0073506

W05137

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Analytical Data Package Prepared For

Fluor Hanford Inc.

Radiochemical Analysis By

STL Richland

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

Assigned Laboratory Code: STLRL

Data Package Contains _____ Pages

Report No.: 34847

SDG No.	Order No.	Client Sample ID (List Order)	Lot-Sa No.	Work Order	Report DB ID	Batch No.
W05137	R07-007	B1MN62	J7C140373-1	JQ3HH1AA	9JQ3HH10	7073625
		B1MN62	J7C140373-1	JQ3HH2AC	9JQ3HH20	7094498
		B1MN63	J7C140373-2	JQ3HR1AA	9JQ3HR10	7073625
		B1MN63	J7C140373-2	JQ3HR2AC	9JQ3HR20	7094498
		B1MTP4	J7C140373-3	JQ3HT1AA	9JQ3HT10	7073625
		B1MTP4	J7C140373-3	JQ3HT2AC	9JQ3HT20	7094498
		B1MTP5	J7C140373-4	JQ3H01AA	9JQ3H010	7073625
		B1MTP5	J7C140373-4	JQ3H02AC	9JQ3H020	7094498
		B1MTP6	J7C140373-5	JQ3H21AA	9JQ3H210	7073625
		B1MTP6	J7C140373-5	JQ3H22AC	9JQ3H220	7094498
		B1MTP7	J7C140373-6	JQ3H41AA	9JQ3H410	7073625
		B1MTP7	J7C140373-6	JQ3H42AC	9JQ3H420	7094498
		B1MTP8	J7C140373-7	JQ3H81AA	9JQ3H810	7073625
		B1MTP8	J7C140373-7	JQ3H82AC	9JQ3H820	7094498
		B1MTR0	J7C140373-8	JQ3JC1AA	9JQ3JC10	7073625
		B1MTR0	J7C140373-8	JQ3JC2AC	9JQ3JC20	7094498

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STL Richland
2800 George Washington Way
Richland, WA 99354

Tel: 509 375 3131 Fax: 509 375 5590
www.stl-inc.com

Certificate of Analysis

Fluor Hanford
P.O. Box 1000, T6-03
Richland, WA 99352

April 16, 2007

Attention: John Trechter

SAF Number	:	R07-007
Date SDG Closed	:	March 14, 2007
Number of Samples	:	Eight (8)
Sample Type	:	Water
SDG Number	:	W05137
Data Deliverable	:	15/15 Day

CASE NARRATIVE

I. Introduction

On March 14, 2007 eight samples were received at STL Richland (STLR) for radiochemical analysis. Upon receipt, the samples were assigned to lot J7C140373 and assigned the following laboratory ID number to correspond with the Fluor Hanford (FH) specific ID:

FH ID#	STLR ID#	MATRIX	DATE OF RECEIPT
B1MN62	JQ3HH	SOIL	3/14/07
B1MN63	JQ3HR	SOIL	3/14/07
B1MTP4	JQ3HT	SOIL	3/14/07
B1MTP5	JQ3H0	SOIL	3/14/07
B1MTP6	JQ3H2	SOIL	3/14/07
B1MTP7	JQ3H4	SOIL	3/14/07
B1MTP8	JQ3H8	SOIL	3/14/07
B1MTR0	JQ3JC	SOIL	3/14/07

II. Sample Receipt

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

III. Analytical Results/Methodology

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

The requested analyses were:

Alpha Spectroscopy
Plutonium-241 by method RICH-RC-5010
Liquid Scintillation Counting
Nickle 63 by LCS

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-241 by method RICH-RC-5010:
The samples were reanalyzed several times due to low LCS yields. Instruments were recalibrated and verified. All aspects of the analysis were inspected. The final run produced acceptable spiked matrix and acceptable reagent LCS's three out of four times. Investigation continues. Except as noted, the blank, LCS, matrix spike, sample and sample duplicate were within contractual limits.

Liquid Scintillation Counting
Nickle 63 by LCS:
The LCS, batch blank, samples and sample duplicate were all within acceptance limits.

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.

April 16, 2007

Reviewed and approved:

Sherryl A. Adam
Project Manager

Drinking Water Method Cross References

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

Uncertainty Estimation

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

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

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

Report Definitions

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

Sample Results Summary

Date: 16-Apr-07

STL Richland STLRL

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

Report No. : 34847 **SDG No:** W05137

Batch	Client Id / Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Yield	MDC or MDA	CRDL	RPD
7073625	NI63_LSC								
	B1MN62								
	JQ3HH1AA	NI-63	-4.43E-01 +- 9.29E-01	U	pCi/g	96%	1.33E+00	3.00E+01	
	B1MN63								
	JQ3HR1AA	NI-63	-2.89E-01 +- 8.75E-01	U	pCi/g	99%	1.24E+00	3.00E+01	
	B1MN63 DUP								
	JQ3HR1AE	NI-63	3.42E-01 +- 9.98E-01	U	pCi/g	93%	1.36E+00	3.00E+01	2395.0
	B1MTP4								
	JQ3HT1AA	NI-63	-5.77E-01 +- 1.96E+00	U	pCi/g	47%	2.76E+00	3.00E+01	
	B1MTP5								
	JQ3H01AA	NI-63	5.31E-02 +- 9.36E-01	U	pCi/g	97%	1.29E+00	3.00E+01	
	B1MTP6								
	JQ3H21AA	NI-63	7.08E-01 +- 2.47E+00	U	pCi/g	38%	3.37E+00	3.00E+01	
	B1MTP7								
	JQ3H41AA	NI-63	-4.13E-01 +- 1.02E+00	U	pCi/g	90%	1.44E+00	3.00E+01	
	B1MTP8								
	JQ3H81AA	NI-63	-1.69E-01 +- 9.43E-01	U	pCi/g	93%	1.32E+00	3.00E+01	
	B1MTR0								
	JQ3JC1AA	NI-63	3.96E+00 +- 1.22E+00		pCi/g	92%	1.37E+00	3.00E+01	
7094498	RICHRC5010								
	B1MN62								
	JQ3HH2AC	PU-241	-1.34E+00 +- 3.72E+00	U	pCi/g	22%	6.75E+00	1.50E+01	
	B1MN62 DUP								
	JQ3HH2AF	PU-241	-1.89E-01 +- 1.02E+00	U	pCi/g	81%	1.85E+00	1.50E+01	-150.4
	B1MN63								
	JQ3HR2AC	PU-241	6.27E-01 +- 1.03E+00	U	pCi/g	84%	1.79E+00	1.50E+01	
	B1MTP4								
	JQ3HT2AC	PU-241	-5.99E-01 +- 1.03E+00	U	pCi/g	73%	1.88E+00	1.50E+01	
	B1MTP5								
	JQ3H02AC	PU-241	-7.47E-01 +- 1.55E+00	U	pCi/g	51%	2.84E+00	1.50E+01	
	B1MTP6								
	JQ3H22AC	PU-241	1.60E-01 +- 1.12E+00	U	pCi/g	75%	1.98E+00	1.50E+01	
	B1MTP7								
	JQ3H42AC	PU-241	9.27E-02 +- 8.63E-01	U	pCi/g	92%	1.54E+00	1.50E+01	
	B1MTP8								
	JQ3H82AC	PU-241	-6.30E-01 +- 1.03E+00	U	pCi/g	77%	1.89E+00	1.50E+01	
	B1MTR0								
	JQ3JC2AC	PU-241	2.05E-01 +- 1.28E+00	U	pCi/g	66%	2.26E+00	1.50E+01	

No. of Results: 18

STL Richland
rptSTLRchSaSummary2 V5.1 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.

QC Results Summary

STL Richland STLRL

Ordered by Method, Batch No, QC Type,.

Date: 16-Apr-07

Report No. : 34847

SDG No.: W05137

Batch / Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Yield	Recovery	Bias	MDC|MDA
NI63_LSC								
7073625 BLANK QC								
JQ3R01AA	NI-63	-1.34E-01 +- 9.24E-01	U	pCi/g	99%			1.29E+00
7073625 LCS								
JQ3R01AC	NI-63	1.16E+02 +- 8.69E+00		pCi/g	93%	80%	-0.2	1.33E+00
RICHRC5010								
7094498 BLANK QC								
JTDEP1AA	PU-241	7.88E-01 +- 9.28E-01	U	pCi/g	95%			1.58E+00
7094498 LCS								
JTDEP1AC	PU-241	1.94E+02 +- 1.47E+01		pCi/g	88%	86%	-0.1	1.71E+00

No. of Results: 4

STL Richland

rptSTLRchQcSummary V5.1 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.

STL RICHLAND

FORM I

SAMPLE RESULTS

Date: 16-Apr-07

Lab Name:	STL Richland	**SDG:**	W05137	**Collection Date:**	3/14/2007 8:05:00 AM
Lot-Sample No.:	J7C140373-1	**Report No. :**	34847	**Received Date:**	3/14/2007 2:20:00 PM
Client Sample ID:	B1MN62	**COC No. :**	R07-007-008	**Matrix:**	SOIL

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 7073625	NI63_LSC			**Work Order:**	JQ3HH1AA		**Report DB ID:**	9JQ3HH10				
NI-63	-4.43E-01	U	5.4E-01	9.3E-01	1.33E+00	pCi/g	96%	*-0.33*	3/28/07 08:44 p		1.04	LSC4
						6.44E-01	3.00E+01	*-0.95*			G	
Batch: 7094498	RICHRC5010			**Work Order:**	JQ3HH2AC		**Report DB ID:**	9JQ3HH20				
PU-241	-1.34E+00	U	2.7E+00	3.7E+00	6.75E+00	pCi/g	22%	*-0.2*	4/9/07 12:26 p		1.01	LSC7
						3.24E+00	1.50E+01	*-0.72*			G	

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

STL Richland
rptSTLRchSample
V6.1 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 I

SAMPLE RESULTS

Date: 16-Apr-07

Lab Name:	STL Richland	SDG:	W05137	Collection Date:	3/14/2007 8:50:00 AM
Lot-Sample No.:	J7C140373-2	Report No. :	34847	Received Date:	3/14/2007 2:20:00 PM
Client Sample ID:	B1MN63	COC No. :	R07-007-008	Matrix:	SOIL

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 7073625	NI63_LSC			Work Order:	JQ3HR1AA		Report DB ID: 9JQ3HR10					
NI-63	-2.89E-01	U	5.1E-01	8.8E-01	1.24E+00	pCi/g	99%	*-0.23*	3/28/07 10:27 p		1.08	LSC4
						6.01E-01	3.00E+01	*-0.66*			G	
Batch: 7094498	RICHRC5010			Work Order:	JQ3HR2AC		Report DB ID: 9JQ3HR20					
PU-241	6.27E-01	U	7.6E-01	1.0E+00	1.79E+00	pCi/g	84%	*0.35*	4/9/07 12:26 p		1.01	LSC7
						8.61E-01	1.50E+01	*(1.2)*			G	

No. of Results: 2 Comments:

STL Richland
rptSTLRchSample
V5.1 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 I

SAMPLE RESULTS

Date: 16-Apr-07

Lab Name:	STL Richland	**SDG:**	W05137	**Collection Date:**	3/14/2007 9:35:00 AM
Lot-Sample No.:	J7C140373-3	**Report No. :**	34847	**Received Date:**	3/14/2007 2:20:00 PM
Client Sample ID:	B1MTP4	**COC No. :**	R07-007-008	**Matrix:**	SOIL

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 7073625	NI63_LSC			**Work Order:**	JQ3HT1AA		**Report DB ID:**	9JQ3HT10				
NI-63	-5.77E-01	U	1.1E+00	2.0E+00	2.76E+00	pCi/g	47%	*-0.21*	3/29/07 01:51 a		1.01	LSC4
						1.34E+00	3.00E+01	*-0.59*			G	
Batch: 7094498	RICHRC5010			**Work Order:**	JQ3HT2AC		**Report DB ID:**	9JQ3HT20				
PU-241	-5.99E-01	U	7.6E-01	1.0E+00	1.88E+00	pCi/g	73%	*-0.32*	4/9/07 12:26 p		1.08	LSC7
						9.04E-01	1.50E+01	*-(1.2)*			G	

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

STL Richland
rptSTLRchSample
V5.1 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 I

SAMPLE RESULTS

Date: 16-Apr-07

Lab Name:	STL Richland	SDG:	W05137	Collection Date:	3/14/2007 12:30:00 PM
Lot-Sample No.:	J7C140373-4	Report No. :	34847	Received Date:	3/14/2007 2:20:00 PM
Client Sample ID:	B1MTP5	COC No. :	R07-007-008	Matrix:	SOIL

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 7073625	NI63_LSC			Work Order:	JQ3H01AA		Report DB ID: 9JQ3H010					
NI-63	5.31E-02	U	5.4E-01	9.4E-01	1.29E+00	pCi/g	97%	*0.04*	3/29/07 03:34 a		1.05	LSC4
						6.28E-01	3.00E+01	*0.11*			G	
Batch: 7094498	RICHRC5010			Work Order:	JQ3H02AC		Report DB ID: 9JQ3H020					
PU-241	-7.47E-01	U	1.1E+00	1.6E+00	2.84E+00	pCi/g	51%	*-0.26*	4/9/07 12:27 p		1.04	LSC7
						1.36E+00	1.50E+01	*-0.96*			G	

No. of Results: 2 Comments:

STL Richland
rptSTLRchSample
V5.1 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 I

SAMPLE RESULTS

Date: 16-Apr-07

Lab Name:	**STL Richland**	**SDG:**	W05137	**Collection Date:**	3/14/2007 8:50:00 AM
Lot-Sample No.:	**J7C140373-5**	**Report No. :**	34847	**Received Date:**	3/14/2007 2:20:00 PM
Client Sample ID:	**B1MTP6**	**COC No. :**	R07-007-008	**Matrix:**	SOIL

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 7073625	NI63_LSC			**Work Order:** JQ3H21AA		**Report DB ID:** 9JQ3H210						
NI-63	7.08E-01	U	1.4E+00	2.5E+00	3.37E+00	pCi/g	38%	*0.21*	3/29/07 05:16 a		1.04	LSC4
						1.63E+00	3.00E+01	*0.57*			G	
Batch: 7094498	RICHRC5010			**Work Order:** JQ3H22AC		**Report DB ID:** 9JQ3H220						
PU-241	1.60E-01	U	8.3E-01	1.1E+00	1.98E+00	pCi/g	75%	*0.08*	4/9/07 12:27 p		1.01	LSC7
						9.61E-01	1.50E+01	*0.29*			G	

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

STL Richland
rptSTLRchSample
V5.1 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 I

SAMPLE RESULTS

Date: 16-Apr-07

Lab Name:	STL Richland	SDG:	W05137	Collection Date:	3/8/2007 8:00:00 AM
Lot-Sample No.:	J7C140373-6	Report No. :	34847	Received Date:	3/14/2007 2:20:00 PM
Client Sample ID:	B1MTP7	COC No. :	R07-007-008	Matrix:	SOIL

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 7073625	NI63_LSC			Work Order:	JQ3H41AA		Report DB ID: 9JQ3H410					
NI-63	-4.13E-01	U	5.9E-01	1.0E+00	1.44E+00	pCi/g	90%	*-0.29*	3/29/07 06:59 a		1.01	LSC4
						7.00E-01	3.00E+01	*-0.81*			G	
Batch: 7094498	RICHRC5010			Work Order:	JQ3H42AC		Report DB ID: 9JQ3H420					
PU-241	9.27E-02	U	6.4E-01	8.6E-01	1.54E+00	pCi/g	92%	*0.06*	4/9/07 12:27 p		1.07	LSC7
						7.40E-01	1.50E+01	*0.21*			G	

No. of Results: 2 Comments:

STL Richland
rptSTLRchSample
V5.1 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 I

SAMPLE RESULTS

Date: 16-Apr-07

Lab Name:	**STL Richland**	**SDG:**	W05137	**Collection Date:**	3/14/2007 9:45:00 AM
Lot-Sample No.:	**J7C140373-7**	**Report No. :**	34847	**Received Date:**	3/14/2007 2:20:00 PM
Client Sample ID:	**B1MTP8**	**COC No. :**	R07-007-008	**Matrix:**	SOIL

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 7073625	NI63_LSC			**Work Order:**	JQ3H81AA		**Report DB ID:**	9JQ3H810				
NI-63	-1.69E-01	U	5.5E-01	9.4E-01	1.32E+00	pCi/g	93%	*-0.13*	3/29/07 08:41 a		1.07	LSC4
						6.42E-01	3.00E+01	*-0.36*			G	
Batch: 7094498	RICHRC5010			**Work Order:**	JQ3H82AC		**Report DB ID:**	9JQ3H820				
PU-241	-6.30E-01	U	7.6E-01	1.0E+00	1.89E+00	pCi/g	77%	*-0.33*	4/9/07 12:27 p		1.03	LSC7
						9.08E-01	1.50E+01	*-(1.2)*			G	

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

STL Richland
rptSTLRchSample
V5.1 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 I

SAMPLE RESULTS

Date: 16-Apr-07

Lab Name:	STL Richland	**SDG:**	W05137	**Collection Date:**	3/14/2007 10:30:00 AM
Lot-Sample No.:	J7C140373-8	**Report No. :**	34847	**Received Date:**	3/14/2007 2:20:00 PM
Client Sample ID:	B1MTR0	**COC No. :**	R07-007-008	**Matrix:**	SOIL

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 7073625	NI63_LSC			**Work Order:**	JQ3JC1AA		**Report DB ID:**	9JQ3JC10				
NI-63	3.96E+00		6.7E-01	1.2E+00	1.37E+00	pCi/g	92%	*(2.9)*	3/29/07 10:23 a		1.04	LSC4
						6.67E-01	3.00E+01	*(6.5)*			G	
Batch: 7094498	RICHRC5010			**Work Order:**	JQ3JC2AC		**Report DB ID:**	9JQ3JC20				
PU-241	2.05E-01	U	9.4E-01	1.3E+00	2.26E+00	pCi/g	66%	*0.09*	4/9/07 12:27 p		1.01	LSC7
						1.09E+00	1.50E+01	*0.32*			G	

No. of Results: 2 **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

Date: 16-Apr-07

DUPLICATE RESULTS

Lab Name:	STL Richland	SDG:	W05137	Collection Date:	3/14/2007 8:05:00 AM
Lot-Sample No.:	J7C140373-1	Report No. :	34847	Received Date:	3/14/2007 2:20:00 PM
Client Sample ID:	B1MN62 DUP	COC No. :	R07-007-008	Matrix:	SOIL

Parameter	Result, Orig Rst	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, CRDL	Yield	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 7094498	RICHRC5010			Work Order: JQ3HH2AF		Report DB ID: JQ3HH2FR			Orig Sa DB ID: 9JQ3HH20			
PU-241	-1.89E-01	U	7.5E-01	1.0E+00	1.85E+00	pCi/g	81%	-0.1	4/9/07 12:26 p		1.01	LSC7
	-1.34E+00	U	RPD	-150.4		1.50E+01		-0.37			G	

No. of Results: 1 Comments:

STL Richland
rptSTLRichDupV5.1
A2002

RPD - Relative Percent Difference.
MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

FORM II

Date: 16-Apr-07

DUPLICATE RESULTS

Lab Name:	STL Richland	SDG:	W05137	Collection Date:	3/14/2007 8:50:00 AM
Lot-Sample No.:	J7C140373-2	Report No. :	34847	Received Date:	3/14/2007 2:20:00 PM
Client Sample ID:	B1MN63 DUP	COC No. :	R07-007-008	Matrix:	SOIL

Parameter	Result, Orig Rst	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, CRDL	Yield	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 7073625	NI63_LSC			Work Order: JQ3HR1AE		Report DB ID: JQ3HR1ER			Orig Sa DB ID: 9JQ3HR10			
NI-63	3.42E-01	U	5.7E-01	1.0E+00	1.36E+00	pCi/g	93%	0.25	3/29/07 12:09 a		1.04	LSC4
	-2.89E-01	U	RPD	2395.0		3.00E+01		0.69			G	

No. of Results: 1 Comments:

STL Richland RPD - Relative Percent Difference.
rptSTLRchDupV5.1 MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
A2002 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: 16-Apr-07

Lab Name: STL Richland
Matrix: SOIL

SDG: W05137
Report No. : 34847

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Lc	Rpt Unit, CRDL	Yield	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 7073625	NI63_LSC			**Work Order:**	JQ3R01AA		**Report DB ID:**	JQ3R01AB				
NI-63	-1.34E-01	U	5.3E-01	9.2E-01	1.29E+00	pCi/g	99%	-0.1	3/29/07 12:06 p		1.03	LSC4
					6.27E-01	3.00E+01		-0.29			G	
Batch: 7094498	RICHRC5010			**Work Order:**	JTDEP1AA		**Report DB ID:**	JTDEP1AB				
PU-241	7.88E-01	U	6.8E-01	9.3E-01	1.58E+00	pCi/g	95%	0.5	4/9/07 12:27 p		1.0	LSC7
					7.59E-01	1.50E+01		(1.7)			G	

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

STL Richland
rptSTLRchBlank
V5.1 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: 16-Apr-07

Lab Name: STL Richland

SDG: W05137

Matrix: SOIL

Report No. : 34847

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC/MDA	Report Unit	Yield	Expected	Expected Uncert	Recovery, Bias	Analysis, Prep Date	Aliquot Size	Primary Detector
Batch: 7073625	NI03_LSC			Work Order:	JQ3R01AC		Report DB ID:	JQ3R01CS					
NI-63	1.16E+02		1.9E+00	8.7E+00	1.33E+00	pCi/g	93%	1.45E+02	4.82E+00	80%	3/29/07 01:48 p	1.06	LSC4
							Rec Limits:	70	130	-0.2		G	
Batch: 7094498	RICHRC5010			Work Order:	JTDEP1AC		Report DB ID:	JTDEP1CS					
PU-241	1.94E+02		3.2E+00	1.5E+01	1.71E+00	pCi/g	88%	2.27E+02	1.02E+01	86%	4/9/07 12:27 p	1.0	LSC7
							Rec Limits:	70	130	-0.1		G	

No. of Results: 2 Comments:

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

rptSTLRichLcs
V5.1 A2002

STL

Data Review/Verification Checklist

RADIOCHEMISTRY, First Level Review

4/16/2007 2:10:13 PM

Lot No., Due Date: J7C140373; 03/29/2007

Client, Site: 108302; FLUOR- SOILS Hanford Site

QC Batch No., Method Test: 7094498; RPU241 Pu-241 by LSC

SDG, Matrix: W05137; 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:
NCM 10-09376

First Level Review Lisa Anderson **Date** 4/16/07

SEVERN TRENT STL

Data Review Checklist
RADIOCHEMISTRY
Second Level Review

QC Batch Number: 7094498
W05157

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: Sheryl R Adam Date: 4-16-07

Clouseau
Nonconformance Memo

SEVERN TRENT SERVICES

NCM #: 10-09736
NCM Initiated By: Lisa Antonson
Date Opened: 04/16/2007
Date Closed:

Classification: **Anomaly**
Status: **GLREVIEW**
Production Area: Environmental - Prep
Tests: Ni-63 by LSC, Pu-241 by LSC, Pulso by ALP
Lot #'s (Sample #'s): J7C140373 (1,2,3,4,5,6,7,8),
QC Batches: 7073623, 7073624, 7073625, 7094496, 7094498

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

Problem Description / Root Cause

Name	Date	Description
Lisa Antonson	04/16/2007	Samples in this Pu/Pu241 analysis were reanalyzed several times due to low LCS yields. Instruments were recalibrated and verified. All aspects of the analysis were inspected. The final run produced acceptable spiked matrix and acceptable reagent LCS's three out of four times. Investigation continues.

Corrective Action

Name	Date	Corrective Action
Lisa Antonson	04/16/2007	Report data based on acceptable QC.

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

STL

Data Review/Verification Checklist

RADIOCHEMISTRY, First Level Review

3/30/2007 1:43:38 PM

Lot No., Due Date: J7C140373; 03/29/2007

Client, Site: 108302; FLUOR- SOILS Hanford Site

QC Batch No., Method Test: 7073625; RNI63 Ni-63 by LSC

SDG, Matrix: W05137; SOIL

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

6.0 Comments on any No response:

First Level Review Pam Anderson **Date** 3-30-07

SEVERN TRENT STL

Data Review Checklist
RADIOCHEMISTRY
Second Level Review

QC Batch Number: 7073625

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: 3-30-07

STL RICHLAND

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	R07-007-008	PAGE 1 OF 3

COLLECTOR HOGAN, JG	COMPANY CONTACT KLAGES, DL	TELEPHONE NO.	PROJECT COORDINATOR TRECHTER, JE	PRICE CODE 8C	DATA TURNAROUND
SAMPLING LOCATION 216-N-7	PROJECT DESIGNATION 200-CW-3 Operable Unit Test Pit Analyses		SAF NO. R07-007	AIR QUALITY ☐	15 Days / 15 Days
ICE CHEST NO. Gauss-6	FIELD LOGBOOK NO. HNF-N-507-3	COA 122333ES20	METHOD OF SHIPMENT GOVERNMENT VEHICLE	J7C140373	
SHIPPED TO Severn Trent Incorporated, Richland	OFFSITE PROPERTY NO. N/A		BILL OF LADING/AIR BILL NO. N/A	W05137 Due ~~04-24-07~~ 03-29-07	

MATRIX*
OL = OTHER LIQUID
OS = OTHER SOLID
S = SOIL
W = WATER

SPECIAL HANDLING AND/OR STORAGE

POSSIBLE SAMPLE HAZARDS/ REMARKS
Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)

SAMPLE NO.	LAB ID	MATRIX*	SAMPLE DATE	SAMPLE TIME	NO./TYPE CONTAINER(S)	ANALYSIS	PRESERVATION
B1MN62		S	3-14-07	0805	1X60mL G/P	Nickel-63; JQ3HH	None
B1MN62		S		0805	1X60mL G/P	Plutonium-241;	None
B1MN63		S		0850	1X60mL G/P	Nickel-63;	None
B1MN63		S		0850	1X60mL G/P	Plutonium-241; JQ3HR	None
B1MTP4		S		0935	1X60mL G/P	Nickel-63;	None
B1MTP4		S		0935	1X60mL G/P	Plutonium-241; JQ3HT	None
B1MTP5		S		1230	1X60mL G/P	Nickel-63;	None

CHAIN OF POSSESSION — SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
J.G. Hogan Fluor Hanford	3/14/07 1330	KB Hulse	3/14/07 1330
KB Hulse	3/14/07 1420	Eu Dunlop	3/14/07 1420

SPECIAL INSTRUCTIONS

** Reporting format the same as GPP, including QC.
** STL is to send a copy of chain of custody (COC) to John Trechter within 24 hours of sample receipt and copy ^CPP Sample Management mailbox.

** The Fluor Hanford samplers shall provide copies of all field documents to Steve Trent.
** Final reports are to be uploaded into HEIS.
** Samples WILL NOT be taken using the multi-increment sampling technique.

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

STL RICHLAND

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		R07-007-008	PAGE 2 OF 3
COLLECTOR HOGAN, JG	COMPANY CONTACT KLAGES, DL	TELEPHONE NO.	PROJECT COORDINATOR TRECHTER, JE	PRICE CODE 8C DATA TURNAROUND
SAMPLING LOCATION 216-N-7	PROJECT DESIGNATION 200-CW-3 Operable Unit Test Pit Analyses		SAF NO. R07-007	AIR QUALITY ☐ 15 Days / 15 Days
ICE CHEST NO. Guss 6	FIELD LOGBOOK NO. HNF-N-507-3	COA 122333ES20	METHOD OF SHIPMENT GOVERNMENT VEHICLE	JTC140373 W05137
SHIPPED TO Severn Trent Incorporated, Richland	OFFSITE PROPERTY NO. N/A		BILL OF LADING/AIR BILL NO. N/A	Due ~~04-24-07~~ 03-29-07

MATRIX*
OL = OTHER LIQUID
OS = OTHER SOLID
S = SOIL
W = WATER

SPECIAL HANDLING AND/OR STORAGE

POSSIBLE SAMPLE HAZARDS/ REMARKS
Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)

SAMPLE NO.	LAB ID	MATRIX*	SAMPLE DATE	SAMPLE TIME	NO./TYPE CONTAINER(S)	ANALYSIS	PRESERVATION
B1MTP5		S	3-14-07	1230	1X60mL G/P	Plutonium-241; JQ3H0	None
B1MTP6		S	↓	0850	1X60mL G/P	Nickel-63;	None
B1MTP6		S	↓	0850	1X60mL G/P	Plutonium-241; JQ3H2	None
B1MTP7		S	3-8-07	0800	1X60mL G/P	Nickel-63;	None
B1MTP7		S	3-8-07	0800	1X60mL G/P	Plutonium-241; JQ3H4	None
B1MTP8		S	3-14-07	0945	1X60mL G/P	Nickel-63;	None
B1MTP8		S	3-14-07	0945	1X60mL G/P	Plutonium-241; JQ3H8	None

CHAIN OF POSSESSION — SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
J.G. Hogan Fluor Hanford	3/14/07 1330	KB Hulse	3/14/07 1330
KB Hulse	3/14/07 1420	Eu Dowby	3/14/07 1420

SPECIAL INSTRUCTIONS

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** STL is to send a copy of chain of custody (COC) to John Trechter within 24 hours of sample receipt and copy ^CPP Sample Management mailbox.

** The Fluor Hanford samplers shall provide copies of all field documents to Steve Trent.
** Final reports are to be uploaded into HEIS.
** Samples WILL NOT be taken using the multi-increment sampling technique.

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

STL RICHLAND

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		R07-007-008	PAGE 3 OF 3
COLLECTOR HOGAN, JG	COMPANY CONTACT KLAGES, DL	TELEPHONE NO.	PROJECT COORDINATOR TRECHTER, JE	PRICE CODE 8C DATA TURNAROUND
SAMPLING LOCATION 216-N-7	PROJECT DESIGNATION 200-CW-3 Operable Unit Test Pit Analyses		SAF NO. R07-007	AIR QUALITY ☐ 15 Days / 15 Days
ICE CHEST NO. GUSS6	FIELD LOGBOOK NO. HNF-N-507-3	COA 122333ES20	METHOD OF SHIPMENT GOVERNMENT VEHICLE	J7C140373 WO 5137
SHIPPED TO Severn Trent Incorporated, Richland	OFFSITE PROPERTY NO. N/A		BILL OF LADING/AIR BILL NO. N/A	Due ~~04-24-07~~ 03-29-07

MATRIX*
OL = OTHER LIQUID
OS = OTHER SOLID
S = SOIL
W = WATER

SPECIAL HANDLING AND/OR STORAGE

POSSIBLE SAMPLE HAZARDS/ REMARKS
Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)

SAMPLE NO.	LAB ID	MATRIX*	SAMPLE DATE	SAMPLE TIME	NO./TYPE CONTAINER(S)	ANALYSIS	PRESERVATION
B1MTR0		S	3-14-07	1030	1X60mL G/P	Nickel-63;	None
B1MTR0		S	3-14-07	1030	1X60mL G/P	Plutonium-241; J93JC	None

CHAIN OF POSSESSION — SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
J.G. Hogan Fluor Hanford	3/14/07 1330	KB Hulse	3/14/07 1330
KB Hulse	3/14/07 1420		3/14/07 1420
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS

** Reporting format the same as GPP, including QC.
** STL is to send a copy of chain of custody (COC) to John Trechter within 24 hours of sample receipt and copy ^CPP Sample Management mailbox.

** The Fluor Hanford samplers shall provide copies of all field documents to Steve Trent.
** Final reports are to be uploaded into HEIS.
** Samples WILL NOT be taken using the multi-increment sampling technique.

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

SEVERN TRENT **STL**

Sample Check-in List

Date/Time Received: 3/14/07 1430

Client: FLH SDG #: W05137 NA [ ] SAF #: R07-007 NA [ ]

Work Order Number: J7C140373 Chain of Custody # R07-007-008

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: 8 16x60mL
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 [ ] adjusted pH [ ]
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: Eric Darby Date: 3/14/07 1430

Client Sample ID	Analysis Requested	Condition	Comments/Action

Client Informed on _____ by _____ Person contacted _____

[ ] No action necessary; process as is.

Project Manager _____ Date _____

LS-023, 12/05, Rev. 6

STL RICHLAND

4/5/2007 2:18:42 PM

Sample Preparation/Analysis

Balance Id:1120373922

108302, Fluor Hanford Inc , Flour
Hanford Inc

AH Pu/241 PrpRC5013/5077, SepRC5010(5039)
SP Plutonium-241 by Liquid Scint
5I CLIENT: HANFORD

Pipet #: _____

AnalyDueDate: 03/29/2007

Sep1 DT/Tm Tech:

Batch: 7094498 SOIL pCi/g PM, Quote: SA , 50639
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:
1 JQ3HH-2-AC J7C140373-1-SAMP 03/14/2007 08:05		1.01g,in AmtRec: 2X60ML	#Containers: 2	10 J		Scr:	Alpha:	Beta:
2 JQ3HH-2-AF-X J7C140373-1-DUP 03/14/2007 08:05		1.01g,in AmtRec: 2X60ML	#Containers: 2			Scr:	Alpha:	Beta:
3 JQ3HR-2-AC J7C140373-2-SAMP 03/14/2007 06:50		1.01g,in AmtRec: 2X60ML	#Containers: 2			Scr:	Alpha:	Beta:
4 JQ3HT-2-AC J7C140373-3-SAMP 03/14/2007 09:35		1.08g,in AmtRec: 2X60ML	#Containers: 2	4/5/07 JGW		Scr:	Alpha:	Beta:
5 JQ3H0-2-AC J7C140373-4-SAMP 03/14/2007 12:30		1.04g,in AmtRec: 2X60ML	#Containers: 2			Scr:	Alpha:	Beta:
6 JQ3H2-2-AC J7C140373-5-SAMP 03/14/2007 08:50		1.01g,in AmtRec: 2X60ML	#Containers: 2			Scr:	Alpha:	Beta:
7 JQ3H4-2-AC J7C140373-6-SAMP 03/06/2007 06:00		1.07g,in AmtRec: 2X60ML	#Containers: 2			Scr:	Alpha:	Beta:

STL RICHLAND

4/5/2007 2:18:44 PM

Sample Preparation/Analysis

Balance Id:1120373922

108302, Fluor Hanford Inc , Flour
Hanford Inc

AH Pu/241 PrpRC5013/5077, SepRC5010(5039)
SP Plutonium-241 by Liquid Scint
5I CLIENT: HANFORD

Pipet #: _____

AnalyDueDate: 03/29/2007

Sep1 DT/Tm Tech:

Batch: 7094498 SOIL pCi/g PM, Quote: SA , 50639

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:
8 JQ3H8-2-AC J7C140373-7-SAMP 03/14/2007 09:45		1.03g,in AmtRec: 2X60ML	#Containers: 2	100		Scr:	Alpha:	Beta:
9 JQ3JC-2-AC J7C140373-8-SAMP 03/14/2007 10:30		1.01g,in AmtRec: 2X60ML	#Containers: 2			Scr:	Alpha:	Beta:
10 JTDEP-1-AA-B J7D040000-498-BLK 03/14/2007 08:05		1.00g,in AmtRec:	#Containers: 1	4/5/07		Scr:	Alpha:	Beta:
11 JTDEP-1-AC-C J7D040000-498-LCS 03/14/2007 08:05		1.00g,in AmtRec:	241B0013 03/28/07,pd 09/23/04,r #Containers: 1			Scr:	Alpha:	Beta:
12 JTDEP-1-AD-BN J7D040000-498-IBLK 03/14/2007 08:05		AmtRec:	#Containers: 1			Scr:	Alpha:	Beta:

Comments:

All Clients for Batch:
108302, Fluor Hanford Inc Flour Hanford Inc , SA , 50639

JQ3H8ZAC-SAMP Constituent List:

Pu-241	RDL:15	pCi/g	LCL:	UCL:	RPD:	Pu-242	RDL:	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 2 ISV - Insufficient Volume for Analysis WO Cnt: 12
Richland Wa. pd - Prep Dt, r - Reference Dt, ec-Enrichment Cell, ct-Cocktailed Added Prep_SamplePrep v4.8.26

STL RICHLAND

4/5/2007 2:18:48 PM

Sample Preparation/Analysis

AH Pu/241 PrpRC5013/5077, SepRC5010(5039)
SP Plutonium-241 by Liquid Scint
5I CLIENT: HANFORD

Balance Id:

Pipet #:

AnalyDueDate: 03/29/2007

Sep1 DT/Tm Tech:

Batch: 7094498 pCi/g
SEQ Batch, Test: None

Sep2 DT/Tm Tech:

Prep Tech:

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

```
JTDEP1AA-BLK:
  Pu-241      RDL:15      pCi/g    LCL:      UCL:      RPD:      Pu-242    RDL:      pCi/g    LCL:70    UCL:130   RPD:35

JTDEP1AC-LCS:
  PU-239      RDL:        pCi/g    LCL:70    UCL:130   RPD:35    Pu-241    RDL:15    pCi/g    LCL:70    UCL:130   RPD:35
  Pu-242      RDL:        pCi/g    LCL:70    UCL:130   RPD:35
JTDEP1AD-IBLK:
  Pu-241      RDL:15      pCi/g    LCL:      UCL:      RPD:      Pu-242    RDL:      pCi/g    LCL:70    UCL:130   RPD:35

UQ3HH2AC-SAMP Calc Info:
    Uncert Level (#s).: 2    Decay to SaDt: Y    Blk Subt.: N    Sci.Not.: Y    ODRs: B
JTDEP1AA-BLK:
    Uncert Level (#s).: 2    Decay to SaDt: Y    Blk Subt.: N    Sci.Not.: Y    ODRs: B
JTDEP1AC-LCS:
    Uncert Level (#s).: 2    Decay to SaDt: Y    Blk Subt.: N    Sci.Not.: Y    ODRs: B
JTDEP1AD-IBLK:
    Uncert Level (#s).: 2    Decay to SaDt: Y    Blk Subt.: N    Sci.Not.: Y    ODRs: B
```

Approved By _____ Date: _____

SEVERN TRENT STL

*** RE-ANALYSIS REQUEST ***

DUE DATE 3/29/07

CUSTOMER Fluor Hanford

ANALYSIS Pu241

MATRIX Soil

LOT NUMBER J7C110373

SAMPLE DELIVERY GROUP

OLD BATCH NUMBER 7091624

NEW BATCH NUMBER 7094198

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

RC-048, 10/03, Rev 7

STL RICHLAND

3/26/2007 5:47:08 PM

Sample Preparation/Analysis

Balance Id:1120373922

108302, Fluor Hanford Inc , Flour
Hanford Inc

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

PRIORITY

Pipet #: _____

AnalyDueDate: 03/29/2007

Sep1 DT/Tm Tech:

Batch: 7073625 SOIL pCi/g PM, Quote: SA , 50639

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 JQ3HH-1-AA J7C140373-1-SAMP 03/14/2007 08:05		AmtRec: 2X60ML	1.04g,in	1.04g #Containers: 2	NITA2386 03/15/07	100		Scr:	Alpha:	Beta:
2 JQ3HR-1-AA J7C140373-2-SAMP 03/14/2007 08:50		AmtRec: 2X60ML	1.08g,in	1.08g #Containers: 2	NITA2383 03/15/07			Scr:	Alpha:	Beta:
3 JQ3HR-1-AE-X J7C140373-2-DUP 03/14/2007 08:50		AmtRec: 2X60ML	1.04g,in	1.04g #Containers: 2	NITA2384 03/15/07	3/26/07		Scr:	Alpha:	Beta:
4 JQ3HT-1-AA J7C140373-3-SAMP 03/14/2007 09:35		AmtRec: 2X60ML	1.01g,in	1.01g #Containers: 2	NITA2385 03/15/07			Scr:	Alpha:	Beta:
5 JQ3H0-1-AA J7C140373-4-SAMP 03/14/2007 12:30		AmtRec: 2X60ML	1.05g,in	1.05g #Containers: 2	NITA2381 03/15/07			Scr:	Alpha:	Beta:
6 JQ3H2-1-AA J7C140373-5-SAMP 03/14/2007 08:50		AmtRec: 2X60ML	1.04g,in	1.04g #Containers: 2	NITA2382 03/15/07			Scr:	Alpha:	Beta:
7 JQ3H4-1-AA J7C140373-6-SAMP 03/08/2007 08:00		AmtRec: 2X60ML	1.01g,in	1.01g #Containers: 2	NITA2379 03/15/07			Scr:	Alpha:	Beta:

STL Richland Key: In - Initial Amt, fi - Final Amt, dl - Diluted Amt, s1 - Sep1, s2 - Sep2 Page 1 ISV - Insufficient Volume for Analysis WO Cnt: 7
Richland Wa. pd - Prep Dt, r - Reference Dt, ec-Enrichment Cell, ct-Cocktailed Added Prep_SamplePrep v4.8.26

STL RICHLAND

3/26/2007 5:47:10 PM

Sample Preparation/Analysis

Balance Id:1120373922

108302, Fluor Hanford Inc , Flour
Hanford Inc

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

PRIORITY

Pipet #: _____

AnalyDueDate: 03/29/2007

Sep1 DT/Tm Tech:

Batch: 7073625 SOIL pCi/g PM, Quote: SA , 50639

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:
8 JQ3H8-1-AA J7C140373-7-SAMP 03/14/2007 09:45		AmtRec: 2X60ML	1.07g,in	1.07g #Containers: 2	NITA2380 03/15/07	100	Scr:	Alpha:		Beta:
9 JQ3JC-1-AA J7C140373-8-SAMP 03/14/2007 10:30		AmtRec: 2X60ML	1.04g,in	1.04g #Containers: 2	NITA2377 03/15/07	3/20/07 JSW	Scr:	Alpha:		Beta:
10 JQ3R0-1-AA-B J7C140000-625-BLK 03/14/2007 08:50		AmtRec:	1.03g,in	1.03g #Containers: 1	NITA2378 03/15/07		Scr:	Alpha:		Beta:
11 JQ3R0-1-AC-C J7C140000-625-LCS 03/14/2007 08:50		AmtRec:	1.06g,in	1.06g #Containers: 1	NISA0752 03/15/07		Scr:	Alpha:		Beta:
12 JQ3R0-1-AD-BN J7C140000-625-IBLK 03/14/2007 08:50		AmtRec:		#Containers: 1			Scr:	Alpha:		Beta:

Comments: Samples have been muffled & bombed 3/20/07 JSW

All Clients for Batch:
108302, Fluor Hanford Inc Flour Hanford Inc , SA , 50639

JQ3HR1AA-SAMP Constituent List:
Ni-63 RDL:30 pCi/g LCL:70 UCL:130 RPD:35

3/26/2007 5:47:15 PM

Sample Preparation/Analysis

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

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

PRIORITY

AnalyDueDate: 03/29/2007

Batch: 7073625 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:

```
JQ3R01AA-BLK:
  Ni-63        RDL:30        pCi/g    LCL:      UCL:      RPD:
JQ3R01AC-LCS:
  Ni-63        RDL:30        pCi/g    LCL:70    UCL:130   RPD:35
JQ3R01AD-IBLK:
  Ni-63        RDL:30        pCi/g    LCL:      UCL:      RPD:
JQ3HH1AA-SAMP Calc Info:
     Uncert Level (#s).: 2    Decay to SaDt: Y    Blk Subt.: N    Sci.Not.: Y    ODRs: B
JQ3R01AA-BLK:
     Uncert Level (#s).: 2    Decay to SaDt: Y    Blk Subt.: N    Sci.Not.: Y    ODRs: B
JQ3R01AC-LCS:
     Uncert Level (#s).: 2    Decay to SaDt: Y    Blk Subt.: N    Sci.Not.: Y    ODRs: B
JQ3R01AD-IBLK:
     Uncert Level (#s).: 2    Decay to SaDt: Y    Blk Subt.: N    Sci.Not.: Y    ODRs: B
```

Approved By _____ Date: _____

4/16/2007 2:08:49 PM

ICOC Fraction Transfer/Status Report

ByDate: 4/16/2006, 4/21/2007, Batch: '7094498', User: *ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting			Comments
7094498						
AC		CalcC	WoodT	4/5/2007 9:19:55 AM		
SC			antonsonl	IsBatched	4/4/2007 5:06:18 PM	ICOC_RADCALC v4.8.26
SC			WoodT	InPrep	4/5/2007 9:19:55 AM	RICH-RC-5013 REVISION 5
SC			WoodT	Prep1C	4/5/2007 2:18:46 PM	RICH-RC-5013 REVISION 5
SC			AntonsonL	Sep1C	4/7/2007 1:17:10 PM	RICH-RC-5010 REVISION 4
SC			StringerR	InCnt1	4/7/2007 1:25:07 PM	RICH-RD-0001 REVISION 3
SC			BlackCL	CalcC	4/10/2007 11:01:46 AM	RICH-RD-0001 REVISION 3
AC			WoodT	4/5/2007 2:18:46 PM		
AC			AntonsonL	4/7/2007 1:17:10 PM		
AC			StringerR	4/7/2007 1:25:07 PM		
AC			BlackCL	4/10/2007 11:01:46		

AC: Accepting Entry; SC: Status Change

STL Richland

Richland Wa.

Grp Rec Cnt: 5

ICOCFractions v4.8.26

3/30/2007 1:43:16 PM

ICOC Fraction Transfer/Status Report

ByDate: 3/30/2006, 4/4/2007, Batch: '7073625', User: *ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting			Comments
7073625						
AC		CalcC	WoodT	3/20/2007 6:52:07		
SC			wagarr	IsBatched	3/14/2007 4:26:02 PM	ICOC_RADCALC v4.8.26
SC			WoodT	InPrep	3/20/2007 6:52:07 AM	RICH-RC-5013 REVISION 5
SC			WoodT	Prep2C	3/26/2007 5:47:16 PM	RICH-RC-5019 REVISION 5
SC			FABREM	Sep1C	3/28/2007 12:39:48 PM	RICH-RC-5069 REVISION 5
SC			StringerR	InCnt1	3/28/2007 12:47:58 PM	RICH-RD-0001 REVISION 3
SC			BlackCL	CalcC	3/30/2007 6:34:58 AM	RICH-RD-0001 REVISION 3
AC			WoodT	3/26/2007 5:47:16 PM		
AC			FABREM	3/28/2007 12:39:48		
AC			StringerR	3/28/2007 12:47:58		
AC			BlackCL	3/30/2007 6:34:58		

AC: Accepting Entry; SC: Status Change

STL Richland

Richland Wa.

Grp Rec Cnt: 5

ICOCFractions v4.8.26