

SAF-BSM-019
324 Building Stack –
Air Filter Analysis
FINAL DATA PACKAGE

COMPLETE COPY OF DATA PACKAGE TO:

No Distribution Required

KW 10/14/15
INITIAL/DATE

COMMENTS:

SDG BSM0023

SAF BSM-019

Rad only

Chem only

Rad & Chem

Complete

Partial

Sample Location: 324 Stack Near Field Monitoring

Analytical Data Package Prepared For
Washington Closure Hanford

Radiochemical Analysis By
TestAmerica Inc

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

Assigned Laboratory Code: TARL

Data Package Contains 17 Pages

Report No.: 67359

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

SDG No.	Order No.	Client Sample ID (List Order)	Lot-Sa No.	Work Order	Report DB ID	Batch No.
BSM0023	BSM-019	32401-1509	J51300412-1	M7M6N1AA	9M7M6N10	5274059

Certificate of Analysis

Washington Hanford Closure
2620 Fermi Avenue
Richland, WA 99354

October 13, 2015

Attention: Joan Kessner

SAF Number	:	BSM-019
Date SDG Closed	:	September 30, 2015
Number of Samples	:	One (1)
Sample Type	:	Filter
SDG Number	:	BSM0023
Data Deliverable	:	21- Day / Summary

CASE NARRATIVE

I. Introduction

On September 30, 2015, one filter sample was received at TestAmerica for radiochemical analysis. Upon receipt, the sample was assigned the following laboratory ID number to correspond with the Washington Closure Hanford (WCH) specific ID:

<u>WCH ID#</u>	<u>TARL ID#</u>	<u>MATRIX</u>	<u>DATE OF RECEIPT</u>
32401-1509	M7M6N	FILTER	9/30/15

II. Sample Receipt

The sample was 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 RL-GPC-008
Gross Beta by method RL-GPC-008

IV. Quality Control

Washington Closure Hanford
October 13, 2015

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

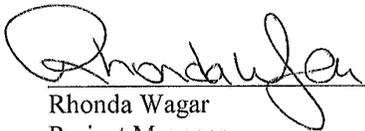
Gas Proportional Counting

Simultaneous Gross Alpha and Gross Beta by method RL-GPC-008:

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:


Rhonda Wagar
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	RL-GAM-001
EPA 900.0	Alpha & Beta	RL-GPC-001
EPA 00-02	Gross Alpha (Coprecipitation)	RL-GPC-002
EPA 903.0	Total Alpha Radium (Ra-226)	RL-RA-002
EPA 903.1	Ra-226	RL-RA-001
EPA 904.0	Ra-228	RL-RA-001
EPA 905.0	Sr-89/90	RL-GPC-003
ASTM D5174	Uranium	RL-KPA-003
EPA 906.0	Tritium	RL-LSC-005

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, $R = \text{constants} * f(x,y,z,\dots)$. 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

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.
CSU (#s) <i>u_c Combined Standard Uncert.</i>	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_c the combined standard uncertainty</i> . 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.

Sample Results Summary

Date: 13-Oct-15

TestAmerica Inc TARL

Ordered by Method, Batch No., Client Sample ID.

Report No. : 67359

SDG No: BSM0023

Batch	Client Id Work Order	Parameter	Result +/- CSU (2 s)	Qual	Units	Tracer Yield	MDL	CRDL	RPD
5274059	ALPHA_GPC								
	32401-1509								
	M7M6N1AA	Alpha	-2.49E-02 +/- 7.4E-02	U	pCi/sample	100%	1.21E-01	1.10E-01	
		Beta	7.87E-02 +/- 1.5E-01	U	pCi/sample	100%	2.56E-01	1.10E-01	
	No. of Results: 2								

TestAmerica Inc rptTALRchSaSummary2 V5.4 A2002 RPD - Relative Percent Difference.
U Qual - Analyzed for but not detected above limiting criteria, Mdc/Mda/Mdl, Total Uncert, RDL or not identified by gamma scan software.

QC Results Summary
TestAmerica Inc TARL
 Ordered by Method, Batch No, QC Type,.

Date: 13-Oct-15

Report No. : 67359

SDG No.: BSM0023

Batch	Work Order	Parameter	Result +- CSU (2 s)	Qual	Units	Tracer Yield	LCS Recovery	Bias	MDL
ALPHA_GPC									
5274059	BLANK QC,								
	M7NNG1AA	Alpha	5.67E-02 +- 7.0E-02	U	ci/sample	100%			9.84E-02
		Beta	7.35E-02 +- 1.5E-01	U	ci/sample	100%			2.55E-01
5274059	LCS,								
	M7NNG1AC	Alpha	1.66E+01 +- 3.3E+00		ci/sample	100%	92%	-0.1	1.05E-01
		Beta	6.24E+00 +- 1.0E+00		ci/sample	100%	82%	-0.2	2.51E-01
No. of Results: 4									

TestAmerica Inc Bias - (Result/Expected)-1 as defined by ANSI N13.30.
 rptSTLRchQcSummary V5.4 A2002 U Qual - Analyzed for but not detected above limiting criteria, Mdc/Mda/Mdl, Total Uncert, RDL or not identified by gamma scan software.

FORM I

Date: 13-Oct-15

SAMPLE RESULTS

Lab Name: TestAmerica Inc

SDG: BSM0023

Collection Date: 9/30/2015 7:30:00 AM

Lot-Sample No.: J51300412-1

Report No.: 67359

Received Date: 9/30/2015 9:40:00 AM

Client Sample ID: 32401-1509

COC No.:

Matrix: OTHER OTHERSOLID

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	CSU (2 s)	MDL, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDL, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 5274059	ALPHA_GPC				M7M6N1AA							
					Work Order: M7M6N1AA Report DB ID: 9M7M6N10							
Alpha	-2.49E-02	U	7.3E-02	7.4E-02	1.21E-01	pCi/sample	100%	-0.21	10/7/15 11:47 a	1.0	1.0	GPC29A
						5.63E-02	1.10E-01	-0.68		Sample	Sample	
Beta	7.87E-02	U	1.5E-01	1.5E-01	2.56E-01	pCi/sample	100%	0.31	10/7/15 11:47 a	1.0	1.0	GPC29A
						1.25E-01	1.10E-01	(1.)		Sample	Sample	

No. of Results: 2 Comments:

TestAmerica Inc MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
 rpt\$TLRchSample U Qual - Analyzed for but not detected above limiting criteria, Mdc|Mda|Mdl, Total Uncert, RDL or not identified by gamma scan software.
 V5.4 A2002

Date: 13-Oct-15

FORM II
BLANK RESULTS

Lab Name: TestAmerica Inc SDG: BSM0023
 Matrix: OTHER Report No.: 67359

Parameter	Result	Qual	Count Error (2 s)	CSU (2 s)	MDL, Lc	Rpt Unit, CRDL	Yield	Rst/MDL, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 5274059 ALPHA_GPC Work Order: M7NNG1AA Report DB ID: M7NNG1AB												
Alpha	5.67E-02	U	6.9E-02	7.0E-02	9.84E-02	pCi/sample	100%	0.58	10/7/15 11:47 a	1.0	1.0	GPC29B
Beta	7.35E-02	U	1.5E-01	1.5E-01	4.51E-02	1.10E-01	100%	(1.6)	10/7/15 11:47 a	Sample	Sample	GPC29B
					2.55E-01	pCi/sample	100%	0.29		Sample	1.0	GPC29B
					1.24E-01	1.10E-01		0.95		Sample	Sample	

No. of Results: 2 Comments:

TestAmerica Inc MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
 rpt|STLRchBlank U Qual - Analyzed for but not detected above limiting criteria, Mdc/Mda/Mdl, Total Uncert, RDL or not identified by gamma scan software.
 V5.4 A2002

Date: 13-Oct-15

FORM II

LCS RESULTS

Lab Name: TestAmerica Inc SDG: BSM0023
Matrix: OTHER Report No.: 67359

Parameter	Result	Qual	Count Error (2 s)	CSU (2 s)	MDL	Report Unit	Yield	Expected	Expected Uncert	Recovery, Bias	Analysis, Prep Date	Aliquot Size	Primary Detector
Batch: 5274059	ALPHA_GPC												
Alpha	1.66E+01		4.6E-01	3.3E+00	1.06E-01	pCi/sample	100%	1.80E+01	6.1E-01	92%	10/8/15 02:41 p	1.0	GPC29A
Beta	6.24E+00		3.3E-01	1.0E+00	2.51E-01	pCi/sample	100%	7.63E+00	1.5E-01	82%	10/8/15 02:41 p	1.0	GPC29A
Rec Limits: Rec Limits: -0.1 -0.2 -0.2													

No. of Results: 2 Comments:

TestAmerica Inc Bias - (Result/Expected)-1 as defined by ANSI N13.30.
rptSTLRchLCS
V5.4 A2002

Lot No., Due Date: J51300412; 10/21/2015
 Client, Site: 127642; S00W235B00 HANFORD
 QC Batch No., Method Test: 5274059; RAB-P/SR Alpha,Beta by GPC
 SDG, Matrix: BSM0023; OTHER

