0073228

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 7/10/07 INITIAL/DATE
Jeanette Duncan	H4-21	KW 7/10/07 INITIAL/DATE

COMMENTS:

SDG J00113 SAF-RC-032

Rad only Chem only X Rad & Chem

X Complete Partial

Waste Site: 118-F-8:4 FSB Verification/Deep Zone

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Analytical Data Package Prepared For

Washington Closure Hanford

RECEIVED
JUL 2007

Radiochemical Analysis By

STL Richland

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

Assigned Laboratory Code: STLRL

Data Package Contains 91 ***Pages***

Report No.: 35814

SDG No.	Order No.	Client Sample ID (List Order)	Lot-Sa No.	Work Order	Report DB ID	Batch No.
J00113	RC-032	J15521	J7F060261-1	J0EJ71AN	9J0EJ710	7157424
		J15521	J7F060261-1	J0EJ71AC	9J0EJ710	7157429
		J15521	J7F060261-1	J0EJ71AK	9J0EJ710	7157430
		J15521	J7F060261-1	J0EJ71AE	9J0EJ710	7157432
		J15521	J7F060261-1	J0EJ71AJ	9J0EJ710	7157433
		J15521	J7F060261-1	J0EJ71AD	9J0EJ710	7157434
		J15521	J7F060261-1	J0EJ71AA	9J0EJ710	7157435
		J15521	J7F060261-1	J0EJ71A4	9J0EJ710	7157452
		J15521	J7F060261-1	J0EJ73AP	9J0EJ730	7172217

SEVERN TRENT STL

STL Richland
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Richland, WA 99354

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Certificate of Analysis

Washington Hanford Closure
2620 Fermi Avenue
Richland, WA 99354

July 6, 2007

Attention: Joan Kessner

SAF Number	:	RC-032
Date SDG Closed	:	June 6, 2007
Number of Samples	:	One (1)
Sample Type	:	Soil
SDG Number	:	J001113
Data Deliverable	:	15 – Day / Summary

CASE NARRATIVE

I. Introduction

On June 6, 2007 one soil sample was received at STL Richland (STLR) for radiochemical and chemical analysis. Upon receipt, the sample was assigned the following laboratory ID number to correspond with the Washington Closure Hanford (WCH) specific ID:

WCH ID#	STLR ID#	MATRIX	DATE OF RECEIPT
J15521	J0EJ7	SOIL	6/05/07

I. Sample Receipt

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

III. Analytical Results/Methodology

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

The requested analyses were:

Alpha Spectroscopy
Plutonium-238, -239/240 by method RICH-RC-5010
Uranium 234, 235 and 238 by method RICH-RC-5039
Americium 241/ Curium 244 by method RICH-RC-5087
Gas Proportional Counting
Total Strontium by method RICH-RC-5006
Gamma Spectroscopy
Gamma Spec by method RICH-RC-5017
Liquid Scintillation Counter
Carbon-14 by method RICH-RC-5022
Nickel-63 by method RICH-RC-5069
Tritium by method RICH-RC-5007
Chemical Analysis
Hexavalent Chromium by EPA method 7196A

IV. Quality Control

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

QC and sample results are reported in the same units.

V. Comments

Alpha Spectroscopy
Plutonium-238, -239/240 by method RICH-RC-5010:
The LCS, batch blank, sample and sample duplicate (J15521) results are within contractual requirements.

Uranium 234, 235 and 238 by method RICH-RC-5039:
The LCS, batch blank, sample and sample duplicate (J15521) results are within contractual requirements.

Americium 241/ Curium 244 by method RICH-RC- 5087:

In the original batch 7157427, sample J15521 had no tracer yield. A recount of sample J15521 confirmed that there was no tracer yield. J15521 DUP and the remaining QC sample were acceptable in both the original count and the recount.

Sample J15521 was reanalyzed in batch 7172217; however reanalyzing a duplicate sample was overlooked. With the exception of the lack of a duplicate sample, the reanalysis batch was acceptable.

Given the fact that both the sample J15521 and J15521 DUP are below the CRDL the following will be reported:

> Sample J15521 DUP and QC samples J0EV11AB and J0EV11CS will be reported from the original batch 7157427. There will not cost associated with these samples.
>
> Sample J15521 and QC samples J1GD51AB and J1GD51CS will be reported from the reanalysis batch 7172217.

Except as noted, the LCS, batch blank and sample results are within contractual requirements.

Gas Proportional Counting

Total Strontium by method RICH-RC-5006:

The LCS, batch blank, sample and sample duplicate (J15521) results are within contractual requirements.

Gamma Spectroscopy

Gamma Spec by method RICH-RC-5017:

There was not enough sample to analyze a duplicate. Sample J15521 was recounted on a different detector for a duplicate. Except as noted, the LCS, batch blank, sample and sample duplicate (J15521) results are within contractual requirements.

Liquid Scintillation Counter

Carbon-14 by method RICH-RC-5022:

The LCS, batch blank, sample and sample duplicate (J15521) results are within contractual requirements.

Nickel-63 by method RICH-RC-5069:

The LCS, batch blank, sample and sample duplicate (J15521) results are within contractual requirements.

Tritium by method RICH-RC-5007

The LCS, batch blank, sample and sample duplicate (J15521) results are within contractual requirements.

Chemical Analysis

Hexavalent Chromium by EPA method 7196A:

The LCS, batch blank, sample, sample duplicate (J15521) and sample matrix spike (J15521) results are within contractual requirements.

Washington Closure Hanford
July 6, 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.

AMENDED DATA

Sample Results Summary
STL Richland STLRL
Ordered by Client Sample ID, Batch No.

RECEIVED JUL 2007

Date: 10-Jul-07

Report No. : 35813

SDG No: J00313

Client ID	Work Order Number	Parameter	Result +- Uncertainty (2s)	Qual	Units	Yield	MDC|MDA	RPD
J15521	J0EJ71AN	AG-108M	-4.15E-03 +- 8.69E-03	U	pCi/g		1.46E-02	
		BA-133	2.72E-03 +- 1.32E-02	U	pCi/g		1.91E-02	
		CO-60	1.48E-02 +- 1.32E-02	U	pCi/g		2.37E-02	
		CS-137	4.78E-01 +- 6.53E-02		pCi/g		1.97E-02	
		EU-152	1.75E-01 +- 4.63E-02	U	pCi/g		5.79E-02	
		EU-154	2.38E-02 +- 4.33E-02	U	pCi/g		7.49E-02	
		EU-155	1.95E-02 +- 2.67E-02	U	pCi/g		4.55E-02	
J15521	J0EJ71AC	U-234	1.32E-01 +- 6.10E-02		pCi/g	87%	3.73E-02	
		U-235	3.60E-02 +- 3.09E-02		pCi/g	87%	3.34E-02	
		U-238	1.67E-01 +- 6.91E-02		pCi/g	87%	2.83E-02	
J15521	J0EJ71AK	C-14	-5.05E-01 +- 6.79E-01	U	pCi/g	100%	8.54E-01	
J15521	J0EJ71AE	NI-63	4.31E+00 +- 4.42E+00	U	pCi/g	90%	5.80E+00	
J15521	J0EJ71AJ	H-3	-7.51E-03 +- 2.21E-02	U	pCi/g	100%	4.87E-02	
J15521	J0EJ71AD	STRONTIUM	6.91E+00 +- 1.82E+00		pCi/g	93%	1.41E-01	
J15521	J0EJ71AA	HEXCHROME	3.50E-01 +- 7.00E-01	U	mg/kg	N/A	3.50E-01	
	J0EJ71A2	HEXCHROME	3.50E-01 +- 7.00E-01	U	mg/kg	N/A	3.50E-01	0.0
J15521	J0EJ71A4	PU-238	-5.99E-03 +- 3.11E-02	U	pCi/g	43%	8.46E-02	
		PU239/40	2.69E-02 +- 4.30E-02	U	pCi/g	43%	7.17E-02	
J15521	J0EJ73AP	AM-241	2.99E-02 +- 3.38E-02	U	pCi/g	94%	4.69E-02	
		CM-243/244	1.40E-01 +- 7.22E-02		pCi/g	94%	3.98E-02	
J15521 DUP	J0EJ71AQ	AG-108M	-1.85E-03 +- 7.01E-03	U	pCi/g		1.18E-02	-76.8
		BA-133	1.99E-03 +- 1.10E-02	U	pCi/g		1.62E-02	
		CO-60	1.03E-02 +- 1.07E-02	U	pCi/g		1.94E-02	36.1
		CS-137	4.31E-01 +- 5.93E-02		pCi/g		1.64E-02	10.2
		EU-152	1.74E-01 +- 3.72E-02	U	pCi/g		5.26E-02	0.5
		EU-154	-9.51E-03 +- 3.66E-02	U	pCi/g		6.20E-02	466.9
		EU-155	2.52E-02 +- 2.64E-02	U	pCi/g		4.42E-02	25.4
J15521 DUP	J0EJ71AT	AM-241	0.00E+00 +- 2.31E-02	U	pCi/g	73%	5.41E-02	200.0
		CM-243/244	5.66E-02 +- 5.16E-02		pCi/g	73%	5.42E-02	84.6
J15521 DUP	J0EJ71AU	U-234	7.19E-02 +- 4.48E-02		pCi/g	89%	3.50E-02	59.2
		U-235	4.96E-03 +- 1.27E-02	U	pCi/g	89%	2.97E-02	151.6
		U-238	1.30E-01 +- 6.10E-02		pCi/g	89%	2.97E-02	24.9

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rptSTLRchSaSum
V5.1.3 A2002

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.

8

AMENDED DATA

Sample Results Summary
STL Richland STLRL
Ordered by Client Sample ID, Batch No.

RECEIVED JUL 2007

Date: 10-Jul-07

Report No. : 35813

SDG No: J00113

Client ID	Work Order Number	Parameter	Result +- Uncertainty (2s)	Qual	Units	Yield	MDC|MDA	RPD
J15521 DUP	J0EJ71AV	C-14	-4.67E-01 +- 6.83E-01	U	pCi/g	100%	8.53E-01	-7.7
J15521 DUP	J0EJ71AW	NI-63	4.38E+00 +- 4.19E+00	U	pCi/g	95%	5.46E+00	1.5
J15521 DUP	J0EJ71AX	H-3	1.43E-02 +- 2.15E-02	U	pCi/g	100%	4.49E-02	641.0
J15521 DUP	J0EJ71A0	STRONTIUM	7.18E+00 +- 1.88E+00		pCi/g	98%	1.31E-01	3.8
J15521 DUP	J0EJ71A5	PU-238	6.92E-03 +- 2.40E-02	U	pCi/g	55%	6.52E-02	2785.8
		PU239/40	2.08E-02 +- 3.31E-02	U	pCi/g	55%	5.52E-02	26.0

Number of Results: 38

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.

AMENDED DATA

QC Results Summary
STL Richland STLRL
Ordered by QC Type, Batch No.

Date: 10-Jul-07

RECEIVED JUL 2007

Report No. : 35813

SDG No.: J00113

QC Type	Work Order Number	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	LCS Recovery	Bias	MDC|MDA
BLANK QC	J0EVK1AA	AG-108M	3.12E-03 +- 2.96E-03	U	pCi/g				5.64E-03
		BA-133	-3.84E-04 +- 5.18E-03	U	pCi/g				7.48E-03
		CO-60	-8.45E-04 +- 3.35E-03	U	pCi/g				6.02E-03
		CS-137	5.41E-04 +- 3.62E-03	U	pCi/g				6.56E-03
		EU-152	-3.09E-03 +- 1.10E-02	U	pCi/g				1.70E-02
		EU-154	6.48E-05 +- 9.40E-03	U	pCi/g				1.77E-02
		EU-155	9.31E-03 +- 1.03E-02	U	pCi/g				1.79E-02
BLANK QC	J0EV11AA	AM-241	6.50E-03 +- 1.66E-02	U	pCi/g	111%			3.89E-02
		CM-243/244	8.78E-02 +- 5.61E-02		pCi/g	111%			3.89E-02
BLANK QC	J0EV31AA	U-234	-1.93E-03 +- 1.22E-02	U	pCi/g	100%			3.23E-02
		U-235	-4.84E-04 +- 1.21E-02	U	pCi/g	100%			2.43E-02
		U-238	-1.45E-03 +- 1.22E-02	U	pCi/g	100%			3.01E-02
BLANK QC	J0EV41AA	C-14	-1.34E-01 +- 2.82E-01	U	pCi/g	100%			3.44E-01
BLANK QC	J0EV71AA	NI-63	4.86E+00 +- 4.35E+00	U	pCi/g	92%			5.66E+00
BLANK QC	J0EWC1AA	H-3	-5.94E-02 +- 1.38E-01	U	pCi/g	100%			3.06E-01
BLANK QC	J0EWF1AA	STRONTIUM	-1.75E-02 +- 6.63E-02	U	pCi/g	81%			1.63E-01
BLANK QC	J0E1C1AA	PU-238	7.83E-03 +- 2.00E-02	U	pCi/g	67%			4.69E-02
		PU239/40	-3.92E-03 +- 2.03E-02	U	pCi/g	67%			5.53E-02
BLANK QC	J0E1C1AD	PU-238	0.00E+00 +- 1.86E-02	U	pCi/g	70%			4.36E-02
		PU239/40	7.29E-03 +- 1.86E-02	U	pCi/g	70%			4.36E-02
BLANK QC	J1GD51AA	AM-241	2.11E-02 +- 2.87E-02	U	pCi/g	103%			4.59E-02
		CM-243/244	8.96E-02 +- 5.60E-02		pCi/g	103%			3.90E-02
LCS	J0EVK1AC	CS-137	2.49E-01 +- 4.37E-02		pCi/g		96%	0.0	2.81E-02
		K-40	1.86E+01 +- 2.31E+00		pCi/g		95%	0.0	2.32E-01
		RA-226	1.00E+00 +- 1.39E-01		pCi/g		87%	-0.1	4.61E-02
		RA-228	1.82E+00 +- 2.70E-01		pCi/g		97%	0.0	9.05E-02
		U-238	1.06E+00 +- 1.49E-01		pCi/g		101%	0.0	4.52E-02
LCS	J0EV11AC	AM-241	9.58E+00 +- 1.71E+00		pCi/g	117%	105%	0.1	4.59E-02
LCS	J0EV31AC	U-234	3.18E+00 +- 6.09E-01		pCi/g	95%	97%	0.0	4.10E-02

STL Richland
rptSTLRchQcSum
V5.1.3 A2002

Bias - (Result/Expected)-1 as defined by ANSI N13.30.
U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

AMENDED DATA

QC Results Summary
STL Richland STLRL
Ordered by QC Type, Batch No.

Date: 10-Jul-07

RECEIVED JUL 2007

Report No. : 35813

SDG No.: J00113

QC Type	Work Order Number	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	LCS Recovery	Bias	MDC|MDA
LCS	J0EV31AC	U-235	1.56E-01 +- 6.89E-02		pCi/g	95%	105%	0.0	3.11E-02
		U-238	3.24E+00 +- 6.19E-01		pCi/g	95%	95%	-0.1	5.07E-02
LCS	J0EV41AC	C-14	6.85E+00 +- 1.04E+00		pCi/g	100%	95%	0.0	3.44E-01
LCS	J0EV71AC	NI-63	4.60E+02 +- 4.55E+01		pCi/g	94%	79%	-0.2	5.30E+00
LCS	J0EWC1AC	H-3	2.28E+00 +- 2.57E-01		pCi/g	100%	84%	-0.2	3.06E-01
LCS	J0EWF1AC	STRONTIUM	8.34E-01 +- 2.57E-01		pCi/g	86%	110%	0.1	1.56E-01
LCS	J0E1C1AC	PU239/40	6.11E+00 +- 1.15E+00		pCi/g	63%	89%	-0.1	6.15E-02
LCS	J0E1C1AE	PU239/40	6.52E+00 +- 1.18E+00		pCi/g	70%	93%	-0.1	4.48E-02
LCS	J1GD51AC	AM-241	8.78E+00 +- 1.59E+00		pCi/g	112%	97%	0.0	3.99E-02
MATRIX SPIK	J0EJ71A1	HEXCHROME	8.77E+00 +- 7.00E-01		mg/kg	N/A	87%	-0.1	3.50E-01

Number of Results: 39

AMENDED DATA

FORM I

SAMPLE RESULTS

RECEIVED JUL 2007

Date: 10-Jul-07

Lab Name:	STL Richland	SDG:	J00113	Collection Date:	6/4/2007 11:00:00 AM
Lot-Sample No.:	J7F060261-1	Report No. :	35813	Received Date:	6/6/2007 12:25:00 PM
Client Sample ID:	J15521	COC No. :	RC-032-118	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: 7157424	Work Order: J0EJ71AN			Report DB ID: 9J0EJ710								
AG-108M	***-4.15E-03***	U	8.7E-03	8.7E-03	1.46E-02	pCi/g		*-0.28*	6/13/07 12:00 p		802.8	GAMMA_GS
								-0.96			g	GER6$1
BA-133	***2.72E-03***	U	1.3E-02	1.3E-02	1.91E-02	pCi/g		*0.14*	6/13/07 12:00 p		802.8	GAMMA_GS
								0.41			g	GER6$1
CO-60	***1.48E-02***	U	1.3E-02	1.3E-02	2.37E-02	pCi/g		*0.62*	6/13/07 12:00 p		802.8	GAMMA_GS
							5.00E-02	*(2.2)*			g	GER6$1
CS-137	***4.78E-01***		6.5E-02	6.5E-02	1.97E-02	pCi/g		*(24.2)*	6/13/07 12:00 p		802.8	GAMMA_GS
							1.00E-01	*(14.6)*			g	GER6$1
EU-152	***1.75E-01***	U	4.6E-02	4.6E-02	5.79E-02	pCi/g		*(3.)*	6/13/07 12:00 p		802.8	GAMMA_GS
							1.00E-01	*(7.5)*			g	GER6$1
EU-154	***2.38E-02***	U	4.3E-02	4.3E-02	7.49E-02	pCi/g		*0.32*	6/13/07 12:00 p		802.8	GAMMA_GS
							1.00E-01	*(1.1)*			g	GER6$1
EU-155	***1.95E-02***	U	2.7E-02	2.7E-02	4.55E-02	pCi/g		*0.43*	6/13/07 12:00 p		802.8	GAMMA_GS
							1.00E-01	*(1.5)*			g	GER6$1
Batch: 7157429	Work Order: J0EJ71AC			Report DB ID: 9J0EJ710								
U-234	***1.32E-01***		5.7E-02	6.1E-02	3.73E-02	pCi/g	87%	*(3.5)*	6/14/07 08:45 p		1.07	UISO_IE_PLATE_AE
						1.06E-02	1.00E+00	*(4.3)*			G	ALP11
U-235	***3.60E-02***		3.0E-02	3.1E-02	3.34E-02	pCi/g	87%	*(1.1)*	6/14/07 08:45 p		1.07	UISO_IE_PLATE_AE
						8.69E-03	1.00E+00	*(2.3)*			G	ALP11
U-238	***1.67E-01***		6.3E-02	6.9E-02	2.83E-02	pCi/g	87%	*(5.9)*	6/14/07 08:45 p		1.07	UISO_IE_PLATE_AE
						6.15E-03	1.00E+00	*(4.8)*			G	ALP11

STL Richland
rptSTLRchSample
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.

AMENDED DATA

FORM I

SAMPLE RESULTS

RECEIVED JUL 2007

Date: 10-Jul-07

Lab Name:	STL Richland	SDG:	J00113	Collection Date:	6/4/2007 11:00:00 AM
Lot-Sample No.:	J7F060261-1	Report No. :	35813	Received Date:	6/6/2007 12:25:00 PM
Client Sample ID:	J15521	COC No. :	RC-032-118	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
								Ratio U-234/238 = 0.8				
Batch: 7157430	Work Order: J0EJ71AK			Report DB ID: 9J0EJ710								
C-14	***-5.05E-01***	U	3.3E-01	6.8E-01	8.54E-01	pCi/g	100%	*-0.59*	6/13/07 11:21 a		2.015	C14_CHEM_LSC
						4.10E-01	5.00E+01	*-(1.5)*			G	LSC3
Batch: 7157432	Work Order: J0EJ71AE			Report DB ID: 9J0EJ710								
NI-63	***4.31E+00***	U	2.5E+00	4.4E+00	5.80E+00	pCi/g	90%	*0.74*	6/15/07 03:17 a		0.25	NI63_LSC
						2.82E+00	3.00E+01	*(2.)*			G	LSC4
Batch: 7157433	Work Order: J0EJ71AJ			Report DB ID: 9J0EJ710								
H-3	***-7.51E-03***	U	1.9E-02	2.2E-02	4.87E-02	pCi/g	100%	*-0.15*	6/12/07 10:29 p		75.2	906.0_H3_LSC
						2.27E-02	4.00E+02	*-0.68*			G	LSC6
Batch: 7157434	Work Order: J0EJ71AD			Report DB ID: 9J0EJ710								
STRONTIUM	***6.91E+00***		3.3E-01	1.8E+00	1.41E-01	pCi/g	93%	*(49.)*	6/12/07 07:16 p		6.06	SRTOT_SEP_PRECIP
						6.54E-02		*(7.6)*			G	GPC26C
Batch: 7157435	Work Order: J0EJ71AA			Report DB ID: 9J0EJ710								
HEXCHROME	***3.50E-01***	U		7.0E-01	3.50E-01	mg/kg	N/A	*(1.)*	7/2/07		2.5	7196_CR6
							3.50E-01	*1.*			G	
Batch: 7157452	Work Order: J0EJ71A4			Report DB ID: 9J0EJ710								
PU-238	***-5.99E-03***	U	3.1E-02	3.1E-02	8.46E-02	pCi/g	43%	*-0.07*	6/20/07 07:05 a		1.03	PUISO_IE_PLATE_A
						2.20E-02	1.00E+00	*-0.38*			G	ALP37
PU239/40	***2.69E-02***	U	4.3E-02	4.3E-02	7.17E-02	pCi/g	43%	*0.38*	6/20/07 07:05 a		1.03	PUISO_IE_PLATE_A
						1.56E-02	1.00E+00	*(1.3)*			G	ALP37

STL Richland
rptSTLRchSample
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.

3

AMENDED DATA

FORM I

SAMPLE RESULTS

RECEIVED JUL 2007

Date: 10-Jul-07

Lab Name:	STL Richland	SDG:	J00113	Collection Date:	6/4/2007 11:00:00 AM
Lot-Sample No.:	J7F060261-1	Report No. :	35813	Received Date:	6/6/2007 12:25:00 PM
Client Sample ID:	J15521	COC No. :	RC-032-118	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: 7172217	Work Order: J0EJ73AP			Report DB ID: 9J0EJ730								
AM-241	***2.99E-02***	U	3.3E-02	3.4E-02	4.69E-02	pCi/g	94%	*0.64*	6/26/07 10:10 p		1.04	AMCMISO_IE_PLATE
						1.22E-02	1.00E+00	*(1.8)*			G	ALP37
CM-243/244	***1.40E-01***		6.9E-02	7.2E-02	3.98E-02	pCi/g	94%	*(3.5)*	6/26/07 10:10 p		1.04	AMCMISO_IE_PLATE
						8.65E-03	1.00E+00	*(3.9)*			G	ALP37

Number of Results: 19

Comments:

STL Richland
rptSTLRchSample
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.

14

AMENDED DATA

FORM II

DUPLICATE RESULTS

Date: 10-Jul-07

RECEIVED JUL 2007

Lab Name:	STL Richland	SDG:	J00113	Collection Date:	6/4/2007 11:00:00 AM
Lot-Sample No.:	J7F060261-1	Report No. :	35813	Received Date:	6/6/2007 12:25:00 PM
Client Sample ID:	J15521	COC No. :	RC-032-118	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: 7157435	Work Order: J0EJ71A2			Report DB ID: J0EJ712R		Orig Sa DB ID: 9J0EJ710						
HEXCHROME	3.50E-01	U		7.0E-01	3.50E-01	mg/kg	N/A	(1.)	7/2/07		2.5	7196_CR6
	3.50E-01	U	RPD 0.0			3.50E-01		1.			G	

Number of Results: 1

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.

15

AMENDED DATA

FORM II

DUPLICATE RESULTS

RECEIVED JUL 2007

Date: 10-Jul-07

Lab Name:	STL Richland	SDG:	J00113	Collection Date:	6/4/2007 11:00:00 AM
Lot-Sample No.:	J7F060261-1	Report No. :	35813	Received Date:	6/6/2007 12:25:00 PM
Client Sample ID:	J15521 DUP	COC No. :	RC-032-118	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: 7157424	Work Order: J0EJ71AQ				Report DB ID: J0EJ71QR		Orig Sa DB ID: 9J0EJ710						
AG-108M	-1.85E-03	U		7.0E-03	7.0E-03	1.18E-02	pCi/g		-0.16	6/13/07 03:28 p		802.8	GAMMA_GS
	-4.15E-03	U	RPD	-76.8					-0.53			g	GER7$1
BA-133	1.99E-03	U		1.1E-02	1.1E-02	1.62E-02	pCi/g		0.12	6/13/07 03:28 p		802.8	GAMMA_GS
	2.72E-03	U	RPD	30.8					0.36			g	GER7$1
CO-60	1.03E-02	U		1.1E-02	1.1E-02	1.94E-02	pCi/g		0.53	6/13/07 03:28 p		802.8	GAMMA_GS
	1.48E-02	U	RPD	36.1			5.00E-02		(1.9)			g	GER7$1
CS-137	4.31E-01			5.9E-02	5.9E-02	1.64E-02	pCi/g		(26.2)	6/13/07 03:28 p		802.8	GAMMA_GS
	4.78E-01		RPD	10.2			1.00E-01		(14.6)			g	GER7$1
EU-152	1.74E-01	U		3.7E-02	3.7E-02	5.26E-02	pCi/g		(3.3)	6/13/07 03:28 p		802.8	GAMMA_GS
	1.75E-01	U	RPD	0.5			1.00E-01		(9.3)			g	GER7$1
EU-154	-9.51E-03	U		3.7E-02	3.7E-02	6.20E-02	pCi/g		-0.15	6/13/07 03:28 p		802.8	GAMMA_GS
	2.38E-02	U	RPD	466.9			1.00E-01		-0.52			g	GER7$1
EU-155	2.52E-02	U		2.6E-02	2.6E-02	4.42E-02	pCi/g		0.57	6/13/07 03:28 p		802.8	GAMMA_GS
	1.95E-02	U	RPD	25.4			1.00E-01		(1.9)			g	GER7$1
Batch: 7157429	Work Order: J0EJ71AU				Report DB ID: J0EJ71UR		Orig Sa DB ID: 9J0EJ710						
U-234	7.19E-02			4.3E-02	4.5E-02	3.50E-02	pCi/g	89%	(2.1)	6/14/07 08:45 p		1.07	UISO_IE_PLATE_AE
	1.32E-01		RPD	59.2			1.00E+00		(3.2)			G	ALP12
U-235	4.96E-03	U		1.3E-02	1.3E-02	2.97E-02	pCi/g	89%	0.17	6/14/07 08:45 p		1.07	UISO_IE_PLATE_AE
	3.60E-02		RPD	151.6			1.00E+00		0.78			G	ALP12
U-238	1.30E-01			5.7E-02	6.1E-02	2.97E-02	pCi/g	89%	(4.4)	6/14/07 08:45 p		1.07	UISO_IE_PLATE_AE
	1.67E-01		RPD	24.9			1.00E+00		(4.3)			G	ALP12
									Ratio U-234/238 = 0.6		*Alpha Spec Result Sum = 2.1E-01*		
Batch: 7157430	Work Order: J0EJ71AV				Report DB ID: J0EJ71VR		Orig Sa DB ID: 9J0EJ710						

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.

AMENDED DATA

FORM II

DUPLICATE RESULTS

Date: 10-Jul-07

RECEIVED JUL 2007

Lab Name:	STL Richland	SDG:	J00113	Collection Date:	6/4/2007 11:00:00 AM
Lot-Sample No.:	J7F060261-1	Report No. :	35813	Received Date:	6/6/2007 12:25:00 PM
Client Sample ID:	J15521 DUP	COC No. :	RC-032-118	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
C-14	-4.67E-01	U		3.4E-01	6.8E-01	8.53E-01	pCi/g	100%	-0.55	6/13/07 12:04 p		2.016	C14_CHEM_LSC
	-5.05E-01	U	RPD	-7.7			5.00E+01		-(1.4)			G	LSC3
Batch: 7157432	Work Order: J0EJ71AW				Report DB ID: J0EJ71WR		Orig Sa DB ID: 9J0EJ710						
NI-63	4.38E+00	U		2.4E+00	4.2E+00	5.46E+00	pCi/g	95%	0.8	6/15/07 05:00 a		0.25	NI63_LSC
	4.31E+00	U	RPD	1.5			3.00E+01		(2.1)			G	LSC4
Batch: 7157433	Work Order: J0EJ71AX				Report DB ID: J0EJ71XR		Orig Sa DB ID: 9J0EJ710						
H-3	1.43E-02	U		1.9E-02	2.1E-02	4.49E-02	pCi/g	100%	0.32	6/12/07 11:11 p		75.6	906.0_H3_LSC
	-7.51E-03	U	RPD	641.0			4.00E+02		(1.3)			G	LSC6
Batch: 7157434	Work Order: J0EJ71A0				Report DB ID: J0EJ710R		Orig Sa DB ID: 9J0EJ710						
STRONTIUM	7.18E+00			3.2E-01	1.9E+00	1.31E-01	pCi/g	98%	(54.8)	6/12/07 07:16 p		6.07	SRTOT_SEP_PRECIP
	6.91E+00		RPD	3.8					(7.6)			G	GPC26D
Batch: 7157452	Work Order: J0EJ71A5				Report DB ID: J0EJ715R		Orig Sa DB ID: 9J0EJ710						
PU-238	6.92E-03	U		2.4E-02	2.4E-02	6.52E-02	pCi/g	55%	0.11	6/20/07 07:05 a		1.02	PUISO_IE_PLATE_A
	-5.99E-03	U	RPD	2785.8			1.00E+00		0.58			G	ALP39
PU239/40	2.08E-02	U		3.3E-02	3.3E-02	5.52E-02	pCi/g	55%	0.38	6/20/07 07:05 a		1.02	PUISO_IE_PLATE_A
	2.69E-02	U	RPD	26.0			1.00E+00		(1.3)			G	ALP39

Alpha Spec Result Sum = 2.8E-02

Number of Results: 16

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.

L1

FORM II

BLANK RESULTS

Date: 06-Jul-07

Lab Name: STL Richland SDG: J00113

Lot-Sample No.: #Error Report No. : 35814 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: 7157435	Work Order:	J0EWK1AA		Report DB ID:	J0EWK1AB							
HEXCHROME	3.50E-01	U		7.0E-01	3.50E-01	mg/kg	N/A	(1.)	7/2/07		2.5	7196_CR6
						3.50E-01		1.			G	

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.

AMENDED DATA

FORM II
BLANK RESULTS

Date: 10-Jul-07

RECEIVED JUL 2007

Lab Name: STL Richland

SDG: J00113

Lot-Sample No.: J7F060000-424

Report No. : 35813

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: 7157424	Work Order: J0EVK1AA			Report DB ID: J0EVK1AB								
AG-108M	3.12E-03	U	3.0E-03	3.0E-03	5.64E-03	pCi/g		0.55	6/13/07 12:00 p		859.27	GAMMA_GS
								(2.1)			g	GER8$1
BA-133	-3.84E-04	U	5.2E-03	5.2E-03	7.48E-03	pCi/g		-0.05	6/13/07 12:00 p		859.27	GAMMA_GS
								-0.15			g	GER8$1
CO-60	-8.45E-04	U	3.3E-03	3.3E-03	6.02E-03	pCi/g		-0.14	6/13/07 12:00 p		859.27	GAMMA_GS
						5.00E-02		-0.51			g	GER8$1
CS-137	5.41E-04	U	3.6E-03	3.6E-03	6.56E-03	pCi/g		0.08	6/13/07 12:00 p		859.27	GAMMA_GS
						1.00E-01		0.3			g	GER8$1
EU-152	-3.09E-03	U	1.1E-02	1.1E-02	1.70E-02	pCi/g		-0.18	6/13/07 12:00 p		859.27	GAMMA_GS
						1.00E-01		-0.56			g	GER8$1
EU-154	6.48E-05	U	9.4E-03	9.4E-03	1.77E-02	pCi/g		0.	6/13/07 12:00 p		859.27	GAMMA_GS
						1.00E-01		0.01			g	GER8$1
EU-155	9.31E-03	U	1.0E-02	1.0E-02	1.79E-02	pCi/g		0.52	6/13/07 12:00 p		859.27	GAMMA_GS
						1.00E-01		(1.8)			g	GER8$1

Number of Results: 7

Comments:

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: 06-Jul-07

Lab Name: STL Richland **SDG:** J00113

Lot-Sample No.: J7F060000-427 **Report No. :** 35814 **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: 7157427	Work Order: J0EV11AA			Report DB ID: J0EV11AB								
AM-241	6.50E-03	U	1.7E-02	1.7E-02	3.89E-02	pCi/g	111%	0.17	6/20/07 10:42 a		1.0	AMCMISO_IE_PLATE
					8.45E-03	1.00E+00		0.78			G	ALP37
CM-243/244	8.78E-02		5.4E-02	5.6E-02	3.89E-02	pCi/g	111%	(2.3)	6/20/07 10:42 a		1.0	AMCMISO_IE_PLATE
					8.46E-03	1.00E+00		(3.1)	-		G	ALP37

Number of Results: 2

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: 06-Jul-07

Lab Name: STL Richland **SDG:** J00113

Lot-Sample No.: J7F060000-429 **Report No. :** 35814 **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: 7157429	Work Order: J0EV31AA			Report DB ID: J0EV31AB								
U-234	-1.93E-03	U	1.2E-02	1.2E-02	3.23E-02	pCi/g	100%	-0.06	6/14/07 08:44 p		1.0	UISO_IE_PLATE_AE
					7.95E-03	1.00E+00		-0.32			G	ALP69
U-235	-4.84E-04	U	1.2E-02	1.2E-02	2.43E-02	pCi/g	100%	-0.02	6/14/07 08:44 p		1.0	UISO_IE_PLATE_AE
					3.98E-03	1.00E+00		-0.08			G	ALP69
U-238	-1.45E-03	U	1.2E-02	1.2E-02	3.01E-02	pCi/g	100%	-0.05	6/14/07 08:44 p		1.0	UISO_IE_PLATE_AE
					6.89E-03	1.00E+00		-0.24			G	ALP69

Ratio U-234/238 = 1.3

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: 06-Jul-07

Lab Name: STL Richland

SDG: J00113

Lot-Sample No.: J7F060000-430

Report No. : 35814

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: 7157430	Work Order: J0EV41AA			Report DB ID: J0EV41AB								
C-14	-1.34E-01	U	1.4E-01	2.8E-01	3.44E-01	pCi/g	100%	-0.39	6/13/07 09:57 a		5.0	C14_CHEM_LSC
					1.65E-01	5.00E+01		-0.95			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: 06-Jul-07

Lab Name: STL Richland **SDG:** J00113

Lot-Sample No.: J7F060000-432 **Report No. :** 35814 **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: 7157432	Work Order:	J0EV71AA		Report DB ID:	J0EV71AB							
NI-63	4.86E+00	U	2.5E+00	4.4E+00	5.66E+00	pCi/g	92%	0.86	6/15/07 07:00 a		0.25	NI63_LSC
					2.75E+00	3.00E+01		(2.2)			G	LSC4

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: 06-Jul-07

Lab Name: STL Richland

SDG: J00113

Lot-Sample No.: J7F060000-433

Report No. : 35814

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: 7157433	Work Order:	J0EWC1AA		Report DB ID:	J0EWC1AB							
H-3	-5.94E-02	U	1.2E-01	1.4E-01	3.06E-01	pCi/g	100%	-0.19	6/12/07 09:04 p		10.0	906.0_H3_LSC
					1.43E-01	4.00E+02		-0.86			G	LSC6

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: 06-Jul-07

Lab Name: STL Richland **SDG:** J00113

Lot-Sample No.: J7F060000-434 **Report No. :** 35814 **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: 7157434	Work Order: J0EWF1AA			Report DB ID: J0EWF1AB								
STRONTIUM	-1.75E-02	U	6.6E-02	6.6E-02	1.63E-01	pCi/g	81%	-0.11	6/12/07 07:16 p		6.0	SRTOT_SEP_PRECIP
					7.58E-02			-0.53			G	GPC27A

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: 06-Jul-07

Lab Name: STL Richland SDG: J00113

Lot-Sample No.: J7F060000-452 Report No. : 35814 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: 7157452	Work Order: J0E1C1AA			Report DB ID: J0E1C1AB								
PU-238	7.83E-03	U	2.0E-02	2.0E-02	4.69E-02	pCi/g	67%	0.17	6/20/07 07:06 a		1.0	PUISO_IE_PLATE_A
					1.02E-02	1.00E+00		0.78			G	ALP40
PU239/40	-3.92E-03	U	2.0E-02	2.0E-02	5.53E-02	pCi/g	67%	-0.07	6/20/07 07:06 a		1.0	PUISO_IE_PLATE_A
					1.44E-02	1.00E+00		-0.38	-		G	ALP40
Batch: 7157452	Work Order: J0E1C1AD			Report DB ID: J0E1C1DX								
PU-238	0.00E+00	U	0.0E+00	1.9E-02	4.36E-02	pCi/g	70%	0.	6/20/07 07:06 a		1.04	PUISO_IE_PLATE_A
					9.48E-03	1.00E+00		0.			G	ALP44
PU239/40	7.29E-03	U	1.9E-02	1.9E-02	4.36E-02	pCi/g	70%	0.17	6/20/07 07:06 a		1.04	PUISO_IE_PLATE_A
					9.48E-03	1.00E+00		0.78			G	ALP44

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: 06-Jul-07

Lab Name: STL Richland SDG: J00113

Lot-Sample No.: J7F210000-217 Report No. : 35814 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: 7172217	Work Order: J1GD51AA			Report DB ID: J1GD51AB								
AM-241	2.11E-02	U	2.9E-02	2.9E-02	4.59E-02	pCi/g	103%	0.46	6/26/07 10:10 p		1.0	AMCMISO_IE_PLATE
					1.20E-02	1.00E+00		(1.5)			G	ALP39
CM-243/244	8.96E-02		5.4E-02	5.6E-02	3.90E-02	pCi/g	103%	(2.3)	6/26/07 10:10 p		1.0	AMCMISO_IE_PLATE
					8.47E-03	1.00E+00		(3.2)			G	ALP39

Number of Results: 2

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: 06-Jul-07

Lab Name: STL Richland SDG: J00113

Lot-Sample No.: #Error Report No. : 35814 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: 7157435	Work Order: J0EWK1AC			Report DB ID: J0EWK1AS									
HEXCHROME	1.65E+01			7.0E-01	3.50E-01	mg/kg	N/A	2.00E+01		82%	7/2/07	2.5	7196_CR6
							Rec Limits:	80.	120.	-0.2		G	

Number of Results: 1

Comments:

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

rptSTLRchLcs
V5.1.3 A2002

FORM II

LCS RESULTS

Date: 06-Jul-07

Lab Name: STL Richland SDG: J00113

Lot-Sample No.: J7F060000-424 Report No. : 35814 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: 7157424	Work Order: J0EVK1AC			Report DB ID: J0EVK1CS									
CS-137	2.49E-01		4.4E-02	4.4E-02	2.81E-02	pCi/g		2.59E-01	1.2E-02	96%	6/13/07 12:01 p	457.79	GAMMA_GS
							Rec Limits:	70.	130.	0.0		g	GER7$1
K-40	1.86E+01		2.3E+00	2.3E+00	2.32E-01	pCi/g		1.95E+01	1.9E+00	95%	6/13/07 12:01 p	457.79	GAMMA_GS
							Rec Limits:	70.	130.	0.0		g	GER7$1
RA-226	1.00E+00		1.4E-01	1.4E-01	4.61E-02	pCi/g		1.15E+00	5.2E-02	87%	6/13/07 12:01 p	457.79	GAMMA_GS
							Rec Limits:	70.	130.	-0.1		g	GER7$1
RA-228	1.82E+00		2.7E-01	2.7E-01	9.05E-02	pCi/g		1.87E+00	9.6E-02	97%	6/13/07 12:01 p	457.79	GAMMA_GS
							Rec Limits:	70.	130.	0.0		g	GER7$1
U-238	1.06E+00		1.5E-01	1.5E-01	4.52E-02	pCi/g		1.05E+00	5.4E-02	101%	6/13/07 12:01 p	457.79	GAMMA_GS
							Rec Limits:	70.	130.	0.0		g	GER7$1

Number of Results: 5

Comments:

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

rptSTLRchLcs
V5.1.3 A2002

STL RICHLAND

FORM II

LCS RESULTS

Date: 06-Jul-07

Lab Name: STL Richland

SDG: J00113

Lot-Sample No.: J7F060000-427

Report No. : 35814

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: 7157427	Work Order: J0EV11AC			Report DB ID: J0EV11CS									
AM-241	9.58E+00		5.6E-01	1.7E+00	4.59E-02	pCi/g	116.74%	9.11E+00	2.9E-01	105%	6/20/07 10:42 a	1.0	AMCMISO_IE_PLATE
							Rec Limits:	70.	130.	0.1		G	ALP39

Number of Results: 1

Comments:

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

rptSTLRchLcs
V5.1.3 A2002

FORM II

LCS RESULTS

Date: 06-Jul-07

Lab Name: STL Richland **SDG:** J00113

Lot-Sample No.: J7F060000-429 **Report No. :** 35814 **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: 7157429	Work Order: J0EV31AC			Report DB ID: J0EV31CS									
U-234	3.18E+00		2.9E-01	6.1E-01	4.10E-02	pCi/g	94.94%	3.27E+00	1.8E-02	97%	6/14/07 08:45 p	1.0	UISO_IE_PLATE_AE
							Rec Limits:	70.	130.	0.0		G	ALP1
U-235	1.56E-01		6.4E-02	6.9E-02	3.11E-02	pCi/g	94.94%	1.49E-01	8.3E-04	105%	6/14/07 08:45 p	1.0	UISO_IE_PLATE_AE
							Rec Limits:	70.	130.	0.0		G	ALP1
U-238	3.24E+00		2.9E-01	6.2E-01	5.07E-02	pCi/g	94.94%	3.42E+00	1.9E-02	95%	6/14/07 08:45 p	1.0	UISO_IE_PLATE_AE
							Rec Limits:	70.	130.	-0.1		G	ALP1

Number of Results: 3

Comments:

FORM II

LCS RESULTS

Date: 06-Jul-07

Lab Name: STL Richland

SDG: J00113

Lot-Sample No.: J7F060000-430

Report No. : 35814

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: 7157430	Work Order: J0EV41AC			Report DB ID: J0EV41CS									
C-14	6.85E+00		3.0E-01	1.0E+00	3.44E-01	pCi/g	100.00%	7.20E+00	2.4E-01	95%	6/13/07 10:39 a	5.0	C14_CHEM_LSC
							Rec Limits:	70.	130.	0.0		G	LSC3

Number of Results: 1

Comments:

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

rptSTLRchLcs
V5.1.3 A2002

STL RICHLAND

FORM II

LCS RESULTS

Date: 06-Jul-07

Lab Name: STL Richland

SDG: J00113

Lot-Sample No.: J7F060000-432

Report No. : 35814

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: 7157432	Work Order: J0EV71AC			Report DB ID: J0EV71CS									
NI-63	4.60E+02		7.6E+00	4.5E+01	5.30E+00	pCi/g	94.25%	5.82E+02	1.6E+00	79%	6/15/07 08:42 a	0.26	NI63_LSC
							Rec Limits:	70.	130.	-0.2		G	LSC4

Number of Results: 1

Comments:

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

rptSTLRchLcs
V5.1.3 A2002

STL RICHLAND

FORM II

LCS RESULTS

Date: 06-Jul-07

Lab Name: STL Richland

SDG: J00113

Lot-Sample No.: J7F060000-433

Report No. : 35814

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: 7157433	Work Order: J0EWC1AC			Report DB ID: J0EWC1CS									-
H-3	2.28E+00		2.2E-01	2.6E-01	3.06E-01	pCi/g	100.00%	2.71E+00	8.1E-02	84%	6/12/07 09:47 p	10.0	906.0_H3_LSC
							Rec Limits:	70.	130.	-0.2		G	LSC6

Number of Results: 1

Comments:

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

rptSTLRchLcs
V5.1.3 A2002

FORM II

LCS RESULTS

Date: 06-Jul-07

Lab Name: STL Richland

SDG: J00113

Lot-Sample No.: J7F060000-434

Report No. : 35814

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: 7157434	Work Order: J0EWF1AC			Report DB ID: J0EWF1CS									
STRONTIUM	8.34E-01		1.3E-01	2.6E-01	1.56E-01	pCi/g	85.70%	7.58E-01	1.5E-02	110%	6/12/07 07:16 p	6.0	SRTOT_SEP_PRECIP
							Rec Limits:	70.	130.	0.1		G	GPC27B

Number of Results: 1

Comments:

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

rptSTLRchLcs
V5.1.3 A2002

STL RICHLAND

FORM II

LCS RESULTS

Date: 06-Jul-07

Lab Name: STL Richland

SDG: J00113

Lot-Sample No.: J7F060000-452

Report No. : 35814

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: 7157452	Work Order: J0E1C1AC			Report DB ID: J0E1C1CS									
PU239/40	6.11E+00		5.2E-01	1.1E+00	6.15E-02	pCi/g	63.34%	6.87E+00	2.3E-01	89%	6/20/07 07:06 a	1.0	PUISO_IE_PLATE_A
							Rec Limits:	70.	130.	-0.1		G	ALP42
Batch: 7157452	Work Order: J0E1C1AE			Report DB ID: J0E1C1EM									
PU239/40	6.52E+00		4.9E-01	1.2E+00	4.48E-02	pCi/g	69.62%	7.04E+00	2.4E-01	93%	6/20/07 07:06 a	1.03	PUISO_IE_PLATE_A
							Rec Limits:	70.	130.	-0.1		G	ALP46

Number of Results: 2

Comments:

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

rptSTLRchLcs
V5.1.3 A2002

STL RICHLAND

FORM II

LCS RESULTS

Date: 06-Jul-07

Lab Name: STL Richland

SDG: J00113

Lot-Sample No.: J7F210000-217

Report No. : 35814

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: 7172217	Work Order: J1GD51AC			Report DB ID: J1GD51CS									
AM-241	8.78E+00		5.4E-01	1.6E+00	3.99E-02	pCi/g	112.47%	9.02E+00	1.4E-01	97%	6/26/07 10:11 p	1.0	AMCMISO_IE_PLATE
							Rec Limits:	70.	130.	0.0		G	ALP40

Number of Results: 1

Comments:

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

rptSTLRchLcs
V5.1.3 A2002

FORM II

MATRIX SPIKE RESULTS

Date: 06-Jul-07

Lab Name: STL Richland **SDG:** J00113

Lot-Sample No.: J7F060261-1, J15521 **Report No. :** 35814 **Matrix:** SOIL

Parameter	SpikeResult, Orig Rst	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA	Rpt Unit, CRDL	Yield	Rec-overy	Exp-ected	Exp Uncert	Analysis, Prep Date	Aliquot Size	Analy Method, Primary Detector
Batch: 7157435	Work Order: J0EJ71A1			Report DB ID: J0EJ71A1			Orig Sa DB ID: 9J0EJ710						
HEXCHROME	8.77E+00			7.0E-01	3.50E-01	mg/kg	N/A	86.75%	1.01E+01		7/2/07	2.5	7196_CR6
	3.50E-01											G	

Number of Results: 1

Comments:

STL Richland RER - Replicate Error Ratio = (S-D)/[sqrt(sq(TPUs)+sq(TPUd))] as defined by ICPT BOA.
rptSTLRchMs Bias - (Result/Expected)-1 as defined by ANSI N13.30.
V5.1.3 A2002

SEVERN TRENT STL

Data Review/Verification Checklist

RADIOCHEMISTRY, First Level Review

6/20/2007 3:01:08 PM

Lot No., Due Date: J7F060261; 06/21/2007

Client, Site: 127642; HANFORD

QC Batch No., Method Test: 7157452; RPUISO Pulso by ALP

SDG, Matrix: J00113; 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 Matt Lardy **Date** 6-20-07

SEVERN TRENT STL

Data Review Checklist
RADIOCHEMISTRY
Second Level Review

QC Batch Number: 7157452

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 Jordan Date: 6/27/7

SEVERN TRENT STL

Data Review/Verification Checklist

RADIOCHEMISTRY, First Level Review

6/20/2007 3:26:45 PM

Lot No., Due Date: J7F060261; 06/21/2007

Client, Site: 127642; HANFORD

QC Batch No., Method Test: 7157429; RUISO Ulso by ALP

SDG, Matrix: J00113; 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 Matt Lardy **Date** 6-20-07

SEVERN TRENT STL

Data Review Checklist
RADIOCHEMISTRY
Second Level Review

QC Batch Number: 7157429

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: 6/27/7

SEVERN TRENT STL

Data Review/Verification Checklist

RADIOCHEMISTRY, First Level Review

6/27/2007 10:17:03 AM

Lot No., Due Date: J7F060261; 06/21/2007

Client, Site: 127642; HANFORD

QC Batch No., Method Test: 7172217; RAMCMISO AmCmIso by ALP

SDG, Matrix: J00113; SOIL

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

6.0 Comments on any No response:
Please see NCM#10-10236

First Level Review [signature] **Date** 6-27-7

SEVERN TRENT STL

Data Review Checklist
RADIOCHEMISTRY
Second Level Review

QC Batch Number: 7172217

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 NCM

Second Level Review: Erika Jordan Date: 4/27/17

Clouseau
Nonconformance Memo

STL

NCM #: 10-10236
NCM Initiated By: John Norton
Date Opened: 06/27/2007
Date Closed:

Classification: **Anomaly**
Status: **GLREVIEW**
Production Area: Environmental - Prep
Tests: None
Lot #'s (Sample #'s): J7F060261 (1),
QC Batches: None.,

Nonconformance: Tracer yield out of limits
Subcategory: Unknown

Problem Description / Root Cause

Name	Date	Description
John Norton	06/27/2007	The sample activity could not be calculated because the tracer yield was absent.
John Norton	06/27/2007	

Corrective Action

Name	Date	Corrective Action
John Norton	06/27/2007	The sample was re-counted to confirm the result,then the sample was re-analyzed in batch #7172217.
John Norton	06/27/2007	The sample duplicate in batch 7157427 relates to the sample in batch 7172217, both are below the RDL.

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: 6/27/2007

SEVERN TRENT STL

Data Review/Verification Checklist

RADIOCHEMISTRY, First Level Review

6/20/2007 3:28:54 PM

Lot No., Due Date: J7F060261; 06/21/2007

Client, Site: 127642; HANFORD

QC Batch No., Method Test: 7157434; RSRTOT SrTot by GPC

SDG, Matrix: J00113; SOIL

1.0 COC

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

2.0 QC Batch

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

3.0 QC & Samples

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

4.0 Raw Data

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

5.0 Other

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

6.0 Comments on any No response:

First Level Review Lisa Anderson **Date** 6/20/07

SEVERN TRENT STL

Data Review Checklist
RADIOCHEMISTRY
Second Level Review

QC Batch Number: 7157431

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 Jordan Date: 6/27/7

SEVERN TRENT STL

Data Review/Verification Checklist

RADIOCHEMISTRY, First Level Review

6/20/2007 3:26:19 PM

Lot No., Due Date: J7F060261; 06/21/2007

Client, Site: 127642; HANFORD

QC Batch No., Method Test: 7157424; RGAMMA Gamma by GER

SDG, Matrix: J00113; 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 10-10182

First Level Review Lisa Antonson **Date** 6/20/07

SEVERN TRENT STL

Data Review Checklist
RADIOCHEMISTRY
Second Level Review

QC Batch Number: 71S7424

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 NCM

Second Level Review: Erika Jade Date: 4/27/7

Clouseau
Nonconformance Memo

STL

NCM #: 10-10182
NCM Initiated By: Lisa Antonson
Date Opened: 06/20/2007
Date Closed:

Classification: **Anomaly**
Status: **GLREVIEW**
Production Area: Environmental - Prep
Tests: Gamma by GER
Lot #'s (Sample #'s): J7F060000 (424), J7F060261 (1),
QC Batches: 7157424,

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

Problem Description / Root Cause

Name	Date	Description
Lisa Antonson	06/20/2007	There was not enough sample to run a duplicate in the Gamma batch. The sample was recounted on a different detector.

Corrective Action

Name	Date	Corrective Action
Lisa Antonson	06/20/2007	NA

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

SEVERN TRENT STL

Data Review/Verification Checklist

RADIOCHEMISTRY, First Level Review

6/14/2007 1:44:07 PM

Lot No., Due Date: J7F060261; 06/21/2007

Client, Site: 127642; HANFORD

QC Batch No., Method Test: 7157430; RC14 C-14 by LSC

SDG, Matrix: J00113; SOIL

		Yes	No	N/A
8.01	The Appropriate Methods Were Used To Analyze the Samples OK	✓		
8.02	Final Results Are in the Appropriate Activity Units OK	✓		
8.03	Batch Contains the Required QC Appropriate for the Method OK	✓		
8.04	The Correct Tracer and QC Vials Where Used in the Samples OK	✓		
8.05	Sample was Appropriately Traced Before or After Fractionating the Sample OK	✓		
8.06	At Least the Minimum Sample Volume Was Used OK	✓		
8.07	The Correct Count Geometry was Used. OK	✓		
8.08	The Sample was Counted for the Minimum Count Time or CRDL was Achieved. OK	✓		
8.09	Method Blank is within Control Limits. OK	✓		
8.1	Comments:			
8.11	Matrix Blank is within Control Limits. No Matrix Blanks (MBlks) found in Batch!			✓
8.12	Method Blank(s) < QAS Limit Value (No B Flag Necessary). OK	✓		
8.13	QAS Specified Duplicate Equation Value within Control Limits. No Duplicate Limit Found in QAS! OK (RPD)			✓
8.14	LCS within Control Limits. OK	✓		
8.15	MLCS within Control Limits. No Matrix Spikes (MLCS) found in Batch!			✓
8.16	MS within Control Limits. No Matrix Spike Samples (MS) found in Batch!			✓
8.17	Tracer within Control Limits. No Tracers found in Batch!			✓
8.18	Samples are above Minimum Tracer Yield (No Failed Samples) No Tracers found in Batch!			✓
8.19	Sample Specific MDC <= CRDL. OK	✓		
8.2	Comments:			
8.21	Result < Lc, Activity Not Detected, U Flag. No Limit Specified!			✓
8.22	Result < Mdc, Activity Not Detected, U Flag. No Limit Specified!			✓
8.23	Result <= Action Level, when Defined. OK; No Action Level Found => C-14 OK; No Callin Level Found => C-14	✓		
8.24	Result + 3s >=0, Not Too Negative. OK	✓		
8.25	Counting Spectrum are within FWHM Limits. No FWHM found in Batch Data!			✓
8.26	Instruments have Current Calibrations.			
8.27	Correct Count Library Used. No Count Library found in Batch Data!			✓

8.28 Instrument Background within Limits at Time of Counting. (Not Applicable to this version. To be developed in later versions) Yes No N/A

8.29 Instrument Check Source within Limits at the Time of Counting. (Not Applicable to this version. To be developed in later versions) Yes No N/A

8.3 Comments:

First Level Review Angela Long Date 6/14/07

SEVERN TRENT STL

Data Review Checklist
RADIOCHEMISTRY
Second Level Review

QC Batch Number: 7157430

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: 6-18-07

SEVERN TRENT STL

Data Review/Verification Checklist

RADIOCHEMISTRY, First Level Review

6/21/2007 4:00:19 PM

Lot No., Due Date: J7F060261; 06/21/2007

Client, Site: 127642; HANFORD

QC Batch No., Method Test: 7157432; RNI63 Ni-63 by LSC

SDG, Matrix: J00113; 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 Anderson **Date** 6/21/07

SEVERN TRENT STL

Data Review Checklist
RADIOCHEMISTRY
Second Level Review

QC Batch Number: 7157432

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?	√ EJ 6/27/17		√
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 Jordan Date: 6/27/17

SEVERN TRENT STL

Data Review/Verification Checklist

RADIOCHEMISTRY, First Level Review

6/14/2007 1:45:09 PM

Lot No., Due Date: J7F060261; 06/21/2007

Client, Site: 127642; HANFORD

QC Batch No., Method Test: 7157433; RTRITIUM H-3 by LSC

SDG, Matrix: J00113; SOIL

		Yes	No	N/A
8.01	The Appropriate Methods Were Used To Analyze the Samples OK	✓		
8.02	Final Results Are in the Appropriate Activity Units OK	✓		
8.03	Batch Contains the Required QC Appropriate for the Method OK	✓		
8.04	The Correct Tracer and QC Vials Where Used in the Samples OK	✓		
8.05	Sample was Appropriately Traced Before or After Fractionating the Sample OK	✓		
8.06	At Least the Minimum Sample Volume Was Used Analysis Volume => J0EJ71AJ 75.20<100.00 Q:VB OK AL 6/14/07		✓	
8.07	The Correct Count Geometry was Used. OK	✓		
8.08	The Sample was Counted for the Minimum Count Time or CRDL was Achieved. OK	✓		
8.09	Method Blank is within Control Limits. OK	✓		
8.1	Comments:			
8.11	Matrix Blank is within Control Limits. No Matrix Blanks (MBlks) found in Batch!			✓
8.12	Method Blank(s) < QAS Limit Value (No B Flag Necessary). OK	✓		
8.13	QAS Specified Duplicate Equation Value within Control Limits. No Duplicate Limit Found in QAS! OK (RPD)			✓
8.14	LCS within Control Limits. OK	✓		
8.15	MLCS within Control Limits. No Matrix Spikes (MLCS) found in Batch!			✓
8.16	MS within Control Limits. No Matrix Spike Samples (MS) found in Batch!			✓
8.17	Tracer within Control Limits. No Tracers found in Batch!			✓
8.18	Samples are above Minimum Tracer Yield (No Failed Samples) No Tracers found in Batch!			✓
8.19	Sample Specific MDC <= CRDL. OK	✓		
8.2	Comments:			
8.21	Result < Lc, Activity Not Detected, U Flag. No Limit Specified!			✓
8.22	Result < Mdc, Activity Not Detected, U Flag. No Limit Specified!			✓
8.23	Result <= Action Level, when Defined. OK; No Action Level Found => H-3 OK; No Callin Level Found => H-3	✓		
8.24	Result + 3s >=0, Not Too Negative. OK	✓		
8.25	Counting Spectrum are within FWHM Limits. No FWHM found in Batch Data!			✓
8.26	Instruments have Current Calibrations.			
8.27	Correct Count Library Used. No Count Library found in Batch Data!			✓

8.28 Instrument Background within Limits at Time of Counting. (Not Applicable to this version. To be developed in later version) Yes No N/A

8.29 Instrument Check Source within Limits at the Time of Counting. (Not Applicable to this version. To be developed in later version) Yes No N/A

8.3 Comments:

First Level Review Angela Long Date 6/14/07

SEVERN TRENT STL

Data Review Checklist
RADIOCHEMISTRY
Second Level Review

QC Batch Number: 715T433

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: 6-17-07

SEVERN TRENT STL

Richland Laboratory
Data Review Check List
Hexavalent Chromium

Work Order Number(s): **J0EWK, J0EJ7**

Lab Sample Numbers or SDG: **J00013**

Method/Test/Parameter: **Cr+6 in SOLID / RICH-WC-5003, Rev 7**

Review Item	Yes (✓)	No (✓)	N/A (✓)	2nd Level Review (✓)
A. Initial Calibration				
1. Performed at required frequency with required number of levels?	✓			✓
2. Correlation coefficient within QC limits?	✓			✓
3. Initial calibration verification (ICV) analyzed immediately after calibration and results within QC limits?	✓			✓
4. Initial calibration blank (ICB) analyzed immediately after ICV and concentrations of all parameters ≤ reporting limit?	✓			✓
B. Continuing Calibration				
1. CCV analyzed at required frequency and all parameters within QC limits?	✓			✓
2. CCB analyzed at required frequency and all results ≤ reporting limit?	✓			✓
C. Sample Analysis	✓			
1. Were any samples with concentrations above the linear range for any parameter diluted and reanalyzed?				✓
2. Were all sample holding times met?	✓			✓
D. QC Samples				
1. All results for the preparation blank below limits?	✓			✓
2. MS or MS/MSD recoveries within QC limits and %RPD (for MSD) acceptable?	✓			✓
3. LCS percent recovery within QC limits and %RPD (for LCSD) acceptable?	✓			✓
4. Analytical spikes within QC limits where applicable?			✓	✓
5. ICP only: One serial dilution performed per SDG?			✓	✓
6. ICP only: CRDL standard (CRI or CRA) analyzed at required frequency?			✓	✓
7. ICP only: Interference check samples (ICSA, ICSAB) and HICAL analyzed at the required frequencies and within QC limits?			✓	✓

Review Item	Yes (✓)	No (✓)	N/A (✓)	2nd Level Review (✓)
E. Other 1. Are all nonconformances included and noted?	✓			
2. Is the correct date and time of analysis shown?	✓			
3. Did the analyst sign and date the front page of the analytical run?	✓			
4. Correct methodology used?	✓			
5. Transcriptions checked?	✓			
6. Calculations checked at minimum frequency?	✓			
7. Units checked?	✓			

Comments on any "No" response

Analyst: [signature] Date: 7/3/07

Second-Level Review: [signature] Date: 7/6/07

J1F060261 J00113 Due 06-11-07 KWU 6/6/07

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		RC-032-118	Page 1 of 1
Collector: Coffman/DeBuigne	Company Contact: R.T. Coffman	Telephone No.: 528-6409	Project Coordinator: KESSNER, JH	Price Code: 8F; Data Turnaround: 7 DAY
Project Designation: 100-F Remaining Sites Burial Grounds - Soil Full Protocol	Sampling Location: 118-F-8:4 FSB Verification/Deep Zone		SAF No.: RC-032	
Ice Chest No.	Field Logbook No.: EFL-1174-2	COA: R118F82000	Method of Shipment: ~~FED EX~~ 6-6-07 Gov Veh	
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	Cool 4C	Cool 4C	None	None	None	None	None	None	
Type of Container	P	P	aG	P	P	P	P	P	P	
No. of Container(s)	1	1	1	1	1	1	1	1	1	
Volume	125mL	125mL	60mL	500mL	125mL	125mL	125mL	125mL	125mL	
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Chromium Hex - 7196	PCBs - 8082	See item (2) in Special Instructions.	Carbon-14; Tritium - H3	Nickel-63; Strontium-89,90 -- Total Sr	Isotopic Plutonium	Isotopic Uranium	Americium-241/Curium-244 (Americium-241, Curium-244)	

Sample No.	Matrix *	Sample Date	Sample Time										
J15521	SOIL	6-4-07	1100		X		X	X	X	X	X	X	
JOEJ7													

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

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
JRDeBuigne JRDB	6-4-07 1515	3728/3A	6-4-07 1515
3728/3A	6-6-07 1200	KMSingleton	6-6-07 1200
KMSingleton WCA	6-6-07 1325 WC4	LINDSEY ANDERSON	6/6/07 1225

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} Ba-133

Sampler unavailable to relinquish samples from 3728 Ref # 3A
3728 Custodian removed samples for shipping on 6/6/07.

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

STL RICHLAND

SEVERN TRENT STL

Sample Check-in List

Date/Time Received: 6/6/07 12:25PM

Client: WCH SDG #: J00113 NA [ ] SAF #: RC032 NA [ ]

Work Order Number: J7F060261 Chain of Custody # _____

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: 6 X 125 mL P / 1 500 mL P
7. Sample holding times exceeded? NA [✓] Yes [ ] No [ ]
8. Samples have:
   - ____ tape
   - ____ custody seals
   - ____ hazard labels
   - ✓ appropriate samples labels
9. Samples are:
   - ✓ in good condition
   - ____ broken
   - ____ leaking
   - ____ 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: [signature] Date: 06-06-07

Client Sample ID	Analysis Requested	Condition	Comments/Action

Client Informed on _____ by _____ Person contacted _____

[ ] No action necessary; process as is.

Project Manager _____ Date 6/6/07

LS-023, 9/03, Rev. 5

STL RICHLAND

6/16/2007 6:57:10 AM

127642, Washington Closure Hanford
Bechtel Hanford, Inc.

AnalyDueDate: 06/21/2007

Sample Preparation/Analysis

Used 5087 [illegible] 6/20/07

7I PuAmCm PrpRC5013/RC5019, SepRC5080(5003)/RC5010(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: 7157452 SOIL pCi/g **PM, Quote: SS , 27038**
SEQ Batch, Test: 7157427, 7ISN 7157427, 7ISN

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 J0EJ7-1-A4 J7F060261-1-SAMP 06/04/2007 11:00	AmtRec: 6X125ML,500MLP #Containers: 7	1.03g,in	PATB4377 05/11/07,pd 03/13/07,r	900		Scr:	Alpha:	Beta:
2 J0EJ7-1-A5-X J7F060261-1-DUP 06/04/2007 11:00	AmtRec: 6X125ML,500MLP #Containers: 7	1.02g,in	PATB4382 06/09/07,pd 03/13/07,r			Scr:	Alpha:	Beta:
3 J0E1C-1-AA-B J7F060000-452-BLK 06/04/2007 11:00	AmtRec: #Containers: 1	1.00g,in	PATB4383 06/09/07,pd 03/13/07,r			Scr:	Alpha:	Beta:
4 J0E1C-1-AC-C J7F060000-452-LCS 06/04/2007 11:00	AmtRec: #Containers: 1	1.00g,in	PASI0169 05/10/07,pd 03/13/07,r			Scr:	Alpha:	Beta:
5 J0E1C-1-AD-BX J7F060000-452-MBLK 06/04/2007 11:00	AmtRec: #Containers: 1	1.04g,in	PATB4384 06/09/07,pd 03/13/07,r			Scr:	Alpha:	Beta:
6 J0E1C-1-AE-CM J7F060000-452-MLCS 06/04/2007 11:00	AmtRec: #Containers: 1	1.03g,in	PASI0170 06/09/07,pd 03/13/07,r			Scr:	Alpha:	Beta:

93

STL RICHLAND

6/16/2007 6:57:14 AM

Sample Preparation/Analysis

Balance Id:1120373922

7I PuAmCm PrpRC5013/RC5019, SepRC5080(5003)/RC5010(5039)
SO Plutonium-238,239/40 by Alpha Spec
5I CLIENT: HANFORD

Pipet #: _____

AnalyDueDate: 06/21/2007

PRIORITY

Sep1 DT/Tm Tech:

Batch: 7157452 pCi/g
SEQ Batch, Test: None

Sep2 DT/Tm Tech:

Prep Tech: ,WoodT

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 and bombed

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

J0EJ71A4-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						

J0E1C1AA-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						

J0E1C1AC-LCS:

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

J0E1C1AD-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						

J0E1C1AE-MLCS:

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

J0EJ71A4-SAMP Calc Info:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

J0E1C1AA-BLK:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

J0E1C1AC-LCS:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

J0E1C1AD-MBLK:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

J0E1C1AE-MLCS:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

Approved By _____ Date: _____

6/20/2007 3:01:16 PM

ICOC Fraction Transfer/Status Report

ByDate: 6/20/2006, 6/25/2007, Batch: '7157452', User: *ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting			Comments
7157452						
AC		CalcC	WoodT	6/8/2007 8:45:38 AM		
SC			wagarr	IsBatched	6/6/2007 2:09:11 PM	ICOC_RADCALC v4.8.26
SC			WoodT	InPrep	6/8/2007 8:45:38 AM	RICH-RC-5019 Revision 5
SC			WoodT	InPrep2	6/16/2007 6:57:22 AM	RICH-RC-5019 REVISION 5
SC			HarveyK	Sep1C	6/18/2007 7:03:48 PM	RICH-RC-5087 REV1
SC			HarveyK	Sep2C	6/19/2007 5:16:10 PM	RICH-RC-5039 REV5
SC			DAWKINSO	InCnt1	6/19/2007 6:18:58 PM	RICH-RD-0008 REVISION 4
SC			StringerR	CalcC	6/20/2007 9:40:44 AM	RICH-RD-0008 REVISION 4
AC			WoodT	6/16/2007 6:57:22		
AC			HarveyK	6/18/2007 7:03:48 PM		
AC			HarveyK	6/19/2007 5:16:10 PM		
AC			DAWKINSO	6/19/2007 6:18:58 PM		
AC			StringerR	6/20/2007 9:40:44		

AC: Accepting Entry; SC: Status Change

STL Richland

Richland Wa.

Grp Rec Cnt: 6

ICOCFractions v4.8.26

STL RICHLAND

6/12/2007 8:03:43 AM

127642, Washington Closure Hanford
Bechtel Hanford, Inc.

AnalyDueDate: 06/21/2007

Sample Preparation/Analysis

Used 5060 [illegible] 6/20

7S Ulso PrpRC5013/RC5019, SepRC5079(5039)
SR Uranium-234,235,238 by Alpha Spec
5I CLIENT: HANFORD

PRIORITY

Balance Id:1120373922

Pipet #: _____

Sep1 DT/Tm Tech:

Sep2 DT/Tm Tech:

Prep Tech: ,WoodT

Batch: 7157429 SOIL pCi/g PM, Quote: SS , 27038

SEQ Batch, Test: None All Tests: 7157424 AXTA, 7157425 88OV, 7157426 6ASO, 7157427 7ISN, 7157429 7SSR, 7157430 5SS3, 7157432 AFS4, 7157433 ATS6, 7157434 CHTH, 7157435 DWEA, 7157452 7ISO,

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 J0EJ7-1-AC J7F060261-1-SAMP 06/04/2007 11:00		1.07g,in AmtRec: 6X125ML,500MLP	UITC17396 05/29/07,pd 01/20/04,r #Containers: 7	200		Scr:	Alpha:	Beta:
2 J0EJ7-1-AU-X J7F060261-1-DUP 06/04/2007 11:00		1.07g,in AmtRec: 6X125ML,500MLP	UITC17397 05/29/07,pd 01/20/04,r #Containers: 7			Scr:	Alpha:	Beta:
3 J0EV3-1-AA-B J7F060000-429-BLK 06/04/2007 11:00		1.00g,in AmtRec:	UITC17398 05/29/07,pd 01/20/04,r #Containers: 1			Scr:	Alpha:	Beta:
4 J0EV3-1-AC-C J7F060000-429-LCS 06/04/2007 11:00		1.00g,in AmtRec:	UISH0500 05/29/07,pd 01/20/04,r #Containers: 1			Scr:	Alpha:	Beta:

Comments: Samples have been muffled, bombed & crashed 6/12/07 JBW

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

J0EJ71AC-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:

J0EV31AA-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:

STL RICHLAND

6/12/2007 8:03:46 AM

Sample Preparation/Analysis

Balance Id:1120373922

7S Uiso PrpRC5013/RC5019, SepRC5079(5039)
SR Uranium-234,235,238 by Alpha Spec
5I CLIENT: HANFORD

PRIORITY

Pipet #: _____

AnalyDueDate: 06/21/2007

Sep1 DT/Tm Tech:

Batch: 7157429 pCi/g

SEQ Batch, Test: None

Sep2 DT/Tm Tech:

Prep Tech: ,WoodT

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:

J0EV31AC-LCS:
U-232 RDL: pCi/g LCL:20 UCL:105 RPD:35 Uranium RDL: pCi/g LCL:70 UCL:130 RPD:35

J0EJ71AC-SAMP Calc Info:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
J0EV31AA-BLK:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
J0EV31AC-LCS:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

Approved By _____ Date: _____

67

6/20/2007 3:25:44 PM

ICOC Fraction Transfer/Status Report

ByDate: 6/20/2006, 6/25/2007, Batch: '7157429', User: *ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting			Comments
7157429						
AC		CalcC	WoodT	6/8/2007 8:38:18 AM		
SC			wagarr	IsBatched	6/6/2007 1:54:31 PM	ICOC_RADCALC v4.8.26
SC			WoodT	InPrep	6/8/2007 8:38:18 AM	RICH-RC-5019 Revision 5
SC			WoodT	Prep1C	6/12/2007 1:35:59 PM	RICH-RC-5019 REVISION 6
SC			HarveyK	Sep2C	6/14/2007 6:15:47 PM	RICH-RC-5039 REV5
SC			DAWKINSO	InCnt1	6/14/2007 7:39:29 PM	RICH-RD-0008 REVISION 4
SC			BlackCL	CalcC	6/15/2007 5:20:27 AM	RICH-RD-0008 REVISION 4
AC			WoodT	6/12/2007 1:35:59 PM		
AC			HarveyK	6/14/2007 6:15:47 PM		
AC			DAWKINSO	6/14/2007 7:39:29 PM		
AC			BlackCL	6/15/2007 5:20:27		

AC: Accepting Entry; SC: Status Change

STL Richland

Richland Wa.

Grp Rec Cnt: 5

ICOCFractions v4.8.26

6/16/2007 6:56:54 AM

Sample Preparation/Analysis

Used BUST KLH 6/20/07

Balance Id:1120373922

127642, Washington Closure Hanford
Bechtel Hanford, Inc.

7I PuAmCm PrpRC5013/RC5019, SepRC5080(5003)/RC5010(5039)
SN Americium-241 and Curium-242,243,244 by Alpha Spec

Pipet #: _____

AnalyDueDate: 06/21/2007

5I CLIENT: HANFORD

PRIORITY

Sep1 DT/Tm Tech:

Batch: 7157427 SOIL pCi/g PM, Quote: SS , 27038

Sep2 DT/Tm Tech:

SEQ Batch, Test: 7157452, 7ISO 7157452, 7ISO All Tests: 7157424 AXTA, 7157425 88OV, 7157426 6ASO, 7157427 7ISN, 7157429 7SSR, 7157430 5SS3, 7157432 AFS4, 7157433 ATS6, 7157434 CHTH, 7157435 DWEA, 7157452 7ISO

Prep Tech: ,WoodT

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 J0EJ7-1-AP J7F060261-1-SAMP 06/04/2007 11:00	AmtRec: 6X125ML,500MLP #Containers: 7	1.03g,in	PATB4377 05/11/07,pd 03/13/07,r	200		Scr:	Alpha:	Beta:
2 J0EJ7-1-AT-X J7F060261-1-DUP 06/04/2007 11:00	AmtRec: 6X125ML,500MLP #Containers: 7	1.02g,in	PATB4382 06/09/07,pd 03/13/07,r			Scr:	Alpha:	Beta:
3 J0EV1-1-AA-B J7F060000-427-BLK 06/04/2007 11:00	AmtRec: #Containers: 1	1.00g,in	PATB4383 06/09/07,pd 03/13/07,r			Scr:	Alpha:	Beta:
4 J0EV1-1-AC-C J7F060000-427-LCS 06/04/2007 11:00	AmtRec: #Containers: 1	1.00g,in	PASI0169 05/10/07,pd 03/13/07,r			Scr:	Alpha:	Beta:
5 J0EV1-1-AD-BX J7F060000-427-MBLK 06/04/2007 11:00	AmtRec: #Containers: 1	1.04g,in	PATB4384 06/09/07,pd 03/13/07,r			Scr:	Alpha:	Beta:
6 J0EV1-1-AE-CM J7F060000-427-MLCS 06/04/2007 11:00	AmtRec: #Containers: 1	1.03g,in	PASI0170 06/09/07,pd 03/13/07,r			Scr:	Alpha:	Beta:

STL RICHLAND

69

STL RICHLAND

6/16/2007 6:57:04 AM

Sample Preparation/Analysis

Balance Id:1120373922

7I PuAmCm PrpRC5013/RC5019, SepRC5080(5003)/RC5010(5039)
SN Americium-241 and Curium-242,243,244 by Alpha Spec
5I CLIENT: HANFORD

Pipet #: _____

AnalyDueDate: 06/21/2007

PRIORITY

Sep1 DT/Tm Tech:

Batch: 7157427 pCi/g
SEQ Batch, Test: None

Sep2 DT/Tm Tech:

Prep Tech: ,WoodT

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 6/16/07 JGW

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

J0EJ71AP-SAMP Constituent List:

Am-241	RDL:1.00E+00	pCi/g	LCL:70	UCL:130	RPD:35	AM-243	RDL:	pCi/g	LCL:20	UCL:105	RPD:35
Cm-242	RDL:1.00E+00	pCi/g	LCL:	UCL:	RPD:	Cm-244	RDL:1.00E+00	pCi/g	LCL:	UCL:	RPD:

J0EV11AA-BLK:

Am-241	RDL:1.00E+00	pCi/g	LCL:	UCL:	RPD:	AM-243	RDL:	pCi/g	LCL:20	UCL:105	RPD:35
Cm-242	RDL:1.00E+00	pCi/g	LCL:	UCL:	RPD:	Cm-244	RDL:1.00E+00	pCi/g	LCL:	UCL:	RPD:

J0EV11AC-LCS:

Am-241	RDL:1	pCi/g	LCL:70	UCL:130	RPD:35	AM-243	RDL:	pCi/g	LCL:20	UCL:105	RPD:35

J0EV11AD-MBLK:

Am-241	RDL:1.00E+00	pCi/g	LCL:	UCL:	RPD:	AM-243	RDL:	pCi/g	LCL:20	UCL:105	RPD:35
Cm-242	RDL:1.00E+00	pCi/g	LCL:	UCL:	RPD:	Cm-244	RDL:1.00E+00	pCi/g	LCL:	UCL:	RPD:

J0EV11AE-MLCS:

Am-241	RDL:1	pCi/g	LCL:70	UCL:130	RPD:35	AM-243	RDL:	pCi/g	LCL:20	UCL:105	RPD:35

J0EJ71AP-SAMP Calc Info:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

J0EV11AA-BLK:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

J0EV11AC-LCS:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

J0EV11AD-MBLK:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

J0EV11AE-MLCS:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

Approved By _____ Date: _____

70

SEVERN TRENT STL

*** RE-ANALYSIS REQUEST ***

DUE DATE 6-21-7

CUSTOMER CLOSURE

ANALYSIS AM

MATRIX SOIL

LOT NUMBER J7F060261

SAMPLE DELIVERY GROUP

OLD BATCH NUMBER 7157427

NEW BATCH NUMBER 7172217

LAB SAMPLE ID	REASON FOR REQUEST & ANALYSIS COMMENTS
1) J0EJ7	LOW YIELD
2)	
3)	
4)	
5)	
6)	
7)	
8)	
9)	
10)	
11)	
12)	
13)	
14)	
15)	
16)	
17)	
18)	
19)	
20)	
LAB QC ID	Assigned with new batch.

STL RICHLAND

6/25/2007 7:19:13 AM

127642, Washington Closure Hanford
Bechtel Hanford, Inc.

AnalyDueDate: 06/21/2007

Sample Preparation/Analysis

7I PuAmCm PrpRC5013/RC5019, ~~SepRC5000(5003)~~/RC5010(5039)
SN Americium-241 and Curium-242,243,244 by Alpha Spec
5I CLIENT: HANFORD

Batch: 7172217 SOIL pCi/g PM, Quote: SS , 27038
SEQ Batch, Test: 7157452, 7ISO 7157452, 7ISO

Balance Id:1120373922
Pipet #:
Sep1 DT/Tm Tech: PRIORITY
Sep2 DT/Tm Tech:
Prep Tech: ,WoodT

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:
37 1 J0EJ7-3-AP J7F060261-1-SAMP 06/04/2007 11:00		1.04g,in AmtRec: 6X125ML,500MLP #Containers: 7	AMTD0072 06/21/07,pd 06/01/01,r	200		Scr:	Alpha:	Beta:
39 2 J1GD5-1-AA-B J7F210000-217-BLK 06/04/2007 11:00		1.00g,in AmtRec: #Containers: 1	AMTD0073 06/21/07,pd 06/01/01,r			Scr:	Alpha:	Beta:
40 3 J1GD5-1-AC-C J7F210000-217-LCS 06/04/2007 11:00		1.00g,in AmtRec: #Containers: 1	AMSJ0240 06/21/07,pd 06/01/01,r			Scr:	Alpha:	Beta:

Comments:

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

J0EJ73AP-SAMP Constituent List:

Am-241	RDL:1.00E+00	pCi/g	LCL:70	UCL:130	RPD:35	AM-243	RDL:	pCi/g	LCL:20	UCL:105	RPD:35
Cm-242	RDL:1.00E+00	pCi/g	LCL:	UCL:	RPD:	Cm-244	RDL:1.00E+00	pCi/g	LCL:	UCL:	RPD:

J1GD51AA-BLK Constituent List:

Am-241	RDL:1.00E+00	pCi/g	LCL:	UCL:	RPD:	AM-243	RDL:	pCi/g	LCL:20	UCL:105	RPD:35
Cm-242	RDL:1.00E+00	pCi/g	LCL:	UCL:	RPD:	Cm-244	RDL:1.00E+00	pCi/g	LCL:	UCL:	RPD:

J1GD51AC-LCS:

Am-241	RDL:1	pCi/g	LCL:70	UCL:130	RPD:35	AM-243	RDL:	pCi/g	LCL:20	UCL:105	RPD:35

J0EJ73AP-SAMP Calc Info:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
J1GD51AA-BLK Calc Info:

72

6/25/2007 7:19:20 AM

Sample Preparation/Analysis

7I PuAmCm PrpRC5013/RC5019, SepRC5080(5003)/RC5010(5039)
SN Americium-241 and Curium-242,243,244 by Alpha Spec
5I CLIENT: HANFORD

Balance Id:1120373922

Pipet #: _____

AnalyDueDate: 06/21/2007

PRIORITY

Sep1 DT/Tm Tech:

Batch: 7172217 pCi/g

Sep2 DT/Tm Tech:

SEQ Batch, Test: None

Prep Tech: WoodT

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:

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

J1GD51AC-LCS:

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

Approved By _____ Date: _____

6/27/2007 10:15:19 AM

ICOC Fraction Transfer/Status Report

ByDate: 6/27/2006, 7/2/2007, Batch: '7172217', User: *ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting			Comments
7172217						
AC		CalcC	WoodT	6/21/2007 10:55:55		
SC			nortonj	IsBatched	6/21/2007 8:21:14 AM	ICOC_RADCALC v4.8.26
SC			WoodT	InPrep	6/21/2007 10:55:55 AM	RICH-RC-5013 Revision 7
SC			WoodT	Prep1C	6/25/2007 7:19:16 AM	RICH-RC-5013 REVISION 7
SC			WoodT	InPrep2	6/25/2007 7:19:47 AM	RICH-RC-5019 REVISION 6
SC			WoodT	Prep2C	6/25/2007 7:20:05 AM	RICH-RC-5019 REVISION 6
SC			HarveyK	InSep1	6/25/2007 2:48:12 PM	RICH-RC-5087 REV1
SC			HarveyK	Sep1C	6/26/2007 8:30:26 AM	RICH-RC-5087 REV1
SC			FABREM	Sep2C	6/26/2007 2:08:16 PM	RICH-RC-5003 REVISION 7
SC			DAWKINSO	InCnt1	6/26/2007 2:19:21 PM	RICH-RD-0008 REVISION 4
SC			DAWKINSO	CalcC	6/27/2007 9:10:13 AM	RICH-RD-0008 REVISION 4
SC			StringerR	CalcC	6/27/2007 9:28:57 AM	RICH-RD-0008 REVISION 4
AC			WoodT	6/25/2007 7:19:16		
AC			WoodT	6/25/2007 7:19:47		
AC			WoodT	6/25/2007 7:20:05		
AC			HarveyK	6/25/2007 2:48:12 PM		
AC			HarveyK	6/26/2007 8:30:26		
AC			FABREM	6/26/2007 2:08:16 PM		
AC			DAWKINSO	6/26/2007 2:19:21 PM		
AC			DAWKINSO	6/27/2007 9:10:13		
AC			StringerR	6/27/2007 9:28:57		

AC: Accepting Entry; SC: Status Change

STL RICHLAND

6/12/2007 4:26:10 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: 06/21/2007

Sep1 DT/Tm Tech: 6/12/07 2:33:19PM

Batch: 7157434 SOIL pCi/g PM, Quote: SS , 27038

SEQ Batch, Test: None

Sep2 DT/Tm Tech:

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 J0EJ7-1-AD J7F060261-1-SAMP 06/04/2007 11:00		6.06g,in AmtRec: 6X125ML,500MLP	SRTA16851 05/01/07,pd 09/11/06,r #Containers: 7	1.5	93.3	50	26C Scr:	1941 Alpha:	6/12/07 DN Beta:	
2 J0EJ7-1-A0-X J7F060261-1-DUP 06/04/2007 11:00		6.07g,in AmtRec: 6X125ML,500MLP	SRTA16875 05/10/07,pd 09/11/06,r #Containers: 7	1.5	98	50	26D Scr:	Alpha:	Beta:	
3 J0EWF-1-AA-B J7F060000-434-BLK 06/04/2007 11:00		6.00g,in AmtRec:	SRTA16887 05/31/07,pd 05/22/07,r #Containers: 1	1.5	81.2	50	27A Scr:	Alpha:	Beta:	
4 J0EWF-1-AC-C J7F060000-434-LCS 06/04/2007 11:00		6.00g,in AmtRec:	STSB1214 04/25/07,pd 09/11/06,r #Containers: 1	1.5	85.7	50	27B Scr:	Alpha:	Beta:	

Comments:

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

J0EJ71AD-SAMP Constituent List:

Sr-90	RDL:1	pCi/g	LCL:70	UCL:130	RPD:35
J0EWF1AA-BLK:					
Sr-90	RDL:1	pCi/g	LCL:	UCL:	RPD:
J0EWF1AC-LCS:					
Sr-90	RDL:1	pCi/g	LCL:70	UCL:130	RPD:35

J0EJ71AD-SAMP Calc Info:

6/12/2007 4:26:11 PM

Sample Preparation/Analysis

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

Balance Id:1120373922
Pipet #:
Sep1 DT/Tm Tech:
Sep2 DT/Tm Tech:
Prep Tech: ,WoodT

AnalyDueDate: 06/21/2007

Batch: 7157434 pCi/g
SEQ Batch, Test: None

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
J0EWF1AA-BLK:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
J0EWF1AC-LCS:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

Approved By _____ Date: _____

6/20/2007 3:28:22 PM

ICOC Fraction Transfer/Status Report

ByDate: 6/20/2006, 6/25/2007, Batch: '7157434', User: *ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting			Comments
7157434						
AC		CalcC	WoodT	6/7/2007 10:49:11		
SC			wagarr	IsBatched	6/6/2007 1:54:31 PM	ICOC_RADCALC v4.8.26
SC			WoodT	InPrep	6/7/2007 10:49:11 AM	RICH-RC-5013 REVISION 5
SC			ManisD	InSep1	6/9/2007 2:14:37 PM	RICH-RC-5006 REVISION 7
SC			WoodT	Prep1C	6/9/2007 2:14:47 PM	RICH-RC-5013 REVISION 5
SC			ManisD	Sep1C	6/12/2007 4:28:26 PM	RICH-RC-5006 REVISION 7
SC			DAWKINSO	InCnt1	6/12/2007 5:12:21 PM	RICH-RD-0003 REVISION 5
SC			DAWKINSO	CalcC	6/12/2007 9:21:58 PM	RICH-RD-0003 REVISION 5
AC			ManisD	6/9/2007 2:14:37 PM		
AC			WoodT	6/9/2007 2:14:47 PM		
AC			ManisD	6/12/2007 4:28:26 PM		
AC			DAWKINSO	6/12/2007 5:12:21 PM		
AC			DAWKINSO	6/12/2007 9:21:58 PM		

AC: Accepting Entry; SC: Status Change

STL Richland

Richland Wa.

Grp Rec Cnt:6

ICOCFractions v4.8.26

STL RICHLAND

6/13/2007 11:33:13 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

Pipet #: _____

AnalyDueDate: 06/21/2007

Sep1 DT/Tm Tech:

Batch: 7157424 SOIL pCi/g PM, Quote: SS , 27038

Sep2 DT/Tm Tech:

SEQ Batch, Test: None

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 J0EJ7-1-AN J7F060261-1-SAMP 06/04/2007 11:00		802.80g,in AmtRec: 6X125ML,500MLP #Containers: 7			SMA	200	G6	1520	6/13/07	
							Scr:	Alpha:	Beta:	
2 J0EJ7-1-AQ-X J7F060261-1-DUP 06/04/2007 11:00	* See note in comment section	6/13/07 JSW AmtRec: 6X125ML,500MLP #Containers: 7					G7	1848	6/13/07	
							Scr:	Alpha:	Beta:	
3 J0EVK-1-AA-B J7F060000-424-BLK 06/04/2007 11:00		859.27g,in AmtRec: #Containers: 1	CAL827		SMA		G8	1521	6/13/07	
							Scr:	Alpha:	Beta:	
4 J0EVK-1-AC-C J7F060000-424-LCS 06/04/2007 11:00		~~457.79g,in~~ 6/13/07 45799 AmtRec: #Containers: 1	~~CAL827~~ CAL876		MA		G7	1521		
							Scr:	Alpha:	Beta:	

Comments: Not enough sample for dup. Please, recount sample on a seperate detector. 6/13/07 JSW

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

J0EJ71AN-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:

J0EVK1AA-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

6/13/2007 11:33:17 AM

Sample Preparation/Analysis

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

Balance Id:1120421763

Pipet #: _____

AnalyDueDate: 06/21/2007

Sep1 DT/Tm Tech:

Batch: 7157424 pCi/g

Sep2 DT/Tm Tech:

SEQ Batch, Test: None

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:

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

J0EVK1AC-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
J0EJ71AN-SAMP Calc Info:
    Uncert Level (#s).: 2    Decay to SaDt: Y    Blk Subt.: N    Sci.Not.: Y    ODRs: B
J0EVK1AA-BLK:
    Uncert Level (#s).: 2    Decay to SaDt: Y    Blk Subt.: N    Sci.Not.: Y    ODRs: B
J0EVK1AC-LCS:
    Uncert Level (#s).: 2    Decay to SaDt: Y    Blk Subt.: N    Sci.Not.: Y    ODRs: B
```

Approved By _____ Date: _____

6/20/2007 3:25:21 PM

ICOC Fraction Transfer/Status Report

ByDate: 6/20/2006, 6/25/2007, Batch: '7157424', User: *ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting			Comments
7157424						
AC		CalcC	WoodT	6/13/2007 11:04:26		
SC			wagarr	IsBatched	6/6/2007 1:54:31 PM	ICOC_RADCALC v4.8.26
SC			WoodT	InPrep	6/13/2007 11:04:26 AM	RICH-RC-5013 Revision 5
SC			WoodT	Prep1C	6/13/2007 11:11:08 AM	RICH-RC-5013 REVISION 5
SC			BlackCL	InCnt1	6/13/2007 11:58:29 AM	RICH-RD-0007 REVISION 6
SC			StringerR	CalcC	6/13/2007 7:20:48 PM	RICH-RD-0007 REVISION 6
AC			WoodT	6/13/2007 11:11:08		
AC			BlackCL	6/13/2007 11:58:29		
AC			StringerR	6/13/2007 7:20:48 PM		

AC: Accepting Entry, SC: Status Change

STL Richland

Richland Wa.

Grp Rec Cnt:4

ICOCFractions v4.8.26

STL RICHLAND

6/6/2007 1:53:16 PM

Sample Preparation/Analysis

127642, Washington Closure Hanford
Bechtel Hanford, Inc.

5S C-14 Prp/SepRC5022
S3 Carbon-14 by Liquid Scint
5I CLIENT: HANFORD

PRIORITY

Balance Id: 12430
Pipet #:
Sep1 DT/Tm Tech: 6-12-07 bm
Sep2 DT/Tm Tech:
Prep Tech:

AnalyDueDate: 06/21/2007 J0413

Batch: 7157430 SOIL pCi/g PM, Quote: SS , 27038
SEQ Batch, Test: None

Work Order, Lot, Sample DateTime	Total Amt/Unit	Initial Aliquot Amt/Unit	QC Tracer Prep Date	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:
1 J0EJ7-1-AK J7F060261-1-SAMP 06/04/2007 11:00	AmtRec: 6X125ML,500MLP	#Containers: 7				Scr:	Alpha:	Beta:-
2 J0EJ7-1-AV-X J7F060261-1-DUP 06/04/2007 11:00	AmtRec: 6X125ML,500MLP	#Containers: 7				Scr:	Alpha:	Beta:
3 J0EV4-1-AA-B J7F060000-430-BLK 06/04/2007 11:00	AmtRec:	#Containers: 1				Scr:	Alpha:	Beta:
4 J0EV4-1-AC-C J7F060000-430-LCS 06/04/2007 11:00	AmtRec:	#Containers: 1				Scr:	Alpha:	Beta:
5 J0EV4-1-AD-BN J7F060000-430-IBLK 06/04/2007 11:00	AmtRec:	#Containers: 1				Scr:	Alpha:	Beta:

Comments:

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

J0EJ71AK-SAMP Constituent List:
C-14 RDL:50 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 ICOC v4.8.26

81

STL RICHLAND

6/6/2007 1:53:17 PM

Sample Preparation/Analysis

5S C-14 Prp/SepRC5022
S3 Carbon-14 by Liquid Scint
5I CLIENT: HANFORD

PRIORITY

Balance Id: 12430
Pipet #:
Sep1 DT/Tm Tech: 6-12-07 2am
Sep2 DT/Tm Tech:
Prep Tech:

AnalyDueDate: 06/21/2007

Batch: 7157430 pCi/g

SEQ Batch, Test: None

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

```
J0EV41AA-BLK:
  C-14        RDL:50        pCi/g    LCL:      UCL:      RPD:
J0EV41AC-LCS:
  C-14        RDL:50        pCi/g    LCL:70    UCL:130   RPD:35
J0EV41AD-IBLK:
  C-14        RDL:50        pCi/g    LCL:      UCL:      RPD:
J0EJ71AK-SAMP Calc Info:
     Uncert Level (#s).: 2    Decay to SaDt: Y    Blk Subt.: N    Sci.Not.: Y    ODRs: B
J0EV41AA-BLK:
     Uncert Level (#s).: 2    Decay to SaDt: Y    Blk Subt.: N    Sci.Not.: Y    ODRs: B
J0EV41AC-LCS:
     Uncert Level (#s).: 2    Decay to SaDt: Y    Blk Subt.: N    Sci.Not.: Y    ODRs: B
J0EV41AD-IBLK:
     Uncert Level (#s).: 2    Decay to SaDt: Y    Blk Subt.: N    Sci.Not.: Y    ODRs: B
```

Approved By _____ Date: _____

82

6/14/2007 1:43:42 PM

ICOC Fraction Transfer/Status Report

ByDate: 6/14/2006, 6/19/2007, Batch: '7157430', User: *ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting			Comments
7157430						
AC		CalcC	McDowellD	6/12/2007 2:42:19 PM		
SC			wagarr	IsBatched	6/6/2007 1:54:31 PM	ICOC_RADCALC v4.8.26
SC			McDowellD	Sep1C	6/12/2007 2:42:19 PM	RICH-RC-5022 REVISION 3
SC			DAWKINSO	InCnt1	6/12/2007 2:53:20 PM	RICH-RD-0001 REVISION 4
SC			StringerR	CalcC	6/13/2007 2:50:27 PM	RICH-RD-0001 REVISION 4
AC			DAWKINSO	6/12/2007 2:53:20 PM		
AC			StringerR	6/13/2007 2:50:27 PM		

AC: Accepting Entry; SC: Status Change

STL Richland

Richland Wa.

Grp Rec Cnt: 3

ICOCFractions v4.8.26

STL RICHLAND

6/14/2007 11:32:27 AM

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 #: _____

Sep1 DT/Tm Tech:

AnalyDueDate: 06/21/2007

Batch: 7157432 SOIL pCi/g PM, Quote: SS , 27038

Sep2 DT/Tm Tech:

SEQ Batch, Test: None

Prep Tech: ,WoodT

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 J0EJ7-1-AE J7F060261-1-SAMP 06/04/2007 11:00		AmtRec: 6X125ML,500MLP	0.25g,in	0.25g #Containers: 7	NITA2413 05/23/07	100	Scr:	Alpha:	Beta:	
2 J0EJ7-1-AW-X J7F060261-1-DUP 06/04/2007 11:00		AmtRec: 6X125ML,500MLP	0.25g,in	0.25g #Containers: 7	NITA2414 05/31/07		Scr:	Alpha:	Beta:	
3 J0EV7-1-AA-B J7F060000-432-BLK 06/04/2007 11:00		AmtRec:	0.25g,in	0.25g #Containers: 1	NITA2415 05/31/07		Scr:	Alpha:	Beta:	
4 J0EV7-1-AC-C J7F060000-432-LCS 06/04/2007 11:00		AmtRec:	0.26g,in	0.26g #Containers: 1	NISA0758 05/31/07		Scr:	Alpha:	Beta:	
5 J0EV7-1-AD-BN J7F060000-432-IBLK 06/04/2007 11:00		AmtRec:		#Containers: 1			Scr:	Alpha:	Beta:	

Comments:

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

J0EJ71AE-SAMP Constituent List:
Ni-63 RDL:30 pCi/g LCL:70 UCL:130 RPD:35

84

STL RICHLAND

6/14/2007 11:32:31 AM

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 #:
Sep1 DT/Tm Tech:
Sep2 DT/Tm Tech:
Prep Tech:

AnalyDueDate: 06/21/2007

Batch: 7157432 pCi/g
SEQ Batch, Test: None

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:

```
J0EV71AA-BLK:
  Ni-63        RDL:30          pCi/g     LCL:        UCL:        RPD:
J0EV71AC-LCS:
  Ni-63        RDL:30          pCi/g     LCL:70      UCL:130     RPD:35
J0EV71AD-IBLK:
  Ni-63        RDL:30          pCi/g     LCL:        UCL:        RPD:
J0EJ71AE-SAMP Calc Info:
     Uncert Level (#s).: 2     Decay to SaDt: Y     Blk Subt.: N     Sci.Not.: Y     ODRs: B
J0EV71AA-BLK:
     Uncert Level (#s).: 2     Decay to SaDt: Y     Blk Subt.: N     Sci.Not.: Y     ODRs: B
J0EV71AC-LCS:
     Uncert Level (#s).: 2     Decay to SaDt: Y     Blk Subt.: N     Sci.Not.: Y     ODRs: B
J0EV71AD-IBLK:
     Uncert Level (#s).: 2     Decay to SaDt: Y     Blk Subt.: N     Sci.Not.: Y     ODRs: B
```

Approved By _____ Date: _____

85

6/21/2007 3:59:22 PM

ICOC Fraction Transfer/Status Report

ByDate: 6/21/2006, 6/26/2007, Batch: '7157432', User: *ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting			Comments
7157432						
AC		CalcC	WoodT	6/8/2007 6:26:09 AM		
SC			wagarr	IsBatched	6/6/2007 1:54:31 PM	ICOC_RADCALC v4.8.26
SC			WoodT	InPrep	6/8/2007 6:26:09 AM	RICH-RC-5019 Revision 5
SC			WoodT	Prep1C	6/12/2007 10:26:51 AM	RICH-RC-5019 REVISION 6
SC			FABREM	Sep1C	6/14/2007 12:59:54 PM	RICH-RC-5069 REVISION 5
SC			BlackCL	CalcC	6/20/2007 6:51:32 AM	RICH-RD-0001 REVISION 4
AC			WoodT	6/12/2007 10:26:51		
AC			FABREM	6/14/2007 12:59:54		
AC			BlackCL	6/20/2007 6:51:32		

AC: Accepting Entry; SC: Status Change

STL Richland

Richland Wa.

Grp Rec Cnt: 4

ICOCFractions v4.8.26

STL RICHLAND

6/6/2007 1:53:18 PM

127642, Washington Closure Hanford
Bechtel Hanford, Inc.

AnalyDueDate: 06/21/2007 J00113

Sample Preparation/Analysis

AT H-3 Prp/SepRC5037
S6 Tritium by Liquid Scint
5I CLIENT: HANFORD

PRIORITY

Balance Id: 12445
Pipet #:
Sep1 DT/Tm Tech: 6-11-07
Sep2 DT/Tm Tech:
Prep Tech:

Batch: 7157433 SOIL pCi/g PM. Quote: SS , 27038
SEQ Batch, Test: None

Work Order, Lot, Sample DateTime	Total Amt/Unit	Initial Aliquot Amt/Unit	QC Tracer Prep Date	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:
1 J0EJ7-1-AJ J7F060261-1-SAMP 06/04/2007 11:00	AmtRec: 6X125ML,500MLP	#Containers: 7				Scr:	Alpha:	Beta:-
2 J0EJ7-1-AX-X J7F060261-1-DUP 06/04/2007 11:00	AmtRec: 6X125ML,500MLP	#Containers: 7				Scr:	Alpha:	Beta:
3 J0EWC-1-AA-B J7F060000-433-BLK 06/04/2007 11:00	AmtRec:	#Containers: 1				Scr:	Alpha:	Beta:
4 J0EWC-1-AC-C J7F060000-433-LCS 06/04/2007 11:00	AmtRec:	#Containers: 1				Scr:	Alpha:	Beta:
5 J0EWC-1-AD-BN J7F060000-433-IBLK 06/04/2007 11:00	AmtRec:	#Containers: 1				Scr:	Alpha:	Beta:

Comments:

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

J0EJ71AJ-SAMP Constituent List:
H-3 RDL:400 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 ICOC v4.8.26

87

STL RICHLAND

6/6/2007 1:53:19 PM

Sample Preparation/Analysis

AT H-3 Prp/SepRC5037
S6 Tritium by Liquid Scint
5I CLIENT: HANFORD

PRIORITY

Balance Id: 12445
Pipet #:
Sep1 DT/Tm Tech: 6-4-07 bm
Sep2 DT/Tm Tech:
Prep Tech:

AnalyDueDate: 06/21/2007

Batch: 7157433 pCi/g
SEQ Batch, Test: None

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

```
J0EWC1AA-BLK:
  H-3        RDL:400      pCi/g    LCL:      UCL:      RPD:
J0EWC1AC-LCS:
  H-3        RDL:400      pCi/g    LCL:70    UCL:130   RPD:35
J0EWC1AD-IBLK:
  H-3        RDL:400      pCi/g    LCL:      UCL:      RPD:
J0EJ71AJ-SAMP Calc Info:
     Uncert Level (#s).: 2    Decay to SaDt: Y    Blk Subt.: N    Sci.Not.: Y    ODRs: B
J0EWC1AA-BLK:
     Uncert Level (#s).: 2    Decay to SaDt: Y    Blk Subt.: N    Sci.Not.: Y    ODRs: B
J0EWC1AC-LCS:
     Uncert Level (#s).: 2    Decay to SaDt: Y    Blk Subt.: N    Sci.Not.: Y    ODRs: B
J0EWC1AD-IBLK:
     Uncert Level (#s).: 2    Decay to SaDt: Y    Blk Subt.: N    Sci.Not.: Y    ODRs: B
```

Approved By _____ Date: _____

88

6/14/2007 1:44:52 PM

ICOC Fraction Transfer/Status Report

ByDate: 6/14/2006, 6/19/2007, Batch: '7157433', User: *ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting			Comments
7157433						
AC		CalcC	McDowellD	6/12/2007 2:42:07 PM		
SC			wagarr	IsBatched	6/6/2007 1:54:31 PM	ICOC_RADCALC v4.8.26
SC			McDowellD	Sep1C	6/12/2007 2:42:07 PM	RICH-RC-5037 REVISION 3
SC			DAWKINSO	InCnt1	6/12/2007 2:53:24 PM	RICH-RD-0001 REVISION 4
SC			BlackCL	CalcC	6/13/2007 10:11:46 AM	RICH-RD-0001 REVISION 4
AC			DAWKINSO	6/12/2007 2:53:24 PM		
AC			BlackCL	6/13/2007 10:11:46		

AC: Accepting Entry; SC: Status Change

STL Richland

Richland Wa.

Grp Rec Cnt: 3

ICOCFractions v4.8.26

6/6/2007 1:53:20 PM

Sample Preparation/Analysis

127642, Washington Closure Hanford
Bechtel Hanford, Inc.

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

PRIORITY

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

AnalyDueDate: 06/21/2007 J0013

Batch: 7157435 SOIL mg/kg
SEQ Batch, Test: None

PM, Quote: SS , 27038

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 J0EJ7-1-AA J7F060261-1-SAMP 06/04/2007 11:00	AmtRec: 6X125ML,500MLP	#Containers: 7	2.5233		2.5070		2.5066	Scr:	Alpha:	Beta:
2 J0EJ7-1-A1-S J7F060261-1-MS 06/04/2007 11:00	AmtRec: 6X125ML,500MLP	#Containers: 7	2.5124		2.5314		2.5283	Scr:	Alpha:	Beta:
3 J0EJ7-1-A2-X J7F060261-1-DUP 06/04/2007 11:00	AmtRec: 6X125ML,500MLP	#Containers: 7	~~2.5550~~ 2.5250 GE 6/20/07		2.5085		2.5132	Scr:	Alpha:	Beta:
4 J0EJ7-1-A3-S J7F060261-1-MS 06/04/2007 11:00	AmtRec: 6X125ML,500MLP	#Containers: 7	2.5550	11.8 PbCr	2.5424 (16.6mg) PbCrO4		2.5058 (12.3mg)	Scr:	Alpha:	Beta:
5 J0EWK-1-AA-B J7F060000-435-BLK 06/04/2007 11:00	AmtRec:	#Containers: 1						Scr:	Alpha:	Beta:
6 J0EWK-1-AC-C J7F060000-435-LCS 06/04/2007 11:00	AmtRec:	#Containers: 1						Scr:	Alpha:	Beta:

STL RICHLAND

90

6/6/2007 1:53:22 PM

Sample Preparation/Analysis

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

PRIORITY

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

AnalyDueDate: 06/21/2007

Batch: 7157435 mg/kg
SEQ Batch, Test: None

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:

Comments: 7.5883 (wet) 1.0047 (dish)
7.4856 (Dry) -0.1027
0.1027 0.8020

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

J0EJ71AA-SAMP Constituent List:
HEXCHROME RDL:0.35 mg/kg LCL:80 UCL:120 RPD:20
J0EJ71A1-MS Constituent List:
HEXCHROME RDL:0.35 mg/kg LCL:75 UCL:125 RPD:20
J0EJ71A3-MS:
HEXCHROME RDL:0.35 mg/kg LCL:75 UCL:125 RPD:20
J0EWK1AA-BLK:
HEXCHROME RDL:0.35 mg/kg LCL: UCL: RPD:
J0EWK1AC-LCS:
HEXCHROME RDL:0.35 mg/kg LCL:80 UCL:120 RPD:20

J0EJ71AA-SAMP Calc Info:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
J0EJ71A1-MS Calc Info:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
J0EJ71A3-MS:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
J0EWK1AA-BLK:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
J0EWK1AC-LCS:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

Approved By _____ Date: _____

STL RICHLAND

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 #: F7F070310
SDG #: J00113

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 22, 2007

Case Narrative
Lot Number: F7F070310
SDG: J00113

This report contains the analytical results for the sample received under chain of custody by STL St. Louis on June 7, 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.

PCBs by SW846 8082

CCVs PCAL112, 123, and 143 recovered low for surrogate DCB. All samples associated with these CCVs recovered DCB within method acceptance criteria. This excursion does not have an adverse affect on the data.
Affected Samples:
F7F070310 (1): J15521

ICP Metals by SW846 6010B

The LCS recovery for Beryllium is outside the upper QC limit, indicating a potential positive bias for that analyte. This analyte was not observed above the reporting limit in the associated samples; therefore the sample data was not adversely affected by this excursion.

The MS and/or MSD recoveries for Aluminum, Iron and Manganese are outside the established QC limits. The 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 Silicon, Chromium, Molybdenum and Antimony 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.
Affected Samples:
F7F070310 (1): J15521

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

Mercury by SW846 7471A

METHODS SUMMARY

F7F070310

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
PCBs by SW-846 8082	SW846 8082	SW846 3550B/366
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

F7F070310

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
J0H32	001	J15521	06/04/07	11:00

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.

J00113

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		RC-032-118	Page 1 of 1
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-8:4 FSB Verification/Deep Zone		SAF No.: RC-032	
Ice Chest No.: AFS-04-057	Field Logbook No.: EFL-1174-2	COA: R118F82000	Method of Shipment: FED EX	
Shipped To: Severn Trent Incorporated, ~~Richland~~ St. Louis JRD 6-4-07	Offsite Property No.: A070307		Bill of Lading/Air Bill No.: See OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS
NA

Special Handling and/or Storage
NA

Preservation	None	Cool 4C	Cool 4C	None	None	None	None	None	None	
Type of Container	P	P	aG	P	P	P	P	P	P	
No. of Container(s)	1	1	1	1	1	1	1	1	1	
Volume	125mL	125mL	60mL	500mL	125mL	125mL	125mL	125mL	125mL	
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Chromium Hex - 7196 6-4-07	PCBs - 8082	See item (2) in Special Instructions.	Carbon-14; Tritium - H3	Nickel-63; Strontium-89,90 – Total Sr 6-4-07	Isotopic Plutonium	Isotopic Uranium	Americium-241/Curium-244 (Americium-241, Curium-244)	

Sample No.	Matrix *	Sample Date	Sample Time										
J15521	SOIL	6-4-07	1100	X	JT	X		JT					

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

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
JRDeBuigne JRD	1515 6-4-07	3728/3A	6-4-07 1515
3728/3A	6-6-07 0900	KMSingleton	6-6-07 0900
KMSingleton	WCH 6-6-07 1500	FED EX	
		[illegible]	6/7/07 0910

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} Ba-133

Sampler unavailable to relinquish samples from 3728 Ref # 3A. 3728 Custodian removed samples for shipping on 6/6/07

Matrix *
S=Soil
SB=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

STL ST. LOUIS

SDG# J00113

5 of 24

STL ST. LOUIS

STL

Lot #(s): FTF070310
- 1586 -

Condition Upon Receipt Form

Client: Washington Closure COC/RFA No: RC-032-118 Date: 6/7/07
Quote No: J 71497 Initiated By: BD Time: 0910

Shipping Information

Shipper Name: FE

Multiple Packages Y (N)

Shipping # (s):*
1. 7913 1570 2132
2.
3.
4.
5.
6.
7.
8.
9.
10.

Sample Temperature (s):**
1. 2
2.
3.
4.
5.
6.
7.
8.
9.
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: 6-8-07

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.

PCBs

Washington Closure Hanford

Client Sample ID: J15521

GC Semivolatiles

Lot-Sample #...: F7F070310-001 **Work Order #...:** J0H321A7 **Matrix.....:** SOLID
Date Sampled...: 06/04/07 **Date Received..:** 06/07/07
Prep Date.....: 06/18/07 **Analysis Date..:** 06/20/07
Prep Batch #...: 7169259
Dilution Factor: 1
% Moisture.....: 2.3 **Method.....:** SW846 8082

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Aroclor 1016	ND	17	ug/kg	6.1
Aroclor 1221	ND	17	ug/kg	6.1
Aroclor 1232	ND	17	ug/kg	6.1
Aroclor 1242	ND	17	ug/kg	6.1
Aroclor 1248	ND	17	ug/kg	6.1
Aroclor 1254	ND	17	ug/kg	6.7
Aroclor 1260	ND	17	ug/kg	6.7

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Decachlorobiphenyl	90	(37 - 150)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

METHOD BLANK REPORT

GC Semivolatiles

Client Lot #...: F7F070310 **Work Order #...:** J08LF1AA **Matrix.....:** SOLID
MB Lot-Sample #: F7F180000-259

Prep Date.....: 06/18/07
Analysis Date..: 06/20/07 **Prep Batch #...:** 7169259
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Aroclor 1016	ND	16	ug/kg	SW846 8082
Aroclor 1221	ND	16	ug/kg	SW846 8082
Aroclor 1232	ND	16	ug/kg	SW846 8082
Aroclor 1242	ND	16	ug/kg	SW846 8082
Aroclor 1248	ND	16	ug/kg	SW846 8082
Aroclor 1254	ND	16	ug/kg	SW846 8082
Aroclor 1260	ND	16	ug/kg	SW846 8082

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Decachlorobiphenyl	74	(37 - 150)

NOTE(S):

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

LABORATORY CONTROL SAMPLE DATA REPORT

GC Semivolatiles

Client Lot #...: F7F070310 **Work Order #...:** J08LF1AC **Matrix.....:** SOLID
LCS Lot-Sample#: F7F180000-259
Prep Date.....: 06/18/07 **Analysis Date..:** 06/20/07
Prep Batch #...: 7169259
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
Aroclor 1016	**167**	**145**	**ug/kg**	**87**	**SW846 8082**
Aroclor 1260	**167**	**138**	**ug/kg**	**83**	**SW846 8082**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Decachlorobiphenyl	79	(70 - 130)

NOTE(S):

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

Bold print denotes control parameters

MATRIX SPIKE SAMPLE DATA REPORT

GC Semivolatiles

Client Lot #...: F7F070310 **Work Order #...:** J0H321CP-MS **Matrix.....:** SOLID
MS Lot-Sample #: F7F070310-001 J0H321CQ-MSD
Date Sampled...: 06/04/07 **Date Received..:** 06/07/07
Prep Date.....: 06/18/07 **Analysis Date..:** 06/20/07
Prep Batch #...: 7169259
Dilution Factor: 1 **% Moisture.....:** 2.3

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
Aroclor 1016	**ND**	**170**	**159**	**ug/kg**	**94**		**SW846 8082**
	ND	**170**	**161**	**ug/kg**	**95**	**1.1**	**SW846 8082**
Aroclor 1260	**ND**	**170**	**153**	**ug/kg**	**90**		**SW846 8082**
	ND	**170**	**155**	**ug/kg**	**91**	**1.5**	**SW846 8082**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Decachlorobiphenyl	85	(37 - 150)
	86	(37 - 150)

NOTE(S):

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

Bold print denotes control parameters

Results and reporting limits have been adjusted for dry weight.

METALS

Washington Closure Hanford

Client Sample ID: J15521

TOTAL Metals

Lot-Sample #...: F7F070310-001 **Matrix.....:** SOLID
Date Sampled...: 06/04/07 **Date Received..:** 06/07/07
% Moisture.....: 2.3

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 7159038						
Silver	ND	1.0	mg/kg	SW846 6010B	06/08-06/13/07	J0H321A1
		Dilution Factor: 1		MDL.....: 0.37		
Aluminum	**5650 N**	**20.5**	**mg/kg**	**SW846 6010B**	**06/08-06/13/07**	**J0H321AD**
		Dilution Factor: 1		MDL.....: 5.2		
Arsenic	**2.4**	**1.0**	**mg/kg**	**SW846 6010B**	**06/08-06/13/07**	**J0H321AF**
		Dilution Factor: 1		MDL.....: 0.24		
Barium	**45.0**	**5.1**	**mg/kg**	**SW846 6010B**	**06/08-06/13/07**	**J0H321AG**
		Dilution Factor: 1		MDL.....: 0.24		
Beryllium	**0.20 B**	**0.51**	**mg/kg**	**SW846 6010B**	**06/08-06/13/07**	**J0H321AH**
		Dilution Factor: 1		MDL.....: 0.072		
Boron	ND	10.2	mg/kg	SW846 6010B	06/08-06/13/07	J0H321AJ
		Dilution Factor: 1		MDL.....: 1.5		
Calcium	**7490 C**	**256**	**mg/kg**	**SW846 6010B**	**06/08-06/13/07**	**J0H321AL**
		Dilution Factor: 1		MDL.....: 8.7		
Cadmium	ND	0.51	mg/kg	SW846 6010B	06/08-06/13/07	J0H321AK
		Dilution Factor: 1		MDL.....: 0.063		
Cobalt	**6.1**	**5.1**	**mg/kg**	**SW846 6010B**	**06/08-06/13/07**	**J0H321AM**
		Dilution Factor: 1		MDL.....: 0.24		
Chromium	**12.3 N**	**1.0**	**mg/kg**	**SW846 6010B**	**06/08-06/13/07**	**J0H321A5**
		Dilution Factor: 1		MDL.....: 0.23		
Copper	**10 C**	**2.6**	**mg/kg**	**SW846 6010B**	**06/08-06/13/07**	**J0H321AN**
		Dilution Factor: 1		MDL.....: 0.16		
Iron	**13200 N**	**10.2**	**mg/kg**	**SW846 6010B**	**06/08-06/13/07**	**J0H321AP**
		Dilution Factor: 1		MDL.....: 3.8		
Potassium	**735**	**512**	**mg/kg**	**SW846 6010B**	**06/08-06/13/07**	**J0H321AW**
		Dilution Factor: 1		MDL.....: 93.7		
Magnesium	**4700**	**102**	**mg/kg**	**SW846 6010B**	**06/08-06/13/07**	**J0H321AR**
		Dilution Factor: 1		MDL.....: 9.2		

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Washington Closure Hanford

Client Sample ID: J15521

TOTAL Metals

Lot-Sample #...: F7F070310-001 **Matrix.....:** SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**244 N**	**1.0**	**mg/kg**	**SW846 6010B**	**06/08-06/13/07**	**J0H321AT**
		Dilution Factor: 1		MDL.....: 0.22		
Molybdenum	ND B,N	4.1	mg/kg	SW846 6010B	06/08-06/13/07	J0H321AU
		Dilution Factor: 1		MDL.....: 0.91		
Sodium	**152**	**102**	**mg/kg**	**SW846 6010B**	**06/08-06/13/07**	**J0H321A2**
		Dilution Factor: 1		MDL.....: 5.9		
Nickel	**11.5**	**4.1**	**mg/kg**	**SW846 6010B**	**06/08-06/13/07**	**J0H321AV**
		Dilution Factor: 1		MDL.....: 1.2		
Lead	**3.8**	**1.0**	**mg/kg**	**SW846 6010B**	**06/08-06/13/07**	**J0H321AQ**
		Dilution Factor: 1		MDL.....: 0.099		
Antimony	ND N	1.0	mg/kg	SW846 6010B	06/08-06/13/07	J0H321AE
		Dilution Factor: 1		MDL.....: 0.52		
Selenium	ND	1.5	mg/kg	SW846 6010B	06/08-06/13/07	J0H321AX
		Dilution Factor: 1		MDL.....: 0.45		
Silicon	**500 C,N**	**40.9**	**mg/kg**	**SW846 6010B**	**06/08-06/13/07**	**J0H321A0**
		Dilution Factor: 1		MDL.....: 4.1		
Vanadium	**32.0**	**1.0**	**mg/kg**	**SW846 6010B**	**06/08-06/13/07**	**J0H321A3**
		Dilution Factor: 1		MDL.....: 0.55		
Zinc	**27.0 C**	**5.1**	**mg/kg**	**SW846 6010B**	**06/08-06/13/07**	**J0H321A4**
		Dilution Factor: 1		MDL.....: 1.4		
Prep Batch #...: 7166107						
Mercury	**0.015 B**	**0.034**	**mg/kg**	**SW846 7471A**	**06/18/07**	**J0H321A6**
		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.

N Spiked analyte recovery is outside stated control limits.

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F7F070310 **Matrix.....:** SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: F7F080000-038 **Prep Batch #...:** 7159038						
Aluminum	ND	20.0	mg/kg	SW846 6010B	06/08-06/13/07	J0J6W1AA
		Dilution Factor: 1				
Antimony	ND	1.0	mg/kg	SW846 6010B	06/08-06/13/07	J0J6W1AC
		Dilution Factor: 1				
Arsenic	ND	1.0	mg/kg	SW846 6010B	06/08-06/13/07	J0J6W1AD
		Dilution Factor: 1				
Barium	ND	5.0	mg/kg	SW846 6010B	06/08-06/13/07	J0J6W1AE
		Dilution Factor: 1				
Beryllium	ND	0.50	mg/kg	SW846 6010B	06/08-06/13/07	J0J6W1AF
		Dilution Factor: 1				
Boron	**1.5 B**	**10.0**	**mg/kg**	**SW846 6010B**	**06/08-06/13/07**	**J0J6W1AG**
		Dilution Factor: 1				
Cadmium	ND	0.50	mg/kg	SW846 6010B	06/08-06/13/07	J0J6W1AH
		Dilution Factor: 1				
Calcium	**11.0 B**	**250**	**mg/kg**	**SW846 6010B**	**06/08-06/13/07**	**J0J6W1AJ**
		Dilution Factor: 1				
Chromium	ND	1.0	mg/kg	SW846 6010B	06/08-06/13/07	J0J6W1A3
		Dilution Factor: 1				
Cobalt	ND	5.0	mg/kg	SW846 6010B	06/08-06/13/07	J0J6W1AK
		Dilution Factor: 1				
Copper	**0.36 B**	**2.5**	**mg/kg**	**SW846 6010B**	**06/08-06/13/07**	**J0J6W1AL**
		Dilution Factor: 1				
Iron	ND	10.0	mg/kg	SW846 6010B	06/08-06/13/07	J0J6W1AM
		Dilution Factor: 1				
Lead	ND	1.0	mg/kg	SW846 6010B	06/08-06/13/07	J0J6W1AN
		Dilution Factor: 1				
Magnesium	ND	100	mg/kg	SW846 6010B	06/08-06/13/07	J0J6W1AP
		Dilution Factor: 1				
Manganese	ND	1.0	mg/kg	SW846 6010B	06/08-06/13/07	J0J6W1AQ
		Dilution Factor: 1				

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METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F7F070310 **Matrix.....:** SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Molybdenum	ND	4.0	mg/kg	SW846 6010B	06/08-06/13/07	J0J6W1AR
		Dilution Factor: 1				
Nickel	ND	4.0	mg/kg	SW846 6010B	06/08-06/13/07	J0J6W1AT
		Dilution Factor: 1				
Potassium	ND	500	mg/kg	SW846 6010B	06/08-06/13/07	J0J6W1AU
		Dilution Factor: 1				
Selenium	ND	1.5	mg/kg	SW846 6010B	06/08-06/13/07	J0J6W1AV
		Dilution Factor: 1				
Silicon	**6.4 B**	**40.0**	**mg/kg**	**SW846 6010B**	**06/08-06/13/07**	**J0J6W1AW**
		Dilution Factor: 1				
Silver	ND	1.0	mg/kg	SW846 6010B	06/08-06/13/07	J0J6W1AX
		Dilution Factor: 1				
Sodium	ND	100	mg/kg	SW846 6010B	06/08-06/13/07	J0J6W1A0
		Dilution Factor: 1				
Vanadium	ND	1.0	mg/kg	SW846 6010B	06/08-06/13/07	J0J6W1A1
		Dilution Factor: 1				
Zinc	**1.4 B**	**5.0**	**mg/kg**	**SW846 6010B**	**06/08-06/13/07**	**J0J6W1A2**
		Dilution Factor: 1				

MB Lot-Sample #: F7F150000-107 **Prep Batch #...:** 7166107

Mercury	ND	0.033	mg/kg	SW846 7471A	06/18/07	J03XL1AA
		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 #...: F7F070310 **Matrix.....:** SOLID

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
LCS Lot-Sample#: F7F080000-038 **Prep Batch #...:** 7159038							
Aluminum	6320	6610	mg/kg	105	SW846 6010B	06/08-06/13/07	J0J6W1A4
			Dilution Factor: 1				
Antimony	60.9	60.3	mg/kg	99	SW846 6010B	06/08-06/13/07	J0J6W1A5
			Dilution Factor: 1				
Arsenic	161	191	mg/kg	119	SW846 6010B	06/08-06/13/07	J0J6W1A6
			Dilution Factor: 1				
Barium	252	284	mg/kg	113	SW846 6010B	06/08-06/13/07	J0J6W1A7
			Dilution Factor: 1				
Beryllium	94.4	115 N	mg/kg	121	SW846 6010B	06/08-06/13/07	J0J6W1A8
			Dilution Factor: 1				
Boron	97.4	104	mg/kg	107	SW846 6010B	06/08-06/13/07	J0J6W1A9
			Dilution Factor: 1				
Cadmium	128	147	mg/kg	115	SW846 6010B	06/08-06/13/07	J0J6W1CA
			Dilution Factor: 1				
Calcium	3320	3920	mg/kg	118	SW846 6010B	06/08-06/13/07	J0J6W1CC
			Dilution Factor: 1				
Cobalt	35.2	39.8	mg/kg	113	SW846 6010B	06/08-06/13/07	J0J6W1CD
			Dilution Factor: 1				
Copper	148	167	mg/kg	113	SW846 6010B	06/08-06/13/07	J0J6W1CE
			Dilution Factor: 1				
Iron	11200	13600	mg/kg	121	SW846 6010B	06/08-06/13/07	J0J6W1CF
			Dilution Factor: 1				
Lead	142	163	mg/kg	115	SW846 6010B	06/08-06/13/07	J0J6W1CG
			Dilution Factor: 1				
Magnesium	2040	2410	mg/kg	118	SW846 6010B	06/08-06/13/07	J0J6W1CH
			Dilution Factor: 1				
Manganese	408	458	mg/kg	112	SW846 6010B	06/08-06/13/07	J0J6W1CJ
			Dilution Factor: 1				

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LABORATORY CONTROL SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: F7F070310 **Matrix.....:** SOLID

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Molybdenum	84.1	99.0	mg/kg	118	SW846 6010B	06/08-06/13/07	J0J6W1CK
			Dilution Factor: 1				
Nickel	147	168	mg/kg	114	SW846 6010B	06/08-06/13/07	J0J6W1CL
			Dilution Factor: 1				
Potassium	1920	2060	mg/kg	108	SW846 6010B	06/08-06/13/07	J0J6W1CM
			Dilution Factor: 1				
Selenium	64.2	75.2	mg/kg	117	SW846 6010B	06/08-06/13/07	J0J6W1CN
			Dilution Factor: 1				
Silicon	754	478	mg/kg	63	SW846 6010B	06/08-06/13/07	J0J6W1CP
			Dilution Factor: 1				
Silver	130	153	mg/kg	118	SW846 6010B	06/08-06/13/07	J0J6W1CQ
			Dilution Factor: 1				
Sodium	445	488	mg/kg	110	SW846 6010B	06/08-06/13/07	J0J6W1CR
			Dilution Factor: 1				
Vanadium	97.3	112	mg/kg	115	SW846 6010B	06/08-06/13/07	J0J6W1CT
			Dilution Factor: 1				
Zinc	165	179	mg/kg	108	SW846 6010B	06/08-06/13/07	J0J6W1CU
			Dilution Factor: 1				
Chromium	69.5	77.6	mg/kg	112	SW846 6010B	06/08-06/13/07	J0J6W1CV
			Dilution Factor: 1				

LCS Lot-Sample#: F7F150000-107 **Prep Batch #...:** 7166107

Mercury	16.9	17.3	mg/kg	103	SW846 7471A	06/18/07	J03XL1AC
			Dilution Factor: 20				

NOTE(S):

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

N Spiked analyte recovery is outside stated control limits.

MATRIX SPIKE SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: F7F070310 **Matrix.....:** SOLID
Date Sampled...: 06/04/07 **Date Received..:** 06/07/07

MS Lot-Sample #: F7F070310-001 **Prep Batch #...:** 7159038
% Moisture.....: 2.3

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Aluminum									
	5650	102	6250 N	mg/kg	583		SW846 6010B	06/08-06/13/07	J0H321CR
	5650	102	6090 N	mg/kg	421	2.7	SW846 6010B	06/08-06/13/07	J0H321CT
			Dilution Factor: 1						
Antimony									
	ND	25.6	17.8 N	mg/kg	69		SW846 6010B	06/08-06/13/07	J0H321CU
	ND	25.6	18.2 N	mg/kg	71	2.4	SW846 6010B	06/08-06/13/07	J0H321CV
			Dilution Factor: 1						
Arsenic									
	2.4	102	109	mg/kg	104		SW846 6010B	06/08-06/13/07	J0H321CW
	2.4	102	110	mg/kg	105	0.84	SW846 6010B	06/08-06/13/07	J0H321CX
			Dilution Factor: 1						
Barium									
	45.0	102	151	mg/kg	104		SW846 6010B	06/08-06/13/07	J0H321C0
	45.0	102	148	mg/kg	101	1.7	SW846 6010B	06/08-06/13/07	J0H321C1
			Dilution Factor: 1						
Beryllium									
	0.20	2.56	3.00	mg/kg	110		SW846 6010B	06/08-06/13/07	J0H321C2
	0.20	2.56	3.04	mg/kg	111	1.1	SW846 6010B	06/08-06/13/07	J0H321C3
			Dilution Factor: 1						
Boron									
	ND	102	104	mg/kg	102		SW846 6010B	06/08-06/13/07	J0H321C4
	ND	102	104	mg/kg	102	0.09	SW846 6010B	06/08-06/13/07	J0H321C5
			Dilution Factor: 1						
Cadmium									
	ND	2.56	2.55	mg/kg	100		SW846 6010B	06/08-06/13/07	J0H321C6
	ND	2.56	2.57	mg/kg	100	0.64	SW846 6010B	06/08-06/13/07	J0H321C7
			Dilution Factor: 1						
Calcium									
	7490	2560	9910	mg/kg	95		SW846 6010B	06/08-06/13/07	J0H321C8
	7490	2560	9730	mg/kg	88	1.8	SW846 6010B	06/08-06/13/07	J0H321C9
			Dilution Factor: 1						

(Continued on next page)

MATRIX SPIKE SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: F7F070310 **Matrix.....:** SOLID
Date Sampled...: 06/04/07 **Date Received..:** 06/07/07

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Chromium									
	12.3	10.2	19.8 N	mg/kg	73		SW846 6010B	06/08-06/13/07	J0H321CK
	12.3	10.2	22.6	mg/kg	100	13	SW846 6010B	06/08-06/13/07	J0H321CL
			Dilution Factor: 1						
Cobalt									
	6.1	25.6	32.4	mg/kg	103		SW846 6010B	06/08-06/13/07	J0H321DA
	6.1	25.6	33.8	mg/kg	108	4.1	SW846 6010B	06/08-06/13/07	J0H321DC
			Dilution Factor: 1						
Copper									
	10	12.8	23.6	mg/kg	107		SW846 6010B	06/08-06/13/07	J0H321DD
	10	12.8	24.0	mg/kg	110	1.6	SW846 6010B	06/08-06/13/07	J0H321DE
			Dilution Factor: 1						
Iron									
	13200	51.2	13700 N	mg/kg	1050		SW846 6010B	06/08-06/13/07	J0H321DF
	13200	51.2	14000 N	mg/kg	1530	1.8	SW846 6010B	06/08-06/13/07	J0H321DG
			Dilution Factor: 1						
Lead									
	3.8	25.6	28.9	mg/kg	98		SW846 6010B	06/08-06/13/07	J0H321DH
	3.8	25.6	29.3	mg/kg	100	1.0	SW846 6010B	06/08-06/13/07	J0H321DJ
			Dilution Factor: 1						
Magnesium									
	4700	2560	7000	mg/kg	90		SW846 6010B	06/08-06/13/07	J0H321DK
	4700	2560	7360	mg/kg	104	5.0	SW846 6010B	06/08-06/13/07	J0H321DL
			Dilution Factor: 1						
Manganese									
	244	25.6	280 N	mg/kg	140		SW846 6010B	06/08-06/13/07	J0H321DM
	244	25.6	278 N	mg/kg	134	0.52	SW846 6010B	06/08-06/13/07	J0H321DN
			Dilution Factor: 1						
Molybdenum									
	ND	102	53.0 N	mg/kg	52		SW846 6010B	06/08-06/13/07	J0H321DP
	ND	102	53.9 N	mg/kg	53	1.7	SW846 6010B	06/08-06/13/07	J0H321DQ
			Dilution Factor: 1						
Nickel									
	11.5	25.6	34.6	mg/kg	91		SW846 6010B	06/08-06/13/07	J0H321DR
	11.5	25.6	36.2	mg/kg	97	4.3	SW846 6010B	06/08-06/13/07	J0H321DT
			Dilution Factor: 1						

(Continued on next page)

MATRIX SPIKE SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: F7F070310 **Matrix.....:** SOLID
Date Sampled...: 06/04/07 **Date Received..:** 06/07/07

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Potassium									
	735	2560	3360	mg/kg	102		SW846 6010B	06/08-06/13/07	J0H321DU
	735	2560	3260	mg/kg	99	3.0	SW846 6010B	06/08-06/13/07	J0H321DV
			Dilution Factor: 1						
Selenium									
	ND	102	91.7	mg/kg	90		SW846 6010B	06/08-06/13/07	J0H321DW
	ND	102	93.3	mg/kg	91	1.7	SW846 6010B	06/08-06/13/07	J0H321DX
			Dilution Factor: 1						
Silicon									
	500	512	694 N	mg/kg	38		SW846 6010B	06/08-06/13/07	J0H321A8
	500	512	651 N	mg/kg	29	6.4	SW846 6010B	06/08-06/13/07	J0H321A9
			Dilution Factor: 1						
Silver									
	ND	2.56	2.20	mg/kg	86		SW846 6010B	06/08-06/13/07	J0H321CA
	ND	2.56	2.18	mg/kg	85	0.84	SW846 6010B	06/08-06/13/07	J0H321CC
			Dilution Factor: 1						
Sodium									
	152	2560	2940	mg/kg	109		SW846 6010B	06/08-06/13/07	J0H321CD
	152	2560	2910	mg/kg	108	1.1	SW846 6010B	06/08-06/13/07	J0H321CE
			Dilution Factor: 1						
Vanadium									
	32.0	25.6	61.3	mg/kg	115		SW846 6010B	06/08-06/13/07	J0H321CF
	32.0	25.6	62.6	mg/kg	120	2.0	SW846 6010B	06/08-06/13/07	J0H321CG
			Dilution Factor: 1						
Zinc									
	27.0	25.6	52.8	mg/kg	101		SW846 6010B	06/08-06/13/07	J0H321CH
	27.0	25.6	55.0	mg/kg	109	3.9	SW846 6010B	06/08-06/13/07	J0H321CJ
			Dilution Factor: 1						

MS Lot-Sample #: F7F070310-001 **Prep Batch #...:** 7166107
% Moisture.....: 2.3

Mercury									
	0.015	0.171	0.171	mg/kg	91		SW846 7471A	06/18/07	J0H321CM
	0.015	0.171	0.167	mg/kg	89	2.0	SW846 7471A	06/18/07	J0H321CN
			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: J15521

General Chemistry

Lot-Sample #...: F7F070310-001 **Work Order #...:** J0H32 **Matrix.....:** SOLID
Date Sampled...: 06/04/07 **Date Received..:** 06/07/07
% Moisture.....: 2.3

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Moisture	2.3	0.10	%	MCAWW 160.3 MOD	06/08-06/09/07	7159247

Dilution Factor: 1 MDL.....:

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F7F070310 **Work Order #...:** J0D14-SMP J0D14-DUP **Matrix.....:** SOLID

Date Sampled...: 06/05/07 **Date Received..:** 06/06/07

% Moisture.....: 15

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Moisture						SD Lot-Sample #:	F7F060189-001	
	14.6	15.3	%	5.2	(0-30)	MCAWW 160.3 MOD	06/08-06/09/07	7159247

Dilution Factor: 1