

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: 59931

SDG Nbr	ORDER Nbr	CLIENT ID NUMBER	LOT Nbr	WORK ORDER	RPT DB ID	BATCH
W06698	F14-003	B2W2H2	J4D090410-1	M3FM11AA	9M3FM110	4099061
		B2W2H6	J4D090410-2	M3FM41AA	9M3FM410	4099061

Comments:



Certificate of Analysis

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

April 30, 2014

Attention: Scot Fitzgerald

SAF Number	:	F14-003
Date SDG Closed	:	April 8, 2014
Number of Samples	:	Two (2)
Sample Type	:	Water
SDG Number	:	W06698
Data Deliverable	:	30 Day / 30 Day Summary

CASE NARRATIVE

I. Introduction

On April 8, 2014, two water samples were received at TestAmerica (TARL). Upon receipt, the samples were assigned the following laboratory ID numbers to correspond with the CH2M specific ID:

<u>CH2M ID#</u>	<u>TARL ID#</u>	<u>DATE OF RECEIPT</u>	<u>MATRIX</u>
B2W2H2	M3FM1	4/8/14	WATER
B2W2H6	M3FM4	4/8/14	WATER

II. Sample Receipt

The samples were received in good condition.

The second and third “Relinquished By” and “Received By” dates were incorrect on Chain of Custodies F14-003-061 and F14-003-065. The samples were collected on April 8, 2014 at 0730 however the second and third “Relinquished By” and “Received By” dates on the Chain of Custodies were March 17, 2014. The correct date was April 8, 2014. For more details refer to the SIR (CHPRC Tracking Number: SDR14-147) that is included in this report.

No other anomalies were noted during check-in.

CH2M Hill Plateau Remediation Company
April 30, 2014

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

IV. Quality Control

The analytical results for each analysis performed includes a minimum of one laboratory control sample (LCS), one method (reagent) blank, and one duplicate sample analysis. Any exceptions have been noted in the "Comments" section.

QC and sample results are reported in the same units.

V. Comments

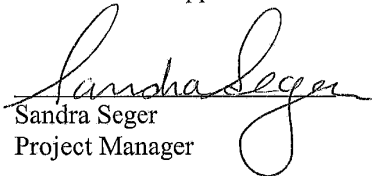
Gamma Spectroscopy

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

The duplicate RPD is greater than 20%. The sample and duplicate results are below the CRDL. Except as noted, the LCS, batch blank, samples and sample duplicate (B2W2H2) 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

SAMPLE ISSUE RESOLUTION	SIR NUM	SDR14-147
	REV NUM	0
	DATE INITIATED	4/10/2014

SAMPLE EVENT INFORMATION

SAF NUM(S) F14-003
 OPERABLE UNIT(S)
 PROJECT(S) 200 AREA SGRP
 SAMPLE EVENT TITLE(S) 200-ZP-1 Remedial Action Wells
 LABORATORY TestAmerica Incorporated, Richland

SAMPLING INFORMATION

NUMBER OF SAMPLES 2
 SAMPLE NUMBERS B2W2H2, B2W2H6
 SAMPLE MATRIX
 COLLECTION DATE -
 SDG NUM

ISSUE BACKGROUND

CLASS Chain of Custody Issue (Field)
 TYPE Incorrect Relinquish/Receipt Date/Time
 DESCRIPTION The second and third "Relinquished By" and "Received By" dates are incorrect on Chain of Custodies F14-003-061 and F14-003-065. The samples were collected on April 8, 2014 at 0730 however the second and third "Relinquished By" and "Received By" date on the COCs is March 17, 2014. The correct date is April 8, 2014.

