SW846 6010B	05/23-05/31/07	JXG7N1AC
		Dilution Factor: 1				
Arsenic	ND	1.0	mg/kg	SW846 6010B	05/23-05/31/07	JXG7N1AD
		Dilution Factor: 1				
Barium	ND	5.0	mg/kg	SW846 6010B	05/23-05/31/07	JXG7N1AE
		Dilution Factor: 1				
Beryllium	ND	0.50	mg/kg	SW846 6010B	05/23-05/31/07	JXG7N1AF
		Dilution Factor: 1				
Boron	1.5 B	10.0	mg/kg	SW846 6010B	05/23-06/04/07	JXG7N1AG
		Dilution Factor: 1				
Cadmium	ND	0.50	mg/kg	SW846 6010B	05/23-05/31/07	JXG7N1AH
		Dilution Factor: 1				
Calcium	ND	250	mg/kg	SW846 6010B	05/23-05/31/07	JXG7N1AJ
		Dilution Factor: 1				
Chromium	ND	1.0	mg/kg	SW846 6010B	05/23-05/31/07	JXG7N1A3
		Dilution Factor: 1				
Cobalt	ND	5.0	mg/kg	SW846 6010B	05/23-05/31/07	JXG7N1AK
		Dilution Factor: 1				
Copper	ND	2.5	mg/kg	SW846 6010B	05/23-05/31/07	JXG7N1AL
		Dilution Factor: 1				
Iron	ND	10.0	mg/kg	SW846 6010B	05/23-06/04/07	JXG7N1AM
		Dilution Factor: 1				
Lead	ND	1.0	mg/kg	SW846 6010B	05/23-05/31/07	JXG7N1AN
		Dilution Factor: 1				
Magnesium	ND	100	mg/kg	SW846 6010B	05/23-05/31/07	JXG7N1AP
		Dilution Factor: 1				
Manganese	ND	1.0	mg/kg	SW846 6010B	05/23-05/31/07	JXG7N1AQ
		Dilution Factor: 1				

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METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F7E220167 **Matrix.....:** SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Molybdenum	ND	4.0	mg/kg	SW846 6010B	05/23-05/31/07	JXG7N1AR
		Dilution Factor: 1				
Nickel	ND	4.0	mg/kg	SW846 6010B	05/23-05/31/07	JXG7N1AT
		Dilution Factor: 1				
Potassium	ND	500	mg/kg	SW846 6010B	05/23-06/04/07	JXG7N1AU
		Dilution Factor: 1				
Selenium	ND	1.5	mg/kg	SW846 6010B	05/23-05/31/07	JXG7N1AV
		Dilution Factor: 1				
Silicon	**8.1 B**	**40.0**	**mg/kg**	**SW846 6010B**	**05/23-06/04/07**	**JXG7N1AW**
		Dilution Factor: 1				
Silver	ND	1.0	mg/kg	SW846 6010B	05/23-05/31/07	JXG7N1AX
		Dilution Factor: 1				
Sodium	ND	100	mg/kg	SW846 6010B	05/23-06/04/07	JXG7N1A0
		Dilution Factor: 1				
Vanadium	ND	1.0	mg/kg	SW846 6010B	05/23-05/31/07	JXG7N1A1
		Dilution Factor: 1				
Zinc	**1.6 B**	**5.0**	**mg/kg**	**SW846 6010B**	**05/23-05/31/07**	**JXG7N1A2**
		Dilution Factor: 1				

MB Lot-Sample #: F7E230000-079 **Prep Batch #...:** 7143079

Mercury	ND	0.033	mg/kg	SW846 7471A	05/29/07	JXG8L1AA
		Dilution Factor: 1				

NOTE(S):

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

B Estimated result. Result is less than RL.

LABORATORY CONTROL SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: F7E220167 **Matrix.....:** SOLID

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
LCS Lot-Sample#: F7E230000-061 **Prep Batch #...:** 7143061							
Aluminum	6320	6650	mg/kg	105	SW846 6010B	05/23-06/04/07	JXG7N1A4
			Dilution Factor: 1				
Antimony	60.9	41.8	mg/kg	69	SW846 6010B	05/23-05/31/07	JXG7N1A5
			Dilution Factor: 1				
Arsenic	161	179	mg/kg	111	SW846 6010B	05/23-05/31/07	JXG7N1A6
			Dilution Factor: 1				
Barium	252	274	mg/kg	109	SW846 6010B	05/23-05/31/07	JXG7N1A7
			Dilution Factor: 1				
Beryllium	94.4	107	mg/kg	113	SW846 6010B	05/23-05/31/07	JXG7N1A8
			Dilution Factor: 1				
Boron	97.4	102	mg/kg	104	SW846 6010B	05/23-06/04/07	JXG7N1A9
			Dilution Factor: 1				
Cadmium	128	137	mg/kg	107	SW846 6010B	05/23-05/31/07	JXG7N1CA
			Dilution Factor: 1				
Calcium	3320	3910	mg/kg	118	SW846 6010B	05/23-05/31/07	JXG7N1CC
			Dilution Factor: 1				
Cobalt	35.2	37.4	mg/kg	106	SW846 6010B	05/23-05/31/07	JXG7N1CD
			Dilution Factor: 1				
Copper	148	154	mg/kg	104	SW846 6010B	05/23-05/31/07	JXG7N1CE
			Dilution Factor: 1				
Iron	11200	11800	mg/kg	106	SW846 6010B	05/23-06/04/07	JXG7N1CF
			Dilution Factor: 1				
Lead	142	154	mg/kg	108	SW846 6010B	05/23-05/31/07	JXG7N1CG
			Dilution Factor: 1				
Magnesium	2040	2280	mg/kg	112	SW846 6010B	05/23-05/31/07	JXG7N1CH
			Dilution Factor: 1				
Manganese	408	431	mg/kg	106	SW846 6010B	05/23-05/31/07	JXG7N1CJ
			Dilution Factor: 1				

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LABORATORY CONTROL SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: F7E220167 **Matrix.....:** SOLID

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Molybdenum	84.1	89.5	mg/kg	106	SW846 6010B	05/23-05/31/07	JXG7N1CK
			Dilution Factor: 1				
Nickel	147	157	mg/kg	107	SW846 6010B	05/23-05/31/07	JXG7N1CL
			Dilution Factor: 1				
Potassium	1920	2060	mg/kg	107	SW846 6010B	05/23-06/04/07	JXG7N1CM
			Dilution Factor: 1				
Selenium	64.2	71.8	mg/kg	112	SW846 6010B	05/23-05/31/07	JXG7N1CN
			Dilution Factor: 1				
Silicon	754	845	mg/kg	112	SW846 6010B	05/23-06/04/07	JXG7N1CP
			Dilution Factor: 1				
Silver	130	156	mg/kg	120	SW846 6010B	05/23-05/31/07	JXG7N1CQ
			Dilution Factor: 1				
Sodium	445	487	mg/kg	109	SW846 6010B	05/23-06/04/07	JXG7N1CR
			Dilution Factor: 1				
Vanadium	97.3	102	mg/kg	105	SW846 6010B	05/23-05/31/07	JXG7N1CT
			Dilution Factor: 1				
Zinc	165	184	mg/kg	111	SW846 6010B	05/23-05/31/07	JXG7N1CU
			Dilution Factor: 1				
Chromium	69.5	72.2	mg/kg	104	SW846 6010B	05/23-05/31/07	JXG7N1CV
			Dilution Factor: 1				

LCS Lot-Sample#: F7E230000-079 **Prep Batch #...:** 7143079

Mercury	16.9	18.1	mg/kg	107	SW846 7471A	05/29/07	JXG8L1AC
			Dilution Factor: 20				

NOTE(S):

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

MATRIX SPIKE SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: F7E220167 **Matrix.....:** SOLID
Date Sampled...: 05/17/07 **Date Received..:** 05/22/07

