Analytical Data Package Prepared For

Fluor Hanford

Radiochemical Analysis By

TestAmerica TARL

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

Data Package Contains _____ Pages

Report Nbr: 38718

RECEIVED APRIL 9, 2008

SDG Nbr	ORDER Nbr	CLIENT ID NUMBER	LOT Nbr	WORK ORDER	RPT DB ID	BATCH
W05283A	W08-011	B1R682	J8C260301-1	KJ81A1AA	9KJ81A10	8087183
		B1R682	J8C260301-1	KJ81A1AC	9KJ81A10	8087185
		B1R681	J8C260301-2	KJ81E1AA	9KJ81E10	8087183
		B1R681	J8C260301-2	KJ81E1AC	9KJ81E10	8087185

Comments:

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Certificate of Analysis

Fluor Hanford
1200 Jadwin Ave.
Richland, WA 99352

April 9, 2008

Attention: Steve Trent

SAF Number	:	W08-011
Date SDG Closed	:	December 10, 2007
Number of Samples	:	Two (2)
Sample Type	:	Water
SDG Number	:	W05283A
Data Deliverable	:	15 Day / Summary

CASE NARRATIVE

On March 25, 2008 a request for reanalysis (Order Number: 080325TARL-R4747) of 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 Fluor Hanford specific IDs:

PGW ID#	STLR ID#	MATRIX	DATE OF RECEIPT
B1R682	KJ81A (KDTWV)	WATER	3/25/08
B1R854	KJ81E (KDTWM)	WATER	3/25/08

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:

Gas Proportional Counting
Gross Alpha by method RICH-RC-5014
Gross Beta by method RICH-RC-5014

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

Gas Proportional Counting

Gross Alpha by method RICH-RC-5014:
The reanalysis results are within RER acceptance criteria. Samples B1R682, B1R681 and B1R682 DUP were analyzed with reduced aliquots based on weight screen results. Except as note, the LCS, batch blank, samples and sample duplicate (B1R682) results are within contractual requirements.

Gross Beta by method RICH-RC-5014:
The reanalysis results are within RER acceptance criteria. Samples B1R682, B1R681 and B1R681 DUP were analyzed with reduced aliquots based on weight screen results. Except as note, the LCS, batch blank, samples and sample duplicate (B1R681) 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:

Sandra Seger
Project Manager

Drinking Water Method Cross References

	DRINKING WATER ASTM METHOD CROSS REFERENCES	
Referenced Method	**Isotope(s)**	**TestAmerica Richland's SOP No.**
EPA 901.1	Cs-134, I-131	RICH-RC-5017
EPA 900.0	Alpha & Beta	RICH-RC-5014
EPA 00-02	Gross Alpha (Coprecipitation)	RICH-RC-5021
EPA 903.0	Total Alpha Radium (Ra-226)	RICH-RC-5027
EPA 903.1	Ra-226	RICH-RC-5005
EPA 904.0	Ra-228	RICH-RC-5005
EPA 905.0	Sr-89/90	RICH-RC-5006
ASTM D5174	Uranium	RICH-RC-5058
EPA 906.0	Tritium	RICH-RC-5007

Results in this report relate only to the sample(s) analyzed.

Uncertainty Estimation

TestAmerica 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/?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

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 TestAmerica.
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 TestAmerica "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 TestAmerica 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.

4/9/2008 7:29:46 AM

TestAmerica Report

Lab Code: TARL

FormNbr: R FormatType: FEAD Version: 05 Rpt Nbr: 38718 File Name: h:\Reportdb\edd\FeadIV\Rad\W05283A.Edd, h:\Reportdb\edd\FeadIV\Rad\38718.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:
9KJ81A10	B1R682		MW6-SBB-A1	W08-011	W05283A					12/06/2007 11:14

Batch	Analyte	CAS#	Result	Unit	CntU 2S	TotU 2S	Qual	MDA	TrcYield	Method	Alq Size	Unit	Analy Date/Time	Act
8087183	ALPHA	12587-46-1	1.79E+00	pCi/L	1.1E+00	1.2E+00		1.14E+00	100.0	9310_ALPHABETA	1.087E-01	L	04/03/2008 18:26	I
8087185	BETA	12587-47-2	3.73E+02	pCi/L	1.0E+01	5.1E+01		3.87E+00	100.0	9310_ALPHABETA	1.613E-01	L	04/03/2008 18:31	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:
9KJ81E10	B1R681		MW6-SBB-A1	W08-011	W05283A					12/06/2007 11:14

Batch	Analyte	CAS#	Result	Unit	CntU 2S	TotU 2S	Qual	MDA	TrcYield	Method	Alq Size	Unit	Analy Date/Time	Act
8087183	ALPHA	12587-46-1	1.01E+00	pCi/L	1.2E+00	1.2E+00	U	2.20E+00	100.0	9310_ALPHABETA	1.316E-01	L	04/03/2008 18:26	I
8087185	BETA	12587-47-2	3.56E+02	pCi/L	9.2E+00	4.7E+01		3.11E+00	100.0	9310_ALPHABETA	1.885E-01	L	04/03/2008 18:31	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.

Wednesday, April 09, 2008

TestAmerica QC Blank Report

Lab Code: TARL

FormNbr: R **FormatType:** FEAD **VersionNbr:** 05 **File Name:** h:\Reportdb\edd\FeadIV\Rad\W05283A.Edd, h:\Reportdb\edd\FeadIV\Rad\38718.E

Lab Sample Id: KJ9WN1AB
Client Id: NA
Moisture/Solids%*:

Sdg/Rept Nbr: W05283A 38718
Matrix: WATER WATER
QC Type: BLK

Collection Date: 12/06/2007 11:14
Sample On Date:
Received Date: 03/25/2008

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix	RTyp
	MW6-SBB-A19981								AE	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
8087183	ALPHA	4.89E-01	pCi/L	4.5E-01	U	7.15E-01	100.0		9310_ALPHAB	2.005E-01	04/03/2008				D
BLK	12587-46-1			4.4E-01						L	20:26				

TestAmerica
rptFeadRadEdd v3.68

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, April 09, 2008

TestAmerica QC Blank Report

Lab Code: TARL

FormNbr: R **FormatType:** FEAD **VersionNbr:** 05 **File Name:** h:\Reportdb\edd\FeadIV\Rad\W05283A.Edd, h:\Reportdb\edd\FeadIV\Rad\38718.E

Lab Sample Id: KJ9WW1AB **Sdg/Rept Nbr:** W05283A 38718 **Collection Date:** 12/06/2007 11:14

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

Moisture/Solids%*: **QC Type:** BLK **Received Date:** 03/25/2008

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix	RTyp
	MW6-SBB-A19981								AG	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
8087185	BETA	7.61E-01	pCi/L	1.2E+00	U	2.64E+00	100.0		9310_ALPHAB	2.002E-01	04/03/2008				D
BLK	12587-47-2			1.2E+00						L	18:31				

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, April 09, 2008

TestAmerica QC Control Sample Report

Lab Code: TARL

FormNbr: R **FormatType:** FEAD **VersionNbr:** 05 **File Name:** h:\Reportdb\edd\FeadIV\Rad\W05283A.Edd, h:\Reportdb\edd\FeadIV\Rad\38718.E

Lab Sample Id: KJ9WN1CS **Sdg/Rept Nbr:** W05283A 38718 **Collection Date:** 12/06/2007 11:14

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

Moisture/Solids%*: **QC Type:** BS **Received Date:** 03/25/2008

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix	RTyp
	MW6-SBB-A19981								AF	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
8087183	ALPHA	2.25E+01	pCi/L	5.2E+00		4.21E-01	100.0	2.29E+01	9310_ALPHAB	2.00E-01	04/03/2008			70	D
BS	12587-46-1			2.2E+00				98.2		L	20:26			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.

Wednesday, April 09, 2008

TestAmerica QC Control Sample Report

Lab Code: TARL

FormNbr: R **FormatType:** FEAD **VersionNbr:** 05 **File Name:** h:\Reportdb\edd\FeadIV\Rad\W05283A.Edd, h:\Reportdb\edd\FeadIV\Rad\38718.E

Lab Sample Id: KJ9WW1CS
Client Id: NA
Moisture/Solids%*:

Sdg/Rept Nbr: W05283A 38718
Matrix: WATER WATER
QC Type: BS

Collection Date: 12/06/2007 11:14
Sample On Date:
Received Date: 03/25/2008

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix	RTyp
	MW6-SBB-A19981								AH	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
8087185	BETA	2.17E+01	pCi/L	3.6E+00		2.51E+00	100.0	2.28E+01	9310_ALPHAB	2.001E-01	04/03/2008			70	D
BS	12587-47-2			2.3E+00				95.3		L	18:31			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.