DISPOSITION

DESCRIPTION PROPOSED DISPOSITION: Correct dates on COCs, initial and date corrections. Initiate SIR and include comments in the case narrative.
 JUSTIFICATION ACCEPTED DISPOSITION: Accept proposed resolution.
 SUBMITTED BY: Sandra Seger/TARL Date: 4/10/14
 ACCEPTED BY: Susan Puckett/CHPRC Date: 4/10/14

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%. $Lc = (1.645 * \sqrt{2 * (BkgrndCnt / BkgrndCntMin) / SCntMin}) * (ConvFct / (Eff * Yld * Abn * Vol) * IngrFct)$. For LSC methods the batch blank is used as a measure of the background variability. Lc cannot be calculated when the background count is zero.
Lot-Sample No	The number assigned by the LIMS software to track samples received on the same day for a given client. The sample number is a sequential number assigned to each sample in the Lot.
MDC MDA	Detection Level based on instrument background or blank, adjusted by the Efficiency, Chemical Yield, and Volume with a Type I and II error probability of approximately 5%. $MDC = (4.65 * \sqrt{((BkgrndCnt / BkgrndCntMin) / SCntMin) + 2.71 / SCntMin}) * (ConvFct / (Eff * Yld * Abn * Vol) * IngrFct)$. For LSC methods the batch blank is used as a measure of the background variability.
Primary Detector	The instrument identifier associated with the analysis of the sample aliquot.
Ratio U-234/U-238	The U-234 result divided by the U-238 result. The U-234/U-238 ratio for natural uranium in NIST SRM 4321C is 1.038.
Rst/MDC	Ratio of the Result to the MDC. A value greater than 1 may indicate activity above background at a high level of confidence. Caution should be used when applying this factor and it should be used in concert with the qualifiers associated with the result.
Rst/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.

4/30/2014 11:17:43 AM

TestAmerica Inc Report

Lab Code: TARL

FormNbr: R FormatType: FEAD Version: 05 Rpt Nbr: 59931 File Name: h:\Report\bhedd\Fead\W06698.Edd, h:\Report\bhedd\Fead\W06698.Edd

Lab Sample Id:	Client Id:	Test User	Contract Nbr	SAF Nbr	Sdg Nbr:	QC Type:	Moisture/Solids%*:	Distilled Volume	Sample On Date:	Collection Date:		
9M3FM110	B2W2H2	F14-003	MW6-SBB-A1	F14-003	W06698					04/08/2014 07:30		
Batch 4099061	Analyte I-129	CAS# 15046-84-1	Result 6.77E-02	Unit pCi/L	CntU 2S 1.4E-01	Qual U	MDA 2.54E-01	TrcYield 94.9	Method I129LL_SEP_LEPS	Alq Size 3.6643E+00	Unit L	Analy Date/Time 04/29/2014 13:35
Lab Sample Id:	Client Id:	Test User	Contract Nbr	SAF Nbr	Sdg Nbr:	QC Type: <th>Moisture/Solids%*:</th> <th>Distilled Volume</th> <th>Sample On Date:</th> <th>Collection Date:</th>	Moisture/Solids%*:	Distilled Volume	Sample On Date:	Collection Date:		
9M3FM410	B2W2H6	F14-003	MW6-SBB-A1	F14-003	W06698					04/08/2014 09:25		
Batch 4099061	Analyte I-129	CAS# 15046-84-1	Result 5.45E-02	Unit pCi/L	CntU 2S 2.0E-01	Qual U	MDA 3.54E-01	TrcYield 97.8	Method I129LL_SEP_LEPS	Alq Size 3.7416E+00	Unit L	Analy Date/Time 04/29/2014 15:57

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rptFeadRadSummaryEdd v3.48

U Qual - Analyzed for, but the result is less than the Mdc or gamma scan did not identify the nuclide.
J Qual - No U qualifier has been assigned and the result is below the Reporting Limit (CRDL).
B Qual- Analyte was found in the associated laboratory blank above the MDC.

