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: 32790

SDG Nbr	ORDER Nbr	CLIENT ID NUMBER	LOT Nbr	WORK ORDER	RPT DB ID	BATCH
W04866A	W06-002	B1HCR7	J6G060212-1	H8QPD1AA	9H8QPD10	6191189

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Comments:

SEVERN TRENT STL

STL Richland
2800 George Washington Way
Richland, WA 99354

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

Certificate of Analysis

Pacific Northwest National Laboratories
Sigma V Building
Richland, WA 99352

July 24, 2006

Attention: Dot Stewart

SAF Number	:	W06-002
Date SDG Closed	:	February 13, 2006
Number of Samples	:	One (1)
Sample Type	:	Water
SDG Number	:	W04866A
Data Deliverable	:	15-Day / Priority

CASE NARRATIVE

I. Introduction

On July 6, 2006, a request for reanalysis of one water sample was received at STL Richland (STLR). Upon receipt, the sample was assigned the following laboratory ID number to correspond with the Pacific Northwest National Laboratories (PGW) specific ID:

PGW ID#	STLR ID#	MATRIX	DATE OF RECEIPT
B1HCR7	H8QPD (HXD3T)	WATER	2/13/06

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:

Gamma Spectroscopy
Gamma Spec (LL) by method RICH-RC-5017

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

Gamma Spectroscopy

Gamma Spec (LL) by method RICH-RC-5017:

The reanalysis results are within RER acceptance criteria. The LCS, batch blank, samples and sample duplicate (B1HCR7) results are within contractual requirements.

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

Reviewed and approved:

Sherryl A. Adam
Project Manager

Drinking Water Method Cross References

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

Uncertainty Estimation

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

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

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

Report Definitions

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

STL Richland Report

Lab Code: STLRL

FormNbr: R FormatType: FEAD Version: 05 Rpt Nbr: 32790 File Name: h:\Reportdb\edd\FeadIV\Rad\W04866A.Edd, h:\Reportdb\edd\FeadIV\Rad\32790.E

Lab Sample Id:	Client Id:	Test User	Contract Nbr	SAF Nbr	Sdg Nbr:	QC Type:	Moisture/ Solids%*:	Distilled Volume	Sample On Date:	Collection Date:
9H8QPD10	B1HCR7		MW6-SBB-A1	W06-002	W04866A					02/13/2006 11:25

Batch	Analyte	CAS#	Result	Unit	CntU 2S	TotU 2S	Qual	MDA	TrcYield	Method	Alq Size	Unit	Analy Date/Time	Act
6191189	BE-7	13966-02-4	-3.86E+01	pCi/L	1.3E+02	1.3E+02	U	2.29E+02		GAMMALL_GS	2.002E+00	L	07/20/200 18:54	I
6191189	CO-60	10198-40-0	4.13E+01	pCi/L	9.6E+00	9.6E+00		4.26E+00		GAMMALL_GS	2.002E+00	L	07/20/200 18:54	I
6191189	CS-134	13967-70-9	1.77E+00	pCi/L	3.4E+00	3.4E+00	U	6.66E+00		GAMMALL_GS	2.002E+00	L	07/20/200 18:54	I
6191189	CS-137	10045-97-3	-1.26E+00	pCi/L	2.5E+00	2.5E+00	U	4.24E+00		GAMMALL_GS	2.002E+00	L	07/20/200 18:54	I
6191189	EU-152	14683-23-9	1.55E+00	pCi/L	6.3E+00	6.3E+00	U	1.14E+01		GAMMALL_GS	2.002E+00	L	07/20/200 18:54	I
6191189	EU-154	15585-10-1	1.03E+00	pCi/L	8.2E+00	8.2E+00	U	1.61E+01		GAMMALL_GS	2.002E+00	L	07/20/200 18:54	I
6191189	EU-155	14391-16-3	1.53E+00	pCi/L	5.7E+00	5.7E+00	U	1.00E+01		GAMMALL_GS	2.002E+00	L	07/20/200 18:54	I
6191189	K-40	13966-00-2	8.62E+01	pCi/L	6.0E+01	6.0E+01		5.53E+01		GAMMALL_GS	2.002E+00	L	07/20/200 18:54	I
6191189	RU-106	13967-48-1	2.51E+01	pCi/L	3.0E+01	3.0E+01	U	5.94E+01		GAMMALL_GS	2.002E+00	L	07/20/200 18:54	I
6191189	SB-125	14234-35-6	-1.01E+00	pCi/L	6.3E+00	6.3E+00	U	1.13E+01		GAMMALL_GS	2.002E+00	L	07/20/200 18:54	I

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.

