

Analytical Data Package Prepared For

CH2M Hill Plateau Remediation

Radiochemical Analysis By

TestAmerica Inc TARL

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

Data Package Contains 46 Pages

Report Nbr: 62215

SDG Nbr	ORDER Nbr	CLIENT ID NUMBER	LOT Nbr	WORK ORDER	RPT DB ID	BATCH
W06842	F14-003	B2X8R7	J4H110421-1	M4LGX1AA	9M4LGX10	4223044
		B2X8R6	J4H110421-2	M4LG01AA	9M4LG010	4224064
		B2X8R6	J4H110421-2	M4LG01AC	9M4LG010	4224062
		B2X8R6	J4H110421-2	M4LG01AD	9M4LG010	4224063
		B2X8R6	J4H110421-2	M4LG02AA	9M4LG020	4245073

Comments:



Certificate of Analysis

CH2M Hill Plateau Remediation Company
P.O. Box 1600
Mail Stop – R3-60
Richland, WA 99352

September 12, 2014

Attention: Scot Fitzgerald

SAF Number	:	F14-003
Date SDG Closed	:	August 11, 2014
Number of Samples	:	Two (2)
Sample Type	:	Water
SDG Number	:	W06842
Data Deliverable	:	30-Day / Summary

CASE NARRATIVE

I. Introduction

On August 11, 2014, two water samples were received at TestAmerica (TARL). Upon receipt, the samples were assigned the following laboratory ID numbers to correspond with the CH2M specific IDs:

<u>CH2M ID#</u>	<u>TARL ID#</u>	<u>DATE OF RECEIPT</u>	<u>MATRIX</u>
B2X8R7	M4LGX	8/11/14	WATER
B2X8R6	M4LG0	8/11/14	WATER

II. Sample Receipt

The samples were received in good condition and no anomalies were noted during check-in.

During the monthly phone call on November 13, 2013 TARL was notified that all groundwater samples received will continue to have a 30 day turnaround time regardless if the chain of custodies have a turn around time that is greater than 30 days.

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.

CH2M Hill Plateau Remediation Company
September 12, 2014

The requested analyses were:

Gamma Spectroscopy

Iodine-129 (LL) by method RL-GAM-002

Liquid Scintillation Counting

Technetium-99 by TEVA method RL-LSC-014

Tritium by method RL-LSC-005

Chemical Analysis

Hexavalent Chromium by EPA method 7196A

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 RL-GAM-002:

The LCS, batch blank, samples and sample duplicate (B2X8R6) results are within contractual requirements.

Liquid Scintillation Counting

Technetium-99 by TEVA method RL-LSC-014:

The LCS, batch blank, samples, sample duplicate (B2X8R6) and sample matrix spike (B2X8R6) results are within contractual requirements.

Tritium by method RL-LSC-005:

The original batch had an incorrect count time. The batch was recounted. Sample B2X8R6 and its duplicate do not meet RPD acceptance criteria. Both results are above CRDL however less than five times CRDL. The difference between the two results is less than one CRDL. Data is accepted. Except as noted, the LCS, batch blank, samples and sample duplicate (B2X8R6) results are within contractual requirements.

Chemical Analysis

Hexavalent Chromium by EPA method 7196A

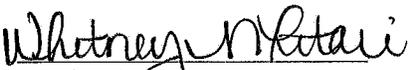
The LCS, batch blank, samples, sample duplicate (B2X8R7) sample matrix spike (B2X8R7) and matrix spike duplicate (B2X8R7) results are within contractual requirements.

September 12, 2014

CH2M Hill Plateau Remediation Company
September 12, 2014

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

TestAmerica Inc Report

Lab Code: TARL

9/12/2014 9:54:04 AM

FormNbr: R FormatType: FEAD Version: 05 Rpt Nbr: 62215 File Name: h:\Reportdb\edd\Fead\Rad\W06842.Edd, h:\Reportdb\edd\Fead\Rad\62215.Ed

Lab Sample Id:	Client Id:	Test User	Contract Nbr	SAF Nbr	Sdg Nbr:	QC Type:	Moisture/Solids%*:	Distilled Volume	Sample On Date:	Collection Date:			
9M4LG010	B2X8R6	F14-003	MW6-SBB-A1	F14-003	W06842				08/11/2014 11:00				
Batch	Analyte	CAS#	Result	Unit	CntU 2S	TotU 2S	MDA	TrcYield	Method	Alq Size	Unit	Analy Date/Time	Act
4224063	I-129	15046-84-1	-2.88E-02	pCi/L	1.2E-01	1.2E-01	2.14E-01	101.9	I129LL_SEP_LEPS	3.7789E+00	L	09/04/2014 09:07	I
4224062	Tc-99	14133-76-7	4.35E+01	pCi/L	5.1E+00	7.3E+00	9.02E+00	100.0	TC99_SEP_LSC	1.306E-01	L	08/20/2014 03:37	I
4224064	H-3	10028-17-8	3.00E+02	pCi/L	1.8E+02	2.0E+02	3.96E+02	100.0	TRITIUM_DIST_LS	5.029E-03	L	08/16/2014 00:37	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:			
9M4LG020	B2X8R6	F14-003	MW6-SBB-A1	F14-003	W06842				08/11/2014 11:00				
Batch	Analyte	CAS#	Result	Unit	CntU 2S	TotU 2S	MDA	TrcYield	Method	Alq Size	Unit	Analy Date/Time	Act
4245073	H-3	10028-17-8	9.39E+02	pCi/L	1.8E+02	2.0E+02	3.58E+02	100.0	TRITIUM_DIST_LS	5.029E-03	L	09/03/2014 03:14	I

TestAmerica Inc
 rpfFeadRadSummaryEdd 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.

Friday, September 12, 2014

TestAmerica Inc QC Blank Report

Lab Code: TARL

FormNbr: R FormatType: FEAD VersionNbr: 05 File Name: h:\Reportdb\edd\Fead\Rad\W06842.Edd, h:\Reportdb\edd\Fead\Rad\62215.Ed

Lab Sample Id: M4LWF1AB Sdg/Rept Nbr: W06842 Collection Date: 08/11/2014 11:00
 Client Id: NA Matrix: WATER Decant: WATER Aliq Size: Date/Time Analyzed: R LCS R
 Moisture/Solids%*: QC Type: BLK Spk Concl/ %Rec: TC99_SEP_LS 1.301E-01 L RPD/ UCL RER/ UCL LCL/UCL Typ D
 Received Date: 08/11/2014

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	F Suffix	R Typ			
	MW6-SBB-A19981								AH	H			
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Qu- al	MDC	Tracer Yield	Spk Concl/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCL	Typ
4224062	Tc-99	6.07E+00	U	9.20E+00	100.0		TC99_SEP_LS	1.301E-01	08/20/2014				D
BLK	14133-76-7							L	06:43				

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.

Friday, September 12, 2014

TestAmerica Inc QC Blank Report

Lab Code: TARL

FormNbr: R FormatType: FEAD VersionNbr: 05 File Name: h:\Reportdb\ledd\Fead\W06842.Edd, h:\Reportdb\ledd\Fead\W06842.Edd, h:\Reportdb\ledd\Fead\W06842.Edd

Lab Sample Id: M4LWH1AB Sdg/Rept Nbr: W06842 Collection Date: 08/11/2014 11:00
 Client Id: NA Matrix: WATER Decant: WATER Sample On Date: 08/11/2014
 Moisture/Solids%*: QC Type: BLK Received Date: 08/11/2014

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix	RType
	MW6-SBB-A19981								AJ	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
4224063	I-129	-1.13E-01	pCi/L	1.3E-01	U	2.16E-01	95.7		1129LL_SEP_L	3.5399E+00	09/04/2014				D
BLK	15046-84-1			1.3E-01						L	10:52				

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 Inc QC Blank Report

Lab Code: TARL

Friday, September 12, 2014

FormNbr: R FormatType: FEAD VersionNbr: 05 File Name: h:\Reportdb\edd\Fead\Rad\W06842.Edd, h:\Reportdb\edd\Fead\Rad\62215.Ed

Lab Sample Id: M4LWJ1AB Sdg/Rept Nbr: W06842 Collection Date: 08/11/2014 11:00
 Client Id: NA Matrix: WATER Decant: WATER Sample On Date: 08/11/2014
 Moisture/Solids%*: BLK QC Type: BLK Received Date: 08/11/2014

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	F Suffix	R Typ					
	MW6-SBB-A19981								AL	H					
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	ToF/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
4224064 H-3		-2.54E+01	pCi/L	1.9E+02	U	4.01E+02	100.0		TRITIUM_DIST	5.005E-03	08/16/2014				D
BLK	10028-17-8			1.6E+02						L	02:43				

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.

Friday, September 12, 2014

TestAmerica Inc QC Blank Report

Lab Code: TARL

FormNbr: R FormatType: FEAD VersionNbr: 05 File Name: h:\Reportdb\edd\Fead\Rad\W06842.Edd, h:\Reportdb\edd\Fead\Rad\62215.Ed

Lab Sample Id: M4LWJ2AB **Sdg/Rept Nbr:** W06842 **Collection Date:** 08/11/2014 11:00
Client Id: NA **Matrix:** WATER **Decant:** WATER **Sample On Date:**
Moisture/Solids%*: **QC Type:** BLK **Received Date:** 08/11/2014

SAF Nbr	Analyt/ CAS#	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	F Suffix	R Typ		
			Tot/Cnt Uncert 2S	Qu- al	MDC	Spk Conc/ %Rec	Analy Method	Aliq Size/ L	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCL	Typ
4245073	H-3	8.08E+01	1.6E+02	U	3.46E+02	100.0	TRITIUM_DIST	5.005E-03	09/03/2014				D
BLK	10028-17-8	MW6-SBB-A19981	1.4E+02						06:00				

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 Inc QC Control Sample Report

Lab Code: TARL

Friday, September 12, 2014

FormNbr: R FormatType: FEAD VersionNbr: 05 File Name: h:\Reportdb\edd\Fead\Rad\W06842.Edd, h:\Reportdb\edd\Fead\Rad\62215.Ed
 Lab Sample Id: M4LWF1CS Sdg/Rept Nbr: W06842 Collection Date: 08/11/2014 11:00
 Client Id: NA Matrix: WATER Decant: WATER Sample On Date: 08/11/2014
 Moisture/Solids%*: BS QC Type: BS Received Date: 08/11/2014

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	F Suffix	R Typ					
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
4224062	Tc-99	4.17E+02	pCi/L	2.8E+01		9.41E+00	100.0	5.57E+02	TC99_SEP_LS	1.252E-01	08/20/2014			70	D
BS	14133-76-7			1.2E+01				74.8		L	07:45			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.

TestAmerica Inc QC Control Sample Report

Lab Code: TARL

Friday, September 12, 2014

FormNbr: R FormatType: FEAD VersionNbr: 05 File Name: h:\Reportdb\edd\Fead\Rad\W06842.Edd, h:\Reportdb\edd\Fead\Rad\62215.Ed

Lab Sample Id: M4LWJ1CS Sdg/Rept Nbr: W06842 Collection Date: 08/11/2014 11:00
 Client Id: NA Matrix: WATER Decant: WATER Sample On Date:
 Moisture/Solids%*: BS QC Type: BS Received Date: 08/11/2014

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	F Suffix	R Typ					
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
4224064 H-3	2.63E+03	3.0E+02	pCi/L	3.0E+02	3.97E+02	100.0	100.0	2.69E+03	TRITIUM_DIST	5.022E-03	08/16/2014	70	70	70	D
BS 10028-17-8		2.7E+02		2.7E+02				97.6		L	03:46			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.

TestAmerica Inc QC Control Sample Report

Lab Code: TARL

Friday, September 12, 2014

FormNbr: R FormatType: FEAD VersionNbr: 05 File Name: h:\Reportdb\ledd\Fead\Rad\W06842.Edd, h:\Reportdb\ledd\Fead\Rad\62215.Ed
 Lab Sample Id: M4LWJ2CS Sdg/Rept Nbr: W06842 Collection Date: 08/11/2014 11:00
 Client Id: NA Matrix: WATER Decant: WATER QC Type: BS Sample On Date: 08/11/2014
 Moisture/Solids%*: Received Date: 08/11/2014

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	RTyp
4245073	H-3	2.79E+03	pCi/L	2.7E+02		3.47E+02	100.0	2.70E+03	TRITIUM_DIST	5.022E-03	09/03/2014			70	D
BS	10028-17-8			2.3E+02				103.3		L	07:22			130	H

TestAmerica Inc rptFeadRadEdd v3.68 8

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.

Friday, September 12, 2014

TestAmerica Inc QC Duplicate Report

Lab Code: TARL

FormNbr: R FormatType: FEAD VersionNbr: 05 File Name: h:\Reportdb\edd\Fead\IRad\W06842.Edd; h:\Reportdb\edd\Fead\IRad\62215.Ed
Lab Sample Id: M4LG01FR **Sdg/Rept Nbr:** W06842 **Collection Date:** 08/11/2014 11:00
Client Id: B2X8R6 **Matrix:** WATER **Decant:** WATER **Sample On Date:** 08/11/2014
Moisture/Solids%*: **QC Type:** DUP **Received Date:** 08/11/2014

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix	RTyp
F14-003	MW6-SBB-A19981								AD	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
4224062	Tc-99	4.13E+01	pCi/L	7.3E+00		9.26E+00	100.0		TC99_SEP_LS	1.267E-01	08/20/2014	5.2	0.4		D
DUP	14133-76-7	4.35E+01		5.1E+00						L	05:41	20.0	3		

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 B Qual- Analyte was found in the associated laboratory blank above the MDC.

Friday, September 12, 2014

TestAmerica Inc QC Duplicate Report

Lab Code: TARL

FormNbr: R FormatType: FEAD VersionNbr: 05 File Name: h:\Reportdb\edd\Fead\VRad\W06842.Edd, h:\Reportdb\edd\Fead\VRad\62215.Ed

Lab Sample Id: M4LG01GR **Sdg/Rept Nbr:** W06842 **Collection Date:** 08/11/2014 11:00
Client Id: B2X8R6 **Matrix:** WATER **Sample On Date:**
Moisture/Solids%*: **QC Type:** DUP **Received Date:** 08/11/2014

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix	RTyp					
F14-003	MW6-SBB-A19981								AE	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
4224063	I-129	1.31E-01	pCi/L	1.5E-01	U	2.99E-01	101.1		1129LL_SEP_L	3.8126E+00	09/04/2014	312.4	1.5		D
DUP	15046-84-1	-2.88E-02		1.5E-01						L	10:52	20.0	3		

TestAmerica Inc
 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.

Friday, September 12, 2014

TestAmerica Inc QC Duplicate Report

Lab Code: TARL

FormNbr: R FormatType: FEAD VersionNbr: 05 File Name: h:\Reportdb\edd\Fead\VRad\W06842.Edd, h:\Reportdb\edd\Fead\VRad\62215.Ed

Lab Sample Id: M4LG01HR **Sdg/Rept Nbr:** W06842 **Collection Date:** 08/11/2014 11:00
Client Id: B2X8R6 **Matrix:** WATER **Decant:** WATER **Sample On Date:**
Moisture/Solids%*: **QC Type:** DUP **Received Date:** 08/11/2014

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Disfilled Volume	File Id	FSuffix	RTyp					
F14-003	MW6-SBB-A19981								AF	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
4224064 H-3		7.01E+02	pCi/L	2.2E+02		3.84E+02	100.0		TRITIUM_DIST	5.032E-03	08/16/2014	80.1	2.6		D
DUP	10028-17-8	3.00E+02		1.9E+02						L	01:40	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 Inc QC Duplicate Report

Lab Code: TARL

Friday, September 12, 2014

FormNbr: R FormatType: FEAD VersionNbr: 05 File Name: h:\Reportdb\edd\Fead\VRad\W06842.Edd; h:\Reportdb\edd\Fead\VRad\62215.Ed
 Lab Sample Id: M4LG02HR Sdg/Rept Nbr: W06842 62215 Collection Date: 08/11/2014 11:00
 Client Id: B2X8R6 Matrix: WATER WATER Sample On Date:
 Moisture/Solids%*: QC Type: DUP Received Date: 08/11/2014

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix	RTyp					
F-14-003	MW6-SBB-A19981								AG	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
4245073	H-3	7.36E+02	pCi/L	1.8E+02		3.27E+02	100.0		TRITIUM_DIST	5.032E-03	09/03/2014	24.2	1.6		D
DUP	10028-17-8	9.39E+02		1.6E+02						L	04:37	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.

Friday, September 12, 2014

TestAmerica Inc Qc Matrix Spike Report

Lab Code: TARL

FormNbr: R FormatType: FEAD VersionNbr: 05 File Name: h:\Reportdb\edd\Fead\Rad\W06842.Edd, h:\Reportdb\edd\Fead\Rad\62215.Ed

Lab Sample Id: M4LG01EW Sdg/Rept Nbr: W06842 Collection Date: 08/11/2014 11:00
 Client Id: B2X8R6 Matrix: WATER WATER Sample On Date:
 Moisture/Solids%*: QC Type: MS Received Date: 08/11/2014

SAF Nbr	Analyt/ CAS#	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix	RType		
F14-003		MW6-SBB-A19981								AC	H		
Batch # / Qc Type	4224062 Tc-99	Result/ Orig Rst	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCL	R Typ
MS	14133-76-7	2.25E+03	1.3E+02 2.6E+01		9.35E+00	100.0	TC99_SEP_LS	1.279E-01	08/20/2014			70	D
								L	04:39			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.

Hexavalent Chromium - Water



Analyst: I. Salifu		Calibration Curve Information										BATCH # 4223044	
Start Date:	8/11/2014	Amount (mL)	Conc. (mg/L)	ABS.	R Squared	2nd ^o Coeff (a)	1st ^o Coeff (b)	Constant (c)	Intercept	Matrix	SDG #	Water	
Start Time:	19:25	Blank	0.000	0.000	0.0000	0.0137	0.5183	0.0000	0.0000	Water	W06842	Water	
End Date:	8/11/2014	Std. 1	0.100	0.096	$y = 0.0137x^2 + 0.5183x + 0.0000$ $R^2 = 1.0000$	0.0137	0.5183	0.0000	SOP Information RL-WC-003 Revision 6				
End Time:	19:57	Std. 2	0.500	0.475		0.0137	0.5183	0.0000					
Analyst Signature:		Std. 3	0.750	0.712		0.0137	0.5183	0.0000					
Date:	08/11/14	Std. 4	1.500	1.394		0.0137	0.5183	0.0000					
		Std. 5	2.000	1.840		0.0137	0.5183	0.0000					
		Standard Volume (mL):	100.000	100.000									
		Date of Curve:	8/11/2014	8/11/2014									
Calibration Information:		ICV/CCV Information:		LCS Information:		Matrix Spike Information:							
Dilution ID #	Cr-14-00309	Cr-14-00310	Cr-14-00309	Cr-14-00309	Cr-14-00309	Cr-14-00309	Cr-14-00309						
Prep Date:	08/11/14	08/11/14	08/11/14	08/11/14	08/11/14	08/11/14	08/11/14						
Concentration (mg/L)	50	50	50	50	50	50	50						
Expiration Date:	08/12/14	08/12/14	08/12/14	08/12/14	08/12/14	08/12/14	08/12/14						
Pipettor(s)	201,282,286	286	286	286	286	286	286						
Volume Used (mL)	1.000	1.000	1.000	1.000	1.000	1.000	1.50						
Final Volume (mL)	100.000	100.000	100.000	100.000	100.000	100.000	100.00						
Expected Value (mg/L)	0.500	0.500	0.500	0.500	0.500	0.500	0.750						
Sample ID	Client ID	Type	Final Volume (mL)	Sample ABS.	Color Blank ABS.	Corrected ABS.	Dilution Factor	Curve Conc. (mg/L)	Expected (mg/L)	% Rec. / RPD	Final Reported Conc. (mg/L)	Qualifier	
n/a	n/a	ICV	100.000	0.939		0.939	1	0.4988	0.5000	99.75%	0.499		
n/a	n/a	ICB	100.000	0.002		0.002	1	0.0010	0.5000		<MDL	U	
n/a	n/a	CCV	100.000	0.927		0.927	1	0.4922	0.5000	98.45%	0.492		
n/a	n/a	CCB	100.000	0.001		0.001	1	0.0005	0.5000		<MDL	U	
M4LJ81AA	n/a	BLK	100.000	0.001		0.001	1	0.0005	0.5000		<MDL	U	
M4LJ81AC	n/a	LCS	100.000	0.951		0.951	1	0.5053	0.5000	101.06%	0.505		
M4L GX1AA	B2X8R7	Sample	100.000	0.003		0.003	1	0.0016	0.5000		<MDL	U	
M4L GX1AC	B2X8R7	MS*	100.000	1.460		1.460	1	0.7859	0.7500	104.79%	0.786		
M4L GX1AD	B2X8R7	MSD*	100.000	1.456		1.456	1	0.7837	0.7500	104.49%	0.784		
M4L GX1AE	B2X8R7 DUJ*	Duplicate	100.000	0.003		0.003	1	0.0016	0.5000		<MDL	U	
			100.000				1						
			100.000				1						
			100.000				1						
			100.000				1						
n/a	n/a	CCV	100.000	0.926		0.926	1	0.4917	0.5000	98.34%	0.492		
n/a	n/a	CCB	100.000	0.002		0.002	1	0.0010	0.5000		<MDL	U	

*If the parent sample is above the MDL, the Final Reported Conc. (mg/L) for the MS and MSD is corrected for the parent sample. CG-223 Rev. 7/12/2013

Lot No., Due Date: J4H110421; 09/11/2014
Client, Site: 108302; FLH HANFORD
QC Batch No., Method Test: 4224063; RGAMLEPS Gamma by LEPS
SDG, Matrix: W06842; 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 *[Signature]* Date *9/10/14*

September 12, 2014



Data Review Checklist
RADIOCHEMISTRY
Second Level Review

Batch Number: 4224063

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:

I-129 SpCi/L

Second Level Review: [Signature]

Date: 9/10/14

Lot No., Due Date: J4H110421; 09/11/2014
Client, Site: 108302; FLH HANFORD
QC Batch No., Method Test: 4224062; RTC99 Tc-99 by LSC
SDG, Matrix: W06842; 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

[Signature]

Date

8/28/2014

Data Review Checklist RADIOCHEMISTRY Second Level Review

Batch Number: 4224062

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: *Landra Loger* Date: 8-29-14

Lot No., Due Date: J4H110421; 09/11/2014
Client, Site: 108302; FLH HANFORD
QC Batch No., Method Test: 4245073; RTRITIUM H-3 by LSC
SDG, Matrix: W06842; 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:

NCM 10-28560

First Level

B. Sengel

Date

9/8/2014

September 12, 2014

Data Review Checklist
RADIOCHEMISTRY
Second Level Review

Batch Number: 4245073

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:

10-285600 A3 400pci/L
recent
dups

Second Level Review: [Signature]

Date: 9/8/14

September 12, 2014

Clouseau Nonconformance Memo



NCM #: 10-28560	Classification: Deficiency
NCM Initiated By: Sarah Nagel	Status: CLOSED
Date Opened: 09/08/2014	Production Area: Counting
Date Closed: 09/08/2014	Tests: H-3 by LSC
Nonconformance: Batch Result Out of Limits	Lot #'s (Sample #'s): J4H110421 (2), J4H120000 (64),
Subcategory: Duplicate agreement exceeds acceptance limit	QC Batches: 4224064, 4245073,

W010842

Problem Description / Root Cause

<u>Name</u>	<u>Date</u>	<u>Description</u>
Sarah Nagel	09/08/2014	Batch 4245073 is a recount of batch 4224064 due to missed CRDL caused by insufficient count time. The original batch was counted for 60 minutes despite the paperwork requesting 80 minute count time. All samples and QC now meet CRDL. The sample and duplicate do not meet RPD acceptance criteria of 20%. Both results are above CRDL however less than five time the CRDL, the difference between the two results is less than one CRDL. Date accepted.

Corrective Action

<u>Name</u>	<u>Date</u>	<u>Corrective Action</u>
Sarah Nagel	09/08/2014	Samples were recounted.

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>

September 12, 2014

Data Review Check List

Hexavalent Chromium

Batch Number(s):	4223044	Lab Sample Numbers or SDG:	W06842	
Method/Test/Parameter: Cr+6 <input checked="" type="checkbox"/> RL-WC-003(Aqueous) <input type="checkbox"/> RL-WC-004(Solid)				
Review Item	Yes (✓)	No (✓)	N/A (✓)	2 nd Level Review (✓)
A. Initial Calibration				
1. Performed at required frequency with required number of levels?	✓			✓
2. Correlation coefficient greater than 0.97?	✓			✓
3. Initial calibration verification (ICV) analyzed immediately after calibration and results within 10% of expected?	✓			✓
4. Initial calibration blank (ICB) analyzed immediately after ICV and concentrations of all parameters ≤ reporting limit?	✓			✓
B. Continuing Calibration				
1. CCV analyzed at required frequency and all parameters within 10% of expected?	✓			✓
2. CCB analyzed at required frequency and all results ≤ reporting limit?	✓			✓
C. Sample Analysis				
1. Were any samples with concentrations above the linear range diluted and reanalyzed?			✓	✓
2. Were all sample holding times met?	✓			✓
D. QC Samples				
1. All results for the preparation blank below limits?	✓			✓
2. LCS percent recovery within 85-115%	✓			✓
3. PbCrO ₄ percent recovery within 75-125%?	✗	100 8-14-14	✓	✓
4. Sample and Duplicate within 20% (aqueous) or 35% (solid) RPD?			✓	✓
5. MS or MS/MSD recoveries within 85-115% (aqueous) or 75-125% (solid)?	✓			✓
6. On MS failure, PDMS within 85-115%?			✓	✓
E. Other				
1. Are all nonconformances included and noted?			✓	✓
2. Is the correct date and time of analysis shown?	✓			✓
3. Did the analyst sign and date the front page of the analytical run?	✓			✓
4. Correct methodology used?	✓			✓
5. Transcriptions checked?	✓			✓
6. Calculations checked at minimum frequency?	✓			✓
7. Units checked?	✓			✓

Comments on any "No" response or list NCM number:

Analyst I. Sotofee

Date 8/12/14 2nd Review [Signature]

Date 8-14-14

September 12, 2014

CH2M Hill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		F14-003-279	PAGE 1 OF 1
COLLECTOR <i>R Crow</i>	COMPANY CONTACT TODAK, D	TELEPHONE NO. 376-6427	PROJECT COORDINATOR TODAK, D	PRICE CODE 7H	DATA TURNAROUND 30 Days / 30 Days
SAMPLING LOCATION C8920, I-006	PROJECT DESIGNATION FY2014 200-ZP-1 Remedial Action Wells Sampling and Analysis - Water	SAF NO. F14-003	COA 302938ES10	AIR QUALITY	METHOD OF SHIPMENT GOVERNMENT VEHICLE
ICE CHEST NO. <i>N/A</i>	FIELD LOGBOOK NO. <i>1110421</i>	ACTUAL SAMPLE DEPTH <i>346.8</i>	BILL OF LADING/AIR BILL NO. SEE PTR	ORIGINAL	
SHIPPED TO TestAmerica Incorporated, Richland	OFFSITE PROPERTY NO. SEE PTR				

MATRIX*	POSSIBLE SAMPLE HAZARDS/ REMARKS	PRESERVATION	
A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	*Contains Radioactive Material at concentrations that are not be regulated for transportation per 49 CFR/IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1.	Cool-4C 24 Hours ag 1 500ml 7196 CR6; COMMON;	
SPECIAL HANDLING AND/OR STORAGE			
SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME
3B2X8R7	WATER	AUG 11 2014	1100

5UH110421
W06842
MHL67



CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	TRVL-14-118	
<i>R Crow</i>	AUG 11 2014 1150	<i>LD Wall</i>	AUG 11 2014 1150		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
<i>LD Wall</i>	AUG 11 2014 1450	<i>LD Wall</i>	AUG 11 2014 1450		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME		
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME		

September 12, 2014

CH2M Hill Plateau Remediation Company		CHAIN OF CUSTODY / SAMPLE ANALYSIS REQUEST		F14-003-278	PAGE 1 OF 1
COLLECTOR <i>R Crow</i>	COMPANY CONTACT TODAK, D	TELEPHONE NO. 376-6427	PROJECT COORDINATOR TODAK, D	PRICE CODE 7H	DATA TURNAROUND 30 Days / 30 Days
SAMPLING LOCATION C8920, I-006	PROJECT DESIGNATION FY2014 200-ZP-1 Remedial Action Wells Sampling and Analysis - Water	ACTUAL SAMPLE DEPTH <i>346.8</i>		AIR QUALITY <input type="checkbox"/>	METHOD OF SHIPMENT GOVERNMENT VEHICLE
ICE CHEST NO. <i>N/A</i>	FIELD BOOK NO. <i>12-44</i>	COA 302938ES10		ORIGINAL	
SHIPPED TO TestAmerica Incorporated, Richland	OFFSITE PROPERTY NO. SEE PTR	BILL OF LADING / AIR BILL NO. SEE PTR			

MATRIX*	POSSIBLE SAMPLE HAZARDS/ REMARKS	PRESERVATION	None	HCl to pH <2
A=Air DL=Drum L=Liquids DS=Drum S=Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	*Contains Radioactive Material at concentrations that are not be regulated for transportation per 49 CFR/TATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1.	HOLDING TIME	6 Months	6 Months
		TYPE OF CONTAINER	P	G/P
		NO. OF CONTAINER(S)	1	3
		VOLUME	1L	1L
		SAMPLE ANALYSIS	TRITIUM_DIST LSC COMMON;	TC99_SEP_LSC COMMON (Technetium-99)

JWH110421
WDB6842
M4L60

CHAIN OF POSSESSION	SIGN/ PRINT NAMES	RECEIVED BY/STORED IN	DATE/TIME	SPECIAL INSTRUCTIONS
RELINQUISHED BY/REMOVED FROM <i>R Crow</i>		RECEIVED BY/STORED IN <i>L.B. Wall</i>	DATE/TIME AUG 11 2014 1150	TRVL-14-118
RELINQUISHED BY/REMOVED FROM <i>L.B. Wall</i>		RECEIVED BY/STORED IN <i>CHERIC D. Wall</i>	DATE/TIME AUG 11 2014 1450	
RELINQUISHED BY/REMOVED FROM <i>CHERIC D. Wall</i>		RECEIVED BY/STORED IN <i>J. F. Reese</i>	DATE/TIME AUG 11 2014 1450	TRVL-14-118
RELINQUISHED BY/REMOVED FROM		RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM		RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM		RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM		RECEIVED BY/STORED IN	DATE/TIME	
LABORATORY SECTION	RECEIVED BY	TITLE		DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY		DATE/TIME

Date/Time Received: 8/11/14 1450 Container GM Screen Result: (Airlock) 40 cpm Initials [B]
Sample GM Screen Result (Sample Receiving) 40 cpm Initials [B]

Client: FLH SDG #: W06842 SAF #: F14-003 NA []

Lot Number: J4H110421

Chain of Custody # F14-003-278, 279

Shipping Container ID or Air Bill Number : Hand de Civ. NA []

Samples received inside shipping container/cooler/box Yes] 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]
- 2. Custody Seals dated and signed? Yes [] No [] No Custody Seal]
- 3. Cooler temperature: 1.6 ON ICE NA []
- 4. Vermiculite/packing materials is NA] Wet [] Dry []

Item 5 through 16 for samples. Initial appropriate response.

- 5. Chain of Custody record present? Yes] No []
- 6. Number of samples received (Each sample may contain multiple bottles): 2
- 7. Containers received: 1 x 500 mL AB, 4 x 4L, 2 x 4Lp

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

11. Samples: are in good condition NA are leaking NA are broken NA
NA have air bubbles (Only for samples requiring no head space) NA Other NA

12. Sample pH appropriate for analysis requested Yes [] No [] NA]
(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]

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

15. Sample Location, Sample Collector Listed on COC? * Yes] No] 8-11-14
*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: 8-11-14

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

] No action necessary; process as is
Project Manager [Signature] Date 8/12/14

9/3/2014 12:09:31 PM **Sample Preparation/Analysis** Balance Id:1120482733,B425712682
 108302, CH2M Hill Plateau Remediation DOE RL **BN I-129 Prp/Sep GAM002** Pipet #: _____
 , Waste Management Federal Servi **TB Gamma by LEPD** Sep1 DT/Tm Tech: _____
AnalyDueDate: 09/11/2014 5I CLIENT: HANFORD Sep2 DT/Tm Tech: _____
Batch: 4224063 WATER pCi/L PM, Quote: SS, 29754
 SEQ Batch, Test: None All Tests: 4223044 88EA, 4224062 AMS5, 4224063 BN1B, 4224064 ARS6, 4245073 ARS6, Prep Tech: CarneyA, NeyensaA