MS Lot-Sample #: F7E220167-001 **Prep Batch #...:** 7143061
% Moisture.....: 1.9

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Aluminum									
	6540	102	7410 N	mg/kg	857		SW846 6010B	05/23-06/04/07	JXE991CN
	6540	102	7940 N	mg/kg	1380	7.0	SW846 6010B	05/23-06/04/07	JXE991CP
			Dilution Factor: 1						
Antimony									
	1.8	25.5	15.5 N	mg/kg	54		SW846 6010B	05/23-05/31/07	JXE991CQ
	1.8	25.5	14.9 N	mg/kg	51	4.1	SW846 6010B	05/23-05/31/07	JXE991CR
			Dilution Factor: 1						
Arsenic									
	1.7	102	107	mg/kg	104		SW846 6010B	05/23-05/31/07	JXE991CT
	1.7	102	109	mg/kg	105	1.5	SW846 6010B	05/23-05/31/07	JXE991CU
			Dilution Factor: 1						
Barium									
	102	102	177 N	mg/kg	74		SW846 6010B	05/23-05/31/07	JXE991CV
	102	102	180	mg/kg	76	1.4	SW846 6010B	05/23-05/31/07	JXE991CW
			Dilution Factor: 1						
Beryllium									
	0.20	2.55	2.96	mg/kg	108		SW846 6010B	05/23-05/31/07	JXE991CX
	0.20	2.55	2.99	mg/kg	109	1.1	SW846 6010B	05/23-05/31/07	JXE991C0
			Dilution Factor: 1						
Boron									
	3.8	102	104	mg/kg	98		SW846 6010B	05/23-06/04/07	JXE991C1
	3.8	102	104	mg/kg	99	0.60	SW846 6010B	05/23-06/04/07	JXE991C2
			Dilution Factor: 1						
Cadmium									
	ND	2.55	2.19	mg/kg	86		SW846 6010B	05/23-05/31/07	JXE991C3
	ND	2.55	2.17	mg/kg	85	1.0	SW846 6010B	05/23-05/31/07	JXE991C4
			Dilution Factor: 1						
Calcium									
	4380	2550	7420	mg/kg	119		SW846 6010B	05/23-05/31/07	JXE991C5
	4380	2550	7720 N	mg/kg	131	4.0	SW846 6010B	05/23-05/31/07	JXE991C6
			Dilution Factor: 1						

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MATRIX SPIKE SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: F7E220167 **Matrix.....:** SOLID
Date Sampled...: 05/17/07 **Date Received..:** 05/22/07

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Chromium									
	7.5	10.2	17.5	mg/kg	99		SW846 6010B	05/23-05/31/07	JXE991CJ
	7.5	10.2	19.0	mg/kg	113	8.1	SW846 6010B	05/23-05/31/07	JXE991CK
			Dilution Factor: 1						
Cobalt									
	11.7	25.5	37.3	mg/kg	100		SW846 6010B	05/23-05/31/07	JXE991C7
	11.7	25.5	37.8	mg/kg	103	1.6	SW846 6010B	05/23-05/31/07	JXE991C8
			Dilution Factor: 1						
Copper									
	10.6	12.7	23.5	mg/kg	101		SW846 6010B	05/23-05/31/07	JXE991C9
	10.6	12.7	23.8	mg/kg	103	1.2	SW846 6010B	05/23-05/31/07	JXE991DA
			Dilution Factor: 1						
Iron									
	21100	51.0	22200 N	mg/kg	2300		SW846 6010B	05/23-06/04/07	JXE991DC
	21100	51.0	22300 N	mg/kg	2340	0.10	SW846 6010B	05/23-06/04/07	JXE991DD
			Dilution Factor: 1						
Lead									
	3.6	25.5	28.5	mg/kg	98		SW846 6010B	05/23-05/31/07	JXE991DE
	3.6	25.5	28.6	mg/kg	98	0.32	SW846 6010B	05/23-05/31/07	JXE991DF
			Dilution Factor: 1						
Magnesium									
	4530	2550	7190	mg/kg	104		SW846 6010B	05/23-05/31/07	JXE991DG
	4530	2550	7560	mg/kg	119	5.1	SW846 6010B	05/23-05/31/07	JXE991DH
			Dilution Factor: 1						
Manganese									
	388	25.5	337 N	mg/kg	0.0		SW846 6010B	05/23-05/31/07	JXE991DJ
	388	25.5	335 N	mg/kg	0.0	0.0	SW846 6010B	05/23-05/31/07	JXE991DK
			Dilution Factor: 1						
Molybdenum									
	ND	51.0	51.6	mg/kg	101		SW846 6010B	05/23-05/31/07	JXE991DL
	ND	51.0	51.9	mg/kg	102	0.58	SW846 6010B	05/23-05/31/07	JXE991DM
			Dilution Factor: 1						
Nickel									
	10.1	25.5	34.3	mg/kg	95		SW846 6010B	05/23-05/31/07	JXE991DN
	10.1	25.5	37.3	mg/kg	107	8.4	SW846 6010B	05/23-05/31/07	JXE991DP
			Dilution Factor: 1						

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MATRIX SPIKE SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: F7E220167 **Matrix.....:** SOLID
Date Sampled...: 05/17/07 **Date Received..:** 05/22/07

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Potassium									
	1340	2550	4140	mg/kg	110		SW846 6010B	05/23-06/04/07	JXE991DQ
	1340	2550	4080	mg/kg	108	1.4	SW846 6010B	05/23-06/04/07	JXE991DR
			Dilution Factor: 1						
Selenium									
	ND	102	91.2	mg/kg	89		SW846 6010B	05/23-05/31/07	JXE991DT
	ND	102	92.0	mg/kg	90	0.82	SW846 6010B	05/23-05/31/07	JXE991DU
			Dilution Factor: 1						
Silicon									
	1040	510	752 N	mg/kg	0.0		SW846 6010B	05/23-06/04/07	JXE991A7
	1040	510	1500	mg/kg	90	0.0	SW846 6010B	05/23-06/04/07	JXE991A8
			Dilution Factor: 1						
Silver									
	ND	2.55	1.96	mg/kg	77		SW846 6010B	05/23-05/31/07	JXE991A9
	ND	2.55	1.98	mg/kg	78	0.82	SW846 6010B	05/23-05/31/07	JXE991CA
			Dilution Factor: 1						
Sodium									
	250	2550	3020	mg/kg	109		SW846 6010B	05/23-06/04/07	JXE991CC
	250	2550	3080	mg/kg	111	1.8	SW846 6010B	05/23-06/04/07	JXE991CD
			Dilution Factor: 1						
Vanadium									
	60.9	25.5	88.0	mg/kg	106		SW846 6010B	05/23-05/31/07	JXE991CE
	60.9	25.5	91.9	mg/kg	122	4.3	SW846 6010B	05/23-05/31/07	JXE991CF
			Dilution Factor: 1						
Zinc									
	39.4	25.5	64.7	mg/kg	99		SW846 6010B	05/23-05/31/07	JXE991CG
	39.4	25.5	67.3	mg/kg	110	4.0	SW846 6010B	05/23-05/31/07	JXE991CH
			Dilution Factor: 1						

MS Lot-Sample #: F7E220167-001 **Prep Batch #...:** 7143079
% Moisture.....: 1.9

Mercury									
	ND	0.170	0.159	mg/kg	94		SW846 7471A	05/29/07	JXE991CL
	ND	0.170	0.169	mg/kg	100	6.1	SW846 7471A	05/29/07	JXE991CM
			Dilution Factor: 1						

NOTE(S):

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

Results and reporting limits have been adjusted for dry weight.

N Spiked analyte recovery is outside stated control limits.

WET CHEMISTRY

Washington Closure Hanford

Client Sample ID: J152P3

General Chemistry

Lot-Sample #...: F7E220167-001 **Work Order #...:** JXE99 **Matrix.....:** SOLID
Date Sampled...: 05/17/07 **Date Received..:** 05/22/07
% Moisture.....: 1.9

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Moisture	1.9	0.10	%	MCAWW 160.3 MOD	05/22-05/23/07	7142362

Dilution Factor: 1 MDL.....:

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F7E220167 **Work Order #...:** JXE6D-SMP JXE6D-DUP **Matrix.....:** SOLID

Date Sampled...: 05/21/07 **Date Received..:** 05/22/07

% Moisture.....: 11

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Moisture						SD Lot-Sample #:	F7E220143-004	
	11.3	12.3	%	8.7	(0-30)	MCAWW 160.3 MOD	05/22-05/23/07	7142362

