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SITE ASSESSMENT, REMEDIATION & REVITALIZATION

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

SCDHEC, BLWM
Kim Kuhn
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Your ref:
Our ref: LTR-RAC-19-73

September 12, 2019

Subject: RI Work Plan **Additional Floodplain Assessment**
Results and Permanent Well Installation Recommendations

Mrs. Kuhn:

Please find attached for your consideration the results of the additional floodplain assessment and the proposed locations for the four permanent floodplain wells.

Respectfully,

Diana P. Joyner
Principal Environmental Engineer
Westinghouse Electric Company, CFFF
803.497.7062 (m)

cc: E. Wills, EH&S Manager
N. Parr, Environmental Manager
J. Grant, AECOM Project Manager
ENOVIA Records

Enc.: "Columbia Fuel Fabrication Facility, Floodplain Assessment Results, RI Work Plan, AECOM, File #51377.

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AECOM

September 12, 2019

Ms. Kimberly M. Kuhn, Project Manager
State Voluntary Cleanup Section
Division of Site Assessment, Remediation and Revitalization
Bureau of Land and Waste Management
2600 Bull Street
Columbia, S.C. 29201

Subject: **Columbia Fuel Fabrication Facility**
Floodplain Assessment Results
Richland County, S.C.
Consent Agreement CA-19-02-HW
File # 51377

Dear Ms. Kuhn:

Based upon our September 9, 2019 meeting, AECOM submits the following additional floodplain assessment analytical results and proposed floodplain well installation information.

Background

On August 2, 2019, AECOM submitted a plan on behalf of the Westinghouse Columbia Fuel Fabrication Facility (CFFF) to conduct vertical groundwater profiling in the Congaree River floodplain. This additional floodplain assessment was approved on August 7. The profiling targeted conductive sand units within the floodplain to obtain groundwater samples from temporary wells on the southern side of Upper Sunset Lake and northeast of Lower Sunset Lake. Groundwater samples were collected from multiple intervals in each borehole location. Prior to sample collection, stabilization parameters were monitored to ensure groundwater being pumped from the temporary well was indicative of groundwater quality at each discrete groundwater sampling interval.

Groundwater Analytical Results

Groundwater south of Upper Sunset Lake was analyzed for chlorinated volatile organic compounds (CVOCs) because CVOCs are the only known constituent of potential concern (COPC) that would migrate within the groundwater in this area based upon previous groundwater assessment activities. Using the same reasoning, groundwater northeast of Lower Sunset Lake was analyzed for CVOCs, fluoride and nitrate.

Table 1 contains a summary of the sample locations, generalized geology at each sample location, groundwater sampling intervals, detected COPCs and proposed floodplain well designation and associated screened interval.

Proposed Permanent Well Locations

Per the April 2019 Remedial Investigation Work Plan, four floodplain wells (W-94 through W-97) will be installed during this phase of work. The locations of these wells are based upon data collected from this additional floodplain assessment. Proposed floodplain well locations are displayed on the attached **Figure 1**. Proposed screened intervals are contained in the attached **Table 1**.

Should you have any questions regarding the information provided in this plan, please do not hesitate to contact AECOM at (803) 254-4400.

Sincerely,

Chuck Suddeth, P.G.
Project Geologist

Jeremy Grant, P.G.
Project Manager

Attachments: Table 1 – Vertical Groundwater Profiling Results
Figure 1 – Proposed Floodplain Well Locations

Cc: Nancy Parr, CFFF
Diana Joyner, CFFF
Ed Wills, Jr., CFFF

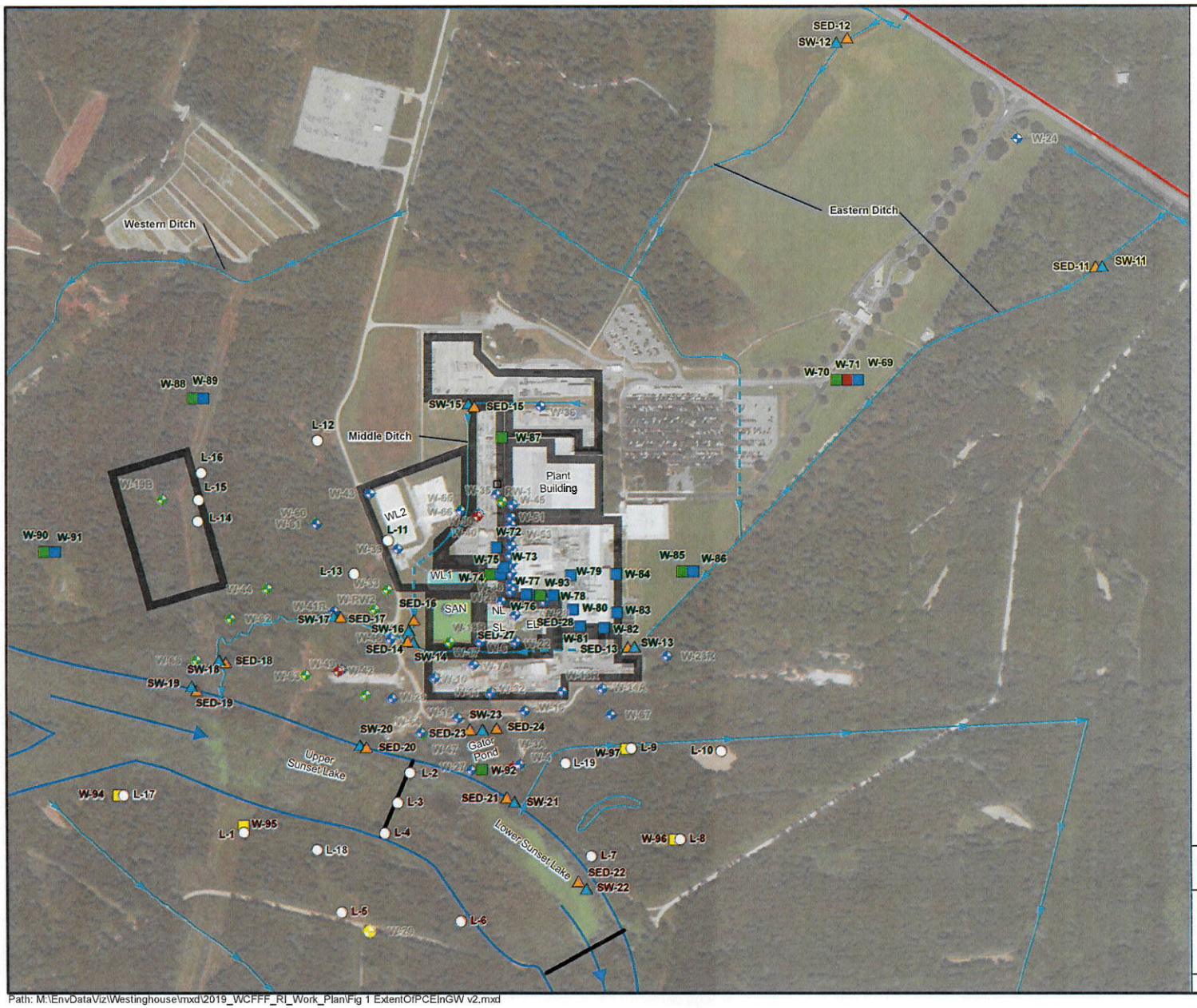
Table 1
Westinghouse Columbia Fuel Fabrication Facility
Additional Floodplain Assessment
Vertical Groundwater Profiling Results

Sample Location	Depth Interval (feet)	Generalized Lithology	Sampling Interval(s) (feet)	Detected Analytes	Proposed Well/Screened Interval
L-1	0-8.5	Clayey silt	-	-	
	8.5-33.5	Sand	10-15	ND	
			28-33	Cis-1,2-DCE = 3.8 ug/L, VC = 2.7 ug/L	W-95, 28-33
	33.5-45	Silt	-	-	
	45-83	Sand	48-53	ND	
			63-68	ND	
			78-83	ND	
	83-86	Clay	-	-	
L-8	0-8	Clayey silt	-	-	
	8-22	Sand	8-13	F = 0.26 mg/L, NO_3 = 0.081 mg/L	
			17-22	ND	
	22-25	Silty clay	-	-	
	25-46	Sand	25-30	PCE = 2.2 ug/L, TCE = 2.1 ug/L	W-96, 25-30
			41-46	F = 0.14 mg/L	
	46-47	Clay	-	-	
L-9	0-10	Clayey silt	-	-	
	10-28.5	Sand	10-15	PCE = 6.5 ug/L, TCE = 3.0 ug/L, F = 0.48 mg/L, NO_3 = 5.4 mg/L	W-97, 13-18
			23-28	ND	
	28.5-32	Silty clay	-	-	
	32-34.5	Sand and gravel	32-37	ND	
	34.5-37.5	Clayey sand	-	-	
	37.5-43.5	Clay	-	-	
L-10	0-9	Clayey silt	-	-	
	9-22.5	Sand	9-14	NO_3 = 1.1 mg/L	
			18-23	NO_3 = 0.18 mg/L	
	22.5-24.5	Silty clay	-	-	
	24.5-33.5	Sand	28-33	NO_3 = 0.19 mg/L	
	33.5-38.5	Clay	-	-	
L-17	0-11	Silt	-	-	
	11-20.5	Sand	15-20	Cis-1,2-DCE = 6.2 ug/L	
	20.5-27	Silty Sand		-	
	27-29	Sand	25-30	Cis-1,2-DCE = 5.4 ug/L	W-94, 24-29
	29-47	Clay	-	-	

Table 1
Westinghouse Columbia Fuel Fabrication Facility
Additional Floodplain Assessment
Vertical Groundwater Profiling Results

Sample Location	Depth Interval (feet)	Generalized Lithology	Sampling Interval(s) (feet)	Detected Analytes	Proposed Well/Screened Interval
L-18	0-14	Silt	-	-	
	14-32	Sand	15-20	ND	
			24-29	Cis-1,2-DCE = 1.2 ug/L, VC = 1.1 ug/L	
	32-37	Clay	-	-	
L-19	0-8	Clayey Silt	-	-	
	8-12	Silty Sand	7-12	F = 7.8 mg/L, NO_3 = 0.092 mg/L, Cis-1,2-DCE = 1.0 ug/L, Trans-1,2-DCE = 1.3 ug/L	
	12-21	Clay	-	-	
	21-26	Sand	21-26	F = 0.16 mg/L, NO_3 = 0.10 mg/L	
	26-29	Clay	-	-	

Notes:
CVOCs - chlorinated volatile organic compounds
EPA - United States Environmental Protection Agency
ND - None detected



Legend

- Ditch
- Culvert
- Mill Creek Flow Direction
- EL East Lagoon
- NL North Lagoon
- SL South Lagoon
- SAN Sanitary Lagoon
- WL1 West Lagoon I
- WL2 West Lagoon II
- Mill Creek
- Property Line
- SCRDI Bluff Road Superfund Site
- Dike Location
- Operable Units

Groundwater Monitoring Wells

- Upper Surficial Aquifer
- Lower Surficial Aquifer
- Black Mingo Aquifer
- Floodplain Well

Proposed Locations

- Sediment Sample
- Surface Water Sample
- Lithologic Boring
- Upper Surficial Aquifer Monitoring Well
- Lower Surficial Aquifer Monitoring Well
- Black Mingo Aquifer Monitoring Well
- Floodplain Monitoring Well

0 250 500 Feet

1:6,000

Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet

Datum: North American 1983

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Proposed Floodplain Well Locations

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	PREPARED BY:	DATE	
60595649	CCS	September 2019	FIGURE 1

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