

**SAF-RC-151
300 Area D4 Waste Sites –
Water
FINAL DATA PACKAGE**

COMPLETE COPY OF DATA PACKAGE TO:

Kathy Wendt H4-21

KW 1/30/13
INITIAL/DATE

COMMENTS:

SDG J01668 SAF-RC-151

Rad only

Chem only

Rad & Chem

Complete

Partial

Sample Location/Waste Site: UPR-300-4

Analytical Data Package Prepared For
Washington Closure Hanford

Radiochemical Analysis By
TestAmerica

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

Assigned Laboratory Code: TARL

Data Package Contains 21 Pages

Report No.: 54380

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.
J01668	RC-151	J1R8X5	J3A150419-1	MXV481AA	9MXV4810	3015046



THE LEADER IN ENVIRONMENTAL TESTING

Certificate of Analysis

Washington Hanford Closure
2620 Fermi Avenue
Richland, WA 99354

TestAmerica Laboratories, Inc.

January 30, 2013

Attention: Joan Kessner

SAF Number	:	RC-151
Date SDG Closed	:	January 15, 2013
Number of Samples	:	One (1)
Sample Type	:	Water
SDG Number	:	J01668
Data Deliverable	:	21-Day / Summary

CASE NARRATIVE

I. Introduction

On January 15, 2013, one water sample was received at TestAmerica for chemical analysis. Upon receipt, the sample was assigned the following laboratory ID number to correspond with the Washington Closure Hanford (WCH) specific ID:

<u>WCH ID#</u>	<u>TARL ID#</u>	<u>MATRIX</u>	<u>DATE OF RECEIPT</u>
J1R8X5	MXV48	WATER	1/15/13

II. Sample Receipt

The sample was 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:

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

Washington Closure Hanford
January 30, 2013

in the "Comments" section.

QC and sample results are reported in the same units.

V. Comments

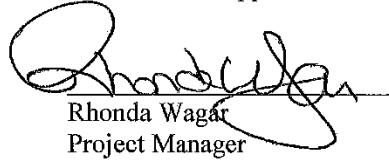
Chemical Analysis

Hexavalent Chromium by EPA method 7196A

The sample was received out of hold time. Except as noted; the LCS, batch blank, sample, sample duplicate (J1R8X5), sample matrix spike (J1R8X5) and the sample matrix spike duplicate (J1R8X5) 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:



Rhonda Wagar
Project Manager

Drinking Water Method Cross References

DRINKING WATER ASTM METHOD CROSS REFERENCES		
Referenced Method	Isotope(s)	TestAmerica Richland's SOP No.
EPA 901.1	Cs-134, I-131	RL-GAM-001
EPA 900.0	Alpha & Beta	RL-GPC-001
EPA 00-02	Gross Alpha (Coprecipitation)	RL-GPC-002
EPA 903.0	Total Alpha Radium (Ra-226)	RL-RA-002
EPA 903.1	Ra-226	RL-RA-001
EPA 904.0	Ra-228	RL-RA-001
EPA 905.0	Sr-89/90	RL-GPC-003
ASTM D5174	Uranium	RL-KPA-003
EPA 906.0	Tritium	RL-LSC-005

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

Uncertainty Estimation

TestAmerica Richland has adopted the internationally accepted approach to estimating uncertainties described in "NIST Technical Note 1297, 1994 Edition". The approach, "Law of Propagation of Errors", involves the identification of all variables in an analytical method which are used to derive a result. These variables are related to the analytical result (R) by some functional relationship, $R = \text{constants} * f(x,y,z,...)$. The components (x,y,z) are evaluated to determine their contribution to the overall method uncertainty. The individual component uncertainties (u_i) are then combined using a statistical model that provides the most probable overall uncertainty value. All component uncertainties are categorized as type A, evaluated by statistical methods, or type B, evaluated by other means. Uncertainties not included in the components, such as sample homogeneity, are combined with the component uncertainty as the square root of the sum-of-the-squares of the individual uncertainties. The uncertainty associated with the derived result is the combined uncertainty (u_c) multiplied by the coverage factor (1,2, or 3).

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

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

Report Definitions

Action Lev	An agreed upon activity level used to trigger some action when the final result is greater than or equal to the Action Level. Often the Action Level is related to the Decision Limit.
Batch	The QC preparation batch number that relates laboratory samples to QC samples that were prepared and analyzed together.
Bias	Defined by the equation (Result/Expected)-1 as defined by ANSI N13.30.
COC No	Chain of Custody Number assigned by the Client or TestAmerica.
Count Error (#s)	Poisson counting statistics of the gross sample count and background. The uncertainty is absolute and in the same units as the result. For Liquid Scintillation Counting (LSC) the batch blank count is the background.
Total Uncert (#s) <i>u_c - Combined Uncertainty.</i>	All known uncertainties associated with the preparation and analysis of the sample are propagated to give a measure of the uncertainty associated with the result, <i>u_c</i> the <i>combined uncertainty</i> . The uncertainty is absolute and in the same units as the result.
(#s), Coverage Factor	The coverage factor defines the width of the confidence interval, 1, 2 or 3 standard deviations.
CRDL (RL)	Contractual Required Detection Limit as defined in the Client's Statement Of Work or TestAmerica "default" nominal detection limit. Often referred to the reporting level (RL)
Lc	Decision Level based on instrument background or blank, adjusted by the Efficiency, Chemical Yield, and Volume associated with the sample. The Type I error probability is approximately 5%. $Lc = (1.645 * \text{Sqrt}(2 * (\text{BkgndCnt} / \text{BkgndCntMin}) / \text{SCntMin})) * (\text{ConvFct} / (\text{Eff} * \text{Yld} * \text{Abn} * \text{Vol})) * \text{IngrFct}$. 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%. $MDC = (4.65 * \text{Sqr}((\text{BkgndCnt} / \text{BkgndCntMin}) / \text{SCntMin}) + 2.71 / \text{SCntMin}) * (\text{ConvFct} / (\text{Eff} * \text{Yld} * \text{Abn} * \text{Vol})) * \text{IngrFct}$. 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 = $(S-D) / [\sqrt{TPUs^2 + TPUs^2}]$ 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 TPUs 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: 30-Jan-13

TestAmerica TARL

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

Report No. : 54380**SDG No: J01668**

Client Id Batch	Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	MDL	CRDL	RPD
3015046_7196_CR6									
J1R8X5									
	MXV481AA	HEXCHROME	8.00E-03 +- 0.0E+00	U	mg/L	N/A	8.00E-03	3.50E-01	
	MXV481AE	HEXCHROME	8.00E-03 +- 0.0E+00	U	mg/L	N/A	8.00E-03	3.50E-01	0.0

No. of Results: 2

TestAmerica	RPD - Relative Percent Difference.
rptSTLRchSaSum mary2 V5.2.23 A2002	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: 30-Jan-13

Report No. : 54380

SDG No.: J01668

Batch	Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	LCS Recovery	Bias	MDL
7196_CR6									
3015046	MATRIX SPIKE, J1R8X5								
MXV481AC	HEXCHROME	7.47E-01	+- 0.0E+00		mg/L	N/A	100%	0.0	8.00E-03
MXV481AD	HEXCHROME	7.59E-01	+- 0.0E+00		mg/L	N/A	101%	0.0	8.00E-03
3015046	LCS,								
MXV5D1AC	HEXCHROME	4.76E-01	+- 0.0E+00		mg/L	N/A	100%	0.0	8.00E-03
3015046	BLANK QC,								
MXV5D1AA	HEXCHROME	8.00E-03	+- 0.0E+00	U	mg/L	N/A			8.00E-03
No. of Results: 4									

TestAmerica Bias = (Result/Expected)-1 as defined by ANSI N13.30.
 rptSTLRchQcSum U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda/Mdl, Total Uncert, CRDL, RDL or
 mary V5.2.23 not identified by gamma scan software.
 A2002

FORM I
SAMPLE RESULTS

Date: 30-Jan-13

Lab Name: TestAmerica
Lot-Sample No.: J3A150419-1
Client Sample ID: J1R8X5

Parameter	Result	Count	Total	MDL,	Rpt Unit,	Yield	Rst/MDL,	Analysis,	Total Sa	Aliquot	Primary
		Error (2 s)	Uncert(2 s)	Action Lev	Lc	CRDL(RL)	Rst/TotUncrt	Prep Date	Size	Size	Detector
Batch: 3015046	7196 CR6			MXV481AA		Report DB ID: 9MXV4810					
HEXCROME	8.00E-03	U	0.00E+00	8.00E-03	mg/L	N/A	1.	1/15/13 04:50 p	95.0	ML	
No. of Results:	1	Comments:				3.50E-01	N/A				

FORM II

DUPLICATE RESULTS

Lab Name: TestAmerica
Lot-Sample No.: J3A150419-1
Client Sample ID: J1R8X5

SDG: J01668 **Collection Date:** 1/14/2013 10:45:00 AM
Report No. : 54380 **Received Date:** 1/15/2013 12:55:00 PM
COC No. : BC-151-004 **Matrix:** WATER

No. of Results: 1 Comments:

TestAmerica Laboratories, Inc.