Dilution Factor: 1

SAF_NUM	SAMP_NUM	SAMP_DATE_TIME	STATUS	FIELD_LOG_ID
RC-033	J111Y4	1/21/2006 10:20:00 AM	L	
RC-033	J111Y5	1/21/2006 11:00:00 AM	L	
RC-033	J111Y6	1/21/2006 11:50:00 AM	L	

SAF_NUM	SAMP_NUM	SAMP_DATE_TIME	STATUS	FIELD_LOG_ID
RC-031	J152H3	5/3/2007 9:45:00 AM	L	
RC-031	J152H4	5/3/2007 9:55:00 AM	L	
RC-031	J14YW9	5/8/2007 8:30:00 AM	R	
RC-031	J14YX0	5/16/2007 12:10:00 PM	L	
RC-031	J14YX1	5/16/2007 12:15:00 PM	L	
RC-031	J152W5	5/22/2007 10:40:00 AM	L	
RC-031	J152W6	5/22/2007 11:00:00 AM	L	
RC-031	J152W7	5/22/2007 1:45:00 PM	L	
RC-031	J15522	5/31/2007 7:55:00 AM	L	
RC-031	J15523	5/31/2007 7:58:00 AM	L	
RC-031	J15524	5/31/2007 8:01:00 AM	L	
RC-031	J15525	5/31/2007 8:04:00 AM	R	
RC-031	J15526	5/31/2007 8:07:00 AM	R	
RC-031	J15527	5/31/2007 8:10:00 AM	R	
RC-031	J15528	5/31/2007 8:13:00 AM	R	
RC-031	J15529	5/31/2007 8:16:00 AM	R	
RC-031	J15530	5/31/2007 8:19:00 AM	R	
RC-031	J15531	5/31/2007 8:21:00 AM	R	
RC-031	J15532	5/31/2007 8:24:00 AM	R	
RC-031	J15533	5/31/2007 8:27:00 AM	R	
RC-031	J15534	5/31/2007 8:30:00 AM	R	
RC-031	J15535	5/31/2007 8:33:00 AM	R	
RC-031	J15536	5/31/2007 8:36:00 AM	R	
RC-031	J15537	5/31/2007 8:39:00 AM	R	
RC-031	J15538	5/31/2007 8:42:00 AM	R	
RC-031	J15539	5/31/2007 8:45:00 AM	R	
RC-031	J15540	5/31/2007 8:48:00 AM	R	
RC-031	J15541	5/31/2007 8:51:00 AM	R	
RC-031	J15542	5/31/2007 8:54:00 AM	R	
RC-031	J15543	5/31/2007 8:57:00 AM	R	
RC-031	J15544	5/31/2007 9:00:00 AM	R	
RC-031	J15545	5/31/2007 9:03:00 AM	R	
RC-032	J14YX2	4/4/2007 7:20:00 AM	L	
RC-032	J14YX3	4/4/2007 7:45:00 AM	L	
RC-032	J14YX4	4/4/2007 7:55:00 AM	L	
RC-032	J15249	5/2/2007 12:30:00 PM	L	
RC-032	J15250	5/2/2007 12:40:00 PM	L	
RC-032	J15251	5/2/2007 12:50:00 PM	L	
RC-032	J15252	5/2/2007 1:00:00 PM	L	
RC-032	J15253	5/3/2007 7:00:00 AM	L	
RC-032	J15254	5/3/2007 7:10:00 AM	L	
RC-032	J15255	5/3/2007 7:20:00 AM	L	
RC-032	J15256	5/3/2007 7:30:00 AM	L	
RC-032	J15257	5/3/2007 7:40:00 AM	L	
RC-032	J15258	5/3/2007 7:50:00 AM	L	
RC-032	J15259	5/3/2007 8:00:00 AM	L	
RC-032	J15260	5/3/2007 8:10:00 AM	L	

SAF_NUM	SAMP_NUM	SAMP_DATE_TIME	STATUS	FIELD_LOG_ID
RC-032	J15261	5/3/2007 8:20:00 AM	L	
RC-032	J15262	5/3/2007 8:30:00 AM	L	
RC-032	J152D7	5/3/2007 8:30:00 AM	L	
RC-032	J15263	5/3/2007 8:40:00 AM	L	
RC-032	J15264	5/3/2007 8:50:00 AM	L	
RC-032	J15265	5/3/2007 9:00:00 AM	L	
RC-032	J152H8	5/7/2007 8:00:00 AM	L	
RC-032	J152H9	5/7/2007 8:05:00 AM	L	
RC-032	J152J0	5/7/2007 8:10:00 AM	L	
RC-032	J152J4	5/7/2007 8:25:00 AM	L	
RC-032	J152J5	5/7/2007 8:30:00 AM	R	
RC-032	J152J6	5/7/2007 8:35:00 AM	R	
RC-032	J152J1	5/7/2007 8:40:00 AM	L	
RC-032	J152J2	5/7/2007 8:45:00 AM	L	
RC-032	J152J3	5/7/2007 8:50:00 AM	L	
RC-032	J15266	5/8/2007 7:30:00 AM	L	
RC-032	J15267	5/8/2007 7:40:00 AM	L	
RC-032	J15268	5/8/2007 7:50:00 AM	L	
RC-032	J15271	5/8/2007 8:00:00 AM	L	
RC-032	J15272	5/8/2007 8:10:00 AM	L	
RC-032	J152D8	5/8/2007 8:10:00 AM	L	
RC-032	J15273	5/8/2007 8:10:00 AM	L	
RC-032	J15274	5/8/2007 8:20:00 AM	L	
RC-032	J15275	5/8/2007 8:30:00 AM	L	
RC-032	J15276	5/8/2007 8:40:00 AM	L	
RC-032	J15277	5/8/2007 8:50:00 AM	L	
RC-032	J15278	5/8/2007 9:00:00 AM	L	
RC-032	J15279	5/8/2007 9:10:00 AM	L	
RC-032	J15280	5/9/2007 9:20:00 AM	L	
RC-032	J15283	5/10/2007 8:00:00 AM	L	
RC-032	J15284	5/10/2007 8:20:00 AM	L	
RC-032	J15285	5/10/2007 8:40:00 AM	L	
RC-032	J15286	5/10/2007 12:15:00 PM	L	
RC-032	J15287	5/10/2007 12:15:00 PM	L	
RC-032	J152D9	5/10/2007 12:15:00 PM	L	
RC-032	J152J8	5/17/2007 7:20:00 AM	L	
RC-032	J152J9	5/17/2007 7:35:00 AM	L	
RC-032	J152N0	5/17/2007 7:50:00 AM	L	
RC-032	J152N1	5/17/2007 7:50:00 AM	L	
RC-032	J152P3	5/17/2007 7:50:00 AM	L	
RC-032	J15521	6/4/2007 11:00:00 AM	R	
RC-033	J152H5	5/3/2007 9:45:00 AM	L	
RC-033	J152H6	5/3/2007 9:55:00 AM	L	
RC-033	J152W8	5/22/2007 2:15:00 PM	L	

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-032-114

Collector Coffman/DeBuigne	**Company Contact** R.T. Coffman	**Telephone No.** 528-6409	**Project Coordinator** KESSNER, JH
Price Code 8K	**Data Turnaround** 15 DAY		
Project Designation 100-F Remaining Sites Burial Grounds - Soil Full Protocol	**Sampling Location** 118-F-2 Verification/BCL Stockpiles		**SAF No.** RC-032
Ice Chest No. Rubber-1	**Field Logbook No.** EFL-1174-2	**COA** R118F22000	**Method of Shipment** FED EX
Shipped To Severn Trent Incorporated, ~~Richland~~ St. Louis JRD 5-14-07	**Offsite Property No.** A070297		**Bill of Lading/Air Bill No.** See OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

NA

Special Handling and/or Storage

NA

cw 1471

Preservation	None	None	None	None	None						
Type of Container	P	P	P	P	P						
No. of Container(s)	1	1	1	1	1						
Volume	125mL	500mL	125mL	125mL	125mL						
SAMPLE ANALYSIS	See item (1) in Special Instructions.	See item (2) in Special Instructions.	Nickel-63, Strontium-89/90, Total Sr	Isotopic Plutonium	Isotopic Uranium						

JRD 5-17-07

Sample No.	Matrix *	Sample Date	Sample Time										
J152P3	SOIL	5-17-07	0750	X									5

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From: JRDeBuigne JRD	5-17-07	Received By/Stored In: 3728/34	5-17-07 1315
Relinquished By/Removed From: 3728/34	5-21-07 1000	Received By/Stored In: KMSingleton	5-21-07 1000
Relinquished By/Removed From: KMSingleton	5-21-07 1500	Received By/Stored In: FED EX	
Relinquished By/Removed From:		Received By/Stored In:	05-22-07 0920
Relinquished By/Removed From:		Received By/Stored In:	
Relinquished By/Removed From:		Received By/Stored In:	

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010 (Client List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc}; Mercury - 7471 - (CV)
(2) Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Silver-108 metastable}

Sampler unavailable to relinquish samples from 3728 Ref # 2A. 3728 Custodian removed samples for shipping on 5/21/07

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

J00112

Track Shipments
Detailed Results

Quick Help

Tracking number	790252698392	**Reference**	R118F22000
Signed for by	S.WILSON	**Destination**	EARTH CITY, MO
Ship date	May 21, 2007	**Delivered to**	Shipping/Receiving
Delivery date	May 22, 2007 9:04 AM	**Service type**	Priority Overnight
		Weight	4.0 lbs.

Status Delivered

Signature image available Yes

Date/Time		Activity	Location	Details
May 22, 2007	9:04 AM	**Delivered**	EARTH CITY, MO	
	7:42 AM	On FedEx vehicle for delivery	EARTH CITY, MO	
	7:00 AM	At local FedEx facility	EARTH CITY, MO	
	6:03 AM	At dest sort facility	BERKELEY, MO	
	3:42 AM	Departed FedEx location	MEMPHIS, TN	
	1:38 AM	Arrived at FedEx location	MEMPHIS, TN	
May 21, 2007	5:21 PM	Left origin	PASCO, WA	
	3:52 PM	Package data transmitted to FedEx		
	3:14 PM	Picked up	PASCO, WA	

Signature proof | E-mail results | Track more shipments

Subscribe to tracking updates (optional)

Your Name: **Your E-mail Address:**

E-mail address	Language	Exception updates	Delivery updates
	English	☐	☐
	English	☐	☐
	English	☐	☐
	English	☐	☐

Select format: ◉ HTML ○ Text ○ Wireless

Add personal message:

Not available for Wireless or non-English characters.

☐ By selecting this check box and the Submit button, I agree to these Terms and Conditions

Submit

:TL ST. LOUIS

STL

Lot #(s): F7E220167
- 1471 -

Condition Upon Receipt Form

Client: Wash. Closure Hanford
COC/RFA No: RC-032-114
Date: 05.22.07
Quote No: 71497
Initiated By: SJ
Time: 0900

Shipping Information

Shipper Name: FedEx
Multiple Packages Y (N)
Shipping # (s):*
Sample Temperature (s):**

1. 790252698392	6.	1. ambient	6.
2.	7.	2.	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 or Rad tests- Liquid or Solids

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

1.	Y (N)	Was sample received broken?	8.	(Y) N	Sample received with Chain of Custody?
2.	Y N (N/A)	Was sample received with proper pH[1]? (If not, make note below)	9.	(Y) N	Chain of Custody matches sample ID's on container(s)?
3.	Y N	If N/A-Was pH taken by original STL Lab?	10.	(Y) N	Are there custody seals present on cooler?
4.	(Y) N	Sample received in proper containers?	11.	Y (N) N/A	Do custody seals on cooler appear to be tampered with?
5.	(Y) N	Sample volume sufficient for analysis?	12.	(Y) N	Are there custody seals present on bottles?
6.	Y N (N/A)	Headspace in VOA or TOX liquid samples? (If Yes, note sample ID's below)	13.	Y (N) N/A	Do custody seals on bottles appear to be tampered with?
7.	(Y) N	Were contents of cooler frisked after opening, but before unpacking?	14.	Y N	Was Internal COC/Workshare received?

[1] For DOE-AL (Pantex, LANL, Sandia) sites, pH of ALL containers received must be verified, EXCEPT VOA, TOX 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: [signature] Date: 5-22-07

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, REVISED 04/18/07\\Slsvr01\QA\FORMS\ST-LOUIS\ADMIN\Admin004 rev11.doc