

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 _____ Pages

Report Nbr: 58528

SDG Nbr	ORDER Nbr	CLIENT ID NUMBER	LOT Nbr	WORK ORDER	RPT DB ID	BATCH
W06635	X14-002	B2RH96	J3L030424-1	M2L231AA	9M2L2310	3337067
		B2RH94	J3L030424-2	M2L241AA	9M2L2410	3337067
		BR2WT2	J3L030425-1	M2L3C1AA	9M2L3C10	3337061
		B2T1D1	J3L030425-10	M2L3M1AA	9M2L3M10	3337061
		BR2WT5	J3L030425-2	M2L3D1AA	9M2L3D10	3337061
		BR2WT9	J3L030425-3	M2L3E1AA	9M2L3E10	3337061
		B2RX27	J3L030425-4	M2L3F1AA	9M2L3F10	3337061
		B2RX29	J3L030425-5	M2L3G1AA	9M2L3G10	3337061
		B2RX39	J3L030425-6	M2L3H1AA	9M2L3H10	3337061
		B2RX42	J3L030425-7	M2L3J1AA	9M2L3J10	3337061
X14-012	X14-012	B2RX82	J3L030425-8	M2L3K1AA	9M2L3K10	3337061
		B2T0L2	J3L030425-9	M2L3L1AA	9M2L3L10	3337061
		B2T6P3	J3L090403-1	M2MLK1AA	9M2MLK10	3353033
		B2T6P3	J3L090403-1	M2MLK3AC	9M2MLK30	4021024
		B2T6P8	J3L090403-2	M2MLL1AA	9M2MLL10	3353033

Comments:

Report Nbr: 58528

SDG Nbr	ORDER Nbr	CLIENT ID NUMBER	LOT Nbr	WORK ORDER	RPT DB ID	BATCH
W06635	X14-012	B2T6P8	J3L090403-2	M2MLL3AC	9M2MLL30	4021024
		B2T6R3	J3L090403-3	M2MLM1A	9M2MLM10	3353033
		B2T6R3	J3L090403-3	M2MLM3A	9M2MLM30	4021024
		B2T6T8	J3L180409-1	M2PMH1AA	9M2PMH10	3353033
		B2T6T8	J3L180409-1	M2PMH3AC	9M2PMH30	4021024

Comments:



Certificate of Analysis

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

January 24, 2014

Attention: Scot Fitzgerald

SAF Number : X14-002, X14-007, X14-012
 Date SDG Closed : December 17, 2013
 Number of Samples : Sixteen (16)
 Sample Type : Water
 SDG Number : W06635
 Data Deliverable : 30-Day / Summary

CASE NARRATIVE

I. Introduction

Between December 3, 2013 and December 17, 2013, sixteen 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>
B2RH96	M2L23	12/03/13	WATER
B2RH94	M2L24	12/03/13	WATER
B2RWT2	M2L3C	12/03/13	WATER
B2RWT5	M2L3D	12/03/13	WATER
B2RWT9	M2L3E	12/03/13	WATER
B2RX27	M2L3F	12/03/13	WATER
B2RX29	M2L3G	12/03/13	WATER
B2RX39	M2L3H	12/03/13	WATER
B2RX42	M2L3J	12/03/13	WATER
B2TX82	M2L3K	12/03/13	WATER
B2T0L2	M2L3L	12/03/13	WATER
B2T1D1	M2L3M	12/03/13	WATER

CH2M Hill Plateau Remediation Company
January 24, 2014

B2T6P3	M2MLK	12/06/13	WATER
B2T6P8	M2MLL	12/06/13	WATER
B2T6R3	M2MLM	12/06/13	WATER
B2T6T8	M2PMH	12/17/13	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.

The requested analyses were:

Gamma Spectroscopy

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

Liquid Scintillation Counting

Technetium-99 by method RL-LSC-013

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.

CH2M Hill Plateau Remediation Company
January 24, 2014

V. Comments

Gamma Spectroscopy

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

The LCS, batch blank, samples and sample duplicate (B2T6P3) results are within contractual requirements.

Liquid Scintillation Counting

Technetium-99 by method RL-LSC-013:

The LCS recovery for the original batch was below acceptance criteria. The batch was reanalyzed. Except as noted, the LCS, batch blank, samples, sample duplicate (B2T6P3) and sample matrix spike (B2T6P3) results are within contractual requirements.

Chemical Analysis

BATCH 3337061

Hexavalent Chromium by EPA method 7196A

The LCS, batch blank, samples, sample duplicate (B2RWT2) sample matrix spike (B2RWT2) and matrix spike duplicate (B2RWT2) results are within contractual requirements.

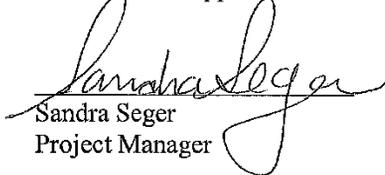
BATCH 3337067

Hexavalent Chromium by EPA method 7196A

The LCS, batch blank, samples, sample duplicate (B2RH94) sample matrix spike (B2RH94) and matrix spike duplicate (B2RH94) 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	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%. $Lc = (1.645 * \sqrt{2 * (BkgndCnt / BkgndCntMin) / SCntMin}) * (ConvFct / (Eff * Yld * Abn * Vol)) * IngrFct$. 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%. $MDC = (4.65 * \sqrt{(BkgndCnt / BkgndCntMin) / SCntMin} + 2.71 / SCntMin) * (ConvFct / (Eff * Yld * Abn * Vol)) * IngrFct$. 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/TotUncert	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.

TestAmerica Inc Report

1/24/2014 11:29:22 AM

Lab Code: TARL

FormNbr: R FormatType: FEAD Version: 05 Rpt Nbr: 58528 File Name: h:\Report\bld\l\Fead\Rad\W06635.Edd, h:\Report\bld\l\Fead\Rad\58528.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:			
9M2MLK10 B2T6P3			MW6-SBB-A1	X14-012	W06635					12/05/2013 12:45			
Batch 3353033 I-129	Analyte	CAS# 15046-84-1	Result 6.73E-02	Unit pCi/L	CntU 2S 9.8E-02	Qual 9.8E-02	MDA 2.06E-01	TrcYield 87.6	Method I129LL_SEP_LEPS	Alq Size 3.596E+00	Unit L	Analy Date/Time 01/08/2014 12:28	Act 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:			
9M2MLK30 B2T6P3			MW6-SBB-A1	X14-012	W06635					12/05/2013 12:45			
Batch 4021024 Tc-99	Analyte	CAS# 14133-76-7	Result 2.81E+00	Unit pCi/L	CntU 2S 3.8E+00	Qual 5.1E+00	MDA 9.12E+00	TrcYield 100.0	Method TC99_SEP_LSC	Alq Size 1.256E-01	Unit L	Analy Date/Time 01/24/2014 02:06	Act 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:			
9M2MLL10 B2T6P8			MW6-SBB-A1	X14-012	W06635					12/05/2013 12:09			
Batch 3353033 I-129	Analyte	CAS# 15046-84-1	Result -5.93E-03	Unit pCi/L	CntU 2S 1.3E-01	Qual 1.3E-01	MDA 2.26E-01	TrcYield 82.7	Method I129LL_SEP_LEPS	Alq Size 3.6134E+00	Unit L	Analy Date/Time 01/08/2014 17:13	Act 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:			
9M2MLL30 B2T6P8			MW6-SBB-A1	X14-012	W06635					12/05/2013 12:09			
Batch 4021024 Tc-99	Analyte	CAS# 14133-76-7	Result 1.35E+00	Unit pCi/L	CntU 2S 3.8E+00	Qual 5.0E+00	MDA 9.09E+00	TrcYield 100.0	Method TC99_SEP_LSC	Alq Size 1.259E-01	Unit L	Analy Date/Time 01/24/2014 05:12	Act 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:			
9M2MLM10 B2T6R3			MW6-SBB-A1	X14-012	W06635					12/05/2013 11:28			
Batch 3353033 I-129	Analyte	CAS# 15046-84-1	Result -1.03E-01	Unit pCi/L	CntU 2S 9.8E-02	Qual 9.8E-02	MDA 1.56E-01	TrcYield 90.5	Method I129LL_SEP_LEPS	Alq Size 3.69E+00	Unit L	Analy Date/Time 01/08/2014 17:14	Act 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:			
9M2MLM30 B2T6R3			MW6-SBB-A1	X14-012	W06635					12/05/2013 11:28			
Batch 4021024 Tc-99	Analyte	CAS# 14133-76-7	Result 4.72E+00	Unit pCi/L	CntU 2S 3.9E+00	Qual 5.2E+00	MDA 9.19E+00	TrcYield 100.0	Method TC99_SEP_LSC	Alq Size 1.252E-01	Unit L	Analy Date/Time 01/24/2014 06:14	Act 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:			
9M2PMH10 B2T6T8			MW6-SBB-A1	X14-012	W06635					12/16/2013 12:04			
Batch 3353033 I-129	Analyte	CAS# 15046-84-1	Result 3.09E-01	Unit pCi/L	CntU 2S 1.6E-01	Qual 1.6E-01	MDA 1.66E-01	TrcYield 91.4	Method I129LL_SEP_LEPS	Alq Size 3.6653E+00	Unit L	Analy Date/Time 01/08/2014 20:37	Act I

TestAmerica Inc
 rpt\FeadRadSummaryEdd 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.