Wednesday, April 09, 2008

TestAmerica QC Duplicate Report

Lab Code: TARL

FormNbr: R **FormatType:** FEAD **VersionNbr:** 05 **File Name:** h:\Reportdb\edd\FeadIV\Rad\W05283A.Edd, h:\Reportdb\edd\FeadIV\Rad\38718.E

Lab Sample Id: KJ81A1DR **Sdg/Rept Nbr:** W05283A 38718 **Collection Date:** 12/06/2007 11:14

Client Id: B1R682 **Matrix:** WATER WATER **Sample On Date:**

Moisture/Solids%*: **QC Type:** DUP **Received Date:** 03/25/2008

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix	RTyp
W08-011	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
8087183	ALPHA	5.79E-01	pCi/L	1.0E+00	U	2.04E+00	100.0		9310_ALPHAB	1.086E-01	04/03/2008	102.1	1.7		D
DUP	12587-46-1	1.79E+00		1.0E+00						L	18:26	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, April 09, 2008

TestAmerica QC Duplicate Report

Lab Code: TARL

FormNbr: R **FormatType:** FEAD **VersionNbr:** 05 **File Name:** h:\Reportdb\edd\FeadIV\Rad\W05283A.Edd, h:\Reportdb\edd\FeadIV\Rad\38718.E

Lab Sample Id: KJ81E1DR
Client Id: B1R681
Moisture/Solids%*:

Sdg/Rept Nbr: W05283A 38718
Matrix: WATER WATER
QC Type: DUP

Collection Date: 12/06/2007 11:14
Sample On Date:
Received Date: 03/25/2008

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix	RTyp
W08-011	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
8087185	BETA	3.57E+02	pCi/L	4.7E+01		3.22E+00	100.0		9310_ALPHAB	1.886E-01	04/03/2008	.3	0.		D
DUP	12587-47-2	3.56E+02		9.3E+00						L	18:31	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.

TestAmerica

Data Review/Verification Checklist

RADIOCHEMISTRY, First Level Review

4/5/2008 3:11:39 PM

Lot No., Due Date: J8C260301; 04/09/2008

Client, Site: 384868;

QC Batch No., Method Test: 8087183; RALPHA-A Alpha by GPC-Am

SDG, Matrix: WB5283A ,; WATER SFS 4/8/08

	Yes	No	N/A
8.0 Correction Calculation Protocol Used. OK	✓		
8.01 The Appropriate Methods Were Used To Analyze the Samples OK	✓		
8.02 Final Results Are in the Appropriate Activity Units OK	✓		
8.03 Batch Contains the Required QC Appropriate for the Method OK	✓		
8.04 The Correct Tracer and QC Vials Where Used in the Samples OK	✓		
8.05 Sample was Appropriately Traced Before or After Fractionating the Sample OK	✓		
8.06 At Least the Minimum Sample Volume Was Used Analysis Volume => KJ81A1AA 108.70<200.00 KJ81E1AA 131.60<200.00 Q:VB		✓	
8.07 The Correct Count Geometry was Used. OK	✓		
8.08 The Sample was Counted for the Minimum Count Time or CRDL was Achieved. OK	✓		
8.09 Method Blank is within Control Limits. OK	✓		
8.1 Comments:			
8.11 Matrix Blank is within Control Limits. No Matrix Blanks (MBlks) found in Batch!			✓
8.12 Method Blank(s) < QAS Limit Value (No B Flag Necessary). OK	✓		
8.13 QAS Specified Duplicate Equation Value within Control Limits. RPD > UCL : 20.0=> KJ81A1AD ALPHA 100.0 (RPD)		✓	
8.14 LCS within Control Limits. OK	✓		
8.15 MLCS within Control Limits. No Matrix Spikes (MLCS) found in Batch!			✓
8.16 MS within Control Limits. No Matrix Spike Samples (MS) found in Batch!			✓
8.17 Tracer within Control Limits. OK	✓		
8.18 Samples are above Minimum Tracer Yield (No Failed Samples) OK	✓		
8.19 Sample Specific MDC <= CRDL. OK	✓		
8.2 Comments:			
8.21 Result < Lc, Activity Not Detected, U Flag. No Limit Specified!			✓
8.22 Result < Mdc, Activity Not Detected, U Flag. Batch Positive Result => KJ81A1AA ALPHA 1.8E+00 L:1.1E+00		✓	
8.23 Result <= Action Level, when Defined. OK; No Action Level Found => ALPHA OK; No Callin Level Found => ALPHA	✓		
8.24 Result + 3s >=0, Not Too Negative. OK	✓		
8.25 Counting Spectrum are within FWHM Limits. No FWHM found in Batch Data!			✓

8.26 Instruments have Current Calibrations. Yes No N/A

8.27 Correct Count Library Used. Yes No N/A ✓
No Count Library found in Batch Data!

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. Yes No N/A ✓
OK

First Level Review Lisa Anderson Date 4/15/08

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Data Review Checklist

RADIOCHEMISTRY

Second Level Review

Batch Number: 808 7183

Review Item	Yes (√)	No (√)	NA (√)
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 within contract acceptance criteria?	√		
6. Is the LCS Minimum Detectable Activity ≤ the Contract Detection Limit?	√		
7. Do the MS/MSD results and yields meet acceptance criteria?			√
8. Do the duplicate sample results and yields meet acceptance criteria?	√		
C. Other 1. Are all Non-conformances 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: Erika Ford Date: 4/8/8

TestAmerica

Data Review/Verification Checklist

RADIOCHEMISTRY, First Level Review

4/5/2008 3:13:23 PM

Lot No., Due Date: J8C260301; 04/09/2008

Client, Site: 384868;

QC Batch No., Method Test: 8087185; RBETA-SR Beta by GPC-Sr/Y

SDG, Matrix: W46528319 ,; WATER SKS 4/8/08

	Yes	No	N/A
8.0 Correction Calculation Protocol Used. OK	✓		
8.01 The Appropriate Methods Were Used To Analyze the Samples OK	✓		
8.02 Final Results Are in the Appropriate Activity Units OK	✓		
8.03 Batch Contains the Required QC Appropriate for the Method OK	✓		
8.04 The Correct Tracer and QC Vials Where Used in the Samples OK	✓		
8.05 Sample was Appropriately Traced Before or After Fractionating the Sample OK	✓		
8.06 At Least the Minimum Sample Volume Was Used Analysis Volume => KJ81A1AC 161.30<200.00 KJ81E1AC 188.50<200.00 Q:VB		✓	
8.07 The Correct Count Geometry was Used. OK	✓		
8.08 The Sample was Counted for the Minimum Count Time or CRDL was Achieved. OK	✓		
8.09 Method Blank is within Control Limits. OK	✓		
8.1 Comments:			
8.11 Matrix Blank is within Control Limits. No Matrix Blanks (MBlks) found in Batch!			✓
8.12 Method Blank(s) < QAS Limit Value (No B Flag Necessary). OK	✓		
8.13 QAS Specified Duplicate Equation Value within Control Limits. OK (RPD)	✓		
8.14 LCS within Control Limits. OK	✓		
8.15 MLCS within Control Limits. No Matrix Spikes (MLCS) found in Batch!			✓
8.16 MS within Control Limits. No Matrix Spike Samples (MS) found in Batch!			✓
8.17 Tracer within Control Limits. OK	✓		
8.18 Samples are above Minimum Tracer Yield (No Failed Samples) OK	✓		
8.19 Sample Specific MDC <= CRDL. OK	✓		
8.2 Comments:			
8.21 Result < Lc, Activity Not Detected, U Flag. No Limit Specified!			✓
8.22 Result < Mdc, Activity Not Detected, U Flag. Batch Positive Result => KJ81A1AC BETA 3.7E+02 L:3.9E+00 KJ81E1AC BETA 3.6E+02 L:3.1E+00		✓	
8.23 Result <= Action Level, when Defined. CK: No Action Level Found => BETA OK: No Callin Level Found => BETA	✓		
8.24 Result + 3s >=0, Not Too Negative. OK	✓		

8.25 Counting Spectrum are within FWHM Limits. Yes No N/A ✓
No FWHM found in Batch Data!

8.26 Instruments have Current Calibrations. Yes No N/A

8.27 Correct Count Library Used. Yes No N/A ✓
No Count Library found in Batch Data!

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. Yes No N/A ✓
OK

First Level Review _____ **Date** 4/15/08

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Data Review Checklist
RADIOCHEMISTRY
Second Level Review

Batch Number: 8087185

Review Item	Yes (√)	No (√)	NA (√)
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 within contract acceptance criteria?	√		
6. Is the LCS Minimum Detectable Activity ≤ the Contract Detection Limit?	√		
7. Do the MS/MSD results and yields meet acceptance criteria?			√
8. Do the duplicate sample results and yields meet acceptance criteria?	√		
C. Other			
1. Are all Non-conformances 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: Erika Jordan Date: 4/8/18

WO5283A
Rcv'd 3/25/08
Due 4/9/08

03/25/2008
RECHECK, RECOUNT, OR REANALYSIS ORDER
CONTRACT NO MW6-SBB-A19981

TestAmerica Incorporated,
2800 George Washington Way
Richland, WA 99354

Battelle PNNL Order Number: 080325TARL-R4747

Sample Delivery Group: W05283

Special Instructions None

Samples(s)

Lab Sample ID	PNNL Sample	Action	TAT	METHOD_NAME:
9KDTWV10	B1R682	Reanalysis	15/15	9310_ALPHABETA_G KJ 8/A
9KDTWM10	B1R681	Reanalysis	15/15	9310_ALPHABETA_G KJ 8/E

J8C260301

Deliver Report Results to: Fluor Hanford, Inc.
1200 Jadwin Ave.
Richland, WA 99352
C/O Mr. Steve Trent

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

Seger, Sandra

From: Hampt, Heidi [Heidi_Hampt@RL.gov]
Sent: Tuesday, March 25, 2008 11:47 AM
To: Seger, Sandra; Jordan, Erika
Cc: Trent, Stephen J; Ayres, Doris E
Subject: Request for Recheck, Recount, or Reanalysis Order

Attachments: 080325TARLR4747.rtf

080325TARLR4747.
rtf (3 KB)

See Attached

TESTAMERICA

FLUOR HANFORD

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

JTL100165 W05283 DUE 1-21-08 KDTWV

C.O.C. # **W08-011-415**

Page 1 of 1

Collector: Fluor Hanford K. B. HULSE	Contact/Requester: Steve Trent	Telephone No.: 509-373-5869 MSIN FAX
SAF No.: W08-011	Sampling Origin: Hanford Site DRW 12/6/07	Purchase Order/Charge Code
Project Title: RCRA, NOVEMBER 2007	HNF-N-506-11 Pg. ~~42~~ 34	Ice Chest No. Temp.
Shipped To (Lab): TestAmerica 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

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

SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes ☑ No ☐

All Labs except WSCF: Batch all samples submitted under A, G, I, S, and W 08 SAFs into one SDG, not to exceed SDG closure of 14 days.
WSCF: Batch all GW samples submitted into one SDG, daily closure.
FY07 and FY08 samples cannot be in the same SDG.

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B1R682		W	12/6/07	1114	1x20-mL P	Activity Scan	None
B1R682		W	↓	↓	1x1000-mL P	9310_ALPHABETA_GPC: Alpha + Beta (2)	HNO3 to pH <2
B1R682		W	↓	↓	1x4000-mL G/P	GAMMALL_GS: List-1 (9)	HNO3 to pH <2

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
Fluor Hanford K. B. HULSE		[signature]	DEC ~~0 8~~ 2007 1430 DRW 12/6/07	[signature]	W LANE	TAL-R	DEC ~~0 6~~ 2007 1430 DRW 12/6/07
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	DS	= Drum Solid
SE	= Sediment	DL	= Drum Liqui
SO	= Solid	T	= Tissue
SL	= Sludge	WI	= Wipe
W	= Water	L	= Liquid
O	= Oil	V	= Vegetation
A	= Air	X	= Other

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

FLUOR HANFORD

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

J7L100165 W05283 DUE 1-21-08 KDTWM

C.O.C. # **W08-011-414**

Page 1 of 1

Collector	Contact/Requester: Steve Trent	Telephone No.: 509-373-5869 MSIN FAX
SAF No.: W08-011 Fluor Hanford K. B. HULSE	Sampling Origin: Hanford Site	Purchase Order/Charge Code
Project Title: RCRA NOVEMBER 2007	HWF-W-506-11 pg. ~~42~~ 34 DRW 12/6/07	Ice Chest No. Temp.
Shipped To (Lab): TestAmerica 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
** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes ☑ No ☐
All Labs except WSCF: Batch all samples submitted under A, G, I, S, and W 08 SAFs into one SDG, not to exceed SDG closure of 14 days.
WSCF: Batch all GW samples submitted into one SDG, daily closure.
FY07 and FY08 samples cannot be in the same SDG.

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B1R681		W	12/6/07	1114	1x20-mL P	Activity Scan	None
B1R681		W	↓	↓	1x1000-mL P	9310_ALPHABETA_GPC: Alpha + Beta (2)	HNO3 to pH <2
B1R681		W	↓	↓	1x4000-mL G/P	GAMMALL_GS: List-1 (9)	HNO3 to pH <2

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
Fluor Hanford K. B. HULSE	[signature]	[signature]	DEC 06 2007 1430 DRW 12/6/07	[signature] LV LANE	TAL-R		DEC 06 2007 1430 DRW 12/06/07
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		DS = Drum Solid	
SE = Sediment		DL = Drum Liqui	
SO = Solid		T = Tissue	
SL = Sludge		WI = Wine	
W = Water		L = Liquid	
O = Oil		V = Vegetation	
A = Air		X = Other	

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

estAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Sample Check-in List

DUE 1-21-08

Date/Time Received: 12-6-07 1430

Client: PGW SDG #: W05283 NA[ ] SAF #: W08-011 NA [ ]

Work Order Number: J7L100165 Chain of Custody # W08-011-414,-415

Shipping Container ID: _____ Air Bill # _____

1. Custody Seals on shipping container intact? NA [ ] Yes [✓] No [ ]
2. Custody Seals dated and signed? NA [ ] Yes [✓] No [ ]
3. Chain of Custody record present? NA [ ] Yes [✓] No [ ]
4. Cooler Temperature: _____ NA [✓] 5. Vermiculite/packing materials is NA [✓] Wet [ ] Dry [ ]
6. Number of samples in shipping container: 2
7. Sample holding times exceeded? NA [✓] Yes [ ] No [ ]
8. Samples have:
   - ____ Tape
   - ✓ Custody Seals
   - ____ Hazard Lables
   - ✓ Appropriate Sample Lables
9. Samples are:
   - ✓ In Good Condition
   - ____ Broken
   - ____ Leaking
   - ____ Have Air Bubbles
   (Only for samples requiring no head space.)
10. Sample pH taken? NA [ ] pH<2 [✓] pH>2 [ ] pH>9 [ ]
11. Sample Location, Sample Collector Listed? *
    *For documentation only. No corrective action needed.
12. Were any anomalies identified in sample receipt? Yes [ ] No [✓]
13. Description of anomalies (include sample numbers): _____

Sample Custodian: [signature] Date: 12-6-07

Client Sample ID	Analysis Requested	Condition	Comments/Action

Client Informed on _____ by _____ Person Contacted _____

[ ] No action necessary; process as is.

Project Manager _____ Date _____

80 SKS 4/7/08

TESTAMERICA

3/31/2008 8:57:22 AM

Sample Preparation/Analysis

384868, Pacific Northwest National Laboratory ,
Pacific Northwest National Lab

AZ Gross Alpha PrpRC5014
S7 Gross Alpha by GPC using Am-241 curv
5I CLIENT: HANFORD

PRIORITY

Balance Id:1120482733
Pipet #:
Sep1 DT/Tm Tech:
Sep2 DT/Tm Tech:
Prep Tech: ,HarrisD

AnalyDueDate: 04/09/2008 1105283A

Batch: 8087183 WATER pCi/L
SEQ Batch, Test: None

PM, Quote: SS , 57671

Work Order, Lot, Sample DateTime	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:
1 KJ81A-1-AA J8C260301-1-SAMP 12/06/2007 11:14		108.70g,in AmtRec: LP,4LP	#Containers: 2	1.5	35.6	100	12A Scr:	1917 Alpha:	4/3/08 RDD Beta:	
2 KJ81A-1-AD-X J8C260301-1-DUP 12/06/2007 11:14		108.60g,in AmtRec: LP,4LP	#Containers: 2		35.8		12B Scr:	Alpha:	Beta:	
3 KJ81E-1-AA J8C260301-2-SAMP 12/06/2007 11:14		131.60g,in AmtRec: LP,4LP	#Containers: 2		43.4		12C Scr:	Alpha:	Beta:	
4 KJ9WN-1-AA-B J8C270000-183-BLK 12/06/2007 11:14		200.50g,in AmtRec:	#Containers: 1		0.5		12B Scr:	2117 Alpha:	Beta:	
5 KJ9WN-1-AC-C J8C270000-183-LCS 12/06/2007 11:14		200.00g,in AmtRec:	ASD4433 03/13/08,pd #Containers: 1		0.7		12A Scr:	Alpha:	Beta:	

Comments: PH<2.0. Aliquot reduced due to weight screens DLH 3/31/08

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

KJ81A1AA-SAMP Constituent List:
ALPHA RDL:3 pCi/L LCL: UCL: RPD:

3/31/2008 8:57:24 AM

Sample Preparation/Analysis

AZ Gross Alpha PrpRC5014
S7 Gross Alpha by GPC using Am-241 curve
5I CLIENT: HANFORD

Balance Id:1120482733
Pipet #:
Sep1 DT/Tm Tech:
Sep2 DT/Tm Tech:
Prep Tech: ,HarrisD

AnalyDueDate: 04/09/2008

Batch: 8087183 pCi/L
SEQ Batch, Test: None

Work Order, Lot, Sample DateTime	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:

```
KJ9WN1AA-BLK:
  ALPHA        RDL:3          pCi/L     LCL:        UCL:        RPD:
KJ9WN1AC-LCS:
  Am-241       RDL:           pCi/L     LCL:70      UCL:130     RPD:20
KJ81A1AA-SAMP Calc Info:
     Uncert Level (#s).: 2     Decay to SaDt: Y     Blk Subt.: N     Sci.Not.: Y     ODRs: B
KJ9WN1AA-BLK:
     Uncert Level (#s).: 2     Decay to SaDt: Y     Blk Subt.: N     Sci.Not.: Y     ODRs: B
KJ9WN1AC-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: 4/6/2007, 4/10/2008, Batch: '8087183', User: *ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting			Comments
8087183						
AC		Rev1C	HarrisD	3/31/2008 8:16:20		
SC			wagarr	IsBatched	3/27/2008 9:15:16 AM	ICOC_RADCALC v4.8.32
SC			HarrisD	InPrep	3/31/2008 8:16:20 AM	RICH-RC-5014 Revision 7
SC			HarrisD	Prep1C	3/31/2008 8:58:18 AM	RICH-RC-5014 REVISION 7
SC			BockJ	InPrep2	4/2/2008 9:31:23 AM	RICH-RC-5014 REVISION 7
SC			DAWKINSO	InCnt1	4/3/2008 6:08:39 PM	RICH-RD-0003 REVISION 5
SC			DAWKINSO	CalcC	4/3/2008 9:42:16 PM	RICH-RD-0003 REVISION 5
SC			antonsonl	Rev1C	4/5/2008 3:11:17 PM	RICH-RC-0002 REV 8
AC			HarrisD	3/31/2008 8:58:18		
AC			BockJ	4/2/2008 9:31:23 AM		
AC			DAWKINSO	4/3/2008 6:08:39 PM		
AC			DAWKINSO	4/3/2008 9:42:16 PM		
AC			antonsonl	4/5/2008 3:11:17 PM		

AC: Accepting Entry; SC: Status Change

TESTAMERICA

3/31/2008 9:03:10 AM

Sample Preparation/Analysis

384868, Pacific Northwest National Laboratory ,
Pacific Northwest National Lab

BC Gross Beta PrpRC5014
S8 Gross Beta by GPC using Sr/Y-90 curve
5I CLIENT: HANFORD

Balance Id:1120482733
Pipet #:

AnalyDueDate: 04/09/2008 WO5283A

Batch: 8087185 WATER pCi/L
SEQ Batch, Test: None

PM, Quote: SS , 57671 PRIORITY

Sep1 DT/Tm Tech:
Sep2 DT/Tm Tech:
Prep Tech: ,HarrisD 1 Back g.

Work Order, Lot, Sample DateTime	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:
1 KJ81A-1-AC J8C260301-1-SAMP 12/06/2007 11:14		161.30g,in AmtRec: LP,4LP	#Containers: 2	1.5	107.0	100	26A	1920	4/3/08	
							Scr:	Alpha:	Beta:	
2 KJ81E-1-AC J8C260301-2-SAMP 12/06/2007 11:14		188.50g,in AmtRec: LP,4LP	#Containers: 2		123.9		26B			
							Scr:	Alpha:	Beta:	
3 KJ81E-1-AD-X J8C260301-2-DUP 12/06/2007 11:14		188.60g,in AmtRec: LP,4LP	#Containers: 2		121.2		26C			
							Scr:	Alpha:	Beta:	
4 KJ9WW-1-AA-B J8C270000-185-BLK 12/06/2007 11:14		200.20g,in AmtRec:	#Containers: 1		Ø		26D			
							Scr:	Alpha:	Beta:	
5 KJ9WW-1-AC-C J8C270000-185-LCS 12/06/2007 11:14		200.10g,in AmtRec:	BESB3231 02/18/08,pd 10/11/06,r #Containers: 1		0.3		27A			
							Scr:	Alpha:	Beta:	

Comments: PH 6.0. Aliquot reduced due to weight screens. DLH 3/31/08

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

KJ81A1AC-SAMP Constituent List:
BETA RDL:4 pCi/L LCL: UCL: RPD:

TAL Richland Key: In - Initial Amt, fi - Final Amt, di - Diluted Amt, s1 - Sep1, s2 - Sep2 Page 1 ISV - Insufficient Volume for Analysis WO Cnt: 5
Richland Wa. pd - Prep Dt, r - Reference Dt, ec-Enrichment Cell, ct-Cocktailed Added Prep_SamplePrep v4.8.32

3/31/2008 9:03:11 AM

Sample Preparation/Analysis

BC Gross Beta PrpRC5014
S8 Gross Beta by GPC using Sr/Y-90 curve
5I CLIENT: HANFORD

Balance Id:1120482733

Pipet #:

AnalyDueDate: 04/09/2008

Sep1 DT/Tm Tech:

Batch: 8087185 pCi/L
SEQ Batch, Test: None

Sep2 DT/Tm Tech:

Prep Tech: ,HarrisD

Work Order, Lot, Sample DateTime	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:

```
KJ9WW1AA-BLK:
  BETA        RDL:4          pCi/L     LCL:       UCL:       RPD:
KJ9WW1AC-LCS:
  Sr-90       RDL:           pCi/L     LCL:70     UCL:130    RPD:20
KJ81A1AC-SAMP Calc Info:
     Uncert Level (#s).: 2     Decay to SaDt: Y     Blk Subt.: N     Sci.Not.: Y     ODRs: B
KJ9WW1AA-BLK:
     Uncert Level (#s).: 2     Decay to SaDt: Y     Blk Subt.: N     Sci.Not.: Y     ODRs: B
KJ9WW1AC-LCS:
     Uncert Level (#s).: 2     Decay to SaDt: Y     Blk Subt.: N     Sci.Not.: Y     ODRs: B
```

Approved By _____ Date: _____

4/5/2008 3:12:58 PM

ICOC Fraction Transfer/Status Report

ByDate: 4/6/2007, 4/10/2008, Batch: '8087185', User: *ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting			Comments
8087185						
AC		Rev1C	HarrisD	3/31/2008 8:59:47		
SC			wagarr	IsBatched	3/27/2008 9:15:16 AM	ICOC_RADCALC v4.8.32
SC			HarrisD	InPrep	3/31/2008 8:59:47 AM	RICH-RC-5014 Revision 7
SC			HarrisD	Prep1C	3/31/2008 9:03:14 AM	RICH-RC-5014 REVISION 7
SC			BockJ	InPrep2	4/2/2008 9:31:29 AM	RICH-RC-5014 REVISION 7
SC			DAWKINSO	InCnt1	4/3/2008 6:23:34 PM	RICH-RD-0003 REVISION 5
SC			DAWKINSO	CalcC	4/3/2008 9:42:06 PM	RICH-RD-0003 REVISION 5
SC			antonsonl	Rev1C	4/5/2008 3:12:52 PM	RICH-RC-0002 REV 8
AC			HarrisD	3/31/2008 9:03:14		
AC			BockJ	4/2/2008 9:31:29 AM		
AC			DAWKINSO	4/3/2008 6:23:34 PM		
AC			DAWKINSO	4/3/2008 9:42:06 PM		
AC			antonsonl	4/5/2008 3:12:52 PM		

AC: Accepting Entry; SC: Status Change