Waters of the U.S. Data Sheet

Project: I-495/I-270 Managed Lanes Study		**Feature ID:** 25N	**Stream Order:** 3rd
Date: 4-6-21	**State:** MD	**Photos:** upstream, downstream: 25N-1, 25N-2	
Crew: JCP/GJK	**County:** Montgomery	**Last Flag Number:** 25N-4A/4B	

Feature Hydrologic Class (check one):

Tidal	Perennial	Intermittent	Ephemeral
○ TNW (Subject to ebb and flow)	○ TNW – Perennial (Flowing year round) ○ RPW – Perennial (Flowing year round)	● RPW – Seasonal (must flow at least 3 months a year)	○ Non-RPW draining uplands ○ Non-RPW erosional feature ○ Non-RPW with abutting wetland ○ Non-RPW with adjacent wetland ○ Non-RPW wetland adjacent or abutting upstream (outside of study area)
Describe rational for hydrologic class: Baseflow with " of water observed during site visit			
Hydrologic Connectivity –	Upstream: outfall pipe	Downstream: Stream 25H	Adjacent/Abutting: 25H / 25D-WET

Feature Description: *(check all that apply)*

Shape (with respect to OHW)		Substrate			Vegetation Cover Type (MBSS)
[ ] Natural Channel Shape	Width: 4-5'	[X] Silts	[ ] Sands	[ ] Muck	RB: Wet-25D
[ ] Artificial (man-made)	Depth: 3-6"	[ ] Cobbles	[X] Gravel	[ ] Other:	
[X] Manipulated (man-altered)	Bank Erosion/stability:	[ ] Bedrock	[ ] Concrete		
[ ] Other:	unstable at confluence	Side slope: [X] ≥1:1 [X] 2:1 [ ] 3:1 [ ] ≤4:1			LB: Berm & 25P-WET
Notes: Below outfall along I-270		upper part 2:1, by confluence 1:1			

Weather/Precipitation Conditions:

During Field Visit	Inches of Rain Within Last Week	Monthly Drought Condition NCDC Regional PDSI http://www.ncdc.noaa.gov/temp-and-precip/climatological-rankings/index.php													Month: April Year: 2021
● No rain	○ 0-0.5	○	○	○	○	○	○	⊗	○	○	○	○	○	○	
○ Light rain	● 0.5-1	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	
○ Heavy Rain	○ >1	Severe Drought			Moderate Drought		Normal			Moderately Wet		Severely Wet			

Non-tidal tributary has: ***(check all that apply; include photos for each & list photo #)***

Bed and Banks	Ordinary High Water Mark		
[X] Yes	[X] Clear, natural line impressed on the bank	[ ] Sediment deposition	[ ] Sediment sorting
[ ] No	[X] Changes in the character of soil	[ ] Water staining	[ ] Scour
	[ ] Shelving	[X] Presence of flood litter/debris	[ ] Observed/predicted flow events
	[X] Vegetation matted down, bent, or absent	[ ] Destruction of terrestrial veg.	[ ] Abrupt change in plant community
	[ ] Leaf litter disturbed	[ ] Presence of wrack line	[ ] Other:

Tidal tributary has: ***(check all that apply; include photos for each & list photo #)***

High Tide Line	Mean High Water Mark indicated by:	Chemical Characteristics
[ ] Oil or scum line along shore objects	[ ] Survey to available datum	[ ] Water is clear
[ ] Fine shell or debris deposits (foreshore)	[ ] Physical markings	[ ] Water is discolored
[ ] Physical markings/characteristics	[ ] Vegetation lines/changes in types	[ ] Oily film
[ ] Tidal gauges		[ ] Other:
Notes:		

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: I-495/I-270 Managed Lanes Study City/County: Montgomery Sampling Date: 4-6-21

Applicant/Owner: MDOT SHA State: MD Sampling Point: 25P-WET

Investigator(s): JCP / GJK Section, Township, Range: ______

Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): Concave Slope (%): 0-2

Subregion (LRR or MLRA): 148 LRR S Lat: 39.0696950 Long: -77.1582620 Datum: NAD 83feet

Soil Map Unit Name: Glenelg silt loam 8-15% slopes NWI classification: (PFO)

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? NO Are "Normal Circumstances" present? Yes X No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? NO (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 ___	Is the Sampled Area within a Wetland?	Yes ___ No ___
Hydric Soil Present?	Yes ___	No ___		
Wetland Hydrology Present?	Yes X	No ___		

Remarks:
FLAGS 25P-1 through P-4. Area may be a created wetland.

Photos 25P-WET-1 25P-UPL-1

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- X Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two 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)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No ___	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No ___	Depth (inches): ___

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five Strata) – Use scientific names of plants.

Sampling Point: 2SP-WET

Tree Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1. Betula nigra	20	Y	FACW
2.			
3.			
4.			
5.			
6.			
= Total Cover	20		
50% of total cover: 10	20% of total cover: 4		

Sapling Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
5.			
6.			
= Total Cover			
50% of total cover:	20% of total cover:		

Shrub Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1. Diospyros virginiana	5	Y	FAC
2. Liquidambar Styraciflua	5	Y	FAC
3. Platanus occidentalis	15	Y	FACW
4.			
5.			
6.			
= Total Cover	25		
50% of total cover: 12.5	20% of total cover: 5		

Herb Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1. Juncus effusus	40	Y	FACW
2. Cinna arundinacea	20	Y	FACW
3. Boehmeria Cylindrica	10	N	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
= Total Cover	70		
50% of total cover: 35	20% of total cover: 14		

Woody Vine Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1. Grape vines	10	Y	N/A
2.			
3.			
4.			
5.			
= Total Cover	10		
50% of total cover: 5	20% of total cover: 2		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 7 (A)

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 87.5 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A = ______

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Five 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.

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 X No ___

Remarks: (Include photo numbers here or on a separate sheet.) Grape vine could not be identified to species level. Vegetation meets dominance test even if Grape species is drier than FAC.

SOIL

Sampling Point: 25P-WET

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- __ Histosol (A1)
- __ Histic Epipedon (A2)
- __ Black Histic (A3)
- __ Hydrogen Sulfide (A4)
- __ Stratified Layers (A5)
- __ 2 cm Muck (A10) **(LRR N)**
- __ Depleted Below Dark Surface (A11)
- __ Thick Dark Surface (A12)
- __ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- __ Sandy Gleyed Matrix (S4)
- __ Sandy Redox (S5)
- __ Stripped Matrix (S6)
- __ Dark Surface (S7)
- __ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- __ Thin Dark Surface (S9) **(MLRA 147, 148)**
- __ Loamy Gleyed Matrix (F2)
- __ Depleted Matrix (F3)
- __ Redox Dark Surface (F6)
- __ Depleted Dark Surface (F7)
- __ Redox Depressions (F8)
- __ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- __ Umbric Surface (F13) **(MLRA 136, 122)**
- __ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- __ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- __ 2 cm Muck (A10) **(MLRA 147)**
- __ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- __ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- __ Very Shallow Dark Surface (TF12)
- __ Other (Explain in Remarks)

[3]Indicators 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: NO SOIL TEST

Soil pit was not dug because the team did not have invasive access.

Wetland Function-Value Evaluation Form

Total area of wetland 0.001 ac, but continues outside study area Human made? Y Is wetland part of a wildlife corridor? yes or a "habitat island"? No

Adjacent land use developed Distance to nearest roadway or other development 0.1 mi

Dominant wetland systems present scrub shrub Contiguous undeveloped buffer zone present Yes

Is the wetland a separate hydraulic system? NO If not, where does the wetland lie in the drainage basin? Upper

How many tributaries contribute to the wetland? 2 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. 2SP-WET

Latitude 39.0697 Longitude -77.15828

Prepared by: JCP Date 4-6-21

Wetland Impact:
Type PFO Area ____

Evaluation based on:
Office X Field X

Corps manual wetland delineation completed? Y X N ____

Function/Value	Suitability Y	Suitability N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	X		7, 9, 15		
Floodflow Alteration	X		4, 8		
Fish and Shellfish Habitat					
Sediment/Toxicant Retention	X		1, 2, 3, 10, 11		Contiguous area beyond study area is ponded
Nutrient Removal	X				
Production Export					
Sediment/Shoreline Stabilization					
Wildlife Habitat	X		3, 6, 8		
Recreation					
Educational/Scientific Value					
Uniqueness/Heritage					
Visual Quality/Aesthetics					
ES Endangered Species Habitat					
Other					

Notes:

* Refer to backup list of numbered considerations.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: I-495/I-270 Managed Lanes Study City/County: Montgomery Sampling Date: 2-23-21
Applicant/Owner: MDOT SHA State: MD Sampling Point: 26A-Wet
Investigator(s): JCP/GK/EA Section, Township, Range: ______
Landform (hillslope, terrace, etc.): stream terrace Local relief (concave, convex, none): concave Slope (%): 0-2
Subregion (LRR or MLRA): ______ Lat: 39.08123 Long: -77.17001 Datum: NAD83
Soil Map Unit Name: Glenville silt loam (5B) NWI classification: PFO
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)
Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? NO Are "Normal Circumstances" present? Yes X No ___
Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? NO (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 X No ___	Is the Sampled Area within a Wetland?	Yes ___ No ___
Hydric Soil Present? Yes ___ No N/AV		
Wetland Hydrology Present? Yes ___ No N/AV		

Remarks: this area is adjacent to 26A-WET-EAST (PEM 1B) 26A-WET-1 But canopy is forested
26A-WET-2 26A-WET-3
Photos (Facing WEST Facing South)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- [x] Surface Water (A1)
- [ ] High Water Table (A2)
- [x] Saturation (A3)
- [ ] Water Marks (B1)
- [ ] Sediment Deposits (B2)
- [ ] Drift Deposits (B3)
- [ ] Algal Mat or Crust (B4)
- [ ] Iron Deposits (B5)
- [ ] Inundation Visible on Aerial Imagery (B7)
- [ ] Water-Stained Leaves (B9)
- [ ] Aquatic Fauna (B13)
- [ ] Marl Deposits (B15) **(LRR U)**
- [ ] Hydrogen Sulfide Odor (C1)
- [ ] Oxidized Rhizospheres along Living Roots (C3)
- [ ] Presence of Reduced Iron (C4)
- [ ] Recent Iron Reduction in Tilled Soils (C6)
- [ ] Thin Muck Surface (C7)
- [ ] Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- [ ] Surface Soil Cracks (B6)
- [ ] Sparsely Vegetated Concave Surface (B8)
- [x] Drainage Patterns (B10)
- [ ] Moss Trim Lines (B16)
- [ ] Dry-Season Water Table (C2)
- [ ] Crayfish Burrows (C8)
- [ ] Saturation Visible on Aerial Imagery (C9)
- [x] Geomorphic Position (D2)
- [ ] Shallow Aquitard (D3)
- [ ] FAC-Neutral Test (D5)
- [ ] Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes X	No ___	Depth (inches): 0.5	
Water Table Present?	Yes ___	No ___	Depth (inches): ___	
Saturation Present? (includes capillary fringe)	Yes ___	No ___	Depth (inches): ___	**Wetland Hydrology Present? Yes X No ___**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: depressional feature (26A-3) has surface hydrol., saturation and drainage patterns. Appears to be maple bottomland (adj. to I-270 on upstream side)

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: 26A - Wet

Tree Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer rubrum	80	Y	FAC
2. Liriodendron tulipifera	15	N	FACU
3. Black locust	10	N	FACU
4. Ulmus americana	10	N	FACW
5.			
6.			
7.			
8.			
	115 = Total Cover		
50% of total cover: 57.5	20% of total cover: 23		

Sapling/Shrub Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1. Carpinus caroliniana	10	Y	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		

Herb Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1. Ficaria verna	50	Y	FAC
2. Juncus effusus	10	N	FACW
3. Boehmeria cylindrica	15	N	FACW
4. Persicaria sp.	5	N	N/A
5. Cinna arundinacea	5	N	FACW
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	85 = Total Cover		
50% of total cover: 42.5	20% of total cover: 17		

Woody Vine Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
5.			
	____ = Total Cover		
50% of total cover: ____	20% of total cover: ____		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	____	x 1 = ____
FACW species	____	x 2 = ____
FAC species	____	x 3 = ____
FACU species	____	x 4 = ____
UPL species	____	x 5 = ____
Column Totals:	____ (A)	____ (B)

Prevalence Index = B/A = ______

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.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

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

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes X No ____

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

SOIL

Sampling Point: 26A - Wet

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ 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 Mucky 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 Soils[3]:

- ☐ 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)

[3]Indicators 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: N/A

Extended boundary limits of 26A - Wet based on plants and surface hydrology.

Wetland Function-Value Evaluation Form

Total area of wetland 0.28 Human made? NO Is wetland part of a wildlife corridor? X or a "habitat island"? see below

Adjacent land use developed commercial/residential Distance to nearest roadway or other development 0.1

Dominant wetland systems present forested Contiguous undeveloped buffer zone present NO

Is the wetland a separate hydraulic system? NO If not, where does the wetland lie in the drainage basin? Unnamed Trib to Watts Branch

How many tributaries contribute to the wetland? 0 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. 26A -WET

Latitude 39.08123 Longitude -77.17001

Prepared by: JCP Date 2/23/21

Wetland Impact:
Type PFO Area ______

Evaluation based on:
Office ______ Field ✓

Corps manual wetland delineation completed? Y ✓ N ______

Function/Value	Suitability Y	Suitability N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	✓		7, 9, 13, 15		
Floodflow Alteration	✓		2, 3, 4, 5, 6		
Fish and Shellfish Habitat		✓			
Sediment/Toxicant Retention	✓		1, 10, 12		
Nutrient Removal	✓				
Production Export	Y				Food source for wildlife
Sediment/Shoreline Stabilization		✓			
Wildlife Habitat	✓		5, 7, 8, 13		wildlife corridor, but also disconnected
Recreation		✓			
Educational/Scientific Value		✓			
Uniqueness/Heritage		✓			
Visual Quality/Aesthetics	✓				
ES Endangered Species Habitat		✓			
Other					Forest buffer for residential community

Notes: wetland 26A is along 26B (Watts Branch)

* Refer to backup list of numbered considerations.

Waters of the U.S. Data Sheet

Project: I-270 / I-495 MANAGED LANE STUDY	**Feature ID:** 26B	**Stream Order:** 2nd
Date: 5/9/18	**State:** MD	**Photos:** Upstream / Downstream
Crew: WT, NC	**County:** Montgomery	**Last Flag Number:** 26B(1-7A)(1-7B

Feature Hydrologic Class (check one):

Tidal	Perennial	Intermittent	Ephemeral
( ) TNW (Subject to ebb and flow)	( ) TNW – Perennial (Flowing year round)	(X) RPW – Seasonal (must flow at least 3 months a year)	( ) Non-RPW draining uplands
	( ) RPW – Perennial (Flowing year round)		( ) Non-RPW erosional feature
			( ) Non-RPW with abutting wetland
			( ) Non-RPW with adjacent wetland
			( ) Non-RPW wetland adjacent or abutting upstream (outside of study area)

Describe rational for hydrologic class: Defined Bed and Banks. Drains abutting Forested WETLAND

Hydrologic Connectivity –	Upstream: Stream Continues upstream beyond study area	Downstream: Beyond study area	Adjacent/Abutting: PEM (26A)

Feature Description: *(check all that apply)*

Shape (with respect to OHW)		Substrate			Vegetation Cover Type (MBSS)
[X] Natural Channel Shape	Width: 8'	[X] Silts	[X] Sands	[ ] Muck	RB: Forested
[ ] Artificial (man-made)	Depth: 4'	[X] Cobbles	[ ] Gravel	[X] Other: Rip Rap	
[X] Manipulated (man-altered)	Bank Erosion/stability: Moderate	[ ] Bedrock	[ ] Concrete		LB: Forested
[ ] Other:		Side slope: [ ] ≥1:1	[ ] 2:1	[X] 3:1 [ ] ≤4:1	

Notes: Pooled water observed. No base Flow, flows under I-270 and Watts Branch Pkwy

Weather/Precipitation Conditions:

During Field Visit	Inches of Rain Within Last Week	Monthly Drought Condition NCDC Regional PDSI http://www.ncdc.noaa.gov/temp-and-precip/climatological-rankings/index.php												
		Month: May										Year: 2018		
(X) No rain	(X) 0-0.5	( )	( )	( )	( )	( )	( )	( )	(X)	( )	( )	( )	( )	( )
( ) Light rain	( ) 0.5-1	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6
( ) Heavy Rain	( ) >1	Severe Drought			Moderate Drought		Normal			Moderately Wet		Severely Wet		

Non-tidal tributary has: *(check all that apply; include photos for each & list photo #)*

Bed and Banks	Ordinary High Water Mark		
[X] Yes	[X] Clear, natural line impressed on the bank	[ ] Sediment deposition	[ ] Sediment sorting
[ ] No	[ ] Changes in the character of soil	[ ] Water staining	[X] Scour
	[ ] Shelving	[X] Presence of flood litter/debris	[ ] Observed/predicted flow events
	[ ] Vegetation matted down, bent, or absent	[ ] Destruction of terrestrial veg.	[ ] Abrupt change in plant community
	[ ] Leaf litter disturbed	[ ] Presence of wrack line	[ ] Other:

Tidal tributary has: *(check all that apply; include photos for each & list photo #)*

High Tide Line	Mean High Water Mark indicated by:	Chemical Characteristics
[ ] Oil or scum line along shore objects	[ ] Survey to available datum	[ ] Water is clear
[ ] Fine shell or debris deposits (foreshore)	[ ] Physical markings	[ ] Water is discolored
[ ] Physical markings/characteristics	[ ] Vegetation lines/changes in types	[ ] Oily film
[ ] Tidal gauges		[ ] Other:

Notes:

Previously WUS18

Waters of the U.S. Data Sheet

Project: I270/I495 Managed Lane Study		Feature ID: 26C / Stream Order: 2nd
Date: 5/10/18	State: MD	Photos: Upstream, downstream
Crew: WT, NC	County: Montgomery	Last Flag Number: 26C(1-12A)(1-12B)

Feature Hydrologic Class (check one):

Tidal	Perennial	Intermittent	Ephemeral
○ TNW (Subject to ebb and flow)	○ TNW – Perennial (Flowing year round) ○ RPW – Perennial (Flowing year round)	(X) RPW – Seasonal (must flow at least 3 months a year)	○ Non-RPW draining uplands ○ Non-RPW erosional feature ○ Non-RPW with abutting wetland ○ Non-RPW with adjacent wetland ○ Non-RPW wetland adjacent or abutting upstream (outside of study area)

Describe rational for hydrologic class: Base flow observed during site investigation

Hydrologic Connectivity –	Upstream: 26G	Downstream: Beyond study area	Adjacent/Abutting: 26F, 26D, 26E

Feature Description: *(check all that apply)*

Shape (with respect to OHW)		Substrate			Vegetation Cover Type (MBSS)
[X] Natural Channel Shape	Width: 9'	[ ] Silts	[X] Sands	[ ] Muck	RB: Forested
[ ] Artificial (man-made)	Depth: 1'	[X] Cobbles	[X] Gravel	[X] Other:	
[X] Manipulated (man-altered)	Bank Erosion/stability:	[ ] Bedrock	[ ] Concrete	Rip rap	
[ ] Other:	Good, Stable	Side slope: [X] ≥1:1 [ ] 2:1 [ ] 3:1 [ ] ≤4:1			LB: Scrub-shrub

Notes: Flows under I-270 and also under Watts Branch Pkwy

Weather/Precipitation Conditions:

During Field Visit	Inches of Rain Within Last Week	Monthly Drought Condition NCDC Regional PDSI http://www.ncdc.noaa.gov/temp-and-precip/climatological-rankings/index.php												Month: May Year: 2018
⊗ No rain	⊗ 0-0.5	○	○	○	○	○	○	○	⊗	○	○	○	○	○
○ Light rain	○ 0.5-1	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6
○ Heavy Rain	○ >1	Severe Drought			Moderate Drought		Normal			Moderately Wet		Severely Wet		

Non-tidal tributary has: *(check all that apply; include photos for each & list photo #)*

Bed and Banks	Ordinary High Water Mark		
[X] Yes	[X] Clear, natural line impressed on the bank	[ ] Sediment deposition	[ ] Sediment sorting
[ ] No	[ ] Changes in the character of soil	[ ] Water staining	[ ] Scour
	[ ] Shelving	[X] Presence of flood litter/debris	[ ] Observed/predicted flow events
	[ ] Vegetation matted down, bent, or absent	[ ] Destruction of terrestrial veg.	[ ] Abrupt change in plant community
	[ ] Leaf litter disturbed	[ ] Presence of wrack line	[ ] Other:

Tidal tributary has: *(check all that apply; include photos for each & list photo #)*

High Tide Line	Mean High Water Mark indicated by:	Chemical Characteristics
[ ] Oil or scum line along shore objects	[ ] Survey to available datum	[ ] Water is clear
[ ] Fine shell or debris deposits (foreshore)	[ ] Physical markings	[ ] Water is discolored
[ ] Physical markings/characteristics	[ ] Vegetation lines/changes in types	[ ] Oily film
[ ] Tidal gauges		[ ] Other:

Notes:

*Previously WUS17/WUS17A

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: I-270/I-495 MANAGED LANE Study City/County: Montgomery Sampling Date: 5/10/18

Applicant/Owner: SHA State: MD Sampling Point: 26D-WET

Investigator(s): WT, NC Section, Township, Range: ______

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2

Subregion (LRR or MLRA): LRR S MLRA 148 Lat: 39.0773954 Long: -77.169275 Datum: NAD83

Soil Map Unit Name: Blocktown Channery Silt loam (116D) NWI classification: PEM1E

Are climatic / hydrologic conditions on the site typical for this time of year? Yes [X] No [ ] (If no, explain in Remarks.)

Are Vegetation [ ] Soil [ ], or Hydrology [ ] significantly disturbed? Are "Normal Circumstances" present? Yes [X] 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 [X]	No [ ]
Hydric Soil Present?	Yes [X]	No [ ]
Wetland Hydrology Present?	Yes [X]	No [ ]

Is the Sampled Area within a Wetland? Yes [X] No [ ]

Remarks:
PEM parallel to sound wall along I-270 AND Watts Branch Parkway.
Flags 26D(1-6) Photo: 26D-WET. North

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- [X] Surface Water (A1)
- [X] High Water Table (A2)
- [X] Saturation (A3)
- [ ] Water Marks (B1)
- [ ] Sediment Deposits (B2)
- [ ] Drift Deposits (B3)
- [ ] Algal Mat or Crust (B4)
- [ ] Iron Deposits (B5)
- [ ] Inundation Visible on Aerial Imagery (B7)
- [ ] Water-Stained Leaves (B9)
- [ ] Aquatic Fauna (B13)
- [ ] True Aquatic Plants (B14)
- [ ] Hydrogen Sulfide Odor (C1)
- [ ] Oxidized Rhizospheres on Living Roots (C3)
- [ ] Presence of Reduced Iron (C4)
- [ ] Recent Iron Reduction in Tilled Soils (C6)
- [ ] Thin Muck Surface (C7)
- [ ] Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- [ ] Surface Soil Cracks (B6)
- [ ] Sparsely Vegetated Concave Surface (B8)
- [X] Drainage Patterns (B10)
- [ ] Moss Trim Lines (B16)
- [ ] Dry-Season Water Table (C2)
- [ ] Crayfish Burrows (C8)
- [ ] Saturation Visible on Aerial Imagery (C9)
- [ ] Stunted or Stressed Plants (D1)
- [X] Geomorphic Position (D2)
- [ ] Shallow Aquitard (D3)
- [ ] Microtopographic Relief (D4)
- [ ] FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes [X]	No [ ]	Depth (inches): 1/2"
Water Table Present?	Yes [X]	No [ ]	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes [X]	No [ ]	Depth (inches): 0

Wetland Hydrology Present? Yes [X] No [ ]

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Area appears to be fed by spring seep from adjacent hillside.
Wetland drains into 26C.

VEGETATION (Five Strata) – Use scientific names of plants.