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	Ppt or Geometry	Count Time Min	Detector Id	Count On Off (24hr) Circle	CR Analyst, Init/Date	Comments:
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1 ~~M4LGO-1-AD~~ 3778.90g.in 3778.90g / ITA14321 08/12/14 37.70mg / 100um
 J4H110421-2-SAMP
 08/11/2014 11:00
 AmtRec: 4XLP-2X4LP #Containers: 6

2 ~~M4LGO-1-AG-X~~ 3812.60g.in 3812.60g / ITA14322 08/12/14 37.40mg /
 J4H110421-2-DUP
 08/11/2014 11:00
 AmtRec: 4XLP-2X4LP #Containers: 6

3 ~~M4LWH-1-AA-B~~ 3539.90g.in 3539.90g / ITA14323 08/12/14 35.40mg /
 J4H120000-63-BLK
 08/27/2014 07:51 pd
 AmtRec: 1

4 ~~M4LWH-1-AC-C~~ 3621.40g.in 3621.40g / ISD1736 08/18/14 35.50mg /
 J4H120000-63-LCS
 08/27/2014 07:54 pd
 AmtRec: 1

September 12, 2014

8/12/2014 3:13:12 PM

Sample Preparation/Analysis

Balance Id.,

BN I-129 Prp/Sep GAM002
TB Gamma by LEPCD
5I CLIENT: HANFORD

Pipet #:

AnalytDueDate: 09/11/2014

Sep1 DT/Tm Tech:

Batch: 4224063

pCi/L

Sep2 DT/Tm Tech:

SEQ Batch, Test: None

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	Ppt or Geometry	Count Time Min	Detector Id	Count On Off (24hr) Circle	CR Analyst, Init/Date	Comments:
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Comments:

All Clients for Batch: 108302, CH2M Hill Plateau Remediation DOE RL Waste Management Federal Servi, SS, 29754

M4LG01AD-SAMP Constituent List:

Constituent	RDL	UCL	LCL	Decay to SaDt	Blk Subst.	Sci. Not.	ODRs
I-129	5.00E-01 pCi/L			Y	N	Y	B
M4LWH1AA-BLK				Y	N	Y	B
M4LWH1AC-ICS				Y	N	Y	B

M4LG01AD-SAMP Calc Info:

Level	Uncert Level	Decay to SaDt	Blk Subst.	Sci. Not.	ODRs
6	2	Y	N	Y	B
6	2	Y	N	Y	B
6	2	Y	N	Y	B

September 12, 2014

9/10/2014 3:07:09 PM

ICOC Fraction Transfer/Status Report

September 12, 2014

ByDate: 9/10/2013, 9/15/2014, Batch: '4224063', User: *ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting	SOPs,Reagents,Comments
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4224063				
AC	Rev1C	NeyensA	8/27/2014 7:44:23	
SC		NeyensA	InPrep	8/27/2014 7:44:23 AM
SC		NeyensAR	IsBatched	9/3/2014 6:35:15 AM
SC		BullJ	InCnt1	9/3/2014 1:06:04 PM
SC		DawkinsO	CalcC	9/5/2014 2:12:29 AM
SC		AntonsonL	Rev1C	9/10/2014 3:07:03 PM
AC		NeyensA		9/3/2014 6:35:45 AM
AC		BullJ		9/3/2014 1:06:04 PM
AC		DawkinsO		9/5/2014 2:12:29 AM
AC		AntonsonL		9/10/2014 3:07:03 PM

RL-GAM-002 REVISION 4
 ICOC_RADCALC v4.9.0
 RL-CI-007 REVISION 3
 RL-CI-007 REVISION 3
 RL-DR-001 Rev 5

AC: Accepting Entry; SC: Status Change

8/14/2014 5:25:46 PM **Sample Preparation/Analysis** Balance Id:1120482733,,
 108302, CH2M Hill Plateau Remediation DOE RL AM Tc-99 Prp/Sep LSC013 Pipet #:
 , Waste Management Federal Servi S5 Technetium-99 by Liquid Scint Sep1 DT/Tm Tech:
AnalyteDueDate: 09/11/2014 51 CLIENT: HANFORD Sep2 DT/Tm Tech:
Batch: 4224062 WATER PM, Quote: SS , 29754 Prep Tech: PeoplesK
 SEQ Batch, Test: None

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	Ppt or Geometry	Count Time Min	Detector Id	Count On Off (24hr) Circle	CR Analyst, Init/Date	Comments:
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1 M4LG0-1-AC 130.60g,in 130.60g
 J4H110421-2-SAMP
 08/11/2014 11:00
 AmtRec: 4XLP-2X4LP #Containers: 6
 TCSG3509
 08/14/14,pd
 07/01/05,r
 #Containers: 6
 Beta: 1.18E-03 uCi/Sa

2 M4LG0-1-AE-S 127.90g,in 127.90g
 J4H110421-2-MS
 08/11/2014 11:00
 AmtRec: 4XLP-2X4LP #Containers: 6
 TCSG3509
 08/14/14,pd
 07/01/05,r
 #Containers: 6
 Beta: 1.18E-03 uCi/Sa

3 M4LG0-1-AF-X 126.70g,in 126.70g
 J4H110421-2-DUP
 08/11/2014 11:00
 AmtRec: 4XLP-2X4LP #Containers: 6
 TCSG3509
 08/14/14,pd
 07/01/05,r
 #Containers: 6
 Beta: 1.18E-03 uCi/Sa

4 M4LWF-1-AA-B 130.10g,in 130.10g
 J4H120000-62-BLK
 08/14/2014 17:24 pd
 AmtRec: 1
 TCSF2917
 08/14/14,pd
 07/01/05,r
 #Containers: 1
 Alpha: Alpha: Beta: Beta:

5 M4LWF-1-AC-C 125.20g,in 125.20g
 J4H120000-62-LCS
 08/14/2014 17:25 pd
 AmtRec: 1
 TCSF2917
 08/14/14,pd
 07/01/05,r
 #Containers: 1
 Alpha: Alpha: Beta: Beta:

6 M4LWF-1-AD-BN 125.20g,in 125.20g
 J4H120000-62-BLK
 08/12/2014 15:13 pd
 AmtRec: 1
 TCSF2917
 08/14/14,pd
 07/01/05,r
 #Containers: 1
 Alpha: Alpha: Beta: Beta:

September 12, 2014

60

8/14/2014 5:25:47 PM

Sample Preparation/Analysis

AM Tc-99 Prp/Sep LSC013
S5 Technetium-99 by Liquid Scint
5I CLIENT: HANFORD

AnalyDueDate: 09/11/2014

Batch: 4224062

SEQ Batch, Test: None

pCi/L

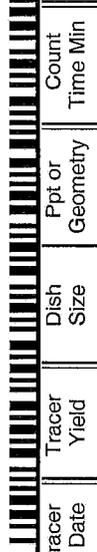
Balance Id: ,,

Pipet #:

Sep1 DT/Tm Tech:

Sep2 DT/Tm Tech:

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	Ppt or Geometry	Count Time Min	Detector Id	Count On Off (24hr) Circle	CR Analyst, Init/Date	Comments:
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Comments: MALWF-BLK "Comments S-14-00059",,P-14-00580

All Clients for Batch:
108302, CH2M Hill Plateau Remediation DOE RL Waste Management Federal Servi, SS , 29754

MALG01AC-SAMP Constituent List:
Tc-99 RDL:15 pCi/L LCL: UCL: RPD:

MALG01AE-MS Constituent List:
MALWF1AA-BLK:
Tc-99 RDL:15 pCi/L LCL: UCL: RPD:

MALWF1AC-LCS:
Tc-99 RDL:15 pCi/L LCL:70 UCL:130 RPD:20

MALWF1AD-IBLK:
Tc-99 RDL:15 pCi/L LCL: UCL: RPD:

MALG01AC-SAMP Calc Info:
Uncert Level (#s) : 2 Decay to Sabt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

MALG01AE-MS Calc Info:
Uncert Level (#s) : 2 Decay to Sabt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

MALWF1AA-BLK:
Uncert Level (#s) : 2 Decay to Sabt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

MALWF1AC-LCS:
Uncert Level (#s) : 2 Decay to Sabt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

MALWF1AD-IBLK:
Uncert Level (#s) : 2 Decay to Sabt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

September 12, 2014

ICOC Fraction Transfer/Status Report

September 12, 2014

ByDate: 8/28/2013, 9/2/2014, Batch: '4224062', User: *ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting	SOPs,Reagents,Comments
4224062				
AC		Rev1C	PeoplesK	8/14/2014 5:25:56 PM
SC			PeoplesK	Prep1C 8/14/2014 5:25:56 PM
SC			carneyam	IsBatched 8/18/2014 8:10:23 AM
SC			CarneyA	Sep2C 8/19/2014 2:56:23 PM
SC			BourneD	Sep2C 8/19/2014 2:56:50 PM
SC			DawkinsO	InCnt1 8/19/2014 4:18:00 PM
SC			BullJ	CalcC 8/20/2014 2:10:54 PM
SC			nagels	Rev1C 8/28/2014 12:01:48 PM
AC			CarneyA	8/19/2014 2:56:23 PM
AC			BourneD	8/19/2014 2:56:50 PM
AC			DawkinsO	8/19/2014 4:18:00 PM
AC			BullJ	8/20/2014 2:10:54 PM
AC			nagels	8/28/2014 12:01:48

RL-PRP-004 REVISION 3
 ICOC_RADCALC v4.9.0
 RL-LSC-013 REVISION 4
 RL-LSC-013 REVISION 4
 RL-CI-005 REVISION 3
 RL-CI-005 REVISION 3
 RL-DR-001 Rev 5

AC: Accepting Entry; SC: Status Change

9/2/2014 1:17:07 PM **Sample Preparation/Analysis** Balance Id.,
 108302, CH2M Hill Plateau Remediation DOE RL AR H-3 Prp/Sep LSC005 Pipet #:
 , Waste Management Federal Servi S6 Tritium by Liquid Scint
 Analyte: HANFORD
 51 CLIENT: HANFORD
 Batch: 4245073 WATER PM, Quote: SS, 29754
 SEQ Batch, Test: None pCi/L

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	Ppt or Geometry	Count Time Min	Detector Id	Count On Off (24hr) Circle	CR Analyst, Init/Date	Comments:
1 M4LG0-2-AA													
J4H110421-2-SAMP													
08/11/2014 11:00													Beta: 1.18E-03 uCi/Sa
2 M4LG0-2-AH-X													
J4H110421-2-DUP													
08/11/2014 11:00													Beta: 1.18E-03 uCi/Sa
3 M4LWJ-2-AA-B													
J4H120000-64-BLK													
09/02/2014 13:17 pd													
4 M4LWJ-2-AC-C													
J4H120000-64-LCS													
09/02/2014 13:17 pd													
5 M4LWJ-2-AD-B													
J4H120000-64-BLK													
09/02/2014 13:17 pd													

September 12, 2014

9/2/2014 1:17:08 PM

Sample Preparation/Analysis

AR H-3 Prp/Sep LSC005
S6 Tritium by Liquid Scint
5I CLIENT: HANFORD

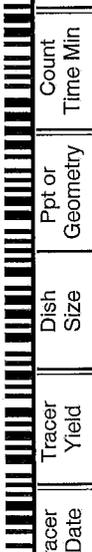
Balance Id:,,
Pipet #:
Sep1 DT/Tm Tech:
Sep2 DT/Tm Tech:
Prep Tech:

AnalyDueDate: 09/11/2014

pCi/L

Batch: 4245073

SEQ Batch, Test: None



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	Ppt or Geometry	Count Time Min	Detector Id	Count On Off (24hr) Circle	CR Analyst, Init/Date	Comments:
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Comments: M4LWJ-BLK "Comments P-14-00405", P-14-00221, H312B180, S-14-00169

All Clients for Batch:
108302, CH2M Hill Plateau Remediation DOE RL Waste Management Federal Servi, SS , 29754

M4LG02AA-SAMP Constituent List:

M4LWJ2AA-BLK:	Decay to SaDt: Y	Blk Subt.: N	Sci.Not.: Y	ODRs: B
Uncert Level (#s): 2				
M4LWJ2AA-BLK:	Decay to SaDt: Y	Blk Subt.: N	Sci.Not.: Y	ODRs: B
Uncert Level (#s): 2				
M4LWJ2AC-LCS:	Decay to SaDt: Y	Blk Subt.: N	Sci.Not.: Y	ODRs: B
Uncert Level (#s): 2				
M4LWJ2AD-BLK:	Decay to SaDt: Y	Blk Subt.: N	Sci.Not.: Y	ODRs: B
Uncert Level (#s): 2				

September 12, 2014

9/8/2014 12:09:12 PM

ICOC Fraction Transfer Status Report

September 12, 2014

ByDate: 9/8/2013, 9/13/2014, Batch: '4245073', User: *ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting	SOPs,Reagents,Comments
4245073				
AC	Rev1C	BullJ	9/8/2014 10:46:47	
SC		BullJ	CalcC 9/8/2014 10:46:47 AM	RL-CI-005 REVISION 3
SC		nagels	Rev1C 9/8/2014 12:09:06 PM	RL-DR-001 Rev 5
AC		nagels	9/8/2014 12:09:06 PM	

AC: Accepting Entry; SC: Status Change

TestAmerica Richland
Richland Wa.

September 12, 2014

*** RE-COUNT REQUEST ***

DUE DATE 9/11
CUSTOMER CH2M
ANALYSIS H-3
MATRIX Water
LOT NUMBER 54H110421
SAMPLE DELIVERY GROUP _____
OLD BATCH NUMBER 4224064
NEW BATCH NUMBER 4245073

LAB SAMPLE ID CLIENT ID REASON FOR REQUEST & ANALYSIS COMMENTS

1)	MALWJ2AD	Wrong Count time
2)	MALG02AA	
3)	MALG02AH	Wipe with antistatic sheet
4)	MUWJ2AA	Count <u>80</u> minutes
5)	MALWJ2AC	
6)		
7)		
8)		
9)		
10)		
11)		
12)		
13)		
14)		
15)		
16)		
17)		
18)		
19)		
20)		

40

September 12, 2014

Sample Preparation/Analysis

Balance Id.,
Pipet #:
Sep1 DT/Tm Tech:
Sep2 DT/Tm Tech:

AR H-3 Prp/Sep LSC005
S6 Tritium by Liquid Scint
51 CLIENT: HANFORD

8/12/2014 3:13:13 PM
108302, CH2M Hill Plateau Remediation DOE RL
, Waste Management Federal Servi

PM, Quote: SS, 29754

WATER pCi/L

Batch: 4224064
SEQ Batch, Test: None

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	Ppt or Geometry	Count Time Min	Detector Id	Count On Off (24hr) Circle	CR Analyst, Init/Date	Comments:
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1 M4LG0-1-AA

J4H110421-2-SAMIP

08/11/2014 11:00

AmtRec: 4XLP;2X4LP

#Containers: 6

Scr:

Alpha:

Beta:

2 M4LG0-1-AH-X

J4H110421-2-DUP

08/11/2014 11:00

AmtRec: 4XLP;2X4LP

#Containers: 6

Scr:

Alpha:

Beta:

3 M4LWJ-1-AA-B

J4H120000-64-BLK

08/12/2014 15:13 pd

AmtRec:

#Containers: 1

Scr:

Alpha:

Beta:

4 M4LWJ-1-AC-C

J4H120000-64-LCS

08/12/2014 15:13 pd

AmtRec:

#Containers: 1

Scr:

Alpha:

Beta:

5 M4LWJ-1-AD-BN

J4H120000-64-BLK

08/12/2014 15:13 pd

AmtRec:

#Containers: 1

Scr:

Alpha:

Beta:

8/12/2014 3:13:14 PM

Sample Preparation/Analysis

Balance Id.,,

AR H-3 Prp/Sep LSC005
S6 Tritium by Liquid Scint
5I CLIENT: HANFORD

Pipet #:

AnalyDueDate: 09/11/2014

Sep1 DT/Tm Tech:

Batch: 4224064

pCi/L

Sep2 DT/Tm Tech:

SEQ Batch, Test: None

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	Ppt or Geometry	Count Time Min	Detector Id	Count On Off (24hr) Circle	CR Analyst, Init/Date	Comments:
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Comments:

All Clients for Batch:
108302, CH2M Hill Plateau Remediation DOE RL Waste Management Federal Servi, SS , 29754

MALG01AA-SAMP Constituent List:

H-3 RDL:400 pCi/L LCL:70 UCL:130 RPD:20

MALWJ1AA-BLK:

40

41

42

43

44

45

46

MALG01AA-SAMP Calc Info:

Uncert Level (#s) : 2

Decay to Sabt: Y

Blk Subt.: N

Sci.Not.: Y

ODRs: B

MALWJ1AA-BLK:

Uncert Level (#s) : 2

Decay to Sabt: Y

Blk Subt.: N

Sci.Not.: Y

ODRs: B

MALWJ1AC-ICS:

Uncert Level (#s) : 2

Decay to Sabt: Y

Blk Subt.: N

Sci.Not.: Y

ODRs: B

MALWJ1AD-IBLK:

Uncert Level (#s) : 2

Decay to Sabt: Y

Blk Subt.: N

Sci.Not.: Y

ODRs: B

September 12, 2014

September 12, 2014

8/11/2014 6:22:15 PM

Sample Preparation/Analysis

Balance Id:,,

108302, CH2M Hill Plateau Remediation DOE RL
, Waste Management Federal Servi

88 NO SAMPLE PREPARATION PERFORMED / DIRECT INJECTION
EA Chromium, Hexavalent (7196A)

Pipet #:

AnalyDueDate: 09/10/2014

Sep1 DT/Tm Tech:

Batch: 4223044 WATER ug/L

PM, Quote: SS , 29754

Sep2 DT/Tm Tech:

SEQ Batch, Test: None

Prep Tech:

Work Order, Lot, Sample Date/Time	Total Amt/Unit	Initial Aliquot Amt/Unit	QC Tracer Prep Date	Count Time Min	Detector Id	Count On Off (24hr) Circle	CR Analyst, Init/Date	Comments:
1 M4LGX-1-AA J4H110421-1-SAMP 08/11/2014 11:00							Alpha: Beta:	
2 M4LGX-1-AC-S J4H110421-1-MS 08/11/2014 11:00							Alpha: Beta:	
3 M4LGX-1-AD-D J4H110421-1-MSD 08/11/2014 11:00							Alpha: Beta:	
4 M4LGX-1-AE-X J4H110421-1-DUP 08/11/2014 11:00							Alpha: Beta:	
5 M4LJ8-1-AA-B J4H110000-44-BLK 08/11/2014 18:22 pd							Alpha: Beta:	
6 M4LJ8-1-AC-C J4H110000-44-LCS 08/11/2014 18:22 pd							Alpha: Beta:	

8/11/2014 6:22:15 PM

Sample Preparation/Analysis

Balance Id.:

88 NO SAMPLE PREPARATION PERFORMED / DIRECT INJECTION
EA Chromium, Hexavalent (7196A)
01 STANDARD TEST SET

Pipet #:

Analyse Date: 09/10/2014

Sep1 DT/Tm Tech:

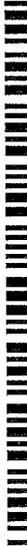
Batch: 4223044

Sep2 DT/Tm Tech:

SEQ Batch, Test: None

ug/L

Prep Tech:

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

Comments:

All Clients for Batch: 108302, CH2M Hill Plateau Remediation DOE RL Waste Management Federal Servi, SS, 29754

MALGX1AA-SAMP Constituent List:

MALGX1AC-MS Constituent List:

- MALGX1AD-MSD:
- MALJ81AA-BLK:
- MALJ81AC-ICS:

MALGX1AA-SAMP Calc Info:

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

September 12, 2014