

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: B-5691/Bridge 52 **City/County:** Cumberland **Sampling Date:** 08-Feb-16
Applicant/Owner: NCDOT **State:** NC **Sampling Point:** B-5691 WA UP
Investigator(s): K. Hamlin, W. Smith **Section, Township, Range:** S T R
Landform (hillslope, terrace, etc.): Hillside **Local relief (concave, convex, none):** concave **Slope:** 0.5 % / 0.3 °
Subregion (LRR or MLRA): MLRA 133S in LRR P **Lat.:** 35.0855 **Long.:** -78.6708 **Datum:** NAD83
Soil Map Unit Name: CaB - Cainhoy sand, 0 to 5 percent slopes **NWI classification:** PFO1

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ☒ No ☐
Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☒ No ☐ Hydric Soil Present? Yes ☐ No ☒ Wetland Hydrology Present? Yes ☐ No ☒	Is the Sampled Area within a Wetland? Yes ☐ No ☒
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply) ☐ Surface Water (A1) ☐ Aquatic Fauna (B13) ☐ High Water Table (A2) ☐ Marl Deposits (B15) (LRR U) ☐ Saturation (A3) ☐ Hydrogen Sulfide Odor (C1) ☐ Water Marks (B1) ☐ Oxidized Rhizospheres along Living Roots (C3) ☐ Sediment Deposits (B2) ☐ Presence of Reduced Iron (C4) ☐ Drift Deposits (B3) ☐ Recent Iron Reduction in Tilled Soils (C6) ☐ Algal Mat or Crust (B4) ☐ Thin Muck Surface (C7) ☐ Iron Deposits (B5) ☐ Other (Explain in Remarks) ☐ Inundation Visible on Aerial Imagery (B7) ☐ Water-Stained Leaves (B9)		Secondary Indicators (minimum of 2 required) ☐ Surface Soil Cracks (B6) ☐ Sparsely Vegetated Concave Surface (B8) ☐ Drainage Patterns (B10) ☐ Moss Trim Lines (B16) ☐ Dry Season Water Table (C2) ☐ Crayfish Burrows (C8) ☐ Saturation Visible on Aerial Imagery (C9) ☐ Geomorphic Position (D2) ☐ Shallow Aquitard (D3) ☒ FAC-Neutral Test (D5) ☐ Sphagnum moss (D8) (LRR T, U)
Field Observations: Surface Water Present? Yes ☐ No ☒ Depth (inches): _____ Water Table Present? Yes ☐ No ☒ Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): _____	Wetland Hydrology Present? Yes ☐ No ☒	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

VEGETATION (Five/Four Strata) - Use scientific names of plants.

