

Analytical Data Package Prepared For  
**Pacific Northwest National Lab**

Radiochemical Analysis By

**STL Richland STLRL**

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

*Data Package Contains \_\_\_\_\_ Pages*

Report Nbr: 33339

SDG Nbr	ORDER Nbr	CLIENT ID NUMBER	LOT Nbr	WORK ORDER	RPT DB ID	BATCH
W04973	W06-008	B1K2M5	J6H030358-1	JALKT1AA	9JALKT10	6227320
		B1K2M5	J6H030358-1	JALKT1AC	9JALKT10	6227285
		B1K2T6	J6H030358-2	JALKX1AA	9JALKX10	6227330
		B1K2M1	J6H030358-3	JALK01AA	9JALK010	6227320
		B1K2M1	J6H030358-3	JALK01AC	9JALK010	6227285
	I06-055	B1K627	J6H030360-1	JALLH1AA	9JALLH10	6227338
		B1K627	J6H030360-1	JALLH1AC	9JALLH10	6227320
		B1K627	J6H030360-1	JALLH1AD	9JALLH10	6227327
		B1K627	J6H030360-1	JALLH1AF	9JALLH10	6227332
		B1K627	J6H030360-1	JALLH1AG	9JALLH10	6227337
		B1K627	J6H030360-1	JALLH1AH	9JALLH10	6227334
		B1K627	J6H030360-1	JALLH1AJ	9JALLH10	6227285
		B1K627	J6H030360-1	JALLH1AK	9JALLH10	6227326
		B1K627	J6H030360-1	JALLH2AE	9JALLH20	6227329
		B1K6C3	J6H030360-2	JALL41AA	9JALL410	6216493

Comments:

Report Nbr: 33339

SDG Nbr	ORDER Nbr	CLIENT ID NUMBER	LOT Nbr	WORK ORDER	RPT DB ID	BATCH	
W04973	W06-008	B1K2V9	J6H030361-1	JALMH1AA	9JALMH10	6227320	
		B1K2V9	J6H030361-1	JALMH1AC	9JALMH10	6227285	
		B1K2L4	J6H030361-2	JALMJ1AA	9JALMJ10	6227320	
		B1K2L4	J6H030361-2	JALMJ1AC	9JALMJ10	6227285	
	I06-055	W06-008	B1K684	J6H030364-1	JALMM1AA	9JALMM10	6227320
			B1K684	J6H030364-1	JALMM1AC	9JALMM10	6227332
			B1K684	J6H030364-1	JALMM1AD	9JALMM10	6227285
	I06-055	W06-008	B1K2L0	J6H030366-1	JALMT1AA	9JALMT10	6227320
			B1K2L0	J6H030366-1	JALMT1AC	9JALMT10	6227285
			B1K2K3	J6H030366-2	JALMV1AA	9JALMV10	6227285
			B1K2T2	J6H030366-3	JALMW1AA	9JALMW10	6227320
			B1K2T2	J6H030366-3	JALMW1AC	9JALMW10	6227285
			B1K5X2	J6H030367-1	JALM11AA	9JALM110	6227320
			B1K5X2	J6H030367-1	JALM11AC	9JALM110	6227332
			B1K5X2	J6H030367-1	JALM11AD	9JALM110	6227285
			B1K5X2	J6H030367-1	JALM11AE	9JALM110	6227326
			B1K5W8	J6H030367-2	JALM41AA	9JALM410	6227320
	W06-008	S06-007	B1K335	J6H030370-1	JALND1AA	9JALND10	6227285
			B1K2P8	J6H030370-2	JALNK1AA	9JALNK10	6227320
			B1K2P8	J6H030370-2	JALNK1AC	9JALNK10	6227285
			B1K327	J6H030370-3	JALNV1AA	9JALNV10	6227285
			B1K2P4	J6H030370-4	JALN31AA	9JALN310	6227320
			B1K2P4	J6H030370-4	JALN31AC	9JALN310	6227285
			B1K2D6	J6H070162-1	JARLW1AA	9JARLW10	6227320
	B1K2D6	J6H070162-1	JARLW2AC	9JARLW20	6237181		
			B1JL69	J6H070208-1	JATC61AA	9JATC610	6227339

Comments:

**Report Nbr: 33339**

<b>SDG Nbr</b>	<b>ORDER Nbr</b>	<b>CLIENT ID NUMBER</b>	<b>LOT Nbr</b>	<b>WORK ORDER</b>	<b>RPT DB ID</b>	<b>BATCH</b>
<b>W04973</b>	<b>S06-007</b>	<b>B1JL69</b>	<b>J6H070208-1</b>	<b>JATC61AC</b>	<b>9JATC610</b>	<b>6227340</b>
		<b>B1JL69</b>	<b>J6H070208-1</b>	<b>JATC61AD</b>	<b>9JATC610</b>	<b>6227285</b>

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**Comments:**

**STL Richland**  
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Richland, WA 99354

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## Certificate of Analysis

Pacific Northwest National Laboratories  
Sigma V Building  
Richland, WA 99352

September 26, 2006

Attention: Dot Stewart

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SAF Number	:	W06-008, I06-055, S06-007
Date SDG Closed	:	August 11, 2006
Number of Samples	:	Nineteen (19)
Sample Type	:	Water
SDG Number	:	W04973
Data Deliverable	:	45-Day / Summary

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### CASE NARRATIVE

#### I. Introduction

Between August 2, 2006 and August 7, 2006, nineteen water samples were received at STL Richland (STLR) for radiochemical analysis. Upon receipt, the samples were assigned the following laboratory ID numbers to correspond with the Pacific Northwest National Laboratories (PGW) specific IDs:

<u>PGW ID#</u>	<u>STLR ID#</u>	<u>MATRIX</u>	<u>DATE OF RECEIPT</u>
B1K2M5	JALKT	WATER	8/2/06
B1K2T6	JALKX	WATER	8/2/06
B1K2M1	JALK0	WATER	8/2/06
B1K627	JALLH	WATER	8/2/06
B1K6C3	JALL4	WATER	8/2/06
B1K2V9	JALMH	WATER	8/2/06
B1K2L4	JALMJ	WATER	8/2/06
B1K684	JALMM	WATER	8/2/06
B1K2L0	JALMT	WATER	8/2/06
B1K2K3	JALMV	WATER	8/2/06
B1K2T2	JALMW	WATER	8/2/06
B1J5X2	JALM1	WATER	8/2/06
B1K5W8	JALM4	WATER	8/2/06
B1K335	JALND	WATER	8/3/06
B1K2P8	JALNK	WATER	8/3/06

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B1K327	JALNV	WATER	8/3/06
B1K2P4	JALN3	WATER	8/3/06
B1K2D6	JARLW	WATER	8/4/06
B1JL69	JATC6	WATER	8/7/06

## 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**

Neptunium-237 by method RICH-RC-5003

### **Gas Proportional Counting**

Gross Alpha by method RICH-RC-5014

Gross Beta by method RICH-RC-5014

Strontium-90 by method RICH-RC-5006

### **Gamma Spectroscopy**

Gamma Spec by method RICH-RC-5017

Iodine-129 (LL) by method RICH-RC-5025 (Sep)

Iodine-129 (LL) by method RICH-RC-5025(Teva)

### **Liquid Scintillation Counting**

Selenium-79 by method RICH-RC-5043

Technetium-99 by TEVA method RICH-RC-5065

Technetium-99 by method RICH-RC-5078

Tritium by method RICH-RC-5007

Carbon-14 by method RICH-RC-5022

### **Laser Induced Phosphorimetry**

Total Uranium by method RICH-RC-5058

### **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**

Neptunium-237 by method RICH-RC-5003

The LCS, batch blank, samples and sample duplicate (B1K627) results are within contractual requirements.

### **Gas Proportional Counting**

Gross Alpha by method RICH-RC-5014:

Samples B1JL69 and B1JL69 DUP were analyzed with reduced volumes due to weight screen activity. Except as noted, the LCS, batch blank, samples and sample duplicate (B1JL69) results are within contractual requirements.

Gross Beta by method RICH-RC-5014:

Reduced volumes were analyzed for samples B1JL69 and B1JL69 DUP due to high dissolved solids in the sample. The CRDL was not met but the results are greater than the MDA which is greater than the CRDL. Other than noted, the LCS, batch blank, samples and sample duplicate (B1JL69) results are within contractual requirements.

Strontium-90 by method RICH-RC-5006

The LCS, batch blank, samples and sample duplicate (B1K627) results are within contractual requirements.

### **Gamma Spectroscopy**

Gamma Spec by method RICH-RC-5017:

The results did not agree on sample B1K627 and the duplicate of B1K627 on the first count. The samples were recounted and are acceptable. Except as noted, the LCS, batch blank, samples and sample duplicate (B1K627) results are within contractual requirements.

Iodine-129 (LL) by method RICH-RC-5025 (Sep):

The LCS, batch blank, samples and sample duplicate (B1K684) results are within contractual requirements.

Iodine-129 (LL) by method RICH-RC-5025 (Teva):

The iodine 129 analysis was not completed at the time of reporting.

### **Liquid Scintillation Counting**

Carbon-14 by method RICH-RC-5022

The LCS, batch blank, samples and sample duplicate (B1K627) results are within contractual requirements.

Selenium-79 by method RICH-RC-5043:

The LCS, batch blank, samples and sample duplicate (B1K627) results are within contractual requirements.

Pacific Northwest National Laboratories  
September 26, 2006

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Technetium-99 by TEVA method RICH-RC-5065:

The LCS, batch blank, samples, sample duplicate (B1K2L0), and sample matrix spike (B1K2K3) results are within contractual requirements.

Technetium-99 by method RICH-RC-5078:

The samples were reanalyzed due to a failed matrix spike. The reanalysis data was acceptable. Except as noted, the LCS, batch blank, samples, sample duplicate (B1K2D6), and sample matrix spike (B1K2D6) results are within contractual requirements.

Tritium by method RICH-RC-5007:

The LCS, batch blank, samples and sample duplicate (B1K2V9) results are within contractual requirements.

**Total Uranium**

Total Uranium by method RICH-RC-5058:

The LCS, batch blank, samples, sample duplicate (B1K5X2), and sample matrix spike (B1K627) results are within contractual requirements.

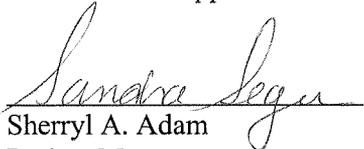
**Chemical Analysis**

Hexavalent Chromium by EPA method 7196A

The LCS, batch blank, samples, sample duplicate (B1K6C3), sample matrix spike (B1K6C3), and matrix spike duplicate results (B1K6C3) are within contractual requirements.

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

Reviewed and approved:



Sherryl A. Adam  
Project Manager

or

## 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,  $R = \text{constants} * f(x,y,z,\dots)$ . 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 ( $S/\sqrt{n}$ ), where S is the standard deviation of the derived results. The type B uncertainties are all other random or non-random components that are not included in the standard deviation.

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

## Report Definitions

<b>Action Lev</b>	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.
<b>Batch</b>	The QC preparation batch number that relates laboratory samples to QC samples that were prepared and analyzed together.
<b>Bias</b>	Defined by the equation (Result/Expected)-1 as defined by ANSI N13.30.
<b>COC No</b>	Chain of Custody Number assigned by the Client or STL Richland.
<b>Count Error (#s)</b>	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.
<b>Total Uncert (#s) <i>u<sub>c</sub>-Combined Uncertainty.</i></b>	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, <i>u<sub>c</sub> the combined uncertainty</i> . The uncertainty is absolute and in the same units as the result.
<b>(#s), Coverage Factor</b>	The coverage factor defines the width of the confidence interval, 1, 2 or 3 standard deviations.
<b>CRDL (RL)</b>	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)
<b>Lc</b>	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%. $Lc = (1.645 * \text{Sqrt}(2 * (\text{BkgndCnt} / \text{BkgndCntMin}) / \text{SCntMin})) * (\text{ConvFct} / (\text{Eff} * \text{Yld} * \text{Abn} * \text{Vol})) * \text{IngrFct}$ . 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.
<b>Lot-Sample No</b>	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.
<b>MDC MDA</b>	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%. $MDC = (4.65 * \text{Sqrt}((\text{BkgndCnt} / \text{BkgndCntMin}) / \text{SCntMin}) + 2.71 / \text{SCntMin}) * (\text{ConvFct} / (\text{Eff} * \text{Yld} * \text{Abn} * \text{Vol})) * \text{IngrFct}$ . For LSC methods the batch blank is used as a measure of the background variability.
<b>Primary Detector</b>	The instrument identifier associated with the analysis of the sample aliquot.
<b>Ratio U-234/U-238</b>	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.
<b>Rst/MDC</b>	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.
<b>Rst/TotUcert</b>	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.
<b>Report DB No</b>	Sample Identifier used by the report system. The number is based upon the first five digits of the <b>Work Order</b> Number.
<b>RER</b>	The equation Replicate Error Ratio = $(S-D) / [\text{sqrt}(\text{TPUs}^2 + \text{TPUD}^2)]$ 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.
<b>SDG</b>	Sample Delivery Group Number assigned by the Client or assigned by STL Richland upon sample receipt.
<b>Sum Rpt Alpha Spec Rst(s)</b>	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.
<b>Work Order</b>	The LIMS software assign test specific identifier.
<b>Yield</b>	The recovery of the tracer added to the sample such as Pu-242 used to trace a Pu-239/40 method.

9/26/2006 11:54:33 AM

# STL Richland Report

Lab Code: STLRL

FormNbr: R      FormatType: FEAD      Version: 05      Rpt Nbr: 33339      File Name: h:\Reportdb\edd\Fead\I\Rad\W04973.Edd, h:\Reportdb\edd\Fead\I\Rad\33339.Edd

Lab Sample Id:	Client Id:	Test User	Contract Nbr	SAF Nbr	Sdg Nbr:	QC Type:	Moisture/Solids%*:	Distilled Volume	Sample On Date:	Collection Date:				
9JALK010	B1K2M1		MW6-SBB-A1	W06-008	W04973					08/02/2006 12:56				
Batch	Analyte	CAS#	Result	Unit	CntU 2S	TotU 2S	Qual	MDA	TrcYield	Method	Alq Size	Unit	Analy Date/Time	Act
6227320	H-3	10028-17-8	5.07E+03	pCi/L	2.6E+02	3.6E+02		3.06E+02	100.0	906.0_H3_LSC	5.00E-03	L	08/18/2006 07:00	I
6227285	TC-99	14133-76-7	1.10E+02	pCi/L	7.1E+00	1.4E+01		1.03E+01	100.0	TC99_ETVDSK_LS	1.264E-01	L	08/27/2006 21:54	I

Lab Sample Id:	Client Id:	Test User	Contract Nbr	SAF Nbr	Sdg Nbr:	QC Type:	Moisture/Solids%*:	Distilled Volume	Sample On Date:	Collection Date:				
9JALKT10	B1K2M5		MW6-SBB-A1	W06-008	W04973					08/02/2006 11:49				
Batch	Analyte	CAS#	Result	Unit	CntU 2S	TotU 2S	Qual	MDA	TrcYield	Method	Alq Size	Unit	Analy Date/Time	Act
6227320	H-3	10028-17-8	4.04E+04	pCi/L	6.6E+02	1.8E+03		3.05E+02	100.0	906.0_H3_LSC	5.00E-03	L	08/18/2006 05:38	I
6227285	TC-99	14133-76-7	1.85E+02	pCi/L	8.6E+00	1.9E+01		1.04E+01	100.0	TC99_ETVDSK_LS	1.261E-01	L	08/27/2006 21:54	I

Lab Sample Id:	Client Id:	Test User	Contract Nbr	SAF Nbr	Sdg Nbr:	QC Type:	Moisture/Solids%*:	Distilled Volume	Sample On Date:	Collection Date:				
9JALKX10	B1K2T6		MW6-SBB-A1	W06-008	W04973					08/02/2006 09:27				
Batch	Analyte	CAS#	Result	Unit	CntU 2S	TotU 2S	Qual	MDA	TrcYield	Method	Alq Size	Unit	Analy Date/Time	Act
6227330	I-129L	15046-84-1	3.62E+01	pCi/L	4.3E+00	4.3E+00		1.15E+00	57.3	I129LL_ETVDSK_S	2.0002E+00	L	09/14/2006 08:57	I

Lab Sample Id:	Client Id:	Test User	Contract Nbr	SAF Nbr	Sdg Nbr:	QC Type:	Moisture/Solids%*:	Distilled Volume	Sample On Date:	Collection Date:				
9JALLH10	B1K627		MW6-SBB-A1	I06-055	W04973					08/02/2006 09:27				
Batch	Analyte	CAS#	Result	Unit	CntU 2S	TotU 2S	Qual	MDA	TrcYield	Method	Alq Size	Unit	Analy Date/Time	Act
6227320	H-3	10028-17-8	1.68E+06	pCi/L	4.1E+03	6.9E+04		3.00E+02	100.0	906.0_H3_LSC	5.00E-03	L	08/18/2006 08:23	I
6227327	C-14	14762-75-5	1.65E+02	pCi/L	7.3E+00	1.1E+01		8.45E+00	100.0	C14_LSC	2.00E-01	L	08/19/2006 09:25	I
6227332	I-129L	15046-84-1	4.27E+01	pCi/L	4.5E+00	4.5E+00		4.36E-01	98.4	I129LL_SEP_LEPS	4.0008E+00	L	09/08/2006 15:08	I
6227338	NP-237	13994-20-2	-1.69E-02	pCi/L	2.4E-02	2.4E-02	U	2.38E-01	97.0	NP237_LLE_PLAT	2.00E-01	L	09/11/2006 21:56	I
6227337	SE-79	15758-45-9	3.28E+01	pCi/L	5.1E+00	6.4E+00		1.00E+01	86.4	SE79_SEP_IE_LS	2.02E-01	L	08/31/2006 08:39	I
6227334	SR-90	10098-97-2	2.58E-01	pCi/L	2.8E-01	3.3E-01	U	6.91E-01	52.4	SRISO_SEP_PRE	1.0002E+00	L	09/09/2006 11:04	I
6227285	TC-99	14133-76-7	7.85E+03	pCi/L	4.9E+01	5.6E+02		1.05E+01	100.0	TC99_ETVDSK_LS	1.253E-01	L	08/27/2006 21:54	I
6227326	Uranium	7440-61-1	1.45E+00	ug/L	1.5E-01	1.5E-01		8.38E-02		UTOT_KPA	2.50E-02	ML	08/24/2006 10:20	I

Lab Sample Id:	Client Id:	Test User	Contract Nbr	SAF Nbr	Sdg Nbr:	QC Type:	Moisture/Solids%*:	Distilled Volume	Sample On Date:	Collection Date:				
9JALLH20	B1K627		MW6-SBB-A1	I06-055	W04973					08/02/2006 09:27				
Batch	Analyte	CAS#	Result	Unit	CntU 2S	TotU 2S	Qual	MDA	TrcYield	Method	Alq Size	Unit	Analy Date/Time	Act
6227329	BE-7	13966-02-4	5.32E+00	pCi/L	1.3E+01	1.3E+01	U	2.49E+01		GAMMA_GS	2.5006E+00	L	08/30/2006 19:32	I

STL Richland

rptFeadRadSummaryEdd v3.48

U Qual - Analyzed for, but the result is less than the Mdc or gamma scan did not identify the nuclide.

