## 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:** JCR/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 – 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:* Baseflow with ~" of water observed during site visit | | | ○ Non-RPW wetland adjacent or abutting upstream (outside of study area) |
| 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' | ☒ Silts | ☐ Sands | ☐ Muck | RB: Wet-25D |
| ☐ Artificial (man-made) | Depth: 3-6" | ☐ Cobbles | ☒ Gravel | ☐ Other: | |
| ☒ Manipulated (man-altered) | Bank Erosion/stability: unstable at confluence | ☐ Bedrock | ☐ Concrete | | LB: Berm & 25P-WET |
| ☐ Other: | | Side slope: ☒ ≥1:1 ☒ 2:1 ☐ 3:1 ☐ ≤4:1 | | | |
| *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 | | | |
|---|---|---|---|---|
| ☒ 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: 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 / GTK 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

| | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| **Tree Stratum** (Plot size: ) | | | |
| 1. Betula nigra | 20 | Y | FACW |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| | 20 = Total Cover | | |
| 50% of total cover: 10 | 20% of total cover: 4 | | |
| **Sapling Stratum** (Plot size: ) | | | |
| 1. None | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| | = Total Cover | | |
| 50% of total cover: | 20% of total cover: | | |
| **Shrub Stratum** (Plot size: ) | | | |
| 1. Diospyros virginiana | 5 | Y | FAC |
| 2. Liquidambar styraciflua | 5 | Y | FAC |
| 3. Platanus occidentalis | 15 | Y | FACW |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| | 25 = Total Cover | | |
| 50% of total cover: 12.5 | 20% of total cover: 5 | | |
| **Herb Stratum** (Plot size: ) | | | |
| 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. | | | |
| | 70 = Total Cover | | |
| 50% of total cover: 35 | 20% of total cover: 14 | | |
| **Woody Vine Stratum** (Plot size: ) | | | |
| 1. Grape vines | 10 | Y | N/A |
| 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: 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) | % | Redox Features Color (moist) | % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | | |
| | | | | | | | | |
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| | | | | | | | | |
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| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[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/A? | |
| Wetland Hydrology Present? | Yes _____ | No N/A? | |

Remarks: this area is adjacent to 26A-WET-EAST (PEM1B) 26A-WET-1 But canopy is forested

Photos 26A-WET-2 (facing West) 26A-WET-3 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 | 30 | 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: _____) | | | |
| 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: _____) | | | |
| 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: _____) | | | |
| 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) | % | Redox Features 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: (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) | ☒ 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 | Downstream: Beyond Study area | Adjacent/Abutting: PEM (26A) |
|---|---|---|---|

**Feature Description:** *(check all that apply)* upstream beyond study area

| Shape (with respect to OHW) | | Substrate | | | Vegetation Cover Type (MBSS) |
|---|---|---|---|---|---|
| ☒ Natural Channel Shape | Width: 8' | ☒ Silts | ☒ Sands | ☐ Muck | RB: Forested |
| ☐ Artificial (man-made) | Depth: 4' | ☒ Cobbles | ☐ Gravel | ☒ Other: Rip Rap | |
| ☒ Manipulated (man-altered) | Bank Erosion/stability: Moderate | ☐ Bedrock | ☐ Concrete | | LB: Forested |
| ☐ Other: | | Side slope: ☐ ≥1:1 ☐ 2:1 ☒ 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: | Year: |
|---|---|---|---|---|
| ☒ No rain | ☒ 0-0.5 | ○ ○ ○ ○ ○ ○ ○ ☒ ○ ○ ○ ○ ○ | May | 2018 |
| ○ 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 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) | (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 observed during site investigation | | | ○ Non-RPW wetland adjacent or abutting upstream (outside of study area) |

| 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 | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| [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 | [ ] 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: 39.0723954 Long: -77.169275 Datum: NAD83
Soil Map Unit Name: Blucktown Channery Silt loam (116D) NWI classification: PEMIE
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:
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) | | | |
|---|---|---|---|
| 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) | | | |
|---|---|---|---|
| 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) | | | |
|---|---|---|---|
| 1. Leersia virginica | 20 | Y | FACW |
| 2. Mnemostegium viminewm | 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) | | | |
|---|---|---|---|
| 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) | % | Redox Features Color (moist) | % | 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

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)

