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: 160-17806-1
Client Project/Site: HDP RFP-CBA-022 (7 DAY TAT)

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

Attn: Mr. Martin Swanson

Authorized for release by:
6/23/2016 8:42:14 AM

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Job ID: 160-17806-1

Laboratory: TestAmerica St. Louis

Narrative

CASE NARRATIVE

Client: Westinghouse Electric Company LLC

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

Report Number: 160-17806-1

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 6/15/2016 11:11 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 20.0º C.

TECHNETIUM-99 (ICPMS)

Samples L12-01-25-P-S-B-00 (160-17806-1), L12-02-25-P-S-B-00 (160-17806-2), L12-03-25-P-S-B-00 (160-17806-3), L12-03-26-P-S-B-00 (160-17806-4), L12-04-25-P-S-B-00 (160-17806-5), L12-05-25-P-S-B-00 (160-17806-6), L12-06-25-P-S-B-00 (160-17806-7), L12-07-25-P-S-B-00 (160-17806-8), L12-08-25-P-S-B-00 (160-17806-9), L12-09-25-P-S-B-00 (160-17806-10) and L12-09-26-P-S-B-00 (160-17806-11) were analyzed for Technetium-99 (ICPMS) in accordance with EPA SW-846 Method 6020A. The samples were prepared on 06/16/2016 and analyzed on 06/22/2016.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

PERCENT SOLIDS

Samples L12-01-25-P-S-B-00 (160-17806-1), L12-02-25-P-S-B-00 (160-17806-2), L12-03-25-P-S-B-00 (160-17806-3),

Job ID: 160-17806-1 (Continued)

Laboratory: TestAmerica St. Louis (Continued)

L12-03-26-P-S-B-00 (160-17806-4), L12-04-25-P-S-B-00 (160-17806-5), L12-05-25-P-S-B-00 (160-17806-6), L12-06-25-P-S-B-00 (160-17806-7), L12-07-25-P-S-B-00 (160-17806-8), L12-08-25-P-S-B-00 (160-17806-9), L12-09-25-P-S-B-00 (160-17806-10) and L12-09-26-P-S-B-00 (160-17806-11) were analyzed for percent solids in accordance with EPA Method 160.3 MOD. The samples were analyzed on 06/16/2016.

Batch 256604 dried for 26 hours due to analyst illness. The laboratory does not believe this had any affect on analysis results.
L12-01-25-P-S-B-00 (160-17806-1), L12-02-25-P-S-B-00 (160-17806-2), L12-03-25-P-S-B-00 (160-17806-3), L12-03-26-P-S-B-00 (160-17806-4), L12-04-25-P-S-B-00 (160-17806-5), L12-05-25-P-S-B-00 (160-17806-6), L12-06-25-P-S-B-00 (160-17806-7), L12-07-25-P-S-B-00 (160-17806-8), L12-08-25-P-S-B-00 (160-17806-9), L12-09-25-P-S-B-00 (160-17806-10), L12-09-26-P-S-B-00 (160-17806-11), (160-17803-A-1), (160-17803-A-1 DU) and (160-17806-A-11 DU)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

CESIUM-137 & OTHER GAMMA EMITTERS (GS)

Samples L12-01-25-P-S-B-00 (160-17806-1), L12-02-25-P-S-B-00 (160-17806-2), L12-03-25-P-S-B-00 (160-17806-3), L12-03-26-P-S-B-00 (160-17806-4), L12-04-25-P-S-B-00 (160-17806-5), L12-05-25-P-S-B-00 (160-17806-6), L12-06-25-P-S-B-00 (160-17806-7), L12-07-25-P-S-B-00 (160-17806-8), L12-08-25-P-S-B-00 (160-17806-9), L12-09-25-P-S-B-00 (160-17806-10) and L12-09-26-P-S-B-00 (160-17806-11) were analyzed for Cesium-137 & Other Gamma Emitters (GS) in accordance with DOE GA-01-R. The samples were leached on 06/15/2016, prepared on 06/17/2016 and analyzed on 06/18/2016.

Preparation Batch 160-256918:
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 21-days of 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. The samples are reported with the MDC achieved. L12-01-25-P-S-B-00 (160-17806-1), L12-02-25-P-S-B-00 (160-17806-2), L12-03-25-P-S-B-00 (160-17806-3), L12-03-26-P-S-B-00 (160-17806-4), L12-04-25-P-S-B-00 (160-17806-5), L12-05-25-P-S-B-00 (160-17806-6), L12-06-25-P-S-B-00 (160-17806-7), L12-07-25-P-S-B-00 (160-17806-8), L12-08-25-P-S-B-00 (160-17806-9), L12-09-25-P-S-B-00 (160-17806-10), L12-09-26-P-S-B-00 (160-17806-11), (LCS 160-256918/2-A), (MB 160-256918/1-A), (160-17803-A-1-F) and (160-17803-A-1-G DU)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Hematite Decommissioning Project	Procedure HDP-PR-QA-006, *Chain of Custody*	
	Revision: 4	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 Cutody ID No. F-061416-02 **Page** 1/1

Project Name:
Westinghouse Electric Company

Contact Person:
Clark Evers

Phone Number:
314-810-3336

Sampler Name
John Michel

Laboratory Name:
TA-MO

Laboratory Address:
13715 Rider Trail North

Phone No.
314-298-8566

Laboratory Contact Person:
Ivan Vania

Phone No.
708-870-8453

Turn Around Time
Rush (7 days)

Sample ID	Date	Time	Matrix	Comp (C) or Grab (G)	Requested Analysis: Gamma Spec	Isotopic Uranium	Tc-99	Gamma Spec (21 day ingrow for Ra-226)						Total Containers	Remarks
L12-01-25-P-S-B-00	6/14/2016	16:05	S	G	X		X	X						1	LSA 12-01
L12-02-25-P-S-B-00	6/14/2016	15:13	S	G	X		X	X						1	LSA 12-02
L12-03-25-P-S-B-00	6/14/2016	15:20	S	G	X		X	X						1	LSA 12-03
L12-03-26-P-S-B-00	6/14/2016	15:25	S	G	X		X	X						1	LSA 12-03
L12-04-25-P-S-B-00	6/14/2016	15:30	S	G	X		X	X						1	LSA 12-04
L12-05-25-P-S-B-00	6/14/2016	15:35	S	G	X		X	X						1	LSA 12-05
L12-06-25-P-S-B-00	6/14/2016	15:33	S	G	X		X	X						1	LSA 12-06
L12-07-25-P-S-B-00	6/14/2016	16:00	S	G	X		X	X						1	LSA 12-07
L12-08-25-P-S-B-00	6/14/2016	15:55	S	G	X		X	X						1	LSA 12-08
L12-09-25-P-S-B-00	6/14/2016	15:45	S	G	X		X	X						1	LSA 12-09
L12-09-26-P-S-B-00	6/14/2016	15:50	S	G	X		X	X						1	LSA 12-09

Relinquished by: Goesan	Date/Time 6-15-16 0915	Received by:	Date/Time 6-15-16 0915	Total 11	Cooler Temperature: Ambient
Company Name: WEC		Company Name: CROSSROADS		Cooler ID: 0614-01	Shipper and Number:
Received by:	Date/Time	Relinquished by:	Date/Time	Comments: N/A	
Company Name:		Company Name:			
Relinquished by: 3815	Date/Time 6-15-16 11:11	Received by:	Date/Time 6-15-16 11:11	Verified By: C. Goesan 6-15-16	
Company Name: Cross Roads		Company Name: TA-St. Louis			

160-17806 Chain of Custody

Login Sample Receipt Checklist

Client: Westinghouse Electric Company LLC

Job Number: 160-17806-1

Login Number: 17806
List Number: 1
Creator: Dedner, Connie L

List Source: TestAmerica St. Louis

Question	Answer	Comment
Radioactivity wasn't checked or is </= 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.	N/A	
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 (excluding tests with immediate HTs)	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 <6mm (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: HDP RFP-CBA-022 (7 DAY TAT)

TestAmerica Job ID: 160-17806-1

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	Result is less than the sample detection limit.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
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: HDP RFP-CBA-022 (7 DAY TAT)

TestAmerica Job ID: 160-17806-1

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

TestAmerica Job ID: 160-17806-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
160-17806-1	L12-01-25-P-S-B-00	Solid	06/14/16 16:05	06/15/16 11:11
160-17806-2	L12-02-25-P-S-B-00	Solid	06/14/16 15:13	06/15/16 11:11
160-17806-3	L12-03-25-P-S-B-00	Solid	06/14/16 15:20	06/15/16 11:11
160-17806-4	L12-03-26-P-S-B-00	Solid	06/14/16 15:25	06/15/16 11:11
160-17806-5	L12-04-25-P-S-B-00	Solid	06/14/16 15:30	06/15/16 11:11
160-17806-6	L12-05-25-P-S-B-00	Solid	06/14/16 15:35	06/15/16 11:11
160-17806-7	L12-06-25-P-S-B-00	Solid	06/14/16 15:33	06/15/16 11:11
160-17806-8	L12-07-25-P-S-B-00	Solid	06/14/16 16:00	06/15/16 11:11
160-17806-9	L12-08-25-P-S-B-00	Solid	06/14/16 15:55	06/15/16 11:11
160-17806-10	L12-09-25-P-S-B-00	Solid	06/14/16 15:45	06/15/16 11:11
160-17806-11	L12-09-26-P-S-B-00	Solid	06/14/16 15:50	06/15/16 11:11

Client Sample ID: L12-01-25-P-S-B-00

Lab Sample ID: 160-17806-1
Date Collected: 06/14/16 16:05
Matrix: Solid
Date Received: 06/15/16 11:11

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	**0.845**		0.132	0.158		0.110	pCi/g	06/17/16 14:18	06/18/16 13:40	1
Americium 241	0.0414	U	0.0980	0.0981		0.163	pCi/g	06/17/16 14:18	06/18/16 13:40	1
Bismuth 212	**1.16**		0.482	0.497		0.406	pCi/g	06/17/16 14:18	06/18/16 13:40	1
Bismuth 214	**0.672**		0.106	0.127		0.0817	pCi/g	06/17/16 14:18	06/18/16 13:40	1
Lead 212	**0.871**		0.0725	0.134		0.0631	pCi/g	06/17/16 14:18	06/18/16 13:40	1
Lead 214	**0.816**		0.0955	0.128		0.0710	pCi/g	06/17/16 14:18	06/18/16 13:40	1
Potassium 40	**15.9**		1.18	2.01		0.162	pCi/g	06/17/16 14:18	06/18/16 13:40	1
Protactinium 231	-0.524	U	1.61	1.61		2.68	pCi/g	06/17/16 14:18	06/18/16 13:40	1
Radium 226	**0.672**		0.106	0.127	1.00	0.0817	pCi/g	06/17/16 14:18	06/18/16 13:40	1
Thorium 234	**0.896**		0.317	0.330	1.00	0.895	pCi/g	06/17/16 14:18	06/18/16 13:40	1
Uranium 235	**0.200**		0.107	0.109		0.151	pCi/g	06/17/16 14:18	06/18/16 13:40	1
Protactinium 234m	1.28	U	3.12	3.12		9.91	pCi/g	06/17/16 14:18	06/18/16 13:40	1
Thorium 232	**0.845**		0.132	0.158		0.110	pCi/g	06/17/16 14:18	06/18/16 13:40	1

Other Detected Radionuclides	*Result*	*Qualifier*	*Count Uncert. (2σ+/-)*	*Total Uncert. (2σ+/-)*	*RL*	*MDC*	*Unit*	*Prepared*	*Analyzed*	*Dil Fac*
Tl-208	*0.256*		*0.0419*	*0.0496*		*0.0276*	*pCi/g*	*06/17/16 14:18*	*06/18/16 13:40*	*1*

Client Sample ID: L12-01-25-P-S-B-00

Lab Sample ID: 160-17806-1
Date Collected: 06/14/16 16:05
Matrix: Solid
Date Received: 06/15/16 11:11
Percent Solids: 91.9

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Technetium 99	ND		0.000061	0.000018	mg/Kg	☼	06/16/16 02:21	06/22/16 11:02	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	0.172	U	0.0636	0.0655	1.23	0.210	pCi/g	06/16/16 02:21	06/22/16 11:02	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Re	*89*		*30 - 110*	*06/16/16 02:21*	*06/22/16 11:02*	*1*

Client Sample ID: L12-02-25-P-S-B-00

Lab Sample ID: 160-17806-2
Date Collected: 06/14/16 15:13
Matrix: Solid
Date Received: 06/15/16 11:11

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	**0.912**		0.121	0.152		0.0845	pCi/g	06/17/16 14:18	06/18/16 13:41	1
Americium 241	0.0266	U	0.0869	0.0870		0.145	pCi/g	06/17/16 14:18	06/18/16 13:41	1
Bismuth 212	**1.01**		0.313	0.329		0.282	pCi/g	06/17/16 14:18	06/18/16 13:41	1
Bismuth 214	**0.763**		0.0874	0.117		0.0611	pCi/g	06/17/16 14:18	06/18/16 13:41	1
Lead 212	**0.883**		0.0638	0.131		0.0526	pCi/g	06/17/16 14:18	06/18/16 13:41	1

Client Sample ID: L12-02-25-P-S-B-00

Lab Sample ID: 160-17806-2
Date Collected: 06/14/16 15:13
Matrix: Solid
Date Received: 06/15/16 11:11

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
Lead 214	**0.767**		0.0835	0.116		0.0713	pCi/g	06/17/16 14:18	06/18/16 13:41	1
Potassium 40	**17.6**		1.06	2.06		0.298	pCi/g	06/17/16 14:18	06/18/16 13:41	1
Protactinium 231	-0.421	U	1.24	1.24		2.07	pCi/g	06/17/16 14:18	06/18/16 13:41	1
Radium 226	**0.763**		0.0874	0.117	1.00	0.0611	pCi/g	06/17/16 14:18	06/18/16 13:41	1
Thorium 234	**1.32**		0.465	0.485	1.00	0.709	pCi/g	06/17/16 14:18	06/18/16 13:41	1
Uranium 235	0.0680	U	0.273	0.273		0.455	pCi/g	06/17/16 14:18	06/18/16 13:41	1
Protactinium 234m	3.39	U	4.03	4.04		6.01	pCi/g	06/17/16 14:18	06/18/16 13:41	1
Thorium 232	**0.912**		0.121	0.152		0.0845	pCi/g	06/17/16 14:18	06/18/16 13:41	1

Other Detected Radionuclides	*Result*	*Qualifier*	*Count Uncert. (2σ+/-)*	*Total Uncert. (2σ+/-)*	*RL*	*MDC*	*Unit*	*Prepared*	*Analyzed*	*Dil Fac*
Pb-210	*1.90*		*0.647*	*0.684*		*0.764*	*pCi/g*	*06/17/16 14:18*	*06/18/16 13:41*	*1*
Tl-208	*0.278*		*0.0387*	*0.0481*		*0.0283*	*pCi/g*	*06/17/16 14:18*	*06/18/16 13:41*	*1*

Client Sample ID: L12-02-25-P-S-B-00

Lab Sample ID: 160-17806-2
Date Collected: 06/14/16 15:13
Matrix: Solid
Date Received: 06/15/16 11:11
Percent Solids: 79.7

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Technetium 99	ND		0.000069	0.000021	mg/Kg	☼	06/16/16 02:21	06/22/16 11:06	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	**0.252**		0.0667	0.0707	1.38	0.236	pCi/g	06/16/16 02:21	06/22/16 11:06	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Re	*91*		*30 - 110*	*06/16/16 02:21*	*06/22/16 11:06*	*1*

Client Sample ID: L12-03-25-P-S-B-00

Lab Sample ID: 160-17806-3
Date Collected: 06/14/16 15:20
Matrix: Solid
Date Received: 06/15/16 11:11

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**		0.130	0.168		0.0908	pCi/g	06/17/16 14:18	06/18/16 14:20	1
Americium 241	-0.0451	U	0.106	0.106		0.176	pCi/g	06/17/16 14:18	06/18/16 14:20	1
Bismuth 212	**0.846**		0.296	0.309		0.368	pCi/g	06/17/16 14:18	06/18/16 14:20	1
Bismuth 214	**0.740**		0.0878	0.117		0.0743	pCi/g	06/17/16 14:18	06/18/16 14:20	1
Lead 212	**0.981**		0.0735	0.147		0.0593	pCi/g	06/17/16 14:18	06/18/16 14:20	1
Lead 214	**0.932**		0.0823	0.127		0.0747	pCi/g	06/17/16 14:18	06/18/16 14:20	1
Potassium 40	**17.2**		1.13	2.09		0.231	pCi/g	06/17/16 14:18	06/18/16 14:20	1
Protactinium 231	-0.449	U	1.44	1.44		2.41	pCi/g	06/17/16 14:18	06/18/16 14:20	1
Radium 226	**0.740**		0.0878	0.117	1.00	0.0743	pCi/g	06/17/16 14:18	06/18/16 14:20	1

Client Sample ID: L12-03-25-P-S-B-00

Lab Sample ID: 160-17806-3
Matrix: Solid
Date Collected: 06/14/16 15:20
Date Received: 06/15/16 11:11

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	**1.29**		0.313	0.341	1.00	0.794	pCi/g	06/17/16 14:18	06/18/16 14:20	1
Uranium 235	-0.0183	U	0.0355	0.0355		0.645	pCi/g	06/17/16 14:18	06/18/16 14:20	1
Protactinium 234m	2.28	U	3.29	3.30		9.31	pCi/g	06/17/16 14:18	06/18/16 14:20	1
Thorium 232	**1.03**		0.130	0.168		0.0908	pCi/g	06/17/16 14:18	06/18/16 14:20	1

Other Detected Radionuclides	*Result*	*Qualifier*	*Count Uncert. (2σ+/-)*	*Total Uncert. (2σ+/-)*	*RL*	*MDC*	*Unit*	*Prepared*	*Analyzed*	*Dil Fac*
Pb-210	*2.15*		*0.738*	*0.780*		*0.867*	*pCi/g*	*06/17/16 14:18*	*06/18/16 14:20*	*1*
Tl-208	*0.237*		*0.0404*	*0.0473*		*0.0323*	*pCi/g*	*06/17/16 14:18*	*06/18/16 14:20*	*1*

Client Sample ID: L12-03-25-P-S-B-00

Lab Sample ID: 160-17806-3
Matrix: Solid
Date Collected: 06/14/16 15:20
Date Received: 06/15/16 11:11
Percent Solids: 84.4

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Technetium 99	**0.000037**	**J**	0.000068	0.000020	mg/Kg	☼	06/16/16 02:21	06/22/16 11:11	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	**0.636**		0.115	0.129	1.37	0.234	pCi/g	06/16/16 02:21	06/22/16 11:11	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Re	*86*		*30 - 110*	*06/16/16 02:21*	*06/22/16 11:11*	*1*

Client Sample ID: L12-03-26-P-S-B-00

Lab Sample ID: 160-17806-4
Matrix: Solid
Date Collected: 06/14/16 15:25
Date Received: 06/15/16 11:11

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	**1.07**		0.129	0.169		0.0587	pCi/g	06/17/16 14:18	06/18/16 14:19	1
Americium 241	-0.0290	U	0.0791	0.0792		0.111	pCi/g	06/17/16 14:18	06/18/16 14:19	1
Bismuth 212	**1.34**		0.543	0.561		0.498	pCi/g	06/17/16 14:18	06/18/16 14:19	1
Bismuth 214	**0.763**		0.106	0.133		0.0765	pCi/g	06/17/16 14:18	06/18/16 14:19	1
Lead 212	**0.936**		0.0763	0.143		0.0683	pCi/g	06/17/16 14:18	06/18/16 14:19	1
Lead 214	**0.841**		0.103	0.135		0.0829	pCi/g	06/17/16 14:18	06/18/16 14:19	1
Potassium 40	**18.5**		1.27	2.28		0.272	pCi/g	06/17/16 14:18	06/18/16 14:19	1
Protactinium 231	0.370	U	0.785	0.786		1.77	pCi/g	06/17/16 14:18	06/18/16 14:19	1
Radium 226	**0.763**		0.106	0.133	1.00	0.0765	pCi/g	06/17/16 14:18	06/18/16 14:19	1
Thorium 234	**1.64**		0.636	0.658	1.00	0.817	pCi/g	06/17/16 14:18	06/18/16 14:19	1
Uranium 235	**0.271**		0.156	0.159		0.211	pCi/g	06/17/16 14:18	06/18/16 14:19	1
Protactinium 234m	1.97	U	3.40	3.40		9.91	pCi/g	06/17/16 14:18	06/18/16 14:19	1
Thorium 232	**1.07**		0.129	0.169		0.0587	pCi/g	06/17/16 14:18	06/18/16 14:19	1

Client Sample ID: L12-03-26-P-S-B-00

Lab Sample ID: 160-17806-4
Date Collected: 06/14/16 15:25
Matrix: Solid
Date Received: 06/15/16 11:11

Other Detected Radionuclides	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Pb-210	1.72		0.663	0.693		0.813	pCi/g	06/17/16 14:18	06/18/16 14:19	1
Tl-208	0.342		0.0488	0.0604		0.0321	pCi/g	06/17/16 14:18	06/18/16 14:19	1

Client Sample ID: L12-03-26-P-S-B-00

Lab Sample ID: 160-17806-4
Date Collected: 06/14/16 15:25
Matrix: Solid
Date Received: 06/15/16 11:11
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		0.000066	0.000020	mg/Kg	☼	06/16/16 02:21	06/22/16 11:28	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	**0.320**		0.0604	0.0672	1.32	0.225	pCi/g	06/16/16 02:21	06/22/16 11:28	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Re	91		30 - 110	06/16/16 02:21	06/22/16 11:28	1

Client Sample ID: L12-04-25-P-S-B-00

Lab Sample ID: 160-17806-5
Date Collected: 06/14/16 15:30
Matrix: Solid
Date Received: 06/15/16 11:11

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	**0.923**		0.147	0.175		0.134	pCi/g	06/17/16 14:18	06/18/16 14:20	1
Americium 241	0.0405	U	0.0890	0.0891		0.148	pCi/g	06/17/16 14:18	06/18/16 14:20	1
Bismuth 212	0.268	U	0.484	0.485		0.811	pCi/g	06/17/16 14:18	06/18/16 14:20	1
Bismuth 214	**0.699**		0.117	0.138		0.0848	pCi/g	06/17/16 14:18	06/18/16 14:20	1
Lead 212	**0.946**		0.0720	0.142		0.0564	pCi/g	06/17/16 14:18	06/18/16 14:20	1
Lead 214	**0.800**		0.0933	0.125		0.0685	pCi/g	06/17/16 14:18	06/18/16 14:20	1
Potassium 40	**15.6**		1.15	1.97		0.157	pCi/g	06/17/16 14:18	06/18/16 14:20	1
Protactinium 231	-0.520	U	1.57	1.57		2.62	pCi/g	06/17/16 14:18	06/18/16 14:20	1
Radium 226	**0.699**		0.117	0.138	1.00	0.0848	pCi/g	06/17/16 14:18	06/18/16 14:20	1
Thorium 234	**0.870**		0.297	0.310	1.00	0.769	pCi/g	06/17/16 14:18	06/18/16 14:20	1
Uranium 235	0.111	U	0.192	0.193		0.288	pCi/g	06/17/16 14:18	06/18/16 14:20	1
Protactinium 234m	0.338	U	0.470	0.471		8.69	pCi/g	06/17/16 14:18	06/18/16 14:20	1
Thorium 232	**0.923**		0.147	0.175		0.134	pCi/g	06/17/16 14:18	06/18/16 14:20	1

Other Detected Radionuclides	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tl-208	0.276		0.0466	0.0547		0.0357	pCi/g	06/17/16 14:18	06/18/16 14:20	1

Client Sample ID: L12-04-25-P-S-B-00

Lab Sample ID: 160-17806-5
Date Collected: 06/14/16 15:30
Matrix: Solid
Date Received: 06/15/16 11:11
Percent Solids: 78.5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Technetium 99	ND		0.000068	0.000020	mg/Kg	☼	06/16/16 02:21	06/22/16 11:32	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	**0.287**		0.137	0.139	1.36	0.234	pCi/g	06/16/16 02:21	06/22/16 11:32	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Re	*94*		*30 - 110*	*06/16/16 02:21*	*06/22/16 11:32*	*1*

Client Sample ID: L12-05-25-P-S-B-00

Lab Sample ID: 160-17806-6
Date Collected: 06/14/16 15:35
Matrix: Solid
Date Received: 06/15/16 11:11

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**		0.109	0.157		0.0941	pCi/g	06/17/16 14:18	06/18/16 14:21	1
Americium 241	0.0190	U	0.0895	0.0895		0.149	pCi/g	06/17/16 14:18	06/18/16 14:21	1
Bismuth 212	**1.21**		0.434	0.452		0.411	pCi/g	06/17/16 14:18	06/18/16 14:21	1
Bismuth 214	**0.787**		0.0943	0.124		0.0611	pCi/g	06/17/16 14:18	06/18/16 14:21	1
Lead 212	**0.981**		0.0671	0.144		0.0566	pCi/g	06/17/16 14:18	06/18/16 14:21	1
Lead 214	**0.813**		0.0759	0.114		0.0580	pCi/g	06/17/16 14:18	06/18/16 14:21	1
Potassium 40	**18.7**		1.09	2.18		0.335	pCi/g	06/17/16 14:18	06/18/16 14:21	1
Protactinium 231	-0.469	U	1.37	1.38		2.29	pCi/g	06/17/16 14:18	06/18/16 14:21	1
Radium 226	**0.787**		0.0943	0.124	1.00	0.0611	pCi/g	06/17/16 14:18	06/18/16 14:21	1
Thorium 234	**1.12**		0.493	0.507	1.00	0.772	pCi/g	06/17/16 14:18	06/18/16 14:21	1
Uranium 235	**0.197**		0.130	0.131		0.176	pCi/g	06/17/16 14:18	06/18/16 14:21	1
Protactinium 234m	0.704	U	1.01	1.01		9.18	pCi/g	06/17/16 14:18	06/18/16 14:21	1
Thorium 232	**1.12**		0.109	0.157		0.0941	pCi/g	06/17/16 14:18	06/18/16 14:21	1

Other Detected Radionuclides	*Result*	*Qualifier*	*Count Uncert. (2σ+/-)*	*Total Uncert. (2σ+/-)*	*RL*	*MDC*	*Unit*	*Prepared*	*Analyzed*	*Dil Fac*
Pb-210	*1.77*		*0.685*	*0.716*		*0.787*	*pCi/g*	*06/17/16 14:18*	*06/18/16 14:21*	*1*
Tl-208	*0.322*		*0.0425*	*0.0538*		*0.0310*	*pCi/g*	*06/17/16 14:18*	*06/18/16 14:21*	*1*

Client Sample ID: L12-05-25-P-S-B-00

Lab Sample ID: 160-17806-6
Date Collected: 06/14/16 15:35
Matrix: Solid
Date Received: 06/15/16 11:11
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		0.000065	0.000020	mg/Kg	☼	06/16/16 02:21	06/22/16 11:36	1

Client Sample ID: L12-05-25-P-S-B-00

Lab Sample ID: 160-17806-6
Date Collected: 06/14/16 15:35
Matrix: Solid
Date Received: 06/15/16 11:11
Percent Solids: 83.9

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	0.306		0.120	0.123	1.30	0.223	pCi/g	06/16/16 02:21	06/22/16 11:36	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Re	*92*		*30 - 110*	*06/16/16 02:21*	*06/22/16 11:36*	*1*

Client Sample ID: L12-06-25-P-S-B-00

Lab Sample ID: 160-17806-7
Date Collected: 06/14/16 15:33
Matrix: Solid
Date Received: 06/15/16 11:11

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	1.09		0.124	0.166		0.110	pCi/g	06/17/16 14:18	06/18/16 14:57	1
Americium 241	0.0410	U	0.103	0.103		0.171	pCi/g	06/17/16 14:18	06/18/16 14:57	1
Bismuth 212	0.734		0.303	0.312		0.433	pCi/g	06/17/16 14:18	06/18/16 14:57	1
Bismuth 214	1.72		0.109	0.209		0.0622	pCi/g	06/17/16 14:18	06/18/16 14:57	1
Lead 212	1.01		0.0681	0.147		0.0615	pCi/g	06/17/16 14:18	06/18/16 14:57	1
Lead 214	1.91		0.105	0.224		0.0800	pCi/g	06/17/16 14:18	06/18/16 14:57	1
Potassium 40	18.2		1.03	2.13		0.247	pCi/g	06/17/16 14:18	06/18/16 14:57	1
Protactinium 231	-0.439	U	1.37	1.37		2.29	pCi/g	06/17/16 14:18	06/18/16 14:57	1
Radium 226	1.72		0.109	0.209	1.00	0.0622	pCi/g	06/17/16 14:18	06/18/16 14:57	1
Thorium 234	1.39		0.536	0.555	1.00	0.834	pCi/g	06/17/16 14:18	06/18/16 14:57	1
Uranium 235	0.263		0.136	0.138		0.196	pCi/g	06/17/16 14:18	06/18/16 14:57	1
Protactinium 234m	3.34	U	5.12	5.13		7.86	pCi/g	06/17/16 14:18	06/18/16 14:57	1
Thorium 232	1.09		0.124	0.166		0.110	pCi/g	06/17/16 14:18	06/18/16 14:57	1

Other Detected Radionuclides	*Result*	*Qualifier*	*Count Uncert. (2σ+/-)*	*Total Uncert. (2σ+/-)*	*RL*	*MDC*	*Unit*	*Prepared*	*Analyzed*	*Dil Fac*
Pb-210	*2.76*		*0.793*	*0.856*		*0.905*	*pCi/g*	*06/17/16 14:18*	*06/18/16 14:57*	*1*
Tl-208	*0.327*		*0.0455*	*0.0567*		*0.0343*	*pCi/g*	*06/17/16 14:18*	*06/18/16 14:57*	*1*

Client Sample ID: L12-06-25-P-S-B-00

Lab Sample ID: 160-17806-7
Date Collected: 06/14/16 15:33
Matrix: Solid
Date Received: 06/15/16 11:11
Percent Solids: 97.2

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Technetium 99	0.000019	J	0.000056	0.000017	mg/Kg	☼	06/16/16 02:21	06/22/16 11:41	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	0.319		0.0610	0.0677	1.12	0.192	pCi/g	06/16/16 02:21	06/22/16 11:41	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Re	*92*		*30 - 110*	*06/16/16 02:21*	*06/22/16 11:41*	*1*

Client Sample ID: L12-07-25-P-S-B-00

Lab Sample ID: 160-17806-8
Date Collected: 06/14/16 16:00
Matrix: Solid
Date Received: 06/15/16 11:11

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**		0.116	0.157		0.117	pCi/g	06/17/16 14:18	06/18/16 15:00	1
Americium 241	-0.0272	U	0.0757	0.0758		0.106	pCi/g	06/17/16 14:18	06/18/16 15:00	1
Bismuth 212	**1.27**		0.450	0.469		0.381	pCi/g	06/17/16 14:18	06/18/16 15:00	1
Bismuth 214	**0.650**		0.0838	0.108		0.0725	pCi/g	06/17/16 14:18	06/18/16 15:00	1
Lead 212	**0.913**		0.0728	0.139		0.0677	pCi/g	06/17/16 14:18	06/18/16 15:00	1
Lead 214	**0.722**		0.0806	0.110		0.0774	pCi/g	06/17/16 14:18	06/18/16 15:00	1
Potassium 40	**18.6**		1.21	2.25		0.245	pCi/g	06/17/16 14:18	06/18/16 15:00	1
Protactinium 231	-0.114	U	1.14	1.14		1.92	pCi/g	06/17/16 14:18	06/18/16 15:00	1
Radium 226	**0.650**		0.0838	0.108	1.00	0.0725	pCi/g	06/17/16 14:18	06/18/16 15:00	1
Thorium 234	**1.41**		0.579	0.598	1.00	0.769	pCi/g	06/17/16 14:18	06/18/16 15:00	1
Uranium 235	0.134	U	0.125	0.126		0.178	pCi/g	06/17/16 14:18	06/18/16 15:00	1
Protactinium 234m	3.04	U	4.55	4.57		7.21	pCi/g	06/17/16 14:18	06/18/16 15:00	1
Thorium 232	**1.03**		0.116	0.157		0.117	pCi/g	06/17/16 14:18	06/18/16 15:00	1

Other Detected Radionuclides	*Result*	*Qualifier*	*Count Uncert. (2σ+/-)*	*Total Uncert. (2σ+/-)*	*RL*	*MDC*	*Unit*	*Prepared*	*Analyzed*	*Dil Fac*
Tl-208	*0.334*		*0.0447*	*0.0566*		*0.0284*	*pCi/g*	*06/17/16 14:18*	*06/18/16 15:00*	*1*

Client Sample ID: L12-07-25-P-S-B-00

Lab Sample ID: 160-17806-8
Date Collected: 06/14/16 16:00
Matrix: Solid
Date Received: 06/15/16 11:11
Percent Solids: 83.4

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	☼	06/16/16 02:21	06/22/16 11:45	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	0.107	U	0.0797	0.0803	1.27	0.218	pCi/g	06/16/16 02:21	06/22/16 11:45	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Re	*94*		*30 - 110*	*06/16/16 02:21*	*06/22/16 11:45*	*1*

Client Sample ID: L12-08-25-P-S-B-00

Lab Sample ID: 160-17806-9
Date Collected: 06/14/16 15:55
Matrix: Solid
Date Received: 06/15/16 11:11

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	**0.940**		0.147	0.176		0.105	pCi/g	06/17/16 14:18	06/18/16 14:58	1
Americium 241	-0.00405	U	0.101	0.101		0.170	pCi/g	06/17/16 14:18	06/18/16 14:58	1
Bismuth 212	0.242	U	0.404	0.405		0.678	pCi/g	06/17/16 14:18	06/18/16 14:58	1
Bismuth 214	**0.574**		0.0851	0.104		0.0547	pCi/g	06/17/16 14:18	06/18/16 14:58	1
Lead 212	**0.898**		0.0736	0.138		0.0599	pCi/g	06/17/16 14:18	06/18/16 14:58	1

Client Sample ID: L12-08-25-P-S-B-00

Lab Sample ID: 160-17806-9
Date Collected: 06/14/16 15:55
Matrix: Solid
Date Received: 06/15/16 11:11

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
Lead 214	**0.703**		0.0846	0.112		0.0697	pCi/g	06/17/16 14:18	06/18/16 14:58	1
Potassium 40	**15.0**		1.18	1.93		0.170	pCi/g	06/17/16 14:18	06/18/16 14:58	1
Protactinium 231	-0.519	U	1.55	1.55		2.59	pCi/g	06/17/16 14:18	06/18/16 14:58	1
Radium 226	**0.574**		0.0851	0.104	1.00	0.0547	pCi/g	06/17/16 14:18	06/18/16 14:58	1
Thorium 234	**1.34**		0.571	0.588	1.00	0.886	pCi/g	06/17/16 14:18	06/18/16 14:58	1
Uranium 235	-0.127	U	0.296	0.297		0.590	pCi/g	06/17/16 14:18	06/18/16 14:58	1
Protactinium 234m	2.98	U	4.66	4.67		8.36	pCi/g	06/17/16 14:18	06/18/16 14:58	1
Thorium 232	**0.940**		0.147	0.176		0.105	pCi/g	06/17/16 14:18	06/18/16 14:58	1

Other Detected Radionuclides	*Result*	*Qualifier*	*Count Uncert. (2σ+/-)*	*Total Uncert. (2σ+/-)*	*RL*	*MDC*	*Unit*	*Prepared*	*Analyzed*	*Dil Fac*
Tl-208	*0.277*		*0.0454*	*0.0538*		*0.0300*	*pCi/g*	*06/17/16 14:18*	*06/18/16 14:58*	*1*

Client Sample ID: L12-08-25-P-S-B-00

Lab Sample ID: 160-17806-9
Date Collected: 06/14/16 15:55
Matrix: Solid
Date Received: 06/15/16 11:11
Percent Solids: 85.8

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Technetium 99	**0.000022**	**J**	0.000067	0.000020	mg/Kg	☼	06/16/16 02:21	06/22/16 11:49	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**		0.0689	0.0772	1.35	0.231	pCi/g	06/16/16 02:21	06/22/16 11:49	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Re	*86*		*30 - 110*	*06/16/16 02:21*	*06/22/16 11:49*	*1*

Client Sample ID: L12-09-25-P-S-B-00

Lab Sample ID: 160-17806-10
Date Collected: 06/14/16 15:45
Matrix: Solid
Date Received: 06/15/16 11:11

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	**0.981**		0.121	0.156		0.0897	pCi/g	06/17/16 14:18	06/18/16 14:58	1
Americium 241	-0.0495	U	0.0615	0.0617		0.151	pCi/g	06/17/16 14:18	06/18/16 14:58	1
Bismuth 212	**1.22**		0.451	0.468		0.392	pCi/g	06/17/16 14:18	06/18/16 14:58	1
Bismuth 214	**0.786**		0.0895	0.121		0.0637	pCi/g	06/17/16 14:18	06/18/16 14:58	1
Lead 212	**1.04**		0.0670	0.150		0.0541	pCi/g	06/17/16 14:18	06/18/16 14:58	1
Lead 214	**0.893**		0.0918	0.131		0.0706	pCi/g	06/17/16 14:18	06/18/16 14:58	1
Potassium 40	**18.5**		1.05	2.14		0.283	pCi/g	06/17/16 14:18	06/18/16 14:58	1
Protactinium 231	-0.436	U	1.30	1.30		2.16	pCi/g	06/17/16 14:18	06/18/16 14:58	1
Radium 226	**0.786**		0.0895	0.121	1.00	0.0637	pCi/g	06/17/16 14:18	06/18/16 14:58	1
Thorium 234	**1.81**		0.670	0.697	1.00	0.811	pCi/g	06/17/16 14:18	06/18/16 14:58	1

Client Sample ID: L12-09-25-P-S-B-00

Lab Sample ID: 160-17806-10
Date Collected: 06/14/16 15:45
Matrix: Solid
Date Received: 06/15/16 11:11

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
Uranium 235	**0.513**		0.151	0.159		0.196	pCi/g	06/17/16 14:18	06/18/16 14:58	1
Protactinium 234m	3.55	U	4.27	4.28		6.78	pCi/g	06/17/16 14:18	06/18/16 14:58	1
Thorium 232	**0.981**		0.121	0.156		0.0897	pCi/g	06/17/16 14:18	06/18/16 14:58	1

Other Detected Radionuclides	*Result*	*Qualifier*	*Count Uncert. (2σ+/-)*	*Total Uncert. (2σ+/-)*	*RL*	*MDC*	*Unit*	*Prepared*	*Analyzed*	*Dil Fac*
Tl-208	*0.337*		*0.0493*	*0.0603*		*0.0366*	*pCi/g*	*06/17/16 14:18*	*06/18/16 14:58*	*1*

Client Sample ID: L12-09-25-P-S-B-00

Lab Sample ID: 160-17806-10
Date Collected: 06/14/16 15:45
Matrix: Solid
Date Received: 06/15/16 11:11
Percent Solids: 96.0

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Technetium 99	**0.000024**	**J**	0.000056	0.000017	mg/Kg	☼	06/16/16 02:21	06/22/16 11:54	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	**0.413**		0.0589	0.0701	1.11	0.190	pCi/g	06/16/16 02:21	06/22/16 11:54	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Re	*93*		*30 - 110*	*06/16/16 02:21*	*06/22/16 11:54*	*1*

Client Sample ID: L12-09-26-P-S-B-00

Lab Sample ID: 160-17806-11
Date Collected: 06/14/16 15:50
Matrix: Solid
Date Received: 06/15/16 11:11

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	**0.744**		0.171	0.187		0.130	pCi/g	06/17/16 14:18	06/18/16 15:01	1
Americium 241	0.0125	U	0.0964	0.0965		0.129	pCi/g	06/17/16 14:18	06/18/16 15:01	1
Bismuth 212	**0.794**		0.370	0.379		0.502	pCi/g	06/17/16 14:18	06/18/16 15:01	1
Bismuth 214	**0.740**		0.109	0.133		0.0726	pCi/g	06/17/16 14:18	06/18/16 15:01	1
Lead 212	**0.856**		0.0795	0.136		0.0739	pCi/g	06/17/16 14:18	06/18/16 15:01	1
Lead 214	**0.796**		0.0974	0.128		0.0755	pCi/g	06/17/16 14:18	06/18/16 15:01	1
Potassium 40	**17.4**		1.37	2.25		0.281	pCi/g	06/17/16 14:18	06/18/16 15:01	1
Protactinium 231	-0.523	U	1.67	1.67		2.79	pCi/g	06/17/16 14:18	06/18/16 15:01	1
Radium 226	**0.740**		0.109	0.133	1.00	0.0726	pCi/g	06/17/16 14:18	06/18/16 15:01	1
Thorium 234	**0.924**		0.304	0.319	1.00	0.839	pCi/g	06/17/16 14:18	06/18/16 15:01	1
Uranium 235	-0.121	U	0.243	0.244		0.601	pCi/g	06/17/16 14:18	06/18/16 15:01	1
Protactinium 234m	1.80	U	3.13	3.13		10.8	pCi/g	06/17/16 14:18	06/18/16 15:01	1
Thorium 232	**0.744**		0.171	0.187		0.130	pCi/g	06/17/16 14:18	06/18/16 15:01	1

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

TestAmerica Job ID: 160-17806-1

Client Sample ID: L12-09-26-P-S-B-00 — **Lab Sample ID: 160-17806-11**
Date Collected: 06/14/16 15:50 — **Matrix: Solid**
Date Received: 06/15/16 11:11

Other Detected Radionuclides	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tl-208	0.299		0.0582	0.0660		0.0433	pCi/g	06/17/16 14:18	06/18/16 15:01	1

Client Sample ID: L12-09-26-P-S-B-00 — **Lab Sample ID: 160-17806-11**
Date Collected: 06/14/16 15:50 — **Matrix: Solid**
Date Received: 06/15/16 11:11 — **Percent Solids: 81.4**

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	☼	06/16/16 02:21	06/22/16 11:58	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	0.195	U	0.119	0.120	1.33	0.227	pCi/g	06/16/16 02:21	06/22/16 11:58	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Re	92		30 - 110	06/16/16 02:21	06/22/16 11:58	1

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

Lab Sample ID: MB 160-256606/1-A
Matrix: Solid
Analysis Batch: 257603

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 256606

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Technetium 99	ND		0.000052	0.000016	mg/Kg		06/16/16 02:21	06/22/16 10:32	1

Lab Sample ID: LCS 160-256606/2-A
Matrix: Solid
Analysis Batch: 257603

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 256606

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Technetium 99			0.00119	0.00119		mg/Kg		100	80 - 120		

Lab Sample ID: 160-17803-A-1-D MS
Matrix: Solid
Analysis Batch: 257603

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 256606

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Technetium 99	0.00021		0.00146	0.00171		mg/Kg	☼	103	75 - 125		

Lab Sample ID: 160-17803-A-1-E MSD
Matrix: Solid
Analysis Batch: 257603

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 256606

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Technetium 99	0.00021		0.00146	0.00166		mg/Kg	☼	100	75 - 125	3	30

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

Lab Sample ID: MB 160-256606/1-A
Matrix: Solid
Analysis Batch: 257604

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 256606

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Technetium 99	0.05901	U	0.0201	0.0208	1.04	0.179	pCi/g	06/16/16 02:21	06/22/16 10:32	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Re	*95*		*30 - 110*	*06/16/16 02:21*	*06/22/16 10:32*	*1*

Lab Sample ID: LCS 160-256606/2-A
Matrix: Solid
Analysis Batch: 257604

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 256606

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Technetium 99			20.3	20.40		2.04	1.03	0.176	pCi/g	100	80 - 120		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Re	*97*		*30 - 110*

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

Lab Sample ID: 160-17803-A-1-D MS
Matrix: Solid
Analysis Batch: 257604

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 256606

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Technetium 99	3.51		25.1	29.26		2.96	1.54	0.264	pCi/g	103	75 - 125

Carrier	*MS %Yield*	*MS Qualifier*	*Limits*
Re	*80*		*30 - 110*

Lab Sample ID: 160-17803-A-1-E MSD
Matrix: Solid
Analysis Batch: 257604

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 256606

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	3.51		25.1	28.47		2.74	1.35	0.232	pCi/g	100	75 - 125	0.14	1

Carrier	*MSD %Yield*	*MSD Qualifier*	*Limits*
Re	*91*		*30 - 110*

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

Lab Sample ID: MB 160-256918/1-A
Matrix: Solid
Analysis Batch: 256969

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 256918

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Actinium 228	0.02560	U	0.0288	0.0289		0.0421	pCi/g	06/17/16 14:18	06/18/16 13:10	1
Americium 241	0.004254	U	0.0236	0.0236		0.0406	pCi/g	06/17/16 14:18	06/18/16 13:10	1
Bismuth 212	0.05347	U	0.103	0.103		0.179	pCi/g	06/17/16 14:18	06/18/16 13:10	1
Bismuth 214	0.002504	U	0.00662	0.00662		0.0592	pCi/g	06/17/16 14:18	06/18/16 13:10	1
Lead 212	-0.01658	U	0.0162	0.0164		0.0368	pCi/g	06/17/16 14:18	06/18/16 13:10	1
Lead 214	-0.001093	U	0.0201	0.0201		0.0362	pCi/g	06/17/16 14:18	06/18/16 13:10	1
Potassium 40	-0.1303	U	0.108	0.109		0.281	pCi/g	06/17/16 14:18	06/18/16 13:10	1
Protactinium 231	-0.03280	U	0.485	0.485		0.833	pCi/g	06/17/16 14:18	06/18/16 13:10	1
Radium 226	0.002504	U	0.00662	0.00662	1.00	0.0592	pCi/g	06/17/16 14:18	06/18/16 13:10	1
Thorium 234	-0.1307	U	0.216	0.216	1.00	0.403	pCi/g	06/17/16 14:18	06/18/16 13:10	1
Uranium 235	-0.004954	U	0.0103	0.0103		0.149	pCi/g	06/17/16 14:18	06/18/16 13:10	1
Protactinium 234m	0.3038	U	0.938	0.939		2.43	pCi/g	06/17/16 14:18	06/18/16 13:10	1
Thorium 232	0.02560	U	0.0288	0.0289		0.0421	pCi/g	06/17/16 14:18	06/18/16 13:10	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*	*06/17/16 14:18*	*06/18/16 13:10*	*1*

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

Lab Sample ID: LCS 160-256918/2-A
Matrix: Solid
Analysis Batch: 256971

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 256918

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Americium 241			101	99.45		10.3		0.490	pCi/g	99	87 - 116		
Cesium 137			33.9	33.33		3.49	0.200	0.171	pCi/g	98	87 - 120		
Cobalt 60			30.8	29.83		3.01		0.0962	pCi/g	97	87 - 115		

Lab Sample ID: 160-17803-A-1-G DU
Matrix: Solid
Analysis Batch: 256969

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 256918

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Actinium 228	1.03			0.9663		0.152		0.103	pCi/g			0.17	1
Americium 241	-0.0363	U		0.01542	U	0.0877		0.146	pCi/g			0.27	1
Bismuth 212	1.51			1.100		0.335		0.279	pCi/g			0.52	1
Bismuth 214	0.632			0.6743		0.115		0.0650	pCi/g			0.19	1
Lead 212	0.853			0.8941		0.131		0.0484	pCi/g			0.16	1
Lead 214	0.723			0.7699		0.106		0.0569	pCi/g			0.21	1
Potassium 40	16.3			18.65		2.19		0.345	pCi/g			0.56	1
Protactinium 231	-0.477	U		-0.3939	U	1.20		2.00	pCi/g			0.03	1
Radium 226	0.632			0.6743		0.115	1.00	0.0650	pCi/g			0.19	1
Thorium 234	1.59			1.556		0.520	1.00	0.749	pCi/g			0.03	1
Uranium 235	-0.130	U		0.2075	U	0.167		0.267	pCi/g			0.89	1
Protactinium 234m	3.65	U		6.159		2.18		1.51	pCi/g			0.39	1
Thorium 232	1.03			0.9663		0.152		0.103	pCi/g			0.17	1

Other Detected Radionuclides	*Sample Result*	*Sample Qual*		*DU Result*	*DU Qual*	*Total Uncert. (2σ+/-)*	*RL*	*MDC*	*Unit*			*RER*	*RER Limit*
Tl-208	*0.326*			*0.2982*		*0.0523*		*0.0325*	*pCi/g*			*0.26*	*1*

Metals

Prep Batch: 256606

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-17803-A-1-D MS	Matrix Spike	Total/NA	Solid	None	
160-17803-A-1-E MSD	Matrix Spike Duplicate	Total/NA	Solid	None	
160-17806-1	L12-01-25-P-S-B-00	Total/NA	Solid	None	
160-17806-2	L12-02-25-P-S-B-00	Total/NA	Solid	None	
160-17806-3	L12-03-25-P-S-B-00	Total/NA	Solid	None	
160-17806-4	L12-03-26-P-S-B-00	Total/NA	Solid	None	
160-17806-5	L12-04-25-P-S-B-00	Total/NA	Solid	None	
160-17806-6	L12-05-25-P-S-B-00	Total/NA	Solid	None	
160-17806-7	L12-06-25-P-S-B-00	Total/NA	Solid	None	
160-17806-8	L12-07-25-P-S-B-00	Total/NA	Solid	None	
160-17806-9	L12-08-25-P-S-B-00	Total/NA	Solid	None	
160-17806-10	L12-09-25-P-S-B-00	Total/NA	Solid	None	
160-17806-11	L12-09-26-P-S-B-00	Total/NA	Solid	None	
LCS 160-256606/2-A	Lab Control Sample	Total/NA	Solid	None	
MB 160-256606/1-A	Method Blank	Total/NA	Solid	None	

Analysis Batch: 257603

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-17803-A-1-D MS	Matrix Spike	Total/NA	Solid	6020A	256606
160-17803-A-1-E MSD	Matrix Spike Duplicate	Total/NA	Solid	6020A	256606
160-17806-1	L12-01-25-P-S-B-00	Total/NA	Solid	6020A	256606
160-17806-2	L12-02-25-P-S-B-00	Total/NA	Solid	6020A	256606
160-17806-3	L12-03-25-P-S-B-00	Total/NA	Solid	6020A	256606
160-17806-4	L12-03-26-P-S-B-00	Total/NA	Solid	6020A	256606
160-17806-5	L12-04-25-P-S-B-00	Total/NA	Solid	6020A	256606
160-17806-6	L12-05-25-P-S-B-00	Total/NA	Solid	6020A	256606
160-17806-7	L12-06-25-P-S-B-00	Total/NA	Solid	6020A	256606
160-17806-8	L12-07-25-P-S-B-00	Total/NA	Solid	6020A	256606
160-17806-9	L12-08-25-P-S-B-00	Total/NA	Solid	6020A	256606
160-17806-10	L12-09-25-P-S-B-00	Total/NA	Solid	6020A	256606
160-17806-11	L12-09-26-P-S-B-00	Total/NA	Solid	6020A	256606
LCS 160-256606/2-A	Lab Control Sample	Total/NA	Solid	6020A	256606
MB 160-256606/1-A	Method Blank	Total/NA	Solid	6020A	256606

General Chemistry

Analysis Batch: 256604

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-17806-1	L12-01-25-P-S-B-00	Total/NA	Solid	Moisture	
160-17806-2	L12-02-25-P-S-B-00	Total/NA	Solid	Moisture	
160-17806-3	L12-03-25-P-S-B-00	Total/NA	Solid	Moisture	
160-17806-4	L12-03-26-P-S-B-00	Total/NA	Solid	Moisture	
160-17806-5	L12-04-25-P-S-B-00	Total/NA	Solid	Moisture	
160-17806-6	L12-05-25-P-S-B-00	Total/NA	Solid	Moisture	
160-17806-7	L12-06-25-P-S-B-00	Total/NA	Solid	Moisture	
160-17806-8	L12-07-25-P-S-B-00	Total/NA	Solid	Moisture	
160-17806-9	L12-08-25-P-S-B-00	Total/NA	Solid	Moisture	
160-17806-10	L12-09-25-P-S-B-00	Total/NA	Solid	Moisture	
160-17806-11	L12-09-26-P-S-B-00	Total/NA	Solid	Moisture	
160-17806-11 DU	L12-09-26-P-S-B-00	Total/NA	Solid	Moisture	

Rad

Leach Batch: 256533

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-17803-A-1-G DU	Duplicate	Total/NA	Solid	Dry and Grind	
160-17806-1	L12-01-25-P-S-B-00	Total/NA	Solid	Dry and Grind	
160-17806-2	L12-02-25-P-S-B-00	Total/NA	Solid	Dry and Grind	
160-17806-3	L12-03-25-P-S-B-00	Total/NA	Solid	Dry and Grind	
160-17806-4	L12-03-26-P-S-B-00	Total/NA	Solid	Dry and Grind	
160-17806-5	L12-04-25-P-S-B-00	Total/NA	Solid	Dry and Grind	
160-17806-6	L12-05-25-P-S-B-00	Total/NA	Solid	Dry and Grind	
160-17806-7	L12-06-25-P-S-B-00	Total/NA	Solid	Dry and Grind	
160-17806-8	L12-07-25-P-S-B-00	Total/NA	Solid	Dry and Grind	
160-17806-9	L12-08-25-P-S-B-00	Total/NA	Solid	Dry and Grind	
160-17806-10	L12-09-25-P-S-B-00	Total/NA	Solid	Dry and Grind	
160-17806-11	L12-09-26-P-S-B-00	Total/NA	Solid	Dry and Grind	

Prep Batch: 256606

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-17803-A-1-D MS	Matrix Spike	Total/NA	Solid	None	
160-17803-A-1-E MSD	Matrix Spike Duplicate	Total/NA	Solid	None	
160-17806-1	L12-01-25-P-S-B-00	Total/NA	Solid	None	
160-17806-2	L12-02-25-P-S-B-00	Total/NA	Solid	None	
160-17806-3	L12-03-25-P-S-B-00	Total/NA	Solid	None	
160-17806-4	L12-03-26-P-S-B-00	Total/NA	Solid	None	
160-17806-5	L12-04-25-P-S-B-00	Total/NA	Solid	None	
160-17806-6	L12-05-25-P-S-B-00	Total/NA	Solid	None	
160-17806-7	L12-06-25-P-S-B-00	Total/NA	Solid	None	
160-17806-8	L12-07-25-P-S-B-00	Total/NA	Solid	None	
160-17806-9	L12-08-25-P-S-B-00	Total/NA	Solid	None	
160-17806-10	L12-09-25-P-S-B-00	Total/NA	Solid	None	
160-17806-11	L12-09-26-P-S-B-00	Total/NA	Solid	None	
LCS 160-256606/2-A	Lab Control Sample	Total/NA	Solid	None	
MB 160-256606/1-A	Method Blank	Total/NA	Solid	None	

Prep Batch: 256918

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-17803-A-1-G DU	Duplicate	Total/NA	Solid	Fill_Geo-0	256533
160-17806-1	L12-01-25-P-S-B-00	Total/NA	Solid	Fill_Geo-0	256533
160-17806-2	L12-02-25-P-S-B-00	Total/NA	Solid	Fill_Geo-0	256533
160-17806-3	L12-03-25-P-S-B-00	Total/NA	Solid	Fill_Geo-0	256533
160-17806-4	L12-03-26-P-S-B-00	Total/NA	Solid	Fill_Geo-0	256533
160-17806-5	L12-04-25-P-S-B-00	Total/NA	Solid	Fill_Geo-0	256533
160-17806-6	L12-05-25-P-S-B-00	Total/NA	Solid	Fill_Geo-0	256533
160-17806-7	L12-06-25-P-S-B-00	Total/NA	Solid	Fill_Geo-0	256533
160-17806-8	L12-07-25-P-S-B-00	Total/NA	Solid	Fill_Geo-0	256533
160-17806-9	L12-08-25-P-S-B-00	Total/NA	Solid	Fill_Geo-0	256533
160-17806-10	L12-09-25-P-S-B-00	Total/NA	Solid	Fill_Geo-0	256533
160-17806-11	L12-09-26-P-S-B-00	Total/NA	Solid	Fill_Geo-0	256533
LCS 160-256918/2-A	Lab Control Sample	Total/NA	Solid	Fill_Geo-0	
MB 160-256918/1-A	Method Blank	Total/NA	Solid	Fill_Geo-0	

Tracer/Carrier Summary

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

TestAmerica Job ID: 160-17806-1

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)
160-17803-A-1-D MS	Matrix Spike	80
160-17803-A-1-E MSD	Matrix Spike Duplicate	91
160-17806-1	L12-01-25-P-S-B-00	89
160-17806-2	L12-02-25-P-S-B-00	91
160-17806-3	L12-03-25-P-S-B-00	86
160-17806-4	L12-03-26-P-S-B-00	91
160-17806-5	L12-04-25-P-S-B-00	94
160-17806-6	L12-05-25-P-S-B-00	92
160-17806-7	L12-06-25-P-S-B-00	92
160-17806-8	L12-07-25-P-S-B-00	94
160-17806-9	L12-08-25-P-S-B-00	86
160-17806-10	L12-09-25-P-S-B-00	93
160-17806-11	L12-09-26-P-S-B-00	92
LCS 160-256606/2-A	Lab Control Sample	97
MB 160-256606/1-A	Method Blank	95

Tracer/Carrier Legend

Re = Re