

Westinghouse Electric Company Nuclear Fuel Columbia Fuel Fabrication Facility 5801 Bluff Road Hopkins, South Carolina 29061 USA

SCDHEC, BLWM Kim Kuhn 2600 Bull Street Columbia, SC 29201 Direct tel: 803.647.1920 Direct fax: 803.695.3964

e-mail: joynerdp@westinghouse.com

Your ref:

Our ref: LTR-RAC-20-59

July 8, 2020

Subject: June 2020 CA Progress Report

Ms. Kuhn:

In accordance with Item 19 of Consent Agreement (CA) 19-02-HW, this progress report is being submitted to you, including the following requested information:

- (a) a brief description of the actions which Westinghouse has taken toward achieving compliance with the Consent Agreement during the previous month;
- (b) results of sampling and tests, in tabular summary format received by Westinghouse during the reporting period;
- (c) a brief description of all actions which are scheduled for the next month to achieve compliance with the Consent Agreement, and other information relating to the progress of the work as deemed necessary or requested by the Department; and
- (d) information regarding the percentage of work completed and any delays encountered or anticipated that may affect the approved schedule for implementation of the terms of the Consent Agreement, and a description of efforts made to mitigate delays or avoid anticipated delays.

In response to the above requirements, the following is being reported to the Department since the last progress report on **June 15, 2020**:

(a) Actions during the previous month:

Westinghouse began implementation of the Final Remedial Investigation (RI) Work Plan on 6/10/19. To comply with **Item 4** of the CA, the following actions were completed this month.

- Submitted the East Lagoon Closure Plan in LTR-RAC-20-57 dated June 30, 2020
- Continued preparing the report for the Tc-99 Source Investigation Work Plan Results Phase I and Phase II
- Completed the following activities to support the Southern Storage Area (SSA) Operable Unit (OU) Work Plan:

- o Removed and packaged for off-site shipment as low-level radioactive waste (LLRW) 3 intermodal containers from the Southern Storage Area (C-41, C-56, C-60)
 - Conducted radiological soil surface surveys under all removed containers.
 The surface surveys did not indicate the need to remove soil.
 - Collected soil samples underneath the containers on June 29, 2020. The sampling included bias VOC samples underneath C-56 and C-60 where previous contamination was documented within the intermodal containers.
- o Continued wet combustible material (WCM) drum removal from 3 intermodal containers (C-64, C-19, and C-54) that have been on hold. Drums potentially containing perchloroethylene were segregated and stored.
 - Intermodal container **C-64** was safely emptied of its contents on 6/17/2020.
 - Health physics radiological surveys of the pallets and the sealand flooring indicated no environmental impact.
 - Intermodal container **C-19** was safely emptied of its contents on 6/26/2020.
 - Health physics radiological surveys of the pallets and the sealand flooring indicated no environmental impact.
 - Intermodal container C-54, was safely emptied of its contents on 7/1/2020.
 - Health physics surveys of the pallets indicated no impact to the environment. A subsequent survey of the sealand flooring indicated a small area of impact towards the back, measuring approximately 1foot in diameter. The impact was quantified at 1,000 dpm/100cm² for alpha contamination.
- o Seven (7) of the original eleven (11) intermodal containers with drums potentially containing perchloroethylene have been emptied since April 14, 2020.

(b) Results of sampling and tests:

- Tabulated results of Hydrofluoric Acid Spiking Station #1 (HFSS#1) Soil Sampling conducted May 4-6, 2020 are included as **Attachment A**. The associated laboratory reports are included as **Attachment B**.
- (c) Brief description of all actions which are scheduled for the next month:
 - In accordance with **Item 4** of the CA, Westinghouse will continue to implement the Work Plan to include the following actions:
 - O Submit *Final* Interim Remedial Investigation Data Summary Report
 - Submit the Hydrofluoric Acid Spiking Station #1 (HFSS#1) Soil Sampling Report and associated Technical Basis Document
 - Submit an assessment report of the Tc-99 Source Investigation Work Plan Results -Phase I and Phase II
 - Host a webinar to discuss and propose the scope for the RI Phase II Work Plan
 - o Continue WCM drum removal from the 4 remaining intermodal containers; segregate and store drums potentially containing perchloroethylene
 - Submit tabulated data from the Southern Storage Area Soil Sampling conducted on June 29, 2020 for intermodal containers C-41, C-56, C-60
- (d) Percentage of work completed and any delays encountered or anticipated:

• Assessment activities identified in the Final Remedial Investigation Work Plan and associated addendums have been completed, with a summary report submitted.

Respectfully,

Diana P. Joyner

Principal Environmental Engineer Westinghouse Electric Company, CFFF

803.497.7062 (m)

Cc: N. Parr, Environmental Manager

J. Ferguson, EH&S Manager

J. Grant, AECOM Project Manager

ENOVIA Records

Hydrofluoric Acid Spiking Station #1 (HFSS#1) Soil Sampling - Tabulated

Table 1 Westinghouse Columbia Fuel Fabrication Facility HF Spiking Station #1 Soil Analytical Results

			Analyte	рН	Fluoride	Nitrate	Technetium-99	Uranium-233/234	Uranium-235/236	Uranium-238
			Unit	SU	mg/kg	mg/kg	pCi/g	pCi/g	pCi/g	pCi/g
	Sample									
Sample ID	Depth	Depth BSS	Sample Date							
HF1-B1-(1-2)	1 - 2 ft	1 - 2 ft	5/4/2020	4.81	28.3	180	0.447 U	13.2	0.828	3.22
HF1-B1-(2-4)	2 - 4 ft	2 - 4 ft	5/4/2020	4.02	706	707	0.88 U	8,310	465	1,620
HF1-B1-(4-6)	4 - 6 ft	4 - 6 ft	5/4/2020	3.88	1500	1240	0.0772 U	10,100	436	1,680
HF1-B1-(6-8)	6 - 8 ft	6 - 8 ft	5/4/2020	4.03	936	971	0.871 U	4,500	252	802
HF1-B1-(8-10)	8 - 10 ft	8 - 10 ft	5/4/2020	4.26	96.4	303	0.656 U	1,440	79.4	263
HF1-B2-(1-2)	1 - 2 ft	1 - 2 ft	5/5/2020	6.38	1.28	76.5	0	4.65	0.455	1.39
HF1-B2-(2-4)	2 - 4 ft	2 - 4 ft	5/5/2020	5.16	0.623 J	90.8	0	0.847	0.107 U	0.785
HF1-B2-(4-6)	4 - 6 ft	4 - 6 ft	5/5/2020	6.05	1.09	94	0	1.5	0.0943 U	0.955
HF1-B2-(6-8)	6 - 8 ft	6 - 8 ft	5/5/2020	5.98	1.1	45.9	0.00658 U	0.926	0.0131 U	0.218
HF1-B2-(8-10)	8 - 10 ft	8 - 10 ft	5/5/2020	6.17	0.8 J	23.4	0	1.52	0.0407 U	0.421
HF1-B3-(1-2)	1 - 2 ft	1 - 2 ft	5/5/2020	4.82	6.24	285	0	3.52	0.0795 U	1.13
HF1-B3-(2-4)	2 - 4 ft	2 - 4 ft	5/5/2020	4.08	683	589	0	3,510	159	582
HF1-B3-(4-6)	4 - 6 ft	4 - 6 ft	5/5/2020	3.96	1020	1290	0	5,600	264	948
HF1-B3-(6-8)	6 - 8 ft	6 - 8 ft	5/5/2020	4.11	546	700	0	2,790	171	632
HF1-B3-(8-10)	8 - 10 ft	8 - 10 ft	5/5/2020	4.25	343	398	0	2,600	139	636
HF1-B4-(1-2)	1 - 2 ft	1 - 2 ft	5/6/2020	5.46	65.8	69.3	0	563	29	110
HF1-B4-(2-4)	2 - 4 ft	2 - 4 ft	5/6/2020	3.97	335	70.4	0.171 U	511	22.1	105
HF1-B4-(4-5.33)	4 - 5.33 ft	4 - 5.33 ft	5/6/2020	3.29	359	82.5	2.6 U	700	31.9	139
HF1-B5-(1-2)	1 - 2 ft	1 - 2 ft	5/6/2020	5.07	1.55	232	0	9.36	0.396	2.56
HF1-B5-(2-4)	2 - 4 ft	2 - 4 ft	5/6/2020	4.39	135	288	0	1,520	82.8	246
HF1-B5-(4-6)	4 - 6 ft	4 - 6 ft	5/6/2020	4.28	21.7	440	0	1,250	50.9	224
HF1-B5-(6-8)	6 - 8 ft	6 - 8 ft	5/6/2020	5.67	1.11	150	0	9.67	0.587	1.61
HF1-B5-(8-10)	8 - 10 ft	8 - 10 ft	5/6/2020	4.35	0.879 J	54.3	0	2.65	0.294	1.02
HF1-B6-(0-2)	0 - 2 ft	0-1.90 ft	5/6/2020	8.09	NA	NA	NA	NA	NA	NA
HF1-B6-(2-4)	2 - 4 ft	1.90-3.79 ft	5/6/2020	6.35	5.67	14.5	0	403	19.3	78.5
HF1-B6-(4-5.67)	4 - 5.67 ft	3.79-5.37 ft	5/6/2020	6.22	43.8	38	0	226	9.66	41.6
HF1-B7-(0-2)	0 - 2 ft	0-1.88 ft	5/6/2020	4.72	40.4	127	0	2,140	93.5	313
HF1-B7-(2-4)	2 - 4 ft	1.88-3.75 ft	5/6/2020	4.41	158	178	3.15 U	2,020	92	355
HF1-B7-(4-5.42)	4 - 5.42 ft	3.75-5.08 ft	5/6/2020	5.21	121	83	0.627 U	799	46.5	158
HF1-B7-REFUSAL	5.42 - 5.42 ft	5.08 ft	5/6/2020	4.58	NA	NA	NA	NA	NA	NA
	Remedial A	ction Screening	g Level		3,100	130,000	88,400	3,310	39	179

Notes:

SU - standard units

ft - feet

mg/kg - milligram per kilogram pCi/g - picocuries per gram BSS - below soil surface U - not detected above the method detection concentration Shaded cells exceed the remedial action screening level

Attachment B

Hydrofluoric Acid Spiking Station #1 (HFSS#1) Soil Sampling - GEL Analytical Results

GEL Analytical Results Sampling conducted: May 4, 2020 GEL Work Order: 510581 Report Date: May 28, 2020

GEL Analytical Results Sampling conducted: May 5, 2020 GEL Work Order: 510757 Report Date: June 1, 2020

GEL Analytical Results Sampling conducted: May 6, 2020 GEL Work Order: 510807 Report Date: June 4, 2020











PO Box 30712 Charleston, SC 29417 2040 Savage Road Charleston, SC 29407 P 843.556.8171 F 843.766.1178

gel.com

May 28, 2020

Ms. Cynthia Logsdon Westinghouse Electric Company, LLC PO Drawer R Columbia, South Carolina 29205

Re: Soil and Vegetation Analysis

Work Order: 510581

Dear Ms. Logsdon:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on May 05, 2020. This original data report has been prepared and reviewed in accordance with GEL's standard operating procedures.

Test results for NELAP or ISO 17025 accredited tests are verified to meet the requirements of those standards, with any exceptions noted. The results reported relate only to the items tested and to the sample as received by the laboratory. These results may not be reproduced except as full reports without approval by the laboratory. Copies of GEL's accreditations and certifications can be found on our website at www.gel.com.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at (843) 556-8171, ext. 4707.

Sincerely,

Katelyn Gray Project Manager

Purchase Order: 4500799254

Enclosures



2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis Report for

WNUC008 Westinghouse Electric Co, LLC (4500775170) Client SDG: 510581 GEL Work Order: 510581

The Qualifiers in this report are defined as follows:

- * A quality control analyte recovery is outside of specified acceptance criteria
- ** Analyte is a Tracer compound
- ** Analyte is a surrogate compound
- H Analytical holding time was exceeded
- U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

The designation ND, if present, appears in the result column when the analyte concentration is not detected above the limit as defined in the 'U' qualifier above.

This data report has been prepared and reviewed in accordance with GEL Laboratories LLC standard operating procedures. Please direct any questions to your Project Manager, Katelyn Gray.

	Katelyn Dray	
Reviewed by	V	

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Project:

Client ID:

Certificate of Analysis

Report Date: May 28, 2020

WNUC00821

1 RXB5 05/07/20 1446 1994735

3

WNUC008

Company: Westinghouse Electric Company, LLC

Address: PO Drawer R

Columbia, South Carolina 29205

Contact: Ms. Cynthia Logsdon
Project: Soil and Vegetation Analysis

Client Sample ID: HF1-B1-(1-2) Sample ID: 510581001

Matrix: Soil

Collect Date: 04-MAY-20 13:13 Receive Date: 05-MAY-20

Collector: Client Moisture: 7.46%

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time Ba	tch Method
Ion Chromatography	y										
SW846 9056A Fluo	ride and Nitrate	"Dry Weight Corrected"									
Fluoride		28.3	0.366	1.08	mg/kg	9.95	1	JLD1	05/05/20	1932 1994	861 1
Nitrate-N		180	1.77	5.38	mg/kg	9.95	5	JLD1	05/06/20	0110 1994	861 2
Titration and Ion Ar	nalysis										
SW9045D Corrosiv	ity (pH<2or>14)	"As Received"									

0.100

SU

Corrosivity H 4.81

The following Pre	ep Methods were performed:					
Method	Description	Analyst	Date	Time	Prep Batch	
SW846 9056A	SW846 9056A Total Anions in Soil	CI2	05/05/20	1814	1994849	

0.0100

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 9056A	•
2	SW846 9056A	

3 SW846 9045D

Notes:

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

MDC: Minimum Detectable Concentration SQL: Sample Quantitation Limit

Page 3 of 26 SDG: 510581

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: May 28, 2020

WNUC00821

WNUC008

Company: Westinghouse Electric Company, LLC

Address: PO Drawer R

Columbia, South Carolina 29205

Contact: Ms. Cynthia Logsdon

Project: Soil and Vegetation Analysis

Client Sample ID: HF1-B1-(2-4) Sample ID: 510581002

Matrix: Soil

Collect Date: 04-MAY-20 13:43 Receive Date: 05-MAY-20

Collector: Client Moisture: 7.57%

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst Date	Time Batch	Method
Ion Chromatography										
SW846 9056A Fluorio	de and Nitrate '	'Dry Weight Corrected"								
Fluoride		706	7.38	21.7	mg/kg	10.0	20	JLD1 05/06/20	0243 1994861	1
Nitrate-N		707	7.16	21.7	mg/kg	10.0	20			
Titration and Ion Ana	lysis									
SW9045D Corrosivity	y (pH<2or>14)	"As Received"								
Corrosivity	Н	4.02	0.0100	0.100	SU		1	RXB5 05/07/20	1448 1994735	2

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 9056A	SW846 9056A Total Anions in Soil	CJ2	05/05/20	1814	1994849

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 9056A	
2	SW846 9045D	

Notes:

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

MDC: Minimum Detectable Concentration SQL: Sample Quantitation Limit

Page 4 of 26 SDG: 510581

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: May 28, 2020

WNUC00821

RXB5 05/07/20 1449 1994735

2

WNUC008

Company: Westinghouse Electric Company, LLC

Address: PO Drawer R

Columbia, South Carolina 29205

Contact: Ms. Cynthia Logsdon

Project: Soil and Vegetation Analysis

Client Sample ID: HF1-B1-(4-6) Sample ID: 510581003

Matrix: Soil

Collect Date: 04-MAY-20 14:58 Receive Date: 05-MAY-20

Collector: Client Moisture: 11.8%

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time Ba	tch	Method
Ion Chromatography	7											
SW846 9056A Fluor	ride and Nitrate	"Dry Weight Corrected"										
Fluoride		1500	19.1	56.1	mg/kg	9.90	50	JLD1	05/06/20	0314 1994	1861	1
Nitrate-N		1240	18.5	56.1	mg/kg	9.90	50					
Titration and Ion An	alysis											
SW9045D Corrosivi	tv (pH<2or>14)	"As Received"										

0.100

SU

Corrosivity H 3.88

The following Prep Methods were performed:MethodDescriptionAnalystDateTimePrep BatchSW846 9056ASW846 9056A Total Anions in SoilCJ205/05/2018141994849

0.0100

The following Analytical Methods were performed:

Method Description Analyst Comments

SW846 9056A

Analyst Comments

2 SW846 9045D

Notes:

Column headers are defined as follows:

DF: Dilution Factor Lc/LC: Critical Level
DL: Detection Limit PF: Prep Factor
MDA: Minimum Detectable Activity RL: Reporting Limit

MDC: Minimum Detectable Concentration SQL: Sample Quantitation Limit

Page 5 of 26 SDG: 510581

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: May 28, 2020

WNUC00821

WNUC008

Company: Westinghouse Electric Company, LLC

Address: PO Drawer R

Columbia, South Carolina 29205

Contact: Ms. Cynthia Logsdon

Project: Soil and Vegetation Analysis

Client Sample ID: HF1-B1-(6-8) Sample ID: 510581004

Matrix: Soil

Collect Date: 04-MAY-20 16:10 Receive Date: 05-MAY-20

Collector: Client Moisture: 11.6%

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time	Batch	Method
Ion Chromatography												
SW846 9056A Fluoride	and Nitrate '	'Dry Weight Corrected"										
Fluoride		936	9.45	27.8	mg/kg	9.83	25	JLD1	05/06/20	0345	1994861	1
Nitrate-N		971	9.17	27.8	mg/kg	9.83	25					
Titration and Ion Analys	sis											
SW9045D Corrosivity (pH<2or>14)	"As Received"										
Corrosivity	Н	4.03	0.0100	0.100	SU		1	RXB5	05/07/20	1450	1994735	2

The following Prep Methods were performed:

MethodDescriptionAnalystDateTimePrep BatchSW846 9056ASW846 9056A Total Anions in SoilCJ205/05/2018141994849

The following Analytical Methods were performed:

Method Description Analyst Comments

SW846 9056A

Analyst Comments

2 SW846 9045D

Notes:

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

MDC: Minimum Detectable Concentration SQL: Sample Quantitation Limit

Page 6 of 26 SDG: 510581

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: May 28, 2020

WNUC00821

WNUC008

Company: Westinghouse Electric Company, LLC

Address: PO Drawer R

Columbia, South Carolina 29205

Contact: Ms. Cynthia Logsdon

Project: Soil and Vegetation Analysis

Client Sample ID: HF1-B1-(8-10) Sample ID: 510581005

Matrix: Soil

Collect Date: 04-MAY-20 17:02 Receive Date: 05-MAY-20

Collector: Client Moisture: 12.8%

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time	Batch	Method
Ion Chromatography												
SW846 9056A Fluoride	and Nitrate '	'Dry Weight Corrected"										
Fluoride		96.4	3.90	11.5	mg/kg	10.0	10	JLD1	05/06/20	0415	1994861	1
Nitrate-N		303	3.79	11.5	mg/kg	10.0	10					
Titration and Ion Analys	sis											
SW9045D Corrosivity (pH<2or>14)	"As Received"										
Corrosivity	Н	4.26	0.0100	0.100	SU		1	RXB5	05/07/20	1451	1994735	2

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 9056A	SW846 9056A Total Anions in Soil	CJ2	05/05/20	1814	1994849

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 9056A	
2	SW846 9045D	

Notes:

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

MDC: Minimum Detectable Concentration SQL: Sample Quantitation Limit

Page 7 of 26 SDG: 510581

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: May 28, 2020

WNUC00821

WNUC008

Company: Westinghouse Electric Company, LLC

Address: PO Drawer R

Columbia, South Carolina 29205

Contact: Ms. Cynthia Logsdon

Project: Soil and Vegetation Analysis

7.46%

Client Sample ID: HF1-B1-(1-2) Sample ID: 510581001

Matrix: Soil

Moisture:

Collect Date: 04-MAY-20 13:13

Receive Date: 05-MAY-20 Collector: Client

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF An	alyst Date	Time Batch	Method
Rad Alpha Spec Analys	is										
Alphaspec U, Soil/Veg	"Dry Weight	Correcte	d"								
Uranium-233/234		13.2	+/-0.986	0.221	0.500	pCi/g		HA	KB 05/09/20	1307 1994680) 1
Uranium-235/236		0.828	+/-0.286	0.186	0.500	pCi/g					
Uranium-238		3.22	+/-0.486	0.111	0.500	pCi/g					
Rad Liquid Scintillation	Analysis										
Liquid Scint Tc99, Soil	"As Received	d"									
Technetium-99	U	0.447	+/-1.94	3.34	5.00	pCi/g		JJ3	05/10/20	0542 1994733	3 2
The following Prep Met	hods were pe	erformed:									
Method	Description	1			Analyst	Date		Time	Prep Batch		
Dry Soil Prep	Dry Soil Prep	GL-RAD-	A-021		CXC1	05/05/20		1018	1994664		

The following Analytical Methods were performed:

Method Description Analyst Comments

DOE EML HASL-300, U-02-RC Modified
DOE EML HASL-300, Tc-02-RC Modified

Surrogate/Tracer RecoveryTestResultNominalRecovery%Acceptable LimitsUranium-232 TracerAlphaspec U, Soil/Veg "Dry Weight Corrected"81.9(15%-125%)Technetium-99m TracerLiquid Scint Tc99, Soil "As Received"97.3(15%-125%)

Notes:

Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor Lc/LC: Critical Level
DL: Detection Limit PF: Prep Factor
MDA: Minimum Detectable Activity RL: Reporting Limit

MDC: Minimum Detectable Concentration SQL: Sample Quantitation Limit

Page 8 of 26 SDG: 510581

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: May 28, 2020

WNUC00821

WNUC008

Company: Westinghouse Electric Company, LLC

Address: PO Drawer R

Columbia, South Carolina 29205

Contact: Ms. Cynthia Logsdon

Project: Soil and Vegetation Analysis

Client Sample ID: HF1-B1-(2-4) Sample ID: 510581002

Matrix: Soil

Collect Date: 04-MAY-20 13:43

Receive Date: 05-MAY-20 Collector: Client Moisture: 7.57%

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF An	alyst Date	Time Batc	n Method
Rad Alpha Spec Analys	is										
Alphaspec U, Soil/Veg	"Dry Weight	Correcte	d"								
Uranium-233/234		8310	+/-213	11.4	0.500	pCi/g		HA	KB 05/11/20	1159 19959	2 1
Uranium-235/236		465	+/-56.2	5.28	0.500	pCi/g					
Uranium-238		1620	+/-94.3	8.12	0.500	pCi/g					
Rad Liquid Scintillation	Analysis										
Liquid Scint Tc99, Soil	"As Receive	d"									
Technetium-99	U	0.880	+/-2.19	3.75	5.00	pCi/g		JJ3	05/10/20	0603 199473	33 2
The following Prep Met	thods were pe	erformed:									
Method	Description	1			Analyst	Date		Time	Prep Batch		
Dry Soil Prep	Dry Soil Prep	GL-RAD-	A-021		CXC1	05/05/20		1018	1994664		

The following Analytical Methods were	nerformed:
---------------------------------------	------------

Method	Description	Analyst Comments

DOE EML HASL-300, U-02-RC Modified
DOE EML HASL-300, Tc-02-RC Modified

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Uranium-232 Tracer	Alphaspec U, Soil/Veg "Dry Weight Corrected"			62	(15%-125%)
Technetium-99m Tracer	Liquid Scint Tc99, Soil "As Received"			94.5	(15%-125%)

Notes:

Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor Lc/LC: Critical Level
DL: Detection Limit PF: Prep Factor
MDA: Minimum Detectable Activity RL: Reporting Limit

MDC: Minimum Detectable Concentration SQL: Sample Quantitation Limit

Page 9 of 26 SDG: 510581

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: May 28, 2020

WNUC00821

WNUC008

Company: Westinghouse Electric Company, LLC

Address: PO Drawer R

Columbia, South Carolina 29205

Contact: Ms. Cynthia Logsdon

Project: Soil and Vegetation Analysis

Client Sample ID: HF1-B1-(4-6) Sample ID: 510581003

Matrix: Soil

Collect Date: 04-MAY-20 14:58 Receive Date: 05-MAY-20

Collector: Client Moisture: 11.8%

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF A	nalyst Date	Time Batch	Method
Rad Alpha Spec Anal	lysis										
Alphaspec U, Soil/Ve	eg "Dry Weight	Correcte	d"								
Uranium-233/234		10100	+/-239	9.20	0.500	pCi/g		H	AKB 05/11/20	1159 1995912	1
Uranium-235/236		436	+/-55.3	7.65	0.500	pCi/g					
Uranium-238		1680	+/-97.6	8.76	0.500	pCi/g					
Rad Liquid Scintillati	ion Analysis										
Liquid Scint Tc99, So	oil "As Receive	d"									
Technetium-99	U	0.0772	+/-2.09	3.63	5.00	pCi/g		JJ.	3 05/10/20	0625 1994733	2
The following Prep M	Methods were pe	erformed:									
Method	Description	n			Analyst	Date		Time	Prep Batch		
Dry Soil Prep	Dry Soil Pren	GL-RAD-A	A-021		CXC1	05/05/20		1018	1994664		

The following Analytical Methods were performed:

Method Description Analyst Comments

DOE EML HASL-300, U-02-RC Modified
DOE EML HASL-300, Tc-02-RC Modified

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Uranium-232 Tracer	Alphaspec U, Soil/Veg "Dry Weight Corrected"			67.1	(15%-125%)
Technetium-99m Tracer	Liquid Scint Tc99, Soil "As Received"			95.8	(15%-125%)

Notes:

Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

MDC: Minimum Detectable Concentration SQL: Sample Quantitation Limit

Page 10 of 26 SDG: 510581

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: May 28, 2020

WNUC00821

WNUC008

Company: Westinghouse Electric Company, LLC

Address: PO Drawer R

Columbia, South Carolina 29205

Contact: Ms. Cynthia Logsdon

Project: Soil and Vegetation Analysis

Client Sample ID: HF1-B1-(6-8) Sample ID: 510581004

Matrix: Soil

Collect Date: 04-MAY-20 16:10 Receive Date: 05-MAY-20

Collector: Client Moisture: 11.6%

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF Ana	lyst Date	Time Batch	Method
Rad Alpha Spec Analys	is										
Alphaspec U, Soil/Veg	"Dry Weight	Corrected	d"								
Uranium-233/234		4500	+/-119	4.20	0.500	pCi/g		HAI	KB 05/07/20	2115 1994680	1
Uranium-235/236		252	+/-31.3	4.22	0.500	pCi/g					
Uranium-238		802	+/-50.2	3.97	0.500	pCi/g					
Rad Liquid Scintillation	Analysis										
Liquid Scint Tc99, Soil	"As Received	d"									
Technetium-99	U	0.871	+/-2.06	3.53	5.00	pCi/g		JJ3	05/10/20	0647 1994733	2
The following Prep Met	hods were pe	erformed:									
Method	Description	1			Analyst	Date		Time	Prep Batch		·
Dry Soil Prep	Dry Soil Prep	GL-RAD-A	A-021		CXC1	05/05/20		1018	1994664		

The following Analytical Methods were performed:

Method Description Analyst Comments

DOE EML HASL-300, U-02-RC Modified
DOE EML HASL-300, Tc-02-RC Modified

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Uranium-232 Tracer	Alphaspec U, Soil/Veg "Dry Weight Corrected"			15	(15%-125%)
Technetium-99m Tracer	Liquid Scint Tc99, Soil "As Received"			96.1	(15%-125%)

Notes:

Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

MDC: Minimum Detectable Concentration SQL: Sample Quantitation Limit

Page 11 of 26 SDG: 510581

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: May 28, 2020

WNUC00821

WNUC008

Company: Westinghouse Electric Company, LLC

Address: PO Drawer R

Columbia, South Carolina 29205

Contact: Ms. Cynthia Logsdon
Project: Soil and Vegetation Analysis

Client Sample ID: HF1-B1-(8-10) Sample ID: 510581005

Matrix: Soil

Collect Date: 04-MAY-20 17:02 Receive Date: 05-MAY-20

Collector: Client Moisture: 12.8%

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF Ana	lyst Date	Time	e Batch	Method
Rad Alpha Spec Analys	is											
Alphaspec U, Soil/Veg	"Dry Weight	Correcte	d"									
Uranium-233/234		1440	+/-43.8	1.98	0.500	pCi/g		HAI	KB 05/07/20	2115	1994680	1
Uranium-235/236		79.4	+/-11.5	1.79	0.500	pCi/g						
Uranium-238		263	+/-18.7	1.69	0.500	pCi/g						
Rad Liquid Scintillation	n Analysis											
Liquid Scint Tc99, Soil	"As Received	d"										
Technetium-99	U	0.656	+/-2.13	3.65	5.00	pCi/g		JJ3	05/10/20	0708	1994733	2
The following Prep Met	thods were pe	erformed:										
Method	Description	1			Analyst	Date		Time	Prep Batch			
Dry Soil Prep	Dry Soil Prep	GL-RAD-	A-021	(CXC1	05/05/20		1018	1994664			

The following Analytical Methods were performed:

Method Description Analyst Comments

DOE EML HASL-300, U-02-RC Modified
DOE EML HASL-300, Tc-02-RC Modified

Surrogate/Tracer RecoveryTestResultNominalRecovery%Acceptable LimitsUranium-232 TracerAlphaspec U, Soil/Veg "Dry Weight Corrected"31.5(15%-125%)Technetium-99m TracerLiquid Scint Tc99, Soil "As Received"92.7(15%-125%)

Notes:

Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor Lc/LC: Critical Level
DL: Detection Limit PF: Prep Factor
MDA: Minimum Detectable Activity RL: Reporting Limit

MDC: Minimum Detectable Concentration SQL: Sample Quantitation Limit

Page 12 of 26 SDG: 510581

2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Report Date: May 28, 2020

Page 1 of 2

Westinghouse Electric Company, LLC

PO Drawer R

Columbia, South Carolina

Contact: Ms. Cynthia Logsdon

Workorder: 510581

Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range Anlst	Date Time
Ion Chromatography Batch 1994861 ———								
QC1204556272 510581001 DUP Fluoride		28.3	37.9	mg/kg	29.1		(0%-109%) JLD1	05/05/20 23:07
Nitrate-N		180	238	mg/kg	28		(0%-104%)	05/06/20 01:41
QC1204556271 LCS Fluoride	25.3		24.1	mg/kg		95.6	(90%-110%)	05/05/20 22:36
Nitrate-N	25.3		24.8	mg/kg		98.2	(90%-110%)	
QC1204556270 MB Fluoride		U	ND	mg/kg				05/05/20 22:05
Nitrate-N		U	ND	mg/kg				
QC1204556273 510581001 MS Fluoride	26.9	28.3	40.8	mg/kg		46.8*	(75%-125%)	05/05/20 23:38
Nitrate-N	26.9	180	221	mg/kg		N/A	(75%-125%)	05/06/20 02:12
Titration and Ion Analysis Batch 1994735 ———								
QC1204556044 510581001 DUP Corrosivity	Н	4.81 H	5.15	SU	6.83		(0%-10%) RXB5	05/07/20 14:47
QC1204556042 LCS Corrosivity	7.00		7.00	SU		100	(95%-105%)	05/07/20 14:42

Notes:

The Qualifiers in this report are defined as follows:

< Result is less than value reported

Page 13 of 26 SDG: 510581

2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Workorder: 510581

Page 2 of 2

Parmname

NOM Sample Qual OC Units RPD% REC% Range AnIst Date Time

Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date '	Time

- > Result is greater than value reported
- B The target analyte was detected in the associated blank.
- E General Chemistry--Concentration of the target analyte exceeds the instrument calibration range
- H Analytical holding time was exceeded
- J See case narrative for an explanation
- J Value is estimated
- N/A RPD or %Recovery limits do not apply.
- N1 See case narrative
- ND Analyte concentration is not detected above the detection limit
- NJ Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Q One or more quality control criteria have not been met. Refer to the applicable narrative or DER.
- R Per section 9.3.4.1 of Method 1664 Revision B, due to matrix spike recovery issues, this result may not be reported or used for regulatory compliance purposes.
- R Sample results are rejected
- U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Z Paint Filter Test--Particulates passed through the filter, however no free liquids were observed.
- ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.
- d 5-day BOD--The 2:1 depletion requirement was not met for this sample
- e 5-day BOD--Test replicates show more than 30% difference between high and low values. The data is qualified per the method and can be used for reporting purposes
- h Preparation or preservation holding time was exceeded

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more or %RPD not applicable.

^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.

* Indicates that a Quality Control parameter was not within specifications.

For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.

Page 14 of 26 SDG: 510581

2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Report Date: May 28, 2020

Page 1 of 3

Westinghouse Electric Company, LLC PO Drawer R

Columbia, South Carolina

Contact: Ms. Cynthia Logsdon

Workorder: 510581

Parmname	NOM	Sample	Qual QC	Units	RPD%	REC%	Range Anlst	Date Time
Rad Alpha Spec								
Batch 1994680 ———								
QC1204555898 510581001 DUP		10.0	10.1	G: /	0.25		(00/ 200/) HAMD	05/05/20 20 55
Uranium-233/234	TT 4.1.4	13.2	12.1	pCi/g	9.25		(0%-20%) HAKB	05/07/20 20:55
	Uncertainty	+/-0.986	+/-1.02					
Uranium-235/236		0.828	0.575	pCi/g	36.1*		(0%-20%)	
	Uncertainty	+/-0.286	+/-0.253					
		2.22	2.25	G: /			(0-1, -0-1)	
Uranium-238	Uncertainty	3.22 +/-0.486	2.27 +/-0.450	pCi/g	34.6*		(0%-20%)	
	Oncertainty	+/-0.480	+/-0.430					
QC1204555899 LCS								
Uranium-233/234			12.2	pCi/g				05/07/20 20:55
	Uncertainty		+/-0.829					
Uranium-235/236			0.933	pCi/g				
014mam 200, 200	Uncertainty		+/-0.257	18				
	•							
Uranium-238	12.9		12.0	pCi/g		93.5	(75%-125%)	
	Uncertainty		+/-0.821					
QC1204555897 MB								
Uranium-233/234			0.428	pCi/g				05/09/20 13:07
	Uncertainty		+/-0.164					
Uranium-235/236			0.0679	nCi/a				
Oranium-233/230	Uncertainty		+/-0.0763	pCi/g				
	Oncertainty		17 0.0703					
Uranium-238			U 0.0889	pCi/g				
	Uncertainty		+/-0.0914					
Batch 1995912 ——								
QC1204558442 510581002 DUP								
Uranium-233/234		8310	8000	pCi/g	3.74		(0%-20%) HAKB	05/11/20 11:59
	Uncertainty	+/-213	+/-253	1 0			,	
Uranium-235/236	**	465	379	pCi/g	20.5*		(0%-20%)	
	Uncertainty	+/-56.2	+/-61.4					
Uranium-238		1620	1420	pCi/g	13.5		(0%-20%)	
	Uncertainty	+/-94.3	+/-107	r 8			(/-/	
	•							

Page 15 of 26 SDG: 510581

2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Workorder: 510581 Page 2 of 3 Date Time **Parmname** NOM Sample Qual QC Units RPD% REC% Range Anlst Rad Alpha Spec 1995912 Batch QC1204558443 LCS Uranium-233/234 162 pCi/g HAKB 05/11/20 11:59 +/-27.6 Uncertainty Uranium-235/236 17.4 pCi/g Uncertainty +/-10.6168 Uranium-238 160 pCi/g 105 (75%-125%) Uncertainty +/-28.1QC1204558441 MB U 05/11/20 11:59 Uranium-233/234 -1.59 pCi/g +/-2.31Uncertainty U Uranium-235/236 -0.163pCi/g Uncertainty +/-2.70Uranium-238 U 0.176 pCi/g Uncertainty +/-3.14 **Rad Liquid Scintillation** Batch 1994733 QC1204556036 510581001 DUP U U 0.447 0.433 JJ3 05/10/20 07:52 Technetium-99 pCi/g N/A N/A +/-1.94 +/-2.00 Uncertainty QC1204556037 LCS Technetium-99 57.1 49.8 pCi/g 87.1 (75% - 125%)05/10/20 08:14 +/-3.28 Uncertainty QC1204556035 MB U 05/10/20 07:30 Technetium-99 2.16 pCi/g Uncertainty +/-2.07

Notes:

Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

The Qualifiers in this report are defined as follows:

- ** Analyte is a Tracer compound
- < Result is less than value reported
- > Result is greater than value reported
- BD Results are either below the MDC or tracer recovery is low
- FA Failed analysis.
- H Analytical holding time was exceeded
- J See case narrative for an explanation

Page 16 of 26 SDG: 510581

2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Parmname NOM Sample Qual QC Units RPD% REC% Range AnIst Date Time

J Value is estimated

510581

Workorder:

- K Analyte present. Reported value may be biased high. Actual value is expected to be lower.
- L Analyte present. Reported value may be biased low. Actual value is expected to be higher.
- M M if above MDC and less than LLD
- M REMP Result > MDC/CL and < RDL
- N/A RPD or %Recovery limits do not apply.
- N1 See case narrative
- ND Analyte concentration is not detected above the detection limit
- NJ Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Q One or more quality control criteria have not been met. Refer to the applicable narrative or DER.
- R Sample results are rejected
- U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.
- UI Gamma Spectroscopy--Uncertain identification
- UJ Gamma Spectroscopy--Uncertain identification
- UL Not considered detected. The associated number is the reported concentration, which may be inaccurate due to a low bias.
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Y Other specific qualifiers were required to properly define the results. Consult case narrative.
- ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.
- h Preparation or preservation holding time was exceeded

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more or %RPD not applicable.

- ^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.
- * Indicates that a Quality Control parameter was not within specifications.

For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.

Page 17 of 26 SDG: 510581

Technical Case Narrative Westinghouse Electric Co, LLC SDG #: 510581

General Chemistry

Product: Ion Chromatography Analytical Method: SW846 9056A

Analytical Procedure: GL-GC-E-086 REV# 27 Analytical Batches: 1994861 and 1994849

The following samples were analyzed using the above methods and analytical procedure(s).

GEL Sample ID#	Client Sample Identification
510581001	HF1-B1-(1-2)
510581002	HF1-B1-(2-4)
510581003	HF1-B1-(4-6)
510581004	HF1-B1-(6-8)
510581005	HF1-B1-(8-10)
1204556270	Method Blank (MB)
1204556271	Laboratory Control Sample (LCS)
1204556272	510581001(HF1-B1-(1-2)) Sample Duplicate (DUP)
1204556273	510581001(HF1-B1-(1-2)) Matrix Spike (MS)

The samples in this SDG were analyzed on a "dry weight" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Quality Control (QC) Information

Matrix Spike (MS)/Post Spike (PS) Recovery Statement

The percent recoveries (%R) obtained from the spike analyses are evaluated when the sample concentration is less than four times (4X) the spike concentration added. The matrix spike recovered outside of the established acceptance limits due to matrix interference and/or non-homogeneity.

Analyte	Sample	Value
Fluoride	1204556273 (HF1-B1-(1-2)MS)	46.8* (75%-125%)

Technical Information

Sample Dilutions

The following samples 1204556272 (HF1-B1-(1-2)DUP), 1204556273 (HF1-B1-(1-2)MS), 510581001 (HF1-B1-(1-2)), 510581002 (HF1-B1-(2-4)), 510581003 (HF1-B1-(4-6)), 510581004 (HF1-B1-(6-8)) and 510581005 (HF1-B1-(8-10)) were diluted because target analyte concentrations exceeded the calibration range. Dilutions may be required for many reasons, including to minimize matrix interferences or to bring over range target analyte concentrations into the linear calibration range.

Page 18 of 26 SDG: 510581

A 1t .	510581					
Analyte	001	002	003	004	005	
Fluoride	1X	20X	50X	25X	10X	
Nitrate	5X	20X	50X	25X	10X	

Product: pH

Analytical Method: SW846 9045D

Analytical Procedure: GL-GC-E-008 REV# 24

Analytical Batch: 1994735

The following samples were analyzed using the above methods and analytical procedure(s).

GEL Sample ID#	Client Sample Identification
510581001	HF1-B1-(1-2)
510581002	HF1-B1-(2-4)
510581003	HF1-B1-(4-6)
510581004	HF1-B1-(6-8)
510581005	HF1-B1-(8-10)
1204556042	Laboratory Control Sample (LCS)
1204556044	510581001(HF1-B1-(1-2)) Sample Duplicate (DUP)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Technical Information

Holding Times

Samples (See Below) were received by the laboratory outside of the method specified holding time. The data is qualified.

Sample	Analyte	Value
1204556044 (HF1-B1-(1-2)DUP)		Received 05-MAY-20, out of holding 04-MAY-20
510581001 (HF1-B1-(1-2))		Received 05-MAY-20, out of holding 04-MAY-20
510581002 (HF1-B1-(2-4))		Received 05-MAY-20, out of holding 04-MAY-20
510581003 (HF1-B1-(4-6))		Received 05-MAY-20, out of holding 04-MAY-20
510581004 (HF1-B1-(6-8))		Received 05-MAY-20, out of holding 04-MAY-20
510581005 (HF1-B1-(8-10))		Received 05-MAY-20, out of holding 04-MAY-20

Radiochemistry

Page 19 of 26 SDG: 510581

Product: Alphaspec U, Soil/Veg

Analytical Method: DOE EML HASL-300, U-02-RC Modified

Analytical Procedure: GL-RAD-A-011 REV# 27

Analytical Batch: 1994680

Preparation Method: Dry Soil Prep

Preparation Procedure: GL-RAD-A-021 REV# 23

Preparation Batch: 1994664

The following samples were analyzed using the above methods and analytical procedure(s).

GEL Sample ID#	Client Sample Identification
510581001	HF1-B1-(1-2)
510581004	HF1-B1-(6-8)
510581005	HF1-B1-(8-10)
1204555897	Method Blank (MB)
1204555898	510581001(HF1-B1-(1-2)) Sample Duplicate (DUP)
1204555899	Laboratory Control Sample (LCS)

The samples in this SDG were analyzed on a "dry weight" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Quality Control (QC) Information

Method Blank Criteria

The blank result (See Below) is greater than the MDC but less than the required detection limit.

Sample	Analyte	Value
1204555897 (MB)	Uranium-233/234	Result: 0.428 pCi/g > MDA: 0.138 pCi/g <= RDL: 0.500 pCi/g
	Uranium-235/236	Result: 0.0679 pCi/g > MDA: 0.0509 pCi/g <= RDL: 0.500 pCi/g

Duplication Criteria between QC Sample and Duplicate Sample

The Sample and the Duplicate, (See Below), did not meet the relative percent difference requirement; however, they do meet the relative error ratio requirement with the value listed below.

Sample	Analyte	Value
1204555898 (HF1-B1-(1-2)DUP)	Uranium-235/236	RPD 36.1* (0.00%-20.00%) RER 1.24 (0-3)
	Uranium-238	RPD 34.6* (0.00%-20.00%) RER 2.31 (0-3)

Technical Information

Recounts

Samples 1204555897 (MB) and 510581001 (HF1-B1-(1-2)) were recounted due to high MDCs. The recounts are reported.

Page 20 of 26 SDG: 510581

Product: Alphaspec U, Soil/Veg

Analytical Method: DOE EML HASL-300, U-02-RC Modified

Analytical Procedure: GL-RAD-A-011 REV# 27

Analytical Batch: 1995912

Preparation Method: Dry Soil Prep

Preparation Procedure: GL-RAD-A-021 REV# 23

Preparation Batch: 1994664

The following samples were analyzed using the above methods and analytical procedure(s).

GEL Sample ID# 510581002 Client Sample Identification HF1-B1-(2-4)

510581003 HF1-B1-(4-6)

1204558441 Method Blank (MB)

1204558442 510581002(HF1-B1-(2-4)) Sample Duplicate (DUP)

1204558443 Laboratory Control Sample (LCS)

The samples in this SDG were analyzed on a "dry weight" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Quality Control (QC) Information

Duplication Criteria between QC Sample and Duplicate Sample

The Sample and the Duplicate, (See Below), did not meet the relative percent difference requirement; however, they do meet the relative error ratio requirement with the value listed below.

Sample	Analyte	Value	
1204558442 (HF1-B1-(2-4)DUP)	Uranium-235/236	RPD 20.5* (0.00%-20.00%) RER 1.05 (0-3)	

RDL Met

The blank (See Below) did not meet the detection limit due to keeping the blank volume consistent with the other sample aliquots.

Sample	Analyte	Value
1204558441 (MB)	Uranium-233/234	Result -1.59 < MDA 7.84 > RDL 0.5 pCi/g
	Uranium-235/236	Result -0.163 < MDA 5.72 > RDL 0.5 pCi/g
	Uranium-238	Result 0.176 < MDA 6.81 > RDL 0.5 pCi/g

Technical Information

Page 21 of 26 SDG: 510581

Sample Re-prep/Re-analysis

Samples were reprepped due to low carrier/tracer yield. The re-analysis is being reported.

Product: Dry Weight

<u>Preparation Method:</u> ASTM D 2216 (Modified) <u>Preparation Procedure:</u> GL-OA-E-020 REV# 13

Preparation Batch: 1994664

Preparation Method: Dry Soil Prep

Preparation Procedure: GL-RAD-A-021 REV# 23

Preparation Batch: 1994664

The following samples were analyzed using the above methods and analytical procedure(s).

GEL Sample ID#	Client Sample Identification
510581001	HF1-B1-(1-2)
510581002	HF1-B1-(2-4)
510581003	HF1-B1-(4-6)
510581004	HF1-B1-(6-8)
510581005	HF1-B1-(8-10)
1204555869	510581001(HF1-B1-(1-2)) Sample Duplicate (DUP)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

There are no exceptions, anomalies or deviations from the specified methods. All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable.

Product: Liquid Scint Tc99, Soil

Analytical Method: DOE EML HASL-300, Tc-02-RC Modified

Analytical Procedure: GL-RAD-A-059 REV# 5

Analytical Batch: 1994733

The following samples were analyzed using the above methods and analytical procedure(s).

GEL Sample ID#	Client Sample Identification
510581001	HF1-B1-(1-2)
510581002	HF1-B1-(2-4)
510581003	HF1-B1-(4-6)
510581004	HF1-B1-(6-8)
510581005	HF1-B1-(8-10)
1204556035	Method Blank (MB)

Page 22 of 26 SDG: 510581

1204556036 510581001(HF1-B1-(1-2)) Sample Duplicate (DUP) 1204556037 Laboratory Control Sample (LCS)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

There are no exceptions, anomalies or deviations from the specified methods. All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable.

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

Page 23 of 26 SDG: 510581

rage: 1011				<u></u>	-	•								GEL	Laborat	GEL Laboratories, LLC	()	
GEL Ouote #:		_ 	l c		rate	Laboratories LLC	CC	,,,,,	H. Anna					2040	2040 Savage Road	Road		
COC Number (i):	2000		Chain of (Sustod	yand	of Custody and Analytical Request	al Requ	Jest	ily Allai	/ucs				Phor	ieston, 3 ie: (843)	Phone: (843) 556-8171	-	
PO Number: 4500778461, ENV-CONSENTA	GEL Work Order Number.	nber:		GEL I	Project.	GEL Project Manager:								Fax:	Fax: (843) 766-1178	921119		
Client Name: Westinghouse		Phone # 803.497.7062	03.497.7	290		7	Sa	Sample Analysis Requested (5)	Analy	sis Re	quest	(s) pa	(Fill i	n the n	umber o	f contain	(Fill in the number of containers for each test)	
Project/Site Name: Project # HF Spiking Station #1 Soil Sampling	Soil Sampling	Fax#				Should this		s			-		_	_			< Preservative Type (6)	(9) ad
Address: 5801 Bluff Road, Hopkins, SC 29061						sample be	le be	ainers	\vdash	H	11	(550		-				
Collected By: R. Crews Reserve	Send Results To: joynerdp@westinghouse.com	erdp@westing	house.co	Ę) Ji)	spa	tnos lo					1 720				Comments Note: extra sample is	, el c
Sample ID * For composites - indicate start and stop date/time	*Date Collected	*Time ced Collected (Military)	QC Code (2)	Field Filtered (3)	Sample Matrix (4)	Radioactive yes, please sup isotopic info.)	(7) Known or	Total number	Hq	Fluor	moisture	Mitts B) U siqotosl	T				required for sample specific QC	nple
HF1-B1-(1-2)	5/4/2020	1313		N/A	SO			-	×	×	×	×	×					
HF1-B1-(2-4)	5/4/2020	1343		N/A	SO			-	×	×	×	×	×					
HF1-B1-(4-6)	5/4/2020	1458		N/A	SO			-	×	×	×	×	×				Please note that MDC for Tc-	for Tc-
HF1-B1-(6-8)	5/4/2020	1610		N/A	SO			-	×	×	×	×	×					۵
HF1-B1-(8-10)	5/4/2020	1702		N/A	so			-	×	×	×	×	×					
											+++							
Cha	Chain of Custody Signatures	res					TAT	TAT Requested:		 − ₽	Normal: X		Rush:		Specify:	خ ا	(Subject to Surcharge)	rge)
Relinquished By (Signed) Date Time	Received by (signed)	7	Date	Time			Fax Results: [] Yes	Its: [Yes	- INo					•			ò
1 Randy Crews 上いれる 5/5/2020 の6	- 4	\$ 500 m	5/5/2029	020	BC643	8	Select Deliverable: [] C of A [] QC Summary	liverab	le: []	C of A		C Sur	nmary	1	[] level 1	[] Level 2	2 [] Level 3 [] Level 4	vel 4
2 Ray Bates 1 (2) 8	8:43 2 M.	Marie	5/5	120	8.4	W	Additional Remarks:	ıl Rema	ırks:									
3 > For sample shipping and delivery details, see Sample Receipt & Review form (SRR)	mole Receipt & Review fo	orm (SRR)				Sample Collection Time Zone: [X] Eastern [1] Pacific	For Lab Receiving Use Only: Custody Seal Intact? [Julection Time Zone: [X] Eastern [1 Pacific [1	Receiv	ing Us	e Onty	: Cus	ody Se	al Inte		1? [] Yes [[] No C	No Cooler Temp: L °C	5.
1.) Chain of Custody Number = Client Determined 2.) OC Codes: N = Normal Sample TR = Tria Blank FD = Field Dandisode FD = Feeld Dandiso	Dualizata FB - Earlinease Di											2						
3.) Field Filtered: For liquid matrices, indicate with a - Y - for yes the sample was field filtered or - N - for sample was not field filtered.	s the sample was field filtered or	- N - for sample w	spine saing as not field	filtered.	Matrix Sp	ike Duplicate	Sample, c	= Crab,	5	posite								
4.) Matrix Codes: DW=Drinking Water, GW=Groundwater, SW=Surface Water, WW=Water, W=Water, ML=Mise Liquid, SO=Soil, SD=Sediment, SL=Sludge, SS=Solid Waste, O=Oil, F=Filter, P=Wipe, U=Urine, F=Fecal, N=Nasal S.) Sample Analysis Requested: Analytical method requested (i.e. 82608, 601087/470A) and number of containers provided for each (i.e. 82608, 2, 10)	Surface Water, WW=Waste W 8260B, 6010B/7470A) and nun	ater, W=Water, M	L=Misc Lic	luid, SO=So	oil, SD=Se	diment, SL=9	Sludge, SS=	Solid W.	aste, O=	Oil, F=F	ilter, P=	Wipe, U	=Urine	F=Fecal	, N=Nasal			
6.) Preservative Type: HA = Hydrochloric Acid, NI = Nitric Acid, SH = Sodium Hydroxide, SA = Sulfuric Acid, AA = Ascorbic Acid, HX = Hexane, ST = Sodium Thiosulfate, If no preservative is added = leave field blank	, SH = Sodium Hydroxide, SA =	Sulfuric Acid, AA	= Ascorbic	Acid, HX	= Hexane,	ST = Sodiun	1 Thiosulfat	e, If no p	reservat	ive is ad	ded = le	ave field	blank					
7.) KNOWN OR POSSIBLE HAZARDS C	Characteristic Hazards FL = Flammable/Ignitable		Listed Waste LW=Listed Waste	ste			Other OT=Other / Unknown	r/IIn	known						P	lease prov	Please provide any additional details	ils
	CO = Corrosive RE = Reactive		(F,K,P and U-li Waste code(s):	(F,K,P and U-listed wastes.) Waste code(s):	(es.)		f.e.: High/low pH, asbestos, beryllium, irritants, other misc. health hazards, etc.) Description:	/low p th haz	H, asb ards, e	estos, tc.)	berylli	um, irr	itants,	other	<u> </u>	mcerns. (concerns. (i.e.: Origin of sample(s), type of site collected from, odd matrices, etc.)	, type , etc.)
Cd = Cadmium Ag= Silver Cr = Chromium MR= Misc. RCRA metals D = 24 CF Cr	TSCA Regulated PCB = Polychlorinated			0.1			•											
rage 24 of 20 add: 510561																		

	Laboratories LLC		K6		SAMPLE RECEIPT & REVIEW FORM
\vdash	AA				OG/AR/COC/Work Order: 51000
K	eceived By:			D	ate Received: 5/5/4/
	Carrier and Tracking Number				FedEx Express FedEx Ground UPS Field Services Courier Other
Su	spected Hazard Information	Yes	S _o	*16	Net Counts > 100cpm on samples not marked "radioactive", contact the Radiation Safety Group for further investigation
A)	Shipped as a DOT Hazardous?		/	Ha	zard Class Shipped: UN#: JN2910, Is the Radioactive Shipment Survey Compliant? Yes No
B) rec	Did the client designate the samples are to be eived as radioactive?			100	C notation or radioactive stickers on containers equal client designation.
C) rad	Did the RSO classify the samples as ioactive?		/	Ma Cla	ximum Net Counts Observed* (Observed Counts - Area Background Counts):CPM / mR/Hr
	Did the client designate samples are ardous?		/	V 12 64 14	C notation or hazard labels on containers equal client designation.
E)	Did the RSO identify possible hazards?		\checkmark	PC	o or E is yes, select Hazards below. B's Flammable Foreign Soil RCRA Asbestos Beryllium Other:
L	Sample Receipt Criteria	Yes	NA NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	/			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
2	Chain of custody documents included with shipment?	/			Circle Applicable: Client contacted and provided COC COC created upon receipt
3	Samples requiring cold preservation within $(0 \le 6 \text{ deg. C})$?*				Preservation Method: Wet Ice Ice Packs Dry ice None Other: *all temperatures are recorded in Celsius TEMP: Soils - L
4	Daily check performed and passed on IR temperature gun?				Temperature Device Serial #:
5	Sample containers intact and sealed?	/			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
6	Samples requiring chemical preservation at proper pH?	$\sqrt{}$			Sample ID's and Containers Affected: If Preservation added 1 of#-
7	Do any samples require Volatile Analysis?			/	If Yes, are Encores or Soil Kits present for solids? Yes No NA (If yes, take to VOA Freezer) Do liquid VOA vials contain acid preservation? Yes No NA (If unknown, select No) Are liquid VOA vials free of headspace? Yes No NA Sample ID's and containers affected:
8	Samples received within holding time?				ID's and tests affected:
9	Sample ID's on COC match ID's on bottles?				ID's and containers affected:
	Date & time on COC match date & time on bottles?				Circle Applicable: No dates on containers No times on containers COC missing info Other (describe)
`	Number of containers received match number indicated on COC?				Circle Applicable: No container count on COC Other (describe)
12	Are sample containers identifiable as GEL provided?	7			
13	COC form is properly signed in relinquished/received sections?				Circle Applicable: Not relinquished Other (describe)
om	nents (Use Continuation Form if needed):				
					•

List of current GEL Certifications as of 28 May 2020

State	Certification
Alaska	17-018
Alaska Drinking Water	SC00012
Arkansas	88-0651
CLIA	42D0904046
California	2940
Colorado	SC00012
Connecticut	PH-0169
DoD ELAP/ ISO17025 A2LA	2567.01
Florida NELAP	E87156
Foreign Soils Permit	P330-15-00283, P330-15-00253
Georgia	SC00012
Georgia SDWA	967
Hawaii	SC00012
Idaho	SC00012
Illinois NELAP	200029
Indiana	C-SC-01
Kansas NELAP	E-10332
Kentucky SDWA	90129
Kentucky Wastewater	90129
Louisiana Drinking Water	LA024
Louisiana NELAP	03046 (AI33904)
Maine	2019020
Maryland	270
Massachusetts	M-SC012
Massachusetts PFAS Approv	Letter
Michigan	9976
Mississippi	SC00012
Nebraska	NE-OS-26-13
Nevada	SC000122020-1
New Hampshire NELAP	2054
New Jersey NELAP	SC002
New Mexico	SC00012
New York NELAP	11501
North Carolina	233
North Carolina SDWA	45709
North Dakota	R-158
Oklahoma	2019–165
Pennsylvania NELAP	68-00485
Puerto Rico	SC00012
S. Carolina Radiochem	10120002
Sanitation Districts of L	9255651
South Carolina Chemistry	10120001
Tennessee	TN 02934
Texas NELAP	T104704235-20-17
Utah NELAP	SC000122020-32
Vermont	VT87156
Virginia NELAP	460202
Washington	C780
TT USITING TOTAL	2700











PO Box 30712 Charleston, SC 29417 2040 Savage Road Charleston, SC 29407 P 843.556.8171 F 843.766.1178

gel.com

June 01, 2020

Ms. Cynthia Logsdon Westinghouse Electric Company, LLC PO Drawer R Columbia, South Carolina 29205

Re: Soil and Vegetation Analysis

Work Order: 510757

Dear Ms. Logsdon:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on May 06, 2020. This original data report has been prepared and reviewed in accordance with GEL's standard operating procedures.

Test results for NELAP or ISO 17025 accredited tests are verified to meet the requirements of those standards, with any exceptions noted. The results reported relate only to the items tested and to the sample as received by the laboratory. These results may not be reproduced except as full reports without approval by the laboratory. Copies of GEL's accreditations and certifications can be found on our website at www.gel.com.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at (843) 556-8171, ext. 4707.

Sincerely,

Katelyn Gray Project Manager

Purchase Order: 4500799254

Enclosures



2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis Report for

WNUC008 Westinghouse Electric Co, LLC (4500775170) Client SDG: 510757 GEL Work Order: 510757

The Qualifiers in this report are defined as follows:

- * A quality control analyte recovery is outside of specified acceptance criteria
- ** Analyte is a Tracer compound
- ** Analyte is a surrogate compound
- H Analytical holding time was exceeded
- J See case narrative for an explanation
- J Value is estimated
- U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

The designation ND, if present, appears in the result column when the analyte concentration is not detected above the limit as defined in the 'U' qualifier above.

This data report has been prepared and reviewed in accordance with GEL Laboratories LLC standard operating procedures. Please direct any questions to your Project Manager, Katelyn Gray.

	Katelyn Dray
Reviewed by	V

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: June 1, 2020

WNUC00821

WNUC008

Company: Westinghouse Electric Company, LLC

Address: PO Drawer R

Columbia, South Carolina 29205

Contact: Ms. Cynthia Logsdon

Project: Soil and Vegetation Analysis

Client Sample ID: HF1-B2-(1-2) Sample ID: 510757001

Matrix: Soil

Collect Date: 05-MAY-20 09:12 Receive Date: 06-MAY-20

Collector: Client Moisture: 8.89%

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst Date	Time Batch	Method
Ion Chromatograp	ohy									
SW846 9056A Fl	uoride and Nitrate	"Dry Weight Correc	cted"							
Fluoride		1.28	0.376	1.11	mg/kg	10.1	1	LXA2 05/07/20	0024 1995237	1
Nitrate-N		76.5	0.730	2.21	mg/kg	10.1	2	LXA2 05/07/20) 1557 1995237	2
Titration and Ion	Analysis									
SW9045D Corros	sivity (pH<2or>14)	"As Received"								
Corrosivity	Н	6.38	0.0100	0.100	SU		1	RXB5 05/07/20	1453 1994735	3
The following Pre	en Methods were ne	erformed:								

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 9056A	SW846 9056A Total Anions in Soil	CJ2	05/06/20	1859	1995236

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 9056A	•
2	SW846 9056A	

3 SW846 9045D

Notes:

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

MDC: Minimum Detectable Concentration SQL: Sample Quantitation Limit

Page 3 of 39 SDG: 510757

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: June 1, 2020

WNUC00821

WNUC008

Company: Westinghouse Electric Company, LLC

Address: PO Drawer R

Columbia, South Carolina 29205

Contact: Ms. Cynthia Logsdon
Project: Soil and Vegetation Analysis

Client Sample ID: HF1-B2-(2-4) Sample ID: 510757002

Matrix: Soil

Collect Date: 05-MAY-20 09:40 Receive Date: 06-MAY-20

Collector: Client Moisture: 7.14%

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst Date	Time Batch	Method
Ion Chromatograp	hy									
SW846 9056A Flu	oride and Nitrate	"Dry Weight Correcte	d"							
Fluoride	J	0.623	0.365	1.07	mg/kg	9.98	1	LXA2 05/07/20	0157 1995237	1
Nitrate-N		90.8	1.77	5.37	mg/kg	9.98	5	LXA2 05/07/20	1730 1995237	2
Titration and Ion A	Analysis									
SW9045D Corrosi	vity (pH<2or>14)	"As Received"								
Corrosivity	Н	5.16	0.0100	0.100	SU		1	RXB5 05/07/20	1456 1994735	3

The following Prep Methods were performed:

1110 10110 11116 110	p memous were performed.					
Method	Description	Analyst	Date	Time	Prep Batch	
SW846 9056A	SW846 9056A Total Anions in Soil	CI2	05/06/20	1859	1995236	

The following Analytical Methods were performed:

	<i>U</i> ,	
Method	Description	Analyst Comments
1	SW846 9056A	·
2	SW846 9056A	

3 SW846 9045D

Notes:

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

MDC: Minimum Detectable Concentration SQL: Sample Quantitation Limit

Page 4 of 39 SDG: 510757

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: June 1, 2020

WNUC00821

WNUC008

Company: Westinghouse Electric Company, LLC

Address: PO Drawer R

Columbia, South Carolina 29205

Contact: Ms. Cynthia Logsdon
Project: Soil and Vegetation Analysis

Client Sample ID: HF1-B2-(4-6) Sample ID: 510757003

Matrix: Soil

Collect Date: 05-MAY-20 10:43
Receive Date: 06-MAY-20
Collector: Client

Moisture: 8.79%

Parameter	Qualifier	Result	DL	RL	Units	PF I	OF A	Analyst Date	Time Batch	Method
Ion Chromatography										
SW846 9056A Fluor	ide and Nitrate '	'Dry Weight Corrected"								
Fluoride	U	ND	0.372	1.09	mg/kg	9.98	1 L	LXA2 05/07/20	0227 199523	7 1
Nitrate-N		94.0	1.80	5.47	mg/kg	9.98	5 L	LXA2 05/07/20	1800 199523	2
Titration and Ion Ana	alysis									
SW9045D Corrosivit	y (pH<2or>14)	"As Received"								
Corrosivity	Н	6.05	0.0100	0.100	SU		1 F	RXB5 05/07/20	1457 199473	3
The following Prep N	Methods were pe	erformed:								
Method	Description	1		Analyst	Date	Ti	ime	Prep Batch		
SW846 9056A	SW846 9056A	A Total Anions in Soil		CJ2	05/06/20	18	359	1995236		

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 9056A	·
2	SW846 9056A	

3 SW846 9045D

Notes:

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

MDC: Minimum Detectable Concentration SQL: Sample Quantitation Limit

Page 5 of 39 SDG: 510757

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: June 1, 2020

WNUC00821

WNUC008

Westinghouse Electric Company, LLC Company:

Address: PO Drawer R

Columbia, South Carolina 29205

Contact: Ms. Cynthia Logsdon

Project: Soil and Vegetation Analysis

HF1-B2-(6-8) Client Sample ID: Sample ID: 510757004

Matrix: Soil

Collect Date: 05-MAY-20 11:30 Receive Date: 06-MAY-20

Collector: Client Moisture: 9.81%

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time	Batch	Method
Ion Chromatography												
SW846 9056A Fluoride	e and Nitrate '	'Dry Weight Corrected"										
Fluoride	U	ND	0.375	1.10	mg/kg	9.95	1	LXA2	05/07/20	0400	1995237	1
Nitrate-N		45.9	0.364	1.10	mg/kg	9.95	1					
Titration and Ion Analy	/sis											
SW9045D Corrosivity	(pH<2or>14)	"As Received"										
Corrosivity	Н	5.98	0.0100	0.100	SU		1	RXB5	05/07/20	1459	1994735	2

The following Prep Methods were performed:

Method Analyst Date Time Prep Batch Description SW846 9056A SW846 9056A Total Anions in Soil CJ2 05/06/20 1859 1995236

The following Analytical Methods were performed:

Description Method **Analyst Comments** SW846 9056A

SW846 9045D 2

Notes:

Column headers are defined as follows:

Lc/LC: Critical Level DF: Dilution Factor DL: Detection Limit PF: Prep Factor MDA: Minimum Detectable Activity **RL**: Reporting Limit

MDC: Minimum Detectable Concentration **SQL**: Sample Quantitation Limit

Page 6 of 39 SDG: 510757

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: June 1, 2020

WNUC00821

WNUC008

Company: Westinghouse Electric Company, LLC

Address: PO Drawer R

Columbia, South Carolina 29205

Contact: Ms. Cynthia Logsdon

Project: Soil and Vegetation Analysis

Client Sample ID: HF1-B2-(8-10) Sample ID: 510757005

Matrix: Soil

Collect Date: 05-MAY-20 12:30 Receive Date: 06-MAY-20

Collector: Client Moisture: 13.1%

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst Date	Time Batch	Method
Ion Chromatography	7									
SW846 9056A Fluor	ride and Nitrate "	Dry Weight Corrected"								
Fluoride	J	0.800	0.388	1.14	mg/kg	9.93	1	LXA2 05/07/20	0431 1995237	1
Nitrate-N		23.4	0.377	1.14	mg/kg	9.93	1			
Titration and Ion An	alysis									
SW9045D Corrosivi	ty (pH<2or>14) '	"As Received"								
Corrosivity	Н	6.17	0.0100	0.100	SU		1	RXB5 05/07/20	1500 1994735	2

The following Prep Methods were performed:

MethodDescriptionAnalystDateTimePrep BatchSW846 9056ASW846 9056A Total Anions in SoilCJ205/06/2018591995236

The following Analytical Methods were performed:

Method Description Analyst Comments

SW846 9056A

Analyst Comments

2 SW846 9045D

Notes:

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

MDC: Minimum Detectable Concentration SQL: Sample Quantitation Limit

Page 7 of 39 SDG: 510757

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Analyst Comments

Report Date: June 1, 2020

WNUC00821

WNUC008

Company: Westinghouse Electric Company, LLC

Address: PO Drawer R

Columbia, South Carolina 29205

Contact: Ms. Cynthia Logsdon
Project: Soil and Vegetation Analysis

Client Sample ID: HF1-B3-(1-2) Sample ID: 510757006

Matrix: Soil

Collect Date: 05-MAY-20 14:13 Receive Date: 06-MAY-20

Collector: Client Moisture: 7.09%

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst Date	Time Batch	Method
Ion Chromatography										
SW846 9056A Fluorio	de and Nitrate	"Dry Weight Corrected"								
Fluoride		6.24	0.370	1.09	mg/kg	10.1	1	LXA2 05/14/20	2320 1996294	1
Nitrate-N		285	3.59	10.9	mg/kg	10.1	10	LXA2 05/14/20	2347 1996294	2
Titration and Ion Ana	lysis									
SW9045D Corrosivity	(pH<2or>14)	"As Received"								
Corrosivity	Н	4.82	0.0100	0.100	SU		1	RXB5 05/07/20	1502 1994735	3

The following Prep Methods were performed:

MethodDescriptionAnalystDateTimePrep BatchSW846 9056ASW846 9056A Total Anions in SoilCJ205/14/2020181996293

The following Analytical Methods were performed:

Method	Description	
1	SW846 9056A	
2	SW846 9056A	

3 SW846 9045D

Notes:

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

MDC: Minimum Detectable Concentration SQL: Sample Quantitation Limit

Page 8 of 39 SDG: 510757

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: June 1, 2020

WNUC00821

WNUC008

Company: Westinghouse Electric Company, LLC

Address: PO Drawer R

Columbia, South Carolina 29205

Contact: Ms. Cynthia Logsdon

Project: Soil and Vegetation Analysis

Client Sample ID: HF1-B3-(2-4) Sample ID: 510757007

Matrix: Soil

Collect Date: 05-MAY-20 14:44 Receive Date: 06-MAY-20

Collector: Client Moisture: 8.9%

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst Dat	e Ti	me Batch	Method
Ion Chromatography											
SW846 9056A Fluoride	and Nitrate '	'Dry Weight Corrected"									
Fluoride		683	18.7	55.0	mg/kg	10.0	50	LXA2 05/15/	20 02	29 1996294	. 1
Nitrate-N		589	18.2	55.0	mg/kg	10.0	50				
Titration and Ion Analy	sis										
SW9045D Corrosivity (pH<2or>14)	"As Received"									
Corrosivity	Н	4.08	0.0100	0.100	SU		1	RXB5 05/07/	20 15	501 1994735	2

The following Prep Methods were performed:

MethodDescriptionAnalystDateTimePrep BatchSW846 9056ASW846 9056A Total Anions in SoilCJ205/14/2020181996293

The following Analytical Methods were performed:

Method Description Analyst Comments
1 SW846 9056A

2 SW846 9045D

Notes:

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

MDC: Minimum Detectable Concentration SQL: Sample Quantitation Limit

Page 9 of 39 SDG: 510757

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: June 1, 2020

WNUC00821

WNUC008

Westinghouse Electric Company, LLC Company:

Address: PO Drawer R

Columbia, South Carolina 29205

Contact: Ms. Cynthia Logsdon

Project: Soil and Vegetation Analysis

Client Sample ID: HF1-B3-(4-6) Sample ID: 510757008

Matrix: Soil

Collect Date: 05-MAY-20 15:35 Receive Date: 06-MAY-20

Collector: Client Moisture: 13.9%

Parameter	Qualifier	Result	DL	RL	Units	PF	DF A	Analyst Date	Time Batch	Method
Ion Chromatography										
SW846 9056A Fluorid	e and Nitrate	"Dry Weight Corrected"								
Fluoride		1020	19.9	58.7	mg/kg	10.1	50	LXA2 05/15/20	0417 1996294	1
Nitrate-N		1290	19.4	58.7	mg/kg	10.1	50			
Titration and Ion Analy	/sis									
SW9045D Corrosivity	(pH<2or>14)	"As Received"								

Corrosivity Н 3.96

0.0100 0.100 SU RXB5 05/07/20 1502 1994735 2

The following Prep Methods were performed:

Date Method Analyst Time Prep Batch Description SW846 9056A SW846 9056A Total Anions in Soil CJ2 05/14/20 2018 1996293

The following Analytical Methods were performed:

Description Method **Analyst Comments** SW846 9056A

SW846 9045D 2

Notes:

Column headers are defined as follows:

Lc/LC: Critical Level DF: Dilution Factor DL: Detection Limit PF: Prep Factor MDA: Minimum Detectable Activity **RL**: Reporting Limit

MDC: Minimum Detectable Concentration **SQL**: Sample Quantitation Limit

Page 10 of 39 SDG: 510757

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: June 1, 2020

WNUC00821

WNUC008

Company: Westinghouse Electric Company, LLC

Address: PO Drawer R

Columbia, South Carolina 29205

Contact: Ms. Cynthia Logsdon

Project: Soil and Vegetation Analysis

Client Sample ID: HF1-B3-(6-8) Sample ID: 510757009

Matrix: Soil

Collect Date: 05-MAY-20 16:20 Receive Date: 06-MAY-20

Collector: Client Moisture: 12.3%

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst Date	Time Batch	Method
Ion Chromatography										
SW846 9056A Fluoride	e and Nitrate '	'Dry Weight Corrected"								
Fluoride		546	9.79	28.8	mg/kg	10.1	25	LXA2 05/15/20	0511 1996294	1
Nitrate-N		700	9.50	28.8	mg/kg	10.1	25			
Titration and Ion Analy	vsis									
SW9045D Corrosivity	(pH<2or>14)	"As Received"								
Corrosivity	Н	4.11	0.0100	0.100	SU		1	RXB5 05/07/20	1504 1994735	2

The following Prep Methods were performed:

MethodDescriptionAnalystDateTimePrep BatchSW846 9056ASW846 9056A Total Anions in SoilCJ205/14/2020181996293

The following Analytical Methods were performed:

MethodDescriptionAnalyst Comments1SW846 9056A

2 SW846 9045D

Notes:

Column headers are defined as follows:

DF: Dilution Factor Lc/LC: Critical Level
DL: Detection Limit PF: Prep Factor
MDA: Minimum Detectable Activity RL: Reporting Limit

MDC: Minimum Detectable Concentration SQL: Sample Quantitation Limit

Page 11 of 39 SDG: 510757

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: June 1, 2020

WNUC00821

WNUC008

Company: Westinghouse Electric Company, LLC

Address: PO Drawer R

Columbia, South Carolina 29205

Contact: Ms. Cynthia Logsdon
Project: Soil and Vegetation Analysis

Client Sample ID: HF1-B3-(8-10) Sample ID: 510757010

Matrix: Soil

Collect Date: 05-MAY-20 17:22 Receive Date: 06-MAY-20

Collector: Client Moisture: 12.6%

Parameter	Qualifier	Result	DL	RL	Units	PF	DF Ana	lyst Date	Time Batch	Method
Ion Chromatograph	у									
SW846 9056A Fluo	oride and Nitrate '	'Dry Weight Corrected'	"							
Fluoride		343	3.91	11.5	mg/kg	10.1	10 LXA	2 05/15/20	0605 1996294	1
Nitrate-N		398	3.80	11.5	mg/kg	10.1	10			
Titration and Ion A	nalysis									
SW9045D Corrosiv	vity (pH<2or>14)	"As Received"								
Corrosivity	H	4.25	0.0100	0.100	SU		1 RXE	5 05/07/20	1505 1994735	2

The following Prep Methods were performed:

MethodDescriptionAnalystDateTimePrep BatchSW846 9056ASW846 9056A Total Anions in SoilCJ205/14/2020181996293

The following Analytical Methods were performed:

Method Description Analyst Comments

SW846 9056A

Analyst Comments

2 SW846 9045D

Notes:

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

MDC: Minimum Detectable Concentration SQL: Sample Quantitation Limit

Page 12 of 39 SDG: 510757

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Analyst Comments

Report Date: June 1, 2020

WNUC00821

WNUC008

Company: Westinghouse Electric Company, LLC

Address: PO Drawer R

Columbia, South Carolina 29205

Contact: Ms. Cynthia Logsdon

Project: Soil and Vegetation Analysis

Client Sample ID: HF1-B2-(1-2) Sample ID: 510757001

Matrix: Soil

Collect Date: 05-MAY-20 09:12 Receive Date: 06-MAY-20

Receive Date: 06-MA
Collector: Client
Moisture: 8.89%

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF Analy	st Date	Time Batch	Method
Rad Alpha Spec Analy	sis										
Alphaspec U, Soil/Veg	"Dry Weight	Corrected	d"								
Uranium-233/234		4.65	+/-0.740	0.316	0.500	pCi/g		BXA4	05/09/20	0839 1995261	. 1
Uranium-235/236		0.455	+/-0.268	0.201	0.500	pCi/g					
Uranium-238		1.39	+/-0.409	0.228	0.500	pCi/g					
Rad Liquid Scintillatio	n Analysis										
Liquid Scint Tc99, Soi	l "As Receive	d"									
Technetium-99	U	-1.41	+/-1.95	3.51	5.00	pCi/g		JJ3	05/12/20	0610 1995247	2
The following Prep Me	ethods were pe	erformed:									
Method	Description	n			Analyst	Date		Time Pr	ep Batch		<u>_</u>

Dry Soil Prep Dry Soil Prep GL-RAD-A-021 CXB7 05/06/20 1726 1995223

The following Analytical Methods were performed:

Method Description

DOE EML HASL-300, U-02-RC Modified

DOE EML HASL-300, Tc-02-RC Modified

DOE EML HASL-300, Tc-02-RC Modified

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Uranium-232 Tracer	Alphaspec U, Soil/Veg "Dry Weight Corrected"			99.6	(15%-125%)
Technetium-99m Tracer	Liquid Scint Tc99, Soil "As Received"			99.5	(15%-125%)

Notes:

Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

MDC: Minimum Detectable Concentration SQL: Sample Quantitation Limit

Page 13 of 39 SDG: 510757

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: June 1, 2020

WNUC00821

WNUC008

Company: Westinghouse Electric Company, LLC

Address: PO Drawer R

Columbia, South Carolina 29205

Contact: Ms. Cynthia Logsdon

Project: Soil and Vegetation Analysis

Client Sample ID: HF1-B2-(2-4) Sample ID: 510757002

Matrix: Soil

Collect Date: 05-MAY-20 09:40

Receive Date: 06-MAY-20

Collector: Client Moisture: 7.14%

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF Ana	lyst Date	Time	e Batch	Method
Rad Alpha Spec Anal	ysis											
Alphaspec U, Soil/Ve	g "Dry Weight	Correcte	d"									
Uranium-233/234		0.847	+/-0.345	0.285	0.500	pCi/g		BX	4 05/09/20	0839	1995261	1
Uranium-235/236	U	0.107	+/-0.154	0.186	0.500	pCi/g						
Uranium-238		0.785	+/-0.321	0.206	0.500	pCi/g						
Rad Liquid Scintillati	on Analysis											
Liquid Scint Tc99, So	oil "As Receive	d"										
Technetium-99	U	-0.842	+/-2.14	3.79	5.00	pCi/g		JJ3	05/12/20	0626	1995247	2
The following Prep M	lethods were pe	erformed:										
Method	Description	1			Analyst	Date		Time	Prep Batch			
Dry Soil Prep	Dry Soil Prep	GL-RAD-	A-021		CXB7	05/06/20		1726	1995223			

The	following	Analytical	Methods	were performed:

Method Description Analyst Comments

DOE EML HASL-300, U-02-RC Modified
DOE EML HASL-300, Tc-02-RC Modified

Surrogate/Tracer Recovery Test Result Nominal Recovery% Acceptable Limits

Uranium-232 Tracer Alphaspec U, Soil/Veg "Dry Weight Corrected" 87 (15%-125%)
Technetium-99m Tracer Liquid Scint Tc99, Soil "As Received" 97.6 (15%-125%)

Notes:

Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor Lc/LC: Critical Level
DL: Detection Limit PF: Prep Factor
MDA: Minimum Detectable Activity RL: Reporting Limit

MDC: Minimum Detectable Concentration SQL: Sample Quantitation Limit

Page 14 of 39 SDG: 510757

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: June 1, 2020

WNUC00821

WNUC008

Company: Westinghouse Electric Company, LLC

Address: PO Drawer R

Columbia, South Carolina 29205

Contact: Ms. Cynthia Logsdon

Project: Soil and Vegetation Analysis

8.79%

Client Sample ID: HF1-B2-(4-6) Sample ID: 510757003

Matrix: Soil

Moisture:

Collect Date: 05-MAY-20 10:43

Receive Date: 06-MAY-20 Collector: Client

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF Analy	st Date	Time Batch	Method
Rad Alpha Spec Analys	sis										
Alphaspec U, Soil/Veg	"Dry Weight	Corrected	1"								
Uranium-233/234		1.50	+/-0.493	0.341	0.500	pCi/g		BXA4	05/09/20	0839 1995261	1
Uranium-235/236	U	0.0943	+/-0.162	0.141	0.500	pCi/g					
Uranium-238		0.955	+/-0.391	0.251	0.500	pCi/g					
Rad Liquid Scintillation	n Analysis										
Liquid Scint Tc99, Soil	"As Received	d"									
Technetium-99	U	-2.60	+/-1.99	3.66	5.00	pCi/g		JJ3	05/12/20	0643 1995247	2

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	CXB7	05/06/20	1726	1995223

The following Analytical Methods were performed:

Method Description Analyst Comments

DOE EML HASL-300, U-02-RC Modified
DOE EML HASL-300, Tc-02-RC Modified

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Uranium-232 Tracer	Alphaspec U, Soil/Veg "Dry Weight Corrected"			90.6	(15%-125%)
Technetium-99m Tracer	Liquid Scint Tc99, Soil "As Received"			97.2	(15%-125%)

Notes:

Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

MDC: Minimum Detectable Concentration SQL: Sample Quantitation Limit

Page 15 of 39 SDG: 510757

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: June 1, 2020

WNUC00821

WNUC008

Company: Westinghouse Electric Company, LLC

Address: PO Drawer R

Columbia, South Carolina 29205

Contact: Ms. Cynthia Logsdon

Project: Soil and Vegetation Analysis

Client Sample ID: HF1-B2-(6-8) Sample ID: 510757004

Matrix: Soil

Collect Date: 05-MAY-20 11:30 Receive Date: 06-MAY-20

Collector: Client Moisture: 9.81%

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF Aı	alyst Date	Time	Batch	Method
Rad Alpha Spec Analys	is											
Alphaspec U, Soil/Veg	"Dry Weight	Correcte	d"									
Uranium-233/234		0.926	+/-0.396	0.327	0.500	pCi/g		ВΣ	A4 05/09/20	0839	1995261	1
Uranium-235/236	U	0.0131	+/-0.137	0.286	0.500	pCi/g						
Uranium-238		0.218	+/-0.198	0.182	0.500	pCi/g						
Rad Liquid Scintillation	Analysis											
Liquid Scint Tc99, Soil	"As Received	d"										
Technetium-99	U	0.00658	+/-2.05	3.57	5.00	pCi/g		JJ3	05/12/20	0659	1995247	2
The following Prep Met	hods were pe	rformed:										
Method	Description	1			Analyst	Date		Time	Prep Batch			
Dry Soil Prep	Dry Soil Prep	GL-RAD-	A-021	(CXB7	05/06/20		1726	1995223			

The	following	Analytical	Methods	were performed:

Method Description Analyst Comments

DOE EML HASL-300, U-02-RC Modified
DOE EML HASL-300, Tc-02-RC Modified

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Uranium-232 Tracer	Alphaspec U, Soil/Veg "Dry Weight Corrected"			86	(15%-125%)
Technetium-99m Tracer	Liquid Scint Tc99, Soil "As Received"			97.2	(15%-125%)

Notes:

Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

MDC: Minimum Detectable Concentration SQL: Sample Quantitation Limit

Page 16 of 39 SDG: 510757

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: June 1, 2020

WNUC00821

WNUC008

Westinghouse Electric Company, LLC Company:

Address: PO Drawer R

Columbia, South Carolina 29205

Contact: Ms. Cynthia Logsdon

Project: Soil and Vegetation Analysis

Client Sample ID: HF1-B2-(8-10) Sample ID: 510757005

Matrix: Soil

Collect Date: 05-MAY-20 12:30

Receive Date: 06-MAY-20

Collector: Client Moisture: 13.1%

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF Ana	lyst Date	Time Batch	Method
Rad Alpha Spec Ana	alysis										
Alphaspec U, Soil/V	eg "Dry Weight	Corrected	d"								
Uranium-233/234		1.52	+/-0.453	0.248	0.500	pCi/g		BXA	4 05/09/20	0839 1995261	. 1
Uranium-235/236	U	0.0407	+/-0.114	0.122	0.500	pCi/g					
Uranium-238		0.421	+/-0.253	0.231	0.500	pCi/g					
Rad Liquid Scintilla	tion Analysis										
Liquid Scint Tc99, S	Soil "As Receive	d"									
Technetium-99	U	-2.27	+/-2.18	3.97	5.00	pCi/g		JJ3	05/12/20	0716 1995247	2
The following Prep	Methods were po	erformed:									
Method	Description	n			Analyst	Date		Time	Prep Batch	l	
Dry Soil Prep	Dry Soil Pren	GL-RAD-A	A-021		CXB7	05/06/20		1726	1995223		

The following Analytical Methods were performed:

Method Description **Analyst Comments**

DOE EML HASL-300, U-02-RC Modified

2 DOE EML HASL-300, Tc-02-RC Modified

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Uranium-232 Tracer	Alphaspec U, Soil/Veg "Dry Weight Corrected"			87.2	(15%-125%)
Technetium-99m Tracer	Liquid Scint Tc99, Soil "As Received"			94.7	(15%-125%)

Notes:

Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

Lc/LC: Critical Level DF: Dilution Factor DL: Detection Limit PF: Prep Factor MDA: Minimum Detectable Activity **RL**: Reporting Limit

SQL: Sample Quantitation Limit MDC: Minimum Detectable Concentration

Page 17 of 39 SDG: 510757

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: June 1, 2020

05/12/20 0732 1995247

2

WNUC00821

WNUC008

JJ3

1726

1995223

Company: Westinghouse Electric Company, LLC

Address: PO Drawer R

Columbia, South Carolina 29205

Contact: Ms. Cynthia Logsdon

Project: Soil and Vegetation Analysis

7.09%

Client Sample ID: HF1-B3-(1-2) Sample ID: 510757006

Matrix: Soil

Collect Date: 05-MAY-20 14:13

Receive Date: 06-MAY-20 Collector: Client

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF Analyst Date	Time Batch	Method
Rad Alpha Spec Analys	sis									
Alphaspec U, Soil/Veg	"Dry Weight	Corrected	''							
Uranium-233/234		3.52	+/-0.714	0.281	0.500	pCi/g		BXA4 05/09/20	0839 1995261	1
Uranium-235/236	U	0.0795	+/-0.156	0.217	0.500	pCi/g				
Uranium-238		1.13	+/-0.414	0.256	0.500	pCi/g				

5.00

CXB7

pCi/g

05/06/20

3.59

Rad Liquid Scintillation Analysis

Moisture:

Liquid Scint Tc99, Soil "As Received"

Technetium-99

The following Prep Methods were performed:

Method Description Analyst Date Time Prep Batch

The following Analytical Methods were performed:

Method Description Analyst Comments

+/-2.03

DOE EML HASL-300, U-02-RC Modified
DOE EML HASL-300, Tc-02-RC Modified

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Uranium-232 Tracer	Alphaspec U, Soil/Veg "Dry Weight Corrected"			74.2	(15%-125%)
Technetium-99m Tracer	Liquid Scint Tc99, Soil "As Received"			101	(15%-125%)

Notes:

Dry Soil Prep

Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Dry Soil Prep GL-RAD-A-021

-0.758

Column headers are defined as follows:

DF: Dilution Factor Lc/LC: Critical Level
DL: Detection Limit PF: Prep Factor
MDA: Minimum Detectable Activity RL: Reporting Limit

MDC: Minimum Detectable Concentration SQL: Sample Quantitation Limit

Page 18 of 39 SDG: 510757

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: June 1, 2020

WNUC00821

WNUC008

Company: Westinghouse Electric Company, LLC

Address: PO Drawer R

Columbia, South Carolina 29205

Contact: Ms. Cynthia Logsdon

Project: Soil and Vegetation Analysis

Client Sample ID: HF1-B3-(2-4) Sample ID: 510757007

Matrix: Soil

Collect Date: 05-MAY-20 14:44 Receive Date: 06-MAY-20

Collector: Client Moisture: 8.9%

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF Ana	alyst Date	Time Bat	ch Method
Rad Alpha Spec Ana	alysis										
Alphaspec U, Soil/V	eg "Dry Weight	Correcte	d"								
Uranium-233/234		3510	+/-99.5	5.06	0.500	pCi/g		MP2	2 05/19/20	1147 1997	576 1
Uranium-235/236		159	+/-23.6	2.72	0.500	pCi/g					
Uranium-238		582	+/-40.5	3.73	0.500	pCi/g					
Rad Liquid Scintilla	tion Analysis										
Liquid Scint Tc99, S	Soil "As Receive	d"									
Technetium-99	U	-0.638	+/-2.39	4.21	5.00	pCi/g		JJ3	05/12/20	0429 1995	246 2
The following Prep	Methods were po	erformed:									
Method	Description	n			Analyst	Date		Time	Prep Batch		
Dry Soil Prep	Dry Soil Prep	GL-RAD-	A-021		CXB7	05/06/20		1723	1995224		

The following Analytical Methods were performed:

Method Description Analyst Comments

DOE EML HASL-300, U-02-RC Modified
DOE EML HASL-300, Tc-02-RC Modified

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Uranium-232 Tracer	Alphaspec U, Soil/Veg "Dry Weight Corrected"			66.5	(15%-125%)
Technetium-99m Tracer	Liquid Scint Tc99, Soil "As Received"			93.3	(15%-125%)

Notes:

Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

MDC: Minimum Detectable Concentration SQL: Sample Quantitation Limit

Page 19 of 39 SDG: 510757

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: June 1, 2020

WNUC00821

WNUC008

Company: Westinghouse Electric Company, LLC

Address: PO Drawer R

Columbia, South Carolina 29205

Contact: Ms. Cynthia Logsdon

Project: Soil and Vegetation Analysis

Client Sample ID: HF1-B3-(4-6) Sample ID: 510757008

Matrix: Soil

Collect Date: 05-MAY-20 15:35 Receive Date: 06-MAY-20

Collector: Client Moisture: 13.9%

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF An	alyst Date	Time	e Batch	Method
Rad Alpha Spec Analys	is											
Alphaspec U, Soil/Veg	"Dry Weight	Correcte	d"									
Uranium-233/234		5600	+/-137	6.49	0.500	pCi/g		MF	2 05/19/20	1147	1997576	1
Uranium-235/236		264	+/-33.1	5.06	0.500	pCi/g						
Uranium-238		948	+/-56.3	3.66	0.500	pCi/g						
Rad Liquid Scintillation	Analysis											
Liquid Scint Tc99, Soil	"As Received	d"										
Technetium-99	U	-0.0340	+/-2.23	3.89	5.00	pCi/g		JJ3	05/12/20	0445	1995246	2
The following Prep Mer	thods were pe	erformed:										
Method	Description	1			Analyst	Date		Time	Prep Batch			
Dry Soil Prep	Dry Soil Prep	GL-RAD-	A-021	(CXB7	05/06/20		1723	1995224			

The following Analytical Methods were performed:

Method Description Analyst Comments

DOE EML HASL-300, U-02-RC Modified
DOE EML HASL-300, Tc-02-RC Modified

Surrogate/Tracer RecoveryTestResultNominalRecovery%Acceptable LimitsUranium-232 TracerAlphaspec U, Soil/Veg "Dry Weight Corrected"61.5(15%-125%)Technetium-99m TracerLiquid Scint Tc99, Soil "As Received"93(15%-125%)

Notes:

Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor Lc/LC: Critical Level
DL: Detection Limit PF: Prep Factor
MDA: Minimum Detectable Activity RL: Reporting Limit

MDC: Minimum Detectable Concentration SQL: Sample Quantitation Limit

Page 20 of 39 SDG: 510757

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: June 1, 2020

WNUC00821

WNUC008

Company: Westinghouse Electric Company, LLC

Address: PO Drawer R

Columbia, South Carolina 29205

Contact: Ms. Cynthia Logsdon

Project: Soil and Vegetation Analysis

Client Sample ID: HF1-B3-(6-8) Sample ID: 510757009

Matrix: Soil

Collect Date: 05-MAY-20 16:20

Receive Date: 06-MAY-20 Collector: Client

Moisture: 12.3%

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF An	alyst Date	Time Batc	h Method
Rad Alpha Spec Ana	alysis										
Alphaspec U, Soil/V	eg "Dry Weight	Correcte	d"								
Uranium-233/234		2790	+/-98.0	5.36	0.500	pCi/g		MP	2 05/19/20	1147 19975	76 1
Uranium-235/236		171	+/-27.1	3.32	0.500	pCi/g					
Uranium-238		632	+/-46.6	4.21	0.500	pCi/g					
Rad Liquid Scintilla	tion Analysis										
Liquid Scint Tc99, S	Soil "As Receive	d"									
Technetium-99	U	-1.07	+/-2.20	3.92	5.00	pCi/g		JJ3	05/12/20	0502 19952	46 2
The following Prep	Methods were p	erformed:									
Method	Description	n			Analyst	Date		Time	Prep Batch	1	
Dry Soil Prep	Dry Soil Prer	GL-RAD-	A-021		CXB7	05/06/20		1723	1995224		

The following Analytical Methods were performed:

Method Description Analyst Comments

DOE EML HASL-300, U-02-RC Modified
DOE EML HASL-300, Tc-02-RC Modified

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Uranium-232 Tracer	Alphaspec U, Soil/Veg "Dry Weight Corrected"			50.9	(15%-125%)
Technetium-99m Tracer	Liquid Scint Tc99, Soil "As Received"			94.8	(15%-125%)

Notes:

Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

MDC: Minimum Detectable Concentration SQL: Sample Quantitation Limit

Page 21 of 39 SDG: 510757

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: June 1, 2020

WNUC00821

WNUC008

Company: Westinghouse Electric Company, LLC

Address: PO Drawer R

Columbia, South Carolina 29205

Contact: Ms. Cynthia Logsdon

Project: Soil and Vegetation Analysis

Client Sample ID: HF1-B3-(8-10) Sample ID: 510757010

Matrix: Soil

Collect Date: 05-MAY-20 17:22 Receive Date: 06-MAY-20

Collector: Client Moisture: 12.6%

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF Anal	yst Date	Time Batch	Method
Rad Alpha Spec Analys	is										
Alphaspec U, Soil/Veg	"Dry Weight	Corrected	d"								
Uranium-233/234		2600	+/-83.9	5.25	0.500	pCi/g		MP2	05/19/20	1147 1997576	5 1
Uranium-235/236		139	+/-21.6	3.66	0.500	pCi/g					
Uranium-238		636	+/-41.5	4.19	0.500	pCi/g					
Rad Liquid Scintillation	n Analysis										
Liquid Scint Tc99, Soil	"As Received	d"									
Technetium-99	U	-2.17	+/-2.15	3.92	5.00	pCi/g		JJ3	05/12/20	0518 1995246	5 2
The following Prep Met	thods were pe	erformed:									
Method	Description	1			Analyst	Date		Time P	rep Batch		

Method	Description	Anaiyst	Date	rime	riep Batti
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	CXB7	05/06/20	1723	1995224

The following Analytical Methods were performed:

Method Description Analyst Comments

DOE EML HASL-300, U-02-RC Modified
DOE EML HASL-300, Tc-02-RC Modified

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Uranium-232 Tracer	Alphaspec U, Soil/Veg "Dry Weight Corrected"			64.6	(15%-125%)
Technetium-99m Tracer	Liquid Scint Tc99, Soil "As Received"			96.1	(15%-125%)

Notes:

Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

MDC: Minimum Detectable Concentration SQL: Sample Quantitation Limit

Page 22 of 39 SDG: 510757

2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Report Date: June 1, 2020

Page 1 of 3

Westinghouse Electric Company, LLC

PO Drawer R

Columbia, South Carolina

Contact: Ms. Cynthia Logsdon

Workorder: 510757

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range Anlst	Date Time
Ion Chromatography Batch 1995237 ———									
QC1204557123 510757001 DUP Fluoride		1.28	J	0.471	mg/kg	92.1 ′	Λ.	(+/-1.10) LXA2	05/07/20 00:55
Nitrate-N		76.5		103	mg/kg	29.9		(0%-104%)	05/07/20 16:28
QC1204557122 LCS Fluoride	25.1			27.1	mg/kg		108	(90%-110%)	05/06/20 22:20
Nitrate-N	25.1			26.6	mg/kg		106	(90%-110%)	
QC1204557121 MB Fluoride			U	ND	mg/kg				05/06/20 21:49
Nitrate-N			U	ND	mg/kg				
QC1204557125 510757001 MS Fluoride	27.4	1.28		10.7	mg/kg		34.2*	(75%-125%)	05/07/20 01:26
Nitrate-N	27.4	76.5		108	mg/kg		116	(75%-125%)	05/07/20 16:59
Batch 1996294 ———									
QC1204559298 510757006 DUP Fluoride		6.24		5.79	mg/kg	7.5		(0%-109%) LXA2	05/15/20 00:14
Nitrate-N		285		278	mg/kg	2.37		(0%-104%)	05/15/20 00:41
QC1204559297 LCS Fluoride	24.7			24.8	mg/kg		100	(90%-110%)	05/14/20 22:51
Nitrate-N	24.7			25.0	mg/kg		101	(90%-110%)	

Page 23 of 39 SDG: 510757

2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Workorder: 510757 Page 2 of 3 **Parmname NOM** Sample Qual QC Units RPD% REC% Range Anlst Date Time Ion Chromatography 1996294 Batch QC1204559296 MB U ND LXA2 05/14/20 21:55 Fluoride mg/kg U Nitrate-N ND mg/kg QC1204559300 510757006 MS Fluoride 26.8 6.24 12.7 mg/kg (75%-125%)05/15/20 01:08 285 302 05/15/20 01:35 Nitrate-N 26.8 (75%-125%) mg/kg N/A **Titration and Ion Analysis** Batch 1994735 QC1204556044 510581001 DUP Н 4.81 Η 5.15 SU(0%-10%) RXB5 05/07/20 14:47 Corrosivity 6.83 QC1204556042 LCS 7.00 SUCorrosivity 7.00 100 (95%-105%) 05/07/20 14:42

Notes:

The Qualifiers in this report are defined as follows:

- < Result is less than value reported
- > Result is greater than value reported
- B The target analyte was detected in the associated blank.
- E General Chemistry--Concentration of the target analyte exceeds the instrument calibration range
- H Analytical holding time was exceeded
- J See case narrative for an explanation
- J Value is estimated
- N/A RPD or %Recovery limits do not apply.
- N1 See case narrative
- ND Analyte concentration is not detected above the detection limit
- NJ Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Q One or more quality control criteria have not been met. Refer to the applicable narrative or DER.
- R Per section 9.3.4.1 of Method 1664 Revision B, due to matrix spike recovery issues, this result may not be reported or used for regulatory compliance purposes.
- R Sample results are rejected

Page 24 of 39 SDG: 510757

2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Workorder: 510757

Page 3 of 3

Parmname NOM Sample Qual QC Units RPD% REC% Range Anlst Date Time

- U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Z Paint Filter Test--Particulates passed through the filter, however no free liquids were observed.
- ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.
- d 5-day BOD--The 2:1 depletion requirement was not met for this sample
- e 5-day BOD--Test replicates show more than 30% difference between high and low values. The data is qualified per the method and can be used for reporting purposes
- h Preparation or preservation holding time was exceeded

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more or %RPD not applicable.

- ^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.
- * Indicates that a Quality Control parameter was not within specifications.

For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.

Page 25 of 39 SDG: 510757

2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Report Date: June 1, 2020

Page 1 of 3

Westinghouse Electric Company, LLC

PO Drawer R

Columbia, South Carolina

Contact: Ms. Cynthia Logsdon

Workorder: 510757

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range A	Anlst	Date Time
Rad Alpha Spec Batch 1995261 ——										
QC1204557184 510752001 DUP										
Uranium-233/234		1.56		1.31	pCi/g	17.7		(0% - 100%)	BXA4	05/09/20 08:39
	Uncertainty	+/-0.476		+/-0.436						
Uranium-235/236	U	0.0219	U	0.0496	pCi/g	N/A		N/A		
	Uncertainty	+/-0.122		+/-0.136	1 - 8					
Uranium-238	TT	1.60		1.06	pCi/g	40.4*		(0%-20%)		
	Uncertainty	+/-0.470		+/-0.376						
QC1204557186 LCS										
Uranium-233/234				11.9	pCi/g					05/09/20 08:39
	Uncertainty			+/-1.09						
Uranium-235/236				0.344	pCi/g					
01 4 114111 2 00, 2 00	Uncertainty			+/-0.228	18					
	•									
Uranium-238	12.5			13.2	pCi/g		106	(75%-125%)		
	Uncertainty			+/-1.15						
QC1204557183 MB										
Uranium-233/234			U	-0.0435	pCi/g					05/09/20 08:39
	Uncertainty			+/-0.0855						
Uranium-235/236			U	-0.0501	pCi/g					
01 4 114111 2 00, 2 00	Uncertainty			+/-0.0808	Pong					
	•									
Uranium-238			U	0.0146	pCi/g					
	Uncertainty			+/-0.0813						
Batch 1997576 ——										
QC1204562383 510757007 DUP										
Uranium-233/234		3510		2820	pCi/g	21.9*		(0%-20%)	MP2	05/19/20 11:47
	Uncertainty	+/-99.5		+/-85.0						
Uranium-235/236		159		128	pCi/g	21.6*		(0%-20%)		
200,200	Uncertainty	+/-23.6		+/-20.2	PONS	21.0		(070 2070)		
	,									
Uranium-238		582		417	pCi/g	33*		(0%-20%)		
	Uncertainty	+/-40.5		+/-32.7						

Page 26 of 39 SDG: 510757

2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Workorder: 510757 Page 2 of 3 **Parmname** NOM Sample Qual QC Units RPD% REC% Range Anlst Date Time Rad Alpha Spec 1997576 Batch QC1204562384 LCS Uranium-233/234 MP2 05/19/20 11:47 71.6 pCi/g +/-16.2 Uncertainty Uranium-235/236 4.52 pCi/g Uncertainty +/-5.03 97.3 97.1 Uranium-238 pCi/g 99.8 (75%-125%) Uncertainty +/-18.7QC1204562382 MB U 05/19/20 11:47 Uranium-233/234 0.523 pCi/g +/-1.70 Uncertainty U Uranium-235/236 0.147 pCi/g Uncertainty +/-1.49 Uranium-238 -0.153 pCi/g Uncertainty +/-0.856**Rad Liquid Scintillation** Batch 1995246 QC1204557146 510757007 DUP U -0.638 U Technetium-99 -1.41 JJ3 05/12/20 05:51 pCi/g N/A N/A +/-2.39 +/-2.24 Uncertainty QC1204557147 LCS Technetium-99 59.9 52.9 pCi/g 88.3 (75%-125%) 05/12/20 06:08 +/-3.84 Uncertainty QC1204557145 MB U Technetium-99 05/12/20 05:35 -1.73pCi/g Uncertainty +/-2.25Batch 1995247 OC1204557150 510757001 DUP U Technetium-99 -1.41 -0.0762 pCi/g N/A N/A JJ3 05/12/20 08:22 Uncertainty +/-1.95+/-2.19QC1204557151 LCS Technetium-99 57.2 57.2 pCi/g 100 (75% - 125%)05/12/20 08:38 Uncertainty +/-3.64 QC1204557148 MB Technetium-99 U -1.52 pCi/g 05/12/20 07:49 Uncertainty +/-1.89

Page 27 of 39 SDG: 510757

2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Page 3 of 3

Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Ti	ime

Notes:

Workorder:

Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

The Qualifiers in this report are defined as follows:

Analyte is a Tracer compound

510757

- < Result is less than value reported
- > Result is greater than value reported
- BDResults are either below the MDC or tracer recovery is low
- FA Failed analysis.
- Η Analytical holding time was exceeded
- J See case narrative for an explanation
- J Value is estimated
- K Analyte present. Reported value may be biased high. Actual value is expected to be lower.
- L Analyte present. Reported value may be biased low. Actual value is expected to be higher.
- M M if above MDC and less than LLD
- REMP Result > MDC/CL and < RDL M
- N/A RPD or %Recovery limits do not apply.
- N1 See case narrative
- ND Analyte concentration is not detected above the detection limit
- NJ Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- One or more quality control criteria have not been met. Refer to the applicable narrative or DER. Q
- R Sample results are rejected
- U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.
- UI Gamma Spectroscopy--Uncertain identification
- UJ Gamma Spectroscopy--Uncertain identification
- UL Not considered detected. The associated number is the reported concentration, which may be inaccurate due to a low bias.
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Y Other specific qualifiers were required to properly define the results. Consult case narrative.
- ٨ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.
- Preparation or preservation holding time was exceeded h

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more or %RPD not applicable. ^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.

* Indicates that a Quality Control parameter was not within specifications.

For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.

Page 28 of 39 SDG: 510757

Technical Case Narrative Westinghouse Electric Co, LLC SDG #: 510757

General Chemistry

Product: Ion Chromatography Analytical Method: SW846 9056A

Analytical Procedure: GL-GC-E-086 REV# 27 Analytical Batches: 1995237 and 1995236

The following samples were analyzed using the above methods and analytical procedure(s).

GEL Sample ID#	Client Sample Identification
510757001	HF1-B2-(1-2)
510757002	HF1-B2-(2-4)
510757003	HF1-B2-(4-6)
510757004	HF1-B2-(6-8)
510757005	HF1-B2-(8-10)
1204557121	Method Blank (MB)
1204557122	Laboratory Control Sample (LCS)
1204557123	510757001(HF1-B2-(1-2)) Sample Duplicate (DUP)
1204557125	510757001(HF1-B2-(1-2)) Matrix Spike (MS)

The samples in this SDG were analyzed on a "dry weight" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Quality Control (QC) Information

Matrix Spike (MS)/Post Spike (PS) Recovery Statement

The percent recoveries (%R) obtained from the spike analyses are evaluated when the sample concentration is less than four times (4X) the spike concentration added. The matrix spike recovered outside of the established acceptance limits due to matrix interference and/or non-homogeneity.

Analyte	Sample	Value
Fluoride	1204557125 (HF1-B2-(1-2)MS)	34.2* (75%-125%)

Technical Information

Sample Dilutions

The following samples 1204557123 (HF1-B2-(1-2)DUP), 1204557125 (HF1-B2-(1-2)MS), 510757001 (HF1-B2-(1-2)), 510757002 (HF1-B2-(2-4)) and 510757003 (HF1-B2-(4-6)) were diluted because target analyte concentrations exceeded the calibration range. Dilutions may be required for many reasons, including to minimize matrix interferences or to bring over range target analyte concentrations into the linear calibration range.

Page 29 of 39 SDG: 510757

A14 -	510757			
Analyte	001	002	003	
Nitrate	2X	5X	5X	

Product: Ion Chromatography Analytical Method: SW846 9056A

Analytical Procedure: GL-GC-E-086 REV# 27 **Analytical Batches:** 1996294 and 1996293

The following samples were analyzed using the above methods and analytical procedure(s).

GEL Sample ID#	Client Sample Identification
510757006	HF1-B3-(1-2)
510757007	HF1-B3-(2-4)
510757008	HF1-B3-(4-6)
510757009	HF1-B3-(6-8)
510757010	HF1-B3-(8-10)
1204559296	Method Blank (MB)
1204559297	Laboratory Control Sample (LCS)
1204559298	510757006(HF1-B3-(1-2)) Sample Duplicate (DUP)
1204559300	510757006(HF1-B3-(1-2)) Matrix Spike (MS)

The samples in this SDG were analyzed on a "dry weight" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Quality Control (QC) Information

Matrix Spike (MS)/Post Spike (PS) Recovery Statement

The percent recoveries (%R) obtained from the spike analyses are evaluated when the sample concentration is less than four times (4X) the spike concentration added. The matrix spike recovered outside of the established acceptance limits due to matrix interference and/or non-homogeneity.

Analyte	Sample	Value
Fluoride	1204559300 (HF1-B3-(1-2)MS)	24.1* (75%-125%)

Technical Information

Sample Dilutions

The following samples 1204559298 (HF1-B3-(1-2)DUP), 1204559300 (HF1-B3-(1-2)MS), 510757006 (HF1-B3-(1-2)), 510757007 (HF1-B3-(2-4)), 510757008 (HF1-B3-(4-6)), 510757009 (HF1-B3-(6-8)) and 510757010 (HF1-B3-(8-10)) were diluted because target analyte concentrations exceeded the calibration range. Dilutions may be required for many reasons, including to minimize matrix interferences or to bring over range target analyte concentrations into the linear calibration range.

Page 30 of 39 SDG: 510757

Analyte	510757				
	006	007	008	009	010
Fluoride	1X	50X	50X	25X	10X
Nitrate	10X	50X	50X	25X	10X

Product: pH

Analytical Method: SW846 9045D

Analytical Procedure: GL-GC-E-008 REV# 24

Analytical Batch: 1994735

The following samples were analyzed using the above methods and analytical procedure(s).

GEL Sample ID#	Client Sample Identification
510757001	HF1-B2-(1-2)
510757002	HF1-B2-(2-4)
510757003	HF1-B2-(4-6)
510757004	HF1-B2-(6-8)
510757005	HF1-B2-(8-10)
510757006	HF1-B3-(1-2)
510757007	HF1-B3-(2-4)
510757008	HF1-B3-(4-6)
510757009	HF1-B3-(6-8)
510757010	HF1-B3-(8-10)
1204556042	Laboratory Control Sample (LCS)
1204556044	510581001(HF1-B1-(1-2)) Sample Duplicate (DUP)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Technical Information

Holding Times

Samples (See Below) were received by the laboratory outside of the method specified holding time. The data is qualified.

Sample	Analyte	Value
1204556044 (HF1-B1-(1-2)DUP)		Received 05-MAY-20, out of holding 04-MAY-20
510757001 (HF1-B2-(1-2))		Received 06-MAY-20, out of holding 05-MAY-20
510757002 (HF1-B2-(2-4))		Received 06-MAY-20, out of holding 05-MAY-20
510757003 (HF1-B2-(4-6))		Received 06-MAY-20, out of holding 05-MAY-20
510757004 (HF1-B2-(6-8))		Received 06-MAY-20, out of holding 05-MAY-20
510757005 (HF1-B2-(8-10))		Received 06-MAY-20, out of holding 05-MAY-20
510757006 (HF1-B3-(1-2))		Received 06-MAY-20, out of holding 05-MAY-20

Page 31 of 39 SDG: 510757

510757007 (HF1-B3-(2-4))	Received 06-MAY-20, out of holding 05-MAY-20
510757008 (HF1-B3-(4-6))	Received 06-MAY-20, out of holding 05-MAY-20
510757009 (HF1-B3-(6-8))	Received 06-MAY-20, out of holding 05-MAY-20
510757010 (HF1-B3-(8-10))	Received 06-MAY-20, out of holding 05-MAY-20

Radiochemistry

Product: Alphaspec U, Soil/Veg

Analytical Method: DOE EML HASL-300, U-02-RC Modified

Analytical Procedure: GL-RAD-A-011 REV# 27

Analytical Batch: 1995261

Preparation Method: Dry Soil Prep

Preparation Procedure: GL-RAD-A-021 REV# 23

Preparation Batch: 1995223

The following samples were analyzed using the above methods and analytical procedure(s).

GEL Sample ID#	Client Sample Identification
510757001	HF1-B2-(1-2)
510757002	HF1-B2-(2-4)
510757003	HF1-B2-(4-6)
510757004	HF1-B2-(6-8)
510757005	HF1-B2-(8-10)
510757006	HF1-B3-(1-2)
1204557183	Method Blank (MB)
1204557184	510752001(NonSDG) Sample Duplicate (DUP)
1204557186	Laboratory Control Sample (LCS)

The samples in this SDG were analyzed on a "dry weight" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Quality Control (QC) Information

Duplication Criteria between QC Sample and Duplicate Sample

The Sample and the Duplicate, (See Below), did not meet the relative percent difference requirement; however, they do meet the relative error ratio requirement with the value listed below.

Sample	Analyte	Value
1204557184 (Non SDG 510752001DUP)	Uranium-238	RPD 40.4* (0.00%-20.00%) RER 1.6 (0-3)

Page 32 of 39 SDG: 510757

Miscellaneous Information

Manual Integration

Manual integration of alpha spectroscopy spectra 510757003 (HF1-B2-(4-6)) was performed to fully separate counts in Regions of Interest which would have been biased.

Additional Comments

The tracer peak centroid for sample 510757003 (HF1-B2-(4-6)) is greater than 50 keV from the expected library energy value for the tracer; however, the tracer yield requirement was met and the tracer peak is within the tracer region of interest.

Product: Alphaspec U, Soil/Veg

Analytical Method: DOE EML HASL-300, U-02-RC Modified

Analytical Procedure: GL-RAD-A-011 REV# 27

Analytical Batch: 1997576

Preparation Method: Dry Soil Prep

Preparation Procedure: GL-RAD-A-021 REV# 23

Preparation Batch: 1995224

The following samples were analyzed using the above methods and analytical procedure(s).

GEL Sample ID#	Client Sample Identification
510757007	HF1-B3-(2-4)
510757008	HF1-B3-(4-6)
510757009	HF1-B3-(6-8)
510757010	HF1-B3-(8-10)
1204562382	Method Blank (MB)
1204562383	510757007(HF1-B3-(2-4)) Sample Duplicate (DUP)
1204562384	Laboratory Control Sample (LCS)

The samples in this SDG were analyzed on a "dry weight" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Quality Control (QC) Information

Duplication Criteria between QC Sample and Duplicate Sample

The Sample and the Duplicate, (See Below), did not meet the relative percent difference requirement; however, they do meet the relative error ratio requirement with the value listed below.

Sample		Analyte	Value	
	1204562383 (HF1-B3-(2-4)DUP)	Uranium-233/234	RPD 21.9* (0.00%-20.00%) RER 1.48 (0-3)	

Page 33 of 39 SDG: 510757

Uranium-235/236	RPD 21.6* (0.00%-20.00%) RER 1.18 (0-3)
Uranium-238	RPD 33* (0.00%-20.00%) RER 2.09 (0-3)

RDL Met

The blank (See Below) did not meet the detection limit due to keeping the blank volume consistent with the other sample aliquots.

Sample	Analyte	Value
1204562382 (MB)	Uranium-233/234	Result 0.523 < MDA 3.21 > RDL 0.5 pCi/g
	Uranium-235/236	Result 0.147 < MDA 3.13 > RDL 0.5 pCi/g
	Uranium-238	Result -0.153 < MDA 2.16 > RDL 0.5 pCi/g

Product: Dry Weight

<u>Preparation Method:</u> ASTM D 2216 (Modified) <u>Preparation Procedure:</u> GL-OA-E-020 REV# 13

Preparation Batch: 1995223

Preparation Method: Dry Soil Prep

Preparation Procedure: GL-RAD-A-021 REV# 23

Preparation Batch: 1995223

The following samples were analyzed using the above methods and analytical procedure(s).

GEL Sample ID#	Client Sample Identification
510757001	HF1-B2-(1-2)
510757002	HF1-B2-(2-4)
510757003	HF1-B2-(4-6)
510757004	HF1-B2-(6-8)
510757005	HF1-B2-(8-10)
510757006	HF1-B3-(1-2)
1204557002	510752001(NonSDG) Sample Duplicate (DUP)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

There are no exceptions, anomalies or deviations from the specified methods. All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable.

Page 34 of 39 SDG: 510757

Product: Dry Weight

<u>Preparation Method:</u> ASTM D 2216 (Modified) <u>Preparation Procedure:</u> GL-OA-E-020 REV# 13

Preparation Batch: 1995224

Preparation Method: Dry Soil Prep

Preparation Procedure: GL-RAD-A-021 REV# 23

Preparation Batch: 1995224

The following samples were analyzed using the above methods and analytical procedure(s).

GEL Sample ID#	Client Sample Identification
510757007	HF1-B3-(2-4)
510757008	HF1-B3-(4-6)
510757009	HF1-B3-(6-8)
510757010	HF1-B3-(8-10)
1204557003	510757007(HF1-B3-(2-4)) Sample Duplicate (DUP)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

There are no exceptions, anomalies or deviations from the specified methods. All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable.

Product: Liquid Scint Tc99, Soil

Analytical Method: DOE EML HASL-300, Tc-02-RC Modified

Analytical Procedure: GL-RAD-A-059 REV# 5

Analytical Batch: 1995246

The following samples were analyzed using the above methods and analytical procedure(s).

GEL Sample ID#	Client Sample Identification
510757007	HF1-B3-(2-4)
510757008	HF1-B3-(4-6)
510757009	HF1-B3-(6-8)
510757010	HF1-B3-(8-10)
1204557145	Method Blank (MB)
1204557146	510757007(HF1-B3-(2-4)) Sample Duplicate (DUP)
1204557147	Laboratory Control Sample (LCS)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

There are no exceptions, anomalies or deviations from the specified methods. All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable.

Page 35 of 39 SDG: 510757

Product: Liquid Scint Tc99, Soil

Analytical Method: DOE EML HASL-300, Tc-02-RC Modified

Analytical Procedure: GL-RAD-A-059 REV# 5

Analytical Batch: 1995247

The following samples were analyzed using the above methods and analytical procedure(s).

GEL Sample ID#	Client Sample Identification
510757001	HF1-B2-(1-2)
510757002	HF1-B2-(2-4)
510757003	HF1-B2-(4-6)
510757004	HF1-B2-(6-8)
510757005	HF1-B2-(8-10)
510757006	HF1-B3-(1-2)
1204557148	Method Blank (MB)
1204557150	510757001(HF1-B2-(1-2)) Sample Duplicate (DUP)
1204557151	Laboratory Control Sample (LCS)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

There are no exceptions, anomalies or deviations from the specified methods. All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable.

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

Page 36 of 39 SDG: 510757

rage: 1 or 1			_	7	+0		(5 8	GEL Laboratories, LLC	s, LLC
GEI Onote #:	2				D Spring	Chemistry Badjochemistry Badjochioassay Specially Analytics	Seav Sr	prialty	Analytic	ď			3 5	2040 Savage Koad Charleston SC 29407	9407
COC Number (1):	510757	Chain of	ofCu	stody	and Ar	Custody and Analytical Request	Seque	St	and and and	9			문	Phone: (843) 556-8171	5-8171
0778461, ENV-CONSENTA	GEL Work Order Number:			GEL Project Manager:	ject M	anager:							Fa	Fax: (843) 766-1178	178
Client Name: Westinghouse		Phone # 803.497.	497.7062	2			Sam	le Ar	alysis	Sample Analysis Requested (5)	ested		II in the	number of co	(Fill in the number of containers for each test)
Project/Site Name: Project # HF Spiking Station #1 Soil Sampling	Sampling	Fax#				Should this							4		< Preservative Type (6)
Address: 5801 Bluff Road, Hopkins, SC 29061						sample be considered:				1u		(pad			
Collected By: R. Crews ZCoass Sen	Send Results To: joynerdp@westinghouse.	@westingho	use.com			II)	ards	Н	əbire	eonte	rate	s phys s	66-		Comments Note: extra sample is
Sample ID * For composites - indicate start and stop date/time	*Date Collected (mm-dd-yy)	*Time Collected (Military)	QC Code (2) F	Field Filtered (3) N	Sample Matrix (4)	Radioactive yes, please sur isotopic info.) (7) Known or	szaH əldizzoq		_	moisture	υiV) U oiqotoel	-oT		required for sample specific QC
HF1-B2-(1-2)	5/5/2020	0912		N/A	SO			×	×	×	×	×	×		
HF1-B2-(2-4)	5/5/2020	0940	- 2	N/A	SO			×	×	×	×	×	×		
HF1-B2-(4-6)	5/5/2020	1043		N/A	SO			×	×	×	×	×	×		
HF1-B2-(6-8)	5/5/2020	1130		N/A	so		ı	×	X	×	×	X	X		
HF1-B2-(8-10)	5/5/2020	1230		N/A	SO		1	×	×	×	×	Х	X		Please note that MDC for
HF1-B3-(1-2)	5/5/2020	1413		N/A	SO		1	×	×	×	×	Х	X		Tc-99 should be 1 pCi/g
HF1-B3-(2-4)	5/5/2020	1444		N/A	SO		1	×	×	×	×	×	×		
HF1-B3-(4-6)	5/5/2020	1535	_ 0	N/A	SO	10	1	X	×	×	×	×	×		
HF1-B3-(6-8)	5/5/2020	1620		N/A	SO			Х	×	×	×	×	×		
HF1-B3-(8-10)	5/5/2020	1722		N/A	SO			×	×	×	×	×	×		
Chain o	Chain of Custody Signatures						TAT Requested:	ednes	:eq:	Normal: X	al: X	R	Rush:	_ Specify:	(Subject to Surcharge)
Relinquished By (Signed) Date Time	Received by (signed)	gned) Date	te	Time		Fax	Fax Results: [] Yes	: [[] No					
1 Randy Crews 72 (AZV 5/6/2020 1020	1 Secure Location		5/6/2020	105	0	Sele	Select Deliverable: [] C of A	erable	: [] c	of A	ŏ	[] QC Summary		[] level 1 []	[] Level 2 [] Level 3 [] Level 4
2 Secure Location 5/6/2020 /	2 0110	6.6	1	7	6		Additional Remarks:	Remar	cs:						
3 (Months) The Bringing and delivery details, see Sample Receipt & Review form (SRR.)	2 3 H. Ul.	(SRR.)		0	N	Ror Lab Receiving Use Only: Custody Seal Intact? [] Yes Sample Collection Time Zone: [X] Eastern [] Pacific [] Central	Lab Re	ceivin	g Use	Only: X] Eas	Custo	ty Sear	For Lab Receiving Use Only: Custody Seal Intact? [] Yes collection Time Zone: [X] Eastern [] Pacific [] Centr] No Cooler Temp:
1.) Chain of Custody Number = Client Determined															
2.) QC Codes: N = Normal Sample, TB = Trip Blank, FD = Field Duplicate, EB = Equipment Blank, MS = Matrix Spike Sample, MSD = Matrix Spike Duplicate Sample, G = Grab, C = Composite	licate, EB = Equipment Blank,	MS = Matrix Sp	ike Sample	MSD = M	atrix Spiko	e Duplicate Sam	ple, G =	Grab, C	= Comp	osite					
3.) Field Filtered: For liquid matrices, indicate with a - Y - for yes the sample was field filtered or - N - for sample was not field filtered	sample was field filtered or - N	- for sample was	not field fi	tered.											
4.) Matrix Codes: DW=Drinking Water, GW=Groundwater, SW=Surface Water, WW=Waste Water, W=Water, ML=Misc	ace Water, WW=Waste Water,	W=Water, ML=		d, SO=Soil	, SD=Sedi	Liquid, SO=Soil, SD=Sediment, SL=Sludge, SS=Solid Waste, O=Oil, F=Filter, P=Wipe, U=Urine, F=Fecal, N=Nasal	ge, SS=Sc	lid Was	e, 0=0	I, F=Fil	er, P=W	ipe, U=	Jrine, F=Fo	cal, N=Nasal	
5.) Sample Analysis Requested: Analytical method requested (i.e. 8260B, 6010B/7470A) and number of containers provided for each (i.e. 8260B - 3, 6010B/7470A - 1).	0B, 6010B/7470A) and number	of containers pro	ovided for	ach (i.e. 82	60B - 3, 6	- NOT-170A -	1).								
Nitric Acid	= Sodium Hydroxide, SA = Sul	furic Acid, AA =	Ascorbic /	cid, HX =	Hexane, S	T = Sodium Thi	iosulfate,	If no pre	servativ	e is adde	d = leav	e field b	ank		
7.) KNOWN OK POSSIBLE HAZAKUS FL.= FL.=	Characteristic Hazards FL = Flammable/Ignitable	Listed Waste LW= Listed V	/aste	9		OT=0	OT= Other / Unknown	/Unk	nwor	_				Plea. belon	Please provide any additional details below regarding handling and/or disposal
RCRA Metals CO As = Arsenic Hg = Mercury RE:	CO = Corrosive RE = Reactive	(F,K,P and U-listed wastes.) Waste code(s):	nd U-list	ed waste.	3	(i.e. misc	(i.e.: High/Iow pH, asbest misc. health hazards, etc.)	ow ph	, asbe. ds, etc	stos, bu	nylliu	n, irrit	(i.e.: High/low pH, asbestos, beryllium, irritants, other misc. health hazards, etc.)		concerns. (i.e.: Origin of sample(s), type of site collected from, odd matrices, etc.)
	4	4				Des	Description:	2.							
Cd = Cadmium Ag= Silver Cr = Chrompium + MR=Miss-RCRA metals PCF	PCB = Polychlorinated	183													
						i i								ĺ	

GEL	Laboratories LLC
-----	------------------

SAMPLE RECEIPT & REVIEW FORM Client: SDG/AR/COC/Work Order: 510 Received By: Date Received: Circle Applicable: FedEx Express FedEx Ground UPS Field Services Carrier and Tracking Number Suspected Hazard Information S_N *If Net Counts > 100cpm on samples not marked "radioactive", contact the Radiation Safety Group for further investigation. Hazard Class Shipped: UN#: If UN2910, Is the Radioactive Shipment Survey Compliant? Yes___ No_ A)Shipped as a DOT Hazardous? B) Did the client designate the samples are to be COC notation or radioactive stickers on containers equal client designation. received as radioactive? Maximum Net Counts Observed* (Observed Counts - Area Background Counts): 800 CPM mR/Hr C) Did the RSO classify the samples as Classified as: Rad 1 Rad 2 radioactive? Rad 3 D) Did the client designate samples are COC notation or hazard labels on containers equal client designation. hazardous? If D or E is yes, select Hazards below. PCB's Flammable E) Did the RSO identify possible hazards? Foreign Soil **RCRA** Asbestos Beryllium Other: Sample Receipt Criteria X S Comments/Qualifiers (Required for Non-Conforming Items) Circle Applicable: Seals broken Damaged container Leaking container Other (describe) Shipping containers received intact and sealed? Chain of custody documents included Circle Applicable: Client contacted and provided COC COC created upon receipt 2 with shipment? Preservation Method Wet Ice Packs Samples requiring cold preservation Dry ice None *all temperatures are recorded in Celsius within $(0 \le 6 \text{ deg. C})$?* TEMP Daily check performed and passed on IR Temperature Device Serial #: 164-16 Secondary Temperature Device Serial # (If Applicable): temperature gun? 1. Circle Applicable: Seals broken Damaged container Leaking container Other (describe) Sample containers intact and sealed? 3 Sample ID's and Containers Affected: Samples requiring chemical preservation . at proper pH? UPreservation added Lor# 71 If Yes, are Encores or Soil Kits present for solids? Yes (If yes, take to VOA Freezer) De liquid VOA viais contain acid preservation? Yes Do any samples require Volatile No (If unknown, select No) Are liquid VOA vials free of headspace? Yes ___ No_ Analysis? Sample ID's and containers affected: ID's and tests affected: • Samples received within holding time? ٠. ٠, Sample ID's on COC match ID's on ID's and containers affected: bottles? Date & time on COC match date & time Circle Applicable: No dates on containers No times on containers COC missing info Other (describe) 10 on bottles? Circle Applicable: No container count on COC Other (describe) Number of containers received match number indicated on COC? Are sample containers identifiable as 12 GEL provided? COC form is properly signed in Circle Applicable: Not relinquished Other (describe) relinquished/received sections? Comments (Use Continuation Form if needed): PM (or PMA) review: Initials NKI's Date of__t__ GL-CHL-SR-001 Rev 6 Page |

List of current GEL Certifications as of 01 June 2020

State	Certification
Alaska	17–018
Alaska Drinking Water	SC00012
Arkansas	88-0651
CLIA	42D0904046
California	2940
Colorado	SC00012
Connecticut	PH-0169
DoD ELAP/ ISO17025 A2LA	2567.01
Florida NELAP	E87156
Foreign Soils Permit	P330-15-00283, P330-15-00253
Georgia	SC00012
Georgia SDWA	967
Hawaii	SC00012
Idaho	SC00012
Illinois NELAP	200029
Indiana	C-SC-01
Kansas NELAP	E-10332
Kentucky SDWA	90129
Kentucky Wastewater	90129
Louisiana Drinking Water	LA024
Louisiana NELAP	03046 (AI33904)
Maine	2019020
Maryland	270
Massachusetts	M-SC012
Massachusetts PFAS Approv	Letter
Michigan	9976
Mississippi	SC00012
Nebraska	NE-OS-26-13
Nevada	SC000122020-1
New Hampshire NELAP	2054
New Jersey NELAP	SC002
New Mexico	SC00012
New York NELAP	11501
North Carolina	233
North Carolina SDWA	45709
North Dakota	R-158
Oklahoma	2019–165
Pennsylvania NELAP	68-00485
Puerto Rico	SC00012
S. Carolina Radiochem	10120002
Sanitation Districts of L	9255651
South Carolina Chemistry	10120001
Tennessee	TN 02934
Texas NELAP	T104704235-20-17
Utah NELAP	SC000122020-32
Vermont	VT87156
Virginia NELAP	460202
Washington	C780











PO Box 30712 Charleston, SC 29417 2040 Savage Road Charleston, SC 29407 P 843.556.8171 F 843.766.1178

gel.com

June 04, 2020

Ms. Cynthia Logsdon Westinghouse Electric Company, LLC PO Drawer R Columbia, South Carolina 29205

Re: Soil and Vegetation Analysis

Work Order: 510807

Dear Ms. Logsdon:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on May 07, 2020. This original data report has been prepared and reviewed in accordance with GEL's standard operating procedures.

Test results for NELAP or ISO 17025 accredited tests are verified to meet the requirements of those standards, with any exceptions noted. The results reported relate only to the items tested and to the sample as received by the laboratory. These results may not be reproduced except as full reports without approval by the laboratory. Copies of GEL's accreditations and certifications can be found on our website at www.gel.com.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at (843) 556-8171, ext. 4707.

Sincerely,

Samuel Hogan for Katelyn Gray Project Manager

Purchase Order: 4500799254

Enclosures



2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis Report for

WNUC008 Westinghouse Electric Co, LLC (4500775170) Client SDG: 510807 GEL Work Order: 510807

The Qualifiers in this report are defined as follows:

- * A quality control analyte recovery is outside of specified acceptance criteria
- ** Analyte is a Tracer compound
- ** Analyte is a surrogate compound
- H Analytical holding time was exceeded
- J See case narrative for an explanation
- J Value is estimated
- U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

The designation ND, if present, appears in the result column when the analyte concentration is not detected above the limit as defined in the 'U' qualifier above.

This data report has been prepared and reviewed in accordance with GEL Laboratories LLC standard operating procedures. Please direct any questions to your Project Manager, Katelyn Gray.

Reviewed by

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: June 4, 2020

WNUC00821

WNUC008

Company: Westinghouse Electric Company, LLC

Address: PO Drawer R

Columbia, South Carolina 29205

Contact: Ms. Cynthia Logsdon

Project: Soil and Vegetation Analysis

Client Sample ID: HF1-B4-(1-2) Sample ID: 510807001

Matrix: Soil

Collect Date: 06-MAY-20 08:23 Receive Date: 07-MAY-20

Collector: Client Moisture: 1.89%

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst Date	Time Batch	Method
Ion Chromatography	y									
SW846 9056A Fluo	ride and Nitrate "	Dry Weight Correcte	d"							
Fluoride		65.8	1.72	5.05	mg/kg	9.90	5	JLD1 05/13/20	1033 1995671	1
Nitrate-N		69.3	1.67	5.05	mg/kg	9.90	5			
Titration and Ion Ar	nalysis									
SW9045D Corrosiv	ity (pH<2or>14) '	'As Received"								
Corrosivity	Н	5.46	0.0100	0.100	SU		1	RXB5 05/28/20	1438 1995459	2

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 9056A	SW846 9056A Total Anions in Soil	CJ2	05/12/20	2001	1995670

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 9056A	

2 SW846 9045D

Notes:

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

MDC: Minimum Detectable Concentration SQL: Sample Quantitation Limit

Page 3 of 47 SDG: 510807

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: June 4, 2020

WNUC00821

RXB5 05/28/20 1443 1995459

3

WNUC008

Company: Westinghouse Electric Company, LLC

Address: PO Drawer R

Columbia, South Carolina 29205

Contact: Ms. Cynthia Logsdon
Project: Soil and Vegetation Analysis

Client Sample ID: HF1-B4-(2-4) Sample ID: 510807002

Matrix: Soil

Collect Date: 06-MAY-20 08:35 Receive Date: 07-MAY-20

Collector: Client Moisture: 1.71%

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time	e Batch	Method
Ion Chromatography												
SW846 9056A Fluoride	e and Nitrate	'Dry Weight Corrected"										
Nitrate-N		70.4	1.68	5.10	mg/kg	10.0	5	JLD1	05/14/20	0218	1995671	1
Fluoride		335	3.47	10.2	mg/kg	10.0	10	JLD1	05/14/20	1038	1995671	2
Titration and Ion Analy	vsis											
SW9045D Corrosivity	(pH<2or>14)	"As Received"										

0.100

SU

Analyst Comments

Corrosivity H 3.97 The following Prep Methods were performed:

MethodDescriptionAnalystDateTimePrep BatchSW846 9056ASW846 9056A Total Anions in SoilCJ205/12/2020011995670

0.0100

The following Analytical Methods were performed:

 Method
 Description

 1
 SW846 9056A

 2
 SW846 9056A

3 SW846 9045D

Notes:

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

MDC: Minimum Detectable Concentration SQL: Sample Quantitation Limit

Page 4 of 47 SDG: 510807

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: June 4, 2020

WNUC00821

WNUC008

Company: Westinghouse Electric Company, LLC

Address: PO Drawer R

Columbia, South Carolina 29205

Contact: Ms. Cynthia Logsdon

Project: Soil and Vegetation Analysis

Client Sample ID: HF1-B4-(4-5.33)

Sample ID: 510807003 Matrix: Soil

Collect Date: 06-MAY-20 08:55 Receive Date: 07-MAY-20

Collector: Client Moisture: 4.19%

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst Date	Time Batch	Method
Ion Chromatography										
SW846 9056A Fluorid	le and Nitrate "	Dry Weight Corrected"								
Fluoride		359	3.56	10.5	mg/kg	10.0	10	JLD1 05/14/20	0350 1995671	1
Nitrate-N		82.5	3.45	10.5	mg/kg	10.0	10			
Titration and Ion Analy	ysis									
SW9045D Corrosivity	(pH<2or>14)	"As Received"								
Corrosivity	Н	3.29	0.0100	0.100	SU		1	RXB5 05/28/20	1446 1995459	2

The following Prep Methods were performed:

MethodDescriptionAnalystDateTimePrep BatchSW846 9056ASW846 9056A Total Anions in SoilCJ205/12/2020011995670

The following Analytical Methods were performed:

Method Description Analyst Comments

SW846 9056A

Analyst Comments

2 SW846 9045D

Notes:

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

MDC: Minimum Detectable Concentration SQL: Sample Quantitation Limit

Page 5 of 47 SDG: 510807

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: June 4, 2020

WNUC00821

WNUC008

Company: Westinghouse Electric Company, LLC

Address: PO Drawer R

Columbia, South Carolina 29205

Contact: Ms. Cynthia Logsdon
Project: Soil and Vegetation Analysis

Client Sample ID: HF1-B5-(1-2) Sample ID: 510807004

Matrix: Soil

Collect Date: 06-MAY-20 09:47
Receive Date: 07-MAY-20
Collector: Client

Moisture: 8.03%

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time	e Batch	Method
Ion Chromatograp	phy											
SW846 9056A Fl	uoride and Nitrate	'Dry Weight Correc	ted"									
Fluoride		1.55	0.372	1.09	mg/kg	10.1	1	JLD1	05/13/20	0423	1995671	1
Nitrate-N		232	3.61	10.9	mg/kg	10.1	10	JLD1	05/14/20	0421	1995671	2
Titration and Ion	Analysis											
SW9045D Corros	sivity (pH<2or>14)	"As Received"										
Corrosivity	Н	5.07	0.0100	0.100	SU		1	RXB5	05/28/20	1447	1995459	3
The following Pro	ep Methods were pe	erformed:										
Method	Description	1		Analyst	Date	,	Tim	- Pr	en Batch			

Method	Description	Analyst	Date	Time	Prep Batch
SW846 9056A	SW846 9056A Total Anions in Soil	CJ2	05/12/20	2001	1995670

The following Analytical Methods were performed:

SW846 9045D

•	<u> </u>	
Method	Description	Analyst Comments
1	SW846 9056A	·
2	SW846 9056A	

Notes:

3

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

MDC: Minimum Detectable Concentration SQL: Sample Quantitation Limit

Page 6 of 47 SDG: 510807

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: June 4, 2020

WNUC00821

WNUC008

Company: Westinghouse Electric Company, LLC

Address: PO Drawer R

Columbia, South Carolina 29205

Contact: Ms. Cynthia Logsdon

Project: Soil and Vegetation Analysis

Client Sample ID: HF1-B5-(2-4) Sample ID: 510807005

Matrix: Soil

Collect Date: 06-MAY-20 10:15 Receive Date: 07-MAY-20

Collector: Client Moisture: 7.57%

Parameter	Oualifier	Result	DL	RL	Units	PF	DF	Analyst Date	Time Batch	Method
Ion Chromatograph	ıy									
SW846 9056A Fluo	oride and Nitrate '	'Dry Weight Correcte	d"							
Fluoride		135	3.72	11.0	mg/kg	10.1	10	JLD1 05/14/20	0452 1995671	1
Nitrate-N		288	3.62	11.0	mg/kg	10.1	10			
Titration and Ion A	nalysis									
SW9045D Corrosiv	vity (pH<2or>14)	"As Received"								
Corrosivity	н	4 30	0.0100	0.100	SII		1	RXR5 05/28/20	1448 1995459	2

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 9056A	SW846 9056A Total Anions in Soil	CJ2	05/12/20	2001	1995670

The following Analytical Methods were performed:

The following I	mary near victious were performed.	
Method	Description	Analyst Comments
1	SW846 9056A	·

SW846 9045D

Notes:

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

MDC: Minimum Detectable Concentration SQL: Sample Quantitation Limit

Page 7 of 47 SDG: 510807

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: June 4, 2020

WNUC00821

1 RXB5 05/28/20 1448 1995459

3

WNUC008

Company: Westinghouse Electric Company, LLC

Address: PO Drawer R

Columbia, South Carolina 29205

Contact: Ms. Cynthia Logsdon
Project: Soil and Vegetation Analysis

Client Sample ID: HF1-B5-(4-6) Sample ID: 510807006

Matrix: Soil

Collect Date: 06-MAY-20 10:45 Receive Date: 07-MAY-20

Collector: Client Moisture: 14.3%

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst Date	Time Batch	Method
Ion Chromatography										
SW846 9056A Fluor	ide and Nitrate	'Dry Weight Corrected"								
Fluoride		21.7	0.396	1.16	mg/kg	9.98	1	JLD1 05/13/20	0525 1995671	1
Nitrate-N		440	9.60	29.1	mg/kg	9.98	25	JLD1 05/14/20	1312 1995671	2
Titration and Ion Ana	alysis									
SW9045D Corrosivit	ty (pH<2or>14)	"As Received"								

0.100

SU

Corrosivity H 4.28 The following Prep Methods were performed:

	r r					
Method	Description	Analyst	Date	Time	Prep Batch	
SW846 9056A	SW846 9056A Total Anions in Soil	CI2	05/12/20	2001	1995670	

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 9056A	·
2	SW846 9056A	

0.0100

3 SW846 9045D

Notes:

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

MDC: Minimum Detectable Concentration SQL: Sample Quantitation Limit

Page 8 of 47 SDG: 510807

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Analyst Comments

Report Date: June 4, 2020

WNUC00821

WNUC008

Company: Westinghouse Electric Company, LLC

Address: PO Drawer R

Columbia, South Carolina 29205

Contact: Ms. Cynthia Logsdon
Project: Soil and Vegetation Analysis

Client Sample ID: HF1-B5-(6-8) Sample ID: 510807007

Matrix: Soil

Collect Date: 06-MAY-20 11:51
Receive Date: 07-MAY-20
Collector: Client

Moisture: 11.4%

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time Ba	atch	Method
Ion Chromatograp	hy											
SW846 9056A Flu	oride and Nitrate	"Dry Weight Corr	ected"									
Fluoride	U	ND	0.377	1.11	mg/kg	9.83	1	JLD1	05/13/20	0556 199	5671	1
Nitrate-N		150	1.83	5.55	mg/kg	9.83	5	JLD1	05/14/20	0656 199	5671	2
Titration and Ion A	Analysis											
SW9045D Corrosi	ivity (pH<2or>14)	"As Received"										
Corrosivity	Н	5.67	0.0100	0.100	SU		1	RXB5	05/28/20	1449 199	5459	3
The following Pro	n Mathada wara n	arfarmad:										

The following Prep Methods were performed:

MethodDescriptionAnalystDateTimePrep BatchSW846 9056ASW846 9056A Total Anions in SoilCJ205/12/2020011995670

The following Analytical Methods were performed:

Method	Description	
1	SW846 9056A	
2	SW846 9056A	

3 SW846 9045D

Notes:

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

MDC: Minimum Detectable Concentration SQL: Sample Quantitation Limit

Page 9 of 47 SDG: 510807

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: June 4, 2020

WNUC00821

WNUC008

Company: Westinghouse Electric Company, LLC

Address: PO Drawer R

Columbia, South Carolina 29205

Contact: Ms. Cynthia Logsdon

Project: Soil and Vegetation Analysis

Client Sample ID: HF1-B5-(8-10)
Sample ID: 510807008

Matrix: Soil

Collect Date: 06-MAY-20 13:40 Receive Date: 07-MAY-20

Collector: Client Moisture: 12.6%

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time	Batch	Method
Ion Chromatography												
SW846 9056A Fluorio	de and Nitrate '	"Dry Weight Correct	ed"									
Fluoride	J	0.879	0.393	1.16	mg/kg	10.1	1	JLD1	05/13/20	0626	1995671	1
Nitrate-N		54.3	0.381	1.16	mg/kg	10.1	1					
Titration and Ion Anal	ysis											
SW9045D Corrosivity	(pH<2or>14)	"As Received"										
Corrosivity	Н	4.35	0.0100	0.100	SU		1	RXB5	05/28/20	1450	1995459	2

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 9056A	SW846 9056A Total Anions in Soil	CJ2	05/12/20	2001	1995670

The following Analytical Methods were performed:

	_	
Method	Description	Analyst Comments
1	SW846 9056A	·
2	SW846 9045D	

Notes:

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

MDC: Minimum Detectable Concentration SQL: Sample Quantitation Limit

Page 10 of 47 SDG: 510807

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Project:

Client ID:

Certificate of Analysis

Report Date: June 4, 2020

1

WNUC00821

WNUC008

Company: Westinghouse Electric Company, LLC

Address: PO Drawer R

Columbia, South Carolina 29205

Contact: Ms. Cynthia Logsdon
Project: Soil and Vegetation Analysis

Client Sample ID: HF1-B6-(0-2) Sample ID: 510807009

Matrix: Soil

Collect Date: 06-MAY-20 14:20
Receive Date: 07-MAY-20
Collector: Client

Parameter Qualifier Result DL RL Units PF DF Analyst Date Time Batch Method

Titration and Ion Analysis

SW9045D Corrosivity (pH<2or>14) "As Received"

Corrosivity H 8.09 0.0100 0.100 SU 1 RXB5 05/28/20 1450 1995459

The following Analytical Methods were performed:

Method Description Analyst Comments

SW846 9045D

Notes:

Column headers are defined as follows:

DF: Dilution Factor Lc/LC: Critical Level
DL: Detection Limit PF: Prep Factor
MDA: Minimum Detectable Activity RL: Reporting Limit

MDC: Minimum Detectable Concentration SQL: Sample Quantitation Limit

Page 11 of 47 SDG: 510807

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: June 4, 2020

WNUC00821

WNUC008

Company: Westinghouse Electric Company, LLC

Address: PO Drawer R

Columbia, South Carolina 29205

Contact: Ms. Cynthia Logsdon

Project: Soil and Vegetation Analysis

Client Sample ID: HF1-B6-(2-4) Sample ID: 510807010

Matrix: Soil

Collect Date: 06-MAY-20 14:40 Receive Date: 07-MAY-20

Collector: Client Moisture: 3.15%

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time 1	Batch	Method
Ion Chromatography												
SW846 9056A Fluorid	e and Nitrate '	'Dry Weight Corrected"										
Fluoride		5.67	0.348	1.02	mg/kg	9.90	1	JLD1	05/13/20	0657 1	995671	1
Nitrate-N		14.5	0.337	1.02	mg/kg	9.90	1					
Titration and Ion Analy	/sis											
SW9045D Corrosivity	(pH<2or>14)	"As Received"										
Corrosivity	Н	6.35	0.0100	0.100	SU		1	RXB5	05/28/20	1452 1	995459	2

The following Prep Methods were performed:

MethodDescriptionAnalystDateTimePrep BatchSW846 9056ASW846 9056A Total Anions in SoilCJ205/12/2020011995670

The following Analytical Methods were performed:

Method Description Analyst Comments
1 SW846 9056A

2 SW846 9045D

Notes:

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

MDC: Minimum Detectable Concentration SQL: Sample Quantitation Limit

Page 12 of 47 SDG: 510807

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: June 4, 2020

WNUC00821

WNUC008

Westinghouse Electric Company, LLC Company:

Address: PO Drawer R

Columbia, South Carolina 29205

Contact: Ms. Cynthia Logsdon Project: Soil and Vegetation Analysis

Client Sample ID: HF1-B6-(4-5.67)

Sample ID: 510807011

Matrix: Soil

Collect Date: 06-MAY-20 15:25 Receive Date: 07-MAY-20

Collector: Client Moisture: 4.47%

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time Batch	Method
Ion Chromatograph	ıy										
SW846 9056A Fluo	oride and Nitrate	"Dry Weight Correct	ted"								
Fluoride		43.8	0.350	1.03	mg/kg	9.83	1	JLD1	05/13/20	0728 1995671	1
Nitrate-N		38.0	0.339	1.03	mg/kg	9.83	1				
Titration and Ion A	nalysis										
SW9045D Corrosiv	vity (pH<2or>14)	"As Received"									
Corrosivity	Н	6.22	0.0100	0.100	SU		1	RXB5	05/28/20	1454 1995459	2
The following Prep	Methods were pe	erformed:									

Prep Batch Method Description Date Time Analyst SW846 9056A SW846 9056A Total Anions in Soil CJ2 05/12/20 2001 1995670

The following Analytical Methods were performed:

Description Method **Analyst Comments** SW846 9056A SW846 9045D

2

Notes:

Column headers are defined as follows:

Lc/LC: Critical Level DF: Dilution Factor DL: Detection Limit PF: Prep Factor MDA: Minimum Detectable Activity **RL**: Reporting Limit

MDC: Minimum Detectable Concentration SQL: Sample Quantitation Limit

Page 13 of 47 SDG: 510807

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: June 4, 2020

WNUC00821

1 RXB5 05/28/20 1455 1995459

3

WNUC008

Company: Westinghouse Electric Company, LLC

Address: PO Drawer R

Columbia, South Carolina 29205

Contact: Ms. Cynthia Logsdon
Project: Soil and Vegetation Analysis

Client Sample ID: HF1-B7-(0-2) Sample ID: 510807012

Matrix: Soil

Collect Date: 06-MAY-20 15:53 Receive Date: 07-MAY-20

Н

Collector: Client Moisture: 3.63%

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time Batch	Method
Ion Chromatography											
SW846 9056A Fluor	ide and Nitrate	"Dry Weight Corrected"									
Fluoride		40.4	0.349	1.03	mg/kg	9.90	1	JLD1	05/13/20	0759 199567	1 1
Nitrate-N		127	1.70	5.14	mg/kg	9.90	5	JLD1	05/14/20	0726 199567	1 2
Titration and Ion Ana	alysis										
SW9045D Corrosivit	ty (pH<2or>14)	"As Received"									

0.100

SU

The following Prep Methods were performed:

The following field intentions were performed.									
Method	Description	Analyst	Date	Time	Prep Batch				
SW846 9056A	SW846 9056A Total Anions in Soil	CI2	05/12/20	2001	1995670				

0.0100

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 9056A	•
2	SW846 9056A	

4.72

3 SW846 9045D

Notes:

Corrosivity

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

MDC: Minimum Detectable Concentration SQL: Sample Quantitation Limit

Page 14 of 47 SDG: 510807

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: June 4, 2020

WNUC00821

WNUC008

Company: Westinghouse Electric Company, LLC

Address: PO Drawer R

Columbia, South Carolina 29205

Contact: Ms. Cynthia Logsdon

Project: Soil and Vegetation Analysis

Client Sample ID: HF1-B7-(2-4) Sample ID: 510807013

Matrix: Soil

Collect Date: 06-MAY-20 16:13 Receive Date: 07-MAY-20

Collector: Client Moisture: 3.49%

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time	Batch	Method
Ion Chromatography												
SW846 9056A Fluor	ide and Nitrate '	'Dry Weight Correct	ed"									
Fluoride		158	3.51	10.3	mg/kg	9.98	10	JLD1	05/14/20	0757	1995671	1
Nitrate-N		178	3.41	10.3	mg/kg	9.98	10					
Titration and Ion An	alysis											
SW9045D Corrosivi	ty (pH<2or>14)	"As Received"										
Corrosivity	Н	4.41	0.0100	0.100	SU		1	RXB5	05/28/20	1456	1995459	2

The following Prep Methods were performed:

MethodDescriptionAnalystDateTimePrep BatchSW846 9056ASW846 9056A Total Anions in SoilCJ205/12/2020011995670

The following Analytical Methods were performed:

Method Description Analyst Comments

SW846 9056A

Analyst Comments

2 SW846 9045D

Notes:

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

MDC: Minimum Detectable Concentration SQL: Sample Quantitation Limit

Page 15 of 47 SDG: 510807

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: June 4, 2020

WNUC00821

WNUC008

Company: Westinghouse Electric Company, LLC

Address: PO Drawer R

Columbia, South Carolina 29205

Contact: Ms. Cynthia Logsdon

Project: Soil and Vegetation Analysis

Client Sample ID: HF1-B7-(4-5.42)

Sample ID: 510807014

Matrix: Soil

Collect Date: 06-MAY-20 16:31 Receive Date: 07-MAY-20

Collector: Client Moisture: 2.69%

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time	Batch	Method
Ion Chromatography												
SW846 9056A Fluoride	e and Nitrate '	'Dry Weight Corrected"										
Fluoride		121	1.76	5.19	mg/kg	10.1	5	JLD1	05/14/20	0828	1995671	1
Nitrate-N		83.0	1.71	5.19	mg/kg	10.1	5					
Titration and Ion Analy	sis											
SW9045D Corrosivity ((pH<2or>14)	"As Received"										
Corrosivity	Н	5.21	0.0100	0.100	SU		1	RXB5	05/28/20	1457	1995459	2

Corrosivity H 5.21
The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 9056A	SW846 9056A Total Anions in Soil	CJ2	05/12/20	2001	1995670

The following Analytical Methods were performed:

The following	mary treat treations were performed.	
Method	Description	Analyst Comments
1	SW846 9056A	·

2 SW846 9045D

Notes:

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

MDC: Minimum Detectable Concentration SQL: Sample Quantitation Limit

Page 16 of 47 SDG: 510807

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: June 4, 2020

1

Company: Westinghouse Electric Company, LLC

Address: PO Drawer R

Columbia, South Carolina 29205

Contact: Ms. Cynthia Logsdon
Project: Soil and Vegetation Analysis

Client Sample ID: HF1-B7-Refusal Project: WNUC00821 Sample ID: 510807015 Client ID: WNUC008

Matrix: Soil

Collect Date: 06-MAY-20 16:31
Receive Date: 07-MAY-20
Collector: Client

Parameter Qualifier Result DL RL Units PF DF Analyst Date Time Batch Method

Titration and Ion Analysis

SW9045D Corrosivity (pH<2or>14) "As Received"

Corrosivity H 4.58 0.0100 0.100 SU 1 RXB5 05/28/20 1458 1995459

The following Analytical Methods were performed:

Method Description Analyst Comments

SW846 9045D

Notes:

Column headers are defined as follows:

DF: Dilution Factor Lc/LC: Critical Level
DL: Detection Limit PF: Prep Factor
MDA: Minimum Detectable Activity RL: Reporting Limit

MDC: Minimum Detectable Concentration SQL: Sample Quantitation Limit

Page 17 of 47 SDG: 510807

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: June 4, 2020

WNUC00821

WNUC008

Company: Westinghouse Electric Company, LLC

Address: PO Drawer R

Columbia, South Carolina 29205

Contact: Ms. Cynthia Logsdon

Project: Soil and Vegetation Analysis

Client Sample ID: HF1-B4-(1-2) Sample ID: 510807001

Matrix: Soil

Collect Date: 06-MAY-20 08:23 Receive Date: 07-MAY-20

Collector: Client Moisture: 1.89%

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF An	alyst Date	Tim	e Batch	Method
Rad Alpha Spec Analys	is											
Alphaspec U, Soil/Veg	"Dry Weight	Correcte	d"									
Uranium-233/234		563	+/-16.4	0.997	0.500	pCi/g		MP	2 05/11/20	1421	1995498	1
Uranium-235/236		29.0	+/-4.16	0.937	0.500	pCi/g						
Uranium-238		110	+/-7.26	0.595	0.500	pCi/g						
Rad Liquid Scintillation	n Analysis											
Liquid Scint Tc99, Soil	"As Received	d"										
Technetium-99	U	-0.924	+/-2.26	4.01	1.00	pCi/g		JJ3	05/17/20	0509	1995744	2
The following Prep Met	thods were pe	erformed:										
Method	Description	1			Analyst	Date		Time	Prep Batch			
Dry Soil Prep	Dry Soil Prep	GL-RAD-	A-021		CXB7	05/07/20		1252	1995477			

The following Analytical Methods were performed:

Method Description Analyst Comments

DOE EML HASL-300, U-02-RC Modified
DOE EML HASL-300, Tc-02-RC Modified

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Uranium-232 Tracer	Alphaspec U, Soil/Veg "Dry Weight Corrected"			25.9	(15%-125%)
Technetium-99m Tracer	Liquid Scint Tc99, Soil "As Received"			95.1	(15%-125%)

Notes:

Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor Lc/LC: Critical Level
DL: Detection Limit PF: Prep Factor
MDA: Minimum Detectable Activity RL: Reporting Limit

MDC: Minimum Detectable Concentration SQL: Sample Quantitation Limit

Page 18 of 47 SDG: 510807

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: June 4, 2020

WNUC00821

WNUC008

Company: Westinghouse Electric Company, LLC

Address: PO Drawer R

Columbia, South Carolina 29205

Contact: Ms. Cynthia Logsdon

Project: Soil and Vegetation Analysis

Client Sample ID: HF1-B4-(2-4) Sample ID: 510807002

Matrix: Soil

Collect Date: 06-MAY-20 08:35

Receive Date: 07-MAY-20

Collector: Client Moisture: 1.71%

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF Ana	lyst Date	Time	e Batch	Method
Rad Alpha Spec Analy	vsis											
Alphaspec U, Soil/Veg	g "Dry Weight	Corrected	"									
Uranium-233/234		511	+/-14.7	0.721	0.500	pCi/g		MP2	05/11/20	1421	1995498	1
Uranium-235/236		22.1	+/-3.41	0.408	0.500	pCi/g						
Uranium-238		105	+/-6.66	0.771	0.500	pCi/g						
Rad Liquid Scintillation	n Analysis											
Liquid Scint Tc99, Soi	1 "As Receive	d"										
Technetium-99	U	0.171	+/-2.45	4.26	1.00	pCi/g		JJ3	05/17/20	0525	1995744	2
The following Prep Me	ethods were pe	erformed:										
Method	Description	n			Analyst	Date		Time 1	Prep Batch			
Dry Soil Prep	Dry Soil Prep	GL-RAD-A	-021		CXB7	05/07/20		1252	1995477			

•			•	1
The	following .	Analytical	Methods	were performed:

Method	Description	Analyst Comments

DOE EML HASL-300, U-02-RC Modified

DOE EML HASL-300, Tc-02-RC Modified

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Uranium-232 Tracer	Alphaspec U, Soil/Veg "Dry Weight Corrected"			24.1	(15%-125%)
Technetium-99m Tracer	Liquid Scint Tc99, Soil "As Received"			89.2	(15%-125%)

Notes:

Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor Lc/LC: Critical Level
DL: Detection Limit PF: Prep Factor
MDA: Minimum Detectable Activity RL: Reporting Limit

MDC: Minimum Detectable Concentration SQL: Sample Quantitation Limit

Page 19 of 47 SDG: 510807

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: June 4, 2020

WNUC00821

WNUC008

Company: Westinghouse Electric Company, LLC

Address: PO Drawer R

Columbia, South Carolina 29205

Contact: Ms. Cynthia Logsdon

Project: Soil and Vegetation Analysis

Client Sample ID: HF1-B4-(4-5.33)

Sample ID: 510807003

Matrix: Soil

Collect Date: 06-MAY-20 08:55 Receive Date: 07-MAY-20

Collector: Client Moisture: 4.19%

Parameter	Qualifier	Result U	Incertainty	MDC	RL	Units	PF	DF An	alyst Date	Time	e Batch	Method
Rad Alpha Spec Anal	ysis											
Alphaspec U, Soil/Ve	g "Dry Weight	Corrected"										
Uranium-233/234		700	+/-17.4	0.789	0.500	pCi/g		MP	2 05/11/20	1421	1995498	1
Uranium-235/236		31.9	+/-4.14	0.668	0.500	pCi/g						
Uranium-238		139	+/-7.78	0.790	0.500	pCi/g						
Rad Liquid Scintillation	on Analysis											
Liquid Scint Tc99, So	il "As Receive	d"										
Technetium-99	U	2.60	+/-2.27	3.78	1.00	pCi/g		JJ3	05/17/20	0542	1995744	2
The following Prep M	lethods were po	erformed:										
Method	Description	n			Analyst	Date		Time	Prep Batch			
Dry Soil Prep	Dry Soil Prep	GL-RAD-A-0	021		CXB7	05/07/20		1252	1995477			

The following Analytical Methods were performed:

Method Description Analyst Comments

DOE EML HASL-300, U-02-RC Modified
DOE EML HASL-300, Tc-02-RC Modified

Surrogate/Tracer RecoveryTestResultNominalRecovery%Acceptable LimitsUranium-232 TracerAlphaspec U, Soil/Veg "Dry Weight Corrected"25.4(15%-125%)Technetium-99m TracerLiquid Scint Tc99, Soil "As Received"91.7(15%-125%)

Notes:

Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor Lc/LC: Critical Level
DL: Detection Limit PF: Prep Factor
MDA: Minimum Detectable Activity RL: Reporting Limit

MDC: Minimum Detectable Concentration SQL: Sample Quantitation Limit

Page 20 of 47 SDG: 510807

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: June 4, 2020

WNUC00821

WNUC008

Company: Westinghouse Electric Company, LLC

Address: PO Drawer R

Columbia, South Carolina 29205

Contact: Ms. Cynthia Logsdon

Project: Soil and Vegetation Analysis

Client Sample ID: HF1-B5-(1-2) Sample ID: 510807004

Matrix: Soil

Collect Date: 06-MAY-20 09:47 Receive Date: 07-MAY-20

Collector: Client
Moisture: 8.03%

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF Ar	alyst Date	Time	e Batch	Method
Rad Alpha Spec Analys	is											
Alphaspec U, Soil/Veg	"Dry Weight	Corrected	d"									
Uranium-233/234		9.36	+/-0.963	0.221	0.500	pCi/g		MI	2 05/11/20	1421	1995498	1
Uranium-235/236		0.396	+/-0.242	0.233	0.500	pCi/g						
Uranium-238		2.56	+/-0.505	0.141	0.500	pCi/g						
Rad Liquid Scintillation	n Analysis											
Liquid Scint Tc99, Soil	"As Received	d"										
Technetium-99	U	-2.14	+/-2.33	4.21	1.00	pCi/g		JJ3	05/17/20	0559	1995744	2
The following Prep Met	thods were pe	erformed:										
Method	Description	1			Analyst	Date		Time	Prep Batch			
Dry Soil Prep	Dry Soil Prep	GL-RAD-A	A-021		CXB7	05/07/20		1252	1995477			

The following Analytical Methods were performed:

Method Description Analyst Comments

DOE EML HASL-300, U-02-RC Modified
DOE EML HASL-300, Tc-02-RC Modified

Surrogate/Tracer RecoveryTestResultNominalRecovery%Acceptable LimitsUranium-232 TracerAlphaspec U, Soil/Veg "Dry Weight Corrected"109(15%-125%)Technetium-99m TracerLiquid Scint Tc99, Soil "As Received"92.4(15%-125%)

Notes:

Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor Lc/LC: Critical Level
DL: Detection Limit PF: Prep Factor
MDA: Minimum Detectable Activity RL: Reporting Limit

MDC: Minimum Detectable Concentration SQL: Sample Quantitation Limit

Page 21 of 47 SDG: 510807

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: June 4, 2020

WNUC00821

WNUC008

Company: Westinghouse Electric Company, LLC

Address: PO Drawer R

Columbia, South Carolina 29205

Contact: Ms. Cynthia Logsdon

Project: Soil and Vegetation Analysis

Client Sample ID: HF1-B5-(2-4) Sample ID: 510807005

Matrix: Soil

Collect Date: 06-MAY-20 10:15 Receive Date: 07-MAY-20

Receive Date: 07-MA
Collector: Client
Moisture: 7.57%

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF An	alyst Date	Time	e Batch	Method
Rad Alpha Spec Analys	is											
Alphaspec U, Soil/Veg	"Dry Weight	Correcte	d"									
Uranium-233/234		1520	+/-51.1	2.49	0.500	pCi/g		MP	2 05/11/20	1421	1995498	1
Uranium-235/236		82.8	+/-13.3	2.81	0.500	pCi/g						
Uranium-238		246	+/-20.6	2.55	0.500	pCi/g						
Rad Liquid Scintillation	n Analysis											
Liquid Scint Tc99, Soil	"As Received	d"										
Technetium-99	U	-1.79	+/-2.17	3.91	1.00	pCi/g		JJ3	05/17/20	0615	1995744	2
The following Prep Me	thods were pe	erformed:										
Method	Description	1			Analyst	Date		Time	Prep Batch			
Dry Soil Prep	Dry Soil Prep	GL-RAD-	A-021		CXB7	05/07/20		1252	1995477			

The following Analytical Methods were performed:

Method Description Analyst Comments

DOE EML HASL-300, U-02-RC Modified
DOE EML HASL-300, Tc-02-RC Modified

Surrogate/Tracer Recovery Test Result Nominal Recovery% Acceptable Limits
Uranium-232 Tracer Alphaspec U, Soil/Veg "Dry Weight Corrected"
Technetium-99m Tracer Liquid Scint Tc99, Soil "As Received"

17.9 (15%-125%)
17.9 (15%-125%)

Notes:

Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor Lc/LC: Critical Level
DL: Detection Limit PF: Prep Factor
MDA: Minimum Detectable Activity RL: Reporting Limit

MDC: Minimum Detectable Concentration SQL: Sample Quantitation Limit

Page 22 of 47 SDG: 510807

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: June 4, 2020

WNUC00821

WNUC008

Company: Westinghouse Electric Company, LLC

Address: PO Drawer R

Columbia, South Carolina 29205

Contact: Ms. Cynthia Logsdon

Project: Soil and Vegetation Analysis

Client Sample ID: HF1-B5-(4-6) Sample ID: 510807006

Matrix: Soil

Collect Date: 06-MAY-20 10:45 Receive Date: 07-MAY-20

Collector: Client Moisture: 14.3%

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF Ar	alyst Date	Time	Batch	Method
Rad Alpha Spec Analys	sis											
Alphaspec U, Soil/Veg	"Dry Weight	Correcte	d"									
Uranium-233/234		1250	+/-36.4	1.81	0.500	pCi/g		MI	2 05/11/20	1421	1995498	1
Uranium-235/236		50.9	+/-8.19	1.84	0.500	pCi/g						
Uranium-238		224	+/-15.4	1.70	0.500	pCi/g						
Rad Liquid Scintillation	n Analysis											
Liquid Scint Tc99, Soil	"As Received	d"										
Technetium-99	U	-1.41	+/-2.27	4.05	1.00	pCi/g		JJ3	05/17/20	0632	1995744	2
The following Prep Me	thods were pe	erformed:										
Method	Description	1			Analyst	Date		Time	Prep Batch			
Dry Soil Prep	Dry Soil Prep	GL-RAD-	A-021	(CXB7	05/07/20		1252	1995477			

The following Analytical Methods were performed:

Method Description Analyst Comments

DOE EML HASL-300, U-02-RC Modified
DOE EML HASL-300, Tc-02-RC Modified

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Uranium-232 Tracer	Alphaspec U, Soil/Veg "Dry Weight Corrected"			25.9	(15%-125%)
Technetium-99m Tracer	Liquid Scint Tc99, Soil "As Received"			92.8	(15%-125%)

Notes:

Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

MDC: Minimum Detectable Concentration SQL: Sample Quantitation Limit

Page 23 of 47 SDG: 510807

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: June 4, 2020

WNUC00821

WNUC008

Westinghouse Electric Company, LLC Company:

Address: PO Drawer R

Columbia, South Carolina 29205

Contact: Ms. Cynthia Logsdon

Project: Soil and Vegetation Analysis

Client Sample ID: HF1-B5-(6-8) Sample ID: 510807007

Matrix: Soil

Collect Date: 06-MAY-20 11:51 Receive Date: 07-MAY-20

Collector: Client Moisture: 11.4%

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF Anal	yst Date	Time Batch	Method
Rad Alpha Spec Analys	sis										
Alphaspec U, Soil/Veg	"Dry Weight	Corrected	."								
Uranium-233/234		9.67	+/-1.23	0.417	0.500	pCi/g		MP2	05/11/20	1410 1995498	1
Uranium-235/236		0.587	+/-0.346	0.147	0.500	pCi/g					
Uranium-238		1.61	+/-0.510	0.277	0.500	pCi/g					
Rad Liquid Scintillation	n Analysis										
Liquid Scint Tc99, Soil	l "As Receive	d"									
Technetium-99	U	-2.28	+/-2.21	4.02	1.00	pCi/g		JJ3	05/17/20	0648 1995744	2
The following Prep Me	ethods were pe	erformed:									

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	CXB7	05/07/20	1252	1995477

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	DOE EML HASL-300, U-02-RC Modified	·

2 DOE EML HASL-300, Tc-02-RC Modified

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Uranium-232 Tracer	Alphaspec U, Soil/Veg "Dry Weight Corrected"			89.5	(15%-125%)
Technetium-99m Tracer	Liquid Scint Tc99, Soil "As Received"			95.2	(15%-125%)

Notes:

Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

Lc/LC: Critical Level DF: Dilution Factor DL: Detection Limit PF: Prep Factor MDA: Minimum Detectable Activity **RL**: Reporting Limit

MDC: Minimum Detectable Concentration SQL: Sample Quantitation Limit

Page 24 of 47 SDG: 510807

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: June 4, 2020

WNUC00821

WNUC008

Company: Westinghouse Electric Company, LLC

Address: PO Drawer R

Columbia, South Carolina 29205

Contact: Ms. Cynthia Logsdon

Project: Soil and Vegetation Analysis

Client Sample ID: HF1-B5-(8-10) Sample ID: 510807008

Matrix: Soil

Collect Date: 06-MAY-20 13:40 Receive Date: 07-MAY-20

Receive Date: 07-MA
Collector: Client
Moisture: 12.6%

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF An	alyst Date	Time	e Batch	Method
Rad Alpha Spec Analys	is											
Alphaspec U, Soil/Veg	"Dry Weight	Correcte	d"									
Uranium-233/234		2.65	+/-0.665	0.327	0.500	pCi/g		MP	2 05/11/20	1410	1995498	1
Uranium-235/236		0.294	+/-0.267	0.245	0.500	pCi/g						
Uranium-238		1.02	+/-0.424	0.306	0.500	pCi/g						
Rad Liquid Scintillation	n Analysis											
Liquid Scint Tc99, Soil	"As Received	d"										
Technetium-99	U	-2.91	+/-2.17	3.98	1.00	pCi/g		JJ3	05/17/20	0705	1995744	2
The following Prep Me	thods were pe	erformed:										
Method	Description	1			Analyst	Date		Time	Prep Batch			
Dry Soil Prep	Dry Soil Prep	GL-RAD-	A-021		CXB7	05/07/20		1252	1995477			

The following Analytical Methods were performed:

Method Description Analyst Comments

DOE EML HASL-300, U-02-RC Modified
DOE EML HASL-300, Tc-02-RC Modified

Surrogate/Tracer RecoveryTestResultNominalRecovery%Acceptable LimitsUranium-232 TracerAlphaspec U, Soil/Veg "Dry Weight Corrected"81.8(15%-125%)Technetium-99m TracerLiquid Scint Tc99, Soil "As Received"94.7(15%-125%)

Notes:

Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor Lc/LC: Critical Level
DL: Detection Limit PF: Prep Factor
MDA: Minimum Detectable Activity RL: Reporting Limit

MDC: Minimum Detectable Concentration SQL: Sample Quantitation Limit

Page 25 of 47 SDG: 510807

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: June 4, 2020

WNUC00821

WNUC008

Westinghouse Electric Company, LLC Company:

Address: PO Drawer R

Columbia, South Carolina 29205

Contact: Ms. Cynthia Logsdon

Project: Soil and Vegetation Analysis

HF1-B6-(2-4) Client Sample ID: Sample ID: 510807010

Matrix: Soil

Collect Date: 06-MAY-20 14:40

Receive Date: 07-MAY-20 Collector: Client

Moisture: 3.15%

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF Ana	alyst Date	Time	e Batch	Method
Rad Alpha Spec Anal	ysis											
Alphaspec U, Soil/Ve	g "Dry Weight	Corrected	l"									
Uranium-233/234		403	+/-12.7	0.905	0.500	pCi/g		MP	2 05/11/20	1410	1995498	1
Uranium-235/236		19.3	+/-3.11	0.618	0.500	pCi/g						
Uranium-238		78.5	+/-5.62	0.808	0.500	pCi/g						
Rad Liquid Scintillati	on Analysis											
Liquid Scint Tc99, So	oil "As Receive	d"										
Technetium-99	U	-1.66	+/-2.31	4.14	1.00	pCi/g		JJ3	05/17/20	0721	1995744	2
The following Prep M	lethods were pe	erformed:										
Method	Description	n			Analyst	Date		Time	Prep Batch			
Dry Soil Prep	Dry Soil Prep	GL-RAD-A	-021		CXB7	05/07/20		1252	1995477			

The following Analytical Methods were performed:

Description Method **Analyst Comments** DOE EML HASL-300, U-02-RC Modified

DOE EML HASL-300, Tc-02-RC Modified

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Uranium-232 Tracer	Alphaspec U, Soil/Veg "Dry Weight Corrected"			32.9	(15%-125%)
Technetium-99m Tracer	Liquid Scint Tc99, Soil "As Received"			94.7	(15%-125%)

Notes:

Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

Lc/LC: Critical Level DF: Dilution Factor DL: Detection Limit PF: Prep Factor MDA: Minimum Detectable Activity **RL**: Reporting Limit

SQL: Sample Quantitation Limit MDC: Minimum Detectable Concentration

Page 26 of 47 SDG: 510807

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: June 4, 2020

WNUC00821

WNUC008

Company: Westinghouse Electric Company, LLC

Address: PO Drawer R

Columbia, South Carolina 29205

Contact: Ms. Cynthia Logsdon

Project: Soil and Vegetation Analysis

4.47%

Client Sample ID: HF1-B6-(4-5.67)

Sample ID: 510807011 Matrix: Soil

Moisture:

Collect Date: 06-MAY-20 15:25

Receive Date: 07-MAY-20 Collector: Client

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF Anal	yst Date	Time Batch	Method
Rad Alpha Spec Analys	sis										
Alphaspec U, Soil/Veg	"Dry Weight	Corrected	d"								
Uranium-233/234	,	226	+/-9.28	0.962	0.500	pCi/g		MP2	05/11/20	1410 1995498	1
Uranium-235/236		9.66	+/-2.16	0.805	0.500	pCi/g					
Uranium-238		41.6	+/-3.99	0.858	0.500	pCi/g					
Rad Liquid Scintillation	n Analysis										
Liquid Scint Tc99, Soil	"As Receive	d"									
Technetium-99	U	-1.09	+/-2.26	4.01	1.00	pCi/g		JJ3	05/17/20	0738 1995744	2
The following Prep Me	thods were pe	erformed:									
Method	Description	n			Analyst	Date		Time P	rep Batch		

CXB7

05/07/20

1252

1995477

The following Analytical Methods were performed:

Method Description Analyst Comments

DOE EML HASL-300, U-02-RC Modified
DOE EML HASL-300, Tc-02-RC Modified

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Uranium-232 Tracer	Alphaspec U, Soil/Veg "Dry Weight Corrected"			34.1	(15%-125%)
Technetium-99m Tracer	Liquid Scint Tc99, Soil "As Received"			97.1	(15%-125%)

Notes:

Dry Soil Prep

Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Dry Soil Prep GL-RAD-A-021

Column headers are defined as follows:

DF: Dilution Factor Lc/LC: Critical Level
DL: Detection Limit PF: Prep Factor
MDA: Minimum Detectable Activity RL: Reporting Limit

MDC: Minimum Detectable Concentration SQL: Sample Quantitation Limit

Page 27 of 47 SDG: 510807

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: June 4, 2020

WNUC00821

WNUC008

Westinghouse Electric Company, LLC Company:

Address: PO Drawer R

Columbia, South Carolina 29205

Contact: Ms. Cynthia Logsdon

Project: Soil and Vegetation Analysis

HF1-B7-(0-2) Client Sample ID: Sample ID: 510807012

Matrix: Soil

Collect Date: 06-MAY-20 15:53

Receive Date: 07-MAY-20

Collector: Client Moisture: 3.63%

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF Anal	yst Date	Time Batch	Method
Rad Alpha Spec Analys	is										
Alphaspec U, Soil/Veg	"Dry Weight	Correcte	d"								
Uranium-233/234		2140	+/-68.1	4.07	0.500	pCi/g		MP2	05/21/20	1152 199853	5 1
Uranium-235/236		93.5	+/-15.9	2.09	0.500	pCi/g					
Uranium-238		313	+/-26.1	2.92	0.500	pCi/g					
Rad Liquid Scintillation	n Analysis										
Liquid Scint Tc99, Soil	"As Received	d"									
Technetium-99	U	-1.90	+/-2.17	3.91	1.00	pCi/g		JJ3	05/17/20	0754 199574	4 2
The following Prep Mer	thods were pe	erformed:									
Method	Description	1			Analyst	Date		Time F	rep Batch		
Dry Soil Prep	Dry Soil Prep	GL-RAD-	A-021		CXB7	05/07/20		1252 1	995477		

The following Analytical Methods were performed:

Method Description **Analyst Comments**

DOE EML HASL-300, U-02-RC Modified

2 DOE EML HASL-300, Tc-02-RC Modified

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Uranium-232 Tracer	Alphaspec U, Soil/Veg "Dry Weight Corrected"			90.4	(15%-125%)
Technetium-99m Tracer	Liquid Scint Tc99, Soil "As Received"			97	(15%-125%)

Notes:

Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

Lc/LC: Critical Level DF: Dilution Factor DL: Detection Limit PF: Prep Factor MDA: Minimum Detectable Activity **RL**: Reporting Limit

SQL: Sample Quantitation Limit MDC: Minimum Detectable Concentration

Page 28 of 47 SDG: 510807

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: June 4, 2020

WNUC00821

WNUC008

Company: Westinghouse Electric Company, LLC

Address: PO Drawer R

Columbia, South Carolina 29205

Contact: Ms. Cynthia Logsdon

Project: Soil and Vegetation Analysis

Client Sample ID: HF1-B7-(2-4) Sample ID: 510807013

Matrix: Soil

Collect Date: 06-MAY-20 16:13

Receive Date: 07-MAY-20

Collector: Client Moisture: 3.49%

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF An	alyst Date	Time Batch	Method
Rad Alpha Spec Anal	ysis										
Alphaspec U, Soil/Ve	g "Dry Weight	Correcte	d"								
Uranium-233/234		2020	+/-59.9	3.64	0.500	pCi/g		MP	2 05/21/20	1152 1998535	1
Uranium-235/236		92.0	+/-14.3	2.73	0.500	pCi/g					
Uranium-238		355	+/-25.1	1.97	0.500	pCi/g					
Rad Liquid Scintillati	on Analysis										
Liquid Scint Tc99, So	oil "As Receive	ed"									
Technetium-99	U	3.15	+/-2.40	3.97	1.00	pCi/g		JJ3	05/17/20	0811 1995744	2
The following Prep M	lethods were p	erformed:									
Method	Descriptio	n			Analyst	Date		Time	Prep Batch		
Dry Soil Prep	Dry Soil Prep	GL-RAD-A	A-021		CXB7	05/07/20		1252	1995477		

The following Analytical Methods were performed:

Method Description Analyst Comments

DOE EML HASL-300, U-02-RC Modified
DOE EML HASL-300, Tc-02-RC Modified

Surrogate/Tracer RecoveryTestResultNominalRecovery%Acceptable LimitsUranium-232 TracerAlphaspec U, Soil/Veg "Dry Weight Corrected"94.8(15%-125%)Technetium-99m TracerLiquid Scint Tc99, Soil "As Received"97.3(15%-125%)

Notes:

Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

MDC: Minimum Detectable Concentration SQL: Sample Quantitation Limit

Page 29 of 47 SDG: 510807

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: June 4, 2020

WNUC00821

WNUC008

Company: Westinghouse Electric Company, LLC

Address: PO Drawer R

Columbia, South Carolina 29205

Contact: Ms. Cynthia Logsdon

Project: Soil and Vegetation Analysis

Client Sample ID: HF1-B7-(4-5.42)

Sample ID: 510807014

Matrix: Soil

Collect Date: 06-MAY-20 16:31 Receive Date: 07-MAY-20

Collector: Client Moisture: 2.69%

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF An	alyst Date	Time B	Batch	Method
Rad Alpha Spec Anal	ysis											
Alphaspec U, Soil/Ve	g "Dry Weight	Corrected	l"									
Uranium-233/234		799	+/-26.9	1.88	0.500	pCi/g		MP	2 05/11/20	1410 19	95498	1
Uranium-235/236		46.5	+/-7.24	1.37	0.500	pCi/g						
Uranium-238		158	+/-12.0	1.40	0.500	pCi/g						
Rad Liquid Scintillati	on Analysis											
Liquid Scint Tc99, So	oil "As Receive	d"										
Technetium-99	U	0.627	+/-2.37	4.09	1.00	pCi/g		JJ3	05/17/20	0827 19	95744	2
The following Prep M	lethods were pe	erformed:										
Method	Description	n			Analyst	Date		Time	Prep Batch			
Dry Soil Prep	Dry Soil Pren	GL-RAD-A	x-021		CXB7	05/07/20		1252	1995477			

The	following	Analytical	Methods	were ne	rformed:

Method 1	Description	Analyst Comments

DOE EML HASL-300, U-02-RC Modified
DOE EML HASL-300, Tc-02-RC Modified

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Uranium-232 Tracer	Alphaspec U, Soil/Veg "Dry Weight Corrected"			29.4	(15%-125%)
Technetium-99m Tracer	Liquid Scint Tc99, Soil "As Received"			94.1	(15%-125%)

Notes:

Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

MDC: Minimum Detectable Concentration SQL: Sample Quantitation Limit

Page 30 of 47 SDG: 510807

2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Report Date: June 4, 2020

Page 1 of 3

Westinghouse Electric Company, LLC

PO Drawer R

Columbia, South Carolina

Contact: Ms. Cynthia Logsdon

Workorder: 510807

Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range Anlst	Date Time
Ion Chromatography Batch 1995671 ————								
QC1204557905 510807001 DUP Fluoride		65.8	65.1	mg/kg	1.06		(0%-109%) JLD1	05/13/20 11:04
Nitrate-N		69.3	68.5	mg/kg	1.27		(0%-104%)	
QC1204557906 510807002 DUP Fluoride		335	340	mg/kg	1.66		(0%-109%)	05/14/20 11:08
Nitrate-N		70.4	70.3	mg/kg	0.148		(0%-104%)	05/14/20 02:49
QC1204557904 LCS Fluoride	25.1		25.0	mg/kg		99.4	(90%-110%)	05/12/20 22:44
Nitrate-N	25.1		24.4	mg/kg		97.2	(90%-110%)	
QC1204557903 MB Fluoride		U	ND	mg/kg				05/12/20 22:13
Nitrate-N		U	ND	mg/kg				
QC1204557907 510807001 MS Fluoride	25.1	65.8	94.2	mg/kg		113	(75%-125%)	05/13/20 11:35
Nitrate-N	25.1	69.3	95.2	mg/kg		103	(75%-125%)	
QC1204557908 510807002 MS Fluoride	25.7	335	353	mg/kg		N/A	(75%-125%)	05/14/20 12:41
Nitrate-N	25.7	70.4	95.9	mg/kg		99.6	(75%-125%)	05/14/20 03:20

Page 31 of 47 SDG: 510807

2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Workorder: 510807 Page 2 of 3

Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range Anlst	Date Time
Titration and Ion Analysis Batch 1995459								
QC1204557582 510807001 DUP Corrosivity	Н	5.46 Н	6.08	SU	10.7*		(0%-10%) RXB5	5 05/28/20 14:40
QC1204557583 510807002 DUP Corrosivity	Н	3.97 Н	3.98	SU	0.252		(0%-10%)	05/28/20 14:44
QC1204557581 LCS Corrosivity	7.00		7.00	SU		100	(95%-105%)	05/28/20 14:38

Notes:

The Qualifiers in this report are defined as follows:

- < Result is less than value reported
- > Result is greater than value reported
- B The target analyte was detected in the associated blank.
- E General Chemistry--Concentration of the target analyte exceeds the instrument calibration range
- H Analytical holding time was exceeded
- J See case narrative for an explanation
- J Value is estimated
- N/A RPD or %Recovery limits do not apply.
- N1 See case narrative
- ND Analyte concentration is not detected above the detection limit
- NJ Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Q One or more quality control criteria have not been met. Refer to the applicable narrative or DER.
- R Per section 9.3.4.1 of Method 1664 Revision B, due to matrix spike recovery issues, this result may not be reported or used for regulatory compliance purposes.
- R Sample results are rejected
- $U\qquad \hbox{Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD}.$
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Z Paint Filter Test--Particulates passed through the filter, however no free liquids were observed.
- ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.
- d 5-day BOD--The 2:1 depletion requirement was not met for this sample
- e 5-day BOD--Test replicates show more than 30% difference between high and low values. The data is qualified per the method and can be used for reporting purposes
- h Preparation or preservation holding time was exceeded

Page 32 of 47 SDG: 510807

2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

510807 Page 3 of 3

-Parmname NOM Sample Qual \mathbf{QC} Units RPD% REC% Range Anlst Date Time

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more or %RPD not applicable. ^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.

* Indicates that a Quality Control parameter was not within specifications.

Workorder:

For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.

Page 33 of 47 SDG: 510807

2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Report Date: June 4, 2020

Page 1 of 3

Westinghouse Electric Company, LLC

PO Drawer R

Columbia, South Carolina

Contact: Ms. Cynthia Logsdon

Workorder: 510807

Parmname	NOM	Sample Qua	al QC	Units	RPD%	REC%	Range A	Anlst	Date Time
Rad Alpha Spec									
Batch 1995498 ——									
QC1204557617 510807001 DUP									
Uranium-233/234		563	534	pCi/g	5.32		(0%-20%)	MP2	05/11/20 14:10
	Uncertainty	+/-16.4	+/-18.5						
Uranium-235/236		29.0	22.9	pCi/g	23.7*		(0%-20%)		
Oramum-233/230	Uncertainty	+/-4.16	+/-4.29	pci/g	23.1		(070-2070)		
	Checitanity	.,	.,>						
Uranium-238		110	98.1	pCi/g	11.7		(0%-20%)		
	Uncertainty	+/-7.26	+/-7.94						
001204557619 1 00									
QC1204557618 LCS Uranium-233/234			11.6	pCi/g					05/11/20 14:10
Oramum-255/254	Uncertainty		+/-1.29	per/g					03/11/20 14:10
Uranium-235/236			0.461	pCi/g					
	Uncertainty		+/-0.321						
	40.0			G1./					
Uranium-238	12.3		12.1	pCi/g		98.8	(75%-125%)		
	Uncertainty		+/-1.31						
QC1204557616 MB									
Uranium-233/234		U	0.0886	pCi/g					05/11/20 14:10
	Uncertainty		+/-0.216						
H		U	0.151	-C:/-					
Uranium-235/236	Uncertainty	O	0.151 +/-0.191	pCi/g					
	Oncertainty		+/-0.191						
Uranium-238		U	0.211	pCi/g					
	Uncertainty		+/-0.209						
Batch 1998535 ——									
QC1204564487 510807012 DUP		21.40	1770	C :/	10		(00/ 200/)	1 (D2	07/01/00 11 70
Uranium-233/234	I In containty	2140 +/-68.1	1770 +/-56.9	pCi/g	19		(0%-20%)	MP2	05/21/20 11:52
	Uncertainty	+/-00.1	+/-30.9						
Uranium-235/236		93.5	81.2	pCi/g	14.1		(0%-20%)		
	Uncertainty	+/-15.9	+/-13.6	1 0					
	-								
Uranium-238		313	276	pCi/g	12.6		(0%-20%)		
	Uncertainty	+/-26.1	+/-22.5						

2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Workorder: 510807 Page 2 of 3 Date Time **Parmname** NOM Sample Qual QC Units RPD% REC% Range Anlst Rad Alpha Spec 1998535 Batch QC1204564488 LCS 104 Uranium-233/234 pCi/g MP2 05/21/20 09:49 Uncertainty +/-11.8Uranium-235/236 4.86 pCi/g Uncertainty +/-3.01109 101 Uranium-238 pCi/g 92.4 (75%-125%) Uncertainty +/-11.6QC1204564486 MB U 05/21/20 11:52 Uranium-233/234 -0.479 pCi/g +/-0.824 Uncertainty U Uranium-235/236 0.500 pCi/g Uncertainty +/-1.39 Uranium-238 -0.104 pCi/g Uncertainty +/-0.812**Rad Liquid Scintillation** Batch 1995744 QC1204558065 510807001 DUP U -0.924 U -0.568JJ3 05/17/20 09:01 Technetium-99 pCi/g N/A N/A +/-2.26 +/-2.24 Uncertainty QC1204558066 LCS Technetium-99 55.0 49.6 pCi/g 90.2 (75% - 125%)05/17/20 09:17 +/-3.46 Uncertainty QC1204558064 MB U 05/17/20 08:44 Technetium-99 -1.71 pCi/g Uncertainty +/-1.93

Notes:

Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

The Qualifiers in this report are defined as follows:

- ** Analyte is a Tracer compound
- < Result is less than value reported
- > Result is greater than value reported
- BD Results are either below the MDC or tracer recovery is low
- FA Failed analysis.
- H Analytical holding time was exceeded
- J See case narrative for an explanation

Page 35 of 47 SDG: 510807

2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Parmname NOM Sample Qual QC Units RPD% REC% Range AnIst Date Time

J Value is estimated

Workorder:

- K Analyte present. Reported value may be biased high. Actual value is expected to be lower.
- L Analyte present. Reported value may be biased low. Actual value is expected to be higher.
- M M if above MDC and less than LLD

510807

- M REMP Result > MDC/CL and < RDL
- N/A RPD or %Recovery limits do not apply.
- N1 See case narrative
- ND Analyte concentration is not detected above the detection limit
- NJ Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Q One or more quality control criteria have not been met. Refer to the applicable narrative or DER.
- R Sample results are rejected
- U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.
- UI Gamma Spectroscopy--Uncertain identification
- UJ Gamma Spectroscopy--Uncertain identification
- UL Not considered detected. The associated number is the reported concentration, which may be inaccurate due to a low bias.
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Y Other specific qualifiers were required to properly define the results. Consult case narrative.
- ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.
- h Preparation or preservation holding time was exceeded

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more or %RPD not applicable.

- ^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.
- * Indicates that a Quality Control parameter was not within specifications.

For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.

Page 36 of 47 SDG: 510807

Technical Case Narrative Westinghouse Electric Co, LLC SDG #: 510807

General Chemistry

Product: Ion Chromatography Analytical Method: SW846 9056A

Analytical Procedure: GL-GC-E-086 REV# 27 Analytical Batches: 1995671 and 1995670

The following samples were analyzed using the above methods and analytical procedure(s).

GEL Sample ID#	Client Sample Identification
510807001	HF1-B4-(1-2)
510807002	HF1-B4-(2-4)
510807003	HF1-B4-(4-5.33)
510807004	HF1-B5-(1-2)
510807005	HF1-B5-(2-4)
510807006	HF1-B5-(4-6)
510807007	HF1-B5-(6-8)
510807008	HF1-B5-(8-10)
510807010	HF1-B6-(2-4)
510807011	HF1-B6-(4-5.67)
510807012	HF1-B7-(0-2)
510807013	HF1-B7-(2-4)
510807014	HF1-B7-(4-5.42)
1204557903	Method Blank (MB)
1204557904	Laboratory Control Sample (LCS)
1204557905	510807001(HF1-B4-(1-2)) Sample Duplicate (DUP)
1204557906	510807002(HF1-B4-(2-4)) Sample Duplicate (DUP)
1204557907	510807001(HF1-B4-(1-2)) Matrix Spike (MS)
1204557908	510807002(HF1-B4-(2-4)) Matrix Spike (MS)

The samples in this SDG were analyzed on a "dry weight" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Technical Information

Sample Dilutions

The following samples 1204557905 (HF1-B4-(1-2)DUP), 1204557906 (HF1-B4-(2-4)DUP), 1204557907 (HF1-B4-(1-2)MS), 1204557908 (HF1-B4-(2-4)MS), 510807001 (HF1-B4-(1-2)), 510807002 (HF1-B4-(2-4)), 510807003 (HF1-B4-(4-5.33)), 510807004 (HF1-B5-(1-2)), 510807005 (HF1-B5-(2-4)), 510807006 (HF1-B5-(4-6)), 510807007 (HF1-B5-(6-8)), 510807012 (HF1-B7-(0-2)), 510807013 (HF1-B7-(2-4)) and 510807014 (HF1-B7-(4-5.42)) were diluted because target analyte concentrations exceeded the calibration range. Dilutions may be required for many reasons, including to minimize matrix interferences or to bring over range target analyte concentrations into the linear calibration range.

Page 37 of 47 SDG: 510807

A 14 -		510807									
Analyte	001	002	003	004	005	006	007	012	013	014	
Fluoride	5X	10X	10X	1X	10X	1X	1X	1X	10X	5X	
Nitrate	5X	5X	10X	10X	10X	25X	5X	5X	10X	5X	

Sample Re-analysis

Sample510807006 (HF1-B5-(4-6)) was re-analyzed to verify the result.

Product: pH

Analytical Method: SW846 9045D

Analytical Procedure: GL-GC-E-008 REV# 24

Analytical Batch: 1995459

The following samples were analyzed using the above methods and analytical procedure(s).

GEL Sample ID#	Client Sample Identification
510807001	HF1-B4-(1-2)
510807002	HF1-B4-(2-4)
510807003	HF1-B4-(4-5.33)
510807004	HF1-B5-(1-2)
510807005	HF1-B5-(2-4)
510807006	HF1-B5-(4-6)
510807007	HF1-B5-(6-8)
510807008	HF1-B5-(8-10)
510807009	HF1-B6-(0-2)
510807010	HF1-B6-(2-4)
510807011	HF1-B6-(4-5.67)
510807012	HF1-B7-(0-2)
510807013	HF1-B7-(2-4)
510807014	HF1-B7-(4-5.42)
510807015	HF1-B7-Refusal
1204557581	Laboratory Control Sample (LCS)
1204557582	510807001(HF1-B4-(1-2)) Sample Duplicate (DUP)
1204557583	510807002(HF1-B4-(2-4)) Sample Duplicate (DUP)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Quality Control (QC) Information

$\label{eq:continuous} \textbf{Duplicate Relative Percent Difference (RPD) Statement}$

The Relative Percent Difference (RPD) between the sample and duplicate falls outside of the established acceptance limits because of the heterogeneous matrix of the sample:

Analyte Sample	Value
----------------	-------

Corrosivity 1204557582 (HF1-B4-(1-2)DUP) 10.7

Technical Information

Holding Times

Samples (See Below) were received by the laboratory outside of the method specified holding time. The data is qualified.

Sample	Analyte	Value
1204557582 (HF1-B4-(1-2)DUP)		Received 07-MAY-20, out of holding 06-MAY-20
1204557583 (HF1-B4-(2-4)DUP)		Received 07-MAY-20, out of holding 06-MAY-20
510807001 (HF1-B4-(1-2))		Received 07-MAY-20, out of holding 06-MAY-20
510807002 (HF1-B4-(2-4))		Received 07-MAY-20, out of holding 06-MAY-20
510807003 (HF1-B4-(4-5.33))		Received 07-MAY-20, out of holding 06-MAY-20
510807004 (HF1-B5-(1-2))		Received 07-MAY-20, out of holding 06-MAY-20
510807005 (HF1-B5-(2-4))		Received 07-MAY-20, out of holding 06-MAY-20
510807006 (HF1-B5-(4-6))		Received 07-MAY-20, out of holding 06-MAY-20
510807007 (HF1-B5-(6-8))		Received 07-MAY-20, out of holding 06-MAY-20
510807008 (HF1-B5-(8-10))		Received 07-MAY-20, out of holding 06-MAY-20
510807009 (HF1-B6-(0-2))		Received 07-MAY-20, out of holding 06-MAY-20
510807010 (HF1-B6-(2-4))		Received 07-MAY-20, out of holding 06-MAY-20
510807011 (HF1-B6-(4-5.67))		Received 07-MAY-20, out of holding 06-MAY-20
510807012 (HF1-B7-(0-2))		Received 07-MAY-20, out of holding 06-MAY-20
510807013 (HF1-B7-(2-4))		Received 07-MAY-20, out of holding 06-MAY-20
510807014 (HF1-B7-(4-5.42))		Received 07-MAY-20, out of holding 06-MAY-20
510807015 (HF1-B7-Refusal)		Received 07-MAY-20, out of holding 06-MAY-20

$\underline{\textbf{Radiochemistry}}$

Product: Alphaspec U, Soil/Veg

Analytical Method: DOE EML HASL-300, U-02-RC Modified

Analytical Procedure: GL-RAD-A-011 REV# 27

Analytical Batch: 1995498

Preparation Method: Dry Soil Prep

Preparation Procedure: GL-RAD-A-021 REV# 23

Preparation Batch: 1995477

Page 39 of 47 SDG: 510807

The following samples were analyzed using the above methods and analytical procedure(s).

GEL Sample ID#	<u>Client Sample Identification</u>
510807001	HF1-B4-(1-2)
510807002	HF1-B4-(2-4)
510807003	HF1-B4-(4-5.33)
510807004	HF1-B5-(1-2)
510807005	HF1-B5-(2-4)
510807006	HF1-B5-(4-6)
510807007	HF1-B5-(6-8)
510807008	HF1-B5-(8-10)
510807010	HF1-B6-(2-4)
510807011	HF1-B6-(4-5.67)
510807014	HF1-B7-(4-5.42)
1204557616	Method Blank (MB)
1204557617	510807001(HF1-B4-(1-2)) Sample Duplicate (DUP)
1204557618	Laboratory Control Sample (LCS)

The samples in this SDG were analyzed on a "dry weight" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Quality Control (QC) Information

Duplication Criteria between QC Sample and Duplicate Sample

The Sample and the Duplicate, (See Below), did not meet the relative percent difference requirement; however, they do meet the relative error ratio requirement with the value listed below.

Sample	Analyte	Value
1204557617 (HF1-B4-(1-2)DUP)	Uranium-235/236	RPD 23.7* (0.00%-20.00%) RER 1.08 (0-3)

Miscellaneous Information

Manual Integration

Manual integration of alpha spectroscopy spectra 510807014 (HF1-B7-(4-5.42)) was performed to fully separate counts in Regions of Interest which would have been biased.

Additional Comments

The tracer peak centroid for sample 510807014 (HF1-B7-(4-5.42)) is greater than 50 keV from the expected library energy value for the tracer; however, the tracer yield requirement was met and the tracer peak is within the tracer region of interest.

Product: Alphaspec U, Soil/Veg

Analytical Method: DOE EML HASL-300, U-02-RC Modified

Page 40 of 47 SDG: 510807

Analytical Procedure: GL-RAD-A-011 REV# 27

Analytical Batch: 1998535

Preparation Method: Dry Soil Prep

Preparation Procedure: GL-RAD-A-021 REV# 23

Preparation Batch: 1995477

The following samples were analyzed using the above methods and analytical procedure(s).

GEL Sample ID# Client Sample Identification

510807012 HF1-B7-(0-2) 510807013 HF1-B7-(2-4) 1204564486 Method Blank (MB)

1204564487 510807012(HF1-B7-(0-2)) Sample Duplicate (DUP)

1204564488 Laboratory Control Sample (LCS)

The samples in this SDG were analyzed on a "dry weight" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Quality Control (QC) Information

RDL Met

The blank (See Below) did not meet the detection limit due to keeping the blank volume consistent with the other sample aliquots.

Sample	Analyte	Value
1204564486 (MB)	Uranium-233/234	Result -0.479 < MDA 2.7 > RDL 0.5 pCi/g
	Uranium-235/236	Result 0.5 < MDA 1.5 > RDL 0.5 pCi/g
	Uranium-238	Result -0.104 < MDA 1.93 > RDL 0.5 pCi/g

Product: Dry Weight

Preparation Method: ASTM D 2216 (Modified) **Preparation Procedure:** GL-OA-E-020 REV# 13

Preparation Batch: 1995477

Preparation Method: Dry Soil Prep

Preparation Procedure: GL-RAD-A-021 REV# 23

Preparation Batch: 1995477

Page 41 of 47 SDG: 510807

The following samples were analyzed using the above methods and analytical procedure(s).

Client Sample Identification
HF1-B4-(1-2)
HF1-B4-(2-4)
HF1-B4-(4-5.33)
HF1-B5-(1-2)
HF1-B5-(2-4)
HF1-B5-(4-6)
HF1-B5-(6-8)
HF1-B5-(8-10)
HF1-B6-(2-4)
HF1-B6-(4-5.67)
HF1-B7-(0-2)
HF1-B7-(2-4)
HF1-B7-(4-5.42)
510807001(HF1-B4-(1-2)) Sample Duplicate (DUP)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

There are no exceptions, anomalies or deviations from the specified methods. All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable.

Product: Liquid Scint Tc99, Soil

Analytical Method: DOE EML HASL-300, Tc-02-RC Modified

Analytical Procedure: GL-RAD-A-059 REV# 5

Analytical Batch: 1995744

The following samples were analyzed using the above methods and analytical procedure(s).

GEL Sample ID#	Client Sample Identification
510807001	HF1-B4-(1-2)
510807002	HF1-B4-(2-4)
510807003	HF1-B4-(4-5.33)
510807004	HF1-B5-(1-2)
510807005	HF1-B5-(2-4)
510807006	HF1-B5-(4-6)
510807007	HF1-B5-(6-8)
510807008	HF1-B5-(8-10)
510807010	HF1-B6-(2-4)
510807011	HF1-B6-(4-5.67)
510807012	HF1-B7-(0-2)
510807013	HF1-B7-(2-4)
510807014	HF1-B7-(4-5.42)
1204558064	Method Blank (MB)
1204558065	510807001(HF1-B4-(1-2)) Sample Duplicate (DUP)
1204558066	Laboratory Control Sample (LCS)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

There are no exceptions, anomalies or deviations from the specified methods. All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable.

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

Page 43 of 47 SDG: 510807

Page: <u>L</u> of <u>2</u>				abo	rate	aboratories II c	_							GEL 1 2040	GEL Laboratories, 2040 Savage Road	GEL Laboratories, LLC 2040 Savage Road	O	
GEL Quote #: COC Number (1):	510807	Cha	gel.com Ch	emistry I Fustod	Radiocher V and	Chemistry I Radiochemistry I Radiobioassay I Specialty Analytics f Custody and Analytical Request	iobioassa)	1 Spec	alty An	alytics				Charle	ston, S: (843)	Charleston, SC 29407 Phone: (843) 556-8171		
0799254	GEL Work Order Number:	77		GEL	Project	GEL Project Manager:	7:					181		Fax: (843) 76	Fax: (843) 766-1178		
Client Name: Westinghouse		Phone # 803.497	3.497.7062	62			S	ımple	Anal	ysis F	eque	Sample Analysis Requested (5)		in the nu	mber o	f contai	(Fill in the number of containers for each test)	
Project/Site Name: Project # HF Spiking Station #1 Soil Sampling	oil Sampling	Fax#				Shou		SJ									< Preservative Type (6)	(9)
Address: 5801 Bluff Road, Hopkins, SC 29061						samı	sample be considered:	enist			1m		(ped					-
Collected By: R. Crews PCAuss S	Send Results To: joynerdp@westinghouse.com	@westing	house.co	ш				102 10 1	F	əbin	conte	ate	s eydje	66			Comments Note: extra sample is	is
Sample ID * For composites - indicate start and stop date/time	*Date Collected (mm-dd-yy)	*Time Collected (Military) (hhmm)	QC Code @	Field Filtered ⁽³⁾	Sample Matrix (4)	Radioactive yes, please su isotopic info.)	(7) Known or possible Haza	odmun latoT	Iq	Fluo	erutsiom	uiV) U siqotosI	-oT			required for sample specific QC	Q
HF1-B4-(1-2)	5/6/2020	0823		N/A	so		Ų.	1	X	×	×	×	×	×				
HF1-B4-(2-4)	5/6/2020	0835		N/A	SO			-	×	×	×	×	×	×				
HF1-B4-(4-5.33)	2/6/2020	0855		N/A	so			-	×	×	×	×	×	×				
HF1-B5-(1-2)	5/6/2020	0947		N/A	SO	11 6		-	×	×	×	×	×	×	·, ·		I -	
HF1-B5-(2-4)	5/6/2020	1015		N/A	so			-	×	×	×	×	×	×			Please note that MDC for	lor
HF1-B5-(4-6)	5/6/2020	1045		N/A	so			-	×	×	×	×	×	×	N 99	. £	Tc-99 should be 5 pCi/g	<u>.</u>
HFI-B5-(6-8)	5/6/2020	1151		N/A	so			-	×	×	×	×	×	×			ı.	
HF1-B5-(8-10)	5/6/2020	1340		N/A	SO	5 5,		-	×	×	×	×	×	×	-	Lai		
		S A.S.	20	F		5 - 1 5 - 1 1 - 1 1 - 1		,	# 8 5	4.					¥- +)			
	Chain of Custody Signatures	2220					TA	TAT Requested:	nestec		Normal: X	ΧI	Rush:	li:	Specify:	fy:	(Subject to Surcharge)	•
Date Tir	Received by (signed)		Date	Time			Fax Results: [] Yes	ults: [] Yes		[] No							
1 Randy Crews TE Gray a Co	1015 1 Stay	вост	S	517/20		2701	Select Deliverable: [] C of A	eliver	ple: [1C o		[] QC Summary	num	ry [] level 1		[] Level 2	2 [] Level 3 [] Level 4	4
2	2						Additional Remarks	ıal Rei	narks:									
3	3						For La	Rece	ving l	Se Or	dy: Cı	istody	Seal In	For Lab Receiving Use Only: Custody Seal Intact? [] Yes	- 1	[] No	Cooler Temp: 7°C	
> For sample shipping and delivery details, see Sample Receipt & Review form (SRR.)	le Receipt & Review form	(SRR.)	100		18	Sample (Collection Time Zone:	ı Time	Zone	⊠	[X] Eastern		[] Pacific	c [] Central	entral	[] Mountain	ıntain [] Other:	1000
 Chain of Custody Number = Citent Determined QC Codes: N = Normal Sample, TB = Trip Blank, FD = Field Duplicate, EB = Equipment Blank, MS = Matrix Spike 	Ouplicate, EB = Equipment Blank	, MS = Matrix	Spike San	ple, MSD	= Matrix	Sample, $MSD = Matrix$ Spike Duplicate Sample, $G = Grab$, $C = Composite$	ate Sample	. G = G	rab, C≡	Compo	site							
3.) Field Filtered: For liquid matrices, indicate with a - Y - for yes the sample was field filtered or - N - for sample was not field filtered. 4.) Matrix Codes: DW=Drinking Water, GPGroundwater, SW=Surface Water, WW=Water, WI=Water, WI=Wise Liquid, SO=Soil, SD=Sediment, SL=Sludge, SS=Solid Waste, O=Oil, F=Filter, P=Wine, U=Urine F=Fercal N=Nasal	the sample was field filtered or - N Surface Water, WW=Waste Wate	N - for sample v	vas not fiel	d filtered.	Soil. SD=	Sediment. S	L=Sludge.	SS=Sol	d Waste	0=0	F=F	er. P=W	ine. U	Trine F=Fec	N=N	-		
5.) Sample Analysis Requested: Analytical method requested (i.e. 8260B, 6010B/7470A) and number of containers provided for each (i.e. 8260B - 3, 6010B/7470A - 1).	3260B, 6010B/7470A) and numbe	er of containers	provided -	for each (i.e	e. 8260B	-3, 6010B/7.	4704 - 1).	1			1	. !						
7.) KNOWN OR POSSIBLE HAZARDS C	Characteristic Hazards	Listed Waste	Waste	i de Joseph	T I I I I		Other	mare, m	and on		anne er	No.		4	P	lease pro	Please provide any additional details	
Is	FL = Flammable/Ignitable CO = Corrosive	LW=L (F,K,P)	LW= Listed Waste (F,K,P and U-listed	LW= Listed Waste (F,K,P and U-listed wastes.)	tes.)		OT= Other / Unknown (i.e.: High/low pH, asbestos, beryllium, irritants, other	her / L gh/low	Inknov pH, a	vn sbesto	s, bery	Hium,	irritan	s, other	2 2	elow region	below regarding handling and/or disposal concerns. (i.e.: Origin of sample(s), type	osal
	RE = Reactive	Waste	Waste code(s):				misc. health hazards, etc.) Description:	alth he	zards	etc.)	V 3				ю	site coll	of site collected from, odd matrices, etc.)	
als	TSCA Regulated PCB = Polychlorinated				è							a						
	biphenyls									7			×					Ž

Page: 2_of <u>2</u> GEL Quote #:			gel.com Chain of C	abo mistry 1 B ustody	rato adiochemi	Laboratories LLC Chemistry I Radiochemistry I Radiobioassay I Specialty Analytics of Custody and Analytical Request	LLC bioassay al Req	Specia uest	Ity Analy	tics				GEL 2040 Charl	GEL Laboratories, 2040 Savage Road Charleston, SC 294	GEL Laboratories, LLC 2040 Savage Road Charleston, SC 29407	LC 7	*1
7 20000	CEI Wall O. Jan W. L.					.								Phone	s: (843 ₎	Phone: (843) 556-8171	71	
ISe	an Other Mamoe	Phone # 803.497.7062	3.497.70	62	Tagar.	OEL Troject Manager.		mnle	Samule Analysis Requested (5)	sic Re	allest	(S)	(Fill i	Fax: (843) 7	Fax: (843) 766-1178 he number of conta	(Fill in the number of containers for each test)	
Project/Site Name: Project # HF Spiking Station #1 Soil Sampling	pling	Fax#	j			Should this	1000	SUS				_	_			_	< Preserva	< Preservative Type (6)
Address: 5801 Bluff Road, Hopkins, SC 29061						sample be	e be	ntsin			1n	Jours						
Collected By: R. Crews Augs Send Res	Send Results To: joynerdp@westinghouse.com	p@westing	house.cc	ų,		Aldq Viqq	ards	05 10 1]	əbi				×			Note: extr	Comments Note: extra sample is
Sample ID * For composites - indicate start and stop date/time	*Date Collected (mm-dd-yy)	*Time Collected (Military) (hhmm)	QC Code @	Field Filtered (3)	Sample Matrix (4)	Radioactive yes, please suj isotopic info.)	(7) Known or	Total number	Hq	Fluor	moisture	BritiM By U siqotosI	>T				required speci	required for sample specific QC
HF1-B6-(0-2)	5/6/2020	1420		N/A	SO			-	×									
HF1-B6-(2-4)	5/6/2020	1440	2/5	N/A	SO	5		-	×	×	×	×	×			20.7		
HF1-B6-(4-5.67)	5/6/2020	1525		N/A	SO			-	×	×	×	×	×				Ī	
HF1-B7-(0-2)	5/6/2020	1553	200	N/A	SO	200		-	×	×	×	×	×					
HF1-B7-(2-4)	5/6/2020	1613		N/A	SO			-	×	×	×	×	×				Please note 1	Please note that MDC for
HF1-B7-(4-5.42)	5/6/2020	1631		N/A	SO			-	×	×	×	×	×				Tc-99 shoul	Tc-99 should be 5 pCi/g
HF1-B7-Refusal	5/6/2020	1631		N/A	SO			-	×			-	┞				T	
					s			٠,	100	16		22 742	32	3			1	
			v.***	P 1									e ***		1 12		9	
Chain of Cus	Chain of Custody Signatures						TAT	Requ	TAT Requested:	ž	Normal: X	×	Rush:		Specify:	ify:	(Subject to Surcharge)	Surcharge)
ate Time	Received by (signed)		Date	Time			Fax Results: [] Yes	ilts: [] Yes	[] No	Q.							
1 Randy Crews KChus Stillow 1015	1 Stacy	Boon	S	7/20		710	Select Deliverable: [] C of A [] QC Summary [] level 1 [] Level 2	livera	ole:	C of		OC Su	mmar	=	vel 1	[]Lev	[] Level 3	[] Level 4
2	2						Additional Remarks	ıl Rem	arks:				1					
3	3						For Lab Receiving Use Only: Custody Seal Intact? [] Yes	Receiv	ing Us	e Onl	: Cus	ody Se	al Into	ct? []		[] No	Cooler Temp:	ا ،د
> For sample shipping and delivery details, see Sample Receipt & Review form (SRR.)	ipt & Review form	(SRR.)				Sample Collection Time Zone: [X] Eastern	ollection	Time.	Zone:	XE	astern		[] Pacific	[]c	[] Central	[]W	[] Mountain [] Other	
 Chain of Custody Number = Client Determined QC Codes: N = Normal Sample, TB = Trip Blank, FD = Field Duplicate, EB = Equipment Blank, MS = Matrix Spike Sample, MSI Field Filtered: For liquid matrices, indicate with a - Y - for yes the sample was field filtered or - N - for sample was not field filtered 	EB = Equipment Blank e was field filtered or - 1	c, MS = Matrix N - for sample v	Spike Sam	ple, MSD = I filtered.	= Matrix Sp	Sample, $MSD=$ Matrix Spike Duplicate Sample, $G=$ Grab, $C=$ Composite field filtered.	te Sample,	G = Gra	ρ' C = C	ошрозі	2							
4.) Matrix Codes: DW=Drinking Water, GW=Groundwater, SW=Surface Water, WW=Water, WE-Water, ML=Misc Liquid, SO=Soil, SD=Sediment, SL=Sludge, SS=Solid Waste, O=Oil, F=Filter, P=Wipe, U=Urin S.) Sample Analysis Requested: Analytical method requested (i.e. 8260B, 6010B/7470A) and number of containers provided for each (i.e. 8260B - 3, 6010B/7470A - 1). 6.) Preservative Type: IA = Hydrochloric Acid, IN = Nitric Acid, SH = Sodium Hydroxide, SA = Sulfuric Acid, AA = Ascorbic Acid, HX = Hexane, ST = Sodium Thiosulfate, If no preservative is added = Leave field blank	ater, WW=Waste Wate 10B/7470A) and numb numb num Hydroxide, SA = Si	rr, W=Water, M er of containers ulfuric Acid, AA	IL=Misc L provided f	quid, SO=9 or each (i.e	Soil, SD=S.: 8260B - 3	ise Liquid, SO=Soil, SD=Sediment, SL=Sludge, SS=Solid Waste, O=Oil, F=Filter, P=Wipe, U=Urine, F=Fecal, N=Nasal ded for each (i.e. 8260B - 3, 6010B/7470A - 1). corbic Acid, HX = Hexane, ST = Sodium Thiosulfate, If no preservative is added = leave field blank	=Sludge, S 70A - 1). am Thiosul	S=Solid	Waste,	D=Oil, I	7=Filter	P=Wip	, U=Ur eld blar	ne, F=Fec k	al, N=N	asal		
7.) KNOWN OR POSSIBLE HAZARDS Character	Characteristic Hazards	Listed Waste	Waste			Ĭ	Other								1	lease p	Please provide any additional details	al details
RCRA Metals	FL = Flammable/Ignitable	LW= Listed $\frac{(F \ K \ P \ and \ I)}{(F \ K \ P \ and \ I)}$	isted Waste	LW= Listed Waste	1 00		OT= Other / Unknown	er / Ur	iknowr	10000	Home		itante	other	9	elow re	below regarding handling and/or disposal	nd/or disposal
As = Arsenic Hg= Mercury RE = Reactive Ba = Barium Se= Sclenium	ctive	Waste c	Waste code(s):	non in the	(2)	- 2 -	misc. health hazards, etc.)	Ith haz	ards, e	tc.)	nervie	mir,	(circuit)	iamo	3 0'	f site co	of site collected from, odd matrices, etc.)	atrices, etc.)
RA metals	TSCA Regulated PCR = Polychlorinated											Ħ			v			
47 SDG: 510807	biphenyls					T. I				F-1								

Client: WNU	1	T	SDG/AR/COCAVork Order: 510807
Received By: SLBOO		- 1	2000
Carrier and Tracking Number	7848		Date Received: MAY7,2020 Circle Applicable: FedEx Express FedEx Ground UPS Field Services Courier Other
Suspected Hazard Information	Yes	2 ,	If Net Counts > 100cpm on samples not marked "radioactive", contact the Radiation Safety Group for further investigation
A)Shipped as a DOT Hazardous?		1	Hazard Class Shipped: UN#: If UN2910, Is the Radioactive Shipment Survey Compliant? Yes No
B) Did the client designate the samples are to be received as radioactive?	:		COC notation or radioactive stickers on containers equal client designation.
C) Did the RSO classify the samples as radioactive?		C	Alaximum Net Counts Observed* (Observed Counts - Area Background Counts):CPM / mR/Hr
D) Did the client designate samples are hazardous?		C	OC notation or hazard labels on containers equal client designation.
E) Did the RSO identify possible hazards?		If P	D or E is yes, select Hazards below. CB's Flammable Foreign Soil RCRA Asbestos Beryllium Other:
Sample Receipt Criteria	Yes ₹\$	12	Comments/Qualifiers (Required for Non-Conforming Items)
Shipping containers received intact and sealed?			Circle Applicable: Seals broken Damaged container Leaking container Citer (describe)
2 Chain of custody documents included with shipment?	/:		Circle Applicable: Client contacted and provided COC COC created upon receipt
3 Samples requiring cold preservation within (0 ≤ 6 deg. C)?*			Preservation Method: Wet Ice lee Packs Drylice None Other: all temperatures are recorded in Celsius
Daily check performed and passed on IR temperature gun?			Temperature Device Serial #: TRI-19 Secondary Temperature Device Serial # (If Applicable):
5 Sample containers intact and sealed?		L	Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
6 Samples requiring chemical preservation at proper pH?		L	Sample ID's and Containers Affected: If Preservation added, Lot#
7 Do any samples require Volatile Analysis?		-	If Yes, are Encores or Soil Kits present for solids? Yes No NA (If yes, take to VOA Freezer) Do liquid VOA vials contain acid preservation? Yes No NA (If unknown, select No) Are liquid VOA vials free of headspace? Yes No NA Sample ID's and containers affected:
8 Samples received within holding time?	1		ID's and tests affected:
Sample ID's on COC match ID's on bottles?			ID's and containers affected:
Date & time on COC match date & time on bottles?			Circle Applicable: No dates on containers No times on containers COC missing info Other (describe)
Number of containers received match number indicated on COC?			Circle Applicable: No container count on COC Other (describe)
Are sample containers identifiable as GEL provided?			,
COC form is properly signed in relinquished/received sections?			Circle Applicable: Not relinquished Other (describe)
mments (Use Continuation Form if needed):			****
×.			<u> </u>

Page 46 of 47 SDG: 510807

List of current GEL Certifications as of 04 June 2020

State	Certification
Alaska	17-018
Alaska Drinking Water	SC00012
Arkansas	88-0651
CLIA	42D0904046
California	2940
Colorado	SC00012
Connecticut	PH-0169
DoD ELAP/ ISO17025 A2LA	2567.01
Florida NELAP	E87156
Foreign Soils Permit	P330-15-00283, P330-15-00253
Georgia	SC00012
Georgia SDWA	967
Hawaii	SC00012
Idaho	SC00012
Illinois NELAP	200029
Indiana	C-SC-01
Kansas NELAP	E-10332
Kentucky SDWA	90129
Kentucky Wastewater	90129
Louisiana Drinking Water	LA024
Louisiana NELAP	03046 (AI33904)
Maine	2019020
Maryland	270
Massachusetts	M-SC012
Massachusetts PFAS Approv	Letter
Michigan	9976
Mississippi	SC00012
Nebraska	NE-OS-26-13
Nevada	SC000122020-1
New Hampshire NELAP	2054
New Jersey NELAP	SC002
New Mexico	SC00012
New York NELAP	11501
North Carolina	233
North Carolina SDWA	45709
North Dakota	R-158
Oklahoma	2019–165
Pennsylvania NELAP	68-00485
Puerto Rico	SC00012
S. Carolina Radiochem	10120002
Sanitation Districts of L	9255651
South Carolina Chemistry	10120001
Tennessee	TN 02934
Texas NELAP	T104704235-20-17
Utah NELAP	SC000122020-32
Vermont	VT87156
Virginia NELAP	460202
Washington	C780