

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: 160-5313-1

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:

1/31/2014 4:49:15 PM

Ivan Vania, Project Manager II
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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.

1

2

3

4

5

6

7

8

9

10

11

12

Table of Contents

Cover Page	1
Table of Contents	2
Case Narrative	3
Chain of Custody	5
Receipt Checklists	7
Definitions/Glossary	8
Method Summary	9
Sample Summary	10
Client Sample Results	11
QC Sample Results	17
QC Association Summary	19
Tracer Carrier Summary	21



Case Narrative

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

TestAmerica Job ID: 160-5313-1

Job ID: 160-5313-1

Laboratory: TestAmerica St. Louis

Narrative

CASE NARRATIVE

Client: Westinghouse Electric Company LLC

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

Report Number: 160-5313-1

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 01/27/2014; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 17.0 C.

TECHNETIUM-99 (ICPMS)

Samples L101017BRS00 (160-5313-1), L101018BES00 (160-5313-2), L101019BSS00 (160-5313-3), L101020BRS00 (160-5313-4), L101021BRS00 (160-5313-5), L101023BRS00 (160-5313-6), L101025BRS00 (160-5313-7), L101026BES00 (160-5313-8), L101027BSS00 (160-5313-9), L101028BRQ00 (160-5313-10), L101028BRS00 (160-5313-11), L101029BSS00 (160-5313-12), L101030BRS00 (160-5313-13), L101031BES00 (160-5313-14), L101032BUB00 (160-5313-15) and L101033BUB00 (160-5313-16) were analyzed for Technetium-99 (ICPMS) in accordance with EPA SW-846 Method 6020A. The samples were prepared on 01/29/2014 and analyzed on 01/31/2014.

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

PERCENT SOLIDS

Case Narrative

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

TestAmerica Job ID: 160-5313-1

Job ID: 160-5313-1 (Continued)

Laboratory: TestAmerica St. Louis (Continued)

Samples L101017BRS00 (160-5313-1), L101018BES00 (160-5313-2), L101019BSS00 (160-5313-3), L101020BRS00 (160-5313-4), L101021BRS00 (160-5313-5), L101023BRS00 (160-5313-6), L101025BRS00 (160-5313-7), L101026BES00 (160-5313-8), L101027BSS00 (160-5313-9), L101028BRQ00 (160-5313-10), L101028BRS00 (160-5313-11), L101029BSS00 (160-5313-12), L101030BRS00 (160-5313-13), L101031BES00 (160-5313-14), L101032BUB00 (160-5313-15) and L101033BUB00 (160-5313-16) were analyzed for percent solids in accordance with EPA Method 160.3 MOD. The samples were analyzed on 01/28/2014.

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

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.																
Chain of Custody ID No. F-012714-01 Page 1/2				Requested Analysis												
Project Name: Westinghouse Electric Company Contact Person: Gerald Rood Phone Number: 314-810-3382 Sampler Name Scott Jenkins				Comp (C) or Grab (G)	Gamma Spec	Isotopic Uranium	Tc-99	Gamma Spec (21 day ingrow for Ra-226)						Total Containers	Laboratory Name: TA-MO	
															Laboratory Address: 13715 Rider Trail North	
															Phone No. 314-298-8566	
															Laboratory Contact Person: Joe Walker	
															Phone No. 708-870-8453	
														Turn Around Time		
														Rush (7 days)		
														Remarks		
Sample ID	Date	Time	Matrix													
L101017BRS00	1/25/2014	8:40	S	C			X	X							1	LSA-10-10 Sys. Samples
L101018BES00	1/25/2014	8:45	S	C			X	X							1	LSA-10-10 Sys. Samples
L101019BSS00	1/25/2014	8:50	S	C			X	X							1	LSA-10-10 Sys. Samples
L101020BRS00	1/25/2014	9:00	S	C			X	X							1	LSA-10-10 Sys. Samples
L101021BRS00	1/25/2014	9:20	S	C			X	X							1	LSA-10-10 Sys. Samples
L101023BRS00	1/25/2014	14:30	S	C			X	X							1	LSA-10-10 Sys. Samples
L101025BRS00	1/25/2014	10:00	S	C			X	X							1	LSA-10-10 Sys. Samples
L101026BES00	1/25/2014	10:05	S	C			X	X							1	LSA-10-10 Sys. Samples
L101027BSS00	1/25/2014	10:15	S	C			X	X							1	LSA-10-10 Sys. Samples
L101028BRQ00	1/25/2014	10:25	S	C			X	X							1	LSA-10-10 QC Sample
L101028BRS00	1/25/2014	10:25	S	C			X	X							1	LSA-10-10 Sys. Samples
L101029BSS00	1/25/2014	10:40	S	C			X	X							1	LSA-10-10 Sys. Samples
Relinquished by: <i>[Signature]</i>		Date/Time: 1-27-14 1630		Received by: <i>[Signature]</i>		Date/Time: 1-27-14 1630		Total: 16		Cooler Temperature: Ambient						
Company Name: WEC				Company Name: Crossroads				Cooler ID: 0127-02		Shipper and Number:						
Received by:		Date/Time:		Relinquished by: <i>[Signature]</i>		Date/Time: 1-27-14 1620		Comments: Please analyze samples for Tc-99 on a 7 day TAT. Please analyze samples for gamma spec after a 21 day in growth period.								
Company Name:				Company Name: Crossroads												
Relinquished by:		Date/Time:		Received by: <i>[Signature]</i>		Date/Time: 1/27/14 1620		Verified By: <i>[Signature]</i> Curtis Wilder								
Company Name:				Company Name: T4												

5313



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: 160-5313-1

Login Number: 5313

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	Thermal preservation not required.
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: 160-5313-1

Qualifiers

Rad

Qualifier	Qualifier Description
U	Result is less than the sample detection 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: 160-5313-1

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

Protocol References:

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: 160-5313-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
160-5313-1	L101017BRS00	Solid	01/25/14 08:40	01/27/14 18:00
160-5313-2	L101018BES00	Solid	01/25/14 08:45	01/27/14 18:00
160-5313-3	L101019BSS00	Solid	01/25/14 08:50	01/27/14 18:00
160-5313-4	L101020BRS00	Solid	01/25/14 09:00	01/27/14 18:00
160-5313-5	L101021BRS00	Solid	01/25/14 09:20	01/27/14 18:00
160-5313-6	L101023BRS00	Solid	01/25/14 14:30	01/27/14 18:00
160-5313-7	L101025BRS00	Solid	01/25/14 10:00	01/27/14 18:00
160-5313-8	L101026BES00	Solid	01/25/14 10:05	01/27/14 18:00
160-5313-9	L101027BSS00	Solid	01/25/14 10:15	01/27/14 18:00
160-5313-10	L101028BRQ00	Solid	01/25/14 10:25	01/27/14 18:00
160-5313-11	L101028BRS00	Solid	01/25/14 10:25	01/27/14 18:00
160-5313-12	L101029BSS00	Solid	01/25/14 10:40	01/27/14 18:00
160-5313-13	L101030BRS00	Solid	01/25/14 11:00	01/27/14 18:00
160-5313-14	L101031BES00	Solid	01/25/14 08:30	01/27/14 18:00
160-5313-15	L101032BUB00	Solid	01/25/14 14:00	01/27/14 18:00
160-5313-16	L101033BUB00	Solid	01/25/14 14:10	01/27/14 18:00

Client Sample Results

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

TestAmerica Job ID: 160-5313-1

Client Sample ID: L101017BRS00

Lab Sample ID: 160-5313-1

Date Collected: 01/25/14 08:40

Matrix: Solid

Date Received: 01/27/14 18:00

Percent Solids: 72.7

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Technetium 99	ND		0.000073	0.000022	mg/Kg	☼	01/29/14 12:15	01/31/14 12:24	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	0.283		0.102	0.111	1.46	0.249	pCi/g	01/29/14 12:15	01/31/14 12:24	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Re	95		30 - 110					01/29/14 12:15	01/31/14 12:24	1

Client Sample ID: L101018BES00

Lab Sample ID: 160-5313-2

Date Collected: 01/25/14 08:45

Matrix: Solid

Date Received: 01/27/14 18:00

Percent Solids: 75.4

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Technetium 99	ND		0.000076	0.000023	mg/Kg	☼	01/29/14 12:15	01/31/14 12:44	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	0.0375	U	0.0292	0.0340	1.52	0.261	pCi/g	01/29/14 12:15	01/31/14 12:44	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Re	87		30 - 110					01/29/14 12:15	01/31/14 12:44	1

Client Sample ID: L101019BSS00

Lab Sample ID: 160-5313-3

Date Collected: 01/25/14 08:50

Matrix: Solid

Date Received: 01/27/14 18:00

Percent Solids: 80.8

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Technetium 99	ND		0.000065	0.000019	mg/Kg	☼	01/29/14 12:15	01/31/14 12:47	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	0.207	U	0.0824	0.0878	1.29	0.221	pCi/g	01/29/14 12:15	01/31/14 12:47	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Re	96		30 - 110					01/29/14 12:15	01/31/14 12:47	1

TestAmerica St. Louis

Client Sample Results

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

TestAmerica Job ID: 160-5313-1

Client Sample ID: L101020BRS00

Lab Sample ID: 160-5313-4

Date Collected: 01/25/14 09:00

Matrix: Solid

Date Received: 01/27/14 18:00

Percent Solids: 82.0

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Technetium 99	ND		0.000064	0.000019	mg/Kg	☼	01/29/14 12:15	01/31/14 12:51	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	0.124	U	0.0693	0.0746	1.29	0.220	pCi/g	01/29/14 12:15	01/31/14 12:51	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Re	94		30 - 110					01/29/14 12:15	01/31/14 12:51	1

Client Sample ID: L101021BRS00

Lab Sample ID: 160-5313-5

Date Collected: 01/25/14 09:20

Matrix: Solid

Date Received: 01/27/14 18:00

Percent Solids: 79.1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Technetium 99	ND		0.000067	0.000020	mg/Kg	☼	01/29/14 12:15	01/31/14 12:55	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	0.0495	U	0.00341	0.00605	1.34	0.229	pCi/g	01/29/14 12:15	01/31/14 12:55	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Re	94		30 - 110					01/29/14 12:15	01/31/14 12:55	1

Client Sample ID: L101023BRS00

Lab Sample ID: 160-5313-6

Date Collected: 01/25/14 14:30

Matrix: Solid

Date Received: 01/27/14 18:00

Percent Solids: 80.2

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Technetium 99	ND		0.000066	0.000020	mg/Kg	☼	01/29/14 12:15	01/31/14 12:59	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	0.320		0.0290	0.0436	1.31	0.225	pCi/g	01/29/14 12:15	01/31/14 12:59	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Re	95		30 - 110					01/29/14 12:15	01/31/14 12:59	1

Client Sample ID: L101025BRS00

Lab Sample ID: 160-5313-7

Date Collected: 01/25/14 10:00

Matrix: Solid

Date Received: 01/27/14 18:00

Percent Solids: 88.0

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Technetium 99	ND		0.000060	0.000018	mg/Kg	☼	01/29/14 12:15	01/31/14 13:03	1

TestAmerica St. Louis

Client Sample Results

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

TestAmerica Job ID: 160-5313-1

Client Sample ID: L101025BRS00

Lab Sample ID: 160-5313-7

Date Collected: 01/25/14 10:00

Matrix: Solid

Date Received: 01/27/14 18:00

Percent Solids: 88.0

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	0.0428	U	0.0366	0.0390	1.21	0.207	pCi/g	01/29/14 12:15	01/31/14 13:03	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Re	94		30 - 110					01/29/14 12:15	01/31/14 13:03	1

Client Sample ID: L101026BES00

Lab Sample ID: 160-5313-8

Date Collected: 01/25/14 10:05

Matrix: Solid

Date Received: 01/27/14 18:00

Percent Solids: 81.8

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Technetium 99	ND		0.000065	0.000020	mg/Kg	☼	01/29/14 12:15	01/31/14 13:07	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	0.0499	U	0.0630	0.0674	1.31	0.224	pCi/g	01/29/14 12:15	01/31/14 13:07	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Re	94		30 - 110					01/29/14 12:15	01/31/14 13:07	1

Client Sample ID: L101027BSS00

Lab Sample ID: 160-5313-9

Date Collected: 01/25/14 10:15

Matrix: Solid

Date Received: 01/27/14 18:00

Percent Solids: 83.9

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Technetium 99	ND		0.000063	0.000019	mg/Kg	☼	01/29/14 12:15	01/31/14 13:11	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	0.303		0.0799	0.0909	1.27	0.217	pCi/g	01/29/14 12:15	01/31/14 13:11	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Re	93		30 - 110					01/29/14 12:15	01/31/14 13:11	1

Client Sample ID: L101028BRQ00

Lab Sample ID: 160-5313-10

Date Collected: 01/25/14 10:25

Matrix: Solid

Date Received: 01/27/14 18:00

Percent Solids: 82.7

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Technetium 99	ND		0.000064	0.000019	mg/Kg	☼	01/29/14 12:15	01/31/14 13:14	1

TestAmerica St. Louis

Client Sample Results

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

TestAmerica Job ID: 160-5313-1

Client Sample ID: L101028BRQ00

Lab Sample ID: 160-5313-10

Date Collected: 01/25/14 10:25

Matrix: Solid

Date Received: 01/27/14 18:00

Percent Solids: 82.7

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	0.160	U	0.0622	0.0678	1.28	0.219	pCi/g	01/29/14 12:15	01/31/14 13:14	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Re	94		30 - 110					01/29/14 12:15	01/31/14 13:14	1

Client Sample ID: L101028BRS00

Lab Sample ID: 160-5313-11

Date Collected: 01/25/14 10:25

Matrix: Solid

Date Received: 01/27/14 18:00

Percent Solids: 83.2

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Technetium 99	ND		0.000063	0.000019	mg/Kg	☼	01/29/14 12:15	01/31/14 13:26	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	0.283		0.139	0.150	1.27	0.217	pCi/g	01/29/14 12:15	01/31/14 13:26	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Re	94		30 - 110					01/29/14 12:15	01/31/14 13:26	1

Client Sample ID: L101029BSS00

Lab Sample ID: 160-5313-12

Date Collected: 01/25/14 10:40

Matrix: Solid

Date Received: 01/27/14 18:00

Percent Solids: 82.9

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Technetium 99	ND		0.000064	0.000019	mg/Kg	☼	01/29/14 12:15	01/31/14 13:30	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	0.193	U	0.0968	0.106	1.29	0.220	pCi/g	01/29/14 12:15	01/31/14 13:30	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Re	93		30 - 110					01/29/14 12:15	01/31/14 13:30	1

Client Sample ID: L101030BRS00

Lab Sample ID: 160-5313-13

Date Collected: 01/25/14 11:00

Matrix: Solid

Date Received: 01/27/14 18:00

Percent Solids: 83.2

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Technetium 99	ND		0.000062	0.000019	mg/Kg	☼	01/29/14 12:15	01/31/14 13:34	1

TestAmerica St. Louis

Client Sample Results

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

TestAmerica Job ID: 160-5313-1

Client Sample ID: L101030BRS00

Lab Sample ID: 160-5313-13

Date Collected: 01/25/14 11:00

Matrix: Solid

Date Received: 01/27/14 18:00

Percent Solids: 83.2

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	-0.0119	U	-0.0318	0.0331	1.25	0.213	pCi/g	01/29/14 12:15	01/31/14 13:34	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Re	96		30 - 110					01/29/14 12:15	01/31/14 13:34	1

Client Sample ID: L101031BES00

Lab Sample ID: 160-5313-14

Date Collected: 01/25/14 08:30

Matrix: Solid

Date Received: 01/27/14 18:00

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		0.000067	0.000020	mg/Kg	☼	01/29/14 12:15	01/31/14 13:38	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	0.0173	U	0.0156	0.0167	1.33	0.228	pCi/g	01/29/14 12:15	01/31/14 13:38	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Re	94		30 - 110					01/29/14 12:15	01/31/14 13:38	1

Client Sample ID: L101032BUB00

Lab Sample ID: 160-5313-15

Date Collected: 01/25/14 14:00

Matrix: Solid

Date Received: 01/27/14 18:00

Percent Solids: 81.3

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Technetium 99	ND		0.000064	0.000019	mg/Kg	☼	01/29/14 12:15	01/31/14 13:42	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	0.0157	U	0.0117	0.0121	1.27	0.218	pCi/g	01/29/14 12:15	01/31/14 13:42	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Re	97		30 - 110					01/29/14 12:15	01/31/14 13:42	1

Client Sample ID: L101033BUB00

Lab Sample ID: 160-5313-16

Date Collected: 01/25/14 14:10

Matrix: Solid

Date Received: 01/27/14 18:00

Percent Solids: 83.8

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Technetium 99	ND		0.000064	0.000019	mg/Kg	☼	01/29/14 12:15	01/31/14 13:45	1

TestAmerica St. Louis

Client Sample Results

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

TestAmerica Job ID: 160-5313-1

Client Sample ID: L101033BUB00

Lab Sample ID: 160-5313-16

Date Collected: 01/25/14 14:10

Matrix: Solid

Date Received: 01/27/14 18:00

Percent Solids: 83.8

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	0.222		0.0374	0.0456	1.28	0.220	pCi/g	01/29/14 12:15	01/31/14 13:45	1
Carrier	%Yield	Qualifier	Limits				Prepared		Analyzed	Dil Fac
Re	93		30 - 110				01/29/14 12:15		01/31/14 13:45	1

QC Sample Results

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

TestAmerica Job ID: 160-5313-1

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

Lab Sample ID: MB 160-102058/1-A

Matrix: Solid

Analysis Batch: 102652

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 102058

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Technetium 99	ND		0.000048	0.000015	mg/Kg		01/29/14 12:15	01/31/14 12:16	1

Lab Sample ID: LCS 160-102058/2-A

Matrix: Solid

Analysis Batch: 102652

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 102058

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Technetium 99	0.00240	0.00238		mg/Kg		99	80 - 120

Lab Sample ID: 160-5313-1 MS

Matrix: Solid

Analysis Batch: 102652

Client Sample ID: L101017BRS00

Prep Type: Total/NA

Prep Batch: 102058

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Technetium 99	ND		0.00328	0.00331		mg/Kg	☼	101	75 - 125

Lab Sample ID: 160-5313-1 MSD

Matrix: Solid

Analysis Batch: 102652

Client Sample ID: L101017BRS00

Prep Type: Total/NA

Prep Batch: 102058

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Technetium 99	ND		0.00331	0.00334		mg/Kg	☼	101	75 - 125	1	30

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

Lab Sample ID: MB 160-102058/1-A

Matrix: Solid

Analysis Batch: 102653

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 102058

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Technetium 99	0.05943	U	0.0398	0.0389	0.967	0.166	pCi/g	01/29/14 12:15	01/31/14 12:16	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Re	103		30 - 110	01/29/14 12:15	01/31/14 12:16	1

Lab Sample ID: LCS 160-102058/2-A

Matrix: Solid

Analysis Batch: 102653

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 102058

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Technetium 99	41.2	40.82		4.12	0.999	0.171	pCi/g	99	80 - 120

Carrier	LCS %Yield	LCS Qualifier	Limits
Re	100		30 - 110

TestAmerica St. Louis

QC Sample Results

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

TestAmerica Job ID: 160-5313-1

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

Lab Sample ID: 160-5313-1 MS

Matrix: Solid

Analysis Batch: 102653

Client Sample ID: L101017BRS00

Prep Type: Total/NA

Prep Batch: 102058

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Technetium 99	0.283		56.2	56.70		5.53	1.44	0.247	pCi/g	100	75 - 125		
Carrier	MS %Yield	MS Qualifier	Limits										
Re	95		30 - 110										

Lab Sample ID: 160-5313-1 MSD

Matrix: Solid

Analysis Batch: 102653

Client Sample ID: L101017BRS00

Prep Type: Total/NA

Prep Batch: 102058

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	0.283		56.6	57.27		5.85	1.47	0.252	pCi/g	101	75 - 125	0.05	1
Carrier	MSD %Yield	MSD Qualifier	Limits										
Re	94		30 - 110										

QC Association Summary

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

TestAmerica Job ID: 160-5313-1

Metals

Prep Batch: 102058

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-5313-1	L101017BRS00	Total/NA	Solid	None	
160-5313-1 MS	L101017BRS00	Total/NA	Solid	None	
160-5313-1 MSD	L101017BRS00	Total/NA	Solid	None	
160-5313-2	L101018BES00	Total/NA	Solid	None	
160-5313-3	L101019BSS00	Total/NA	Solid	None	
160-5313-4	L101020BRS00	Total/NA	Solid	None	
160-5313-5	L101021BRS00	Total/NA	Solid	None	
160-5313-6	L101023BRS00	Total/NA	Solid	None	
160-5313-7	L101025BRS00	Total/NA	Solid	None	
160-5313-8	L101026BES00	Total/NA	Solid	None	
160-5313-9	L101027BSS00	Total/NA	Solid	None	
160-5313-10	L101028BRQ00	Total/NA	Solid	None	
160-5313-11	L101028BRS00	Total/NA	Solid	None	
160-5313-12	L101029BSS00	Total/NA	Solid	None	
160-5313-13	L101030BRS00	Total/NA	Solid	None	
160-5313-14	L101031BES00	Total/NA	Solid	None	
160-5313-15	L101032BUB00	Total/NA	Solid	None	
160-5313-16	L101033BUB00	Total/NA	Solid	None	
LCS 160-102058/2-A	Lab Control Sample	Total/NA	Solid	None	
MB 160-102058/1-A	Method Blank	Total/NA	Solid	None	

Analysis Batch: 102652

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-5313-1	L101017BRS00	Total/NA	Solid	6020A	102058
160-5313-1 MS	L101017BRS00	Total/NA	Solid	6020A	102058
160-5313-1 MSD	L101017BRS00	Total/NA	Solid	6020A	102058
160-5313-2	L101018BES00	Total/NA	Solid	6020A	102058
160-5313-3	L101019BSS00	Total/NA	Solid	6020A	102058
160-5313-4	L101020BRS00	Total/NA	Solid	6020A	102058
160-5313-5	L101021BRS00	Total/NA	Solid	6020A	102058
160-5313-6	L101023BRS00	Total/NA	Solid	6020A	102058
160-5313-7	L101025BRS00	Total/NA	Solid	6020A	102058
160-5313-8	L101026BES00	Total/NA	Solid	6020A	102058
160-5313-9	L101027BSS00	Total/NA	Solid	6020A	102058
160-5313-10	L101028BRQ00	Total/NA	Solid	6020A	102058
160-5313-11	L101028BRS00	Total/NA	Solid	6020A	102058
160-5313-12	L101029BSS00	Total/NA	Solid	6020A	102058
160-5313-13	L101030BRS00	Total/NA	Solid	6020A	102058
160-5313-14	L101031BES00	Total/NA	Solid	6020A	102058
160-5313-15	L101032BUB00	Total/NA	Solid	6020A	102058
160-5313-16	L101033BUB00	Total/NA	Solid	6020A	102058
LCS 160-102058/2-A	Lab Control Sample	Total/NA	Solid	6020A	102058
MB 160-102058/1-A	Method Blank	Total/NA	Solid	6020A	102058

General Chemistry

Analysis Batch: 101585

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-5313-1	L101017BRS00	Total/NA	Solid	Moisture	
160-5313-2	L101018BES00	Total/NA	Solid	Moisture	

TestAmerica St. Louis

QC Association Summary

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

TestAmerica Job ID: 160-5313-1

General Chemistry (Continued)

Analysis Batch: 101585 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-5313-3	L101019BSS00	Total/NA	Solid	Moisture	
160-5313-3 DU	L101019BSS00	Total/NA	Solid	Moisture	
160-5313-4	L101020BRS00	Total/NA	Solid	Moisture	
160-5313-5	L101021BRS00	Total/NA	Solid	Moisture	
160-5313-6	L101023BRS00	Total/NA	Solid	Moisture	
160-5313-7	L101025BRS00	Total/NA	Solid	Moisture	
160-5313-8	L101026BES00	Total/NA	Solid	Moisture	
160-5313-9	L101027BSS00	Total/NA	Solid	Moisture	
160-5313-10	L101028BRQ00	Total/NA	Solid	Moisture	
160-5313-11	L101028BRS00	Total/NA	Solid	Moisture	
160-5313-12	L101029BSS00	Total/NA	Solid	Moisture	
160-5313-13	L101030BRS00	Total/NA	Solid	Moisture	
160-5313-14	L101031BES00	Total/NA	Solid	Moisture	
160-5313-15	L101032BUB00	Total/NA	Solid	Moisture	
160-5313-16	L101033BUB00	Total/NA	Solid	Moisture	
160-5313-16 DU	L101033BUB00	Total/NA	Solid	Moisture	

Rad

Prep Batch: 102058

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-5313-1	L101017BRS00	Total/NA	Solid	None	
160-5313-1 MS	L101017BRS00	Total/NA	Solid	None	
160-5313-1 MSD	L101017BRS00	Total/NA	Solid	None	
160-5313-2	L101018BES00	Total/NA	Solid	None	
160-5313-3	L101019BSS00	Total/NA	Solid	None	
160-5313-4	L101020BRS00	Total/NA	Solid	None	
160-5313-5	L101021BRS00	Total/NA	Solid	None	
160-5313-6	L101023BRS00	Total/NA	Solid	None	
160-5313-7	L101025BRS00	Total/NA	Solid	None	
160-5313-8	L101026BES00	Total/NA	Solid	None	
160-5313-9	L101027BSS00	Total/NA	Solid	None	
160-5313-10	L101028BRQ00	Total/NA	Solid	None	
160-5313-11	L101028BRS00	Total/NA	Solid	None	
160-5313-12	L101029BSS00	Total/NA	Solid	None	
160-5313-13	L101030BRS00	Total/NA	Solid	None	
160-5313-14	L101031BES00	Total/NA	Solid	None	
160-5313-15	L101032BUB00	Total/NA	Solid	None	
160-5313-16	L101033BUB00	Total/NA	Solid	None	
LCS 160-102058/2-A	Lab Control Sample	Total/NA	Solid	None	
MB 160-102058/1-A	Method Blank	Total/NA	Solid	None	

TestAmerica St. Louis

Tracer/Carrier Summary

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

TestAmerica Job ID: 160-5313-1

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)	
160-5313-1	L101017BRS00	95	
160-5313-1 MS	L101017BRS00	95	
160-5313-1 MSD	L101017BRS00	94	
160-5313-2	L101018BES00	87	
160-5313-3	L101019BSS00	96	
160-5313-4	L101020BRS00	94	
160-5313-5	L101021BRS00	94	
160-5313-6	L101023BRS00	95	
160-5313-7	L101025BRS00	94	
160-5313-8	L101026BES00	94	
160-5313-9	L101027BSS00	93	
160-5313-10	L101028BRQ00	94	
160-5313-11	L101028BRS00	94	
160-5313-12	L101029BSS00	93	
160-5313-13	L101030BRS00	96	
160-5313-14	L101031BES00	94	
160-5313-15	L101032BUB00	97	
160-5313-16	L101033BUB00	93	
LCS 160-102058/2-A	Lab Control Sample	100	
MB 160-102058/1-A	Method Blank	103	

Tracer/Carrier Legend

Re = Re