



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

SCDES, BLWM  
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Your ref:  
Our ref: LTR-RAC-24-39

July 3, 2024

Subject: **June 2024 CA Progress Report**

Ms. Kuhn:

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

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

In response to the above requirements, the following is being reported to the Department since the last progress report submitted on **June 10, 2024**. The following progress report is for work occurring from **June 1- 30, 2024**:

- (a) Actions during the previous month:

In accordance with **Item 7** of the Consent Agreement and to support completion of the **Feasibility Study (FS) Report** due on or before November 30, 2024, Westinghouse continued work as follows:

- Conducted a site visit with Department of Environmental Services (DES) personnel and Leidos contractors so that the concepts in the forthcoming Middle Ditch Remediation Work Plan could be discussed.
- Groundwater flow model:
  - Presented the draft groundwater modeling presentation to CFFF personnel and incorporated their feedback.
  - Began conducting a sensitivity analysis to evaluate alternative concentration predictions based upon alternative inputs.

- FS:
  - Completed remedial alternatives preliminary designs.
  - Completed preliminary evaluations of remedial alternatives.
  
- (b) Results of sampling and tests:
  - **Semi-annual Groundwater Sampling (118 wells)**  
Tabulated results of the semiannual groundwater sampling campaign conducted in April 2024 are included in **Attachment A as Table A1**. Potentiometric and plume figures from the April 2024 groundwater sampling campaign are included as **Attachment B**.
  
- (c) Brief description of all actions which are scheduled for the next month:
  - Conduct groundwater sampling in W-56 for isotopic uranium analysis.
  - Groundwater flow model:
    - Continue the sensitivity analysis and add the results to the presentation.
    - Present the revised groundwater modeling presentation to Westinghouse.
    - Schedule and present the groundwater modeling results to DES.
  - FS:
    - Schedule and conduct a progress meeting with Westinghouse and DES personnel.
    - Refine remedial alternatives design based on Westinghouse and DES comments.
    - Continue evaluation of remedial alternatives.
    - Begin drafting the FS Report.
  
- (d) Percentage of work completed, and any delays encountered or anticipated:
  - 100% of the **Remedial Investigation** is complete.
  - 100% of the **Groundwater Flow Model** is completed.
  - 100% of the **Feasibility Study Work Plan** is completed.
  - 90% of the **Groundwater Fate and Transport Model** is completed.
  - 63% of the **Feasibility Study** is completed:
    - Identification of remedial action objectives/goals (complete)
    - Screening of remedial technologies (complete)
    - Development and evaluation of remedial alternatives (50% complete, 75% of overall FS).
  - Currently there are no anticipated delays.

Respectfully,



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

cc : N. Parr, Environmental Manager  
J. Ferguson, EH&S Manager  
J. Grant, AECOM Project Manager  
S. Subosits, Licensing Engineer  
ENOVIA Records

**Attachment A:** Table A1 April 2024 Groundwater Analytical Results (118 wells)

**Attachment B:** April 2024 Groundwater Sampling Event Potentiometric and Plume Figures

# **Attachment A**

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Groundwater Analytical Results

**April 2024 (118 wells)**

Table A1 April 2024 Groundwater Analytical Results  
Westinghouse Columbia Fuel Fabrication Facility, Hopkins, SC

				Well Date Type	W-RW1 4/8/2024 N	W-RW1 4/8/2024 FD	W-RW2 4/12/2024 N	W-3A 4/17/2024 N	W-4R 4/17/2024 N	W-6 4/4/2024 N	W-7A 4/2/2024 N	W-10 4/2/2024 N	W-11 4/3/2024 N	W-13R 4/3/2024 N	W-14 4/15/2024 N	W-15 4/15/2024 N	W-16 4/16/2024 N
Group	Analyte	MCL	Units														
Radiological	Technetium-99	900	pCi/L	0 ##	0 ##	6.77	0.00441 #	2.89 #	1890	135	60.4	628	59.9	0.108 #	163	3.24 #	
Radiological	Uranium-234		ug/L	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.250	
Radiological	Uranium-235		ug/L	< 0.0700	< 0.0700	< 0.0700	< 0.0700	< 0.0700	< 0.0700	< 0.0700	< 0.0700	< 0.0700	< 0.0700	< 0.0700	< 0.0700	< 0.350	
Radiological	Uranium-238		ug/L	< 0.200	< 0.200	< 0.200	0.129 J	< 0.200	0.285	0.431	0.0801 J	< 0.200	0.165 J	0.292	< 0.200	2.12	
Radiological	Total Uranium Isotopes	30	ug/L	< 0.200	< 0.200	< 0.200	0.129 J	< 0.200	0.285	0.431	0.0801 J	< 0.200	0.165 J	0.292	< 0.200	2.12	
Chemical	Fluoride	4	mg/L	< 0.10	< 0.10	0.26	< 0.10	< 0.10	0.38	6.5	3.3	< 0.10	9.1	< 0.10	2.7	6.6	
Chemical	Nitrate as N	10	mg/L	1.5	1.5	10	0.11	0.17	270	210	7.2	17	16	0.093	36	2.0	
VOCs	cis-1,2-Dichloroethene	70	ug/L	< 1.0	< 1.0	0.68 J	< 1.0	< 1.0	2.8	< 1.0	< 1.0	4.0	0.52 J	0.51 J	0.90 J	< 1.0	
VOCs	Tetrachloroethene	5	ug/L	1.2	1.3	140	< 1.0	< 1.0	21	0.81 J	< 1.0	27	17	0.46 J	8.2	2.0	
VOCs	Trichloroethene	5	ug/L	< 1.0	< 1.0	9.5	< 1.0	< 1.0	3.7	< 1.0	< 1.0	4.5	1.7	0.57 J	1.7	0.76 J	
VOCs	Vinyl chloride	2	ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
SVOCs	Bis(2-ethylhexyl)phthalate	6	ug/L	NA	NA	< 1.00	< 1.00	NA	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	
SVOCs	Naphthalene		ug/L	NA	NA	< 1.00	< 1.00	NA	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	
SVOCs	Tributylphosphate		ug/L	NA	NA	< 10.0	< 10.0	NA	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	

Notes:  
MCL - Maximum Contaminant Level  
Concentrations in orange shaded cells exceed their MCL  
Bold concentrations indicate detections  
J - Result below reporting limit  
NA - not analyzed  
# - value is below minimum detectable concentration  
## - value shown as zero reported by analytical laboratory as a negative number  
pCi/L - picocuries per liter  
ug/L - micrograms per liter  
mg/L - milligrams per liter  
SVOCs - semivolatle organic compounds  
VOCs - volatile organic compounds  
N - Normal sample  
FD - Field duplicate sample

Table A1 April 2024 Groundwater Analytical Results  
Westinghouse Columbia Fuel Fabrication Facility, Hopkins, SC

				Well Date	W-17	W-18R	W-19B	W-20	W-22	W-23R	W-24	W-25	W-26	W-27	W-28	W-29	W-30
				Type	4/8/2024	4/5/2024	4/12/2024	4/18/2024	4/4/2024	4/16/2024	4/16/2024	4/18/2024	4/12/2024	4/17/2024	4/4/2024	4/4/2024	4/5/2024
Group	Analyte	MCL	Units	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Radiological	Technetium-99	900	pCi/L	533	134	0 ##	1.49 #	22.1	0 ##	0 ##	0.0309 #	3.99	3.04 #	0 ##	8.49	31.3	
Radiological	Uranium-234		ug/L	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500
Radiological	Uranium-235		ug/L	< 0.0700	0.0224 J	< 0.0700	< 0.0700	< 0.0700	< 0.0700	< 0.0700	< 0.0700	< 0.0700	< 0.0700	< 0.0700	0.0767	< 0.0700	0.121
Radiological	Uranium-238		ug/L	0.123 J	2.21	< 0.200	< 0.200	0.503	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	3.83	0.612	5.04
Radiological	Total Uranium Isotopes	30	ug/L	0.123 J	2.23	< 0.200	< 0.200	0.503	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	3.91	0.612	5.16
Chemical	Fluoride	4	mg/L	3.1	6.9	< 0.10	< 0.10	4.8	< 0.10	< 0.10	0.10	2.1	3.3	4.4	3.0	8.3	
Chemical	Nitrate as N	10	mg/L	14	330	3.1	0.084	45	0.74	0.070	0.11	2.4	0.096	11	19	210	
VOCs	cis-1,2-Dichloroethene	70	ug/L	1.1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Tetrachloroethene	5	ug/L	5.6	1.8	71	< 1.0	0.47 J	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	0.62 J	0.59 J
VOCs	Trichloroethene	5	ug/L	1.5	0.60 J	1.5	< 1.0	0.49 J	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	0.41 J	0.51 J	< 1.0
VOCs	Vinyl chloride	2	ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
SVOCs	Bis(2-ethylhexyl)phthalate	6	ug/L	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00
SVOCs	Naphthalene		ug/L	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00
SVOCs	Tributylphosphate		ug/L	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0

Notes:  
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NA - not analyzed  
# - value is below minimum detectable concentration  
## - value shown as zero reported by analytical laboratory as a neg  
pCi/L - picocuries per liter  
ug/L - micrograms per liter  
mg/L - milligrams per liter  
SVOCs - semivolatile organic compounds  
VOCs - volatile organic compounds  
N - Normal sample  
FD - Field duplicate sample

Table A1 April 2024 Groundwater Analytical Results  
Westinghouse Columbia Fuel Fabrication Facility, Hopkins, SC

				Well Date Type	W-32 4/3/2024 N	W-33 4/11/2024 N	W-35 4/8/2024 N	W-36 4/8/2024 N	W-37 4/5/2024 N	W-38 4/4/2024 N	W-39 4/10/2024 N	W-40 4/9/2024 N	W-41R 4/11/2024 N	W-42 4/15/2024 N	W-43 4/10/2024 N	W-44 4/11/2024 N	W-45 4/8/2024 N
Group	Analyte	MCL	Units														
Radiological	Technetium-99	900	pCi/L		254	2.89 #	1.38 #	0.0484 #	0 ##	0 ##	5.06	2.27 #	10.1	2.78 #	0.275 #	2.51 #	0 ##
Radiological	Uranium-234		ug/L		< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500
Radiological	Uranium-235		ug/L		< 0.0700	< 0.0700	< 0.0700	< 0.0700	< 0.0700	< 0.0700	< 0.0700	< 0.0700	< 0.0700	< 0.0700	< 0.0700	< 0.0700	0.0290 J
Radiological	Uranium-238		ug/L		0.147 J	< 0.200	< 0.200	< 0.200	< 0.200	0.100 J	< 0.200	0.129 J	< 0.200	< 0.200	< 0.200	< 0.200	1.14
Radiological	Total Uranium Isotopes	30	ug/L		0.147 J	< 0.200	< 0.200	< 0.200	< 0.200	0.100 J	< 0.200	0.129 J	< 0.200	< 0.200	< 0.200	< 0.200	1.17
Chemical	Fluoride	4	mg/L		3.9	0.16	< 0.10	< 0.10	0.32	< 0.10	0.25	< 0.10	1.4	< 0.10	< 0.10	< 0.10	0.49
Chemical	Nitrate as N	10	mg/L		110	7.2	2.5	0.27	1.4	2.9	59	0.41	34	2.9	5.9	1.7	1.6
VOCs	cis-1,2-Dichloroethene	70	ug/L		< 1.0	1.6	< 1.0	< 1.0	< 1.0	< 1.0	20	< 1.0	3.7	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Tetrachloroethene		ug/L		0.94 J	220	1.4	< 1.0	< 1.0	1.1	290	< 1.0	190	< 1.0	0.41 J	< 1.0	< 1.0
VOCs	Trichloroethene	5	ug/L		< 1.0	25	< 1.0	< 1.0	< 1.0	7.7	9.4	< 1.0	8.4	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Vinyl chloride	2	ug/L		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
SVOCs	Bis(2-ethylhexyl)phthalate	6	ug/L		< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 0.957	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00
SVOCs	Naphthalene		ug/L		< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 0.957	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00
SVOCs	Tributylphosphate		ug/L		< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 9.57	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0

Notes:  
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ug/L - micrograms per liter  
mg/L - milligrams per liter  
SVOCs - semivolatle organic compounds  
VOCs - volatile organic compounds  
N - Normal sample  
FD - Field duplicate sample

Table A1 April 2024 Groundwater Analytical Results  
Westinghouse Columbia Fuel Fabrication Facility, Hopkins, SC

		Well Date Type	W-46 4/12/2024 N	W-47 4/15/2024 N	W-48 4/15/2024 N	W-49 4/15/2024 N	W-50 4/9/2024 N	W-51 4/5/2024 N	W-52 4/2/2024 N	W-53 4/2/2024 N	W-54 4/5/2024 N	W-55 4/9/2024 N	W-56 4/9/2024 N	W-57 4/4/2024 N	W-58 4/4/2024 N
Group	Analyte	MCL	Units												
Radiological	Technetium-99	900	pCi/L	49.5	94.0	14.3	2.77 #	0 ##	0 ##	0 ##	0 ##	0.0996 #	0.998 #	0 ##	0 ##
Radiological	Uranium-234		ug/L	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	0.0160 J	0.0760	< 0.0500	< 0.0500
Radiological	Uranium-235		ug/L	< 0.0700	< 0.0700	< 0.0700	< 0.0700	< 0.0700	< 0.0700	< 0.0700	< 0.0700	1.98	9.84	< 0.0700	0.0155 J
Radiological	Uranium-238		ug/L	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	0.126 J	< 0.200	59.1	292	0.210	0.511
Radiological	Total Uranium Isotopes	30	ug/L	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	0.126 J	< 0.200	61.1	302	0.210	0.527
Chemical	Fluoride	4	mg/L	< 0.10	4.7	0.44	< 0.10	0.22	0.81	< 0.10	0.10	0.0826 J	0.355	< 0.10	0.11
Chemical	Nitrate as N	10	mg/L	7.7	36	5.0	0.13	0.084	1.3	0.34	0.90	1.54	1.99	1.6	5.6
VOCs	cis-1,2-Dichloroethene	70	ug/L	< 1.0	< 1.0	1.9	< 1.0	< 1.0	< 1.0	< 1.0	0.46 J	< 1.00	< 1.00	< 1.0	< 1.0
VOCs	Tetrachloroethene	5	ug/L	2.9	2.2	190	< 1.0	< 1.0	< 1.0	< 1.0	0.60 J	< 1.00	< 1.00	0.58 J	0.51 J
VOCs	Trichloroethene	5	ug/L	0.58 J	0.50 J	4.7	< 1.0	< 1.0	< 1.0	< 1.0	0.42 J	< 1.00	< 1.00	0.40 J	0.41 J
VOCs	Vinyl chloride	2	ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.00	< 1.00	< 1.0	< 1.0
SVOCs	Bis(2-ethylhexyl)phthalate	6	ug/L	< 1.00	< 1.00	< 1.00	< 1.00	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	Naphthalene		ug/L	< 1.00	< 1.00	< 1.00	< 1.00	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	Tributylphosphate		ug/L	< 10.0	< 10.0	< 10.0	< 10.0	NA	NA	NA	NA	NA	NA	NA	NA

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pCi/L - picocuries per liter  
ug/L - micrograms per liter  
mg/L - milligrams per liter  
SVOCs - semivolatle organic compounds  
VOCs - volatile organic compounds  
N - Normal sample  
FD - Field duplicate sample



Table A1 April 2024 Groundwater Analytical Results  
Westinghouse Columbia Fuel Fabrication Facility, Hopkins, SC

				Well Date Type	W-59 4/9/2024 N	W-60 4/12/2024 N	W-61 4/10/2024 N	W-62 4/11/2024 N	W-63 4/15/2024 N	W-64 4/15/2024 N	W-64 4/15/2024 FD	W-65 4/10/2024 N	W-66 4/10/2024 N	W-67 4/16/2024 N	W-68 4/11/2024 N	W-69 4/16/2024 N	W-70 4/16/2024 N
Group	Analyte	MCL	Units														
Radiological	Technetium-99	900	pCi/L		11.4	0 ##	0.108 #	0 ##	23.3	99.5	97.1	0 ##	0.535 #	43.3	1.88 #	0 ##	0 ##
Radiological	Uranium-234		ug/L		< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500
Radiological	Uranium-235		ug/L		0.139	< 0.0700	< 0.0700	< 0.0700	0.0101 J	< 0.0700	< 0.0700	< 0.0700	< 0.0700	< 0.0700	< 0.0700	< 0.0700	< 0.0700
Radiological	Uranium-238		ug/L		4.42	< 0.200	0.0959 J	< 0.200	1.20	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200
Radiological	Total Uranium Isotopes	30	ug/L		4.56	< 0.200	0.0959 J	< 0.200	1.21	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200
Chemical	Fluoride	4	mg/L		1.87	< 0.10	< 0.10	< 0.10	< 0.10	4.3	4.3	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Chemical	Nitrate as N	10	mg/L		34.6	0.11	2.1	3.4	6.2	40	39	1.3	1.8	11	2.4	0.79	1.2
VOCs	cis-1,2-Dichloroethene	70	ug/L		< 1.00	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	22	14	1.2	< 1.0	< 1.0	< 1.0
VOCs	Tetrachloroethene	5	ug/L		< 1.00	< 1.0	0.74 J	51	2.2	1.7	1.7	370	340	41	47	< 1.0	< 1.0
VOCs	Trichloroethene	5	ug/L		< 1.00	0.90 J	< 1.0	0.67 J	1.5	0.44 J	0.40 J	50	9.5	6.9	0.96 J	< 1.0	< 1.0
VOCs	Vinyl chloride	2	ug/L		< 1.00	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
SVOCs	Bis(2-ethylhexyl)phthalate	6	ug/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	Naphthalene		ug/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	Tributylphosphate		ug/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:  
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Concentrations in orange shaded cells exceed their MCL  
Bold concentrations indicate detections  
J - Result below reporting limit  
NA - not analyzed  
# - value is below minimum detectable concentration  
## - value shown as zero reported by analytical laboratory as a neg  
pCi/L - picocuries per liter  
ug/L - micrograms per liter  
mg/L - milligrams per liter  
SVOCs - semivolatile organic compounds  
VOCs - volatile organic compounds  
N - Normal sample  
FD - Field duplicate sample

Table A1 April 2024 Groundwater Analytical Results  
Westinghouse Columbia Fuel Fabrication Facility, Hopkins, SC

				Well Date	W-71	W-72	W-73	W-74	W-75	W-76	W-77	W-78	W-78	W-79	W-80	W-81	W-82
				Type	4/16/2024	4/5/2024	4/4/2024	4/8/2024	4/5/2024	4/4/2024	4/9/2024	4/3/2024	4/3/2024	4/3/2024	4/2/2024	4/3/2024	4/2/2024
Group	Analyte	MCL	Units		N	N	N	N	N	N	N	N	FD	N	N	N	N
Radiological	Technetium-99	900	pCi/L		0 ##	0 ##	0 ##	0 ##	0.389 #	0 ##	3.22 #	0 ##	0 ##	0 ##	0 ##	0.223 #	0 ##
Radiological	Uranium-234		ug/L		< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	0.0180 J	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500
Radiological	Uranium-235		ug/L		< 0.0700	0.0202 J	< 0.0700	< 0.0700	< 0.0700	0.132	2.47	< 0.0700	< 0.0700	< 0.0700	< 0.0700	< 0.0700	< 0.0700
Radiological	Uranium-238		ug/L		0.0928 J	0.614	0.110 J	< 0.200	< 0.200	3.95	56.9	0.0930 J	0.101 J	< 0.200	0.299	0.0835 J	0.189 J
Radiological	Total Uranium Isotopes	30	ug/L		0.0928 J	0.634	0.110 J	< 0.200	< 0.200	4.09	59.4	0.0930 J	0.101 J	< 0.200	0.299	0.0835 J	0.189 J
Chemical	Fluoride	4	mg/L		< 0.10	0.68	< 0.10	< 0.10	< 0.10	2.8	7.77	9.8	9.7	1.1	0.15	< 0.10	< 0.10
Chemical	Nitrate as N	10	mg/L		0.14	1.6	0.84	5.2	0.81	13	6.11	5.6	5.8	3.5	9.4	4.2	2.1
VOCs	cis-1,2-Dichloroethene	70	ug/L		< 1.0	< 1.0	< 1.0	0.75 J	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Tetrachloroethene	5	ug/L		< 1.0	0.71 J	0.75 J	7.4	0.74 J	0.67 J	< 1.00	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Trichloroethene	5	ug/L		< 1.0	0.51 J	0.41 J	2.6	0.48 J	48	< 1.00	< 1.0	< 1.0	< 1.0	0.87 J	< 1.0	0.77 J
VOCs	Vinyl chloride	2	ug/L		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.00	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
SVOCs	Bis(2-ethylhexyl)phthalate	6	ug/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	Naphthalene		ug/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	Tributylphosphate		ug/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:  
MCL - Maximum Contaminant Level  
Concentrations in orange shaded cells exceed their MCL  
Bold concentrations indicate detections  
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SVOCs - semivolatile organic compounds  
VOCs - volatile organic compounds  
N - Normal sample  
FD - Field duplicate sample

Table A1 April 2024 Groundwater Analytical Results  
Westinghouse Columbia Fuel Fabrication Facility, Hopkins, SC

				Well Date	W-83	W-84	W-85	W-86	W-87	W-88	W-89	W-90	W-91	W-92	W-93	W-94	W-95
				Type	4/2/2024	4/2/2024	4/16/2024	4/16/2024	4/8/2024	4/11/2024	4/11/2024	4/12/2024	4/11/2024	4/17/2024	4/8/2024	4/18/2024	4/19/2024
Group	Analyte	MCL	Units	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Radiological	Technetium-99	900	pCi/L	0 ##	0 ##	0.259 #	0 ##	0 ##	0.894 #	0 ##	0.291 #	2.23 #	1.35 #	0 ##	0 ##	2.43 #	
Radiological	Uranium-234		ug/L	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500
Radiological	Uranium-235		ug/L	< 0.0700	< 0.0700	< 0.0700	< 0.0700	< 0.0700	< 0.0700	< 0.0700	< 0.0700	< 0.0700	< 0.0700	< 0.0700	< 0.0700	< 0.0700	< 0.0700
Radiological	Uranium-238		ug/L	< 0.200	< 0.200	< 0.200	< 0.200	0.205	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	0.0965 J	< 0.200	< 0.200
Radiological	Total Uranium Isotopes	30	ug/L	< 0.200	< 0.200	< 0.200	< 0.200	0.205	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	0.0965 J	< 0.200	< 0.200
Chemical	Fluoride	4	mg/L	0.12	< 0.10	0.27	0.47	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.11	< 0.10	< 0.10	< 0.10	< 0.10
Chemical	Nitrate as N	10	mg/L	1.0	0.17	0.15	0.14	0.68	3.2	1.8	2.2	0.64	0.13	5.9	0.078	0.15	
VOCs	cis-1,2-Dichloroethene	70	ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	4.1	0.98 J
VOCs	Tetrachloroethene	5	ug/L	< 1.0	< 1.0	< 1.0	< 1.0	24	1.7	1.0	< 1.0	< 1.0	< 1.0	27	< 1.0	< 1.0	< 1.0
VOCs	Trichloroethene	5	ug/L	0.43 J	0.78 J	< 1.0	< 1.0	6.9	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	3.9	< 1.0	< 1.0	< 1.0
VOCs	Vinyl chloride	2	ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	1.4	< 1.0
SVOCs	Bis(2-ethylhexyl)phthalate	6	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	Naphthalene		ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	Tributylphosphate		ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:  
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Concentrations in orange shaded cells exceed their MCL  
Bold concentrations indicate detections  
J - Result below reporting limit  
NA - not analyzed  
# - value is below minimum detectable concentration  
## - value shown as zero reported by analytical laboratory as a neg  
pCi/L - picocuries per liter  
ug/L - micrograms per liter  
mg/L - milligrams per liter  
SVOCs - semivolatile organic compounds  
VOCs - volatile organic compounds  
N - Normal sample  
FD - Field duplicate sample

Table A1 April 2024 Groundwater Analytical Results  
Westinghouse Columbia Fuel Fabrication Facility, Hopkins, SC

				Well Date	W-96	W-97	W-98	W-99	W-100	W-102	W-103	W-104	W-105	W-106	W-107	W-108	W-109
				Type	4/17/2024	4/16/2024	4/15/2024	4/12/2024	4/12/2024	4/5/2024	4/16/2024	4/18/2024	4/17/2024	4/15/2024	4/19/2024	4/18/2024	4/18/2024
Group	Analyte	MCL	Units		N	N	N	N	N	N	N	N	N	N	N	N	N
Radiological	Technetium-99	900	pCi/L		3.01 #	41.7	8.11	47.1	4.71	89.6	24.3	5.76	0 ##	3.87	5.65	3.63	4.54
Radiological	Uranium-234		ug/L		< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500
Radiological	Uranium-235		ug/L		< 0.0700	< 0.0700	< 0.0700	< 0.0700	< 0.0700	0.0225 J	< 0.0700	< 0.0700	< 0.0700	< 0.0700	< 0.0700	< 0.0700	< 0.0700
Radiological	Uranium-238		ug/L		< 0.200	< 0.200	0.0731 J	< 0.200	0.105 J	1.25	< 0.200	< 0.200	< 0.200	< 0.200	0.0721 J	0.0747 J	< 0.200
Radiological	Total Uranium Isotopes	30	ug/L		< 0.200	< 0.200	0.0731 J	< 0.200	0.105 J	1.27	< 0.200	< 0.200	< 0.200	< 0.200	0.0721 J	0.0747 J	< 0.200
Chemical	Fluoride	4	mg/L		< 0.10	0.25	< 0.10	2.8	0.74	2.8	< 0.10	< 0.10	0.18	0.30	0.12	< 0.10	< 0.10
Chemical	Nitrate as N	10	mg/L		0.13	5.9	7.0	0.43	1.9	57	6.5	6.6	0.21	0.054	0.082	0.090	0.099
VOCs	cis-1,2-Dichloroethene	70	ug/L		0.55 J	0.45 J	< 1.0	< 1.0	< 1.0	3.1	0.66 J	< 1.0	< 1.0	< 1.0	< 1.0	0.90 J	1.4
VOCs	Tetrachloroethene	5	ug/L		0.65 J	8.5	< 1.0	1.3	< 1.0	36	23	3.2	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Trichloroethene	5	ug/L		1.6	1.6	< 1.0	< 1.0	< 1.0	5.8	4.3	1.2	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Vinyl chloride	2	ug/L		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	0.46 J	3.2	1.0	< 1.0
SVOCs	Bis(2-ethylhexyl)phthalate	6	ug/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	Naphthalene		ug/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	Tributylphosphate		ug/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:  
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Bold concentrations indicate detections  
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NA - not analyzed  
# - value is below minimum detectable concentration  
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mg/L - milligrams per liter  
SVOCs - semivolatle organic compounds  
VOCs - volatile organic compounds  
N - Normal sample  
FD - Field duplicate sample

Table A1 April 2024 Groundwater Analytical Results  
Westinghouse Columbia Fuel Fabrication Facility, Hopkins, SC

				Well Date Type	W-110 4/19/2024 N	W-111 4/18/2024 N	W-111 4/18/2024 FD	W-112 4/18/2024 N	W-113 4/9/2024 N	W-114 4/9/2024 N	W-115 4/9/2024 N	W-116 4/9/2024 N	W-117 4/9/2024 N	W-118 4/12/2024 N	W-119 4/11/2024 N	W-119 4/11/2024 FD	W-120 4/10/2024 N
Group	Analyte	MCL	Units														
Radiological	Technetium-99	900	pCi/L		2.83 #	4.60	2.55 #	1.64 #	0.0688 #	0 ##	1.94 #	0 ##	4.43	0 ##	3.62 #	0.859 #	1.40 #
Radiological	Uranium-234		ug/L		< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500
Radiological	Uranium-235		ug/L		< 0.0700	< 0.0700	< 0.0700	< 0.0700	< 0.0700	< 0.0700	< 0.0700	< 0.0700	< 0.0700	< 0.0700	< 0.0700	< 0.0700	< 0.0700
Radiological	Uranium-238		ug/L		< 0.200	< 0.200	< 0.200	0.398	0.100 J	0.112 J	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	0.354
Radiological	Total Uranium Isotopes	30	ug/L		< 0.200	< 0.200	< 0.200	0.398	0.100 J	0.112 J	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	0.354
Chemical	Fluoride	4	mg/L		< 0.10	< 0.10	< 0.10	0.13	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Chemical	Nitrate as N	10	mg/L		0.12	0.13	0.11	0.065	2.7	0.98	2.9	4.8	2.4	2.3	1.3	1.4	1.2
VOCs	cis-1,2-Dichloroethene	70	ug/L		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	1.0
VOCs	Tetrachloroethene	5	ug/L		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	3.1	61	62	59	260
VOCs	Trichloroethene	5	ug/L		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	2.2	3.1	2.9	14
VOCs	Vinyl chloride	2	ug/L		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
SVOCs	Bis(2-ethylhexyl)phthalate	6	ug/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	Naphthalene		ug/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	Tributylphosphate		ug/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:  
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Bold concentrations indicate detections  
J - Result below reporting limit  
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SVOCs - semivolatile organic compounds  
VOCs - volatile organic compounds  
N - Normal sample  
FD - Field duplicate sample

Table A1 April 2024 Groundwater Analytical Results  
Westinghouse Columbia Fuel Fabrication Facility, Hopkins, SC

				Well Date Type	W-121 4/10/2024 N	W-122 4/8/2024 N	W-122 4/8/2024 FD	W-123 4/3/2024 N	W-124 4/18/2024 N	W-125 4/17/2024 N	W-126 4/17/2024 N
Group	Analyte	MCL	Units								
Radiological	Technetium-99	900	pCi/L		0 ##	0 ##	0 ##	384	1.27 #	0.630 #	0 ##
Radiological	Uranium-234		ug/L		< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500
Radiological	Uranium-235		ug/L		< 0.0700	< 0.0700	< 0.0700	0.0105 J	< 0.0700	< 0.0700	< 0.0700
Radiological	Uranium-238		ug/L		< 0.200	< 0.200	< 0.200	1.45	< 0.200	0.0762 J	0.0726 J
Radiological	Total Uranium Isotopes	30	ug/L		< 0.200	< 0.200	< 0.200	1.46	< 0.200	0.0762 J	0.0726 J
Chemical	Fluoride	4	mg/L		< 0.10	< 0.10	< 0.10	9.0	< 0.10	0.60	0.13
Chemical	Nitrate as N	10	mg/L		1.7	0.082	0.12	88	0.13	0.99	0.097
VOCs	cis-1,2-Dichloroethene	70	ug/L		< 1.0	< 1.0	< 1.0	1.9	< 1.0	< 1.0	0.91 J
VOCs	Tetrachloroethene	5	ug/L		12	< 1.0	< 1.0	23	< 1.0	< 1.0	< 1.0
VOCs	Trichloroethene	5	ug/L		< 1.0	< 1.0	< 1.0	12	< 1.0	< 1.0	2.1
VOCs	Vinyl chloride	2	ug/L		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
SVOCs	Bis(2-ethylhexyl)phthalate	6	ug/L		NA	NA	NA	NA	NA	NA	NA
SVOCs	Naphthalene		ug/L		NA	NA	NA	NA	NA	NA	NA
SVOCs	Tributylphosphate		ug/L		NA	NA	NA	NA	NA	NA	NA

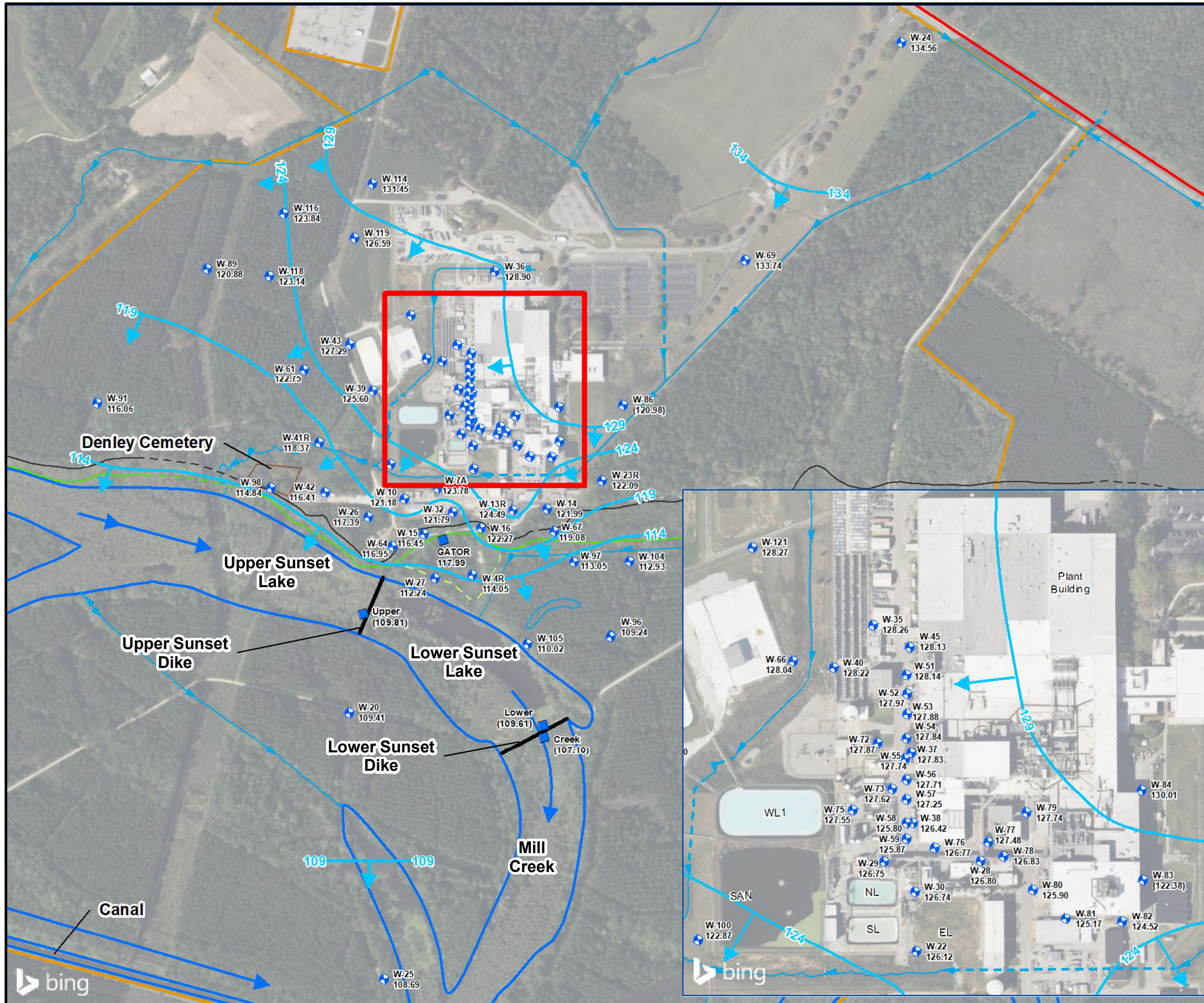
Notes:  
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Bold concentrations indicate detections  
J - Result below reporting limit  
NA - not analyzed  
# - value is below minimum detectable concentration  
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pCi/L - picocuries per liter  
ug/L - micrograms per liter  
mg/L - milligrams per liter  
SVOCs - semivolatle organic compounds  
VOCs - volatile organic compounds  
N - Normal sample  
FD - Field duplicate sample

## **Attachment B**

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April 2024 Groundwater Sampling Event Potentiometric and Plume Figures





**Legend**

- Surficial Aquifer - Upper Zone Monitoring Well
- Mill Creek
- Property Line
- SCRDI Bluff Road (Superfund Site)
- Culvert
- Ditch
- Mill Creek Flow Direction
- Dike Location
- Staff Gauge Location
- Top of Bluff
- Inferred Top of Bluff
- Bottom of Bluff
- Inferred Bottom of Bluff
- Secondary Bluff Area
- EL Former East Lagoon
- NL North Lagoon
- SL South Lagoon
- SAN Sanitary Lagoon
- WL1 West Lagoon I
- WL2 West Lagoon II
- Potentiometric Line (C.I. = 5 feet)
- Direction of Groundwater
- 130.01 Groundwater Elevation
- (112.38) Elevation for illustrative purposes only

Based upon data collected on April 1, 2024

0 300 600 Feet  
1:7,200

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

**AECOM** 101 Research Drive  
Columbia, SC 29203  
T: (803) 254-4400 F: (803) 771-6676

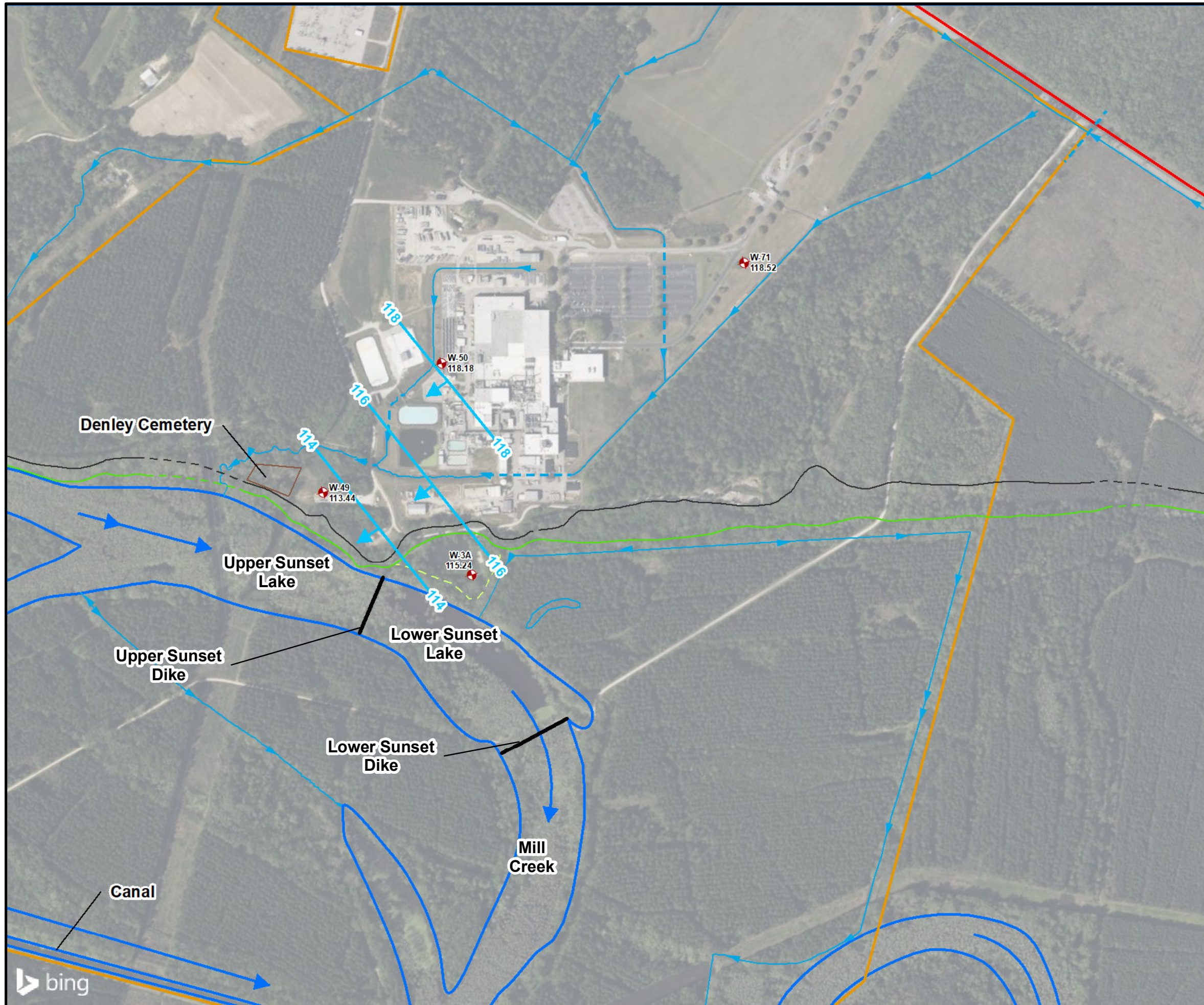
**Surficial Aquifer - Upper Zone Potentiometric Map April 2024**  
WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY  
HOPKINS, SOUTH CAROLINA

PROJECT NO. 60700386	PREPARED BY. CCS	DATE. April 2024	<b>FIGURE B1</b>
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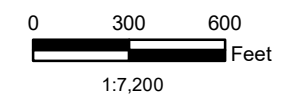








- Legend**
- ⊕ Black Creek Aquifer Monitoring Well
  - Mill Creek
  - Property Line
  - SCRDI Bluff Road (Superfund Site)
  - Culvert
  - ▶ Ditch
  - ▶ Mill Creek Flow Direction
  - Dike Location
  - Top of Bluff
  - Inferred Top of Bluff
  - Bottom of Bluff
  - Inferred Bottom of Bluff
  - Secondary Bluff Area
  - EL Former East Lagoon
  - NL North Lagoon
  - SL South Lagoon
  - SAN Sanitary Lagoon
  - WL1 West Lagoon I
  - WL2 West Lagoon II
  - Potentiometric Line (C.I. = 2 feet)
  - ▶ Direction of Groundwater
  - 113.44 Groundwater Elevation
- Based upon data collected on April 1, 2024



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



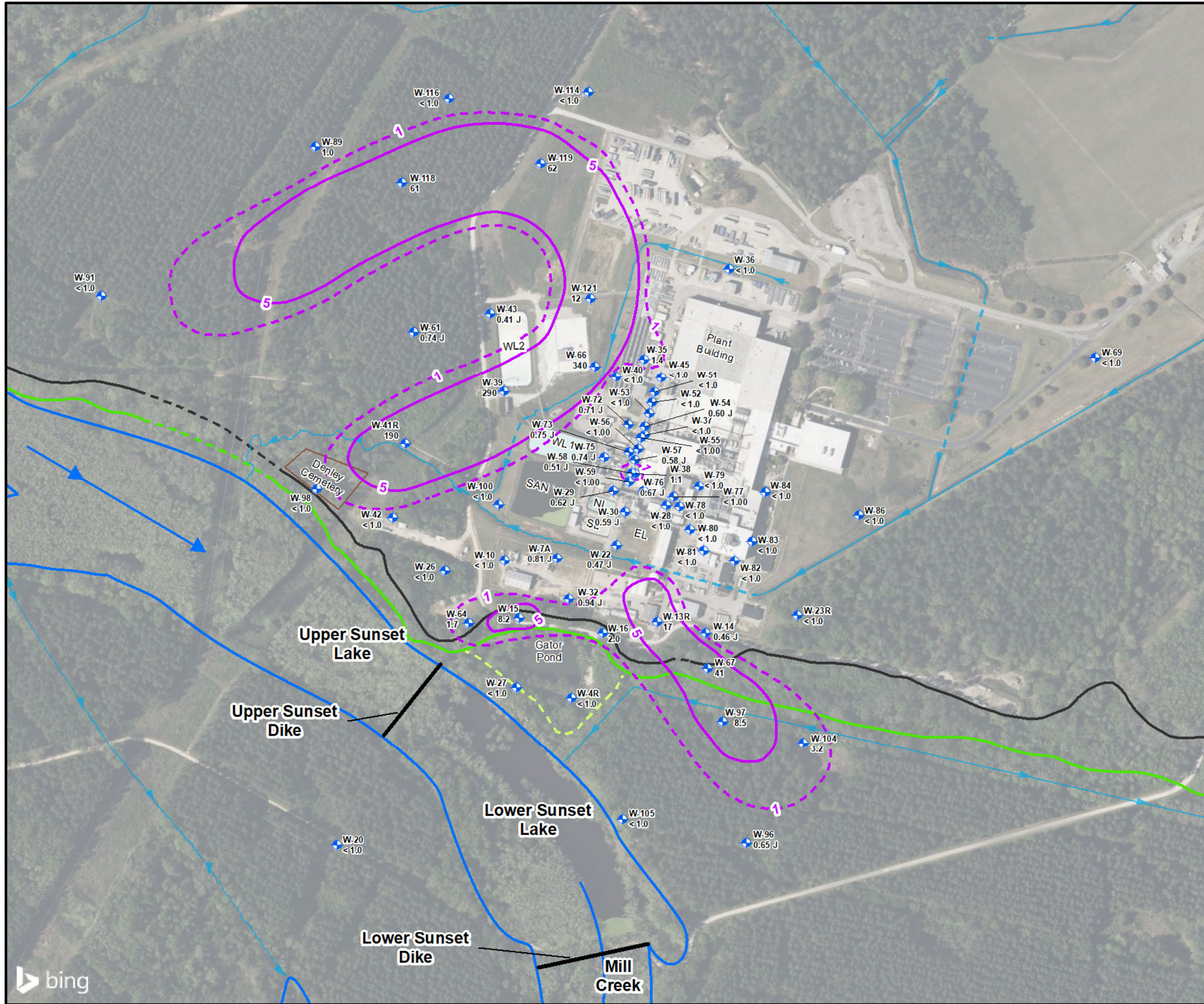
<b>AECOM</b>	101 Research Drive Columbia, SC 29203 T: (803) 254-4400 F: (803) 771-6676
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**Black Creek Aquifer  
 Potentiometric Map April 2024**  
 WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY  
 HOPKINS, SOUTH CAROLINA

PROJECT NO. 60700386	PREPARED BY: CCS	DATE: April 2024	<b>FIGURE B3</b>
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**Legend**

- Surficial Aquifer - Upper Zone Monitoring Well
- Ditch
- Culvert
- Dike Location
- Mill Creek
- Mill Creek Flow Direction
- Top of Bluff
- Inferred Top of Bluff
- Bottom of Bluff
- Inferred Bottom of Bluff
- Secondary Bluff Area
- PCE Isoconcentration Contour (5 µg/L)
- PCE Isoconcentration Contour at or Above the Detection Limit (µg/L)

340 PCE Concentration in µg/L  
 J Result Below Reporting Limit  
 EL Former East Lagoon  
 NL North Lagoon  
 SL South Lagoon  
 SAN Sanitary Lagoon  
 WL1 West Lagoon 1  
 WL2 West Lagoon 2

**Notes:**  
 Although the river terrace sediments above and below the bluff are of different geologic ages (Pleistocene-vs-Holocene), they were deposited under similar conditions, have similar lithologies and are hydrogeologically connected as a single surficial aquifer.

0 200 400  
 Feet  
 1 inch = 400 feet

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

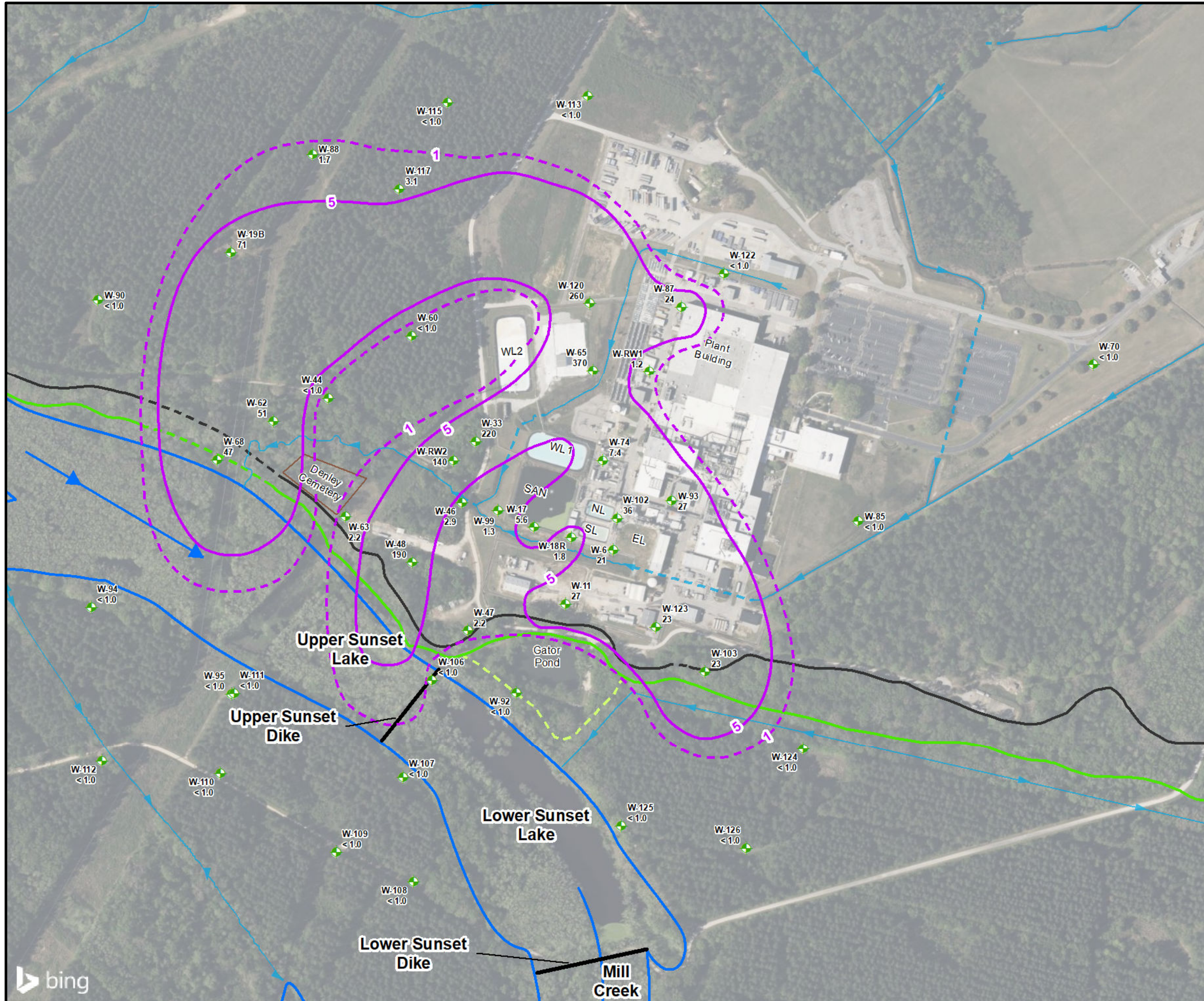
**AECOM** 101 Research Drive  
 Columbia, SC 29203  
 T: (803) 254-4400 F: (803) 771-6676

**Extent of PCE -  
 Surficial Aquifer - Upper Zone  
 April 2024**

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY  
 HOPKINS, SOUTH CAROLINA

PROJECT NO: 60700386	PREPARED BY: CCS	DATE: June 2024	<b>FIGURE B4</b>
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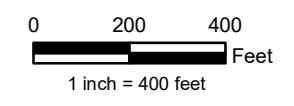


**Legend**

- Surficial Aquifer - Lower Zone Monitoring Well
  - Ditch
  - Culvert
  - Dike Location
  - Mill Creek Flow Direction
  - Mill Creek
  - Top of Bluff
  - Inferred Top of Bluff
  - Bottom of Bluff
  - Inferred Bottom of Bluff
  - Secondary Bluff Area
  - PCE Isoconcentration Contour (5 µg/L)
  - PCE Isoconcentration Contour at or Above the Detection Limit (µg/L)
- 370 PCE Concentration in µg/L  
 EL Former East Lagoon  
 NL North Lagoon  
 SL South Lagoon  
 SAN Sanitary Lagoon  
 WL1 West Lagoon 1  
 WL2 West Lagoon 2

**Notes:**

Although the river terrace sediments above and below the bluff are of different geologic ages (Pleistocene-vs-Holocene), they were deposited under similar conditions, have similar lithologies and are hydrogeologically connected as a single surficial aquifer.



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



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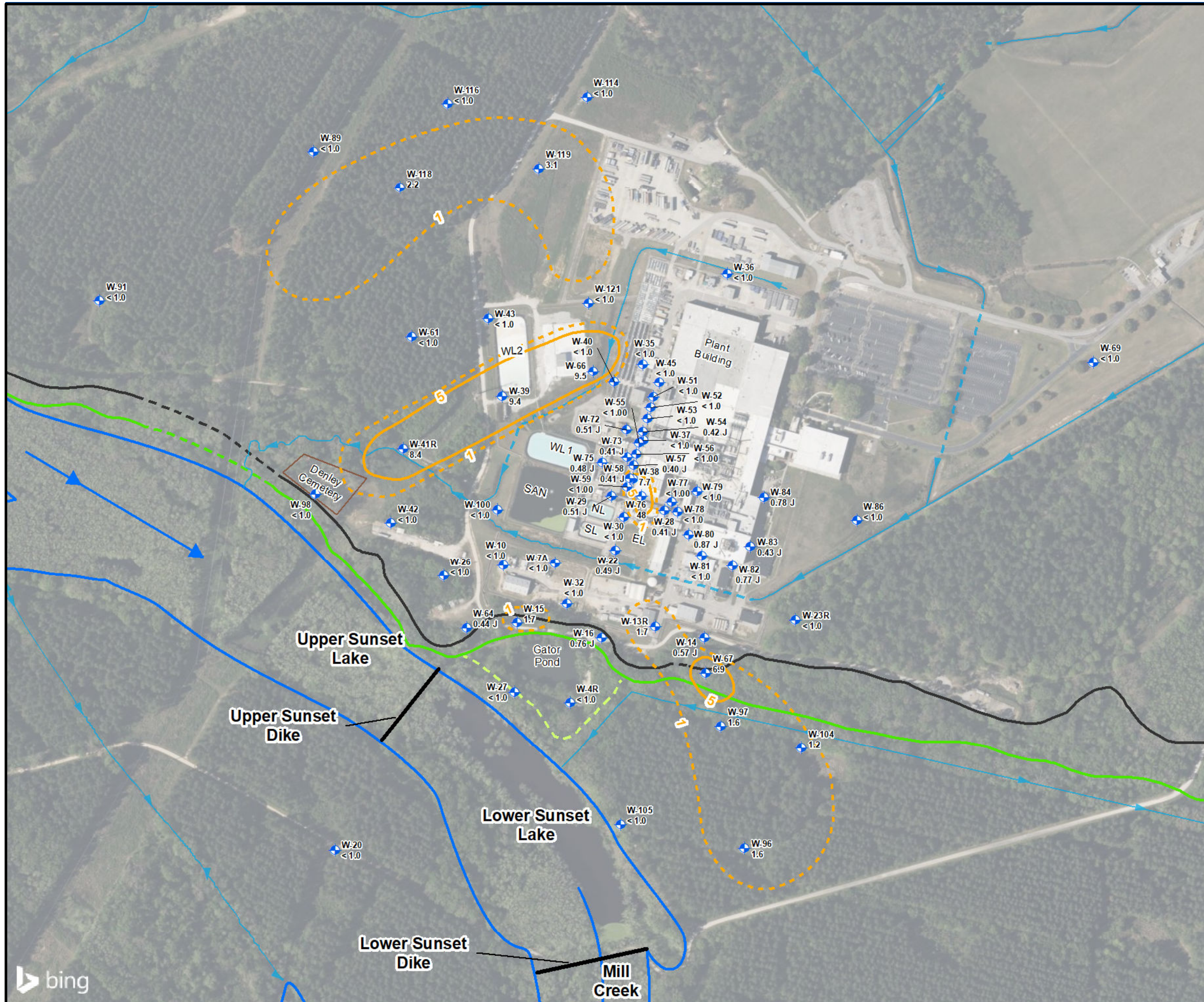
**Extent of PCE  
 Surficial Aquifer - Lower Zone  
 April 2024**

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY  
 HOPKINS, SOUTH CAROLINA

PROJECT NO: 60700386	PREPARED BY: CCS	DATE: June 2024	<b>FIGURE B5</b>
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- Legend**
- Surficial Aquifer - Upper Zone Monitoring Well
  - Ditch
  - Culvert
  - Dike Location
  - Mill Creek Flow Direction
  - Mill Creek
  - Top of Bluff
  - Inferred Top of Bluff
  - Bottom of Bluff
  - Inferred Bottom of Bluff
  - Secondary Bluff Area
  - TCE Isoconcentration Contour (5 ug/L)
  - TCE Isoconcentration Contour at or Above the Detection Limit (ug/L)
- 48 TCE Concentration in ug/L  
 J Result below reporting limit  
 EL Former East Lagoon  
 NL North Lagoon  
 SL South Lagoon  
 SAN Sanitary Lagoon  
 WL1 West Lagoon 1  
 WL2 West Lagoon 2

**Notes:**  
 Although the river terrace sediments above and below the bluff are of different geologic ages (Pleistocene-vs-Holocene), they were deposited under similar conditions, have similar lithologies and are hydrogeologically connected as a single surficial aquifer.

0 200 400  
 Feet  
 1 inch = 400 feet

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

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**Extent of TCE  
 Surficial Aquifer - Upper Zone  
 April 2024**

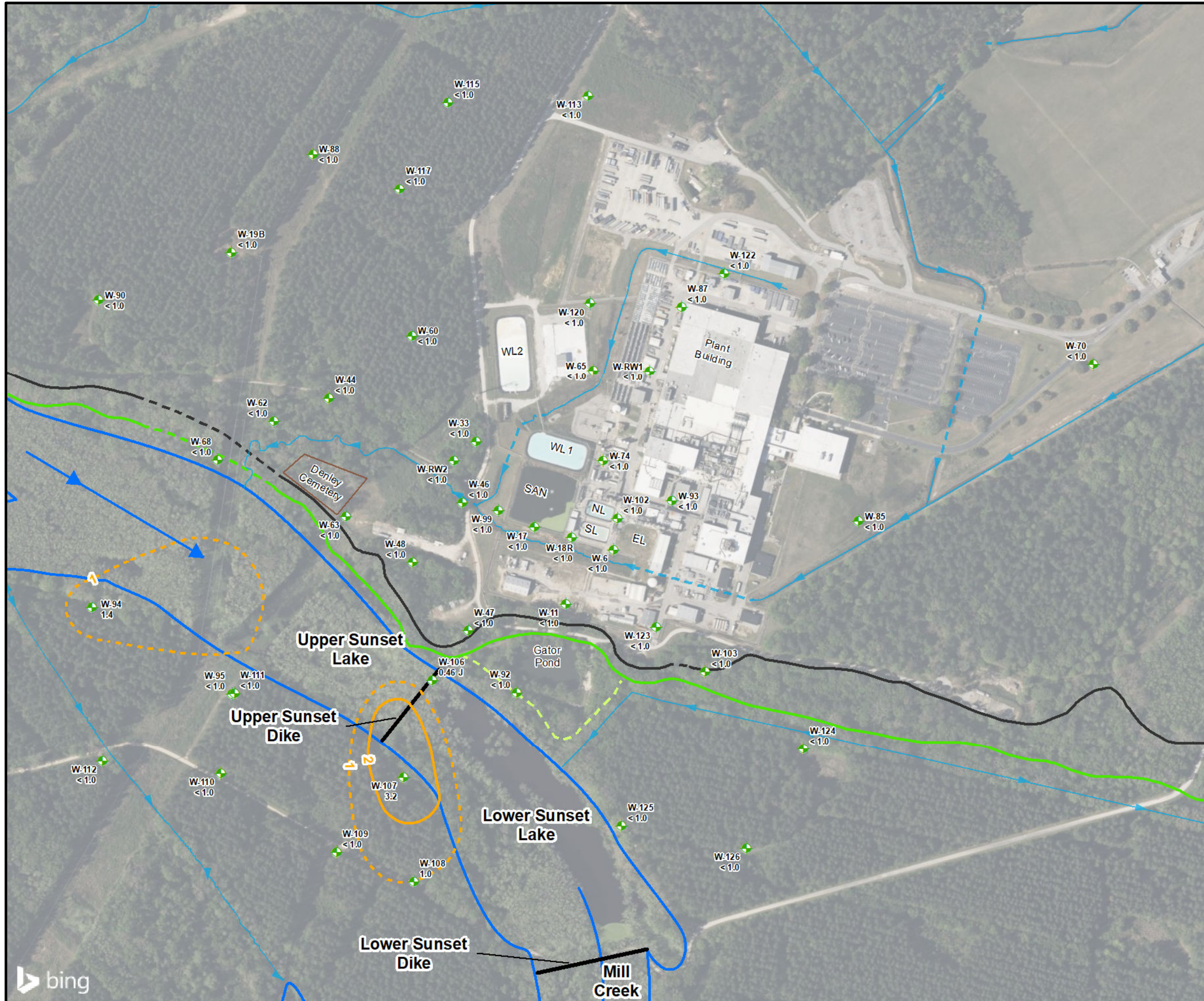
WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY  
 HOPKINS, SOUTH CAROLINA

PROJECT NO: 60700386	PREPARED BY: CCS	DATE: June 2024	<b>FIGURE B6</b>
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**Legend**

- Surficial Aquifer - Lower Zone Monitoring Well
- Ditch
- Culvert
- Ditch
- Mill Creek Flow Direction
- Mill Creek
- Top of Bluff
- Inferred Top of Bluff
- Bottom of Bluff
- Inferred Bottom of Bluff
- Secondary Bluff Area
- VC Isoconcentration Contour (2 ug/L)
- VC Isoconcentration Contour at or Above the Detection Limit (ug/L)

3.2 VC Concentration in ug/L  
 J Result below reporting limit  
 EL Former East Lagoon  
 NL North Lagoon  
 SL South Lagoon  
 SAN Sanitary Lagoon  
 WL1 West Lagoon 1  
 WL2 West Lagoon 2

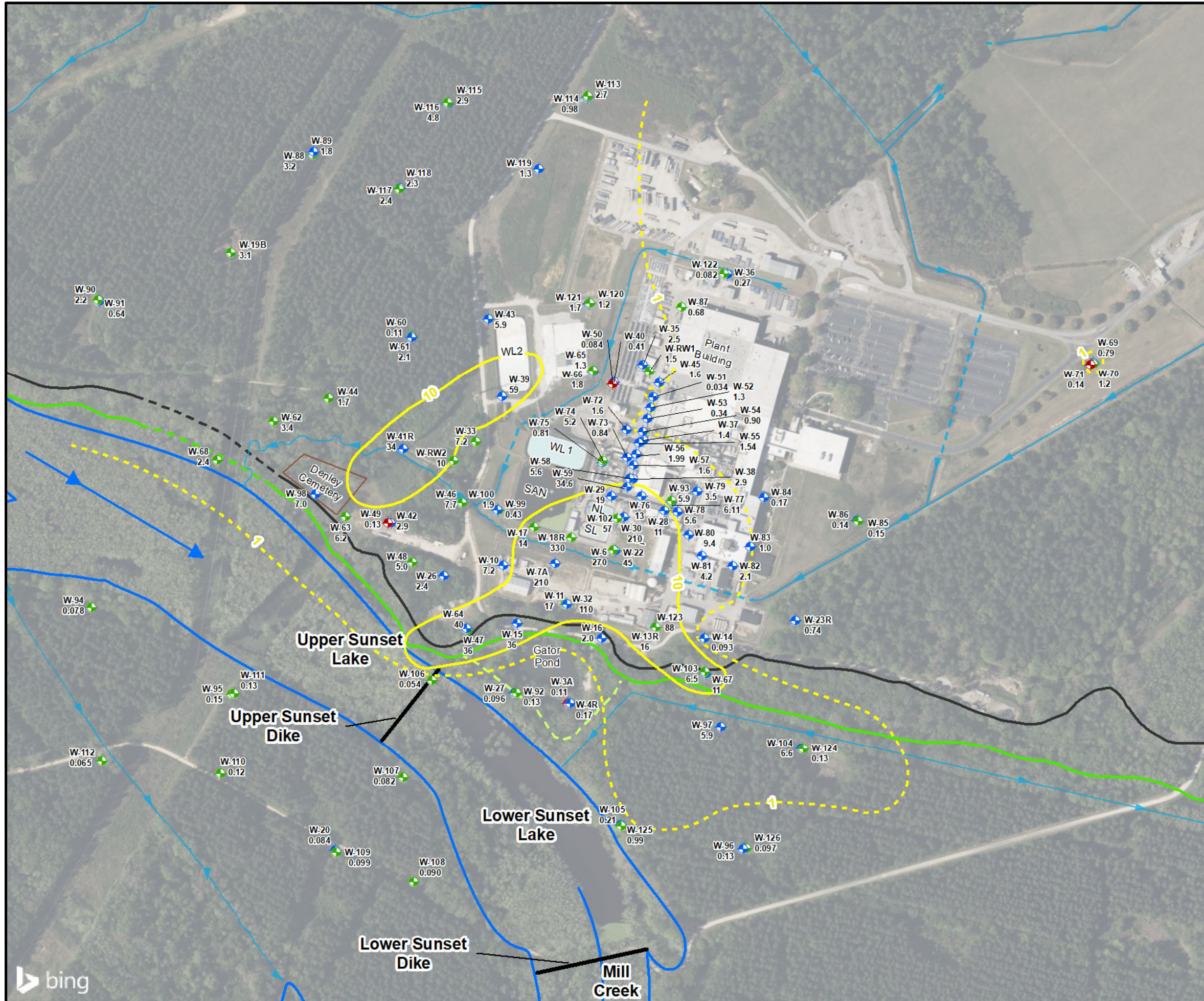
**Notes:**  
 Although the river terrace sediments above and below the bluff are of different geologic ages (Pleistocene-vs-Holocene), they were deposited under similar conditions, have similar lithologies and are hydrogeologically connected as a single surficial aquifer.

0 200 400  
 Feet  
 1 inch = 400 feet

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

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	<b>Extent of VC Surficial Aquifer - Lower Zone April 2024</b>		
WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY HOPKINS, SOUTH CAROLINA			
PROJECT NO. 60700386	PREPARED BY: CCS	DATE: June 2024	<b>FIGURE B8</b>

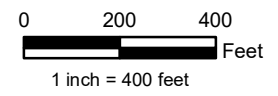




**Legend**

- ◆ Surficial Aquifer - Upper Zone Monitoring Well
  - ◆ Surficial Aquifer - Lower Zone Monitoring Well
  - ◆ Black Creek Aquifer Monitoring Well
  - Ditch
  - - - Culvert
  - Dike Location
  - ▶ Mill Creek Flow Direction
  - ▭ Mill Creek
  - Top of Bluff
  - - - Inferred Top of Bluff
  - Bottom of Bluff
  - - - Inferred Bottom of Bluff
  - - - Secondary Bluff Area
  - Nitrate Isoconcentration Contour (10 mg/L)
  - - - Nitrate Isoconcentration Contour at or Above the Detection Limit (mg/L)
- 330 Nitrate Concentration in mg/L
- EL Former East Lagoon
- NL North Lagoon
- SL South Lagoon
- SAN Sanitary Lagoon
- WL1 West Lagoon 1
- WL2 West Lagoon 2

Notes:  
 Although the river terrace sediments above and below the bluff are of different geologic ages (Pleistocene-vs-Holocene), they were deposited under similar conditions, have similar lithologies and are hydrogeologically connected as a single surficial aquifer.



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



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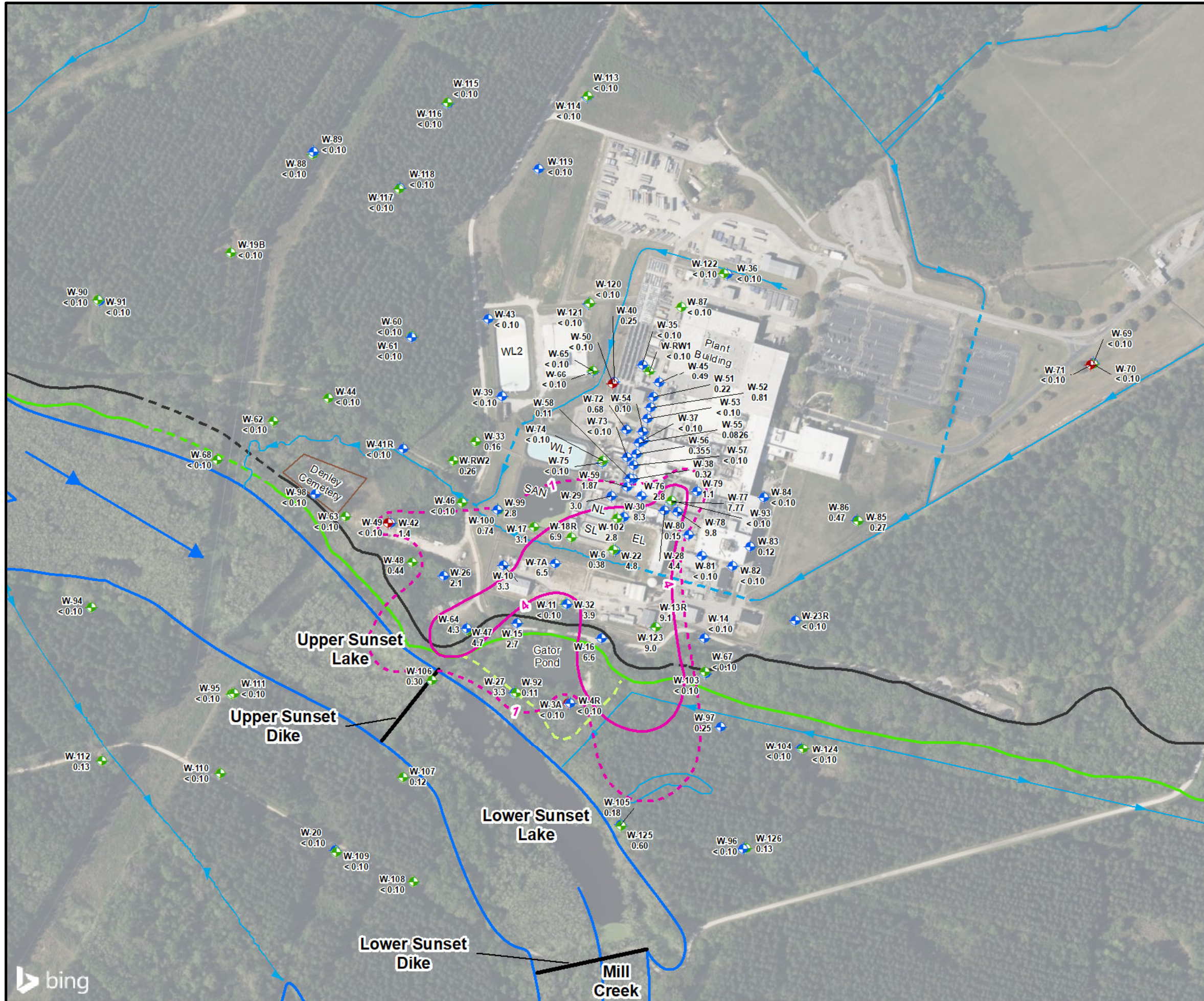
**Extent of Nitrate in Groundwater  
April 2024**

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY  
HOPKINS, SOUTH CAROLINA

PROJECT NO: 60700386	PREPARED BY: CCS	DATE: June 2024	<b>FIGURE B9</b>
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- Legend**
- ◆ Surficial Aquifer - Upper Zone Monitoring Well
  - ◆ Surficial Aquifer - Lower Zone Monitoring Well
  - ◆ Black Creek Aquifer Monitoring Well
  - Ditch
  - - - Culvert
  - Dike Location
  - Mill Creek Flow Direction
  - ▭ Mill Creek
  - Top of Bluff
  - - - Inferred Top of Bluff
  - Bottom of Bluff
  - - - Inferred Bottom of Bluff
  - - - Secondary Bluff Area
  - Fluoride Isoconcentration Contour (4 mg/L)
  - - - Fluoride Isoconcentration Contour at or Above the Detection Limit (mg/L)
- 9.8 Fluoride Concentration in mg/L
- EL Former East Lagoon
- NL North Lagoon
- SL South Lagoon
- SAN Sanitary Lagoon
- WL1 West Lagoon 1
- WL2 West Lagoon 2

**Notes:**  
 Although the river terrace sediments above and below the bluff are of different geologic ages (Pleistocene-vs-Holocene), they were deposited under similar conditions, have similar lithologies and are hydrogeologically connected as a single surficial aquifer.

0 200 400  
 Feet  
 1 inch = 400 feet

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

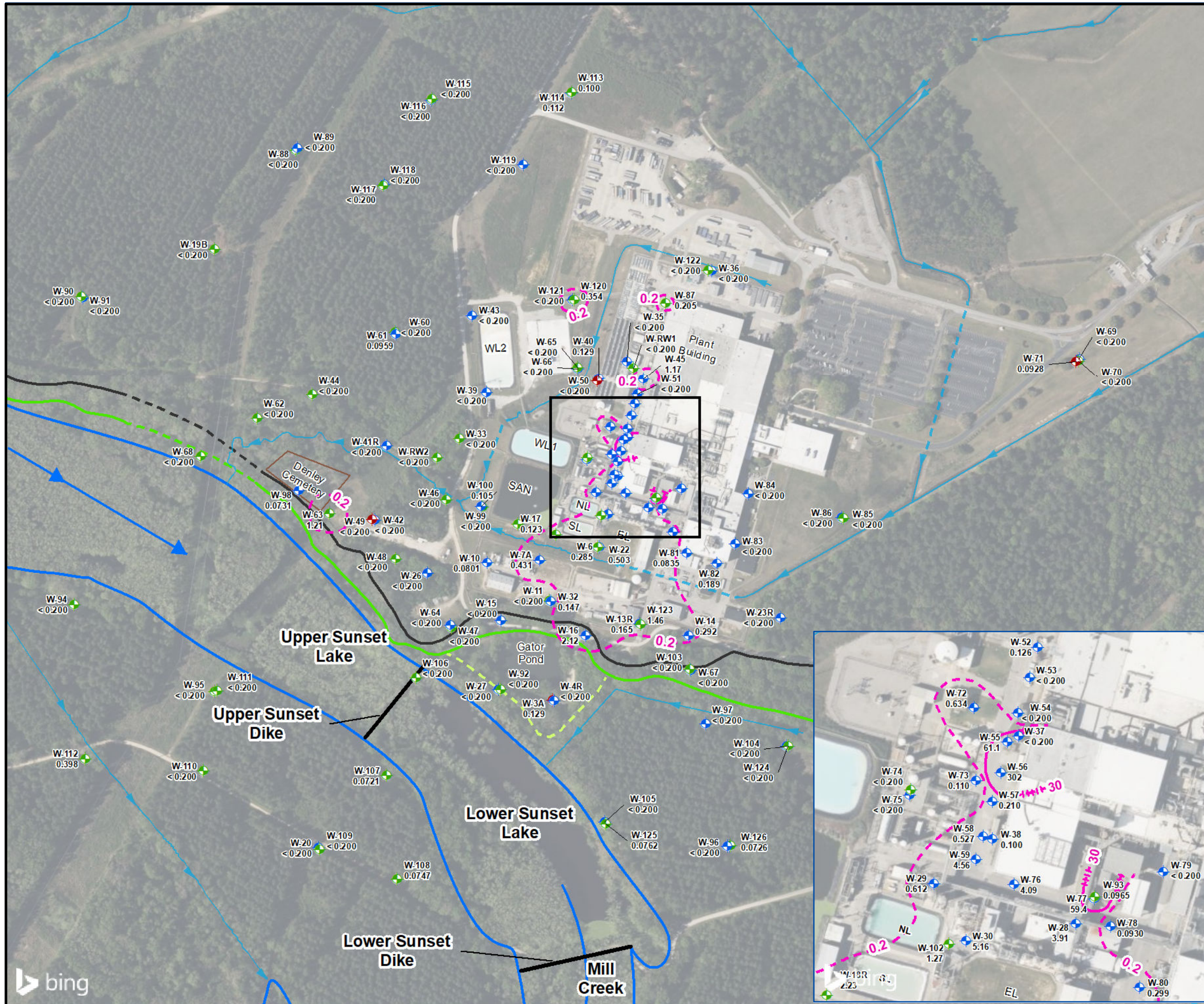
<b>AECOM</b>	101 Research Drive Columbia, SC 29203 T: (803) 254-4400 F: (803) 771-6676

**Extent of Fluoride in Groundwater  
 April 2024**

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY  
 HOPKINS, SOUTH CAROLINA

PROJECT NO. 60700386	PREPARED BY: CCS	DATE: June 2024	<b>FIGURE B10</b>
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**Legend**

- ◆ Surficial Aquifer - Upper Zone Monitoring Well
- ◆ Surficial Aquifer - Lower Zone Monitoring Well
- ◆ Black Creek Aquifer Monitoring Well
- Ditch
- - - Culvert
- Dike Location
- Mill Creek Flow Direction
- ▭ Mill Creek
- Top of Bluff
- - - Inferred Top of Bluff
- Bottom of Bluff
- - - Inferred Bottom of Bluff
- - - Secondary Bluff Area
- Uranium Isoconcentration Contour (30 µg/L)
- - - Uranium Inferred Isoconcentration Contour (µg/L)
- - - Uranium Isoconcentration Contour at or Above the Minimum Detectible Concentration (µg/L)

302 Total Uranium in µg/L  
 J Result below reporting limit  
 EL Former East Lagoon  
 NL North Lagoon  
 SL South Lagoon  
 SAN Sanitary Lagoon  
 WL1 West Lagoon 1  
 WL2 West Lagoon 2

**Notes:**  
 Although the river terrace sediments above and below the bluff are of different geologic ages (Pleistocene-vs-Holocene), they were deposited under similar conditions, have similar lithologies and are hydrogeologically connected as a single surficial aquifer.

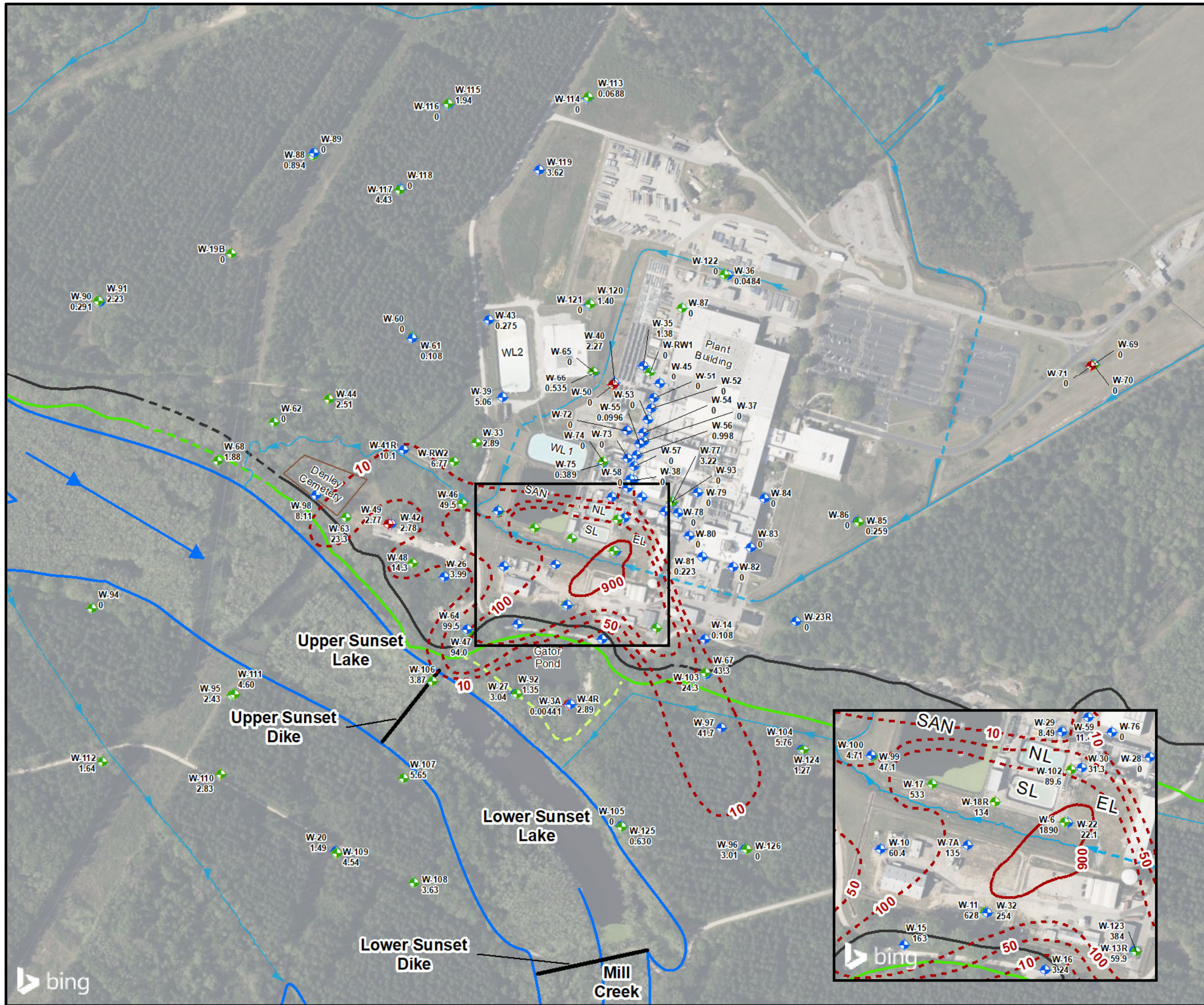
0 200 400  
 1 inch = 400 feet

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



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		<b>Extent of Uranium in Groundwater</b> <b>April 2024</b> WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY HOPKINS, SOUTH CAROLINA	
PROJECT NO. 60700386	PREPARED BY: CCS	DATE: June 2024	<b>FIGURE B11</b>





- ### Legend
- ◆ Surficial Aquifer - Upper Zone Monitoring Well
  - ◆ Surficial Aquifer - Lower Zone Monitoring Well
  - ◆ Black Creek Aquifer Monitoring Well
  - Ditch
  - - - Culvert
  - Dike Location
  - ▶ Mill Creek Flow Direction
  - ▭ Mill Creek
  - Top of Bluff
  - - - Inferred Top of Bluff
  - Bottom of Bluff
  - - - Inferred Bottom of Bluff
  - - - Secondary Bluff Area
  - Tc-99 Isoconcentration Contour (900 pCi/L)
  - - - Tc-99 Isoconcentration Contour at or Above the Minimum Detectable Concentration (pCi/L)
  - 1,890 Technetium-99 Concentration in pCi/L
  - 0 Concentration reported as a negative number by the analytical laboratory
  - EL Former East Lagoon
  - NL North Lagoon
  - SL South Lagoon
  - SAN Sanitary Lagoon
  - WL1 West Lagoon 1
  - WL2 West Lagoon 2

Notes:  
 Although the river terrace sediments above and below the bluff are of different geologic ages (Pleistocene-vs-Holocene), they were deposited under similar conditions, have similar lithologies and are hydrogeologically connected as a single surficial aquifer.

0 200 400  
 Feet  
 1 inch = 400 feet

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

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## Extent of Technetium-99 in Groundwater April 2024

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY  
 HOPKINS, SOUTH CAROLINA

PROJECT NO: 60700386	PREPARED BY: CCS	DATE: June 2024	<b>FIGURE B12</b>
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