Sampling Point: 26D-WET

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer saccharinum	5	Y	FACW
2. Fraxinus pennsylvanica	5	Y	FACW
3. Diospyros virginiana	5	Y	FAC
4.			
5.			
6.			
	15 = Total Cover		
50% of total cover: 8	20% of total cover: 3		

Sapling Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Lonicera tatarica	10	Y	FACU
2.			
3.			
4.			
5.			
6.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		

Shrub Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Rosa multiflora	2	Y	FACU
2.			
3.			
4.			
5.			
6.			
	2 = Total Cover		
50% of total cover: 1	20% of total cover: 1		

Herb Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Leersia virginica	20	Y	FACW
2. Microstegium vimineum	20	Y	FAC
3. Poa palustris	10	N	FACW
4. Lycopus sp.	2	N	NI
5. Persicaria sagittata	2	N	OBL
6. Parthenocissus quinquefolia	2	N	FACU
7.			
8.			
9.			
10.			
11.			
	56 = Total Cover		
50% of total cover: 28	20% of total cover: 11		

Woody Vine Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 71 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- [ ] 1 - Rapid Test for Hydrophytic Vegetation
- [x] 2 - Dominance Test is >50%
- [ ] 3 - Prevalence Index is ≤3.0[1]
- [ ] 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Five 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.

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 [x] No [ ]

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: 26D-WET

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 4/1	100					silt loam	Saturated
3-6	10YR 4/2	100					Sandy loam	Saturated
6-12	10YR 5/3	75	5YR 5/3	20	C	M	Silty clay	
			7.5YR 5/6	5	C	M		
12-20	10YR 4/4	90	7.5YR 5/6	10			silty clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10) **(LRR N)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7)
- ☐ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ☐ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ☐ Loamy Gleyed Matrix (F2)
- ☒ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ☐ Umbric Surface (F13) **(MLRA 136, 122)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ☐ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10) **(MLRA 147)**
- ☐ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators 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:

Wetland Function-Value Evaluation Form

Wetland I.D. 26D
Latitude 39.0773954 Longitude -77.169275
Prepared by: WT Date 5/10/18
Wetland Impact:
Type N/A Area N/A

Evaluation based on:
Office ✓ Field ✓

Corps manual wetland delineation completed? Y ✓ N ___

Total area of wetland 0.01 Ac Human made? No Is wetland part of a wildlife corridor? No or a "habitat island"? No

Adjacent land use Forested, developed Distance to nearest roadway or other development 30 ft

Dominant wetland systems present PEM Contiguous undeveloped buffer zone present No

Is the wetland a separate hydraulic system? Yes If not, where does the wetland lie in the drainage basin? ___

How many tributaries contribute to the wetland? 0 Wildlife & vegetation diversity/abundance (see attached list)

Function/Value	Suitability Y / N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	Y			
Floodflow Alteration	Y			
Fish and Shellfish Habitat	N			
Sediment/Toxicant Retention	Y			
Nutrient Removal	Y			
Production Export	N			
Sediment/Shoreline Stabilization	N			
Wildlife Habitat	N			
Recreation	N			
Educational/Scientific Value	N			
Uniqueness/Heritage	N			
Visual Quality/Aesthetics	N			
ES Endangered Species Habitat	N			
Other	—			

Notes: WETLAND DRAINS into 26C.
Wetland adjacent to I-270 Soundwall.

* Refer to backup list of numbered considerations.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: I-270/I-495 MANAGED LANE City/County: Montgomery Sampling Date: 5/10/18
Applicant/Owner: SHA State: MD Sampling Point: 26E-WET
Investigator(s): WT, NC Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2
Subregion (LRR or MLRA): LRR S MLRA 148 Lat: 39.0772380 Long: -77.169106 Datum: NAD 83
Soil Map Unit Name: Baile silt loam (6A) NWI classification: PEM1B
Are climatic / hydrologic conditions on the site typical for this time of year? Yes [X] No [ ] (If no, explain in Remarks.)
Are Vegetation [ ] Soil [ ], or Hydrology [ ] significantly disturbed? Are "Normal Circumstances" present? Yes [X] 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 [X] No [ ]
Hydric Soil Present? Yes [X] No [ ]
Wetland Hydrology Present? Yes [X] No [ ]

Is the Sampled Area within a Wetland? Yes [X] No [ ]

Remarks:
PEM paralleling sound wall. Previously Identified AS PEM09.
Flags: 26E(1-11)
Natural GAS line Runs under wetland. Photo: 26E_WET_South

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- [X] Surface Water (A1)
- [X] High Water Table (A2)
- [X] Saturation (A3)
- [ ] Water Marks (B1)
- [ ] Sediment Deposits (B2)
- [ ] Drift Deposits (B3)
- [ ] Algal Mat or Crust (B4)
- [ ] Iron Deposits (B5)
- [ ] Inundation Visible on Aerial Imagery (B7)
- [ ] Water-Stained Leaves (B9)
- [ ] Aquatic Fauna (B13)
- [ ] True Aquatic Plants (B14)
- [ ] Hydrogen Sulfide Odor (C1)
- [ ] Oxidized Rhizospheres on Living Roots (C3)
- [ ] Presence of Reduced Iron (C4)
- [ ] Recent Iron Reduction in Tilled Soils (C6)
- [ ] Thin Muck Surface (C7)
- [ ] Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- [ ] Surface Soil Cracks (B6)
- [ ] Sparsely Vegetated Concave Surface (B8)
- [X] Drainage Patterns (B10)
- [ ] Moss Trim Lines (B16)
- [ ] Dry-Season Water Table (C2)
- [ ] Crayfish Burrows (C8)
- [ ] Saturation Visible on Aerial Imagery (C9)
- [ ] Stunted or Stressed Plants (D1)
- [X] Geomorphic Position (D2)
- [ ] Shallow Aquitard (D3)
- [ ] Microtopographic Relief (D4)
- [ ] FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes [X] No [ ] Depth (inches): 1"
Water Table Present? Yes [X] No [ ] Depth (inches): 0"
Saturation Present? (includes capillary fringe) Yes [X] No [ ] Depth (inches): 0"

Wetland Hydrology Present? Yes [X] No [ ]

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Spring seep, drains through wetland to gabion basket along 26C. Extended wetland to make connection to 26C.

VEGETATION (Five Strata) – Use scientific names of plants.

Sampling Point: 26E-WET

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover:	20% of total cover:		

Sapling Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover:	20% of total cover:		

Shrub Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover:	20% of total cover:		

Herb Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Poa palustris	80	Y	FACW
2. Leersia virginica	10	N	FACW
3. Typha latifolia	2	N	OBL
4. Carex lurida	2	N	OBL
5. Parthenocissus quinquefolia	1	N	FACU
6.			
7.			
8.			
9.			
10.			
11.			
	95 = Total Cover		
50% of total cover: 48	20% of total cover: 19		

Woody Vine Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- [ ] 1 - Rapid Test for Hydrophytic Vegetation
- [x] 2 - Dominance Test is >50%
- [ ] 3 - Prevalence Index is ≤3.0[1]
- [ ] 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Five 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.

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 [x] No [ ]

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: 26E-WET

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-5	2.5Y 4/1	100%					Sandy loam	Saturated
5-11	Gley 1 5/10Y	75%	10YR 5/6	25	C	M	Silty Clay	Saturated
11-20	Gley 1 4/10Y	95%	10YR 5/4	5	C	M	Silty Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10) **(LRR N)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7)
- ☐ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ☐ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ☐ Loamy Gleyed Matrix (F2)
- ☒ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ☐ Umbric Surface (F13) **(MLRA 136, 122)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ☐ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10) **(MLRA 147)**
- ☐ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators 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:

Wetland Function-Value Evaluation Form

Total area of wetland 0.03 Ac Human made? No Is wetland part of a wildlife corridor? No or a "habitat island"? No

Adjacent land use forested, developed Distance to nearest roadway or other development 48 ft.

Dominant wetland systems present PEM1B Contiguous undeveloped buffer zone present No

Is the wetland a separate hydraulic system? Yes If not, where does the wetland lie in the drainage basin? ____

How many tributaries contribute to the wetland? 0 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. 26E

Latitude 39.0772380 Longitude -77.169106

Prepared by: WT Date 5/10/18

Wetland Impact:
Type NA Area NA

Evaluation based on:
Office ✓ Field ✓

Corps manual wetland delineation completed? Y ✓ N ____

Function/Value	Suitability Y / N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	Y			
Floodflow Alteration	Y			
Fish and Shellfish Habitat	N			
Sediment/Toxicant Retention	Y			
Nutrient Removal	Y			
Production Export	N			
Sediment/Shoreline Stabilization	N			
Wildlife Habitat	N			
Recreation	N			
Educational/Scientific Value	N			
Uniqueness/Heritage	N			
Visual Quality/Aesthetics	N			
ES Endangered Species Habitat	N			
Other	—			

Notes: WETLAND DRAINS into 26C.
Natural GAS line RUNS underneath wetland System.
Adjacent to I-270 Soundwall.

* Refer to backup list of numbered considerations.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: I495/I270 Managed Lanes Study City/County: Montgomery County Sampling Date: 6/19/18
Applicant/Owner: Maryland State Highway Administration State: MD Sampling Point: 26F-WET
Investigator(s): WT, NL, RS Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-3
Subregion (LRR or MLRA): LRR S MLRA 148 Lat: 39.077529 Long: -77.167283 Datum: NAD83
Soil Map Unit Name: Baile silt loam, 0 to 3 percent slopes (6A) NWI classification: PEM1A
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:
26F is a wetland located within 26-SWM2. 26C flows through the wetland.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☑ Surface Water (A1)
- ☑ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ True Aquatic Plants (B14)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two 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)
- ☐ Stunted or Stressed Plants (D1)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ Microtopographic Relief (D4)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ☑ No ☐ Depth (inches): 1"
Water Table Present? Yes ☑ No ☐ Depth (inches): 1"
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:
26F receives hydrology from 26C, 26G, and multiple outfalls. It also receives runoff from adjacent uplands. 26J flows into 26F.

Flags: 26F(1-12)

Photos: 26F-WET

VEGETATION (Five Strata) – Use scientific names of plants.

Sampling Point: 26F-WET

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix nigra	10	Yes	OBL
2. Acer rubrum	10	Yes	FAC
3.			
4.			
5.			
6.			
	20 = Total Cover		
50% of total cover: 10	20% of total cover: 4		

Sapling Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix nigra	5	Yes	OBL
2.			
3.			
4.			
5.			
6.			
	5 = Total Cover		
50% of total cover: 2.5	20% of total cover: 1		

Shrub Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover:	20% of total cover:		

Herb Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Persicaria pensylvanica	20	Yes	FACW
2. Leersia oryzoides	20	Yes	OBL
3. Peltandra virginica	10	No	OBL
4. Boehmeria cylindrica	10	No	FACW
5. Carex tribuloides	10	No	
6.			
7.			
8.			
9.			
10.			
11.			
	70 = Total Cover		
50% of total cover: 35	20% of total cover: 14		

Woody Vine Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Parthenocissus quinquefolia	5	Yes	FACU
2.			
3.			
4.			
5.			
	5 = Total Cover		
50% of total cover: 2.5	20% of total cover: 1		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 83 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- [ ] 1 - Rapid Test for Hydrophytic Vegetation
- [x] 2 - Dominance Test is >50%
- [ ] 3 - Prevalence Index is ≤3.0[1]
- [ ] 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Five 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.

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 [x] No [ ]

Remarks: (Include photo numbers here or on a separate sheet.)
Other species observed; Platanus occidentalis, Typha angustifolia, Schoenoplectus tabernaemontani

SOIL

Sampling Point: 26F-WET

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-20	10YR 2/2	100					Silty clay	Moist

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10) **(LRR N)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7)
- ☐ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ☐ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ☐ Umbric Surface (F13) **(MLRA 136, 122)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ☐ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10) **(MLRA 147)**
- ☐ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators 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:

Wetland Function-Value Evaluation Form

Total area of wetland 1.57 ac Human made? Yes Is wetland part of a wildlife corridor? No or a "habitat island"? No

Adjacent land use Forested upland, I-270, walking trail Distance to nearest roadway or other development 30 ft

Dominant wetland systems present PEM Contiguous undeveloped buffer zone present No

Is the wetland a separate hydraulic system? No If not, where does the wetland lie in the drainage basin? Upper

How many tributaries contribute to the wetland? 1 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. 26F

Latitude 39.077529 Longitude -77.167285

Prepared by: RS Date 6/20/18

Wetland Impact:
Type NA Area NA

Evaluation based on:
Office X Field X

Corps manual wetland delineation completed? Y ✓ N

Function/Value	Suitability Y / N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	Yes	7, 9,		
Floodflow Alteration	Yes	1, 2, 4, 5, 6, 7, 8, 9, 10, 13, 15, 16, 18	X	Designed as a SWM pond
Fish and Shellfish Habitat	Yes	3, 7, 8, 9, 14, 17		
Sediment/Toxicant Retention	Yes	1, 2, 3, 7, 10, 11, 12, 13, 14, 15, 16	X	Designed as a SWM pond
Nutrient Removal	Yes	3, 4, 5, 8, 9, 10, 11, 12, 13, 14	X	Designed as a SWM pond
Production Export	Yes	2, 5, 7, 8, 12		White tail deer noted
Sediment/Shoreline Stabilization	Yes	1, 2, 3, 4, 12, 15		Sediment marks up on herbaceous vegetation
Wildlife Habitat	Yes	3, 8, 13, 17, 19, 20,		Green frogs and bird species noted
Recreation	Yes	11, 12		Off of walking trail
Educational/Scientific Value	Yes	9, 10,		
Uniqueness/Heritage	Yes	1, 19, 27		Tough to see entire wetland from accessible area
Visual Quality/Aesthetics	Yes	6		
ES Endangered Species Habitat	No			
Other	—			

Notes: Wetland is part of a man-made Stormwater pond.

* Refer to backup list of numbered considerations.

Waters of the U.S. Data Sheet

Project: I495/I270 Managed Lanes Study		**Feature ID:** 26 G — **Stream Order:** 1st
Date: 6/19/18	**State:** Maryland	**Photos:** Upstream, downstream
Crew: WT, BS, NL	**County:** Montgomery	**Last Flag Number:** N/A, already flagged

Feature Hydrologic Class (check one):

Tidal	Perennial	Intermittent	Ephemeral
( ) TNW (Subject to ebb and flow)	( ) TNW – Perennial (Flowing year round)	(x) RPW – Seasonal (must flow at least 3 months a year)	( ) Non-RPW draining uplands
	( ) RPW – Perennial (Flowing year round)		( ) Non-RPW erosional feature
			(x) Non-RPW with abutting wetland
			( ) Non-RPW with adjacent wetland
			( ) Non-RPW wetland adjacent or abutting upstream (outside of study area)

Describe rational for hydrologic class: Ephemeral at upstream extend, banks and bed become more defined downstream and intermittent

Hydrologic Connectivity –	Upstream: 26H	Downstream: 26F, 26C	Adjacent/Abutting: N/A

Feature Description: *(check all that apply)*

Shape (with respect to OHW)		Substrate			Vegetation Cover Type (MBSS)
[x] Natural Channel Shape	Width: 6"	[x] Silts	[x] Sands	[ ] Muck	RB: Upland Forest
[ ] Artificial (man-made)	Depth: 3"	[x] Cobbles	[x] Gravel	[ ] Other:	
[ ] Manipulated (man-altered)	Bank Erosion/stability:	[ ] Bedrock	[ ] Concrete		LB: Upland forest
[ ] Other:	Minor but stable	Side slope: [ ] ≥1:1 [x] 2:1 [ ] 3:1 [ ] ≤4:1			

Notes: There is a stormwater outfall that adds flow to 26G in the ephemeral part

Weather/Precipitation Conditions:

During Field Visit	Inches of Rain Within Last Week		Monthly Drought Condition NCDC Regional PDSI https://www.ncdc.noaa.gov/temp-and-precip/climatological-rankings/index.php — Month: May — Year: 2018												
(x) No rain	(x)	0-0.5	( )	( )	( )	( )	( )	( )	( )	(x)	( )	( )	( )	( )	( )
( ) Light rain	( )	0.5-1	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6
( ) Heavy Rain	( )	>1	Severe Drought			Moderate Drought		Normal			Moderately Wet		Severely Wet		

Non-tidal tributary has: *(check all that apply; include photos for each & list photo #)*

Bed and Banks	Ordinary High Water Mark		
[x] Yes	[x] Clear, natural line impressed on the bank	[x] Sediment deposition	[ ] Sediment sorting
[ ] No	[ ] Changes in the character of soil	[ ] Water staining	[x] Scour
	[x] Shelving	[x] Presence of flood litter/debris	[ ] Observed/predicted flow events
	[ ] Vegetation matted down, bent, or absent	[ ] Destruction of terrestrial veg.	[ ] Abrupt change in plant community
	[ ] Leaf litter disturbed	[ ] Presence of wrack line	[ ] Other:

Tidal tributary has: *(check all that apply; include photos for each & list photo #)*

High Tide Line	Mean High Water Mark indicated by:	Chemical Characteristics
[ ] Oil or scum line along shore objects	[ ] Survey to available datum	[ ] Water is clear
[ ] Fine shell or debris deposits (foreshore)	[ ] Physical markings	[ ] Water is discolored
[ ] Physical markings/characteristics	[ ] Vegetation lines/changes in types	[ ] Oily film
[ ] Tidal gauges		[ ] Other:

Notes:

Waters of the U.S. Data Sheet

Project: I495/I270 Managed Lanes Study		**Feature ID:** 26 G_1 — **Stream Order:** 1st
Date: 6/19/18	**State:** Maryland	**Photos:** Upstream, downstream
Crew: WT, BS, NL	**County:** Montgomery	**Last Flag Number:** N/A, already flagged

Feature Hydrologic Class (check one):

Tidal	Perennial	Intermittent	Ephemeral
○ TNW (Subject to ebb and flow)	○ TNW – Perennial (Flowing year round)	⊗ RPW – Seasonal (must flow at least 3 months a year)	○ Non-RPW draining uplands
	○ RPW – Perennial (Flowing year round)		○ Non-RPW erosional feature
			○ Non-RPW with abutting wetland
			○ Non-RPW with adjacent wetland
			○ Non-RPW wetland adjacent or abutting upstream (outside of study area)

Describe rational for hydrologic class: Ephemeral at upstream extend, banks and bed become more defined downstream and intermittent

Hydrologic Connectivity – Upstream: 26H | Downstream: 26F, 26C | Adjacent/Abutting: N/A

Feature Description: *(check all that apply)*

Shape (with respect to OHW)		Substrate			Vegetation Cover Type (MBSS)
[x] Natural Channel Shape	Width: 6"	[x] Silts	[x] Sands	[ ] Muck	RB: Upland Forest
[ ] Artificial (man-made)	Depth: 3"	[x] Cobbles	[x] Gravel	[ ] Other:	
[ ] Manipulated (man-altered)	Bank Erosion/stability:	[ ] Bedrock	[ ] Concrete		LB: Upland forest
[ ] Other:	Minor but stable	Side slope: [ ] ≥1:1 [x] 2:1 [ ] 3:1 [ ] ≤4:1			

Notes: -

Weather/Precipitation Conditions:

During Field Visit	Inches of Rain Within Last Week	Monthly Drought Condition NCDC Regional PDSI http://www.ncdc.noaa.gov/temp-and-precip/climatological-rankings/index.php	Month: May	Year: 2018
⊗ No rain	⊗ 0-0.5	Severe Drought: ○ -6 ○ -5 ○ -4	Moderate Drought: ○ -3 ○ -2	Normal: ○ -1 ○ 0 ⊗ 1
○ Light rain	○ 0.5-1	Moderately Wet: ○ 2 ○ 3	Severely Wet: ○ 4 ○ 5 ○ 6	
○ Heavy Rain	○ >1			

Non-tidal tributary has: *(check all that apply; include photos for each & list photo #)*

Bed and Banks	Ordinary High Water Mark		
[x] Yes	[x] Clear, natural line impressed on the bank	[x] Sediment deposition	[ ] Sediment sorting
[ ] No	[ ] Changes in the character of soil	[ ] Water staining	[x] Scour
	[x] Shelving	[x] Presence of flood litter/debris	[ ] Observed/predicted flow events
	[ ] Vegetation matted down, bent, or absent	[ ] Destruction of terrestrial veg.	[ ] Abrupt change in plant community
	[ ] Leaf litter disturbed	[ ] Presence of wrack line	[ ] Other:

Tidal tributary has: *(check all that apply; include photos for each & list photo #)*

High Tide Line	Mean High Water Mark indicated by:	Chemical Characteristics
[ ] Oil or scum line along shore objects	[ ] Survey to available datum	[ ] Water is clear
[ ] Fine shell or debris deposits (foreshore)	[ ] Physical markings	[ ] Water is discolored
[ ] Physical markings/characteristics	[ ] Vegetation lines/changes in types	[ ] Oily film
[ ] Tidal gauges		[ ] Other:

Notes:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: I495/I270 Managed Lanes Study City/County: Montgomery County Sampling Date: 6/19/18
Applicant/Owner: Maryland State Highway Administration State: MD Sampling Point: 26H-WET
Investigator(s): WT, NL, RS Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 3-8
Subregion (LRR or MLRA): LRR S MLRA 148 Lat: 39.075005 Long: -77.164635 Datum: NAD 83
Soil Map Unit Name: Glenelg silt loam, 3 to 8 percent slopes (2B) NWI classification: PEM1A
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:
26H is located northwest of Falls Rd and abuts 26G

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☑ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ True Aquatic Plants (B14)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two 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)
- ☐ Stunted or Stressed Plants (D1)
- ☑ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ Microtopographic Relief (D4)
- ☐ FAC-Neutral Test (D5)

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:
26H receives hydrology from runoff from adjacent uplands.

Photo: 26H-WET_Northeast

VEGETATION (Five Strata) – Use scientific names of plants.

Sampling Point: 264-WET

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Fraxinus pennsylvanica	5	Yes	FACW
2. Diospyros virginiana	5	Yes	FAC
3. Juglans nigra	5	Yes	FACU
4.			
5.			
6.			
	15 = Total Cover		
50% of total cover: 7.5	20% of total cover: 3		

Sapling Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover:	20% of total cover:		

Shrub Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Diervilla Lonicera	5	Yes	UPL
2.			
3.			
4.			
5.			
6.			
	5 = Total Cover		
50% of total cover: 2.5	20% of total cover: 1		

Herb Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Onoclea sensibilis	40	Yes	FACW
2. Impatiens capensis	20	Yes	FACW
3. Toxicodendron radicans	10	No	FAC
4. Rubus occidentalis	10	No	UPL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	80 = Total Cover		
50% of total cover: 40	20% of total cover: 16		

Woody Vine Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Toxicodendron radicans	10	Yes	FAC
2.			
3.			
4.			
5.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 86 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☑ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Five 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.

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 ☐

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: 26H-WET

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 4/3	75	10YR 5/6	20	C	M	Silty Clay	
			5YR 5/6	5	C	M		
4-10	10YR 4/2	90	5YR 4/6	10	C	M	Silty Clay	
10-20	10YR 6/1	85	10YR 5/6	15	C	M	Sandy Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10) **(LRR N)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7)
- ☐ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ☐ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ☐ Umbric Surface (F13) **(MLRA 136, 122)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ☐ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10) **(MLRA 147)**
- ☐ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators 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:

Wetland Function-Value Evaluation Form

Total area of wetland 0.03 Ac Human made? No Is wetland part of a wildlife corridor? No or a "habitat island"? No

Adjacent land use Forested upland, roadway Distance to nearest roadway or other development 30 ft

Dominant wetland systems present PEM Contiguous undeveloped buffer zone present No

Is the wetland a separate hydraulic system? No If not, where does the wetland lie in the drainage basin? Upstream

How many tributaries contribute to the wetland? 0 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. 26H

Latitude 39.075005 Longitude -77.164635

Prepared by: RS Date 6/20/18

Wetland Impact:
Type NA Area NA

Evaluation based on:
Office X Field X

Corps manual wetland delineation completed? Y ✓ N

Function/Value	Suitability Y / N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	Yes			
Floodflow Alteration	Yes			
Fish and Shellfish Habitat	Yes			
Sediment/Toxicant Retention	Yes			
Nutrient Removal	Yes			
Production Export	Yes			
Sediment/Shoreline Stabilization	Yes			
Wildlife Habitat	Yes			
Recreation	Yes			
Educational/Scientific Value	Yes			
Uniqueness/Heritage	No			
Visual Quality/Aesthetics	Yes			
ES Endangered Species Habitat	No			
Other	—			

Notes:

* Refer to backup list of numbered considerations.

Waters of the U.S. Data Sheet

Project: I495/I270 Managed Lanes Study		**Feature ID:** 26J — **Stream Order:** 1st
Date: 6/19/18	**State:** MD	**Photos:** Upstream, downstream
Crew: WT, RS, NL	**County:** Montgomery	**Last Flag Number:** 26J-2A, 26J-2B

Feature Hydrologic Class (check one):

Tidal	Perennial	Intermittent	Ephemeral
○ TNW (Subject to ebb and flow)	○ TNW – Perennial (Flowing year round) ○ RPW – Perennial (Flowing year round)	⊗ RPW – Seasonal (must flow at least 3 months a year)	○ Non-RPW draining uplands ○ Non-RPW erosional feature ○ Non-RPW with abutting wetland ○ Non-RPW with adjacent wetland ○ Non-RPW wetland adjacent or abutting upstream (outside of study area)

Describe rational for hydrologic class: Man-made channel, but had water in it at time of visit

Hydrologic Connectivity –	Upstream: 26-SWM4	Downstream: 26F	Adjacent/Abutting: 26F

Feature Description: *(check all that apply)*

Shape (with respect to OHW)

[ ] Natural Channel Shape	Width: 8'	
[X] Artificial (man-made)	Depth: 2'	
[ ] Manipulated (man-altered)	Bank Erosion/stability:	
[ ] Other:	No erosion, stable	

Substrate

[ ] Silts	[ ] Sands	[ ] Muck
[ ] Cobbles	[ ] Gravel	[X] Other:
[ ] Bedrock	[ ] Concrete	Riprap

Side slope: [ ] ≥1:1 [X] 2:1 [ ] 3:1 [ ] ≤4:1

Vegetation Cover Type (MBSS)

RB: Forest

LB: Forest

Notes: 26J is an outfall from 26-SWM4 that drains into 26F, Man-made w/ Gabion Baskets

Weather/Precipitation Conditions:

During Field Visit	Inches of Rain Within Last Week
⊗ No rain	⊗ 0-0.5
○ Light rain	○ 0.5-1
○ Heavy Rain	○ >1

Monthly Drought Condition
NCDC Regional PDSI
https://www.ncdc.noaa.gov/temp-and-precip/climatological-rankings/index.php

Month: May **Year:** 2018

-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6
○	○	○	○	○	○	○	⊗	○	○	○	○	○
Severe Drought			Moderate Drought		Normal			Moderately Wet		Severely Wet		

Non-tidal tributary has: *(check all that apply; include photos for each & list photo #)*

Bed and Banks	Ordinary High Water Mark		
[X] Yes	[X] Clear, natural line impressed on the bank	[X] Sediment deposition	[ ] Sediment sorting
[ ] No	[ ] Changes in the character of soil	[X] Water staining	[ ] Scour
	[ ] Shelving	[X] Presence of flood litter/debris	[ ] Observed/predicted flow events
	[ ] Vegetation matted down, bent, or absent	[ ] Destruction of terrestrial veg.	[ ] Abrupt change in plant community
	[ ] Leaf litter disturbed	[ ] Presence of wrack line	[ ] Other:

Tidal tributary has: *(check all that apply; include photos for each & list photo #)*

High Tide Line	Mean High Water Mark indicated by:	Chemical Characteristics
[ ] Oil or scum line along shore objects	[ ] Survey to available datum	[ ] Water is clear
[ ] Fine shell or debris deposits (foreshore)	[ ] Physical markings	[ ] Water is discolored
[ ] Physical markings/characteristics	[ ] Vegetation lines/changes in types	[ ] Oily film
[ ] Tidal gauges		[ ] Other:

Notes:

Waters of the U.S. Data Sheet

Project: I-495/I-270 Managed Lanes Study	**Feature ID:** 26K	**Stream Order:** 1st
Date: 2/26/21 AND 3/3/21	**State:** MD	**Photos:** 26K-1, -2, -3
Crew: JCP/GJK	**County:** Montgomery	**Last Flag Number:** 1A-11A / 1B-11B

Feature Hydrologic Class (check one):

Tidal	Perennial	Intermittent	Ephemeral
○ TNW (Subject to ebb and flow)	○ TNW – Perennial (Flowing year round) ○ RPW – Perennial (Flowing year round)	(X) RPW – Seasonal (must flow at least 3 months a year)	○ Non-RPW draining uplands ○ Non-RPW erosional feature ○ Non-RPW with abutting wetland ○ Non-RPW with adjacent wetland ○ Non-RPW wetland adjacent or abutting upstream (outside of study area)
Describe rational for hydrologic class: stream has significant flow during the spring, and drains a wetland (intercepts ground water)			
Hydrologic Connectivity –	Upstream: 26F	Downstream: 26C	Adjacent/Abutting: wetland 26F

Feature Description: *(check all that apply)*

Shape (with respect to OHW)		Substrate			Vegetation Cover Type (MBSS)
[X] Natural Channel Shape	Width: 4'	[X] Silts	[ ] Sands	[ ] Muck	RB: PEM wetland parkland & trails
[ ] Artificial (man-made)	Depth: 1' or less	[ ] Cobbles	[ ] Gravel	[ ] Other:	
[ ] Manipulated (man-altered)	Bank Erosion/stability:	[ ] Bedrock	[ ] Concrete		LB: PEM wetland
[ ] Other:	unstable, somewhat	Side slope: [X] ≥1:1 [ ] 2:1 [ ] 3:1 [X] ≤4:1			
Notes: incised, but is within a wetland / SLOPE VARIES					

Weather/Precipitation Conditions:

During Field Visit	Inches of Rain Within Last Week	Monthly Drought Condition NCDC Regional PDSI http://www.ncdc.noaa.gov/temp-and-precip/climatological-rankings/index.php Month: Feb Year: 2021												
● No rain	○ 0-0.5	○	○	○	○	○	○	○	○	⊗	○	○	○	○
○ Light rain	○ 0.5-1	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6
○ Heavy Rain	○ >1	Severe Drought			Moderate Drought		Normal			Moderately Wet		Severely Wet		

Non-tidal tributary has: *(check all that apply; include photos for each & list photo #)*

Bed and Banks	Ordinary High Water Mark		
[X] Yes	[X] Clear, natural line impressed on the bank	[X] Sediment deposition	[ ] Sediment sorting
[ ] No	[ ] Changes in the character of soil	[ ] Water staining	[X] Scour
	[ ] Shelving	[ ] Presence of flood litter/debris	[ ] Observed/predicted flow events
	[X] Vegetation matted down, bent, or absent	[ ] Destruction of terrestrial veg.	[ ] Abrupt change in plant community
	[ ] Leaf litter disturbed	[ ] Presence of wrack line	[ ] Other:

Tidal tributary has: *(check all that apply; include photos for each & list photo #)*

High Tide Line	Mean High Water Mark indicated by:	Chemical Characteristics
[ ] Oil or scum line along shore objects	[ ] Survey to available datum	[ ] Water is clear
[ ] Fine shell or debris deposits (foreshore)	[ ] Physical markings	[ ] Water is discolored
[ ] Physical markings/characteristics	[ ] Vegetation lines/changes in types	[ ] Oily film
[ ] Tidal gauges		[ ] Other:
Notes:		

Waters of the U.S. Data Sheet

Project: I-495/I-270 Managed Lanes Study		**Feature ID:** 26L	**Stream Order:** 1
Date: 4-6-21	**State:** MD	**Photos:** 26L-1, L-2, L-3	
Crew: JCP/GJK	**County:** Montgomery	**Last Flag Number:** 26L-1-2A/2B (4 pts total)	

Feature Hydrologic Class (check one):

Tidal	Perennial	Intermittent	Ephemeral
◯ TNW (Subject to ebb and flow)	◯ TNW – Perennial (Flowing year round) ◯ RPW – Perennial (Flowing year round)	⊗ RPW – Seasonal (must flow at least 3 months a year)	◯ Non-RPW draining uplands ◯ Non-RPW erosional feature ◯ Non-RPW with abutting wetland ◯ Non-RPW with adjacent wetland
Describe rational for hydrologic class: flow from a culvert that drains a stormwater detention pond (with inlet) and wetlands within facility			◯ Non-RPW wetland adjacent or abutting upstream (outside of study area)
Hydrologic Connectivity –	Upstream: 26SWM-02	Downstream: wetland 26F	Adjacent/Abutting: wetland 26F

↳ photos 26-SWM02-1, -2, -3 (source of groundwater flow)

Feature Description: *(check all that apply)*

Shape (with respect to OHW)		Substrate			Vegetation Cover Type (MBSS)
[ ] Natural Channel Shape	Width: 6 feet	[ ] Silts	[ ] Sands	[ ] Muck	RB: PEM wetland 26F
[X] Artificial (man-made)	Depth: 6 inches	[ ] Cobbles	[ ] Gravel	[X] Other:	
[ ] Manipulated (man-altered)	Bank Erosion/stability:	[ ] Bedrock	[ ] Concrete	riprap	
[ ] Other:	Stable - riprap/gabion	Side slope: [ ] ≥1:1 [ ] 2:1 [ ] 3:1 [X] ≤4:1			LB: PEM wetland 26F
Notes:					

Weather/Precipitation Conditions:

During Field Visit	Inches of Rain Within Last Week	Monthly Drought Condition NCDC Regional PDSI http://www.ncdc.noaa.gov/temp-and-precip/climatological-rankings/index.php												Month: March Year: 2021
⊗ No rain	◯ 0-0.5	◯	◯	◯	◯	◯	◯	◯	◯	⊗	◯	◯	◯	◯
◯ Light rain	◯ 0.5-1	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6
◯ Heavy Rain	◯ >1	Severe Drought			Moderate Drought		Normal			Moderately Wet		Severely Wet		

Non-tidal tributary has: *(check all that apply; include photos for each & list photo #)*

Bed and Banks	Ordinary High Water Mark		
[ ] Yes	[ ] Clear, natural line impressed on the bank	[ ] Sediment deposition	[ ] Sediment sorting
[X] No	[ ] Changes in the character of soil	[X] Water staining	[ ] Scour
	[ ] Shelving	[ ] Presence of flood litter/debris	[ ] Observed/predicted flow events
	[ ] Vegetation matted down, bent, or absent	[ ] Destruction of terrestrial veg.	[ ] Abrupt change in plant community
	[X] Leaf litter disturbed	[ ] Presence of wrack line	[ ] Other:

Tidal tributary has: *(check all that apply; include photos for each & list photo #)*

High Tide Line	Mean High Water Mark indicated by:	Chemical Characteristics
[ ] Oil or scum line along shore objects	[ ] Survey to available datum	[ ] Water is clear
[ ] Fine shell or debris deposits (foreshore)	[ ] Physical markings	[ ] Water is discolored
[ ] Physical markings/characteristics	[ ] Vegetation lines/changes in types	[ ] Oily film
[ ] Tidal gauges		[ ] Other:
Notes:		

VeriFIED
5/9/18

NEW ID: 27A

Map 15
Section 27

Stream Datasheet

Project: 270
Stream ID: ~~WL012~~ / WUS19 / 27A
Stream Name: Watts Branch

Date: 8/6/15
Investigators: RS, WT

Use (I-IV): I-P
Rapanos Class: ☐ TNW ☒ RPW ☐ NRPW
Flow: ☒ Perennial ☐ Intermittent ☐ Ephemeral
If ephemeral, provide justification for flagging: N/A

Direction of flow: South
Gradient (%): 1
Connection to TNW: ~~WL012~~ WUS19/27A is Watts branch, which flows into the Potomac River, which is a TNW.

Avg. Width (Top of Bank): 17'
Avg. Depth (Top of Bank): 10"
Avg. Water Depth: 7"
Avg. Slope of Banks (°): LB 15 RB 20
Has stream been altered? If so, how: ~~WL012~~ WUS19/27A is culverted at the upstream extent.

Common Substrate:
☒ Bedrock ☒ Cobble/Gravel ☒ Concrete ☒ Sand ☒ Silt
☐ Other:

Habitat Complexity:
☒ Riffles/pools ☒ Undercut Banks ☒ Tree Roots ☒ Woody Debris
Bank Erosion: ☐ Severe ☐ Moderate ☒ Minor
Silt Deposition: ☐ Severe ☐ Moderate ☒ Minor
Is the stream problematically incised? ☐ Yes ☒ No

Riparian Zone:
RB: ☒ Forested ☒ Shrub ☒ Herb. ☒ Wetlands ☐ Developed ☐ Maintained
LB: ☒ Forested ☒ Shrub ☒ Herb. ☒ Wetlands ☐ Developed ☐ Maintained

Flags:
~~WL012~~ WUS19-001 to ~~WL012~~ WUS19-059
Additional Notes:
Photos: [redacted]
Upstream, Downstream

Adjacent to 27G
Upstream: 27D, 27B, 27H, 27J, 27K
Downstream: Out of study area

Take upstream and downstream photos.

Waters of the U.S. Data Sheet

Project: I-495/I-270 Managed Lane Study		**Feature ID:** 27B	**Stream Order:** 1st
Date: 5/9/18	**State:** MD	**Photos:** Upstream/Downstream	
Crew: WT, NC	**County:** Montgomery	**Last Flag Number:** No changes to stream polygon	

Feature Hydrologic Class (check one):

Tidal	Perennial	Intermittent	Ephemeral
○ TNW (Subject to ebb and flow)	○ TNW – Perennial (Flowing year round) ○ RPW – Perennial (Flowing year round)	◉ RPW – Seasonal (must flow at least 3 months a year)	○ Non-RPW draining uplands ○ Non-RPW erosional feature ○ Non-RPW with abutting wetland ○ Non-RPW with adjacent wetland ○ Non-RPW wetland adjacent or abutting upstream (outside of study area)
Describe rational for hydrologic class: No flow observed 5/9/18, follow up visit 12/13/18 showed consistent flow			
Hydrologic Connectivity –	Upstream: Culvert outside of study area	Downstream: Watts Branch (27A)	Adjacent/Abutting: 27E

Feature Description: *(check all that apply)*

Shape (with respect to OHW)		Substrate			Vegetation Cover Type (MBSS)
☑ Natural Channel Shape	Width: 5'	☑ Silts	☑ Sands	☐ Muck	RB: Forest
☑ Artificial (man-made)	Depth: 1'	☑ Cobbles	☐ Gravel	☑ Other:	
☐ Manipulated (man-altered)	Bank Erosion/stability:	☐ Bedrock	☐ Concrete	Rip rap	
☐ Other:	Moderate stability	Side slope: ☐ ≥1:1 ☑ 2:1 ☐ 3:1 ☐ ≤4:1			LB: Forest

Notes: Part of channel drains wetland 27E, culverted at the upstream extent with some rip rap.

Weather/Precipitation Conditions:

During Field Visit	Inches of Rain Within Last Week	Monthly Drought Condition NCDC Regional PDSI http://www.ncdc.noaa.gov/temp-and-precip/climatological-rankings/index.php												
											Month: May		Year: 2018	
◉ No rain	◉ 0-0.5	○	○	○	○	○	○	○	◉	○	○	○	○	○
○ Light rain	○ 0.5-1	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6
○ Heavy Rain	○ >1	Severe Drought			Moderate Drought		Normal			Moderately Wet		Severely Wet		

Non-tidal tributary has: *(check all that apply; include photos for each & list photo #)*

Bed and Banks	Ordinary High Water Mark		
☑ Yes	☐ Clear, natural line impressed on the bank	☑ Sediment deposition	☐ Sediment sorting
☐ No	☐ Changes in the character of soil	☐ Water staining	☐ Scour
	☐ Shelving	☑ Presence of flood litter/debris	☐ Observed/predicted flow events
	☐ Vegetation matted down, bent, or absent	☐ Destruction of terrestrial veg.	☐ Abrupt change in plant community
	☐ Leaf litter disturbed	☑ Presence of wrack line	☐ Other:

Tidal tributary has: *(check all that apply; include photos for each & list photo #)*

High Tide Line	Mean High Water Mark indicated by:	Chemical Characteristics
☐ Oil or scum line along shore objects	☐ Survey to available datum	☐ Water is clear
☐ Fine shell or debris deposits (foreshore)	☐ Physical markings	☐ Water is discolored
☐ Physical markings/characteristics	☐ Vegetation lines/changes in types	☐ Oily film
☐ Tidal gauges		☐ Other:

Notes:

Waters of the U.S. Data Sheet

Project: I-270/I-495 Managed Lane Study		Feature ID: 27C	Stream Order: 1st
Date: 5/9/18	State: MD	Photos: Upstream / Downstream	
Crew: WT, NC	County: Montgomery	Last Flag Number: No changes to stream polygon	

Feature Hydrologic Class (check one):

Tidal	Perennial	Intermittent	Ephemeral
○ TNW (Subject to ebb and flow)	○ TNW – Perennial (Flowing year round)	○ RPW – Seasonal (must flow at least 3 months a year)	○ Non-RPW draining uplands
	○ RPW – Perennial (Flowing year round)		○ Non-RPW erosional feature
			☒ Non-RPW with abutting wetland
			○ Non-RPW with adjacent wetland
			○ Non-RPW wetland adjacent or abutting upstream (outside of study area)

Describe rational for hydrologic class: Defined Bed and Bank. Drains abutting PFO (27F) into 270 and eventually Watts Branch.

Hydrologic Connectivity – Upstream: Culvert @ road | Downstream: Watts Branch (27A) | Adjacent/Abutting: PFO (27F)

Feature Description: *(check all that apply)*

Shape (with respect to OHW)		Substrate			Vegetation Cover Type (MBSS)
☒ Natural Channel Shape	Width: 3'	☒ Silts	☒ Sands	☐ Muck	RB: Forest
☐ Artificial (man-made)	Depth: 6"	☐ Cobbles	☐ Gravel	☐ Other:	
☐ Manipulated (man-altered)	Bank Erosion/stability:	☐ Bedrock	☐ Concrete		
☐ Other:	Moderate	Side slope: ☒ ≥1:1 ☐ 2:1 ☐ 3:1 ☐ ≤4:1			LB: Forest

Notes: Drains into 270, a tributary to Watts Branch

Weather/Precipitation Conditions:

During Field Visit	Inches of Rain Within Last Week	Monthly Drought Condition NCDC Regional PDSI https://www.ncdc.noaa.gov/temp-and-precip/climatological-rankings/index.php												
		Month: May										Year: 2018		
☒ No rain	☒ 0-0.5	○	○	○	○	○	○	○	☒	○	○	○	○	○
○ Light rain	○ 0.5-1	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6
○ Heavy Rain	○ >1	Severe Drought			Moderate Drought		Normal			Moderately Wet		Severely Wet		

Non-tidal tributary has: *(check all that apply; include photos for each & list photo #)*

Bed and Banks	Ordinary High Water Mark		
☒ Yes	☐ Clear, natural line impressed on the bank	☐ Sediment deposition	☐ Sediment sorting
☐ No	☐ Changes in the character of soil	☐ Water staining	☐ Scour
	☐ Shelving	☒ Presence of flood litter/debris	☐ Observed/predicted flow events
	☒ Vegetation matted down, bent, or absent	☐ Destruction of terrestrial veg.	☐ Abrupt change in plant community
	☒ Leaf litter disturbed	☐ Presence of wrack line	☐ Other:

Tidal tributary has: *(check all that apply; include photos for each & list photo #)*

High Tide Line	Mean High Water Mark indicated by:	Chemical Characteristics
☐ Oil or scum line along shore objects	☐ Survey to available datum	☐ Water is clear
☐ Fine shell or debris deposits (foreshore)	☐ Physical markings	☐ Water is discolored
☐ Physical markings/characteristics	☐ Vegetation lines/changes in types	☐ Oily film
☐ Tidal gauges		☐ Other:

Notes:

Previously WUS 19C

Waters of the U.S. Data Sheet

Project: I-270/I-495 Managed Lane Study	Feature ID: 27D	Stream Order: 1st
Date: 5/9/18	State: MD	Photos: Upstream · Downstream
Crew: WT, NC	County: Montgomery	Last Flag Number: No changes to stream polygon.

Feature Hydrologic Class (check one):

Tidal	Perennial	Intermittent	Ephemeral
○ TNW (Subject to ebb and flow)	○ TNW – Perennial (Flowing year round)	⊗ RPW – Seasonal (must flow at least 3 months a year)	○ Non-RPW draining uplands
	○ RPW – Perennial (Flowing year round)		○ Non-RPW erosional feature
			○ Non-RPW with abutting wetland
			○ Non-RPW with adjacent wetland
			○ Non-RPW wetland adjacent or abutting upstream (outside of study area)

Describe rational for hydrologic class: BASE FLOW @ time of investigation

Hydrologic Connectivity –	Upstream: 27C	Downstream: WAtts Branch (27A)	Adjacent/Abutting: PFO (27F)

Feature Description: *(check all that apply)*

Shape (with respect to OHW)		Substrate			Vegetation Cover Type (MBSS)
[X] Natural Channel Shape	Width: 4'	[ ] Silts	[ ] Sands	[ ] Muck	RB: Forested
[ ] Artificial (man-made)	Depth: 1'	[ ] Cobbles	[ ] Gravel	[X] Other: Rip Rap	
[X] Manipulated (man-altered)	Bank Erosion/stability: Moderate	[ ] Bedrock	[ ] Concrete		LB: Forested
[ ] Other:		Side slope: [ ] ≥1:1 [ ] 2:1 [X] 3:1 [ ] ≤4:1			

Notes: Drains abutting PFO. Base Flow @ time of investigation. Unnamed tributary to WAtts Branch.

Weather/Precipitation Conditions:

During Field Visit	Inches of Rain Within Last Week	Monthly Drought Condition NCDC Regional PDSI https://www.ncdc.noaa.gov/temp-and-precip/climatological-rankings/index.php												Month: MAY	Year: 2018
⊗ No rain	⊗ 0-0.5	○ -6	○ -5	○ -4	○ -3	○ -2	○ -1	○ 0	⊗ 1	○ 2	○ 3	○ 4	○ 5	○ 6	
○ Light rain	○ 0.5-1	Severe Drought			Moderate Drought		Normal			Moderately Wet		Severely Wet			
○ Heavy Rain	○ >1														

Non-tidal tributary has: *(check all that apply; include photos for each & list photo #)*

Bed and Banks	Ordinary High Water Mark		
[X] Yes	[X] Clear, natural line impressed on the bank	[ ] Sediment deposition	[ ] Sediment sorting
[ ] No	[ ] Changes in the character of soil	[ ] Water staining	[ ] Scour
	[ ] Shelving	[ ] Presence of flood litter/debris	[ ] Observed/predicted flow events
	[ ] Vegetation matted down, bent, or absent	[ ] Destruction of terrestrial veg.	[ ] Abrupt change in plant community
	[ ] Leaf litter disturbed	[ ] Presence of wrack line	[ ] Other:

Tidal tributary has: *(check all that apply; include photos for each & list photo #)*

High Tide Line	Mean High Water Mark indicated by:	Chemical Characteristics
[ ] Oil or scum line along shore objects	[ ] Survey to available datum	[ ] Water is clear
[ ] Fine shell or debris deposits (foreshore)	[ ] Physical markings	[ ] Water is discolored
[ ] Physical markings/characteristics	[ ] Vegetation lines/changes in types	[ ] Oily film
[ ] Tidal gauges		[ ] Other:

Notes:

Previously WUS-19D

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: I-270/I-495 MANAGED LANE City/County: Montgomery Sampling Date: 5/9/18

Applicant/Owner: SHA State: MD Sampling Point: 27E-WET

Investigator(s): WT, NC Section, Township, Range: ____

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 2-5

Subregion (LRR or MLRA): LRR S MLRA 148 Lat: 39.0888143 Long: -77.173497 Datum: NAD83

Soil Map Unit Name: Hatboro silt loam (54A) NWI classification: PFO1B

Are climatic / hydrologic conditions on the site typical for this time of year? Yes [X] No [ ] (If no, explain in Remarks.)

Are Vegetation [ ], Soil [ ], or Hydrology [ ] significantly disturbed? Are "Normal Circumstances" present? Yes [X] 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 [X] No [ ]	**Is the Sampled Area within a Wetland?** Yes [X] No [ ]
Hydric Soil Present?	Yes [X] No [ ]	
Wetland Hydrology Present?	Yes [X] No [ ]	

Remarks:
PFO drains into unnamed tributary to Watts Branch (27B)
Previously identified as PFO13.
Expanded lower extent of wetland to connect to 27B. Photo ID: 27B_WET_EAST

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- [ ] Surface Water (A1)
- [ ] High Water Table (A2)
- [X] Saturation (A3)
- [ ] Water Marks (B1)
- [ ] Sediment Deposits (B2)
- [X] Drift Deposits (B3)
- [ ] Algal Mat or Crust (B4)
- [ ] Iron Deposits (B5)
- [ ] Inundation Visible on Aerial Imagery (B7)
- [ ] Water-Stained Leaves (B9)
- [ ] Aquatic Fauna (B13)
- [ ] True Aquatic Plants (B14)
- [ ] Hydrogen Sulfide Odor (C1)
- [ ] Oxidized Rhizospheres on Living Roots (C3)
- [ ] Presence of Reduced Iron (C4)
- [ ] Recent Iron Reduction in Tilled Soils (C6)
- [ ] Thin Muck Surface (C7)
- [ ] Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- [ ] Surface Soil Cracks (B6)
- [ ] Sparsely Vegetated Concave Surface (B8)
- [X] Drainage Patterns (B10)
- [ ] Moss Trim Lines (B16)
- [ ] Dry-Season Water Table (C2)
- [ ] Crayfish Burrows (C8)
- [ ] Saturation Visible on Aerial Imagery (C9)
- [ ] Stunted or Stressed Plants (D1)
- [X] Geomorphic Position (D2)
- [ ] Shallow Aquitard (D3)
- [ ] Microtopographic Relief (D4)
- [ ] FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes [ ]	No [ ]	Depth (inches): ____
Water Table Present?	Yes [X]	No [ ]	Depth (inches): -4"
Saturation Present? (includes capillary fringe)	Yes [X]	No [ ]	Depth (inches): -4"

Wetland Hydrology Present? Yes [X] No [ ]

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Area receives sheetflow runoff from adjacent wooded uplands.

VEGETATION (Five Strata) – Use scientific names of plants.

Sampling Point: 27E-WET

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Fraxinus pennsylvanica	30	Y	FACW
2. Acer rubrum	30	Y	FAC
3. Ulmus americana	10	N	FACW
4. Platanus occidentalis	10	N	FACW
5.			
6.			
	80 = Total Cover		

50% of total cover: 40 20% of total cover: 16

Sapling Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		

50% of total cover: ____ 20% of total cover: ____

Shrub Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Fraxinus pennsylvanica	5	Y	FACW
2. Cephalanthus occidentalis	2	Y	OBL
3.			
4.			
5.			
6.			
	7 = Total Cover		

50% of total cover: 3.5 20% of total cover: 1.4

Herb Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Symplocarpus foetidus	40	Y	OBL
2. Ficaria verna	10	N	FAC
3. Microstegium vimineum	5	N	
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	55 = Total Cover		

50% of total cover: 28 20% of total cover: 11

Woody Vine Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		

50% of total cover: ____ 20% of total cover: ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

- [ ] 1 - Rapid Test for Hydrophytic Vegetation
- [x] 2 - Dominance Test is >50%
- [ ] 3 - Prevalence Index is ≤3.0[1]
- [ ] 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Five 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.

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 [x] No [ ]

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: 27E-WET

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-9	10YR 3/1	95	7.5YR 5/6	5	C	M	silt loam	saturated @ ~4"
9-18	10YR 4/1	80	7.5YR 5/6	20	C	M	silt loam	saturated

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10) **(LRR N)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7)
- ☐ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ☐ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☒ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ☐ Umbric Surface (F13) **(MLRA 136, 122)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ☐ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10) **(MLRA 147)**
- ☐ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators 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:

Wetland Function-Value Evaluation Form

Total area of wetland 0.13 Ac Human made? No Is wetland part of a wildlife corridor? Yes or a "habitat island"? No

Adjacent land use Residential, Recreation, Roadways, Forest Distance to nearest roadway or other development 50'

Dominant wetland systems present Palustrine Forested Contiguous undeveloped buffer zone present No

Is the wetland a separate hydraulic system? No If not, where does the wetland lie in the drainage basin? Top

How many tributaries contribute to the wetland? NONE Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. 27E
Latitude N 39.0888143 Longitude W -77.173497
Prepared by: WT Date 5/9/18
Wetland Impact:
Type NA Area NA

Evaluation based on:
Office X Field X
Corps manual wetland delineation completed? Y X N ___

Function/Value	Suitability Y / N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	Y			
Floodflow Alteration	Y			
Fish and Shellfish Habitat	Y			
Sediment/Toxicant Retention	Y			
Nutrient Removal	Y			
Production Export	Y			
Sediment/Shoreline Stabilization	Y			
Wildlife Habitat	Y			
Recreation	N			
Educational/Scientific Value	N			
Uniqueness/Heritage	N			
Visual Quality/Aesthetics	N			
ES Endangered Species Habitat	N			
Other				

Notes: WETLAND DRAINS INTO UNNAMED Tributary to Watts Branch. * Refer to backup list of numbered considerations.

Previous ID: PF013

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: I-270/I-495 MANAGED LANE City/County: Montgomery Sampling Date: 5/9/18
Applicant/Owner: SHA State: MD Sampling Point: 27F-WET
Investigator(s): WT, NC Section, Township, Range: ______
Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 2-5
Subregion (LRR or MLRA): LRR S MLRA 148 Lat: 39.0898136 Long: -77.173905 Datum: NAD83
Soil Map Unit Name: Hatboro Silt loam NWI classification: PFO1E

Are climatic / hydrologic conditions on the site typical for this time of year? Yes [X] No [ ] (If no, explain in Remarks.)
Are Vegetation [ ], Soil [ ], or Hydrology [ ] significantly disturbed? Are "Normal Circumstances" present? Yes [X] 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 [X] No [ ]	Is the Sampled Area within a Wetland? Yes [X] No [ ]
Hydric Soil Present?	Yes [X] No [ ]	
Wetland Hydrology Present?	Yes [X] No [ ]	

Remarks:
PFO abuts unnamed tributaries to Watts Branch (27C and 27D).
Previous ID: WP001
Photo ID: 27D_WET_North

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- [ ] Surface Water (A1)
- [ ] High Water Table (A2)
- [ ] Saturation (A3)
- [ ] Water Marks (B1)
- [ ] Sediment Deposits (B2)
- [ ] Drift Deposits (B3)
- [ ] Algal Mat or Crust (B4)
- [ ] Iron Deposits (B5)
- [ ] Inundation Visible on Aerial Imagery (B7)
- [ ] Water-Stained Leaves (B9)
- [ ] Aquatic Fauna (B13)
- [ ] True Aquatic Plants (B14)
- [ ] Hydrogen Sulfide Odor (C1)
- [ ] Oxidized Rhizospheres on Living Roots (C3)
- [ ] Presence of Reduced Iron (C4)
- [ ] Recent Iron Reduction in Tilled Soils (C6)
- [ ] Thin Muck Surface (C7)
- [ ] Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- [ ] Surface Soil Cracks (B6)
- [ ] Sparsely Vegetated Concave Surface (B8)
- [X] Drainage Patterns (B10)
- [ ] Moss Trim Lines (B16)
- [ ] Dry-Season Water Table (C2)
- [ ] Crayfish Burrows (C8)
- [ ] Saturation Visible on Aerial Imagery (C9)
- [ ] Stunted or Stressed Plants (D1)
- [X] Geomorphic Position (D2)
- [ ] Shallow Aquitard (D3)
- [ ] Microtopographic Relief (D4)
- [ ] FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes [ ] No [X] Depth (inches): ______
Water Table Present? Yes [ ] No [X] Depth (inches): ______
Saturation Present? (includes capillary fringe) Yes [ ] No [X] Depth (inches): ______

Wetland Hydrology Present? Yes [X] No [ ]

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Area recieves runoff from roadway and is inundated during flooding of 27C and 27D.

VEGETATION (Five Strata) – Use scientific names of plants.

Sampling Point: 27F-WET

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Fraxinus pennsylvanica	30	Y	FACW
2. Quercus palustris	20	Y	FACW
3. Acer negundo	10	N	FAC
4. Acer rubrum	5	N	FAC
5. Ulmus americana	5	N	FACW
6.			
	70 = Total Cover		

50% of total cover: 35 20% of total cover: 14

Sapling Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Fraxinus pennsylvanica	10	Y	FACW
2.			
3.			
4.			
5.			
6.			
	10 = Total Cover		

50% of total cover: 5 20% of total cover: 2

Shrub Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Lonicera tatarica	20	Y	FACU
2.			
3.			
4.			
5.			
6.			
	20 = Total Cover		

50% of total cover: 10 20% of total cover: 4

Herb Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Toxicodendron radicans	20	Y	FAC
2. Symplocarpus foetidus	20	Y	OBL
3. Arisaema triphyllum	10	N	FACW
4. Onoclea sensibilis	5	N	FACW
5. Lonicera japonica	5	N	FACU
6. Parthenocissus quinquefolia	5	N	FACU
7. Alliaria petiolata	5	N	FACU
8.			
9.			
10.			
11.			
	70 = Total Cover		

50% of total cover: 35 20% of total cover: 14

Woody Vine Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		

50% of total cover: ______ 20% of total cover: ______

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A = ______

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☒ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Five 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.

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 ☐

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL Sampling Point: 27F-WET

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR3/2	95	7.5YR5/6	5	C	M	Silt loam	
4-20	10YR5/3	85	7.5YR4/6	15	C	M	Silt loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10) **(LRR N)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7)
- ☐ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ☐ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ☐ Loamy Gleyed Matrix (F2)
- ☒ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ☐ Umbric Surface (F13) **(MLRA 136, 122)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ☐ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10) **(MLRA 147)**
- ☐ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators 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:

Wetland Function-Value Evaluation Form

Total area of wetland 0.16 Human made? No Is wetland part of a wildlife corridor? YES or a "habitat island"? No

Adjacent land use Residential, Recreation, Forest Roadways Distance to nearest roadway or other development 20'

Dominant wetland systems present PFO Contiguous undeveloped buffer zone present No

Is the wetland a separate hydraulic system? No If not, where does the wetland lie in the drainage basin? Top

How many tributaries contribute to the wetland? ONE Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. 27F
Latitude N 39.0898136 Longitude W -77.173905
Prepared by: WT Date 5/9/18
Wetland Impact:
Type NA Area NA

Evaluation based on:
Office X Field X

Corps manual wetland delineation completed? Y X N ____

Function/Value	Suitability Y / N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	Y			
Floodflow Alteration	Y			
Fish and Shellfish Habitat	Y			
Sediment/Toxicant Retention	Y			
Nutrient Removal	Y			
Production Export	Y			
Sediment/Shoreline Stabilization	Y			
Wildlife Habitat	Y			
Recreation	N			
Educational/Scientific Value	N			
Uniqueness/Heritage	N			
Visual Quality/Aesthetics	N			
ES Endangered Species Habitat	N			
Other				

Notes: WETLAND Recieves runoff FROM Adjacent ROADWAY.
Natural Gas line EASEMENT runs through WETLAND.

* Refer to backup list of numbered considerations.

Verified
WT 3/19/18

Map 15
Sec 27
Labeled PSS01

27G

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: 270 City/County: Montgomery Sampling Date: 8/7/15

Applicant/Owner: SHA State: MD Sampling Point: ~~WP004~~-WET

Investigator(s): RS, WT Section, Township, Range: ______

Landform (hillslope, terrace, etc.): Toe-of-slope Local relief (concave, convex, none): Concave Slope (%): 0

Subregion (LRR or MLRA): 148 LRR S Lat: 39-05-14.7 Long: 77-10-32.0 Datum: NAD83

Soil Map Unit Name: Hatboro silt loam (54A) NWI classification: PSS1A

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 ___	Is the Sampled Area within a Wetland? Yes ✓ No ___
Hydric Soil Present?	Yes ✓ No ___	
Wetland Hydrology Present?	Yes ✓ No ___	

Remarks:
27G ~~WP004~~ is located south of W. Montgomery Avenue Wetland is in good condition. 27G functions as flood control and toxicant removal. Wetland area drains to Watts Branch, a tributary to Potomac River, a TNW.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ✓ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ✓ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two 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)
- ___ Stunted or Stressed Plants (D1)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

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): 0	**Wetland Hydrology Present?** Yes ✓ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
27G ~~WP004~~ receives hydrology from a spring seep and runoff from the I-270 on ramp from W. Montgomery Avenue.

Flagging: 27G -001 to 27G -008

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VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: WP004-WET

Tree Stratum (Plot size: 30 ft)

	Absolute % Cover	Dominant Species?	Indicator Status
1. *Juglans nigra*	5	yes	FACU
2. *Prunus serotina*	5	yes	FACU
3.			
4.			
5.			
6.			
7.			
8.			
	10	= Total Cover	

Sapling/Shrub Stratum (Plot size: 30 ft)

	Absolute % Cover	Dominant Species?	Indicator Status
1. *Fraxinus pennsylvanica*	5	no	FACW
2. *Viburnum prunifolium*	20	yes	FACU
3. *Lonicera tatarica*	2	no	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	27	= Total Cover	

Herb Stratum (Plot size: 30 ft)

	Absolute % Cover	Dominant Species?	Indicator Status
1. *Symplocarpus foetidus*	15	yes	OBL
2. *Impatiens capensis*	5	no	FACW
3. *Calystegia sepium*	10	no	FAC
4. *Carex lurida*	5	no	FACW
5. *Toxicodendron radicans*	15	yes	FAC
6. *Urtica dioica*	5	no	FAC
7. *Vitis aestivalis*	5	no	FACU
8.			
9.			
10.			
11.			
12.			
	60	= Total Cover	

Woody Vine Stratum (Plot size: 30 ft)

	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 40 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	15	x 1 = 15
FACW species	15	x 2 = 30
FAC species	30	x 3 = 90
FACU species	42	x 4 = 168
UPL species		x 5 =
Column Totals:	102 (A)	303 (B)

Prevalence Index = B/A = 2.97

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is >50%
✓ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

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

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✓ No ___

Remarks: (Include photo numbers here or on a separate sheet.)

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SOIL

Sampling Point: ~~WP004~~-WET

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 4/2	55	10YR 3/2	30	D	M	Silt loam	Saturated
			7.5YR 4/4	15	C	M		
6-20	10YR 5/2	50	10YR 3/2	10	D	M	Silt loam	Saturated
			7.5YR 5/4	40	C	M		

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✓ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators 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:

Wetland Function-Value Evaluation Form

Total area of wetland 0.01 Ac Human made? No Is wetland part of a wildlife corridor? No or a "habitat island"? Yes

Adjacent land use Roadway, Stream Distance to nearest roadway or other development 20 Ft

Dominant wetland systems present PSS1A Contiguous undeveloped buffer zone present NO

Is the wetland a separate hydraulic system? No If not, where does the wetland lie in the drainage basin? Upstream

How many tributaries contribute to the wetland? 0 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. 27G
Latitude 39.087380 Longitude -77.175612
Prepared by: WT Date 5/17/18
Wetland Impact:
Type NA Area NA

Evaluation based on:
Office ✓ Field ✓

Corps manual wetland delineation completed? Y ✓ N

Function/Value	Suitability Y / N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	Y			
Floodflow Alteration	Y			
Fish and Shellfish Habitat	N			
Sediment/Toxicant Retention	Y			
Nutrient Removal	Y			
Production Export	N			
Sediment/Shoreline Stabilization	N			
Wildlife Habitat	N			
Recreation	N			
Educational/Scientific Value	N			
Uniqueness/Heritage	N			
Visual Quality/Aesthetics	N			
ES Endangered Species Habitat	N			
Other	—			

Notes: WETLAND DRAINS South into 27A (WATTS Branch)

* Refer to backup list of numbered considerations.

Waters of the U.S. Data Sheet

Project: I270/I495 Managed Lane Study		**Feature ID:** 27H	**Stream Order:** 1st
Date: 5/14/18	**State:** MD	**Photos:** Upstream, downstream	
Crew: NL NC	**County:** Montgomery	**Last Flag Number:** No changes to feature	

Feature Hydrologic Class (check one):

Tidal	Perennial	Intermittent	Ephemeral
○ TNW (Subject to ebb and flow)	○ TNW – Perennial (Flowing year round) ○ RPW – Perennial (Flowing year round)	⊗ RPW – Seasonal (must flow at least 3 months a year)	○ Non-RPW draining uplands ○ Non-RPW erosional feature ○ Non-RPW with abutting wetland ○ Non-RPW with adjacent wetland ○ Non-RPW wetland adjacent or abutting upstream (outside of study area)

Describe rational for hydrologic class: Drains wetland 27G, flowing at time of site visit

Hydrologic Connectivity –	Upstream: 27G	Downstream: 27A	Adjacent/Abutting: NA

Feature Description: *(check all that apply)*

Shape (with respect to OHW)		Substrate			Vegetation Cover Type (MBSS)
[x] Natural Channel Shape	Width: 3'	[x] Silts	[ ] Sands	[x] Muck	RB: Herbaceous
[ ] Artificial (man-made)	Depth: 6"	[ ] Cobbles	[x] Gravel	[ ] Other:	
[ ] Manipulated (man-altered)	Bank Erosion/stability:	[ ] Bedrock	[ ] Concrete		
[ ] Other:	No erosion, Stable	Side slope: [x] ≥1:1 [ ] 2:1 [ ] 3:1 [ ] ≤4:1			LB: Herbaceous

Notes: Small channel draining wetland

Weather/Precipitation Conditions:

During Field Visit	Inches of Rain Within Last Week	Monthly Drought Condition NCDC Regional PDSI https://www.ncdc.noaa.gov/temp-and-precip/climatological-rankings/index.php												Month: April Year: 2018
⊗ No rain	○ 0-0.5	○	○	○	○	○	○	○	○	⊗	○	○	○	○
○ Light rain	⊗ 0.5-1	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6
○ Heavy Rain	○ >1	Severe Drought			Moderate Drought		Normal			Moderately Wet		Severely Wet		

Non-tidal tributary has: ***(check all that apply; include photos for each & list photo #)***

Bed and Banks	Ordinary High Water Mark		
[x] Yes	[ ] Clear, natural line impressed on the bank	[ ] Sediment deposition	[ ] Sediment sorting
[ ] No	[ ] Changes in the character of soil	[ ] Water staining	[ ] Scour
	[ ] Shelving	[ ] Presence of flood litter/debris	[ ] Observed/predicted flow events
	[x] Vegetation matted down, bent, or absent	[ ] Destruction of terrestrial veg.	[ ] Abrupt change in plant community
	[ ] Leaf litter disturbed	[x] Presence of wrack line	[ ] Other:

Tidal tributary has: ***(check all that apply; include photos for each & list photo #)***

High Tide Line	Mean High Water Mark indicated by:	Chemical Characteristics
[ ] Oil or scum line along shore objects	[ ] Survey to available datum	[ ] Water is clear
[ ] Fine shell or debris deposits (foreshore)	[ ] Physical markings	[ ] Water is discolored
[ ] Physical markings/characteristics	[ ] Vegetation lines/changes in types	[ ] Oily film
[ ] Tidal gauges		[ ] Other:

Notes:

VERIFIED
WT 3/19/18

27K SB7NB2-B Map 15
Sec 27

Waters of the U.S. Data Sheet

Project: I270 TCM SB02/NB02 / I270/I495 Managed Lanes Study		**Feature ID:** SB02/NB02-B
Date: 8-3-2017	**State:** MD	**Photos:** 9517-18 / Upstream/ downstream
Crew: MBS/ET / WT RS	**County:** Montgomery	**Last Flag Number:** 5A8B

Stream Order: 1

Feature Hydrologic Class (check one):

Tidal	Perennial	Intermittent	Ephemeral
○ TNW (Subject to ebb and flow)	○ TNW – Perennial (Flowing year round)	○ RPW – Seasonal (must flow at least 3 months a year)	⊗ Non-RPW draining uplands
	○ RPW – Perennial (Flowing year round)		○ Non-RPW erosional feature
			○ Non-RPW with abutting wetland
			○ Non-RPW with adjacent wetland
Describe rational for hydrologic class: No water, drains Mown field			○ Non-RPW wetland adjacent or abutting upstream (outside of study area)
Hydrologic Connectivity –	Upstream: N/A	Downstream: WUS 19 (27A)	Adjacent/Abutting: N/A

Feature Description: *(check all that apply)*

Shape (with respect to OHW)		Substrate			Vegetation Cover Type (MBSS)
☒ Natural Channel Shape	Width: 3'	☒ Silts	☒ Sands	☐ Muck	RB: Hedgerow
☐ Artificial (man-made)	Depth: 1'	☒ Cobbles	☒ Gravel	☐ Other:	
☐ Manipulated (man-altered)	Bank Erosion/stability:	☐ Bedrock	☐ Concrete		LB: Hedgerow
☐ Other:	Unstable	Side slope: ☒ ≥1:1 ☐ 2:1 ☐ 3:1 ☐ ≤4:1			
Notes:					

Weather/Precipitation Conditions:

During Field Visit	Inches of Rain Within Last Week	Monthly Drought Condition NCDC Regional PDSI http://www.ncdc.noaa.gov/temp-and-precip/climatological-rankings/index.php													Month: March	Year: 2018
⊗ No rain	☒ 0-0.5	○	○	○	○	⊗	○	○	☒	○	○	○	○	○		
○ Light rain	● 0.5-1	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6		
○ Heavy Rain	○ >1	Severe Drought			Moderate Drought		Normal			Moderately Wet		Severely Wet				

Non-tidal tributary has: *(check all that apply; include photos for each & list photo #)*

Bed and Banks	Ordinary High Water Mark		
☒ Yes	☒ Clear, natural line impressed on the bank	☐ Sediment deposition	☒ Sediment sorting
☐ No	☐ Changes in the character of soil	☐ Water staining	☒ Scour
	☐ Shelving	☐ Presence of flood litter/debris	☐ Observed/predicted flow events
	☒ Vegetation matted down, bent, or absent	☐ Destruction of terrestrial veg.	☐ Abrupt change in plant community
	☐ Leaf litter disturbed	☒ Presence of wrack line	☐ Other:

Tidal tributary has: *(check all that apply; include photos for each & list photo #)*

High Tide Line	Mean High Water Mark indicated by:	Chemical Characteristics
☐ Oil or scum line along shore objects	☐ Survey to available datum	☐ Water is clear
☐ Fine shell or debris deposits (foreshore)	☐ Physical markings	☐ Water is discolored
☐ Physical markings/characteristics	☐ Vegetation lines/changes in types	☐ Oily film
☐ Tidal gauges		☐ Other:
Notes:		

Verified
WT 3/27/18

Map 11
Sec 27 / 27L

Waters of the U.S. Data Sheet

Project: I-270 ICM / I270/I495 Managed Lanes Study		Feature ID: NB3-A / 27L
Stream Order: 1		
Date: 8-17-2017	State: MD	Photos: 9560-68 / Upstream, Downstream
Crew: MBS/CCO WT RS	County: Montgomery	Last Flag Number: 4A8B

Feature Hydrologic Class (check one):

Tidal	Perennial	Intermittent	Ephemeral
○ TNW (Subject to ebb and flow)	○ TNW – Perennial (Flowing year round)	⊗ RPW – Seasonal (must flow at least 3 months a year)	○ Non-RPW draining uplands
	○ RPW – Perennial (Flowing year round)		○ Non-RPW erosional feature
			○ Non-RPW with abutting wetland
			○ Non-RPW with adjacent wetland
Describe rational for hydrologic class: flowing at time of field investigation – low flow			○ Non-RPW wetland adjacent or abutting upstream (outside of study area)
Hydrologic Connectivity –	Upstream: 24" PIPE to NB3-B (27M)	Downstream: 4' PIPE	Adjacent/Abutting: N/A

Feature Description: *(check all that apply)*

Shape (with respect to OHW)		Substrate			Vegetation Cover Type (MBSS)
[ ] Natural Channel Shape	Width: 2-4'	[X] Silts	[X] Sands	[ ] Muck	RB: Hedgerow
[ ] Artificial (man-made)	Depth: 6"	[X] Cobbles	[ ] Gravel	[X] Other: Riprap	
[X] Manipulated (man-altered)	Bank Erosion/stability:	[ ] Bedrock	[ ] Concrete		LB: Hedgerow
[ ] Other:	Stable - Riprap	Side slope: [ ] ≥1:1 [X] 2:1 [ ] 3:1 [ ] ≤4:1			
Notes:					

Weather/Precipitation Conditions:

Monthly Drought Condition NCDC Regional PDSI — http://www.ncdc.noaa.gov/temp-and-precip/climatological-rankings/index.php — Month: March Year: 2018

During Field Visit	Inches of Rain Within Last Week	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6
● No rain	● 0-0.5	○	○	○	○	○	●	○	⊗	○	○	○	○	○
○ Light rain	○ 0.5-1													
○ Heavy Rain	⊗ >1	Severe Drought			Moderate Drought		Normal			Moderately Wet		Severely Wet		

Non-tidal tributary has: *(check all that apply; include photos for each & list photo #)*

Bed and Banks	Ordinary High Water Mark		
[X] Yes	[X] Clear, natural line impressed on the bank	[X] Sediment deposition	[ ] Sediment sorting
[ ] No	[X] Changes in the character of soil	[ ] Water staining	[ ] Scour
	[ ] Shelving	[X] Presence of flood litter/debris	[ ] Observed/predicted flow events
	[X] Vegetation matted down, bent, or absent	[ ] Destruction of terrestrial veg.	[ ] Abrupt change in plant community
	[ ] Leaf litter disturbed	[ ] Presence of wrack line	[ ] Other:

Tidal tributary has: *(check all that apply; include photos for each & list photo #)*

High Tide Line	Mean High Water Mark indicated by:	Chemical Characteristics
[ ] Oil or scum line along shore objects	[ ] Survey to available datum	[ ] Water is clear
[ ] Fine shell or debris deposits (foreshore)	[ ] Physical markings	[ ] Water is discolored
[ ] Physical markings/characteristics	[ ] Vegetation lines/changes in types	[ ] Oily film
[ ] Tidal gauges		[ ] Other:
Notes:		

BASE Flow observed @ time of Investigation.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: I495/I270 Managed Lanes Study City/County: Montgomery County Sampling Date: 5/23/18
Applicant/Owner: Maryland State Highway Administration State: MD Sampling Point: 27M-UP2
Investigator(s): PS, RS Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): None Local relief (concave, convex, none): None Slope (%): 3-8
Subregion (LRR or MLRA): LRR S MLRA 148 Lat: 39.108955 Long: -77.184608 Datum: NAD 83
Soil Map Unit Name: Glenelg silt loam, 3 to 8 percent slopes (2B) NWI classification: None
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:
Upland forested area northwest of 27M PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)
- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ True Aquatic Plants (B14)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two 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)
- ☐ Stunted or Stressed Plants (D1)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ Microtopographic Relief (D4)
- ☐ FAC-Neutral Test (D5)

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:
No hydrology observed

VEGETATION (Five Strata) – Use scientific names of plants.

Sampling Point: 27M-UPL

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer rubrum	40	Yes	FAC
2. Diospyros virginiana	20	Yes	FAC
3.			
4.			
5.			
6.			
	60 = Total Cover		
50% of total cover: 30	20% of total cover: 12		

Sapling Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover:	20% of total cover:		

Shrub Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover:	20% of total cover:		

Herb Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Parthenocissus quinquefolia	30	Yes	FACU
2. Rosa multiflora	20	Yes	FACU
3. Lonicera japonica	20	Yes	FACU
4. Toxicodendron radicans	10	No	FAC
5. Rubus occidentalis	10	No	UPL
6. Lindera benzoin	10	No	FACW
7. Allium oleraceum	5	No	UPL
8. Smilax rotundifolia	5	No	FAC
9.			
10.			
11.			
	110 = Total Cover		
50% of total cover: 55	20% of total cover: 22		

Woody Vine Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	2	(A)
Total Number of Dominant Species Across All Strata:	5	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	40	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☐ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Five 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.

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 ☑

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: 27M-UPL

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 4/3	100					Silty clay	
6-20	10YR 5/3	100					Silty clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10) **(LRR N)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7)
- ☐ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ☐ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ☐ Umbric Surface (F13) **(MLRA 136, 122)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ☐ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10) **(MLRA 147)**
- ☐ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators 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:

27M-PFO

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: I495/I270 Managed Lanes Study City/County: Montgomery County Sampling Date: 5/23/18
Applicant/Owner: Maryland State Highway Administration State: MD Sampling Point: 27M-WET-PFO
Investigator(s): PS RS Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 3-8
Subregion (LRR or MLRA): LRR S MLRA 148 Lat: 39.108796 Long: -77.184606 Datum: NAD83
Soil Map Unit Name: Glenelg silt loam, 3 to 8 percent slopes NWI classification: PFO1A
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 [ ]	Is the Sampled Area within a Wetland? Yes [✓] No [ ]
Hydric Soil Present?	Yes [✓] No [ ]	
Wetland Hydrology Present?	Yes [✓] No [ ]	

Remarks:
It follows the R.O.W. fence down to the SWM pond fence

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- [ ] Surface Water (A1)
- [ ] High Water Table (A2)
- [ ] Saturation (A3)
- [ ] Water Marks (B1)
- [ ] Sediment Deposits (B2)
- [ ] Drift Deposits (B3)
- [ ] Algal Mat or Crust (B4)
- [ ] Iron Deposits (B5)
- [ ] Inundation Visible on Aerial Imagery (B7)
- [✓] Water-Stained Leaves (B9)
- [ ] Aquatic Fauna (B13)
- [ ] True Aquatic Plants (B14)
- [ ] Hydrogen Sulfide Odor (C1)
- [ ] Oxidized Rhizospheres on Living Roots (C3)
- [ ] Presence of Reduced Iron (C4)
- [ ] Recent Iron Reduction in Tilled Soils (C6)
- [ ] Thin Muck Surface (C7)
- [ ] Other (Explain in Remarks)

Secondary Indicators (minimum of two 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)
- [ ] Stunted or Stressed Plants (D1)
- [✓] Geomorphic Position (D2)
- [ ] Shallow Aquitard (D3)
- [ ] Microtopographic Relief (D4)
- [ ] FAC-Neutral Test (D5)

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:
27M-PFO receives hydrology from runoff from I-270 northbound and runoff from adjacent uplands.

Flags: 27M(1-10)

Photos: 27M-WET-PFO
27M-UPL

VEGETATION (Five Strata) – Use scientific names of plants.

Sampling Point: 27M-WET-PFO

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer rubrum	70	Yes	FAC
2.			
3.			
4.			
5.			
6.			
	70	= Total Cover	
50% of total cover: 45	20% of total cover: 14		

Sapling Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
	0	= Total Cover	
50% of total cover:	20% of total cover:		

Shrub Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
	0	= Total Cover	
50% of total cover:	20% of total cover:		

Herb Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Onoclea sensibilis	60	Yes	FACW
2. Phalaris arundinacea	20	No	FACW
3. Parthenocissus quinquefolia	10	No	FACU
4. Lindera benzoin	10	No	FACW
5. Lonicera japonica	5	No	FACU
6. Rosa multiflora	5	No	FACU
7. Allium oleraceum	5	No	UPL
8.			
9.			
10.			
11.			
	115	= Total Cover	
50% of total cover: 57.5	20% of total cover: 23		

Woody Vine Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☑ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Five 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.

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 ☐

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: 27M-WET_PFO

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 5/2	100					Silty clay	
2-8	10YR 2/1	100					Silty clay	
8-20	10YR 3/1	80	5YR 5/6	20	C	M	Clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10) **(LRR N)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7)
- ☐ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ☐ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☒ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ☐ Umbric Surface (F13) **(MLRA 136, 122)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ☐ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10) **(MLRA 147)**
- ☐ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators 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:

Wetland Function-Value Evaluation Form

Total area of wetland 0.13 ac Human made? No Is wetland part of a wildlife corridor? No or a "habitat island"? No

Adjacent land use I-270, forested upland Distance to nearest roadway or other development 20ft

Dominant wetland systems present PFO/PEM Contiguous undeveloped buffer zone present No

Is the wetland a separate hydraulic system? No If not, where does the wetland lie in the drainage basin? Upper

How many tributaries contribute to the wetland? 1 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. 27M
Latitude 39.108796 Longitude -77.184606
Prepared by: RS Date 6/7/18
Wetland Impact:
Type NA Area NA

Evaluation based on:
Office ✓ Field ✓

Corps manual wetland delineation completed? Y ✓ N

Function/Value	Suitability Y / N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	Yes	9, 10,		Sheetflow inflows, outflow through SWM facility
Floodflow Alteration	Yes	2, 3, 4, 5, 7, 8, 9, 15, 18	X	Part of SWM facility
Fish and Shellfish Habitat	NO			
Sediment/Toxicant Retention	Yes	2, 5, 12, 15, 16		
Nutrient Removal	Yes	3, 5, 8, 9, 10, 11		Part PEM/PFO
Production Export	Yes	1, 2, 4, 7, 12,		Burrows
Sediment/Shoreline Stabilization	Yes	2, 12, 14, 15		
Wildlife Habitat	Yes	3, 8, 13, 14, 17, 19, 20,		Burrows
Recreation	No			
Educational/Scientific Value	No			
Uniqueness/Heritage	Yes	1,		No easy access or visibility
Visual Quality/Aesthetics	No			↓
ES Endangered Species Habitat	No			
Other	—			

Notes: Part of wetland is within SWM facility

* Refer to backup list of numbered considerations.

Renamed 27N

Map 15
Sec 27

Stream Datasheet

Project: 270
Date: 8/7/15
Stream ID: WL014 / WUS19B **27N**
Investigators: RS, WT
Stream Name: Unnamed tributary to Watts Branch.

Use (I-IV): I
Rapanos Class: ☐ TNW ☒ RPW ☐ NRPW
Flow: ☐ Perennial ☒ Intermittent ☐ Ephemeral
If ephemeral, provide justification for flagging: 27N achieves significant nexus by providing nutrient cycling support and cooling through a shaded channel.

Direction of flow: Southwest
Gradient (%): 1
Connection to TNW: 27N flows into 27A (Watts Branch), which flows into the Potomac River, which is a TNW.
Only jurisdictional from seep to 27A (Watts Branch)

Avg. Width (Top of Bank): 2.5'
Avg. Depth (Top of Bank): 6"
Avg. Water Depth: N/A
Avg. Slope of Banks (°): LB 30 RB 15
Has stream been altered? If so, how: N/A

Common Substrate:
☐ Bedrock ☐ Cobble/Gravel ☐ Concrete ☐ Sand ☒ Silt
☐ Other:

Habitat Complexity:
☐ Riffles/pools ☒ Undercut Banks ☒ Tree Roots ☒ Woody Debris
Bank Erosion: ☐ Severe ☐ Moderate ☒ Minor
Silt Deposition: ☐ Severe ☐ Moderate ☒ Minor
Is the stream problematically incised? ☐ Yes ☒ No

Riparian Zone:
RB: ☒ Forested ☒ Shrub ☒ Herb. ☐ Wetlands ☐ Developed ☐ Maintained
LB: ☒ Forested ☒ Shrub ☒ Herb. ☐ Wetlands ☐ Developed ☐ Maintained

Flags:
27N -001 to 27N -010
Receives flow from a seep
Additional Notes:
Photos: US-NE, DS-SW
Recieves roadside Runoff. No defined Bed and Banks Present.

Take upstream and downstream photos.

Waters of the U.S. Data Sheet

Project: I-495/I-270 Managed Lanes Study		**Feature ID:** 27P — **Stream Order:** 1st
Date: 2/26/21	**State:** MD	**Photos:** 27P-1
Crew: JCP/GK	**County:** Montgomery	**Last Flag Number:**

Feature Hydrologic Class (check one):

Tidal	Perennial	Intermittent	Ephemeral
○ TNW (Subject to ebb and flow)	○ TNW – Perennial (Flowing year round)	○ RPW – Seasonal (must flow at least 3 months a year)	○ Non-RPW draining uplands
	⊗ RPW – Perennial (Flowing year round)		○ Non-RPW erosional feature
			○ Non-RPW with abutting wetland
			○ Non-RPW with adjacent wetland
Describe rational for hydrologic class: defined channel ~~and~~ flow is approximately 4 inches deep			○ Non-RPW wetland adjacent or abutting upstream (outside of study area)
Hydrologic Connectivity –	Upstream: outside study area	Downstream: Watts Branch (27A)	Adjacent/Abutting: 27A-2

Feature Description: *(check all that apply)*

Shape (with respect to OHW)		Substrate			Vegetation Cover Type (MBSS)
[X] Natural Channel Shape	Width: 12'	[X] Silts	[X] Sands	[ ] Muck	RB: Forest
[ ] Artificial (man-made)	Depth: 4'	[ ] Cobbles	[X] Gravel	[ ] Other:	
[ ] Manipulated (man-altered)	Bank Erosion/stability: incised Right BANK	[ ] Bedrock	[ ] Concrete		
[ ] Other:		Side slope: [X] ≥1:1	[ ] 2:1	[ ] 3:1 [ ] ≤4:1	LB: PEM/scrub near roadway
Notes: incised along right BANK vertical bank at confluence					

Weather/Precipitation Conditions:

During Field Visit	Inches of Rain Within Last Week	Monthly Drought Condition NCDC Regional PDSI http://www.ncdc.noaa.gov/temp-and-precip/climatological-rankings/index.php — Month: Feb — Year: 2021
○ No rain	○ 0-0.5	○ -6 ○ -5 ○ -4 (Severe Drought) ○ -3 ○ -2 (Moderate Drought) ○ -1 ○ 0 ○ 1 (Normal) ⊗ 2 ○ 3 (Moderately Wet) ○ 4 ○ 5 ○ 6 (Severely Wet)
○ Light rain	○ 0.5-1	
○ Heavy Rain	○ >1	

Non-tidal tributary has: ***(check all that apply; include photos for each & list photo #)***

Bed and Banks	Ordinary High Water Mark		
[X] Yes	[ ] Clear, natural line impressed on the bank	[ ] Sediment deposition	[ ] Sediment sorting
[ ] No	[X] Changes in the character of soil	[ ] Water staining	[ ] Scour
	[ ] Shelving	[ ] Presence of flood litter/debris	[ ] Observed/predicted flow events
	[X] Vegetation matted down, bent, or absent	[ ] Destruction of terrestrial veg.	[ ] Abrupt change in plant community
	[ ] Leaf litter disturbed	[ ] Presence of wrack line	[ ] Other:

Tidal tributary has: ***(check all that apply; include photos for each & list photo #)***

High Tide Line	Mean High Water Mark indicated by:	Chemical Characteristics
[ ] Oil or scum line along shore objects	[ ] Survey to available datum	[ ] Water is clear
[ ] Fine shell or debris deposits (foreshore)	[ ] Physical markings	[ ] Water is discolored
[ ] Physical markings/characteristics	[ ] Vegetation lines/changes in types	[ ] Oily film
[ ] Tidal gauges		[ ] Other:

Notes:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: I-495/I-270 Managed Lanes Study City/County: Montgomery Sampling Date: 2/26/21
Applicant/Owner: MDOT SHA State: MD Sampling Point: 27Q-WET
Investigator(s): JCP/GJK Section, Township, Range: ______
Landform (hillslope, terrace, etc.): Fringe along Stream Local relief (concave, convex, none): Convex Slope (%): 0-2
Subregion (LRR or MLRA): 148S Lat: 39.08660 Long: -77.17683 Datum: NAD 83 Feet
Soil Map Unit Name: Hatboro Silt loam (54A) NWI classification: PEM
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)
Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? No Are "Normal Circumstances" present? Yes X No ___
Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? No (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 X No ___	Is the Sampled Area within a Wetland? Yes ___ No ___
Hydric Soil Present?	Yes ___ No ___	
Wetland Hydrology Present?	Yes X No ___	

Remarks: No upland data sheet. Obvious upland boundary.

Photo 27Q-WET-1 of wetland and upland boundary visible in background

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- X Water-Stained Leaves (B9) (surface muck)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two 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)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

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 X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Small fringe wetland between 27A-2 and 27P
visual observation of hydrology only, at this time.

VEGETATION (Five Strata) – Use scientific names of plants. Sampling Point: 27Q-wet

Tree Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
	= Total Cover		
50% of total cover: ____	20% of total cover: ____		

Sapling Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
	= Total Cover		
50% of total cover: ____	20% of total cover: ____		

Shrub Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
	= Total Cover		
50% of total cover: ____	20% of total cover: ____		

Herb Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1. Cinna arundinacea	70	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	50 = Total Cover		
50% of total cover: 25	20% of total cover: 10		

Woody Vine Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
50% of total cover: ____	20% of total cover: ____		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	____	x 1 = ____
FACW species	____	x 2 = ____
FAC species	____	x 3 = ____
FACU species	____	x 4 = ____
UPL species	____	x 5 = ____
Column Totals:	____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

__ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

__ 3 - Prevalence Index is ≤3.0[1]

__ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

__ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Five 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.

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 X No ____

Remarks: (Include photo numbers here or on a separate sheet.)
area dominated by wetland grasses

SOIL

Sampling Point: 27Q-wet

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- __ Histosol (A1)
- __ Histic Epipedon (A2)
- __ Black Histic (A3)
- __ Hydrogen Sulfide (A4)
- __ Stratified Layers (A5)
- __ 2 cm Muck (A10) **(LRR N)**
- __ Depleted Below Dark Surface (A11)
- __ Thick Dark Surface (A12)
- __ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- __ Sandy Gleyed Matrix (S4)
- __ Sandy Redox (S5)
- __ Stripped Matrix (S6)
- __ Dark Surface (S7)
- __ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- __ Thin Dark Surface (S9) **(MLRA 147, 148)**
- __ Loamy Gleyed Matrix (F2)
- __ Depleted Matrix (F3)
- __ Redox Dark Surface (F6)
- __ Depleted Dark Surface (F7)
- __ Redox Depressions (F8)
- __ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- __ Umbric Surface (F13) **(MLRA 136, 122)**
- __ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- __ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- __ 2 cm Muck (A10) **(MLRA 147)**
- __ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- __ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- __ Very Shallow Dark Surface (TF12)
- __ Other (Explain in Remarks)

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

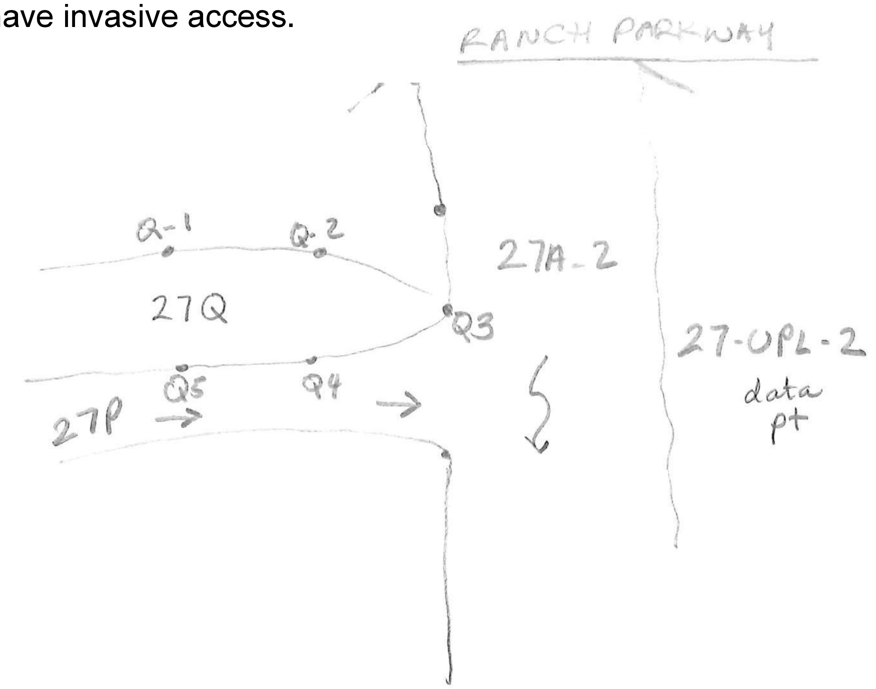
Restrictive Layer (if observed):

Type: ______

Depth (inches): ______

Hydric Soil Present? Yes ______ No ______

Remarks: A soil pit was not dug because the team did not have invasive access.



Wetland Function-Value Evaluation Form

Total area of wetland 0.02 ac Human made? No Is wetland part of a wildlife corridor? yes or a "habitat island"? NO

Adjacent land use transportation & floodplain Distance to nearest roadway or other development 43 ft

Dominant wetland systems present emergent - grasses Contiguous undeveloped buffer zone present yes along stream

Is the wetland a separate hydraulic system? NO If not, where does the wetland lie in the drainage basin? Upper

How many tributaries contribute to the wetland? 0 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. 27Q - WET
Latitude 39.0866 Longitude -77.17683
Prepared by: JCP Date 5/21/21
Wetland Impact:
Type PEM Area 0.01

Evaluation based on:
Office X Field X
Corps manual wetland delineation completed? Y X N

Function/Value	Suitability Y	Suitability N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	X				Small depression of muck
Floodflow Alteration	X				
Fish and Shellfish Habitat	X				fringe along stream, clam shells
Sediment/Toxicant Retention	X				
Nutrient Removal	X				
Production Export		X			
Sediment/Shoreline Stabilization	X				
Wildlife Habitat	X				very small fringe along stream 27A-2, adj to roadway
Recreation		X			
Educational/Scientific Value		X			
Uniqueness/Heritage		X			
Visual Quality/Aesthetics		X			
ES Endangered Species Habitat		X			
Other					

Notes:

* Refer to backup list of numbered considerations.

Waters of the U.S. Data Sheet

Project: I-495/I-270 Managed Lanes Study		Feature ID: 27R	Stream Order: 1st
Date: 2/26/21	State: MD	Photos: 27R-1 (upstream) 27R-2 (downstream)	
Crew: JCP/GK	County: Montgomery	Last Flag Number: R1A/B – R2A/B	

Feature Hydrologic Class (check one):

Tidal	Perennial	Intermittent	Ephemeral
○ TNW (Subject to ebb and flow)	○ TNW – Perennial (Flowing year round) ○ RPW – Perennial (Flowing year round)	⊗ RPW – Seasonal (must flow at least 3 months a year)	○ Non-RPW draining uplands ○ Non-RPW erosional feature ○ Non-RPW with abutting wetland ○ Non-RPW with adjacent wetland ○ Non-RPW wetland adjacent or abutting upstream (outside of study area)
Describe rational for hydrologic class:			
Hydrologic Connectivity –	Upstream: non jurisdictional feature	Downstream: 27S-Wet	Adjacent/Abutting: 27S-WET

Feature Description: *(check all that apply)*

Shape (with respect to OHW)		Substrate			Vegetation Cover Type (MBSS)
☐ Natural Channel Shape	Width: 5'	☐ Silts	☐ Sands	☐ Muck	RB: woodland/scrub
☒ Artificial (man-made)	Depth: 2'	☐ Cobbles	☐ Gravel	☒ Other: riprap	
☐ Manipulated (man-altered)	Bank Erosion/stability: eroded below riprap	☐ Bedrock	☐ Concrete		LB: woodland/SCRUB
☐ Other:		Side slope: ☐ ≥1:1 ☒ 2:1 ☐ 3:1 ☐ ≤4:1			
Notes:					

Weather/Precipitation Conditions:

During Field Visit	Inches of Rain Within Last Week	Monthly Drought Condition NCDC Regional PDSI http://www.ncdc.noaa.gov/temp-and-precip/climatological-rankings/index.php Month: Feb Year: 2021												
○ No rain	○ 0-0.5	○	○	○	○	○	○	○	○	⊗	○	○	○	○
○ Light rain	○ 0.5-1	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6
○ Heavy Rain	○ >1	Severe Drought			Moderate Drought		Normal			Moderately Wet		Severely Wet		

Non-tidal tributary has: *(check all that apply; include photos for each & list photo #)*

Bed and Banks	Ordinary High Water Mark		
☐ Yes	☐ Clear, natural line impressed on the bank	☐ Sediment deposition	☐ Sediment sorting
☐ No	☒ Changes in the character of soil	☒ Water staining	☐ Scour
	☐ Shelving	☐ Presence of flood litter/debris	☐ Observed/predicted flow events
	☒ Vegetation matted down, bent, or absent	☐ Destruction of terrestrial veg.	☐ Abrupt change in plant community
	☐ Leaf litter disturbed	☐ Presence of wrack line	☐ Other:

Tidal tributary has: *(check all that apply; include photos for each & list photo #)*

High Tide Line	Mean High Water Mark indicated by:	Chemical Characteristics
☐ Oil or scum line along shore objects	☐ Survey to available datum	☐ Water is clear
☐ Fine shell or debris deposits (foreshore)	☐ Physical markings	☐ Water is discolored
☐ Physical markings/characteristics	☐ Vegetation lines/changes in types	☐ Oily film
☐ Tidal gauges		☒ Other: Stagnant water over baseflow
Notes:		

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: I-495/I-270 Managed Lanes Study City/County: Montgomery Sampling Date: 2/26/21
Applicant/Owner: MDOT SHA State: MD Sampling Point: 27 S-WET
Investigator(s): JCP / GK Section, Township, Range: ______
Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): Flat Slope (%): 0
Subregion (LRR or MLRA): 148 S Lat: 39.08579 Long: -77.17640 Datum: NAD83 Feet
Soil Map Unit Name: Gaila Silt loam (1C) NWI classification: PEM
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)
Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? NO Are "Normal Circumstances" present? Yes X No ___
Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? NO (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 X	No ___	**Is the Sampled Area within a Wetland?** **Yes** ___ **No** ___
Hydric Soil Present?	Yes ___	No ___	
Wetland Hydrology Present?	Yes X	No ___	

Remarks: 27S-WET is a depression below a culvert and rip rap Channel (likely ephemeral), within the 100 YR Floodplain of Watts Branch. photos 27S-Wet-1 and 27S-UPL-1

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- X Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

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 X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: ponded / saturated with wetland vegetation.

VEGETATION (Five Strata) – Use scientific names of plants.

Sampling Point: 27S-WET

Tree Stratum (Plot size: 15')	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
5.			
6.			
		= Total Cover	
50% of total cover:		20% of total cover:	

Sapling Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. none			
2.			
3.			
4.			
5.			
6.			
		= Total Cover	
50% of total cover:		20% of total cover:	

Shrub Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. none			
2.			
3.			
4.			
5.			
6.			
		= Total Cover	
50% of total cover:		20% of total cover:	

Herb Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. Cinna Arundinacea	5	N	FACW
2. Poa palustris	90	Y	FACW
3.	5	N	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100	= Total Cover	
50% of total cover:	50	20% of total cover:	20

Woody Vine Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
5.			
		= Total Cover	
50% of total cover:		20% of total cover:	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Five 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.

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 X No ___

Remarks: (Include photo numbers here or on a separate sheet.)
other grasses not identifiable. dormant season

SOIL

Sampling Point: 27S-wet

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

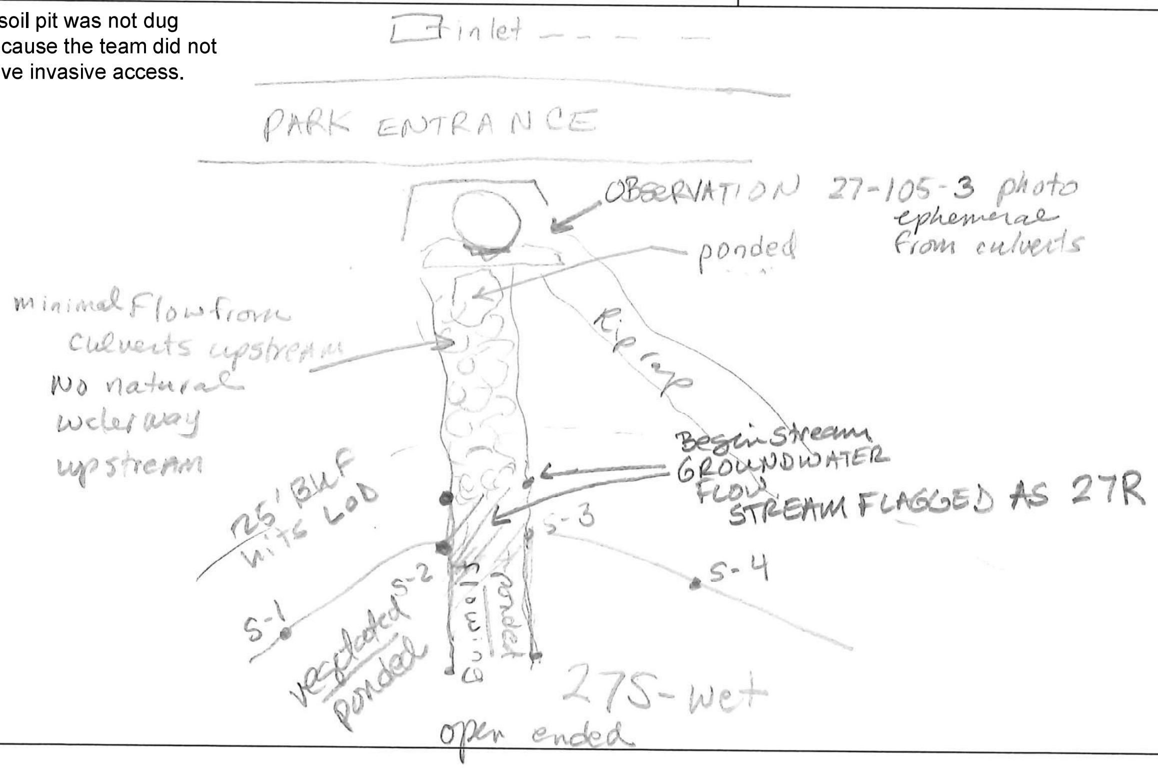
Restrictive Layer (if observed):

Type: ____________

Depth (inches): ____________

Hydric Soil Present? Yes ______ No ______

Remarks: A soil pit was not dug because the team did not have invasive access.



Wetland Function-Value Evaluation Form

Total area of wetland 0.004 ac Human made? yes Is wetland part of a wildlife corridor? X or a "habitat island"? No

Adjacent land use transportation & floodplain Distance to nearest roadway or other development 85 ft

Dominant wetland systems present emergent Contiguous undeveloped buffer zone present 1-side

Is the wetland a separate hydraulic system? No If not, where does the wetland lie in the drainage basin? ______

How many tributaries contribute to the wetland? 1 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. 27S-wet
Latitude 39.08579 Longitude -77.1764
Prepared by: JCP Date 5-21-21
Wetland Impact:
Type PEM Area 0.01

Evaluation based on:
Office ______ Field ______
Corps manual wetland delineation completed? Y ______ N ______

Function/Value	Suitability Y	Suitability N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	X				small ponded area within floodplain
Floodflow Alteration	X				likely a created basin (below outfall)
Fish and Shellfish Habitat	X				
Sediment/Toxicant Retention	X				
Nutrient Removal	X				
Production Export					
Sediment/Shoreline Stabilization					
Wildlife Habitat	X				has become naturalized
Recreation					
Educational/Scientific Value					
Uniqueness/Heritage					
Visual Quality/Aesthetics					
ES Endangered Species Habitat					
Other					

Notes:

* Refer to backup list of numbered considerations.

Waters of the U.S. Data Sheet

Project: I-270/I-495 Managed Lane Study		**Feature ID:** 28A / **Stream Order:** 1st
Date: 5/1/18	**State:** MD	**Photos:** 28A-Upstream-SW, 28A-Downstream-NE
Crew: WT, PS	**County:** Montgomery	**Last Flag Number:** No Flags, Digitized Aerially

Feature Hydrologic Class (check one):

Tidal	Perennial	Intermittent	Ephemeral
○ TNW (Subject to ebb and flow)	○ TNW – Perennial (Flowing year round)	○ RPW – Seasonal (must flow at least 3 months a year)	○ Non-RPW draining uplands
	☒ RPW – Perennial (Flowing year round)		○ Non-RPW erosional feature
			○ Non-RPW with abutting wetland
			○ Non-RPW with adjacent wetland
			○ Non-RPW wetland adjacent or abutting upstream (outside of study area)

Describe rational for hydrologic class: Drains to outfall @ Northwest corner of pond into 29A

Hydrologic Connectivity – | Upstream: 28-SWM5 | Downstream: 29A | Adjacent/Abutting: N/A

Feature Description: *(check all that apply)*

Shape (with respect to OHW)		Substrate			Vegetation Cover Type (MBSS)
☐ Natural Channel Shape	Width: Varies	☐ Silts	☐ Sands	☐ Muck	RB: Maintained Park
☒ Artificial (man-made)	Depth: Several Feet	☐ Cobbles	☐ Gravel	☒ Other: Rip Rap	
☐ Manipulated (man-altered)	Bank Erosion/stability: No Erosion, Good Stability From Rip Rap along shoreline	☐ Bedrock	☐ Concrete		LB: Commercial Development
☐ Other:		Side slope: ☐ ≥1:1 ☒ 2:1 ☐ 3:1 ☐ ≤4:1			

Notes: Assume pond was constructed within in-line stream.

Weather/Precipitation Conditions:

During Field Visit	Inches of Rain Within Last Week	Monthly Drought Condition NCDC Regional PDSI https://www.ncdc.noaa.gov/temp-and-precip/climatological-rankings/index.php	Month: April	Year: 2018
☒ No rain	● 0-0.5			
○ Light rain	○ 0.5-1			
○ Heavy Rain	☒ >1			

○ -6	○ -5	○ -4	○ -3	○ -2	● -1	○ 0	○ 1	☒ 2	○ 3	○ 4	○ 5	○ 6
Severe Drought			Moderate Drought		Normal			Moderately Wet		Severely Wet		

Non-tidal tributary has: *(check all that apply; include photos for each & list photo #)*

Bed and Banks	Ordinary High Water Mark		
☒ Yes	☒ Clear, natural line impressed on the bank	☐ Sediment deposition	☐ Sediment sorting
☐ No	☐ Changes in the character of soil	☐ Water staining	☐ Scour
	☐ Shelving	☐ Presence of flood litter/debris	☐ Observed/predicted flow events
	☐ Vegetation matted down, bent, or absent	☐ Destruction of terrestrial veg.	☒ Abrupt change in plant community
	☐ Leaf litter disturbed	☐ Presence of wrack line	☐ Other:

Tidal tributary has: *(check all that apply; include photos for each & list photo #)*

High Tide Line	Mean High Water Mark indicated by:	Chemical Characteristics
☐ Oil or scum line along shore objects	☐ Survey to available datum	☐ Water is clear
☐ Fine shell or debris deposits (foreshore)	☐ Physical markings	☐ Water is discolored
☐ Physical markings/characteristics	☐ Vegetation lines/changes in types	☐ Oily film
☐ Tidal gauges		☐ Other:

Notes:

Waters of the U.S. Data Sheet

Project: I-270/I-495 MANAGED LANE STUDY	**Feature ID:** 28B	**Stream Order:** 1st
Date: 5/10/18 **State:** MD	**Photos:** 28B-Upstream-NW, 28B-Downstream-SE	
Crew: WT, NC **County:** Montgomery	**Last Flag Number:** No changes to stream polygon	

Feature Hydrologic Class (check one):

Tidal	Perennial	Intermittent	Ephemeral
○ TNW (Subject to ebb and flow)	○ TNW – Perennial (Flowing year round) ○ RPW – Perennial (Flowing year round)	☒ RPW – Seasonal (must flow at least 3 months a year)	○ Non-RPW draining uplands ○ Non-RPW erosional feature ○ Non-RPW with abutting wetland ○ Non-RPW with adjacent wetland ○ Non-RPW wetland adjacent or abutting upstream (outside of study area)

Describe rational for hydrologic class: BASE Flow observed During Field Investigation

Hydrologic Connectivity –	Upstream: SWM - 28SWM1	Downstream: 29A	Adjacent/Abutting: N/A

Feature Description: *(check all that apply)*

Shape (with respect to OHW)		Substrate			Vegetation Cover Type (MBSS)
☐ Natural Channel Shape	Width: 6'	☐ Silts	☐ Sands	☐ Muck	RB: Forested
☒ Artificial (man-made)	Depth: 6"	☐ Cobbles	☐ Gravel	Other:	
☐ Manipulated (man-altered)	Bank Erosion/stability: Good stability Concrete channel	☐ Bedrock	☒ Concrete		
☐ Other:		Side slope: ☐ ≥1:1 ☒ 2:1 ☐ 3:1 ☐ ≤4:1			LB: Forested

Notes: Drains into 29A

Weather/Precipitation Conditions:

During Field Visit	Inches of Rain Within Last Week	Monthly Drought Condition NCDC Regional PDSI http://www.ncdc.noaa.gov/temp-and-precip/climatological-rankings/index.php												
											Month: May		Year: 2018	
☒ No rain	☒ 0-0.5	○	○	○	○	○	●	○	☒	○	○	○	○	○
○ Light rain	○ 0.5-1	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6
○ Heavy Rain	○ >1	Severe Drought			Moderate Drought		Normal			Moderately Wet		Severely Wet		

Non-tidal tributary has: ***(check all that apply; include photos for each & list photo #)***

Bed and Banks	Ordinary High Water Mark		
☒ Yes	☐ Clear, natural line impressed on the bank	☐ Sediment deposition	☐ Sediment sorting
☐ No	☐ Changes in the character of soil	☒ Water staining	☐ Scour
	☐ Shelving	☐ Presence of flood litter/debris	☐ Observed/predicted flow events
	☐ Vegetation matted down, bent, or absent	☐ Destruction of terrestrial veg.	☐ Abrupt change in plant community
	☐ Leaf litter disturbed	☐ Presence of wrack line	☒ Other: high water mark on Concrete

Tidal tributary has: ***(check all that apply; include photos for each & list photo #)***

High Tide Line	Mean High Water Mark indicated by:	Chemical Characteristics
☐ Oil or scum line along shore objects	☐ Survey to available datum	☐ Water is clear
☐ Fine shell or debris deposits (foreshore)	☐ Physical markings	☐ Water is discolored
☐ Physical markings/characteristics	☐ Vegetation lines/changes in types	☐ Oily film
☐ Tidal gauges		☐ Other:

Notes:

Waters of the U.S. Data Sheet

Project: I495 / I-270 Managed Lane Study		**Feature ID:** 29A	**Stream Order:** 2nd
Date: 4/26/18	**State:** MD	**Photos:** Upstream / Downstream	
Crew: WT, RS	**County:** Montgomery	**Last Flag Number:** (1-9A) (1-8B)	

Feature Hydrologic Class (check one):

Tidal	Perennial	Intermittent	Ephemeral
○ TNW (Subject to ebb and flow)	○ TNW – Perennial (Flowing year round)	○ RPW – Seasonal (must flow at least 3 months a year)	○ Non-RPW draining uplands
	[X] RPW – Perennial (Flowing year round)		○ Non-RPW erosional feature
			○ Non-RPW with abutting wetland
			○ Non-RPW with adjacent wetland
Describe rational for hydrologic class: BASE FLOW observed During FIELD Investigation			○ Non-RPW wetland adjacent or abutting upstream (outside of study area)
Hydrologic Connectivity –	Upstream: SWM Pond, 28B	Downstream: Muddy Branch ↳ Outside of study area	Adjacent/Abutting: NA

Feature Description: *(check all that apply)*

Shape (with respect to OHW)		Substrate			Vegetation Cover Type (MBSS)
[X] Natural Channel Shape	Width: 20'	[X] Silts	[X] Sands	[ ] Muck	RB: Forest
[ ] Artificial (man-made)	Depth: 2'	[X] Cobbles	[X] Gravel	[X] Other: Rip Rap	
[X] Manipulated (man-altered)	Bank Erosion/stability:	[ ] Bedrock	[ ] Concrete		
[ ] Other:	Minor / Rip Rap @ outfall	Side slope: [ ] ≥1:1 [ ] 2:1 [ ] 3:1 [X] ≤4:1			LB: Forest

Notes: DUAL 72" Concrete Pipes, Rip Rap @ outfall

Weather/Precipitation Conditions:

During Field Visit	Inches of Rain Within Last Week	Monthly Drought Condition NCDC Regional PDSI https://www.ncdc.noaa.gov/temp-and-precip/climatological-rankings/index.php												Month: April	Year: 2018
[X] No rain	○ 0-0.5	○	○	○	○	○	●	○	○	[X]	○	○	○	○	
○ Light rain	[X] 0.5-1	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	
○ Heavy Rain	○ >1	Severe Drought			Moderate Drought		Normal			Moderately Wet		Severely Wet			

Non-tidal tributary has: *(check all that apply; include photos for each & list photo #)*

Bed and Banks	Ordinary High Water Mark		
[X] Yes	[X] Clear, natural line impressed on the bank	[ ] Sediment deposition	[ ] Sediment sorting
[ ] No	[ ] Changes in the character of soil	[ ] Water staining	[ ] Scour
	[ ] Shelving	[X] Presence of flood litter/debris	[ ] Observed/predicted flow events
	[ ] Vegetation matted down, bent, or absent	[ ] Destruction of terrestrial veg.	[ ] Abrupt change in plant community
	[ ] Leaf litter disturbed	[ ] Presence of wrack line	[ ] Other:

Tidal tributary has: *(check all that apply; include photos for each & list photo #)*

High Tide Line	Mean High Water Mark indicated by:	Chemical Characteristics
[ ] Oil or scum line along shore objects	[ ] Survey to available datum	[ ] Water is clear
[ ] Fine shell or debris deposits (foreshore)	[ ] Physical markings	[ ] Water is discolored
[ ] Physical markings/characteristics	[ ] Vegetation lines/changes in types	[ ] Oily film
[ ] Tidal gauges		[ ] Other:

Notes:

Waters of the U.S. Data Sheet

Project: I495 / I270 Managed Lanes Study		Feature ID: 29B
Date: 4/26/18	State: MD	Stream Order: ~~[illegible]~~ 2nd
Crew: WT RS	County: Montgomery	Photos: upstream, downstream
		Last Flag Number: (1-7A) (1-6B)

Feature Hydrologic Class (check one):

Tidal	Perennial	Intermittent	Ephemeral
○ TNW (Subject to ebb and flow)	○ TNW – Perennial (Flowing year round)	○ RPW – Seasonal (must flow at least 3 months a year)	○ Non-RPW draining uplands
	[X] RPW – Perennial (Flowing year round)		○ Non-RPW erosional feature
			○ Non-RPW with abutting wetland
			○ Non-RPW with adjacent wetland
			○ Non-RPW wetland adjacent or abutting upstream (outside of study area)

Describe rational for hydrologic class: BASE Flow observed During Field Investigation

Hydrologic Connectivity –	Upstream: Unnamed tributaries	Downstream: Potomac River	Adjacent/Abutting: NA

Feature Description: *(check all that apply)* (29D) * Both upstream and downstream is outside of the study area*

Shape (with respect to OHW)		Substrate			Vegetation Cover Type (MBSS)
[X] Natural Channel Shape	Width: 20'	[ ] Silts	[X] Sands	[ ] Muck	RB: Forest
[ ] Artificial (man-made)	Depth: 2'	[X] Cobbles	[X] Gravel	[ ] Other:	
[X] Manipulated (man-altered)	Bank Erosion/stability:	[X] Bedrock	[ ] Concrete		
[ ] Other:	moderate erosion	Side slope: [ ] ≥1:1 [ ] 2:1 [ ] 3:1 [X] ≤4:1			LB: Forest

Notes: 10' Culvert @ upstream extent, 29B is Muddy Branch

Weather/Precipitation Conditions:

During Field Visit	Inches of Rain Within Last Week	Monthly Drought Condition NCDC Regional PDSI http://www.ncdc.noaa.gov/temp-and-precip/climatological-rankings/index.php	Month: April [redacted]	Year: 2018
[X] No rain	○ 0-0.5	Severe Drought: ○ -6 ○ -5 ○ -4	Moderate Drought: ○ -3 ○ -2	Normal: ● -1 ○ 0 ○ 1
○ Light rain	[X] 0.5-1	Moderately Wet: [X] 2 ○ 3	Severely Wet: ○ 4 ○ 5 ○ 6	
○ Heavy Rain	○ >1			

Non-tidal tributary has: ***(check all that apply; include photos for each & list photo #)***

Bed and Banks	Ordinary High Water Mark		
[X] Yes	[X] Clear, natural line impressed on the bank	[ ] Sediment deposition	[ ] Sediment sorting
[ ] No	[X] Changes in the character of soil	[ ] Water staining	[ ] Scour
	[X] Shelving	[X] Presence of flood litter/debris	[ ] Observed/predicted flow events
	[X] Vegetation matted down, bent, or absent	[ ] Destruction of terrestrial veg.	[ ] Abrupt change in plant community
	[ ] Leaf litter disturbed	[X] Presence of wrack line	[ ] Other:

Tidal tributary has: ***(check all that apply; include photos for each & list photo #)***

High Tide Line	Mean High Water Mark indicated by:	Chemical Characteristics
[ ] Oil or scum line along shore objects	[ ] Survey to available datum	[ ] Water is clear
[ ] Fine shell or debris deposits (foreshore)	[ ] Physical markings	[ ] Water is discolored
[ ] Physical markings/characteristics	[ ] Vegetation lines/changes in types	[ ] Oily film
[ ] Tidal gauges		[ ] Other:

Notes:

Waters of the U.S. Data Sheet

Project: 1495 / 1270 Managed Lane Study	Feature ID: 29C	Stream Order: 2nd
Date: 4/26/18 — State: MD	Photos: Upstream / Downstream	
Crew: WT RS — County: Montgomery	Last Flag Number: 29C (1-11A)(1-11B)	

Feature Hydrologic Class (check one):

Tidal	Perennial	Intermittent	Ephemeral
○ TNW (Subject to ebb and flow)	○ TNW – Perennial (Flowing year round)	⊗ RPW – Seasonal (must flow at least 3 months a year)	○ Non-RPW draining uplands
	○ RPW – Perennial (Flowing year round)		○ Non-RPW erosional feature
			○ Non-RPW with abutting wetland
			○ Non-RPW with adjacent wetland
			○ Non-RPW wetland adjacent or abutting upstream (outside of study area)

Describe rational for hydrologic class: BASE Flow observed During FIELD Investigation Drains to pipe @ I-270

Hydrologic Connectivity –	Upstream: 29E, 29F	Downstream: Muddy Branch → outside study area	Adjacent/Abutting: 29J, 29G (PFO), 29H

Feature Description: *(check all that apply)*

Shape (with respect to OHW)		Substrate			Vegetation Cover Type (MBSS)
[X] Natural Channel Shape	Width: 6'	[ ] Silts	[ ] Sands	[ ] Muck	RB: Forested
[ ] Artificial (man-made)	Depth: 1.5'	[X] Cobbles	[X] Gravel	[X] Other: Rip Rap	
[X] Manipulated (man-altered)	Bank Erosion/stability: Good stability	[ ] Bedrock	[ ] Concrete		LB: Maintained Herbaceous / Mowed
[ ] Other:		Side slope: [ ] ≥1:1 [X] 2:1 [ ] 3:1 [ ] ≤4:1			

Notes: Segment continues south of I-270

Weather/Precipitation Conditions:

During Field Visit	Inches of Rain Within Last Week	Monthly Drought Condition NCDC Regional PDSI https://www.ncdc.noaa.gov/temp-and-precip/climatological-rankings/index.php — Month: April Year: 2018
⊗ No rain	○ 0-0.5	○ -6 ○ -5 ○ -4 (Severe Drought)
○ Light rain	⊗ 0.5-1	○ -3 ○ -2 (Moderate Drought)
○ Heavy Rain	○ >1	● -1 ○ 0 ○ 1 (Normal)
		⊗ 2 ○ 3 (Moderately Wet)
		○ 4 ○ 5 ○ 6 (Severely Wet)

Non-tidal tributary has: *(check all that apply; include photos for each & list photo #)*

Bed and Banks	Ordinary High Water Mark		
[X] Yes	[X] Clear, natural line impressed on the bank	[ ] Sediment deposition	[ ] Sediment sorting
[ ] No	[ ] Changes in the character of soil	[ ] Water staining	[ ] Scour
	[ ] Shelving	[X] Presence of flood litter/debris	[ ] Observed/predicted flow events
	[ ] Vegetation matted down, bent, or absent	[ ] Destruction of terrestrial veg.	[ ] Abrupt change in plant community
	[ ] Leaf litter disturbed	[ ] Presence of wrack line	[ ] Other:

Tidal tributary has: *(check all that apply; include photos for each & list photo #)*

High Tide Line	Mean High Water Mark indicated by:	Chemical Characteristics
[ ] Oil or scum line along shore objects	[ ] Survey to available datum	[ ] Water is clear
[ ] Fine shell or debris deposits (foreshore)	[ ] Physical markings	[ ] Water is discolored
[ ] Physical markings/characteristics	[ ] Vegetation lines/changes in types	[ ] Oily film
[ ] Tidal gauges		[ ] Other:

Notes:

Waters of the U.S. Data Sheet

Project: I270/I495 Managed Lanes Study	Feature ID: 29 D	Stream Order: 1st
Date: 4/5/18 State: MD	Photos: Upstream, downstream	
Crew: WT RS County: Mo Co	Last Flag Number: No changes to stream polygons	

Feature Hydrologic Class (check one):

Tidal	Perennial	Intermittent	Ephemeral
○ TNW (Subject to ebb and flow)	○ TNW – Perennial (Flowing year round) ○ RPW – Perennial (Flowing year round)	☒ RPW – Seasonal (must flow at least 3 months a year)	○ Non-RPW draining uplands ○ Non-RPW erosional feature ○ Non-RPW with abutting wetland ○ Non-RPW with adjacent wetland ○ Non-RPW wetland adjacent or abutting upstream (outside of study area)

Describe rational for hydrologic class: BASE Flow observed During Field Investigation Drains SWM Pond 28-SWM2

Hydrologic Connectivity – Upstream: SWM Pond | Downstream: Muddy Branch (29B) | Adjacent/Abutting: 29-SWM 5

Feature Description: *(check all that apply)*

Shape (with respect to OHW)		Substrate			Vegetation Cover Type (MBSS)
☒ Natural Channel Shape	Width: 4'	☒ Silts	☒ Sands	☐ Muck	RB: forest
☐ Artificial (man-made)	Depth: 3'	☒ Cobbles	☐ Gravel	☒ Other: Rip Rap	
☐ Manipulated (man-altered)	Bank Erosion/stability:	☐ Bedrock	☐ Concrete		
☒ Other: piped	Moderate	Side slope: ☐ ≥1:1 ☒ 2:1 ☐ 3:1 ☐ ≤4:1			LB: Forest

Notes: Rip Rap placed in channel north of I-370.

Weather/Precipitation Conditions:

During Field Visit	Inches of Rain Within Last Week	Monthly Drought Condition NCDC Regional PDSI http://www.ncdc.noaa.gov/temp-and-precip/climatological-rankings/index.php												Month: March Year: 2018
● No rain	☒ 0-0.5	○ -6	○ -5	○ -4	○ -3	○ -2	● -1	○ 0	☒ 1	○ 2	○ 3	○ 4	○ 5	○ 6
○ Light rain	○ 0.5-1	Severe Drought			Moderate Drought		Normal			Moderately Wet		Severely Wet		
○ Heavy Rain	○ >1													

Non-tidal tributary has: *(check all that apply; include photos for each & list photo #)*

Bed and Banks	Ordinary High Water Mark		
☒ Yes	☒ Clear, natural line impressed on the bank	☐ Sediment deposition	☐ Sediment sorting
☐ No	☐ Changes in the character of soil	☐ Water staining	☒ Scour
	☐ Shelving	☐ Presence of flood litter/debris	☐ Observed/predicted flow events
	☒ Vegetation matted down, bent, or absent	☐ Destruction of terrestrial veg.	☐ Abrupt change in plant community
	☐ Leaf litter disturbed	☐ Presence of wrack line	☐ Other:

Tidal tributary has: *(check all that apply; include photos for each & list photo #)*

High Tide Line	Mean High Water Mark indicated by:	Chemical Characteristics
☐ Oil or scum line along shore objects	☐ Survey to available datum	☐ Water is clear
☐ Fine shell or debris deposits (foreshore)	☐ Physical markings	☐ Water is discolored
☐ Physical markings/characteristics	☐ Vegetation lines/changes in types	☐ Oily film
☐ Tidal gauges		☐ Other:

Notes:

Waters of the U.S. Data Sheet

Project: I-495/I-270 Managed Lane Study		**Feature ID:** 29E	**Stream Order:** 1st
Date: 4/26/18	**State:** MD	**Photos:** Upstream, Downstream	
Crew: WT, RS	**County:** Montgomery	**Last Flag Number:** 29E-1A / 29E-1B	

Feature Hydrologic Class (check one):

Tidal	Perennial	Intermittent	Ephemeral
○ TNW (Subject to ebb and flow)	○ TNW – Perennial (Flowing year round) ◉ RPW – Perennial (Flowing year round)	○ RPW – Seasonal (must flow at least 3 months a year)	○ Non-RPW draining uplands ○ Non-RPW erosional feature ○ Non-RPW with abutting wetland ○ Non-RPW with adjacent wetland ○ Non-RPW wetland adjacent or abutting upstream (outside of study area)

Describe rational for hydrologic class: Base flow observed during field investigation

Hydrologic Connectivity –	Upstream: 29-SWM1	Downstream: 29C	Adjacent/Abutting: 29G

Feature Description: *(check all that apply)*

Shape (with respect to OHW)		Substrate			Vegetation Cover Type (MBSS)
☑ Natural Channel Shape	Width: 5'	☑ Silts	☐ Sands	☐ Muck	RB: Scrub shrub/forest
☐ Artificial (man-made)	Depth: 1'	☑ Cobbles	☑ Gravel	☐ Other:	
☐ Manipulated (man-altered)	Bank Erosion/stability:	☐ Bedrock	☐ Concrete		
☐ Other:	Minor erosion/good stability	Side slope: ☑ ≥1:1 ☐ 2:1 ☐ 3:1 ☐ ≤4:1			LB: Scrub shrub/forest

Notes: Drains SWM facility

Weather/Precipitation Conditions:

During Field Visit	Inches of Rain Within Last Week	Monthly Drought Condition NCDC Regional PDSI http://www.ncdc.noaa.gov/temp-and-precip/climatological-rankings/index.php												Month: April	Year: 2018
◉ No rain	○ 0-0.5	○	○	○	○	○	○	○	○	◉	○	○	○	○	
○ Light rain	◉ 0.5-1	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	
○ Heavy Rain	○ >1	Severe Drought			Moderate Drought		Normal			Moderately Wet		Severely Wet			

Non-tidal tributary has: *(check all that apply; include photos for each & list photo #)*

Bed and Banks	Ordinary High Water Mark		
☑ Yes	☑ Clear, natural line impressed on the bank	☑ Sediment deposition	☐ Sediment sorting
☐ No	☐ Changes in the character of soil	☐ Water staining	☐ Scour
	☐ Shelving	☑ Presence of flood litter/debris	☐ Observed/predicted flow events
	☑ Vegetation matted down, bent, or absent	☐ Destruction of terrestrial veg.	☐ Abrupt change in plant community
	☐ Leaf litter disturbed	☑ Presence of wrack line	☐ Other:

Tidal tributary has: *(check all that apply; include photos for each & list photo #)*

High Tide Line	Mean High Water Mark indicated by:	Chemical Characteristics
☐ Oil or scum line along shore objects	☐ Survey to available datum	☐ Water is clear
☐ Fine shell or debris deposits (foreshore)	☐ Physical markings	☐ Water is discolored
☐ Physical markings/characteristics	☐ Vegetation lines/changes in types	☐ Oily film
☐ Tidal gauges		☐ Other:

Notes:

Waters of the U.S. Data Sheet

Project: I-495/I-270 Managed Lane Study		**Feature ID:** 29F	**Stream Order:** 1st
Date: 4/26/18	**State:** MD	**Photos:** Upstream, Downstream	
Crew: WT, RS	**County:** Montgomery	**Last Flag Number:** 29F-9A / 29F-9B	

Feature Hydrologic Class (check one):

Tidal	Perennial	Intermittent	Ephemeral
○ TNW (Subject to ebb and flow)	○ TNW – Perennial (Flowing year round) ◉ RPW – Perennial (Flowing year round)	○ RPW – Seasonal (must flow at least 3 months a year)	○ Non-RPW draining uplands ○ Non-RPW erosional feature ○ Non-RPW with abutting wetland ○ Non-RPW with adjacent wetland ○ Non-RPW wetland adjacent or abutting upstream (outside of study area)
Describe rational for hydrologic class: Base flow observed during field investigation			
Hydrologic Connectivity –	Upstream: 29-SWM1	Downstream: 29C	Adjacent/Abutting: 29G

Feature Description: ***(check all that apply)***

Shape (with respect to OHW)		Substrate			Vegetation Cover Type (MBSS)
☑ Natural Channel Shape	Width: 4'	☑ Silts	☑ Sands	☐ Muck	RB: Forest/emergent wetland
☐ Artificial (man-made)	Depth: 1'	☑ Cobbles	☐ Gravel	☑ Other: Rip rap	
☑ Manipulated (man-altered)	Bank Erosion/stability:	☐ Bedrock	☐ Concrete		
☐ Other:	Minor erosion/good stability	Side slope: ☑ ≥1:1 ☐ 2:1 ☐ 3:1 ☐ ≤4:1			LB: Forest

Notes: Some rip rap placed at the downstream extent.

Weather/Precipitation Conditions:

During Field Visit	Inches of Rain Within Last Week	Monthly Drought Condition NCDC Regional PDSI http://www.ncdc.noaa.gov/temp-and-precip/climatological-rankings/index.php												
											Month: April		Year: 2018	
◉ No rain	○ 0-0.5	○	○	○	○	○	○	○	○	◉	○	○	○	○
○ Light rain	◉ 0.5-1	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6
○ Heavy Rain	○ >1	Severe Drought			Moderate Drought		Normal			Moderately Wet		Severely Wet		

Non-tidal tributary has: ***(check all that apply; include photos for each & list photo #)***

Bed and Banks	Ordinary High Water Mark		
☑ Yes	☑ Clear, natural line impressed on the bank	☐ Sediment deposition	☐ Sediment sorting
☐ No	☐ Changes in the character of soil	☐ Water staining	☐ Scour
	☑ Shelving	☑ Presence of flood litter/debris	☐ Observed/predicted flow events
	☐ Vegetation matted down, bent, or absent	☐ Destruction of terrestrial veg.	☐ Abrupt change in plant community
	☐ Leaf litter disturbed	☐ Presence of wrack line	☐ Other:

Tidal tributary has: ***(check all that apply; include photos for each & list photo #)***

High Tide Line	Mean High Water Mark indicated by:	Chemical Characteristics
☐ Oil or scum line along shore objects	☐ Survey to available datum	☐ Water is clear
☐ Fine shell or debris deposits (foreshore)	☐ Physical markings	☐ Water is discolored
☐ Physical markings/characteristics	☐ Vegetation lines/changes in types	☐ Oily film
☐ Tidal gauges		☐ Other:

Notes:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: I495/I270 Managed Lanes Study City/County: Montgomery Sampling Date: 5/15/18

Applicant/Owner: Maryland State Highway Administration State: MD Sampling Point: 29G/29J-UPL

Investigator(s): RS NL Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): None Local relief (concave, convex, none): Convex Slope (%): 0-3

Subregion (LRR or MLRA): LRR S MLRA 148 Lat: 39.130823 Long: -77.205066 Datum: NAD83

Soil Map Unit Name: Baile silt loam 0 to 3 percent slopes (6A) NWI classification: None

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:
29J/29G-UPL is located northeast of 29E and northwest of 29C
Area is an herbaceous area with upland vegetation and no wetland hydrology

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ True Aquatic Plants (B14)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two 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)
- ☐ Stunted or Stressed Plants (D1)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ Microtopographic Relief (D4)
- ☐ FAC-Neutral Test (D5)

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:
No hydrology observed.

VEGETATION (Five Strata) – Use scientific names of plants.

Sampling Point: 296/295-UPL

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Ulmus rubra	10	Y	FAC
2.			
3.			
4.			
5.			
6.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		

Sapling Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover:	20% of total cover:		

Shrub Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover:	20% of total cover:		

Herb Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Lonicera japonica	20	Y	FACU
2. Vitis aestivalis	15	Y	FACU
3. Potentilla indica	15	Y	FACU
4. Ipomoea pandurata	10	N	FACU
5. Lespedeza cuneata	5	N	FACU
6. Stachys tenuifolia	5	N	FACW
7.			
8.			
9.			
10.			
11.			
	70 = Total Cover		
50% of total cover: 35	20% of total cover: 14		

Woody Vine Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 25 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☐ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Five 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.

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 ☑

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: 29 6/29T-UPL

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 4/4	100					Silt loam	
4-20	10YR 4/6	95	10YR 5/8	5	C	M	Silt loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10) **(LRR N)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7)
- ☐ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ☐ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ☐ Umbric Surface (F13) **(MLRA 136, 122)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ☐ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10) **(MLRA 147)**
- ☐ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators 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:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: I495/I270 Managed Lanes Study City/County: Montgomery Sampling Date: 5/15/18
Applicant/Owner: Maryland State Highway Administration State: MD Sampling Point: 29G-WET
Investigator(s): RS, NC Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): None Local relief (concave, convex, none): Concave Slope (%): 0-3
Subregion (LRR or MLRA): LRR S MLRA 148 Lat: 39.130935 Long: -77.205250 Datum: NAD83
Soil Map Unit Name: Baile silt loam 0 to 3 percent slopes (6A) NWI classification: PEM1B
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 [ ]	Is the Sampled Area within a Wetland?	Yes [✓] No [ ]
Hydric Soil Present? Yes [✓] No [ ]		
Wetland Hydrology Present? Yes [✓] No [ ]		

Remarks:
29G is located southeast of 29-SWM1 along the left bank of 29E

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- [ ] Surface Water (A1)
- [✓] High Water Table (A2)
- [✓] Saturation (A3)
- [ ] Water Marks (B1)
- [ ] Sediment Deposits (B2)
- [✓] Drift Deposits (B3)
- [ ] Algal Mat or Crust (B4)
- [ ] Iron Deposits (B5)
- [ ] Inundation Visible on Aerial Imagery (B7)
- [ ] Water-Stained Leaves (B9)
- [ ] Aquatic Fauna (B13)
- [ ] True Aquatic Plants (B14)
- [ ] Hydrogen Sulfide Odor (C1)
- [ ] Oxidized Rhizospheres on Living Roots (C3)
- [ ] Presence of Reduced Iron (C4)
- [ ] Recent Iron Reduction in Tilled Soils (C6)
- [ ] Thin Muck Surface (C7)
- [ ] Other (Explain in Remarks)

Secondary Indicators (minimum of two 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)
- [ ] Stunted or Stressed Plants (D1)
- [✓] Geomorphic Position (D2)
- [ ] Shallow Aquitard (D3)
- [ ] Microtopographic Relief (D4)
- [ ] FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes [ ] No [✓] Depth (inches): ____
Water Table Present? Yes [✓] No [ ] Depth (inches): 4"
Saturation Present? (includes capillary fringe) Yes [✓] No [ ] Depth (inches): 4"

Wetland Hydrology Present? Yes [✓] No [ ]

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
29G receives hydrology from 29-SWM1 and overflow from 29E

Photos: 29G-J-UPL
29G-WET

VEGETATION (Five Strata) – Use scientific names of plants.

Sampling Point: 296-WET

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: ____ 20% of total cover: ____			

Sapling Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: ____ 20% of total cover: ____			

Shrub Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix nigra	15	Y	OBL
2.			
3.			
4.			
5.			
6.			
	15 = Total Cover		
50% of total cover: 7.5 20% of total cover: 3			

Herb Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Impatiens capensis	30	Y	FACW
2. Leersia oryzoides	20	Y	OBL
3. Boehmeria cylindrica	10	N	FACW
4. Vitis aestivalis	5	N	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	65 = Total Cover		
50% of total cover: 32.5 20% of total cover: 13			

Woody Vine Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: ____ 20% of total cover: ____			

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

- [ ] 1 - Rapid Test for Hydrophytic Vegetation
- [x] 2 - Dominance Test is >50%
- [ ] 3 - Prevalence Index is ≤3.0[1]
- [ ] 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Five 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.

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 [x] No [ ]

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: 296-WET

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 3/2	80	7.5YR 4/6	20	C	M	Sandy clay loam	
6-12	10YR 3/2	100					Sandy clay loam	Saturated
12-20	10YR 5/2	100					Sandy clay	Saturated

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10) **(LRR N)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7)
- ☐ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ☐ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ☐ Loamy Gleyed Matrix (F2)
- ☒ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ☐ Umbric Surface (F13) **(MLRA 136, 122)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ☐ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10) **(MLRA 147)**
- ☐ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators 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:

Wetland Function-Value Evaluation Form

Total area of wetland 0.05 ac Human made? NO Is wetland part of a wildlife corridor? No or a "habitat island"? No

Adjacent land use I-270, Forested upland Distance to nearest roadway or other development 45 ft

Dominant wetland systems present PEM1B Contiguous undeveloped buffer zone present No

Is the wetland a separate hydraulic system? NO If not, where does the wetland lie in the drainage basin? Upper

How many tributaries contribute to the wetland? 1 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. 296

Latitude 39.130395 Longitude -77.205250

Prepared by: RS Date 5/15/18

Wetland Impact:
Type NA Area NA

Evaluation based on:
Office X Field X

Corps manual wetland delineation completed? Y X N

Function/Value	Suitability Y / N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	Y			
Floodflow Alteration	Y			
Fish and Shellfish Habitat	N			
Sediment/Toxicant Retention	Y			
Nutrient Removal	Y			
Production Export	N			
Sediment/Shoreline Stabilization	Y			
Wildlife Habitat	Y			
Recreation	N			
Educational/Scientific Value	N			
Uniqueness/Heritage	N			
Visual Quality/Aesthetics	N			
ES Endangered Species Habitat	N			
Other	—			

Notes:

* Refer to backup list of numbered considerations.

Waters of the U.S. Data Sheet

Project: I495/I270 Managed Lanes Study		**Feature ID:** 29 H — **Stream Order:** 1st
Date: 4/26/18	**State:** Montgomery	**Photos:** Upstream Downstream
Crew: WT, RS	**County:** MD	**Last Flag Number:** No changes to stream polygon

Feature Hydrologic Class (check one):

Tidal	Perennial	Intermittent	Ephemeral
○ TNW (Subject to ebb and flow)	○ TNW – Perennial (Flowing year round)	⊗ RPW – Seasonal (must flow at least 3 months a year)	○ Non-RPW draining uplands
	○ RPW – Perennial (Flowing year round)		○ Non-RPW erosional feature
			○ Non-RPW with abutting wetland
			○ Non-RPW with adjacent wetland
			○ Non-RPW wetland adjacent or abutting upstream (outside of study area)

Describe rational for hydrologic class: Base Flow observed During Field Investigation

Hydrologic Connectivity –	Upstream: SWM inlet	Downstream: 29C / Unnamed trib to Muddy Branch	Adjacent/Abutting: 29C

Feature Description: *(check all that apply)*

Shape (with respect to OHW)		Substrate			Vegetation Cover Type (MBSS)
[ ] Natural Channel Shape	Width: 6	[X] Silts	[ ] Sands	[ ] Muck	RB: Maintained/Mowed
[ ] Artificial (man-made)	Depth: 2'	[ ] Cobbles	[X] Gravel	[ ] Other: Rip Rap	
[X] Manipulated (man-altered)	Bank Erosion/stability: None observed Rip Rap @ outfall	[ ] Bedrock	[ ] Concrete		LB: Maintained/Mowed
[ ] Other:		Side slope: [ ] ≥1:1 [X] 2:1 [ ] 3:1 [ ] ≤4:1			

Notes: Plunge Pool @ outfall

Weather/Precipitation Conditions:

During Field Visit	Inches of Rain Within Last Week	Monthly Drought Condition NCDC Regional PDSI https://www.ncdc.noaa.gov/temp-and-precip/climatological-rankings/index.php												Month: April Year: 2018
⊗ No rain	○ 0-0.5	○	○	○	○	○	●	○	○	⊗	○	○	○	○
○ Light rain	⊗ 0.5-1	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6
○ Heavy Rain	○ >1	Severe Drought			Moderate Drought		Normal			Moderately Wet		Severely Wet		

Non-tidal tributary has: *(check all that apply; include photos for each & list photo #)*

Bed and Banks	Ordinary High Water Mark		
[X] Yes	[X] Clear, natural line impressed on the bank	[X] Sediment deposition	[ ] Sediment sorting
[ ] No	[ ] Changes in the character of soil	[ ] Water staining	[ ] Scour
	[ ] Shelving	[X] Presence of flood litter/debris	[ ] Observed/predicted flow events
	[ ] Vegetation matted down, bent, or absent	[ ] Destruction of terrestrial veg.	[ ] Abrupt change in plant community
	[ ] Leaf litter disturbed	[X] Presence of wrack line	[ ] Other:

Tidal tributary has: *(check all that apply; include photos for each & list photo #)*

High Tide Line	Mean High Water Mark indicated by:	Chemical Characteristics
[ ] Oil or scum line along shore objects	[ ] Survey to available datum	[ ] Water is clear
[ ] Fine shell or debris deposits (foreshore)	[ ] Physical markings	[ ] Water is discolored
[ ] Physical markings/characteristics	[ ] Vegetation lines/changes in types	[ ] Oily film
[ ] Tidal gauges		[ ] Other:

Notes:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: I495/I270 Managed Lanes Study City/County: Montgomery Sampling Date: 5/15/18
Applicant/Owner: Maryland State Highway Administration State: MD Sampling Point: 29J-WET
Investigator(s): RS ML Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-3
Subregion (LRR or MLRA): LRR S MLRA 148 Lat: 39.130600 Long: -77.204970 Datum: NAD83
Soil Map Unit Name: Baile silt loam 0 to 3 percent slopes (6A) NWI classification: PEM1A
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 ☐	**Is the Sampled Area within a Wetland?**	**Yes** ☑ **No** ☐
Hydric Soil Present?	Yes ☑ No ☐		
Wetland Hydrology Present?	Yes ☑ No ☐		

Remarks:
29J is located between 29C and 29F

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☑ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ True Aquatic Plants (B14)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two 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)
- ☐ Stunted or Stressed Plants (D1)
- ☑ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ Microtopographic Relief (D4)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ☐ No ☑	Depth (inches):	**Wetland Hydrology Present? Yes** ☑ **No** ☐
Water Table Present?	Yes ☐ No ☑	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ☐ No ☑	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
29J receives hydrology from overflow from 29C and 29F

29J photos: 29J-WET
29GJ-UPL

VEGETATION (Five Strata) – Use scientific names of plants.

Sampling Point: 29J-WET

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Platanus occidentalis	5	Y	FACW
2. Quercus phellos	5	Y	FAC
3.			
4.			
5.			
6.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		

Sapling Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover:	20% of total cover:		

Shrub Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover:	20% of total cover:		

Herb Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Impatiens capensis	40	Y	FACW
2. Boehmeria cylindrica	15	Y	FACW
3. Galium palustre	15	Y	OBL
4. Vitis aestivalis	5	N	FACU
5. Ipomea pandurata	5	N	FACU
6. Acer negundo	5	N	FAC
7.			
8.			
9.			
10.			
11.			
	85 = Total Cover		
50% of total cover: 42.5	20% of total cover: 17		

Woody Vine Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☑ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Five 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.

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 ☐

Remarks: (Include photo numbers here or on a separate sheet.)
Other species observed; Lindera benzoin, Acer rubrum

SOIL

Sampling Point: 29J-WET

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 3/2	85	10YR 4/6	15	C	M	Clay loam	
10-20	10YR 3/2	100					Clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10) **(LRR N)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7)
- ☐ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ☐ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ☐ Umbric Surface (F13) **(MLRA 136, 122)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ☐ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10) **(MLRA 147)**
- ☐ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators 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:

Wetland Function-Value Evaluation Form

Total area of wetland 0.11 Ac Human made? No Is wetland part of a wildlife corridor? No or a "habitat island"? No

Adjacent land use Forested Distance to nearest roadway or other development 46 Ft

Dominant wetland systems present PEMIA Contiguous undeveloped buffer zone present NO

Is the wetland a separate hydraulic system? No If not, where does the wetland lie in the drainage basin? Upper

How many tributaries contribute to the wetland? 2 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. 29J

Latitude 39.130600 Longitude -77.201970

Prepared by: RS Date 5/15/18

Wetland Impact:
Type NA Area NA

Evaluation based on:
Office ✓ Field ✓

Corps manual wetland delineation completed? Y ✓ N

Function/Value	Suitability Y / N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	Y			
Floodflow Alteration	Y			
Fish and Shellfish Habitat	N			
Sediment/Toxicant Retention	Y			
Nutrient Removal	Y			
Production Export	N			
Sediment/Shoreline Stabilization	Y			
Wildlife Habitat	N			
Recreation	N			
Educational/Scientific Value	N			
Uniqueness/Heritage	N			
Visual Quality/Aesthetics	N			
ES Endangered Species Habitat	N			
Other	—			

Notes:

* Refer to backup list of numbered considerations.

Waters of the U.S. Data Sheet

Project: I-495/I-270 MANAGED LANE STUDY	**Feature ID:** 29K	**Stream Order:** 1st
Date: 5/4/18 — **State:** MD	**Photos:** UpstREAM / Downstream	
Crew: NL, NC — **County:** Montgomery	**Last Flag Number:** 29K-1A to 6A; 29K-1B to 6B	

Feature Hydrologic Class (check one):

Tidal	Perennial	Intermittent	Ephemeral
◯ TNW (Subject to ebb and flow)	◯ TNW – Perennial (Flowing year round)	(X) RPW – Seasonal (must flow at least 3 months a year)	◯ Non-RPW draining uplands
	◯ RPW – Perennial (Flowing year round)		◯ Non-RPW erosional feature
			◯ Non-RPW with abutting wetland
			◯ Non-RPW with adjacent wetland
Describe rational for hydrologic class: BASE FLOW OF WATER OBSERVED During Field Investigation			◯ Non-RPW wetland adjacent or abutting upstream (outside of study area)
Hydrologic Connectivity –	Upstream: SWM Facily 28-SWM3	Downstream: UNNAMED Tributary to Muddy Branch (Located out of study area)	Adjacent/Abutting: 29-SWM 3

Feature Description: *(check all that apply)*

Shape (with respect to OHW)		Substrate			Vegetation Cover Type (MBSS)
☐ Natural Channel Shape	Width: 3'	(X) Silts	☐ Sands	☐ Muck	RB: Forested
(X) Artificial (man-made)	Depth: 6"	☐ Cobbles	☐ Gravel	☐ Other:	
☐ Manipulated (man-altered)	Bank Erosion/stability:	☐ Bedrock	☐ Concrete		
☐ Other:	No erosion; Stable banks	Side slope: ☐ ≥1:1 (X) 2:1 ☐ 3:1 ☐ ≤4:1			LB: Forested
Notes:					

Weather/Precipitation Conditions:

During Field Visit	Inches of Rain Within Last Week	Monthly Drought Condition NCDC Regional PDSI http://www.ncdc.noaa.gov/temp-and-precip/climatological-rankings/index.php — Month: May — Year: 2018												
◯ No rain	(X) 0-0.5	◯	◯	◯	◯	◯	●	◯	(X)	◯	◯	◯	◯	◯
(X) Light rain	◯ 0.5-1	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6
◯ Heavy Rain	● >1	Severe Drought			Moderate Drought		Normal			Moderately Wet		Severely Wet		

Non-tidal tributary has: *(check all that apply; include photos for each & list photo #)*

Bed and Banks	Ordinary High Water Mark		
(X) Yes	☐ Clear, natural line impressed on the bank	☐ Sediment deposition	☐ Sediment sorting
☐ No	☐ Changes in the character of soil	☐ Water staining	☐ Scour
	☐ Shelving	(X) Presence of flood litter/debris	☐ Observed/predicted flow events
	☐ Vegetation matted down, bent, or absent	☐ Destruction of terrestrial veg.	☐ Abrupt change in plant community
	☐ Leaf litter disturbed	☐ Presence of wrack line	☐ Other:

Tidal tributary has: *(check all that apply; include photos for each & list photo #)*

High Tide Line	Mean High Water Mark indicated by:	Chemical Characteristics
☐ Oil or scum line along shore objects	☐ Survey to available datum	☐ Water is clear
☐ Fine shell or debris deposits (foreshore)	☐ Physical markings	☐ Water is discolored
☐ Physical markings/characteristics	☐ Vegetation lines/changes in types	☐ Oily film
☐ Tidal gauges		☐ Other:

Notes:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: I-495/I-270 Managed Lane Study City/County: Montgomery Sampling Date: 2-24-21
Applicant/Owner: MDOT SHA State: MD Sampling Point: 29L-Wet
Investigator(s): JCP/EJA Section, Township, Range: ____
Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): Concave Slope (%): 0-2
Subregion (LRR or MLRA): 148 LRRS Lat: 39.12422 Long: -77.19915 Datum: NAD83
Soil Map Unit Name: Hatboro silt loam (54A) NWI classification: PFO
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? NO Are "Normal Circumstances" present? Yes X No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? NO (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 X No ____	Is the Sampled Area within a Wetland?	Yes ____ No ____
Hydric Soil Present?	Yes ____ No ____		
Wetland Hydrology Present?	Yes X No ____		

Remarks:

29L-Wet-1 Photo facing north

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- X Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes X No ____	Depth (inches): 2-3	
Water Table Present?	Yes ____ No ____	Depth (inches): ____	
Saturation Present? (includes capillary fringe)	Yes ____ No ____	Depth (inches): ____	**Wetland Hydrology Present? Yes X No ____**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five Strata) – Use scientific names of plants. Sampling Point: 29L-Wet

Tree Stratum (Plot size: 15')	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix nigra	10	N	OBL
2. Fraxinus pennsylvanica	40	Y	FACW
3. Acer negundo	30	Y	FAC
4.			
5.			
6.			
	80 = Total Cover		
50% of total cover: 40	20% of total cover: 20		

Sapling Stratum (Plot size: 15')	Absolute % Cover	Dominant Species?	Indicator Status
1. Fraxinus pennsylvanica	10	Y	FACW
2. Acer negundo	10	Y	FAC
3.			
4.			
5.			
6.			
	20 = Total Cover		
50% of total cover: 10	20% of total cover: 2		

Shrub Stratum (Plot size: 15')	Absolute % Cover	Dominant Species?	Indicator Status
1. Lonicera sp. (bush honeysuckle)	25	Y	FACU
2. Smilax rotundifolia	15	Y	FAC
3. Fraxinus pennsylvanica	10	Y	FACW
4.			
5.			
6.			
	50 = Total Cover		
50% of total cover: 25	20% of total cover: 10		

Herb Stratum (Plot size: 10')	Absolute % Cover	Dominant Species?	Indicator Status
1. Carex sp.	20	Y	N/A
2. Poa sp.	40	Y	N/A
3. Cinna arundinacea	15	Y	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	75 = Total Cover		
50% of total cover: 37.5	20% of total cover: 15		

Woody Vine Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. Lonicera japonica	10	Y	FACU
2.			
3.			
4.			
5.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 7 (A)

Total Number of Dominant Species Across All Strata: 11 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 64 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Five 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.

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 X No ___

Remarks: (Include photo numbers here or on a separate sheet.)
Dormant season unable to identify carex & poa species

Although unable to ID this vegetation to species level, the vegetation still passes the dominance test when the unknown species are factored in as "FACU" equivalent species.

SOIL

Sampling Point: 29L-wet

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR 4/2	100					Sandy loam	
5-14	10YR 4/2	98	10YR 5/8	2	C	M	Sandy loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators 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:

A soil pit was not dug because the team did not have invasive access.

Soils collected on 9/29/2021

Wetland Function-Value Evaluation Form

Total area of wetland 0.04 Human made? No Is wetland part of a wildlife corridor? yes or a "habitat island"? No

Adjacent land use I-270 ROW, developed, parkland Distance to nearest roadway or other development 300'

Dominant wetland systems present PFO Contiguous undeveloped buffer zone present yes

Is the wetland a separate hydraulic system? No If not, where does the wetland lie in the drainage basin? upper

How many tributaries contribute to the wetland? 0 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. 29L -WET
Latitude 39.12422 Longitude -77.19915
Prepared by: JCP Date 2-24-21
Wetland Impact:
Type PFO Area <.1 AC

Evaluation based on:
Office ____ Field X

Corps manual wetland delineation completed? Y X N ____

Function/Value	Suitability Y	Suitability N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	✓				
Floodflow Alteration	✓	✓			
Fish and Shellfish Habitat					
Sediment/Toxicant Retention	✓				
Nutrient Removal	✓				
Production Export		✓			
Sediment/Shoreline Stabilization	✓				
Wildlife Habitat	✓				
Recreation		✓			
Educational/Scientific Value	✓				
Uniqueness/Heritage		✓			
Visual Quality/Aesthetics	✓				
ES Endangered Species Habitat		✓			
Other					

Notes:

* Refer to backup list of numbered considerations.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: I-495/I-270 Managed Lanes Study City/County: Montgomery Sampling Date: 3-4-21
Applicant/Owner: MDOT SHA State: MD Sampling Point: 29M-wet
Investigator(s): JCP/GK Section, Township, Range: ______
Landform (hillslope, terrace, etc.): below hillslope Local relief (concave, convex, none): Convex Slope (%): 0-5
Subregion (LRR or MLRA): 148 LRRS Lat: 39.12438 Long: -77.19872 Datum: NAD 83feet
Soil Map Unit Name: Hatboro siltloam (54A) NWI classification: PFO
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)
Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? No Are "Normal Circumstances" present? Yes X No ___
Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? NO (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 ___	Is the Sampled Area within a Wetland?	Yes ___ No ___
Hydric Soil Present?	Yes ___	No ___		
Wetland Hydrology Present?	Yes X	No ___		

Remarks: adjacent to narrow stream 29P (6' wide)
RAIN 3 days prior to field visit.
Adjacent upland is on slope; photo 29M-UPL
wetland photo 29M-WET-1

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- X Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes X	No ___	Depth (inches): 0.5
Water Table Present?	Yes ___	No ___	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes X	No ___	Depth (inches): 0

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Abundant saturated drainageways through the area
a drainage way from tennis courts provides hydrology, however the drainage way is a dry grass channel. Also, a 6" corrogated pipe discharges to drainage way in 29M. (pipe is dry, underneath is saturated.

VEGETATION (Five Strata) – Use scientific names of plants. Sampling Point: 29m-wet

Tree Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1. Quercus palustris	40	Y	FACW
2.			
3.			
4.			
5.			
6.			
	40	= Total Cover	
50% of total cover: 20	20% of total cover: 8		

Sapling Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1. Carpinus caroliniana	10	Y	FAC
2. Quercus palustris	10	Y	FACW
3. Fraxinus pennsylvanica	15	Y	FACW
4.			
5.			
6.			
	35	= Total Cover	
50% of total cover: 17.5	20% of total cover: 7		

Shrub Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1. Viburnum lentago	20	Y	FAC
2. Acer negundo	10	Y	FAC
3.			
4.			
5.			
6.			
	30	= Total Cover	
50% of total cover: 15	20% of total cover: 6		

Herb Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1. Lonicera sp. (bush honeysuckle)	20	Y	FACU
2. Carex sp.	5	–	N/A
3. Toxicodendron radicans	10	Y	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	35	= Total Cover	
50% of total cover: 17.5	20% of total cover: 7		

Woody Vine Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1. Lonicera japonica	5	Y	FACU
2.			
3.			
4.			
5.			
	5	= Total Cover	
50% of total cover: 2.5	20% of total cover: 1		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 7 (A)

Total Number of Dominant Species Across All Strata: 9 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 78 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	______	x 1 = ______
FACW species	______	x 2 = ______
FAC species	______	x 3 = ______
FACU species	______	x 4 = ______
UPL species	______	x 5 = ______
Column Totals:	______ (A)	______ (B)

Prevalence Index = B/A = ______

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Five 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.

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 X No ______

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: 29M-wet

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 4/2	100					Loam	
4-12	10YR 4/2	85	5YR 4/4	15	C	M	Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators 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:

A soil pit was not dug because the team did not have invasive access.

Soils collected on 9/29/2021.

Wetland Function-Value Evaluation Form

Total area of wetland 0.09 ac Human made? No Is wetland part of a wildlife corridor? yes or a "habitat island"? No

Adjacent land use Developed, stream corridor Distance to nearest roadway or other development 32 ft

Dominant wetland systems present forest Contiguous undeveloped buffer zone present yes

Is the wetland a separate hydraulic system? No If not, where does the wetland lie in the drainage basin? upper

How many tributaries contribute to the wetland? 2 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. 29M-wet
Latitude 39.1243 Longitude -77.1987
Prepared by: JCP Date 5-21-21
Wetland Impact:
Type PFO Area ____

Evaluation based on:
Office X Field X
Corps manual wetland delineation completed? Y X N ____

Function/Value	Suitability Y	Suitability N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	X			X	
Floodflow Alteration	X			X	
Fish and Shellfish Habitat					
Sediment/Toxicant Retention	X				
Nutrient Removal	X				
Production Export					
Sediment/Shoreline Stabilization	X				
Wildlife Habitat	X				
Recreation	X				area is ~~actively~~ passively used by park patrons
Educational/Scientific Value	X				Same as above, ~~active~~ passive use
Uniqueness/Heritage		X			
Visual Quality/Aesthetics	X				
ES Endangered Species Habitat	X				corridor in an otherwise urban setting
Other					

Notes:

* Refer to backup list of numbered considerations.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: I-495/I-270 Managed Lanes Study City/County: Montgomery Sampling Date: 2-24-21

Applicant/Owner: MDOT SHA State: MD Sampling Point: 29N-wet

Investigator(s): JCP/EJA Section, Township, Range: ______

Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): FLAT Slope (%): 0-2

Subregion (LRR or MLRA): 148 LRRS Lat: 39.12316 Long: -77.20203 Datum: NAD83 Feet

Soil Map Unit Name: Hatboro silt loam (54A) NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? No Are "Normal Circumstances" present? Yes X No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? No (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 X No ___	Is the Sampled Area within a Wetland?	Yes ___ No ___
Hydric Soil Present?	Yes ___ No ___		
Wetland Hydrology Present?	Yes X No ___		

Remarks: Adjacent to left bank of 29B_1

photo 29N-WET-1 facing west

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- X Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes X	No ___	Depth (inches): 1-2
Water Table Present?	Yes ___	No ___	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No ___	Depth (inches): ___

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five Strata) – Use scientific names of plants.

Sampling Point: 29N-wet

Tree Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer rubrum	80	Y	FAC
2. Liriodendron tulipifera	10	N	FACU
3.			
4.			
5.			
6.			
	90 = Total Cover		
50% of total cover: 45	20% of total cover: 18		

Sapling Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
5.			
6.			
	______ = Total Cover		
50% of total cover: ______	20% of total cover: ______		

Shrub Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1. Lindera benzoin	50	Y	FAC
2.			
3.			
4.			
5.			
6.			
	50 = Total Cover		
50% of total cover: 25	20% of total cover: 10		

Herb Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1. Lindera benzoin	10	N	FAC
2. Cinna arundinacea	30	Y	FACW
3. Carex blanda	15	Y	FAC
4. Carex lurida	10	N	FACW
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	65 = Total Cover		
50% of total cover: 32.5	20% of total cover: 13		

Woody Vine Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
5.			
	______ = Total Cover		
50% of total cover: ______	20% of total cover: ______		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	______	x 1 = ______
FACW species	______	x 2 = ______
FAC species	______	x 3 = ______
FACU species	______	x 4 = ______
UPL species	______	x 5 = ______
Column Totals:	______ (A)	______ (B)

Prevalence Index = B/A = ______

Hydrophytic Vegetation Indicators:

- __ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- __ 3 - Prevalence Index is ≤3.0[1]
- __ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- __ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Five 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.

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 X No ______

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL Sampling Point: 29N-wet

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

Depth	Matrix		Redox Features				Texture	Remarks
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-6	10 YR 3/2	95	10 YR 4/6	5	C	M	Loam	
6-12	10 YR 5/2	90	7.5 YR 4/6	10	C	M	Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

__ Histosol (A1)
__ Histic Epipedon (A2)
__ Black Histic (A3)
__ Hydrogen Sulfide (A4)
__ Stratified Layers (A5)
__ 2 cm Muck (A10) **(LRR N)**
__ Depleted Below Dark Surface (A11)
__ Thick Dark Surface (A12)
__ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
__ Sandy Gleyed Matrix (S4)
__ Sandy Redox (S5)
__ Stripped Matrix (S6)
__ Dark Surface (S7)
__ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
__ Thin Dark Surface (S9) **(MLRA 147, 148)**
X Loamy Gleyed Matrix (F2)
X Depleted Matrix (F3)
__ Redox Dark Surface (F6)
__ Depleted Dark Surface (F7)
__ Redox Depressions (F8)
__ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
__ Umbric Surface (F13) **(MLRA 136, 122)**
__ Piedmont Floodplain Soils (F19) **(MLRA 148)**
__ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

__ 2 cm Muck (A10) **(MLRA 147)**
__ Coast Prairie Redox (A16) **(MLRA 147, 148)**
__ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
__ Very Shallow Dark Surface (TF12)
__ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: ________

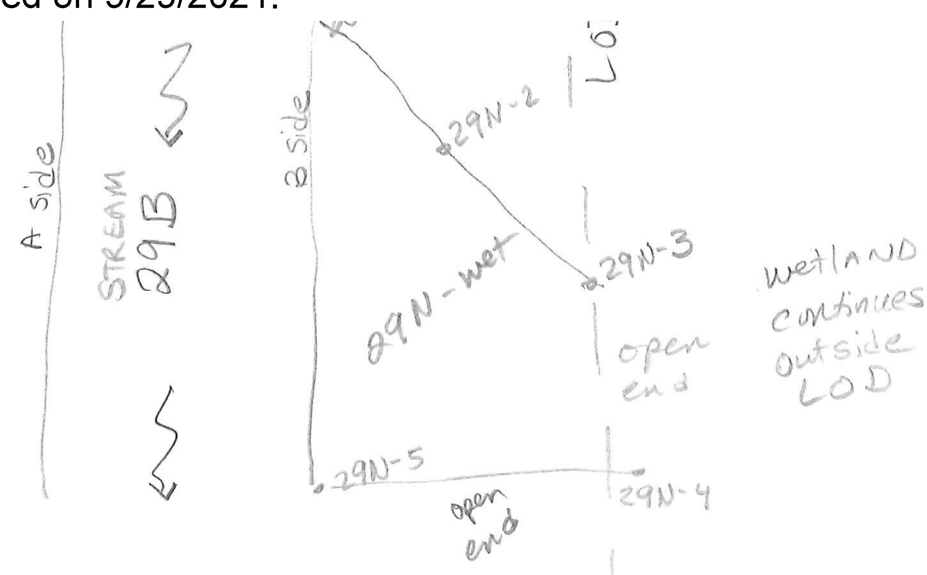
Depth (inches): ________

Hydric Soil Present? Yes ____ No ____

Remarks:

A soil pit was not dug because the team did not have invasive access.

Soils were collected on 9/29/2021.



Wetland Function-Value Evaluation Form

Total area of wetland 0.16 ac Human made? NO Is wetland part of a wildlife corridor? yes or a "habitat island"? NO

Adjacent land use PARKLAND / residential Distance to nearest roadway or other development 65 ft

Dominant wetland systems present PFO Contiguous undeveloped buffer zone present yes

Is the wetland a separate hydraulic system? NO If not, where does the wetland lie in the drainage basin? ____

How many tributaries contribute to the wetland? N/A Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. 29N -WET
Latitude 39.12316 Longitude -77.20203
Prepared by: JCP Date 2-24-21
Wetland Impact:
Type PFO Area 1 AC+

Evaluation based on:
Office ____ Field X

Corps manual wetland delineation completed? Y ____ N X

Function/Value	Suitability Y	Suitability N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	✓		7, 9, 13		
Floodflow Alteration	✓		2, 3, 4, 6, 18		
Fish and Shellfish Habitat					
Sediment/Toxicant Retention	✓		10, 13, 14, 16		
Nutrient Removal	✓				
Production Export		✓			
Sediment/Shoreline Stabilization		✓			
Wildlife Habitat	✓		1, 3, 5, 7, 8, 13		birds, mammals
Recreation	✓				
Educational/Scientific Value	✓				
Uniqueness/Heritage		✓			
Visual Quality/Aesthetics	✓				
ES Endangered Species Habitat	✓				possible FIDS habitat (good quality forest)
Other					

Notes:

* Refer to backup list of numbered considerations.

Waters of the U.S. Data Sheet

Project: I495/I270 Managed Lanes Study		**Feature ID:** 29P — **Stream Order:** 2ND
Date: 3/4/21	**State:** MD	**Photos:** 29P-1, 29P-2
Crew: JCP/GK	**County:** Montgomery	**Last Flag Number:** 29P-7A/B-centerline

Feature Hydrologic Class (check one):

Tidal	Perennial	Intermittent	Ephemeral
○ TNW (Subject to ebb and flow)	○ TNW – Perennial (Flowing year round) ○ RPW – Perennial (Flowing year round)	⊗ RPW – Seasonal (must flow at least 3 months a year)	○ Non-RPW draining uplands ○ Non-RPW erosional feature ○ Non-RPW with abutting wetland ○ Non-RPW with adjacent wetland ○ Non-RPW wetland adjacent or abutting upstream (outside of study area)

Describe rational for hydrologic class: stream supports an adjacent wetland (baseflow connection)

Hydrologic Connectivity –	Upstream: outside of study area	Downstream: outside of study area	Adjacent/Abutting: Muddy Branch 29B

Feature Description: *(check all that apply)*

Shape (with respect to OHW)		Substrate			Vegetation Cover Type (MBSS)
[X] Natural Channel Shape	Width: 6"	[X] Silts	[ ] Sands	[ ] Muck	RB: Forest/maintained lawn (PARK)
[ ] Artificial (man-made)	Depth: 6"	[X] Cobbles	[ ] Gravel	[ ] Other:	
[ ] Manipulated (man-altered)	Bank Erosion/stability:	[X] Bedrock	[ ] Concrete		
[ ] Other:	Some erosion	Side slope: [ ] ≥1:1 [ ] 2:1 [X] 3:1 [ ] ≤4:1			LB: Forest

Notes: Connects to 29B (Muddy Branch)

Weather/Precipitation Conditions:

During Field Visit	Inches of Rain Within Last Week	Monthly Drought Condition NCDC Regional PDSI http://www.ncdc.noaa.gov/temp-and-precip/climatological-rankings/index.php — Month: Feb — Year: 2021												
○ No rain	○ 0-0.5	○	○	○	○	○	○	○	○	⊗	○	○	○	○
○ Light rain	○ 0.5-1	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6
○ Heavy Rain	○ >1	Severe Drought			Moderate Drought		Normal			Moderately Wet		Severely Wet		

Non-tidal tributary has: *(check all that apply; include photos for each & list photo #)*

Bed and Banks	Ordinary High Water Mark		
[ ] Yes	[ ] Clear, natural line impressed on the bank	[X] Sediment deposition	[ ] Sediment sorting
[ ] No	[ ] Changes in the character of soil	[ ] Water staining	[ ] Scour
	[ ] Shelving	[ ] Presence of flood litter/debris	[ ] Observed/predicted flow events
	[X] Vegetation matted down, bent, or absent	[ ] Destruction of terrestrial veg.	[ ] Abrupt change in plant community
	[X] Leaf litter disturbed	[ ] Presence of wrack line	[ ] Other:

Tidal tributary has: *(check all that apply; include photos for each & list photo #)*

High Tide Line	Mean High Water Mark indicated by:	Chemical Characteristics
[ ] Oil or scum line along shore objects	[ ] Survey to available datum	[ ] Water is clear
[ ] Fine shell or debris deposits (foreshore)	[ ] Physical markings	[ ] Water is discolored
[ ] Physical markings/characteristics	[ ] Vegetation lines/changes in types	[ ] Oily film
[ ] Tidal gauges		[ ] Other:

Notes: