SHEALY ENVIRONMENTAL SERVICES, INC.

Report of Analysis

Westinghouse Electric Company
5801 Bluff Rd.
Hopkins, SC 29061
Attention: Diana Joyner

Project Name: CVOC

Lot Number:**UH14136**

Date Completed:08/16/2019

08/16/2019 3:55 PM
Approved and released by:
Project Manager: Grant Wilton

Shealy Environmental Services, Inc.
106 Vantage Point Drive West Columbia, SC 29172 (803) 791-9700 Fax (803) 791-9111 www.shealylab.com

Case Narrative
Westinghouse Electric Company
Lot Number: UH14136

This Report of Analysis contains the analytical result(s) for the sample(s) listed on the Sample Summary following this Case Narrative. The sample receiving date is documented in the header information associated with each sample.

All results listed in this report relate only to the samples that are contained within this report.

Sample receipt, sample analysis, and data review have been performed in accordance with the most current approved NELAC standards, the Shealy Environmental Services, Inc. ("Shealy") Quality Assurance Management Plan (QAMP), standard operating procedures (SOPs), and Shealy policies. Any exceptions to the NELAC standards, the QAMP, SOPs or policies are qualified on the results page or discussed below.

If you have any questions regarding this report please contact the Shealy Project Manager listed on the cover page.

Sample Summary
Westinghouse Electric Company
Lot Number: UH14136
Project Name: CVOC
Project Number:

Sample Number	Sample ID	Matrix	Date Sampled	Date Received
001	L-1 (10-15)	Aqueous	08/14/2019 1500	08/14/2019
002	L-1 (28-33)	Aqueous	08/14/2019 1612	08/14/2019
003	L-1 (48-53)	Aqueous	08/14/2019 1802	08/14/2019
004	TB-1	Aqueous	08/14/2019 1810	08/14/2019

(4 samples)

Detection Summary

Westinghouse Electric Company

Lot Number: UH14136

Project Name: CVOC

Project Number:

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
002	L-1 (28-33)	Aqueous	cis-1,2-Dichloroethene	8260D	3.8		ug/L	6
002	L-1 (28-33)	Aqueous	Vinyl chloride	8260D	2.7		ug/L	6

(2 detections)

Volatile Organic Compounds by GC/MS

Client: **Westinghouse Electric Company** Laboratory ID: **UH14136-001**

Description: **L-1 (10-15)** Matrix: **Aqueous**

Date Sampled: **08/14/2019 1500** Project Name: **CVOC**

Date Received: **08/14/2019** Project Number:

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/15/2019 2223	STM		26047

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
1,2-Dichloroethane	107-06-2	8260D	ND		1.0	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		1.0	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	ND		1.0	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		1.0	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		1.0	ug/L	1
Trichloroethene	79-01-6	8260D	ND		1.0	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		1.0	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		112	70-130
1,2-Dichloroethane-d4		114	70-130
Toluene-d8		100	70-130

LOQ = Limit of Quantitation
ND = Not detected at or above the LOQ
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%

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Volatile Organic Compounds by GC/MS

Client: **Westinghouse Electric Company** Laboratory ID: **UH14136-002**

Description: **L-1 (28-33)** Matrix: **Aqueous**

Date Sampled: **08/14/2019 1612** Project Name: **CVOC**

Date Received: **08/14/2019** Project Number:

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/15/2019 2246	STM		26047

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
1,2-Dichloroethane	107-06-2	8260D	ND		1.0	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		1.0	ug/L	1
cis-1,2-Dichloroethene	**156-59-2**	**8260D**	**3.8**		**1.0**	**ug/L**	**1**
trans-1,2-Dichloroethene	156-60-5	8260D	ND		1.0	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		1.0	ug/L	1
Trichloroethene	79-01-6	8260D	ND		1.0	ug/L	1
Vinyl chloride	**75-01-4**	**8260D**	**2.7**		**1.0**	**ug/L**	**1**

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		104	70-130
1,2-Dichloroethane-d4		117	70-130
Toluene-d8		96	70-130

LOQ = Limit of Quantitation
ND = Not detected at or above the LOQ
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N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%

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Volatile Organic Compounds by GC/MS

Client: **Westinghouse Electric Company** Laboratory ID: **UH14136-003**

Description: **L-1 (48-53)** Matrix: **Aqueous**

Date Sampled: **08/14/2019 1802** Project Name: **CVOC**

Date Received: **08/14/2019** Project Number:

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/15/2019 2311	STM		26047

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
1,2-Dichloroethane	107-06-2	8260D	ND		1.0	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		1.0	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	ND		1.0	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		1.0	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		1.0	ug/L	1
Trichloroethene	79-01-6	8260D	ND		1.0	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		1.0	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		99	70-130
1,2-Dichloroethane-d4		117	70-130
Toluene-d8		97	70-130

LOQ = Limit of Quantitation
ND = Not detected at or above the LOQ
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%

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Volatile Organic Compounds by GC/MS

Client: **Westinghouse Electric Company** Laboratory ID: **UH14136-004**

Description: **TB-1** Matrix: **Aqueous**

Date Sampled: **08/14/2019 1810** Project Name: **CVOC**

Date Received: **08/14/2019** Project Number:

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/15/2019 2159	STM		26047

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
1,2-Dichloroethane	107-06-2	8260D	ND		1.0	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		1.0	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	ND		1.0	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		1.0	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		1.0	ug/L	1
Trichloroethene	79-01-6	8260D	ND		1.0	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		1.0	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		98	70-130
1,2-Dichloroethane-d4		112	70-130
Toluene-d8		94	70-130

LOQ = Limit of Quantitation
ND = Not detected at or above the LOQ
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B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%

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Chain of Custody
and
Miscellaneous Documents

Chain of Custody Record

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Telephone No. 803-791-9700 Fax No. 803-791-9111
www.shealylab.com

Number 101199

Client: Westinghouse Columbia Fuel Fabrication Facility
Address: 5801 Bluff Road
City: Hopkins State: SC Zip Code:
Project Name: Westinghouse Columbia Fuel Fabrication Facility
Project No.:
P.O. No.:
Report to Contact: Diana Joyner
Sampler's Signature: x Charles K Sudduth
Printed Name: Charles K Sudduth
Telephone No. / E-mail: 803-647-1920 / joynerdp@westinghouse.com
Quote No.:
Page 1 of 1
Analysis (Attach list if more space is needed): Chlorinated VOCs

UH14136

GRW

Sample ID / Description (Containers for each sample may be combined on one line.)	Date	Time	G=Grab C=Composite	Matrix: Aqueous	Matrix: Solid	Matrix: Non-Aqueous	Unpres	H_2SO_4	HNO_3	HCl	NaOH	5035 Kit	Chlorinated VOCs	Remarks / Cooler I.D.
L-1 (10-15)	8/14/19	1500	G	X						3			X	Analyze for Chlorinated VOCs only
L-1 (28-33)	8/14/19	1612	G	X						3			X	
L-1 (48-53)	8/14/19	1802	G	X						3			X	
TB-1	8/14/19	1810	G	X						2			X	

Turn Around Time Required (Prior lab approval required for expedited TAT.): ☐ Standard ☒ Rush (Specify) 24 hr (1Xup)

Sample Disposal: ☐ Return to Client ☒ Disposal by Lab

Possible Hazard Identification: ☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison ☐ Unknown

QC Requirements (Specify):

Relinquished by	Date	Time	Received by	Date	Time
1. Charles K Sudduth	8/14/19	1907	1.		
2.			2.		
3.			3.		
4.			4. Laboratory received by Darby Nunto	8/14/19	1907

Note: All samples are retained for four weeks from receipt unless other arrangements are made.

LAB USE ONLY: Received on ice (Circle) (Yes) No Ice Pack Receipt Temp. 5.0 °C No tb

DISTRIBUTION: WHITE & YELLOW-Return to laboratory with Sample(s); PINK-Field/Client Copy

Document Number: F-AD-133 Effective Date: 08-01-2014

Shealy Environmental Services, Inc.
Document Number: ME00180-14

Page 1 of 1
Effective Date: 8/2/2018

Sample Receipt Checklist (SRC)

Client: Westinghouse Columbia Fuel Cooler Inspected by/date: DMN / 08/14/19 Lot #: CH14136

Means of receipt: ☐ SESI ☑ Client ☐ UPS ☐ FedEx ☐ Other: _____

☐ Yes	☑ No		1. Were custody seals present on the cooler?
☐ Yes	☐ No	☑ NA	2. If custody seals were present, were they intact and unbroken?

pH Strip ID: NA Chlorine Strip ID: NA Tested by: NA

Original temperature upon receipt / Derived (Corrected) temperature upon receipt %Solid Snap-Cup ID: NA

5.0 / 5.0 °C NA / NA °C NA / NA °C NA / NA °C

Method: ☐ Temperature Blank ☑ Against Bottles IR Gun ID: 5 IR Gun Correction Factor: 0 °C

Method of coolant: ☑ Wet Ice ☐ Ice Packs ☐ Dry Ice ☐ None

☐ Yes	☐ No	☑ NA	3. If temperature of any cooler exceeded 6.0°C, was Project Manager Notified? PM was Notified by: phone / email / face-to-face (circle one).
☐ Yes	☐ No	☑ NA	4. Is the commercial courier's packing slip attached to this form?
☑ Yes	☐ No		5. Were proper custody procedures (relinquished/received) followed?
☑ Yes	☐ No		6. Were sample IDs listed on the COC?
☑ Yes	☐ No		7. Were sample IDs listed on all sample containers?
☑ Yes	☐ No		8. Was collection date & time listed on the COC?
☑ Yes	☐ No		9. Was collection date & time listed on all sample containers?
☑ Yes	☐ No		10. Did all container label information (ID, date, time) agree with the COC?
☑ Yes	☐ No		11. Were tests to be performed listed on the COC?
☑ Yes	☐ No		12. Did all samples arrive in the proper containers for each test and/or in good condition (unbroken, lids on, etc.)?
☑ Yes	☐ No		13. Was adequate sample volume available?
☑ Yes	☐ No		14. Were all samples received within ½ the holding time or 48 hours, whichever comes first?
☐ Yes	☑ No		15. Were any samples containers missing/excess (circle one) samples Not listed on COC?
☐ Yes	☑ No	☐ NA	16. For VOA and RSK-175 samples, were bubbles present >"pea-size" (¼"or 6mm in diameter) in any of the VOA vials?
☐ Yes	☐ No	☑ NA	17. Were all DRO/metals/nutrient samples received at a pH of < 2?
☐ Yes	☐ No	☑ NA	18. Were all cyanide samples received at a pH > 12 and sulfide samples received at a pH > 9?
☐ Yes	☐ No	☑ NA	19. Were all applicable NH_3/TKN/cyanide/phenol/625 (< 0.5mg/L) samples free of residual chlorine?
☐ Yes	☐ No	☑ NA	20. Were client remarks/requests (i.e. requested dilutions, MS/MSD designations, etc…) correctly transcribed from the COC into the comment section in LIMS?
☐ Yes	☑ No		21. Was the quote number listed on the container label? If yes, Quote # NA

Sample Preservation (Must be completed for any sample(s) incorrectly preserved or with headspace.)

Sample(s) NA _____ were received incorrectly preserved and were adjusted accordingly in sample receiving with NA mL of circle one: H2SO4, HNO3, HCl, NaOH using SR # NA.

Time of preservation NA. If more than one preservative is needed, please note in the comments below.

Sample(s) NA _____ were received with bubbles >6 mm in diameter.

Samples(s) NA _____ were received with TRC > 0.5 mg/L (If #19 is *no*) and were adjusted accordingly in sample receiving with sodium thiosulfate ($Na_2S_2O_3$) with Shealy ID: NA.

SR barcode labels applied by: BMG Date: 08/14/19

Comments:

SHEALY ENVIRONMENTAL SERVICES, INC.

Report of Analysis

Westinghouse Electric Company
5801 Bluff Rd.
Hopkins, SC 29061
Attention: Diana Joyner

Project Name: CVOC

Lot Number:**UH15060**

Date Completed:08/16/2019

08/16/2019 5:18 PM
Approved and released by:
Project Manager: Grant Wilton

The electronic signature above is the equivalent of a handwritten signature.

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106 Vantage Point Drive West Columbia, SC 29172 (803) 791-9700 Fax (803) 791-9111 www.shealylab.com

Case Narrative
Westinghouse Electric Company
Lot Number: UH15060

This Report of Analysis contains the analytical result(s) for the sample(s) listed on the Sample Summary following this Case Narrative. The sample receiving date is documented in the header information associated with each sample.

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If you have any questions regarding this report please contact the Shealy Project Manager listed on the cover page.

Sample Summary

Westinghouse Electric Company

Lot Number: UH15060

Project Name: CVOC

Project Number:

Sample Number	Sample ID	Matrix	Date Sampled	Date Received
001	L-1 (63-68)	Aqueous	08/15/2019 1000	08/15/2019
002	L-1 (78-83)	Aqueous	08/15/2019 1205	08/15/2019
003	L-1 (78-83)-DUP	Aqueous	08/15/2019 1205	08/15/2019
004	TB-02-091519	Aqueous	08/15/2019 1650	08/15/2019

(4 samples)

Detection Summary

Westinghouse Electric Company

Lot Number: UH15060

Project Name: CVOC

Project Number:

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page

(0 detections)

Volatile Organic Compounds by GC/MS

Client: Westinghouse Electric Company
Laboratory ID: UH15060-001
Description: L-1 (63-68)
Matrix: Aqueous
Date Sampled: 08/15/2019 1000
Project Name: CVOC
Date Received: 08/15/2019
Project Number:

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/16/2019 0413	STM		26047

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
1,2-Dichloroethane	107-06-2	8260D	ND		1.0	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		1.0	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	ND		1.0	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		1.0	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		1.0	ug/L	1
Trichloroethene	79-01-6	8260D	ND		1.0	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		1.0	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		103	70-130
1,2-Dichloroethane-d4		119	70-130
Toluene-d8		101	70-130

LOQ = Limit of Quantitation
ND = Not detected at or above the LOQ
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N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%

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Volatile Organic Compounds by GC/MS

Client: Westinghouse Electric Company
Laboratory ID: UH15060-002
Description: L-1 (78-83)
Matrix: Aqueous
Date Sampled: 08/15/2019 1205
Project Name: CVOC
Date Received: 08/15/2019
Project Number:

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/16/2019 0436	STM		26047

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
1,2-Dichloroethane	107-06-2	8260D	ND		1.0	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		1.0	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	ND		1.0	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		1.0	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		1.0	ug/L	1
Trichloroethene	79-01-6	8260D	ND		1.0	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		1.0	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		108	70-130
1,2-Dichloroethane-d4		123	70-130
Toluene-d8		104	70-130

LOQ = Limit of Quantitation
ND = Not detected at or above the LOQ
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%

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Volatile Organic Compounds by GC/MS

Client: Westinghouse Electric Company			Laboratory ID: UH15060-003
Description: L-1 (78-83)-DUP			Matrix: Aqueous
Date Sampled: 08/15/2019 1205	Project Name: CVOC		
Date Received: 08/15/2019	Project Number:		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/16/2019 0459	STM		26047

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
1,2-Dichloroethane	107-06-2	8260D	ND		1.0	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		1.0	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	ND		1.0	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		1.0	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		1.0	ug/L	1
Trichloroethene	79-01-6	8260D	ND		1.0	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		1.0	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		98	70-130
1,2-Dichloroethane-d4		119	70-130
Toluene-d8		98	70-130

LOQ = Limit of Quantitation
ND = Not detected at or above the LOQ
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%

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Volatile Organic Compounds by GC/MS

Client: Westinghouse Electric Company
Laboratory ID: UH15060-004
Description: TB-02-091519
Matrix: Aqueous
Date Sampled: 08/15/2019 1650
Project Name: CVOC
Date Received: 08/15/2019
Project Number:

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/16/2019 0350	STM		26047

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
1,2-Dichloroethane	107-06-2	8260D	ND		1.0	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		1.0	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	ND		1.0	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		1.0	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		1.0	ug/L	1
Trichloroethene	79-01-6	8260D	ND		1.0	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		1.0	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		97	70-130
1,2-Dichloroethane-d4		117	70-130
Toluene-d8		95	70-130

LOQ = Limit of Quantitation
ND = Not detected at or above the LOQ
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%

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Chain of Custody

and

Miscellaneous Documents

Chain of Custody Record

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106 Vantage Point Drive • West Columbia, SC 29172
Telephone No. 803-791-9700 Fax No. 803-791-9111
www.shealylab.com

Number 101198

Client: Westinghouse Columbia Fuel Fabrication Facility
Address: 5801 Bluff Road
City: Hopkins State: SC Zip Code:
Project Name: Westinghouse Columbia Fuel Fabrication Facility
Project No.:
P.O. No.:

Report to Contact: Diana Joyner
Sampler's Signature: x Charles K Suddeth
Printed Name: Charles K. Suddeth

Telephone No. / E-mail: 803-647-1920 / joynerdp@westinghouse.com
Analysis (Attach list if more space is needed): Chlorinated VOCs

Quote No.:
Page 1 of 1
UH15060
GRW

Sample ID / Description (Containers for each sample may be combined on one line.)	Date	Time	G=Grab C=Composite	Matrix: Aqueous	Matrix: Solid	Matrix: Non Aqueous	Unpres.	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Chlorinated VOCs	Remarks / Cooler I.D.
L-1 (63-68)	8/15/19	1000	G	X						3			X	
L-1 (78-83)	8/15/19	1205	G	X						3			X	
L-1 (78-83)-DUP	8/15/19	1205	G	X						3			X	
TB-02-081519	8/15/19	1650	G	X						2			X	

Turn Around Time Required (Prior lab approval required for expedited TAT.) ☐ Standard ☒ Rush (Specify) 48 hr or sooner

Sample Disposal ☐ Return to Client ☒ Disposal by Lab

Possible Hazard Identification ☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison ☐ Unknown

QC Requirements (Specify)

Relinquished by	Date	Time	Received by	Date	Time
1. Charles K Suddeth	8/15/19	1725	1.		
2.			2.		
3.			3.		
4.			4. Laboratory received by: Darcy N [signature]	8/15/19	1725

Note: All samples are retained for four weeks from receipt unless other arrangements are made.

LAB USE ONLY Received on ice (Circle) (Yes) No Ice Pack Receipt Temp. 5.9 °C no tb

DISTRIBUTION: WHITE & YELLOW-Return to laboratory with Sample(s); PINK-Field/Client Copy

Document Number: F-AD-133 Effective Date: 08-01-2014

Shealy Environmental Services, Inc.
Document Number: ME001SC-14

Page 1 of 1
Effective Date: 8/2/2018

Sample Receipt Checklist (SRC)

Client: Westinghouse Columbia Cooler Inspected by/date: DMN / 08/15/19 Lot #: UH15060

Means of receipt: ☐ SESI ☑ Client ☐ UPS ☐ FedEx ☐ Other: ____

☐ Yes	☑ No		1. Were custody seals present on the cooler?
☐ Yes	☐ No	☑ NA	2. If custody seals were present, were they intact and unbroken?

pH Strip ID: NA Chlorine Strip ID: NA Tested by: NA

Original temperature upon receipt / Derived (Corrected) temperature upon receipt %Solid Snap-Cup ID: NA

5.9 / 5.9 °C NA / NA °C NA / NA °C NA / NA °C

Method: ☐ Temperature Blank ☑ Against Bottles IR Gun ID: 5 IR Gun Correction Factor: 0 °C

Method of coolant: ☑ Wet Ice ☐ Ice Packs ☐ Dry Ice ☐ None

☐ Yes	☐ No	☑ NA	3. If temperature of any cooler exceeded 6.0°C, was Project Manager Notified? PM was Notified by: phone / email / face-to-face (circle one).
☐ Yes	☐ No	☑ NA	4. Is the commercial courier's packing slip attached to this form?
☑ Yes	☐ No		5. Were proper custody procedures (relinquished/received) followed?
☑ Yes	☐ No		6. Were sample IDs listed on the COC?
☑ Yes	☐ No		7. Were sample IDs listed on all sample containers?
☑ Yes	☐ No		8. Was collection date & time listed on the COC?
☑ Yes	☐ No		9. Was collection date & time listed on all sample containers?
☑ Yes	☐ No		10. Did all container label information (ID, date, time) agree with the COC?
☑ Yes	☐ No		11. Were tests to be performed listed on the COC?
☑ Yes	☐ No		12. Did all samples arrive in the proper containers for each test and/or in good condition (unbroken, lids on, etc.)? ____
☑ Yes	☐ No		13. Was adequate sample volume available?
☑ Yes	☐ No		14. Were all samples received within ½ the holding time or 48 hours, whichever comes first?
☐ Yes	☑ No		15. Were any samples containers missing/excess (circle one) samples Not listed on COC?
☑ Yes	☐ No	☐ NA	16. For VOA and RSK-175 samples, were bubbles present >"pea-size" (¼"or 6mm in diameter) in any of the VOA vials?
☐ Yes	☐ No	☑ NA	17. Were all DRO/metals/nutrient samples received at a pH of < 2?
☐ Yes	☐ No	☑ NA	18. Were all cyanide samples received at a pH > 12 and sulfide samples received at a pH > 9?
☐ Yes	☐ No	☑ NA	19. Were all applicable NH_3/TKN/cyanide/phenol/625 (< 0.5mg/L) samples free of residual chlorine?
☐ Yes	☐ No	☑ NA	20. Were client remarks/requests (i.e. requested dilutions, MS/MSD designations, etc…) correctly transcribed from the COC into the comment section in LIMS?
☐ Yes	☑ No		21. Was the quote number listed on the container label? If yes, Quote # NA

Sample Preservation (Must be completed for any sample(s) incorrectly preserved or with headspace.)

Sample(s) NA ____ were received incorrectly preserved and were adjusted accordingly in sample receiving with NA mL of circle one: H2SO4, HNO3, HCl, NaOH using SR # NA.
Time of preservation NA. If more than one preservative is needed, please note in the comments below.

Sample(s) TB-02-081519 (2) ____ were received with bubbles >6 mm in diameter.

Samples(s) NA ____ were received with TRC > 0.5 mg/L (If #19 is *no*) and were adjusted accordingly in sample receiving with sodium thiosulfate ($Na_2S_2O_3$) with Shealy ID: NA.

SR barcode labels applied by: DMN Date: 08/15/19

Comments:

SHEALY ENVIRONMENTAL SERVICES, INC.

Report of Analysis

Westinghouse Electric Company
5801 Bluff Rd.
Hopkins, SC 29061
Attention: Diana Joyner

Project Name: CVOC

Lot Number:**UH16068**

Date Completed:08/20/2019

08/20/2019 3:37 PM
Approved and released by:
Project Manager: Grant Wilton

The electronic signature above is the equivalent of a handwritten signature.

Shealy Environmental Services, Inc.
106 Vantage Point Drive West Columbia, SC 29172 (803) 791-9700 Fax (803) 791-9111 www.shealylab.com

Case Narrative
Westinghouse Electric Company
Lot Number: UH16068

This Report of Analysis contains the analytical result(s) for the sample(s) listed on the Sample Summary following this Case Narrative. The sample receiving date is documented in the header information associated with each sample.

All results listed in this report relate only to the samples that are contained within this report.

Sample receipt, sample analysis, and data review have been performed in accordance with the most current approved NELAC standards, the Shealy Environmental Services, Inc. ("Shealy") Quality Assurance Management Plan (QAMP), standard operating procedures (SOPs), and Shealy policies. Any exceptions to the NELAC standards, the QAMP, SOPs or policies are qualified on the results page or discussed below.

If you have any questions regarding this report please contact the Shealy Project Manager listed on the cover page.

Sample Summary

Westinghouse Electric Company

Lot Number: UH16068

Project Name: CVOC

Project Number:

Sample Number	Sample ID	Matrix	Date Sampled	Date Received
001	L-17 (15-20)	Aqueous	08/16/2019 1003	08/16/2019
002	L-17 (25-30)	Aqueous	08/16/2019 1122	08/16/2019
003	TB-03-081619	Aqueous	08/16/2019 1200	08/16/2019

(3 samples)

Detection Summary

Westinghouse Electric Company

Lot Number: UH16068

Project Name: CVOC

Project Number:

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
001	L-17 (15-20)	Aqueous	cis-1,2-Dichloroethene	8260D	6.2		ug/L	5
002	L-17 (25-30)	Aqueous	cis-1,2-Dichloroethene	8260D	5.4		ug/L	6

(2 detections)

Volatile Organic Compounds by GC/MS

Client: Westinghouse Electric Company
Laboratory ID: UH16068-001
Description: L-17 (15-20)
Matrix: Aqueous
Date Sampled: 08/16/2019 1003
Project Name: CVOC
Date Received: 08/16/2019
Project Number:

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/19/2019 1211	TML		26312

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
1,2-Dichloroethane	107-06-2	8260D	ND		1.0	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		1.0	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	6.2		1.0	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		1.0	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		1.0	ug/L	1
Trichloroethene	79-01-6	8260D	ND		1.0	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		1.0	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		103	70-130
1,2-Dichloroethane-d4		101	70-130
Toluene-d8		108	70-130

LOQ = Limit of Quantitation
ND = Not detected at or above the LOQ
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%

Shealy Environmental Services, Inc.
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Volatile Organic Compounds by GC/MS

Client: Westinghouse Electric Company
Laboratory ID: UH16068-002
Description: L-17 (25-30)
Matrix: Aqueous
Date Sampled: 08/16/2019 1122
Project Name: CVOC
Date Received: 08/16/2019
Project Number:

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/19/2019 1235	TML		26312

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
1,2-Dichloroethane	107-06-2	8260D	ND		1.0	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		1.0	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	5.4		1.0	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		1.0	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		1.0	ug/L	1
Trichloroethene	79-01-6	8260D	ND		1.0	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		1.0	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		102	70-130
1,2-Dichloroethane-d4		101	70-130
Toluene-d8		108	70-130

LOQ = Limit of Quantitation
ND = Not detected at or above the LOQ
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%

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Volatile Organic Compounds by GC/MS

Client: Westinghouse Electric Company
Laboratory ID: UH16068-003
Description: TB-03-081619
Matrix: Aqueous
Date Sampled: 08/16/2019 1200
Project Name: CVOC
Date Received: 08/16/2019
Project Number:

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/19/2019 1059	TML		26312

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
1,2-Dichloroethane	107-06-2	8260D	ND		1.0	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		1.0	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	ND		1.0	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		1.0	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		1.0	ug/L	1
Trichloroethene	79-01-6	8260D	ND		1.0	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		1.0	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		102	70-130
1,2-Dichloroethane-d4		99	70-130
Toluene-d8		108	70-130

LOQ = Limit of Quantitation
ND = Not detected at or above the LOQ
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%

Shealy Environmental Services, Inc.
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Chain of Custody

and

Miscellaneous Documents

SHEALY ENVIRONMENTAL SERVICES, INC.

SHEALY **Chain of Custody Record**

106 Vantage Point Drive • West Columbia, SC 29172
Telephone No. 803-791-9700 Fax No. 803-791-9111
www.shealylab.com

Number 101201

Client: Westinghouse Columbia Fuel Fabrication Facility
Address: 5801 Bluff Road
City: Hopkins | State: SC | Zip Code:
Project Name: Westinghouse Columbia Fuel Fabrication Facility
Project No.: | P.O. No.:

Report to Contact: Diana Joyner
Sampler's Signature: x Charles K Suddeth
Printed Name: Charles K. Suddeth

Telephone No. / E-mail: 803-647-1920 / joynerdp@westinghouse.com
Analysis (Attach list if more space is needed)

Quote No.:
Page 1 of 1

UH16068
GRW
Remarks / Cooler I.D.

Sample ID / Description (Containers for each sample may be combined on one line.)	Date	Time	Grab/Composite	Matrix: Aqueous	Matrix: Solid	Matrix: Non-Aqueous	No of Containers by Preservative Type: Unpres	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Chlorinated VOCs
L-17 (15-20)	8/16/19	1003	G	X						3			X
L-17 (25-30)	8/16/19	1122	G	X						3			X
TB-03-081619	8/16/19	1200	G	X						2			X

Turn Around Time Required (Prior lab approval required for expedited TAT.): ☐ Standard ☒ Rush (Specify) 48 hr or better

Sample Disposal: ☐ Return to Client ☒ Disposal by Lab

Possible Hazard Identification: ☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison ☐ Unknown

QC Requirements (Specify):

	Date	Time		Date	Time
1. Relinquished by: Charles K Suddeth	8/16/19	1609	1. Received by		
2. Relinquished by	Date	Time	2. Received by	Date	Time
3. Relinquished by	Date	Time	3. Received by	Date	Time
4. Relinquished by	Date	Time	4. Laboratory received by	Date: 8/16/19	Time: 1608

Note: All samples are retained for four weeks from receipt unless other arrangements are made.

LAB USE ONLY
Received on ice (Circle) (Yes) No Ice Pack
Receipt Temp. 0.7 °C NO tb

DISTRIBUTION: WHITE & YELLOW-Return to laboratory with Sample(s); PINK-Field/Client Copy

Document Number: F-AD-133 Effective Date: 08-01-2014

SHEALY ENVIRONMENTAL SERVICES, INC.

Shealy Environmental Services, Inc.
Document Number: ME0018C-14

Page 1 of 1
Effective Date: 8/2/2018

Sample Receipt Checklist (SRC)

Client: Westinghouse Columbia Cooler Inspected by/date: BMG / 08/16/19 Lot #: UH16068

Means of receipt: ☐ SESI ☑ Client ☐ UPS ☐ FedEx ☐ Other: _____

☐ Yes	☑ No		1. Were custody seals present on the cooler?
☐ Yes	☐ No	☑ NA	2. If custody seals were present, were they intact and unbroken?

pH Strip ID: NA Chlorine Strip ID: NA Tested by: NA

Original temperature upon receipt / Derived (Corrected) temperature upon receipt %Solid Snap-Cup ID: NA

5.7 / 5.7 °C NA / NA °C NA / NA °C NA / NA °C

Method: ☐ Temperature Blank ☑ Against Bottles IR Gun ID: 5 IR Gun Correction Factor: 0 °C

Method of coolant: ☑ Wet Ice ☐ Ice Packs ☐ Dry Ice ☐ None

☐ Yes	☐ No	☑ NA	3. If temperature of any cooler exceeded 6.0°C, was Project Manager Notified? PM was Notified by: phone / email / face-to-face (circle one).
☐ Yes	☐ No	☑ NA	4. Is the commercial courier's packing slip attached to this form?
☑ Yes	☐ No		5. Were proper custody procedures (relinquished/received) followed?
☑ Yes	☐ No		6. Were sample IDs listed on the COC?
☑ Yes	☐ No		7. Were sample IDs listed on all sample containers?
☑ Yes	☐ No		8. Was collection date & time listed on the COC?
☑ Yes	☐ No		9. Was collection date & time listed on all sample containers?
☑ Yes	☐ No		10. Did all container label information (ID, date, time) agree with the COC?
☑ Yes	☐ No		11. Were tests to be performed listed on the COC?
☑ Yes	☐ No		12. Did all samples arrive in the proper containers for each test and/or in good condition (unbroken, lids on, etc.)?
☑ Yes	☐ No		13. Was adequate sample volume available?
☑ Yes	☐ No		14. Were all samples received within ½ the holding time or 48 hours, whichever comes first?
☐ Yes	☑ No		15. Were any samples containers missing/excess (circle one) samples Not listed on COC?
☑ Yes	☐ No	☐ NA	16. For VOA and RSK-175 samples, were bubbles present >"pea-size" (¼"or 6mm in diameter) in any of the VOA vials?
☐ Yes	☐ No	☑ NA	17. Were all DRO/metals/nutrient samples received at a pH of < 2?
☐ Yes	☐ No	☑ NA	18. Were all cyanide samples received at a pH > 12 and sulfide samples received at a pH > 9?
☐ Yes	☐ No	☑ NA	19. Were all applicable NH_3/TKN/cyanide/phenol/625 (< 0.5mg/L) samples free of residual chlorine?
☐ Yes	☐ No	☑ NA	20. Were client remarks/requests (i.e. requested dilutions, MS/MSD designations, etc…) correctly transcribed from the COC into the comment section in LIMS?
☐ Yes	☑ No		21. Was the quote number listed on the container label? If yes, Quote # NA

Sample Preservation (Must be completed for any sample(s) incorrectly preserved or with headspace.)

Sample(s) NA were received incorrectly preserved and were adjusted accordingly in sample receiving with NA mL of circle one: H_2SO_4, HNO_3, HCl, NaOH using SR # NA. Time of preservation NA. If more than one preservative is needed, please note in the comments below.

Sample(s) TB-03-081619 (2) were received with bubbles >6 mm in diameter.

Samples(s) NA were received with TRC > 0.5 mg/L (If #19 is ***no***) and were adjusted accordingly in sample receiving with sodium thiosulfate ($Na_2S_2O_3$) with Shealy ID: NA.

SR barcode labels applied by: DMN Date: 08/16/19

Comments:

SHEALY ENVIRONMENTAL SERVICES, INC.

Report of Analysis

Westinghouse Electric Company
5801 Bluff Rd.
Hopkins, SC 29061
Attention: Diana Joyner

Project Name: CVOC

Lot Number:**UH19033**

Date Completed:08/28/2019

08/29/2019 10:47 AM
Approved and released by:
Project Manager: Grant Wilton

The electronic signature above is the equivalent of a handwritten signature.

Shealy Environmental Services, Inc.
106 Vantage Point Drive West Columbia, SC 29172 (803) 791-9700 Fax (803) 791-9111 www.shealylab.com

Case Narrative
Westinghouse Electric Company
Lot Number: UH19033

This Report of Analysis contains the analytical result(s) for the sample(s) listed on the Sample Summary following this Case Narrative. The sample receiving date is documented in the header information associated with each sample.

All results listed in this report relate only to the samples that are contained within this report.

Sample receipt, sample analysis, and data review have been performed in accordance with the most current approved NELAC standards, the Shealy Environmental Services, Inc. ("Shealy") Quality Assurance Management Plan (QAMP), standard operating procedures (SOPs), and Shealy policies. Any exceptions to the NELAC standards, the QAMP, SOPs or policies are qualified on the results page or discussed below.

If you have any questions regarding this report please contact the Shealy Project Manager listed on the cover page.

Sample Summary

Westinghouse Electric Company

Lot Number: UH19033

Project Name: CVOC

Project Number:

Sample Number	Sample ID	Matrix	Date Sampled	Date Received
001	EB-01-081919	Aqueous	08/19/2019 1315	08/19/2019
002	L-10 (9-14)	Aqueous	08/19/2019 1250	08/19/2019
003	TB-04-081919	Aqueous	08/19/2019 1315	08/19/2019

(3 samples)

Detection Summary

Westinghouse Electric Company

Lot Number: UH19033

Project Name: CVOC

Project Number:

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
001	EB-01-081919	Aqueous	Nitrate - N	353.2	0.089		mg/L	5
002	L-10 (9-14)	Aqueous	Nitrate - N	353.2	1.1		mg/L	7

(2 detections)

Inorganic non-metals

Client: Westinghouse Electric Company
Laboratory ID: UH19033-001
Description: EB-01-081919
Matrix: Aqueous
Date Sampled: 08/19/2019 1315
Project Name: CVOC
Date Received: 08/19/2019
Project Number:

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(Fluoride) 9056A	1	08/28/2019 0439	GMH		27287
1		(Nitrate - N) 353.2	1	08/21/2019 0014	MDD		26536

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
Fluoride	16984-48-8	9056A	ND		0.10	mg/L	1
Nitrate - N		353.2	0.089		0.020	mg/L	1

LOQ = Limit of Quantitation
ND = Not detected at or above the LOQ
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%

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Volatile Organic Compounds by GC/MS

Client: Westinghouse Electric Company
Laboratory ID: UH19033-001
Description: EB-01-081919
Matrix: Aqueous
Date Sampled: 08/19/2019 1315
Project Name: CVOC
Date Received: 08/19/2019
Project Number:

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/21/2019 2258	ALR1		26707

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
1,2-Dichloroethane	107-06-2	8260D	ND		1.0	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		1.0	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	ND		1.0	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		1.0	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		1.0	ug/L	1
Trichloroethene	79-01-6	8260D	ND		1.0	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		1.0	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		97	70-130
1,2-Dichloroethane-d4		109	70-130
Toluene-d8		97	70-130

LOQ = Limit of Quantitation
ND = Not detected at or above the LOQ
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%

Shealy Environmental Services, Inc.
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Inorganic non-metals

Client: Westinghouse Electric Company
Laboratory ID: UH19033-002
Description: L-10 (9-14)
Matrix: Aqueous
Date Sampled: 08/19/2019 1250
Project Name: CVOC
Date Received: 08/19/2019
Project Number:

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(Fluoride) 9056A	1	08/28/2019 0455	GMH		27287
1		(Nitrate - N) 353.2	1	08/21/2019 0015	MDD		26536

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
Fluoride	16984-48-8	9056A	ND		0.10	mg/L	1
Nitrate - N		353.2	1.1		0.020	mg/L	1

LOQ = Limit of Quantitation
ND = Not detected at or above the LOQ
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%

Shealy Environmental Services, Inc.
106 Vantage Point Drive West Columbia, SC 29172 (803) 791-9700 Fax (803) 791-9111 www.shealylab.com

Volatile Organic Compounds by GC/MS

Client: Westinghouse Electric Company
Laboratory ID: UH19033-002
Description: L-10 (9-14)
Matrix: Aqueous
Date Sampled: 08/19/2019 1250
Project Name: CVOC
Date Received: 08/19/2019
Project Number:

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/21/2019 2322	ALR1		26707

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
1,2-Dichloroethane	107-06-2	8260D	ND		1.0	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		1.0	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	ND		1.0	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		1.0	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		1.0	ug/L	1
Trichloroethene	79-01-6	8260D	ND		1.0	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		1.0	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		91	70-130
1,2-Dichloroethane-d4		109	70-130
Toluene-d8		98	70-130

LOQ = Limit of Quantitation
ND = Not detected at or above the LOQ
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%

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Volatile Organic Compounds by GC/MS

Client: Westinghouse Electric Company
Laboratory ID: UH19033-003
Description: TB-04-081919
Matrix: Aqueous
Date Sampled: 08/19/2019 1315
Project Name: CVOC
Date Received: 08/19/2019
Project Number:

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/21/2019 2345	ALR1		26707

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
1,2-Dichloroethane	107-06-2	8260D	ND		1.0	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		1.0	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	ND		1.0	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		1.0	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		1.0	ug/L	1
Trichloroethene	79-01-6	8260D	ND		1.0	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		1.0	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		95	70-130
1,2-Dichloroethane-d4		109	70-130
Toluene-d8		96	70-130

LOQ = Limit of Quantitation
ND = Not detected at or above the LOQ
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%

Shealy Environmental Services, Inc.
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Chain of Custody

and

Miscellaneous Documents

Shealy Environmental Services, Inc.
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Chain of Custody Record

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106 Vantage Point Drive • West Columbia, SC 29172
Telephone No. 803-791-9700 Fax No. 803-791-9111
www.shealylab.com

Number 097985

Client: Westinghouse Columbia Fuel Fabrication Facility	Report to Contact: Diana Joyner	Telephone No. / E-mail: 803-647-1920 / joynerdp@westinghouse.com	Quote No.
Address: 5801 Bluff Road	Sampler's Signature: X Charles K Sudduth	Analysis (Attach list if more space is needed)	Page 1 of 1
City: Hopkins / State: SC / Zip Code:	Printed Name: Charles K Sudduth		
Project Name: Westinghouse Columbia Fuel Fabrication Facility			
Project No.	P.O. No.		

Sample ID / Description (Containers for each sample may be combined on one line.)	Date	Time	Grab/Composite	Matrix: Aqueous	Matrix: Solid	Matrix: Non-Aqueous	No of Containers by Preservative Type: Unpres.	HNO3	H2SO4	HCl	NaOH	Soda Ash	Chlorinated VOCs	Nitrate	Fluoride	Remarks / Cooler I.D.
L-18 (15-20)	8/19/19	1450	G	X						3			X			48 hr TAT or sooner
L-18 (24-29)	8/19/19	1612	G	X						3			X			48 hr TAT or sooner
EB-01-081919	8/19/19	1315	G	X			1			3			X	X	X	Standard TAT
L-10 (9-14)	8/19/19	1750	G	X			1			3			X	X	X	Standard TAT
TB-04-081919	8/19/19	1315	G	X						2			X			Standard TAT

UH19033
GW

Turn Around Time Required (Prior lab approval required for expedited TAT.)
☐ Standard ☐ Rush (Specify) See Remarks

Sample Disposal
☐ Return to Client ☒ Disposal by Lab

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison ☐ Unknown

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished by: Charles K Sudduth	8/19/19	1840	1. Received by		
2. Relinquished by			2. Received by		
3. Relinquished by			3. Received by		
4. Relinquished by			4. Laboratory received by: Darcy Nutt	8/19/19	1840

Note: All samples are retained for four weeks from receipt unless other arrangements are made.

LAB USE ONLY
Received on ice (Circle) (Yes) No Ice Pack — Receipt Temp 5.7 °C — no th

DISTRIBUTION: WHITE & YELLOW-Return to laboratory with Sample(s); PINK-Field/Client Copy

SHEALY ENVIRONMENTAL SERVICES, INC.

Shealy Environmental Services, Inc.
Document Number: ME0018C-14

Page 1 of 1
Effective Date: 8/2/2018

Sample Receipt Checklist (SRC)

Client: Westinghouse Columbia Cooler Inspected by/date: DMN / 08/19/19 Lot #: UH19033

Means of receipt: ☐ SESI ☑ Client ☐ UPS ☐ FedEx ☐ Other: _____

☐ Yes	☑ No		1. Were custody seals present on the cooler?
☐ Yes	☐ No	☑ NA	2. If custody seals were present, were they intact and unbroken?

pH Strip ID: NA Chlorine Strip ID: NA Tested by: NA

Original temperature upon receipt / Derived (Corrected) temperature upon receipt %Solid Snap-Cup ID: NA

5.7 /5.7 °C NA /NA °C NA /NA °C NA /NA °C

Method: ☐ Temperature Blank ☑ Against Bottles IR Gun ID: 5 IR Gun Correction Factor: 0 °C

Method of coolant: ☑ Wet Ice ☐ Ice Packs ☐ Dry Ice ☐ None

☐ Yes	☐ No	☑ NA	3. If temperature of any cooler exceeded 6.0°C, was Project Manager Notified? PM was Notified by: phone / email / face-to-face (circle one).
☐ Yes	☐ No	☑ NA	4. Is the commercial courier's packing slip attached to this form?
☑ Yes	☐ No		5. Were proper custody procedures (relinquished/received) followed?
☑ Yes	☐ No		6. Were sample IDs listed on the COC?
☑ Yes	☐ No		7. Were sample IDs listed on all sample containers?
☑ Yes	☐ No		8. Was collection date & time listed on the COC?
☑ Yes	☐ No		9. Was collection date & time listed on all sample containers?
☑ Yes	☐ No		10. Did all container label information (ID, date, time) agree with the COC?
☑ Yes	☐ No		11. Were tests to be performed listed on the COC?
☑ Yes	☐ No		12. Did all samples arrive in the proper containers for each test and/or in good condition (unbroken, lids on, etc.)? _____
☑ Yes	☐ No		13. Was adequate sample volume available?
☑ Yes	☐ No		14. Were all samples received within ½ the holding time or 48 hours, whichever comes first?
☐ Yes	☑ No		15. Were any samples containers missing/excess (circle one) samples Not listed on COC?
☑ Yes	☐ No	☐ NA	16. For VOA and RSK-175 samples, were bubbles present >"pea-size" (¼"or 6mm in diameter) in any of the VOA vials?
☐ Yes	☐ No	☑ NA	17. Were all DRO/metals/nutrient samples received at a pH of < 2?
☐ Yes	☐ No	☑ NA	18. Were all cyanide samples received at a pH > 12 and sulfide samples received at a pH > 9?
☐ Yes	☐ No	☑ NA	19. Were all applicable NH_3/TKN/cyanide/phenol/625 (< 0.5mg/L) samples free of residual chlorine?
☐ Yes	☐ No	☑ NA	20. Were client remarks/requests (i.e. requested dilutions, MS/MSD designations, etc…) correctly transcribed from the COC into the comment section in LIMS?
☐ Yes	☑ No		21. Was the quote number listed on the container label? If yes, Quote # NA

Sample Preservation (Must be completed for any sample(s) incorrectly preserved or with headspace.)

Sample(s) NA _____ were received incorrectly preserved and were adjusted accordingly in sample receiving with NA mL of circle one: H_2SO_4, HNO_3, HCl, NaOH using SR # NA.
Time of preservation NA. If more than one preservative is needed, please note in the comments below.

Sample(s) TB-04-081919 (2) _____ were received with bubbles >6 mm in diameter.

Samples(s) NA _____ were received with TRC > 0.5 mg/L (If #19 is ***no***) and were adjusted accordingly in sample receiving with sodium thiosulfate ($Na_2S_2O_3$) with Shealy ID: NA.

SR barcode labels applied by: BMG Date: 08/19/19

Comments:

SHEALY ENVIRONMENTAL SERVICES, INC.

Report of Analysis

Westinghouse Electric Company
5801 Bluff Rd.
Hopkins, SC 29061
Attention: Diana Joyner

Project Name: CVOC

Lot Number:**UH19036**

Date Completed:08/22/2019

Project Manager:**Grant Wilton**

08/26/2019 5:15 PM
Approved and released by:
Project Manager: Cathy S. Dover

The electronic signature above is the equivalent of a handwritten signature.

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Case Narrative
Westinghouse Electric Company
Lot Number: UH19036

This Report of Analysis contains the analytical result(s) for the sample(s) listed on the Sample Summary following this Case Narrative. The sample receiving date is documented in the header information associated with each sample.

All results listed in this report relate only to the samples that are contained within this report.

Sample receipt, sample analysis, and data review have been performed in accordance with the most current approved NELAC standards, the Shealy Environmental Services, Inc. ("Shealy") Quality Assurance Management Plan (QAMP), standard operating procedures (SOPs), and Shealy policies. Any exceptions to the NELAC standards, the QAMP, SOPs or policies are qualified on the results page or discussed below.

If you have any questions regarding this report please contact the Shealy Project Manager listed on the cover page.

Sample Summary

Westinghouse Electric Company

Lot Number: UH19036

Project Name: CVOC

Project Number:

Sample Number	Sample ID	Matrix	Date Sampled	Date Received
001	L-18 (15-20)	Aqueous	08/19/2019 1450	08/19/2019
002	L-18 (24-29)	Aqueous	08/19/2019 1450	08/19/2019

(2 samples)

Detection Summary

Westinghouse Electric Company

Lot Number: UH19036

Project Name: CVOC

Project Number:

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
002	L-18 (24-29)	Aqueous	cis-1,2-Dichloroethene	8260D	1.2		ug/L	6
002	L-18 (24-29)	Aqueous	Vinyl chloride	8260D	1.1		ug/L	6

(2 detections)

Volatile Organic Compounds by GC/MS

Client: Westinghouse Electric Company
Laboratory ID: UH19036-001
Description: L-18 (15-20)
Matrix: Aqueous
Date Sampled: 08/19/2019 1450
Project Name: CVOC
Date Received: 08/19/2019
Project Number:

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/21/2019 0105	STM		26540

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
1,2-Dichloroethane	107-06-2	8260D	ND		1.0	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		1.0	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	ND		1.0	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		1.0	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		1.0	ug/L	1
Trichloroethene	79-01-6	8260D	ND		1.0	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		1.0	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		96	70-130
1,2-Dichloroethane-d4		94	70-130
Toluene-d8		103	70-130

LOQ = Limit of Quantitation
ND = Not detected at or above the LOQ
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%

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Volatile Organic Compounds by GC/MS

Client: Westinghouse Electric Company
Laboratory ID: UH19036-002
Description: L-18 (24-29)
Matrix: Aqueous
Date Sampled: 08/19/2019 1450
Project Name: CVOC
Date Received: 08/19/2019
Project Number:

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/21/2019 0129	STM		26540

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
1,2-Dichloroethane	107-06-2	8260D	ND		1.0	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		1.0	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	1.2		1.0	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		1.0	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		1.0	ug/L	1
Trichloroethene	79-01-6	8260D	ND		1.0	ug/L	1
Vinyl chloride	75-01-4	8260D	1.1		1.0	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		97	70-130
1,2-Dichloroethane-d4		95	70-130
Toluene-d8		104	70-130

LOQ = Limit of Quantitation
ND = Not detected at or above the LOQ
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%

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Chain of Custody
and
Miscellaneous Documents

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Chain of Custody Record

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Telephone No. 803-791-9700 Fax No. 803-791-9111
www.shealylab.com

Number 097985

Client: Westinghouse Columbia Fuel Fabrication Facility
Report to Contact: Diana Joyner
Telephone No. / E-mail: 803-647-1920 / joynerdp@westinghouse.com
Quote No.
Address: 5801 Bluff Road
Sampler's Signature: X Charles K Sudduth
Analysis (Attach list if more space is needed)
Page 1 of 1
City: Hopkins | State: SC | Zip Code:
Printed Name: Charles K Sudduth
Project Name: Westinghouse Columbia Fuel Fabrication Facility
Project No. | P.O. No.

UH19036 GRW
UH19033 GRW

Sample ID / Description (Containers for each sample may be combined on one line.)	Date	Time	G=Grab C=Composite	Matrix: Aqueous	Matrix: Solid	Matrix: Non-Aqueous	No of Containers by Preservative Type: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Chlorinated VOCs	Nitrate	Fluoride	Remarks / Cooler I.D.
L-18 (15-20)	8/19/19	1450	G	X						3			X			48 hr TAT or sooner
L-18 (24-29)	8/19/19	1612	G	X						3			X			48 hr TAT or sooner
EB-01-081919	8/19/19	1315	G	X			1			3			X	X	X	Standard TAT
L-10 (9-14)	8/19/19	1750	G	X			1			3			X	X	X	Standard TAT
TB-04-081919	8/19/19	1385	G	X						2			X			Standard TAT

Turn Around Time Required (Prior lab approval required for expedited TAT.)
☐ Standard ☐ Rush (Specify) See Remarks

Sample Disposal
☐ Return to Client ☒ Disposal by Lab

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison ☐ Unknown

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished by: Charles K Sudduth	8/19/19	1840	1. Received by		
2. Relinquished by			2. Received by		
3. Relinquished by			3. Received by		
4. Relinquished by			4. Laboratory received by	8/19/19	1840

Note: All samples are retained for four weeks from receipt unless other arrangements are made.

LAB USE ONLY
Received on ice (Circle) (Yes) No Ice Pack
Receipt Temp. 5.7 °C no th

DISTRIBUTION: WHITE & YELLOW-Return to laboratory with Sample(s), PINK-Field/Client Copy

Document Number: F-AD-133 Effective Date: 08-01-2014

SHEALY ENVIRONMENTAL SERVICES, INC.

Shealy Environmental Services, Inc.
Document Number: ME0018C-14

Page 1 of 1
Effective Date: 8/2/2018

Sample Receipt Checklist (SRC)

Client: Westinghouse Columbia Cooler Inspected by/date: BMN / 08/19/19 Lot #: UI119036

Means of receipt: ☐ SESI ☑ Client ☐ UPS ☐ FedEx ☐ Other: ____

☐ Yes	☑ No		1. Were custody seals present on the cooler?
☐ Yes	☐ No	☑ NA	2. If custody seals were present, were they intact and unbroken?

pH Strip ID: NA Chlorine Strip ID: NA Tested by: NA

Original temperature upon receipt / Derived (Corrected) temperature upon receipt %Solid Snap-Cup ID: NA

5.7 / 5.7 °C NA / NA °C NA / NA °C NA / NA °C

Method: ☐ Temperature Blank ☑ Against Bottles IR Gun ID: 5 IR Gun Correction Factor: 0 °C

Method of coolant: ☑ Wet Ice ☐ Ice Packs ☐ Dry Ice ☐ None

☐ Yes	☐ No	☑ NA	3. If temperature of any cooler exceeded 6.0°C, was Project Manager Notified? PM was Notified by: phone / email / face-to-face (circle one).
☐ Yes	☐ No	☑ NA	4. Is the commercial courier's packing slip attached to this form?
☑ Yes	☐ No		5. Were proper custody procedures (relinquished/received) followed?
☑ Yes	☐ No		6. Were sample IDs listed on the COC?
☑ Yes	☐ No		7. Were sample IDs listed on all sample containers?
☑ Yes	☐ No		8. Was collection date & time listed on the COC?
☑ Yes	☐ No		9. Was collection date & time listed on all sample containers?
☑ Yes	☐ No		10. Did all container label information (ID, date, time) agree with the COC?
☑ Yes	☐ No		11. Were tests to be performed listed on the COC?
☑ Yes	☐ No		12. Did all samples arrive in the proper containers for each test and/or in good condition (unbroken, lids on, etc.)? ____
☑ Yes	☐ No		13. Was adequate sample volume available?
☑ Yes	☐ No		14. Were all samples received within ½ the holding time or 48 hours, whichever comes first?
☐ Yes	☑ No		15. Were any samples containers missing/excess (circle one) samples Not listed on COC?
☐ Yes	☑ No	☐ NA	16. For VOA and RSK-175 samples, were bubbles present >"pea-size" (¼"or 6mm in diameter) in any of the VOA vials?
☐ Yes	☐ No	☑ NA	17. Were all DRO/metals/nutrient samples received at a pH of < 2?
☐ Yes	☐ No	☑ NA	18. Were all cyanide samples received at a pH > 12 and sulfide samples received at a pH > 9?
☐ Yes	☐ No	☑ NA	19. Were all applicable NH_3/TKN/cyanide/phenol/625 (< 0.5mg/L) samples free of residual chlorine?
☐ Yes	☐ No	☑ NA	20. Were client remarks/requests (i.e. requested dilutions, MS/MSD designations, etc…) correctly transcribed from the COC into the comment section in LIMS?
☐ Yes	☑ No		21. Was the quote number listed on the container label? If yes, Quote # NA

Sample Preservation (Must be completed for any sample(s) incorrectly preserved or with headspace.)

Sample(s) NA ____ were received incorrectly preserved and were adjusted accordingly in sample receiving with NA mL of circle one: H2SO4, HNO3, HCl, NaOH using SR # NA.

Time of preservation NA. If more than one preservative is needed, please note in the comments below.

Sample(s) NA ____ were received with bubbles >6 mm in diameter.

Samples(s) NA ____ were received with TRC > 0.5 mg/L (If #19 is ***no***) and were adjusted accordingly in sample receiving with sodium thiosulfate ($Na_2S_2O_3$) with Shealy ID: NA.

SR barcode labels applied by: BMG Date: 08/19/19

Comments:

SHEALY ENVIRONMENTAL SERVICES, INC.

Report of Analysis

Westinghouse Electric Company
5801 Bluff Rd.
Hopkins, SC 29061
Attention: Diana Joyner

Project Name: CVOC

Lot Number:**UH20071**

Date Completed:09/04/2019

09/05/2019 9:09 AM
Approved and released by:
Project Manager: Grant Wilton

The electronic signature above is the equivalent of a handwritten signature.

Shealy Environmental Services, Inc.
106 Vantage Point Drive West Columbia, SC 29172 (803) 791-9700 Fax (803) 791-9111 www.shealylab.com

Case Narrative
Westinghouse Electric Company
Lot Number: UH20071

This Report of Analysis contains the analytical result(s) for the sample(s) listed on the Sample Summary following this Case Narrative. The sample receiving date is documented in the header information associated with each sample.

All results listed in this report relate only to the samples that are contained within this report.

Sample receipt, sample analysis, and data review have been performed in accordance with the most current approved NELAC standards, the Shealy Environmental Services, Inc. ("Shealy") Quality Assurance Management Plan (QAMP), standard operating procedures (SOPs), and Shealy policies. Any exceptions to the NELAC standards, the QAMP, SOPs or policies are qualified on the results page or discussed below.

If you have any questions regarding this report please contact the Shealy Project Manager listed on the cover page.

Volatile Organic Analysis – Method 8260B
The following sample was received with headspace in the sample vial UH20071-006.

Sample Summary

Westinghouse Electric Company

Lot Number: UH20071

Project Name: CVOC

Project Number:

Sample Number	Sample ID	Matrix	Date Sampled	Date Received
001	L-10 (18-23)	Aqueous	08/20/2019 1105	08/20/2019
002	L-10 (28-33)	Aqueous	08/20/2019 1235	08/20/2019
003	L-19 (7-12)	Aqueous	08/20/2019 1505	08/20/2019
004	L-19 (21-26)	Aqueous	08/20/2019 1615	08/20/2019
005	L-8 (8-13)	Aqueous	08/20/2019 1640	08/20/2019
006	TB-05-082019	Aqueous	08/20/2019 1105	08/20/2019

(6 samples)

Detection Summary

Westinghouse Electric Company

Lot Number: UH20071

Project Name: CVOC

Project Number:

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
001	L-10 (18-23)	Aqueous	Nitrate - N	353.2	0.18		mg/L	5
002	L-10 (28-33)	Aqueous	Nitrate - N	353.2	0.19		mg/L	7
003	L-19 (7-12)	Aqueous	Fluoride	9056A	7.8		mg/L	9
003	L-19 (7-12)	Aqueous	Nitrate - N	353.2	0.092		mg/L	9
003	L-19 (7-12)	Aqueous	cis-1,2-Dichloroethene	8260D	1.0		ug/L	10
003	L-19 (7-12)	Aqueous	trans-1,2-Dichloroethene	8260D	1.3		ug/L	10
004	L-19 (21-26)	Aqueous	Fluoride	9056A	0.16		mg/L	11
004	L-19 (21-26)	Aqueous	Nitrate - N	353.2	0.10		mg/L	11
005	L-8 (8-13)	Aqueous	Fluoride	9056A	0.26		mg/L	13
005	L-8 (8-13)	Aqueous	Nitrate - N	353.2	0.081		mg/L	13

(10 detections)

Inorganic non-metals

Client: Westinghouse Electric Company
Laboratory ID: UH20071-001
Description: L-10 (18-23)
Matrix: Aqueous
Date Sampled: 08/20/2019 1105
Project Name: CVOC
Date Received: 08/20/2019
Project Number:

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(Fluoride) 9056A	1	09/04/2019 0102	GMH		27866
1		(Nitrate - N) 353.2	1	08/21/2019 0025	MDD		26536

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
Fluoride	16984-48-8	9056A	ND		0.10	mg/L	1
Nitrate - N		353.2	0.18		0.020	mg/L	1

LOQ = Limit of Quantitation
ND = Not detected at or above the LOQ
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%

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Volatile Organic Compounds by GC/MS

Client: Westinghouse Electric Company
Laboratory ID: UH20071-001
Description: L-10 (18-23)
Matrix: Aqueous
Date Sampled: 08/20/2019 1105
Project Name: CVOC
Date Received: 08/20/2019
Project Number:

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/22/2019 0141	ALR1		26707

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
1,2-Dichloroethane	107-06-2	8260D	ND		1.0	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		1.0	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	ND		1.0	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		1.0	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		1.0	ug/L	1
Trichloroethene	79-01-6	8260D	ND		1.0	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		1.0	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		101	70-130
1,2-Dichloroethane-d4		113	70-130
Toluene-d8		98	70-130

LOQ = Limit of Quantitation
ND = Not detected at or above the LOQ
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%

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Inorganic non-metals

Client: Westinghouse Electric Company
Laboratory ID: UH20071-002
Description: L-10 (28-33)
Matrix: Aqueous
Date Sampled: 08/20/2019 1235
Project Name: CVOC
Date Received: 08/20/2019
Project Number:

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(Fluoride) 9056A	1	09/04/2019 0118	GMH		27866
1		(Nitrate - N) 353.2	1	08/21/2019 0026	MDD		26536

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
Fluoride	16984-48-8	9056A	ND		0.10	mg/L	1
Nitrate - N		353.2	0.19		0.020	mg/L	1

LOQ = Limit of Quantitation
ND = Not detected at or above the LOQ
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%

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Volatile Organic Compounds by GC/MS

Client: Westinghouse Electric Company
Laboratory ID: UH20071-002
Description: L-10 (28-33)
Matrix: Aqueous
Date Sampled: 08/20/2019 1235
Project Name: CVOC
Date Received: 08/20/2019
Project Number:

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/22/2019 0205	ALR1		26707

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
1,2-Dichloroethane	107-06-2	8260D	ND		1.0	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		1.0	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	ND		1.0	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		1.0	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		1.0	ug/L	1
Trichloroethene	79-01-6	8260D	ND		1.0	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		1.0	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		92	70-130
1,2-Dichloroethane-d4		110	70-130
Toluene-d8		95	70-130

LOQ = Limit of Quantitation
ND = Not detected at or above the LOQ
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%

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Inorganic non-metals

Client: Westinghouse Electric Company
Laboratory ID: UH20071-003
Description: L-19 (7-12)
Matrix: Aqueous
Date Sampled: 08/20/2019 1505
Project Name: CVOC
Date Received: 08/20/2019
Project Number:

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(Fluoride) 9056A	1	09/04/2019 0135	GMH		27866
1		(Nitrate - N) 353.2	1	08/21/2019 0027	MDD		26536

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
Fluoride	16984-48-8	9056A	7.8		0.10	mg/L	1
Nitrate - N		353.2	0.092		0.020	mg/L	1

LOQ = Limit of Quantitation
ND = Not detected at or above the LOQ
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%

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Volatile Organic Compounds by GC/MS

Client: Westinghouse Electric Company
Laboratory ID: UH20071-003
Description: L-19 (7-12)
Matrix: Aqueous
Date Sampled: 08/20/2019 1505
Project Name: CVOC
Date Received: 08/20/2019
Project Number:

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/22/2019 0228	ALR1		26707

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
1,2-Dichloroethane	107-06-2	8260D	ND		1.0	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		1.0	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	1.0		1.0	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	1.3		1.0	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		1.0	ug/L	1
Trichloroethene	79-01-6	8260D	ND		1.0	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		1.0	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		91	70-130
1,2-Dichloroethane-d4		109	70-130
Toluene-d8		96	70-130

LOQ = Limit of Quantitation
ND = Not detected at or above the LOQ
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%

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Inorganic non-metals

Client: Westinghouse Electric Company
Laboratory ID: UH20071-004
Description: L-19 (21-26)
Matrix: Aqueous
Date Sampled: 08/20/2019 1615
Project Name: CVOC
Date Received: 08/20/2019
Project Number:

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(Fluoride) 9056A	1	09/04/2019 0151	GMH		27866
1		(Nitrate - N) 353.2	1	08/21/2019 0029	MDD		26536

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
Fluoride	16984-48-8	9056A	0.16		0.10	mg/L	1
Nitrate - N		353.2	0.10		0.020	mg/L	1

LOQ = Limit of Quantitation
ND = Not detected at or above the LOQ
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%

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Volatile Organic Compounds by GC/MS

Client: Westinghouse Electric Company
Laboratory ID: UH20071-004
Description: L-19 (21-26)
Matrix: Aqueous
Date Sampled: 08/20/2019 1615
Project Name: CVOC
Date Received: 08/20/2019
Project Number:

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/22/2019 0251	ALR1		26707

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
1,2-Dichloroethane	107-06-2	8260D	ND		1.0	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		1.0	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	ND		1.0	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		1.0	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		1.0	ug/L	1
Trichloroethene	79-01-6	8260D	ND		1.0	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		1.0	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		98	70-130
1,2-Dichloroethane-d4		112	70-130
Toluene-d8		98	70-130

LOQ = Limit of Quantitation
ND = Not detected at or above the LOQ
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%

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Inorganic non-metals

Client: Westinghouse Electric Company
Laboratory ID: UH20071-005
Description: L-8 (8-13)
Matrix: Aqueous
Date Sampled: 08/20/2019 1640
Project Name: CVOC
Date Received: 08/20/2019
Project Number:

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(Fluoride) 9056A	1	09/04/2019 0207	GMH		27866
1		(Nitrate - N) 353.2	1	08/21/2019 0030	MDD		26536

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
Fluoride	16984-48-8	9056A	0.26		0.10	mg/L	1
Nitrate - N		353.2	0.081		0.020	mg/L	1

LOQ = Limit of Quantitation
ND = Not detected at or above the LOQ
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%

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Volatile Organic Compounds by GC/MS

Client: Westinghouse Electric Company
Laboratory ID: UH20071-006
Description: TB-05-082019
Matrix: Aqueous
Date Sampled: 08/20/2019 1105
Project Name: CVOC
Date Received: 08/20/2019
Project Number:

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/22/2019 0314	ALR1		26707

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
1,2-Dichloroethane	107-06-2	8260D	ND		1.0	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		1.0	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	ND		1.0	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		1.0	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		1.0	ug/L	1
Trichloroethene	79-01-6	8260D	ND		1.0	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		1.0	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		102	70-130
1,2-Dichloroethane-d4		114	70-130
Toluene-d8		98	70-130

LOQ = Limit of Quantitation
ND = Not detected at or above the LOQ
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%

Shealy Environmental Services, Inc.
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Chain of Custody

and

Miscellaneous Documents

Shealy Environmental Services, Inc.
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SHEALY ENVIRONMENTAL SERVICES, INC.

Chain of Custody Record

SHEALY ENVIRONMENTAL SERVICES, INC.
106 Vantage Point Drive • West Columbia, SC 29172
Telephone No. 803-791-9700 Fax No. 803-791-9111
www.shealylab.com

Number 097989

Client: Westinghouse Columbia Fuel Fabrication Facility	Report to Contact: Diana Joyner	Telephone No. / E-mail: 803-647-1920 / joynerdp@westinghouse.com	Quote No.
Address: 5801 Bluff Rd	Sampler's Signature: x Charles K Sudduth	Analysis (Attach list if more space is needed)	Page 1 of 1
City: Hopkins / State: SC / Zip Code:	Printed Name: Charles K. Sudduth		UH20071 GRW
Project Name: RI Implementation			
Project No.	P.O. No.		

Sample ID / Description (Containers for each sample may be combined on one line)	Date	Time	Grab / Composite	Matrix: Aqueous	Matrix: Solid	Matrix: Non-Aqueous	No of Containers by Preservative Type: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Chlorinated VOCs	Nitrate	Fluoride	Remarks / Cooler I.D.
L-10 (18-23)	8/20/19	1105	G	X			1			3			X	X	X	
L-10 (28-33)	8/20/19	1235	G	X			1			3			X	X	X	
L-19 (7-12)	8/20/19	1505	G	X			1			3			X	X	X	
L-19 (21-26)	8/20/19	1615	G	X			1			3			X	X	X	
L-8 (8-13)	8/20/19	1640	G	X			1			3			X	X	X	
TB-05-082019	8/20/19	1105	G	X						2			X			

Turn Around Time Required (Prior lab approval required for expedited TAT.): [X] Standard [ ] Rush (Specify)

Sample Disposal: [ ] Return to Client [X] Disposal by Lab

Possible Hazard Identification: [X] Non-Hazard [ ] Flammable [ ] Skin Irritant [ ] Poison [ ] Unknown

QC Requirements (Specify)

1. Relinquished by: Charles K Sudduth	Date: 8/20/19	Time: 1829	1. Received by	Date	Time
2. Relinquished by	Date	Time	2. Received by	Date	Time
3. Relinquished by	Date	Time	3. Received by	Date	Time
4. Relinquished by	Date	Time	4. Laboratory received by: Diana Joyner	Date: 8/20/19	Time: 1829

Note: All samples are retained for four weeks from receipt unless other arrangements are made.

LAB USE ONLY
Received on Ice (Circle): (Yes) No Ice Pack
Receipt Temp: 4.8 °C no tb

DISTRIBUTION: WHITE & YELLOW-Return to laboratory with Sample(s); PINK-Field/Client Copy

Document Number: F-AD-133 Effective Date: 08-01-2014

Shealy Environmental Services, Inc.
Document Number: ME0018C-14

Page: 1 of 1
Effective Date: 8/2/2018

Sample Receipt Checklist (SRC)

Client: Westinghouse Cooler Inspected by/date: DMN / 8/20/19 Lot #: UI120071

Means of receipt: ☑ SESI ☐ Client ☐ UPS ☐ FedEx ☐ Other: _____

☐ Yes	☑ No		1. Were custody seals present on the cooler?
☐ Yes	☐ No	☑ NA	2. If custody seals were present, were they intact and unbroken?

pH Strip ID: NA Chlorine Strip ID: NA Tested by: NA

Original temperature upon receipt / Derived (Corrected) temperature upon receipt %Solid Snap-Cup ID: NA

4.8 / 4.8 °C NA / NA °C NA / NA °C NA / NA °C

Method: ☐ Temperature Blank ☑ Against Bottles IR Gun ID: 5 IR Gun Correction Factor: 0 °C

Method of coolant: ☑ Wet Ice ☐ Ice Packs ☐ Dry Ice ☐ None

☐ Yes	☐ No	☑ NA	3. If temperature of any cooler exceeded 6.0°C, was Project Manager Notified? PM was Notified by: phone / email / face-to-face (circle one).
☐ Yes	☐ No	☑ NA	4. Is the commercial courier's packing slip attached to this form?
☑ Yes	☐ No		5. Were proper custody procedures (relinquished/received) followed?
☑ Yes	☐ No		6. Were sample IDs listed on the COC?
☑ Yes	☐ No		7. Were sample IDs listed on all sample containers?
☑ Yes	☐ No		8. Was collection date & time listed on the COC?
☑ Yes	☐ No		9. Was collection date & time listed on all sample containers?
☑ Yes	☐ No		10. Did all container label information (ID, date, time) agree with the COC?
☑ Yes	☐ No		11. Were tests to be performed listed on the COC?
☑ Yes	☐ No		12. Did all samples arrive in the proper containers for each test and/or in good condition (unbroken, lids on, etc.)? _____
☑ Yes	☐ No		13. Was adequate sample volume available?
☑ Yes	☐ No		14. Were all samples received within ½ the holding time or 48 hours, whichever comes first?
☐ Yes	☑ No		15. Were any samples containers missing/excess (circle one) samples Not listed on COC?
☑ Yes	☐ No	☐ NA	16. For VOA and RSK-175 samples, were bubbles present >"pea-size" (¼"or 6mm in diameter) in any of the VOA vials?
☐ Yes	☐ No	☑ NA	17. Were all DRO/metals/nutrient samples received at a pH of < 2?
☐ Yes	☐ No	☑ NA	18. Were all cyanide samples received at a pH > 12 and sulfide samples received at a pH > 9?
☐ Yes	☐ No	☑ NA	19. Were all applicable NH_3/TKN/cyanide/phenol/625 (< 0.5mg/L) samples free of residual chlorine?
☐ Yes	☐ No	☑ NA	20. Were client remarks/requests (i.e. requested dilutions, MS/MSD designations, etc…) correctly transcribed from the COC into the comment section in LIMS?
☐ Yes	☑ No		21. Was the quote number listed on the container label? If yes, Quote # NA

Sample Preservation (Must be completed for any sample(s) incorrectly preserved or with headspace.)

Sample(s) NA were received incorrectly preserved and were adjusted accordingly in sample receiving with NA mL of circle one: H2SO4, HNO3, HCl, NaOH using SR # NA.

Time of preservation NA. If more than one preservative is needed, please note in the comments below.

Sample(s) -006 (2) were received with bubbles >6 mm in diameter.

Samples(s) NA were received with TRC > 0.5 mg/L (If #19 is ***no***) and were adjusted accordingly in sample receiving with sodium thiosulfate ($Na_2S_2O_3$) with Shealy ID: NA.

SR barcode labels applied by: BMG Date: 8/20/19

Comments:

SHEALY ENVIRONMENTAL SERVICES, INC.

Report of Analysis

Westinghouse Electric Company
5801 Bluff Rd.
Hopkins, SC 29061
Attention: Diana Joyner

Project Name: RI Implementation

Lot Number:**UH21060**

Date Completed:09/10/2019

09/10/2019 12:25 PM
Approved and released by:
Project Manager: Grant Wilton

The electronic signature above is the equivalent of a handwritten signature.

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Case Narrative
Westinghouse Electric Company
Lot Number: UH21060

This Report of Analysis contains the analytical result(s) for the sample(s) listed on the Sample Summary following this Case Narrative. The sample receiving date is documented in the header information associated with each sample.

All results listed in this report relate only to the samples that are contained within this report.

Sample receipt, sample analysis, and data review have been performed in accordance with the most current approved NELAC standards, the Shealy Environmental Services, Inc. ("Shealy") Quality Assurance Management Plan (QAMP), standard operating procedures (SOPs), and Shealy policies. Any exceptions to the NELAC standards, the QAMP, SOPs or policies are qualified on the results page or discussed below.

If you have any questions regarding this report please contact the Shealy Project Manager listed on the cover page.

Sample Summary

Westinghouse Electric Company

Lot Number: UH21060

Project Name: RI Implementation

Project Number:

Sample Number	Sample ID	Matrix	Date Sampled	Date Received
001	L-8 (17-22)	Aqueous	08/21/2019 0940	08/21/2019
002	L-9 (10-15)	Aqueous	08/21/2019 1018	08/21/2019
003	L-8 (25-30)	Aqueous	08/21/2019 1125	08/21/2019
004	L-9 (23-28)	Aqueous	08/21/2019 1135	08/21/2019
005	L-9 (23-28)-DUP	Aqueous	08/21/2019 1135	08/21/2019
006	L-9 (32-37)	Aqueous	08/21/2019 1423	08/21/2019
007	L-8 (41-46)	Aqueous	08/21/2019 1520	08/21/2019
008	EB-01-082119	Aqueous	08/21/2019 1550	08/21/2019
009	TB-06-082119	Aqueous	08/21/2019 1025	08/21/2019

(9 samples)

Detection Summary

Westinghouse Electric Company

Lot Number: UH21060

Project Name: RI Implementation

Project Number:

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
002	L-9 (10-15)	Aqueous	Fluoride	9056A	0.48		mg/L	7
002	L-9 (10-15)	Aqueous	Nitrate - N	353.2	5.4		mg/L	7
002	L-9 (10-15)	Aqueous	Tetrachloroethene	8260D	6.5		ug/L	8
002	L-9 (10-15)	Aqueous	Trichloroethene	8260D	3.0		ug/L	8
003	L-8 (25-30)	Aqueous	Tetrachloroethene	8260D	2.2		ug/L	10
003	L-8 (25-30)	Aqueous	Trichloroethene	8260D	2.1		ug/L	10
007	L-8 (41-46)	Aqueous	Fluoride	9056A	0.14		mg/L	17

(7 detections)

Inorganic non-metals

Client: Westinghouse Electric Company
Laboratory ID: UH21060-001
Description: L-8 (17-22)
Matrix: Aqueous
Date Sampled: 08/21/2019 0940
Project Name: RI Implementation
Date Received: 08/21/2019
Project Number:

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(Fluoride) 9056A	1	09/10/2019 0016	GMH		28380
1		(Nitrate - N) 353.2	1	08/22/2019 0113	MDD		26725

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
Fluoride	16984-48-8	9056A	ND		0.10	mg/L	1
Nitrate - N		353.2	ND		0.020	mg/L	1

LOQ = Limit of Quantitation
ND = Not detected at or above the LOQ
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%

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Volatile Organic Compounds by GC/MS

Client: Westinghouse Electric Company
Laboratory ID: UH21060-001
Description: L-8 (17-22)
Matrix: Aqueous
Date Sampled: 08/21/2019 0940
Project Name: RI Implementation
Date Received: 08/21/2019
Project Number:

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/24/2019 2320	STM		26947

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
1,2-Dichloroethane	107-06-2	8260D	ND		1.0	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		1.0	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	ND		1.0	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		1.0	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		1.0	ug/L	1
Trichloroethene	79-01-6	8260D	ND		1.0	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		1.0	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		98	70-130
1,2-Dichloroethane-d4		94	70-130
Toluene-d8		99	70-130

LOQ = Limit of Quantitation
ND = Not detected at or above the LOQ
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%

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Inorganic non-metals

Client: Westinghouse Electric Company
Laboratory ID: UH21060-002
Description: L-9 (10-15)
Matrix: Aqueous
Date Sampled: 08/21/2019 1018
Project Name: RI Implementation
Date Received: 08/21/2019
Project Number:

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(Fluoride) 9056A	1	09/10/2019 0037	GMH		28380
1		(Nitrate - N) 353.2	5	08/22/2019 0115	MDD		26725

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
Fluoride	16984-48-8	9056A	0.48		0.10	mg/L	1
Nitrate - N		353.2	5.4		0.10	mg/L	1

LOQ = Limit of Quantitation
ND = Not detected at or above the LOQ
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%

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Volatile Organic Compounds by GC/MS

Client: Westinghouse Electric Company
Laboratory ID: UH21060-002
Description: L-9 (10-15)
Matrix: Aqueous
Date Sampled: 08/21/2019 1018
Project Name: RI Implementation
Date Received: 08/21/2019
Project Number:

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/24/2019 1945	STM		26947

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
1,2-Dichloroethane	107-06-2	8260D	ND		1.0	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		1.0	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	ND		1.0	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		1.0	ug/L	1
Tetrachloroethene	127-18-4	8260D	6.5		1.0	ug/L	1
Trichloroethene	79-01-6	8260D	3.0		1.0	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		1.0	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		99	70-130
1,2-Dichloroethane-d4		94	70-130
Toluene-d8		99	70-130

LOQ = Limit of Quantitation
ND = Not detected at or above the LOQ
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%

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Inorganic non-metals

Client: Westinghouse Electric Company
Laboratory ID: UH21060-003
Description: L-8 (25-30)
Matrix: Aqueous
Date Sampled: 08/21/2019 1125
Project Name: RI Implementation
Date Received: 08/21/2019
Project Number:

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(Fluoride) 9056A	1	09/10/2019 0223	GMH		28380
1		(Nitrate - N) 353.2	1	08/22/2019 0033	MDD		26725

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
Fluoride	16984-48-8	9056A	ND		0.10	mg/L	1
Nitrate - N		353.2	ND		0.020	mg/L	1

LOQ = Limit of Quantitation
ND = Not detected at or above the LOQ
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%

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Volatile Organic Compounds by GC/MS

Client: Westinghouse Electric Company
Laboratory ID: UH21060-003
Description: L-8 (25-30)
Matrix: Aqueous
Date Sampled: 08/21/2019 1125
Project Name: RI Implementation
Date Received: 08/21/2019
Project Number:

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/24/2019 2009	STM		26947

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
1,2-Dichloroethane	107-06-2	8260D	ND		1.0	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		1.0	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	ND		1.0	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		1.0	ug/L	1
Tetrachloroethene	127-18-4	8260D	2.2		1.0	ug/L	1
Trichloroethene	79-01-6	8260D	2.1		1.0	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		1.0	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		101	70-130
1,2-Dichloroethane-d4		95	70-130
Toluene-d8		101	70-130

LOQ = Limit of Quantitation
ND = Not detected at or above the LOQ
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%

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Inorganic non-metals

Client: Westinghouse Electric Company
Laboratory ID: UH21060-004
Description: L-9 (23-28)
Matrix: Aqueous
Date Sampled: 08/21/2019 1135
Project Name: RI Implementation
Date Received: 08/21/2019
Project Number:

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(Fluoride) 9056A	1	09/10/2019 0244	GMH		28380
1		(Nitrate - N) 353.2	1	08/22/2019 0035	MDD		26725

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
Fluoride	16984-48-8	9056A	ND		0.10	mg/L	1
Nitrate - N		353.2	ND		0.020	mg/L	1

LOQ = Limit of Quantitation
ND = Not detected at or above the LOQ
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%

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Volatile Organic Compounds by GC/MS

Client: Westinghouse Electric Company
Laboratory ID: UH21060-004
Description: L-9 (23-28)
Matrix: Aqueous
Date Sampled: 08/21/2019 1135
Project Name: RI Implementation
Date Received: 08/21/2019
Project Number:

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/24/2019 2033	STM		26947

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
1,2-Dichloroethane	107-06-2	8260D	ND		1.0	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		1.0	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	ND		1.0	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		1.0	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		1.0	ug/L	1
Trichloroethene	79-01-6	8260D	ND		1.0	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		1.0	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		100	70-130
1,2-Dichloroethane-d4		96	70-130
Toluene-d8		102	70-130

LOQ = Limit of Quantitation
ND = Not detected at or above the LOQ
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%

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Inorganic non-metals

Client: Westinghouse Electric Company
Laboratory ID: UH21060-005
Description: L-9 (23-28)-DUP
Matrix: Aqueous
Date Sampled: 08/21/2019 1135
Project Name: RI Implementation
Date Received: 08/21/2019
Project Number:

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(Fluoride) 9056A	1	09/10/2019 0305	GMH		28380
1		(Nitrate - N) 353.2	1	08/22/2019 0040	MDD		26725

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
Fluoride	16984-48-8	9056A	ND		0.10	mg/L	1
Nitrate - N		353.2	ND		0.020	mg/L	1

LOQ = Limit of Quantitation
ND = Not detected at or above the LOQ
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%

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Volatile Organic Compounds by GC/MS

Client: Westinghouse Electric Company
Laboratory ID: UH21060-005
Description: L-9 (23-28)-DUP
Matrix: Aqueous
Date Sampled: 08/21/2019 1135
Project Name: RI Implementation
Date Received: 08/21/2019
Project Number:

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/24/2019 2057	STM		26947

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
1,2-Dichloroethane	107-06-2	8260D	ND		1.0	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		1.0	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	ND		1.0	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		1.0	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		1.0	ug/L	1
Trichloroethene	79-01-6	8260D	ND		1.0	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		1.0	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		102	70-130
1,2-Dichloroethane-d4		97	70-130
Toluene-d8		103	70-130

LOQ = Limit of Quantitation
ND = Not detected at or above the LOQ
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%

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Inorganic non-metals

Client: Westinghouse Electric Company
Laboratory ID: UH21060-006
Description: L-9 (32-37)
Matrix: Aqueous
Date Sampled: 08/21/2019 1423
Project Name: RI Implementation
Date Received: 08/21/2019
Project Number:

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(Fluoride) 9056A	1	09/10/2019 0326	GMH		28380
1		(Nitrate - N) 353.2	1	08/22/2019 0041	MDD		26725

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
Fluoride	16984-48-8	9056A	ND		0.10	mg/L	1
Nitrate - N		353.2	ND		0.020	mg/L	1

LOQ = Limit of Quantitation
ND = Not detected at or above the LOQ
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%

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Volatile Organic Compounds by GC/MS

Client: Westinghouse Electric Company
Laboratory ID: UH21060-006
Description: L-9 (32-37)
Matrix: Aqueous
Date Sampled: 08/21/2019 1423
Project Name: RI Implementation
Date Received: 08/21/2019
Project Number:

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/24/2019 2121	STM		26947

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
1,2-Dichloroethane	107-06-2	8260D	ND		1.0	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		1.0	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	ND		1.0	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		1.0	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		1.0	ug/L	1
Trichloroethene	79-01-6	8260D	ND		1.0	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		1.0	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		101	70-130
1,2-Dichloroethane-d4		97	70-130
Toluene-d8		103	70-130

LOQ = Limit of Quantitation
ND = Not detected at or above the LOQ
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%

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Inorganic non-metals

Client: Westinghouse Electric Company
Laboratory ID: UH21060-007
Description: L-8 (41-46)
Matrix: Aqueous
Date Sampled: 08/21/2019 1520
Project Name: RI Implementation
Date Received: 08/21/2019
Project Number:

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(Fluoride) 9056A	1	09/10/2019 0347	GMH		28380
1		(Nitrate - N) 353.2	1	08/22/2019 0043	MDD		26725

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
Fluoride	16984-48-8	9056A	0.14		0.10	mg/L	1
Nitrate - N		353.2	ND		0.020	mg/L	1

LOQ = Limit of Quantitation
ND = Not detected at or above the LOQ
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%

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Volatile Organic Compounds by GC/MS

Client: Westinghouse Electric Company
Laboratory ID: UH21060-007
Description: L-8 (41-46)
Matrix: Aqueous
Date Sampled: 08/21/2019 1520
Project Name: RI Implementation
Date Received: 08/21/2019
Project Number:

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/24/2019 2145	STM		26947

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
1,2-Dichloroethane	107-06-2	8260D	ND		1.0	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		1.0	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	ND		1.0	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		1.0	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		1.0	ug/L	1
Trichloroethene	79-01-6	8260D	ND		1.0	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		1.0	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		102	70-130
1,2-Dichloroethane-d4		97	70-130
Toluene-d8		102	70-130

LOQ = Limit of Quantitation
ND = Not detected at or above the LOQ
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%

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Inorganic non-metals

Client: Westinghouse Electric Company
Laboratory ID: UH21060-008
Description: EB-01-082119
Matrix: Aqueous
Date Sampled: 08/21/2019 1550
Project Name: RI Implementation
Date Received: 08/21/2019
Project Number:

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(Fluoride) 9056A	1	09/10/2019 0408	GMH		28380
1		(Nitrate - N) 353.2	1	08/22/2019 0044	MDD		26725

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
Fluoride	16984-48-8	9056A	ND		0.10	mg/L	1
Nitrate - N		353.2	ND		0.020	mg/L	1

LOQ = Limit of Quantitation
ND = Not detected at or above the LOQ
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%

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Volatile Organic Compounds by GC/MS

Client: Westinghouse Electric Company
Laboratory ID: UH21060-008
Description: EB-01-082119
Matrix: Aqueous
Date Sampled: 08/21/2019 1550
Project Name: RI Implementation
Date Received: 08/21/2019
Project Number:

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/24/2019 2209	STM		26947

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
1,2-Dichloroethane	107-06-2	8260D	ND		1.0	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		1.0	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	ND		1.0	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		1.0	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		1.0	ug/L	1
Trichloroethene	79-01-6	8260D	ND		1.0	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		1.0	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		99	70-130
1,2-Dichloroethane-d4		95	70-130
Toluene-d8		100	70-130

LOQ = Limit of Quantitation
ND = Not detected at or above the LOQ
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%

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Volatile Organic Compounds by GC/MS

Client: Westinghouse Electric Company
Laboratory ID: UH21060-009
Description: TB-06-082119
Matrix: Aqueous
Date Sampled: 08/21/2019 1025
Project Name: RI Implementation
Date Received: 08/21/2019
Project Number:

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/24/2019 2233	STM		26947

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
1,2-Dichloroethane	107-06-2	8260D	ND		1.0	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		1.0	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	ND		1.0	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		1.0	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		1.0	ug/L	1
Trichloroethene	79-01-6	8260D	ND		1.0	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		1.0	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		102	70-130
1,2-Dichloroethane-d4		97	70-130
Toluene-d8		102	70-130

LOQ = Limit of Quantitation
ND = Not detected at or above the LOQ
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%

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Chain of Custody

and

Miscellaneous Documents

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Chain of Custody Record

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Number 097990

Client: Westinghouse Columbia Fuel Fabrication Facility
Report to Contact: Diana Joyner
Telephone No. / E-mail: 803-647-1920 / joynerdp@westinghouse.com
Quote No.:
Address: 5801 Bluff Rd.
Sampler's Signature: x Charles K Sudduth
Analysis (Attach list if more space is needed):
Page 1 of 1
City: Hopkins | State: SC | Zip Code:
Project Name: RE Implementation
Printed Name: Charles K. Sudduth
Project No.:
P.O. No.:

Sample ID / Description (Containers for each sample may be combined on one line.)	Date	Time	Discrete or Composite	Matrix: Aqueous	Solid	Non-Aqueous	No of Containers by Preservative Type: Unpres	H2SO4	HNO3	HCl	NaOH	Other	Chlorinated VOCs	Nitrate	Fluoride	Remarks / Cooler I.D.
L-8 (17-22)	8/21/19	0940	G	X			1			3			X	X	X	
L-9 (10-15)	8/21/19	1018	G	X			1			3			X	X	X	
L-8 (25-30)	8/21/19	1125	G	X			1			3			X	X	X	
L-9 (23-28)	8/21/19	1135	G	X			1			3			X	X	X	
L-9 (23-28) - DUP	8/21/19	1135	G	X			1			3			X	X	X	
L-9 (32-37)	8/21/19	1423	G	X			1			3			X	X	X	
L-8 (41-46)	8/21/19	1520	G	X			1			3			X	X	X	
EB-01-082119	8/21/19	1550	G	X			1			3			X	X	X	
TB-06-082119	8/21/19	1025	G	X						2			X			

SHIPPER
UH21060
SRW

Turn Around Time Required (Prior lab approval required for expedited TAT.)
X Standard ☐ Rush (Specify)

Sample Disposal
☐ Return to Client X Disposal by Lab

Possible Hazard Identification
X Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison ☐ Unknown

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished by: Charles K Sudduth	8/21/19	1704	1. Received by		
2. Relinquished by			2. Received by		
3. Relinquished by			3. Received by		
4. Relinquished by			4. Laboratory received by: Erin Brown	8/21/19	1704

Note: All samples are retained for four weeks from receipt unless other arrangements are made.

LAB USE ONLY
Received on Ice (Circle) (Yes) No Ice Pack Receipt Temp. 1.7 °C TBV

DISTRIBUTION: WHITE & YELLOW-Return to laboratory with Sample(s); PINK-Field/Client Copy

Document Number: F-AD-135 Effective Date: 08-01-2014

SHEALY ENVIRONMENTAL SERVICES, INC.

Shealy Environmental Services, Inc.
Document Number: ME0018C-14

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Effective Date: 8/2/2018

Sample Receipt Checklist (SRC)

Client: Westinghouse Electric Cooler Inspected by/date: BMG / 08/21/19 Lot #: UH21060

Means of receipt: ☐ SESI ☑ Client ☐ UPS ☐ FedEx ☐ Other: ____

☐ Yes	☑ No		1. Were custody seals present on the cooler?
☐ Yes	☐ No	☑ NA	2. If custody seals were present, were they intact and unbroken?

pH Strip ID: NA Chlorine Strip ID: NA Tested by: NA

Original temperature upon receipt / Derived (Corrected) temperature upon receipt %Solid Snap-Cup ID: NA

1.7 / 1.7 °C NA / NA °C NA / NA °C NA / NA °C

Method: ☑ Temperature Blank ☐ Against Bottles IR Gun ID: 5 IR Gun Correction Factor: 0 °C

Method of coolant: ☑ Wet Ice ☐ Ice Packs ☐ Dry Ice ☐ None

☐ Yes	☐ No	☑ NA	3. If temperature of any cooler exceeded 6.0°C, was Project Manager Notified? PM was Notified by: phone / email / face-to-face (circle one).
☐ Yes	☐ No	☑ NA	4. Is the commercial courier's packing slip attached to this form?
☑ Yes	☐ No		5. Were proper custody procedures (relinquished/received) followed?
☑ Yes	☐ No		6. Were sample IDs listed on the COC?
☑ Yes	☐ No		7. Were sample IDs listed on all sample containers?
☑ Yes	☐ No		8. Was collection date & time listed on the COC?
☑ Yes	☐ No		9. Was collection date & time listed on all sample containers?
☑ Yes	☐ No		10. Did all container label information (ID, date, time) agree with the COC?
☑ Yes	☐ No		11. Were tests to be performed listed on the COC?
☑ Yes	☐ No		12. Did all samples arrive in the proper containers for each test and/or in good condition (unbroken, lids on, etc.)?
☑ Yes	☐ No		13. Was adequate sample volume available?
☑ Yes	☐ No		14. Were all samples received within ½ the holding time or 48 hours, whichever comes first?
☐ Yes	☑ No		15. Were any samples containers missing/excess (circle one) samples Not listed on COC?
☑ Yes	☐ No	☐ NA	16. For VOA and RSK-175 samples, were bubbles present >"pea-size" (¼"or 6mm in diameter) in any of the VOA vials?
☐ Yes	☐ No	☑ NA	17. Were all DRO/metals/nutrient samples received at a pH of < 2?
☐ Yes	☐ No	☑ NA	18. Were all cyanide samples received at a pH > 12 and sulfide samples received at a pH > 9?
☐ Yes	☐ No	☑ NA	19. Were all applicable NH_3/TKN/cyanide/phenol/625 (< 0.5mg/L) samples free of residual chlorine?
☐ Yes	☐ No	☑ NA	20. Were client remarks/requests (i.e. requested dilutions, MS/MSD designations, etc…) correctly transcribed from the COC into the comment section in LIMS?
☐ Yes	☑ No		21. Was the quote number listed on the container label? If yes, Quote # NA

Sample Preservation (Must be completed for any sample(s) incorrectly preserved or with headspace.)

Sample(s) NA ____ were received incorrectly preserved and were adjusted accordingly in sample receiving with NA mL of circle one: H2SO4, HNO3, HCl, NaOH using SR # NA.

Time of preservation NA. If more than one preservative is needed, please note in the comments below.

Sample(s) TBs ____ were received with bubbles >6 mm in diameter.

Samples(s) NA ____ were received with TRC > 0.5 mg/L (If #19 is *no*) and were adjusted accordingly in sample receiving with sodium thiosulfate ($Na_2S_2O_3$) with Shealy ID: NA

SR barcode labels applied by: BMG/JSH Date: 08/21/19

Comments: