

# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

## ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica St. Louis  
13715 Rider Trail North  
Earth City, MO 63045  
Tel: (314)298-8566

TestAmerica Job ID: 160-3571-1

Client Project/Site: RFP-CBA-022 (7 DAY TAT)

For:

Westinghouse Electric Company LLC  
3300 State Road P  
Festus, Missouri 63028

Attn: Martin Swanson



Authorized for release by:

9/8/2013 11:04:17 AM

Ivan Vania, Project Manager I  
[ivan.vania@testamericainc.com](mailto:ivan.vania@testamericainc.com)

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*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*

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## Case Narrative

Client: Westinghouse Electric Company LLC  
Project/Site: RFP-CBA-022 (7 DAY TAT)

TestAmerica Job ID: 160-3571-1

**Job ID: 160-3571-1**

**Laboratory: TestAmerica St. Louis**

**Narrative**

### CASE NARRATIVE

**Client: Westinghouse Electric Company LLC**

**Project: RFP-CBA-022 (7 DAY TAT)**

**Report Number: 160-3571-1**

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

TestAmerica St. Louis attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results for Chemistry analyses are reported on an "as received" basis unless otherwise indicated by the presence of a % solids value in the method header. All soil/sediment sample results for radiochemistry analyses are based upon sample as dried and disaggregated with the exception of tritium, carbon-14, and iodine-129 by gamma spectroscopy unless requested as wet weight by the client."

This laboratory report is confidential and is intended for the sole use of TestAmerica and its client.

#### RECEIPT

The samples were received on 08/29/2013; the samples arrived in good condition, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 20.0° C and 20.0° C.

#### TECHNETIUM-99 (ICPMS)

Samples L050119TSQ00 (160-3571-1), L050119TSS00 (160-3571-2), L050120TRS00 (160-3571-3), L050121TSS00 (160-3571-4), L050122TRS00 (160-3571-5), L050125TRS00 (160-3571-6), L050127TRS00 (160-3571-7), L050128TES00 (160-3571-8), L050131TRS00 (160-3571-9), L050132TES00 (160-3571-10), L050133TRS00 (160-3571-11), L050139TES00 (160-3571-12), L050140TRS00 (160-3571-13), L050148TRS00 (160-3571-14), L050154TRS00 (160-3571-15), L050155TES00 (160-3571-16), L050156TRS00 (160-3571-17), L050157TES00 (160-3571-18), L050162TRQ00 (160-3571-19), L050162TRS00 (160-3571-20), L050163TES00 (160-3571-21), L050164TRS00 (160-3571-22), L050165TEQ00 (160-3571-23), L050165TES00 (160-3571-24), L050169TSS00 (160-3571-25), L050170TRS00 (160-3571-26), L050171TRS00 (160-3571-27) and L050172TES00 (160-3571-28) were analyzed for Technetium-99 (ICPMS) in accordance with EPA SW-846 Method 6020A. The samples were prepared on 08/30/2013 and 09/03/2013 and analyzed on 09/03/2013 and 09/04/2013.

## Case Narrative

Client: Westinghouse Electric Company LLC  
Project/Site: RFP-CBA-022 (7 DAY TAT)

TestAmerica Job ID: 160-3571-1

### Job ID: 160-3571-1 (Continued)

#### Laboratory: TestAmerica St. Louis (Continued)

Preparation Batches 70096 & 69983; Analytical Batches 70530 & 70531:

The following sample(s) was diluted due to matrix interference indicated by internal standard failure in the undiluted sample:  
L050154TRS00 (160-3571-15). Elevated reporting limits (RLs) are provided.

Sample L050154TRS00 (160-3571-15)[2X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No difficulties were encountered during the Tc-99 analysis. All quality control parameters were within the acceptance limits.

#### PERCENT SOLIDS

Samples L050119TSQ00 (160-3571-1), L050119TSS00 (160-3571-2), L050120TRS00 (160-3571-3), L050121TSS00 (160-3571-4), L050122TRS00 (160-3571-5), L050125TRS00 (160-3571-6), L050127TRS00 (160-3571-7), L050128TES00 (160-3571-8), L050131TRS00 (160-3571-9), L050132TES00 (160-3571-10), L050133TRS00 (160-3571-11), L050139TES00 (160-3571-12), L050140TRS00 (160-3571-13), L050148TRS00 (160-3571-14), L050154TRS00 (160-3571-15), L050155TES00 (160-3571-16), L050156TRS00 (160-3571-17), L050157TES00 (160-3571-18), L050162TRQ00 (160-3571-19), L050162TRS00 (160-3571-20), L050163TES00 (160-3571-21), L050164TRS00 (160-3571-22), L050165TEQ00 (160-3571-23), L050165TES00 (160-3571-24), L050169TSS00 (160-3571-25), L050170TRS00 (160-3571-26), L050171TRS00 (160-3571-27) and L050172TES00 (160-3571-28) were analyzed for percent solids in accordance with EPA Method 160.3 MOD. The samples were analyzed on 09/03/2013.

No difficulties were encountered during the % solids analysis. All quality control parameters were within the acceptance limits.

#### CESIUM-137 & OTHER GAMMA EMITTERS (GS)

Samples L050119TSQ00 (160-3571-1), L050119TSS00 (160-3571-2), L050120TRS00 (160-3571-3), L050121TSS00 (160-3571-4), L050122TRS00 (160-3571-5), L050125TRS00 (160-3571-6), L050127TRS00 (160-3571-7), L050128TES00 (160-3571-8), L050131TRS00 (160-3571-9), L050132TES00 (160-3571-10), L050133TRS00 (160-3571-11), L050139TES00 (160-3571-12), L050140TRS00 (160-3571-13), L050148TRS00 (160-3571-14), L050154TRS00 (160-3571-15), L050155TES00 (160-3571-16), L050156TRS00 (160-3571-17), L050157TES00 (160-3571-18), L050162TRQ00 (160-3571-19), L050162TRS00 (160-3571-20), L050163TES00 (160-3571-21), L050164TRS00 (160-3571-22), L050165TEQ00 (160-3571-23), L050165TES00 (160-3571-24), L050169TSS00 (160-3571-25), L050170TRS00 (160-3571-26), L050171TRS00 (160-3571-27) and L050172TES00 (160-3571-28) were analyzed for Cesium-137 & Other Gamma Emitters (GS) in accordance with DOE GA-01-R. The samples were leached on 08/30/2013, prepared on 09/04/2013 and analyzed on 09/04/2013 and 09/05/2013.

Preparation Batch 70600:

Radium-226 is reported in these samples at the client's request. Radium-226 is reported from the 609.31 keV line of Bismuth-214. Because the samples have not had a 21-day ingrowth, the activity for Radium-226 is an estimated value and may be biased low. This bias is caused by the disruption of secular equilibrium between Radium-226 and Bismuth-214 by the loss of Radon-222 during sample preparation. (160-3570-8 DU), (LCS 160-70600/2-A), (MB 160-70600/1-A), L050117TUB00 (160-3570-8), L050163TES00 (160-3571-21), L050164TRS00 (160-3571-22), L050165TEQ00 (160-3571-23), L050165TES00 (160-3571-24), L050169TSS00 (160-3571-25), L050170TRS00 (160-3571-26), L050171TRS00 (160-3571-27), L050172TES00 (160-3571-28)

The reporting limit for thorium-234 was not met due to insufficient sample weight available for analysis. Analytical results are reported with the MDC achieved. L050165TEQ00 (160-3571-23), L050171TRS00 (160-3571-27)

Preparation Batch 70555:

Radium-226 is reported in these samples at the client's request. Radium-226 is reported from the 609.31 keV line of Bismuth-214. Because the samples have not had a 21-day ingrowth, the activity for Radium-226 is an estimated value and may be biased low. This bias is caused by the disruption of secular equilibrium between Radium-226 and Bismuth-214 by the loss of Radon-222 during sample preparation. (160-3571-20 DU), (LCS 160-70555/2-A), (MB 160-70555/1-A), L050119TSQ00 (160-3571-1), L050119TSS00 (160-3571-2), L050120TRS00 (160-3571-3), L050121TSS00 (160-3571-4), L050122TRS00 (160-3571-5), L050125TRS00 (160-3571-6), L050127TRS00 (160-3571-7), L050128TES00 (160-3571-8), L050131TRS00 (160-3571-9), L050132TES00 (160-3571-10), L050133TRS00 (160-3571-11), L050139TES00 (160-3571-12), L050140TRS00 (160-3571-13), L050148TRS00 (160-3571-14), L050154TRS00 (160-3571-15), L050155TES00 (160-3571-16), L050156TRS00 (160-3571-17), L050157TES00 (160-3571-18), L050162TRQ00 (160-3571-19), L050162TRS00 (160-3571-20)

The reporting limit for thorium-234 was not met due to insufficient sample weight available for analysis. Analytical results are reported with the MDC achieved. L050122TRS00 (160-3571-5), L050125TRS00 (160-3571-6), L050162TRQ00 (160-3571-19)

Case Narrative

Client: Westinghouse Electric Company LLC  
Project/Site: RFP-CBA-022 (7 DAY TAT)

TestAmerica Job ID: 160-3571-1

Job ID: 160-3571-1 (Continued)

Laboratory: TestAmerica St. Louis (Continued)

No other difficulties were encountered during the Gamma spec analysis. All other quality control parameters were within the acceptance limits.

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Hematite Decommissioning Project	Procedure HDP-PR-QA-006, Chain of Custody	
	Revision: 3	Page 1 of 1
	Westinghouse Non-Proprietary Class 3	

**FORM HDP-PR-QA-006-1  
CHAIN OF CUSTODY**

Instructions: Each time the container is transferred to another organization, a person from each organization should sign the CoC. The Laboratory/End User must verify that the sample is correctly identified before the sample is released for use or analysis and send the completed CoC to HDP.

<b>Chain of Custody ID No.</b> F-082913-02 <b>Page</b> 1/3				<b>Requested Analysis</b>										<b>Laboratory Name:</b>		
<b>Project Name:</b> Westinghouse Electric Company				Comp (C) or Grab (G)	Gamma Spec	Isotopic Uranium	Tc-99	Gamma Spec (21 day ingrow for Ra-226)							Total Containers	<b>TA-MO</b>
<b>Contact Person:</b> Gerald Rood																<b>Laboratory Address:</b> 13715 Rider Trail North
<b>Phone Number:</b> 314-810-3382																<b>Phone No.</b> 314-298-8566
<b>Sampler Name:</b> Scott Jenkins																<b>Laboratory Contact Person:</b> Joe Walker
															<b>Phone No.</b> 708-870-8453	
																<b>Turn Around Time</b>
																Rush (7 days)
																Remarks
Sample ID	Date	Time	Matrix													
L050119TSQ00	8/28/2013	8:50	S	C	X		X	X							1	LSA 05-01 Sys
L050119TSS00	8/28/2013	8:50	S	C	X		X	X							1	
L050120TRS00	8/28/2013	10:15	S	C	X		X	X							1	
L050121TSS00	8/28/2013	8:40	S	C	X		X	X							1	
L050122TRS00	8/28/2013	9:15	S	C	X		X	X							1	
L050125TRS00	8/28/2013	10:10	S	C	X		X	X							1	
L050127TRS00	8/28/2013	8:33	S	C	X		X	X							1	
L050128TES00	8/28/2013	8:45	S	C	X		X	X							1	
L050131TRS00	8/28/2013	10:35	S	C	X		X	X							1	
L050132TES00	8/28/2013	10:40	S	C	X		X	X							1	
L050133TRS00	8/28/2013	9:20	S	C	X		X	X							1	
L050139TES00	8/28/2013	10:20	S	C	X		X	X							1	LSA 05-01 Sys
Relinquished by:		Date/Time		Received by:		Date/Time		Total		Cooler Temperature:						
[Signature]		8/28/13 1600		Joe Bradshaw		8-29-13 0616		28		Ambient						
Company Name:				Company Name:				Cooler ID:		Shipper and Number:						
WEC				Crossroads				0829-02/03								
Received by:		Date/Time		Relinquished by:		Date/Time		Comments: Please re-analyze samples after 21 day ingrowth period.								
Company Name:				Joe Bradshaw		8-29-13 18:39										
				Crossroads												
Relinquished by:		Date/Time		Received by:		Date/Time		Verified By:								
Company Name:				[Signature]		8-29-13 18:38										
				K. Starnes												

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Hematite Decommissioning Project	Procedure HDP-PR-QA-006, Chain of Custody	
	Revision: 3	Page 1 of 1
	Westinghouse Non-Proprietary Class 3	

**FORM HDP-PR-QA-006-1  
CHAIN OF CUSTODY**

Instructions: Each time the container is transferred to another organization, a person from each organization should sign the CoC. The Laboratory/End User must verify that the sample is correctly identified before the sample is released for use or analysis and send the completed CoC to HDP.

<b>Chain of Custody ID No.</b> F-082913-02 <b>Page</b> 2/3				<b>Requested Analysis</b>												<b>Laboratory Name:</b> TA-MO	
<b>Project Name:</b> Westinghouse Electric Company				Comp (C) or Grab (G)	Gamma Spec	Isotopic Uranium	IC-99	Gamma Spec (21 day ingrow for Ra-226)							Total Containers	<b>Laboratory Address:</b> 13715 Rider Trail North	
<b>Contact Person:</b> Gerald Rood																<b>Phone No.</b> 314-298-8566	
<b>Phone Number:</b> 314-810-3382																<b>Laboratory Contact Person:</b> Joe Walker	
<b>Sampler Name</b> Scott Jenkins																<b>Phone No.</b> 708-870-8453	
																<b>Turn Around Time</b>	
																Rush (7 days)	
																Remarks	
Sample ID	Date	Time	Matrix														
L050140TRS00	8/28/2013	8:35	S	C	X		X	X							1		LSA 05-01 Sys
L050148TRS00	8/28/2013	16:25	S	C	X		X	X							1		
L050154TRS00	8/28/2013	13:05	S	C	X		X	X							1		
L050155TES00	8/28/2013	13:10	S	C	X		X	X							1		
L050156TRS00	8/28/2013	13:15	S	C	X		X	X							1		
L050157TES00	8/28/2013	13:40	S	C	X		X	X							1		
L050162TRQ00	8/28/2013	11:10	S	C	X		X	X							1		
L050162TRS00	8/28/2013	11:10	S	C	X		X	X							1		
L050163TES00	8/28/2013	14:00	S	C	X		X	X							1		
L050164TRS00	8/28/2013	10:55	S	C	X		X	X							1		
L050165TEQ00	8/28/2013	11:05	S	C	X		X	X							1		
L050165TES00	8/28/2013	11:05	S	C	X		X	X							1		LSA 05-01 Sys
<b>Relinquished by:</b> C =		<b>Date/Time:</b> 8/28/13 1600		<b>Received by:</b> 		<b>Date/Time:</b> 8-29 1600		<b>Total:</b> 28		<b>Cooler Temperature:</b> Ambient							
<b>Company Name:</b> WEC				<b>Company Name:</b> Crossroads				<b>Cooler ID:</b> 0829-02/03		<b>Shipper and Number:</b>							
<b>Received by:</b>		<b>Date/Time:</b>		<b>Relinquished by:</b> 		<b>Date/Time:</b> 8-29 18:30		<b>Comments:</b> Please re-analyze samples after 21 day ingrowth period.									
<b>Company Name:</b>				<b>Company Name:</b> Crossroads													
<b>Relinquished by:</b>		<b>Date/Time:</b>		<b>Received by:</b> 		<b>Date/Time:</b> 8-29 18:38		<b>Verified By:</b> 									
<b>Company Name:</b>				<b>Company Name:</b> TE5 name: ca													

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FORM HDP-PR-QA-006-1  
CHAIN OF CUSTODY

Instructions: Each time the container is transferred to another organization, a person from each organization should sign the CoC. The Laboratory/End User must verify that the sample is correctly identified before the sample is released for use or analysis and send the completed CoC to HDP.

