

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: 33812**

<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>
W04974 I	W06-008	B1K2V2	J6H070164-2	JARMN1AF	9JARMN10	6319361
	<i>D Hayes</i> <i>5/16/12</i>	B1K2V1	J6H070164-3	JARMW1AE	9JARMW10	6319361

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Comments:

**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

November 27, 2006

Attention: Dot Stewart

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SAF Number	:	W06-008
Date SDG Closed	:	August 14, 2006
Number of Samples	:	Two (2)
Sample Type	:	Water
SDG Number	:	W04974
Data Deliverable	:	45-Day / Summary

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### CASE NARRATIVE

#### **I. Introduction**

On August 4, 2006 two 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>
B1K2V2	JARMN	WATER	8/4/06
B1K2V1	JARMW	WATER	8/4/06

#### **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**  
Iodine-129 (LL) by method RICH-RC-5025

#### 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

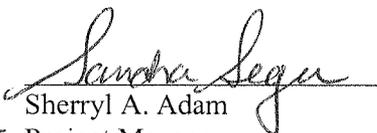
##### **Gamma Spectroscopy**

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

Samples B1K2V2 and B1K2V1 were originally analyzed by method I129LL\_ETVDSK\_SEP\_GS which failed. On November 14, 2006 STL Richland sent Issue Resolution Form (PNNL No.:06-048) asking permission to analyze samples B1K2V2 and B1K2V1 by method I129LL\_SEP\_LEPS\_GS instead of I129LL\_ETVDSK\_SEP\_GS. The proposed resolution was accepted on November 14, 2006. The samples were reanalyzed by method I129LL\_SEP\_LEPS\_GS. There was insufficient sample remaining for a duplicate on the reanalysis. Except as noted, the LCS, batch blank and sample 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:

  
for 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,  $R = \text{constants} * f(x,y,z,\dots)$ . 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%. $Lc = (1.645 * \sqrt{2 * (BkgrndCnt / BkgrndCntMin) / SCntMin}) * (ConvFct / (Eff * Yld * Abn * Vol)) * IngrFct$ . 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.
<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%. $MDC = (4.65 * \sqrt{((BkgrndCnt / BkgrndCntMin) / SCntMin) + 2.71 / SCntMin}) * (ConvFct / (Eff * Yld * Abn * Vol)) * IngrFct$ . For LSC methods the batch blank is used as a measure of the background variability.
<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 = $(S-D) / [\sqrt{TPUs^2 + TPUD^2}]$ 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.
<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.

11/27/2006 10:18:25 AM

### STL Richland Report

Lab Code: STLRL

FormNbr: R      FormatType: FEAD      Version: 05      Rpt Nbr: 33812      File Name: h:\Reportdb\ledd\Fead\I\Rad\W04974.Edd, h:\Reportdb\ledd\Fead\I\Rad\33812.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:				
9JARMN10	B1K2V2		MW6-SBB-A1	W06-008	W04974					08/04/2006 11:48				
Batch	Analyte	CAS#	Result	Unit	CntU 2S	TotU 2S	Qual	MDA	TrcYield	Method	Alq Size	Unit	Analy Date/Time	Act
6319361	I-129L	15046-84-1	1.05E+01	pCi/L	1.3E+00	1.3E+00		3.84E-01	97.3	I129LL_SEP_LEPS	3.8119E+00	L	11/21/2006 17:27	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:				
9JARMW10	B1K2V1		MW6-SBB-A1	W06-008	W04974					08/04/2006 11:48				
Batch	Analyte	CAS#	Result	Unit	CntU 2S	TotU 2S	Qual	MDA	TrcYield	Method	Alq Size	Unit	Analy Date/Time	Act
6319361	I-129L	15046-84-1	9.68E+00	pCi/L	1.2E+00	1.2E+00		3.80E-01	99.7	I129LL_SEP_LEPS	3.9173E+00	L	11/21/2006 17:28	I

Monday, November 27, 2006

### STL Richland QC Blank Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W04974.Edd, h:\Reportdb\edd\FeadIV\Rad\33812.Edd

Lab Sample Id: JJP7A1AB

Sdg/Rept Nbr: W04974 33812

Collection Date: 08/04/2006 11:48

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								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
6319361 BLK	I-129L 15046-84-1	6.57E-02	pCi/L	1.1E-01 1.1E-01	U	2.28E-01	99.2		I129LL_SEP_L	3.8038E+00 L	11/21/2006 17:28				D

Monday, November 27, 2006

### STL Richland QC Control Sample Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\ledd\Fead\I\Rad\W04974.Edd, h:\Reportdb\ledd\Fead\I\Rad\33812.Edd

Lab Sample Id: JJP7A1CS

Sdg/Rept Nbr: W04974 33812

Collection Date: 08/04/2006 11:48

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								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
6319361 BS	I-129L 15046-84-1	5.62E+00	pCi/L	8.3E-01 8.3E-01		4.23E-01	97.4	6.49E+00 86.5	I129LL_SEP_L	3.5053E+00 L	11/21/2006 19:12			70 130	D

Lot No., Due Date: J6H070164; 09/28/2006  
 Client, Site: 384868; PGW 615HANFORD HANFORD  
 QC Batch No., Method Test: 6319361; RGAMLEPS Gamma by LEPS  
 SDG, Matrix: W04974; 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. 10-09029

First Level Review Pam Anderson

Date 11-24-06



# STL

Data Review Checklist  
RADIOCHEMISTRY  
Second Level Review

QC Batch Number: 6319361  
W04974

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: 11-24-06

# Clouseau Nonconformance Memo



NCM #: <b>10-09029</b>	Classification: <b>Anomaly</b>
NCM Initiated By: Pam Anderson	Status: <b>GLREVIEW</b>
Date Opened: 11/24/2006	Production Area: Environmental - Sep
Date Closed:	Tests: Gamma by LEPS
	Lot #'s (Sample #'s): J6H070164 (2,3), J6K150000 (361),
	QC Batches: 6319361
Nonconformance: Other (describe in detail)	
Subcategory: Other (explanation required)	

### Problem Description / Root Cause

<u>Name</u>	<u>Date</u>	<u>Description</u>
Pam Anderson	11/24/2006	These I 129 in water samples had been run through TEVA disks on the first analysis and all failed. This analysis has not gone through the TEVA disk. Yields are good. There was insufficient sample left for a duplicate on the reanalysis.

### Corrective Action

<u>Name</u>	<u>Date</u>	<u>Corrective Action</u>
Pam Anderson	11/24/2006	The samples were reanalyzed with good results.

### 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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PNNL

# CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # **W06-008-283**  
Page 1 of 1

Collector <b>R. T. SICKLE</b>	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	<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.	

POSSIBLE SAMPLE HAZARDS/REMARKS ** ** <b>J6H070164</b> <b>W04974</b>	SPECIAL INSTRUCTIONS 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	Hold Time	Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B1K2V2		W	8/4/06	1148	1x20-mL P	Activity Scan	None
B1K2V2		W	↓	↓	1x1000-mL P	906.0_H3_LSC: Tritium (1)	None
B1K2V2		W	↓	↓	1x500-mL P	TC99_ETVDSK_LSC: Tc-99 (1) <b>JARMN</b>	HCl to pH <2
B1K2V2		W	↓	↓	2x4000-mL G/P	1129LL_ETVDSK_SEP_GS: I-129_ETVDSK (1)	None
<i>P. Wall 8/4/06</i>							

Relinquished By <b>R. T. SICKLE</b>	Print <i>[Signature]</i>	Sign <i>[Signature]</i>	Date/Time <b>AUG 04 2006</b>	Received By <b>DAVID HARDING</b>	Print <i>[Signature]</i>	Sign <i>[Signature]</i>	Date/Time <b>AUG 04 2006</b>	<b>Matrix *</b> 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	
<b>FINAL SAMPLE DISPOSITION</b>	Disposal Method (e.g., Return to customer, per lab procedure, used in process)			Disposed By			Date/Time	

# CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # **W06-008-282**  
Page 1 of 1

Collector <b>R. T. SICKLE</b>	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	<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.		

POSSIBLE SAMPLE HAZARDS/REMARKS  
\*\* \*\*  
**JLH070164**  
**W04974**

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
B1K2V1		W	8/4/06	1148	1x20-mL P	Activity Scan	None
B1K2V1		W	↓	↓	1x1000-mL P	906.0_H3_LSC: Tritium (1)	None
B1K2V1		W	↓	↓	1x500-mL P	TC99_ETVDSK_LSC: Tc-99 (1) <b>JARMW</b>	HCl to pH <2
B1K2V1		W	↓	↓	2x4000-mL G/P	I129LL_ETVDSK_SEP_GS: I-129_ETVDSK (1)	None
<i>R. Wall 8/4/06</i>							

Relinquished By <b>R. T. SICKLE</b>	Print <i>[Signature]</i>	Sign <i>[Signature]</i>	Date/Time <b>AUG 04 2006</b>	Received By <b>DAVID HARBINSKI</b>	Print <i>[Signature]</i>	Sign <i>[Signature]</i>	Date/Time <b>AUG 04 2006</b>
Relinquished By			Date/Time	Received By			Date/Time
Relinquished By			Date/Time	Received By			Date/Time
Relinquished By			Date/Time	Received By			Date/Time

- Matrix \*
- S = Soil
  - SE = Sediment
  - SO = Solid
  - SI = 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
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# STL

### Sample Check-in List

Date/Time Received: 8/4/06 13:55

Client: Prnl SDG #: W06-008 NA  SAF #: W06-008 NA

Work Order Number: JG H070164 Chain of Custody # W06-008-252 NA

Shipping Container ID: DTB-SAWS-H100 Air Bill # N/A W06-006-165 W06-008-362 W06-008-283

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: 14
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: 8/4/06 13:55

Client Sample ID	Analysis Requested	Condition	Comments/Action

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

[ ] No action necessary; process as is.

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

**STL RICHLAND ISSUE RESOLUTION FORM  
FOR CONTRACT 615 WITH BHI/FH/PNNL**

PNNL No. : 06-048

SAF No.: W06-008

Date: November 14, 2006

SDG: W04974

Sample No.(s) B1K2V2, B1K2V1

Submitted By: Sherryl Adam

Submitted To: **Dot Stewart (PNNL)**

Phone No. 509-375-3131 x164

Phone No. **509-376-5056**

Fax No. 509-375-5590

Fax No. 509-372-1704

**ISSUE**

I129LL\_ETVDSK\_SEP\_GS

**PROPOSED RESOLUTION**

Analyze as I129LL\_SEP\_GS instead of  
I129LL ETVDSK SEP GS

**BHI/FH/PNNL COMMENTS -**

Accept proposed resolution.

Heidi Hampt for Dot Stewart 11/14/06

Signature and date

**Seger, Sandra**

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**From:** Adam, Sherryl  
**Sent:** Wednesday, November 15, 2006 8:13 AM  
**To:** Seger, Sandra  
**Subject:** FW: IRFs  
**Attachments:** 06-047.DOC; 06-048.DOC

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**From:** Hampt, Heidi [mailto:heidi.hampt@pnl.gov]  
**Sent:** Tuesday, November 14, 2006 1:52 PM  
**To:** Adam, Sherryl; Stewart, Dorothy L  
**Cc:** Waters-Husted, Karen S; Felmy, Diana  
**Subject:** RE: IRFs

Sheryl,

Here is the response.

Thanks,  
Heidi

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**From:** Adam, Sherryl [mailto:SAdam@stl-inc.com]  
**Sent:** Tuesday, November 14, 2006 10:53 AM  
**To:** Stewart, Dorothy L  
**Cc:** Hampt, Heidi; Waters-Husted, Karen S  
**Subject:** IRFs

Dot,  
Here are some IRFs. Thanks.

<<IRFW04973\_14NOV06.DOC>> <<IRFW04974\_14NOV06.DOC>>

*Sherryl A. Adam*  
Project Manager  
Severn Trent Laboratories Richland  
(509) 375 - 3131 ext. 164

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11/15/2006

11/21/2006 3:27:07 PM

### Sample Preparation/Analysis

Balance Id:na

384868, Pacific Northwest National Laboratory ,  
Pacific Northwest National Lab

**BN I-129 Prp/SepRC5025**  
**TB Gamma by LEPD**  
**5I CLIENT: HANFORD**

Pipet #: \_\_\_\_\_

AnalyDueDate: 09/18/2006

Sep1 DT/Tm Tech: \_\_\_\_\_

Batch: 6319361 WATER pCi/L PM, Quote: HC , 57671

Sep2 DT/Tm Tech: \_\_\_\_\_

SEQ Batch, Test: None All Tests: 6227361 FPS5, 6227364 ARS6, 6227367 H3TB, 6262394 H3TB, 6319361 BNTB,

Prep Tech: bostedd

Work Order, Lot, Sample Date/Time	Total Amt/Unit	Initial Aliquot Amt/Unit	QC Tracer Prep Date	Dish Size	Ppt or Geometry	Count Time Min	Detector Id	Count On   Off (24hr) Circle	CR Analyst, Init/Date	Comments:
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1 JARMN-1-AF J6H070164-2-SAMP 	3811.90g,in		ITA5741 11/10/06			100	1907			11/21/06 bost
08/04/2006 11:48	AmtRec: 20ML,500ML,1000ML,2X4000 #Containers: 5							Scr: Alpha: -9.50E-05 uCi/Sa		Beta: 1.57E-03 uCi/Sa

2 JARMN-1-AG-X J6H070164-2-DUP 	insufficient volume for DUP DB 11-16-06										
08/04/2006 11:48	AmtRec: 20ML,500ML,1000ML,2X4000 #Containers: 5								Scr: Alpha: -9.50E-05 uCi/Sa		Beta: 1.57E-03 uCi/Sa

3 JARMW-1-AE J6H070164-3-SAMP 	3917.30g,in		ITA5821 11/10/06			14	1908			11/21/06 bost	
08/04/2006 11:48	AmtRec: 20ML,500ML,1000ML,2X4000 #Containers: 5								Scr: Alpha: 2.92E-04 uCi/Sa		Beta: 1.12E-03 uCi/Sa

4 JJP7A-1-AA-B J6K150000-361-BLK 	3802.80g,in		ITA5822 11/10/06			15					
08/04/2006 11:48	AmtRec:	#Containers: 1							Scr: Alpha:		Beta:

5 JJP7A-1-AC-C J6K150000-361-LCS 	3505.30g,in		ISB0204 11/14/06			24	2052				
08/04/2006 11:48	AmtRec:	#Containers: 1							Scr: Alpha:		Beta:

**Comments:**

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

JARMN1AF-SAMP Constituent List:  
I-129 RDL:1.00E+00 pCi/L LCL: UCL: RPD:

Sample Preparation/Analysis

Balance Id:n/a,na

BN I-129 Prp/SepRC5025  
 TB Gamma by LEPD  
 5I CLIENT: HANFORD

Pipet #: \_\_\_\_\_

AnalyDueDate: 09/18/2006

Sep1 DT/Tm Tech: \_\_\_\_\_

Batch: 6319361

pCi/L

Sep2 DT/Tm Tech: \_\_\_\_\_

SEQ Batch, Test: None

Prep Tech: ,bostedd



Work Order, Lot, Sample Date/Time	Total Amt/Unit	Initial Aliquot Amt/Unit	QC Tracer Prep Date	Dish Size	Ppt or Geometry	Count Time Min	Detector Id	Count On   Off (24hr) Circle	CR Analyst, Init/Date	Comments:
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JJP7A1AA-BLK:  
 I-129 RDL:1.00E+00 pCi/L LCL: UCL: RPD:  
 JJP7A1AC-LCS:  
 I-129 RDL:5 pCi/L LCL:70 UCL:130 RPD:20  
 JARMN1AF-SAMP Calc Info:  
 Uncert Level (#s): 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B  
 JJP7A1AA-BLK:  
 Uncert Level (#s): 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B  
 JJP7A1AC-LCS:  
 Uncert Level (#s): 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

Approved By \_\_\_\_\_ Date: \_\_\_\_\_

# ICOC Fraction Transfer/Status Report

ByDate: 11/22/2005, 11/27/2006, Batch: '6319361', User: \*ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting	Comments
<b>6319361</b>				
AC		<b>CalcC</b>	<b>BostedD</b> 11/16/2006 10:58:46	
SC			wagarr IsBatched 11/15/2006 10:22:39 AM	ICOC_RADCALC v4.8.24
SC			BostedD InSep1 11/16/2006 10:58:46 AM	RICHRC5025 REV3
SC			BostedD Sep1C 11/21/2006 3:29:18 PM	RICHRC5025 REV3
SC			AntonsonL Sep1C 11/21/2006 3:29:36 PM	RICHRC5025 REV3
SC			DAWKINSO InCnt1 11/21/2006 3:38:20 PM	RICH-RD-0007 REVISION 5
SC			DAWKINSO CalcC 11/21/2006 9:15:24 PM	RICH-RD-0007 REVISION 5
AC			<b>BostedD</b> 11/21/2006 3:29:18	
AC			<b>AntonsonL</b> 11/21/2006 3:29:36	
AC			<b>DAWKINSO</b> 11/21/2006 3:38:20	
AC			<b>DAWKINSO</b> 11/21/2006 9:15:24	

AC: Accepting Entry; SC: Status Change