STL Richland QC Blank Report

Lab Code: STLRL

FormNbr: R **FormatType:** FEAD **VersionNbr:** 05 **File Name:** h:\Reportdb\edd\FeadIV\Rad\W04866A.Edd, h:\Reportdb\edd\FeadIV\Rad\32790.E

Lab Sample Id: H8WX91AB **Sdg/Rept Nbr:** W04866A 32790 **Collection Date:** 02/13/2006 11:25

Client Id: NA **Matrix:** WATER WATER **Sample On Date:**

Moisture/Solids%*: **QC Type:** BLK **Received Date:** 07/06/2006

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix	RTyp
	MW6-SBB-A19981								AC	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
6191189	BE-7	-5.53E+01	pCi/L	9.3E+01	U	1.57E+02			GAMMALL_GS	2.0001E+00	07/20/2006				D
BLK	13966-02-4			9.3E+01						L	21:30				
6191189	CO-60	-4.01E-01	pCi/L	1.5E+00	U	2.78E+00			GAMMALL_GS	2.0001E+00	07/20/2006				D
BLK	10198-40-0			1.5E+00						L	21:30				
6191189	CS-134	1.24E-01	pCi/L	1.8E+00	U	3.42E+00			GAMMALL_GS	2.0001E+00	07/20/2006				D
BLK	13967-70-9			1.8E+00						L	21:30				
6191189	CS-137	9.51E-01	pCi/L	1.6E+00	U	3.19E+00			GAMMALL_GS	2.0001E+00	07/20/2006				D
BLK	10045-97-3			1.6E+00						L	21:30				
6191189	EU-152	2.13E-01	pCi/L	3.8E+00	U	6.86E+00			GAMMALL_GS	2.0001E+00	07/20/2006				D
BLK	14683-23-9			3.8E+00						L	21:30				
6191189	EU-154	-1.87E+00	pCi/L	5.0E+00	U	8.87E+00			GAMMALL_GS	2.0001E+00	07/20/2006				D
BLK	15585-10-1			5.0E+00						L	21:30				
6191189	EU-155	-2.91E+00	pCi/L	3.7E+00	U	6.11E+00			GAMMALL_GS	2.0001E+00	07/20/2006				D
BLK	14391-16-3			3.7E+00						L	21:30				
6191189	K-40	-6.62E-01	pCi/L	2.6E+01	U	5.47E+01			GAMMALL_GS	2.0001E+00	07/20/2006				D
BLK	13966-00-2			2.6E+01						L	21:30				
6191189	RU-106	-1.63E+01	pCi/L	2.0E+01	U	3.34E+01			GAMMALL_GS	2.0001E+00	07/20/2006				D
BLK	13967-48-1			2.0E+01						L	21:30				
6191189	SB-125	-9.80E-01	pCi/L	4.3E+00	U	7.70E+00			GAMMALL_GS	2.0001E+00	07/20/2006				D
BLK	14234-35-6			4.3E+00						L	21:30				

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.

STL Richland QC Control Sample Report

Lab Code: STLRL

FormNbr: R FormatType: FEAD VersionNbr: 05 File Name: h:\Reportdb\edd\FeadIV\Rad\W04866A.Edd, h:\Reportdb\edd\FeadIV\Rad\32790.E

Lab Sample Id:	H8WX91CS	**Sdg/Rept Nbr:**	W04866A 32790	**Collection Date:**	02/13/2006 11:25
Client Id:	NA	**Matrix:**	WATER WATER	**Sample On Date:**	
Moisture/Solids%*:		**QC Type:**	BS	**Received Date:**	07/06/2006

