

Analytical Data Package Prepared For

# Pacific Northwest National Lab

Radiochemical Analysis By

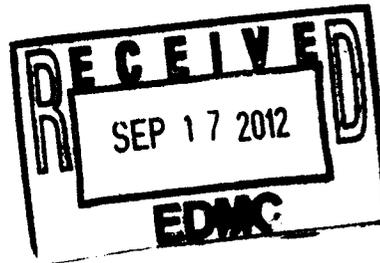
**STL Richland STLRL**

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

*Data Package Contains 16 Pages*

Report Nbr: 29455

SDG Nbr	ORDER Nbr	CLIENT ID NUMBER	LOT Nbr	WORK ORDER	RPT DB ID	BATCH
W04641A	W05-005	BICTF0	J5G070339-1	HE2W41AA	9HE2W410	5189136



1216860

Comments:

**Certificate of Analysis**  
**RECHECK, RECOUNT, OR REANALYSIS ORDER**  
**ORDER NUMBER 050707STLRL-R3041**

**Certificate of Analysis**

Pacific Northwest National Laboratories  
Sigma V Building  
Richland, WA 99352

July 19, 2005

Attention: Dot Stewart

---

SAF Number : W05-005  
Date SDG Closed : July 7, 2005  
Number of Samples : One (1)  
Sample Type : Water  
SDG Number : W04641A  
Data Deliverable : 15-Day / Priority

---

**CASE NARRATIVE**

**I. Introduction**

On July 7, 2005, 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:

<u>PGW ID#</u>	<u>STLR ID#</u>	<u>MATRIX</u>	<u>DATE OF RECEIPT</u>
B1CTF0	HE2W4 (G98PH)	WATER	7/7/05

**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 analysis was: **Liquid Scintillation Counting**  
Technetium-99 by method RICH-RC-5065

**IV. Quality Control**

The analytical results for each analysis performed under SDG W04641A 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**

**Liquid Scintillation Counting**  
Technetium-99 by method RICH-RC-5065:

The reanalysis result is not within RER acceptance criteria. The LCS, batch blank, samples, sample duplicate (B1CTF0) and sample matrix spike (B1CTF0) 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:



Hans Carman  
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,  $R = \text{constants} * f(x,y,z,...)$ . 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 $(\text{Result}/\text{Expected})-1$ 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%. $Lc = (1.645 * \sqrt{2 * (\text{BkgndCnt}/\text{BkgndCntMin})/\text{SCntMin}}) * (\text{ConvFct}/(\text{Eff} * \text{Yld} * \text{Abn} * \text{Vol})) * \text{IngrFct}$ . 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%. $MDC = (4.65 * \sqrt{(\text{BkgndCnt}/\text{BkgndCntMin})/\text{SCntMin}} + 2.71/\text{SCntMin}) * (\text{ConvFct}/(\text{Eff} * \text{Yld} * \text{Abn} * \text{Vol})) * \text{IngrFct}$ . 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 = $(S-D)/[\sqrt{(\text{TPUs}^2 + \text{TPUd}^2)}]$ 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.

7/20/2005 9:58:53 AM

# STL Richland Report

Lab Code: STLRL

FormNbr: R    FormatType: FEAD    Version: 05    Rpt Nbr: 29455    File Name: h:\Reportdb\ledd\Fead\W04641A.Edd, h:\Reportdb\ledd\Fead\W04641A.Edd, h:\Reportdb\ledd\Fead\W04641A.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:
9HE2W410 B1CTF0			MW6-SBB-A1	W05-005	W04641A					05/10/2005 09:58
Batch 5189136	Analyte TC-99	CAS# 14133-76-7	Result 1.74E+03	Unit pCi/L	CntU 2S 2.4E+01	TotU 2S 1.1E+02	MDA 1.09E+01	TrcYield 100.0	Method TC99_ETVDSK_LS	Alq Size 1.252E-01
										Unit L
										Analy Date/Time 07/13/200 23:26
										Act 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.



Wednesday, July 20, 2005

# STL Richland QC Control Sample Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\Fead\Rad\W04641A.Edd, h:\Reportdb\edd\Fead\Rad\29455.E

Lab Sample Id: HE3J21CS

Sdg/Rept Nbr: W04641A 29455

Collection Date: 05/10/2005 09:58

Client Id: NA

Matrix: WATER

Sample On Date:

Moisture/Solids%\*:

QC Type: BS

Received Date: 05/10/2005

SAF Nbr	Analyt/ CAS#	Result/ Orig Rst	Unit	Toi/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Concl/ %Rec	Analy Method	Aliq Size/ L	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCL	R Typ	FSuffix	RType
5189136	TC-99	4.58E+02	pCi/L	3.3E+01		1.07E+01	100.0	5.35E+02	TC99_ETVDSK	1.272E-01	07/14/2005			70	D		
BS	14133-76-7			1.3E+01				85.6			03:37			130		AE	H

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.

Wednesday, July 20, 2005

# STL Richland QC Duplicate Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\Fead\W04641A.Edd, h:\Reportdb\edd\Fead\W04641A.Edd, h:\Reportdb\edd\Fead\W04641A.Edd

**Lab Sample Id:** HE2W41DR      **Sdg/Rept Nbr:** W04641A      **29455**      **Collection Date:** 05/10/2005 09:58  
**Client Id:** B1CTF0      **Matrix:** WATER      **WATER**  
**Moisture/Solids%\*:**      **QC Type:** DUP

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix	RType
W05-005	MW6-SBB-A19981								AC	H

Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt	Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Concl/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCL	R Typ
5189136	TC-99	1.77E+03	pCi/L	1.1E+02	1.1E+02	1.13E+01	100.0	100.0		TC99_ETVDSK	1.199E-01	07/14/2005	1.8	0.4		D
DUP	14133-76-7	1.74E+03		2.4E+01							L	01:31	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.

Wednesday, July 20, 2005

# STL Richland Qc Matrix Spike Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\Fead\W04641A.Edd, h:\Reportdb\edd\Fead\W04641A.Edd, h:\Reportdb\edd\Fead\W04641A.Edd

Lab Sample Id: HE2W41CW

Client Id: B1CTF0

Moisture/Solids%\*:

Sdg/Rept Nbr: W04641A 29455

Matrix: WATER WATER

QC Type: MS

Collection Date: 05/10/2005 09:58

Sample On Date:

Received Date: 05/10/2005

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix	RTyp					
W05-005	MW6-SBB-A19981								AB	H					
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Concl/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCL	Typ
5189136 TC-99 MS	14133-76-7	4.54E+03	pCi/L	2.8E+02 3.7E+01		1.08E+01	100.0	3.56E+03 127.5	TC99_ETVDSK	1.262E-01 L	07/14/2005 00:29			60 140	D

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.

Lot No., Due Date: J5G070339; 07/22/2005  
Client, Site: 384868; PGW 615HANFORD HANFORD  
QC Batch No., Method Test: 5189136; RTC99 Tc-99 by LSC  
SDG, Matrix: W04641A; 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

*[Handwritten Signature]*

Date

7/15/05



# STL

Data Review Checklist  
RADIOCHEMISTRY  
Second Level Review

QC Batch Number: 5789136

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: Jodie Co Date: 7/19/05

07/07/2005  
RECHECK, RECOUNT, OR REANALYSIS ORDER  
CONTRACT NO MW6-SBB-

Severn Trent Incorporated,  
2800 George Washington Way  
Richland, WA 99354

Battelle PNNL Order Number: 050707STLRL-R3041  
Sample Delivery Group: W04641  
Special Instructions None

JSE100337  
051005 1450  
051005 0958 500P  
W05-005-187

Samples(s)

Lab Sample ID	PNNL Sample	Action	TAT	METHOD_NAME:
9G98PH10	B1CTF0	Reanalysis	15/15	TC99_ETVDSK_LSC

HE 2 W4

W04641A  
J507070339  
Due 072205

Deliver Report Results to: Dorothy L. Stewart, K6-96  
c/o Secretary  
3110 Port of Benton Blvd.  
Richland, WA 99352

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

7/13/2005 7:07:34 AM Balance Id: 1120482733  
 384868, Pacific Northwest National Laboratories, Pipet #:  
 Pacific Northwest National Lab FP Tc-99 Prp/SepRC5065  
S5 Technetium-99 by Liquid Scint  
**Report Due: 07/22/2005** SI CLIENT: HANFORD  
 PM, Quote: SS, 57671  
 Prep Tech: ,GiroirB