[illegible]



## Login Sample Receipt Checklist

Client: Westinghouse Electric Company LLC

Job Number: 160-3571-1

Login Number: 3571

List Source: TestAmerica St. Louis

List Number: 1

Creator: Clarke, Jill C

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	False	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

## Definitions/Glossary

Client: Westinghouse Electric Company LLC  
Project/Site: RFP-CBA-022 (7 DAY TAT)

TestAmerica Job ID: 160-3571-1

### Qualifiers

#### Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

#### Rad

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
X	Carrier exceeds control limit

### Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

## Method Summary

Client: Westinghouse Electric Company LLC  
Project/Site: RFP-CBA-022 (7 DAY TAT)

TestAmerica Job ID: 160-3571-1

Method	Method Description	Protocol	Laboratory
6020A	Metals (ICP/MS), Tc-99	SW846	TAL SL
Moisture	Percent Moisture	EPA	TAL SL
6020A	Metals (ICP/MS), Tc-99 in Activity	SW846	TAL SL
GA-01-R	Cesium-137 & Other Gamma Emitters (GS)	DOE	TAL SL

### Protocol References:

DOE = U.S. Department of Energy

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

### Laboratory References:

TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

## Sample Summary

Client: Westinghouse Electric Company LLC  
Project/Site: RFP-CBA-022 (7 DAY TAT)

TestAmerica Job ID: 160-3571-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
160-3571-1	L050119TSQ00	Solid	08/28/13 08:50	08/29/13 18:38
160-3571-2	L050119TSS00	Solid	08/28/13 08:50	08/29/13 18:38
160-3571-3	L050120TRS00	Solid	08/28/13 10:15	08/29/13 18:38
160-3571-4	L050121TSS00	Solid	08/28/13 08:40	08/29/13 18:38
160-3571-5	L050122TRS00	Solid	08/28/13 09:15	08/29/13 18:38
160-3571-6	L050125TRS00	Solid	08/28/13 10:10	08/29/13 18:38
160-3571-7	L050127TRS00	Solid	08/28/13 08:33	08/29/13 18:38
160-3571-8	L050128TES00	Solid	08/28/13 08:45	08/29/13 18:38
160-3571-9	L050131TRS00	Solid	08/28/13 10:35	08/29/13 18:38
160-3571-10	L050132TES00	Solid	08/28/13 10:40	08/29/13 18:38
160-3571-11	L050133TRS00	Solid	08/28/13 09:20	08/29/13 18:38
160-3571-12	L050139TES00	Solid	08/28/13 10:20	08/29/13 18:38
160-3571-13	L050140TRS00	Solid	08/28/13 08:35	08/29/13 18:38
160-3571-14	L050148TRS00	Solid	08/28/13 16:25	08/29/13 18:38
160-3571-15	L050154TRS00	Solid	08/28/13 13:05	08/29/13 18:38
160-3571-16	L050155TES00	Solid	08/28/13 13:10	08/29/13 18:38
160-3571-17	L050156TRS00	Solid	08/28/13 13:15	08/29/13 18:38
160-3571-18	L050157TES00	Solid	08/28/13 13:40	08/29/13 18:38
160-3571-19	L050162TRQ00	Solid	08/28/13 11:10	08/29/13 18:38
160-3571-20	L050162TRS00	Solid	08/28/13 11:10	08/29/13 18:38
160-3571-21	L050163TES00	Solid	08/28/13 14:00	08/29/13 18:38
160-3571-22	L050164TRS00	Solid	08/28/13 10:55	08/29/13 18:38
160-3571-23	L050165TEQ00	Solid	08/28/13 11:05	08/29/13 18:38
160-3571-24	L050165TES00	Solid	08/28/13 11:05	08/29/13 18:38
160-3571-25	L050169TSS00	Solid	08/28/13 13:10	08/29/13 18:38
160-3571-26	L050170TRS00	Solid	08/28/13 13:30	08/29/13 18:38
160-3571-27	L050171TRS00	Solid	08/28/13 11:00	08/29/13 18:38
160-3571-28	L050172TES00	Solid	08/28/13 11:15	08/29/13 18:38

# Client Sample Results

Client: Westinghouse Electric Company LLC  
Project/Site: RFP-CBA-022 (7 DAY TAT)

TestAmerica Job ID: 160-3571-1

**Client Sample ID: L050119TSQ00**

**Lab Sample ID: 160-3571-1**

Date Collected: 08/28/13 08:50

Matrix: Solid

Date Received: 08/29/13 18:38

Percent Solids: 89.8

## Method: 6020A - Metals (ICP/MS), Tc-99

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Technetium 99	0.000018	J	0.00060	0.000018	mg/Kg	☆	09/03/13 07:18	09/03/13 17:41	1

## Method: 6020A - Metals (ICP/MS), Tc-99 in Activity

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Technetium 99	0.300		0.0426	0.0542	1.19	0.204	pCi/g	09/03/13 07:18	09/03/13 17:41	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Re	94		30 - 110					09/03/13 07:18	09/03/13 17:41	1

## Method: GA-01-R - Cesium-137 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Actinium 228	0.747		0.141	0.160		0.103	pCi/g	09/04/13 10:53	09/04/13 19:17	1
Americium 241	0.0498	U	0.0567	0.0569		0.0931	pCi/g	09/04/13 10:53	09/04/13 19:17	1
Bismuth 212	0.963		0.296	0.312		0.262	pCi/g	09/04/13 10:53	09/04/13 19:17	1
Bismuth 214	0.667		0.0885	0.112		0.0658	pCi/g	09/04/13 10:53	09/04/13 19:17	1
Lead 212	0.775		0.0689	0.122		0.0741	pCi/g	09/04/13 10:53	09/04/13 19:17	1
Lead 214	0.711		0.0836	0.112		0.0714	pCi/g	09/04/13 10:53	09/04/13 19:17	1
Potassium 40	16.0		1.05	1.95		0.367	pCi/g	09/04/13 10:53	09/04/13 19:17	1
Protactinium 231	0.414	U	0.243	0.247		0.969	pCi/g	09/04/13 10:53	09/04/13 19:17	1
Radium 226	0.667		0.0885	0.112	1.00	0.0658	pCi/g	09/04/13 10:53	09/04/13 19:17	1
Thorium 234	1.57		0.714	0.733	1.00	0.860	pCi/g	09/04/13 10:53	09/04/13 19:17	1
Uranium 235	0.150	U	0.133	0.133		0.215	pCi/g	09/04/13 10:53	09/04/13 19:17	1
Protactinium 234m	1.27	U	1.96	1.97		4.95	pCi/g	09/04/13 10:53	09/04/13 19:17	1
Thorium 232	0.747		0.141	0.160		0.103	pCi/g	09/04/13 10:53	09/04/13 19:17	1
Other Detected Radionuclides	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tl-208	0.278		0.0484	0.0564		0.0381	pCi/g	09/04/13 10:53	09/04/13 19:17	1

**Client Sample ID: L050119TSS00**

**Lab Sample ID: 160-3571-2**

Date Collected: 08/28/13 08:50

Matrix: Solid

Date Received: 08/29/13 18:38

Percent Solids: 90.8

## Method: 6020A - Metals (ICP/MS), Tc-99

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Technetium 99	0.000025	J	0.00060	0.000018	mg/Kg	☆	09/03/13 07:18	09/03/13 17:53	1

## Method: 6020A - Metals (ICP/MS), Tc-99 in Activity

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Technetium 99	0.423		0.0951	0.113	1.21	0.207	pCi/g	09/03/13 07:18	09/03/13 17:53	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Re	91		30 - 110					09/03/13 07:18	09/03/13 17:53	1

TestAmerica St. Louis



# Client Sample Results

Client: Westinghouse Electric Company LLC  
Project/Site: RFP-CBA-022 (7 DAY TAT)

TestAmerica Job ID: 160-3571-1

Client Sample ID: L050119TSS00

Lab Sample ID: 160-3571-2

Date Collected: 08/28/13 08:50

Matrix: Solid

Date Received: 08/29/13 18:38

## Method: GA-01-R - Cesium-137 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Actinium 228	1.12		0.146	0.185		0.144	pCi/g	09/04/13 10:53	09/04/13 19:17	1
Americium 241	-0.00521	U	0.285	0.285		0.102	pCi/g	09/04/13 10:53	09/04/13 19:17	1
Bismuth 212	0.734		0.392	0.400		0.573	pCi/g	09/04/13 10:53	09/04/13 19:17	1
Bismuth 214	0.764		0.116	0.140		0.0827	pCi/g	09/04/13 10:53	09/04/13 19:17	1
Lead 212	1.00		0.0778	0.151		0.0581	pCi/g	09/04/13 10:53	09/04/13 19:17	1
Lead 214	0.802		0.0904	0.123		0.0807	pCi/g	09/04/13 10:53	09/04/13 19:17	1
Potassium 40	17.8		1.33	2.26		0.404	pCi/g	09/04/13 10:53	09/04/13 19:17	1
Protactinium 231	0.228	U	0.160	0.162		1.22	pCi/g	09/04/13 10:53	09/04/13 19:17	1
Radium 226	0.764		0.116	0.140	1.00	0.0827	pCi/g	09/04/13 10:53	09/04/13 19:17	1
Thorium 234	1.82		0.697	0.723	1.00	0.882	pCi/g	09/04/13 10:53	09/04/13 19:17	1
Uranium 235	0.177	U	0.119	0.121		0.197	pCi/g	09/04/13 10:53	09/04/13 19:17	1
Protactinium 234m	0.537	U	2.12	2.12		5.88	pCi/g	09/04/13 10:53	09/04/13 19:17	1
Thorium 232	1.12		0.146	0.185		0.144	pCi/g	09/04/13 10:53	09/04/13 19:17	1
Other Detected										
Radionuclides	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tl-208	0.270		0.0490	0.0565		0.0406	pCi/g	09/04/13 10:53	09/04/13 19:17	1

Client Sample ID: L050120TRS00

Lab Sample ID: 160-3571-3

Date Collected: 08/28/13 10:15

Matrix: Solid

Date Received: 08/29/13 18:38

Percent Solids: 92.6

## Method: 6020A - Metals (ICP/MS), Tc-99

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Technetium 99	0.000018	J	0.00059	0.000018	mg/Kg	☼	09/03/13 07:18	09/03/13 17:57	1

## Method: 6020A - Metals (ICP/MS), Tc-99 in Activity

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Technetium 99	0.302		0.0869	0.0999	1.18	0.202	pCi/g	09/03/13 07:18	09/03/13 17:57	1
Carrier	%Yield	Qualifier	Limits							
Re	91		30 - 110							
								Prepared	Analyzed	Dil Fac
								09/03/13 07:18	09/03/13 17:57	1

## Method: GA-01-R - Cesium-137 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Actinium 228	0.904		0.137	0.165		0.141	pCi/g	09/04/13 10:53	09/04/13 19:18	1
Americium 241	0.0198	U	0.0601	0.0602		0.101	pCi/g	09/04/13 10:53	09/04/13 19:18	1
Bismuth 212	0.691		0.343	0.351		0.369	pCi/g	09/04/13 10:53	09/04/13 19:18	1
Bismuth 214	0.743		0.0990	0.126		0.0679	pCi/g	09/04/13 10:53	09/04/13 19:18	1
Lead 212	0.813		0.0729	0.128		0.0677	pCi/g	09/04/13 10:53	09/04/13 19:18	1
Lead 214	0.780		0.0860	0.118		0.0616	pCi/g	09/04/13 10:53	09/04/13 19:18	1
Potassium 40	17.4		1.27	2.18		0.279	pCi/g	09/04/13 10:53	09/04/13 19:18	1
Protactinium 231	-0.728	U	0.799	0.803		1.31	pCi/g	09/04/13 10:53	09/04/13 19:18	1
Radium 226	0.743		0.0990	0.126	1.00	0.0679	pCi/g	09/04/13 10:53	09/04/13 19:18	1

TestAmerica St. Louis

# Client Sample Results

Client: Westinghouse Electric Company LLC  
Project/Site: RFP-CBA-022 (7 DAY TAT)

TestAmerica Job ID: 160-3571-1

Client Sample ID: L050120TRS00

Lab Sample ID: 160-3571-3

Date Collected: 08/28/13 10:15

Matrix: Solid

Date Received: 08/29/13 18:38

## Method: GA-01-R - Cesium-137 & Other Gamma Emitters (GS) (Continued)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Thorium 234	1.54		0.647	0.667	1.00	0.827	pCi/g	09/04/13 10:53	09/04/13 19:18	1
Uranium 235	0.136	U	0.140	0.141		0.245	pCi/g	09/04/13 10:53	09/04/13 19:18	1
Protactinium 234m	0.0323	U	2.35	2.35		4.42	pCi/g	09/04/13 10:53	09/04/13 19:18	1
Thorium 232	0.904		0.137	0.165		0.141	pCi/g	09/04/13 10:53	09/04/13 19:18	1
<b>Other Detected</b>										
Radionuclides	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tl-208	0.274		0.0495	0.0571		0.0400	pCi/g	09/04/13 10:53	09/04/13 19:18	1

Client Sample ID: L050121TSS00

Lab Sample ID: 160-3571-4

Date Collected: 08/28/13 08:40

Matrix: Solid

Date Received: 08/29/13 18:38

Percent Solids: 90.8

## Method: 6020A - Metals (ICP/MS), Tc-99

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Technetium 99	0.00018	J	0.00062	0.000019	mg/Kg	☆	09/03/13 07:18	09/03/13 18:00	1

## Method: 6020A - Metals (ICP/MS), Tc-99 in Activity

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Technetium 99	3.11		0.306	0.468	1.24	0.213	pCi/g	09/03/13 07:18	09/03/13 18:00	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Re	89		30 - 110					09/03/13 07:18	09/03/13 18:00	1

## Method: GA-01-R - Cesium-137 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Actinium 228	0.782		0.118	0.142		0.0570	pCi/g	09/04/13 10:53	09/04/13 19:19	1
Americium 241	-0.0118	U	0.0528	0.0528		0.0889	pCi/g	09/04/13 10:53	09/04/13 19:19	1
Bismuth 212	1.06		0.302	0.322		0.222	pCi/g	09/04/13 10:53	09/04/13 19:19	1
Bismuth 214	0.622		0.0817	0.104		0.0537	pCi/g	09/04/13 10:53	09/04/13 19:19	1
Lead 212	0.684		0.0591	0.106		0.0503	pCi/g	09/04/13 10:53	09/04/13 19:19	1
Lead 214	0.681		0.0739	0.102		0.0654	pCi/g	09/04/13 10:53	09/04/13 19:19	1
Potassium 40	10.5		0.879	1.39		0.303	pCi/g	09/04/13 10:53	09/04/13 19:19	1
Protactinium 231	0.216	U	0.154	0.156		0.944	pCi/g	09/04/13 10:53	09/04/13 19:19	1
Radium 226	0.622		0.0817	0.104	1.00	0.0537	pCi/g	09/04/13 10:53	09/04/13 19:19	1
Thorium 234	0.718	U	0.301	0.310	1.00	0.790	pCi/g	09/04/13 10:53	09/04/13 19:19	1
Uranium 235	0.156	U	0.121	0.122		0.197	pCi/g	09/04/13 10:53	09/04/13 19:19	1
Protactinium 234m	1.30	U	2.41	2.41		4.19	pCi/g	09/04/13 10:53	09/04/13 19:19	1
Thorium 232	0.782		0.118	0.142		0.0570	pCi/g	09/04/13 10:53	09/04/13 19:19	1
<b>Other Detected</b>										
Radionuclides	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tl-208	0.224		0.0404	0.0466		0.0320	pCi/g	09/04/13 10:53	09/04/13 19:19	1

TestAmerica St. Louis

# Client Sample Results

Client: Westinghouse Electric Company LLC  
Project/Site: RFP-CBA-022 (7 DAY TAT)

TestAmerica Job ID: 160-3571-1

Client Sample ID: L050122TRS00

Lab Sample ID: 160-3571-5

Date Collected: 08/28/13 09:15

Matrix: Solid

Date Received: 08/29/13 18:38

Percent Solids: 83.0

## Method: 6020A - Metals (ICP/MS), Tc-99

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Technetium 99	0.000023	J	0.00067	0.000020	mg/Kg	☼	09/03/13 07:18	09/03/13 18:04	1

## Method: 6020A - Metals (ICP/MS), Tc-99 in Activity

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Technetium 99	0.402		0.0564	0.0741	1.33	0.228	pCi/g	09/03/13 07:18	09/03/13 18:04	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Re	91		30 - 110	09/03/13 07:18	09/03/13 18:04	1

## Method: GA-01-R - Cesium-137 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Actinium 228	1.13		0.182	0.215		0.164	pCi/g	09/04/13 10:53	09/04/13 19:51	1
Americium 241	0.00232	U	0.0681	0.0681		0.116	pCi/g	09/04/13 10:53	09/04/13 19:51	1
Bismuth 212	1.26		0.420	0.440		0.363	pCi/g	09/04/13 10:53	09/04/13 19:51	1
Bismuth 214	0.947		0.128	0.162		0.0767	pCi/g	09/04/13 10:53	09/04/13 19:51	1
Lead 212	1.06		0.0906	0.164		0.0755	pCi/g	09/04/13 10:53	09/04/13 19:51	1
Lead 214	0.841		0.101	0.134		0.0927	pCi/g	09/04/13 10:53	09/04/13 19:51	1
Potassium 40	17.0		1.44	2.26		0.227	pCi/g	09/04/13 10:53	09/04/13 19:51	1
Protactinium 231	0.490	U	0.325	0.329		1.23	pCi/g	09/04/13 10:53	09/04/13 19:51	1
Radium 226	0.947		0.128	0.162	1.00	0.0767	pCi/g	09/04/13 10:53	09/04/13 19:51	1
Thorium 234	1.12		0.378	0.395	1.00	1.01	pCi/g	09/04/13 10:53	09/04/13 19:51	1
Uranium 235	0.0276	U	0.0850	0.0851		0.241	pCi/g	09/04/13 10:53	09/04/13 19:51	1
Protactinium 234m	4.38	U	3.43	3.46		7.65	pCi/g	09/04/13 10:53	09/04/13 19:51	1
Thorium 232	1.13		0.182	0.215		0.164	pCi/g	09/04/13 10:53	09/04/13 19:51	1

Other Detected Radionuclides	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tl-208	0.309		0.0516	0.0607		0.0367	pCi/g	09/04/13 10:53	09/04/13 19:51	1

Client Sample ID: L050125TRS00

Lab Sample ID: 160-3571-6

Date Collected: 08/28/13 10:10

Matrix: Solid

Date Received: 08/29/13 18:38

Percent Solids: 70.6

## Method: 6020A - Metals (ICP/MS), Tc-99

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Technetium 99	0.00017	J	0.00081	0.000024	mg/Kg	☼	09/03/13 07:18	09/03/13 18:08	1

## Method: 6020A - Metals (ICP/MS), Tc-99 in Activity

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Technetium 99	2.97		0.307	0.471	1.62	0.278	pCi/g	09/03/13 07:18	09/03/13 18:08	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Re	87		30 - 110	09/03/13 07:18	09/03/13 18:08	1

TestAmerica St. Louis

# Client Sample Results

Client: Westinghouse Electric Company LLC  
Project/Site: RFP-CBA-022 (7 DAY TAT)

TestAmerica Job ID: 160-3571-1

Client Sample ID: L050125TRS00

Lab Sample ID: 160-3571-6

Date Collected: 08/28/13 10:10

Matrix: Solid

Date Received: 08/29/13 18:38

## Method: GA-01-R - Cesium-137 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Actinium 228	0.779		0.198	0.214		0.101	pCi/g	09/04/13 10:53	09/04/13 19:19	1
Americium 241	0.0895	U	0.173	0.173		0.249	pCi/g	09/04/13 10:53	09/04/13 19:19	1
Bismuth 212	0.458	U	0.679	0.681		1.14	pCi/g	09/04/13 10:53	09/04/13 19:19	1
Bismuth 214	0.805		0.193	0.211		0.176	pCi/g	09/04/13 10:53	09/04/13 19:19	1
Lead 212	0.769		0.128	0.210		0.143	pCi/g	09/04/13 10:53	09/04/13 19:19	1
Lead 214	0.969		0.161	0.206		0.177	pCi/g	09/04/13 10:53	09/04/13 19:19	1
Potassium 40	11.0		1.57	1.93		0.933	pCi/g	09/04/13 10:53	09/04/13 19:19	1
Protactinium 231	0.177	U	0.400	0.401		2.06	pCi/g	09/04/13 10:53	09/04/13 19:19	1
Radium 226	0.805		0.193	0.211	1.00	0.176	pCi/g	09/04/13 10:53	09/04/13 19:19	1
Thorium 234	0.834	U	0.691	0.696	1.00	2.26	pCi/g	09/04/13 10:53	09/04/13 19:19	1
Uranium 235	0.207	U	0.291	0.292		0.531	pCi/g	09/04/13 10:53	09/04/13 19:19	1
Protactinium 234m	2.60	U	6.23	6.23		10.3	pCi/g	09/04/13 10:53	09/04/13 19:19	1
Thorium 232	0.779		0.198	0.214		0.101	pCi/g	09/04/13 10:53	09/04/13 19:19	1
<b>Other Detected</b>										
Radionuclides	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tl-208	0.219		0.0636	0.0675		0.0657	pCi/g	09/04/13 10:53	09/04/13 19:19	1

Client Sample ID: L050127TRS00

Lab Sample ID: 160-3571-7

Date Collected: 08/28/13 08:33

Matrix: Solid

Date Received: 08/29/13 18:38

Percent Solids: 82.5

## Method: 6020A - Metals (ICP/MS), Tc-99

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Technetium 99	0.000022	J	0.00064	0.000019	mg/Kg	☆	09/03/13 07:18	09/03/13 18:20	1

## Method: 6020A - Metals (ICP/MS), Tc-99 in Activity

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Technetium 99	0.380		0.0167	0.0415	1.29	0.221	pCi/g	09/03/13 07:18	09/03/13 18:20	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Re	93		30 - 110					09/03/13 07:18	09/03/13 18:20	1

## Method: GA-01-R - Cesium-137 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Actinium 228	1.11		0.104	0.154		0.0882	pCi/g	09/04/13 10:53	09/04/13 19:55	1
Americium 241	0.00965	U	0.0607	0.0607		0.102	pCi/g	09/04/13 10:53	09/04/13 19:55	1
Bismuth 212	1.29		0.374	0.397		0.317	pCi/g	09/04/13 10:53	09/04/13 19:55	1
Bismuth 214	0.807		0.0853	0.120		0.0551	pCi/g	09/04/13 10:53	09/04/13 19:55	1
Lead 212	1.09		0.0713	0.158		0.0583	pCi/g	09/04/13 10:53	09/04/13 19:55	1
Lead 214	0.871		0.0739	0.117		0.0639	pCi/g	09/04/13 10:53	09/04/13 19:55	1
Potassium 40	18.1		1.10	2.16		0.372	pCi/g	09/04/13 10:53	09/04/13 19:55	1
Protactinium 231	0.405	U	0.214	0.218		1.10	pCi/g	09/04/13 10:53	09/04/13 19:55	1
Radium 226	0.807		0.0853	0.120	1.00	0.0551	pCi/g	09/04/13 10:53	09/04/13 19:55	1

TestAmerica St. Louis

# Client Sample Results

Client: Westinghouse Electric Company LLC  
Project/Site: RFP-CBA-022 (7 DAY TAT)

TestAmerica Job ID: 160-3571-1

Client Sample ID: L050127TRS00

Lab Sample ID: 160-3571-7

Date Collected: 08/28/13 08:33

Matrix: Solid

Date Received: 08/29/13 18:38

## Method: GA-01-R - Cesium-137 & Other Gamma Emitters (GS) (Continued)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Thorium 234	1.57		0.593	0.616	1.00	0.775	pCi/g	09/04/13 10:53	09/04/13 19:55	1
Uranium 235	0.212		0.132	0.134		0.164	pCi/g	09/04/13 10:53	09/04/13 19:55	1
Protactinium 234m	6.51		3.26	3.33		3.36	pCi/g	09/04/13 10:53	09/04/13 19:55	1
Thorium 232	1.11		0.104	0.154		0.0882	pCi/g	09/04/13 10:53	09/04/13 19:55	1
<b>Other Detected</b>										
Radionuclides	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tl-208	0.359		0.0447	0.0582		0.0314	pCi/g	09/04/13 10:53	09/04/13 19:55	1

Client Sample ID: L050128TES00

Lab Sample ID: 160-3571-8

Date Collected: 08/28/13 08:45

Matrix: Solid

Date Received: 08/29/13 18:38

Percent Solids: 82.5

## Method: 6020A - Metals (ICP/MS), Tc-99

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Technetium 99	ND		0.00065	0.000020	mg/Kg	☼	09/03/13 07:18	09/03/13 18:24	1

## Method: 6020A - Metals (ICP/MS), Tc-99 in Activity

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Technetium 99	0.278		0.0291	0.0416	1.30	0.223	pCi/g	09/03/13 07:18	09/03/13 18:24	1
<b>Carrier</b>										
Re	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Re	93		30 - 110					09/03/13 07:18	09/03/13 18:24	1

## Method: GA-01-R - Cesium-137 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Actinium 228	1.16		0.128	0.174		0.115	pCi/g	09/04/13 10:53	09/04/13 19:54	1
Americium 241	0.0521	U	0.0602	0.0605		0.0814	pCi/g	09/04/13 10:53	09/04/13 19:54	1
Bismuth 212	1.23		0.354	0.376		0.321	pCi/g	09/04/13 10:53	09/04/13 19:54	1
Bismuth 214	0.866		0.0995	0.134		0.0727	pCi/g	09/04/13 10:53	09/04/13 19:54	1
Lead 212	1.02		0.0819	0.156		0.0868	pCi/g	09/04/13 10:53	09/04/13 19:54	1
Lead 214	0.862		0.0868	0.125		0.0769	pCi/g	09/04/13 10:53	09/04/13 19:54	1
Potassium 40	20.9		1.23	2.46		0.353	pCi/g	09/04/13 10:53	09/04/13 19:54	1
Protactinium 231	0.271	U	0.502	0.503		0.844	pCi/g	09/04/13 10:53	09/04/13 19:54	1
Radium 226	0.866		0.0995	0.134	1.00	0.0727	pCi/g	09/04/13 10:53	09/04/13 19:54	1
Thorium 234	1.55		0.687	0.706	1.00	0.864	pCi/g	09/04/13 10:53	09/04/13 19:54	1
Uranium 235	0.101	U	0.163	0.163		0.258	pCi/g	09/04/13 10:53	09/04/13 19:54	1
Protactinium 234m	2.00	U	2.41	2.42		4.63	pCi/g	09/04/13 10:53	09/04/13 19:54	1
Thorium 232	1.16		0.128	0.174		0.115	pCi/g	09/04/13 10:53	09/04/13 19:54	1
<b>Other Detected</b>										
Radionuclides	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tl-208	0.365		0.0514	0.0638		0.0381	pCi/g	09/04/13 10:53	09/04/13 19:54	1

TestAmerica St. Louis



# Client Sample Results

Client: Westinghouse Electric Company LLC  
Project/Site: RFP-CBA-022 (7 DAY TAT)

TestAmerica Job ID: 160-3571-1

Client Sample ID: L050131TRS00

Lab Sample ID: 160-3571-9

Date Collected: 08/28/13 10:35

Matrix: Solid

Date Received: 08/29/13 18:38

Percent Solids: 94.6

## Method: 6020A - Metals (ICP/MS), Tc-99

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Technetium 99	0.000089	J	0.00057	0.000017	mg/Kg	☼	09/03/13 07:18	09/03/13 18:28	1

## Method: 6020A - Metals (ICP/MS), Tc-99 in Activity

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Technetium 99	1.52		0.107	0.188	1.14	0.195	pCi/g	09/03/13 07:18	09/03/13 18:28	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Re	94		30 - 110					09/03/13 07:18	09/03/13 18:28	1

## Method: GA-01-R - Cesium-137 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Actinium 228	0.420		0.0910	0.101		0.0693	pCi/g	09/04/13 10:53	09/04/13 19:55	1
Americium 241	0.00766	U	0.0364	0.0364		0.0618	pCi/g	09/04/13 10:53	09/04/13 19:55	1
Bismuth 212	0.699		0.198	0.211		0.128	pCi/g	09/04/13 10:53	09/04/13 19:55	1
Bismuth 214	0.517		0.0678	0.0865		0.0455	pCi/g	09/04/13 10:53	09/04/13 19:55	1
Lead 212	0.367		0.0405	0.0624		0.0397	pCi/g	09/04/13 10:53	09/04/13 19:55	1
Lead 214	0.540		0.0567	0.0798		0.0458	pCi/g	09/04/13 10:53	09/04/13 19:55	1
Potassium 40	9.74		0.762	1.25		0.187	pCi/g	09/04/13 10:53	09/04/13 19:55	1
Protactinium 231	0.184	U	0.202	0.203		0.806	pCi/g	09/04/13 10:53	09/04/13 19:55	1
Radium 226	0.517		0.0678	0.0865	1.00	0.0455	pCi/g	09/04/13 10:53	09/04/13 19:55	1
Thorium 234	0.857		0.384	0.394	1.00	0.505	pCi/g	09/04/13 10:53	09/04/13 19:55	1
Uranium 235	0.0459	U	0.0933	0.0934		0.145	pCi/g	09/04/13 10:53	09/04/13 19:55	1
Protactinium 234m	1.55	U	2.24	2.25		3.73	pCi/g	09/04/13 10:53	09/04/13 19:55	1
Thorium 232	0.420		0.0910	0.101		0.0693	pCi/g	09/04/13 10:53	09/04/13 19:55	1
Other Detected			Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radionuclides	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tl-208	0.117		0.0244	0.0272		0.0218	pCi/g	09/04/13 10:53	09/04/13 19:55	1

Client Sample ID: L050132TES00

Lab Sample ID: 160-3571-10

Date Collected: 08/28/13 10:40

Matrix: Solid

Date Received: 08/29/13 18:38

Percent Solids: 95.6

## Method: 6020A - Metals (ICP/MS), Tc-99

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Technetium 99	0.00015	J	0.00055	0.000017	mg/Kg	☼	09/03/13 07:18	09/03/13 18:31	1

## Method: 6020A - Metals (ICP/MS), Tc-99 in Activity

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Technetium 99	2.50		0.0783	0.255	1.10	0.189	pCi/g	09/03/13 07:18	09/03/13 18:31	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Re	95		30 - 110					09/03/13 07:18	09/03/13 18:31	1

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# Client Sample Results

Client: Westinghouse Electric Company LLC  
Project/Site: RFP-CBA-022 (7 DAY TAT)

TestAmerica Job ID: 160-3571-1

Client Sample ID: L050132TES00

Lab Sample ID: 160-3571-10

Date Collected: 08/28/13 10:40

Matrix: Solid

Date Received: 08/29/13 18:38

## Method: GA-01-R - Cesium-137 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert.	Uncert.						
			(2σ+/-)	(2σ+/-)						
Actinium 228	0.441		0.0777	0.0898		0.0537	pCi/g	09/04/13 10:53	09/04/13 19:56	1
Americium 241	-0.00865	U	0.0432	0.0432		0.0728	pCi/g	09/04/13 10:53	09/04/13 19:56	1
Bismuth 212	0.160	U	0.217	0.217		0.359	pCi/g	09/04/13 10:53	09/04/13 19:56	1
Bismuth 214	0.514		0.0761	0.0929		0.0542	pCi/g	09/04/13 10:53	09/04/13 19:56	1
Lead 212	0.380		0.0441	0.0660		0.0431	pCi/g	09/04/13 10:53	09/04/13 19:56	1
Lead 214	0.588		0.0729	0.0952		0.0575	pCi/g	09/04/13 10:53	09/04/13 19:56	1
Potassium 40	9.45		0.818	1.27		0.213	pCi/g	09/04/13 10:53	09/04/13 19:56	1
Protactinium 231	-0.344	U	0.515	0.516		0.856	pCi/g	09/04/13 10:53	09/04/13 19:56	1
Radium 226	0.514		0.0761	0.0929	1.00	0.0542	pCi/g	09/04/13 10:53	09/04/13 19:56	1
Thorium 234	0.608		0.224	0.233	1.00	0.580	pCi/g	09/04/13 10:53	09/04/13 19:56	1
Uranium 235	0.107	U	0.0930	0.0937		0.167	pCi/g	09/04/13 10:53	09/04/13 19:56	1
Protactinium 234m	0.649	U	2.35	2.35		4.15	pCi/g	09/04/13 10:53	09/04/13 19:56	1
Thorium 232	0.441		0.0777	0.0898		0.0537	pCi/g	09/04/13 10:53	09/04/13 19:56	1
Other Detected			Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radionuclides			Uncert.	Uncert.						
	Result	Qualifier	(2σ+/-)	(2σ+/-)						
Tl-208	0.124		0.0311	0.0337		0.0267	pCi/g	09/04/13 10:53	09/04/13 19:56	1

Client Sample ID: L050133TRS00

Lab Sample ID: 160-3571-11

Date Collected: 08/28/13 09:20

Matrix: Solid

Date Received: 08/29/13 18:38

Percent Solids: 93.6

## Method: 6020A - Metals (ICP/MS), Tc-99

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Technetium 99	0.00017	J	0.00059	0.000018	mg/Kg	☆	09/03/13 07:18	09/03/13 18:35	1

## Method: 6020A - Metals (ICP/MS), Tc-99 in Activity

			Count	Total						
			Uncert.	Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Technetium 99	2.94		0.139	0.332	1.17	0.200	pCi/g	09/03/13 07:18	09/03/13 18:35	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Re	92		30 - 110					09/03/13 07:18	09/03/13 18:35	1

## Method: GA-01-R - Cesium-137 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert.	Uncert.						
			(2σ+/-)	(2σ+/-)						
Actinium 228	0.583		0.0838	0.103		0.0747	pCi/g	09/04/13 10:53	09/04/13 19:54	1
Americium 241	0.000244	U	0.0509	0.0509		0.0863	pCi/g	09/04/13 10:53	09/04/13 19:54	1
Bismuth 212	0.911		0.315	0.329		0.256	pCi/g	09/04/13 10:53	09/04/13 19:54	1
Bismuth 214	0.569		0.0841	0.103		0.0584	pCi/g	09/04/13 10:53	09/04/13 19:54	1
Lead 212	0.692		0.0562	0.106		0.0446	pCi/g	09/04/13 10:53	09/04/13 19:54	1
Lead 214	0.595		0.0589	0.0854		0.0552	pCi/g	09/04/13 10:53	09/04/13 19:54	1
Potassium 40	13.5		0.953	1.68		0.285	pCi/g	09/04/13 10:53	09/04/13 19:54	1
Protactinium 231	0.327	U	0.174	0.178		0.901	pCi/g	09/04/13 10:53	09/04/13 19:54	1
Radium 226	0.569		0.0841	0.103	1.00	0.0584	pCi/g	09/04/13 10:53	09/04/13 19:54	1

TestAmerica St. Louis

# Client Sample Results

Client: Westinghouse Electric Company LLC  
Project/Site: RFP-CBA-022 (7 DAY TAT)