Wednesday, April 30, 2014

TestAmerica Inc QC Blank Report

Lab Code: TARL

FormNbr: R FormatType: FEAD VersionNbr: 05 File Name: h:\Reportdb\edd\Fead\VRad\W06698_Edd, h:\Reportdb\edd\Fead\VRad\59931.Ed

Lab Sample Id: M3FQ31AB **Sdg/Rept Nbr:** W06698 **Collection Date:** 04/08/2014 07:30
Client Id: NA **Matrix:** WATER **Sample On Date:**
Moisture/Solids%*: **QC Type:** BLK **Received Date:** 04/08/2014

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

Batch # /	Analyt/	Result/	Toi/Cnt	Qu-	Tracer	Spk Concl/	Analy	Aliq	Date/Time	RPD/	RER/	LCS	R
Qc Type	CAS#	Orig Rst	Uncert 2S	al	Yield	%Rec	Method	Size/	Analyzed	UCL	UCL	LCL/UCL	Typ
4099061	I-129	-1.67E-02	1.2E-01	U	2.21E-01	94.9	1129LL_SEP_L	3.9098E+00	04/29/2014				D
BLK	15046-84-1		1.2E-01					L	15:58				

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.

Wednesday, April 30, 2014

TestAmerica Inc QC Control Sample Report

Lab Code: TARL

FormNbr: R FormatType: FEAD VersionNbr: 05 File Name: h:\Reportdb\edd\Fead\W06698.Edd, h:\Reportdb\edd\Fead\W06698.Edd

Lab Sample Id: M3FQ31CS Sdg/Rept Nbr: W06698 59931 Collection Date: 04/08/2014 07:30
 Client Id: NA Matrix: WATER WATER Sample On Date:
 Moisture/Solids%*: QC Type: BS Received Date: 04/08/2014

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

Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qual	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCL	R Typ
4099061	I-129	9.07E+00	pCi/L	1.2E+00		4.11E-01	99.5	9.67E+00	I129LL_SEP_L	3.9263E+00	04/29/2014			70	D
BS	15046-84-1			1.2E+00				93.9		L	17:55			130	

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.

Wednesday, April 30, 2014

TestAmerica Inc QC Duplicate Report

Lab Code: TARL

FormNbr: R FormatType: FEAD VersionNbr: 05 File Name: h:\Reportabledd\Fead\W06698.Edd, h:\Reportabledd\Fead\W06698.Edd

Lab Sample Id: M3FM11CR Sdg/Rept Nbr: W06698 59931 Collection Date: 04/08/2014 07:30
 Client Id: B2W2H2 Matrix: WATER WATER Sample On Date:
 Moisture/Solids%*: QC Type: DUP Received Date: 04/08/2014

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix	RType				
F14-003	MW6-SBB-A19981								AC	H				
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Tracer Yield	MDC	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCL	R Typ
4099061	I-129	-4.08E-03	pCi/L	1.2E-01	U	2.27E-01	95.7	1129LL_SEP_L	3.70E+00	04/29/2014	225.6	0.8		D
DUP	15046-84-1	6.77E-02		1.2E-01					L	13:36	20.0	3		

TestAmerica Inc rptFeadRadEdd v3.68 3

U Qual - Analyzed for, but the result is less than the Mdc or gamma scan did not identify the nuclide.
 J Qual - No U qualifier has been assigned and the result is below the Reporting Limit (CRDL).
 B Qual- Analyte was found in the associated laboratory blank above the MDC.

Lot No., Due Date: J4D090410; 05/08/2014
Client, Site: 108302; FLH HANFORD
QC Batch No., Method Test: 4099061; RGAMLEPS Gamma by LEPS
SDG, Matrix: W06698; 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 *La Anton* Date *4/30/14*



THE LEADER IN ENVIRONMENTAL TESTING

Data Review Checklist
RADIOCHEMISTRY
 Second Level Review

Batch Number: 4099061

Review Item	Yes (✓)	No (✓)	NA (✓)
A. Sample Analysis			
1. Are the sample yields within acceptance criteria?	✓		
2. Is the sample Minimum Detectable Activity < the Contract Detection Limit?	✓		
3. Are the correct isotopes reported?	✓		
B. QC Samples			
1. Is the Minimum Detectable Activity for the blank result ≤ the Contract Detection Limit?	✓		
2. Does the blank result meet the Contract criteria?	✓		
3. Is the blank result < the Contract Detection Limit?	✓		
4. Is the blank result > the Contract Detection Limit but the sample result < the Contract Detection Limit?			✓
5. Is the LCS recovery within contract acceptance criteria?	✓		
6. Is the LCS Minimum Detectable Activity ≤ the Contract Detection Limit?	✓		
7. Do the MS/MSD results and yields meet acceptance criteria?			✓
8. Do the duplicate sample results and yields meet acceptance criteria?	✓		
C. Other			
1. Are all Nonconformances (NCM) included and noted?			✓
2. Was the correct methodology used?	✓		
3. Were units checked?	✓		

Comments on any "No" response: _____

Second Level Review: *Sandra Segura* Date: 4-30-14

CH2M Hill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		F14-003-061	PAGE 1 OF 1
COLLECTOR <i>C. Fulton</i>	COMPANY CONTACT TODAK, D	TELEPHONE NO. 376-6427	PROJECT COORDINATOR TODAK, D	PRICE CODE 7H	DATA TURNAROUND 30 Days / 30 Days
SAMPLING LOCATION C8070, I-008 FTB 8/25/14	PROJECT DESIGNATION FY2014 200-ZP-1 Remedial Action Wells Sampling and Analysis - Water	SAF NO. F14-003		AIR QUALITY	
ICE CHEST NO.	FIELD LOGBOOK NO. HNF-AI-507-26.71	ACTUAL SAMPLE DEPTH (N/A)		METHOD OF SHIPMENT GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO TestAmerica Incorporated, Richland	OFFSITE PROPERTY NO. SEE PTR	BILL OF LADING/AIR BILL NO. SEE PTR			

MATRIX*	PRESERVATION	None
A=Air	HOLDING TIME	6 Months
DL=Drum	TYPE OF CONTAINER	G/P
DS=Drum	NO. OF CONTAINER(S)	2
Solids	VOLUME	4L
L=Liquid	SAMPLE ANALYSIS	IL291L_SEP_LE PS_CSS COMMON;
O=Oil	SAMPLE DATE	4-8-14
S=Soil	SAMPLE TIME	0730
SE=Sediment		
T=Tissue		
V=Vegetation		
W=Water		
WL=Wipe		
X=Other		

J4D090410
wolkeas
m3fmi



CHAIN OF POSSESSION		SIGN / PRINT NAMES		SPECIAL INSTRUCTIONS	
RELINQUISHED BY/REMOVED FROM <i>C. Fulton</i>	DATE/TIME 4/8/14 1050	RECEIVED BY/STORED IN SSU #1	DATE/TIME 4-8-14 1050	** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF. TRVL-14-058	
RELINQUISHED BY/REMOVED FROM <i>SSU-1</i>	DATE/TIME MAR 17 2014 1130	RECEIVED BY/STORED IN L.D. WALKER	DATE/TIME MAR 17 2014 1130	* correction by S. Seeger on 4-10-14	
RELINQUISHED BY/REMOVED FROM <i>L.D. WALKER</i>	DATE/TIME MAR 17 2014 1345	RECEIVED BY/STORED IN S. Seeger	DATE/TIME 4-8-14 1345	SKS4-10-14	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	TRVL-14-058	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

CH2M Hill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		F14-003-065	PAGE 1 OF 1
COLLECTOR <i>C Fulton</i>	COMPANY CONTACT TODAK, D	TELEPHONE NO. 376-6427	PROJECT COORDINATOR TODAK, D	PRICE CODE 7H	DATA TURNAROUND 30 Days / 30 Days
SAMPLING LOCATION C8070, I-008	PROJECT DESIGNATION FY2014 200-ZP-1 Remedial Action Wells Sampling and Analysis - Water		SAF NO. F14-003	AIR QUALITY <input type="checkbox"/>	
ICE CHEST NO. <i>12/A</i>	FIELD LOGBOOK NO. HNF-N-507-26-71	ACTUAL SAMPLE DEPTH <i>599.59</i>	COA 302938ES10	METHOD OF SHIPMENT GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO TestAmerica Incorporated, Richland	OFFSITE PROPERTY NO. SEE PTR	BILL OF LADING/AIR BILL NO. SEE PTR			

MATRIX* A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WF=Wipe X=Other	POSSIBLE SAMPLE HAZARDS/ REMARKS Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR/JATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1.	PRESERVATION None	HOLDING TIME 6 Months	TYPE OF CONTAINER G/P	NO. OF CONTAINER(S) 2	VOLUME 4L	SAMPLE ANALYSIS IT29L_SEP_LE PS_GS COMMON;
SPECIAL HANDLING AND/OR STORAGE							
SAMPLE NO. B2W2H6	MATRIX* WATER	SAMPLE DATE <i>4/8/14</i>	SAMPLE TIME <i>0925</i>				<input checked="" type="checkbox"/>

340090410
W06694
m38m4

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS	
RELINQUISHED BY/REMOVED FROM <i>C Fulton</i>	DATE/TIME <i>4/8/14 1050</i>	RECEIVED BY/STORED IN <i>SSU #1</i>	DATE/TIME <i>4/8/14 1050</i>	** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF. TRVL-14-058	
RELINQUISHED BY/REMOVED FROM <i>SSU-1</i>	DATE/TIME <i>MAR 17 2014 1130</i>	RECEIVED BY/STORED IN <i>L.D. WALKER</i>	DATE/TIME <i>MAR 17 2014 1130</i>	* CORRECTIONS by S. Seger on 4-10-14	
RELINQUISHED BY/REMOVED FROM <i>L.D. WALKER</i>	DATE/TIME <i>MAR 17 2014 1345</i>	RECEIVED BY/STORED IN <i>S. Beck</i>	DATE/TIME <i>MAR 17 2014 1345</i>	SKS A-10-14	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	TRVL-14-058	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

PRINTED ON 2/7/2014

A-6003-618 (REV 2)

TestAmerica

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Sample Check-in List

Date/Time Received: 4-8-14/1345 Container GM Screen Result: (Airlock) 40 cpm Initials [B]
Sample GM Screen Result (Sample Receiving) 40 cpm Initials [B]

Client: FLH SDG #: W04694 SAF #: F14-003 NA []

Lot Number: J4D090410

Chain of Custody # F14-003-065;041

Shipping Container ID or Air Bill Number: Mandelom 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: _____ °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): 2
7. Containers received: 4 x 4L

- 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: ~~WTF~~ SKS 4-9-14 Samples were sampled on 4/8/14 at 07:30. The 2nd & 3rd
Received By and Relinquished By DATES ARE 3/17/14 at 13:45. CORRECT DATE SHOULD BE
[] Client/Courier denied temperature check. [] Client/Courier unpack cooler. 4-9-14. Will correct COCs & Submit a SIR.

Sample Check-in List completed by Sample Custodian:
Signature: _____ Date: 4-8-14

Client Notification needed? Yes [FKS] No [] Date: 4-9-14
By: Sandra Seger
Person contacted: Susan Puckett

[B] No action necessary; process as is
Project Manager: Sandra Seger Date: 4-9-14

Balance Id: 1120482733, B145441330

Sample Preparation/Analysis

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

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

4/29/2014 12:59:55 PM
Analyte: WATER
Batch: 4099061
SEQ Batch, Test: None

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

PM, Quote: SS, 29754

pCi/L

Prep Tech: ,Norton,J

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 M3FM1-1-AA	3664.30g	3664.30g	3664.30g	3664.30g	ITA13829 03/28/14			35:10mg	1600	1600	L4	1515	41935
J4D090410-1-SAMP 04/08/2014 07:30					#Containers: 2 AmitRec: 2X4LP								Beta: 8.53E-05 uCi/Sa
2 M3FM1-1-AC-X	3700.00g	3700.00g	3700.00g	3700.00g	ITA13830 03/28/14			35:40mg			L5	1514	
J4D090410-1-DUP 04/08/2014 07:30					#Containers: 2 AmitRec: 2X4LP								Beta: 8.53E-05 uCi/Sa
3 M3FM4-1-AA	3741.60g	3741.60g	3741.60g	3741.60g	ITA13831 03/28/14			36:20mg			L4	1737	41291100
J4D090410-2-SAMP 04/08/2014 09:25					#Containers: 2 AmitRec: 2X4LP								Beta: 5.37E-03 uCi/Sa 1.3E-01L
4 M3FQ3-1-AA-B	3909.80g	3909.80g	3909.80g	3909.80g	ITA13832 03/28/14			35:10mg			L5	1738	
J4D090000-61-BLK 04/16/2014 10:50 pd					#Containers: 1 AmitRec:								Beta:
5 M3FQ3-1-AC-C	3926.30g	3926.30g	3926.30g	3926.30g	ISD1658 02/24/14			37:40mg			L4	1935	
J4D090000-61-LCS 04/16/2014 10:53 pd					#Containers: 1 AmitRec:								Beta:

TestAmerica Key: In - Initial Amt, fi - Final Amt, di - Diluted Amt, s1 - Sep1, s2 - Sep2 Page 1
Richland Wa. pd - Prep Dt, dc - Date Chg, r - Reference Dt, ec-Enrichment Cell, ct-Cocktailed Added

ISV - Insufficient Volume for Analysis

WO Cnt: 5
Prep_SamplePrep v4.8.69

4/29/2014 12:59:56 PM

Sample Preparation/Analysis

Balance Id:1120482733,B145441330

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

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

AnalyDueDate: 05/08/2014

Batch: 4099061

SEQ Batch, Test: None

Prep Tech: NortonJ



Work Ord, Lot, Sample Date	Total Amt/Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	Tracer Yield	Dish Size	Ppt or Geometry	Count Time Min	Detector Id	Count On Off (24hr) Circle	CR Analyst, Init/Date	Comments:
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Comments: M3FQ3-BLK "Comments S-14-00059",P-14-00233,S-14-00003,S-14-00074,P-13-00420,P-14-00120,P-13-00523

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

M3FMI1AA-SAMP Constituent List:

I-129	RDL:5.00E-01	pCi/L	LCL:	UCL:	RPD:								
M3FQ31AA-BLK:													
I-129	RDL:5.00E-01	pCi/L	LCL:	UCL:	RPD:								
M3FQ31AC-LCS:													
I-129	RDL:5	pCi/L	LCL:70	UCL:130	RPD:20								
M3FMI1AA-SAMP Calc Info:													
Uncert Level (#s):	2		Decay to sAdt: Y	Blk Subt.: N	Sci.Not.: Y	ODRs: B							
M3FQ31AA-BLK:													
Uncert Level (#s):	2		Decay to sAdt: Y	Blk Subt.: N	Sci.Not.: Y	ODRs: B							
M3FQ31AC-LCS:													
Uncert Level (#s):	2		Decay to sAdt: Y	Blk Subt.: N	Sci.Not.: Y	ODRs: B							

4/30/2014 8:39:35 AM

ICOC Fraction Transfer/Status Report

ByDate: 4/30/2013, 5/5/2014, Batch: '4099061', User: *ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting	SOPs,Reagents,Comments
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4099061

AC	Rev1C	NortonJ	4/16/2014 10:36:43	
SC		campbellsc	IsBatched	4/10/2014 8:07:12 AM
SC		NortonJ	InSep1	4/16/2014 10:36:43 AM
SC		NortonJ	InSep1	4/29/2014 7:23:30 AM
SC		BullJ	InCnt1	4/29/2014 1:31:16 PM
SC		DawkinsO	CalcC	4/29/2014 11:18:43 PM
SC		AntonsonL	Rev1C	4/30/2014 8:39:20 AM
AC		NortonJ	4/29/2014 7:23:30	ICOC_RADCALC v4.8.49
AC		BullJ	4/29/2014 1:31:16 PM	RL-GAM-002 REVISION 3
AC		DawkinsO	4/29/2014 11:18:43	RL-GAM-002 REVISION 4
AC		AntonsonL	4/30/2014 8:39:20	RL-CI-007 REVISION 3
				RL-CI-007 REVISION 3
				RL-DR-001 Rev 5

AC: Accepting Entry; SC: Status Change

TestAmerica Richland
Richland Wa.