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix	RTyp
	MW6-SBB-A19981								AD	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
6191189	CO-60	4.16E+01	pCi/L	9.7E+00		4.68E+00		3.81E+01	GAMMALL_GS	2.0011E+00	07/20/2006			70	D
BS	10198-40-0			9.7E+00				109.2		L	21:31			130	
6191189	CS-137	3.16E+01	pCi/L	7.3E+00		5.80E+00		2.49E+01	GAMMALL_GS	2.0011E+00	07/20/2006			70	D
BS	10045-97-3			7.3E+00				127.0		L	21:31			130	
6191189	EU-152	9.43E+01	pCi/L	2.2E+01	U	2.82E+01		7.68E+01	GAMMALL_GS	2.0011E+00	07/20/2006			70	D
BS	14683-23-9			2.2E+01				122.8		L	21:31			130	

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.

Monday, July 24, 2006

STL Richland QC Duplicate Report

Lab Code: STLRL

FormNbr: R **FormatType:** FEAD **VersionNbr:** 05 **File Name:** h:\Reportdb\edd\FeadIV\Rad\W04866A.Edd, h:\Reportdb\edd\FeadIV\Rad\32790.E

Lab Sample Id: H8QPD1CR **Sdg/Rept Nbr:** W04866A 32790 **Collection Date:** 02/13/2006 11:25

Client Id: B1HCR7 **Matrix:** WATER WATER **Sample On Date:**

Moisture/Solids%*: **QC Type:** DUP **Received Date:** 07/06/2006

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix	RTyp
W06-002	MW6-SBB-A19981								AB	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
6191189	BE-7	7.99E+01	pCi/L	1.3E+02	U	2.49E+02			GAMMALL_GS	2.002E+00	07/20/2006	573.1	1.3		D
DUP	13966-02-4	-3.86E+01		1.3E+02						L	21:30	20.0	3		
6191189	CO-60	3.49E+01	pCi/L	8.7E+00		8.25E-01			GAMMALL_GS	2.002E+00	07/20/2006	16.7	1.		D
DUP	10198-40-0	4.13E+01		8.7E+00						L	21:30	20.0	3		
6191189	CS-134	-1.91E-01	pCi/L	3.1E+00	U	5.71E+00			GAMMALL_GS	2.002E+00	07/20/2006	248.5	0.9		D
DUP	13967-70-9	1.77E+00		3.1E+00						L	21:30	20.0	3		
6191189	CS-137	-8.63E-01	pCi/L	2.4E+00	U	4.31E+00			GAMMALL_GS	2.002E+00	07/20/2006	0.0	0.2		D
DUP	10045-97-3	-1.26E+00		2.4E+00						L	21:30	20.0	3		
6191189	EU-152	5.96E+00	pCi/L	6.2E+00	U	1.21E+01			GAMMALL_GS	2.002E+00	07/20/2006	117.5	1.		D
DUP	14683-23-9	1.55E+00		6.2E+00						L	21:30	20.0	3		
6191189	EU-154	5.19E-01	pCi/L	6.3E+00	U	1.26E+01			GAMMALL_GS	2.002E+00	07/20/2006	65.6	0.1		D
DUP	15585-10-1	1.03E+00		6.3E+00						L	21:30	20.0	3		
6191189	EU-155	-6.37E-01	pCi/L	5.7E+00	U	1.01E+01			GAMMALL_GS	2.002E+00	07/20/2006	484.3	0.5		D
DUP	14391-16-3	1.53E+00		5.7E+00						L	21:30	20.0	3		
6191189	K-40	-3.19E+01	pCi/L	5.4E+01	U	1.21E+02			GAMMALL_GS	2.002E+00	07/20/2006	434.8	3.1		D
DUP	13966-00-2	8.62E+01		5.4E+01						L	21:30	20.0	3		
6191189	RU-106	2.49E+00	pCi/L	2.8E+01	U	5.33E+01			GAMMALL_GS	2.002E+00	07/20/2006	163.9	1.1		D
DUP	13967-48-1	2.51E+01		2.8E+01						L	21:30	20.0	3		
6191189	SB-125	-3.91E-01	pCi/L	6.1E+00	U	1.09E+01			GAMMALL_GS	2.002E+00	07/20/2006	0.0	0.1		D
DUP	14234-35-6	-1.01E+00		6.1E+00						L	21:30	20.0	3		

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.

SEVERN TRENT STL

Data Review/Verification Checklist

RADIOCHEMISTRY, First Level Review

7/21/2006 1:42:58 PM

Lot No., Due Date: J6G060212; 07/21/2006

Client, Site: 384868; PGW 615HANFORD HANFORD

QC Batch No., Method Test: 6191189; RGAMMA Gamma by GER

SDG, Matrix: W04866A; 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 Steven E. Wheeland **Date** 7/21/06

SEVERN TRENT STL

Data Review Checklist
RADIOCHEMISTRY
Second Level Review

QC Batch Number: 619189
W04866A

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 R Adam Date: 7-24-06

J6G060212

W04866A

B1HCR7- gammaLL

Rcv'd 7/6/06

Due 7/21/06

07/06/2006
RECHECK, RECOUNT, OR REANALYSIS ORDER
CONTRACT NO MW6-SBB-

Severn Trent
2800 George Washington
Richland, WA 99354

Battelle PNNL Order 060706STLRL-R3494

Sample Delivery W04866 (Co-60) and W04894 (alpha/beta)

Special Please reanalyze sample B1HM78 for alpha and beta.

Samples(s

Lab Sample ID	PNNL Sample	Action	TAT	METHOD_NAME
9HXD3T10	B1HCR7	Reanalysis	15/15	GAMMALL_GS
9H29M910	B1HM78	Reanalysis	15/15	9310_ALPHABETA

H8QPD

Deliver Report Results Dorothy L. Stewart, K6-96

c/o Secretary
3110 Port of Benton Blvd.

The report results must reference the Battelle PNNL-order number, SDG number, and the Battelle PNNL sample identification number shown above.

Seger, Sandra

From: Adam, Sherryl
Sent: Thursday, July 06, 2006 9:06 AM
To: Seger, Sandra
Subject: FW: Request for Recheck, Recount, or Reanalysis Order

Attachments: 060706STLRLR3494.rtf

060706STLRLR3494
.rtf (11 KB)

-----Original Message-----
From: Hampt, Heidi [mailto:heidi.hampt@pnl.gov]
Sent: Thursday, July 06, 2006 9:02 AM
To: Adam, Sherryl
Cc: Stewart, Dorothy L
Subject: Request for Recheck, Recount, or Reanalysis Order

<<060706STLRLR3494.rtf>>
Sherryl,

My RDR system just grouped two RDRs from different SDGs together with one RDR number. Please let me know if this will be a problem for you.

Thanks,
Heidi

STL RICHLAND

PNNL

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # **W06-002-94**

Page 1 of 1

Collector EURATEK D.T. SICKLE	**Contact/Requester** Dot Stewart	**Telephone No.** 509-376-5056 **MSIN** **FAX**
SAF No. W06-002	**Sampling Origin** Hanford Site	**Purchase Order/Charge Code**
Project Title RCRA, February 2006	DTS- SAWS HC,B	**Ice Chest No.** SAWS 209 **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
** **

W04866

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
B1HCR7		W	2-13-06	1125	1x20-mL P	Activity Scan HX D3T	None
B1HCR7		W			1x500-mL G/P	UTOT_KPA: Uranium (1)	HNO3 to pH <2
B1HCR7		W			1x1000-mL P	906.0_H3_LSC: Tritium (1)	None
B1HCR7		W			1x4000-mL G/P	GAMMALL_GS: List-1 (9)	HNO3 to pH <2
B1HCR7		W			1x500-mL P	TC99_ETVDSK_LSC: Tc-99 (1)	HCl to pH <2
B1HCR7		W			1x1000-mL P	9310_ALPHABETA_GPC: Alpha + Beta (2)	HNO3 to pH <2