Wetland I.D. 26D

Latitude 39.077394 Longitude -77.169275

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.
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 Lanes 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: NAD83
Soil Map Unit Name: Baile silt loam (6A) NWI classification: PEMIB
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:
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

| | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| **Tree Stratum** (Plot size: 30 ft) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| | 0 = Total Cover | | |
| 50% of total cover: ____ 20% of total cover: ____ | | | |
| **Sapling Stratum** (Plot size: 30 ft) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| | 0 = Total Cover | | |
| 50% of total cover: ____ 20% of total cover: ____ | | | |
| **Shrub Stratum** (Plot size: 30 ft) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| | 0 = Total Cover | | |
| 50% of total cover: ____ 20% of total cover: ____ | | | |
| **Herb Stratum** (Plot size: 30 ft) | | | |
| 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) | | | |
| 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
- ☒ 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: 26E-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 |
|---|---|---|---|---|---|---|---|---|
| 0-5 | 2.5Y 4/1 | 100% | | | | | Sandy loam | saturated |
| 5-11 | Gley1 5/10Y | 75% | 10YR 5/6 | 25 | C | M | silty clay | saturated |
| 11-20 | Gley1 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 PEMIB 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 39.077238 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 [ ] | **Is the Sampled Area within a Wetland?** Yes [✓] No [ ] |
| Hydric Soil Present? | Yes [✓] | No [ ] | |
| Wetland Hydrology Present? | 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

| | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| **Tree Stratum** (Plot size: 30 ft) | | | |
| 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) | | | |
| 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) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| | 0 = Total Cover | | |
| 50% of total cover: | 20% of total cover: | | |
| **Herb Stratum** (Plot size: 30 ft) | | | |
| 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) | | | |
| 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
- ☑ 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; 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) | % | Redox Features Color (moist) | % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-20 | 10YR 3/2 | 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 uplands, 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 39.077520 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) | ⊗ 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) |
|---|---|---|---|---|---|
| ☒ Natural Channel Shape | Width: 6" | ☒ Silts | ☑ Sands | ☐ Muck | RB: Upland forest |
| ☐ Artificial (man-made) | Depth: 3" | ☒ Cobbles | ☒ Gravel | ☐ Other: | |
| ☐ Manipulated (man-altered) | Bank Erosion/stability: | ☐ Bedrock | ☐ Concrete | | LB: Upland forest |
| ☐ Other: | Minor but stable | Side slope: ☐ ≥1:1 ☒ 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 (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:** 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) |
|---|---|---|---|---|---|---|
| ☒ Natural Channel Shape | Width: 5' | ☒ Silts | ☑ Sands | ☐ Muck | | RB: Upland forest |
| ☐ Artificial (man-made) | Depth: 3" | ☒ Cobbles | ☒ Gravel | ☐ Other: | | |
| ☐ Manipulated (man-altered) | Bank Erosion/stability: | ☐ Bedrock | ☐ Concrete | | | LB: Upland forest |
| ☐ Other: | Minor but stable | 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: 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:*

## 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: PEMIA
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:
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) | | | |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| | 0 = Total Cover | | |

50% of total cover: _____ 20% of total cover: _____

| Shrub Stratum (Plot size: 30 ft) | | | |
|---|---|---|---|
| 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) | | | |
|---|---|---|---|
| 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) | | | |
|---|---|---|---|
| 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) | % | Redox Features Color (moist) | % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 6-4 | 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 6.03 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. 96H

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 – 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:* 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) | | Substrate | | | Vegetation Cover Type (MBSS) |
|---|---|---|---|---|---|
| ☐ Natural Channel Shape | Width: 8' | ☐ Silts | ☐ Sands | ☐ Muck | RB: Forest |
| ☒ Artificial (man-made) | Depth: 2' | ☐ Cobbles | ☐ Gravel | ☒ Other: Riprap | |
| ☐ Manipulated (man-altered) | Bank Erosion/stability: No erosion, stable | ☐ Bedrock | ☐ Concrete | | LB: Forest |
| ☐ Other: | | Side slope: ☐ ≥1:1 ☒ 2:1 ☐ 3:1 ☐ ≤4:1 | | | |

*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** (http://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 | | | |
|---|---|---|---|---|
| ☒ 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 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) | (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:* stream has significant flow during the spring, and drains a wetland (intercepts groundwater) | | | ○ Non-RPW wetland adjacent or abutting upstream (outside of study area) |
| 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) |
|---|---|---|---|---|---|
| ☒ Natural Channel Shape | Width: 4' | ☒ Silts | ☐ Sands | ☐ Muck | RB: PEM wetland, parkland & trail |
| ☐ Artificial (man-made) | Depth: 1' or less | ☐ Cobbles | ☐ Gravel | ☐ Other: | |
| ☐ Manipulated (man-altered) | Bank Erosion/stability: | ☐ Bedrock | ☐ Concrete | | LB: PEM wetland |
| ☐ Other: | unstable, somewhat incised, but is within a wetland | Side slope: ☒ ≥1:1 ☐ 2:1 ☐ 3:1 ☒ ≤4:1 | | | |
| *Notes:* | / 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 | | | |
|---|---|---|---|---|
| ☒ 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 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 – 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:* 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 |
| ☒ Artificial (man-made) | Depth: 8 inches | ☐ Cobbles | ☐ Gravel | ☒ Other: riprap | |
| ☐ Manipulated (man-altered) | Bank Erosion/stability: stable - riprap/gabion | ☐ Bedrock | ☐ Concrete | | LB: PEM wetland 26F |
| ☐ 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: 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 |
| ☒ 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 5/9/18

New ID: 27A

Map 15 Section 27

# Stream Datasheet

Project: 270 Date: 8/6/15

Stream ID: ~~WL012~~ / WUS19 / 27A Investigators: RS, WT

Stream Name: Watts Branch

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 WUS19/27A Gradient (%): 1

Connection to TNW: ~~WL012~~ 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" WUS19/27A Avg. Slope of Banks (°): LB 15 RB 20

Has stream been altered? If so, how: ~~WL012~~ 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: WUS19 WUS19 Adjacent to 27G

~~WL012~~-001 to ~~WL012~~-059 Upstream: 27D, 27B, 27H, 27J, 27K

Additional Notes: Downstream: Out of study area

Photos: ~~US-N, DS-S~~ Upstream, Downstream

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 – 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 flow observed 5/9/18, follow up visit 12/13/18 showed consistent flow | | | ○ Non-RPW wetland adjacent or abutting upstream (outside of study area) |

| 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 geometry | |

**Feature Hydrologic Class (check one):**

| Tidal | Perennial | Intermittent | Ephemeral |
|---|---|---|---|
| ○ TNW (Subject to ebb and flow) | ○ TNW – Perennial (Flowing year round)<br>○ RPW – Perennial (Flowing year round) | ○ RPW – Seasonal (must flow at least 3 months a year) | ○ Non-RPW draining uplands<br>○ Non-RPW erosional feature<br>⊗ Non-RPW with abutting wetland<br>○ Non-RPW with adjacent wetland<br>○ 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: Moderate | ☐ Bedrock | ☐ Concrete | | LB: Forest |
| ☐ Other: | | Side slope: ☒ ≥1:1 ☐ 2:1 ☐ 3:1 ☐ ≤4:1 | | | |

*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 (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:*

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: Wahs 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: 4' | ☐ Silts | ☐ Sands | ☐ Muck | RB: Forested |
| ☐ Artificial (man-made) | Depth: 1' | ☐ Cobbles | ☐ Gravel | ☒ Other: Rip Rap | |
| ☒ Manipulated (man-altered) | Bank Erosion/stability: Moderate | ☐ Bedrock | ☐ Concrete | | LB: Forested |
| ☐ Other: | | Side slope: ☐ ≥1:1 ☐ 2:1 ☒ 3:1 ☐ ≤4:1 | | | |

*Notes:* Drains abutting PFO. Base Flow @ time of investigation. Unnamed tributary to Wahs 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: | Year: |
|---|---|---|---|---|
| ☒ No rain | ☒ 0-0.5 | | May | 2018 |
| ○ 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:*

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 [ ]
Hydric Soil Present? Yes [X] No [ ]
Wetland Hydrology Present? Yes [X] No [ ]
**Is the Sampled Area within a Wetland?** Yes [X] No [ ]

Remarks:
PFO drains into UNNAMED tributary to WATTS BRANCH (27B)
Previously identified as PFO1B.
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

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

## 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 0.13Ac 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 N39.088143 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: MO 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: 39.0892136 Long: -77.173905 Datum: NAD83
Soil Map Unit Name: Hatboro Silt loam NWI classification: PFOIE
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: 27-WET

| | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| **Tree Stratum** (Plot size: 30 ft) | | | |
| 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) | | | |
| 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) | | | |
| 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) | | | |
| 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) | | | |
| 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 | 10YR 3/2 | 95 | 7.5YR 5/6 | 5 | C | M | silt loam | |
| 4-20 | 10YR 5/3 | 85 | 7.5YR 4/6 | 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: ~~X~~ 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) | | | |
| 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) | | | |
| 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) | | | |
| 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 PSSIA 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)<br>○ RPW – Perennial (Flowing year round) | ⊗ RPW – Seasonal (must flow at least 3 months a year) | ○ Non-RPW draining uplands<br>○ Non-RPW erosional feature<br>○ Non-RPW with abutting wetland<br>○ Non-RPW with adjacent wetland<br>○ 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) |
|---|---|---|---|---|---|
| ☒ Natural Channel Shape | Width: 3' | ☐ ☒ Silts | ☐ Sands | ☒ Muck | RB: Herbaceous |
| ☐ Artificial (man-made) | Depth: 6" | ☐ ☐ Cobbles | ☒ Gravel | ☐ Other: | |
| ☐ Manipulated (man-altered) | Bank Erosion/stability: | ☐ ☐ Bedrock | ☐ Concrete | | LB: Herbaceous |
| ☐ Other: | No erosion, stable | Side slope: ☒ ≥1:1 ☐ 2:1 ☐ 3:1 ☐ ≤4:1 | | | |

*Notes:* Small channel draining wetland

**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:*

VERIFIED WT 3/19/18

27K SB7NB2-B Map 15 Sec 27

## Waters of the U.S. Data Sheet

| | | | |
|---|---|---|---|
| **Project:** I270 TCM SB07/NB02 I270/I495 Managed Lanes Study | | **Feature ID:** SB07/NB02-B | **Stream Order:** 1 |
| **Date:** 8-3-2017 | **State:** MD | **Photos:** 9517-18 / Upstream / downstream | |
| **Crew:** MKS/ET / WT RS | **County:** Montgomery | **Last Flag Number:** SAR B | |

**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 9 (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: Hedgrow |
| ☐ Artificial (man-made) | Depth: 1' | ☒ Cobbles | ☒ Gravel | ☐ Other: | | |
| ☐ Manipulated (man-altered) | Bank Erosion/stability: | ☐ Bedrock | ☐ Concrete | | | LB: Hedgrow |
| ☐ 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 | **Stream Order:** 1 |
| **Date:** 8-17-2017 | **State:** MD | **Photos:** 9360-68 / Upstream, Downstream | |
| **Crew:** MES/CCO WT RS | **County:** MONTGOMERY | **Last Flag Number:** 4A&B | |

**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' | ☒ Silts | ☒ Sands | ☐ Muck | RB: Hedgerow |
| ☐ Artificial (man-made) | Depth: 6" | ☒ Cobbles | ☐ Gravel | ☒ Other: Riprap | |
| ☒ Manipulated (man-altered) | Bank Erosion/stability: Stable-Riprap | ☐ Bedrock | ☐ Concrete | | LB: Hedgerow |
| ☐ 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: 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:* | | |

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: 5/23/12
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 [✓] | **Is the Sampled Area within a Wetland?** Yes [ ] No [✓] |
| Hydric Soil Present? | Yes [ ] | No [✓] | |
| Wetland Hydrology Present? | 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: SIM-UPL

| | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| **Tree Stratum** (Plot size: 30 ft) | | | |
| 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) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| | 0 = Total Cover | | |
| 50% of total cover: | 20% of total cover: | | |
| **Shrub Stratum** (Plot size: 30 ft) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| | 0 = Total Cover | | |
| 50% of total cover: | 20% of total cover: | | |
| **Herb Stratum** (Plot size: 30 ft) | | | |
| 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) | | | |
| 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) | % | Redox Features Color (moist) | % | 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) | | | |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| | 0 = Total Cover | | |

50% of total cover: _____ 20% of total cover: _____

| Shrub Stratum (Plot size: 30 ft) | | | |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| | 0 = Total Cover | | |

50% of total cover: _____ 20% of total cover: _____

| Herb Stratum (Plot size: 30 ft) | | | |
|---|---|---|---|
| 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) | | | |
|---|---|---|---|
| 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: ATM-WET_PP0

**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 |
|---|---|---|---|---|---|---|---|---|
| 0-2 | 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 | Adjacent/Abutting: 27A-2 |

**Feature Description:** *(check all that apply)* (27A)

| Shape (with respect to OHW) | | Substrate | | | Vegetation Cover Type (MBSS) |
|---|---|---|---|---|---|
| ☒ Natural Channel Shape | Width: 12' | ☒ Silts | ☒ Sands | ☐ Muck | RB: Forest |
| ☐ Artificial (man-made) | Depth: 4' | ☐ Cobbles | ☒ Gravel | ☐ Other: | |
| ☐ Manipulated (man-altered) | Bank Erosion/stability: incised Right BANK | ☐ Bedrock | ☐ Concrete | | LB: PEM/scrub near roadway |
| ☐ Other: | | Side slope: ☒ ≥1:1 ☐ 2:1 ☐ 3:1 ☐ ≤4:1 | | | |
| *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 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | ⊗ | ○ | ○ | ○ | ○ | |
| ○ 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: 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: _____) | | | |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| | _____ = Total Cover | | |

50% of total cover: _____ 20% of total cover: _____

| Shrub Stratum (Plot size: _____) | | | |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| | _____ = Total Cover | | |

50% of total cover: _____ 20% of total cover: _____

| Herb Stratum (Plot size: _____) | | | |
|---|---|---|---|
| 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: _____) | | | |
|---|---|---|---|
| 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 (inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
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| | | | | | | | | |
| | | | | | | | | |
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| | | | | | | | | |
| | | | | | | | | |

[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.

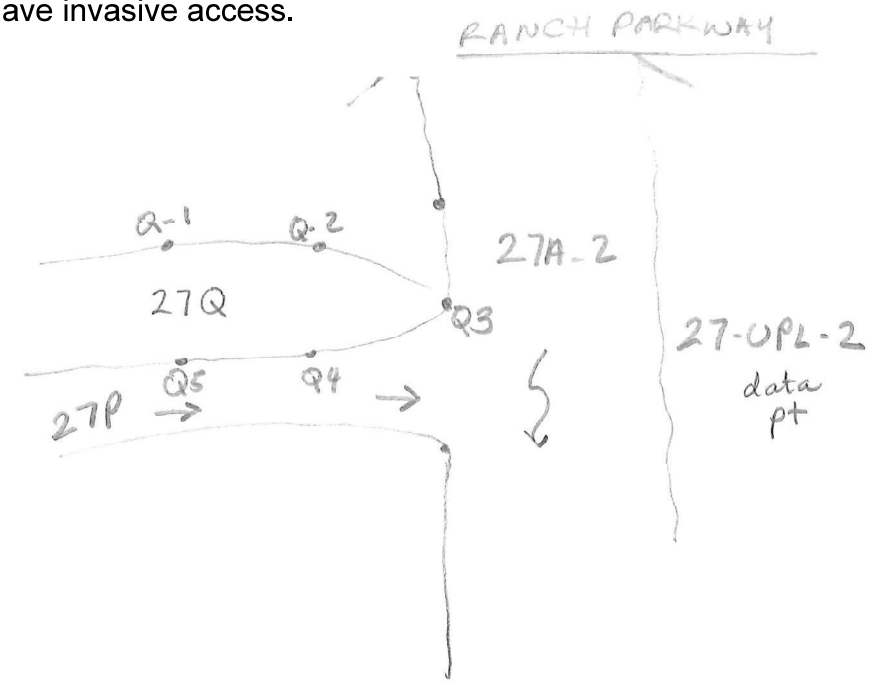
**Restrictive Layer (If observed):**

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:** SCP/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 – 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:* | | | ○ Non-RPW wetland adjacent or abutting upstream (outside of study area) |

| | | | |
|---|---|---|---|
| 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: | ☐ Bedrock | ☐ Concrete | | | LB: woodland/SCRUB |
| ☐ Other: | eroded below riprap | 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: 27S-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): 148S Lat: 39.08579 Long: -77.17640 Datum: NAD83 feet
Soil Map Unit Name: Glenelg 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: _____) | | | |
|---|---|---|---|
| 1. none | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| | = Total Cover | | |

50% of total cover: _____ 20% of total cover: _____

| Shrub Stratum (Plot size: _____) | | | |
|---|---|---|---|
| 1. none | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| | = Total Cover | | |

50% of total cover: _____ 20% of total cover: _____

| Herb Stratum (Plot size: _____) | | | |
|---|---|---|---|
| 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: _____) | | | |
|---|---|---|---|
| 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) | % | Redox Features 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.

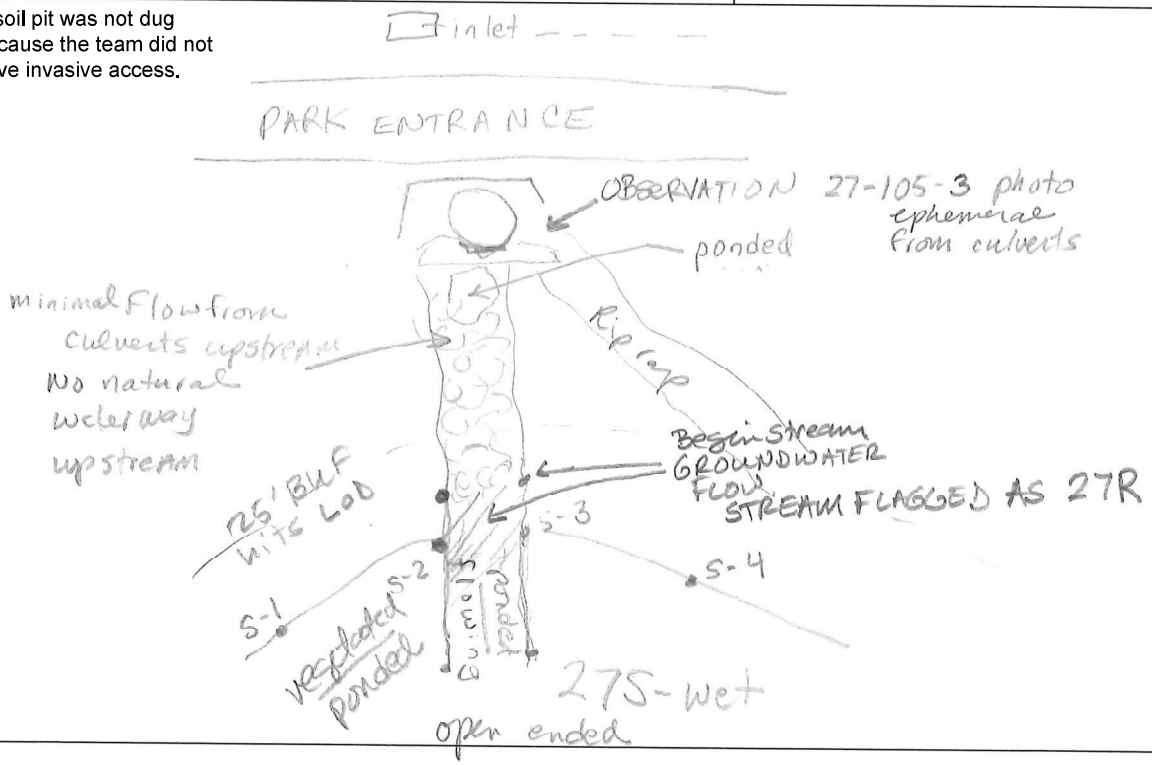
**Restrictive Layer (if observed):**

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 0.004 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: [redacted] 28-SWM5 | Downstream: [redacted] 29A | Adjacent/Abutting: NA |
|---|---|---|---|

**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 (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-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 change to stream polygon | |

**Feature Hydrologic Class (check one):**

| Tidal | Perennial | Intermittent | Ephemeral |
|---|---|---|---|
| ○ TNW (Subject to ebb and flow) | ○ TNW – Perennial (Flowing year round)<br>○ RPW – Perennial (Flowing year round) | ⊗ RPW – Seasonal (must flow at least 3 months a year) | ○ Non-RPW draining uplands<br>○ Non-RPW erosional feature<br>○ Non-RPW with abutting wetland<br>○ Non-RPW with adjacent wetland<br>○ 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: NA |
|---|---|---|---|

**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 | | LB: Forested |
| ☐ Other: | | Side slope: ☐ ≥1:1 ☒ 2:1 ☐ 3:1 ☐ ≤4:1 | | | |

*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) (1-88) | |

**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:* 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 | Adjacent/Abutting: NA |
|---|---|---|---|

**Feature Description:** *(check all that apply)* ↳ Outside of study area

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

*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 | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ☒ 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:** I495 / I270 Managed Lanes Study | | **Feature ID:** 29B | **Stream Order:** 2nd |
| **Date:** 4/26/18 | **State:** MD | **Photos:** upstream, downstream | |
| **Crew:** WT RS | **County:** Montgomery | **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 |
| | ☒ 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: 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) |
|---|---|---|---|---|---|---|
| ☒ Natural Channel Shape | Width: 20' | ☐ Silts | ☒ Sands | ☐ Muck | | RB: Forest |
| ☐ Artificial (man-made) | Depth: 2' | ☒ Cobbles | ☒ Gravel | ☐ Other: | | |
| ☒ Manipulated (man-altered) | Bank Erosion/stability: | ☒ Bedrock | ☐ Concrete | | | LB: Forest |
| ☐ Other: | Moderate erosion | Side slope: ☐ ≥1:1 ☐ 2:1 ☐ 3:1 ☒ ≤4:1 | | | | |

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

**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**
http://www.ncdc.noaa.gov/temp-and-precip/drought/historical-palmers.php
Month: April Year: 2018

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ○ | ○ | ○ | ○ | ○ | ○ | [redacted] | ○ | ○ | ☒ | ○ | ○ | ○ | ○ | ○ |
| -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:** 1495 / 1270 Managed Lane Study | | **Feature ID:** 29C | **Stream Order:** ~~1st~~ 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)<br>○ RPW – Perennial (Flowing year round) | ☒ RPW – Seasonal (must flow at least 3 months a year) | ○ Non-RPW draining uplands<br>○ Non-RPW erosional feature<br>○ Non-RPW with abutting wetland<br>○ Non-RPW with adjacent wetland<br>○ 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 | Adjacent/Abutting: 29J, 29G (PFO), 29H |
|---|---|---|---|

↳ outside study area

**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: 1.5' | ☒ Cobbles | ☒ Gravel | ☒ Other: Rip Rap | |
| ☒ Manipulated (man-altered) | Bank Erosion/stability: Good Stability | ☐ Bedrock | ☐ Concrete | | LB: Maintained / Mowed Herbaceous |
| ☐ Other: | | Side slope: ☐ ≥1:1 ☒ 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 |
|---|---|
| ☒ No rain | ○ 0-0.5 |
| ○ Light rain | ☒ 0.5-1 |
| ○ Heavy Rain | ○ >1 |

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

| -6 | -5 | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ○ | ○ | ○ | ○ | ○ | [redacted] | ○ | ○ | ☒ | ○ | ○ | ○ | ○ |
| 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:** I270/I495 Managed Lanes Study | | **Feature ID:** 29D | **Stream Order:** 1st |
| **Date:** 4/5/18 | **State:** MD | **Photos:** Upstream, downstream | |
| **Crew:** WT RS | **County:** MoCo | **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 – 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 SWM Pond 28-SWM2

Hydrologic Connectivity – Upstream: SWM Pond Downstream: Muddy Branch (29B) Adjacent/Abutting: 29-SWM5

**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 | | LB: forest |
| ☒ Other: piped | Moderate | Side slope: ☐ ≥1:1 ☒ 2:1 ☐ 3:1 ☐ ≤4:1 | | | |

*Notes:* Rip Rap places 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 | ○ | ○ | ○ | ○ | ○ | ● | ○ | ☒ | ○ | ○ | ○ | ○ | ○ |
| ○ 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:** 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 – 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 observed during field investigation | | | ○ Non-RPW wetland adjacent or abutting upstream (outside of study area) |

| 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 | | LB: Scrub shrub/forest |
| ☐ Other: | Minor erosion/good stability | Side slope: ☑ ≥1:1 ☐ 2:1 ☐ 3:1 ☐ ≤4:1 | | | |
| *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 – 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 observed during field investigation | | | ○ Non-RPW wetland adjacent or abutting upstream (outside of study area) |

| 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: | |
| ☑ Manipulated (man-altered) | Bank Erosion/stability: | ☐ Bedrock | ☐ Concrete | Rip rap | LB: Forest |
| ☐ Other: | Minor erosion/good stability | Side slope: ☑ ≥1:1 ☐ 2:1 ☐ 3:1 ☐ ≤4:1 | | | |

*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: 296/295 - 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: -77.205 066 Datum: NAD 83
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 [X] | **Is the Sampled Area within a Wetland?** Yes [ ] No [✓] |
| Hydric Soil Present? | Yes [ ] | No [X] | |
| Wetland Hydrology Present? | Yes [ ] | No [X] | |

Remarks:
295/296 - 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: 29G/29J - UPL

| | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| **Tree Stratum** (Plot size: 30 ft) | | | |
| 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) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| | 0 = Total Cover | | |
| 50% of total cover: | 20% of total cover: | | |
| **Shrub Stratum** (Plot size: 30 ft) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| | 0 = Total Cover | | |
| 50% of total cover: | 20% of total cover: | | |
| **Herb Stratum** (Plot size: 30 ft) | | | |
| 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. Desmodium canescens | 5 | N | FACU |
| 6. Stachys tenuifolia | 5 | N | FACU |
| 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) | | | |
| 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 6/29 - UPL

**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 | 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: 296-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: PEMIB
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:
296 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:
296 receives hydrology from 29-Swm1 and overflow from 29E

Photos: 296-J-UPL
296-WET

**VEGETATION (Five Strata) – Use scientific names of plants.** Sampling Point: 296-WET

| | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| **Tree Stratum** (Plot size: 30 ft) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| | 0 = Total Cover | | |
| 50% of total cover: ____ 20% of total cover: ____ | | | |
| **Sapling Stratum** (Plot size: 30 ft) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| | 0 = Total Cover | | |
| 50% of total cover: ____ 20% of total cover: ____ | | | |
| **Shrub Stratum** (Plot size: 30 ft) | | | |
| 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) | | | |
| 1. Impatiens capensis | 30 | Y | FACW |
| 2. Leersia oryzoides | 20 | Y | OBL |
| 3. Boehmeria cylindrica | 10 | N | FACW |
| 4. Viola sagittalis | 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) | | | |
| 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
- ☑ 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: 296-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 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[redacted] H | **Stream Order:** 1st |
| **Date:** 4/26/18 | **State:** Montgomery MD | **Photos:** UPSTREAM Downstream | |
| **Crew:** WT, RS | **County:** | **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 |
| *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 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' | ☒ Silts | ☐ Sands | ☐ Muck | RB: MAINTAINED/Mowed |
| ☐ Artificial (man-made) | Depth: 2' | ☐ Cobbles | ☒ Gravel | ☐ Other: | |
| ☒ Manipulated (man-altered) | Bank Erosion/stability: NONE observed / Rip Rap outfall | ☐ Bedrock | ☐ Concrete | Rip Rap | LB: MAINTAINED/Mowed |
| ☐ Other: | | Side slope: ☐ ≥1:1 ☒ 2:1 ☐ 3:1 ☐ ≤4:1 | | | |

*Notes:* Plunge Pool @ outfall

**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** Month: April Year: 2018
http://www.ncdc.noaa.gov/temp-and-precip/climatological-rankings/index.php

| ○ | ○ | ○ | ○ | ○ | ● | ○ | ○ | ☒ | ○ | ○ | ○ | ○ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| -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:*

## 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): BS 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: PEMIA
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): _____ |
| 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:
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) | | | |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| | 0 = Total Cover | | |

50% of total cover: _____ 20% of total cover: _____

| Shrub Stratum (Plot size: 30 ft) | | | |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| | 0 = Total Cover | | |

50% of total cover: _____ 20% of total cover: _____

| Herb Stratum (Plot size: 30 ft) | | | |
|---|---|---|---|
| 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) | | | |
|---|---|---|---|
| 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) | % | Redox Features Color (moist) | % | 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. 295

Latitude 39.130600 Longitude -77.204970

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:** 5/14/18 | **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) | ☒ 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 of water observed during field investigation

Hydrologic Connectivity – Upstream: SWM Facily 28-SWM3 Downstream: Unnamed Tributary to Middle Branch (Located out of study area) Adjacent/Abutting: 29-SWM3

**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: Forested |
| ☒ Artificial (man-made) | Depth: 6" | ☐ Cobbles | ☐ Gravel | ☐ Other: | |
| ☐ Manipulated (man-altered) | Bank Erosion/stability: | ☐ Bedrock | ☐ Concrete | | LB: Forested |
| ☐ Other: | No erosion; Stable banks | 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: 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:*

## 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 LRR S 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') | | | |
|---|---|---|---|
| 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') | | | |
|---|---|---|---|
| 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') | | | |
|---|---|---|---|
| 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: ) | | | |
|---|---|---|---|
| 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) | % | Redox Features Color (moist) | % | 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 LRR5 Lat: 39.12438 Long: -77.19872 Datum: NAD 83feet
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 _____ No _____<br>Hydric Soil Present? Yes _____ No _____<br>Wetland Hydrology Present? Yes X No _____ | **Is the Sampled Area within a Wetland?** | **Yes** _____ **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" corrugated 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: ) | | | |
| 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: ) | | | |
| 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: ) | | | |
| 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: ) | | | |
| 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) | % | Redox Features Color (moist) | % | 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 LRR Lat: 39.12316 Long: -77.20203 Datum: NAD83feet
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: ) | | | |
| 1. None | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| | = Total Cover | | |
| 50% of total cover: | 20% of total cover: | | |
| **Shrub Stratum** (Plot size: ) | | | |
| 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: ) | | | |
| 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: ) | | | |
| 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 (inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 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: _____

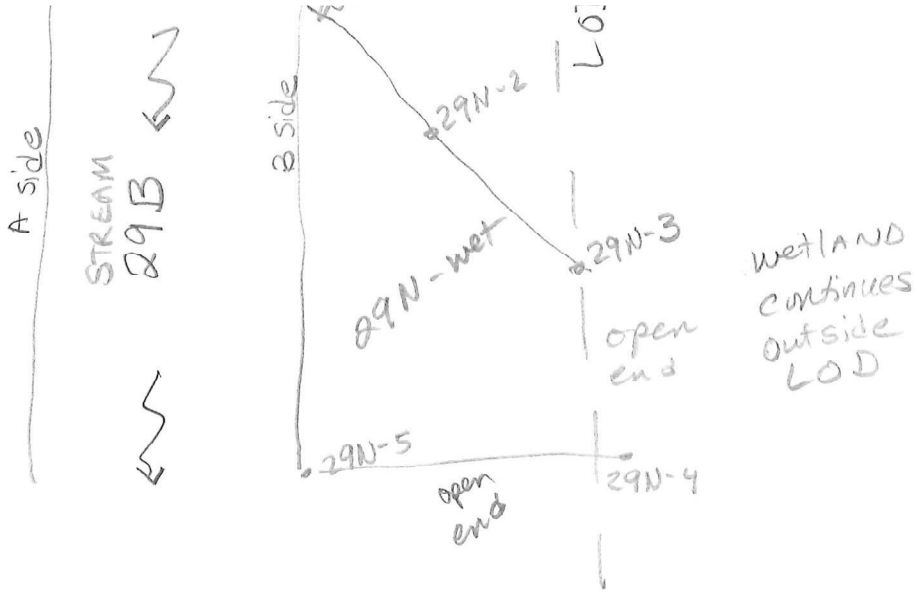
Depth (inches): _____

**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 1AC+

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:** 1495/1270 Managed Lanes Study | | **Feature ID:** 29P | **Stream Order:** 2ND |
| **Date:** 3/4/21 | **State:** MD | **Photos:** 29P-1, 29P-2 | |
| **Crew:** SCP/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 – 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:* stream supports an adjacent wetland (baseflow connection) | | | ○ Non-RPW wetland adjacent or abutting upstream (outside of study area) |

| | | | |
|---|---|---|---|
| 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) |
|---|---|---|---|---|---|
| ☒ Natural Channel Shape | Width: 6' | ☒ Silts | ☐ Sands | ☐ Muck | RB: Forest/maintained lawn (PARK) |
| ☐ Artificial (man-made) | Depth: 6" | ☒ Cobbles | ☐ Gravel | ☐ Other: | |
| ☐ Manipulated (man-altered) | Bank Erosion/stability: | ☒ Bedrock | ☐ Concrete | | LB: Forest |
| ☐ Other: | Some erosion | Side slope: ☐ ≥1:1 ☐ 2:1 ☒ 3:1 ☐ ≤4:1 | | | |
| *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 | ○ -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 | | | |
|---|---|---|---|---|
| ☐ 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:* | | |