J Qual - No U qualifier has been assigned and the result is below the Reporting Limit (CRDL).

B Qual- Analyte was found in the associated laboratory blank above the MDC.

9/26/2006 11:54:33 AM

# STL Richland Report

Lab Code: STLRL

FormNbr: R      FormatType: FEAD      Version: 05      Rpt Nbr: 33339      File Name: h:\Reportdb\edd\FeaIV\Rad\W04973.Edd, h:\Reportdb\edd\FeaIV\Rad\33339.Edd

6227329	CO-60	10198-40-0	3.99E+00	pCi/L	2.4E+00	2.4E+00	U	4.99E+00	GAMMA_GS	2.5006E+00	L	08/30/2006	19:32	I
6227329	CS-134	13967-70-9	-1.35E-01	pCi/L	1.2E+00	1.2E+00	U	2.21E+00	GAMMA_GS	2.5006E+00	L	08/30/2006	19:32	I
6227329	CS-137	10045-97-3	1.06E-01	pCi/L	1.1E+00	1.1E+00	U	2.02E+00	GAMMA_GS	2.5006E+00	L	08/30/2006	19:32	I
6227329	EU-152	14683-23-9	2.59E+00	pCi/L	2.9E+00	2.9E+00	U	5.70E+00	GAMMA_GS	2.5006E+00	L	08/30/2006	19:32	I
6227329	EU-154	15585-10-1	9.62E-02	pCi/L	4.5E+00	4.5E+00	U	8.46E+00	GAMMA_GS	2.5006E+00	L	08/30/2006	19:32	I
6227329	EU-155	14391-16-3	-1.11E+00	pCi/L	2.5E+00	2.5E+00	U	4.29E+00	GAMMA_GS	2.5006E+00	L	08/30/2006	19:32	I
6227329	K-40	13966-00-2	-2.17E+00	pCi/L	2.9E+01	2.9E+01	U	6.10E+01	GAMMA_GS	2.5006E+00	L	08/30/2006	19:32	I
6227329	PA-231	14331-85-2	-6.24E+00	pCi/L	3.1E+01	3.1E+01	U	5.41E+01	GAMMA_GS	2.5006E+00	L	08/30/2006	19:32	I
6227329	RU-106	13967-48-1	2.89E+00	pCi/L	1.3E+01	1.3E+01	U	2.34E+01	GAMMA_GS	2.5006E+00	L	08/30/2006	19:32	I
6227329	SB-125	14234-35-6	8.31E-02	pCi/L	3.0E+00	3.0E+00	U	5.50E+00	GAMMA_GS	2.5006E+00	L	08/30/2006	19:32	I

Lab Sample Id:	Client Id:	Test User	Contract Nbr	SAF Nbr	Sdg Nbr:	QC Type:	Moisture/Solids%*:	Distilled Volume	Sample On Date:	Collection Date:				
9JALM110	B1K5X2		MW6-SBB-A1	I06-055	W04973					08/02/2006 10:16				
Batch	Analyte	CAS#	Result	Unit	CntU 2S	TotU 2S	Qual	MDA	TrcYield	Method	Alq Size	Unit	Analy Date/Time	Act
6227320	H-3	10028-17-8	6.96E+03	pCi/L	3.0E+02	4.4E+02		3.07E+02	100.0	906.0_H3_LSC	5.00E-03	L	08/18/2006 22:01	I
6227332	I-129L	15046-84-1	1.81E-01	pCi/L	1.4E-01	1.4E-01	U	2.90E-01	97.8	I129LL_SEP_LEPS	4.0006E+00	L	09/08/2006 20:48	I
6227285	TC-99	14133-76-7	1.03E+02	pCi/L	7.0E+00	1.3E+01		1.04E+01	100.0	TC99_ETVDSK_LS	1.257E-01	L	08/27/2006 21:55	I
6227326	Uranium	7440-61-1	9.27E-01	ug/L	9.5E-02	9.5E-02		8.35E-02		UTOT_KPA	2.51E-02	ML	08/24/2006 10:26	I

Lab Sample Id:	Client Id:	Test User	Contract Nbr	SAF Nbr	Sdg Nbr:	QC Type:	Moisture/Solids%*:	Distilled Volume	Sample On Date:	Collection Date:				
9JALM410	B1K5W8		MW6-SBB-A1	I06-055	W04973					08/02/2006 12:06				
Batch	Analyte	CAS#	Result	Unit	CntU 2S	TotU 2S	Qual	MDA	TrcYield	Method	Alq Size	Unit	Analy Date/Time	Act
6227320	H-3	10028-17-8	1.40E+03	pCi/L	1.7E+02	2.0E+02		3.02E+02	100.0	906.0_H3_LSC	5.00E-03	L	08/18/2006 23:22	I

Lab Sample Id:	Client Id:	Test User	Contract Nbr	SAF Nbr	Sdg Nbr:	QC Type:	Moisture/Solids%*:	Distilled Volume	Sample On Date:	Collection Date:				
9JALMH10	B1K2V9		MW6-SBB-A1	W06-008	W04973					08/02/2006 11:20				
Batch	Analyte	CAS#	Result	Unit	CntU 2S	TotU 2S	Qual	MDA	TrcYield	Method	Alq Size	Unit	Analy Date/Time	Act
6227320	H-3	10028-17-8	8.81E+03	pCi/L	3.3E+02	5.1E+02		3.05E+02	100.0	906.0_H3_LSC	5.00E-03	L	08/18/2006 09:45	I
6227285	TC-99	14133-76-7	1.87E+02	pCi/L	8.6E+00	1.9E+01		1.04E+01	100.0	TC99_ETVDSK_LS	1.264E-01	L	08/27/2006 21:54	I

Lab Sample Id:	Client Id:	Test User	Contract Nbr	SAF Nbr	Sdg Nbr:	QC Type:	Moisture/Solids%*:	Distilled Volume	Sample On Date:	Collection Date:				
9JALMJ10	B1K2L4		MW6-SBB-A1	W06-008	W04973					08/02/2006 09:36				
Batch	Analyte	CAS#	Result	Unit	CntU 2S	TotU 2S	Qual	MDA	TrcYield	Method	Alq Size	Unit	Analy Date/Time	Act
6227320	H-3	10028-17-8	2.66E+03	pCi/L	2.1E+02	2.6E+02		3.07E+02	100.0	906.0_H3_LSC	5.00E-03	L	08/18/2006 12:28	I

STL Richland

U Qual - Analyzed for, but the result is less than the Mdc or gamma scan did not identify the nuclide.

J Qual - No U qualifier has been assigned and the result is below the Reporting Limit (CRDL).

B Qual- Analyte was found in the associated laboratory blank above the MDC.

rptFeaRadSummaryEdd v3.48

9/26/2006 11:54:34 AM

## STL Richland Report

Lab Code: STLRL

FormNbr: R      FormatType: FEAD      Version: 05      Rpt Nbr: 33339      File Name: h:\Reportdb\ledd\Fead\I\Rad\W04973.Edd, h:\Reportdb\ledd\Fead\I\Rad\33339.Edd

6227285 TC-99      14133-76-7      1.00E+02      pCi/L      6.9E+00      1.3E+01      1.04E+01      100.0      TC99\_ETVDSK\_LS      1.263E-01      L      08/27/2006 21:54      I

Lab Sample Id:	Client Id:	Test User	Contract Nbr	SAF Nbr	Sdg Nbr:	QC Type:	Moisture/Solids%*:	Distilled Volume	Sample On Date:	Collection Date:				
9JALMM10	B1K684		MW6-SBB-A1	I06-055	W04973					08/02/2006 12:40				
Batch	Analyte	CAS#	Result	Unit	CntU 2S	TotU 2S	Qual	MDA	TrcYield	Method	Alq Size	Unit	Analy Date/Time	Act
6227320	H-3	10028-17-8	7.41E+03	pCi/L	3.0E+02	4.6E+02		3.06E+02	100.0	906.0_H3_LSC	5.00E-03	L	08/18/2006 13:50	I
6227332	I-129L	15046-84-1	1.36E-01	pCi/L	1.6E-01	1.6E-01	U	3.15E-01	93.5	I129LL_SEP_LEPS	3.8827E+00	L	09/08/2006 16:53	I
6227285	TC-99	14133-76-7	5.98E+03	pCi/L	4.2E+01	4.3E+02		1.03E+01	100.0	TC99_ETVDSK_LS	1.258E-01	L	08/27/2006 21:54	I

Lab Sample Id:	Client Id:	Test User	Contract Nbr	SAF Nbr	Sdg Nbr:	QC Type:	Moisture/Solids%*:	Distilled Volume	Sample On Date:	Collection Date:				
9JALMT10	B1K2L0		MW6-SBB-A1	W06-008	W04973					08/02/2006 09:09				
Batch	Analyte	CAS#	Result	Unit	CntU 2S	TotU 2S	Qual	MDA	TrcYield	Method	Alq Size	Unit	Analy Date/Time	Act
6227320	H-3	10028-17-8	3.26E+03	pCi/L	2.2E+02	2.8E+02		3.08E+02	100.0	906.0_H3_LSC	5.00E-03	L	08/18/2006 15:12	I
6227285	TC-99	14133-76-7	1.49E+03	pCi/L	2.1E+01	1.1E+02		1.02E+01	100.0	TC99_ETVDSK_LS	1.263E-01	L	08/27/2006 21:54	I

Lab Sample Id:	Client Id:	Test User	Contract Nbr	SAF Nbr	Sdg Nbr:	QC Type:	Moisture/Solids%*:	Distilled Volume	Sample On Date:	Collection Date:				
9JALMV10	B1K2K3		MW6-SBB-A1	W06-008	W04973					08/02/2006 12:06				
Batch	Analyte	CAS#	Result	Unit	CntU 2S	TotU 2S	Qual	MDA	TrcYield	Method	Alq Size	Unit	Analy Date/Time	Act
6227285	TC-99	14133-76-7	6.91E+01	pCi/L	6.2E+00	1.1E+01		1.03E+01	100.0	TC99_ETVDSK_LS	1.26E-01	L	08/27/2006 21:54	I

Lab Sample Id:	Client Id:	Test User	Contract Nbr	SAF Nbr	Sdg Nbr:	QC Type:	Moisture/Solids%*:	Distilled Volume	Sample On Date:	Collection Date:				
9JALMW10	B1K2T2		MW6-SBB-A1	W06-008	W04973					08/02/2006 13:40				
Batch	Analyte	CAS#	Result	Unit	CntU 2S	TotU 2S	Qual	MDA	TrcYield	Method	Alq Size	Unit	Analy Date/Time	Act
6227320	H-3	10028-17-8	6.10E+03	pCi/L	2.8E+02	4.0E+02		3.03E+02	100.0	906.0_H3_LSC	5.00E-03	L	08/18/2006 20:39	I
6227285	TC-99	14133-76-7	3.04E+02	pCi/L	1.0E+01	2.7E+01		1.04E+01	100.0	TC99_ETVDSK_LS	1.254E-01	L	08/27/2006 21:54	I

Lab Sample Id:	Client Id:	Test User	Contract Nbr	SAF Nbr	Sdg Nbr:	QC Type:	Moisture/Solids%*:	Distilled Volume	Sample On Date:	Collection Date:				
9JALN310	B1K2P4		MW6-SBB-A1	W06-008	W04973					08/03/2006 08:40				
Batch	Analyte	CAS#	Result	Unit	CntU 2S	TotU 2S	Qual	MDA	TrcYield	Method	Alq Size	Unit	Analy Date/Time	Act
6227320	H-3	10028-17-8	5.14E+03	pCi/L	2.6E+02	3.6E+02		3.03E+02	100.0	906.0_H3_LSC	5.00E-03	L	08/19/2006 02:06	I
6227285	TC-99	14133-76-7	2.24E+03	pCi/L	2.6E+01	1.6E+02		1.04E+01	100.0	TC99_ETVDSK_LS	1.247E-01	L	08/27/2006 21:55	I

Lab Sample Id:	Client Id:	Test User	Contract Nbr	SAF Nbr	Sdg Nbr:	QC Type:	Moisture/Solids%*:	Distilled Volume	Sample On Date:	Collection Date:
9JALND10	B1K335		MW6-SBB-A1	W06-008	W04973					08/03/2006 11:42

STL Richland

U Qual - Analyzed for, but the result is less than the Mdc or gamma scan did not identify the nuclide.

rptFeadRadSummaryEdd v3.48

J Qual - No U qualifier has been assigned and the result is below the Reporting Limit (CRDL).

B Qual- Analyte was found in the associated laboratory blank above the MDC.

3

9/26/2006 11:54:34 AM

### STL Richland Report

Lab Code: STLRL

FormNbr: R      FormatType: FEAD      Version: 05      Rpt Nbr: 33339      File Name: h:\Reportdb\edd\FeadIV\Rad\W04973.Edd, h:\Reportdb\edd\FeadIV\Rad\33339.Edd

Batch	Analyte	CAS#	Result	Unit	CntU 2S	TotU 2S	Qual	MDA	TrcYield	Method	Alq Size	Unit	Analy Date/Time	Act
6227285	TC-99	14133-76-7	1.21E+03	pCi/L	2.0E+01	9.1E+01		1.04E+01	100.0	TC99_ETVDSK_LS	1.263E-01	L	08/27/2006 21:55	I
<b>Lab Sample Id:</b>	<b>Client Id:</b>	<b>Test User:</b>	<b>Contract Nbr:</b>	<b>SAF Nbr:</b>	<b>Sdg Nbr:</b>	<b>QC Type:</b>	<b>Moisture/Solids%*:</b>	<b>Distilled Volume:</b>	<b>Sample On Date:</b>	<b>Collection Date:</b>				
9JALNK10	B1K2P8		MW6-SBB-A1	W06-008	W04973					08/03/2006 10:47				
6227320	H-3	10028-17-8	7.39E+03	pCi/L	3.0E+02	4.5E+02		3.01E+02	100.0	906.0_H3_LSC	5.00E-03	L	08/19/2006 00:44	I
6227285	TC-99	14133-76-7	1.87E+04	pCi/L	7.5E+01	1.3E+03		1.04E+01	100.0	TC99_ETVDSK_LS	1.253E-01	L	08/27/2006 21:55	I
<b>Lab Sample Id:</b>	<b>Client Id:</b>	<b>Test User:</b>	<b>Contract Nbr:</b>	<b>SAF Nbr:</b>	<b>Sdg Nbr:</b>	<b>QC Type:</b>	<b>Moisture/Solids%*:</b>	<b>Distilled Volume:</b>	<b>Sample On Date:</b>	<b>Collection Date:</b>				
9JALNV10	B1K327		MW6-SBB-A1	W06-008	W04973					08/03/2006 10:06				
6227285	TC-99	14133-76-7	8.99E+02	pCi/L	1.7E+01	6.9E+01		1.02E+01	100.0	TC99_ETVDSK_LS	1.252E-01	L	08/27/2006 21:55	I
<b>Lab Sample Id:</b>	<b>Client Id:</b>	<b>Test User:</b>	<b>Contract Nbr:</b>	<b>SAF Nbr:</b>	<b>Sdg Nbr:</b>	<b>QC Type:</b>	<b>Moisture/Solids%*:</b>	<b>Distilled Volume:</b>	<b>Sample On Date:</b>	<b>Collection Date:</b>				
9JARLW10	B1K2D6		MW6-SBB-A1	W06-008	W04973					08/04/2006 11:14				
6227320	H-3	10028-17-8	1.05E+04	pCi/L	3.6E+02	5.8E+02		3.09E+02	100.0	906.0_H3_LSC	5.00E-03	L	08/19/2006 03:28	I
<b>Lab Sample Id:</b>	<b>Client Id:</b>	<b>Test User:</b>	<b>Contract Nbr:</b>	<b>SAF Nbr:</b>	<b>Sdg Nbr:</b>	<b>QC Type:</b>	<b>Moisture/Solids%*:</b>	<b>Distilled Volume:</b>	<b>Sample On Date:</b>	<b>Collection Date:</b>				
9JARLW20	B1K2D6		MW6-SBB-A1	W06-008	W04973					08/04/2006 11:14				
6237181	TC-99	14133-76-7	3.35E+01	pCi/L	5.3E+00	8.1E+00		1.05E+01	100.0	TC99_SEP_LSC	1.253E-01	L	09/13/2006 21:32	I
<b>Lab Sample Id:</b>	<b>Client Id:</b>	<b>Test User:</b>	<b>Contract Nbr:</b>	<b>SAF Nbr:</b>	<b>Sdg Nbr:</b>	<b>QC Type:</b>	<b>Moisture/Solids%*:</b>	<b>Distilled Volume:</b>	<b>Sample On Date:</b>	<b>Collection Date:</b>				
9JATC610	B1JL69		MW6-SBB-A1	S06-007	W04973					08/07/2006 10:33				
6227339	ALPHA	12587-46-1	2.96E+00	pCi/L	1.6E+00	1.7E+00		1.51E+00	100.0	9310_ALPHABETA	1.518E-01	L	08/28/2006 20:06	I
6227340	BETA	12587-47-2	1.84E+03	pCi/L	2.5E+01	2.6E+02		4.93E+00	100.0	9310_ALPHABETA	1.292E-01	L	08/25/2006 18:46	I
6227285	TC-99	14133-76-7	4.28E+00	pCi/L	4.5E+00	6.5E+00	U	1.05E+01	100.0	TC99_ETVDSK_LS	1.249E-01	L	08/27/2006 21:55	I

Tuesday, September 26, 2006

### STL Richland QC Blank Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\Fead\VRad\W04973.Edd, h:\Reportdb\edd\Fead\VRad\33339.Edd

Lab Sample Id: JCC202AB

Sdg/Rept Nbr: W04973

33339

Collection Date: 08/04/2006 11:14

Client Id: NA

Matrix: WATER

WATER

Sample On Date:

Moisture/Solids%\*:

QC Type: BLK

Received Date: 08/04/2006

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix	RTyp					
	MW6-SBB-A19981								BK	H					
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCL	R Typ
6237181 BLK	TC-99 14133-76-7	-1.60E+00	pCi/L	6.1E+00 4.3E+00	U	1.04E+01	100.0		TC99_SEP_LS	1.255E-01 L	09/14/2006 00:39				D

Tuesday, September 26, 2006

### STL Richland QC Blank Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\Fead\Rad\W04973.Edd, h:\Reportdb\edd\Fead\Rad\33339.Edd

Lab Sample Id: JCC301AB

Sdg/Rept Nbr: W04973

33339

Collection Date: 08/02/2006 09:27

Client Id: NA

Matrix: WATER

WATER

Sample On Date:

Moisture/Solids%\*:

QC Type: BLK

Received Date: 08/02/2006

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix	RTyp					
	MW6-SBB-A19981								BM	H					
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qual	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCL	R Typ
6227334 BLK	SR-90 10098-97-2	6.32E-02	pCi/L	2.6E-01 2.3E-01	U	5.67E-01	66.8		SRISO_SEP_P	1.00E+00 L	09/09/2006 11:04				D

Tuesday, September 26, 2006

# STL Richland QC Blank Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\ledd\Fead\VRad\W04973.Edd, h:\Reportdb\ledd\Fead\VRad\33339.Edd

Lab Sample Id: JCC311AB

Sdg/Rept Nbr: W04973 33339

Collection Date: 08/02/2006 09:27

Client Id: NA

Matrix: WATER WATER

Sample On Date:

Moisture/Solids%\*:

QC Type: BLK

Received Date: 08/02/2006

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix	RType					
	MW6-SBB-A19981								BO	H					
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCL	R Typ
6227337 BLK	SE-79 15758-45-9	-1.75E+00	pCi/L	5.0E+00 4.2E+00	U	1.03E+01	85.2		SE79_SEP_IE	2.00E-01 L	08/31/2006 10:25				D

Tuesday, September 26, 2006

### STL Richland QC Blank Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\ledd\Fead\VRad\W04973.Edd, h:\Reportdb\ledd\Fead\VRad\33339.Edd

Lab Sample Id: JCC321AB

Sdg/Rept Nbr: W04973 33339

Collection Date: 08/02/2006 09:27

Client Id: NA

Matrix: WATER WATER

Sample On Date:

Moisture/Solids%\*:

QC Type: BLK

Received Date: 08/02/2006

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix	RTyp					
	MW6-SBB-A19981								BP	H					
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCL	R Typ
6227338 BLK	NP-237 13994-20-2	4.12E-02	pCi/L	8.3E-02 8.2E-02	U	1.12E-01	101.7		NP237_LLE_P	1.997E-01 L	09/11/2006 21:58				D

Tuesday, September 26, 2006

### STL Richland QC Blank Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\ledd\Fead\VRad\W04973.Edd, h:\Reportdb\ledd\Fead\VRad\33339.Edd

Lab Sample Id: JCC341AB

Sdg/Rept Nbr: W04973 33339

Collection Date: 08/07/2006 10:33

Client Id: NA

Matrix: WATER WATER

Sample On Date:

Moisture/Solids%\*:

QC Type: BLK

Received Date: 08/07/2006

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix	RType					
	MW6-SBB-A19981								BR	H					
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCL	R Typ
6227339 BLK	ALPHA 12587-46-1	1.05E-01	pCi/L	3.4E-01 3.4E-01	U	8.87E-01	100.0		9310_ALPHAB	1.996E-01 L	08/28/2006 21:10				D

Tuesday, September 26, 2006

### STL Richland QC Blank Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\Fead\Rad\W04973.Edd, h:\Reportdb\edd\Fead\Rad\33339.Edd

Lab Sample Id: JCC351AB

Sdg/Rept Nbr: W04973

33339

Collection Date: 08/07/2006 10:33

Client Id: NA

Matrix: WATER

WATER

Sample On Date:

Moisture/Solids%\*:

QC Type: BLK

Received Date: 08/07/2006

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix	RTyp					
	MW6-SBB-A19981								BT	H					
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCL	R Typ
6227340 BLK	BETA 12587-47-2	1.61E+00	pCi/L	1.3E+00 1.3E+00	U	2.65E+00	100.0		9310_ALPHAB	2.018E-01 L	08/25/2006 18:46				D

Tuesday, September 26, 2006

# STL Richland QC Blank Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\Fead\VRad\W04973.Edd, h:\Reportdb\edd\Fead\VRad\33339.Edd

Lab Sample Id: JCC3C1AB

Sdg/Rept Nbr: W04973

33339

Collection Date: 08/02/2006 11:20

Client Id: NA

Matrix: WATER

WATER

Sample On Date:

Moisture/Solids%\*:

QC Type: BLK

Received Date: 08/02/2006

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix	RTyp					
	MW6-SBB-A19981								BV	H					
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCL	R Typ
6227320 BLK	H-3 10028-17-8	-2.02E+01	pCi/L	1.4E+02 1.2E+02	U	3.06E+02	100.0		906.0_H3_LSC	5.00E-03 L	08/18/2006 02:55				D

Tuesday, September 26, 2006

### STL Richland QC Blank Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\ledd\Fead\I\Rad\W04973.Edd, h:\Reportdb\ledd\Fead\I\Rad\33339.Edd

Lab Sample Id: JCC3C1DX

Sdg/Rept Nbr: W04973 33339

Collection Date: 08/02/2006 11:20

Client Id: NA

Matrix: WATER WATER

Sample On Date:

Moisture/Solids%\*:

QC Type: BLK

Received Date: 08/02/2006

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix	RTyp					
	MW6-SBB-A19981								BX	H					
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCL	R Typ
6227320 BLK	H-3 10028-17-8	1.52E+01	pCi/L	1.4E+02 1.3E+02	U	3.07E+02	100.0		906.0_H3_LSC	5.00E-03 L	08/18/2006 17:55				D

Tuesday, September 26, 2006

### STL Richland QC Blank Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\ledd\Fead\I\Rad\W04973.Edd, h:\Reportdb\ledd\Fead\I\Rad\33339.Edd

Lab Sample Id: JCC3K1AB

Sdg/Rept Nbr: W04973 33339

Collection Date: 08/02/2006 10:16

Client Id: NA

Matrix: WATER WATER

Sample On Date:

Moisture/Solids%\*:

QC Type: BLK

Received Date: 08/02/2006

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix	RTyp					
	MW6-SBB-A19981								BZ	H					
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCL	R Typ
6227326 BLK	Uranium 7440-61-1	1.30E-02	ug/L	1.4E-03 1.4E-03	U	8.42E-02			UTOT_KPA	2.49E-02 ML	08/24/2006 09:41				D

Tuesday, September 26, 2006

# STL Richland QC Blank Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\ledd\Fead\W04973.Edd, h:\Reportdb\ledd\Fead\W04973.Edd

Lab Sample Id: JCC3L1AB

Sdg/Rept Nbr: W04973 33339

Collection Date: 08/02/2006 09:27

Client Id: NA

Matrix: WATER WATER

Sample On Date:

Moisture/Solids%\*:

QC Type: BLK

Received Date: 08/02/2006

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix	RTyp					
	MW6-SBB-A19981								CC	H					
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCL	R Typ
6227327 BLK	C-14 14762-75-5	6.16E-02	pCi/L	4.3E+00 3.5E+00	U	8.45E+00	100.0		C14_LSC	2.00E-01 L	08/19/2006 08:01				D

Tuesday, September 26, 2006

### STL Richland QC Blank Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\Fead\I\Rad\W04973.Edd, h:\Reportdb\edd\Fead\I\Rad\33339.Edd

Lab Sample Id: JCC3N1AB

Sdg/Rept Nbr: W04973

33339

Collection Date: 08/02/2006 09:27

Client Id: NA

Matrix: WATER

WATER

Sample On Date:

Moisture/Solids%\*:

QC Type: BLK

Received Date: 08/02/2006

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix	RTyp					
	MW6-SBB-A19981								CE	H					
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCL	R Typ
6227329 BLK	BE-7 13966-02-4	3.45E+00	pCi/L	1.4E+01 1.4E+01	U	2.60E+01			GAMMA_GS	2.5004E+00 L	08/26/2006 09:41				D
6227329 BLK	CO-60 10198-40-0	-1.04E+00	pCi/L	1.7E+00 1.7E+00	U	2.86E+00			GAMMA_GS	2.5004E+00 L	08/26/2006 09:41				D
6227329 BLK	CS-134 13967-70-9	-5.16E-01	pCi/L	1.4E+00 1.4E+00	U	2.40E+00			GAMMA_GS	2.5004E+00 L	08/26/2006 09:41				D
6227329 BLK	CS-137 10045-97-3	3.82E-01	pCi/L	1.2E+00 1.2E+00	U	2.29E+00			GAMMA_GS	2.5004E+00 L	08/26/2006 09:41				D
6227329 BLK	EU-152 14683-23-9	3.14E-02	pCi/L	3.2E+00 3.2E+00	U	5.88E+00			GAMMA_GS	2.5004E+00 L	08/26/2006 09:41				D
6227329 BLK	EU-154 15585-10-1	-4.10E-01	pCi/L	3.9E+00 3.9E+00	U	7.28E+00			GAMMA_GS	2.5004E+00 L	08/26/2006 09:41				D
6227329 BLK	EU-155 14391-16-3	2.65E+00	pCi/L	3.1E+00 3.1E+00	U	5.81E+00			GAMMA_GS	2.5004E+00 L	08/26/2006 09:41				D
6227329 BLK	K-40 13966-00-2	-2.18E+01	pCi/L	1.9E+01 1.9E+01	U	3.68E+01			GAMMA_GS	2.5004E+00 L	08/26/2006 09:41				D
6227329 BLK	PA-231 14331-85-2	-3.74E+01	pCi/L	4.3E+01 4.3E+01	U	6.36E+01			GAMMA_GS	2.5004E+00 L	08/26/2006 09:41				D
6227329 BLK	RU-106 13967-48-1	8.05E-01	pCi/L	1.2E+01 1.2E+01	U	2.28E+01			GAMMA_GS	2.5004E+00 L	08/26/2006 09:41				D
6227329 BLK	SB-125 14234-35-6	1.22E+00	pCi/L	3.1E+00 3.1E+00	U	5.94E+00			GAMMA_GS	2.5004E+00 L	08/26/2006 09:41				D

Tuesday, September 26, 2006

### STL Richland QC Blank Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\Fead\IVRad\W04973.Edd, h:\Reportdb\edd\Fead\IVRad\33339.Edd

Lab Sample Id: JCC3R1DB

Sdg/Rept Nbr: W04973

33339

Collection Date: 08/02/2006 09:27

Client Id: NA

Matrix: WATER

WATER

Sample On Date:

Moisture/Solids%\*:

QC Type: BLK

Received Date: 08/02/2006

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix	RTyp					
	MW6-SBB-A19981								CG	H					
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qual	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCL	R Typ
6227330 BLK	I-129L 15046-84-1	-2.55E-02	pCi/L	2.3E-01 2.3E-01	U	4.21E-01	94.3		I129LL_ETVDS	2.00E+00 L	09/14/2006 10:43				D

Tuesday, September 26, 2006

### STL Richland QC Blank Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W04973.Edd, h:\Reportdb\edd\FeadIV\Rad\33339.Edd

Lab Sample Id: JCC3V1AB

Sdg/Rept Nbr: W04973

33339

Collection Date: 08/02/2006 12:40

Client Id: NA

Matrix: WATER

WATER

Sample On Date:

Moisture/Solids%\*:

QC Type: BLK

Received Date: 08/02/2006

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix	RTyp					
	MW6-SBB-A19981								CI	H					
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCL	R Typ
6227332 BLK	I-129L 15046-84-1	-1.34E-01	pCi/L	1.4E-01 1.4E-01	U	2.30E-01	97.6		I129LL_SEP_L	3.9984E+00 L	09/09/2006 09:28				D

Tuesday, September 26, 2006

### STL Richland QC Blank Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\ledd\Fead\VRad\W04973.Edd, h:\Reportdb\ledd\Fead\VRad\33339.Edd

Lab Sample Id: JCCX41AB

Sdg/Rept Nbr: W04973

33339

Collection Date: 08/02/2006 09:09

Client Id: NA

Matrix: WATER

WATER

Sample On Date:

Moisture/Solids%\*:

QC Type: BLK

Received Date: 08/02/2006

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix	RTyp					
	MW6-SBB-A19981								CK	H					
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCL	R Typ
6227285 BLK	TC-99 14133-76-7	5.13E-01	pCi/L	6.3E+00 4.3E+00	U	1.04E+01	100.0		TC99_ETVDSK	1.25E-01 L	08/27/2006 21:55				D

Tuesday, September 26, 2006

### STL Richland QC Control Sample Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\Fead\I\Rad\W04973.Edd, h:\Reportdb\edd\Fead\I\Rad\33339.Edd

Lab Sample Id: JCC202CS

Sdg/Rept Nbr: W04973

33339

Collection Date: 08/04/2006 11:14

Client Id: NA

Matrix: WATER

WATER

Sample On Date:

Moisture/Solids%\*:

QC Type: BS

Received Date: 08/04/2006

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix	RType					
	MW6-SBB-A19981								BL	H					
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCL	R Typ
6237181 BS	TC-99 14133-76-7	4.14E+02	pCi/L	3.1E+01 1.2E+01		1.05E+01	100.0	5.42E+02 76.3	TC99_SEP_LS	1.248E-01 L	09/14/2006 01:42			70 130	D

Tuesday, September 26, 2006

### STL Richland QC Control Sample Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\Fead\IVRad\W04973.Edd, h:\Reportdb\edd\Fead\IVRad\33339.Edd

Lab Sample Id: JCC301CS

Sdg/Rept Nbr: W04973

33339

Collection Date: 08/02/2006 09:27

Client Id: NA

Matrix: WATER

WATER

Sample On Date:

Moisture/Solids%\*:

QC Type: BS

Received Date: 08/02/2006

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix	RTyp					
	MW6-SBB-A19981								BN	H					
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCL	R Typ
6227334 BS	SR-90 10098-97-2	1.26E+01	pCi/L	2.0E+00 6.8E-01		5.16E-01	73.5	1.39E+01 90.7	SRISO_SEP_P	1.0006E+00 L	09/09/2006 11:04			70 130	D

Tuesday, September 26, 2006

### STL Richland QC Control Sample Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\Fead\Rad\W04973.Edd, h:\Reportdb\edd\Fead\Rad\33339.Edd

Lab Sample Id: JCC321CS

Sdg/Rept Nbr: W04973

33339

Collection Date: 08/02/2006 09:27

Client Id: NA

Matrix: WATER

WATER

Sample On Date:

Moisture/Solids%\*:

QC Type: BS

Received Date: 08/02/2006

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix	RTyp					
	MW6-SBB-A19981								BQ	H					
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCL	R Typ
6227338 BS	NP-237 13994-20-2	9.33E+00	pCi/L	1.9E+00 1.3E+00		2.47E-01	97.0	8.95E+00 104.2	NP237_LLE_P	2.019E-01 L	09/11/2006 21:59			70 130	D

Tuesday, September 26, 2006

### STL Richland QC Control Sample Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\Fead\Rad\W04973.Edd, h:\Reportdb\edd\Fead\Rad\33339.Edd

Lab Sample Id: JCC341CS

Sdg/Rept Nbr: W04973

33339

Collection Date: 08/07/2006 10:33

Client Id: NA

Matrix: WATER

WATER

Sample On Date:

Moisture/Solids%\*:

QC Type: BS

Received Date: 08/07/2006

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix	RTyp					
	MW6-SBB-A19981								BS	H					
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCL	R Typ
6227339 BS	ALPHA 12587-46-1	1.87E+01	pCi/L	4.7E+00 2.9E+00		9.95E-01	100.0	2.29E+01 81.4	9310_ALPHAB	1.997E-01 L	08/28/2006 21:10			70 130	D

Tuesday, September 26, 2006

### STL Richland QC Control Sample Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\Fead\VRad\W04973.Edd, h:\Reportdb\edd\Fead\VRad\33339.Edd

Lab Sample Id: JCC351CS

Sdg/Rept Nbr: W04973 33339

Collection Date: 08/07/2006 10:33

Client Id: NA

Matrix: WATER WATER

Sample On Date:

Moisture/Solids%\*:

QC Type: BS

Received Date: 08/07/2006

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix	RTyp					
	MW6-SBB-A19981								BU	H					
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCL	R Typ
6227340 BS	BETA 12587-47-2	2.45E+01	pCi/L	4.1E+00 2.5E+00		2.58E+00	100.0	2.26E+01 108.3	9310_ALPHAB	2.009E-01 L	08/25/2006 18:46			70 130	D

Tuesday, September 26, 2006

### STL Richland QC Control Sample Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\Fead\I\Rad\W04973.Edd, h:\Reportdb\edd\Fead\I\Rad\33339.Edd

Lab Sample Id: JCC3C1CS

Sdg/Rept Nbr: W04973

33339

Collection Date: 08/02/2006 11:20

Client Id: NA

Matrix: WATER

WATER

Sample On Date:

Moisture/Solids%\*:

QC Type: BS

Received Date: 08/02/2006

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix	RTyp					
	MW6-SBB-A19981								BW	H					
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCL	R Typ
6227320 BS	H-3 10028-17-8	2.66E+03	pCi/L	2.6E+02 2.1E+02		3.06E+02	100.0	2.72E+03 97.9	906.0_H3_LSC	5.00E-03 L	08/18/2006 04:17			70 130	D

Tuesday, September 26, 2006

### STL Richland QC Control Sample Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\Fead\VRad\W04973.Edd, h:\Reportdb\edd\Fead\VRad\33339.Edd

Lab Sample Id: JCC3C1EM

Sdg/Rept Nbr: W04973 33339

Collection Date: 08/02/2006 11:20

Client Id: NA

Matrix: WATER WATER

Sample On Date:

Moisture/Solids%\*:

QC Type: BS

Received Date: 08/02/2006

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix	RTyp					
	MW6-SBB-A19981								BY	H					
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCL	R Typ
6227320 BS	H-3 10028-17-8	2.57E+03	pCi/L	2.5E+02 2.1E+02		3.07E+02	100.0	2.72E+03 94.4	906.0_H3_LSC	5.00E-03 L	08/18/2006 19:17			70 130	D

Tuesday, September 26, 2006

### STL Richland QC Control Sample Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\ledd\Fead\VRad\W04973.Edd, h:\Reportdb\ledd\Fead\VRad\33339.Edd

Lab Sample Id: JCC3K1CS

Sdg/Rept Nbr: W04973

33339

Collection Date: 08/02/2006 10:16

Client Id: NA

Matrix: WATER

WATER

Sample On Date:

Moisture/Solids%\*:

QC Type: BS

Received Date: 08/02/2006

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix	RTyp					
	MW6-SBB-A19981								CA	H					
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCL	R Typ
6227326 BS	Uranium 7440-61-1	3.59E+01	ug/L	4.2E+00 4.2E+00		8.32E-02		3.58E+01 100.3	UTOT_KPA	2.52E-02 ML	08/24/2006 10:13			70 130	D

Tuesday, September 26, 2006

### STL Richland QC Control Sample Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\ledd\Fead\VRad\W04973.Edd, h:\Reportdb\ledd\Fead\VRad\33339.Edd

Lab Sample Id: JCC3K1DS

Sdg/Rept Nbr: W04973

33339

Collection Date: 08/02/2006 10:16

Client Id: NA

Matrix: WATER

WATER

Sample On Date:

Moisture/Solids%\*:

QC Type: BS

Received Date: 08/02/2006

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix	RTyp					
	MW6-SBB-A19981								CB	H					
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCL	R Typ
6227326 BS	Uranium 7440-61-1	3.51E+00	ug/L	3.6E-01 3.6E-01		8.38E-02		3.62E+00 97.0	UTOT_KPA	2.50E-02 ML	08/24/2006 10:16			70 130	D

Tuesday, September 26, 2006

### STL Richland QC Control Sample Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W04973.Edd, h:\Reportdb\edd\FeadIV\Rad\33339.Edd

Lab Sample Id: JCC3L1CS

Sdg/Rept Nbr: W04973

33339

Collection Date: 08/02/2006 09:27

Client Id: NA

Matrix: WATER

WATER

Sample On Date:

Moisture/Solids%\*:

QC Type: BS

Received Date: 08/02/2006

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix	RTyp					
	MW6-SBB-A19981								CD	H					
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCL	R Typ
6227327 BS	C-14 14762-75-5	4.50E+01	pCi/L	6.2E+00 4.8E+00		8.46E+00	100.0	4.45E+01 101.1	C14_LSC	2.00E-01 L	08/19/2006 08:43			70 130	D

Tuesday, September 26, 2006

### STL Richland QC Control Sample Report

Lab Code: STLRL

FormNbr: R      FormatType: FEAD      VersionNbr: 05      File Name: h:\Reportdb\edd\Fead\I\Rad\W04973.Edd, h:\Reportdb\edd\Fead\I\Rad\33339.Edd

Lab Sample Id: JCC3N1CS      Sdg/Rept Nbr: W04973      33339      Collection Date: 08/02/2006 09:27  
 Client Id: NA      Matrix: WATER      WATER      Sample On Date:  
 Moisture/Solids%\*:      QC Type: BS      Received Date: 08/02/2006

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix	RTyp					
	MW6-SBB-A19981								CF	H					
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCL	R Typ
6227329 BS	CO-60 10198-40-0	3.48E+01	pCi/L	7.1E+00 7.1E+00		4.32E+00		3.03E+01 114.7	GAMMA_GS	2.5006E+00 L	08/26/2006 09:42			70 130	D
6227329 BS	CS-137 10045-97-3	2.00E+01	pCi/L	5.7E+00 5.7E+00		3.63E+00		1.98E+01 101.3	GAMMA_GS	2.5006E+00 L	08/26/2006 09:42			70 130	D
6227329 BS	EU-152 14683-23-9	6.51E+01	pCi/L	1.3E+01 1.3E+01		9.34E+00		6.12E+01 106.3	GAMMA_GS	2.5006E+00 L	08/26/2006 09:42			70 130	D

Tuesday, September 26, 2006

### STL Richland QC Control Sample Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\ledd\Fead\VRad\W04973.Edd, h:\Reportdb\ledd\Fead\VRad\33339.Edd

Lab Sample Id: JCC3R1ES

Sdg/Rept Nbr: W04973

33339

Collection Date: 08/02/2006 09:27

Client Id: NA

Matrix: WATER

WATER

Sample On Date:

Moisture/Solids%\*:

QC Type: BS

Received Date: 08/02/2006

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix	RTyp					
	MW6-SBB-A19981								CH	H					
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCL	R Typ
6227330 BS	I-129L 15046-84-1	1.60E+01	pCi/L	2.1E+00 2.1E+00		8.10E-01	97.7	1.94E+01 82.3	I129LL_ETVDS	2.00E+00 L	09/14/2006 10:45			70 130	D

Tuesday, September 26, 2006

### STL Richland QC Control Sample Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\Fead\VRad\W04973.Edd, h:\Reportdb\edd\Fead\VRad\33339.Edd

Lab Sample Id: JCC3V1CS

Sdg/Rept Nbr: W04973 33339

Collection Date: 08/02/2006 12:40

Client Id: NA

Matrix: WATER WATER

Sample On Date:

Moisture/Solids%\*:

QC Type: BS

Received Date: 08/02/2006

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix	RTyp					
	MW6-SBB-A19981								CJ	H					
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCL	R Typ
6227332 BS	I-129L 15046-84-1	7.64E+00	pCi/L	1.6E+00 1.6E+00		1.17E+00	21.1	9.64E+00 79.3	I129LL_SEP_L	3.9939E+00 L	09/09/2006 09:29			70 130	D

Tuesday, September 26, 2006

### STL Richland QC Control Sample Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\Fead\I\Rad\W04973.Edd, h:\Reportdb\edd\Fead\I\Rad\33339.Edd

Lab Sample Id: JCCX41CS

Sdg/Rept Nbr: W04973

33339

Collection Date: 08/02/2006 09:09

Client Id: NA

Matrix: WATER

WATER

Sample On Date:

Moisture/Solids%\*:

QC Type: BS

Received Date: 08/02/2006

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix	RTyp					
	MW6-SBB-A19981								CL	H					
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCL	R Typ
6227285 BS	TC-99 14133-76-7	5.22E+02	pCi/L	4.3E+01 1.3E+01		1.03E+01	100.0	5.41E+02 96.6	TC99_ETVDSK	1.25E-01 L	08/27/2006 21:55			70 130	D

Tuesday, September 26, 2006

### STL Richland QC Duplicate Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\Fead\IVRad\W04973.Edd, h:\Reportdb\edd\Fead\IVRad\33339.Edd

Lab Sample Id: JALKX1CR

Sdg/Rept Nbr: W04973

33339

Collection Date: 08/02/2006 09:27

Client Id: B1K2T6

Matrix: WATER

WATER

Sample On Date:

Moisture/Solids%\*:

QC Type: DUP

Received Date: 08/02/2006

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix	RTyp					
W06-008	MW6-SBB-A19981								AU	H					
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qual	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCL	R Typ
6227330	I-129L	3.36E+01	pCi/L	4.6E+00		1.27E+00	48.9		I129LL_ETVDS	2.0006E+00	09/14/2006	7.5	0.8		D
DUP	15046-84-1	3.62E+01		4.6E+00						L	08:56	20.0	3		

Tuesday, September 26, 2006

### STL Richland QC Duplicate Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\Fead\Rad\W04973.Edd, h:\Reportdb\edd\Fead\Rad\33339.Edd

Lab Sample Id: JALLH1MR

Sdg/Rept Nbr: W04973

33339

Collection Date: 08/02/2006 09:27

Client Id: B1K627

Matrix: WATER

WATER

Sample On Date:

Moisture/Solids%\*:

QC Type: DUP

Received Date: 08/02/2006

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix	RTyp					
I06-055	MW6-SBB-A19981								AW	H					
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCL	R Typ
6227327 DUP	C-14 14762-75-5	1.77E+02 1.65E+02	pCi/L	1.2E+01 7.4E+00		8.45E+00	100.0		C14_LSC	2.00E-01 L	08/19/2006 10:08	6.6 20.0	1.4 3		D

Tuesday, September 26, 2006

### STL Richland QC Duplicate Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\ledd\Fead\I\Rad\W04973.Edd, h:\Reportdb\ledd\Fead\I\Rad\33339.Edd

Lab Sample Id: JALLH1NR

Sdg/Rept Nbr: W04973

33339

Collection Date: 08/02/2006 09:27

Client Id: B1K627

Matrix: WATER

WATER

Sample On Date:

Moisture/Solids%\*:

QC Type: DUP

Received Date: 08/02/2006

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix	RTyp					
106-055	MW6-SBB-A19981								AX	H					
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCL	R Typ
6227329	BE-7	-6.69E+00	pCi/L	1.7E+01	U	2.89E+01			GAMMA_GS	2.5006E+00	08/26/2006	0.0	1.		D
	DUP 13966-02-4	5.32E+00		1.7E+01						L	11:39	20.0	3		
6227329	CO-60	4.64E+00	pCi/L	2.7E+00	U	5.62E+00			GAMMA_GS	2.5006E+00	08/26/2006	15.0	0.3		D
	DUP 10198-40-0	3.99E+00		2.7E+00						L	11:39	20.0	3		
6227329	CS-134	-9.86E-01	pCi/L	1.9E+00	U	3.27E+00			GAMMA_GS	2.5006E+00	08/26/2006	0.0	0.6		D
	DUP 13967-70-9	-1.35E-01		1.9E+00						L	11:39	20.0	3		
6227329	CS-137	8.88E-01	pCi/L	1.9E+00	U	3.46E+00			GAMMA_GS	2.5006E+00	08/26/2006	157.5	0.6		D
	DUP 10045-97-3	1.06E-01		1.9E+00						L	11:39	20.0	3		
6227329	EU-152	4.33E+00	pCi/L	4.8E+00	U	8.84E+00			GAMMA_GS	2.5006E+00	08/26/2006	50.3	0.5		D
	DUP 14683-23-9	2.59E+00		4.8E+00						L	11:39	20.0	3		
6227329	EU-154	3.43E+00	pCi/L	5.4E+00	U	1.10E+01			GAMMA_GS	2.5006E+00	08/26/2006	189.1	0.9		D
	DUP 15585-10-1	9.62E-02		5.4E+00						L	11:39	20.0	3		
6227329	EU-155	-2.26E+00	pCi/L	4.8E+00	U	7.87E+00			GAMMA_GS	2.5006E+00	08/26/2006	0.0	0.3		D
	DUP 14391-16-3	-1.11E+00		4.8E+00						L	11:39	20.0	3		
6227329	K-40	-4.50E+01	pCi/L	5.3E+01	U	1.16E+02			GAMMA_GS	2.5006E+00	08/26/2006	0.0	1.1		D
	DUP 13966-00-2	-2.17E+00		5.3E+01						L	11:39	20.0	3		
6227329	PA-231	-1.89E+01	pCi/L	5.4E+01	U	9.11E+01			GAMMA_GS	2.5006E+00	08/26/2006	0.0	0.3		D
	DUP 14331-85-2	-6.24E+00		5.4E+01						L	11:39	20.0	3		
6227329	RU-106	-3.84E-01	pCi/L	1.5E+01	U	2.67E+01			GAMMA_GS	2.5006E+00	08/26/2006	261.4	0.3		D
	DUP 13967-48-1	2.89E+00		1.5E+01						L	11:39	20.0	3		
6227329	SB-125	-5.68E-01	pCi/L	4.3E+00	U	7.58E+00			GAMMA_GS	2.5006E+00	08/26/2006	0.0	0.2		D
	DUP 14234-35-6	8.31E-02		4.3E+00						L	11:39	20.0	3		

Tuesday, September 26, 2006

### STL Richland QC Duplicate Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\Fead\VRad\W04973.Edd, h:\Reportdb\edd\Fead\VRad\33339.Edd

Lab Sample Id: JALLH1PR

Sdg/Rept Nbr: W04973 33339

Collection Date: 08/02/2006 09:27

Client Id: B1K627

Matrix: WATER WATER

Sample On Date:

Moisture/Solids%\*:

QC Type: DUP

Received Date: 08/02/2006

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix	RTyp					
106-055	MW6-SBB-A19981								AY	H					
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCL	R Typ
6227334	SR-90	-4.02E-02	pCi/L	2.1E-01	U	4.64E-01	75.4		SRISO_SEP_P	1.0008E+00	09/09/2006	273.8	2.		D
DUP	10098-97-2	2.58E-01		2.1E-01						L	11:04	20.0	3		

Tuesday, September 26, 2006

### STL Richland QC Duplicate Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\Fead\Rad\W04973.Edd, h:\Reportdb\edd\Fead\Rad\33339.Edd

Lab Sample Id: JALLH1QR

Sdg/Rept Nbr: W04973 33339

Collection Date: 08/02/2006 09:27

Client Id: B1K627

Matrix: WATER WATER

Sample On Date:

Moisture/Solids%\*:

QC Type: DUP

Received Date: 08/02/2006

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix	RTyp					
106-055	MW6-SBB-A19981								AZ	H					
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCL	R Typ
6227337	SE-79	3.77E+01	pCi/L	6.7E+00		1.02E+01	85.7		SE79_SEP_IE	2.009E-01	08/31/2006	13.9	1.		D
DUP	15758-45-9	3.28E+01		5.3E+00						L	09:32	20.0	3		

Tuesday, September 26, 2006

### STL Richland QC Duplicate Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\ledd\Fead\I\Rad\W04973.Edd, h:\Reportdb\ledd\Fead\I\Rad\33339.Edd

Lab Sample Id: JALLH1RR

Sdg/Rept Nbr: W04973

33339

Collection Date: 08/02/2006 09:27

Client Id: B1K627

Matrix: WATER

WATER

Sample On Date:

Moisture/Solids%\*:

QC Type: DUP

Received Date: 08/02/2006

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix	RTyp					
106-055	MW6-SBB-A19981								BA	H					
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCL	R Typ
6227338	NP-237	-1.58E-02	pCi/L	2.2E-02	U	2.23E-01	106.1		NP237_LLE_P	2.012E-01	09/11/2006	0.0	0.1		D
DUP	13994-20-2	-1.69E-02		2.2E-02						L	21:56	20.0	3		

Tuesday, September 26, 2006

### STL Richland QC Duplicate Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W04973.Edd, h:\Reportdb\edd\FeadIV\Rad\33339.Edd

Lab Sample Id: JALM11FR

Sdg/Rept Nbr: W04973

33339

Collection Date: 08/02/2006 10:16

Client Id: B1K5X2

Matrix: WATER

WATER

Sample On Date:

Moisture/Solids%\*:

QC Type: DUP

Received Date: 08/02/2006

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix	RTyp					
106-055	MW6-SBB-A19981								BB	H					
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCL	R Typ
6227326 DUP	Uranium 7440-61-1	8.89E-01 9.27E-01	ug/L	9.1E-02 9.1E-02		8.38E-02			UTOT_KPA	2.50E-02 ML	08/24/2006 10:29	4.2 20.0	0.6 3		D

Tuesday, September 26, 2006

### STL Richland QC Duplicate Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W04973.Edd, h:\Reportdb\edd\FeadIV\Rad\33339.Edd

Lab Sample Id: JALMH1DR

Sdg/Rept Nbr: W04973

33339

Collection Date: 08/02/2006 11:20

Client Id: B1K2V9

Matrix: WATER

WATER

Sample On Date:

Moisture/Solids%\*:

QC Type: DUP

Received Date: 08/02/2006

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix	RTyp					
W06-008	MW6-SBB-A19981								BC	H					
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qual al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCL	R Typ
6227320 DUP	H-3 10028-17-8	8.79E+03 8.81E+03	pCi/L	5.1E+02 3.3E+02		3.04E+02	100.0		906.0_H3_LSC	5.00E-03 L	08/18/2006 11:07	.2 20.0	0.1 3		D

Tuesday, September 26, 2006

### STL Richland QC Duplicate Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W04973.Edd, h:\Reportdb\edd\FeadIV\Rad\33339.Edd

Lab Sample Id: JALMM1ER

Sdg/Rept Nbr: W04973

33339

Collection Date: 08/02/2006 12:40

Client Id: B1K684

Matrix: WATER

WATER

Sample On Date:

Moisture/Solids%\*:

QC Type: DUP

Received Date: 08/02/2006

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix	RTyp					
I06-055	MW6-SBB-A19981								BD	H					
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qual	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCL	R Typ
6227332	I-129L	9.12E-03	pCi/L	1.6E-01	U	2.92E-01	96.8		I129LL_SEP_L	3.9192E+00	09/08/2006	174.9	1.1		D
<b>DUP</b>	15046-84-1	1.36E-01		1.6E-01						L	18:52	20.0	3		

Tuesday, September 26, 2006

### STL Richland QC Duplicate Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\Fead\I\Rad\W04973.Edd, h:\Reportdb\edd\Fead\I\Rad\33339.Edd

Lab Sample Id: JALMT1DR

Sdg/Rept Nbr: W04973

33339

Collection Date: 08/02/2006 09:09

Client Id: B1K2L0

Matrix: WATER

WATER

Sample On Date:

Moisture/Solids%\*:

QC Type: DUP

Received Date: 08/02/2006

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix	RTyp					
W06-008	MW6-SBB-A19981								BE	H					
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qual	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCL	R Typ
6227285	TC-99	1.50E+03	pCi/L	1.1E+02		1.04E+01	100.0		TC99_ETVDSK	1.258E-01	08/27/2006	1.2	0.2		D
DUP	14133-76-7	1.49E+03		2.2E+01						L	21:54	20.0	3		

Tuesday, September 26, 2006

### STL Richland QC Duplicate Report

Lab Code: STLR

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\Fead\Rad\W04973.Edd, h:\Reportdb\edd\Fead\Rad\33339.Edd

Lab Sample Id: JARLW2ER

Sdg/Rept Nbr: W04973 33339

Collection Date: 08/04/2006 11:14

Client Id: B1K2D6

Matrix: WATER WATER

Sample On Date:

Moisture/Solids%\*:

QC Type: DUP

Received Date: 08/04/2006

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix	RTyp					
W06-008	MW6-SBB-A19981								BH	H					
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCL	R Typ
6237181 DUP	TC-99 14133-76-7	3.25E+01 3.35E+01	pCi/L	8.1E+00 5.3E+00		1.05E+01	100.0		TC99_SEP_LS	1.251E-01 L	09/13/2006 23:37	2.9 20.0	0.2 3		D

Tuesday, September 26, 2006

### STL Richland QC Duplicate Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\ledd\Fead\I\Rad\W04973.Edd, h:\Reportdb\ledd\Fead\I\Rad\33339.Edd

Lab Sample Id: JATC61ER

Sdg/Rept Nbr: W04973

33339

Collection Date: 08/07/2006 10:33

Client Id: B1JL69

Matrix: WATER

WATER

Sample On Date:

Moisture/Solids%\*:

QC Type: DUP

Received Date: 08/07/2006

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix	RTyp					
S06-007	MW6-SBB-A19981								BI	H					
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCL	R Typ
6227339	ALPHA	3.82E+00	pCi/L	2.0E+00		1.74E+00	100.0		9310_ALPHAB	1.519E-01	08/28/2006	25.4	0.6		D
DUP	12587-46-1	2.96E+00		1.8E+00						L	21:10	20.0	3		

Tuesday, September 26, 2006

### STL Richland QC Duplicate Report

Lab Code: STLR

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadI\Rad\W04973.Edd, h:\Reportdb\edd\FeadI\Rad\33339.Edd

Lab Sample Id: JATC61FR

Sdg/Rept Nbr: W04973 33339

Collection Date: 08/07/2006 10:33

Client Id: B1JL69

Matrix: WATER WATER

Sample On Date:

Moisture/Solids%\*:

QC Type: DUP

Received Date: 08/07/2006

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix	RTyp					
S06-007	MW6-SBB-A19981								BJ	H					
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCL	R Typ
6227340 DUP	BETA 12587-47-2	1.85E+03 1.84E+03	pCi/L	2.5E+02 2.5E+01		4.46E+00	100.0		9310_ALPHAB	1.29E-01 L	08/25/2006 18:46	.7 20.0	0.1 3		D

Tuesday, September 26, 2006

### STL Richland Qc Matrix Spike Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\Fead\IVRad\W04973.Edd, h:\Reportdb\edd\Fead\IVRad\33339.Edd

Lab Sample Id: JALLH1LW

Sdg/Rept Nbr: W04973

33339

Collection Date: 08/02/2006 09:27

Client Id: B1K627

Matrix: WATER

WATER

Sample On Date:

Moisture/Solids%\*:

QC Type: MS

Received Date: 08/02/2006

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix	RTyp				
I06-055	MW6-SBB-A19981								AV	H				
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qual MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCL	R Typ
6227326 MS	Uranium 7440-61-1	3.22E+01	ug/L	3.4E+00 3.4E+00	8.38E-02		3.59E+01 89.8	UTOT_KPA	2.50E-02 ML	08/24/2006 10:24			60 140	D

Tuesday, September 26, 2006

### STL Richland Qc Matrix Spike Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\Fead\VRad\W04973.Edd, h:\Reportdb\edd\Fead\VRad\33339.Edd

Lab Sample Id: JALMV1CW

Sdg/Rept Nbr: W04973 33339

Collection Date: 08/02/2006 12:06

Client Id: B1K2K3

Matrix: WATER WATER

Sample On Date:

Moisture/Solids%\*:

QC Type: MS

Received Date: 08/02/2006

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix	RTyp					
W06-008	MW6-SBB-A19981								BF	H					
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCL	R Typ
6227285 MS	TC-99 14133-76-7	3.42E+03	pCi/L	2.5E+02 3.3E+01		1.04E+01	100.0	3.56E+03 96.2	TC99_ETVDSK	1.265E-01 L	08/27/2006 21:54			60 140	D

Tuesday, September 26, 2006

### STL Richland Qc Matrix Spike Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\Fead\Rad\W04973.Edd, h:\Reportdb\edd\Fead\Rad\33339.Edd

Lab Sample Id: JARLW2DW

Sdg/Rept Nbr: W04973

33339

Collection Date: 08/04/2006 11:14

Client Id: B1K2D6

Matrix: WATER

WATER

Sample On Date:

Moisture/Solids%\*:

QC Type: MS

Received Date: 08/04/2006

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix	RTyp					
W06-008	MW6-SBB-A19981								BG	H					
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCL	R Typ
6237181 MS	TC-99 14133-76-7	3.09E+03	pCi/L	2.0E+02 3.1E+01		1.05E+01	100.0	3.60E+03 86.1	TC99_SEP_LS	1.251E-01 L	09/13/2006 22:34			60 140	D

Analyst:	S. Wheland	Calibration Curve Information				SOP Information		BATCH #	6216493
Start Date:	8/2/2006		Amount	Conc.(mg/L)	ABS.	RICH-WC-5003		SDG #	W04973
Start Time:	19:00	Blank	0.000	0.000	0.000	Revision 7		Matrix	Water
End Date:	8/2/2006	Std. 1	0.100	0.050	0.096				
End Time	20:00	Std. 2	0.400	0.200	0.383				
		Std. 3	1.000	0.500	0.937	MDL (mg/L)		0.002	
Analyst Signature:	<i>S. Wheland</i>	Std. 4	2.000	1.000	1.831	Instrument Information			
		Std 5	3.000	1.500	2.589	Instrument: Hach DR2010			
Date:	3-Aug	Standard Volume (mL):			100.000	Wavelength: 540			
		Date of Curve:			8/2/2006	R Squared 0.99833			
						Slope: 1.74135			
						Intercept: 0.02943			

	Calibration Information:	ICV Information:	LCS Information:	Matrix Spike Information:			
Dilution ID #	Cr-06-00306	Cr-06-00307	Cr-06-00306	Cr-06-00306			
Prep Date:	08/02/06	08/02/06	08/02/06	08/02/06			
Concentration (mg/L)	50	50	50	50			
Expiration Date:	08/03/06	08/03/06	08/03/06	08/03/06			
Pipettor(s)	70,190	190	190	190			
Volume Used	Expected Value	1.000	0.50000	1.00	0.50000	0.50	0.26316

Expected values are only amounts added in mg and not final concentrations

Sample ID	Client ID	Type	Sample Volume (mL)	Sample ABS.	Blank ABS.	Corrected ABS.	Dilution Factor	Curve Conc. (mg/L)	Final Conc. (mg/L)	% Rec.
n/a	n/a	ICV	100.000	0.948	0.000	0.948	1	0.5275	0.528	105.50%
n/a	n/a	ICB	100.000	0.001	0.000	0.001	1	-0.0163	<MDL	
JAPC8-1AAB	n/a	Prep Blank	100.000	-0.002		-0.002	1	<MDL	<MDL	
JAPC8-1ACC	n/a	LCS	100.000	0.951		0.951	1	0.5292	0.529	105.84%
JALL4-1AA	B1K6C3	Sample	100.000	1.392		1.392	1	0.7825	0.782	
JALL4-1AC-S	B1K6C3-MS	MS	100.000	1.843		1.843	1	1.0415	1.041	98.42%
JALL4-1AD-D	B1K6C3-MSD	MSD	100.000	1.863		1.863	1	1.0530	1.053	102.78%
JALL4-1AE-X	B1K6C3-DUP	Duplicate	100.000	1.433		1.433	1	0.8060	0.806	85.81616
			100.000				1			
			100.000				1			
			100.000				1			
n/a	n/a	CCV	100.000	0.938		0.938	1	0.5218	0.522	104.35%
n/a	n/a	CCB	100.000	0.000		0.000	1	<MDL	<MDL	
			100.000				1			
			100.000				1			
			100.000				1			
			100.000				1			
			100.000				1			
			100.000				1			





# STL

Data Review Checklist  
RADIOCHEMISTRY  
Second Level Review

QC Batch Number: 4227338  
wo 4973

Review Item	Yes (✓)	No (✓)	N/A (✓)
<b>A. Sample Analysis</b>			
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>B. QC Samples</b>			
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?	/		
<b>C. Other</b>			
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. Adams Date: 9-13-06

Lot No., Due Date: J6H030360,J6H030367,J6H030364; 09/25/2006  
 Client, Site: 384868; PGW 615HANFORD HANFORD  
 QC Batch No., Method Test: 6227332; RGAMLEPS Gamma by LEPS  
 SDG, Matrix: W04973; WATER

**1.0 COC**

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

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

Yes  No  N/A

2.2 Are the QC appropriate for the analysis included in the batch? Yes No N/A

Yes  No  N/A

2.3 Is the Analytical Batch Worksheet complete; includes as appropriate, volumes, count times, etc? Yes No N/A

Yes  No  N/A

2.4 Does the Worksheets include a Tracer Vial label for each sample? Yes No N/A

Yes  No  N/A

**3.0 QC & Samples**

3.1 Is the blank results, yield, and MDA within contract limits? Yes No N/A

Yes  No  N/A

3.2 Is the LCS result, yield, and MDA within contract limits? Yes No N/A

Yes  No  N/A

3.3 Are the MS/MSD results, yields, and MDA within contract limits? Yes No N/A

Yes  No  N/A

3.4 Are the duplicate result, yields, and MDAs within contract limits? Yes No N/A

Yes  No  N/A

3.5 Are the sample yields and MDAs within contract limits? Yes No N/A

Yes  No  N/A

**4.0 Raw Data**

4.1 Were results calculated in the correct units? Yes No N/A

Yes  No  N/A

4.2 Were analysis volumes entered correctly? Yes No N/A

Yes  No  N/A

4.3 Were Yields entered correctly? Yes No N/A

Yes  No  N/A

4.4 Were spectra reviewed/meet contractual requirements? Yes No N/A

Yes  No  N/A

4.5 Were raw counts reviewed for anomalies? Yes No N/A

Yes  No  N/A

**5.0 Other**

5.1 Are all nonconformances included and noted? Yes No N/A

Yes  No  N/A

5.2 Are all required forms filled out? Yes No N/A

Yes  No  N/A

5.3 Was the correct methodology used? Yes No N/A

Yes  No  N/A

5.4 Was transcription checked? Yes No N/A

Yes  No  N/A

5.5 Were all calculations checked at a minimum frequency? Yes No N/A

Yes  No  N/A

5.6 Are worksheet entries complete and correct? Yes No N/A

Yes  No  N/A

6.0 Comments on any No response:

First Level Review



Date

9/11/06



# STL

Data Review Checklist  
RADIOCHEMISTRY  
Second Level Review

QC Batch Number: 6 227332  
W04973

Review Item	Yes (✓)	No (✓)	N/A (✓)
<b>A. Sample Analysis</b>			
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>B. QC Samples</b>			
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?	/		
<b>C. Other</b>			
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: Sherry A Adam Date: 9-12-06

Lot No., Due Date: J6H030360; 09/25/2006  
 Client, Site: 384868; PGW 615HANFORD HANFORD  
 QC Batch No., Method Test: 6227329; RGAMMA Gamma by GER  
 SDG, Matrix: W04973; WATER

**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:  
 See NCM. 10-08614 10-08701

First Level Review Pam Anderson

Date 9-5-06



# STL

Data Review Checklist  
RADIOCHEMISTRY  
Second Level Review

QC Batch Number: 6227329  
W049B

Review Item	Yes (✓)	No (✓)	N/A (✓)
<b>A. Sample Analysis</b>			
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>B. QC Samples</b>			
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?	/		
<b>C. Other</b>			
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

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Second Level Review: Sheryl A Adams

Date: 9-5-06

# Clouseau Nonconformance Memo



NCM #: <b>10-08701</b>	Classification: <b>Anomaly</b>
NCM Initiated By: Pam Anderson	Status: <b>CHREVIEW</b>
Date Opened: 09/21/2006	Production Area: Counting
Date Closed:	Tests: Gamma by GER
	Lot #'s (Sample #'s): J6H030360 (1), J6H150000 (329), J6H240314 (1), J6H310000 (743),
	QC Batches: 6227329, 6243743
Nonconformance: Other (describe in detail)	
Subcategory: Other (explanation required)	

### Problem Description / Root Cause

<u>Name</u>	<u>Date</u>	<u>Description</u>
Pam Anderson	09/21/2006	Two batches of gamma requested the regular isotope list with Pa-231 added on. Pa-231 is not on the regular gamma list. The samples were transferred from the regular QRL library and then rereported with a SJC.NLB. The Pa-231 was transferred from this library.

### Corrective Action

<u>Name</u>	<u>Date</u>	<u>Corrective Action</u>
Pam Anderson	09/21/2006	None at this time.

### Client Notification Summary

<u>Client</u>	<u>Project Manager</u>	<u>Notified</u>	<u>Response</u>	<u>How Notified</u>	<u>Note</u>
			<u>Response</u>		<u>Response Note</u>

### Quality Assurance Verification

<u>Verified By</u>	<u>Due Date</u>	<u>Status</u>	<u>Notes</u>
		This section not yet completed by QA.	

### Approval History

<u>Date Approved</u>	<u>Approved By</u>	<u>Position</u>
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# Clouseau Nonconformance Memo



NCM #: <b>10-08614</b>	Classification: <b>Anomaly</b>
NCM Initiated By: Pam Anderson	Status: <b>PMREVIEW</b>
Date Opened: 09/05/2006	Production Area: Environmental - Sep
Date Closed:	Tests: Gamma by GER
	Lot #'s (Sample #'s): J6H030360 (1), J6H070211 (1),
	QC Batches: 6227329, 6227393
Nonconformance: Other (describe in detail)	
Subcategory: Other (explanation required)	

### Problem Description / Root Cause

Name	Date	Description
Pam Anderson	09/05/2006	These are two gamma batches for the same client. The sample on one batch showed a small amount of Cs 137, below CRDL. and it's duplicate did not. The other batch the duplicate showed Cs 137 and the sample did not. Fearing a mixup the samples were recounted on different detectors. No Cs shows.

### Corrective Action

Name	Date	Corrective Action
Pam Anderson	09/05/2006	The detector that showed the small amount of Cs 137 will be cleaned.

### Client Notification Summary

Client	Project Manager	Notified	Response	How Notified	Note
			<u>Response</u>		<u>Response Note</u>

### Quality Assurance Verification

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

### Approval History

Date Approved	Approved By	Position
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Lot No., Due Date: J6H070208; 09/25/2006  
 Client, Site: 384868; PGW 615HANFORD HANFORD  
 QC Batch No., Method Test: 6227339; RALPHA-A Alpha by GPC-Am  
 SDG, Matrix: W04973; WATER

8.0 Correction Calculation Protocol Used. OK	Yes	No	N/A
8.01 The Appropriate Methods Were Used To Analyze the Samples OK	Yes	No	N/A
8.02 Final Results Are in the Appropriate Activity Units OK	Yes	No	N/A
8.03 Batch Contains the Required QC Appropriate for the Method OK	Yes	No	N/A
8.04 The Correct Tracer and QC Vials Where Used in the Samples OK	Yes	No	N/A
8.05 Sample was Appropriately Traced Before or After Fractionating the Sample OK	Yes	No	N/A
8.06 At Least the Minimum Sample Volume Was Used Analysis Volume => JATC61AA 151.80<200.00 Q:VB	Yes	No	N/A
8.07 The Correct Count Geometry was Used. OK	Yes	No	N/A
8.08 The Sample was Counted for the Minimum Count Time or CRDL was Achieved. OK	Yes	No	N/A
8.09 Method Blank is within Control Limits. OK	Yes	No	N/A
8.1 Comments:			
8.11 Matrix Blank is within Control Limits. No Matrix Blanks (MBLks) found in Batch!	Yes	No	N/A
8.12 Method Blank(s) < QAS Limit Value (No B Flag Necessary). OK	Yes	No	N/A
8.13 QAS Specified Duplicate Equation Value within Control Limits. RPD > UCL : 20.0=> JATC61AE ALPHA 25.0 (RPD)	Yes	No	N/A
8.14 LCS within Control Limits. OK	Yes	No	N/A
8.15 MLCS within Control Limits. No Matrix Spikes (MLCS) found in Batch!	Yes	No	N/A
8.16 MS within Control Limits. No Matrix Spike Samples (MS) found in Batch!	Yes	No	N/A
8.17 Tracer within Control Limits. OK	Yes	No	N/A
8.18 Samples are above Minimum Tracer Yield (No Failed Samples) OK	Yes	No	N/A
8.19 Sample Specific MDC <= CRDL. OK	Yes	No	N/A
8.2 Comments:			
8.21 Result < Lc, Activity Not Detected, U Flag. No Limit Specified!	Yes	No	N/A
8.22 Result < Mdc, Activity Not Detected, U Flag. Batch Positive Result => JATC61AA ALPHA 3.0E+00 L:1.5E+00	Yes	No	N/A
8.23 Result <= Action Level, when Defined. OK; No Action Level Found => ALPHA  OK; No Callin Level Found => ALPHA	Yes	No	N/A
8.24 Result + 3s >=0, Not Too Negative. OK	Yes	No	N/A
8.25 Counting Spectrum are within FWHM Limits. No FWHM found in Batch Data!	Yes	No	N/A

8.26 Instruments have Current Calibrations.	Yes	No	N/A
8.27 Correct Count Library Used. No Count Library found in Batch Data!	Yes	No	N/A <input checked="" type="checkbox"/>
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:			
8.31 Results Blank Subtracted as Appropriate. OK	Yes	No	N/A <input checked="" type="checkbox"/>

First Level Review Pam Anderson Date 8-30-06



# STL

## Data Review Checklist RADIOCHEMISTRY Second Level Review

QC Batch Number: 6227339  
W04973

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. Adams Date: 8-30-06

Lot No., Due Date: J6H070208; 09/25/2006  
 Client, Site: 384868; PGW 615HANFORD HANFORD  
 QC Batch No., Method Test: 6227340; RBETA-SR Beta by GPC-Sr/Y  
 SDG, Matrix: W04973; WATER

**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:  
See NCM. 10-08576

First Level Review Pam Anderson

Date 8-29-06



# STL

## Data Review Checklist RADIOCHEMISTRY Second Level Review

QC Batch Number: 6227340  
W04973

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 A Adam Date: 8-29-06

# Clouseau Nonconformance Memo



NCM #: <b>10-08571</b>	Classification: <b>Anomaly</b>
NCM Initiated By: Pam Anderson	Status: <b>PMREVIEW</b>
Date Opened: 08/29/2006	Production Area: Environmental - Sep
Date Closed:	Tests: Beta by GPC-Sr/Y
Nonconformance: MDA not met	Lot #'s (Sample #'s): J6H070208 (1), J6H150000 (340),
Subcategory: Matrix effect	QC Batches: 6227340

### Problem Description / Root Cause

<u>Name</u>	<u>Date</u>	<u>Description</u>
Pam Anderson	08/29/2006	The beta samples in this batch had reduced aliquots due to dissolved solids in the sample. The CRDL was not met but the results are >MDA>CRDL.

### Corrective Action

<u>Name</u>	<u>Date</u>	<u>Corrective Action</u>
Pam Anderson	08/29/2006	Note in case narrative.

### Client Notification Summary

<u>Client</u>	<u>Project Manager</u>	<u>Notified</u>	<u>Response</u>	<u>How Notified</u>	<u>Note</u>
			<u>Response</u>		<u>Response Note</u>

### Quality Assurance Verification

<u>Verified By</u>	<u>Due Date</u>	<u>Status</u>	<u>Notes</u>
		This section not yet completed by QA.	

### Approval History

<u>Date Approved</u>	<u>Approved By</u>	<u>Position</u>

Lot No., Due Date: J6H030360; 09/25/2006  
 Client, Site: 384868; PGW 615HANFORD HANFORD  
 QC Batch No., Method Test: 6227334; RSR85907 Sr-85/90 by GPC-7  
 SDG, Matrix: W04973; WATER

**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

*Thomas E. Meland*

Date

*9/11/06*



# STL

Data Review Checklist  
RADIOCHEMISTRY  
Second Level Review

QC Batch Number: 6227334  
W04973

Review Item	Yes (✓)	No (✓)	N/A (✓)
<b>A. Sample Analysis</b>			
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>B. QC Samples</b>			
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?	/		
<b>C. Other</b>			/
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: 9-12-06

**Lot No., Due Date:** J6H030360; 09/25/2006  
**Client, Site:** 384868; PGW 615HANFORD HANFORD  
**QC Batch No., Method Test:** 6227327; RC14 C-14 by LSC  
**SDG, Matrix:** W04973; WATER

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

8.26 Instruments have Current Calibrations.	Yes	No	N/A
8.27 Correct Count Library Used. No Count Library found in Batch Data!	Yes	No	N/A <input checked="" type="checkbox"/>
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:			
8.31 Results Blank Subtracted as Appropriate. OK	Yes <input checked="" type="checkbox"/>	No	N/A

First Level Review Pam Anderson

Date 8-23-00



# STL

## Data Review Checklist RADIOCHEMISTRY Second Level Review

QC Batch Number: 6227327  
W04973

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 Adams Date: 7-24-06

**Lot No., Due Date:** J6H030360; 09/25/2006  
**Client, Site:** 384868; PGW 615HANFORD HANFORD  
**QC Batch No., Method Test:** 6227337; RSE79 Se-79 by LSC  
**SDG, Matrix:** W04973; WATER

8.0	Correction Calculation Protocol Used. OK	Yes	No	N/A
8.01	The Appropriate Methods Were Used To Analyze the Samples OK	Yes	No	N/A
8.02	Final Results Are in the Appropriate Activity Units OK	Yes	No	N/A
8.03	Batch Contains the Required QC Appropriate for the Method OK	Yes	No	N/A
8.04	The Correct Tracer and QC Vials Where Used in the Samples OK	Yes	No	N/A
8.05	Sample was Appropriately Traced Before or After Fractionating the Sample OK	Yes	No	N/A
8.06	At Least the Minimum Sample Volume Was Used OK	Yes	No	N/A
8.07	The Correct Count Geometry was Used. OK	Yes	No	N/A
8.08	The Sample was Counted for the Minimum Count Time or CRDL was Achieved. OK	Yes	No	N/A
8.09	Method Blank is within Control Limits. OK	Yes	No	N/A
8.1	Comments:			
8.11	Matrix Blank is within Control Limits. No Matrix Blanks (MBIks) found in Batch!	Yes	No	N/A
8.12	Method Blank(s) < QAS Limit Value (No B Flag Necessary). OK	Yes	No	N/A
8.13	QAS Specified Duplicate Equation Value within Control Limits. OK (RPD)	Yes	No	N/A
8.14	LCS within Control Limits. No Blank Spikes (LCS) found in Batch!	Yes	No	N/A
8.15	MLCS within Control Limits. No Matrix Spikes (MLCS) found in Batch!	Yes	No	N/A
8.16	MS within Control Limits. No Matrix Spike Samples (MS) found in Batch!	Yes	No	N/A
8.17	Tracer within Control Limits. No Tracers found in Batch!	Yes	No	N/A
8.18	Samples are above Minimum Tracer Yield (No Failed Samples) No Tracers found in Batch!	Yes	No	N/A
8.19	Sample Specific MDC <= CRDL. OK	Yes	No	N/A
8.2	Comments:			
8.21	Result < Lc, Activity Not Detected, U Flag. No Limit Specified!	Yes	No	N/A
8.22	Result < Mdc, Activity Not Detected, U Flag. No Positive Results OK Calc_IDL Not Calculated	Yes	No	N/A
8.23	Result <= Action Level, when Defined. OK; No Action Level Found => SE-79  OK; No Callin Level Found => SE-79	Yes	No	N/A
8.24	Result + 3s >=0, Not Too Negative. OK	Yes	No	N/A
8.25	Counting Spectrum are within FWHM Limits. No FWHM found in Batch Data!	Yes	No	N/A

8.26 Instruments have Current Calibrations.	Yes	No	N/A
8.27 Correct Count Library Used. No Count Library found in Batch Data!	Yes	No	N/A <input checked="" type="checkbox"/>
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 <input checked="" type="checkbox"/>
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 <input checked="" type="checkbox"/>
8.3 Comments:			
8.31 Results Blank Subtracted as Appropriate. OK	Yes <input checked="" type="checkbox"/>	No	N/A

First Level Review Pam Anderson

Date 9-5-06



# STL

## Data Review Checklist RADIOCHEMISTRY Second Level Review

QC Batch Number: 6227337  
W04973

Review Item	Yes (✓)	No (✓)	N/A (✓)
<b>A. Sample Analysis</b>			
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>B. QC Samples</b>			
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?	✓		
<b>C. Other</b>			
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: Sherry A Adams Date: 9-5-06

Lot No., Due Date: J6H030358,J6H030360,J6H030367,J6H030361,J6H030364,J6H030366,J6H030370,J6H070208;  
 Client, Site: 384868; PGW 615HANFORD HANFORD  
 QC Batch No., Method Test: 6227285; RTC99 Tc-99 by LSC  
 SDG, Matrix: W04973; WATER

8.0 Correction Calculation Protocol Used. OK	Yes	No	N/A
8.01 The Appropriate Methods Were Used To Analyze the Samples OK	Yes	No	N/A
8.02 Final Results Are in the Appropriate Activity Units OK	Yes	No	N/A
8.03 Batch Contains the Required QC Appropriate for the Method OK	Yes	No	N/A
8.04 The Correct Tracer and QC Vials Where Used in the Samples Incorrect Tracer/Vial => JALMV1AC TCSG<->TCSE Q:V9	Yes	No	N/A
8.05 Sample was Appropriately Traced Before or After Fractionating the Sample OK	Yes	No	N/A
8.06 At Least the Minimum Sample Volume Was Used OK	Yes	No	N/A
8.07 The Correct Count Geometry was Used. OK	Yes	No	N/A
8.08 The Sample was Counted for the Minimum Count Time or CRDL was Achieved. OK	Yes	No	N/A
8.09 Method Blank is within Control Limits. OK	Yes	No	N/A
8.1 Comments:			
8.11 Matrix Blank is within Control Limits. No Matrix Blanks (MBIks) found in Batch!	Yes	No	N/A
8.12 Method Blank(s) < QAS Limit Value (No B Flag Necessary). OK	Yes	No	N/A
8.13 QAS Specified Duplicate Equation Value within Control Limits. OK (RPD)	Yes	No	N/A
8.14 LCS within Control Limits. OK	Yes	No	N/A
8.15 MLCS within Control Limits. No Matrix Spikes (MLCS) found in Batch!	Yes	No	N/A
8.16 MS within Control Limits. OK	Yes	No	N/A
8.17 Tracer within Control Limits. No Tracers found in Batch!	Yes	No	N/A
8.18 Samples are above Minimum Tracer Yield (No Failed Samples) No Tracers found in Batch!	Yes	No	N/A
8.19 Sample Specific MDC <= CRDL. OK	Yes	No	N/A
8.2 Comments:			
8.21 Result < Lc, Activity Not Detected, U Flag. No Limit Specified!	Yes	No	N/A
8.22 Result < Mdc, Activity Not Detected, U Flag. No Positive Results OK Calc_IDL Not Calculated	Yes	No	N/A
8.23 Result <= Action Level, when Defined. OK; No Action Level Found => TC-99  OK; No Callin Level Found => TC-99	Yes	No	N/A
8.24 Result + 3s >=0, Not Too Negative. OK	Yes	No	N/A
8.25 Counting Spectrum are within FWHM Limits. No FWHM found in Batch Data!	Yes	No	N/A

8.26	Instruments have Current Calibrations.	Yes	No	N/A
8.27	Correct Count Library Used. No Count Library found in Batch Data!	Yes	No	N/A <input checked="" type="checkbox"/>
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:			
8.31	Results Blank Subtracted as Appropriate. OK	Yes	No	N/A <input checked="" type="checkbox"/>

First Level Review Pam Anderson Date 8.30.06



# STL

## Data Review Checklist RADIOCHEMISTRY Second Level Review

QC Batch Number: 4227285

Review Item	Yes (✓)	No (✓)	N/A (✓)
<b>A. Sample Analysis</b>			
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>B. QC Samples</b>			
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?	✓		
<b>C. Other</b>			✓
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. Adams Date: 8-30-06





# STL

Data Review Checklist  
RADIOCHEMISTRY  
Second Level Review

QC Batch Number: 6237181

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?	/		

SAA  
9-14-06

Comments on any "No" response: See NCM

Second Level Review: Sherryl A Adam Date: 9-14-06

# Clouseau Nonconformance Memo



NCM #: <b>10-08670</b>	Classification: <b>Anomaly</b>
NCM Initiated By: Steven Wheland	Status: <b>GLREVIEW</b>
Date Opened: 09/14/2006	Production Area: Environmental - Sep
Date Closed:	Tests: Tc-99 by LSC
	Lot #'s (Sample #'s): J6H070162 (1), J6H150000 (317),
	QC Batches: 6237181
Nonconformance: Other (describe in detail)	
Subcategory: Other (explanation required)	

### Problem Description / Root Cause

<u>Name</u>	<u>Date</u>	<u>Description</u>
Steven Wheland	09/14/2006	Batch was reanalyzed due to a failed matrix spike (5%). The reanalysis data was acceptable at 85% radiochemical yield.

### Corrective Action

<u>Name</u>	<u>Date</u>	<u>Corrective Action</u>
Steven Wheland	09/14/2006	report reanalysis data.

### Client Notification Summary

<u>Client</u>	<u>Project Manager</u>	<u>Notified</u>	<u>Response</u>	<u>How Notified</u>	<u>Note</u>
	<u>Response</u>	<u>Response Note</u>			

### Quality Assurance Verification

<u>Verified By</u>	<u>Due Date</u>	<u>Status</u>	<u>Notes</u>
		This section not yet completed by QA.	

### Approval History

<u>Date Approved</u>	<u>Approved By</u>	<u>Position</u>
----------------------	--------------------	-----------------

**Lot No., Due Date:** J6H030358,J6H030360,J6H030367,J6H030361,J6H030364,J6H030366,J6H030370,J6H070162;  
**Client, Site:** 384868; PGW 615HANFORD HANFORD  
**QC Batch No., Method Test:** 6227320; RTRITIUM H-3 by LSC  
**SDG, Matrix:** W04973; WATER

8.0	Correction Calculation Protocol Used. OK	Yes	No	N/A
8.01	The Appropriate Methods Were Used To Analyze the Samples OK	Yes	No	N/A
8.02	Final Results Are in the Appropriate Activity Units OK	Yes	No	N/A
8.03	Batch Contains the Required QC Appropriate for the Method OK	Yes	No	N/A
8.04	The Correct Tracer and QC Vials Where Used in the Samples OK	Yes	No	N/A
8.05	Sample was Appropriately Traced Before or After Fractionating the Sample OK	Yes	No	N/A
8.06	At Least the Minimum Sample Volume Was Used Analysis Volume => JALKT1AA 5.00<10.00 JALK01AA 5.00<10.00 JALLH1AC 5.00<10.00 JALMH1AA 5.00<10.00 JALMJ1AA 5.00<10.00 JALMM1AA 5.00<10.00 JALMT1AA 5.00<10.00 JALMW1AA 5.00<10.00 JALM11AA 5.00<10.00 JALM41AA 5.00<10.00 JALNK1AA 5.00<10.00 JALN31AA 5.00<10.00 JARLW1AA 5.00<10.00 Q:VB	Yes	No	N/A
8.07	The Correct Count Geometry was Used. Count Geometry => JCC3C1AF SVP15/5<>SVP10/10 JCC3C1AG SVP15/5<>SVP10/10 JCC3C1AA SVP15/5<>SVP10/10 JCC3C1AC SVP15/5<>SVP10/10 JALKT1AA SVP15/5<>SVP10/10 JALK01AA SVP15/5<>SVP10/10 JALLH1AC SVP15/5<>SVP10/10 JALMH1AA SVP15/5<>SVP10/10 JALMH1AD SVP15/5<>SVP10/10 JALMJ1AA SVP15/5<>SVP10/10 JALMM1AA SVP15/5<>SVP10/10 JALMT1AA SVP15/5<>SVP10/10 JCC3C1AH SVP15/5<>SVP10/10 JCC3C1AD SVP15/5<>SVP10/10 JCC3C1AE SVP15/5<>SVP10/10 JALMW1AA SVP15/5<>SVP10/10 JALM11AA SVP15/5<>SVP10/10 JALM41AA SVP15/5<>SVP10/10 JALNK1AA SVP15/5<>SVP10/10 JALN31AA SVP15/5<>SVP10/10 JARLW1AA SVP15/5<>SVP10/10 Q:VC	Yes	No	N/A
8.08	The Sample was Counted for the Minimum Count Time or CRDL was Achieved. OK	Yes	No	N/A
8.09	Method Blank is within Control Limits. OK	Yes	No	N/A
8.1	Comments:			
8.11	Matrix Blank is within Control Limits. OK	Yes	No	N/A
8.12	Method Blank(s) < QAS Limit Value (No B Flag Necessary). OK	Yes	No	N/A
8.13	QAS Specified Duplicate Equation Value within Control Limits. OK (RPD)	Yes	No	N/A
8.14	LCS within Control Limits. OK	Yes	No	N/A

8.15 MLCS within Control Limits. OK	Yes	No	N/A
8.16 MS within Control Limits. No Matrix Spike Samples (MS) found in Batch!	Yes	No	N/A
8.17 Tracer within Control Limits. No Tracers found in Batch!	Yes	No	N/A
8.18 Samples are above Minimum Tracer Yield (No Failed Samples) No Tracers found in Batch!	Yes	No	N/A
8.19 Sample Specific MDC <= CRDL. OK	Yes	No	N/A
8.2 Comments:			
8.21 Result < Lc, Activity Not Detected, U Flag. No Limit Specified!	Yes	No	N/A
8.22 Result < Mdc, Activity Not Detected, U Flag. No Positive Results OK Calc_IDL Not Calculated	Yes	No	N/A
8.23 Result <= Action Level, when Defined. OK; No Action Level Found => H-3  OK; No Callin Level Found => H-3	Yes	No	N/A
8.24 Result + 3s >=0, Not Too Negative. OK	Yes	No	N/A
8.25 Counting Spectrum are within FWHM Limits. No FWHM found in Batch Data!	Yes	No	N/A
8.26 Instruments have Current Calibrations.	Yes	No	N/A
8.27 Correct Count Library Used. No Count Library found in Batch Data!	Yes	No	N/A
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:			
8.31 Results Blank Subtracted as Appropriate. OK	Yes	No	N/A

First Level Review Pam Anderson

Date 8-28-06



# STL

## Data Review Checklist RADIOCHEMISTRY Second Level Review

OC Batch Number: 6227320  
W04973

Review Item	Yes (✓)	No (✓)	N/A (✓)
<b>A. Sample Analysis</b>			
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>B. QC Samples</b>			
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?	✓		
<b>C. Other</b>			
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: 8-28-06

Lot No., Due Date: J6H030360,J6H030367; 09/25/2006  
 Client, Site: 384868; PGW 615HANFORD HANFORD  
 QC Batch No., Method Test: 6227326; RUNAT UNat by KPA  
 SDG, Matrix: W04973; WATER

8.0 Correction Calculation Protocol Used. OK	Yes	No	N/A
8.01 The Appropriate Methods Were Used To Analyze the Samples OK	Yes	No	N/A
8.02 Final Results Are in the Appropriate Activity Units OK	Yes	No	N/A
8.03 Batch Contains the Required QC Appropriate for the Method OK	Yes	No	N/A
8.04 The Correct Tracer and QC Vials Where Used in the Samples Incorrect Tracer/Vial => JCC3K1AD UNSC<->UNSF Q:V9	Yes	No	N/A
8.05 Sample was Appropriately Traced Before or After Fractionating the Sample OK	Yes	No	N/A
8.06 At Least the Minimum Sample Volume Was Used No Count Analysis Size found in Batch Data!	Yes	No	N/A
8.07 The Correct Count Geometry was Used. No Count Geometry found in Batch Data!	Yes	No	N/A
8.08 The Sample was Counted for the Minimum Count Time or CRDL was Achieved. No Count Duration Field Found in Batch Data!	Yes	No	N/A
8.09 Method Blank is within Control Limits. OK	Yes	No	N/A
8.1 Comments:			
8.11 Matrix Blank is within Control Limits. No Matrix Blanks (MBIks) found in Batch!	Yes	No	N/A
8.12 Method Blank(s) < QAS Limit Value (No B Flag Necessary). OK	Yes	No	N/A
8.13 QAS Specified Duplicate Equation Value within Control Limits. OK (RPD)	Yes	No	N/A
8.14 LCS within Control Limits. OK	Yes	No	N/A
8.15 MLCS within Control Limits. No Matrix Spikes (MLCS) found in Batch!	Yes	No	N/A
8.16 MS within Control Limits. OK	Yes	No	N/A
8.17 Tracer within Control Limits. No Tracers found in Batch!	Yes	No	N/A
8.18 Samples are above Minimum Tracer Yield (No Failed Samples) No Tracers found in Batch!	Yes	No	N/A
8.19 Sample Specific MDC <= CRDL. OK	Yes	No	N/A
8.2 Comments:			
8.21 Result < Lc, Activity Not Detected, U Flag. No Limit Specified!	Yes	No	N/A
8.22 Result < Mdc, Activity Not Detected, U Flag. Batch Positive Result => JALLH1AK Uranium 1.4E+00 L:8.4E-02 JALM11AE Uranium 9.3E-01 L:8.3E-02	Yes	No	N/A
8.23 Result <= Action Level, when Defined. OK; No Action Level Found => Uranium  OK; No Callin Level Found => Uranium	Yes	No	N/A
8.24 Result + 3s >=0, Not Too Negative. OK	Yes	No	N/A
8.25 Counting Spectrum are within FWHM Limits. No FWHM found in Batch Data!	Yes	No	N/A

8.26 Instruments have Current Calibrations.	Yes	No	N/A
8.27 Correct Count Library Used. No Count Library found in Batch Data!	Yes	No	N/A <input checked="" type="checkbox"/>
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:			
8.31 Results Blank Subtracted as Appropriate. OK	Yes <input checked="" type="checkbox"/>	No	N/A

First Level Review Pam Anderson Date 8.28.06



# STL

## Data Review Checklist RADIOCHEMISTRY Second Level Review

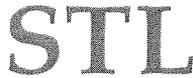
QC Batch Number: 6227326  
W04973

Review Item	Yes (✓)	No (✓)	N/A (✓)
<b>A. Sample Analysis</b>			
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>B. QC Samples</b>			
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?	✓		
<b>C. Other</b>			
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: Sherry A. Adams Date: 8-28-06

Entered  
SKS8/18/06



Richland Laboratory  
Data Review Check List  
Hexavalent Chromium

Work Order Number(s): JAPC8, JALL4				
Lab Sample Numbers or SDG: Baton 6216493 W04973				
Method/Test/Parameter: Cr+6 in Water / RICH-WC-5003, Rev 7 JBH 030360				
Review Item	Yes (✓)	No (✓)	N/A (✓)	2 <sup>nd</sup> Level Review (✓)
<b>A. Initial Calibration</b>				
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>B. Continuing Calibration</b>				
1. CCV analyzed at required frequency and all parameters within QC limits?	✓			—
2. CCB analyzed at required frequency and all results ≤ reporting limit?	✓			—
<b>C. Sample Analysis</b>				
1. Were any samples with concentrations above the linear range for any parameter diluted and reanalyzed?			✓	—
2. Were all sample holding times met?	✓			—
<b>D. QC Samples</b>				
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 (✓)	2 <sup>nd</sup> Level Review (✓)
<b>E. Other</b>			✓	
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:

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Analyst: *Ann E. Wiland*

Date: *8/4/06*

Second-Level Review: *Sheryl A. Blam*

Date: *8-18-06*





PNNL	<b>CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST</b>	C.O.C. # <b>W06-008-228</b>
		Page <u>1</u> of <u>1</u>

Collector <i>DURATEK</i> L. D. WALL	Contact/Requester Dot Stewart	Telephone No. MSIN FAX 509-376-5056
SAF No. W06-008	Sampling Origin Hanford Site	Purchase Order/Charge Code
Project Title RCRA, AUGUST 2006	<b>DTS-SAWS-H106</b>	Ice Chest No. <i>SML595</i> Temp.
Shipped To (Lab) Severn Trent Incorporated, Richland	Method of Shipment Govt. Vehicle	Bill of Lading/Air Bill No.
Protocol RCRA	Priority: 45 Days	Offsite Property No.

<b>POSSIBLE SAMPLE HAZARDS/REMARKS</b> ** ** <div style="font-size: 1.2em; margin-top: 10px;"><i>JL0 N030358</i> <i>W04973</i></div>	<b>SPECIAL INSTRUCTIONS</b> <b>Hold Time</b> Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Batch all PNNL GW samples submitted under "W", "S", "I", "A" or "G" 06 SAFs into one SDG, not to exceed SDG closure of 14 days. Submit invoices & deliverables to DL Stewart, PNNL
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Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B1K2M1		W	<i>8-2-06</i>	<i>1256</i>	1x20-mL P	Activity Scan	None
B1K2M1		W	↓	↓	1x1000-mL P	906.0_H3_LSC: Tritium (1) <i>JALCO</i>	None
B1K2M1		W	↓	↓	1x500-mL P	TC99_ETVDSK_LSC: Tc-99 (1)	HCl to pH <2

Relinquished By <i>L.D. WALL</i>	Date/Time <i>AUG 02 2006</i>	Received By <i>DAVID HARBINSO</i>	Date/Time <i>8/2/06</i>	<b>Matrix *</b> S = Soil                      DS = Drum Solid SE = Sediment            DI = Drum Liquid SO = Solid                    T = Tissue SL = Sludge                 WI = Wine W = Water                    L = Liquid O = Oil                        V = Vegetation A = Air                         X = Other
Relinquished By	Date/Time	Received By	Date/Time	
Relinquished By	Date/Time	Received By	Date/Time	
Relinquished By	Date/Time	Received By	Date/Time	
<b>FINAL SAMPLE DISPOSITION</b>	Disposal Method (e.g., Return to customer, per lab procedure, used in process)		Disposed By	Date/Time



# STL

## Sample Check-in List

Date/Time Received: 8/2/06 14:55

Client: DURATEK

SDG# W04973

NA

SAF# W06-008

NA

Work Order Number: J0H030358

Chain of Custody # W06-008-234

W06-008-234

Shipping Container ID: SWS-H100

Air Bill # W/A 106-055-72

W06-008-288

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? NA  Yes  No
4. Cooler temperature: \_\_\_\_\_ NA  5. Vermiculite/packing materials is NA  Wet  Dry
6. Number of samples in shipping container: 27
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? YES NA  pH < 2  pH > 2  adjusted pH
11. Sample Location, Sample Collector Listed? \*  
\*For documentation only. No corrective action needed. Yes  No
12. Were any anomalies identified in sample receipt? Yes  No
13. Description of anomalies (include sample numbers): \_\_\_\_\_

Sample Custodian

[Signature]

Date:

8/2/06 14:55

Client Sample ID	Analysis Requested	Condition	Comments/Action

Client Informed on \_\_\_\_\_ by \_\_\_\_\_ Person contacted \_\_\_\_\_

[ ] No action necessary; process as is.

Project Manager \_\_\_\_\_

Date \_\_\_\_\_

PNNL	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	C.O.C. # <b>106-055-72</b>
		Page <u>1</u> of <u>1</u>

Collector <b>DURATEK L.D. WALL</b>	Contact/Requester Dot Stewart	Telephone No. MSIN FAX 509-376-5056
SAF No. 106-055	Sampling Origin Hanford Site	Purchase Order/Charge Code
Project Title 2ZP1-LOI AUGUST 2006	<b>OTS - SAWS H 106</b>	Ice Chest No. <b>SMC 595</b> Temp.
Shipped To (Lab) Severn Trent Incorporated, Richland	Method of Shipment Govt. Vehicle	Bill of Lading/Air Bill No.
Protocol CERCLA	Priority: 45 Days	Offsite Property No.

<b>POSSIBLE SAMPLE HAZARDS/REMARKS</b> ** ** <div style="font-size: 1.5em; font-family: cursive;">             J64030360              W04973              Due: 9/15/06         </div>	<b>SPECIAL INSTRUCTIONS</b> Hold Time Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Batch all PNNL GW samples submitted under "W", "S", "I", "A" or "G" 06 SAFs into one SDG, not to exceed SDG closure of 14 days. Submit invoices & deliverables to DL Stewart, PNNL
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Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B1K627		W	<b>8-2-06</b>	<b>0927</b>	1x1000-mL P	906.0_H3_LSC: Tritium (1)	None
B1K627		W			1x20-mL P	Activity Scan	None
B1K627		W			2x4000-mL G/P	I129LL_SEP_LEPS_GS_LL: I-129 (1)	None
B1K627		W			1x500-mL P	TC99_ETVDSK_LSC: Tc-99 (1)	HCl to pH <2
B1K627		W			1x500-mL G/P	UTOT_KPA: Uranium (1)	HNO3 to pH <2
B1K627		W			3x1000-mL G/P	SRISO_SEP_PRECIP_GPC: Sr-90 (1)	HNO3 to pH <2
B1K627		W			2x1000-mL G/P	C14_LSC: C-14 (1)	None
B1K627		W			3x1000-mL G/P	GAMMA_GS: List-1 + Pa-231 (11)	HNO3 to pH <2
B1K627		W			1x1000-mL G/P	NP237_LLE_PLATE_AEA:Np-237(1)	HNO3 to pH <2
B1K627		W			2x1000-mL G/P	Selenium-79	HNO3 to pH <2
B1K6C3 (F)		W			1x500-mL aG	7196_CR6: Hexavalent Chromium (1)	Cool 4C

Relinquished By <b>DURATEK L.D. WALL</b> <i>L.D. Wall</i>	Date/Time <b>AUG 02 2006</b>	Received By <b>DAVID HARBINSON</b> <i>David Harbinson</i>	Date/Time <b>AUG 02 2006</b>	Matrix *
Relinquished By	Date/Time	Received By	Date/Time	S = Soil DS = Drum Solid SE = Sediment DI = Drum Liquid SO = Solid T = Tissue SL = Sludge WI = Wine W = Water L = Liquid O = Oil V = Vegetation A = Air X = Other
Relinquished By	Date/Time	Received By	Date/Time	
Relinquished By	Date/Time	Received By	Date/Time	
<b>FINAL SAMPLE DISPOSITION</b>	Disposal Method (e.g., Return to customer, per lab procedure, used in process)		Disposed By	Date/Time



# STL

### Sample Check-in List

Date/Time Received: 8/2/06 14:55

Client: DUNATEK

SDG #: W04973

NA

SAF #: 106-055

NA

Work Order Number: J0H030360

Chain of Custody #

W06-008-234

Shipping Container ID: SWSH100

Air Bill #

106-055-72

W06-008-238

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: 27

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? YES NA  pH < 2  pH > 2

adjusted pH

11. Sample Location, Sample Collector Listed? \*  
\*For documentation only. No corrective action needed.

Yes  No

12. Were any anomalies identified in sample receipt?

Yes  No

13. Description of anomalies (include sample numbers):

Sample Custodian: [Signature]

Date: 8/2/06 14:55

Client Sample ID	Analysis Requested	Condition	Comments/Action

Client Informed on \_\_\_\_\_ by \_\_\_\_\_ Person contacted \_\_\_\_\_

[ ] No action necessary; process as is.

Project Manager \_\_\_\_\_ Date \_\_\_\_\_







# STL

## Sample Check-in List

Date/Time Received: 8/2/2006 14:50

Client: PNNL

SDG #: W04973 NA  SAF #: W06-008 NA   
W06-008-212

Work Order Number: J6H030361

Chain of Custody # W06-008-212

Shipping Container ID: SAWS-1109

Air Bill # 106-055-164

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? NA  Yes  No
4. Cooler temperature: \_\_\_\_\_ NA  Yes  No
5. Vermiculite/packing materials is NA  Wet  Dry
6. Number of samples in shipping container: 11
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? YES NA  pH < 2  pH > 2  adjusted pH
11. Sample Location, Sample Collector Listed? \*  
\*For documentation only. No corrective action needed. Yes  No
12. Were any anomalies identified in sample receipt? Yes  No
13. Description of anomalies (include sample numbers): \_\_\_\_\_

Sample Custodian: [Signature] Date: 8/2/06 14:50

Client Sample ID	Analysis Requested	Condition	Comments/Action

Client Informed on \_\_\_\_\_ by \_\_\_\_\_ Person contacted \_\_\_\_\_

[ ] No action necessary; process as is.

Project Manager \_\_\_\_\_ Date \_\_\_\_\_

Collector <b>D.P. CONSOLLY</b>	Contact/Requester Dot Stewart	Telephone No. MSIN FAX 509-376-5056
SAF No. I06-055	Sampling Origin Hanford Site	Purchase Order/Charge Code
Project Title 2ZP1-LOL AUGUST 2006	<b>DTS-SAWS-H109</b>	Ice Chest No. <b>SAWS-370</b> Temp.
Shipped To (Lab) Severn Trent Incorporated, Richland	Method of Shipment Govt. Vehicle	Bill of Lading/Air Bill No.
Protocol CERCLA	Priority: 45 Days	Offsite Property No.

<b>POSSIBLE SAMPLE HAZARDS/REMARKS</b> ** ** <b>JL61030364</b> <b>W04973</b> <b>Due: 9/15/06</b>	<b>SPECIAL INSTRUCTIONS</b> <b>Hold Time</b> Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Batch all PNNL GW samples submitted under "W", "S", "T", "A" or "G" 06 SAFs into one SDG, not to exceed SDG closure of 14 days. Submit invoices & deliverables to DL Stewart, PNNL
---	---

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B1K684		W	<b>8/2/6</b>	<b>1240</b>	1x1000-mL P	906.0_H3_LSC: Tritium (1)	None
B1K684		W	↓	↓	1x20-mL P	Activity Scan	None
B1K684		W	↓	↓	2x4000-mL G/P	I129LL_SEP_LEPS_GS_LL: I-129 (1) <b>JALMM</b>	None
B1K684		W	↓	↓	1x500-mL P	TC99_ETVDSK_LSC: Tc-99 (1)	HCl to pH <2

Relinquished By <b>D.P. CONSOLLY</b> Print    Sign <i>[Signature]</i>	Date/Time <b>AUG 02 2006 14:50</b>	Received By <b>DAVID HARBINSON</b> Print    Sign <i>[Signature]</i>	Date/Time <b>AUG 02 2006 14:50</b>	<b>Matrix *</b> S = Soil                      DS = Drum Solid SE = Sediment              DI = Drum Liquid SO = Solid                    T = Tissue SI = Sludge                  WI = Wine W = Water                    L = Liquid O = Oil                        V = Vegetation A = Air                         X = Other
Relinquished By	Date/Time	Received By	Date/Time	
Relinquished By	Date/Time	Received By	Date/Time	
Relinquished By	Date/Time	Received By	Date/Time	
<b>FINAL SAMPLE DISPOSITION</b>	Disposal Method (e.g., Return to customer, per lab procedure, used in process)		Disposed By	Date/Time



# STL

### Sample Check-in List

Date/Time Received: 8/2/2006 14:50

Client: PNNL

SDG #: W004973 NA  SAF #: I06-055 NA

Work Order Number: J0H030304

Chain of Custody # W06-008-212

Shipping Container ID: N109

Air Bill # N/A I06-055-164

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? NA  Yes  No
4. Cooler temperature: \_\_\_\_\_ NA  Yes  No
5. Vermiculite/packing materials is NA  Wet  Dry
6. Number of samples in shipping container: 11
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) adjusted pH
10. Sample pH taken? YES NA  pH < 2  pH > 2
11. Sample Location, Sample Collector Listed? \*  
\*For documentation only. No corrective action needed. Yes  No
12. Were any anomalies identified in sample receipt? Yes  No
13. Description of anomalies (include sample numbers): \_\_\_\_\_

Sample Custodian: [Signature] Date: 8/2/06 14:50

Client Sample ID	Analysis Requested	Condition	Comments/Action

Client Informed on \_\_\_\_\_ by \_\_\_\_\_ Person contacted \_\_\_\_\_

No action necessary; process as is.

Project Manager \_\_\_\_\_ Date \_\_\_\_\_





Collection: <b>M. HALL</b>	Contact/Requester: <b>Dot Stewart</b>	Telephone No.: <b>509-376-5056</b>
SAF No.: <b>W06-008</b>	Sampling Origin: <b>Hanford Site</b>	Purchase Order/Charge Code:
Project Title: <b>RCRA, AUGUST 2006</b>	<b>DTS SAWS-H104</b>	Ice Chest No.: <b>SMC-442</b> Temp.:
Shipped To (Lab): <b>Severn Trent Incorporated, Richland</b>	Method of Shipment: <b>Govt. Vehicle</b>	Bill of Lading/Air Bill No.:
Protocol: <b>RCRA</b>	Priority: <b>45 Days</b>	Offsite Property No.:

**POSSIBLE SAMPLE HAZARDS/REMARKS**  
\*\* \*\*

JLH030300  
W04973

**SPECIAL INSTRUCTIONS** **Hold Time** Total Activity Exemption: Yes  No

Batch all PNNL GW samples submitted under "W", "S", "T", "A" or "G" 06 SAFs into one SDG, not to exceed SDG closure of 14 days.  
Submit invoices & deliverables to DL Stewart, PNNL

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B1K2T2		W	8-2-06	1340	1x20-mL P	Activity Scan	None
B1K2T2		W	↓	↓	1x1000-mL P	906.0_H3_LSC: Tritium (1) <span style="margin-left: 20px;">JALMW</span>	None
B1K2T2		W	↓	↓	1x500-mL P	TC99_ETVDSK_LSC: Tc-99 (1)	HCl to pH <2

Relinquished By: <b>F. M. HALL</b> <small>Print</small>	Date/Time: <b>AUG 02 2006</b> <small>1510</small>	Received By: <b>DAVID HARBINSON</b> <small>Print</small>	Date/Time: <b>AUG 02 2006</b> <small>1510</small>	<b>Matrix *</b> S = Soil                      DS = Drum Solid SF = Sediment              DL = Drum Liquid SO = Solid                    T = Tissue SL = Sludge                  WI = Wine W = Water                    L = Liquid O = Oil                        V = Vegetation A = Air                        X = Other
Relinquished By:	Date/Time:	Received By:	Date/Time:	
Relinquished By:	Date/Time:	Received By:	Date/Time:	
Relinquished By:	Date/Time:	Received By:	Date/Time:	
<b>FINAL SAMPLE DISPOSITION</b>	Disposal Method (e.g., Return to customer, per lab procedure, used in process)		Disposed By	Date/Time



# STL

### Sample Check-in List SKS 8/4/06

Date/Time Received: 8/2/06 15:10

~~W06-008-206~~  
~~W06-008-196~~

Client: DURATEK/PGW SDG #: W04973 NA

~~I-06-055-2~~

Work Order Number: J011030366

SAF #: W106-008 NA

Shipping Container ID: 3AWS-H104

Chain of Custody # I06-055-5

Air Bill # N/A

W06-008-200  
190  
206

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? NA  Yes  No
4. Cooler temperature: \_\_\_\_\_ NA  5. Vermiculite/packing materials is NA  Wet  Dry
6. Number of samples in shipping container: 16
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? YES NA  pH < 2  pH > 2  adjusted pH
11. Sample Location, Sample Collector Listed? \*  
\*For documentation only. No corrective action needed. Yes  No
12. Were any anomalies identified in sample receipt? Yes  No
13. Description of anomalies (include sample numbers): \_\_\_\_\_

Sample Custodian: [Signature]

Date: 8/2/06 15:10

Client Sample ID	Analysis Requested	Condition	Comments/Action

Client Informed on \_\_\_\_\_ by \_\_\_\_\_ Person contacted \_\_\_\_\_

[ ] No action necessary; process as is.

Project Manager \_\_\_\_\_ Date \_\_\_\_\_

PNNL	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	C.O.C. # <b>106-055-5</b>
		Page <u>1</u> of <u>1</u>

Collector: <b>F. M. HALL</b>	Contact/Requester Dot Stewart	Telephone No. <b>509-376-5056</b> MSIN FAX
SAF No. 106-055	Sampling Origin Hanford Site	Purchase Order/Charge Code
Project Title 2ZP1-LOI AUGUST 2006	<i>DTS-SAWS H104</i>	Ice Chest No. <i>SML-442</i> Temp.
Shipped To (Lab) Severn Trent Incorporated, Richland	Method of Shipment Govt. Vehicle	Bill of Lading/Air Bill No.
Protocol CERCLA	Priority: 45 Days	Offsite Property No.

<b>POSSIBLE SAMPLE HAZARDS/REMARKS</b> ** ** <div style="font-size: 1.5em; font-family: cursive; margin-left: 20px;">           J64030307            W04973            Due: 9/15/06         </div>	<b>SPECIAL INSTRUCTIONS</b> Hold Time Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Batch all PNNL GW samples submitted under "W", "S", "I", "A" or "G" 06 SAFs into one SDG, not to exceed SDG closure of 14 days. Submit invoices & deliverables to DL Stewart, PNNL
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Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B1K5X2		W	<i>8-20-06</i>	<i>10/6</i>	1x1000-mL P	906.0_H3_LSC: Tritium (1)	None
B1K5X2		W	<i>↓</i>	<i>↓</i>	1x20-mL P	Activity Scan	None
B1K5X2		W	<i>↓</i>	<i>↓</i>	2x4000-mL G/P	I129LL_SEP_LEPS_GS_LL: I-129 (1) <i>JALMI</i>	None
B1K5X2		W	<i>↓</i>	<i>↓</i>	1x500-mL P	TC99_ETVDSK_LSC: Tc-99 (1)	HCl to pH <2
B1K5X2		W	<i>↓</i>	<i>↓</i>	1x500-mL G/P	UTOT_KPA: Uranium (1)	HNO3 to pH <2

Relinquished By <b>F. M. HALL</b>	Print <i>[Signature]</i>	Sign	Date/Time <i>1510</i> <b>AUG 02 2006</b>	Received By <b>DAVID HARBINSON</b>	Print <i>[Signature]</i>	Sign	Date/Time <i>1510</i> <b>AUG 02 2006</b>	<b>Matrix *</b> S = Soil                      DS = Dnm Solid SF = Sediment              DI = Drum Lioni SO = Solid                    T = Tissue SL = Sludge                  WI = Wine W = Water                    L = Liquid O = Oil                        V = Vegetation A = Air                         X = Other
Relinquished By	Date/Time	Received By	Date/Time					
Relinquished By	Date/Time	Received By	Date/Time					
Relinquished By	Date/Time	Received By	Date/Time					
<b>FINAL SAMPLE DISPOSITION</b>	Disposal Method (e.g., Return to customer, per lab procedure, used in process)			Disposed By	Date/Time			

PNNL	<b>CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST</b>	C.O.C. # <b>106-055-2</b>
		Page <u>1</u> of <u>1</u>

Collector <i>DURATEK F. M. HALL</i>	Contact/Requester <i>Dot Stewart</i>	Telephone No. MSIN FAX <i>509-376-5056</i>
SAF No. <i>106-055</i>	Sampling Origin <i>Hanford Site</i>	Purchase Order/Charge Code
Project Title <i>2ZP1-IOL AUGUST 2006</i>	<i>DTS SAWS-11104</i>	Ice Chest No. <i>3ML-442</i> Temp.
Shipped To (Lab) <i>Severn Trent Incorporated, Richland</i>	Method of Shipment <i>Govt. Vehicle</i>	Bill of Lading/Air Bill No.
Protocol <i>CERCLA</i>	Priority: 45 Days	Offsite Property No.

<b>POSSIBLE SAMPLE HAZARDS/REMARKS</b> ** ** <div style="font-size: 2em; text-align: center; margin-top: 10px;"><i>J6H030307 W04973</i></div>	<b>SPECIAL INSTRUCTIONS</b> Hold Time    Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Batch all PNNL GW samples submitted under "W", "S", "I", "A" or "G" 06 SAFs into one SDG, not to exceed SDG closure of 14 days. Submit invoices & deliverables to DL Stewart, PNNL
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Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B1K5W8		W	<i>8-206</i>	<i>1206</i>	1x1000-mL P	906.0_H3_LSC: Tritium (1) <i>JALM4</i>	None
B1K5W8		W	<i>↓</i>	<i>↓</i>	1x20-mL P	Activity Scan	None

Relinquished By <i>F. M. HALL</i>	Print <i>[Signature]</i>	Sign <i>[Signature]</i>	Date/Time <i>1510</i>	Received By <i>DAVID HARRIS</i>	Print <i>[Signature]</i>	Sign <i>[Signature]</i>	Date/Time <i>1510</i>	<b>Matrix *</b> S = Soil                      DS = Drum Solid SE = Sediment              DL = Drum Liquid SO = Solid                    T = Tissue SL = Sludge                  WT = Wine W = Water                    L = Liquid O = Oil                        V = Vegetation A = Air                         X = Other
Relinquished By	Date/Time	Received By	Date/Time					
Relinquished By	Date/Time	Received By	Date/Time					
Relinquished By	Date/Time	Received By	Date/Time					
<b>FINAL SAMPLE DISPOSITION</b>	Disposal Method (e.g., Return to customer, per lab procedure, used in process)			Disposed By			Date/Time	



# STL

### Sample Check-in List

Date/Time Received: 8/2/06 15:10

SLS8/4/06  
~~W06-008-206~~  
~~W06-008-196~~  
~~T-06-055-2~~

Client: DURATEK

SDG #: W06A73

NA

SAP #: I06-055

NA

Work Order Number: J011030 307

Chain of Custody # I06-055-5, 2

Shipping Container ID: SMS-H104

Air Bill # N/A

SML-442

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? NA  Yes  No
4. Cooler temperature: \_\_\_\_\_ NA  5. Vermiculite/packing materials is NA  Wet  Dry
6. Number of samples in shipping container: 16
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? YES NA  pH < 2  pH > 2  adjusted pH
11. Sample Location, Sample Collector Listed? \*  
\*For documentation only. No corrective action needed. Yes  No
12. Were any anomalies identified in sample receipt? Yes  No
13. Description of anomalies (include sample numbers): \_\_\_\_\_

Sample Custodian: [Signature]

Date: 8/2/06 15:10

Client Sample ID	Analysis Requested	Condition	Comments/Action

Client Informed on \_\_\_\_\_ by \_\_\_\_\_ Person contacted \_\_\_\_\_

No action necessary; process as is.

Project Manager \_\_\_\_\_

Date \_\_\_\_\_

Collector <b>R. T. SICKLE</b>	Contact/Requester Dot Stewart	Telephone No. MSIN FAX 509-376-5056
SAF No. W06-008	Sampling Origin Hanford Site	Purchase Order/Charge Code
Project Title RCRA AUGUST 2006	Logbook: <b>DTS-SAWS-H106</b>	Ice Chest No. <b>SML-595</b> Temp.
Shipped To (Lab) Severn Trent Incorporated, Richland	Method of Shipment Govt. Vehicle	Bill of Lading/Air Bill No.
Protocol RCRA	Priority: 45 Days	Offsite Property No.

**POSSIBLE SAMPLE HAZARDS/REMARKS**      **SPECIAL INSTRUCTIONS**      Hold Time      Total Activity Exemption: Yes  No

\*\* \*\*      **J04030370**      Batch all PNNL GW samples submitted under "W", "S", "T", "A" or "G" 06 SAFs into one SDG, not to exceed SDG closure of 14 days.  
**W04973**      Submit invoices & deliverables to DL Stewart, PNNL  
**Due: 9/18/06**

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B1K335		W	8/3/06	1142	1x20-mL P	Activity Scan	None
B1K335		W	↓	↓	1x500-mL P	TC99_ETVDSK_LSC: Tc-99 (1) <b>JALND</b>	HCl to pH <2
<i>of wall 8/3/06</i>							

Relinquished By <b>R. T. SICKLE</b> <i>[Signature]</i>	Date/Time <b>AUG 03 2006 14:35</b>	Received By <b>DAVID HARBINSON</b> <i>[Signature]</i>	Date/Time <b>AUG 03 2006 14:35</b>	<b>Matrix *</b>
Relinquished By	Date/Time	Received By	Date/Time	S = Soil      DS = Drum Solid SE = Sediment      DI = Drum Liquid SO = Solid      T = Tissue SL = Sludge      WI = Wine W = Water      L = Liquid O = Oil      V = Vegetation A = Air      X = Other
Relinquished By	Date/Time	Received By	Date/Time	
Relinquished By	Date/Time	Received By	Date/Time	
Relinquished By	Date/Time	Received By	Date/Time	
<b>FINAL SAMPLE DISPOSITION</b>	Disposal Method (e.g., Return to customer, per lab procedure, used in process)		Disposed By	Date/Time

PNNL	<b>CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST</b>	C.O.C. # <b>W06-008-264</b>
		Page <u>1</u> of <u>1</u>

Collector <b>R. T. SICKLE</b>	Contact/Requester Dot Stewart	Telephone No. MSIN FAX 509-376-5056
SAF No. W06-008	Sampling Origin Hanford Site	Purchase Order/Charge Code
Project Title RCRA, AUGUST 2006	Logbook: <b>DTS-SAWS-H106</b>	Ice Chest No. <b>SMC-595</b> Temp.
Shipped To (Lab) Severn Trent Incorporated, Richland	Method of Shipment Govt. Vehicle	Bill of Lading/Air Bill No.
Protocol RCRA	Priority: 45 Days	Offsite Property No.

<b>POSSIBLE SAMPLE HAZARDS/REMARKS</b> ** ** <div style="font-size: 2em; text-align: center; margin-top: 10px;"> <b>JLH030370</b>  <b>W04973</b> </div>	<b>SPECIAL INSTRUCTIONS</b> <b>Hold Time</b> Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Batch all PNNL GW samples submitted under "W", "S", "I", "A" or "G" 06 SAFs into one SDG, not to exceed SDG closure of 14 days. Submit invoices & deliverables to DL Stewart, PNNL
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Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B1K2P8		W	8/3/06	1047	1x20-mL P	Activity Scan	None
B1K2P8		W	↓	↓	1x1000-mL P	906.0_H3_LSC: Tritium (1)	None
B1K2P8		W	↓	↓	1x500-mL P	TC99_ETVDSK_LSC: Tc-99 (1)	HCl to pH <2
<div style="font-size: 1.5em; transform: rotate(-45deg); opacity: 0.5;"> <del>of. wall 8/3/06</del> </div>							

Relinquished By <b>R. T. SICKLE</b>	Date/Time <b>AUG 03 2006 14:35</b>	Received By <b>DAVID HANBIRSON</b>	Date/Time <b>AUG 03 2006 14:35</b>	Matrix *
Relinquished By	Date/Time	Received By	Date/Time	S = Soil                      DS = Drum Solid SE = Sediment              DI = Drum Liquid SO = Solid                    T = Tissue SL = Sludge                    WI = Wine W = Water                      L = Liquid O = Oil                         V = Vegetation A = Air                         X = Other
Relinquished By	Date/Time	Received By	Date/Time	
Relinquished By	Date/Time	Received By	Date/Time	
Relinquished By	Date/Time	Received By	Date/Time	
<b>FINAL SAMPLE DISPOSITION</b>	Disposal Method (e.g., Return to customer, per lab procedure, used in process)		Disposed By	Date/Time

PNNL	<b>CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST</b>	C.O.C. # <b>W06-008-386</b>
		Page <u>1</u> of <u>1</u>

Collector <b>R. T. SICKLE</b>	Contact/Requester Dot Stewart	Telephone No. MSIN FAX 509-376-5056
SAF No. W06-008	Sampling Origin Hanford Site	Purchase Order/Charge Code
Project Title RCRA, AUGUST 2006	<b>Logbook: DTS - SAWS - H106</b>	Ice Chest No. <b>SML-595</b> Temp.
Shipped To (Lab) Severn Trent Incorporated, Richland	Method of Shipment Govt. Vehicle	Bill of Lading/Air Bill No.
Protocol RCRA	Priority: 45 Days	Offsite Property No.

<b>POSSIBLE SAMPLE HAZARDS/REMARKS</b> ** ** <div style="font-size: 2em; text-align: center;">JLH030370</div> <div style="font-size: 2em; text-align: center;">W04973</div>	<b>SPECIAL INSTRUCTIONS</b> Hold Time Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Batch all PNNL GW samples submitted under "W", "S", "T", "A" or "G" 06 SAFs into one SDG, not to exceed SDG closure of 14 days. Submit invoices & deliverables to DL Stewart, PNNL
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Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B1K327		W	8/3/06	1006	1x20-mL P	Activity Scan	None
B1K327		W	↓	↓	1x500-mL P	TC99_ETVDSK_LSC: Tc-99 (1) <b>JALNV</b>	HCl to pH <2
<div style="font-size: 2em; transform: rotate(-45deg); opacity: 0.5;">             R. Wall 8/3/06           </div>							

Relinquished By <b>R. T. SICKLE</b> <i>[Signature]</i>	Date/Time <b>AUG 03 2006 14:35</b>	Received By <b>DAVID HARBINS</b> <i>[Signature]</i>	Date/Time <b>AUG 03 2006 14:35</b>	<b>Matrix *</b> S = Soil DS = Drum Solid SE = Sediment DI = Drum Liquid SO = Solid T = Tissue SL = Sludge WI = Wine W = Water L = Liquid O = Oil V = Vegetation A = Air X = Other
Relinquished By	Date/Time	Received By	Date/Time	
Relinquished By	Date/Time	Received By	Date/Time	
Relinquished By	Date/Time	Received By	Date/Time	
<b>FINAL SAMPLE DISPOSITION</b>	Disposal Method (e.g., Return to customer, per lab procedure, used in process)		Disposed By	Date/Time

Collector <b>R.T. SICKLE</b>	Contact/Requester Dot Stewart	Telephone No. MSIN FAX 509-376-5056
SAF No. W06-008	Sampling Origin Hanford Site	Purchase Order/Charge Code
Project Title RCRA, AUGUST 2006	Logbook: <b>DTS-SAWS-H106</b>	Ice Chest No. <b>SML-595</b> Temp.
Shipped To (Lab) Severn Trent Incorporated, Richland	Method of Shipment Govt. Vehicle	Bill of Lading/Air Bill No.
Protocol RCRA	Priority: 45 Days	Offsite Property No.

**POSSIBLE SAMPLE HAZARDS/REMARKS**  
\*\* \*\*

JLH030370  
W04973

**SPECIAL INSTRUCTIONS** Hold Time Total Activity Exemption: Yes  No

Batch all PNNL GW samples submitted under "W", "S", "I", "A" or "G" 06 SAFs into one SDG, not to exceed SDG closure of 14 days.  
Submit invoices & deliverables to DL Stewart, PNNL

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B1K2P4		W	8/3/06	0840	1x20-mL P	Activity Scan	None
B1K2P4		W	↓	↓	1x1000-mL P	906.0_H3_LSC: Tritium (1)	None
B1K2P4		W	↓	↓	1x500-mL P	TC99_ETVDSK_LSC: Tc-99 (1) <b>JALN3</b>	HCl to pH <2
<del> <div style="display: flex; justify-content: space-between; align-items: center;"> <div style="width: 40%;"></div> <div style="width: 40%; text-align: center;"> <p><i>d. wall</i> 8/3/06</p> </div> </div> </del>							

Relinquished By <b>R.T. SICKLE</b> <i>[Signature]</i>	Date/Time <b>AUG 03 2006</b> 14:35	Received By <b>DAVID HARRISON</b> <i>[Signature]</i>	Date/Time <b>AUG 03 2006</b> 14:35	<b>Matrix *</b> S = Soil DS = Drum Solid SE = Sediment DI = Drum Liquid SO = Solid T = Tissue SI = Sludge WI = Wine W = Water L = Liquid O = Oil V = Vegetation A = Air X = Other
Relinquished By	Date/Time	Received By	Date/Time	
Relinquished By	Date/Time	Received By	Date/Time	
Relinquished By	Date/Time	Received By	Date/Time	
<b>FINAL SAMPLE DISPOSITION</b>	Disposal Method (e.g., Return to customer, per lab procedure, used in process)		Disposed By	Date/Time



# STL

## Sample Check-in List

SKS8/4/06  
~~W06-008-286~~  
W06-008-258

Date/Time Received: 8/3/06 14:35

Client: PNNL SDG# W04973 NA  SAF# W06-008 NA

Work Order Number: J04030370 Chain of Custody # W06-008-378

Shipping Container ID: SAWS-H100 Air Bill # W06-008-264  
↓ 386  
↓ 258

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? NA  Yes  No
4. Cooler temperature: \_\_\_\_\_ NA  5. Vermiculite/packing materials is NA  Wet  Dry
6. Number of samples in shipping container: 10
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? YES NA  pH < 2  pH > 2  adjusted pH
11. Sample Location, Sample Collector Listed? \*  
\*For documentation only. No corrective action needed. Yes  No
12. Were any anomalies identified in sample receipt? Yes  No
13. Description of anomalies (include sample numbers): \_\_\_\_\_

Sample Custodian: [Signature] Date: 8/3/06 14:35

Client Sample ID	Analysis Requested	Condition	Comments/Action

Client Informed on \_\_\_\_\_ by \_\_\_\_\_ Person contacted \_\_\_\_\_

[ ] No action necessary; process as is.

Project Manager \_\_\_\_\_ Date \_\_\_\_\_

PNNL

# CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. #

W06-008-16

Page 1 of 1

Collector <b>DURATEX</b> F. M. HALL	Contact/Requester Dot Stewart	Telephone No. 509-376-5056	MSIN FAX
SAF No. W06-008	Sampling Origin Hanford Site	Purchase Order/Charge Code	
Project Title RCRA, AUGUST 2006	<i>DTS SAWS-4104</i>	Ice Chest No. <i>3MCL-442</i>	Temp.
Shipped To (Lab) Severn Trent Incorporated, Richland	Method of Shipment Govt. Vehicle	Bill of Lading/Air Bill No.	
Protocol RCRA	Priority: 45 Days	Offsite Property No.	

**POSSIBLE SAMPLE HAZARDS/REMARKS**  
\*\* \*\*  
*J64070162*  
*W04973*  
*Dye: 9/18/06*

**SPECIAL INSTRUCTIONS** Hold Time Total Activity Exemption: Yes  No   
Batch all PNNL GW samples submitted under "W", "S", "T", "A" or "G" 06 SAFs into one SDG, not to exceed SDG closure of 14 days.  
Submit invoices & deliverables to DL Stewart, PNNL

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B1K2D6		W	<i>8-4-06</i>	<i>1114</i>	1x20-mL P	Activity Scan	None
B1K2D6		W	↓	↓	1x1000-mL P	906.0_H3_LSC: Tritium (1)	None
B1K2D6		W	↓	↓	3x1000-mL G/P	TC99_SEP_LSC: Tc-99 (1) <i>JARLW</i>	HCl to pH <2

Relinquished By <b>DURATEX</b> F. M. HALL	Print <i>[Signature]</i>	Sign <i>[Signature]</i>	Date/Time <i>1405</i> AUG 04 2006	Received By <b>DAVID HARBINSON</b>	Print <i>[Signature]</i>	Sign <i>[Signature]</i>	Date/Time <i>1905</i> AUG 04 2006	Matrix *
Relinquished By	Date/Time	Received By	Date/Time	Relinquished By	Date/Time	Received By	Date/Time	S = Soil                      DS = Drum Solid SF = Sediment              DI = Drum Liquid SO = Solid                    T = Tissue SL = Sludge                  WI = Wine W = Water                    L = Liquid O = Oil                        V = Vegetation A = Air                         X = Other
Relinquished By	Date/Time	Received By	Date/Time	Relinquished By	Date/Time	Received By	Date/Time	
Relinquished By	Date/Time	Received By	Date/Time	Relinquished By	Date/Time	Received By	Date/Time	
Relinquished By	Date/Time	Received By	Date/Time	Relinquished By	Date/Time	Received By	Date/Time	
<b>FINAL SAMPLE DISPOSITION</b>	Disposal Method (e.g., Return to customer, per lab procedure, used in process)			Disposed By			Date/Time	



# STL

### Sample Check-in List

Date/Time Received: 8/4/06 14:05

Client: PML SDG #: W04973 NA  SAF #: W06-008 NA

Work Order Number: 101070162 Chain of Custody # W06-008-16

Shipping Container ID: WAW5-H104 Air Bill # N/A  
SML-442

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? NA  Yes  No
4. Cooler temperature: \_\_\_\_\_ NA  5. Vermiculite/packing materials is NA  Wet  Dry
6. Number of samples in shipping container: 5
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? YES 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): N/A Yes  No

Sample Custodian: [Signature] Date: 8/4/06 14:05

Client Sample ID	Analysis Requested	Condition	Comments/Action

Client Informed on \_\_\_\_\_ by \_\_\_\_\_ Person contacted \_\_\_\_\_

[ ] No action necessary; process as is.

Project Manager \_\_\_\_\_ Date \_\_\_\_\_

Collector <b>DURATEK F. M. HALL</b>	Contact/Requester Dot Stewart	Telephone No. <b>MSIN FAX</b> 509-376-5056
SAF No. S06-007	Sampling Origin Hanford Site	Purchase Order/Charge Code
Project Title SURV. JULY 2006	<b>DT - Stew 14 104</b>	Ice Chest No. <b>5ml 442</b> Temp.
Shipped To (Lab) Severn Trent Incorporated, Richland	Method of Shipment Govt. Vehicle	Bill of Lading/Air Bill No.
Protocol SURV	Priority: 45 Days	Offsite Property No.

**POSSIBLE SAMPLE HAZARDS/REMARKS**      **SPECIAL INSTRUCTIONS**      **Hold Time**      Total Activity Exemption: Yes  No

\*\* \*\*      **J6H070208**      **w04973**      Batch all PNNL GW samples submitted under "W", "S", "T", "A" or "G" 06 SAFs into one SDG, not to exceed SDG closure of 14 days.

**10/21/06**      **1004873**      **Due 9/21/06**      Submit invoices & deliverables to DL Stewart, PNNL

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B1JL69		W	<b>8-7-06</b>	<b>1033</b>	1x20-mL P	Activity Scan	None
B1JL69		W	↓	↓	1x1000-mL P	9310_ALPHABETA_GPC: Alpha + Beta (2) <b>JATCO</b>	HNO3 to pH <2
B1JL69		W	↓	↓	1x500-mL P	TC99_ETVDSK_LSC: Tc-99 (1)	HCl to pH <2

Relinquished By <b>DURATEK F. M. HALL</b>	Print	Sign <i>[Signature]</i>	Date/Time <b>1425</b>	Received By <b>DAVID HARBISON</b>	Print	Sign <i>[Signature]</i>	Date/Time <b>1425</b>			
Relinquished By	Date/Time	Received By	Date/Time	Received By	Date/Time	Received By	Date/Time	<b>Matrix *</b> S = Soil      DS = Drum Solid SE = Sediment      DI = Drum Liquid SO = Solid      T = Tissue SL = Sludge      WI = Wine W = Water      LI = Liquid O = Oil      V = Vegetation A = Air      X = Other		
Relinquished By	Date/Time	Received By	Date/Time	Received By	Date/Time	Received By	Date/Time			
Relinquished By	Date/Time	Received By	Date/Time	Received By	Date/Time	Received By	Date/Time			
Relinquished By	Date/Time	Received By	Date/Time	Received By	Date/Time	Received By	Date/Time			
<b>FINAL SAMPLE DISPOSITION</b>	Disposal Method (e.g., Return to customer, per lab procedure, used in process)						Disposed By	Date/Time		



# STL

### Sample Check-in List

Date/Time Received: 8/7/06 14:25

Client: PurL

SDG #: W04973 NA

I06-046-7

SAF #: 506-007 NA

Work Order Number: J04070208

Chain of Custody # 506-007-195

Shipping Container ID: SAWS-H104  
SMC-442

Air Bill # N/A 506-007-11  
I06-046-8

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: 13
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? YES 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): N/A

Sample Custodian: [Signature] Date: 8/7/06 14:25

Client Sample ID	Analysis Requested	Condition	Comments/Action

Client Informed on \_\_\_\_\_ by \_\_\_\_\_ Person contacted \_\_\_\_\_

[ ] No action necessary; process as is.

Project Manager \_\_\_\_\_ Date \_\_\_\_\_