Relinquished By EURATEK D.T. SICKLE Print Sign Date/Time 1510 FEB 13 2006	Received By Jeff Jensen Print Sign Date/Time 1510 FEB 13 2006	Matrix *
Relinquished By Date/Time	Received By Date/Time	<100 CPM
Relinquished By Date/Time	Received By Date/Time	
Relinquished By Date/Time	Received By Date/Time	

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

FINAL SAMPLE DISPOSITION Disposal Method (e.g., Return to customer, per lab procedure, used in process) Disposed By Date/Time

7/17/2006 3:09:29 PM

Sample Preparation/Analysis

Balance Id:1120482733

384868, Pacific Northwest National Laboratory ,
Pacific Northwest National Lab

AW Gamma PrpRC5017
TA Gamma by HPGE
5I CLIENT: HANFORD

Pipet #: _____

AnalyDueDate: 07/21/2006 104866A

Sep1 DT/Tm Tech:

Batch: 6191189 WATER pCi/L PM, Quote: HC , 57671

Sep2 DT/Tm Tech:

SEQ Batch, Test: None

Prep Tech: RutherfordJ

PRIORITY

Work Order, Lot, Sample DateTime	Total Amt/Unit	Initial Aliquot Amt/Unit	QC Tracer Prep Date	Disp Size	Opt or Geometry	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:
1 H8QPD-1-AA J6G060212-1-SAMP 02/13/2006 11:25		2002.00g,in AmtRec: 4LP	#Containers: 1	1.5	100	100	G7	2034	7/20/06 OK	
2 H8QPD-1-AC-X J6G060212-1-DUP 02/13/2006 11:25		AmtRec: 4LP	#Containers: 1			100	G4	2309		
3 H8WX9-1-AA-B J6G100000-189-BLK 02/13/2006 11:25		2000.10g,in AmtRec:	#Containers: 1			100	G10	2310		
4 H8WX9-1-AC-C J6G100000-189-LCS 02/13/2006 11:25		2001.10g,in AmtRec:	QCAG1233 07/17/06,pd 03/07/05,r #Containers: 1			100	G7	2311		

Comments: H8QPD-SAMP "Comments: Not enough sample for duplicate on sample H8QPD. jhr 07/07/06"

pH <2.0 JHR 7/17/06

All Clients for Batch:
384868, Pacific Northwest National Laboratory Pacific Northwest National Lab, HC , 57671

H8QPD1AA-SAMP Constituent List:

Co-60	RDL:0.00E+00	pCi/L	LCL:	UCL:	RPD:	Cs-134	RDL:0.00E+00	pCi/L	LCL:	UCL:	RPD:
Cs-137	RDL:6.00E+00	pCi/L	LCL:70	UCL:130	RPD:20	Cs-137DA	RDL:6.00E+00	pCi/L	LCL:70	UCL:130	RPD:20
Eu-154	RDL:0.00E+00	pCi/L	LCL:	UCL:	RPD:	Eu-155	RDL:.00E+00	pCi/L	LCL:	UCL:	RPD:
K-40	RDL:0.00E+00	pCi/L	LCL:	UCL:	RPD:	Sb-125	RDL:0.00E+00	pCi/L	LCL:	UCL:	RPD:

H8WX91AA-BLK:

7/21/2006 1:42:26 PM

ICOC Fraction Transfer/Status Report

ByDate: 7/21/2005, 7/26/2006, Batch: '6191189', User: *ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting			Comments
6191189						
AC		**CalcC**	**RutherfordJ**	7/17/2006 1:32:35 PM		
SC			wagarr	IsBatched	7/10/2006 9:28:13 AM	ICOC_RADCALC v4.8.24
SC			RutherfordJ	InPrep	7/17/2006 1:32:35 PM	RICH-RC-5016 REVISION 6
SC			RutherfordJ	Prep1C	7/17/2006 3:10:36 PM	RICH-RC-5017 REVISION 5
SC			ScottM	InPrep2	7/18/2006 6:21:06 AM	RICH-RC-5017 REVISION 4
SC			ScottM	Prep2C	7/20/2006 2:12:35 PM	RICH-RC-5017 REVISION 4
SC			DAWKINSO	InCnt1	7/20/2006 4:46:09 PM	RICH-RD-0007 REVISION 5
SC			BlackCL	CalcC	7/21/2006 10:29:17 AM	RICH-RD-0007 REVISION 5
AC			**RutherfordJ**	7/17/2006 3:10:36 PM		
AC			**ScottM**	7/18/2006 6:21:06		
AC			**ScottM**	7/20/2006 2:12:35 PM		
AC			**DAWKINSO**	7/20/2006 4:46:09 PM		
AC			**BlackCL**	7/21/2006 10:29:17		

