1216329

Analytical Data Package Prepared For

CH2M Hill Plateau Remediation

Radiochemical Analysis By

TestAmerica

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

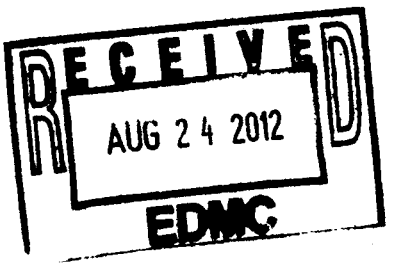
Assigned Laboratory Code: TARL

Data Package Contains _____ Pages

Report No.: 49379

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.
W06312	F11-069	B2CP01	J1J290423-1	MNKKP1AA	9MNKKP10	1304111
		B2CP01	J1J290423-1	MNKKP2AA	9MNKKP20	1304164



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

November 18, 2011

Attention: Scot Fitzgerald

SAF Number	:	F11-069
Date SDG Closed	:	October 26, 2011
Number of Samples	:	One (1)
Sample Type	:	Water
SDG Number	:	W06312
Data Deliverable	:	24 Hour / 15 Day Summary

CASE NARRATIVE

I. Introduction

On October 26, 2011 one water sample was received at TestAmerica (TARL). Upon receipt, the sample was assigned the following laboratory ID numbers to correspond with the CH2M specific ID:

CH2M ID#	TARL ID#	MATRIX	DATE OF RECEIPT
B2CP01	MNKKP	WATER	10/26/11

II. Sample Receipt

The sample was received in good condition. The analysis requested on the COC was Tc-99 by ICPMS however TARL is does not have this capability. The client requested TARL to provide a quick-turnaround technetium-99 screening result. For more detail refer to the SIR (CHPRC Tracking Number: SDR12-039) which is included in this report following the case narrative. 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.

CH2M Hill Plateau Remediation Company
November 18, 2011

The requested analyses were:

Liquid Scintillation Counting
Technetium-99 by TEVA method RL-LSC-014

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

Liquid Scintillation Counting
Technetium-99 by TEVA method RL-LSC-014:

Batch 1304111:
The sample was counted for fifteen minutes. The CRDL was not met due to the reduced count time. No QC samples were analyzed as directed by the client.

Batch 1304164:
Batch 1304111 was re-counted for sixty minutes which is the routine count time for this procedure. No QC samples were analyzed as directed by the client.

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	SDR12-039
REV NUM	0
DATE INITIATED	10/26/2011

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	4
SAMPLE NUMBERS	B2CP00, B2CP01, B2CP02, B2CP03
SAMPLE MATRIX	WATER
COLLECTION DATE	10/24/2011
SDG NUM	W06297, W06312, W06315, W06334

ISSUE BACKGROUND

CLASS	General Laboratory Direction
TYPE	Addition of Analyses
DESCRIPTION	The listed sample has been diverted from the Waste Sampling and Characterization Facility to the TestAmerica Richland laboratory. The sample requires a 24-hour "quick-turn" technetium-99 screen to support field drilling operations.

DISPOSITION

DESCRIPTION	Proposed Resolution: Request TARL provide a quick-turnaround technetium-99 screening for the listed sample. Screening method to consist of a separation on TEVA resin followed by liquid scintillation counting. No batch QC samples are required for this quick-turn screen. TARL will also analyze the sample with the TC99_ETVDSK_LSC method to confirm the quick-turn results.
JUSTIFICATION	Accepted Resolution: Accept Proposed Resolution. Submitted by: David Todak / CHPRC Date: 10/26/2011 Accepted by: Sandra Seger / TARL Date: 10/27/2011

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: 18-Nov-11

TestAmerica TARL

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

Report No. : 49379 **SDG No:** W06312

Batch	Client Id / Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	MDL	CRDL	RPD
1304111	**TC99_ETVDSK_LSC**								
	B2CP01								
	MNKKP1AA	TC-99	7.26E+02 +- 5.8E+01		pCi/L	100%	2.00E+01	1.50E+01	
1304164	**TC99_ETVDSK_LSC**								
	B2CP01								
	MNKKP2AA	TC-99	7.27E+02 +- 4.6E+01		pCi/L	100%	9.66E+00	1.50E+01	

No. of Results: 2

TestAmerica **RPD** - **Relative Percent Difference.**

rptSTLRchSaSum mary2 V5.2.18 A2002

FORM I

SAMPLE RESULTS

Date: 18-Nov-11

Lab Name:	TestAmerica	**SDG:**	W06312	**Collection Date:**	10/26/2011 12:35:00 PM
Lot-Sample No.:	J1J290423-1	**Report No. :**	49379	**Received Date:**	10/26/2011 3:15:00 PM
Client Sample ID:	B2CP01	**COC No. :**	F11-069-005	**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: 1304111	TC99_ETVDSK_LSC			**Work Order:**	MNKKP1AA		**Report DB ID:**	9MNKKP10				
TC-99	***7.26E+02***		3.0E+01	5.8E+01	2.00E+01	pCi/L	100%	*(36.3)*	11/1/11 12:59 a		0.1259	LSC4
						9.31E+00	1.50E+01	*(24.9)*			L	
Batch: 1304164	TC99_ETVDSK_LSC			**Work Order:**	MNKKP2AA		**Report DB ID:**	9MNKKP20				
TC-99	***7.27E+02***		1.5E+01	4.6E+01	9.66E+00	pCi/L	100%	*(75.3)*	11/1/11 03:35 p		0.1259	LSC4
						4.63E+00	1.50E+01	*(31.5)*			L	

No. of Results: 2 **Comments:**

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

rptSTLRchSample
V5.2.18 A2002

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Data Review/Verification Checklist
RADIOCHEMISTRY, First Level Review

11/1/2011 12:00:18 PM

Lot No., Due Date: J1J290423; 11/01/2011
Client, Site: 108302; FLH HANFORD
QC Batch No., Method Test: 1304111; RTC99 Tc-99 by LSC
SDG, Matrix: W06312; 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:
results for screening only.

First Level John V Cotton **Date** 11-1-11

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QAS_RADCALCv4.8.44

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THE LEADER IN ENVIRONMENTAL TESTING

Data Review Checklist
RADIOCHEMISTRY
Second Level Review

Batch Number: 1304111

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: _____ Date: 11/16/11

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

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Data Review/Verification Checklist
RADIOCHEMISTRY, First Level Review

11/2/2011 9:59:25 AM

Lot No., Due Date: J1J290423; 11/01/2011
Client, Site: 108302; FLH HANFORD
QC Batch No., Method Test: 1304164; RTC99 Tc-99 by LSC
SDG, Matrix: W06312; 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:
Client requested re-count.

First Level [signature] **Date** 11-2-11

TestAmerica Richland
QAS_RADCALCv4.8.44

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THE LEADER IN ENVIRONMENTAL TESTING

Data Review Checklist

RADIOCHEMISTRY

Second Level Review

Batch Number: 13041164

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 Cox Date: 11/16/11

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

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-069-005	PAGE 1 OF 1
COLLECTOR L.White	**COMPANY CONTACT** STINNETT, MW	**TELEPHONE NO.** 373-5940	**PROJECT COORDINATOR** STINNETT, MW	**PRICE CODE** 1A	**DATA TURNAROUND**
SAMPLING LOCATION C8095 (299-W22-90); I-008	**PROJECT DESIGNATION** 200-UP-1 Remedial Wells - Groundwater		**SAF NO.** F11-069	**AIR QUALITY** ☐	24 Hours / 15 Days
ICE CHEST NO. N/A	**FIELD LOGBOOK NO.** ~~HNF-N~~ 645-1 pg 35	**ACTUAL SAMPLE DEPTH** 242.9	**COA** 300191ES10	**METHOD OF SHIPMENT** GOVERNMENT VEHICLE	**ORIGINAL**
SHIPPED TO ~~Waste Sampling & Characterization~~ T1R L 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)	**PRESERVATION**	HNO3 to pH <2 (ULTREX)
		HOLDING TIME	None
		TYPE OF CONTAINER	~~Nalgene~~ P KS 11/11
		NO. OF CONTAINER(S)	1
		VOLUME	250mL
	SPECIAL HANDLING AND/OR STORAGE	**SAMPLE ANALYSIS**	Tc-99 by ICPMS (Technetium-99);

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B2CP01	WATER	10/26/11	1235	✓

MNKLCP

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
M.A.White M.White	10-26-11 1330	L.D. Wall K.D.Wall	10-26-11 1330
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
L.D. Wall CHPRC K.D.Wall	OCT 26 2011 1515	T1R L2 CHPRC Camron Kruger	OCT 26 2011 1515
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.

Lot# JJJ290423
SDG# W06312
Due 11-10-11

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)

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Sample Check-in List

Date/Time Received: 10-26-11/1515 Container GM Screen Result: (Airlock) .06 Initials [ ]
Sample GM Screen Result (Sample Receiving) .06 Initials [ ]

Client: FLH SDG #: W06312 NA [ ] SAF #: F11-069 NA [ ]

Lot Number: JIJ290423

Chain of Custody # F11-069-005, -002 CK 10.29.11

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: _____ °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 [ ] SKS 10/28/11
6. Number of samples received (Each sample may contain multiple bottles): 2 1
7. Containers received: 1 x 250 mLAG; 2 x 40 SKS 10/28/11

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

LS-023, Rev. 15, 07/11

See over for additional information.

10/31/2011 3:11:29 PM

Sample Preparation/Analysis

Balance Id:1120482733

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

FP Tc-99 Prp/Sep LSC014
S5 Technetium-99 by Liquid Scint
5I CLIENT: HANFORD

Pipet #: _____

AnalyDueDate: 11/01/2011

Sep1 DT/Tm Tech:

Batch: 1304111 **WATER** **pCi/L** **PM, Quote: SS , 29754**

Sep2 DT/Tm Tech:

SEQ Batch, Test: None All Tests: 1304111 FPS5, 1304164 FPS5,

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 MNKKP-1-AA			125.90g,in	125.90g									
J1J290423-1-SAMP													
10/26/2011 12:35			AmtRec: 1X250G	#Containers: 1									
2 MNK9H-1-AA-BN													
J1J310000-111-IBLK													
10/31/2011 15:11 pd			AmtRec:	#Containers: 1									

15

Scr: Alpha: Beta:

Scr: Alpha: Beta:

Comments:

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

MNKKP1AA-SAMP Constituent List:
  Tc-99       RDL:15          pCi/L     LCL:70      UCL:130     RPD:20
MNK9H1AA-IBLK Constituent List:

MNKKP1AA-SAMP Calc Info:
     Uncert Level (#s).: 2     Decay to SaDt: Y     Blk Subt.: N     Sci.Not.: Y     ODRs: B
MNK9H1AA-IBLK Calc Info:
     Uncert Level (#s).: 2     Decay to SaDt: Y     Blk Subt.: N     Sci.Not.: Y     ODRs: B
```

11/1/2011 11:59:03 AM

ICOC Fraction Transfer/Status Report

ByDate: 11/1/2010, 11/6/2011, Batch: '1304111', User: *ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting		Comments
1304111					
AC		Rev1C	ClarkR	10/31/2011 3:32:57	
SC			luksics	IsBatched 10/31/2011 1:30:42 PM	ICOC_RADCALC v4.8.49
SC			ClarkR	InCnt1 10/31/2011 3:32:57 PM	RL-CI-005 REV. 2
SC			BlackCL	CalcC 11/1/2011 8:53:48 AM	RL-CI-005 REV. 2
SC			nortonj	Rev1C 11/1/2011 11:58:59 AM	RL-DR-001 Rev 2
AC			BlackCL	11/1/2011 8:53:48	
AC			nortonj	11/1/2011 11:58:59	

AC: Accepting Entry, SC: Status Change

TestAmerica Richland

Richland Wa.

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Grp Rec Cnt: 3

ICOCFractions v4.8.44

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

RE-COUNT REQUEST

DUE DATE _____

CUSTOMER CH2M Hill

ANALAYSIS Tc 99

MATRIX water

LOT NUMBER 515240423

SAMPLE DELIVERY GROUP _____

OLD BATCH NUMBER 304111

NEW BATCH NUMBER 304164

	LAB SAMPLE ID	CLIENT ID	REASON FOR REQUEST & ANALYSIS COMMENTS
1)			
2)			
3)			
4)			Client Request
5)			
6)			
7)			
8)			
9)			
10)			
11)			
12)			
13)			
14)			
15)			
16)			
17)			
18)			
19)			
20)			

RC-126, 12/07, Rev 5

10/31/2011 3:11:57 PM

Sample Preparation/Analysis

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

AnalyDueDate: 11/01/2011

FP Tc-99 Prp/Sep LSC014
S5 Technetium-99 by Liquid Scint
5I CLIENT: HANFORD

Batch: 1304164 **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 MNKKP-2-AA J1J290423-1-SAMP 10/26/2011 12:35			AmtRec: 1X250G	#Containers: 1					60	Scr:	Alpha:		Beta:
2 MNLAF-1-AA-BN J1J310000-164-IBLK 10/31/2011 15:11 pd			AmtRec:	#Containers: 1						Scr:	Alpha:		Beta:

Comments:

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

MNKKP2AA-SAMP Constituent List:

MNLAF1AA-IBLK Constituent List:

MNKKP2AA-SAMP Calc Info:
    Uncert Level (#s).: 2     Decay to SaDt: Y     Blk Subt.: N     Sci.Not.: Y     ODRs: B
MNLAF1AA-IBLK Calc Info:
    Uncert Level (#s).: 2     Decay to SaDt: Y     Blk Subt.: N     Sci.Not.: Y     ODRs: B
```

11/2/2011 9:58:28 AM

ICOC Fraction Transfer/Status Report

ByDate: 11/2/2010, 11/7/2011, Batch: '1304164', User: *ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting		Comments
1304164					
AC		Rev1C	ClarkR	10/31/2011 3:33:10	
SC			ClarkR	InCnt1 10/31/2011 3:33:10 PM	RL-CI-005 REV. 2
SC			ClarkR	CalcC 11/2/2011 9:22:24 AM	RL-CI-005 REV. 2
SC			nortonj	Rev1C 11/2/2011 9:58:24 AM	RL-DR-001 Rev 2
AC			ClarkR	11/2/2011 9:22:24	
AC			nortonj	11/2/2011 9:58:24	

AC: Accepting Entry; SC: Status Change

TestAmerica Richland

Richland Wa.

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Grp Rec Cnt: 3

ICOCFractions v4.8.44