1216323

DECEMBER 21, 2011

Analytical Data Package Prepared For

CH2M Hill Plateau Remediation

Radiochemical Analysis By

TestAmerica

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

Assigned Laboratory Code: TARL

Data Package Contains _____ Pages

Report No.: 49904

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

SDG No.	Order No.	Client Sample ID (List Order)	Lot-Sa No.	Work Order	Report DB ID	Batch No.
W06290	F11-069	B2CP06	J1J240443-1	MNE5N1AC	9MNE5N10	1297205
		B2CP06	J1J240443-1	MNE5N1AA	9MNE5N10	1300064
		B2CP12	J1J240443-1	MNE5M1AA	9MNE5M10	1300067

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TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Certificate of Analysis

TestAmerica Laboratories, Inc.

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

December 21, 2011

Attention: Scot Fitzgerald

SAF Number	:	F11-069
Date SDG Closed	:	October 24, 2011
Number of Samples	:	Two (2)
Sample Type	:	Water
SDG Number	:	W06290
Data Deliverable	:	45 Day Summary

CASE NARRATIVE

I. Introduction

On October 24, 2011 one 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
B2CP06	MNE5N	WATER	10/24/11
B2CP12	MNE5M	WATER	10/24/11

II. Sample Receipt

The sample was received in good condition.

Samples were received above the 4° C requirement. For more details refer to the SIR (CHPRC Tracking Number: SDR12-060) that is included in this report.

No other 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.

CH2M Hill Plateau Remediation Company
December 21, 2011

The requested analyses were:

Gamma Spectroscopy
Iodine-129 (LL) by method RL-GAM-002
Liquid Scintillation Counting
Tritium by method RL-LSC-005
Chemical Analysis
Hexavalent Chromium by EPA method 7196A

IV. Quality Control

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

QC and sample results are reported in the same units.

V. Comments

Gamma Spectroscopy
Iodine-129 (LL) by method RL-GAM-002:
The LCS, batch blank, samples and sample duplicate (B2CP12) results are within contractual requirements.

Liquid Scintillation Counting
Tritium by method RL-LSC-005:
The LCS, batch blank, samples and sample duplicate (B2CP06) results are within contractual requirements.

Chemical Analysis
Hexavalent Chromium by EPA method 7196A
The LCS, batch blank, samples, sample duplicate (B2CP06), sample matrix spike (B2CP06), and matrix spike duplicate (B2CP06) 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	SDR12-060
REV NUM	0
DATE INITIATED	11/21/2011

SAMPLE EVENT INFORMATION

SAF NUM(S)	F11-069
OPERABLE UNIT(S)	200-UP-1
PROJECT(S)	Remedial Wells
SAMPLE EVENT TITLE(S)	200-UP-1 Remedial Wells
LABORATORY	TestAmerica Incorporated, Richland

SAMPLING INFORMATION

NUMBER OF SAMPLES	1
SAMPLE NUMBERS	B2CP06
SAMPLE MATRIX	WATER
COLLECTION DATE	10/24/2011 - 10/24/2011
SDG NUM	W06290

ISSUE BACKGROUND

CLASS	Field Sampling Issue
TYPE	Incorrect Sample Preservation
DESCRIPTION	For the listed sample, the COC indicates the sample should have been preserved at 4°C. Instead, the sample was received at 13°C.

DISPOSITION

DESCRIPTION	Proposed Disposition: Proceed with requested analyses, report results, and note elevated sample preservation temperature in the case narrative.
JUSTIFICATION	Accepted Disposition: Accept proposed resolution.

Submitted by: Sandra Seger / TARL Date: 11/21/2011
Accepted by: Dave Todak / CHPRC Date: 11/21/2011

A-6003-640 (03/30)

PAGE 1 of 1

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.

Sample Results Summary

Date: 21-Dec-11

TestAmerica TARL

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

Report No. : 49904 **SDG No:** W06290

Batch	Client Id Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	MDL	CRDL	RPD
1300067 I129_SEP_LEPS_GS									
B2CP12									
	MNE5M1AA	I129	4.04E-01 +- 1.8E-01		pCi/L	85%	2.00E-01	1.00E+00	
B2CP12 DUP									
	MNE5M1AC	I129	4.44E-01 +- 1.8E-01		pCi/L	105%	2.00E-01	1.00E+00	9.5
1297205 7196_CR6									
B2CP06									
	MNE5N1AC	HEXCHROME	3.70E-03 +- 0.0E+00	U	mg/L	N/A	3.70E-03	3.50E-01	
	MNE5N1AJ	HEXCHROME	3.70E-03 +- 0.0E+00	U	mg/L	N/A	3.70E-03	3.50E-01	0.0
1300064 906.0_H3_LSC									
B2CP06									
	MNE5N1AA	H-3	2.43E+04 +- 8.2E+02		pCi/L	100%	3.38E+02	4.00E+02	
B2CP06 DUP									
	MNE5N1AK	H-3	2.40E+04 +- 8.1E+02		pCi/L	100%	3.39E+02	4.00E+02	

No. of Results: 6

TestAmerica
rptSTLRchSaSummary2 V5.2.18.1
A2002

RPD - Relative Percent Difference.

U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda/Mdl, Total Uncert, CRDL, RDL or not identified by gamma scan software.

QC Results Summary
TestAmerica TARL

Ordered by Method, Batch No, QC Type,.

Date: 21-Dec-11

Report No. : 49904

SDG No.: W06290

Batch Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	LCS Recovery	Bias	MDL
I129_SEP_LEPS_GS								
1300067 BLANK QC,								
MNHVG1AA	I129	-6.20E-02 +- 1.1E-01	U	pCi/L	85%			1.88E-01
1300067 LCS,								
MNHVG1AC	I129	1.35E+01 +- 1.6E+00		pCi/L	92%	122%	0.2	2.66E-01
7196_CR6								
1297205 MATRIX SPIKE, B2CP06								
MNE5N1AG	HEXCHROME	2.60E-01 +- 0.0E+00		mg/L	N/A	99%	0.0	3.70E-03
MNE5N1AH	HEXCHROME	2.63E-01 +- 0.0E+00		mg/L	N/A	100%	0.0	3.70E-03
1297205 LCS,								
MNE5W1AC	HEXCHROME	4.89E-01 +- 0.0E+00		mg/L	N/A	98%	0.0	3.70E-03
1297205 BLANK QC,								
MNE5W1AA	HEXCHROME	3.70E-03 +- 0.0E+00	U	mg/L	N/A			3.70E-03
906.0_H3_LSC								
1300064 BLANK QC,								
MNHVD1AA	H-3	5.09E+01 +- 1.6E+02	U	pCi/L	100%			3.42E+02
MNHVD1AD	H-3	1.18E+02 +- 1.6E+02	U	pCi/L	100%			3.43E+02
1300064 LCS,								
MNHVD1AE	H-3	3.14E+03 +- 2.6E+02		pCi/L	100%	116%	0.2	3.46E+02
MNHVD1AC	H-3	3.03E+03 +- 2.6E+02		pCi/L	100%	112%	0.1	3.43E+02

No. of Results: 10

TestAmerica
rptSTLRchQcSummary V5.2.18.1
A2002

Bias - (Result/Expected)-1 as defined by ANSI N13.30.

U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda/Mdl, Total Uncert, CRDL, RDL or not identified by gamma scan software.

FORM I

SAMPLE RESULTS

Date: 21-Dec-11

Lab Name:	TestAmerica	SDG:	W06290	Collection Date:	10/24/2011 10:11:00 AM
Lot-Sample No.:	J1J240443-1	Report No. :	49904	Received Date:	10/24/2011 2:20:00 PM
Client Sample ID:	B2CP06	COC No. :	F11-069-002	Matrix:	WATER

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDL, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDL, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 1297205	7196_CR6			Work Order:	MNE5N1AC		Report DB ID: 9MNE5N10					
HEXCHROME	***3.70E-03***	U		0.0E+00	3.70E-03	mg/L	N/A	*1.*	10/24/11 04:30 p		100.0	
							3.50E-01	*N/A*			ML	
Batch: 1300064	906.0_H3_LSC			Work Order:	MNE5N1AA		Report DB ID: 9MNE5N10					
H-3	***2.43E+04***		5.6E+02	8.2E+02	3.38E+02	pCi/L	100%	*(72.)*	12/10/11 05:26 p		0.00503	LSC8
						1.61E+02	4.00E+02	*(59.)*			L	

No. of Results: 2 Comments:

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda/Mdl, Total Uncert, CRDL, RDL or not identified by gamma scan software.

DECEMBER 21, 2011

FORM I

SAMPLE RESULTS

Date: 21-Dec-11

Lab Name:	**TestAmerica**	**SDG:**	W06290	**Collection Date:**	10/24/2011 10:11:00 AM
Lot-Sample No.:	**J1J240443-1**	**Report No. :**	49904	**Received Date:**	10/24/2011 2:20:00 PM
Client Sample ID:	**B2CP12**	**COC No. :**	F11-069-003	**Matrix:**	WATER

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDL, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDL, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 1300067	I129_SEP_LEPS_GS			**Work Order:**	MNE5M1AA		**Report DB ID:**	9MNE5M10				
I129	***4.04E-01***		1.8E-01	1.8E-01	2.00E-01	pCi/L	85%	*(2.)*	12/1/11 08:35 p		3.6708	LEP5$1
						8.52E-02	1.00E+00	*(4.5)*			L	

No. of Results: 1 **Comments:**

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda/Mdl, Total Uncert, CRDL, RDL or not identified by gamma scan software.