AC: Accepting Entry; SC: Status Change

7/21/2006 1:42:23 PM

Rpt DB Transfer log (Batch Results)

SEVERN TRENT STL

SDG or Batch / Isotope	Rpt Db Id / Method	RTst	Qc	LotSample / Analysis Date	Client Id / Result	Matrix / Cnt Uncert	Received Date / Tot uncert	Sample Date / Mga	Units	Expected	Yield	Volumes
W04866A	**9H8QPD10**			**J6G0602121**	B1HCR7	WATER	7/6/2006 10:00:00	2/13/2006 11:25:00 AM				
BE-7	AWTA	0		7/20/2006 6:54:14 PM	**-3.8555E+01**	6.573E+01	6.573E+01	2.291E+02	PCI/LITER			2.002E+0
CO-60	AWTA	0		7/20/2006 6:54:14 PM	**4.1292E+01**	4.807E+00	4.807E+00	4.262E+00	PCI/LITER			2.002E+0
CS-134	AWTA	0		7/20/2006 6:54:14 PM	**1.7703E+00**	1.686E+00	1.686E+00	6.658E+00	PCI/LITER			2.002E+0
CS-137DA	AWTA	0		7/20/2006 6:54:14 PM	**-1.2552E+00**	1.245E+00	1.245E+00	4.236E+00	PCI/LITER			2.002E+0
EU-152	AWTA	0		7/20/2006 6:54:14 PM	**1.5492E+00**	3.142E+00	3.142E+00	1.14E+01	PCI/LITER			2.002E+0
EU-154	AWTA	0		7/20/2006 6:54:14 PM	**1.0263E+00**	4.091E+00	4.091E+00	1.612E+01	PCI/LITER			2.002E+0
EU-155	AWTA	0		7/20/2006 6:54:14 PM	**1.5327E+00**	2.834E+00	2.834E+00	1.001E+01	PCI/LITER			2.002E+0
K-40	AWTA	0		7/20/2006 6:54:14 PM	**8.6247E+01**	2.995E+01	2.995E+01	5.527E+01	PCI/LITER			2.002E+0
RU-106DA	AWTA	0		7/20/2006 6:54:14 PM	**2.5067E+01**	1.477E+01	1.477E+01	5.936E+01	PCI/LITER			2.002E+0
SB-125	AWTA	0		7/20/2006 6:54:14 PM	**-1.0085E+00**	3.157E+00	3.157E+00	1.128E+01	PCI/LITER			2.002E+0
W04866A	**H8QPD1CR**			**J6G0602121**	B1HCR7 DUP	WATER	7/6/2006 10:00:00	2/13/2006 11:25:00 AM				
BE-7	AWTA	0	R	7/20/2006 9:30:05 PM	**7.9894E+01**	6.315E+01	6.315E+01	2.488E+02	PCI/LITER			2.002E+0
CO-60	AWTA	0	R	7/20/2006 9:30:05 PM	**3.4918E+01**	4.351E+00	4.351E+00	8.25E-01	PCI/LITER			2.002E+0
CS-134	AWTA	0	R	7/20/2006 9:30:05 PM	**-1.9146E-01**	1.568E+00	1.568E+00	5.714E+00	PCI/LITER			2.002E+0
CS-137DA	AWTA	0	R	7/20/2006 9:30:05 PM	**-8.6309E-01**	1.217E+00	1.217E+00	4.307E+00	PCI/LITER			2.002E+0
EU-152	AWTA	0	R	7/20/2006 9:30:05 PM	**5.9634E+00**	3.095E+00	3.095E+00	1.211E+01	PCI/LITER			2.002E+0
EU-154	AWTA	0	R	7/20/2006 9:30:05 PM	**5.1915E-01**	3.129E+00	3.129E+00	1.264E+01	PCI/LITER			2.002E+0
EU-155	AWTA	0	R	7/20/2006 9:30:05 PM	**-6.3674E-01**	2.838E+00	2.838E+00	1.005E+01	PCI/LITER			2.002E+0
K-40	AWTA	0	R	7/20/2006 9:30:05 PM	**-3.1899E+01**	2.715E+01	2.715E+01	1.213E+02	PCI/LITER			2.002E+0
RU-106DA	AWTA	0	R	7/20/2006 9:30:05 PM	**2.4891E+00**	1.423E+01	1.423E+01	5.334E+01	PCI/LITER			2.002E+0
SB-125	AWTA	0	R	7/20/2006 9:30:05 PM	**-3.9057E-01**	3.046E+00	3.046E+00	1.086E+01	PCI/LITER			2.002E+0
W04866A	**H8WX91AB**			**J6G100000189**	INTRA-LAB BLANK	WATER	7/6/2006 10:00:00	2/13/2006 11:25:00 AM				
BE-7	AWTA	0	B	7/20/2006 9:30:43 PM	**-5.5305E+01**	4.663E+01	4.663E+01	1.57E+02	PCI/LITER			2.0E+0
CO-60	AWTA	0	B	7/20/2006 9:30:43 PM	**-4.0127E-01**	7.312E-01	7.312E-01	2.781E+00	PCI/LITER			2.0E+0
CS-134	AWTA	0	B	7/20/2006 9:30:43 PM	**1.2396E-01**	8.961E-01	8.961E-01	3.422E+00	PCI/LITER			2.0E+0
CS-137DA	AWTA	0	B	7/20/2006 9:30:43 PM	**9.5053E-01**	7.919E-01	7.919E-01	3.186E+00	PCI/LITER			2.0E+0
EU-152	AWTA	0	B	7/20/2006 9:30:43 PM	**2.1302E-01**	1.889E+00	1.889E+00	6.858E+00	PCI/LITER			2.0E+0
EU-154	AWTA	0	B	7/20/2006 9:30:43 PM	**-1.8731E+00**	2.505E+00	2.505E+00	8.872E+00	PCI/LITER			2.0E+0
EU-155	AWTA	0	B	7/20/2006 9:30:43 PM	**-2.911E+00**	1.861E+00	1.861E+00	6.11E+00	PCI/LITER			2.0E+0
K-40	AWTA	0	B	7/20/2006 9:30:43 PM	**-6.624E-01**	1.299E+01	1.299E+01	5.467E+01	PCI/LITER			2.0E+0
RU-106DA	AWTA	0	B	7/20/2006 9:30:43 PM	**-1.6253E+01**	1.01E+01	1.01E+01	3.341E+01	PCI/LITER			2.0E+0
SB-125	AWTA	0	B	7/20/2006 9:30:43 PM	**-9.8012E-01**	2.159E+00	2.159E+00	7.702E+00	PCI/LITER			2.0E+0
W04866A	**H8WX91CS**			**J6G100000189**	INTRA-LAB CHECK	WATER	7/6/2006 10:00:00	2/13/2006 11:25:00 AM				
CO-60	AWTA	0	S	7/20/2006 9:31:12 PM	**4.1618E+01**	4.844E+00	4.844E+00	4.681E+00	PCI/LITER	3.8124E+01		2.001E+0
CS-137DA	AWTA	0	S	7/20/2006 9:31:12 PM	**3.1573E+01**	3.649E+00	3.649E+00	5.796E+00	PCI/LITER	2.4867E+01		2.001E+0
EU-152	AWTA	0	S	7/20/2006 9:31:12 PM	**9.431E+01**	1.101E+01	1.101E+01	2.819E+01	PCI/LITER	7.6817E+01		2.001E+0

6191189,6191189, **Samples Inserted | Updated | NotUpdated => 4 | 0 | 0,
**Results Inserted | ReTestInserted | Updated | NotInserted => 33 | 0 | 0 | 0.
**Diff RptDb | Qtims => .