TestAmerica Job ID: 160-3571-1

Client Sample ID: L050133TRS00

Lab Sample ID: 160-3571-11

Date Collected: 08/28/13 09:20

Matrix: Solid

Date Received: 08/29/13 18:38

## Method: GA-01-R - Cesium-137 & Other Gamma Emitters (GS) (Continued)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Thorium 234	1.07		0.520	0.532	1.00	0.693	pCi/g	09/04/13 10:53	09/04/13 19:54	1
Uranium 235	0.0829	U	0.117	0.118		0.195	pCi/g	09/04/13 10:53	09/04/13 19:54	1
Protactinium 234m	-1.71	U	3.95	3.95		4.58	pCi/g	09/04/13 10:53	09/04/13 19:54	1
Thorium 232	0.583		0.0838	0.103		0.0747	pCi/g	09/04/13 10:53	09/04/13 19:54	1
<b>Other Detected</b>										
Radionuclides	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tl-208	0.211		0.0357	0.0419		0.0286	pCi/g	09/04/13 10:53	09/04/13 19:54	1

Client Sample ID: L050139TES00

Lab Sample ID: 160-3571-12

Date Collected: 08/28/13 10:20

Matrix: Solid

Date Received: 08/29/13 18:38

Percent Solids: 94.3

## Method: 6020A - Metals (ICP/MS), Tc-99

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Technetium 99	0.00067		0.00057	0.000017	mg/Kg	☆	09/03/13 07:18	09/03/13 18:39	1

## Method: 6020A - Metals (ICP/MS), Tc-99 in Activity

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Technetium 99	11.5		1.23	1.72	1.13	0.194	pCi/g	09/03/13 07:18	09/03/13 18:39	1
<b>Carrier</b>										
Re	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
	94		30 - 110					09/03/13 07:18	09/03/13 18:39	1

## Method: GA-01-R - Cesium-137 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Actinium 228	0.444		0.0968	0.107		0.0930	pCi/g	09/04/13 10:53	09/04/13 20:28	1
Americium 241	-0.000285	U	0.0466	0.0466		0.0795	pCi/g	09/04/13 10:53	09/04/13 20:28	1
Bismuth 212	0.366	U	0.252	0.254		0.369	pCi/g	09/04/13 10:53	09/04/13 20:28	1
Bismuth 214	0.667		0.0933	0.116		0.0491	pCi/g	09/04/13 10:53	09/04/13 20:28	1
Lead 212	0.350		0.0477	0.0658		0.0480	pCi/g	09/04/13 10:53	09/04/13 20:28	1
Lead 214	0.666		0.0800	0.106		0.0541	pCi/g	09/04/13 10:53	09/04/13 20:28	1
Potassium 40	8.80		0.895	1.27		0.168	pCi/g	09/04/13 10:53	09/04/13 20:28	1
Protactinium 231	0.206	U	0.241	0.243		0.730	pCi/g	09/04/13 10:53	09/04/13 20:28	1
Radium 226	0.667		0.0933	0.116	1.00	0.0491	pCi/g	09/04/13 10:53	09/04/13 20:28	1
Thorium 234	1.26		0.284	0.313	1.00	0.676	pCi/g	09/04/13 10:53	09/04/13 20:28	1
Uranium 235	0.199		0.130	0.131		0.190	pCi/g	09/04/13 10:53	09/04/13 20:28	1
Protactinium 234m	0.831	U	3.29	3.29		5.80	pCi/g	09/04/13 10:53	09/04/13 20:28	1
Thorium 232	0.444		0.0968	0.107		0.0930	pCi/g	09/04/13 10:53	09/04/13 20:28	1
<b>Other Detected</b>										
Radionuclides	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tl-208	0.129		0.0413	0.0434		0.0364	pCi/g	09/04/13 10:53	09/04/13 20:28	1

TestAmerica St. Louis

# Client Sample Results

Client: Westinghouse Electric Company LLC  
Project/Site: RFP-CBA-022 (7 DAY TAT)

TestAmerica Job ID: 160-3571-1

Client Sample ID: L050140TRS00

Lab Sample ID: 160-3571-13

Date Collected: 08/28/13 08:35

Matrix: Solid

Date Received: 08/29/13 18:38

Percent Solids: 92.5

## Method: 6020A - Metals (ICP/MS), Tc-99

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Technetium 99	0.00011	J	0.00057	0.000017	mg/Kg	☼	09/03/13 07:18	09/03/13 18:43	1

## Method: 6020A - Metals (ICP/MS), Tc-99 in Activity

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Technetium 99	1.86		0.125	0.223	1.15	0.197	pCi/g	09/03/13 07:18	09/03/13 18:43	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Re	95		30 - 110					09/03/13 07:18	09/03/13 18:43	1

## Method: GA-01-R - Cesium-137 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Actinium 228	0.465		0.0773	0.0907		0.0682	pCi/g	09/04/13 10:53	09/04/13 20:32	1
Americium 241	0.0184	U	0.0424	0.0424		0.0709	pCi/g	09/04/13 10:53	09/04/13 20:32	1
Bismuth 212	0.478		0.225	0.230		0.310	pCi/g	09/04/13 10:53	09/04/13 20:32	1
Bismuth 214	0.581		0.0710	0.0932		0.0505	pCi/g	09/04/13 10:53	09/04/13 20:32	1
Lead 212	0.440		0.0459	0.0732		0.0436	pCi/g	09/04/13 10:53	09/04/13 20:32	1
Lead 214	0.625		0.0591	0.0879		0.0520	pCi/g	09/04/13 10:53	09/04/13 20:32	1
Potassium 40	8.97		0.751	1.19		0.310	pCi/g	09/04/13 10:53	09/04/13 20:32	1
Protactinium 231	0.342	U	0.181	0.185		0.756	pCi/g	09/04/13 10:53	09/04/13 20:32	1
Radium 226	0.581		0.0710	0.0932	1.00	0.0505	pCi/g	09/04/13 10:53	09/04/13 20:32	1
Thorium 234	0.834		0.410	0.419	1.00	0.562	pCi/g	09/04/13 10:53	09/04/13 20:32	1
Uranium 235	0.0997	U	0.109	0.109		0.173	pCi/g	09/04/13 10:53	09/04/13 20:32	1
Protactinium 234m	0.112	U	2.03	2.03		3.80	pCi/g	09/04/13 10:53	09/04/13 20:32	1
Thorium 232	0.465		0.0773	0.0907		0.0682	pCi/g	09/04/13 10:53	09/04/13 20:32	1
Other Detected			Count Uncert.	Total Uncert.						
Radionuclides	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tl-208	0.164		0.0283	0.0330		0.0203	pCi/g	09/04/13 10:53	09/04/13 20:32	1

Client Sample ID: L050148TRS00

Lab Sample ID: 160-3571-14

Date Collected: 08/28/13 16:25

Matrix: Solid

Date Received: 08/29/13 18:38

Percent Solids: 79.1

## Method: 6020A - Metals (ICP/MS), Tc-99

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Technetium 99	0.0030		0.00065	0.000019	mg/Kg	☼	09/03/13 07:18	09/03/13 18:47	1

## Method: 6020A - Metals (ICP/MS), Tc-99 in Activity

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Technetium 99	51.4		1.73	5.19	1.29	0.221	pCi/g	09/03/13 07:18	09/03/13 18:47	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Re	97		30 - 110					09/03/13 07:18	09/03/13 18:47	1

TestAmerica St. Louis

# Client Sample Results

Client: Westinghouse Electric Company LLC  
Project/Site: RFP-CBA-022 (7 DAY TAT)

TestAmerica Job ID: 160-3571-1

Client Sample ID: L050148TRS00

Lab Sample ID: 160-3571-14

Date Collected: 08/28/13 16:25

Matrix: Solid

Date Received: 08/29/13 18:38

## Method: GA-01-R - Cesium-137 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert.	Uncert.						
			(2σ+/-)	(2σ+/-)						
Actinium 228	0.195		0.0472	0.0512		0.0213	pCi/g	09/04/13 10:53	09/04/13 20:34	1
Americium 241	0.000918	U	0.0368	0.0368		0.0624	pCi/g	09/04/13 10:53	09/04/13 20:34	1
Bismuth 212	0.0804	U	0.132	0.132		0.223	pCi/g	09/04/13 10:53	09/04/13 20:34	1
Bismuth 214	0.582		0.0648	0.0886		0.0404	pCi/g	09/04/13 10:53	09/04/13 20:34	1
Lead 212	0.124		0.0289	0.0330		0.0393	pCi/g	09/04/13 10:53	09/04/13 20:34	1
Lead 214	0.687		0.0580	0.0920		0.0441	pCi/g	09/04/13 10:53	09/04/13 20:34	1
Potassium 40	2.51		0.352	0.436		0.189	pCi/g	09/04/13 10:53	09/04/13 20:34	1
Protactinium 231	0.0926	U	0.102	0.103		0.459	pCi/g	09/04/13 10:53	09/04/13 20:34	1
Radium 226	0.582		0.0648	0.0886	1.00	0.0404	pCi/g	09/04/13 10:53	09/04/13 20:34	1
Thorium 234	1.57		0.469	0.497	1.00	0.536	pCi/g	09/04/13 10:53	09/04/13 20:34	1
Uranium 235	0.189		0.0781	0.0804		0.126	pCi/g	09/04/13 10:53	09/04/13 20:34	1
Protactinium 234m	0.782	U	1.58	1.58		2.71	pCi/g	09/04/13 10:53	09/04/13 20:34	1
Thorium 232	0.195		0.0472	0.0512		0.0213	pCi/g	09/04/13 10:53	09/04/13 20:34	1
Other Detected										
Radionuclides	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert.	Uncert.						
			(2σ+/-)	(2σ+/-)						
Tl-208	0.0673		0.0221	0.0232		0.0207	pCi/g	09/04/13 10:53	09/04/13 20:34	1

Client Sample ID: L050154TRS00

Lab Sample ID: 160-3571-15

Date Collected: 08/28/13 13:05

Matrix: Solid

Date Received: 08/29/13 18:38

Percent Solids: 95.3

## Method: 6020A - Metals (ICP/MS), Tc-99

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Technetium 99	0.0039		0.0010	0.000031	mg/Kg	☆	09/03/13 07:18	09/04/13 07:49	2

## Method: 6020A - Metals (ICP/MS), Tc-99 in Activity

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert.	Uncert.						
			(2σ+/-)	(2σ+/-)						
Technetium 99	67.5		2.79	6.71	2.08	0.356	pCi/g	09/03/13 07:18	09/04/13 07:49	2
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Re	101		30 - 110					09/03/13 07:18	09/04/13 07:49	2

## Method: GA-01-R - Cesium-137 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert.	Uncert.						
			(2σ+/-)	(2σ+/-)						
Actinium 228	0.0444	U	0.0510	0.0512		0.0909	pCi/g	09/04/13 10:53	09/04/13 20:32	1
Americium 241	0.0144	U	0.0344	0.0345		0.0580	pCi/g	09/04/13 10:53	09/04/13 20:32	1
Bismuth 212	0.125	U	0.173	0.173		0.287	pCi/g	09/04/13 10:53	09/04/13 20:32	1
Bismuth 214	0.806		0.0757	0.113		0.0370	pCi/g	09/04/13 10:53	09/04/13 20:32	1
Lead 212	0.0961		0.0265	0.0293		0.0366	pCi/g	09/04/13 10:53	09/04/13 20:32	1
Lead 214	0.889		0.0638	0.112		0.0409	pCi/g	09/04/13 10:53	09/04/13 20:32	1
Potassium 40	1.41		0.294	0.328		0.185	pCi/g	09/04/13 10:53	09/04/13 20:32	1
Protactinium 231	0.0685	U	0.0803	0.0806		0.545	pCi/g	09/04/13 10:53	09/04/13 20:32	1
Radium 226	0.806		0.0757	0.113	1.00	0.0370	pCi/g	09/04/13 10:53	09/04/13 20:32	1

TestAmerica St. Louis



# Client Sample Results

Client: Westinghouse Electric Company LLC  
Project/Site: RFP-CBA-022 (7 DAY TAT)

TestAmerica Job ID: 160-3571-1

**Client Sample ID: L050154TRS00**

**Lab Sample ID: 160-3571-15**

Date Collected: 08/28/13 13:05

Matrix: Solid

Date Received: 08/29/13 18:38

## Method: GA-01-R - Cesium-137 & Other Gamma Emitters (GS) (Continued)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Thorium 234	1.97		0.484	0.526	1.00	0.548	pCi/g	09/04/13 10:53	09/04/13 20:32	1
Uranium 235	0.301		0.100	0.105		0.119	pCi/g	09/04/13 10:53	09/04/13 20:32	1
Protactinium 234m	5.13		1.96	2.03		1.54	pCi/g	09/04/13 10:53	09/04/13 20:32	1
Thorium 232	0.0444	U	0.0510	0.0512		0.0909	pCi/g	09/04/13 10:53	09/04/13 20:32	1
<b>Other Detected</b>										
Radionuclides	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tl-208	0.0504		0.0181	0.0189		0.0180	pCi/g	09/04/13 10:53	09/04/13 20:32	1

**Client Sample ID: L050155TES00**

**Lab Sample ID: 160-3571-16**

Date Collected: 08/28/13 13:10

Matrix: Solid

Date Received: 08/29/13 18:38

Percent Solids: 92.4

## Method: 6020A - Metals (ICP/MS), Tc-99

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Technetium 99	0.0048		0.00058	0.000018	mg/Kg	☆	09/03/13 07:18	09/03/13 18:55	1

## Method: 6020A - Metals (ICP/MS), Tc-99 in Activity

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Technetium 99	82.5		2.76	8.67	1.17	0.200	pCi/g	09/03/13 07:18	09/03/13 18:55	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Re	93		30 - 110					09/03/13 07:18	09/03/13 18:55	1

## Method: GA-01-R - Cesium-137 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Actinium 228	0.0982		0.0548	0.0557		0.0892	pCi/g	09/04/13 10:53	09/04/13 20:32	1
Americium 241	0.0000572	U	0.0411	0.0411		0.0700	pCi/g	09/04/13 10:53	09/04/13 20:32	1
Bismuth 212	0.0536	U	0.188	0.188		0.334	pCi/g	09/04/13 10:53	09/04/13 20:32	1
Bismuth 214	0.762		0.0793	0.112		0.0358	pCi/g	09/04/13 10:53	09/04/13 20:32	1
Lead 212	0.0956		0.0260	0.0288		0.0335	pCi/g	09/04/13 10:53	09/04/13 20:32	1
Lead 214	0.787		0.0638	0.104		0.0476	pCi/g	09/04/13 10:53	09/04/13 20:32	1
Potassium 40	1.23		0.308	0.333		0.220	pCi/g	09/04/13 10:53	09/04/13 20:32	1
Protactinium 231	0.0624	U	0.0750	0.0753		0.668	pCi/g	09/04/13 10:53	09/04/13 20:32	1
Radium 226	0.762		0.0793	0.112	1.00	0.0358	pCi/g	09/04/13 10:53	09/04/13 20:32	1
Thorium 234	1.45		0.295	0.332	1.00	0.610	pCi/g	09/04/13 10:53	09/04/13 20:32	1
Uranium 235	0.342		0.101	0.107		0.120	pCi/g	09/04/13 10:53	09/04/13 20:32	1
Protactinium 234m	3.32	U	1.82	1.85		4.10	pCi/g	09/04/13 10:53	09/04/13 20:32	1
Thorium 232	0.0982		0.0548	0.0557		0.0892	pCi/g	09/04/13 10:53	09/04/13 20:32	1
<b>Other Detected</b>										
Radionuclides	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tl-208	0.0609		0.0191	0.0201		0.0173	pCi/g	09/04/13 10:53	09/04/13 20:32	1

TestAmerica St. Louis

# Client Sample Results

Client: Westinghouse Electric Company LLC  
Project/Site: RFP-CBA-022 (7 DAY TAT)

TestAmerica Job ID: 160-3571-1

Client Sample ID: L050156TRS00

Lab Sample ID: 160-3571-17

Date Collected: 08/28/13 13:15

Matrix: Solid

Date Received: 08/29/13 18:38

Percent Solids: 93.4

## Method: 6020A - Metals (ICP/MS), Tc-99

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Technetium 99	0.00016	J	0.00054	0.000016	mg/Kg	☼	09/03/13 07:18	09/03/13 19:06	1

## Method: 6020A - Metals (ICP/MS), Tc-99 in Activity

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Technetium 99	2.75		0.0950	0.270	1.08	0.184	pCi/g	09/03/13 07:18	09/03/13 19:06	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Re	100		30 - 110	09/03/13 07:18	09/03/13 19:06	1

## Method: GA-01-R - Cesium-137 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Actinium 228	0.390		0.0774	0.0870		0.0638	pCi/g	09/04/13 10:53	09/04/13 20:35	1
Americium 241	-0.000846	U	0.0388	0.0388		0.0660	pCi/g	09/04/13 10:53	09/04/13 20:35	1
Bismuth 212	0.440		0.240	0.244		0.246	pCi/g	09/04/13 10:53	09/04/13 20:35	1
Bismuth 214	0.444		0.0551	0.0719		0.0325	pCi/g	09/04/13 10:53	09/04/13 20:35	1
Lead 212	0.346		0.0385	0.0591		0.0372	pCi/g	09/04/13 10:53	09/04/13 20:35	1
Lead 214	0.528		0.0499	0.0742		0.0415	pCi/g	09/04/13 10:53	09/04/13 20:35	1
Potassium 40	7.97		0.653	1.04		0.171	pCi/g	09/04/13 10:53	09/04/13 20:35	1
Protactinium 231	0.136	U	0.186	0.187		0.619	pCi/g	09/04/13 10:53	09/04/13 20:35	1
Radium 226	0.444		0.0551	0.0719	1.00	0.0325	pCi/g	09/04/13 10:53	09/04/13 20:35	1
Thorium 234	0.671		0.358	0.365	1.00	0.495	pCi/g	09/04/13 10:53	09/04/13 20:35	1
Uranium 235	0.0736	U	0.0894	0.0897		0.142	pCi/g	09/04/13 10:53	09/04/13 20:35	1
Protactinium 234m	-0.287	U	11.5	11.5		4.21	pCi/g	09/04/13 10:53	09/04/13 20:35	1
Thorium 232	0.390		0.0774	0.0870		0.0638	pCi/g	09/04/13 10:53	09/04/13 20:35	1

Other Detected Radionuclides	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tl-208	0.131		0.0244	0.0279		0.0192	pCi/g	09/04/13 10:53	09/04/13 20:35	1

Client Sample ID: L050157TES00

Lab Sample ID: 160-3571-18

Date Collected: 08/28/13 13:40

Matrix: Solid

Date Received: 08/29/13 18:38

Percent Solids: 90.8

## Method: 6020A - Metals (ICP/MS), Tc-99

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Technetium 99	0.000038	J	0.00058	0.000017	mg/Kg	☼	09/03/13 07:18	09/03/13 19:10	1

## Method: 6020A - Metals (ICP/MS), Tc-99 in Activity

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Technetium 99	0.657		0.187	0.206	1.16	0.199	pCi/g	09/03/13 07:18	09/03/13 19:10	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Re	95		30 - 110	09/03/13 07:18	09/03/13 19:10	1

TestAmerica St. Louis

# Client Sample Results

Client: Westinghouse Electric Company LLC  
Project/Site: RFP-CBA-022 (7 DAY TAT)

TestAmerica Job ID: 160-3571-1

Client Sample ID: L050157TES00

Lab Sample ID: 160-3571-18

Date Collected: 08/28/13 13:40

Matrix: Solid

Date Received: 08/29/13 18:38

## Method: GA-01-R - Cesium-137 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert.	Uncert.						
			(2σ+/-)	(2σ+/-)						
Actinium 228	0.419		0.112	0.120		0.0911	pCi/g	09/04/13 10:53	09/04/13 21:23	1
Americium 241	0.0101	U	0.0439	0.0440		0.0743	pCi/g	09/04/13 10:53	09/04/13 21:23	1
Bismuth 212	0.296	U	0.256	0.258		0.400	pCi/g	09/04/13 10:53	09/04/13 21:23	1
Bismuth 214	0.506		0.0675	0.0856		0.0337	pCi/g	09/04/13 10:53	09/04/13 21:23	1
Lead 212	0.382		0.0511	0.0711		0.0558	pCi/g	09/04/13 10:53	09/04/13 21:23	1
Lead 214	0.543		0.0777	0.0961		0.0615	pCi/g	09/04/13 10:53	09/04/13 21:23	1
Potassium 40	7.73		0.805	1.13		0.251	pCi/g	09/04/13 10:53	09/04/13 21:23	1
Protactinium 231	0.129	U	0.122	0.123		0.784	pCi/g	09/04/13 10:53	09/04/13 21:23	1
Radium 226	0.506		0.0675	0.0856	1.00	0.0337	pCi/g	09/04/13 10:53	09/04/13 21:23	1
Thorium 234	0.817		0.510	0.517	1.00	0.641	pCi/g	09/04/13 10:53	09/04/13 21:23	1
Uranium 235	0.0360	U	0.106	0.106		0.177	pCi/g	09/04/13 10:53	09/04/13 21:23	1
Protactinium 234m	3.25	U	2.74	2.76		4.65	pCi/g	09/04/13 10:53	09/04/13 21:23	1
Thorium 232	0.419		0.112	0.120		0.0911	pCi/g	09/04/13 10:53	09/04/13 21:23	1
Other Detected			Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radionuclides			Uncert.	Uncert.						
	Result	Qualifier	(2σ+/-)	(2σ+/-)						
Tl-208	0.148		0.0341	0.0374		0.0297	pCi/g	09/04/13 10:53	09/04/13 21:23	1

Client Sample ID: L050162TRQ00

Lab Sample ID: 160-3571-19

Date Collected: 08/28/13 11:10

Matrix: Solid

Date Received: 08/29/13 18:38

Percent Solids: 83.7

## Method: 6020A - Metals (ICP/MS), Tc-99

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Technetium 99	0.00010	J	0.00064	0.000019	mg/Kg	☆	09/03/13 07:18	09/03/13 19:14	1

## Method: 6020A - Metals (ICP/MS), Tc-99 in Activity

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert.	Uncert.						
			(2σ+/-)	(2σ+/-)						
Technetium 99	1.75		0.0165	0.174	1.28	0.219	pCi/g	09/03/13 07:18	09/03/13 19:14	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Re	93		30 - 110					09/03/13 07:18	09/03/13 19:14	1

## Method: GA-01-R - Cesium-137 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert.	Uncert.						
			(2σ+/-)	(2σ+/-)						
Actinium 228	0.996		0.171	0.199		0.111	pCi/g	09/04/13 10:53	09/04/13 22:00	1
Americium 241	-0.0326	U	0.0788	0.0789		0.132	pCi/g	09/04/13 10:53	09/04/13 22:00	1
Bismuth 212	0.718		0.441	0.447		0.657	pCi/g	09/04/13 10:53	09/04/13 22:00	1
Bismuth 214	0.898		0.126	0.156		0.0792	pCi/g	09/04/13 10:53	09/04/13 22:00	1
Lead 212	1.13		0.0905	0.172		0.0721	pCi/g	09/04/13 10:53	09/04/13 22:00	1
Lead 214	0.943		0.0981	0.139		0.0836	pCi/g	09/04/13 10:53	09/04/13 22:00	1
Potassium 40	21.6		1.59	2.73		0.216	pCi/g	09/04/13 10:53	09/04/13 22:00	1
Protactinium 231	0.803	U	0.435	0.443		1.43	pCi/g	09/04/13 10:53	09/04/13 22:00	1
Radium 226	0.898		0.126	0.156	1.00	0.0792	pCi/g	09/04/13 10:53	09/04/13 22:00	1

TestAmerica St. Louis

# Client Sample Results

Client: Westinghouse Electric Company LLC  
Project/Site: RFP-CBA-022 (7 DAY TAT)

TestAmerica Job ID: 160-3571-1

Client Sample ID: L050162TRQ00

Lab Sample ID: 160-3571-19

Date Collected: 08/28/13 11:10

Matrix: Solid

Date Received: 08/29/13 18:38

## Method: GA-01-R - Cesium-137 & Other Gamma Emitters (GS) (Continued)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Thorium 234	1.77		0.853	0.873	1.00	1.08	pCi/g	09/04/13 10:53	09/04/13 22:00	1
Uranium 235	0.219	U	0.181	0.183		0.279	pCi/g	09/04/13 10:53	09/04/13 22:00	1
Protactinium 234m	1.95	U	4.11	4.11		7.05	pCi/g	09/04/13 10:53	09/04/13 22:00	1
Thorium 232	0.996		0.171	0.199		0.111	pCi/g	09/04/13 10:53	09/04/13 22:00	1
<b>Other Detected</b>										
Radionuclides	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tl-208	0.406		0.0678	0.0798		0.0504	pCi/g	09/04/13 10:53	09/04/13 22:00	1

Client Sample ID: L050162TRS00

Lab Sample ID: 160-3571-20

Date Collected: 08/28/13 11:10

Matrix: Solid

Date Received: 08/29/13 18:38

Percent Solids: 82.5

## Method: 6020A - Metals (ICP/MS), Tc-99

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Technetium 99	0.000088	J	0.00066	0.000020	mg/Kg	☆	09/03/13 07:18	09/03/13 19:18	1

## Method: 6020A - Metals (ICP/MS), Tc-99 in Activity

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Technetium 99	1.50		0.195	0.261	1.31	0.224	pCi/g	09/03/13 07:18	09/03/13 19:18	1
<b>Carrier</b>										
Re	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Re	92		30 - 110					09/03/13 07:18	09/03/13 19:18	1

## Method: GA-01-R - Cesium-137 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Actinium 228	1.27		0.155	0.202		0.112	pCi/g	09/04/13 10:53	09/05/13 08:40	1
Americium 241	0.0260	U	0.0687	0.0687		0.114	pCi/g	09/04/13 10:53	09/05/13 08:40	1
Bismuth 212	1.64		0.551	0.577		0.477	pCi/g	09/04/13 10:53	09/05/13 08:40	1
Bismuth 214	0.939		0.101	0.140		0.0703	pCi/g	09/04/13 10:53	09/05/13 08:40	1
Lead 212	1.02		0.0797	0.155		0.0869	pCi/g	09/04/13 10:53	09/05/13 08:40	1
Lead 214	1.05		0.101	0.149		0.0820	pCi/g	09/04/13 10:53	09/05/13 08:40	1
Potassium 40	20.4		1.19	2.40		0.418	pCi/g	09/04/13 10:53	09/05/13 08:40	1
Protactinium 231	0.466	U	0.381	0.384		1.09	pCi/g	09/04/13 10:53	09/05/13 08:40	1
Radium 226	0.939		0.101	0.140	1.00	0.0703	pCi/g	09/04/13 10:53	09/05/13 08:40	1
Thorium 234	1.66		0.792	0.811	1.00	0.955	pCi/g	09/04/13 10:53	09/05/13 08:40	1
Uranium 235	0.296		0.128	0.132		0.190	pCi/g	09/04/13 10:53	09/05/13 08:40	1
Protactinium 234m	0.711	U	2.92	2.92		5.08	pCi/g	09/04/13 10:53	09/05/13 08:40	1
Thorium 232	1.27		0.155	0.202		0.112	pCi/g	09/04/13 10:53	09/05/13 08:40	1
<b>Other Detected</b>										
Radionuclides	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tl-208	0.353		0.0446	0.0578		0.0325	pCi/g	09/04/13 10:53	09/05/13 08:40	1

TestAmerica St. Louis

# Client Sample Results

Client: Westinghouse Electric Company LLC  
Project/Site: RFP-CBA-022 (7 DAY TAT)

TestAmerica Job ID: 160-3571-1

Client Sample ID: L050163TES00

Lab Sample ID: 160-3571-21

Date Collected: 08/28/13 14:00

Matrix: Solid

Date Received: 08/29/13 18:38

Percent Solids: 83.0

## Method: 6020A - Metals (ICP/MS), Tc-99

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Technetium 99	0.000025	J	0.00063	0.000019	mg/Kg	☼	08/30/13 10:44	09/03/13 19:29	1

## Method: 6020A - Metals (ICP/MS), Tc-99 in Activity

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Technetium 99	0.435		0.0752	0.0905	1.27	0.217	pCi/g	08/30/13 10:44	09/03/13 19:29	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Re	94		30 - 110					08/30/13 10:44	09/03/13 19:29	1

## Method: GA-01-R - Cesium-137 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Actinium 228	1.03		0.150	0.183		0.126	pCi/g	09/04/13 13:12	09/04/13 21:58	1
Americium 241	0.00255	U	0.0695	0.0695		0.118	pCi/g	09/04/13 13:12	09/04/13 21:58	1
Bismuth 212	0.864		0.421	0.430		0.597	pCi/g	09/04/13 13:12	09/04/13 21:58	1
Bismuth 214	0.809		0.105	0.135		0.0604	pCi/g	09/04/13 13:12	09/04/13 21:58	1
Lead 212	1.02		0.0849	0.157		0.0735	pCi/g	09/04/13 13:12	09/04/13 21:58	1
Lead 214	0.731		0.0879	0.116		0.0816	pCi/g	09/04/13 13:12	09/04/13 21:58	1
Potassium 40	19.0		1.46	2.43		0.460	pCi/g	09/04/13 13:12	09/04/13 21:58	1
Protactinium 231	0.367	U	0.258	0.261		1.40	pCi/g	09/04/13 13:12	09/04/13 21:58	1
Radium 226	0.809		0.105	0.135	1.00	0.0604	pCi/g	09/04/13 13:12	09/04/13 21:58	1
Thorium 234	0.791	U	0.369	0.378	1.00	0.885	pCi/g	09/04/13 13:12	09/04/13 21:58	1
Uranium 235	0.0918	U	0.134	0.135		0.261	pCi/g	09/04/13 13:12	09/04/13 21:58	1
Protactinium 234m	1.23	U	2.42	2.43		6.20	pCi/g	09/04/13 13:12	09/04/13 21:58	1
Thorium 232	1.03		0.150	0.183		0.126	pCi/g	09/04/13 13:12	09/04/13 21:58	1
Other Detected			Count Uncert.	Total Uncert.						
Radionuclides	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tl-208	0.304		0.0600	0.0677		0.0496	pCi/g	09/04/13 13:12	09/04/13 21:58	1

Client Sample ID: L050164TRS00

Lab Sample ID: 160-3571-22

Date Collected: 08/28/13 10:55

Matrix: Solid

Date Received: 08/29/13 18:38

Percent Solids: 83.4

## Method: 6020A - Metals (ICP/MS), Tc-99

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Technetium 99	0.000029	J	0.00069	0.000021	mg/Kg	☼	08/30/13 10:44	09/03/13 19:41	1

## Method: 6020A - Metals (ICP/MS), Tc-99 in Activity

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Technetium 99	0.503		0.0295	0.0629	1.37	0.235	pCi/g	08/30/13 10:44	09/03/13 19:41	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Re	87		30 - 110					08/30/13 10:44	09/03/13 19:41	1

TestAmerica St. Louis



# Client Sample Results

Client: Westinghouse Electric Company LLC  
Project/Site: RFP-CBA-022 (7 DAY TAT)

TestAmerica Job ID: 160-3571-1

Client Sample ID: L050164TRS00

Lab Sample ID: 160-3571-22

Date Collected: 08/28/13 10:55

Matrix: Solid

Date Received: 08/29/13 18:38

## Method: GA-01-R - Cesium-137 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert.	Uncert.						
			(2σ+/-)	(2σ+/-)						
Actinium 228	0.973		0.148	0.178		0.0944	pCi/g	09/04/13 13:12	09/04/13 22:01	1
Americium 241	0.0179	U	0.0569	0.0569		0.0953	pCi/g	09/04/13 13:12	09/04/13 22:01	1
Bismuth 212	1.39		0.383	0.410		0.330	pCi/g	09/04/13 13:12	09/04/13 22:01	1
Bismuth 214	0.733		0.0969	0.123		0.0746	pCi/g	09/04/13 13:12	09/04/13 22:01	1
Lead 212	1.06		0.0705	0.154		0.0580	pCi/g	09/04/13 13:12	09/04/13 22:01	1
Lead 214	0.788		0.0863	0.119		0.0656	pCi/g	09/04/13 13:12	09/04/13 22:01	1
Potassium 40	19.4		1.16	2.30		0.381	pCi/g	09/04/13 13:12	09/04/13 22:01	1
Protactinium 231	-0.593	U	0.638	0.641		1.04	pCi/g	09/04/13 13:12	09/04/13 22:01	1
Radium 226	0.733		0.0969	0.123	1.00	0.0746	pCi/g	09/04/13 13:12	09/04/13 22:01	1
Thorium 234	1.56		0.635	0.656	1.00	0.815	pCi/g	09/04/13 13:12	09/04/13 22:01	1
Uranium 235	0.0894	U	0.128	0.129		0.210	pCi/g	09/04/13 13:12	09/04/13 22:01	1
Protactinium 234m	-0.683	U	9.06	9.06		5.36	pCi/g	09/04/13 13:12	09/04/13 22:01	1
Thorium 232	0.973		0.148	0.178		0.0944	pCi/g	09/04/13 13:12	09/04/13 22:01	1
<b>Other Detected</b>										
Radionuclides	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert.	Uncert.						
			(2σ+/-)	(2σ+/-)						
Tl-208	0.311		0.0435	0.0541		0.0344	pCi/g	09/04/13 13:12	09/04/13 22:01	1

Client Sample ID: L050165TEQ00

Lab Sample ID: 160-3571-23

Date Collected: 08/28/13 11:05

Matrix: Solid

Date Received: 08/29/13 18:38

Percent Solids: 80.0

## Method: 6020A - Metals (ICP/MS), Tc-99

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Technetium 99	ND		0.00068	0.000021	mg/Kg	☼	08/30/13 10:44	09/03/13 19:53	1

## Method: 6020A - Metals (ICP/MS), Tc-99 in Activity

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert.	Uncert.						
			(2σ+/-)	(2σ+/-)						
Technetium 99	0.200	U	0.0595	0.0678	1.37	0.234	pCi/g	08/30/13 10:44	09/03/13 19:53	1
<b>Carrier</b>										
	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Re	92		30 - 110					08/30/13 10:44	09/03/13 19:53	1

## Method: GA-01-R - Cesium-137 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert.	Uncert.						
			(2σ+/-)	(2σ+/-)						
Actinium 228	1.13		0.163	0.199		0.128	pCi/g	09/04/13 13:12	09/04/13 22:35	1
Americium 241	-0.0296	U	0.0611	0.0611		0.102	pCi/g	09/04/13 13:12	09/04/13 22:35	1
Bismuth 212	1.65		0.663	0.685		0.554	pCi/g	09/04/13 13:12	09/04/13 22:35	1
Bismuth 214	0.797		0.123	0.148		0.0847	pCi/g	09/04/13 13:12	09/04/13 22:35	1
Lead 212	1.07		0.0898	0.165		0.0729	pCi/g	09/04/13 13:12	09/04/13 22:35	1
Lead 214	0.885		0.0970	0.134		0.0826	pCi/g	09/04/13 13:12	09/04/13 22:35	1
Potassium 40	17.5		1.51	2.34		0.438	pCi/g	09/04/13 13:12	09/04/13 22:35	1
Protactinium 231	0.400	U	0.252	0.256		1.56	pCi/g	09/04/13 13:12	09/04/13 22:35	1
Radium 226	0.797		0.123	0.148	1.00	0.0847	pCi/g	09/04/13 13:12	09/04/13 22:35	1

TestAmerica St. Louis

# Client Sample Results

Client: Westinghouse Electric Company LLC  
Project/Site: RFP-CBA-022 (7 DAY TAT)

TestAmerica Job ID: 160-3571-1

Client Sample ID: L050165TEQ00

Lab Sample ID: 160-3571-23

Date Collected: 08/28/13 11:05

Matrix: Solid

Date Received: 08/29/13 18:38

## Method: GA-01-R - Cesium-137 & Other Gamma Emitters (GS) (Continued)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Thorium 234	1.01	U	0.364	0.379	1.00	1.04	pCi/g	09/04/13 13:12	09/04/13 22:35	1
Uranium 235	0.0821	U	0.156	0.156		0.261	pCi/g	09/04/13 13:12	09/04/13 22:35	1
Protactinium 234m	1.31	U	4.20	4.21		7.38	pCi/g	09/04/13 13:12	09/04/13 22:35	1
<b>Thorium 232</b>	<b>1.13</b>		0.163	0.199		0.128	pCi/g	09/04/13 13:12	09/04/13 22:35	1
<b>Other Detected</b>										
Radionuclides	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tl-208	0.354		0.0560	0.0669		0.0375	pCi/g	09/04/13 13:12	09/04/13 22:35	1

Client Sample ID: L050165TES00

Lab Sample ID: 160-3571-24

Date Collected: 08/28/13 11:05

Matrix: Solid

Date Received: 08/29/13 18:38

Percent Solids: 81.2

## Method: 6020A - Metals (ICP/MS), Tc-99

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Technetium 99	ND		0.00065	0.000020	mg/Kg	☆	08/30/13 10:44	09/03/13 19:57	1

## Method: 6020A - Metals (ICP/MS), Tc-99 in Activity

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Technetium 99	0.163	U	0.0708	0.0769	1.31	0.223	pCi/g	08/30/13 10:44	09/03/13 19:57	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Re	94		30 - 110					08/30/13 10:44	09/03/13 19:57	1

## Method: GA-01-R - Cesium-137 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
<b>Actinium 228</b>	<b>1.18</b>		0.162	0.201		0.135	pCi/g	09/04/13 13:12	09/04/13 22:36	1
Americium 241	0.0178	U	0.0651	0.0651		0.109	pCi/g	09/04/13 13:12	09/04/13 22:36	1
<b>Bismuth 212</b>	<b>1.08</b>		0.377	0.393		0.505	pCi/g	09/04/13 13:12	09/04/13 22:36	1
<b>Bismuth 214</b>	<b>0.726</b>		0.0919	0.119		0.0645	pCi/g	09/04/13 13:12	09/04/13 22:36	1
<b>Lead 212</b>	<b>1.14</b>		0.0770	0.166		0.0575	pCi/g	09/04/13 13:12	09/04/13 22:36	1
<b>Lead 214</b>	<b>0.835</b>		0.0904	0.125		0.0682	pCi/g	09/04/13 13:12	09/04/13 22:36	1
<b>Potassium 40</b>	<b>19.8</b>		1.24	2.37		0.403	pCi/g	09/04/13 13:12	09/04/13 22:36	1
Protactinium 231	0.750	U	0.298	0.309		1.20	pCi/g	09/04/13 13:12	09/04/13 22:36	1
<b>Radium 226</b>	<b>0.726</b>		0.0919	0.119	1.00	0.0645	pCi/g	09/04/13 13:12	09/04/13 22:36	1
<b>Thorium 234</b>	<b>1.23</b>		0.647	0.660	1.00	0.866	pCi/g	09/04/13 13:12	09/04/13 22:36	1
Uranium 235	0.120	U	0.151	0.151		0.262	pCi/g	09/04/13 13:12	09/04/13 22:36	1
Protactinium 234m	4.78	U	2.48	2.52		6.07	pCi/g	09/04/13 13:12	09/04/13 22:36	1
<b>Thorium 232</b>	<b>1.18</b>		0.162	0.201		0.135	pCi/g	09/04/13 13:12	09/04/13 22:36	1
<b>Other Detected</b>										
Radionuclides	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tl-208	0.336		0.0468	0.0584		0.0363	pCi/g	09/04/13 13:12	09/04/13 22:36	1

TestAmerica St. Louis

# Client Sample Results

Client: Westinghouse Electric Company LLC  
Project/Site: RFP-CBA-022 (7 DAY TAT)

TestAmerica Job ID: 160-3571-1

**Client Sample ID: L050169TSS00**

**Lab Sample ID: 160-3571-25**

**Date Collected: 08/28/13 13:10**

**Matrix: Solid**

**Date Received: 08/29/13 18:38**

**Percent Solids: 97.8**

## Method: 6020A - Metals (ICP/MS), Tc-99

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Technetium 99	ND		0.00057	0.000017	mg/Kg	☼	08/30/13 10:44	09/03/13 20:00	1

## Method: 6020A - Metals (ICP/MS), Tc-99 in Activity

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Technetium 99	0.131	U	0.0277	0.0336	1.14	0.195	pCi/g	08/30/13 10:44	09/03/13 20:00	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Re	90		30 - 110					08/30/13 10:44	09/03/13 20:00	1

## Method: GA-01-R - Cesium-137 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Actinium 228	0.159		0.0558	0.0581		0.0708	pCi/g	09/04/13 13:12	09/04/13 22:37	1
Americium 241	-0.00987	U	0.0270	0.0270		0.0455	pCi/g	09/04/13 13:12	09/04/13 22:37	1
Bismuth 212	0.127	U	0.129	0.130		0.206	pCi/g	09/04/13 13:12	09/04/13 22:37	1
Bismuth 214	0.225		0.0447	0.0504		0.0383	pCi/g	09/04/13 13:12	09/04/13 22:37	1
Lead 212	0.143		0.0296	0.0349		0.0325	pCi/g	09/04/13 13:12	09/04/13 22:37	1
Lead 214	0.232		0.0380	0.0450		0.0323	pCi/g	09/04/13 13:12	09/04/13 22:37	1
Potassium 40	5.97		0.502	0.791		0.165	pCi/g	09/04/13 13:12	09/04/13 22:37	1
Protactinium 231	0.0331	U	0.0317	0.0319		0.536	pCi/g	09/04/13 13:12	09/04/13 22:37	1
Radium 226	0.225		0.0447	0.0504	1.00	0.0383	pCi/g	09/04/13 13:12	09/04/13 22:37	1
Thorium 234	0.156	U	0.147	0.148	1.00	0.466	pCi/g	09/04/13 13:12	09/04/13 22:37	1
Uranium 235	0.0302	U	0.0457	0.0459		0.0916	pCi/g	09/04/13 13:12	09/04/13 22:37	1
Protactinium 234m	-0.0205	U	1.32	1.32		2.42	pCi/g	09/04/13 13:12	09/04/13 22:37	1
Thorium 232	0.159		0.0558	0.0581		0.0708	pCi/g	09/04/13 13:12	09/04/13 22:37	1
Other Detected Radionuclides	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tl-208	0.0555		0.0170	0.0180		0.0150	pCi/g	09/04/13 13:12	09/04/13 22:37	1

**Client Sample ID: L050170TRS00**

**Lab Sample ID: 160-3571-26**

**Date Collected: 08/28/13 13:30**

**Matrix: Solid**

**Date Received: 08/29/13 18:38**

**Percent Solids: 96.4**

## Method: 6020A - Metals (ICP/MS), Tc-99

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Technetium 99	ND		0.25	0.0074	mg/Kg	☼	08/30/13 10:44	09/03/13 20:04	1

## Method: 6020A - Metals (ICP/MS), Tc-99 in Activity

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Technetium 99	40.5	U	5740	2720000	491	84.1	pCi/g	08/30/13 10:44	09/03/13 20:04	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Re	0.2	X	30 - 110					08/30/13 10:44	09/03/13 20:04	1

TestAmerica St. Louis

# Client Sample Results

Client: Westinghouse Electric Company LLC  
Project/Site: RFP-CBA-022 (7 DAY TAT)

TestAmerica Job ID: 160-3571-1

Client Sample ID: L050170TRS00

Lab Sample ID: 160-3571-26

Date Collected: 08/28/13 13:30

Matrix: Solid

Date Received: 08/29/13 18:38

## Method: GA-01-R - Cesium-137 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert.	Uncert.						
			(2σ+/-)	(2σ+/-)						
Actinium 228	0.229		0.0597	0.0641		0.0468	pCi/g	09/04/13 13:12	09/04/13 22:40	1
Americium 241	0.00363	U	0.0254	0.0254		0.0439	pCi/g	09/04/13 13:12	09/04/13 22:40	1
Bismuth 212	0.0428	U	0.151	0.151		0.268	pCi/g	09/04/13 13:12	09/04/13 22:40	1
Bismuth 214	0.176		0.0439	0.0475		0.0546	pCi/g	09/04/13 13:12	09/04/13 22:40	1
Lead 212	0.149		0.0282	0.0341		0.0291	pCi/g	09/04/13 13:12	09/04/13 22:40	1
Lead 214	0.276		0.0379	0.0476		0.0344	pCi/g	09/04/13 13:12	09/04/13 22:40	1
Potassium 40	5.85		0.586	0.838		0.183	pCi/g	09/04/13 13:12	09/04/13 22:40	1
Protactinium 231	0.0702	U	0.109	0.110		0.530	pCi/g	09/04/13 13:12	09/04/13 22:40	1
Radium 226	0.176		0.0439	0.0475	1.00	0.0546	pCi/g	09/04/13 13:12	09/04/13 22:40	1
Thorium 234	0.222	U	0.159	0.161	1.00	0.467	pCi/g	09/04/13 13:12	09/04/13 22:40	1
Uranium 235	0.0473	U	0.0634	0.0636		0.102	pCi/g	09/04/13 13:12	09/04/13 22:40	1
Protactinium 234m	0.254	U	1.23	1.23		2.29	pCi/g	09/04/13 13:12	09/04/13 22:40	1
Thorium 232	0.229		0.0597	0.0641		0.0468	pCi/g	09/04/13 13:12	09/04/13 22:40	1
<b>Other Detected</b>										
Radionuclides	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert.	Uncert.						
			(2σ+/-)	(2σ+/-)						
Tl-208	0.0719		0.0185	0.0199		0.0160	pCi/g	09/04/13 13:12	09/04/13 22:40	1

Client Sample ID: L050171TRS00

Lab Sample ID: 160-3571-27

Date Collected: 08/28/13 11:00

Matrix: Solid

Date Received: 08/29/13 18:38

Percent Solids: 83.3

## Method: 6020A - Metals (ICP/MS), Tc-99

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Technetium 99	ND		0.00066	0.000020	mg/Kg	☼	08/30/13 10:44	09/03/13 20:08	1

## Method: 6020A - Metals (ICP/MS), Tc-99 in Activity

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert.	Uncert.						
			(2σ+/-)	(2σ+/-)						
Technetium 99	0.153	U	0.0477	0.0551	1.33	0.227	pCi/g	08/30/13 10:44	09/03/13 20:08	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Re	90		30 - 110					08/30/13 10:44	09/03/13 20:08	1

## Method: GA-01-R - Cesium-137 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert.	Uncert.						
			(2σ+/-)	(2σ+/-)						
Actinium 228	1.26		0.174	0.217		0.159	pCi/g	09/04/13 13:12	09/04/13 22:39	1
Americium 241	-0.0416	U	0.0786	0.0787		0.131	pCi/g	09/04/13 13:12	09/04/13 22:39	1
Bismuth 212	2.23		0.493	0.544		0.278	pCi/g	09/04/13 13:12	09/04/13 22:39	1
Bismuth 214	0.742		0.115	0.139		0.0929	pCi/g	09/04/13 13:12	09/04/13 22:39	1
Lead 212	1.10		0.0927	0.170		0.0833	pCi/g	09/04/13 13:12	09/04/13 22:39	1
Lead 214	0.977		0.119	0.157		0.0834	pCi/g	09/04/13 13:12	09/04/13 22:39	1
Potassium 40	19.6		1.59	2.56		0.620	pCi/g	09/04/13 13:12	09/04/13 22:39	1
Protactinium 231	0.439	U	0.242	0.247		1.50	pCi/g	09/04/13 13:12	09/04/13 22:39	1
Radium 226	0.742		0.115	0.139	1.00	0.0929	pCi/g	09/04/13 13:12	09/04/13 22:39	1

TestAmerica St. Louis

# Client Sample Results

Client: Westinghouse Electric Company LLC  
Project/Site: RFP-CBA-022 (7 DAY TAT)

TestAmerica Job ID: 160-3571-1

Client Sample ID: L050171TRS00

Lab Sample ID: 160-3571-27

Date Collected: 08/28/13 11:00

Matrix: Solid

Date Received: 08/29/13 18:38

## Method: GA-01-R - Cesium-137 & Other Gamma Emitters (GS) (Continued)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Thorium 234	1.43		0.827	0.840	1.00	1.05	pCi/g	09/04/13 13:12	09/04/13 22:39	1
Uranium 235	0.126	U	0.171	0.171		0.244	pCi/g	09/04/13 13:12	09/04/13 22:39	1
Protactinium 234m	-0.577	U	3.94	3.94		7.06	pCi/g	09/04/13 13:12	09/04/13 22:39	1
Thorium 232	1.26		0.174	0.217		0.159	pCi/g	09/04/13 13:12	09/04/13 22:39	1
<b>Other Detected</b>										
Radionuclides	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tl-208	0.416		0.0761	0.0875		0.0597	pCi/g	09/04/13 13:12	09/04/13 22:39	1

Client Sample ID: L050172TES00

Lab Sample ID: 160-3571-28

Date Collected: 08/28/13 11:15

Matrix: Solid

Date Received: 08/29/13 18:38

Percent Solids: 85.1

## Method: 6020A - Metals (ICP/MS), Tc-99

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Technetium 99	ND		0.00065	0.000020	mg/Kg	☼	08/30/13 10:44	09/03/13 20:12	1

## Method: 6020A - Metals (ICP/MS), Tc-99 in Activity

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Technetium 99	0.203	U	0.0184	0.0293	1.30	0.223	pCi/g	08/30/13 10:44	09/03/13 20:12	1
<b>Carrier</b>										
Re	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
	89		30 - 110					08/30/13 10:44	09/03/13 20:12	1

## Method: GA-01-R - Cesium-137 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Actinium 228	1.12		0.157	0.194		0.148	pCi/g	09/04/13 13:12	09/04/13 23:14	1
Americium 241	0.0223	U	0.0591	0.0591		0.0994	pCi/g	09/04/13 13:12	09/04/13 23:14	1
Bismuth 212	0.746		0.441	0.447		0.649	pCi/g	09/04/13 13:12	09/04/13 23:14	1
Bismuth 214	0.950		0.127	0.160		0.0747	pCi/g	09/04/13 13:12	09/04/13 23:14	1
Lead 212	1.08		0.0910	0.166		0.0775	pCi/g	09/04/13 13:12	09/04/13 23:14	1
Lead 214	0.956		0.134	0.167		0.110	pCi/g	09/04/13 13:12	09/04/13 23:14	1
Potassium 40	20.5		1.57	2.62		0.221	pCi/g	09/04/13 13:12	09/04/13 23:14	1
Protactinium 231	1.06	U	0.470	0.484		1.23	pCi/g	09/04/13 13:12	09/04/13 23:14	1
Radium 226	0.950		0.127	0.160	1.00	0.0747	pCi/g	09/04/13 13:12	09/04/13 23:14	1
Thorium 234	1.41		0.671	0.687	1.00	0.936	pCi/g	09/04/13 13:12	09/04/13 23:14	1
Uranium 235	0.0652	U	0.108	0.109		0.293	pCi/g	09/04/13 13:12	09/04/13 23:14	1
Protactinium 234m	5.20	U	3.22	3.26		7.18	pCi/g	09/04/13 13:12	09/04/13 23:14	1
Thorium 232	1.12		0.157	0.194		0.148	pCi/g	09/04/13 13:12	09/04/13 23:14	1
<b>Other Detected</b>										
Radionuclides	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tl-208	0.390		0.0615	0.0736		0.0475	pCi/g	09/04/13 13:12	09/04/13 23:14	1

TestAmerica St. Louis

# QC Sample Results

Client: Westinghouse Electric Company LLC  
Project/Site: RFP-CBA-022 (7 DAY TAT)

TestAmerica Job ID: 160-3571-1

## Method: 6020A - Metals (ICP/MS), Tc-99

Lab Sample ID: MB 160-69983/1-A

Matrix: Solid

Analysis Batch: 70530

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 69983

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Technetium 99	ND		0.00050	0.000015	mg/Kg		08/30/13 10:44	09/03/13 19:22	1

Lab Sample ID: LCS 160-69983/2-A

Matrix: Solid

Analysis Batch: 70530

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 69983

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Technetium 99	0.00237	0.00248		mg/Kg		104	80 - 120

Lab Sample ID: 160-3571-21 MS

Matrix: Solid

Analysis Batch: 70530

Client Sample ID: L050163TES00

Prep Type: Total/NA

Prep Batch: 69983

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Technetium 99	0.000025	J	0.00316	0.00298		mg/Kg	☼	93	75 - 125

Lab Sample ID: 160-3571-21 MSD

Matrix: Solid

Analysis Batch: 70530

Client Sample ID: L050163TES00

Prep Type: Total/NA

Prep Batch: 69983

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Technetium 99	0.000025	J	0.00311	0.00292		mg/Kg	☼	93	75 - 125	2	30

Lab Sample ID: MB 160-70096/1-A

Matrix: Solid

Analysis Batch: 70530

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 70096

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Technetium 99	ND		0.00052	0.000016	mg/Kg		09/03/13 07:18	09/03/13 17:33	1

Lab Sample ID: LCS 160-70096/2-A

Matrix: Solid

Analysis Batch: 70530

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 70096

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Technetium 99	0.00234	0.00241		mg/Kg		103	80 - 120

Lab Sample ID: 160-3571-1 MS

Matrix: Solid

Analysis Batch: 70530

Client Sample ID: L050119TSQ00

Prep Type: Total/NA

Prep Batch: 70096

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Technetium 99	0.000018	J	0.00295	0.00268		mg/Kg	☼	91	75 - 125

Lab Sample ID: 160-3571-1 MSD

Matrix: Solid

Analysis Batch: 70530

Client Sample ID: L050119TSQ00

Prep Type: Total/NA

Prep Batch: 70096

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Technetium 99	0.000018	J	0.00289	0.00268		mg/Kg	☼	93	75 - 125	0	30

TestAmerica St. Louis

# QC Sample Results

Client: Westinghouse Electric Company LLC  
Project/Site: RFP-CBA-022 (7 DAY TAT)

TestAmerica Job ID: 160-3571-1

## Method: 6020A - Metals (ICP/MS), Tc-99 in Activity

Lab Sample ID: MB 160-69983/1-A

Matrix: Solid

Analysis Batch: 70531

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 69983

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Technetium 99	0.1284	U	0.0449	0.0456	0.991	0.170	pCi/g	08/30/13 10:44	09/03/13 19:22	1
Carrier	MB %Yield	MB Qualifier	Limits					Prepared	Analyzed	Dil Fac
Re	102		30 - 110					08/30/13 10:44	09/03/13 19:22	1

Lab Sample ID: LCS 160-69983/2-A

Matrix: Solid

Analysis Batch: 70531

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 69983

Analyte		Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Technetium 99		40.7	42.40		3.96	1.02	0.174	pCi/g	104	80 - 120
Carrier	LCS %Yield	LCS Qualifier	Limits							
Re	99		30 - 110							

Lab Sample ID: 160-3571-21 MS

Matrix: Solid

Analysis Batch: 70531

Client Sample ID: L050163TES00

Prep Type: Total/NA

Prep Batch: 69983

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Technetium 99	0.435		54.1	50.98		5.57	1.35	0.231	pCi/g	93	75 - 125
Carrier	MS %Yield	MS Qualifier	Limits								
Re	90		30 - 110								

Lab Sample ID: 160-3571-21 MSD

Matrix: Solid

Analysis Batch: 70531

Client Sample ID: L050163TES00

Prep Type: Total/NA

Prep Batch: 69983

Analyte	Sample Result	Sample Qual	Spike Added	MSD Result	MSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Technetium 99	0.435		53.3	49.98		5.13	1.33	0.228	pCi/g	93	75 - 125	0.09	1
Carrier	MSD %Yield	MSD Qualifier	Limits										
Re	90		30 - 110										

Lab Sample ID: MB 160-70096/1-A

Matrix: Solid

Analysis Batch: 70531

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 70096

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Technetium 99	0.08381	U	0.0374	0.0395	1.04	0.178	pCi/g	09/03/13 07:18	09/03/13 17:33	1

TestAmerica St. Louis



# QC Sample Results

Client: Westinghouse Electric Company LLC  
Project/Site: RFP-CBA-022 (7 DAY TAT)

TestAmerica Job ID: 160-3571-1

## Method: 6020A - Metals (ICP/MS), Tc-99 in Activity (Continued)

Lab Sample ID: MB 160-70096/1-A

Matrix: Solid

Analysis Batch: 70531

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 70096

Carrier	MB %Yield	MB Qualifier	Limits
Re	97		30 - 110

Prepared	Analyzed	Dil Fac
09/03/13 07:18	09/03/13 17:33	1

Lab Sample ID: LCS 160-70096/2-A

Matrix: Solid

Analysis Batch: 70531

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 70096

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Technetium 99	40.1	41.32		3.99	1.00	0.172	pCi/g	103	80 - 120
Carrier	LCS %Yield	LCS Qualifier	Limits						
Re	100		30 - 110						

Lab Sample ID: 160-3571-1 MS

Matrix: Solid

Analysis Batch: 70531

Client Sample ID: L050119TSQ00

Prep Type: Total/NA

Prep Batch: 70096

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Technetium 99	0.300		50.4	45.86		5.26	1.26	0.216	pCi/g	90	75 - 125
Carrier	MS %Yield	MS Qualifier	Limits								
Re	89		30 - 110								

Lab Sample ID: 160-3571-1 MSD

Matrix: Solid

Analysis Batch: 70531

Client Sample ID: L050119TSQ00

Prep Type: Total/NA

Prep Batch: 70096

Analyte	Sample Result	Sample Qual	Spike Added	MSD Result	MSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	Limit
Technetium 99	0.300		49.6	45.88		5.14	1.24	0.212	pCi/g	92	75 - 125	0	1
Carrier	MSD %Yield	MSD Qualifier	Limits										
Re	90		30 - 110										

## Method: GA-01-R - Cesium-137 & Other Gamma Emitters (GS)

Lab Sample ID: MB 160-70555/1-A

Matrix: Solid

Analysis Batch: 70404

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 70555

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Actinium 228	0.001613	U	0.0112	0.0112		0.0414	pCi/g	09/04/13 10:53	09/04/13 19:10	1
Americium 241	0.008326	U	0.0114	0.0114		0.0189	pCi/g	09/04/13 10:53	09/04/13 19:10	1
Bismuth 212	0.003871	U	0.0979	0.0979		0.207	pCi/g	09/04/13 10:53	09/04/13 19:10	1
Bismuth 214	0.007521	U	0.0215	0.0215		0.0391	pCi/g	09/04/13 10:53	09/04/13 19:10	1

TestAmerica St. Louis

# QC Sample Results

Client: Westinghouse Electric Company LLC  
Project/Site: RFP-CBA-022 (7 DAY TAT)

TestAmerica Job ID: 160-3571-1

## Method: GA-01-R - Cesium-137 & Other Gamma Emitters (GS) (Continued)

Lab Sample ID: MB 160-70555/1-A

Matrix: Solid

Analysis Batch: 70404

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 70555

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Lead 212	-0.002086	U	0.0242	0.0242		0.0297	pCi/g	09/04/13 10:53	09/04/13 19:10	1
Lead 214	0.0006809	U	0.0145	0.0145		0.0316	pCi/g	09/04/13 10:53	09/04/13 19:10	1
Potassium 40	0.1609	U	0.140	0.141		0.174	pCi/g	09/04/13 10:53	09/04/13 19:10	1
Protactinium 231	-0.07701	U	0.245	0.246		0.440	pCi/g	09/04/13 10:53	09/04/13 19:10	1
Radium 226	0.007521	U	0.0215	0.0215	1.00	0.0391	pCi/g	09/04/13 10:53	09/04/13 19:10	1
Thorium 234	0.03321	U	0.125	0.126	1.00	0.271	pCi/g	09/04/13 10:53	09/04/13 19:10	1
Uranium 235	-0.006296	U	0.0335	0.0335		0.0617	pCi/g	09/04/13 10:53	09/04/13 19:10	1
Protactinium 234m	0.0000	U	0.600	0.600		3.73	pCi/g	09/04/13 10:53	09/04/13 19:10	1
Thorium 232	0.001613	U	0.0112	0.0112		0.0414	pCi/g	09/04/13 10:53	09/04/13 19:10	1

Other Detected Radionuclides	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Other Detected Radionuclide	None						pCi/g	09/04/13 10:53	09/04/13 19:10	1

Lab Sample ID: LCS 160-70555/2-A

Matrix: Solid

Analysis Batch: 70571

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 70555

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Americium 241	97.7	90.94		9.46		0.494	pCi/g	93	87 - 116
Cesium 137	31.6	30.32		3.17	0.200	0.108	pCi/g	96	87 - 120
Cobalt 60	24.7	23.15		2.34		0.0565	pCi/g	94	87 - 115

Lab Sample ID: 160-3571-20 DU

Matrix: Solid

Analysis Batch: 70839

Client Sample ID: L050162TRS00

Prep Type: Total/NA

Prep Batch: 70555

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Actinium 228	1.27		1.251		0.204		0.133	pCi/g	0.04	1
Americium 241	0.0260	U	0.06001	U	0.0583		0.0831	pCi/g	0.27	1
Bismuth 212	1.64		1.657		0.466		0.324	pCi/g	0.01	1
Bismuth 214	0.939		0.8695		0.150		0.0867	pCi/g	0.24	1
Lead 212	1.02		1.202		0.176		0.0643	pCi/g	0.54	1
Lead 214	1.05		0.9296		0.130		0.0749	pCi/g	0.44	1
Potassium 40	20.4		20.59		2.50		0.359	pCi/g	0.04	1
Protactinium 231	0.466	U	-0.6526	U	0.791		1.30	pCi/g	0.95	1
Radium 226	0.939		0.8695		0.150	1.00	0.0867	pCi/g	0.24	1
Thorium 234	1.66		1.924		0.769	1.00	0.920	pCi/g	0.17	1
Uranium 235	0.296		0.1022	U	0.139		0.265	pCi/g	0.71	1
Protactinium 234m	0.711	U	1.687	U	3.61		6.16	pCi/g	0.15	1
Thorium 232	1.27		1.251		0.204		0.133	pCi/g	0.04	1

TestAmerica St. Louis

# QC Sample Results

Client: Westinghouse Electric Company LLC  
Project/Site: RFP-CBA-022 (7 DAY TAT)

TestAmerica Job ID: 160-3571-1

## Method: GA-01-R - Cesium-137 & Other Gamma Emitters (GS) (Continued)

Lab Sample ID: MB 160-70600/1-A

Matrix: Solid

Analysis Batch: 70572

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 70600

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Actinium 228	0.008675	U	0.0191	0.0191		0.0465	pCi/g	09/04/13 13:12	09/04/13 21:58	1
Americium 241	0.008474	U	0.0114	0.0114		0.0189	pCi/g	09/04/13 13:12	09/04/13 21:58	1
Bismuth 212	0.001267	U	0.0575	0.0575		0.122	pCi/g	09/04/13 13:12	09/04/13 21:58	1
Bismuth 214	-0.01059	U	0.0879	0.0879		0.0396	pCi/g	09/04/13 13:12	09/04/13 21:58	1
Lead 212	0.006140	U	0.00975	0.00978		0.0188	pCi/g	09/04/13 13:12	09/04/13 21:58	1
Lead 214	-0.01411	U	0.470	0.470		0.0346	pCi/g	09/04/13 13:12	09/04/13 21:58	1
Potassium 40	-0.03629	U	0.180	0.180		0.239	pCi/g	09/04/13 13:12	09/04/13 21:58	1
Protactinium 231	-0.0007753	U	0.159	0.159		0.299	pCi/g	09/04/13 13:12	09/04/13 21:58	1
Radium 226	-0.01059	U	0.0879	0.0879	1.00	0.0396	pCi/g	09/04/13 13:12	09/04/13 21:58	1
Thorium 234	0.01706	U	0.107	0.107	1.00	0.224	pCi/g	09/04/13 13:12	09/04/13 21:58	1
Uranium 235	0.0001144	U	0.000412	0.000412		0.0675	pCi/g	09/04/13 13:12	09/04/13 21:58	1
Protactinium 234m	0.1530	U	0.923	0.923		2.00	pCi/g	09/04/13 13:12	09/04/13 21:58	1
Thorium 232	0.008675	U	0.0191	0.0191		0.0465	pCi/g	09/04/13 13:12	09/04/13 21:58	1

Other Detected Radionuclides	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Other Detected Radionuclide	None						pCi/g	09/04/13 13:12	09/04/13 21:58	1

Lab Sample ID: LCS 160-70600/2-A

Matrix: Solid

Analysis Batch: 70581

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 70600

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Americium 241	97.7	92.66		9.64		0.473	pCi/g	95	87 - 116
Cesium 137	31.6	30.45		3.19	0.200	0.151	pCi/g	96	87 - 120
Cobalt 60	24.7	23.85		2.41		0.0926	pCi/g	97	87 - 115

Lab Sample ID: 160-3570-A-8-E DU

Matrix: Solid

Analysis Batch: 70581

Client Sample ID: Duplicate

Prep Type: Total/NA

Prep Batch: 70600

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Actinium 228	0.746		0.7632		0.131		0.0839	pCi/g	0.07	1
Americium 241	0.00169	U	-0.00281	U	0.133		0.0903	pCi/g	0.02	1
Bismuth 212	1.07		1.003		0.418		0.377	pCi/g	0.09	1
Bismuth 214	0.632		0.6603		0.114		0.0643	pCi/g	0.13	1
Lead 212	0.714		0.6978		0.109		0.0519	pCi/g	0.07	1
Lead 214	0.746		0.6657		0.0985		0.0592	pCi/g	0.39	1
Potassium 40	14.5		13.92		1.77		0.247	pCi/g	0.15	1
Protactinium 231	0.383	U	0.1268	U	0.117		1.06	pCi/g	0.70	1
Radium 226	0.632		0.6603		0.114	1.00	0.0643	pCi/g	0.13	1
Thorium 234	2.02		1.647		0.373	1.00	0.779	pCi/g	0.36	1
Uranium 235	0.403		0.4261		0.169		0.189	pCi/g	0.08	1

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## QC Sample Results

Client: Westinghouse Electric Company LLC  
Project/Site: RFP-CBA-022 (7 DAY TAT)

TestAmerica Job ID: 160-3571-1

### Method: GA-01-R - Cesium-137 & Other Gamma Emitters (GS) (Continued)

Lab Sample ID: 160-3570-A-8-E DU

Matrix: Solid

Analysis Batch: 70581

Client Sample ID: Duplicate

Prep Type: Total/NA

Prep Batch: 70600

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Protactinium 234m	1.97	U	3.462	U	2.95		4.55	pCi/g	0.26	1
Thorium 232	0.746		0.7632		0.131		0.0839	pCi/g	0.07	1

## QC Association Summary

Client: Westinghouse Electric Company LLC  
Project/Site: RFP-CBA-022 (7 DAY TAT)

TestAmerica Job ID: 160-3571-1

### Metals

#### Prep Batch: 69983

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-3571-21	L050163TES00	Total/NA	Solid	None	
160-3571-21 MS	L050163TES00	Total/NA	Solid	None	
160-3571-21 MSD	L050163TES00	Total/NA	Solid	None	
160-3571-22	L050164TRS00	Total/NA	Solid	None	
160-3571-23	L050165TEQ00	Total/NA	Solid	None	
160-3571-24	L050165TES00	Total/NA	Solid	None	
160-3571-25	L050169TSS00	Total/NA	Solid	None	
160-3571-26	L050170TRS00	Total/NA	Solid	None	
160-3571-27	L050171TRS00	Total/NA	Solid	None	
160-3571-28	L050172TES00	Total/NA	Solid	None	
LCS 160-69983/2-A	Lab Control Sample	Total/NA	Solid	None	
MB 160-69983/1-A	Method Blank	Total/NA	Solid	None	

#### Prep Batch: 70096

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-3571-1	L050119TSQ00	Total/NA	Solid	None	
160-3571-1 MS	L050119TSQ00	Total/NA	Solid	None	
160-3571-1 MSD	L050119TSQ00	Total/NA	Solid	None	
160-3571-2	L050119TSS00	Total/NA	Solid	None	
160-3571-3	L050120TRS00	Total/NA	Solid	None	
160-3571-4	L050121TSS00	Total/NA	Solid	None	
160-3571-5	L050122TRS00	Total/NA	Solid	None	
160-3571-6	L050125TRS00	Total/NA	Solid	None	
160-3571-7	L050127TRS00	Total/NA	Solid	None	
160-3571-8	L050128TES00	Total/NA	Solid	None	
160-3571-9	L050131TRS00	Total/NA	Solid	None	
160-3571-10	L050132TES00	Total/NA	Solid	None	
160-3571-11	L050133TRS00	Total/NA	Solid	None	
160-3571-12	L050139TES00	Total/NA	Solid	None	
160-3571-13	L050140TRS00	Total/NA	Solid	None	
160-3571-14	L050148TRS00	Total/NA	Solid	None	
160-3571-15	L050154TRS00	Total/NA	Solid	None	
160-3571-16	L050155TES00	Total/NA	Solid	None	
160-3571-17	L050156TRS00	Total/NA	Solid	None	
160-3571-18	L050157TES00	Total/NA	Solid	None	
160-3571-19	L050162TRQ00	Total/NA	Solid	None	
160-3571-20	L050162TRS00	Total/NA	Solid	None	
LCS 160-70096/2-A	Lab Control Sample	Total/NA	Solid	None	
MB 160-70096/1-A	Method Blank	Total/NA	Solid	None	

#### Analysis Batch: 70530

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-3571-1	L050119TSQ00	Total/NA	Solid	6020A	70096
160-3571-1 MS	L050119TSQ00	Total/NA	Solid	6020A	70096
160-3571-1 MSD	L050119TSQ00	Total/NA	Solid	6020A	70096
160-3571-2	L050119TSS00	Total/NA	Solid	6020A	70096
160-3571-3	L050120TRS00	Total/NA	Solid	6020A	70096
160-3571-4	L050121TSS00	Total/NA	Solid	6020A	70096
160-3571-5	L050122TRS00	Total/NA	Solid	6020A	70096
160-3571-6	L050125TRS00	Total/NA	Solid	6020A	70096
160-3571-7	L050127TRS00	Total/NA	Solid	6020A	70096

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## QC Association Summary

Client: Westinghouse Electric Company LLC  
Project/Site: RFP-CBA-022 (7 DAY TAT)

TestAmerica Job ID: 160-3571-1

### Metals (Continued)

#### Analysis Batch: 70530 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-3571-8	L050128TES00	Total/NA	Solid	6020A	70096
160-3571-9	L050131TRS00	Total/NA	Solid	6020A	70096
160-3571-10	L050132TES00	Total/NA	Solid	6020A	70096
160-3571-11	L050133TRS00	Total/NA	Solid	6020A	70096
160-3571-12	L050139TES00	Total/NA	Solid	6020A	70096
160-3571-13	L050140TRS00	Total/NA	Solid	6020A	70096
160-3571-14	L050148TRS00	Total/NA	Solid	6020A	70096
160-3571-15	L050154TRS00	Total/NA	Solid	6020A	70096
160-3571-16	L050155TES00	Total/NA	Solid	6020A	70096
160-3571-17	L050156TRS00	Total/NA	Solid	6020A	70096
160-3571-18	L050157TES00	Total/NA	Solid	6020A	70096
160-3571-19	L050162TRQ00	Total/NA	Solid	6020A	70096
160-3571-20	L050162TRS00	Total/NA	Solid	6020A	70096
160-3571-21	L050163TES00	Total/NA	Solid	6020A	69983
160-3571-21 MS	L050163TES00	Total/NA	Solid	6020A	69983
160-3571-21 MSD	L050163TES00	Total/NA	Solid	6020A	69983
160-3571-22	L050164TRS00	Total/NA	Solid	6020A	69983
160-3571-23	L050165TEQ00	Total/NA	Solid	6020A	69983
160-3571-24	L050165TES00	Total/NA	Solid	6020A	69983
160-3571-25	L050169TSS00	Total/NA	Solid	6020A	69983
160-3571-26	L050170TRS00	Total/NA	Solid	6020A	69983
160-3571-27	L050171TRS00	Total/NA	Solid	6020A	69983
160-3571-28	L050172TES00	Total/NA	Solid	6020A	69983
LCS 160-69983/2-A	Lab Control Sample	Total/NA	Solid	6020A	69983
LCS 160-70096/2-A	Lab Control Sample	Total/NA	Solid	6020A	70096
MB 160-69983/1-A	Method Blank	Total/NA	Solid	6020A	69983
MB 160-70096/1-A	Method Blank	Total/NA	Solid	6020A	70096

### General Chemistry

#### Analysis Batch: 70086

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-3571-1	L050119TSQ00	Total/NA	Solid	Moisture	
160-3571-2	L050119TSS00	Total/NA	Solid	Moisture	
160-3571-3	L050120TRS00	Total/NA	Solid	Moisture	
160-3571-4	L050121TSS00	Total/NA	Solid	Moisture	
160-3571-5	L050122TRS00	Total/NA	Solid	Moisture	
160-3571-6	L050125TRS00	Total/NA	Solid	Moisture	
160-3571-7	L050127TRS00	Total/NA	Solid	Moisture	
160-3571-8	L050128TES00	Total/NA	Solid	Moisture	
160-3571-9	L050131TRS00	Total/NA	Solid	Moisture	
160-3571-10	L050132TES00	Total/NA	Solid	Moisture	
160-3571-11	L050133TRS00	Total/NA	Solid	Moisture	
160-3571-12	L050139TES00	Total/NA	Solid	Moisture	
160-3571-13	L050140TRS00	Total/NA	Solid	Moisture	
160-3571-14	L050148TRS00	Total/NA	Solid	Moisture	
160-3571-15	L050154TRS00	Total/NA	Solid	Moisture	
160-3571-16	L050155TES00	Total/NA	Solid	Moisture	
160-3571-17	L050156TRS00	Total/NA	Solid	Moisture	
160-3571-18	L050157TES00	Total/NA	Solid	Moisture	

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# QC Association Summary

Client: Westinghouse Electric Company LLC  
Project/Site: RFP-CBA-022 (7 DAY TAT)

TestAmerica Job ID: 160-3571-1

## General Chemistry (Continued)

### Analysis Batch: 70086 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-3571-19	L050162TRQ00	Total/NA	Solid	Moisture	
160-3571-20	L050162TRS00	Total/NA	Solid	Moisture	
160-3571-21	L050163TES00	Total/NA	Solid	Moisture	
160-3571-22	L050164TRS00	Total/NA	Solid	Moisture	
160-3571-23	L050165TEQ00	Total/NA	Solid	Moisture	
160-3571-24	L050165TES00	Total/NA	Solid	Moisture	
160-3571-25	L050169TSS00	Total/NA	Solid	Moisture	
160-3571-26	L050170TRS00	Total/NA	Solid	Moisture	
160-3571-27	L050171TRS00	Total/NA	Solid	Moisture	
160-3571-28	L050172TES00	Total/NA	Solid	Moisture	
160-3571-28 DU	L050172TES00	Total/NA	Solid	Moisture	

## Rad

### Leach Batch: 69978

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-3570-A-8-E DU	Duplicate	Total/NA	Solid	Dry and Grind	

### Prep Batch: 69983

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-3571-21	L050163TES00	Total/NA	Solid	None	
160-3571-21 MS	L050163TES00	Total/NA	Solid	None	
160-3571-21 MSD	L050163TES00	Total/NA	Solid	None	
160-3571-22	L050164TRS00	Total/NA	Solid	None	
160-3571-23	L050165TEQ00	Total/NA	Solid	None	
160-3571-24	L050165TES00	Total/NA	Solid	None	
160-3571-25	L050169TSS00	Total/NA	Solid	None	
160-3571-26	L050170TRS00	Total/NA	Solid	None	
160-3571-27	L050171TRS00	Total/NA	Solid	None	
160-3571-28	L050172TES00	Total/NA	Solid	None	
LCS 160-69983/2-A	Lab Control Sample	Total/NA	Solid	None	
MB 160-69983/1-A	Method Blank	Total/NA	Solid	None	

### Leach Batch: 69988

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-3571-1	L050119TSQ00	Total/NA	Solid	Dry and Grind	
160-3571-2	L050119TSS00	Total/NA	Solid	Dry and Grind	
160-3571-3	L050120TRS00	Total/NA	Solid	Dry and Grind	
160-3571-4	L050121TSS00	Total/NA	Solid	Dry and Grind	
160-3571-5	L050122TRS00	Total/NA	Solid	Dry and Grind	
160-3571-6	L050125TRS00	Total/NA	Solid	Dry and Grind	
160-3571-7	L050127TRS00	Total/NA	Solid	Dry and Grind	
160-3571-8	L050128TES00	Total/NA	Solid	Dry and Grind	
160-3571-9	L050131TRS00	Total/NA	Solid	Dry and Grind	
160-3571-10	L050132TES00	Total/NA	Solid	Dry and Grind	
160-3571-11	L050133TRS00	Total/NA	Solid	Dry and Grind	
160-3571-12	L050139TES00	Total/NA	Solid	Dry and Grind	
160-3571-13	L050140TRS00	Total/NA	Solid	Dry and Grind	
160-3571-14	L050148TRS00	Total/NA	Solid	Dry and Grind	
160-3571-15	L050154TRS00	Total/NA	Solid	Dry and Grind	

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## QC Association Summary

Client: Westinghouse Electric Company LLC  
Project/Site: RFP-CBA-022 (7 DAY TAT)

TestAmerica Job ID: 160-3571-1

### Rad (Continued)

#### Leach Batch: 69988 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-3571-16	L050155TES00	Total/NA	Solid	Dry and Grind	
160-3571-17	L050156TRS00	Total/NA	Solid	Dry and Grind	
160-3571-18	L050157TES00	Total/NA	Solid	Dry and Grind	
160-3571-19	L050162TRQ00	Total/NA	Solid	Dry and Grind	
160-3571-20	L050162TRS00	Total/NA	Solid	Dry and Grind	
160-3571-20 DU	L050162TRS00	Total/NA	Solid	Dry and Grind	
160-3571-21	L050163TES00	Total/NA	Solid	Dry and Grind	
160-3571-22	L050164TRS00	Total/NA	Solid	Dry and Grind	
160-3571-23	L050165TEQ00	Total/NA	Solid	Dry and Grind	
160-3571-24	L050165TES00	Total/NA	Solid	Dry and Grind	
160-3571-25	L050169TSS00	Total/NA	Solid	Dry and Grind	
160-3571-26	L050170TRS00	Total/NA	Solid	Dry and Grind	
160-3571-27	L050171TRS00	Total/NA	Solid	Dry and Grind	
160-3571-28	L050172TES00	Total/NA	Solid	Dry and Grind	

#### Prep Batch: 70096

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-3571-1	L050119TSQ00	Total/NA	Solid	None	
160-3571-1 MS	L050119TSQ00	Total/NA	Solid	None	
160-3571-1 MSD	L050119TSQ00	Total/NA	Solid	None	
160-3571-2	L050119TSS00	Total/NA	Solid	None	
160-3571-3	L050120TRS00	Total/NA	Solid	None	
160-3571-4	L050121TSS00	Total/NA	Solid	None	
160-3571-5	L050122TRS00	Total/NA	Solid	None	
160-3571-6	L050125TRS00	Total/NA	Solid	None	
160-3571-7	L050127TRS00	Total/NA	Solid	None	
160-3571-8	L050128TES00	Total/NA	Solid	None	
160-3571-9	L050131TRS00	Total/NA	Solid	None	
160-3571-10	L050132TES00	Total/NA	Solid	None	
160-3571-11	L050133TRS00	Total/NA	Solid	None	
160-3571-12	L050139TES00	Total/NA	Solid	None	
160-3571-13	L050140TRS00	Total/NA	Solid	None	
160-3571-14	L050148TRS00	Total/NA	Solid	None	
160-3571-15	L050154TRS00	Total/NA	Solid	None	
160-3571-16	L050155TES00	Total/NA	Solid	None	
160-3571-17	L050156TRS00	Total/NA	Solid	None	
160-3571-18	L050157TES00	Total/NA	Solid	None	
160-3571-19	L050162TRQ00	Total/NA	Solid	None	
160-3571-20	L050162TRS00	Total/NA	Solid	None	
LCS 160-70096/2-A	Lab Control Sample	Total/NA	Solid	None	
MB 160-70096/1-A	Method Blank	Total/NA	Solid	None	

#### Prep Batch: 70555

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-3571-1	L050119TSQ00	Total/NA	Solid	Fill_Geo-0	69988
160-3571-2	L050119TSS00	Total/NA	Solid	Fill_Geo-0	69988
160-3571-3	L050120TRS00	Total/NA	Solid	Fill_Geo-0	69988
160-3571-4	L050121TSS00	Total/NA	Solid	Fill_Geo-0	69988
160-3571-5	L050122TRS00	Total/NA	Solid	Fill_Geo-0	69988
160-3571-6	L050125TRS00	Total/NA	Solid	Fill_Geo-0	69988
160-3571-7	L050127TRS00	Total/NA	Solid	Fill_Geo-0	69988

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## QC Association Summary

Client: Westinghouse Electric Company LLC  
Project/Site: RFP-CBA-022 (7 DAY TAT)

TestAmerica Job ID: 160-3571-1

### Rad (Continued)

#### Prep Batch: 70555 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-3571-8	L050128TES00	Total/NA	Solid	Fill_Geo-0	69988
160-3571-9	L050131TRS00	Total/NA	Solid	Fill_Geo-0	69988
160-3571-10	L050132TES00	Total/NA	Solid	Fill_Geo-0	69988
160-3571-11	L050133TRS00	Total/NA	Solid	Fill_Geo-0	69988
160-3571-12	L050139TES00	Total/NA	Solid	Fill_Geo-0	69988
160-3571-13	L050140TRS00	Total/NA	Solid	Fill_Geo-0	69988
160-3571-14	L050148TRS00	Total/NA	Solid	Fill_Geo-0	69988
160-3571-15	L050154TRS00	Total/NA	Solid	Fill_Geo-0	69988
160-3571-16	L050155TES00	Total/NA	Solid	Fill_Geo-0	69988
160-3571-17	L050156TRS00	Total/NA	Solid	Fill_Geo-0	69988
160-3571-18	L050157TES00	Total/NA	Solid	Fill_Geo-0	69988
160-3571-19	L050162TRQ00	Total/NA	Solid	Fill_Geo-0	69988
160-3571-20	L050162TRS00	Total/NA	Solid	Fill_Geo-0	69988
160-3571-20 DU	L050162TRS00	Total/NA	Solid	Fill_Geo-0	69988
LCS 160-70555/2-A	Lab Control Sample	Total/NA	Solid	Fill_Geo-0	
MB 160-70555/1-A	Method Blank	Total/NA	Solid	Fill_Geo-0	

#### Prep Batch: 70600

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-3570-A-8-E DU	Duplicate	Total/NA	Solid	Fill_Geo-0	69978
160-3571-21	L050163TES00	Total/NA	Solid	Fill_Geo-0	69988
160-3571-22	L050164TRS00	Total/NA	Solid	Fill_Geo-0	69988
160-3571-23	L050165TEQ00	Total/NA	Solid	Fill_Geo-0	69988
160-3571-24	L050165TES00	Total/NA	Solid	Fill_Geo-0	69988
160-3571-25	L050169TSS00	Total/NA	Solid	Fill_Geo-0	69988
160-3571-26	L050170TRS00	Total/NA	Solid	Fill_Geo-0	69988
160-3571-27	L050171TRS00	Total/NA	Solid	Fill_Geo-0	69988
160-3571-28	L050172TES00	Total/NA	Solid	Fill_Geo-0	69988
LCS 160-70600/2-A	Lab Control Sample	Total/NA	Solid	Fill_Geo-0	
MB 160-70600/1-A	Method Blank	Total/NA	Solid	Fill_Geo-0	

## Tracer/Carrier Summary

Client: Westinghouse Electric Company LLC  
Project/Site: RFP-CBA-022 (7 DAY TAT)

TestAmerica Job ID: 160-3571-1

**Method: 6020A - Metals (ICP/MS), Tc-99 in Activity**

**Matrix: Solid**

**Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)	
Lab Sample ID	Client Sample ID	Re (30-110)	
160-3571-1	L050119TSQ00	94	
160-3571-1 MS	L050119TSQ00	89	
160-3571-1 MSD	L050119TSQ00	90	
160-3571-2	L050119TSS00	91	
160-3571-3	L050120TRS00	91	
160-3571-4	L050121TSS00	89	
160-3571-5	L050122TRS00	91	
160-3571-6	L050125TRS00	87	
160-3571-7	L050127TRS00	93	
160-3571-8	L050128TES00	93	
160-3571-9	L050131TRS00	94	
160-3571-10	L050132TES00	95	
160-3571-11	L050133TRS00	92	
160-3571-12	L050139TES00	94	
160-3571-13	L050140TRS00	95	
160-3571-14	L050148TRS00	97	
160-3571-15	L050154TRS00	101	
160-3571-16	L050155TES00	93	
160-3571-17	L050156TRS00	100	
160-3571-18	L050157TES00	95	
160-3571-19	L050162TRQ00	93	
160-3571-20	L050162TRS00	92	
160-3571-21	L050163TES00	94	
160-3571-21 MS	L050163TES00	90	
160-3571-21 MSD	L050163TES00	90	
160-3571-22	L050164TRS00	87	
160-3571-23	L050165TEQ00	92	
160-3571-24	L050165TES00	94	
160-3571-25	L050169TSS00	90	
160-3571-26	L050170TRS00	0.2 X	
160-3571-27	L050171TRS00	90	
160-3571-28	L050172TES00	89	
LCS 160-69983/2-A	Lab Control Sample	99	
LCS 160-70096/2-A	Lab Control Sample	100	
MB 160-69983/1-A	Method Blank	102	
MB 160-70096/1-A	Method Blank	97	

### Tracer/Carrier Legend

Re = Re