Tree Stratum (Plot size: 50')					Dominant Species?	Sampling Point: B-5691 WA UP
	Absolute % Cover	Rel.Strat. Cover	Indicator Status			
1. <i>Quercus nigra</i>	10	☒ 33.3%	FAC	Dominance Test worksheet: Number of Dominant Species That are OBL, FACW, or FAC: <u>7</u> (A) Total Number of Dominant Species Across All Strata: <u>8</u> (B) Percent of dominant Species That Are OBL, FACW, or FAC: <u>87.5%</u> (A/B)		
2. <i>Acer rubrum</i>	10	☒ 33.3%	FAC			
3. <i>Quercus laurifolia</i>	10	☒ 33.3%	FACW			
4.		☐ 0.0%				
5.		☐ 0.0%				
6.	0	☐ 0.0%				
7.	0	☐ 0.0%				
8.	0	☐ 0.0%				
50% of Total Cover: <u>15</u> 20% of Total Cover: <u>6</u> 30 = Total Cover				Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>25</u> x 2 = <u>50</u> FAC species <u>40</u> x 3 = <u>120</u> FACU species <u>5</u> x 4 = <u>20</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>70</u> (A) <u>190</u> (B) Prevalence Index = B/A = <u>2.714</u>		
Sapling or Sapling/Shrub Stratum (Plot size: 30')						
1. <i>Acer rubrum</i>	10	☒ 100.0%	FAC			
2.	0	☐ 0.0%				
3.	0	☐ 0.0%				
4.	0	☐ 0.0%				
5.	0	☐ 0.0%				
6.	0	☐ 0.0%				
7.	0	☐ 0.0%		Hydrophytic Vegetation Indicators: ☐ 1 - Rapid Test for Hydrophytic Vegetation ☒ 2 - Dominance Test is > 50% ☒ 3 - Prevalence Index is ≤3.0 ¹ ☐ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.		
8.	0	☐ 0.0%				
50% of Total Cover: <u>5</u> 20% of Total Cover: <u>2</u> 10 = Total Cover						
Shrub Stratum (Plot size: 30')						
1. <i>Ilex decidua</i>	15	☒ 100.0%	FACW			
2.		☐ 0.0%				
3.		☐ 0.0%				
4.	0	☐ 0.0%				
5.	0	☐ 0.0%				
6.	0	☐ 0.0%		Definition of Vegetation Strata: Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall. Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody vine - All woody vines, regardless of height.		
50% of Total Cover: <u>7.5</u> 20% of Total Cover: <u>3</u> 15 = Total Cover						
Herb Stratum (Plot size: 5')						
1.		☐ 0.0%				
2.	0	☐ 0.0%				
3.	0	☐ 0.0%				
4.	0	☐ 0.0%				
5.	0	☐ 0.0%				
6.	0	☐ 0.0%				
7.	0	☐ 0.0%		Hydrophytic Vegetation Present? Yes ☒ No ☐		
8.	0	☐ 0.0%				
9.	0	☐ 0.0%				
10.	0	☐ 0.0%				
11.	0	☐ 0.0%				
12.	0	☐ 0.0%				
50% of Total Cover: <u>0</u> 20% of Total Cover: <u>0</u> 0 = Total Cover						
Woody Vine Stratum (Plot size: 15')						
1. <i>Smilax rotundifolia</i>	5	☒ 33.3%	FAC			
2. <i>Toxicodendron radicans</i>	5	☒ 33.3%	FAC			
3. <i>Lonicera japonica</i>	5	☒ 33.3%	FACU			
4.	0	☐ 0.0%				
5.	0	☐ 0.0%				
50% of Total Cover: <u>7.5</u> 20% of Total Cover: <u>3</u> 15 = Total Cover						

Remarks: (If observed, list morphological adaptations below).

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: B-5691 WA UP

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-3	10YR	2/1	80				Sand	20% unmasked grains w/o hand lens
3-12+	10YR	3/2	80				Sand	20% unmasked grains w/o hand lens

¹ Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains ²Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Muck Presence (A8) (LRR U)
- ☐ 1 cm Muck (A9) (LRR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Muck Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)

- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils³:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,B)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☐ No ☒

Remarks:

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Subregion (LRR or MLRA): MLRA 133S in LRR P **Lat.:** 35.0858 **Long.:** -78.6709 **Datum:** NAD83
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Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ☒ No ☐
Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☒ No ☐ Hydric Soil Present? Yes ☒ No ☐ Wetland Hydrology Present? Yes ☒ No ☐	Is the Sampled Area within a Wetland? Yes ☒ No ☐
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply) ☐ Surface Water (A1) ☐ Aquatic Fauna (B13) ☒ High Water Table (A2) ☐ Marl Deposits (B15) (LRR U) ☒ Saturation (A3) ☐ Hydrogen Sulfide Odor (C1) ☐ Water Marks (B1) ☐ Oxidized Rhizospheres along Living Roots (C3) ☐ Sediment Deposits (B2) ☐ Presence of Reduced Iron (C4) ☐ Drift Deposits (B3) ☐ Recent Iron Reduction in Tilled Soils (C6) ☐ Algal Mat or Crust (B4) ☐ Thin Muck Surface (C7) ☐ Iron Deposits (B5) ☐ Other (Explain in Remarks) ☐ Inundation Visible on Aerial Imagery (B7) ☐ Water-Stained Leaves (B9)		Secondary Indicators (minimum of 2 required) ☐ Surface Soil Cracks (B6) ☐ Sparsely Vegetated Concave Surface (B8) ☐ Drainage Patterns (B10) ☐ Moss Trim Lines (B16) ☐ Dry Season Water Table (C2) ☐ Crayfish Burrows (C8) ☐ Saturation Visible on Aerial Imagery (C9) ☐ Geomorphic Position (D2) ☐ Shallow Aquitard (D3) ☒ FAC-Neutral Test (D5) ☐ Sphagnum moss (D8) (LRR T, U)
Field Observations: Surface Water Present? Yes ☐ No ☒ Depth (inches): _____ Water Table Present? Yes ☒ No ☐ Depth (inches): 2 Saturation Present? (includes capillary fringe) Yes ☒ No ☐ Depth (inches): 0	Wetland Hydrology Present? Yes ☒ No ☐	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

VEGETATION (Five/Four Strata) - Use scientific names of plants.

Sampling Point: B-5691 WA WET

Tree Stratum	(Plot size: 50')	Absolute % Cover	Species? Rel.Strat. Cover	Indicator Status	
1. Quercus nigra		10	☒ 25.0%	FAC	
2. Acer rubrum		10	☒ 25.0%	FAC	
3. Quercus laurifolia		10	☒ 25.0%	FACW	
4. Nyssa aquatica		5	☐ 12.5%	OBL	
5. Taxodium distichum		5	☐ 12.5%	OBL	
6.		0	☐ 0.0%		
7.		0	☐ 0.0%		
8.		0	☐ 0.0%		
50% of Total Cover: 20 20% of Total Cover: 8		40	= Total Cover		
Sapling or Sapling/Shrub Stratum (Plot size: 30')					
1. Acer rubrum		10	☒ 100.0%	FAC	
2.		0	☐ 0.0%		
3.		0	☐ 0.0%		
4.		0	☐ 0.0%		
5.		0	☐ 0.0%		
6.		0	☐ 0.0%		
7.		0	☐ 0.0%		
8.		0	☐ 0.0%		
50% of Total Cover: 5 20% of Total Cover: 2		10	= Total Cover		
Shrub Stratum (Plot size: 30')					
1. Ilex decidua		15	☒ 60.0%	FACW	
2. Phoradendron leucarpum		5	☒ 20.0%	NI	
3. Rosa palustris		5	☒ 20.0%	OBL	
4.		0	☐ 0.0%		
5.		0	☐ 0.0%		
6.		0	☐ 0.0%		
50% of Total Cover: 12.5 20% of Total Cover: 5		25	= Total Cover		
Herb Stratum (Plot size: 5')					
1. Arundinaria gigantea		10	☒ 100.0%	FACW	
2.		0	☐ 0.0%		
3.		0	☐ 0.0%		
4.		0	☐ 0.0%		
5.		0	☐ 0.0%		
6.		0	☐ 0.0%		
7.		0	☐ 0.0%		
8.		0	☐ 0.0%		
9.		0	☐ 0.0%		
10.		0	☐ 0.0%		
11.		0	☐ 0.0%		
12.		0	☐ 0.0%		
50% of Total Cover: 5 20% of Total Cover: 2		10	= Total Cover		
Woody Vine Stratum (Plot size: 15')					
1. Smilax rotundifolia		15	☒ 65.2%	FAC	
2. Toxicodendron radicans		5	☒ 21.7%	FAC	
3. Lonicera japonica		3	☐ 13.0%	FACU	
4.		0	☐ 0.0%		
5.		0	☐ 0.0%		
50% of Total Cover: 11.5 20% of Total Cover: 4.6		23	= Total Cover		

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 9 (A)

Total Number of Dominant Species Across All Strata: 10 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 90.0% (A/B)

Prevalence Index worksheet:

Total % Cover of: 15 x 1 = 15

FACW species 35 x 2 = 70

FAC species 50 x 3 = 150

FACU species 3 x 4 = 12

UPL species 0 x 5 = 0

Column Totals: 103 (A) 247 (B)

Prevalence Index = B/A = 2.398

Hydrophytic Vegetation Indicators:

☐ 1 - Rapid Test for Hydrophytic Vegetation

☒ 2 - Dominance Test is > 50%

☒ 3 - Prevalence Index is ≤ 3.0 ¹

☐ Problematic Hydrophytic Vegetation ¹ (Explain)

¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definition of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ☒ No ☐

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: B-5691 WA WET

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-12	10YR	2/1	100				Sandy Loam	

¹ Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains ²Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Muck Presence (A8) (LRR U)
- ☐ 1 cm Muck (A9) (LRR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Muck Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)

- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☒ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils³:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,B)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks: