



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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Columbia, SC 29201

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e-mail: joynerdp@westinghouse.com
Your ref:
Our ref: LTR-RAC-22-09

February 10, 2022

Subject: **January 2022 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 **January 6, 2021**. The following progress report is for work occurring from **January 1- 31, 2022**:

- (a) Actions during the previous month:
 - Completed the following to support completion of the **RI Report, Item 6** of the CA:
 - Generated plume maps and potentiometric maps for the semi-annual groundwater sampling campaign conducted in October 2021. The maps are included in this monthly report as **Attachment A**. The tabulated results, which were previously submitted to the department in the December 2021 monthly progress report, are also included in this monthly report as **Attachment B**.

- Completed the following to support **Calcium Fluoride (CaF₂) Pad Restoration** Activities:
 - Shipped eleven railcars containing 110 bags of CaF₂ in January per the 3rd NRC Alternate Disposal Request (ADR).
 - Completed radiological surveys of the CaF₂ pad. No areas of elevated radiation were noted compared to background levels.
 - Completed soil sampling on January 7, 2022 in eight locations around the edge of the CaF₂ concrete pad.
 - Removed the fence in the temporary bag storage area and removed 70% of the mats.
- Completed the following to support **Cultural Resources Survey** Activities:
 - Submitted the cultural resources survey report conducted at the site by Brockington and Associates to the SHPO for review.

(b) Results of sampling and tests:

- **CaF₂ Pad Soil Sampling**

Tabulated analytical results of the soil sampling around the edge of the CaF₂ pad, a graphic illustrating the sample locations, and the GEL laboratory report (WO 567201) are included in this monthly report as **Attachment C**. Analytical results were within residential use screening levels (RUSLs) identified in site procedure RA-433 except one (CF-010722-08), which exceeded the U-234 RUSL at 13.3 versus 13 pCi/g. For this sample, the “Sum of Fractions” (SOF) approach resulted in a value of 1.3 vs. a residential screening level of 1.0. The CaF₂ pad is an industrial use area of the site, and the result is well below the Industrial Use Screening Level (IUSL) of 3,310 pCi/g for U-234. Further evaluation of the data is planned in conjunction with the other soil/sediment samples collected during the Phase II RI fieldwork.

(c) Brief description of all actions which are scheduled for the next month:

In accordance with **Item 4** of the CA, Westinghouse will continue to implement the Work Plan to include the following actions:

- Continue CaF₂ railcar shipments.
- Clean and the remove remaining mats in the CaF₂ temporary storage area.
- Continue working on item #6 of the Consent Agreement, the Remedial Investigation Report.

(d) Percentage of work completed and any delays encountered or anticipated:

- 35% of the **RI Report** scope is completed.
- 100% of Phase II **field** work scope completed.
- 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
ENOVIA Records

Attachment A: Potentiometric and Plume Maps, October 2021 Semi-annual GW Sampling Campaign

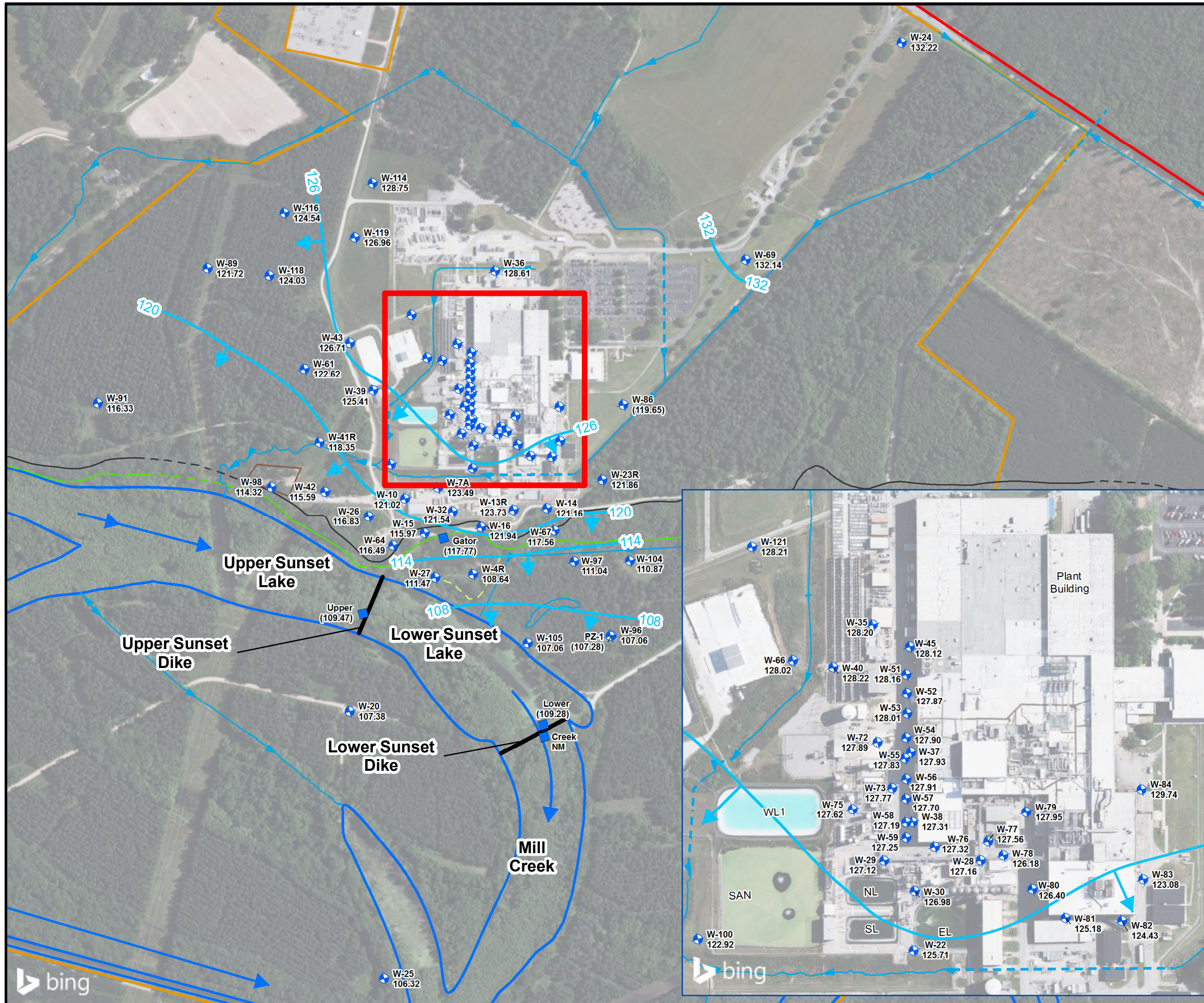
Attachment B: Tabulated Groundwater Wells Analytical Results, October 2021 (118 wells)

Attachment C: CaF₂ Pad Soil Sampling Results

- Tabulated Soil Sampling Results and Sum of Fractions Calculations
- CaF₂ Pad Soil Sampling Location Map
- GEL Laboratory Results, WO 567201

Attachment A

Potentiometric and Plume Maps October 2021 Semi-annual GW Sampling Campaign



Legend

- Surficial Aquifer - Upper Zone Monitoring Well
- Mill Creek
- Property Line
- SCRDI Bluff Road (Superfund Site)
- Denley Cemetery
- 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 East Lagoon
- NL North Lagoon
- SL South Lagoon
- SAN Sanitary Lagoon
- WL1 West Lagoon I
- WL2 West Lagoon II
- Potentiometric Line (C.I. = 6 feet)
- Direction of Groundwater
- 129.74 Groundwater Elevation
- (119.65) Elevation for illustrative purposes only

Based upon data collected on October 4, 2021

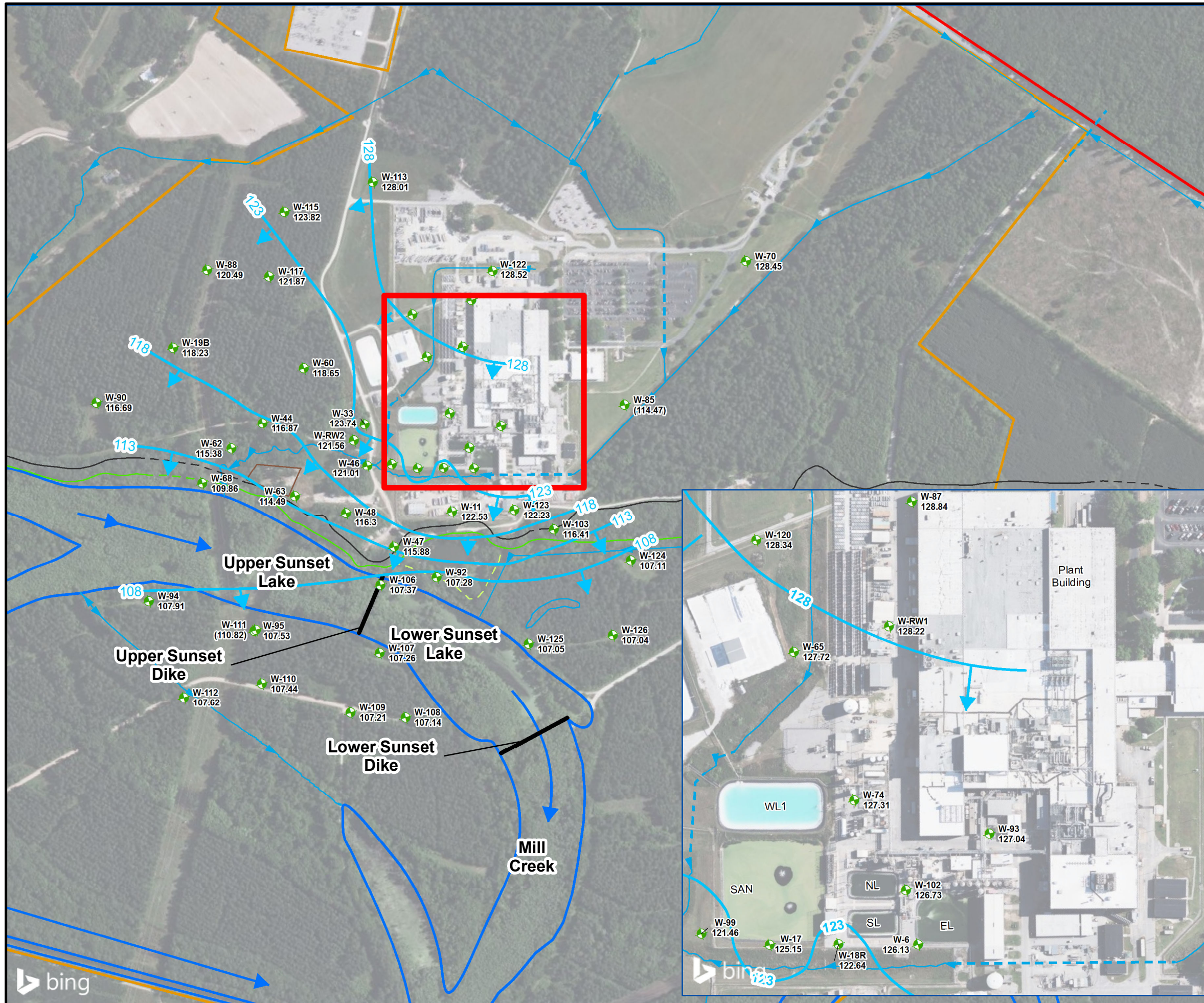
0 300 600 Feet
1:7,200

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

AECOM 101 Research Drive
Columbia, SC 29203
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Surficial Aquifer - Upper Zone Potentiometric Map October 2021
WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO. 60595649	PREPARED BY. LJG	DATE. February 2022	FIGURE A1
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Legend

- Surficial Aquifer - Lower Zone Monitoring Well
- Mill Creek
- Property Line
- SCRDI Bluff Road (Superfund Site)
- Denley Cemetery
- 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 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
- 128.84 Groundwater Elevation
- (114.47) Elevation for illustrative purposes only

Based upon data collected on October 4, 2021

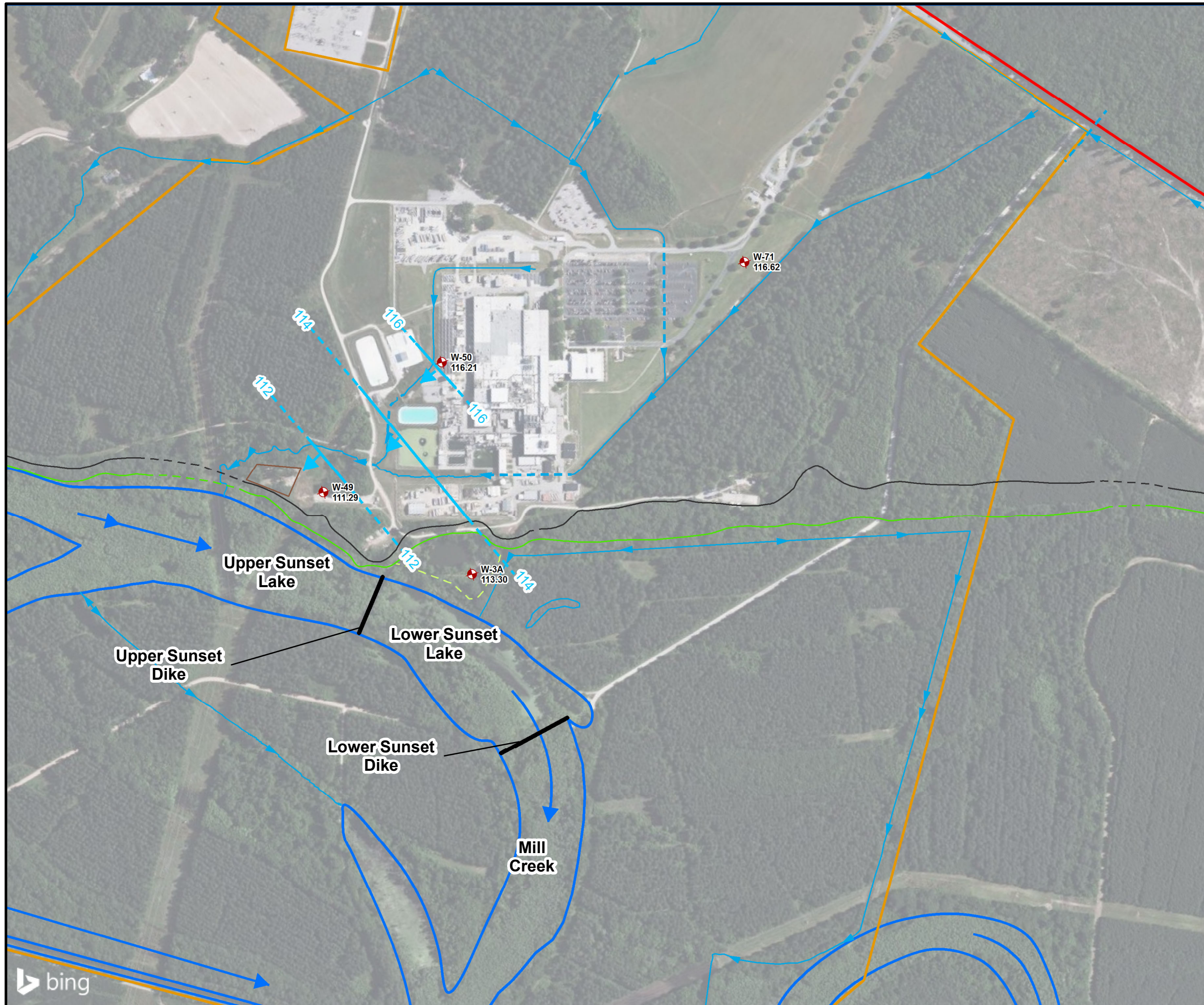
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Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet
Datum: North American 1983

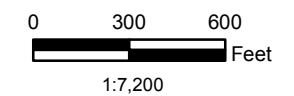
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Surficial Aquifer - Lower Zone Potentiometric Map October 2021
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HOPKINS, SOUTH CAROLINA

PROJECT NO. 60595649	PREPARED BY: LJG	DATE: February 2022	FIGURE A2
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- Legend**
- ◆ Black Creek Aquifer Monitoring Well
 - Mill Creek
 - Property Line
 - SCRDI Bluff Road (Superfund Site)
 - Denley Cemetery
 - - - 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 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, dashed where inferred)
 - ▶ Direction of Groundwater
- 116.21 Groundwater Elevation
Based upon data collected on October 4, 2021



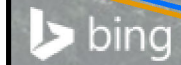
Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet
Datum: North American 1983

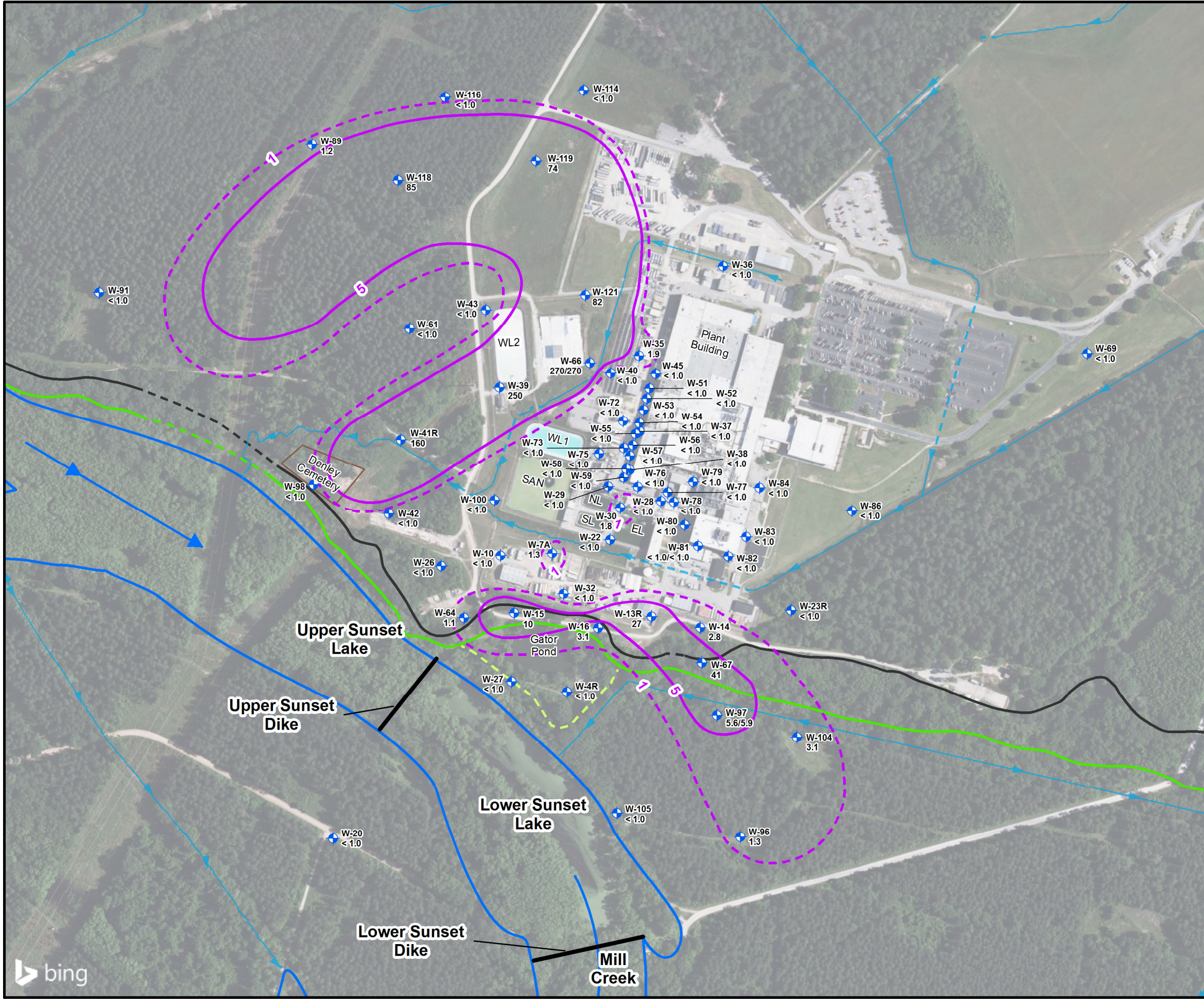


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**Black Creek Aquifer
Potentiometric Map October 2021**
WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO. 60595649	PREPARED BY: LJG	DATE: February 2022	FIGURE A3
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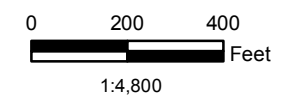


Legend

- 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 (µg/L)
 - PCE Isoconcentration Contour at a concentration less than the maximum contaminant level (µg/L)
- 270 PCE Concentration in µg/L
 EL East Lagoon
 NL North Lagoon
 SL South Lagoon
 SAN Sanitary Lagoon
 WL1 West Lagoon 1
 WL2 West Lagoon 2

Notes:

Based upon data collected in October 2021. 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

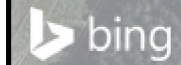


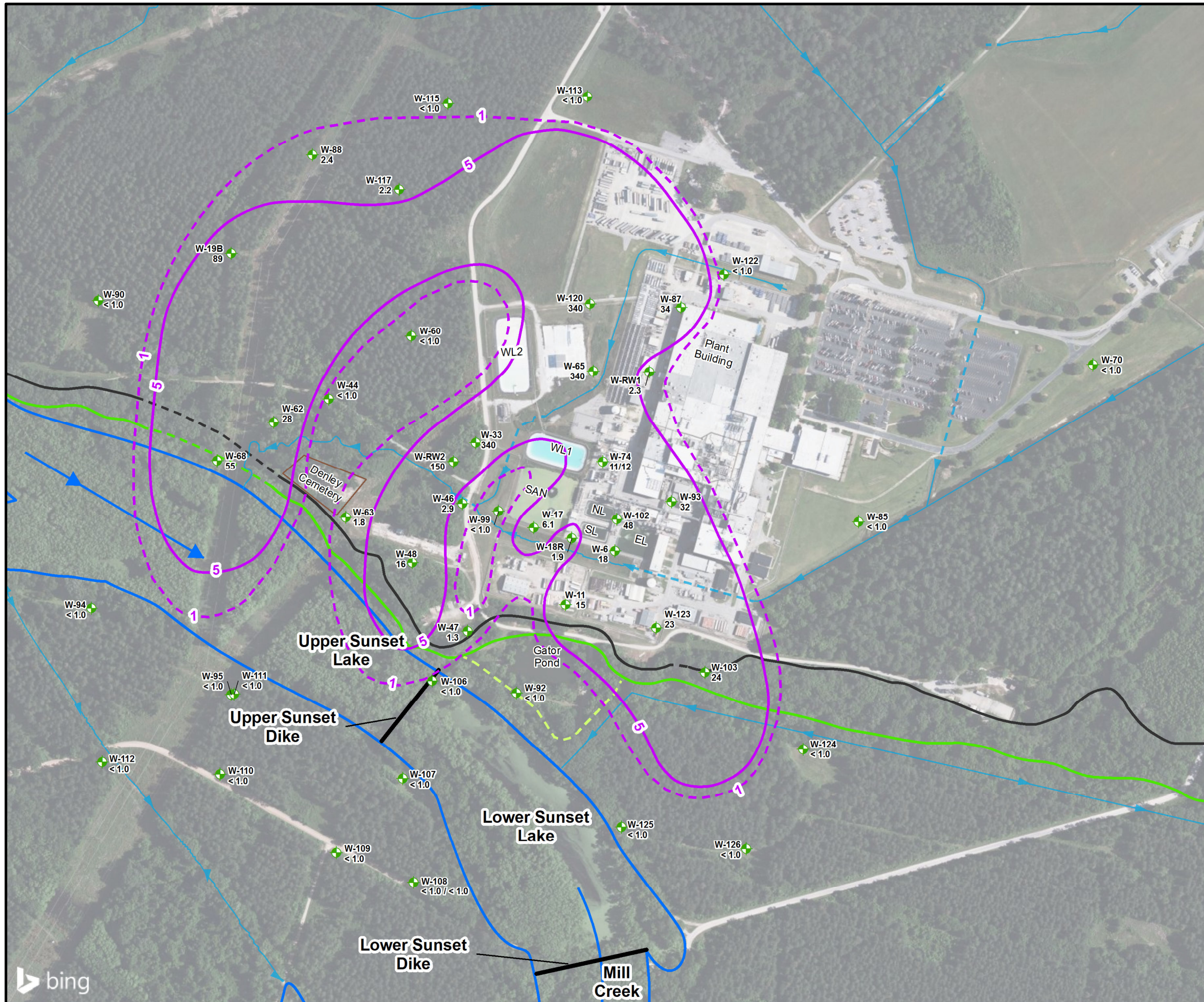
AECOM	101 Research Drive Columbia, SC 29203 T: (803) 254-4400 F: (803) 771-6676
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**Extent of PCE -
 Surficial Aquifer - Upper Zone
 October 2021**

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
 HOPKINS, SOUTH CAROLINA

PROJECT NO. 60595649	PREPARED BY: LJG	DATE: February 2022	FIGURE A4
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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 (µg/L)
 - PCE Isoconcentration Contour at a concentration less than the Maximum Contaminant Level (µg/L)
- 340 PCE Concentration in µg/L
 EL East Lagoon
 NL North Lagoon
 SL South Lagoon
 SAN Sanitary Lagoon
 WL1 West Lagoon 1
 WL2 West Lagoon 2

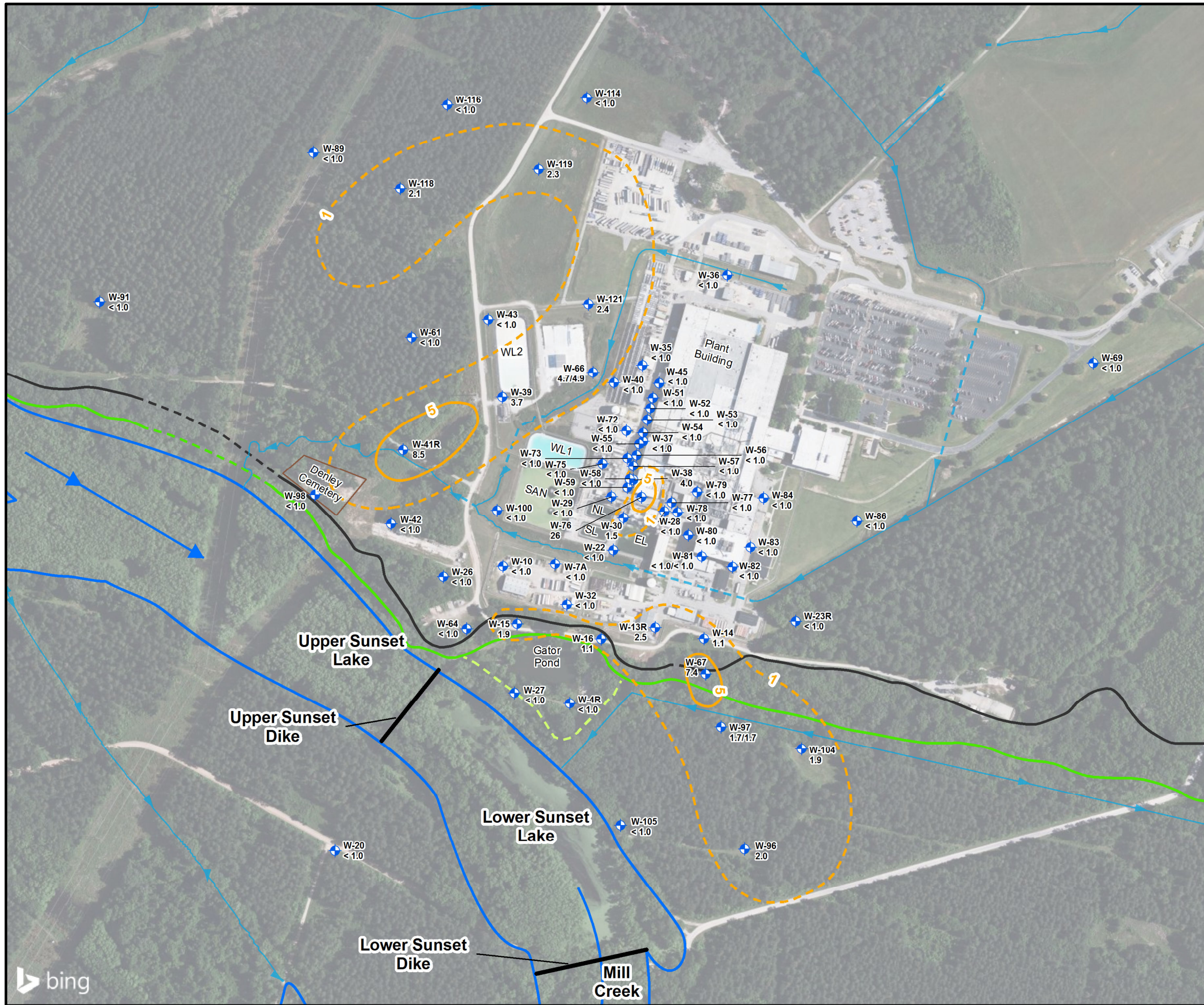
Notes:
 Based upon data collected in October 2021. Although the river terrace sediments above and below the bluff are of different geologic ages (Pleistocene-vs-Holocene), they were deposited under similar conditions, have similar lithologies and are hydrogeologically connected as a single surficial aquifer.

0 200 400 Feet
 1:4,800

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



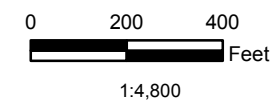
AECOM	101 Research Drive Columbia, SC 29203 T: (803) 254-4400 F: (803) 771-6676		
	Extent of PCE Surficial Aquifer - Lower Zone October 2021		
WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY HOPKINS, SOUTH CAROLINA			
PROJECT NO. 60595649	PREPARED BY: LJG	DATE: February 2022	FIGURE A5



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 (ug/L)
- TCE Isoconcentration Contour at a concentration less than the Maximum Contaminant Level (ug/L)
- 26 TCE Concentration in ug/L
- EL East Lagoon
- NL North Lagoon
- SL South Lagoon
- SAN Sanitary Lagoon
- WL1 West Lagoon 1
- WL2 West Lagoon 2

Notes:
 Based upon data collected in October 2021.
 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

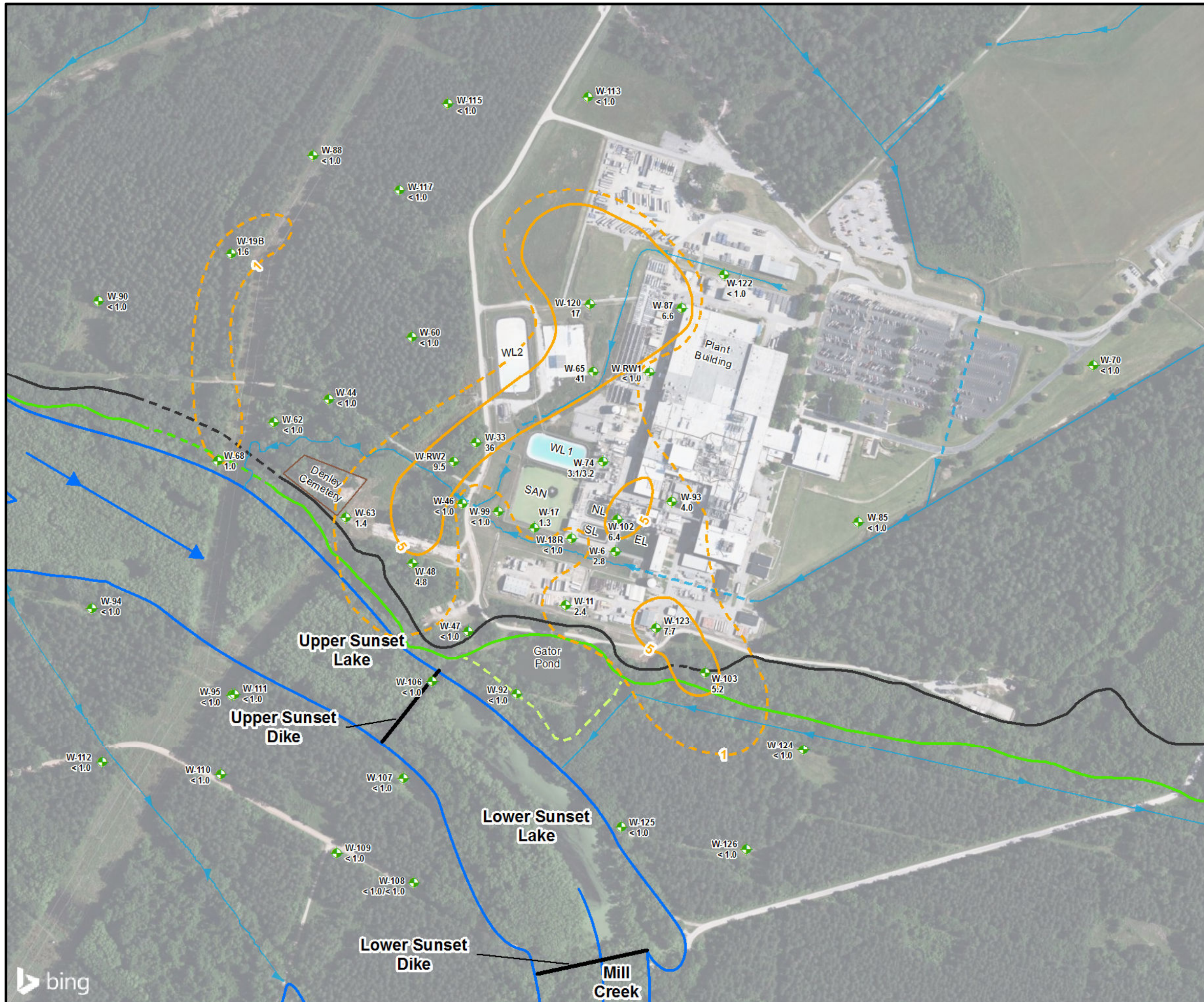
AECOM	101 Research Drive Columbia, SC 29203 T: (803) 254-4400 F: (803) 771-6676
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**Extent of TCE
 Surficial Aquifer - Upper Zone
 October 2021**

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
 HOPKINS, SOUTH CAROLINA

PROJECT NO. 60595649	PREPARED BY: LJG	DATE: February 2022	FIGURE A6
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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
- TCE Isoconcentration Contour (ug/L)
- TCE Isoconcentration Contour at a concentration less than the Maximum Contaminant Level (ug/L)

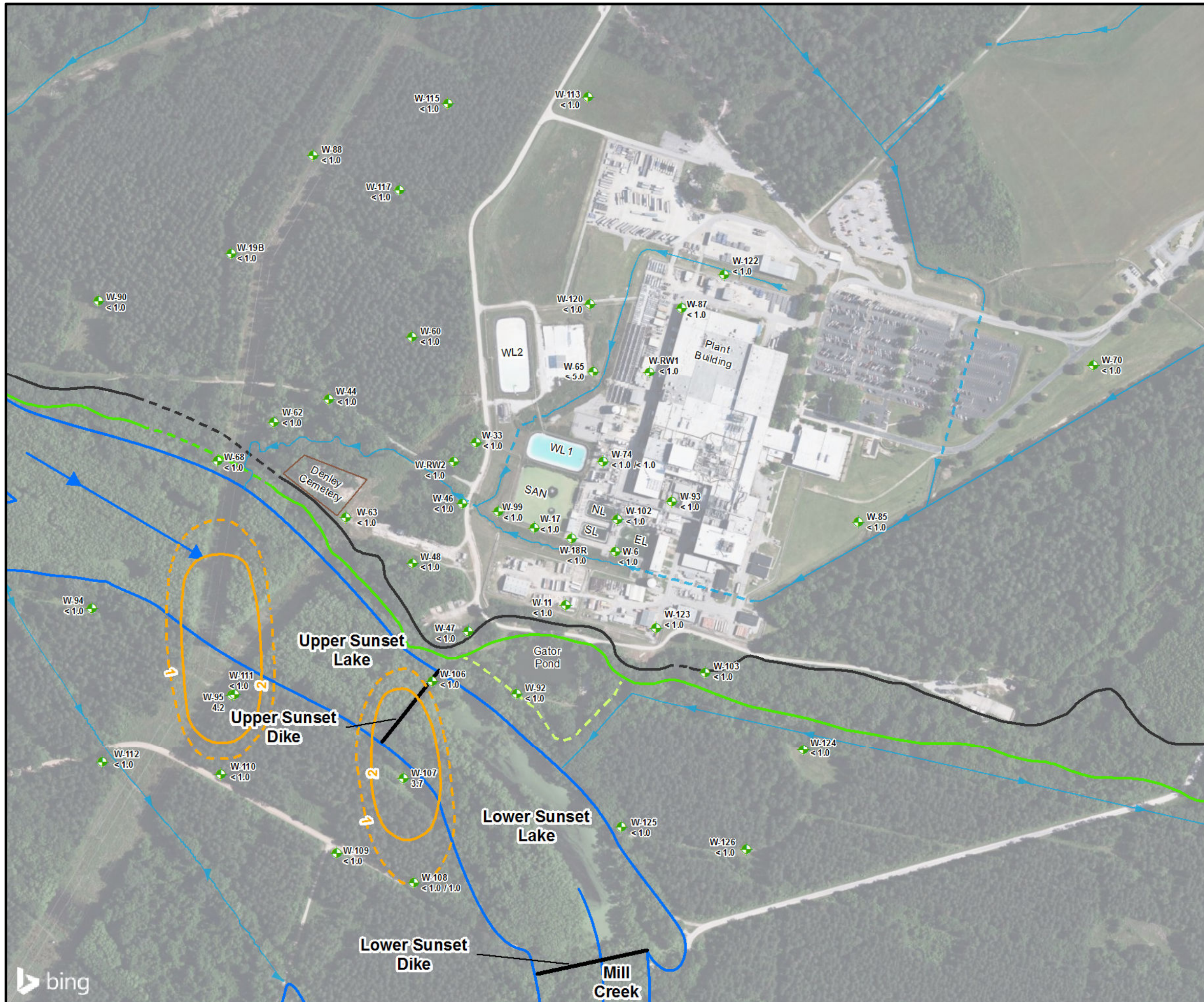
41 TCE Concentration in ug/L
 EL East Lagoon
 NL North Lagoon
 SL South Lagoon
 SAN Sanitary Lagoon
 WL1 West Lagoon 1
 WL2 West Lagoon 2

Notes:
 Based upon data collected in October 2021. 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
 1:4,800

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

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Extent of TCE Surficial Aquifer - Lower Zone October 2021			
WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY HOPKINS, SOUTH CAROLINA			
PROJECT NO. 60595649	PREPARED BY: LJG	DATE: February 2022	FIGURE A7



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 (ug/L)
- VC Isoconcentration Contour at a concentration less than the Maximum Contaminant Level (ug/L)

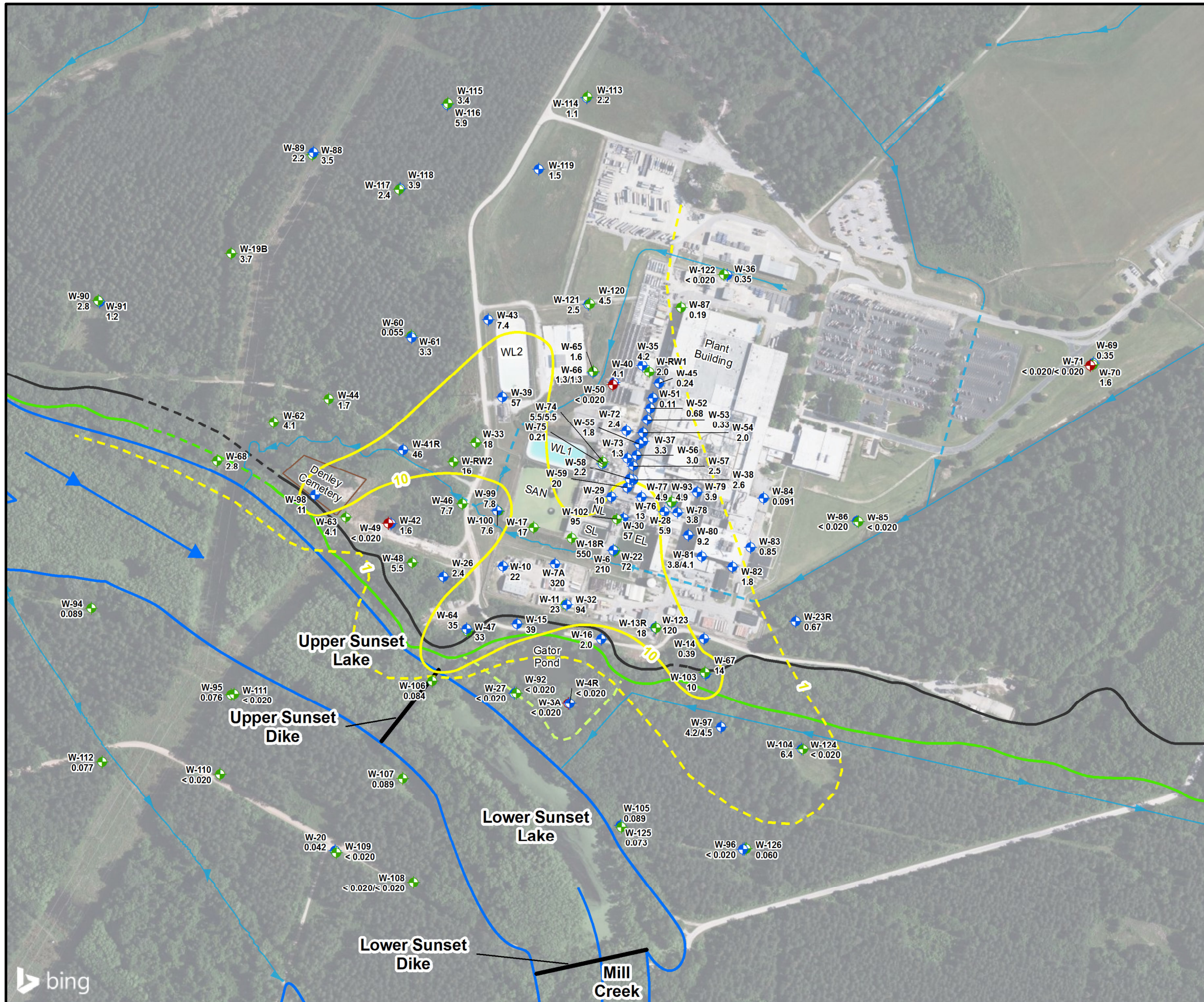
4.2 VC Concentration in ug/L
 EL East Lagoon
 NL North Lagoon
 SL South Lagoon
 SAN Sanitary Lagoon
 WL1 West Lagoon 1
 WL2 West Lagoon 2

Notes:
 Based upon data collected in October 2021. 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
 1:4,800

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

		101 Research Drive Columbia, SC 29203 T: (803) 254-4400 F: (803) 771-6676	
Extent of VC Surficial Aquifer - Lower Zone October 2021			
WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY HOPKINS, SOUTH CAROLINA			
PROJECT NO. 60595649	PREPARED BY LJG	DATE February 2022	FIGURE A8



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 (mg/L)
- Nitrate Isoconcentration Contour at a concentration less than the Maximum Contaminant Level (mg/L)

550 Nitrate Concentration in mg/L

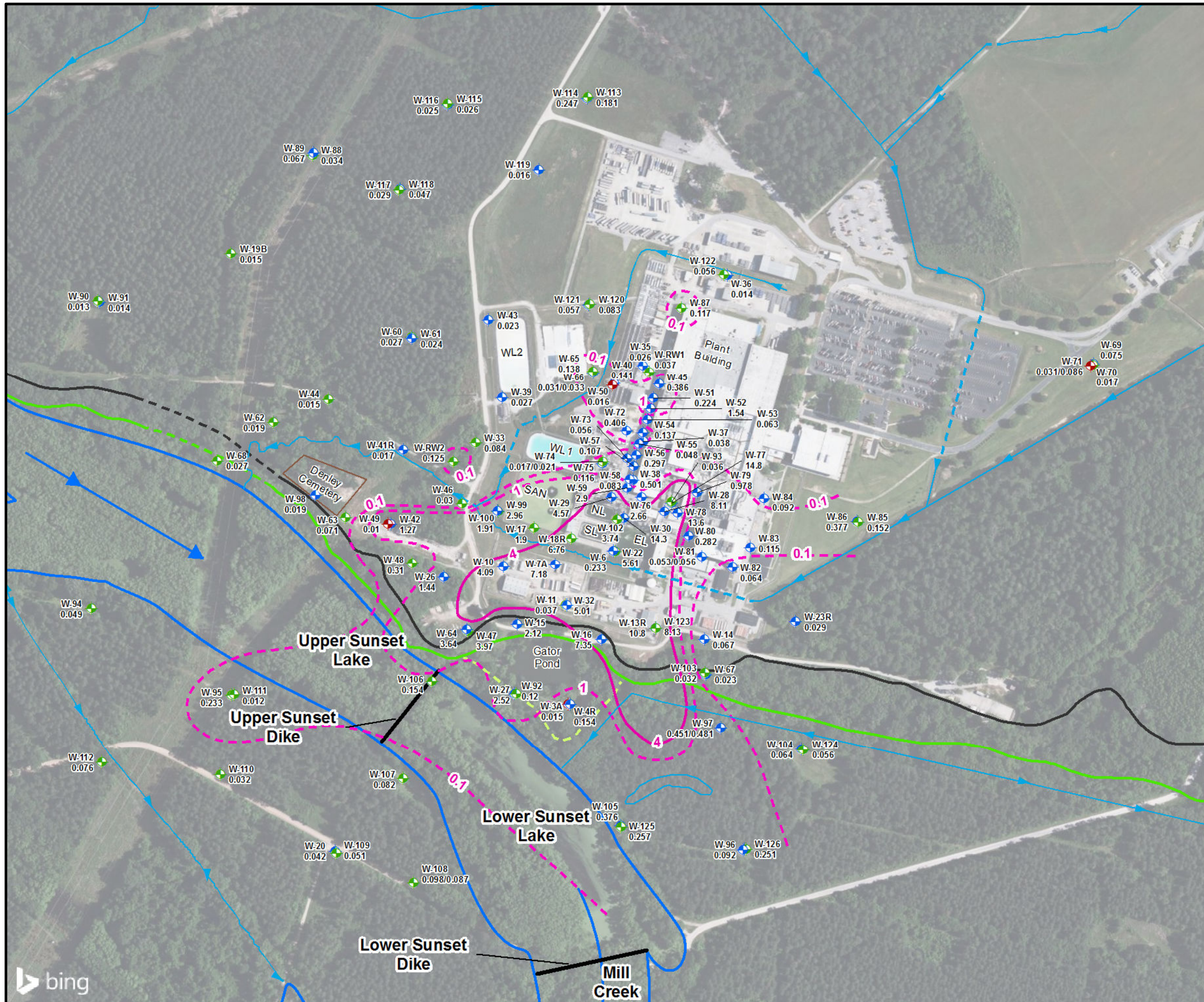
EL East Lagoon
 NL North Lagoon
 SL South Lagoon
 SAN Sanitary Lagoon
 WL1 West Lagoon 1
 WL2 West Lagoon 2

Notes:
 Based upon data collected in October 2021.
 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.

1:4,800

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 Nitrate in Groundwater October 2021			
WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY HOPKINS, SOUTH CAROLINA			
PROJECT NO. 60595649	PREPARED BY. LJG	DATE. February 2022	FIGURE A9



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 (mg/L)
- - - Fluoride Isoconcentration Contour at a concentration less than the Maximum Contaminant Level (mg/L)

14.8 Fluoride Concentration in mg/L

EL East Lagoon
 NL North Lagoon
 SL South Lagoon
 SAN Sanitary Lagoon
 WL1 West Lagoon 1
 WL2 West Lagoon 2

Notes:
 Based upon data collected in October 2021. 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
 1:4,800

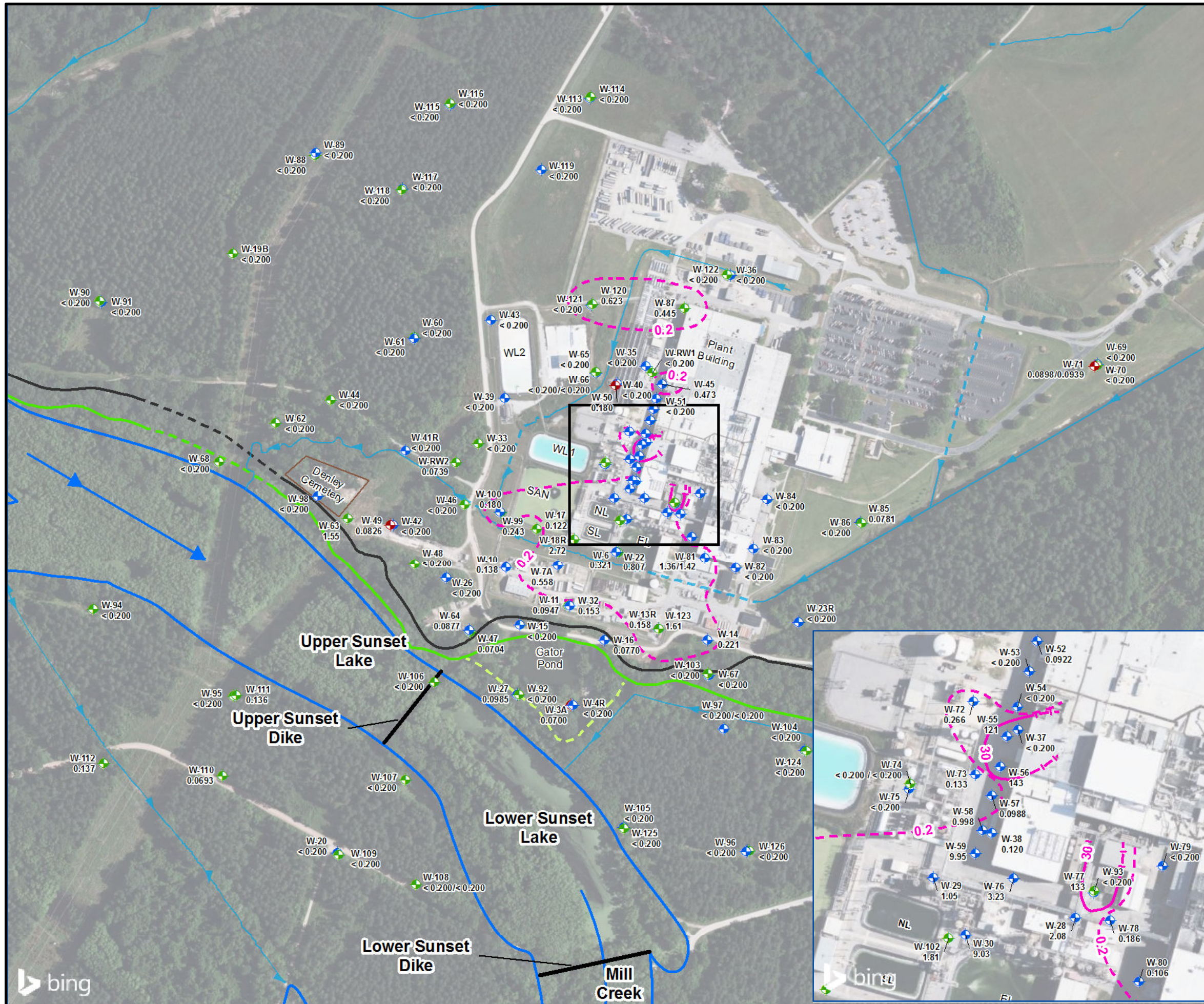
Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet
 NAD: North American Datum 1983

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**Extent of Fluoride in Groundwater
 October 2021**

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
 HOPKINS, SOUTH CAROLINA

PROJECT NO. 60595649	PREPARED BY: LJG	DATE: February 2022	FIGURE A10
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Legend

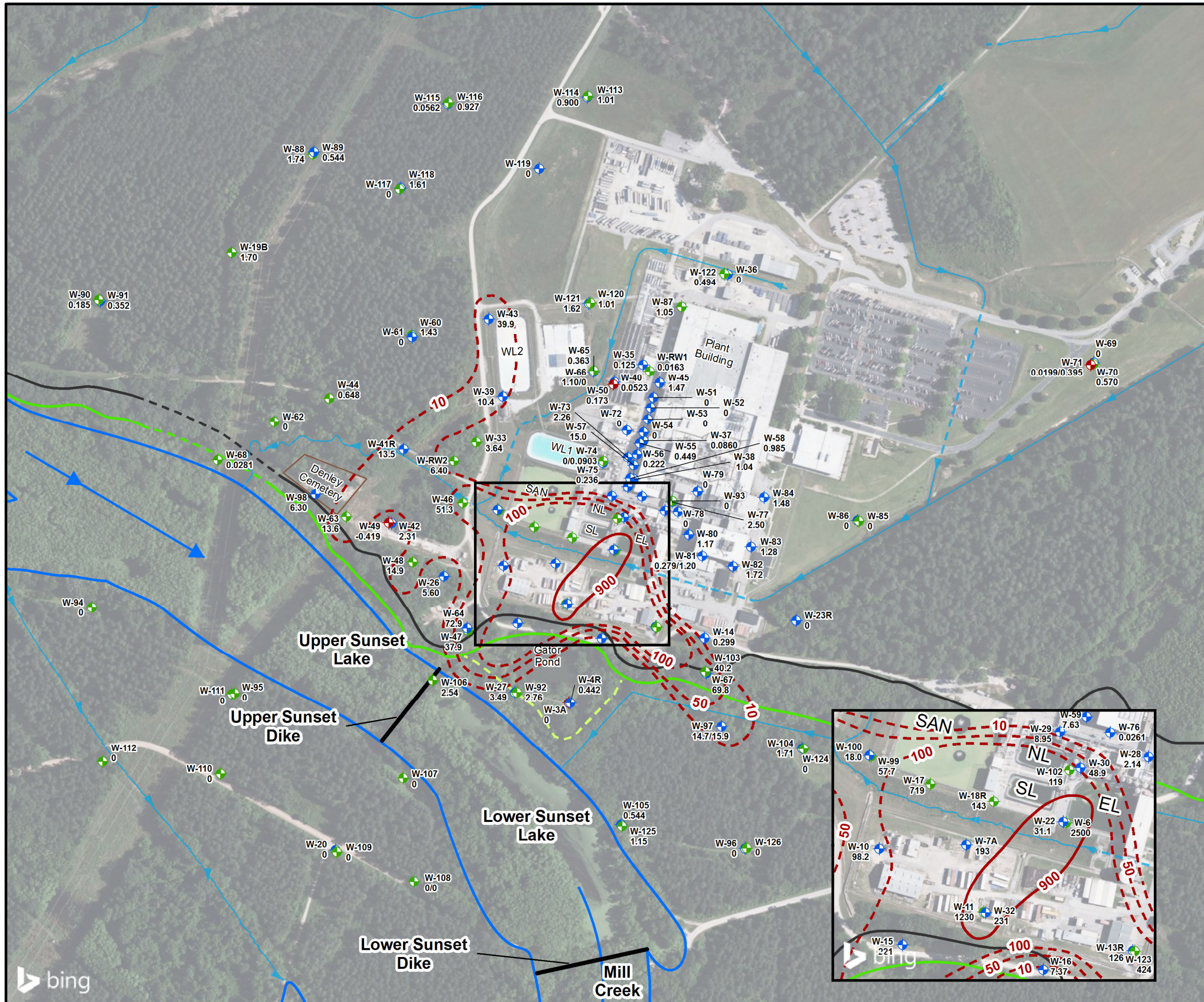
- ◆ Surficial Aquifer - Upper Zone Monitoring Well
- ◆ Surficial Aquifer - Lower Zone Monitoring Well
- ◆ Black Creek Aquifer Monitoring Well
- Ditch
- - - Culvert
- Dike Location
- ▶ Mill Creek Flow Direction
- ▭ Mill Creek
- Top of Bluff
- - - Inferred Top of Bluff
- Bottom of Bluff
- - - Inferred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

143 Total Uranium in µg/L
 EL East Lagoon
 NL North Lagoon
 SL South Lagoon
 SAN Sanitary Lagoon
 WL1 West Lagoon 1
 WL2 West Lagoon 2

Notes:
 Based upon data collected in October 2021.
 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
 1:4,800
 Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet
 Datum: North American 1983

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		Extent of Uranium in Groundwater in October 2021 WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY HOPKINS, SOUTH CAROLINA	
PROJECT NO. 60595649	PREPARED BY: CCS	DATE: February 2022	FIGURE A11



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 (pCi/L)
- - - Tc-99 Isoconcentration Contour at or Above the Minimum Detectable Concentration (pCi/L)

2500 Technetium-99 Concentration in pCi/L
 0 Concentration reported as a negative number by the analytical laboratory

EL East Lagoon
 NL North Lagoon
 SL South Lagoon
 SAN Sanitary Lagoon
 WL1 West Lagoon 1
 WL2 West Lagoon 2

Notes:
 Based upon data collected in October 2021. 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.

1:4,800
 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 October 2021			
WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY HOPKINS, SOUTH CAROLINA			
PROJECT NO. 60595649	PREPARED BY. LJG	DATE. February 2022	FIGURE A12

Attachment B

Tabulated Groundwater Wells Analytical Results October 2021 (118 wells)

Attachment B

Tabulated Groundwater Wells Analytical Results, October 2021

Westinghouse Columbia Fuel Fabrication Facility, Hopkins, SC

					Well Date Type	W-92	W-93	W-94	W-95	W-96	W-97	W-97	W-98	W-99	W-100	W-102	W-103	W-104	W-105
						10/22/2021 12:01 N	10/6/2021 9:49 N	10/26/2021 10:24 N	10/26/2021 11:13 N	10/25/2021 8:53 N	10/25/2021 13:50 N	10/25/2021 13:50 FD	10/19/2021 14:51 N	10/15/2021 13:00 N	10/15/2021 12:03 N	10/8/2021 10:39 N	10/18/2021 12:22 N	10/25/2021 11:46 N	10/25/2021 11:26 N
Group	Analyte	MCL	note	Units															
Radiological	Alpha particles	15	*	pCi/L	3.35	2.17 #	3.82 #	2.57 #	0.893 #	1.69 #	0.808 #	2.36 #	1.01 #	2.75 #	6.57	0 ##	0.457 #	0.634 #	
Radiological	Beta particles	50	*	pCi/L	0.885 #	3.21 #	5.78	3.99	2.22 #	10.3	12.9	16.3	40.6	23.9	80.6	7.53	4.20 #	2.20 #	
Radiological	Tritium			pCi/L															
Radiological	Technetium-99	900		pCi/L	2.76 #	0 ##	0 ##	0 ##	0 ##	14.7	15.9	6.30	57.7	18.0	119	40.2	1.71 #	0.544 #	
Radiological	Uranium-233/234			pCi/L	0.0378 #	0.264	0 ##	0 ##	0.0564 #	0 ##	0.0789 #	0 ##	0.314 #	0.0196 #	1.81	0 ##	0.111 #	0 ##	
Radiological	Uranium-235/236			pCi/L	0 ##	0.101 #	0 ##	0 ##	0.0586 #	0.0222 #	0 ##	0.0516 #	0.0255 #	0.0619 #	0.136	0 ##	0.0696 #	0 ##	
Radiological	Uranium-238			pCi/L	0 ##	0.0520 #	0 ##	0 ##	0 ##	0 ##	0 ##	0 ##	0.130 #	0 ##	0.396	0 ##	0.0806 #	0.0794 #	
Radiological	Percent Uranium-235			%	0 #	0 #	0 #	0 #	0 #	0 #	0 #	0 #	0 #	0 #	5.06	0 #	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	< 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	0.0312 J	< 0.0700	< 0.0700	< 0.0700	
Radiological	Uranium-238			ug/L	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	0.243	0.180 J	1.78	< 0.200	< 0.200	< 0.200	
Radiological	Total Uranium Isotopes	30		ug/L	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	0.243	0.180 J	1.81	< 0.200	< 0.200	< 0.200	
Chemical	Fluoride	4		mg/L	0.12	0.036 J	0.049 J	0.233	0.092 J	0.481	0.451	0.019 J	2.96	1.91	3.74	0.032 J	0.064 J	0.376	
Chemical	Nitrate as N	10		mg/L	< 0.020	4.9	0.089	0.076	< 0.020	4.5	4.2	11	7.8	7.6	95	10	6.4	0.089	
Chemical	Ammonia as N			mg/L	4.39	0.0174 J	0.275	0.203	0.241	7.35	8.65	0.356	3.25	8.27	35.1	0.387	1.45	0.721	
VOCs	Acetone			ug/L	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	
VOCs	Benzene	5		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	
VOCs	Bromodichloromethane			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	
VOCs	Bromoform			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	
VOCs	Bromomethane			ug/L	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	
VOCs	2-Butanone			ug/L	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	
VOCs	Carbon disulfide			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	
VOCs	Carbon tetrachloride	5		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	
VOCs	Chlorobenzene	100		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	
VOCs	Chloroethane			ug/L	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	
VOCs	Chloroform			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	
VOCs	Chloromethane			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	
VOCs	Cyclohexane			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	
VOCs	1,2-Dibromo-3-chloropropane	0.2		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	
VOCs	Dibromochloromethane			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	
VOCs	1,2-Dibromoethane	0.05		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	
VOCs	1,2-Dichlorobenzene	600		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	
VOCs	1,3-Dichlorobenzene			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	
VOCs	1,4-Dichlorobenzene	75		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	
VOCs	1,1-Dichloroethane			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	
VOCs	Dichlorodifluoromethane			ug/L	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	
VOCs	1,2-Dichloroethane	5		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	
VOCs	1,1-Dichloroethene	7		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	
VOCs	cis-1,2-Dichloroethene	70		ug/L	< 1.0	< 1.0	5.8	2.4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	5.1	< 1.0	< 1.0	< 1.0	
VOCs	trans-1,2-Dichloroethene	100		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	
VOCs	1,2-Dichloropropane	5		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	
VOCs	cis-1,3-Dichloropropene			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	
VOCs	trans-1,3-Dichloropropene			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	
VOCs	Ethylbenzene	700		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	
VOCs	2-Hexanone			ug/L	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	
VOCs	(1-Methylethyl)-Benzene			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	
VOCs	Methyl acetate			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	
VOCs	Methyl tert-butyl ether			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	
VOCs	4-Methyl-2-pentanone			ug/L	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	
VOCs	Methylcyclohexane			ug/L	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	
VOCs	Methylene chloride	5		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	
VOCs	Styrene	100		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	
VOCs	1,1,2,2-Tetrachloroethane			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	
VOCs	Tetrachloroethene	5		ug/L	< 1.0	32	< 1.0	< 1.0	1.3	5.6	5.9	< 1.0	< 1.0	< 1.0	48	24	3.1	< 1.0	
VOCs	Toluene	1000		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	
VOCs	1,1,2-Trichloro-1,2,2-trifluoroethane			ug/L	< 1.0	< 1.0	< 1.0	< 1											

Attachment B

Tabulated Groundwater Wells Analytical Results, October 2021

Westinghouse Columbia Fuel Fabrication Facility, Hopkins, SC

Group	Analyte	MCL	note	Well Date Type	W-RW2	W-26	W-41R	W-48
					10/21/2021 10:03 N	10/19/2021 11:53 N	10/21/2021 9:06 N	10/19/2021 13:35 N
				Units				
SVOCs	1,1'-Biphenyl			ug/L	< 0.80	< 0.80	< 0.80	< 0.80
SVOCs	2,4,5-Trichlorophenol			ug/L	< 0.80	< 0.80	< 0.80	< 0.80
SVOCs	2,4,6-Trichlorophenol			ug/L	< 0.80	< 0.80	< 0.80	< 0.80
SVOCs	2,4-Dichlorophenol			ug/L	< 0.80	< 0.80	< 0.80	< 0.80
SVOCs	2,4-Dimethylphenol			ug/L	< 0.80	< 0.80	< 0.80	< 0.80
SVOCs	2,4-Dinitrophenol			ug/L	< 4.0	< 4.0	< 4.0	< 4.0
SVOCs	2,4-Dinitrotoluene			ug/L	< 1.6	< 1.6	< 1.6	< 1.6
SVOCs	2,6-Dinitrotoluene			ug/L	< 1.6	< 1.6	< 1.6	< 1.6
SVOCs	2-Chloronaphthalene			ug/L	< 0.80	< 0.80	< 0.80	< 0.80
SVOCs	2-Chlorophenol			ug/L	< 0.80	< 0.80	< 0.80	< 0.80
SVOCs	2-Methylnaphthalene			ug/L	< 0.16	< 0.16	< 0.16	< 0.16
SVOCs	2-Methylphenol			ug/L	< 0.80	< 0.80	< 0.80	< 0.80
SVOCs	2-Nitroaniline			ug/L	< 1.6	< 1.6	< 1.6	< 1.6
SVOCs	2-Nitrophenol			ug/L	< 1.6	< 1.6	< 1.6	< 1.6
SVOCs	3,3'-Dichlorobenzidine			ug/L	< 4.0	< 4.0	< 4.0	< 4.0
SVOCs	3-Nitroaniline			ug/L	< 1.6	< 1.6	< 1.6	< 1.6
SVOCs	4,6-Dinitro-2-methylphenol			ug/L	< 4.0	< 4.0	< 4.0	< 4.0
SVOCs	4-Bromophenyl phenyl ether			ug/L	< 0.80	< 0.80	< 0.80	< 0.80
SVOCs	4-Chloro-3-methylphenol			ug/L	< 0.80	< 0.80	< 0.80	< 0.80
SVOCs	4-Chloroaniline			ug/L	< 0.80	< 0.80	< 0.80	< 0.80
SVOCs	4-Chlorophenyl phenyl ether			ug/L	< 0.80	< 0.80	< 0.80	< 0.80
SVOCs	4-Methylphenol			ug/L	< 1.6	< 1.6	< 1.6	< 1.6
SVOCs	4-Nitroaniline			ug/L	< 1.6	< 1.6	< 1.6	< 1.6
SVOCs	4-Nitrophenol			ug/L	< 4.0	< 4.0	< 4.0	< 4.0
SVOCs	Acenaphthene			ug/L	< 0.16	< 0.16	< 0.16	< 0.16
SVOCs	Acenaphthylene			ug/L	< 0.16	< 0.16	< 0.16	< 0.16
SVOCs	Acetophenone			ug/L	< 0.80	< 0.80	< 0.80	< 0.80
SVOCs	Anthracene			ug/L	< 0.16	< 0.16	< 0.16	< 0.16
SVOCs	Atrazine	3		ug/L	< 0.80	< 0.80	< 0.80	< 0.80
SVOCs	Benz(a)anthracene			ug/L	< 0.16	< 0.16	< 0.16	< 0.16
SVOCs	Benzaldehyde			ug/L	< 4.0	< 4.0	< 4.0	< 4.0
SVOCs	Benzo(a)pyrene	0.2		ug/L	< 0.16	< 0.16	< 0.16	< 0.16
SVOCs	Benzo(b)fluoranthene			ug/L	< 0.16	< 0.16	< 0.16	< 0.16
SVOCs	Benzo(g,h,i)perylene			ug/L	< 0.16	< 0.16	< 0.16	< 0.16
SVOCs	Benzo(k)fluoranthene			ug/L	< 0.16	< 0.16	< 0.16	< 0.16
SVOCs	Bis(2-chloroethoxy)methane			ug/L	< 0.80	< 0.80	< 0.80	< 0.80
SVOCs	Bis(2-chloroethyl)ether			ug/L	< 0.80	< 0.80	< 0.80	< 0.80
SVOCs	Bis(2-chloroisopropyl)ether			ug/L	< 0.80	< 0.80	< 0.80	< 0.80
SVOCs	Bis(2-ethylhexyl)phthalate	6		ug/L	< 4.0	< 4.0	< 4.0	< 4.0
SVOCs	Butyl benzyl phthalate			ug/L	< 4.0	< 4.0	< 4.0	< 4.0
SVOCs	Caprolactam			ug/L	< 4.0	< 4.0	< 4.0	< 4.0
SVOCs	Carbazole			ug/L	< 0.80	< 0.80	< 0.80	< 0.80
SVOCs	Chrysene			ug/L	< 0.16	< 0.16	< 0.16	< 0.16
SVOCs	Di-n-butyl phthalate			ug/L	< 4.0	< 4.0	< 4.0	< 4.0
SVOCs	Di-n-octyl phthalate			ug/L	< 4.0	< 4.0	< 4.0	< 4.0
SVOCs	Dibenz(a,h)anthracene			ug/L	< 0.16	< 0.16	< 0.16	< 0.16
SVOCs	Dibenzofuran			ug/L	< 0.80	< 0.80	< 0.80	< 0.80
SVOCs	Diethyl phthalate			ug/L	< 4.0	< 4.0	< 4.0	< 4.0
SVOCs	Dimethyl phthalate			ug/L	< 4.0	< 4.0	< 4.0	< 4.0
SVOCs	Fluoranthene			ug/L	< 0.16	< 0.16	< 0.16	< 0.16
SVOCs	Fluorene			ug/L	< 0.16	< 0.16	< 0.16	< 0.16
SVOCs	Hexachlorobenzene	1		ug/L	< 0.80	< 0.80	< 0.80	< 0.80
SVOCs	Hexachlorobutadiene			ug/L	< 0.80	< 0.80	< 0.80	< 0.80
SVOCs	Hexachlorocyclopentadiene	50		ug/L	< 4.0	< 4.0	< 4.0	< 4.0
SVOCs	Hexachloroethane			ug/L	< 0.80	< 0.80	< 0.80	< 0.80
SVOCs	Indeno(1,2,3-cd)pyrene			ug/L	< 0.16	< 0.16	< 0.16	< 0.16
SVOCs	Isophorone			ug/L	< 0.80	< 0.80	< 0.80	< 0.80
SVOCs	N-Nitrosodi-n-propylamine			ug/L	< 0.80	< 0.80	< 0.80	< 0.80
SVOCs	N-Nitrosodiphenylamine			ug/L	< 0.80	< 0.80	< 0.80	< 0.80
SVOCs	Naphthalene			ug/L	< 0.16	0.33	< 0.16	1.1
SVOCs	Nitrobenzene			ug/L	< 0.80	< 0.80	< 0.80	< 0.80
SVOCs	Pentachlorophenol	1		ug/L	< 4.0	< 4.0	< 4.0	< 4.0
SVOCs	Phenanthrene			ug/L	< 0.16	< 0.16	< 0.16	< 0.16
SVOCs	Phenol			ug/L	< 0.80	< 0.80	< 0.80	< 0.80
SVOCs	Pyrene			ug/L	< 0.16	< 0.16	< 0.16	< 0.16

Notes: MCL - Maximum Contaminant Level
Concentrations in orange shaded cells exceed their MCL
* - site-specific action level

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 - semivolatile organic compounds

VOCs - volatile organic compounds

N - Normal sample

FD - Field duplicate sample

Attachment C

CaF₂ Pad Soil Sampling Results

Tabulated Soil Sampling Results and Sum of Fractions Calculations

CaF₂ Pad Soil Sampling Location Map

GEL Laboratory Results
Sampling conducted: January 7, 2022
GEL Work Order: 567201
Report Date: January 19, 2022

Attachment C

Tabulated Results and Sum of Fractions Calculations

GEL Work Order 567201

Sampling Event: **CaF2 Pad Soil Sampling**

Total Sample Count: **8**

	Analyte (pCi/g)			
	U-234	U-235	U-238	Tc-99
Minimum Result:	4.3	0.2	1.3	0.2
Average Result:	8.0	0.4	2.3	0.7
Maximum Result:	13.3	0.7	3.2	1.1

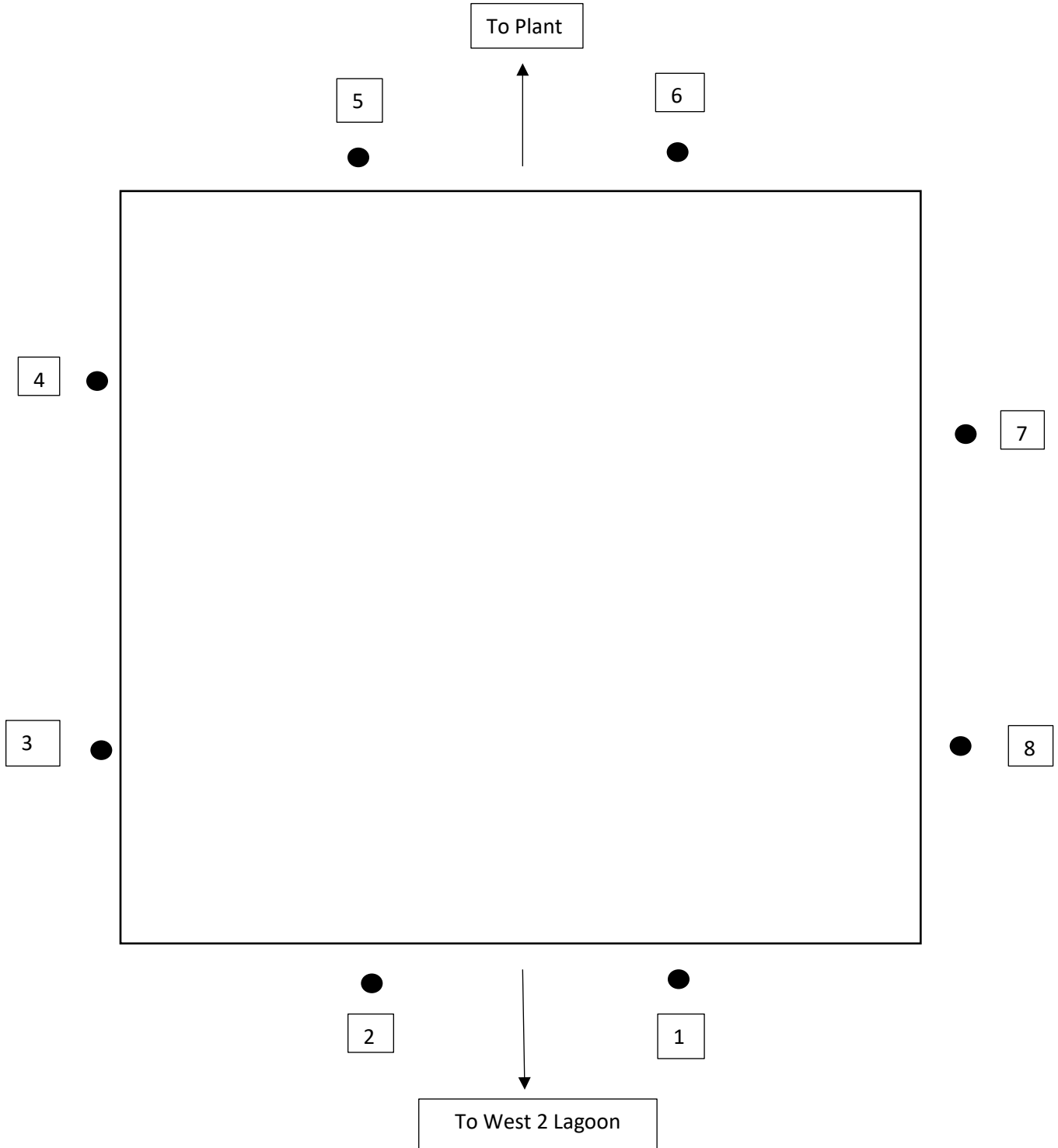
SOF Residential	SOF Industrial
0.5	0.0
0.9	0.0
1.3	0.0

#	Sample ID	Gross Analyte Activity (pCi/g)			
		U-234	U-235	U-238	Tc-99
1	CF-010722-01	9.0	0.4	3.2	0.6
2	CF-010722-02	8.0	0.4	2.9	0.5
3	CF-010722-03	7.5	0.4	2.9	1.0
4	CF-010722-04	7.1	0.4	2.4	1.1
5	CF-010722-05	4.3	0.3	1.3	0.6
6	CF-010722-06	9.5	0.4	1.5	0.2
7	CF-010722-07	5.4	0.2	1.9	0.9
8	CF-010722-08	13.3	0.7	2.6	0.6

SOF Residential	SOF Industrial
1.0	0.0
0.9	0.0
0.9	0.0
0.8	0.0
0.5	0.0
0.9	0.0
0.6	0.0
1.3	0.0

Attachment C

CaF2 Pad Soil Sampling Location Map





January 19, 2022

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

Re: East Lagoon Remediation Project
Work Order: 567201

Dear Ms. Teague:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on January 12, 2022. This original data report has been prepared and reviewed in accordance with GEL's standard operating procedures.

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

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at (843) 556-8171, ext. 4523.

Sincerely,

Grace Bodiford for
Samuel Hogan
Project Manager

Purchase Order: 4500822910 Line 1
Enclosures

GEL LABORATORIES LLC

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

**Certificate of Analysis Report
for**

WNUC010 Westinghouse Electric Company PO (4500822910)

Client SDG: 567201 GEL Work Order: 567201

The Qualifiers in this report are defined as follows:

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

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

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

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



Reviewed by _____

GEL LABORATORIES LLC

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

Certificate of Analysis

Company : Westinghouse Electric Company,
Address : LLC
PO Drawer R

Columbia, South Carolina 29205

Report Date: January 19, 2022

Contact: Ms. Cynthia Teague

Project: East Lagoon Remediation Project

Client Sample ID: CF-010722-01
Sample ID: 567201001
Matrix: Solid
Collect Date: 07-JAN-22
Receive Date: 12-JAN-22
Collector: Client
Moisture: 7.29%

Project: WNUC01025
Client ID: WNUC010

Parameter	Qualifier	Result	Uncertainty	MDC	TPU	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
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Rad Alpha Spec Analysis

Alphaspec U, Soil "As Received"

Uranium-233/234		8.95	+/-0.703	0.111	+/-1.44	0.500	pCi/g			MR2	01/18/22	0857	2217732	1
Uranium-235/236		0.389	+/-0.166	0.0531	+/-0.175	0.500	pCi/g							
Uranium-238		3.20	+/-0.422	0.104	+/-0.617	0.500	pCi/g							

Rad Liquid Scintillation Analysis

Liquid Scint Tc99, Soil "As Received"

Technetium-99	U	0.592	+/-0.394	0.641	+/-0.400	1.00	pCi/g			AG2	01/18/22	1005	2217725	2
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The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	CM2	01/12/22	1703	2217656

The following Analytical Methods were performed

Method	Description
1	DOE EML HASL-300, U-02-RC Modified
2	DOE EML HASL-300, Tc-02-RC Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Uranium-232 Tracer	Alphaspec U, Soil "As Received"	2217732	88	(15%-125%)
Technetium-99m Tracer	Liquid Scint Tc99, Soil "As Received"	2217725	93.3	(15%-125%)

GEL LABORATORIES LLC

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

Certificate of Analysis

Company : Westinghouse Electric Company,
Address : LLC
PO Drawer R

Columbia, South Carolina 29205

Report Date: January 19, 2022

Contact: Ms. Cynthia Teague

Project: East Lagoon Remediation Project

Client Sample ID: CF-010722-01

Sample ID: 567201001

Project: WNUC01025

Client ID: WNUC010

Parameter	Qualifier	Result	Uncertainty	MDC	TPU	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
Surrogate/Tracer	Recovery	Test						Batch ID	Recovery%	Acceptable Limits				

Notes:

The MDC is a sample specific MDC.

TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

Lc/LC: Critical Level

MDA: Minimum Detectable Activity

MDC: Minimum Detectable Concentration

Mtd.: Method

PF: Prep Factor

RL: Reporting Limit

TPU: Total Propagated Uncertainty

GEL LABORATORIES LLC

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Certificate of Analysis

Company : Westinghouse Electric Company,
Address : LLC
PO Drawer R

Columbia, South Carolina 29205

Report Date: January 19, 2022

Contact: Ms. Cynthia Teague

Project: East Lagoon Remediation Project

Client Sample ID: CF-010722-02

Project: WNUC01025

Sample ID: 567201002

Client ID: WNUC010

Matrix: Solid

Collect Date: 07-JAN-22

Receive Date: 12-JAN-22

Collector: Client

Moisture: 7.5%

Parameter	Qualifier	Result	Uncertainty	MDC	TPU	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis														
<i>Alphaspec U, Soil "As Received"</i>														
Uranium-233/234		8.01	+/-0.840	0.180	+/-1.59	0.500	pCi/g			MR2	01/18/22	0857	2217732	1
Uranium-235/236		0.393	+/-0.213	0.0842	+/-0.223	0.500	pCi/g							
Uranium-238		2.90	+/-0.506	0.120	+/-0.702	0.500	pCi/g							
Rad Liquid Scintillation Analysis														
<i>Liquid Scint Tc99, Soil "As Received"</i>														
Technetium-99	U	0.456	+/-0.396	0.656	+/-0.400	1.00	pCi/g			AG2	01/18/22	1038	2217725	2

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	CM2	01/12/22	1703	2217656

The following Analytical Methods were performed

Method	Description
1	DOE EML HASL-300, U-02-RC Modified
2	DOE EML HASL-300, Tc-02-RC Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Uranium-232 Tracer	Alphaspec U, Soil "As Received"	2217732	57	(15%-125%)
Technetium-99m Tracer	Liquid Scint Tc99, Soil "As Received"	2217725	93.3	(15%-125%)

GEL LABORATORIES LLC

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Certificate of Analysis

Company : Westinghouse Electric Company,
Address : LLC
PO Drawer R

Columbia, South Carolina 29205

Report Date: January 19, 2022

Contact: Ms. Cynthia Teague

Project: East Lagoon Remediation Project

Client Sample ID: CF-010722-02

Project: WNUC01025

Sample ID: 567201002

Client ID: WNUC010

Parameter	Qualifier	Result	Uncertainty	MDC	TPU	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
Surrogate/Tracer	Recovery	Test						Batch ID	Recovery%	Acceptable Limits				

Notes:

The MDC is a sample specific MDC.

TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor

Mtd.: Method

DL: Detection Limit

PF: Prep Factor

Lc/LC: Critical Level

RL: Reporting Limit

MDA: Minimum Detectable Activity

TPU: Total Propagated Uncertainty

MDC: Minimum Detectable Concentration

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Certificate of Analysis

Company : Westinghouse Electric Company,
Address : LLC
PO Drawer R

Columbia, South Carolina 29205

Report Date: January 19, 2022

Contact: Ms. Cynthia Teague

Project: East Lagoon Remediation Project

Client Sample ID: CF-010722-03

Project: WNUC01025

Sample ID: 567201003

Client ID: WNUC010

Matrix: Solid

Collect Date: 07-JAN-22

Receive Date: 12-JAN-22

Collector: Client

Moisture: 10.3%

Parameter	Qualifier	Result	Uncertainty	MDC	TPU	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis														
<i>Alphaspec U, Soil "As Received"</i>														
Uranium-233/234		7.48	+/-0.708	0.122	+/-1.33	0.500	pCi/g			MR2	01/18/22	0857	2217732	1
Uranium-235/236		0.425	+/-0.193	0.0992	+/-0.203	0.500	pCi/g							
Uranium-238		2.86	+/-0.440	0.121	+/-0.614	0.500	pCi/g							
Rad Liquid Scintillation Analysis														
<i>Liquid Scint Tc99, Soil "As Received"</i>														
Technetium-99		0.962	+/-0.427	0.666	+/-0.441	1.00	pCi/g			AG2	01/18/22	1110	2217725	2

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	CM2	01/12/22	1703	2217656

The following Analytical Methods were performed

Method	Description
1	DOE EML HASL-300, U-02-RC Modified
2	DOE EML HASL-300, Tc-02-RC Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Uranium-232 Tracer	Alphaspec U, Soil "As Received"	2217732	78.8	(15%-125%)
Technetium-99m Tracer	Liquid Scint Tc99, Soil "As Received"	2217725	91.5	(15%-125%)

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Certificate of Analysis

Company : Westinghouse Electric Company,
Address : LLC
PO Drawer R

Columbia, South Carolina 29205

Report Date: January 19, 2022

Contact: Ms. Cynthia Teague

Project: East Lagoon Remediation Project

Client Sample ID: CF-010722-03

Project: WNUC01025

Sample ID: 567201003

Client ID: WNUC010

Parameter	Qualifier	Result	Uncertainty	MDC	TPU	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
Surrogate/Tracer	Recovery	Test						Batch ID	Recovery%	Acceptable Limits				

Notes:

The MDC is a sample specific MDC.

TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor

Mtd.: Method

DL: Detection Limit

PF: Prep Factor

Lc/LC: Critical Level

RL: Reporting Limit

MDA: Minimum Detectable Activity

TPU: Total Propagated Uncertainty

MDC: Minimum Detectable Concentration

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Certificate of Analysis

Company : Westinghouse Electric Company,
Address : LLC
PO Drawer R

Columbia, South Carolina 29205

Report Date: January 19, 2022

Contact: Ms. Cynthia Teague

Project: East Lagoon Remediation Project

Client Sample ID: CF-010722-04

Project: WNUC01025

Sample ID: 567201004

Client ID: WNUC010

Matrix: Solid

Collect Date: 07-JAN-22

Receive Date: 12-JAN-22

Collector: Client

Moisture: 12.8%

Parameter	Qualifier	Result	Uncertainty	MDC	TPU	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis														
<i>Alphaspec U, Soil "As Received"</i>														
Uranium-233/234		7.06	+/-0.703	0.155	+/-1.30	0.500	pCi/g			MR2	01/18/22	0857	2217732	1
Uranium-235/236		0.352	+/-0.181	0.103	+/-0.189	0.500	pCi/g							
Uranium-238		2.36	+/-0.408	0.119	+/-0.547	0.500	pCi/g							
Rad Liquid Scintillation Analysis														
<i>Liquid Scint Tc99, Soil "As Received"</i>														
Technetium-99		1.06	+/-0.511	0.806	+/-0.526	1.00	pCi/g			AG2	01/18/22	1143	2217725	2

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	CM2	01/12/22	1703	2217656

The following Analytical Methods were performed

Method	Description
1	DOE EML HASL-300, U-02-RC Modified
2	DOE EML HASL-300, Tc-02-RC Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Uranium-232 Tracer	Alphaspec U, Soil "As Received"	2217732	73.6	(15%-125%)
Technetium-99m Tracer	Liquid Scint Tc99, Soil "As Received"	2217725	75.6	(15%-125%)

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Certificate of Analysis

Company : Westinghouse Electric Company,
Address : LLC
PO Drawer R

Columbia, South Carolina 29205

Report Date: January 19, 2022

Contact: Ms. Cynthia Teague

Project: East Lagoon Remediation Project

Client Sample ID: CF-010722-04

Sample ID: 567201004

Project: WNUC01025

Client ID: WNUC010

Parameter	Qualifier	Result	Uncertainty	MDC	TPU	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
Surrogate/Tracer	Recovery	Test						Batch ID	Recovery%	Acceptable Limits				

Notes:

The MDC is a sample specific MDC.

TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

Lc/LC: Critical Level

MDA: Minimum Detectable Activity

MDC: Minimum Detectable Concentration

Mtd.: Method

PF: Prep Factor

RL: Reporting Limit

TPU: Total Propagated Uncertainty

GEL LABORATORIES LLC

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Certificate of Analysis

Company : Westinghouse Electric Company,
Address : LLC
PO Drawer R

Columbia, South Carolina 29205

Report Date: January 19, 2022

Contact: Ms. Cynthia Teague

Project: East Lagoon Remediation Project

Client Sample ID: CF-010722-05

Project: WNUC01025

Sample ID: 567201005

Client ID: WNUC010

Matrix: Solid

Collect Date: 07-JAN-22

Receive Date: 12-JAN-22

Collector: Client

Moisture: 14.5%

Parameter	Qualifier	Result	Uncertainty	MDC	TPU	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis														
<i>Alphaspec U, Soil "As Received"</i>														
Uranium-233/234		4.33	+/-0.475	0.109	+/-0.759	0.500	pCi/g			MR2	01/18/22	0857	2217732	1
Uranium-235/236		0.279	+/-0.138	0.0767	+/-0.143	0.500	pCi/g							
Uranium-238		1.29	+/-0.261	0.0780	+/-0.315	0.500	pCi/g							
Rad Liquid Scintillation Analysis														
<i>Liquid Scint Tc99, Soil "As Received"</i>														
Technetium-99	U	0.606	+/-0.469	0.772	+/-0.475	1.00	pCi/g			AG2	01/18/22	1215	2217725	2

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	CM2	01/12/22	1703	2217656

The following Analytical Methods were performed

Method	Description
1	DOE EML HASL-300, U-02-RC Modified
2	DOE EML HASL-300, Tc-02-RC Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Uranium-232 Tracer	Alphaspec U, Soil "As Received"	2217732	93.2	(15%-125%)
Technetium-99m Tracer	Liquid Scint Tc99, Soil "As Received"	2217725	81.7	(15%-125%)

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Certificate of Analysis

Company : Westinghouse Electric Company,
Address : LLC
PO Drawer R

Columbia, South Carolina 29205

Report Date: January 19, 2022

Contact: Ms. Cynthia Teague

Project: East Lagoon Remediation Project

Client Sample ID: CF-010722-05

Project: WNUC01025

Sample ID: 567201005

Client ID: WNUC010

Parameter	Qualifier	Result	Uncertainty	MDC	TPU	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
Surrogate/Tracer	Recovery	Test						Batch ID	Recovery%	Acceptable Limits				

Notes:

The MDC is a sample specific MDC.

TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

Lc/LC: Critical Level

MDA: Minimum Detectable Activity

MDC: Minimum Detectable Concentration

Mtd.: Method

PF: Prep Factor

RL: Reporting Limit

TPU: Total Propagated Uncertainty

GEL LABORATORIES LLC

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

Certificate of Analysis

Company : Westinghouse Electric Company,
Address : LLC
PO Drawer R

Columbia, South Carolina 29205

Report Date: January 19, 2022

Contact: Ms. Cynthia Teague

Project: East Lagoon Remediation Project

Client Sample ID: CF-010722-06

Project: WNUC01025

Sample ID: 567201006

Client ID: WNUC010

Matrix: Solid

Collect Date: 07-JAN-22

Receive Date: 12-JAN-22

Collector: Client

Moisture: 25.5%

Parameter	Qualifier	Result	Uncertainty	MDC	TPU	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis														
<i>Alphaspec U, Soil "As Received"</i>														
Uranium-233/234		9.52	+/-0.714	0.0962	+/-1.51	0.500	pCi/g			MR2	01/18/22	0857	2217732	1
Uranium-235/236		0.422	+/-0.172	0.0909	+/-0.182	0.500	pCi/g							
Uranium-238		1.47	+/-0.285	0.113	+/-0.351	0.500	pCi/g							
Rad Liquid Scintillation Analysis														
<i>Liquid Scint Tc99, Soil "As Received"</i>														
Technetium-99	U	0.219	+/-0.481	0.827	+/-0.482	1.00	pCi/g			AG2	01/18/22	1248	2217725	2

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	CM2	01/12/22	1703	2217656

The following Analytical Methods were performed

Method	Description
1	DOE EML HASL-300, U-02-RC Modified
2	DOE EML HASL-300, Tc-02-RC Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Uranium-232 Tracer	Alphaspec U, Soil "As Received"	2217732	87.1	(15%-125%)
Technetium-99m Tracer	Liquid Scint Tc99, Soil "As Received"	2217725	72.9	(15%-125%)

GEL LABORATORIES LLC

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Certificate of Analysis

Company : Westinghouse Electric Company,
Address : LLC
PO Drawer R

Columbia, South Carolina 29205

Report Date: January 19, 2022

Contact: Ms. Cynthia Teague

Project: East Lagoon Remediation Project

Client Sample ID: CF-010722-06

Project: WNUC01025

Sample ID: 567201006

Client ID: WNUC010

Parameter	Qualifier	Result	Uncertainty	MDC	TPU	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
Surrogate/Tracer Recovery	Test													
								Batch ID	Recovery%					Acceptable Limits

Notes:

The MDC is a sample specific MDC.

TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor

Mtd.: Method

DL: Detection Limit

PF: Prep Factor

Lc/LC: Critical Level

RL: Reporting Limit

MDA: Minimum Detectable Activity

TPU: Total Propagated Uncertainty

MDC: Minimum Detectable Concentration

GEL LABORATORIES LLC

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

Certificate of Analysis

Company : Westinghouse Electric Company,
Address : LLC
PO Drawer R

Columbia, South Carolina 29205

Report Date: January 19, 2022

Contact: Ms. Cynthia Teague

Project: East Lagoon Remediation Project

Client Sample ID: CF-010722-07

Project: WNUC01025

Sample ID: 567201007

Client ID: WNUC010

Matrix: Solid

Collect Date: 07-JAN-22

Receive Date: 12-JAN-22

Collector: Client

Moisture: 10.9%

Parameter	Qualifier	Result	Uncertainty	MDC	TPU	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis														
<i>Alphaspec U, Soil "As Received"</i>														
Uranium-233/234		5.36	+/-0.621	0.150	+/-1.05	0.500	pCi/g			MR2	01/18/22	0857	2217732	1
Uranium-235/236		0.201	+/-0.142	0.106	+/-0.146	0.500	pCi/g							
Uranium-238		1.92	+/-0.374	0.129	+/-0.480	0.500	pCi/g							
Rad Liquid Scintillation Analysis														
<i>Liquid Scint Tc99, Soil "As Received"</i>														
Technetium-99		0.929	+/-0.491	0.782	+/-0.503	1.00	pCi/g			AG2	01/18/22	1320	2217725	2

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	CM2	01/12/22	1703	2217656

The following Analytical Methods were performed

Method	Description
1	DOE EML HASL-300, U-02-RC Modified
2	DOE EML HASL-300, Tc-02-RC Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Uranium-232 Tracer	Alphaspec U, Soil "As Received"	2217732	67.8	(15%-125%)
Technetium-99m Tracer	Liquid Scint Tc99, Soil "As Received"	2217725	75.4	(15%-125%)

GEL LABORATORIES LLC

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Certificate of Analysis

Company : Westinghouse Electric Company,
Address : LLC
PO Drawer R

Columbia, South Carolina 29205

Report Date: January 19, 2022

Contact: Ms. Cynthia Teague

Project: East Lagoon Remediation Project

Client Sample ID: CF-010722-07

Project: WNUC01025

Sample ID: 567201007

Client ID: WNUC010

Parameter	Qualifier	Result	Uncertainty	MDC	TPU	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
Surrogate/Tracer	Recovery	Test						Batch ID	Recovery%	Acceptable Limits				

Notes:

The MDC is a sample specific MDC.

TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

Lc/LC: Critical Level

MDA: Minimum Detectable Activity

MDC: Minimum Detectable Concentration

Mtd.: Method

PF: Prep Factor

RL: Reporting Limit

TPU: Total Propagated Uncertainty

GEL LABORATORIES LLC

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

Certificate of Analysis

Company : Westinghouse Electric Company,
Address : LLC
PO Drawer R

Columbia, South Carolina 29205

Report Date: January 19, 2022

Contact: Ms. Cynthia Teague

Project: East Lagoon Remediation Project

Client Sample ID: CF-010722-08

Project: WNUC01025

Sample ID: 567201008

Client ID: WNUC010

Matrix: Solid

Collect Date: 07-JAN-22

Receive Date: 12-JAN-22

Collector: Client

Moisture: 16.6%

Parameter	Qualifier	Result	Uncertainty	MDC	TPU	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis														
<i>Alphaspec U, Soil "As Received"</i>														
Uranium-233/234		13.3	+/-0.941	0.121	+/-2.24	0.500	pCi/g			MR2	01/18/22	0857	2217732	1
Uranium-235/236		0.685	+/-0.241	0.0643	+/-0.263	0.500	pCi/g							
Uranium-238		2.60	+/-0.417	0.0801	+/-0.577	0.500	pCi/g							
Rad Liquid Scintillation Analysis														
<i>Liquid Scint Tc99, Soil "As Received"</i>														
Technetium-99	U	0.621	+/-0.499	0.822	+/-0.504	1.00	pCi/g			AG2	01/18/22	1353	2217725	2

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	CM2	01/12/22	1703	2217656

The following Analytical Methods were performed

Method	Description
1	DOE EML HASL-300, U-02-RC Modified
2	DOE EML HASL-300, Tc-02-RC Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Uranium-232 Tracer	Alphaspec U, Soil "As Received"	2217732	73.5	(15%-125%)
Technetium-99m Tracer	Liquid Scint Tc99, Soil "As Received"	2217725	76.1	(15%-125%)

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Certificate of Analysis

Company : Westinghouse Electric Company,
Address : LLC
PO Drawer R

Columbia, South Carolina 29205

Report Date: January 19, 2022

Contact: Ms. Cynthia Teague

Project: East Lagoon Remediation Project

Client Sample ID: CF-010722-08

Project: WNUC01025

Sample ID: 567201008

Client ID: WNUC010

Parameter	Qualifier	Result	Uncertainty	MDC	TPU	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
Surrogate/Tracer	Recovery	Test						Batch ID	Recovery%	Acceptable Limits				

Notes:

The MDC is a sample specific MDC.

TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

Lc/LC: Critical Level

MDA: Minimum Detectable Activity

MDC: Minimum Detectable Concentration

Mtd.: Method

PF: Prep Factor

RL: Reporting Limit

TPU: Total Propagated Uncertainty

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QC Summary

Report Date: January 19, 2022

Page 1 of 3

Client : Westinghouse Electric Company, LLC
PO Drawer R

Columbia, South Carolina

Contact: Ms. Cynthia Teague

Workorder: 567201

Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Rad Alpha Spec									
Batch	2217732								
QC1204997007 567201001 DUP									
Uranium-233/234		8.95	8.31	pCi/g	7.32		(0%-20%)	MR2	01/18/2208:57
		Uncert: +/-0.703	+/-0.741						
		TPU: +/-1.44	+/-1.45						
Uranium-235/236		0.389	0.355	pCi/g	9.06		(0%-20%)		
		Uncert: +/-0.166	+/-0.176						
		TPU: +/-0.175	+/-0.184						
Uranium-238		3.20	3.40	pCi/g	6.06		(0%-20%)		
		Uncert: +/-0.422	+/-0.475						
		TPU: +/-0.617	+/-0.695						
QC1204997008 LCS									
Uranium-233/234			4.99	pCi/g				MR2	01/18/2208:57
		Uncert: +/-0.574							
		TPU: +/-0.944							
Uranium-235/236			0.168	pCi/g					
		Uncert: +/-0.124							
		TPU: +/-0.126							
Uranium-238	5.26		5.68	pCi/g		108	(75%-125%)		
		Uncert: +/-0.611							
		TPU: +/-1.05							
QC1204997006 MB									
Uranium-233/234		U	-0.0274	pCi/g				MR2	01/18/2208:57
		Uncert: +/-0.0434							
		TPU: +/-0.0435							
Uranium-235/236		U	-0.0106	pCi/g					
		Uncert: +/-0.0370							
		TPU: +/-0.0371							
Uranium-238		U	0.00266	pCi/g					
		Uncert: +/-0.0412							
		TPU: +/-0.0412							
Rad Liquid Scintillation									
Batch	2217725								
QC1204996990 567201001 DUP									
Technetium-99		U	0.592	pCi/g	17.9		(0% - 100%)	AG2	01/18/2214:58
		Uncert: +/-0.394	+/-0.418						
		TPU: +/-0.400	+/-0.426						
QC1204996991 LCS									
Technetium-99	22.1		21.7	pCi/g		98.1	(75%-125%)	AG2	01/18/2215:30
		Uncert: +/-1.34							
		TPU: +/-2.83							
QC1204996989 MB									

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QC Summary

Workorder: 567201

Page 2 of 3

Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Liquid Scintillation										
Batch	2217725									
Technetium-99		U	-0.149	pCi/g				AG2	01/18/22	14:25
	Uncert:		+/-0.317							
	TPU:		+/-0.317							

Notes:

TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

The Qualifiers in this report are defined as follows:

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

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QC Summary

Workorder: 567201

Page 3 of 3

<u>Parmname</u>	<u>NOM</u>	<u>Sample Qual</u>	<u>QC</u>	<u>Units</u>	<u>RPD%</u>	<u>REC%</u>	<u>Range</u>	<u>Anlst</u>	<u>Date</u>	<u>Time</u>
-----------------	------------	--------------------	-----------	--------------	-------------	-------------	--------------	--------------	-------------	-------------

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

** Indicates analyte is a surrogate/tracer compound.

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

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

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

**Radiochemistry
Technical Case Narrative
Westinghouse Electric Company PO
SDG #: 567201**

Product: Alphaspec U, Soil

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

Analytical Procedure: GL-RAD-A-011 REV# 28

Analytical Batch: 2217732

Preparation Method: Dry Soil Prep

Preparation Procedure: GL-RAD-A-021 REV# 24

Preparation Batch: 2217656

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

<u>GEL Sample ID#</u>	<u>Client Sample Identification</u>
567201001	CF-010722-01
567201002	CF-010722-02
567201003	CF-010722-03
567201004	CF-010722-04
567201005	CF-010722-05
567201006	CF-010722-06
567201007	CF-010722-07
567201008	CF-010722-08
1204997006	Method Blank (MB)
1204997007	567201001(CF-010722-01) Sample Duplicate (DUP)
1204997008	Laboratory Control Sample (LCS)

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

Data Summary:

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

Product: Dry Weight

Preparation Method: Dry Soil Prep

Preparation Procedure: GL-RAD-A-021 REV# 24

Preparation Batch: 2217656

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

<u>GEL Sample ID#</u>	<u>Client Sample Identification</u>
567201001	CF-010722-01
567201002	CF-010722-02
567201003	CF-010722-03

567201004	CF-010722-04
567201005	CF-010722-05
567201006	CF-010722-06
567201007	CF-010722-07
567201008	CF-010722-08

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

Data Summary:

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

Product: Liquid Scint Tc99, Soil

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

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

Analytical Batch: 2217725

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

<u>GEL Sample ID#</u>	<u>Client Sample Identification</u>
567201001	CF-010722-01
567201002	CF-010722-02
567201003	CF-010722-03
567201004	CF-010722-04
567201005	CF-010722-05
567201006	CF-010722-06
567201007	CF-010722-07
567201008	CF-010722-08
1204996989	Method Blank (MB)
1204996990	567201001(CF-010722-01) Sample Duplicate (DUP)
1204996991	Laboratory Control Sample (LCS)

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

Data Summary:

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

Certification Statement

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

Page: 1 of 1
 Project # PO Line Item 1
 GEL Quote #: WNUC010
 COC Number (1):
 PO#4500822910
 Client Name: Westinghouse
 Project/Site Name: East Lagoon Remediation Project
 Address: 5801 Bluff Road, Hopkins, SC 29061
 Collected By: Xaliyah Reaves
 GEL Project Manager: Lindsay Fabra
 Phone # 803.647.3171
 Fax #
 GEL Laboratories, LLC
 2040 Savage Road
 Charleston, SC 29407
 Phone: (843) 556-8171
 Fax: (843) 766-1178

Chain of Custody and Analytical Request
 GEL Work Order Number:
 Sample Analysis Requested (6) (Fill in the number of containers for each test)
 Sample ID
 *For composites - indicate start and stop date/time

Sample ID	*Date Collected (mm-dd-yy)	*Time Collected (Military) (hhmm)	QC Code (1)	Field Filtered (2)	Sample Matrix (3)	Radioactive (If Yes, please supply isotopic info.)	(7) Known or possible Hazards	Total number of containers	Isotopic Uranium (By individual isotope, alpha spec)	Preservative Type (6)	Comments
CF-010722-01	01/07/2022	09:27	G	N	SO			1	X		All samples reported "as found"
CF-010722-02	01/07/2022	09:35	G	N	SO			1	X		All samples reported "as found"
CF-010722-03	01/07/2022	09:43	G	N	SO			1	X		All samples reported "as found"
CF-010722-04	01/07/2022	09:50	G	N	SO			1	X		All samples reported "as found"
CF-010722-05	01/07/2022	09:53	G	N	SO			1	X		All samples reported "as found"
CF-010722-06	01/07/2022	09:57	G	N	SO			1	X		All samples reported "as found"
CF-010722-07	01/07/2022	10:00	G	N	SO			1	X		All samples reported "as found"
CF-010722-08	01/07/2022	10:04	G	N	SO			1	X		All samples reported "as found"

Chain of Custody Signatures
 Relinquished By (Signed) Date Time Received by (signed) Date Time
 1. [Signature] 1/12/22 0932 [Signature] 1/12/22 1153
 2. [Signature] 1/12/22 1505 [Signature] 1/12/22 1525
 3. [Signature] [Signature]
 TAT Requested: Normal: Rush: Specify 7 day turnaround (Subject to Surcharge)
 Fax Results: Yes No
 Select Deliverable: C of A QC Summary Level 1 Level 2 Level 3 Level 4
 Additional Remarks:
 For Lab Receiving Use Only: Custody Seal Intact? Yes No Cooler Temp: 3 °C
 Sample Collection Time Zone: Eastern Pacific Central Mountain Other:

> For sample shipping and delivery details, see Sample Receipt & Review form (SRR).
 1.) Chain of Custody Number = Client Determined
 2.) QC Codes: N = Normal Sample, TB = Trip Blank, FD = Field Duplicate, EB = Equipment Blank, MS = Matrix Spike Sample, MSD = Matrix Spike Duplicate Sample, G = Grab, C = Composite
 3.) Field Filtered: For liquid matrices, indicate with a - Y - for yes the sample was field filtered or - N - for sample was not field filtered.
 4.) Matrix Codes: DW = Drinking Water, GW = Groundwater, SW = Surface Water, WW = Waste Water, W = Water, ML = Misc Liquid, SO = Soil, SD = Sediment, SL = Sludge, SS = Solid Waste, O = Oil, F = Filter, P = Wipe, U = Urine, F = Fecal, N = Nasal
 5.) Sample Analysis Requested: Analytical method requested (i.e. 8260B, 6010B/7470A) and number of containers provided for each (i.e. 8260B - 3, 6010B/7470A - 1).
 6.) Preservative Type: HA = Hydrochloric Acid, NI = Nitric Acid, SH = Sodium Hydroxide, SA = Sulfuric Acid, AA = Ascorbic Acid, HX = Hexane, ST = Sodium Thiosulfate, If no preservative is added = leave field blank
 7.) KNOWN OR POSSIBLE HAZARDS
 Characteristic Hazards: FL = Flammable/Ignitable, LW = Listed Waste, CO = Corrosive, RE = Reactive, TSCA Regulated, PCB = Polychlorinated biphenyls
 RCRA Metals: As = Arsenic, Hg = Mercury, Ba = Barium, Se = Selenium, Cd = Cadmium, Ag = Silver, Cr = Chromium, MR = Misc. RCRA metals
 Other: OT = Other / Unknown (i.e. High/low pH, asbestos, beryllium, irritants, other misc. health hazards, etc.)
 Description:
 Please provide any additional details below regarding handling and/or disposal concerns. (i.e.: Origin of sample(s), type of site collected from, odd matrices, etc.)

54

SAMPLE RECEIPT & REVIEW FORM

Client: <u>WNUC</u>	SDG/AR/COC/Work Order: <u>567201</u>
Received By: <u>BE</u>	Date Received: <u>1-12-21</u>
Carrier and Tracking Number	Circle Applicable: FedEx Express FedEx Ground UPS Field Services <u>Courier</u> Other

Suspected Hazard Information	Yes	No	*If Net Counts > 100cpm on samples not marked "radioactive", contact the Radiation Safety Group for further investigation.
A) Shipped as a DOT Hazardous?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Hazard Class Shipped: _____ UN#: _____ If UN2910, Is the Radioactive Shipment Survey Compliant? Yes ___ No ___
B) Did the client designate the samples are to be received as radioactive?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	COC notation or radioactive stickers on containers equal client designation.
C) Did the RSO classify the samples as radioactive?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Maximum Net Counts Observed (Observed Counts - Area Background Counts): <u>0</u> CPM/mR/Hr Classified as <u>Rad 1</u> Rad 2 Rad 3
D) Did the client designate samples are hazardous?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	COC notation or hazard labels on containers equal client designation.
E) Did the RSO identify possible hazards?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	If D or E is yes, select Hazards below. PCB's Flammable Foreign Soil RCRA Asbestos Beryllium Other: _____

Sample Receipt Criteria		Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
2	Chain of custody documents included with shipment?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Circle Applicable: Client contacted and provided COC COC created upon receipt
3	Samples requiring cold preservation within (0 ≤ 6 deg. C)?*	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Preservation Method: <u>Wet Ice</u> Ice Packs Dry ice None Other: *all temperatures are recorded in Celsius TEMP: <u>3</u>
4	Daily check performed and passed on IR temperature gun?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Temperature Device Serial #: <u>IR2-21</u> Secondary Temperature Device Serial # (If Applicable): _____
5	Sample containers intact and sealed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
6	Samples requiring chemical preservation at proper pH?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Sample ID's and Containers Affected: If Preservation added, Lot#: _____
7	Do any samples require Volatile Analysis?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	If Yes, are Encores or Soil Kits present for solids? Yes ___ No ___ NA ___ (If yes, take to VOA/Freezer) Do liquid VOA vials contain acid preservation? Yes ___ No ___ NA ___ (If unknown, select No) Are liquid VOA vials free of headspace? Yes ___ No ___ NA ___ Sample ID's and containers affected: _____
8	Samples received within holding time?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	ID's and tests affected: _____
9	Sample ID's on COC match ID's on bottles?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	ID's and containers affected: _____
10	Date & time on COC match date & time on bottles?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Circle Applicable: No dates on containers No times on containers COC missing info Other (describe)
11	Number of containers received match number indicated on COC?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Circle Applicable: No container count on COC Other (describe)
12	Are sample containers identifiable as GEL provided by use of GEL labels?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
13	COC form is properly signed in relinquished/received sections?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Circle Applicable: Not relinquished Other (describe)

Comments (Use Continuation Form if needed):

List of current GEL Certifications as of 19 January 2022

State	Certification
Alabama	42200
Alaska	17-018
Alaska Drinking Water	SC00012
Arkansas	88-0651
CLIA	42D0904046
California	2940
Colorado	SC00012
Connecticut	PH-0169
DoD ELAP/ ISO17025 A2LA	2567.01
Florida NELAP	E87156
Foreign Soils Permit	P330-15-00283, P330-15-00253
Georgia	SC00012
Georgia SDWA	967
Hawaii	SC00012
Idaho	SC00012
Illinois NELAP	200029
Indiana	C-SC-01
Kansas NELAP	E-10332
Kentucky SDWA	90129
Kentucky Wastewater	90129
Louisiana Drinking Water	LA024
Louisiana NELAP	03046 (AI33904)
Maine	2019020
Maryland	270
Massachusetts	M-SC012
Massachusetts PFAS Approv	Letter
Michigan	9976
Mississippi	SC00012
Nebraska	NE-OS-26-13
Nevada	SC000122021-1
New Hampshire NELAP	2054
New Jersey NELAP	SC002
New Mexico	SC00012
New York NELAP	11501
North Carolina	233
North Carolina SDWA	45709
North Dakota	R-158
Oklahoma	2019-165
Pennsylvania NELAP	68-00485
Puerto Rico	SC00012
S. Carolina Radiochem	10120002
Sanitation Districts of L	9255651
South Carolina Chemistry	10120001
Tennessee	TN 02934
Texas NELAP	T104704235-21-19
Utah NELAP	SC000122021-36
Vermont	VT87156
Virginia NELAP	460202
Washington	C780