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TestAmerica	RPD - Relative Percent Difference.	MDC/MdA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
rpfSTLRchDupV5.	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.
2.23 A2002		

Date: 30-Jan-13

FORM II
BLANK RESULTS

Lab Name: **TestAmerica**
Matrix: **WATER**

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDL, Lc	Rpt Unit, CRDL	Yield	Rst/MDL, Rst/TotUncrt	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 3015046	7196_CR6			Work Order: MXV5D1AA				Report DB ID: MXV5D1AB				
HEXCHROME	8.00E-03	U		0.0E+00	8.00E-03	mg/L	N/A	1.	1/15/13 04:50 p	95.0	ML	

No. of Results: 1 Comments:

Date: 30-Jan-13

FORM II
LCS RESULTS

Lab Name: TestAmerica
Matrix: WATER

Parameter	Result	Count	Total Uncert(2 s)	MDL	Report Unit	Yield	Expected	Expected Uncert	Recovery, Bias	Analysis, Prep Date	Aliquot Size	Primary Detector
Batch: 3015046	7196_CR6			Work Order: MXV5D1AC		Report DB ID: MXV5D1AS						
HEXCHROME	4.76E-01	0.0E+00	8.00E-03	mg/L	N/A	4.75E-01	100%	0.0	1/15/13 04:50 p	95.0	ML	

No. of Results: 1 Comments:

FORM II
MATRIX SPIKE RESULTS

Date: 30-Jan-13

Lab Name: TestAmerica
 Lot-Sample No.: J3A150419-1, J1R8X5

SDG: J01668
 Report No.: 54380

Parameter	SpikeResult, Orig Rst	Count	Total Uncert(2 s)	MDC MDA	Rpt Unit, CRDL	Rec- over	Expected, Uncert	Analysis, Prep Date	Aliquot Size	Analy Method, Primary Detector
Batch: 3015046 HEXCHROME	Work Order: MXV481AC 7.47E-01	Report DB ID: MXV481CW 0.0E+00	8.00E-03	mg/L	Orig Sa DB ID: 9MXV4810 N/A	99.60%	7.50E-01	1/15/13 04:50 p	95.0 ML	7196_CR6
Batch: 3015046 HEXCHROME	Work Order: MXV481AD 7.59E-01	Report DB ID: MXV481DW 0.0E+00	8.00E-03	mg/L	Orig Sa DB ID: MXV481CW N/A	101.20%	7.50E-01	1/15/13 04:50 p	95.0 ML	7196_CR6
		7.47E-01								

Number of Results: 2

Comments:

FORM II
MATRIX SPIKE DUPLICATE RESULTS

Date: 30-Jan-13

Lab Name: TestAmerica
 Lot-Sample No.: J3A150419-1, J1R8X5

SDG: J01668
 Report No.: 54380

Parameter	SpikeResult, Orig Rst	Qual	Count	Total Uncert(2 s)	MDC MDA	Rpt Unit, CRDL	Yield	Rec- covery	Expected, Uncert	Analysis, Rep Date	Aliquot Size	Primary Detector
Batch: 3015046	7196_CR6			Work Order: MXV481AC		Report DB ID: MXV481CW		99.60%	7.50E-01	MXV481DW		
HEXCHROME	7.47E-01			0.0E+00	8.00E-03	mg/L	N/A			1/15/13 04:50 p	95.0	
	7.59E-01	RPD	1.6								ML	
Batch: 3015046	7196_CR6			Work Order: MXV481AD		Report DB ID: MXV481DW		101.20%	7.50E-01	MXV481CW		
HEXCHROME	7.59E-01			0.0E+00	8.00E-03	mg/L	N/A			1/15/13 04:50 p	95.0	
	7.47E-01	RPD	1.6								ML	