FORM II

Date: 21-Dec-11

DUPLICATE RESULTS

Lab Name:	TestAmerica	SDG:	W06290	Collection Date:	10/24/2011 10:11:00 AM
Lot-Sample No.:	J1J240443-1	Report No. :	49904	Received Date:	10/24/2011 2:20:00 PM
Client Sample ID:	B2CP06	COC No. :	F11-069-002	Matrix:	WATER

Parameter	Result, Orig Rst	Qual	Count Error (2 s)	Total Uncert(2 s)	MDL, Action Lev	Rpt Unit, CRDL	Yield	Rst/MDL, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 1297205	7196_CR6			Work Order: MNE5N1AJ		Report DB ID: MNE5N1ER			Orig Sa DB ID: 9MNE5N10			
HEXCHROME	3.70E-03	U		0.0E+00	3.70E-03	mg/L	N/A	1.	10/24/11 04:30 p		100.0	
	3.70E-03	U	RPD	0.0		3.50E-01		N/A			ML	

No. of Results: 1 Comments:

RPD - Relative Percent Difference.
MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda/Mdl, Total Uncert, CRDL, RDL or not identified by gamma scan software.

DECEMBER 21, 2011

FORM II

Date: 21-Dec-11

DUPLICATE RESULTS

Lab Name:	**TestAmerica**	**SDG:**	W06290	**Collection Date:**	10/24/2011 10:11:00 AM
Lot-Sample No.:	**J1J240443-2**	**Report No. :**	49904	**Received Date:**	10/24/2011 2:20:00 PM
Client Sample ID:	**B2CP06 DUP**	**COC No. :**	F11-069-002	**Matrix:**	WATER

Parameter	Result, Orig Rst	Qual	Count Error (2 s)	Total Uncert(2 s)	MDL, Action Lev	Rpt Unit, CRDL	Yield	Rst/MDL, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 1300064	906.0_H3_LSC			**Work Order:** MNE5N1AK		**Report DB ID:** MNE5N1KR			**Orig Sa DB ID:**			
H-3	2.40E+04		5.5E+02	8.1E+02	3.39E+02	pCi/L	100%	(70.7)	12/10/11 06:48 p		0.00502	LSC8
			RPD			4.00E+02		(58.8)			L	

No. of Results: 1 **Comments:**

RPD - Relative Percent Difference.

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.

DECEMBER 21, 2011

FORM II

Date: 21-Dec-11

DUPLICATE RESULTS

Lab Name:	TestAmerica	SDG:	W06290	Collection Date:	10/24/2011 10:11:00 AM
Lot-Sample No.:	J1J240443-1	Report No. :	49904	Received Date:	10/24/2011 2:20:00 PM
Client Sample ID:	B2CP12 DUP	COC No. :	F11-069-003	Matrix:	WATER

Parameter	Result, Orig Rst	Qual	Count Error (2 s)	Total Uncert(2 s)	MDL, Action Lev	Rpt Unit, CRDL	Yield	Rst/MDL, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 1300067	I129_SEP_LEPS_GS			Work Order: MNE5M1AC		Report DB ID: MNE5M1CR			Orig Sa DB ID: 9MNE5M10			
I129	4.44E-01		1.8E-01	1.8E-01	2.00E-01	pCi/L	105%	(2.2)	12/2/11 02:53 a		3.7809	LEP4$1
	4.04E-01		RPD 9.5			1.00E+00		(4.8)			L	

No. of Results: 1 Comments:

DECEMBER 21, 2011

RPD - Relative Percent Difference.

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.

FORM II

BLANK RESULTS

Date: 21-Dec-11

Lab Name: TestAmerica

Matrix: WATER

SDG: W06290

Report No. : 49904

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDL, Lc	Rpt Unit, CRDL	Yield	Rst/MDL, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 1297205	7196_CR6			**Work Order:**	MNE5W1AA		**Report DB ID:**	MNE5W1AB				
HEXCHROME	3.70E-03	U		0.0E+00	3.70E-03	mg/L	N/A	1.	10/24/11 04:30 p		100.0	
						3.50E-01		N/A			ML	
Batch: 1300064	906.0_H3_LSC			**Work Order:**	MNHVD1AA		**Report DB ID:**	MNHVD1AB				
H-3	5.09E+01	U	1.4E+02	1.6E+02	3.42E+02	pCi/L	100%	0.15	12/10/11 08:10 p		0.00502	LSC8
					1.63E+02	4.00E+02		0.64			L	
Batch: 1300064	906.0_H3_LSC			**Work Order:**	MNHVD1AD		**Report DB ID:**	MNHVD1DX				
H-3	1.18E+02	U	1.4E+02	1.6E+02	3.43E+02	pCi/L	100%	0.34	12/10/11 10:53 p		0.00505	LSC8
					1.63E+02	4.00E+02		(1.5)			L	
Batch: 1300067	I129_SEP_LEPS_GS			**Work Order:**	MNHVG1AA		**Report DB ID:**	MNHVG1AB				
I129	-6.20E-02	U	1.1E-01	1.1E-01	1.88E-01	pCi/L	85%	-0.33	12/2/11 12:00 a		3.5714	LEP5$1
					8.06E-02	1.00E+00		-(1.1)			L	

No. of Results: 4 Comments:

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda/Mdl, Total Uncert, CRDL, RDL or not identified by gamma scan software.

DECEMBER 21, 2011

FORM II

LCS RESULTS

Date: 21-Dec-11

Lab Name: TestAmerica

Matrix: WATER

SDG: W06290

Report No. : 49904

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDL	Report Unit	Yield	Expected	Expected Uncert	Recovery, Bias	Analysis, Prep Date	Aliquot Size	Primary Detector
Batch: 1297205	7196_CR6			Work Order:	MNE5W1AC		Report DB ID:	MNE5W1AS					
HEXCHROME	4.89E-01			0.0E+00	3.70E-03	mg/L	N/A	5.00E-01		98%	10/24/11 04:30 p	100.0	
							Rec Limits:	70	130	0.0		ML	
Batch: 1300064	906.0_H3_LSC			Work Order:	MNHVD1AC		Report DB ID:	MNHVD1CS					
H-3	3.03E+03		2.4E+02	2.6E+02	3.43E+02	pCi/L	100%	2.71E+03	8.14E+01	112%	12/10/11 09:32 p	0.00502	LSC8
							Rec Limits:	70	130	0.1		L	
Batch: 1300064	906.0_H3_LSC			Work Order:	MNHVD1AE		Report DB ID:	MNHVD1EM					
H-3	3.14E+03		2.4E+02	2.6E+02	3.46E+02	pCi/L	100%	2.72E+03	8.15E+01	116%	12/11/11 12:15 a	0.00501	LSC8
							Rec Limits:	70	130	0.2		L	
Batch: 1300067	I129_SEP_LEPS_GS			Work Order:	MNHVG1AC		Report DB ID:	MNHVG1CS					
I129	1.35E+01		1.6E+00	1.6E+00	2.66E-01	pCi/L	92%	1.11E+01	3.59E-01	122%	12/2/11 05:16 a	3.4587	LEP5$1
							Rec Limits:	70	130	0.2		L	

No. of Results: 4 Comments:

TestAmerica Bias - (Result/Expected)-1 as defined by ANSI N13.30.

rptSTLRchLcs
V5.2.18.1 A2002

DECEMBER 21, 2011

FORM II

MATRIX SPIKE RESULTS

Date: 21-Dec-11

Lab Name: TestAmerica **SDG:** W06290

Lot-Sample No.: J1J240443-1, B2CP06 **Report No. :** 49904 **Matrix:** WATER

Parameter	SpikeResult, Orig Rst	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA	Rpt Unit, CRDL	Yield	Rec-overy	Expected, Uncert	Analysis, Prep Date	Aliquot Size	Analy Method, Primary Detector
Batch: 1297205	Work Order:	MNE5N1AG		Report DB ID:	MNE5N1CW		Orig Sa DB ID:	9MNE5N10				
HEXCHROME	2.60E-01			0.0E+00	3.70E-03	mg/L	N/A	98.80%	2.63E-01	10/24/11 04:30 p	100.0	7196_CR6
	3.70E-03										ML	
Batch: 1297205	Work Order:	MNE5N1AH		Report DB ID:	MNE5N1DW		Orig Sa DB ID:	MNE5N1CW				
HEXCHROME	2.63E-01			0.0E+00	3.70E-03	mg/L	N/A	99.94%	2.63E-01	10/24/11 04:30 p	100.0	7196_CR6
	2.60E-01										ML	

Number of Results: 2

Comments:

DECEMBER 21, 2011

TestAmerica
rptSTLRchMs
V5.2.18.1 A2002

RER - Replicate Error Ratio = (S-D)/[sqrt(sq(TPUs)+sq(TPUd))] as defined by ICPT BOA.
Bias - (Result/Expected)-1 as defined by ANSI N13.30.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Data Review/Verification Checklist
RADIOCHEMISTRY, First Level Review

12/6/2011 11:31:24 AM

Lot No., Due Date: J1J240443; 12/08/2011
Client, Site: 108302; FLH HANFORD
QC Batch No., Method Test: 1300067; RGAMLEPS Gamma by LEPS
SDG, Matrix: W06290; 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 Lisa Gustafson **Date** 12/6/11

TestAmerica Richland
QAS_RADCALCv4.8.44

Page 1

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Data Review Checklist
RADIOCHEMISTRY
Second Level Review

Batch Number: 1300067

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: Jodie G Date: 12/7/11

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

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Data Review/Verification Checklist
RADIOCHEMISTRY, First Level Review

12/14/2011 11:41:30 AM

Lot No., Due Date: J1J240443; 12/08/2011
Client, Site: 108302; FLH HANFORD
QC Batch No., Method Test: 1300064; RTRITIUM H-3 by LSC
SDG, Matrix: W06290; WATER

	Yes	No	N/A
1.0 COC			
1.1 Is the ICOC page complete; includes all applicable analysis, dates, SOP numbers, and revisions?	✓		
2.0 QC Batch			
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			
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			
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			
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 John Wooten **Date** 12-14-11

TestAmerica Richland
QAS_RADCALCv4.8.44

Page 1

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Data Review Checklist
RADIOCHEMISTRY
Second Level Review

Batch Number: 1300064

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: Jodie G Date: 12/15/11

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

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Richland Laboratory
Data Review Check List
Hexavalent Chromium

Batch Number(s): **1297205**
Lab Sample Numbers or SDG: **W06290** Due 12/8
Method/Test/Parameter: **Cr+6 in Water / RL-WC-003**

Review Item	Yes (✓)	No (✓)	N/A (✓)	2nd Level Review (✓)
A. Initial Calibration				
1. Performed at required frequency with required number of levels?	✓			✓
2. Correlation coefficient within QC limits?	✓			✓
3. Initial calibration verification (ICV) analyzed immediately after calibration and results within QC limits?	✓			✓
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 QC limits?	✓			✓
2. CCB analyzed at required frequency and all results ≤ reporting limit?	✓			✓
C. Sample Analysis				
1. Were any samples with concentrations above the linear range for any parameter diluted and reanalyzed?			✓	✓
2. Were all sample holding times met?	✓			✓
D. QC Samples				
1. All results for the preparation blank below limits?	✓			✓
2. MS or MS/MSD recoveries within QC limits and %RPD (for MSD) acceptable?	✓			✓
3. LCS percent recovery within QC limits and %RPD (for LCSD) acceptable?	✓			✓
4. Analytical spikes within QC limits where applicable?	✓			✓
5. ICP only: One serial dilution performed per SDG?			✓	✓
6. ICP only: CRDL standard (CRI or CRA) analyzed at required frequency?			✓	✓
7. ICP only: Interference check samples (ICSA, ICSAB) and HICAL analyzed at the required frequencies and within QC limits?			✓	✓

Review Item	Yes (✓)	No (✓)	N/A (✓)	2nd Level Review (✓)
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:

Analyst: H. Rahavi Date: 10/24/11

Second-Level Review: [signature] Date: 10-24-11

Form CG-191, Rev. 4, 2/03 page 2 of 2

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-069-002	PAGE 1 OF 1
COLLECTOR: Crow / Fulton	COMPANY CONTACT: STINNETT, MW	TELEPHONE NO.: 373-5940	PROJECT COORDINATOR: STINNETT, MW	PRICE CODE: 7N	DATA TURNAROUND
SAMPLING LOCATION: C8095 (299-W22-90); I-007	PROJECT DESIGNATION: 200-UP-1 Remedial Wells - Groundwater		SAF NO.: F11-069	AIR QUALITY ☐	45 Days / 45 Days
ICE CHEST NO.	FIELD LOGBOOK NO.: ~~HNF-N-~~ 645-1 pg	ACTUAL SAMPLE DEPTH: 241.7	COA: 300191ES10	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: ~~Waste Sampling & Characterization~~ TARL 10-24-11	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

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 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	HCl or H2SO4 to pH <2/Cool~4C	HNO3 to pH <2	Cool~4C	Cool~4C	None
HOLDING TIME	14 Days	6 Months	24 Hours	48 Hours	6 Months
TYPE OF CONTAINER	aGs*	G/P	aG	P	G
NO. OF CONTAINER(S)	3	1	1	1	1
VOLUME	40mL	250mL	500mL	60mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196;	IC Anions - 300.0 (Nitrogen in Nitrate);	Tritium - Ion Ex;

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME					
B2CP06	WATER	10/24/11	1017			✓		✓

W06290
J1J240443 MNESN
Due 12-8-11

J1J240443

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: Crow / Fulton	DATE/TIME: 10/24/11 1420	RECEIVED BY/STORED IN: J. Beck / J. Beck TARL	DATE/TIME: 10/24/11 1420
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 CACN for all analytical work at WSCF laboratory is 402813ES20.
** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) VOA - 8260 (TCL) {Carbon tetrachloride, Trichloroethene};
(2) ICP/MS - 200.8 (TAL) {Chromium}; ICP/MS - 200.8 (Add-on) {Uranium};

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

PRINTED ON 3/30/2011

A-6003-618 (REV 2)

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-069-003	PAGE 1 OF 1
COLLECTOR Crow/Fulton	COMPANY CONTACT STINNETT, MW	TELEPHONE NO. 373-5940	PROJECT COORDINATOR STINNETT, MW	PRICE CODE 7N	DATA TURNAROUND
SAMPLING LOCATION C8095 (299-W22-90); I-007	PROJECT DESIGNATION 200-UP-1 Remedial Wells - Groundwater		SAF NO. F11-069	AIR QUALITY ☐	45 Days / 45 Days
ICE CHEST NO.	FIELD LOGBOOK NO. HNF-N-645-1 pg	ACTUAL SAMPLE DEPTH 241.7	COA 300191ES10	METHOD OF SHIPMENT GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO TestAmerica Incorporated, Richland	OFFSITE PROPERTY NO. N/A		BILL OF LADING/AIR BILL NO. N/A		

MATRIX*	POSSIBLE SAMPLE HAZARDS/ REMARKS		
A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)	PRESERVATION	None
		HOLDING TIME	6 Months
		TYPE OF CONTAINER	G/P
		NO. OF CONTAINER(S)	2
		VOLUME	4L
	SPECIAL HANDLING AND/OR STORAGE	SAMPLE ANALYSIS	T-129 Low Level;

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B2CP12	WATER	10/24/11	1011	✓

WO6290
JIJ240443 MNE5m
Due 12-8-11

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS
RELINQUISHED BY/REMOVED FROM CFulton/[illegible]	DATE/TIME 10/24/11 1420	RECEIVED BY/STORED IN J.Rock/[illegible] TACC	DATE/TIME 10/24/11 1420	** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
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	

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

PRINTED ON 3/30/2011

A-6003-618 (REV 2)

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Sample Check-in List

Date/Time Received: 10-24-11 / 1420 Container GM Screen Result: (Airlock) .04 Initials [ ]
Sample GM Screen Result (Sample Receiving) .04 Initials [ ]

Client: ~~PGW~~ FLH SDG #: W06290 NA [ ] SAF #: F11-069 NA [ ]

Lot Number: J1J240443

Chain of Custody # F11-069-003; 002

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

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

1. Custody Seals on shipping container intact? Yes [ ] No [ ] No Custody Seal [ ]
2. Custody Seals dated and signed? Yes [ ] No [ ] No Custody Seal [ ]
3. Cooler temperature: 13 °C NA [ ]
4. Vermiculite/packing materials is NA [ ] Wet [ ] Dry [ ]

Item 5 through 16 for samples. Initial appropriate response.

5. Chain of Custody record present? Yes [ ] No [ ]
6. Number of samples received (Each sample may contain multiple bottles): 2
7. Containers received: 1 x 250 ~~mLAG~~ mLP SKS 10/26/11; 1 x 500 ~~mLP~~ mLAG; 2 x 4LP [ ] 10-24-11
8. Sample holding times exceeded? NA [ ] Yes [ ] No [ ]
9. Samples have:
   ____tape
   ____custody seals
   [ ] hazard labels
   [ ] appropriate sample labels
10. Matrix:
    ____A (FLT, Wipe, Solid, Soil)
    ____S (Air, Niosh 7400)
    [ ] I (Water)
    ____T (Biological, Ni-63)
11. Samples:
    [ ] are in good condition
    ____are broken
    ____Other
    ____are leaking
    ____have air bubbles (Only for samples requiring no head space)
12. Sample pH appropriate for analysis requested Yes [ ] No [ ] NA [ ]
    (If acidification is necessary, then document sample ID, initial pH, amount of HNO_3 added and pH after addition on table overleaf)

    RPL ID # of preservative used : N/A
13. Were any anomalies identified in sample receipt? Yes [ ] No [ ] SKS 10/26/11 [ ] 10-24-11
14. Description of anomalies (include sample numbers): NA [ ] SKS 10/26/11 Samples were received above the 4 °C Requirement.

LS-023, Rev. 15, 07/11 See over for additional information.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

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

16. Additional Information: N/A

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

Sample Custodian: Jue Bock / 1420 Date: 10-24-11

Client Informed on N/A by N/A Person contacted N/A

[✓] No action necessary; process as is

Project Manager Sandra Leger Date 10-26-11

SAMPLE ID	Initial pH	Acid Amt	Final pH	SAMPLE ID	Initial pH	Acid Amt	Final pH

JIJ 240443 SKS 10-26-11

LS-023, Rev. 15, 07/11

See over for additional information.

TAT = 45 DAYS

SDG NUMBER	SAF NUMBER	RECEIVED DATE	LOT NUMBER	CLIENT CODE	MATRIX	NUMBER OF SAMPLES	COMMENTS
W06290	F11-069	10/24/2011	J1J240443	FLH	I	2	-129,TRIT,CHROME

CLOSED 10/24/11

DUE 12/8/11

DECEMBER 21, 2011

FLH I 129

11/9/2011 1:38:46 PM

Sample Preparation/Analysis

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

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

Balance Id:1120482733 / L8881

Pipet #:

AnalyDueDate: 12/08/2011

Sep1 DT/Tm Tech:

Batch: 1300067 WATER pCi/L **PM, Quote: SS , 29754**

SEQ Batch, Test: None

Sep2 DT/Tm Tech:

Prep Tech: ,NyeM

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 MNE5M-1-AA J1J240443-1-SAMP 10/24/2011 10:11			3670.80g,in AmtRec: 2X4LP	3670.80g #Containers: 2	ITA11245 08/26/11			0.1063g 200 0.0750g 31.3mg		L5 Scr:	2355 Alpha: 1.71E-03 uCi/Sa	12/01/11 OD Beta: -1.93E-04 uCi/Sa	
2 MNE5M-1-AC-X J1J240443-1-DUP 10/24/2011 10:11			3780.90g,in AmtRec: 2X4LP	3780.90g #Containers: 2	ITA11246 08/26/11			0.1128g 0.0740g 38.8mg		L4 Scr:	0613 Alpha: 1.71E-03 uCi/Sa	12/1/11 OD Beta: -1.93E-04 uCi/Sa	
3 MNHVG-1-AA-B J1J270000-67-BLK 10/27/2011 09:11 pd			3571.40g,in AmtRec:	3571.40g #Containers: 1	ITA11247 08/26/11			0.1056g 0.0740g 31.6mg		L5 Scr:	0379 Alpha:	12/1/11 OD Beta:	
4 MNHVG-1-AC-C J1J270000-67-LCS 10/27/2011 09:11 pd			3458.70g,in AmtRec:	3458.70g #Containers: 1	ISD1306 10/19/11			0.1094g 0.0745g 34.9mg		L5 Scr:	0836 Alpha:	12/2/11 OD Beta:	

Comments:

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

MNE5M1AA-SAMP Constituent List:

I-129	RDL:5.00E-01	pCi/L	LCL:	UCL:	RPD:

MNHVG1AA-BLK:

I-129	RDL:5.00E-01	pCi/L	LCL:	UCL:	RPD:

MNHVG1AC-LCS:

I-129	RDL:5	pCi/L	LCL:70	UCL:130	RPD:20

MNE5M1AA-SAMP Calc Info:

11/9/2011 1:38:46 PM

Sample Preparation/Analysis

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

Balance Id:1120482733

Pipet #: _____

AnalyDueDate: 12/08/2011

Sep1 DT/Tm Tech:

Batch: 1300067 pCi/L

SEQ Batch, Test: None

Sep2 DT/Tm Tech:

Prep Tech: ,NyeM

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:

```
    Uncert Level (#s).: 2     Decay to SaDt: Y     Blk Subt.: N     Sci.Not.: Y     ODRs: B
MNHVG1AA-BLK:
    Uncert Level (#s).: 2     Decay to SaDt: Y     Blk Subt.: N     Sci.Not.: Y     ODRs: B
MNHVG1AC-LCS:
    Uncert Level (#s).: 2     Decay to SaDt: Y     Blk Subt.: N     Sci.Not.: Y     ODRs: B
```

12/6/2011 11:30:26 AM

ICOC Fraction Transfer/Status Report

ByDate: 12/6/2010, 12/11/2011, Batch: '1300067', User: *ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus		Accepting		Comments
1300067						
AC		Rev1C	NyeM	11/9/2011 1:29:00 PM		
SC			luksics	IsBatched	11/9/2011 12:24:03 PM	ICOC_RADCALC v4.8.49
SC			NyeM	InPrep	11/9/2011 1:29:00 PM	RL-PRP-004 REV. 2
SC			NyeM	Prep1C	11/9/2011 2:01:47 PM	RL-GAM-002 REV. 1
SC			NyeM	Prep2C	11/16/2011 2:50:36 PM	RL-GAM-002 REV. 1
SC			HiattC	InCnt1	11/16/2011 3:03:31 PM	RL-CI-007 REV. 2
SC			DawkinsO	CalcC	12/3/2011 12:41:16 AM	RL-CI-007 REV. 2
SC			antonsonl	Rev1C	12/6/2011 11:28:39 AM	RL-DR-001 Rev 2
AC			NyeM	11/9/2011 2:01:47 PM		
AC			NyeM	11/16/2011 2:50:36		
AC			HiattC	11/16/2011 3:03:31		
AC			DawkinsO	12/3/2011 12:41:16		
AC			antonsonl	12/6/2011 11:28:39		

AC: Accepting Entry; SC: Status Change

TestAmerica Richland

Richland Wa.

Page 1

Grp Rec Cnt: 6

ICOCFractions v4.8.44

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10/27/2011 9:11:30 AM

Sample Preparation/Analysis

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

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

AnalyDueDate: 12/08/2011

Batch: 1300064 **WATER** **pCi/L** **PM, Quote: SS , 29754**
SEQ Batch, Test: None

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

Work Ord, Lot, Sample Date	Total Amt/Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	Tracer Yield	Dish Size	Ppt or Geometry	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:
1 MNE5N-1-AA													
J1J240443-2-SAMP													
10/24/2011 10:11			AmtRec: 1X250MLP;1X500MLAG		#Containers: 2				Scr:		Alpha:		Beta:
2 MNE5N-1-AK-X													
J1J240443-2-DUP													
10/24/2011 10:11			AmtRec: 1X250MLP;1X500MLAG		#Containers: 2				Scr:		Alpha:		Beta:
3 MNHVD-1-AA-B													
J1J270000-64-BLK													
10/27/2011 09:11 pd			AmtRec:		#Containers: 1				Scr:		Alpha:		Beta:
4 MNHVD-1-AC-C													
J1J270000-64-LCS													
10/27/2011 09:11 pd			AmtRec:		#Containers: 1				Scr:		Alpha:		Beta:
5 MNHVD-1-AD-BX													
J1J270000-64-MBLK													
10/27/2011 09:11 pd			AmtRec:		#Containers: 1				Scr:		Alpha:		Beta:
6 MNHVD-1-AE-CM													
J1J270000-64-MLCS													
10/27/2011 09:11 pd			AmtRec:		#Containers: 1				Scr:		Alpha:		Beta:
7 MNHVD-1-AF-BN													
J1J270000-64-IBLK													
10/27/2011 09:11 pd			AmtRec:		#Containers: 1				Scr:		Alpha:		Beta:

TestAmerica Richland Wa. Key: In - Initial Amt, fi - Final Amt, di - Diluted Amt, s1 - Sep1, s2 - Sep2 pd - Prep Dt, dc - Date Chg, r - Reference Dt, ec-Enrichment Cell, ct-Cocktailed Added Page 1 ISV - Insufficient Volume for Analysis WO Cnt: 7 ICOC v4.8.49

10/27/2011 9:11:31 AM

Sample Preparation/Analysis

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

AnalyDueDate: 12/08/2011

Batch: 1300064 pCI/L
SEQ Batch, Test None

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

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

Comments:

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

MNE5N1AA-SAMP Constituent List:
H-3 RDL:400 pCi/L LCL:70 UCL:130 RPD:20
MNHVD1AA-BLK:

MNHVD1AC-LCS:

MNHVD1AD-MBLK:

MNHVD1AE-MLCS:

MNHVD1AF-IBLK:

MNE5N1AA-SAMP Calc Info:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
MNHVD1AA-BLK:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
MNHVD1AC-LCS:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
MNHVD1AD-MBLK:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
MNHVD1AE-MLCS:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
MNHVD1AF-IBLK:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

12/14/2011 11:40:41 AM

ICOC Fraction Transfer/Status Report

ByDate: 12/14/2010, 12/19/2011, Batch: '1300064', User: *ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting			Comments
1300064						
AC		Rev1C	DefordP	12/7/2011 10:50:01		
SC			DefordP	Sep1C	12/7/2011 10:50:01 AM	RL-LSC-005 REV. 2
SC			HiattC	InCnt1	12/9/2011 9:46:29 AM	RL-CI-005 REV. 2
SC			DawkinsO	CalcC	12/11/2011 1:57:46 PM	RL-CI-005 REV. 2
SC			nortonj	Rev1C	12/14/2011 11:40:33 AM	RL-DR-001 Rev 2
AC			HiattC	12/9/2011 9:46:29		
AC			DawkinsO	12/11/2011 1:57:46		
AC			nortonj	12/14/2011 11:40:33		

AC: Accepting Entry; SC: Status Change

TestAmerica Richland

Richland Wa.

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Grp Rec Cnt: 4

ICOCFractions v4.8.44

10/24/2011 4:41:18 PM

Sample Preparation/Analysis

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

AnalyDueDate: 12/08/2011

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

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

Batch: 1297205 **WATER** **ug/L** **PM, Quote: SS , 29754**
SEQ Batch, Test: None All Tests: ARS6, BNTB, 1297205 88EA,

Work Order, Lot, Sample DateTime	Total Amt/Unit	Initial Aliquot Amt/Unit	QC Tracer Prep Date	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:
1 MNE5N-1-AC J1J240443-2-SAMP 10/24/2011 10:11		AmtRec: 1X250MLP;1X500MLAG	#Containers: 2			Scr:	Alpha:	Beta:
2 MNE5N-1-AG-S J1J240443-2-MS 10/24/2011 10:11		AmtRec: 1X250MLP;1X500MLAG	#Containers: 2			Scr:	Alpha:	Beta:
3 MNE5N-1-AH-D J1J240443-2-MSD 10/24/2011 10:11		AmtRec: 1X250MLP;1X500MLAG	#Containers: 2			Scr:	Alpha:	Beta:
4 MNE5N-1-AJ-X J1J240443-2-DUP 10/24/2011 10:11		AmtRec: 1X250MLP;1X500MLAG	#Containers: 2			Scr:	Alpha:	Beta:
5 MNE5W-1-AA-B J1J240000-205-BLK 10/24/2011 16:41 pd		AmtRec:	#Containers: 1			Scr:	Alpha:	Beta:
6 MNE5W-1-AC-C J1J240000-205-LCS 10/24/2011 16:41 pd		AmtRec:	#Containers: 1			Scr:	Alpha:	Beta:

TestAmerica Richland Wa. Key: In - Initial Amt, fi - Final Amt, di - Diluted Amt, s1 - Sep1, s2 - Sep2 pd - Prep Dt, dc - Date Chg, r - Reference Dt, ec-Enrichment Cell, ct-Cocktailed Added Page 1 ISV - Insufficient Volume for Analysis WO Cnt: 6 ICOC v4.8.49

10/24/2011 4:41:19 PM

Sample Preparation/Analysis

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

AnalyDueDate: 12/08/2011

Batch: 1297205 ug/L
SEQ Batch, Test: None

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

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

Comments:

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

MNE5N1AC-SAMP Constituent List:

MNE5N1AG-MS Constituent List:

MNE5N1AH-MSD:

MNE5W1AA-BLK:

MNE5W1AC-LCS:

MNE5N1AC-SAMP Calc Info:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
MNE5N1AG-MS Calc Info:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
MNE5N1AH-MSD:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
MNE5W1AA-BLK:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
MNE5W1AC-LCS:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B