**Batch: 5189136 WATER** pCi/L  
 SEQ Batch, Test: None

Work Order, Lot, Sample Date	Total Amt /Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	Count Time Min	Detector Id	Count On   Off (24hr) Circle	CR Analyst, Init/Date	Comments:
1 HE2W4-1-AA J5G070339-1-SAMP 05/10/2005 09:58	125.20g.in		125.20g.in							
AmfRec: 500P #Containers: 1										
2 HE2W4-1-AC-S J5G070339-1-MS 05/10/2005 09:58	126.20g.in		126.20g.in		TCSG1222 07/12/05,pd 02/15/05,I					
AmfRec: 500P #Containers: 1										
3 HE2W4-1-AD-X J5G070339-1-DUP 05/10/2005 09:58	119.90g.in		119.90g.in							
AmfRec: 500P #Containers: 1										
4 HE3J2-1-AA-B J5G080000-136-BLK 05/10/2005 09:58	129.70g.in		129.70g.in							
AmfRec: 500P #Containers: 1										
5 HE3J2-1-AC-C J5G080000-136-LCS 05/10/2005 09:58	127.20g.in		127.20g.in		TCSE1740 07/13/05,pd 03/10/05,I					
AmfRec: #Containers: 1										
6 HE3J2-1-AD-BN J5G080000-136-IBLK 05/10/2005 09:58										
AmfRec: #Containers: 1										

7/13/2005 7:07:42 AM

### Sample Preparation/Analysis

Balance Id:

FP Tc-99 Prp/SepRC5065  
S5 Technetium-99 by Liquid Scint  
5I CLIENT: HANFORD

Pipet #:

Sep1 DT/Tm Tech:

Sep2 DT/Tm Tech:

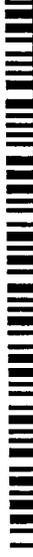
Prep Tech:

Report Due: 07/22/2005

Batch: 5189136

SEQ Batch, Test: None

pCi/L



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

**Comments:**

*pH verified @ 2m prep*

All Clients for Batch:

384868, Pacific Northwest National Laboratories Pacific Northwest National Lab, SS , 57671

**HE2W41AA-SAMP Constituent List:**

Tc-99 RDL:15 pCi/L LCL:70 UCL:130 RPD:20

**HE2W41AC-MS Constituent List:**

Tc-99 RDL:15 pCi/L LCL:70 UCL:130 RPD:20

**HE3J21AA-BLK:**

Tc-99 RDL:15 pCi/L LCL: UCL: RPD:

**HE3J21AC-LCS:**

Tc-99 RDL:15 pCi/L LCL:70 UCL:130 RPD:20

**HE3J21AD-IBLK:**

Tc-99 RDL:15 pCi/L LCL: UCL: RPD:

**HE2W41AA-SAMP Calc Info:**

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

**HE2W41AC-MS Calc Info:**

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

**HE3J21AA-BLK:**

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

**HE3J21AC-LCS:**

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

**HE3J21AD-IBLK:**

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: 7/14/2004, 7/19/2005, Batch: '5189136', User: \*ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting	Comments
<b>5189136</b>				
AC	<b>CalcC</b>	<b>GiroirB</b>	7/13/2005 5:48:11	
SC		andersonp	IsBatched	7/8/2005 8:07:12 AM
SC		GiroirB	InPrep	7/13/2005 5:48:11 AM
SC		GiroirB	Prep1C	7/13/2005 8:49:37 AM
SC		FinchA	Sep1C	7/13/2005 4:24:59 PM
SC		DAWKINSO	InCnt1	7/13/2005 4:39:38 PM
SC		BlackCL	CalcC	7/14/2005 7:17:47 AM
AC		<b>GiroirB</b>	7/13/2005 8:49:37	ICOC_RADCALC v4.8.08
AC		<b>FinchA</b>	7/13/2005 4:24:59 PM	RICH-RC-5016 REVISION 5
AC		<b>DAWKINSO</b>	7/13/2005 4:39:38 PM	RICH-RC-5016 REVISION 5
AC		<b>BlackCL</b>	7/14/2005 7:17:47	RICH-RC-5065 REVISION 5
				RICH-RD-0001 REVISION 3
				RICH-RD-0001 REVISION 3

AC: Accepting Entry; SC: Status Change