



**HYDROLOGIC FEATURES REPORT**  
**For the**  
**Potter Lane Project**  
**Warren County, Tennessee**

**19 September 2024**

**Prepared For:**  
*City of McMinnville*  
*101 E. Main Street*  
*McMinnville, Tennessee 37110*

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## 1 INTRODUCTION

During May 2023, MRW Environmental LLC (“MRW”) was contacted by the City of McMinnville (“Client”), to assess a parcel approximately two (2) acres in size (“Subject Property”). The Subject Property is located adjacent to Potter Lane, McMinnville, Warren County Tennessee, and was assessed for potential jurisdictional waters (i.e., streams, wet weather conveyances (“WWC”), and wetlands).

The following hydrologic features report identifies and assesses only aquatic features such as streams, wetlands, and WWCs identified by MRW within the Subject Property. The primary objectives of this inventory were; 1) to identify and delineate Waters within the Subject Property subject to jurisdiction under Sections 404 and/or 401 of the Clean Water Act, and any Tennessee legislation (e.g., Tennessee Water Control Act of 1977) that prohibits destruction or degradation of Waters of the U.S. (“WOUS”) and/or Waters of the State (“WOS”), and 2) identify any jurisdictional features so that any future construction activities would not result in impacts. MRW also compared any new Waters to previously permitted and mitigated areas.

## 2 LOCATION

The Subject Property is located on Potter Lane, McMinnville, Warren County Tennessee (Figure 1). The approximate coordinates of the property are 35.692299° N, -85.783485° W.

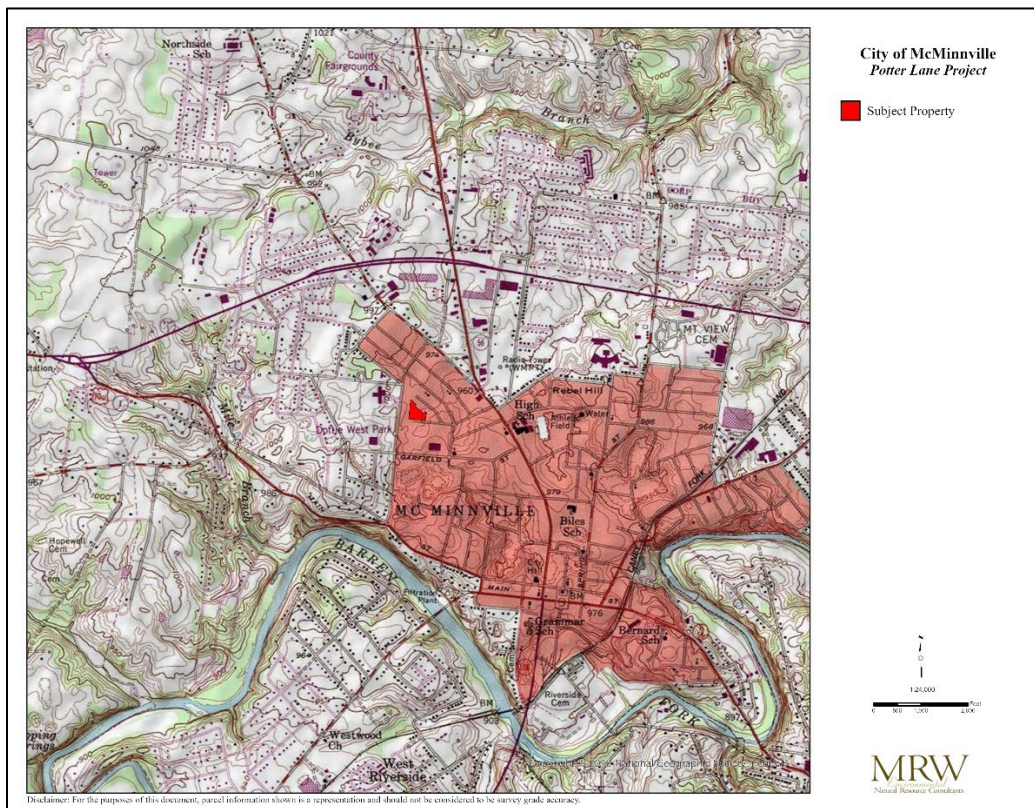


Figure 1. Vicinity map indicating location of the Subject Property.

### 3 METHODS

#### 3.1 Literature Review

##### 3.1.1 Aquatic Features

Prior to conducting the field investigation, data were examined that might provide information regarding potential jurisdictional waters on the property. The principal databases used included National Wetland Inventory (“NWI”) dataset, National Hydrography Dataset (“NHD”), and local soil surveys for the area. No wetland areas or streams were identified within the Subject Property based on the NWI and NHD datasets.

Soils data for the Subject Property indicated two soil series within the Subject Property (Figure 2). Neither the Captina (Ca) nor the Waynesboro (Wa) soil series are considered hydric within Warren County, Tennessee. Following this “office” investigation the Subject Property was assessed by systematically transecting it on foot to determine if jurisdictional waters were present.



Figure 2. Soil series listed within the Subject Property.

### 4 ON-SITE DATA RECORDING

#### 4.1 Aquatic Features

##### 4.1.1 Wetlands

Wetlands are typically defined as ..... “areas inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support,

*a prevalence of vegetation typically adapted for life in saturated soil conditions.*” (33 CFR328.3(b);1984.).

Whenever potential wetland areas were located, procedures described in the U.S. Army Corps of Engineers (“Corps”) Wetland Delineation Manual (“WDM”) (Corps 1987) and the Regional Supplement to the Corps WDM: Eastern Mountain and Piedmont (“EMP”) (Corps 2012). These documents were employed to: (1) determine if the area was a wetland, and (2) provide guidance for the delineation of the wetland boundary. This process involved documenting the dominant plant species and carefully examining potential indicators of soils and hydrology. Dominant plants (i.e., tree, shrub, ground, and woody vine) were identified to species if possible, using Radford et al. (1968) and Godfrey and Wooten (1979) and their indicator status (Obligate, Facultative Wetland, etc.) (Table 1) was determined from Lichvar (2016). If more than 50% of the dominant species were Facultative, Facultative Wetland, or Obligate, the site was considered dominated by hydrophytic vegetation.

Table 1. Wetland indicator status definitions according to Reed (1988)

Category	Abbreviation	Definition
Obligate Wetland	OBL	Occur almost always (estimated probability >99%) in wetlands under natural conditions
Facultative Wetland	FACW	Usually occur in wetlands (estimated probability 67-99%), but occasionally found in non-wetlands
Facultative	FAC	Equally likely to occur in wetlands or non-wetlands (estimated probability 33-66%)
Facultative Upland	FACU	Usually occur in non-wetlands (estimated probability 67-99%), but occasionally found in wetlands
Upland	UPL	Occur almost always (estimated probability >99%) in non-wetlands under natural conditions

Soils were exposed by extracting samples with a soil probe or digging soil pits to a depth of approximately 12-18 inches. Color of the soil matrix (the primary color) and of the redoximorphic features (colors within the matrix, if present) were described using standard Munsell color notation. Other indicators of hydric soil also were noted if present (U.S. Dept. of Agriculture 2010).

A determination of whether the site had a hydroperiod prolonged enough to be considered “wetland hydrology” was made based on field indicators described in the EMP supplement. Additional information regarding each of the indicators of wetland hydrology can be found in the WDM and EMP supplement.

Once an area was determined to be a wetland, its boundaries were delineated based on the presence or absence of each of the wetland indicators. A flag or other marker was placed in the ground to indicate the point at which one or more of the parameters ceased to be present, thus denoting the edge of the wetland. Each wetland then was assigned to the most detailed Cowardin and Hydrogeomorphic class (“HGM”) possible.

### 4.1.2 Deepwater Aquatic Habitat

Deepwater Aquatic Habitat is defined in the WDM as any open water area that has a mean annual water depth >6.6ft, lacks soil, and is either unvegetated or supports only floating or submersed macrophytes.

### 4.1.3 Drainage Features, Streams, and/or Wet Weather Conveyances

All other aquatic features were documented utilizing Tennessee Department of Environment and Conservation’s (“TDEC”) Division of Water Pollution Control *Guidance for Making Hydrologic Determinations, Version 1.5* (“Guidance”) (TDEC 2020). Prior to conducting a field evaluation, MRW reviewed the recent precipitation patterns for the local area, and the long-term seasonal precipitation trends. Local weather conditions over the previous one week, one month, and three-month intervals, prior to the field investigation date were assessed. This information was utilized to determine if “Normal Weather Conditions” existed in the area. In addition, MRW considered other available information such as historic land-use, regional geology and soil types, or previous hydrologic determinations near the site. All hydrologic determinations were made by a Qualified Hydrologic Professional (1105-TN11).

## 5 RESULTS

### 5.1 Aquatic Features

According to local climatological data for McMinnville, Tennessee (Station ID: McMinnville (USC00405882 (GHCN)), 0.00 inches of precipitation had fallen within 48 hours and a total of 0.95 inches of precipitation had fallen seven days prior to the assessment completed on August 7th, 2024. In order to calculate if “normal” weather conditions were present, including the standard deviation, data from the McMinnville weather station were utilized. Following the review of the weather data, MRW determined that the weather conditions based on the hydrologic determination Guidance were “average” (Table 2).

Table 2. “Normal Weather Conditions” Chart

	Long-term rainfall records					Actual Rainfall	Condition	Condition value	Month weight value	Product of previous two columns
	Month	Standard Deviation	Minus One Standard Deviation	Normal (Mean inches)	Plus One Standard Deviation					
1st prior Month	July	2.38	2.55	4.93	7.31	5.80	Average	2	X 3	6
2nd prior Month	June	2.59	1.38	3.97	6.56	2.04	Average	2	X 2	4
3rd prior Month	May	3.06	1.76	4.82	7.88	7.82	Average	2	X 1	2
									<b>Sum =</b>	<b>12</b>

Based on the on-site review, one wetland area was identified within the Subject Property (Figure 4).



Figure 3. Hydrologic features identified within the Subject Property.

### 5.1.1 Wetlands

One wetland area was identified within the Subject Property. Table 3 depicts the acreage, HGM classification, and Cowardin classification of the wetland identified within the Subject Property. Sample locations, wetland delineation forms, and pictures are included in Appendix A.

Table 3. Characteristics of Identified Wetlands.

ID	Acreage	Cowardin Classification	HGM Classification	Latitude	Longitude
WET-A	0.83	PEM1A/PFO1A	Slope	35.692087	-85.783423

#### Wetland-A

Wetland-A (“WET-A”) is a palustrine emergent/forested slope wetland. Hydrology indicators included oxidized rhizospheres on living roots. Hydrophytic vegetation dominated the wetland area and included species such as: black willow (*Salix nigra*), green ash (*Fraxinus pennsylvanicum*), green bullrush (*Scirpus atrovirens*), and tapertip rush (*Juncus acuminatus*). This wetland met the F3 hydric soil indicator.

### **5.1.2 Deepwater Aquatic Habitat**

No deepwater aquatic habitat was identified within the Subject Property.

### **5.1.3 Streams, WWC, and Upland Drainage Features**

No streams, WWC's, or upland drainage features were identified within the Subject Property.

## **6 CONCLUSIONS**

### **6.1 Aquatic Features**

MRW identified one wetland area within the Subject Property. The wetland area identified within the Subject Property totaled approximately 0.83 acres.

Prior to any construction, MRW strongly recommends consultation with appropriate regulatory personnel before any further alterations to these aquatic features are undertaken. This includes but is not limited to the placement of fill material into Waters, or the alteration of hydrology across the site.

## 7 LITERATURE CITED

- Cowardin, L. M., V. Carter, F. C. Golet, and L. T. LaRoe. 1979. Classification of wetlands and deepwater habitats of the United States. FWS/OBS-79/31. U. S. Fish and Wildlife Service. Washington, DC.
- Godfrey, R. K., and J. W. Wooten. 1979. Aquatic and wetland plants of southeastern United States, monocotyledons. University of Georgia Press. Athens, GA.
- Lichvar, R. W., D. L. Banks, W. N. Kirchner, and N. C. Melvin. 2016. The National Wetland Plant List: 2016 wetland ratings.
- Radford, A. E., H. E. Ahles, and C. R. Bell. 1968. Manual of the vascular flora of the Carolinas. The University of North Carolina Press. Chapel Hill, NC.
- Smith, R. D., A. Ammann, C. Bartoldus, and M. M. Brinson. 1995. An approach for assessing wetland functions using hydrogeomorphic classification, reference wetlands, and functional indices. Technical Report WRP-DE-9. U. S. Army Corps of Engineers Waterways Experiment Station. Vicksburg, MS.
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- Tennessee Department of Environment and Conservation. Tennessee Rapid Assessment Method for Wetlands
- U.S. Department of Agriculture, Natural Resource Conservation Service. 2010. *Field Indicators of Hydric Soils in the United States*. Version 7.0. L. M. Vasilas, G. W. Hurt, and C. V. Noble (eds.). USDA, NRCS, in cooperation with the National Technical Committee for Hydric Soils.
- U. S. Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers Wetland Delineation Manual. Waterways Experiment Station Technical Report Y-87-1.
- U.S. Army Corps of Engineers. 2012. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region Version 2.0*, ed. J. F. Berkowitz, J. S. Wakeley, R. W. Lichvar, C. V. Noble. ERDC/EL TR-12-9. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

# **APPENDIX A**

## Additional Information

# WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: Potter Lane City/County: McMinnville/ Warren Sampling Date: Aug 2, 2023  
 Applicant/Owner: City of McMinnville State: TN Sampling Point: WET A  
 Investigator(s): Ken Morgan and Matt Granstaff Section, Township, Range: \_\_\_\_\_

Landform (hillslope, terrace, etc.): Slope Local relief (concave, convex, none): convex Slope (%): 1  
 Subregion (LRR or MLRA): LRR Lat: 35.69214 Long: -85.783418 Datum: NAD83

Soil Map Unit Name: CaD NWI Classification: N/A

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 <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	<b>Is the Sampled Area within a Wetland?</b> Yes <input checked="" type="checkbox"/> No _____
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Remarks: \_\_\_\_\_

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one is required: check all that apply): <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Saturation (A3) <input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)	Secondary Indicators (minimum of two required): <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
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<b>Field Observations:</b> Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (Inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (Inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (Inches): _____ (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No _____
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Describe Recorded Data (stream gauge, aerial photos, previous inspections), if available: \_\_\_\_\_

Remarks: \_\_\_\_\_

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

Sampling Point: WET A

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: <u>30 meters</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Salix nigra</u>	<u>5</u>	<u>Yes</u>	<u>OBL</u>
2. <u>Fraxinus pennsylvanicum</u>	<u>10</u>	<u>Yes</u>	<u>FACW</u>
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____

\_\_\_\_\_ = Total Cover  
 50% of total cover: 7.5 20% of total cover: 3

Shrub Stratum (Plot Size: _____ )	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____

\_\_\_\_\_ = Total Cover  
 50% of total cover: \_\_\_\_\_ 20% of total cover: \_\_\_\_\_

Herb Stratum (Plot Size: <u>30 meters</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Scirpus atrovirens</u>	<u>80</u>	<u>Yes</u>	<u>OBL</u>
2. <u>Juncus acuminatus</u>	<u>40</u>	<u>Yes</u>	<u>OBL</u>
3. <u>Rhexia mariana</u>	<u>5</u>	<u>No</u>	<u>OBL</u>
4. <u>Diodia virginiana</u>	<u>25</u>	<u>No</u>	<u>FACW</u>
5. <u>Juncus effusus</u>	<u>5</u>	<u>No</u>	<u>FACW</u>
6. <u>Juncus canadensis</u>	<u>10</u>	<u>No</u>	<u>OBL</u>
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____

\_\_\_\_\_ = Total Cover  
 50% of total cover: 82.5 20% of total cover: 33

Woody Vine Stratum (Plot Size: _____ )	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____

\_\_\_\_\_ = Total Cover  
 50% of total cover: \_\_\_\_\_ 20% of total cover: \_\_\_\_\_

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

**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 (C)

**Prevalence Index worksheet:**

Total % Cover of:	Multiply by:
OBL Species <u>140</u>	X 1 = <u>140</u>
FACW Species <u>40</u>	X 2 = <u>80</u>
FAC Species _____	X 3 = _____
FACU Species _____	X 4 = _____
UPL species _____	X 5 = _____
Column Totals: <u>180</u> (A)	<u>220</u> (B)

Prevalence Index = B/A = 1.2

**Hydrophytic Vegetation Indicators:**

- Rapid Test for Hydrophytic Vegetation
- X - Dominance Test is > 50%
- X - Prevalence Index is < 3.0<sup>1</sup>
- Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
- Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup> 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 \_\_\_\_\_

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

Depth (inches)	Matrix		Redox Features			Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
	Color (moist)	%	Color (moist)	%					
0-11	10YR 6/8	100							
11+	10YR 5/1	100							

<sup>1</sup> Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=masked Sand Grains.

<sup>2</sup> 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)
- IronManganese 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<sup>3</sup>:**

- 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)

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

**Restrictive Layer (if observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soils Present? Yes  No \_\_\_\_\_

Remarks:

# WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: Potter Lane City/County: McMinnville/ Warren Sampling Date: Aug 2, 2023  
 Applicant/Owner: City of McMinnville State: TN Sampling Point: UPL A  
 Investigator(s): Ken Morgan and Matt Granstaff Section, Township, Range: \_\_\_\_\_

Landform (hillslope, terrace, etc.): Slope Local relief (concave, convex, none): none Slope (%): 1  
 Subregion (LRR or MLRA): LRR Lat: 35.692054 Long: -85.78319 Datum: NAD83

Soil Map Unit Name: CaD NWI Classification: N/A

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 <input checked="" type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b> Yes _____ No <input checked="" type="checkbox"/>
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Remarks: \_\_\_\_\_

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one is required: check all that apply): <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)	Secondary Indicators (minimum of two required): <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
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<b>Field Observations:</b> Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (Inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (Inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (Inches): _____ (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes _____ No <input checked="" type="checkbox"/>
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Describe Recorded Data (stream gauge, aerial photos, previous inspections), if available: \_\_\_\_\_

Remarks: \_\_\_\_\_

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

Sampling Point: UPL A

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: <u>30 meters</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Fraxinus pennsylvanicum</u>	<u>10</u>	<u>Yes</u>	<u>FACW</u>
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____

\_\_\_\_\_ = Total Cover  
 50% of total cover: 5 20% of total cover: 2

Shrub Stratum (Plot Size: _____ )	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____

\_\_\_\_\_ = Total Cover  
 50% of total cover: \_\_\_\_\_ 20% of total cover: \_\_\_\_\_

Herb Stratum (Plot Size: <u>30 meters</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Campsis radicans</u>	<u>10</u>	<u>No</u>	<u>FAC</u>
2. <u>Daucus carota</u>	<u>5</u>	<u>No</u>	<u>UPL</u>
3. <u>Cyperus strigosus</u>	<u>5</u>	<u>No</u>	<u>FACW</u>
4. <u>Erigeron annuus</u>	<u>15</u>	<u>No</u>	<u>FACU</u>
5. <u>Prunella vulgaris</u>	<u>5</u>	<u>No</u>	<u>FACU</u>
6. <u>Panicum acuminatum</u>	<u>25</u>	<u>Yes</u>	<u>FACU</u>
7. <u>Trifolium pratense</u>	<u>10</u>	<u>No</u>	<u>FACU</u>
8. <u>Andropogon virginicus</u>	<u>10</u>	<u>No</u>	<u>FACU</u>
9. _____	_____	_____	_____
10. _____	_____	_____	_____

\_\_\_\_\_ = Total Cover  
 50% of total cover: 42.5 20% of total cover: 17

Woody Vine Stratum (Plot Size: _____ )	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____

\_\_\_\_\_ = Total Cover  
 50% of total cover: \_\_\_\_\_ 20% of total cover: \_\_\_\_\_

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

**Dominance Test worksheet:**

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (C)

**Prevalence Index worksheet:**

Total % Cover of: \_\_\_\_\_ Multiply by: \_\_\_\_\_

OBL Species \_\_\_\_\_ X 1 = \_\_\_\_\_

FACW Species 15 X 2 = 30

FAC Species 10 X 3 = 30

FACU Species 65 X 4 = 260

UPL species 5 X 5 = 25

Column Totals: 95 (A) 345 (B)

Prevalence Index = B/A = 3.6

**Hydrophytic Vegetation Indicators:**

- Rapid Test for Hydrophytic Vegetation
- Dominance Test is > 50%
- Prevalence Index is < 3.0<sup>1</sup>
- Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
- Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup> 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 X

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

Depth (inches)	Matrix		Redox Features			Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
	Color (moist)	%	Color (moist)	%					
0-12	10YR 6/8	100							

<sup>1</sup> Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=masked Sand Grains.

<sup>2</sup> 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)
- IronManganese 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<sup>3</sup>:**

- 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)

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

**Restrictive Layer (if observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soils Present?    Yes \_\_\_\_\_    No  \_\_\_\_\_

Remarks:



*Picture 1. Photograph of WET-A*



*Picture 2. Photograph of WET-A*



*Picture 3. Photograph of UPL-A*