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:		

Thomas OME
 First Level Date 10/12/15

Data Review Checklist RADIOCHEMISTRY Second Level Review

Batch Number: 5274059

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 Nonconformances (NCM) included and noted?			
2. Was the correct methodology used?	✓		
3. Were units checked?	✓		

Comments on any "No" response: _____

Second Level Review: *Shonda W. Fan* Date: 10/13/15



Acrobat 9.0

SAF #: BSM-019

J5F300412
SOG # BSM0023
Due 10/21/15

324 FACILITY
EFFLUENT SAMPLING CHAIN-OF-CUSTODY
STACK PARTICULATE SAMPLES

Company: WCH

Company Contact: Dan Johnson, 727-5258 Analysis Request: Gross Alpha/Beta

Unique Sample Number	Sample Point ID	EDP Code	On			Off			Comments		
			Date	Time	Flow Rate (cfm)	Vacuum ("wg)	Date	Time		Flow Rate (cfm)	Vacuum ("wg)
32401-1509	ESP-324-01-S	F025	8-31-15	0710	1.8	14	9-30-15	0730	1.8	16	M7M6N

Sample Collected By: [Signature] / 0110002 / HID#

Relinquished By: [Signature] / 0110002 / HID#

Received By: Jordan Friesz / [Signature] / HID#

Relinquished By: / / / / HID#

Received By: / / / / HID#

Relinquished By: / / / / HID#

Received By: / / / / HID#

Relinquished By: / / / / HID#

Date: 9-30-15 Time: 0940

Date: 9/30/15 Time: 0940

Date: _____ Time: _____

LABORATORY FINAL SAMPLE DISPOSAL METHOD: _____ By: _____ Signature _____ Date: _____ Time: _____

WCH-FS-223 (05/15/2014)

Sample Check-in List

Date/Time Received: 9/30/15 0940 Container GM Screen Result: (Airlock) 0 cpm Initials [J]
Sample GM Screen Result (Sample Receiving) 0 cpm Initials [J]

Client: WCH SDG #: BSM0023 SAF #: BSM-019 NA []

Lot Number: JSI300412

Chain of Custody # N/A

Shipping Container ID or Air Bill Number : NA [J]

Samples received inside shipping container/cooler/box Yes [J] Continue with 1 through 4. Initial appropriate response.
No [] Go to 5, add comment to #16.

- 1. Custody Seals on shipping container intact? Yes [] No [] No Custody Seal [J]
2. Custody Seals dated and signed? Yes [] No [] No Custody Seal [J]
3. Cooler temperature: °C NA [J]
4. Vermiculite/packing materials is NA [J] Wet [] Dry []

Item 5 through 16 for samples. Initial appropriate response.

- 5. Chain of Custody record present? Yes [J] No []
6. Number of samples received (Each sample may contain multiple bottles): 1
7. Containers received: 1x Filter

- 8. Sample holding times exceeded? NA [] Yes [] No [J]
9. Samples have: ___ tape ___ hazard labels [J] custody seals [J] appropriate sample labels
10. Matrix: ___ A (FLT, Wipe, Solid, Soil) ___ I (Water) [J] S (Air, Niosh 7400) ___ T (Biological, Ni-63)

- 11. Samples:
[J] are in good condition ___ are leaking ___ are broken
[J] have air bubbles (Only for samples requiring no head space) ___ Other

- 12. Sample pH appropriate for analysis requested Yes [] No [] NA [J]
(If acidification is necessary go to pH area & document sample ID, initial pH, amount of HNO3 added and pH after addition on table)

- 13. Were any anomalies identified in sample receipt? Yes [] No [J]

- 14. Description of anomalies (include sample numbers): NA [J]

- 15. Sample Location, Sample Collector Listed on COC? * Yes [] No [J]
*For documentation only. No corrective action needed.

- 16. Additional Information: N/A

[] Client/Courier denied temperature check. [] Client/Courier unpack cooler.