1/24/2014 11:29:22 AM

TestAmerica Inc Report

Lab Code: TARL

FormNbr: R FormatType: FEAD Version: 05 Rpt Nbr: 58528 File Name: h:\Reportdb\edd\Feed\Rad\W06635.Edd, h:\Reportdb\edd\Feed\Rad\158528.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:		
9M2PMH30 B2T6T8			MW6-SBB-A1	X14-012	W06635					12/16/2013 12:04		
Batch 4021024	Analyte Tc-99	CAS# 14133-76-7	Result 1.05E+01	Unit pCi/L	CntU 2S 4.1E+00	TotU 2S 5.5E+00	MDA 9.20E+00	TrcYield 100.0	Method TC99_SEP_LSC	Unit L	Analy Date/Time 01/24/2014 07:16	Act 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, January 24, 2014
 FormNbr: R FormatType: FEAD VersionNbr: 05 File Name: h:\Report\bledd\FeadIVRad\W06635.Edd, h:\Report\bledd\FeadIVRad\58528.Ed
 Lab Code: TARL

TestAmerica Inc QC Blank Report

Lab Sample Id: M2P2D1AB Sdg/Rept Nbr: W06635 58528 Collection Date: 12/05/2013 12:45
 Client Id: NA Matrix: WATER WATER Sample On Date:
 Moisture/Solids%*: QC Type: BLK Received Date: 12/06/2013

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 # /	Analyt/	Result/	Qu-	Tracer	Spk Conc/	Analy	Aliq	Date/Time	RPD/	RER/	LCS	R
Qc Type	CAS#	Orig Rst	al	Yield	%Rec	Method	Size/	Analyzed	UCL	UCL	LCL/UCL	Typ
3353033	I-129	-6.63E-02	U	90.3		1129LL_SEP_L	3.9937E+00	01/08/2014				D
BLK	15046-84-1		9.4E-02				L	20:37				

TestAmerica Inc U Qual - Analyzed for, but the result is less than the Mdc or gamma scan did not identify the nuclide.
 rptFeadRadEdd v3.68 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, January 24, 2014

TestAmerica Inc QC Blank Report

Lab Code: TARL

FormNbr: R FormatType: FEAD VersionNbr: 05 File Name: h:\Report\bledd\Fead\IVRad\W06635.Edd, h:\Report\bledd\Fead\IVRad\58528.Ed

Lab Sample Id: M2V7J1AB Sdg/Rept Nbr: W06635 58528 Collection Date: 12/05/2013 12:45
 Client Id: NA Matrix: WATER WATER Sample On Date:
 Moisture/Solids%*: QC Type: BLK Received Date: 12/06/2013

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

Batch # /	Analyt/	Result/	Tot/Cnt	Qu-	Tracer	Spk Conc/	Analy	Aliq	Date/Time	RPD/	RER/	LCS	R
Qc Type	CAS#	Orig Ret	Uncert.2S	al	Yield	%Rec	Method	Size/	Analyzed	UCL	UCL	LCL/UCL	Typ
4021024	Tc-99	-1.47E+00	4.9E+00	U	100.0		TC99_SEP_LS	1.261E-01	01/24/2014				D
BLK	14133-76-7		3.6E+00					L	08:17				

TestAmerica Inc
 rptfheadRadEdd 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, January 24, 2014
 FormNbr: R FormatType: FEAD VersionNbr: 05 File Name: h:\Reportdb\edd\FeadIV\Rad\W06635.Edd, h:\Reportdb\edd\FeadIV\Rad\58528.Ed
 Lab Code: TARL

TestAmerica Inc QC Control Sample Report

Lab Sample Id: M2P2D1CS Sdg/Rept Nbr: W06635 58528 Collection Date: 12/05/2013 12:45
 Client Id: NA Matrix: WATER WATER Sample On Date:
 Moisture/Solids%*: QC Type: BS Received Date: 12/06/2013

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	Fsuffix	RType
	MW6-SBB-A19981								AM	H

Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Tot/Cnt	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCL	Type
3353033 BS	1-129 15046-84-1	7.87E+00	9.4E-01 9.4E-01		2.44E-01	91.4	9.87E+00 79.7	1129LL_SEP_L	3.9995E+00	01/08/2014 23:59			70 130	D D

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. 3

Friday, January 24, 2014
 FormNbr: R FormatType: FEAD VersionNbr: 05 File Name: h:\Report\bled\Fead\Rad\W06635.Edd, h:\Report\bled\Fead\Rad\58528.Ed
 Lab Code: TARL

TestAmerica Inc QC Duplicate Report

Lab Sample Id: M2MLK1DR Sdg/Rept Nbr: W06635 58528 Collection Date: 12/05/2013 12:45
 Client Id: B2T6P3 Matrix: WATER WATER Sample On Date:
 Moisture/Solids%*: QC Type: DUP Received Date: 12/06/2013

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	Fsuffix	RType					
X14-012	MW6-SBB-A19981								AI	H					
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncent 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCL	Typ
3353033	I-129	7.07E-02	pCi/L	9.2E-02	U	1.81E-01	87.8		1129LL_SEP_L	3.6707E+00	01/08/2014	4.9	0.1		D
DUP	15046-84-1	6.73E-02		9.2E-02						L	12:29	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. 5

Friday, January 24, 2014

TestAmerica Inc QC Duplicate Report

Lab Code: TARL

FormNbr: R FormatType: FEAD VersionNbr: 05 File Name: h:\Reportdb\edd\Fead\Rad\W06635.Edd, h:\Reportdb\edd\Fead\Rad\58528.Ed

Lab Sample Id: M2MLK3FR Sdg/Rept Nbr: W06635 58528 Collection Date: 12/05/2013 12:45
 Client Id: B2T6P3 Matrix: WATER WATER Sample On Date:
 Moisture/Solids%*: QC Type: DUP Received Date: 12/06/2013

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix	RType					
X14-012	MW6-SBB-A19981								AK	H					
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tof/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
4021024	Tc-99	3.09E+00	pCi/L	5.1E+00	U	9.08E+00	100.0		TC99_SEP_LS	1.262E-01	01/24/2014	9.5	0.1		D
DUP	14133-76-7	2.81E+00		3.8E+00						L	04:10	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, January 24, 2014
 FormNbr: R FormatType: FEAD VersionNbr: 05 File Name: h:\Report\bled\Fead\IVRad\W06635.Edd, h:\Report\bled\Fead\IVRad\58528.Ed
 Lab Code: TARL

TestAmerica Inc Qc Matrix Spike Report

Lab Sample Id: M2MLK3EW Sdg/Rept Nbr: W06635 58528 Collection Date: 12/05/2013 12:45
 Client Id: B2T6P3 Matrix: WATER WATER Sample On Date:
 Moisture/Solids%*: QC Type: MS Received Date: 12/06/2013

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	F Suffix	R Typ
X14-012	MW6-SBB-A19981								AJ	H

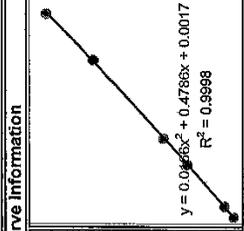
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCL	R Typ
4021024	Tc-99	2.85E+03	pCi/L	1.6E+02		9.12E+00	100.0	3.59E+03	TC99_SEP_LS	1.262E-01	01/24/2014			60	D
MS	14133-76-7			2.9E+01				79.4		L	03:08			140	

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. 7



Hexavalent Chromium - Water

Analyst: H.Rahavi	BATCH # 3337061
Start Date: 12/3/2013	SDG # W06635
Start Time: 16:30	Matrix Water
End Date: 12/3/2013	SOP Information RL-WC-003
End Time: 18:00	Revision 4
Analyst Signature:	Instrument Information Hach DR2010
Date: 12/3/2013	Wavelength: 540



Dilution ID # Cr-13-00447	LCS Information: Cr-13-00447
Prep Date: 12/03/13	Matrix Spike Information: Cr-13-00447
Concentration (mg/L) 50	12/03/13
Pipettor(s) 70,190	50
Volume Used (mL) 12/04/13	12/04/13
Final Volume (mL) 100,000	190
Expected Value (mg/L) 0.475	1.00
	100,000
	0.475
	0.713

Sample ID	Client ID	Type	Sample Volume (mL)	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	95.000	100.000	0.950		0.950	1	0.4714	0.4750	99.23%	0.471	U
n/a	n/a	ICB	95.000	100.000	0.001		0.001	1	0.0022	0.4750	95.16%	<MDL	U
n/a	n/a	CCV	95.000	100.000	0.912		0.912	1	0.4520	0.4750		0.452	U
n/a	n/a	CCB	95.000	100.000	0.002		0.002	1	0.0027	0.4750		<MDL	U
M2L321AA	n/a	BLK	95.000	100.000	0.005		0.005	1	0.0041	0.4750	100.84%	<MDL	U
M2L321AC	n/a	LCS	95.000	100.000	0.965		0.965	1	0.4790	0.4750		0.479	U
M2L3C1AA	B2RWT2	Sample	95.000	100.000	0.015		0.015	1	0.0089	0.4750		0.009	U
M2L3C1AC-S	B2RWT2-MS	MS*	95.000	100.000	1.554		1.554	1	0.7855	0.7500	103.55%	0.777	U
M2L3C1AD-D	B2RWT2-MSD	MSD*	95.000	100.000	0.015		0.015	1	0.0089	0.4750	102.85%	0.771	U
M2L3C1AE-X	B2RWT2-DUP	Duplicate	95.000	100.000	0.013		0.013	1	0.0079	0.4750	0.00%	0.009	U
M2L3D1AA	B2RWT5	Sample	95.000	100.000	0.010		0.010	1	0.0065	0.4750		<MDL	U
M2L3E1AA	B2RWT9	Sample	95.000	100.000	0.009		0.009	1	0.0060	0.4750		<MDL	U
M2L3F1AA	B2RX27	Sample	95.000	100.000	0.006		0.006	1	0.0046	0.4750		<MDL	U
M2L3G1AA	B2RX29	Sample	95.000	100.000	0.908		0.908	1	0.4500	0.4750	94.73%	0.450	U
n/a	n/a	CCV	95.000	100.000	0.001		0.001	1	0.0022	0.4750		<MDL	U
n/a	n/a	CCB	95.000	100.000	0.001		0.001	1	0.0022	0.4750		<MDL	U

HR
Zed

*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. 6 1/2013

12/3/2013

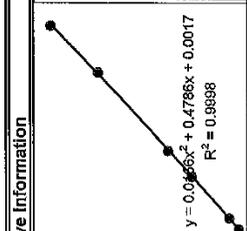


Hexavalent Chromium - Water

35
SKS
12-4-13

Analyst: H.Rahavi	Batch # 3337067
Start Date: 12/3/2013	SDG # W06094 W06094
Start Time: 18:00	Matrix Water
End Date: 12/3/2013	SOP Information RL-WC-003
End Time: 18:50	Revision 4
Analyst Signature:	Instrument Information Hach DR2010
Date: 12/03/13	Wavelength: 540

Calibration Curve Information
R Squared 0.9998
2nd^o Coeff (a) 0.0166
1st^o Coeff (b) 0.4786
Constant (c) 0.0017
Intercept -0.0036
MDL (mg/L) 0.008



Amount (mL)	Conc. (mg/L)	ABS.
Blank	0.000	0.000
Std. 1	0.100	0.048
Std. 2	0.500	0.238
Std. 3	0.750	0.356
Std. 4	1.500	0.713
Std. 5	2.000	1.431
Standard Volume (mL):	0.950	1.854
Date of Curve:	12/3/2013	95.000

Dilution ID #	Calibration Information:	LCS Information:	Matrix Spike Information:
Prep Date: 12/03/13	Cr-13-00447	Cr-13-00447	Cr-13-00447
Expiration Date: 12/04/13	12/03/13	12/03/13	12/03/13
Pipettor(s)	50	50	50
Concentration (mg/L)	12/04/13	12/04/13	12/04/13
Volume Used (mL)	70,190	190	190
Final Volume (mL)	100.000	100.000	100.000
Expected Value (mg/L)	0.475	0.475	0.713

Sample ID	Client ID	Type	Sample Volume (mL)	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	95.000	100.000	0.950		0.950	1	0.4714	0.4750	99.23%	0.471	U
n/a	n/a	ICB	95.000	100.000	0.001		0.001	1	0.0022			<MDL	U
n/a	n/a	CCV	95.000	100.000	0.905		0.905	1	0.4484	0.4750	94.41%	0.448	U
n/a	n/a	CCB	95.000	100.000	0.001		0.001	1	0.0022			<MDL	U
M2L4G1AA	n/a	BLK	95.000	100.000	0.001		0.001	1	0.0022			<MDL	U
M2L4G1AC	n/a	LCS	95.000	100.000	0.952		0.952	1	0.4724	0.4750	99.45%	0.472	U
M2L241AA	B2RH94'	Sample	95.000	100.000	0.014		0.014	1	0.0084			0.008	U
M2L241AC-S	B2RH94'-MS	MS*	95.000	100.000	1.449		1.449	1	0.7300	0.7500	96.22%	0.722	U
M2L241AD-D	B2RH94'-MSD	MSD*	95.000	100.000	1.459		1.459	1	0.7353	0.7500	96.92%	0.727	U
M2L241AE-X	B2RH94'-DUP	Duplicate	95.000	100.000	0.009		0.009	1	0.0060			<MDL	U
M2L231AA	B2RH96'	Sample	47.500	50.000	0.009		0.009	1	0.0060			<MDL	U
			95.000	100.000				1					
			95.000	100.000				1					
			95.000	100.000				1					
n/a	n/a	CCV	95.000	100.000	0.903		0.903	1	0.4474	0.4750	94.19%	0.447	U
n/a	n/a	CCB	95.000	100.000	0.000		0.000	1	0.0017			<MDL	U

Zwd ✓

*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. 6 1/2013

Lot No., Due Date: J3L090403, J3L180409; 01/20/2014
Client, Site: 384868; A210440 HANFORD HANFORD
QC Batch No., Method Test: 3353033; RGAMLEPS Gamma by LEPS
SDG, Matrix: W06635; 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 *1/9/14*



Data Review Checklist
RADIOCHEMISTRY
 Second Level Review

Batch Number: 3353083

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: CRL = 0.5 pCi/l

Second Level Review: *Shondoufan* Date: 1/10/14

Lot No., Due Date:	J3L090403, J3L180409; 01/20/2014
Client, Site:	384868; A210440 HANFORD HANFORD
QC Batch No., Method Test:	4021024; RTC99 Tc-99 by LSC
SDG, Matrix:	W06635; WATER

1.0 ICOC	
1.1 Is the ICOC page complete; includes all applicable analysis, dates, SOP numbers, and revisions?	Yes No N/A <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
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 <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
2.2 Are the QC appropriate for the analysis included in the batch?	Yes No N/A <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
2.3 Is the Analytical Batch Worksheet complete; includes as appropriate, volumes, count times, etc?	Yes No N/A <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
2.4 Does the Worksheets include a Tracer Vial label for each sample?	Yes No N/A <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
3.0 QC & Samples	
3.1 Is the blank results, yield, and MDA within contract limits?	Yes No N/A <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
3.2 Is the LCS result, yield, and MDA within contract limits?	Yes No N/A <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
3.3 Are the MS/MSD results, yields, and MDA within contract limits?	Yes No N/A <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
3.4 Are the duplicate result, yields, and MDAs within contract limits?	Yes No N/A <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
3.5 Are the sample yields and MDAs within contract limits?	Yes No N/A <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
4.0 Raw Data	
4.1 Were results calculated in the correct units?	Yes No N/A <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
4.2 Were analysis volumes entered correctly?	Yes No N/A <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
4.3 Were Yields entered correctly?	Yes No N/A <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
4.4 Were spectra reviewed/meet contractual requirements?	Yes No N/A <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
4.5 Were raw counts reviewed for anomalies?	Yes No N/A <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
5.0 Other	
5.1 Are all nonconformances included and noted?	Yes No N/A <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
5.2 Are all required forms filled out?	Yes No N/A <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
5.3 Was the correct methodology used?	Yes No N/A <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
5.4 Was transcription checked?	Yes No N/A <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
5.5 Were all calculations checked at a minimum frequency?	Yes No N/A <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
5.6 Are worksheet entries complete and correct?	Yes No N/A <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
6.0 Comments on any No response: NCM 10-25904	


First Level _____ **Date** 1/24/14



THE LEADER IN ENVIRONMENTAL TESTING

Data Review Checklist
RADIOCHEMISTRY
 Second Level Review

Batch Number: 4021024

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: See NCM 10-25904

Second Level Review: *Sandra Seger* Date: 1-24-14

**Clouseau
Nonconformance Memo**



NCM #: 10-25904 NCM Initiated By: Tom McGinnis Date Opened: 01/24/2014 Date Closed:	Classification: Deficiency Status: PMREVIEW Production Area: Environmental - Sep Tests: Tc-99 by LSC Lot #'s (Sample #'s): J3L090403 (1,2,3), J3L180409 (1), J4A210000 (24), QC Batches: 4021024,
Nonconformance: Batch Result Out of Limits Subcategory: LCS result outside acceptance limits	

Problem Description / Root Cause

<u>Name</u>	<u>Date</u>	<u>Description</u>
Tom McGinnis	01/24/2014	The LCS recovery for the initial analysis batch 4014025 was below acceptance criteria. The final results for reanalysis batch 4021024 meet acceptance criteria.

Corrective Action

<u>Name</u>	<u>Date</u>	<u>Corrective Action</u>
Tom McGinnis	01/24/2014	The PM was notified of the batch deficiency.

Client Notification Summary

<u>Client</u>	<u>Project Manager</u>	<u>Notified</u>	<u>Response</u>	<u>How Notified</u>	<u>Note</u>
			<u>Response</u>		<u>Response Note</u>

Quality Assurance Verification

<u>Verified By</u>	<u>Due Date</u>	<u>Status</u>	<u>Notes</u>
			This section not yet completed by QA.

Approval History

<u>Date Approved</u>	<u>Approved By</u>	<u>Position</u>
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JANUARY 24, 2014



Richland Laboratory
Data Review Check List
Hexavalent Chromium

Batch Number(s):	3337061	Lab Sample Numbers or SDG:	W06635		
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 ₆ percent recovery within 75-125%?			✓	✓	
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 H. Rahavi Date 12/04/13 2nd Review John 2/20/14 Date 12/4/13

JANUARY 24, 2014



Richland Laboratory
Data Review Check List
Hexavalent Chromium

Batch Number(s):	3337067	Lab Sample Numbers or SDG:	W06634 W06635 S16 12-4-13	
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%?			✓	✓
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 M. Rahavi Date 12/04/13 2nd Review [Signature] Date 12/4/14

CH2M Hill Plateau Remediation Company		C.O.C. # X14-002-175	
Collector J. Aguilar		Page 1 of 1	
SAF No. X14-002	Contact/Requester Karen Waters-Husted	Telephone No. 509-376-4650	
Project Title IBCS-ADD, OCTOBER 2013	Sampling Origin Hanford Site	Purchase Order/Charge Code 303269ES20	
Shipped To (Lab) Waste Sampling & Characterization	Logbook No. HNF-N-506 59 / 30	Ice Chest No. N/A	
Protocol CERCLA	Method of Shipment GOVERNMENT VEHICLE	Bill of Lading/Air Bill No. N/A	
	Priority: 31 Days	Offsite Property No. N/A	
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 <input checked="" type="checkbox"/> No <input type="checkbox"/> 100-Area Generator Knowledge Information Form applies. The CACN for well analytical work at WSCF is unknown. It will be provided at a later date.			
Sample No.	Filter *	Date	Time
B2RH96	Y	12-3-13	1132
B2RH94	N	12-3-13	1132
			500
			KS 12/3/13
			malay
			malay
			Preservative
			24 Hours
			24 Hours
			Cool-4C
			Cool-4C

33030424
 W06635
 SKS 12-4-13



TRM-14-018

Relinquished By J. Aguilar	Date/Time 12-3-13 1335	Received By J. Bork	Date/Time 12-3-13 1335
Relinquished By	Date/Time	Received By	Date/Time
Relinquished By	Date/Time	Received By	Date/Time
Relinquished By	Date/Time	Received By	Date/Time
FINAL SAMPLE DISPOSITION		Disposal Method (e.g., Return to customer, per lab procedure, used in process)	
PRINTED O 11/5/2013		A-6004-842 (REV 2)	

Matrix *

S	= Soil	DS	= Drum Solids
SE	= Sediment	DL	= Drum Liquids
SO	= Solid	T	= Tissue
SL	= Sludge	WT	= Wipe
W	= Water	L	= Liquid
O	= Oil	V	= Vegetation
A	= Air	X	= Other

JANUARY 24, 2014

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Sample Check-in List

Date/Time Received: 12-3-13/1355 Container GM Screen Result: (Airlock) 40 cpm Initials [B]
Sample GM Screen Result (Sample Receiving) 60 cpm Initials [B]

Client: Plw SDG #: W096635 SAF #: X14-002 NA []
12-4-13

Lot Number: J5L030424

Chain of Custody # X14-002-175

Shipping Container ID or Air Bill Number: hand deliv. NA [SKS]

Samples received inside shipping container/cooler/box Yes [B] 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 [B]
2. Custody Seals dated and signed? Yes [] No [] No Custody Seal [B]
3. Cooler temperature: 3.1 °C Ice NA []
4. Vermiculite/packing materials is NA [B] Wet [] Dry []

Item 5 through 16 for samples. Initial appropriate response.

- 5. Chain of Custody record present? Yes [B] No []
6. Number of samples received (Each sample may contain multiple bottles): 2
7. Containers received: 1x 60 mL AG; 1x 500 mL AG

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

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

- 12. Sample pH appropriate for analysis requested Yes [SKS] No [] NA [B] SKS 12-4-13
(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 [B]
14. Description of anomalies (include sample numbers): NA [B]

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

16. Additional Information: N/A

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

Sample Check-in List completed by Sample Custodian:
Signature: [Signature] Date: 12-3-13

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

[B] No action necessary; process as is
Project Manager: [Signature] Date: 12-3-13

CH2MHill Plateau Remediation Company		C.O.C.# X14-007-147		Page 1 of 1	
CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					
Collector	D Floyd	Contact/Requester	Karen Waters-Husted	Telephone No.	509-376-4650
SAF No.	X14-007	Sampling Origin	Hanford Site	Purchase Order/Charge Code	303064ES20
Project Title	AQUIFER TUBES, NOVEMBER 2013	Logbook No.	HNF-N-506	Ice Chest No.	N/A
Shipped To (Lab)	Waste Sampling & Characterization	Method of Shipment	GOVERNMENT VEHICLE	Bill of Lading/Air Bill No.	N/A
Protocol	SURV	Priority:	31 Days	Offsite Property No.	N/A
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 <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes Site Wide Generator Knowledge Information Form applies. The CACN for analytical work at WSCF is 403899. FY13 and FY14 samples cannot be in the same SDG.			
Sample No.	B2RWT2	Filter	* W	Date	12/3/13
				Time	1219
		No/Type Container	1x500-mL aG		
		Sample Analysis	7196_CR6: COMMON <i>malice</i>		
		Holding Time	24 Hours		
		Preservative	Cool-4C		

33030425
 W0425

 J3L030425

Requisitioned By	D. Floyd	Print	Sign	Date/Time	12/3/13	1450	Matrix *
Requisitioned By		Print	Sign	Date/Time			S = Soil SE = Sediment SO = Solid SL = Sludge W = Water O = Oil A = Air
Requisitioned By		Print	Sign	Date/Time			DS = Drum Solids DL = Drum Liquids T = Tissue WI = Wipe L = Liquid V = Vegetation X = Other
Requisitioned By		Print	Sign	Date/Time			
FINAL SAMPLE DISPOSITION				Disposal Method (e.g., Return to customer, per lab procedure, used in process)		Date/Time	

CH2M HILL Plateau Remediation Company		C.O.C. # X14-007-149	
Collector D. Floyd		Page 1 of 1	
SAF No. X14-007		Contact/Requester Karen Waters-Husted	Telephone No. 509-376-4650
Project Title AQUIFER TUBES, NOVEMBER 2013		Sampling Origin Hanford Site	Purchase Order/Charge Code 303064ES20
Shipped To (Lab) Waste Sampling & Characterization		Logbook No. HNF-N-506 62150	Ice Chest No. N/A
Protocol SURV		Method of Shipment GOVERNMENT VEHICLE	Bill of Lading/Air Bill No. N/A
POSSIBLE SAMPLE HAZARDS/REMARKS TARL 620, 12/13		Priority: 31 Days	Offsite Property No. N/A
SPECIAL INSTRUCTIONS Site Wide Generator Knowledge Information Form applies. The CACN for analytical work at WSCF is 403899. FY13 and FY14 samples cannot be in the same SDG.		Hold Time	Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Sample No.	Filter	* Date	Time
B2RWT5	N	W 12/13/13	1206
No/Type Container		Sample Analysis	Holding Time
1x500-mL aG		7196 CR6: COMMON	24 Hours
			Preservative
			Cool-4C

336030425
W02635

Reinquished By D. Floyd	Print	Sign	Date/Time 12/13/13	Received By J. Smith	Print	Sign	Date/Time 12/13/13
Reinquished By				Received By			
Reinquished By				Received By			
Reinquished By				Received By			

Matrix *

S	=	Soil	DS	=	Drum Solids
SE	=	Sediment	DL	=	Drum Liquids
SO	=	Solid	T	=	Tissue
SL	=	Sludge	WI	=	Wipe
W	=	Water	L	=	Liquid
O	=	Oil	V	=	Vegetation
A	=	Air	X	=	Other

Disposal Method (e.g., Return to customer, per lab procedure, used in process)

Disposed By

Date/Time

CH2M Hill Plateau Remediation Company		C.O.C.# X14-007-152	
CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			
Collector D. Floyd	Contact/Requester Karen Waters-Husted	Telephone No. 509-376-4650	Page 1 of 1
SAF No. X14-007	Sampling Origin Hanford Site	Purchase Order/Charge Code 303064ES20	
Project Title AQUIFER TUBES, NOVEMBER 2013	Logbook No. HNF-N-506 62/50	Ice Chest No. N/A	
Shipped To (Lab) Waste Sampling & Characterization	Method of Shipment GOVERNMENT VEHICLE	Bill of Lading/Air Bill No. N/A	
Protocol SURV	Priority: 31 Days	Offsite Property No. N/A	
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)		Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> SPECIAL INSTRUCTIONS Hold Time Site Wide Generator Knowledge Information Form applies. The CACN for analytical work at WSCF is 403899. FY13 and FY14 samples cannot be in the same SDG.	
Sample No. B2RWT9	Filter * N	Date 12/3/13	Time 12:51
No/Type Container 1x500-mL aG	Sample Analysis COMMON	Holding Time 24 Hours	Preservative Cool-4C

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W00035

Relinquished By D. Floyd	Print <i>[Signature]</i>	Sign <i>[Signature]</i>	Received By J. Beck	Print THUC	Sign <i>[Signature]</i>	Date/Time 12/3/13 1450	Matrix * S = Soil DS = Drum Solids SE = Sediment DL = Drum Liquids SO = Solid T = Tissue SL = Sludge WI = Wipe W = Water L = Liquid O = Oil V = Vegetation A = Air X = Other
Relinquished By	Date/Time 12/3/13 1450	Date/Time 12/3/13 1450	Received By	Date/Time	Date/Time		
Relinquished By	Date/Time	Date/Time	Received By	Date/Time	Date/Time		
Relinquished By	Date/Time	Date/Time	Received By	Date/Time	Date/Time		
FINAL SAMPLE DISPOSITION			Disposal Method (e.g., Return to customer, per lab procedure, used in process)			Date/Time	

CH2M Hill Plateau Remediation Company		C.O.C. # X14-007-191						
Collector O. Floyd		Contact/Requester Karen Waters-Husted	Telephone No. 509-376-4650					
SAF No. X14-007		Sampling Origin Hanford Site	Purchase Order/Charge Code 303064ES20					
Project Title AQUIFER TUBES, NOVEMBER 2013		Logbook No. HNF-N-506 62/50	Ice Chest No. N/A					
Shipped To (Lab) Waste Sampling & Characterization		Method of Shipment GOVERNMENT VEHICLE	Bill of Lading/Air Bill No. N/A					
Protocol SURV		Priority: 31 Days	Offsite Property No. N/A					
<p>POSSIBLE SAMPLE HAZARDS/REMARKS ** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CRF but are not releasable per DOE Order 5400.5 (1990/1993)</p>		<p>SPECIAL INSTRUCTIONS Site Wide Generator Knowledge Information Form applies. The CACN for analytical work at WSCF is 403899. FY13 and FY14 samples cannot be in the same SDG.</p>	Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>					
Sample No.	Filter	#	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B2RX27	N	W	12/3/13	0943	1x500-mL aG	7196_CR6: COMMON	24 Hours	Cool-4C

SLOBOVINS
WATERS

mal3f

Relinquished By O. Floyd	Print <i>[Signature]</i>	Sign	Date/Time 12/3/13	1450	Received By J. Souda	Print <i>[Signature]</i>	Sign	Date/Time 12/3/13	1450
Relinquished By			Date/Time		Received By			Date/Time	
Relinquished By			Date/Time		Received By			Date/Time	
Relinquished By			Date/Time		Received By			Date/Time	
FINAL SAMPLE DISPOSITION		Disposal Method (e.g., Return to customer, per lab procedure, used in process)			Disposed By		Date/Time		

Matrix *

S	=	Soil	DS	=	Drum Solids
SE	=	Sediment	DL	=	Drum Liquids
SO	=	Solid	T	=	Tissue
SL	=	Sludge	WI	=	Wipe
W	=	Water	L	=	Liquid
O	=	Oil	V	=	Vegetation
A	=	Air	X	=	Other

CH2M Hill Plateau Remediation Company		C.O.C. # X14-007-192	
CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			
Collector	O. Floyd	Contact/Requester	Karen Waters-Husted
SAF No.	X14-007	Sampling Origin	Hanford Site
Project Title	AQUIFER TUBES, NOVEMBER 2013	Logbook No.	HNF-N-506 <i>62/50</i>
Shipped To (Lab)	Waste Sampling & Characterization	Method of Shipment	GOVERNMENT VEHICLE
Protocol	SURV	Priority:	31 Days PRIORITY
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 <input checked="" type="checkbox"/> No <input type="checkbox"/> Site Wide Generator Knowledge Information Form applies. The CACN for analytical work at WSCF is 403899. FY13 and FY14 samples cannot be in the same SDG.	
Sample No.	Filter * Date Time	No/Type Container	Sample Analysis
B2RX29	N W 12/3/13 0958	1x500-mL aG	7196_CR6: COMMON <i>mal36</i>
			Holding Time
			24 Hours
			Preservative
			Cool-4C

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W000635*

Relinquished By	Print Sign	Date/Time	Received By	Print Sign	Date/Time
O. Floyd	<i>[Signature]</i>	12/3/13 1450	S. Scott	<i>[Signature]</i>	12/3/13 1450
Relinquished By			Received By		
Relinquished By			Received By		
Relinquished By			Received By		

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

- Matrix *
- S = Soil
 - SE = Sediment
 - SO = Solid
 - W = Sludge
 - O = Water
 - A = Air
 - DS = Drum Solids
 - DL = Drum Liquids
 - T = Tissue
 - WI = Wipe
 - L = Liquid
 - V = Vegetation
 - X = Other

CH2M Hill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		C.O.C. # X14-007-198	
				Page 1 of 1	
Collector	D. Floyd	Contact/Requester	Karen Waters-Husted	Telephone No.	509-376-4650
SAF No.	X14-007	Sampling Origin	Hanford Site	Purchase Order/Charge Code	303064ES20
Project Title	AQUIFER TUBES, NOVEMBER 2013	Logbook No.	HNF-N-506 62/50	Ice Chest No.	N/A
Shipped To (Lab)	Waste Sampling & Characterization	Method of Shipment	GOVERNMENT VEHICLE	Bill of Lading/Air Bill No.	N/A
Protocol	SURV	Priority:	31 Days	Offsite Property No.	N/A
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 <input checked="" type="checkbox"/> No <input type="checkbox"/> Site Wide Generator Knowledge Information Form applies. The CACN for analytical work at WSCF is 403899. FY13 and FY14 samples cannot be in the same SDG.			
Sample No.	Filter	Date	Time	No/Type Container	Sample Analysis
B2RX39	N	12/13/13	1113	1x500-mL aG	7196_CR6: COMMON mal3H
				Holding Time	Preservative
				24 Hours	Cool-4C

*Suzanne
wda35*

Relinquished By	D. Floyd	Print	DF	Sign		Received By	J. Scott York-Taur	Print	JY	Sign		Date/Time	12/13/13	1450	Matrix *
Relinquished By						Received By						Date/Time			S = Soil SE = Sediment SO = Solid SL = Sludge W = Water O = Oil A = Air DS = Drum Solids DL = Drum Liquids T = Tissue WI = Wipe L = Liquid V = Vegetation X = Other
Relinquished By						Received By						Date/Time			
Relinquished By						Received By						Date/Time			
FINAL SAMPLE DISPOSITION Disposal Method (e.g., Return to customer, per lab procedure, used in process)												Disposed By		Date/Time	

CH2M Hill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				C.O.C. # X14-007-200	
Collector D. Floyd		Contact/Requester Karen Waters-Husted	Telephone No.	509-376-4650		Page 1 of 1	
SAF No. X14-007		Sampling Origin Hanford Site	Purchase Order/Charge Code	303064ES20			
Project Title AQUIFER TUBES, NOVEMBER 2013		Logbook No. HNF-N-506 62/50	Ice Chest No.	N/A			
Shipped To (Lab) Waste Sampling & Characterization		Method of Shipment GOVERNMENT VEHICLE	Bill of Lading/Air Bill No.	N/A			
Protocol SURV		Priority: 31 Days	Offsite Property No.	N/A			
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 Site Wide Generator Knowledge Information Form applies. The CACN for analytical work at WSCF is 403899. FY13 and FY14 samples cannot be in the same SDG.		Hold Time		Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Sample No.	Filter	Date	Time	No./Type Container	Sample Analysis	Holding Time	Preservative
B2RX42	N	12/3/13	1053	1x500-mL aG	7196_CR6: COMMON mal35	24 Hours	Cool-4C

*330300125
w davis*

Relinquished By D. Floyd	Print [Signature]	Sign	Received By J. Smith	Print [Signature]	Sign	Date/Time 12/3/13 1450	Matrix *
Relinquished By			Received By			12/3/13 1450	S = Soil SE = Sediment SO = Solid SL = Sludge W = Water O = Oil A = Air
Relinquished By			Received By				DS = Drum Solids DL = Drum Liquids T = Tissue WI = Wipe L = Liquid V = Vegetation X = Other
Relinquished By			Received By				

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

CH2MHill Plateau Remediation Company		C.O.C.# X14-007-220	
Collector <i>D. Floyd</i>		Page 1 of 1	
SAF No. X14-007	Contact/Requester Karen Waters-Husted	Telephone No. 509-376-4650	
Project Title AQUIFER TUBES, NOVEMBER 2013	Sampling Origin Hanford Site	Purchase Order/Charge Code 303064ES20	
Shipped To (Lab) Waste Sampling & Characterization	Logbook No. HNF-N-506 62 / 50	Ice Chest No. N/A	
Protocol SURV	Method of Shipment GOVERNMENT VEHICLE	Bill of Lading/Air Bill No. N/A	
	Priority: 31 Days	Offsite Property No. N/A	
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 <input checked="" type="checkbox"/> No <input type="checkbox"/> Site Wide Generator Knowledge Information Form applies. The CAGN for analytical work at WSCF is 403899. FY13 and FY14 samples cannot be in the same SDG.			
Sample No. B2RX82	Filler * N	Time 12/31/13 1021	No/Type Container 1x500-mL aG
		Sample Analysis <i>mal3x</i>	Holding Time 24 Hours
			Preservative Cool-4C

*530800425
W06435*

Relinquished By <i>D. Floyd</i>	Print <i>SOO</i>	Sign	Date/Time 12/31/13 1450	Received By <i>J. Beck</i>	Print <i>J. Beck</i>	Sign <i>TALC</i>	Date/Time 12/31/13 1450	Matrix * S = Soil DS = Drum Solids SE = Sediment DL = Drum Liquids SO = Solid T = Tissue SL = Sludge WI = Wipe W = Water L = Liquid O = Oil V = Vegetation A = Air X = Other
Relinquished By			Date/Time	Received By			Date/Time	
Relinquished By			Date/Time	Received By			Date/Time	
Relinquished By			Date/Time	Received By			Date/Time	
Disposal Method (e.g., Return to customer, per lab procedure, used in process)								Disposed By
FINAL SAMPLE DISPOSITION								Date/Time

CH2M Hill Plateau Remediation Company		C.O.C.# X14-007-340	
CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			
Collector <i>D. Floyd</i>	Contact/Requester Karen Waters-Husted	Telephone No. 509-376-4650	Page 1 of 1
SAF No. X14-007	Sampling Origin Hanford Site	Purchase Order/Charge Code 303064ES20	
Project Title AQUIFER TUBES, NOVEMBER 2013	Logbook No. HNF-N-506 <i>62/50</i>	Ice Chest No. N/A	
Shipped To (Lab) Waste Sampling & Characterization	Method of Shipment GOVERNMENT VEHICLE	Bill of Lading/Air Bill No. N/A	
Protocol SURV	Priority: 31 Days	Offsite Property No. N/A	
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)		Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> SPECIAL INSTRUCTIONS Hold Time Site Wide Generator Knowledge Information Form applies. The CACN for analytical work at WSCF is 403899. FY13 and FY14 samples cannot be in the same SDG.	
Sample No.	Filter *	Date	Time
B2T0L2	N	12/3/13	1053
			No/Type Container
			1x500-mL aG
			7196_CR6: COMMON
			Sample Analysis
			<i>metal</i>
			Holding Time
			24 Hours
			Preservative
			Cool-4C

52000425
W06655

Reinquired By <i>D. Floyd</i>	Print <i>DF</i>	Sign <i>DF</i>	Date/Time 12/3/13 1450
Reinquired By	Print	Sign	Date/Time
			12/3/13 1450
Reinquired By	Print	Sign	Date/Time
Reinquired By	Print	Sign	Date/Time

Received By	Print	Sign	Date/Time
<i>J. Sullivan</i>		<i>J. Sullivan</i>	12/3/13 1450
Received By	Print	Sign	Date/Time
Received By	Print	Sign	Date/Time

Matrix *	S	= Soil	DS	= Drum Solids
	SE	= Sediment	DL	= Drum Liquids
	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)	Date/Time

CH2M Hill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		C.O.C.# X14-007-355
Collector D. Floyd	Contact/Requester Karen Waters-Husted	Telephone No.	509-376-4650	
SAF No. X14-007	Sampling Origin Hanford Site	Purchase Order/Charge Code	303064ES20	
Project Title AQUIFER TUBES, NOVEMBER 2013	Logbook No. HNF-N-506 42 / 50	Ice Chest No.	N/A	
Shipped To (Lab) Waste Sampling & Characterization	Method of Shipment GOVERNMENT VEHICLE	Bill of Lading/Air Bill No.	N/A	
Protocol SURV	Priority: 31 Days	Offsite Property No.	N/A	
POSSIBLE SAMPLE HAZARDS/REMARKS		SPECIAL INSTRUCTIONS		
*** 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)		Site Wide Generator Knowledge Information Form applies. The CACN for analytical work at WSCF is 403899. FY13 and FY14 samples cannot be in the same SDG.		
Sample No.	Filter	Date	Time	No./Type Container
B21D1	N	12/13/13	0730	1x500-mL aG
Sample Analysis		Holding Time		
m a l c s m		24 Hours		
Preservative		Cool-4C		

SLOSONAS
WOLFESS

Relinquished By D. Floyd	Print [Signature]	Sign	Received By [Signature]	Print [Signature]	Sign	Date/Time 12/13/13 1450	Matrix *
Relinquished By	Date/Time 12/13/13 1450	Received By	Date/Time	Received By	Date/Time		S = Soil SE = Sediment SO = Solid SL = Sludge W = Water O = Oil A = Air
Relinquished By	Date/Time	Received By	Date/Time	Received By	Date/Time		DS = Drum Solids DL = Drum Liquids T = Tissue WI = Wipe L = Liquid V = Vegetation X = Other
Relinquished By	Date/Time	Received By	Date/Time	Received By	Date/Time		
FINAL SAMPLE DISPOSITION		Disposal Method (e.g., Return to customer, per lab procedure, used in process)		Disposed By		Date/Time	

JANUARY 24, 2014

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Sample Check-in List

Date/Time Received: 12-3-13 / 1450 Container GM Screen Result: (Airlock) 40 cpm Initials [B]
Sample GM Screen Result (Sample Receiving) 40 cpm Initials [B]

Client: PKW SDG #: W06635 SAF #: X14-007 NA []

Lot Number: 336030425

Chain of Custody # X14-007-147; 149; 152; 191; 192; 198; 200; 220; 340; 355

Shipping Container ID or Air Bill Number: hand deliv. NA []

Samples received inside shipping container/cooler/box Yes [B] 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 [B]
2. Custody Seals dated and signed? Yes [] No [] No Custody Seal [B]
3. Cooler temperature: 3.8 °C Ice NA []
4. Vermiculite/packing materials is NA [B] Wet [] Dry []

- Item 5 through 16 for samples. Initial appropriate response.
5. Chain of Custody record present? Yes [B] No []
6. Number of samples received (Each sample may contain multiple bottles): 10
7. Containers received: 10 x 500 mL G

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

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

- 12. Sample pH appropriate for analysis requested Yes [B] No [] NA [B] SKS 12-4-13
(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 [B]
14. Description of anomalies (include sample numbers): NA [B]

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

- 16. Additional Information: W/A

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

Sample Check-in List completed by Sample Custodian:
Signature: [Signature] Date: 12-3-13

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

[B] No action necessary; process as is
Project Manager: [Signature] Date: 12-4-13

CH2MHill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		C.O.C. # X14-012-070 Page 1 of 1
Collector <i>Scott King</i> X14-012	Contact/Requester Karen Waters-Husted Hanford Site	Telephone No. 509-376-4650	Purchase Order/Charge Code 303064ES20	
Project Title AQUIFER TUBES, DECEMBER 2013	Logbook No. HNF-N-50602 / 54	Ice Chest No. N/A	Bill of Lading/Air Bill No. N/A	
Shipped To (Lab) TestAmerica Incorporated, Richland	Method of Shipment GOVERNMENT VEHICLE	Priority: 30 Days	Offsite Property No. N/A	Total Activity Exemption: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
PROTOCOL SURV PRIORITY				
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 Site Wide Generator Knowledge Information Form applies. The CACN for analytical work at WSCF is 403899. FY13 and FY14 samples cannot be in the same SDG.				
Sample No.	Filter *	Date	Time	No/Type Container
B2T6P3	N	12-5-13	1245	1x20-mL P
B2T6P3	N	12-5-13	1245	2x4-L G/P
B2T6P3	N	12-5-13	1245	3x1-L G/P
Sample Analysis		Holding Time		Preservative
Activity Scan I129LL_SEP_LEPS_GS_LL: COMMON		6 Months		None
TC99_SEP_LSC: COMMON		6 Months		None
manuk		6 Months		HCl to pH <2

530090403
 WSD6435

 J3L090403

Relinquished By <i>Scott King</i> Relinquished By SSU-1	Print Sign Date/Time 12/5/13 1435	Received By SSU-1 Received By Received By Received By	Print Sign Date/Time 12/5/13/1435 12/6/13 1030 12/6/13 1155	Matrix * S = Soil SE = Sediment SO = Solid SL = Sludge W = Water O = Oil A = Air DS = Drum Solids DL = Drum Liquids T = Tissue WI = Wipe L = Liquid V = Vegetation X = Other
Relinquished By Relinquished By	Print Sign Date/Time 12/6/13 1270 12/6/13 1155	Received By Received By Received By	Print Sign Date/Time 12/6/13 1030 12/6/13 1155	Matrix * S = Soil SE = Sediment SO = Solid SL = Sludge W = Water O = Oil A = Air DS = Drum Solids DL = Drum Liquids T = Tissue WI = Wipe L = Liquid V = Vegetation X = Other
Disposal Method (e.g., Return to customer, per lab procedure, used in process)				Date/Time
FINAL SAMPLE DISPOSITION				Date/Time

CH2M Hill Plateau Remediation Company		C.O.C.# X14-012-071	
Collector <i>Scott King</i>		Telephone No.	509-376-4650
SAF No.	X14-012	Purchase Order/Charge Code	303064ES20
Project Title	AQUIFER TUBES, DECEMBER 2013	Ice Chest No.	N/A
Shipped To (Lab)	TestAmerica Incorporated, Richland	Bill of Lading/Air Bill No.	N/A
Protocol	SURV	Offsite Property No.	N/A
POSSIBLE SAMPLE HAZARDS/REMARKS *** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CRF but are not releasable per DOE Order 5400.5 (1990/1993)		SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Site Wide Generator Knowledge Information Form applies. The CACN for analytical work at WSCF is 403899. FY13 and FY14 samples cannot be in the same SDG.	
Sample No.	Filter	No/Type Container	Sample Analysis
B2T6P8	N	1x20-mL P	Activity Scan
B2T6P8	N	2x4-L G/P	I129LL_SEP_LEPS_GS_LL: COMMON
B2T6P8	N	3x1-L G/P	TC99_SEP_LSC: COMMON
			<i>mamll</i>
			6 Months
			6 Months
			6 Months
			HCl to pH <2
			Preservative



J3L090403
W00035

Relinquished By <i>Scott King</i>	Print <i>Scott King</i>	Sign <i>Scott King</i>	Received By SSU-1	Print	Sign	Date/Time <i>12-05-13/1335</i>	Matrix * S = Soil SE = Sediment SO = Solid W = Sludge O = Water A = Air
Relinquished By SSU-1	Print	Sign	Received By <i>K. Harrison</i>	Print	Sign	Date/Time <i>12-05-13/1335</i>	DS = Drum Solids DL = Drum Liquids T = Tissue WI = Wipe L = Liquid V = Vegetation X = Other
Relinquished By <i>K. Harrison</i>	Print	Sign	Received By <i>J. Bull</i>	Print	Sign	Date/Time <i>12/6/13 1155</i>	
Relinquished By	Print	Sign	Received By	Print	Sign	Date/Time	
FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process)					Date/Time	

A-6004-842 (REV 2)

PRINTED ON 10/16/2013

CH2MHill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		C.O.C. # X14-012-072	
Collector <i>Scott King</i>		Contact/Requester Karen Waters-Husted	Telephone No.	509-376-4650	
SAF No. X14-012		Sampling Origin Hanford Site	Purchase Order/Charge Code	303064ES20	
Project Title AQUIFER TUBES, DECEMBER 2013		Logbook No. HNF-N-506 <i>102-153</i>	Ice Chest No.	N/A	
Shipped To (Lab) TestAmerica Incorporated, Richland		Method of Shipment GOVERNMENT VEHICLE	Bill of Lading/Air Bill No.	N/A	
Protocol SURV		Priority: 30 Days	Offsite Property No.	N/A	
POSSIBLE SAMPLE HAZARDS/REMARKS		SPECIAL INSTRUCTIONS			
*** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CRF but are not releasable per DOE Order 5400.5 (1990/1993)		Hold Time Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>			
Sample No.	Filter	* Date	Time	No/Type Container	Sample Analysis
B2T6R3	N	W	<i>12-5-13</i>	1x20-mL P	Activity Scan
B2T6R3	N	W	<i>12-5-13</i>	2x4-L G/P	I129LL_SEP_LEPS_GS_LL: COMMON
B2T6R3	N	W	<i>12-5-13</i>	3x1-L G/P	TC99_SEP_LSC: COMMON <i>medium</i>
					Holding Time
					6 Months
					6 Months
					6 Months
					Preservative
					None
					None
					HCl to pH <2

536090403
W00435

Relinquished By <i>Scott King</i>	Print <i>Scott King</i>	Sign <i>Scott King</i>	Date/Time <i>12-5-13/1435</i>	Received By SSU-1	Print	Sign	Date/Time <i>12-5-13/1435</i>	Matrix *
Relinquished By SSU-1	Print	Sign	Date/Time <i>12-5-13/1435</i>	Received By <i>R. Peterson</i>	Print	Sign	Date/Time <i>12/6/13 10:20</i>	Matrix *
Relinquished By <i>R. Peterson</i>	Print	Sign	Date/Time <i>12-6-13 10:20</i>	Received By <i>J. Beck</i>	Print	Sign	Date/Time <i>12/6/13 11:55</i>	Matrix *
Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time	Matrix *
FINAL SAMPLE DISPOSITION		Disposal Method (e.g., Return to customer, per lab procedure, used in process)		Dispersed By		Date/Time		
PRINTED ON 10/16/2013								A-6004-842 (REV 2)

JANUARY 24, 2014



Sample Check-in List

Date/Time Received: 12-6-13/1155 Container GM Screen Result: (Airlock) 40 cpm Initials [B]
Sample GM Screen Result (Sample Receiving) 40 cpm Initials [B]

Client: Plw SDG #: W04635 SAF #: 114-012 NA []

Lot Number: 536090403

Chain of Custody # 114-012-070; 071; 072

Shipping Container ID or Air Bill Number: Handled in NA [SK]

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

Item 5 through 16 for samples. Initial appropriate response.

- 5. Chain of Custody record present? Yes [B] No []
6. Number of samples received (Each sample may contain multiple bottles): 3
7. Containers received: 3 x vial 20; 9 x 40; 6 x 40

- 8. Sample holding times exceeded? NA [] Yes [] No [B]
9. Samples have: _____ tape _____ hazard labels [B] custody seals [B] appropriate sample labels
10. Matrix: _____ A (FLT, Wipe, Solid, Soil) [B] I (Water) _____ S (Air, Niosh 7400) _____ T (Biological, Ni-63)
11. Samples: [B] are in good condition _____ are leaking _____ are broken
_____ have air bubbles (Only for samples requiring no head space) _____ Other _____
12. Sample pH appropriate for analysis requested Yes [B] 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 [B]
14. Description of anomalies (include sample numbers): NA [B]
15. Sample Location, Sample Collector Listed on COC? * Yes [B] No []
*For documentation only. No corrective action needed.
16. Additional Information: W/A

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

Sample Check-in List completed by Sample Custodian:
Signature: [Signature] Date: 12-9-13

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

[B] No action necessary; process as is
Project Manager [Signature] Date 12-9-13

CH2MHill Plateau Remediation Company		C.O.C.# X14-012-075	
Collector: <i>Scott King</i>		Page 1 of 1	
SAF No. X14-012	Contact/Requester: Karen Waters-Husted	Telephone No. 509-376-4650	
Project Title: AQUIFER TUBES, DECEMBER 2013	Sampling Origin: Hanford Site	Purchase Order/Charge Code: 303064ES20	
Shipped To (Lab): <u>TestAmerica Incorporated, Richland</u>	Logbook No. HNF-N-506 <i>602-158</i>	Ice Chest No. N/A	
Protocol: SURV	Method of Shipment: GOVERNMENT VEHICLE	Bill of Lading/Air Bill No. N/A	
	Priority: 30 Days	Offsite Property No. N/A	

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
 Site Wide Generator Knowledge Information Form applies.
 The CACN for analytical work at WSCF is 403899.
 FY13 and FY14 samples cannot be in the same SDG.

Sample No.	Filter	* Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B2T6T8	N	W 12-16-13	1204	1x20-mL P	Activity Scan	6 Months	None
B2T6T8	N	W 12-16-13	1204	2x4-L G/P	I129LL_SEP_LEPS_GS_LL: COMMON	6 Months	None
B2T6T8	N	W 12-16-13	1204	3x1-L G/P	TC99_SEP_LSC: COMMON	6 Months	HCl to pH <2



J3L180409
W046635

Relinquished By: <i>Scott King</i>	Print: <i>ESU #1</i>	Received By: <i>ESU #1</i>	Sign: _____	Date/Time: 12-16-13	Date/Time: 12-16-13	Matrix * S = Soil, DS = Drum Solids, SE = Sediment, DL = Drum Liquids, SO = Solid, T = Tissue, SL = Sludge, WI = Wipe, W = Water, L = Liquid, O = Oil, A = Air, V = Vegetation, X = Other
Relinquished By: <i>KC Patterson</i>	Print: _____	Received By: <i>KC Patterson</i>	Sign: _____	Date/Time: 12-17-13	Date/Time: 12-17-13	
Relinquished By: <i>CHPRC</i>	Print: _____	Received By: <i>DAVID HARRISON</i>	Sign: _____	Date/Time: 12-17-13	Date/Time: 12-17-13	
Relinquished By: _____	Print: _____	Received By: _____	Sign: _____	Date/Time: _____	Date/Time: _____	

FINAL SAMPLE DISPOSITION

Disposal Method (e.g., Return to customer, per lab procedure, used in process)

Disposed By: _____ Date/Time: _____

PRINTED O 10/16/2013 A-6004-842 (REV 2)



Sample Check-in List

Date/Time Received: 12-17-13/1515 Container GM Screen Result: (Airlock) 60 cpm Initials [B]
Sample GM Screen Result (Sample Receiving) 40 cpm Initials [B]

Client: Plw SDG #: W06655 SAF #: 714-012 NA []

Lot Number: 336180409

Chain of Custody # X14-012-075

Shipping Container ID or Air Bill Number: hand deliv. NA [S/S]

Samples received inside shipping container/cooler/box Yes [B] 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 [B]
2. Custody Seals dated and signed? Yes [] No [B] No Custody Seal [B]
3. Cooler temperature: 3.9 C ICE NA []
4. Vermiculite/packing materials is NA [B] Wet [] Dry []

- Item 5 through 16 for samples. Initial appropriate response.
5. Chain of Custody record present? Yes [B] No []
6. Number of samples received (Each sample may contain multiple bottles): 1
7. Containers received: 1 x vial 20; 2 x 4LP; 3 x LP

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

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

- 12. Sample pH appropriate for analysis requested Yes [B] No [] NA []
13. Were any anomalies identified in sample receipt? Yes [] No [B]
14. Description of anomalies (include sample numbers): NA [S/S] N/A

- 15. Sample Location, Sample Collector Listed on COC? * Yes [B] No []
*For documentation only. No corrective action needed.
16. Additional Information: N/A

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

Sample Check-in List completed by Sample Custodian:
Signature: [Signature] Date: 12-17-13

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

[S/S] No action necessary; process as is
Project Manager [Signature] Date 12-18-13

Balance Id: 1120482733

Sample Preparation/Analysis

1/8/2014 12:20:36 PM

384868, CH2M Hill Plateau Remediation Company
Pacific Northwest National Lab

BN I-129 Prp/Sep GAM002
TB Gamma by LEPD
51 CLIENT: HANFORD

AnalyteDate: 01/20/2014

Sep1 DT/Tm Tech:
Sep2 DT/Tm Tech:

PM, Quote: SS, 57671

Batch: 3353033 WATER pCi/L
SEQ Batch, Test: None All Tests: 3353033 BNTB, 3353034 AMS5.

Prep Tech: WattN,Sannohs

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 M2MLK-1-AA	3596.00g.in		3596.00g		ITA13482 12/13/13		32.4mg	200	200	L4	1548	1/8/14/PS	
J3L090403-1-SAMP													
12/05/2013 12:45													
2 M2MLK-1-ADX	3670.70g.in		3670.70g		ITA13483 12/13/13		32.5mg	200	200	L5	1549		Beta: 1.94E-03 uCi/Sa
J3L090403-1-DUP													
12/05/2013 12:45													
3 M2MLL-1-AA	3613.40g.in		3613.40g		ITA13484 12/13/13		30.6mg	200	200	L4	2033	1/8/14/PS	Beta: 1.94E-03 uCi/Sa
J3L090403-2-SAMP													
12/05/2013 12:45													
4 M2MLM-1-AA	3690.00g.in		3690.00g		ITA13485 12/13/13		33.5mg	200	200	L5	2034		Beta: 2.99E-04 uCi/Sa
J3L090403-3-SAMP													
12/06/2013 12:09													
5 M2PMH-1-AA	3665.30g.in		3665.30g		ITA13486 12/13/13		33.8mg	200	200	L4	2354		Beta: 5.28E-04 uCi/Sa
J3L180409-1-SAMP													
12/05/2013 11:28													
6 M2P2D-1-AA-B	3993.70g.in		3993.70g		ITA13487 12/13/13		33.4mg	200	200	L5	2359		Beta: 9.16E-04 uCi/Sa
J3L190000-33-BLK													
12/19/2013 14:35 pd													
7 M2P2D-1-AC-C	3999.50g.in		3999.50g		ISD1613 10/10/13		34.4mg	200	200	L4	0318		Beta:
J3L190000-33-LCS													
12/19/2013 14:35 pd													

WO Cnt: 7

ISV - Insufficient Volume for Analysis

Page 1

Prep SamplePrep v4.8.65

1/8/2014 12:20:38 PM

Sample Preparation/Analysis

Balance Id:1120482733

BN I-129 Prip/Sep GAM002
 TB Gamma by LEPD
 5I CLIENT: HANFORD

Pipet #:
 Sep1 DT/Tm Tech:
 Sep2 DT/Tm Tech:

AnalytDueDate: 01/20/2014

Batch: 3353033

SEQ Batch, Test: None

Prep Tech: HarbinsonD,SannohS



Work Ord. Sample Date	Total Amt/Unit	Total Amt/Unit Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	OC 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:
-----------------------	----------------	-------------------------------	--------------------------	-----------------------------	---------------------	--------------	-----------	-----------------	----------------	-------------	------------------------------	-----------------------	-----------

Comments: M2P2D-BLK CommentsDHP-13-00623,P-13-00441,S-13-00126,S-13-00328,S-14-00006,S-13-00229,,,P-13-00594,S-12-00214

[Handwritten Signature]
 1-8-2014

All Clients for Batch: 384868, CH2M Hill Plateau Remediation Company Pacific Northwest National Lab, SS, 57671

M2MLK1AA-SAMP Constituent List:

I-129	RDL:0.50E+00	pCi/L	LCL:	UCL:	RED:								
M2P2D1AA-BLK:													
I-129	RDL:0.50E+00	pCi/L	LCL:	UCL:	RED:								
M2P2D1AC-LCS:													
I-129	RDL:5	pCi/L	LCL:70	UCL:130	RED:20								
M2MLK1AA-SAMP Calc Info:													
Uncert Level (#s):	2		Decay to SaDt: Y	Blk Subt.: N	Sci.Not.: Y	ODRs: B							
M2P2D1AA-BLK:													
Uncert Level (#s):	2		Decay to SaDt: Y	Blk Subt.: N	Sci.Not.: Y	ODRs: B							
M2P2D1AC-LCS:													
Uncert Level (#s):	2		Decay to SaDt: Y	Blk Subt.: N	Sci.Not.: Y	ODRs: B							

1/9/2014 3:15:25 PM

ICOC Fraction Transfer/Status Report

ByDate: 1/9/2013, 1/14/2014, Batch: '3353033', User: *ALL Order By DateTimeAccepting

Batch	Work Ord	CurStatus	Accepting	Comments
3353033				
AC	Rev1C	SannohS	12/23/2013 8:22:37	
SC		campbellsc	IsBatched	12/19/2013 3:10:28 PM ICOC_RADCALC v4.8.49
SC		SannohS	InPrep	12/23/2013 8:22:37 AM RL-GAM-002 REVISION 3
SC		HarbinsonD	Sep2C	1/8/2014 12:22:13 PM RL-GAM-002 REVISION 3
SC		BullJ	InCnt1	1/8/2014 12:23:41 PM RL-CI-007 REVISION 3
SC		BullJ	CalcC	1/9/2014 10:57:23 AM RL-CI-007 REVISION 3
SC		antonsonl	Rev1C	1/9/2014 3:15:20 PM RL-DR-001 Rev 4
AC		HarbinsonD	1/8/2014 12:22:13 PM	
AC		BullJ	1/8/2014 12:23:41 PM	
AC		BullJ	1/9/2014 10:57:23	
AC		antonsonl	1/9/2014 3:15:20 PM	

AC: Accepting Entry; SC: Status Change

TestAmerica Richland
Richland Wa.

JANUARY 24, 2014

*** RE-ANALYSIS REQUEST ***

PRIORITY

DUE DATE ASAP 1/20

CUSTOMER CH₂MH ll

ANALYSIS Te 99

MATRIX WATER

LOT NUMBER _____

SAMPLE DELIVERY GROUP _____

OLD BATCH NUMBER 4014025 / 4020018

NEW BATCH NUMBER 4021024

LAB SAMPLE ID	CLIENT ID	REASON FOR REQUEST & ANALYSIS COMMENTS
1)		
2)		
3)		
4)		
5)		
6)		
7)		
8)		
9)		
10)		
11)		
12)		
13)		
14)		
15)		
16)		
17)		
18)		
19)		
20)		
LAB QC ID		Assigned with new batch.

RC-048 Rev 9, 9/10

Sample Preparation/Analysis										Balance Id: 1120403183									
1/21/2014 9:51:24 AM 384868, CH2M Hill Plateau Remediation Company , Pacific Northwest National Lab Analyte: AM Tc-99 Pp/Sep LSC013 S5 Technetium-99 by Liquid Scint 51 CLIENT: HANFORD Batch: 4021024 WATER pCi/L SEQ Batch, Test: None All Tests: 3353033 BNTB, 3353034 AMS5, 4014025 AMS5, 4021024 AMS5, PM, Quote: SS, 57671 Prep Tech: WattN, RichardsonB										Pipet #:		Sep1 DT/Tm Tech:		Sep2 DT/Tm Tech:		CR Analyst, Init/Date		Comments:	
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	Deflector Id	Count On Off (24hr) Circle	Beta							
1 M2MLK-3-AC	125.60g, in		125.60g																
J3L090403-1-SAMP																			
12/05/2013 12:45												Beta: 1.94E-03 uCi/Sa							
2 M2MLK-3-AE-S	126.20g, in		126.20g																
J3L090403-1-MS																			
12/05/2013 12:45												Beta: 1.94E-03 uCi/Sa							
3 M2MLK-3-AF-X	126.20g, in		126.20g																
J3L090403-1-DUP																			
12/05/2013 12:45												Beta: 1.94E-03 uCi/Sa							
4 M2MLL-3-AC	125.90g, in		125.90g																
J3L090403-2-SAMP																			
12/05/2013 12:09												Beta: 2.93E-04 uCi/Sa							
5 M2MLM-3-AC	125.20g, in		125.20g																
J3L090403-3-SAMP																			
12/05/2013 11:28												Beta: 5.28E-04 uCi/Sa							
6 M2PMH-3-AC	125.10g, in		125.10g																
J3L180409-1-SAMP																			
12/16/2013 12:04												Beta: 9.16E-04 uCi/Sa							
7 M2V7J-1-AA-B	126.10g, in		126.10g																
J4A210000-24-BLK																			
01/21/2014 09:11 pd												Beta:							
TestAmerica Richland Wa.										Key: In - Initial Amt, fi - Final Amt, di - Diluted Amt, s1 - Sep1, s2 - Sep2 Page 1 pd - Prep Dt, dc - Date Chg, r - Reference Dt, ec-Enrichment Cell, ct-Cocktailed Added		ISV - Insufficient Volume for Analysis WO Cnt: 7 Prep_SamplePrep v4.8.65							

1/21/2014 9:51:25 AM										Sample Preparation/Analysis										Balance Id:																							
AM Tc-99 Pp/Sep LSC013										S5 Technetium-99 by Liquid Scint										Pipet #:																							
51 CLIENT: HANFORD										Sep1 DT/Tm Tech:										Sep2 DT/Tm Tech:																							
Batch: 4021024										pCi/L										Prep Tech:																							
SEQ Batch, Test: None																				Count		Detector		CR Analyst,																			
Work Ord, Lot, Sample Date										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		Count On Off (24hr) Circle		Comments:							
Total Amt/Unit										Total Acidified/Unit										Decay to SaDt: Y		Blk Subt.: N		Sci.Not.: Y		ODRS: B		Decay to SaDt: Y		Blk Subt.: N		Sci.Not.: Y		ODRS: B		Decay to SaDt: Y		Blk Subt.: N		Sci.Not.: Y		ODRS: B	
Total Amt/Unit										Total Acidified/Unit										Decay to SaDt: Y		Blk Subt.: N		Sci.Not.: Y		ODRS: B		Decay to SaDt: Y		Blk Subt.: N		Sci.Not.: Y		ODRS: B		Decay to SaDt: Y		Blk Subt.: N		Sci.Not.: Y		ODRS: B	
Total Amt/Unit										Total Acidified/Unit										Decay to SaDt: Y		Blk Subt.: N		Sci.Not.: Y		ODRS: B		Decay to SaDt: Y		Blk Subt.: N		Sci.Not.: Y		ODRS: B		Decay to SaDt: Y		Blk Subt.: N		Sci.Not.: Y		ODRS: B	
Total Amt/Unit										Total Acidified/Unit										Decay to SaDt: Y		Blk Subt.: N		Sci.Not.: Y		ODRS: B		Decay to SaDt: Y		Blk Subt.: N		Sci.Not.: Y		ODRS: B		Decay to SaDt: Y		Blk Subt.: N		Sci.Not.: Y		ODRS: B	

Comments: M2V7J-BLK CommentsP-13-00706,s-12-00228

All Clients for Batch:
 384868, CH2M Hill Plateau Remediation Company Pacific Northwest National Lab, SS , 57671

M2MLK3AC-SAMP Constituent List:
 M2MLK3AE-MS Constituent List:
 M2V7J1AA-BLK:
 M2V7J1AC-ICS:
 M2V7J1AD-IBLK:
 M2MLK3AC-SAMP Calc Info:
 Uncert Level (#s) : 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRS: B
 M2MLK3AE-MS Calc Info:
 Uncert Level (#s) : 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRS: B
 M2V7J1AA-BLK:
 Uncert Level (#s) : 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRS: B
 M2V7J1AC-ICS:
 Uncert Level (#s) : 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRS: B
 M2V7J1AD-IBLK:
 Uncert Level (#s) : 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRS: B

TestAmerica Key: In - Initial Amt, fi - Final Amt, di - Diluted Amt, s1 - Sep1, s2 - Sep2 Page 3
 Richland Wa. pd - Prep Dt, dc - Date Chg, r - Reference Dt, ec-Enrichment Cell, ct-Cocktailed Added
 ISV - Insufficient Volume for Analysis
 WO Cnt: 9
 Prep_SamplePrep v4.8.65

1/24/2014 10:48:31 AM

ICOC Fraction Transfer/Status Report

ByDate: 1/24/2013, 1/29/2014, Batch: '4021024', User: *ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting	Comments
4021024				
AC	Rev1C	RichardsonB	1/21/2014 9:42:06	
SC		mcginnist	IsBatched	1/21/2014 9:13:32 AM
SC		RichardsonB	InPrep	1/21/2014 9:42:06 AM
SC		JorgensonD	Sep2C	1/23/2014 3:35:44 PM
SC		DawkinsO	InCnt1	1/23/2014 5:05:39 PM
SC		BullJ	CalcC	1/24/2014 9:55:36 AM
SC		mcginnist	Rev1C	1/24/2014 10:48:20 AM
AC		JorgensonD	1/23/2014 3:35:44 PM	ICOC_RADCALC v4.8.49
AC		DawkinsO	1/23/2014 5:05:39 PM	RL-PRP-004 REVISION 2
AC		BullJ	1/24/2014 9:55:36	RL-LSC-013 REVISION 2
AC		mcginnist	1/24/2014 10:48:20	RL-CI-005 REVISION 3
				RL-CI-005 REVISION 3
				RL-DR-001 Rev 4

AC: Accepting Entry; SC: Status Change

TestAmerica Richland
Richland Wa.

Sample Preparation/Analysis									
12/3/2013 4:25:53 PM		Balance Id:		88 NO SAMPLE PREPARATION PERFORMED / DIRECT INJECTION		Pipet #:			
384868, CH2M Hill Plateau Remediation Company		51 CLIENT: HANFORD		EA Chromium, Hexavalent (7196A)		Sep1 DT/Tm Tech:			
Pacific Northwest National Lab		PM, Quote: SS, 57671		51 CLIENT: HANFORD		Sep2 DT/Tm Tech:			
AnalytDueDate: 01/03/2014		WATER mg/L		QC Tracer		Prep Tech:			
Batch: 3337061		Initial Aliquot Amt/Unit		Prep Date		CR Analyst, Init/Date			
SEQ Batch, Test: None		All Tests: 3337061 88EA,		#Containers: 1		Count On Off (24hr) Circle			
Work Order, Lot, Sample Date/Time		Total Amt/Unit		Count Time Min		Detector Id		Comments:	
1 M2L3C-1-AA									
J3L030425-1-SAMP									
12/03/2013 00:19									
AmiRec: 1X500MLAG #Containers: 1									
Alpha: Beta:									
2 M2L3C-1-AC-S									
J3L030425-1-MS									
12/03/2013 00:19									
AmiRec: 1X500MLAG #Containers: 1									
Alpha: Beta:									
3 M2L3C-1-AD-D									
J3L030425-1-MSD									
12/03/2013 00:19									
AmiRec: 1X500MLAG #Containers: 1									
Alpha: Beta:									
4 M2L3C-1-AE-X									
J3L030425-1-DJP									
12/03/2013 00:19									
AmiRec: 1X500MLAG #Containers: 1									
Alpha: Beta:									
5 M2L3D-1-AA									
J3L030425-2-SAMP									
12/03/2013 12:06									
AmiRec: 1X500MLAG #Containers: 1									
Alpha: Beta:									
6 M2L3E-1-AA									
J3L030425-3-SAMP									
12/03/2013 12:51									
AmiRec: 1X500MLAG #Containers: 1									
Alpha: Beta:									
7 M2L3F-1-AA									
J3L030425-4-SAMP									
12/03/2013 09:43									
AmiRec: 1X500MLAG #Containers: 1									
Alpha: Beta:									
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: 7									
ICOC v4.8.49									

Sample Preparation/Analysis										Balance Id:
12/3/2013 4:25:53 PM										Pipet #:
394868, CH2M Hill Plateau Remediation Company										Sep1 DT/Tm Tech:
88 NO SAMPLE PREPARATION PERFORMED / DIRECT INJECTION										Sep2 DT/Tm Tech:
EA Chromium, Hexavalent (7196A)										Prep Tech:
51 CLIENT: HANFORD										CR Analyst, Init/Date
PM, Quote: SS, 57671										Comments:
Batch: 3337061 WATER mg/L										
SEQ Batch, Test: None										
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	Alpha	Beta		
8 M2L3G-1-AA										
J3L030425-5-SAMP										
12/03/2013 09:58							Alpha:	Beta:		
9 M2L3H-1-AA										
J3L030425-6-SAMP										
12/03/2013 11:13							Alpha:	Beta:		
10 M2L3J-1-AA										
J3L030425-7-SAMP										
12/03/2013 10:53							Alpha:	Beta:		
11 M2L3K-1-AA										
J3L030425-8-SAMP										
12/03/2013 10:21							Alpha:	Beta:		
12 M2L3L-1-AA										
J3L030425-9-SAMP										
12/03/2013 10:53							Alpha:	Beta:		
13 M2L3M-1-AA										
J3L030425-10-SAMP										
12/03/2013 07:30							Alpha:	Beta:		
14 M2L32-1-AA-B										
J3L030000-61-BLK										
12/03/2013 16:25 pd							Alpha:	Beta:		

12/3/2013 4:25:54 PM **Sample Preparation/Analysis** Balance Id: _____ Pipet #: _____

88 NO SAMPLE PREPARATION PERFORMED / DIRECT INJECTION
EA Chromium, Hexavalent (7196A)
5I CLIENT: HANFORD

AnalyteDueDate: 01/03/2014 mg/L

Batch: 3337061
SEQ Batch, Test: None

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:
15 M2L32-1-AC-C								

J3L030000-61-LCS
12/03/2013 16:25 pd
#Containers: 1
Alpha: _____ Beta: _____

Comments:

All Clients for Batch:
384868, CHEM HILL Plateau Remediation Company Pacific Northwest National Lab, SS , 57671

M2L3C1AA-SAMP Constituent List:

M2L3C1AC-MS Constituent List:

M2L3C1AD-MSD:

M2L321AA-BLK:

M2L321AC-IGS:

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

M2L321AC-IGS: Uncert Level (#s): 2 Decay to SaDt: Y Blk Subt.: N Sci. Not.: Y ODRs: B

Richland Wa. pd - Prep Dt, dc - Date Chg, r - Reference Dt, ec-Enrichment Cell, ct-Cocktailed Added

TestAmerica Key: In - Initial Amt, fi - Final Amt, di - Diluted Amt, s1 - Sep1, s2 - Sep2 Page 3 ISV - Insufficient Volume for Analysis WO Cnt: 15
ICOC v4.8.49

Sample Preparation/Analysis										Balance Id:
12/3/2013 5:17:10 PM										Pipet #:
384868, CH2M Hill Plateau Remediation Company										Sep1 DT/Tm Tech:
Pacific Northwest National Lab										Sep2 DT/Tm Tech:
88 NO SAMPLE PREPARATION PERFORMED / DIRECT INJECTION										Prep Tech:
EA Chromium, Hexavalent (7196A)										CR Analyst, Intri/Date
51 CLIENT: HANFORD										Comments:
AnalyseDate: 01/03/2014										
Batch: 3337067 WATER mg/L										
PM, Quote: SS, 57671										
SEQ Batch, Test: None										
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	Alpha:	Beta:	Comments:	
1 M2L23-1-AA										
J3L030424-1-SAMP							Scr:	Alpha:	Beta:	
12/03/2013 11:32		AmtRec: 1X60MLAG	#Containers: 1							
2 M2L24-1-AA										
J3L030424-2-SAMP							Scr:	Alpha:	Beta:	
12/03/2013 11:32		AmtRec: 1X500MLAG	#Containers: 1							
3 M2L24-1-AC-S										
J3L030424-2-MS							Scr:	Alpha:	Beta:	
12/03/2013 11:32		AmtRec: 1X500MLAG	#Containers: 1							
4 M2L24-1-AD-D										
J3L030424-2-MSD							Scr:	Alpha:	Beta:	
12/03/2013 11:32		AmtRec: 1X500MLAG	#Containers: 1							
5 M2L24-1-AE-X										
J3L030424-2-DUP							Scr:	Alpha:	Beta:	
12/03/2013 11:32		AmtRec: 1X500MLAG	#Containers: 1							
6 M2L4G-1-AA-B										
J3L030000-67-BLK							Scr:	Alpha:	Beta:	
12/03/2013 17:17 pd		AmtRec:	#Containers: 1							
7 M2L4G-1-AC-C										
J3L030000-67-LCS							Scr:	Alpha:	Beta:	
12/03/2013 17:17 pd		AmtRec:	#Containers: 1							
TestAmerica Key: In - Initial Amt, fi - Final Amt, di - Diluted Amt, s1 - Sep1, s2 - Sep2 Page 1 ISV - Insufficient Volume for Analysis WO Cnt: 7										
Richland Wa. pd - Prep Dt, dc - Date Chg, r - Reference Dt, ec-Enrichment Cell, ct-Cooktailed Added ICOC: v4.8.49										

12/3/2013 5:17:10 PM		Sample Preparation/Analysis		Balance Id:	
88 NO SAMPLE PREPARATION PERFORMED / DIRECT INJECTION		EA Chromium, Hexavalent (7196A)		Pipet #:	
51 CLIENT: HANFORD		mg/L		Sep1 DT/Tm Tech:	
Batch: 3337067				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:					
All Clients for Batch:					
384868, CH2M Hill Plateau Remediation Company		Pacific Northwest National Lab, SS , 57671			
M2L231AA-SAMP Constituent List:					
M2L241AC-MS:					
M2L241AD-MSD:					
M2L4G1AA-BLK:					
M2L4G1AC-LCS:					
M2L231AA-SAMP Calc Info:					
Uncert Level (#s) : 2	Decay to SaDt: Y	Blk Subt.: N	Sci.Not.: Y	ODRs: B	
M2L241AC-MS:					
Uncert Level (#s) : 2	Decay to SaDt: Y	Blk Subt.: N	Sci.Not.: Y	ODRs: B	
M2L241AD-MSD:					
Uncert Level (#s) : 2	Decay to SaDt: Y	Blk Subt.: N	Sci.Not.: Y	ODRs: B	
M2L4G1AA-BLK:					
Uncert Level (#s) : 2	Decay to SaDt: Y	Blk Subt.: N	Sci.Not.: Y	ODRs: B	
M2L4G1AC-LCS:					
Uncert Level (#s) : 2	Decay to SaDt: Y	Blk Subt.: N	Sci.Not.: Y	ODRs: B	

TestAmerica Key: In - Initial Amt, fi - Final Amt, di - Diluted Amt, s1 - Sep1, s2 - Sep2 Page 2 ISV - Insufficient Volume for Analysis WO Cnt: 7
 Richland Wa. pd - Prep Dt, dc - Date Chg, r - Reference Dt, ec-Cocktailed Added