No. of Results: 2 Comments:

TestAmerica	RER	- Replicate Error Ratio = $(S-D)/[\sqrt{(S^2 + D^2)} - \sqrt{((TPU)^2 + (TBU)^2)}]$ as defined by ICPT BOA.
rptSTLRchMsDup2	Bias	- (Result/Expected)-1 as defined by ANSI N13.30.
V5.2.23 A2002		

Richland Laboratory
Data Review Check List
Hexavalent Chromium

Batch Number(s): <u>3015046</u>	Lab Sample Numbers or SDG:	<u>J01668</u>		
Method/Test/Parameter: Cr+6 <input checked="" type="checkbox"/> RL-WC-003(Aqueous) <input type="checkbox"/> RL-WC-004(Solid)				
Review Item	Yes (✓)	No (✗)	N/A (✗)	2 nd Level Review (✓)
A. Initial Calibration				
1. Performed at required frequency with required number of levels?	✓			✓
2. Correlation coefficient greater than 0.97?	✓			✓
3. Initial calibration verification (ICV) analyzed immediately after calibration and results within 10% of expected?	✓			✓
4. Initial calibration blank (ICB) analyzed immediately after ICV and concentrations of all parameters \leq reporting limit?	✓			✓
B. Continuing Calibration				
1. CCV analyzed at required frequency and all parameters within 10% of expected?	✓			✓
2. CCB analyzed at required frequency and all results \leq reporting limit?	✓			✓
C. Sample Analysis				
1. Were any samples with concentrations above the linear range diluted and reanalyzed?			✓	✓
2. Were all sample holding times met?	✓			✓
D. QC Samples				
1. All results for the preparation blank below limits?	✓			✓
2. LCS percent recovery within 85-115%	✓			✓
3. PbCrO ₄ percent recovery within 75-125%?			✓	✓
4. Sample and Duplicate within 20% (aqueous) or 35% (solid) RPD?	✓			✓
5. MS or MS/MSD recoveries within 85-115% (aqueous) or 75-125% (solid)?	✓			✓
6. On MS failure, PDMS within 85-115%?			✓	✓
E. Other				
1. Are all nonconformances included and noted?	✓			✓
2. Is the correct date and time of analysis shown?	✓			✓
3. Did the analyst sign and date the front page of the analytical run?	✓			✓
4. Correct methodology used?	✓			✓
5. Transcriptions checked?	✓			✓
6. Calculations checked at minimum frequency?	✓			✓
7. Units checked?	✓			✓

Comments on any "No" response or list NCM number: 10-22602

Analyst _____

Date 5/15/13 2nd Review H. Rahbari Date 5/15/13

Clouseau Nonconformance Memo



NCM #: **10-22606**
NCM Initiated By: Hooshang Rahavi
Date Opened: 01/15/2013
Date Closed:

Classification: **Anomaly**
Status: **PMREVIEW**
Production Area: Classical Chemistry
Tests: 7196A
Lot #'s (Sample #'s): J3A150000 (34), J3A150410
(1,10,11,12,2,3,4,5,6,7,8,9),
QC Batches: 3015034,

Nonconformance: Hold Time Violation
Subcategory: Holding time expired in transit

Problem Description / Root Cause

Name	Date	Description
Hooshang Rahavi	01/15/2013	sample date/time is 1/14/13 at 10:45 am but the sample was delivered to TA on 1/15/13 at 12:55 pm.

Received PP 1/15/13

Corrective Action

Name	Date	Corrective Action
Hooshang Rahavi	01/15/2013	report data

Client Notification Summary

Client	Project Manager	Notified	Response	How Notified	Note
	Response	Response Note			

Quality Assurance Verification

Verified By	Due Date	Status	Notes
This section not yet completed by QA.			

Approval History

Date Approved	Approved By	Position
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Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				RC-151-004	Page 1 of 1
Collector Oswald, MG	Company Contact Joan Kessner	Telephone No. 509-375-4688	Project Coordinator KESSNER, JH	Price Code TL	Data Turnaround 21 Days		
Project Designation 300 Area D4 Waste Sites - Water	Sampling Location UPR-300-4 [321] - Excavation Floor - Ground Water		SAF No. RC-151				
Ice Chest No. N/A	Field Logbook No. EL-1663-05	COA RUP3042600	Method of Shipment Fed Ex/Hand Deliver/Government Vehicle				
Shipped To TestAmerica Incorporated, Richland	Offsite Property No. N/A	Bill of Lading/Air Bill No. See OSRC-A# 1-14-13 N/A					
POSSIBLE SAMPLE HAZARDS/REMARKS <i>Potentially Radioactive & DOT Limits</i> As 1-15-13							
Special Handling and/or Storage Cool/4C		Preservation G/P					
		No. of Container(s) 1					
		Volume 300mL 5CC's					
			Chromium Hex 7196				
J3A150419							
J3A150419							
Due 2-5-13							
Sample No. J1R8X5 IN 1148	Matrix # WATER	Sample Date 1/14/13	Sample Time 1045				
			X				
CHAIN OF POSSESSION							
Relinquished By/Removed From Michael O'Neil	Date/Time 1-14-13 12:00	Received By/Stored In David Becker	Date/Time 1/14/13 1200				
Relinquished By/Removed From David Becker	Date/Time 1/14/13 1000	Received By/Stored In A. Fischer	Date/Time 1/14/13 1252				
Relinquished By/Removed From A. Fischer	Date/Time 1-13-13 1255	Received By/Stored In Lock THLL	Date/Time 1-15-13 1255				
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						
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By					

Matrix *
 S=Soil
 SE=Sediment
 SO=Solid
 SL=Sludge
 W=Water
 O=Oil
 A=Air
 DS=Dust Solids
 DL=Dust Liquids
 T=Tissue
 W=Wipe
 L=Liquid
 V=Vaseline
 X=Other



Date/Time
Date/Time



1/15/2013 8:38:24AM

Page 1 of 4

Analysis Report for RCF35171

J1R8X6 SAF:RC-151 FF2/UPR-300-4 [321] Excavation Floor

GAMMA SPECTRUM ANALYSIS

Sample Identification : RCF35171
Sample Description : J1R8X6 SAF:RC-151 FF2/UPR-300-4 [321] Excavation Floor
Sample Type : 125 mL Poly Bottle

Sample Size : 1.250E+02 mL
Facility : Default

Sample Taken On : 1/14/2013 10:45:00AM
Acquisition Started : 1/15/2013 6:38:06AM

Procedure : 125ml Poly Bottle
Operator : RCT
Detector Name : REGIE2
Geometry : 125 mL Poly Bottle
Live Time : 7200.0 seconds
Real Time : 7201.7 seconds

Dead Time : 0.02 %

Peak Locate Threshold : 3.00
Peak Locate Range (in channels) : 40 - 4096
Peak Area Range (in channels) : 40 - 4096
Identification Energy Tolerance : 1.000 keV

Energy Calibration Used Done On : 1/2/2013
Efficiency Calibration Used Done On : 3/11/2012
Efficiency Calibration Description : REGIE2 125ml PBot EC031012 SN85270-238

Sample Number : 30195

INTERFERENCE CORRECTED REPORT

<i>Nuclide Name</i>	<i>Nuclide Id</i>	<i>Wt mean Activity (pCi/mL)</i>	<i>Wt mean Activity Uncertainty</i>	<i>Comments</i>
RA-226d	@	0.351	1.84E-01	7.37E-02

Sample Check-in List

Date/Time Received: 1-15-13 1255 GM Screen Result: (Airlock) D.4 Initials B]
(Sample Receiving) D.4 Initials B]

Client: WCH SDG #: 5010-68 NA [] SAF #: RC-151 NA []

Lot Number: JBA150419

Chain of Custody # RC-151-004

Shipping Container ID: hand deliv. NA b/w

Samples received inside shipping container/coolier/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: 8.1 °C Ice packs NA []
4. Vermiculite/packing materials is NA b/w] Wet [] Dry []

Item 5 through 16 for samples. Initial appropriate response.

5. Chain of Custody record present? Yes B] No []
6. Number of samples received (Each sample may contain multiple bottles): 1
7. Containers received: 1x 500 ml p

8. Sample holding times exceeded? NA [] Yes b/w] No b/w 4/15/13
9. Samples have:
 - tape
 - custody seals
 hazard labels B appropriate sample labels
10. Matrix:
 - A (FLT, Wipe, Solid, Soil)
 - S (Air, Niosh 7400)
 I (Water) B 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 B]
(If acidification is necessary, then document sample ID, initial pH, amount of HNO₃ 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 B]

14. Description of anomalies (include sample numbers): NA b/w 15/13 Hold time exceeded
will note in Case Narrative.

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

*For documentation only. No corrective action needed.

16. Additional Information: N/A

Client/Courier denied temperature check. Client/Courier unpack cooler.

[S] Client/Courier unpack cooler.

Sample Custodian: Jeanie Beck Date: 1-15-13

Date: 1-15-13

Client Informed on _____ by _____ **Person contacted** _____

No action necessary; process as is

Project Manager _____ Date 7/15/12

J3A 150419 fw 1/15/13

Sample Preparation/Analysis										Balance Id:
88 NO SAMPLE PREPARATION PERFORMED / DIRECT INJECTION										Pipet #:
EA Chromium, Hexavalent (7196A)										Sep1 DT/Tm Tech:
51 CLIENT: HANFORD										Sep2 DT/Tm Tech:
Work Order, Lot, Sample Date/Time	Total Amt/Unit	Initial Aliquot Amt/Unit	QC Tracer Prep Date	Count Time Min	Defector Id	Count On Off (24hr) Circle	CR Analyst, InitDate	Comments:	Prep Tech:	Prep Tech:
Batch: 3015046 WATER	mg/L		PM, Quote: RW2, 27023							
SEQ Batch, Test: None										
1 MXV48-1-AA										
J3A150419-1-SAM-P 										
01/14/2013 10:45			Antifec: 1X500MLP		#Containers: 1					Beta:
2 MXV48-1-AC-S										
J3A150419-1-MSD 										
01/14/2013 10:45			Antifec: 1X500MLP		#Containers: 1					Beta:
3 MXV48-1-AD-D										
J3A150419-1-MSD 										
01/14/2013 10:45			Antifec: 1X500MLP		#Containers: 1					Beta:
4 MXV48-1-AE-X										
J3A150419-1-DUP 										
01/14/2013 10:45			Antifec: 1X500MLP		#Containers: 1					Beta:
5 MXV5D-1-AA-B										
J3A150000-46-BLK 										
01/15/2013 15:04 pd			Antifec:		#Containers: 1					
6 MXV5D-1-AC-C										
J3A150000-46-LCS 										
01/15/2013 15:04 pd			Antifec:		#Containers: 1					Beta:
TestAmerica Richland Wa.	Key: In - Initial Amt, pd - Prep Dl, dc - Date Chg, r - Reference Dl, ec-Enrichment Cell, ct-Cocktailed Added	W/O Cnt: 6	Isv - Insufficient Volume for Analysis	Page 1	ICoC v4.8.49					

Sample Preparation/Analysis		Balance Id:		
88 NO SAMPLE PREPARATION PERFORMED / DIRECT INJECTION		Pipet #:		
EA Chromium, Hexavalent (7196A)		Sep1 DT/Tm Tech:		
51 CLIENT: HANFORD		Sep2 DT/Tm Tech:		
Batch: 3015046		Prep Tech:		
SEQ Batch, Test: None	mg/L			
Comments:				
All Clients For Batch: 127642, Washington Closure Hanford LLC	Bechtel Hanford, Inc.	RW2,	27023	
MXV481AA-SAMP Constituent List:				
MXV481AC-MS Constituent List:				
MXV481AD-MSD:				
MXV5D1AA-BLK:				
MXV5D1AC-LCS:				
MXV481AA-SAMP Calc Info: Uncert Level (#s) : 2	Decay to Sdt: Y	Blk Subt.: N	Sci.Not.: Y	ODRs: B
MXV481AC-MS Calc Info: Uncert Level (#s) : 2	Decay to Sdt: Y	Blk Subt.: N	Sci.Not.: Y	ODRs: B
MXV481AD-MSD: Uncert Level (#s) : 2	Decay to Sdt: Y	Blk Subt.: N	Sci.Not.: Y	ODRs: B
MXV5D1AA-BLK: Uncert Level (#s) : 2	Decay to Sdt: Y	Blk Subt.: N	Sci.Not.: Y	ODRs: B
MXV5D1AC-LCS: Uncert Level (#s) : 2	Decay to Sdt: Y	Blk Subt.: N	Sci.Not.: Y	ODRs: B
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 2	SV - Insufficient Volume for Analysis	
			W/O Cnt: 6 ICOC v4.8.49	