Sample Check-in List completed by Sample Custodian:
Signature: [Signature] Date: 9/30/15

Client Notification needed? Yes [] No [X] Date:
By:
Person contacted:

[X] No action necessary; process as is.
Project Manager: [Signature] Date: 10/1/15

10/1/2015 2:03:29 PM **Sample Preparation/Analysis** Balance Id:; Pipet #:

127642, Washington Closure Hanford LLC BE Gross Alpha/Beta Prp GPC008
 Washington Closure Hanford LLC S9 Gross Alpha and Beta by GPC using Pu-239, Sr/Y90
 AnalyzeDate: 10/21/2015 01 STANDARD TEST SET

Batch: 5274059 OTHER pCi/samp1 PM, Quote: RW2, 91174
 SEQ Batch, Test: None

Work Ord, Lot, Sample Date	Total Amt/Unit	Total Amt/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	Tracer Yield	Dish Size	Ppt or Geometry	Count Time Min	Deflector Id	Count On Off (24hr) Circle	CR Analyst, Init/Date	Comments:
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1 M7M6N-1-AA
 J5I300412-1-SAMP
 09/30/2015 07:30
 AmtRec: 1XFILTER #Containers: 1
 Scr: 29A 1510 Alpha: 1510 Beta: 16-7-1578

2 M7NNG-1-AA-B
 J5J010000-59-BLK
 10/01/2015 14:03 pd
 AmtRec: #Containers: 1
 Scr: 29D 1800 Alpha: 1800 Beta: 16-7-1578

3 M7NNG-1-AC-C
 J5J010000-59-LCS
 10/01/2015 14:03 pd
 AmtRec: #Containers: 1
 Scr: 29A 1800 Alpha: 1800 Beta: 16-7-1578

TestAmerica Key: In - Initial Amt, fi - Final Amt, di - Diluted Amt, s1 - Sep1, s2 - Sep2 Page 1
 Richland Wa. pd - Prep Dt, dc - Date Chg, r - Reference Dt, ec-Enrichment Cell, ct-Cocktailed Added
 ISV - Insufficient Volume for Analysis
 WO Cnt: 3
 ICOC v4.9.0

10/1/2015 2:03:30 PM

Sample Preparation/Analysis

Balance Id:;

BE Gross Alpha/Beta Prp GPC008
S9 Gross Alpha and Beta by GPC using Pu-239,Sr/Y90
01 STANDARD TEST SET

Pipet #:

Analysis Due Date: 10/21/2015

Sep1 DT/Tm Tech:

Batch: 5274059
SEQ Batch, Test: None

Sep2 DT/Tm Tech:

pCi/samp1

Prep Tech:

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

Comments:

All Clients for Batch:
127642, Washington Closure Hanford LLC

Washington Closure Hanford LLC, RW2, 91174

M7M6N1AA-SAMP Constituent List:
ALPHA RDL:1.10E-01 pCi/sam LCL:

RPD:

BETA

RDL:1.10E-01

pCi/sam

ICL:

UCL:

RPD:

M7NNG1AA-BLK Constituent List:
M7NNG1AC-LCS:

M7M6N1AA-SAMP Calc Info:

Uncert Level (#s) : 2

Decay to SaDt: Y

Blk Subt.: N

Sci.Not.: Y

ODRs: B

M7NNG1AA-BLK Calc Info:

Uncert Level (#s) : 2

Decay to SaDt: Y

Blk Subt.: N

Sci.Not.: Y

ODRs: B

M7NNG1AC-LCS:

Uncert Level (#s) : 2

Decay to SaDt: Y

Blk Subt.: N

Sci.Not.: Y

ODRs: B

TestAmerica
Richland Wa.

Key: In - Initial Amt, fi - Final Amt, di - Diluted Amt, s1 - Sep1, s2 - Sep2 Page 2
pd - Prep Dt, dc - Date Chg, r - Reference Dt, ec-Enrichment Cell, ct-Cocktailed Added

WO Cnt: 3
ICOC v4.9.0

10/12/2015 4:32:14 PM

ICOC Fraction Transfer/Status Report

ByDate: 10/12/2014, 10/17/2015, Batch: '5274059', User: *ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting	SOPs,Reagents,Comments
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5274059

AC	Rev1C	JorgensonD	10/7/2015 8:11:01		
SC		campbellsc	IsBatched	10/1/2015 2:08:36 PM	ICOC_RADCALC v4.9.0
SC		JorgensonD	Prep1C	10/7/2015 8:11:01 AM	RL-CI-006 REVISION 6
SC		JorgensonD	InCnt1	10/7/2015 8:11:35 AM	RL-CI-006 REVISION 6
SC		BullJ	CalcC	10/9/2015 9:10:59 AM	RL-CI-006 REVISION 6
SC		Mcginnist	Rev1C	10/12/2015 4:32:07 PM	RL-DR-001 Rev 7
AC		JorgensonD	10/7/2015 8:11:35		
AC		BullJ	10/9/2015 9:10:59		
AC		Mcginnist	10/12/2015 4:32:07		

AC: Accepting Entry; SC: Status Change

TestAmerica Richland
Richland Wa.