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: 56604

SDG Nbr	ORDER Nbr	CLIENT ID NUMBER	LOT Nbr	WORK ORDER	RPT DB ID	BATCH
W06590	F13-002	B2R1C7	J3H060434-1	M1KED1AA	9M1KED10	3219031
		B2R1C9	J3H060434-2	M1KEE1AA	9M1KEE10	3219031

Comments:

AUGUST 20, 2013

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Certificate of Analysis

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

August 20, 2013

Attention: Scot Fitzgerald

SAF Number	:	F13-002
Date SDG Closed	:	August 5, 2013
Number of Samples	:	Two (2)
Sample Type	:	Water
SDG Number	:	W06590
Data Deliverable	:	15 Day / 15 Day Summary

CASE NARRATIVE

I. Introduction

On August 5, 2013, 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:

CH2M ID#	TARL ID#	MATRIX	DATE OF RECEIPT
B2R1C7	M1KED	WATER	8/05/13
B2R1C9	M1KEE	WATER	8/05/13

II. Sample Receipt

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

III. Analytical Results/Methodology

The analytical results for this report are presented by laboratory sample ID. Each set of data includes sample identification information, analytical results and the appropriate associated statistical errors.

The requested analyses were:

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 LCS, batch blank, samples and sample duplicate (B2R1C7) 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 = constants * f(x,y,z,...). The components (x,y,z) are evaluated to determine their contribution to the overall method uncertainty. The individual component uncertainties (u_i) are then combined using a statistical model that provides the most probable overall uncertainty value. All component uncertainties are categorized as type A, evaluated by statistical methods, or type B, evaluated by other means. Uncertainties not included in the components, such as sample homogeneity, are combined with the component uncertainty as the square root of the sum-of-the-squares of the individual uncertainties. The uncertainty associated with the derived result is the combined uncertainty (u_c) multiplied by the coverage factor (1,2, or 3).

When three or more sample replicates are used to derive the analytical result, the type A uncertainty is the standard deviation of the mean value (S/? n), where S is the standard deviation of the derived results. The type B uncertainties are all other random or non-random components that are not included in the standard deviation.

The derivation of the general "Law of Propagation of Errors" equations and specific example are available on request.

Report Definitions

Action Lev	An agreed upon activity level used to trigger some action when the final result is greater than or equal to the Action Level. Often the Action Level is related to the Decision Limit.
Batch	The QC preparation batch number that relates laboratory samples to QC samples that were prepared and analyzed together.
Bias	Defined by the equation (Result/Expected)-1 as defined by ANSI N13.30.
COC No	Chain of Custody Number assigned by the Client or TestAmerica.
Count Error (#s)	Poisson counting statistics of the gross sample count and background. The uncertainty is absolute and in the same units as the result. For Liquid Scintillation Counting (LSC) the batch blank count is the background.
Total Uncert (#s) ***u_c – Combined Uncertainty.***	All known uncertainties associated with the preparation and analysis of the sample are propagated to give a measure of the uncertainty associated with the result, *u_c the combined uncertainty*. The uncertainty is absolute and in the same units as the result.
(#s), Coverage Factor	The coverage factor defines the width of the confidence interval, 1, 2 or 3 standard deviations.
CRDL (RL)	Contractual Required Detection Limit as defined in the Client's Statement Of Work or TestAmerica "default" nominal detection limit. Often referred to the reporting level (RL)
Lc	Decision Level based on instrument background or blank, adjusted by the Efficiency, Chemical Yield, and Volume associated with the sample. The Type I error probability is approximately 5%. Lc=(1.645 * Sqrt(2*(BkgrndCnt/BkgrndCntMin)/SCntMin)) * (ConvFct/(Eff*Yld*Abn*Vol) * IngrFct). For LSC methods the batch blank is used as a measure of the background variability. Lc cannot be calculated when the background count is zero.
Lot-Sample No	The number assigned by the LIMS software to track samples received on the same day for a given client. The sample number is a sequential number assigned to each sample in the Lot.
MDC|MDA	Detection Level based on instrument background or blank, adjusted by the Efficiency, Chemical Yield, and Volume with a Type I and II error probability of approximately 5%. MDC = (4.65 * Sqrt((BkgrndCnt/BkgrndCntMin)/SCntMin) + 2.71/SCntMin) * (ConvFct/(Eff * Yld * Abn * Vol) * IngrFct). For LSC methods the batch blank is used as a measure of the background variability.
Primary Detector	The instrument identifier associated with the analysis of the sample aliquot.
Ratio U-234/U-238	The U-234 result divided by the U-238 result. The U-234/U-238 ratio for natural uranium in NIST SRM 4321C is 1.038.
Rst/MDC	Ratio of the Result to the MDC. A value greater than 1 may indicate activity above background at a high level of confidence. Caution should be used when applying this factor and it should be used in concert with the qualifiers associated with the result.
Rst/TotUcert	Ratio of the Result to the Total Uncertainty. If the uncertainty has a coverage factor of 2 a value greater than 1 may indicate activity above background at approximately the 95% level of confidence assuming a two-sided confidence interval. Caution should be used when applying this factor and it should be used in concert with the qualifiers associated with the result.
Report DB No	Sample Identifier used by the report system. The number is based upon the first five digits of the **Work Order** Number.
RER	The equation Replicate Error Ratio = (S-D)/[sqrt($TPUs^2$ + $TPUd^2$)] as defined by ICPT BOA where S is the original sample result, D is the result of the duplicate, TPUs is the total uncertainty of the original sample and TPUd is the total uncertainty of the duplicate sample.
SDG	Sample Delivery Group Number assigned by the Client or assigned by TestAmerica upon sample receipt.
Sum Rpt Alpha Spec Rst(s)	The sum of the reported alpha spec results for tests derived from the same sample excluding duplicate result where the results are in the same units.
Work Order	The LIMS software assign test specific identifier.
Yield	The recovery of the tracer added to the sample such as Pu-242 used to trace a Pu-239/40 method.

8/20/2013 2:20:28 PM

TestAmerica Inc Report

Lab Code: TARL

FormNbr: R **FormatType:** FEAD **Version:** 05 **Rpt Nbr:** 56604 **File Name:** h:\Reportdb\edd\FeadIV\Rad\W06590.Edd, h:\Reportdb\edd\FeadIV\Rad\56604.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:
9M1KED10	B2R1C7	F13-002	MW6-SBB-A1	F13-002	W06590					08/05/2013 10:21

Batch	Analyte	CAS#	Result	Unit	CntU 2S	TotU 2S	Qual	MDA	TrcYield	Method	Alq Size	Unit	Analy Date/Time	Act
3219031	I-129	15046-84-1	1.42E-01	pCi/L	1.0E-01	1.0E-01	U	2.09E-01	96.5	I129LL_SEP_LEPS	3.5986E+00	L	08/15/2013 16:42	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:
9M1KEE10	B2R1C9	F13-002	MW6-SBB-A1	F13-002	W06590					08/05/2013 10:30

Batch	Analyte	CAS#	Result	Unit	CntU 2S	TotU 2S	Qual	MDA	TrcYield	Method	Alq Size	Unit	Analy Date/Time	Act
3219031	I-129	15046-84-1	7.19E-01	pCi/L	2.1E-01	2.1E-01		1.74E-01	96.8	I129LL_SEP_LEPS	3.5486E+00	L	08/16/2013 11:40	I

AUGUST 20, 2013

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.

Tuesday, August 20, 2013

TestAmerica Inc QC Blank Report

Lab Code: TARL

FormNbr: R **FormatType:** FEAD **VersionNbr:** 05 **File Name:** h:\Reportdb\edd\FeadIV\Rad\W06590.Edd, h:\Reportdb\edd\FeadIV\Rad\56604.Ed

Lab Sample Id: M1KH01AB **Sdg/Rept Nbr:** W06590 56604 **Collection Date:** 08/05/2013 10:21

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

Moisture/Solids%*: **QC Type:** BLK **Received Date:** 08/05/2013

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

Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu-al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCL	R Typ
3219031	I-129	2.25E-02	pCi/L	9.4E-02	U	1.73E-01	97.3		I129LL_SEP_L	3.9269E+00	08/15/2013				D
BLK	15046-84-1			9.4E-02						L	23:51				

AUGUST 20, 2013

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.

Tuesday, August 20, 2013

TestAmerica Inc QC Control Sample Report

Lab Code: TARL

FormNbr: R **FormatType:** FEAD **VersionNbr:** 05 **File Name:** h:\Reportdb\edd\FeadIV\Rad\W06590.Edd, h:\Reportdb\edd\FeadIV\Rad\56604.Ed

Lab Sample Id: M1KH01CS **Sdg/Rept Nbr:** W06590 56604 **Collection Date:** 08/05/2013 10:21

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

Moisture/Solids%*: **QC Type:** BS **Received Date:** 08/05/2013

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

Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu-al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCL	R Typ
3219031	I-129	8.56E+00	pCi/L	9.7E-01		2.08E-01	96.8	9.59E+00	I129LL_SEP_L	3.9902E+00	08/15/2013			70	D
BS	15046-84-1			9.7E-01				89.2		L	23:55			130	

AUGUST 20, 2013

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.

Tuesday, August 20, 2013

TestAmerica Inc QC Duplicate Report

Lab Code: TARL

FormNbr: R **FormatType:** FEAD **VersionNbr:** 05 **File Name:** h:\Reportdb\edd\FeadIV\Rad\W06590.Edd, h:\Reportdb\edd\FeadIV\Rad\56604.Ed

Lab Sample Id:	M1KED1CR	**Sdg/Rept Nbr:**	W06590	56604	**Collection Date:** 08/05/2013 10:21
Client Id:	B2R1C7	**Matrix:**	WATER	WATER	**Sample On Date:**
Moisture/Solids%*:		**QC Type:**	DUP		**Received Date:** 08/05/2013

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix	RTyp
F13-002	MW6-SBB-A19981								AC	H

Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu-al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCL	R Typ
3219031	I-129	1.66E-01	pCi/L	1.2E-01	U	2.36E-01	98.6		I129LL_SEP_L	3.5737E+00	08/15/2013	15.6	0.3		D
DUP	15046-84-1	1.42E-01		1.2E-01						L	20:09	20.0	3		

AUGUST 20, 2013

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

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Data Review/Verification Checklist
RADIOCHEMISTRY, First Level Review

8/20/2013 10:00:33 AM

Lot No., Due Date: J3H060434; 08/20/2013
Client, Site: 108302; FLH HANFORD
QC Batch No., Method Test: 3219031; RGAMLEPS Gamma by LEPS
SDG, Matrix: W06590; WATER

1.0 COC

		Yes	No	N/A
1.1	Is the ICOC page complete; includes all applicable analysis, dates, SOP numbers, and revisions?	✓		

2.0 QC Batch

		Yes	No	N/A
2.1	Do the Summary/Detailed Reports include a calculated result for each sample listed on the QC Batch Sheet?	✓		
2.2	Are the QC appropriate for the analysis included in the batch?	✓		
2.3	Is the Analytical Batch Worksheet complete; includes as appropriate, volumes, count times, etc?	✓		
2.4	Does the Worksheets include a Tracer Vial label for each sample?	✓		

3.0 QC & Samples

		Yes	No	N/A
3.1	Is the blank results, yield, and MDA within contract limits?	✓		
3.2	Is the LCS result, yield, and MDA within contract limits?	✓		
3.3	Are the MS/MSD results, yields, and MDA within contract limits?			✓
3.4	Are the duplicate result, yields, and MDAs within contract limits?	✓		
3.5	Are the sample yields and MDAs within contract limits?	✓		

4.0 Raw Data

		Yes	No	N/A
4.1	Were results calculated in the correct units?	✓		
4.2	Were analysis volumes entered correctly?	✓		
4.3	Were Yields entered correctly?	✓		
4.4	Were spectra reviewed/meet contractual requirements?	✓		
4.5	Were raw counts reviewed for anomalies?	✓		

5.0 Other

		Yes	No	N/A
5.1	Are all nonconformances included and noted?			✓
5.2	Are all required forms filled out?	✓		
5.3	Was the correct methodology used?	✓		
5.4	Was transcription checked?	✓		
5.5	Were all calculations checked at a minimum frequency?			✓
5.6	Are worksheet entries complete and correct?	✓		

6.0 Comments on any No response:

First Level Lee Antonson Date 8/20/13

TestAmerica Richland
QAS_RADCALCv4.8.44

Page 1

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Data Review Checklist
RADIOCHEMISTRY
Second Level Review

Batch Number: 3219031

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

Comments on any "No" response: _____

Second Level Review: Sandra Segre Date: 8-20-13

LS-038B, Rev. 10, 9/07

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F13-002-315	PAGE 1 OF 1
COLLECTOR Kauer Floyd, Aguilar	COMPANY CONTACT EVANS, RT	TELEPHONE NO. 373-7924	PROJECT COORDINATOR EVANS, RT	PRICE CODE 7C AIR QUALITY ☐	DATA TURNAROUND 15 Days / 15 Days
SAMPLING LOCATION 289-T, 299-W14-74, Valve V05-YE04	PROJECT DESIGNATION 200W Pump & Treat - Extraction Well Water Sampling		SAF NO. F13-002		
ICE CHEST NO.	FIELD LOGBOOK NO. HNF-N-484-5/85	ACTUAL SAMPLE DEPTH N/A	COA 303111ES10	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
WI=Wipe
X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS
Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR/IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1.

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	None
HOLDING TIME	6 Months
TYPE OF CONTAINER	G/P
NO. OF CONTAINER(S)	2
VOLUME	4L
SAMPLE ANALYSIS	I129LL_SEP_LEPS_GS_LL: COMMON;

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B2R1C7	WATER	8-5-13	1021	✓

J3H060434
W06590
Due 8-20-13
MIXED

J3H060434

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM Edward Eldridge 8-5-13	DATE/TIME 1125	RECEIVED BY/STORED IN J. Bock / Bock TALK 8-5-13	DATE/TIME 1125
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS
** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF. TRVL-13-079

TRVL- 13- 079

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

PRINTED ON 8/1/2013

A-6003-618 (REV 2)

AUGUST 20, 2013

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F13-002-318	PAGE 1 OF 1
COLLECTOR Kevin Eldo Floyd Agoilar	COMPANY CONTACT EVANS, RT	TELEPHONE NO. 373-7924	PROJECT COORDINATOR EVANS, RT	PRICE CODE 7C AIR QUALITY ☐	DATA TURNAROUND 15 Days / 15 Days
SAMPLING LOCATION 289-T, 299-W11-96, Valve V05-YE08	PROJECT DESIGNATION 200W Pump & Treat - Extraction Well Water Sampling		SAF NO. F13-002		
ICE CHEST NO.	FIELD LOGBOOK NO. HNF-N-451-5/29	ACTUAL SAMPLE DEPTH N/A	COA 303111ES10	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
WI=Wipe
X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS
Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR/IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1.

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	None
HOLDING TIME	6 Months
TYPE OF CONTAINER	G/P
NO. OF CONTAINER(S)	2
VOLUME	4L
SAMPLE ANALYSIS	I129LL_SEP_LEPS_GS_LL: COMMON;

J3H060434
W06590

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B2R1C9	WATER	8-5-13	1030	✓

MIKEE

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
Eldo Floyd Agoilar 8-5-13	1125	J. Bell / Jack TALL	8-5-13 1125
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS
** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF. TRVL-13-079

TRVL 13- 079

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

PRINTED ON 8/1/2013

A-6003-618 (REV 2)

AUGUST 20, 2013

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Sample Check-in List

Date/Time Received: 8-5-13 / 1125 Container GM Screen Result: (Airlock) 40 cpm Initials [B]
Sample GM Screen Result (Sample Receiving) 20 cpm Initials [B]

Client: ATW FLH SDG #: W06590 SAF #: F13-002 NA [ ]
B 8-5-13

Lot Number: J3H060434

Chain of Custody # F13-002-315; 318

Shipping Container ID or Air Bill Number : hand delivered 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: _____ °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 p
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
    [B] 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 HNO_3 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. [SKS] Client/Courier unpack cooler.

Sample Check-in List completed by Sample Custodian:
Signature: Susie Cook Date: 8-5-13

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

[SKS] No action necessary; process as is

Project Manager Sandra Segen Date 8-7-13

LS-023 Rev. 17, 05/13

Page 1 of 1

8/15/2013 9:35:06 AM

Sample Preparation/Analysis

Balance Id:1120482733

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

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

Pipet #: _____

AnalyDueDate: 08/20/2013

Sep1 DT/Tm Tech:

Batch: 3219031 WATER pCi/L
SEQ Batch, Test: None All Tests: 3219031 BNTB,

PM, Quote: SS , 29754

Sep2 DT/Tm Tech:

Prep Tech: ,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 M1KED-1-AA J3H060434-1-SAMP 08/05/2013 10:21			3598.60g,in	3598.60g AmtRec: 2X4LP	ITA13244 07/19/13 #Containers: 2			35.7mg	200	L5	2002	8/15/13	Scr: Alpha: 3.56E-04 uCi/Sa Beta: -2.72E-03 uCi/Sa
2 M1KED-1-AC-X J3H060434-1-DUP 08/05/2013 10:21			3573.70g,in	3573.70g AmtRec: 2X4LP	ITA13245 07/19/13 #Containers: 2			36.5mg		L4	2329		Scr: Alpha: 3.56E-04 uCi/Sa Beta: -2.72E-03 uCi/Sa
3 M1KEE-1-AA J3H060434-2-SAMP 08/05/2013 10:30			3548.60g,in	3548.60g AmtRec: 2X4LP	ITA13246 07/19/13 #Containers: 2			35.8mg		~~L5~~ L4	~~2331~~ 1500	8/16/13 8/16/13	Scr: Alpha: -2.89E-04 uCi/Sa Beta: -1.78E-03 uCi/Sa
4 M1KH0-1-AA-B J3H070000-31-BLK 08/07/2013 10:10 pd			3926.90g,in	3926.90g AmtRec:	ITA13247 07/19/13 #Containers: 1			36.0mg		L4	0311		Scr: Alpha: Beta:
5 M1KH0-1-AC-C J3H070000-31-LCS 08/07/2013 10:10 pd			3990.20g,in	3990.20g AmtRec:	ISD1577 07/19/13 #Containers: 1			36.4mg		L5	0315		Scr: Alpha: Beta:

8/15/2013 9:35:08 AM

Sample Preparation/Analysis

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

Balance Id:1120482733
Pipet #: _____
Sep1 DT/Tm Tech:
Sep2 DT/Tm Tech:
Prep Tech: NortonJ,SannohS

AnalyDueDate: 08/20/2013

Batch: 3219031 pCi/L
SEQ Batch, Test: None

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

Comments: M1KH0-BLK "Comments P-12-00571",S-12-00193,P-13-00094,S-13-00068,P-13-00289,S-13-00041,S-12-00141,P-13-00358,S-12-00061

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

M1KED1AA-SAMP Constituent List:
  I-129        RDL:5.00E-01    pCi/L     LCL:        UCL:        RPD:
M1KH01AA-BLK:
  I-129        RDL:5.00E-01    pCi/L     LCL:        UCL:        RPD:
M1KH01AC-LCS:
  I-129        RDL:5           pCi/L     LCL:70      UCL:130     RPD:20

M1KED1AA-SAMP Calc Info:
     Uncert Level (#s).: 2     Decay to SaDt: Y     Blk Subt.: N     Sci.Not.: Y     ODRs: B
M1KH01AA-BLK:
     Uncert Level (#s).: 2     Decay to SaDt: Y     Blk Subt.: N     Sci.Not.: Y     ODRs: B
M1KH01AC-LCS:
     Uncert Level (#s).: 2     Decay to SaDt: Y     Blk Subt.: N     Sci.Not.: Y     ODRs: B
```

8/20/2013 9:58:19 AM

ICOC Fraction Transfer/Status Report

ByDate: 8/20/2012, 8/25/2013, Batch: '3219031', User: *ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting			Comments
3219031						
AC		Rev1C	NortonJ	8/15/2013 7:11:10		
SC			rogersa	IsBatched	8/7/2013 10:08:53 AM	ICOC_RADCALC v4.8.49
SC			NortonJ	InSep1	8/15/2013 7:11:10 AM	RL-GAM-002 REVISION 3
SC			CarnesH	InCnt1	8/15/2013 10:07:46 AM	RL-CI-007 REVISION 3
SC			NortonJ	CalcC	8/16/2013 3:47:47 PM	RL-CI-007 REVISION 3
SC			antonsonl	Rev1C	8/20/2013 9:56:01 AM	RL-DR-001 Rev 2
AC			CarnesH	8/15/2013 10:07:46		
AC			NortonJ	8/16/2013 3:47:47 PM		
AC			antonsonl	8/20/2013 9:56:01		

AC: Accepting Entry, SC: Status Change

TestAmerica Richland

Richland Wa.

Page 1

Grp Rec Cnt: 4

ICOCFractions v4.8.44