

Wetland Assessment

for

The Qualls Family Property
Putnam County, Tennessee

March 13, 2025

Prepared for:

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Project No. 25-0038

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Project Narrative

Executive Summary

We have performed a wetland assessment to determine the presence or absence of wetlands based on the guidelines for wetland identification and delineation contained in the “Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region” on a piece of property owned by the Qualls family. The property is near the corner of N Old Kentucky Road and E 10th Street. A portion of the larger parcel has been developed into a Food City and a Wendys but approximately 19 acres remains undeveloped. The remaining 19 acres have historically been used for farming of hay. The property was traversed with the intention of gathering information to determine the presence or absence of wetland characteristics.

Based on data collected, information compiled from various sources and the site reconnaissance, there is wetland located within a total of approximately 3.5 acres of the site.

Soil probes and shovel testing were used to determine the presence of hydric soils; however, an intrusive investigation through soil/groundwater sampling was beyond the scope of this assessment.

Introduction

The purpose of this wetland assessment is to identify, to the extent feasible, the presence or absence of wetlands or wetland characteristics on the subject property. The “Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and

Piedmont Region" was used to determine the presence or absence of wetlands or areas of wetland characteristics.

Site Description

The site is near the corner of N Old Kentucky road and E 10th Street, it is bordered to the east by SR-111. A portion of Burtons Branch, a stream, runs through the property as well. The property is located in the **Falling Water River Headwaters (051301080701)**.

Reference Appendix A.

Records Review

The USDA NRCS Web Soil Survey was utilized to determine the soil classification for the subject properties as well as the hydric rating for the soils on the subject properties. The following Table 1 shows the data provided in the Soil Resource Report. The complete report is included in the Appendix B for reference. Based on the soil report, there is hydric soil present.

Table 1 - USDA NRCS Soil Resource Report			
Map Unit Symbol	Map Unit Name	Percent of the subject property	Hydric Category
HnC2	Holston loam, 5 to 12 percent slopes, eroded	5.8%	TN Nonhydric
MnB	Monongahela silt loam, 2 to 5 percent slopes	7.4%	TN Nonhydric
Pd	Purdy silt loam	79.4%	TN Hydric
WaC2	Waynesboro silt loam, 5 to 12 percent slopes, eroded	7.5%	TN Nonhydric

The U.S. Fish and Wildlife Services National Wetlands Inventory Database and Map Viewer was consulted to identify any previous mapped wetlands. According to the NWI map, a freshwater forested/shrub wetland is shown where the Burtons Branch runs through the property. No other wetlands are shown on the NWI. The area shown on the NWI map is a graphical representation only and does not reflect a field verified wetland delineation. The map is included in the Appendix C for reference.

Reference Appendix B and C.

Wetland Indicators

The site was inspected on February 25, 2025 by Katie Slezak, TNQHP. During the site visit, wetlands were identified and delineated.

In accordance with the guidelines of the “Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region,” an area must exhibit three characteristics to be classified as a wetland. The three characteristics are Wetland Hydrology, Hydrophytic Vegetation, and Hydric Soils. Some wetlands can be difficult to identify because wetland indicators may be missing due to recent disturbances. Lands used for agriculture are often challenging when it comes to wetland identification.

Hydric Soils

Hydric soils are formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part. They have characteristics that are a result of repeated periods of saturation or inundation for more than a few days. Saturation or inundation, when combined with microbial activity in the soil, causes the depletion of oxygen. Soils may be characterized by features such as gley, redox depletions, redox concentrations, redox matrix. The soils present on the site during the investigation were characteristic of hydric soils by having a depleted matrix and feeling like a silty loam soil. There was presence of redox in the soils within the matrix as well. The NRCS soil survey identifies TN Hydric soils as being present throughout a majority of the site.

Wetland Hydrology

Wetland Hydrology indicators are used to verify that the site has continuous and ongoing wetland hydrologic regime with consistently inundated and saturated areas during the growing season to support hydrophytic vegetation and hydric soils. Some hydrology indicators include but are not limited to observations of surface water ponding, saturation, water marks, sediment deposits, thick muck surface, algal mats, stressed plants, and saturation shown on aerial imagery. The main hydrology indicators found on this site were surface water, a high water table, iron deposits, and an algal mat/crust in certain areas.

Hydrophytic Vegetation

Hydrophytic vegetation is present when the plant community is dominated by species that require or can tolerate prolonged inundation or soil saturation during the growing season. Hydrophytic vegetation decisions are based on the wetland indicator status (current approved list) of species that make up the plant community. Species in the facultative categories (FACW, FAC, and FACU) are recognized as occurring in both wetlands and uplands to varying degrees. Although most wetlands are dominated mainly by species rated OBL, FACW, and FAC, some wetland communities may be dominated primarily by FACU species and cannot be identified by dominant species alone.

Due to this property being historically used for agriculture, the natural plant community has been greatly altered. It is possible to have a determination of a wetland and have problematic wetland vegetation. If the unmanaged vegetation condition cannot be determined, make the wetland determination based on indicators of hydric soil and wetland hydrology. The following Table 2 shows the species that were able to be identified and the wetland indicator status for the Eastern Mountain and Piedmont Region.

Table 2 - Plants identified on subject property

Common Name	Scientific Name	Wetland Indicator Status*
Common rush	Juncus	FACW

*Wetland Indicator Status for the Eastern Mountain and Piedmont Region

OBL	Obligate Wetland	almost always occur in wetlands
FACW	Facultative Wetland	usually occur in wetlands, but may occur in non-wetlands
FAC	Facultative	occur in wetlands and non-wetlands
FACU	Facultative Upland	usually occur in non-wetlands, but may occur in wetlands
UPL	Upland	almost always occur in non-wetlands

Photographs of the subject property at the time of the site investigation are in Appendix D for reference.

Findings and Conclusions

We have performed a wetland assessment to determine the presence or absence of wetlands based on the guidelines for wetland identification and delineation contained in the "Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region" on an approximate 19 acre site in Cookeville, TN. This site has been historically used for agriculture and exists at the corner of N Old Kentucky Road and E 10th Street, and bordered to the East by SR-111. The property was traversed with the intention of gathering information to determine the presence or absence of wetland characteristics.

Based on data collected, information compiled from various sources, the site reconnaissance, and professional experience, a wetland has been identified and delineated to encompass approximately 3.5 acres of the remaining 19 acres.

Feature Designation	Latitude	Longitude	Estimated amount of aquatic resource in project area (acres)	Type of aquatic resource
WTL-1	36.176035	-85.462887	1.8	Floodplain wetland
WTL-1a	36.176827	-85.463318	1.6	Floodplain wetland
WTL-2	36.176189	-85.462160	0.15	Floodplain wetland
STR-1	36.178069, -85.463543	36.175545, -85.462052	1043 lf	Perennial Stream

Appendix A: Location Maps



PROJECT NO. 25-0038

1.0 OVERALL SITE



0 500 1000



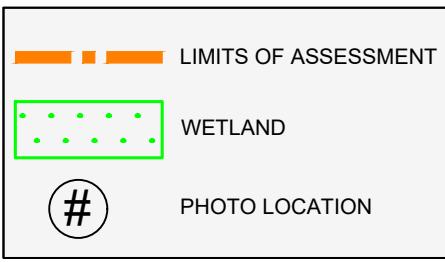
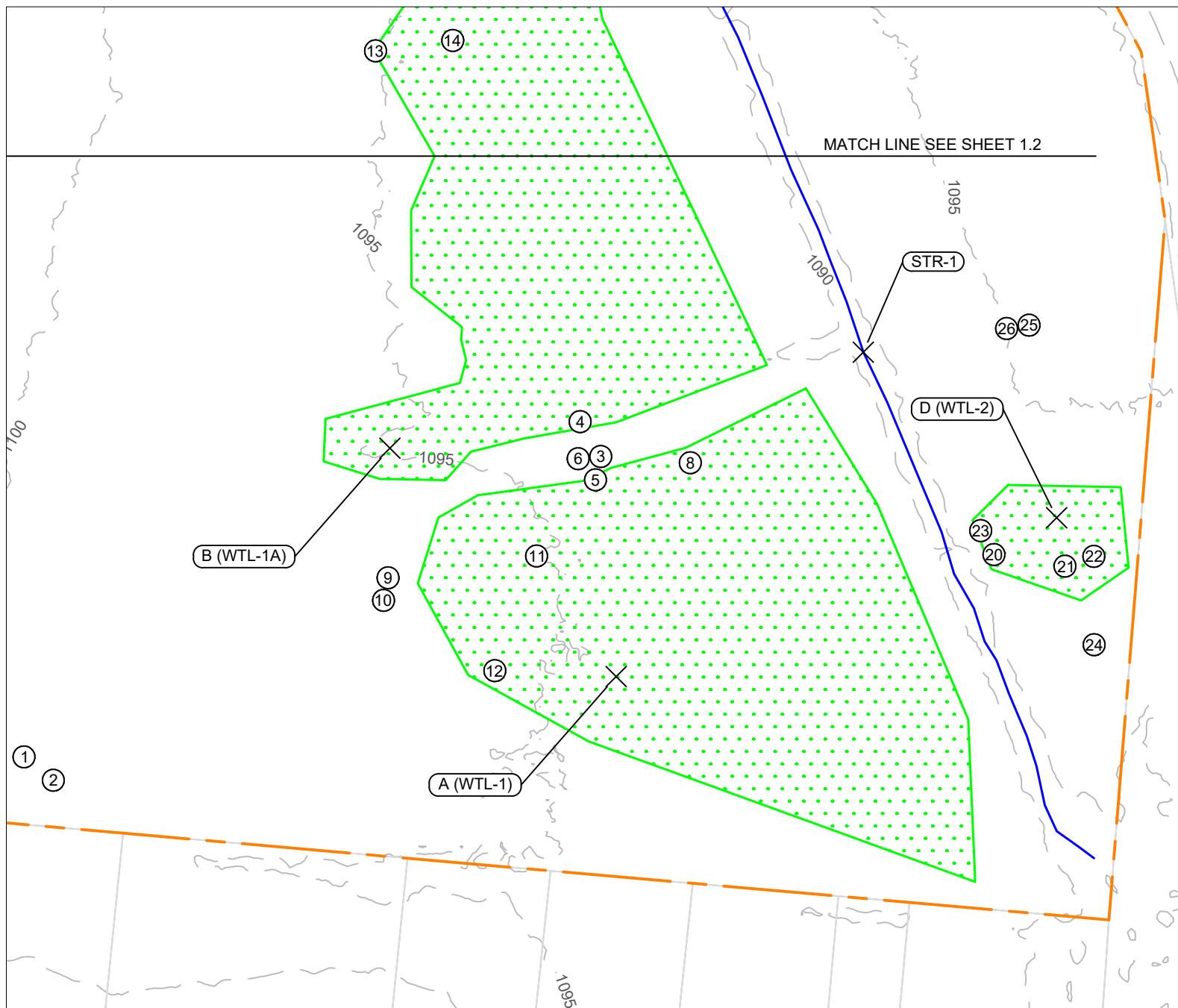
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NATURAL RESOURCE ASSESSMENT TABLE					
OBSERVATION ID	DESCRIPTION	NORTHING	EASTING	LATITUDE	LONGITUDE
A	WTL-1	671152.8723	2126939.5852	N036.175925	W085.463175
B	WTL-1A	671312.2675	2126781.6410	N036.176365	W085.463708
D	WTL-2	671263.7397	2127247.1180	N036.176225	W085.462131

HORIZONTAL DATUM: NAD83

PROJECT NO. 25-0038

1.1 SITE ASSESSMENT



0 100 200

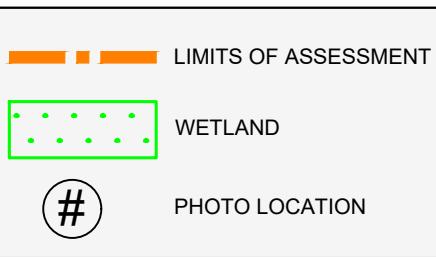
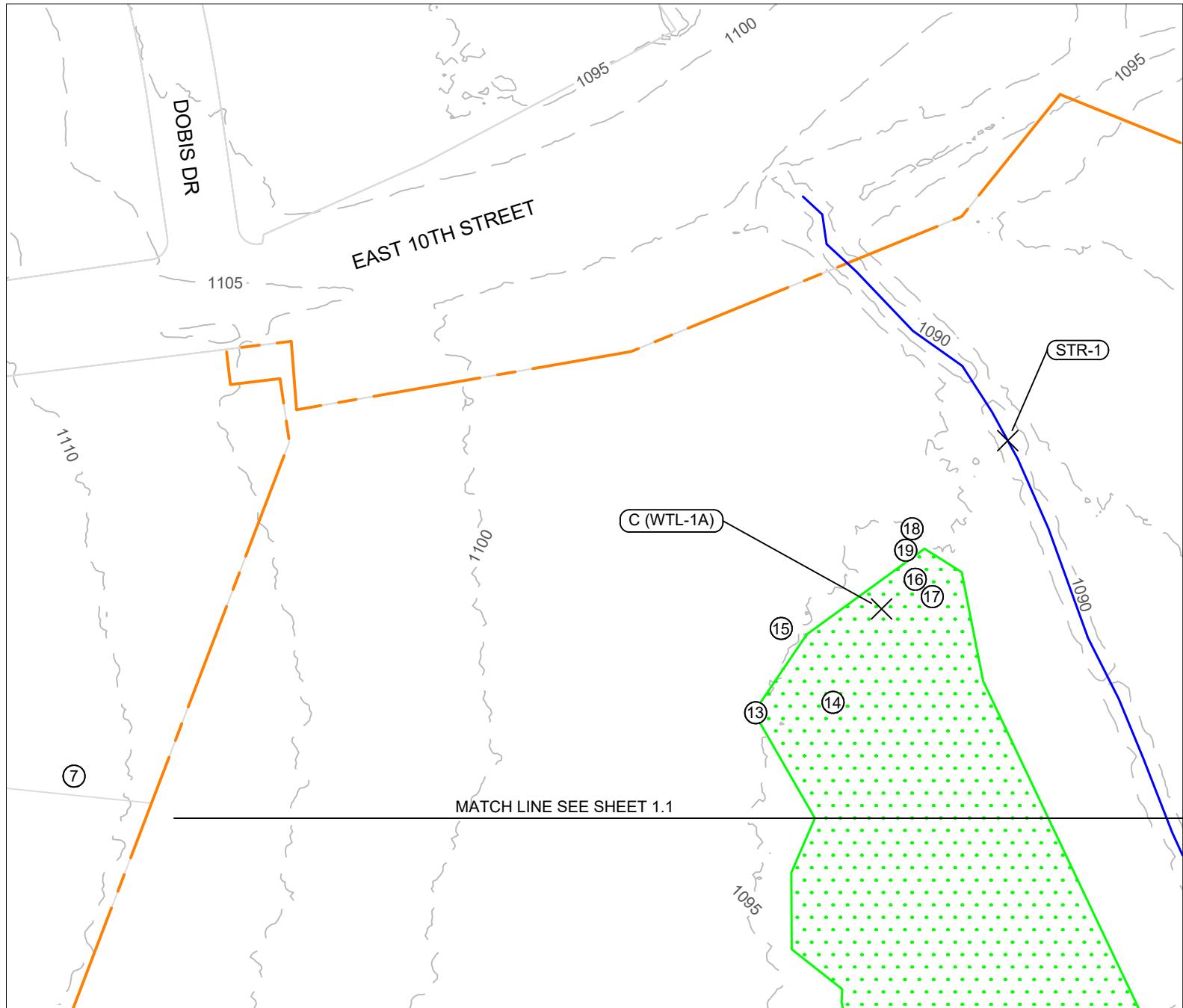
WETLAND DELINEATION FOR THE QUALLS FAMILY PROPERTY

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NATURAL RESOURCE ASSESSMENT TABLE					
OBSERVATION ID	DESCRIPTION	NORTHING	EASTING	LATITUDE	LONGITUDE
C	WTL-1A	671661.9680	2126859.3664	N036.177324	W085.463438
HORIZONTAL DATUM: NAD83					

PROJECT NO. 25-0038

1.2 SITE ASSESSMENT



0 100 200

**WETLAND
DELINEATION
FOR
THE QUALLS
FAMILY PROPERTY**

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Appendix B: Soil Resource Report



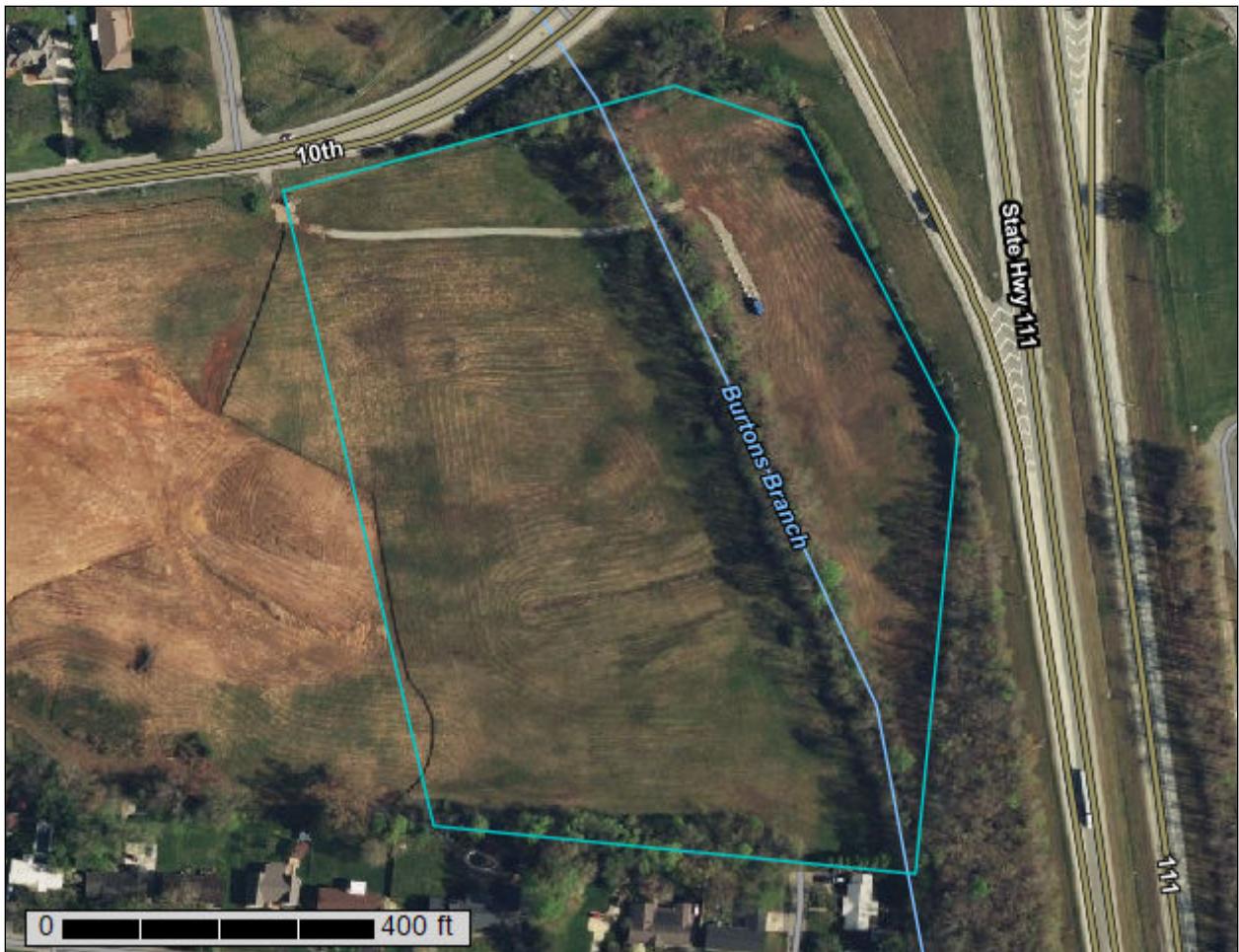
United States
Department of
Agriculture

NRCS

Natural
Resources
Conservation
Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Putnam County and Parts of White County, Tennessee
Qualls Family Property



Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units).

Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

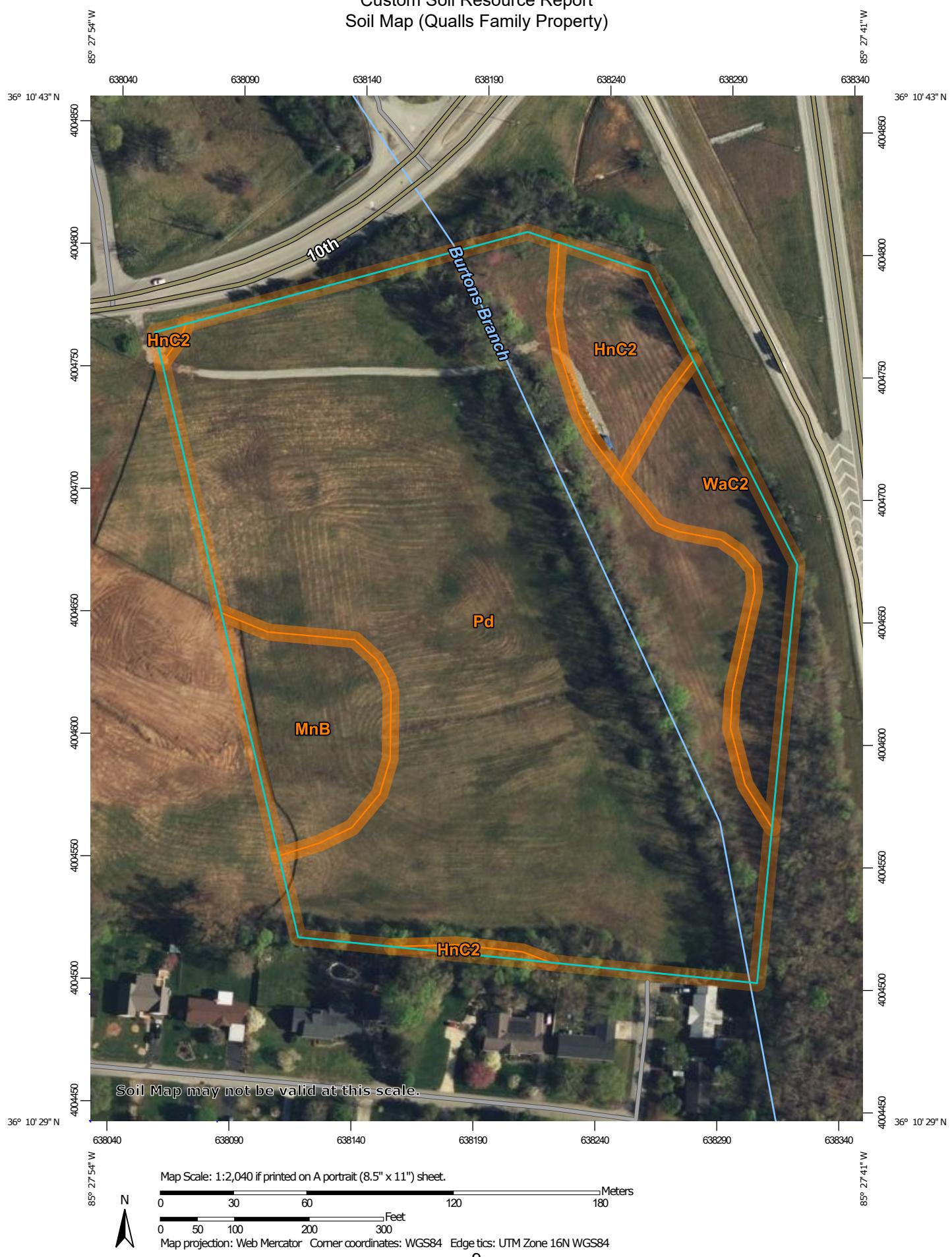
Custom Soil Resource Report

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map (Qualls Family Property)



MAP LEGEND

Area of Interest (AOI)	
	Area of Interest (AOI)
Soils	
	Soil Map Unit Polygons
	Soil Map Unit Lines
	Soil Map Unit Points
Special Point Features	
	Blowout
	Borrow Pit
	Clay Spot
	Closed Depression
	Gravel Pit
	Gravelly Spot
	Landfill
	Lava Flow
	Marsh or swamp
	Mine or Quarry
	Miscellaneous Water
	Perennial Water
	Rock Outcrop
	Saline Spot
	Sandy Spot
	Severely Eroded Spot
	Sinkhole
	Slide or Slip
	Sodic Spot
	Spoil Area
	Stony Spot
	Very Stony Spot
	Wet Spot
	Other
	Special Line Features
Water Features	
	Streams and Canals
Transportation	
	Rails
	Interstate Highways
	US Routes
	Major Roads
	Local Roads
Background	
	Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
 Web Soil Survey URL:
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Putnam County and Parts of White County, Tennessee
 Survey Area Data: Version 15, Sep 12, 2024

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Apr 1, 2021—Oct 1, 2021

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background

MAP LEGEND

MAP INFORMATION

imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend (Qualls Family Property)

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
HnC2	Holston loam, 5 to 12 percent slopes, eroded	0.9	5.8%
MnB	Monongahela silt loam, 2 to 5 percent slopes	1.1	7.4%
Pd	Purdy silt loam	12.0	79.4%
WaC2	Waynesboro silt loam, 5 to 12 percent slopes, eroded	1.1	7.5%
Totals for Area of Interest		15.1	100.0%

Map Unit Descriptions (Qualls Family Property)

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Putnam County and Parts of White County, Tennessee

HnC2—Holston loam, 5 to 12 percent slopes, eroded

Map Unit Setting

National map unit symbol: 2mgyq

Elevation: 900 to 1,800 feet

Mean annual precipitation: 45 to 55 inches

Mean annual air temperature: 57 to 61 degrees F

Frost-free period: 190 to 205 days

Farmland classification: Not prime farmland

Map Unit Composition

Holston and similar soils: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Holston

Setting

Landform: Stream terraces

Landform position (three-dimensional): Tread

Parent material: Loamy alluvium and/or colluvium derived from limestone, sandstone, and shale

Typical profile

H1 - 0 to 6 inches: loam

H2 - 6 to 40 inches: clay loam

H3 - 40 to 75 inches: clay loam

Properties and qualities

Slope: 5 to 12 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: High (about 9.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3e

Hydrologic Soil Group: B

Ecological site: F122XY027TN - Loamy Terraces

Hydric soil rating: No

MnB—Monongahela silt loam, 2 to 5 percent slopes

Map Unit Setting

National map unit symbol: 2mgzn

Elevation: 300 to 1,000 feet
Mean annual precipitation: 35 to 55 inches
Mean annual air temperature: 45 to 57 degrees F
Frost-free period: 120 to 180 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Monongahela and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Monongahela

Setting

Landform: Stream terraces
Landform position (three-dimensional): Tread
Parent material: Loamy alluvium derived from limestone, sandstone, and shale

Typical profile

H1 - 0 to 7 inches: silt loam
H2 - 7 to 26 inches: silt loam
H3 - 26 to 55 inches: loam
H4 - 55 to 60 inches: loam

Properties and qualities

Slope: 2 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.60 in/hr)
Depth to water table: About 18 to 30 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 4.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: C/D
Ecological site: F122XY010KY - Moderately Well Drained Fragipan Terraces
Hydric soil rating: No

Pd—Purdy silt loam

Map Unit Setting

National map unit symbol: 2mh0b
Elevation: 300 to 2,000 feet
Mean annual precipitation: 35 to 50 inches
Mean annual air temperature: 48 to 57 degrees F
Frost-free period: 140 to 180 days
Farmland classification: Not prime farmland

Map Unit Composition

*Purdy, ponded, and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.*

Description of Purdy, Ponded

Setting

Landform: Depressions

Landform position (three-dimensional): Dip

Parent material: Clayey alluvium derived from limestone, sandstone, and shale

Typical profile

H1 - 0 to 6 inches: silt loam

H2 - 6 to 36 inches: silty clay loam

H3 - 36 to 60 inches: silty clay

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Poorly drained

Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)

Depth to water table: About 0 inches

Frequency of flooding: None

Frequency of ponding: Frequent

Available water supply, 0 to 60 inches: Moderate (about 8.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 4w

Hydrologic Soil Group: C/D

Ecological site: F122XY013KY - Saturated Flats

Hydric soil rating: Yes

WaC2—Waynesboro silt loam, 5 to 12 percent slopes, eroded

Map Unit Setting

National map unit symbol: 2mh0t

Elevation: 700 to 1,100 feet

Mean annual precipitation: 45 to 65 inches

Mean annual air temperature: 57 to 61 degrees F

Frost-free period: 185 to 205 days

Farmland classification: Not prime farmland

Map Unit Composition

Waynesboro and similar soils: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Waynesboro

Setting

Landform: Stream terraces

Custom Soil Resource Report

Landform position (three-dimensional): Tread

Parent material: Old clayey alluvium derived from limestone, sandstone, and shale

Typical profile

H1 - 0 to 8 inches: silt loam

H2 - 8 to 27 inches: clay loam

H3 - 27 to 60 inches: clay

Properties and qualities

Slope: 5 to 12 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.60 to 2.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: High (about 10.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3e

Hydrologic Soil Group: B

Ecological site: F122XY026TN - Clayey Limestone Terraces And Uplands

Hydric soil rating: No

Soil Information for All Uses

Suitabilities and Limitations for Use

The Suitabilities and Limitations for Use section includes various soil interpretations displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each interpretation.

Land Classifications

Land Classifications are specified land use and management groupings that are assigned to soil areas because combinations of soil have similar behavior for specified practices. Most are based on soil properties and other factors that directly influence the specific use of the soil. Example classifications include ecological site classification, farmland classification, irrigated and nonirrigated land capability classification, and hydric rating.

Hydric Rating by Map Unit (Qualls Family Property)

This rating indicates the percentage of map units that meets the criteria for hydric soils. Map units are composed of one or more map unit components or soil types, each of which is rated as hydric soil or not hydric. Map units that are made up dominantly of hydric soils may have small areas of minor nonhydric components in the higher positions on the landform, and map units that are made up dominantly of nonhydric soils may have small areas of minor hydric components in the lower positions on the landform. Each map unit is rated based on its respective components and the percentage of each component within the map unit.

The thematic map is color coded based on the composition of hydric components. The five color classes are separated as 100 percent hydric components, 66 to 99 percent hydric components, 33 to 65 percent hydric components, 1 to 32 percent hydric components, and less than one percent hydric components.

In Web Soil Survey, the Summary by Map Unit table that is displayed below the map pane contains a column named 'Rating'. In this column the percentage of each map unit that is classified as hydric is displayed.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). Under natural conditions, these soils are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 2002). These criteria are used to identify map unit components that normally are associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (Soil Survey Staff, 1999) and "Keys to Soil Taxonomy" (Soil Survey Staff, 2006) and in the "Soil Survey Manual" (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils are specified in "Field Indicators of Hydric Soils in the United States" (Hurt and Vasilas, 2006).

References:

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

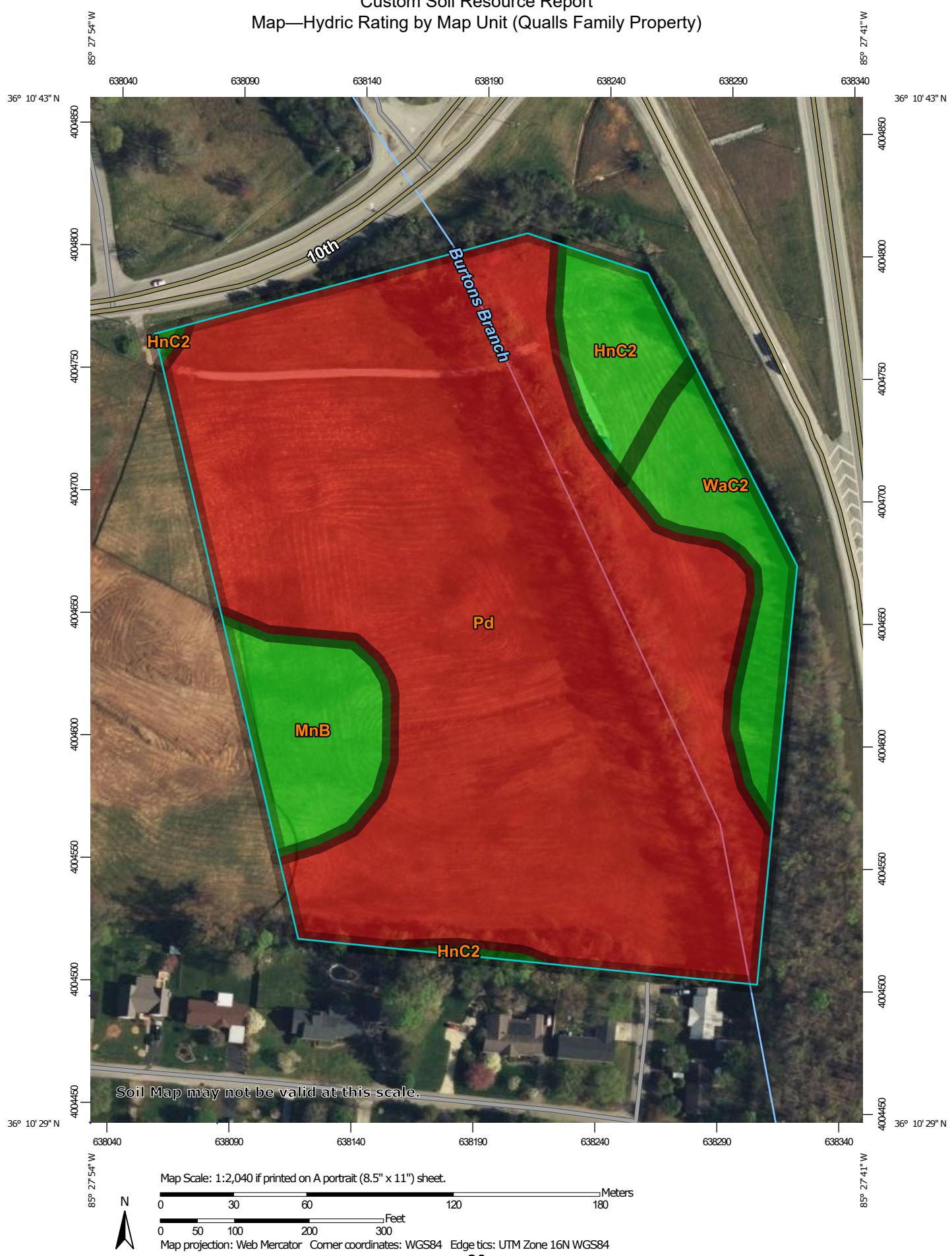
Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18.

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service. U.S. Department of Agriculture Handbook 436.

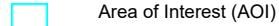
Soil Survey Staff. 2006. Keys to soil taxonomy. 10th edition. U.S. Department of Agriculture, Natural Resources Conservation Service.

Custom Soil Resource Report
Map—Hydric Rating by Map Unit (Qualls Family Property)



MAP LEGEND

Area of Interest (AOI)



Area of Interest (AOI)

Soils

Soil Rating Polygons

- █ Hydric (100%)
- █ Hydric (66 to 99%)
- █ Hydric (33 to 65%)
- █ Hydric (1 to 32%)
- █ Not Hydric (0%)
- █ Not rated or not available

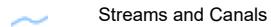
Soil Rating Lines

- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

Soil Rating Points

- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

Water Features



Streams and Canals

Transportation

- + + + Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- █ Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
 Web Soil Survey URL:
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Putnam County and Parts of White County, Tennessee

Survey Area Data: Version 15, Sep 12, 2024

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Apr 1, 2021—Oct 1, 2021

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background

MAP LEGEND

MAP INFORMATION

imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Table—Hydric Rating by Map Unit (Qualls Family Property)

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
HnC2	Holston loam, 5 to 12 percent slopes, eroded	0	0.9	5.8%
MnB	Monongahela silt loam, 2 to 5 percent slopes	0	1.1	7.4%
Pd	Purdy silt loam	100	12.0	79.4%
WaC2	Waynesboro silt loam, 5 to 12 percent slopes, eroded	0	1.1	7.5%
Totals for Area of Interest			15.1	100.0%

Rating Options—Hydric Rating by Map Unit (Qualls Family Property)*Aggregation Method: Percent Present**Component Percent Cutoff: None Specified**Tie-break Rule: Lower*

References

American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

National Research Council. 1995. Wetlands: Characteristics and boundaries.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_054262

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service, U.S. Department of Agriculture Handbook 436. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053577

Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053580

Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.

United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.

United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053374

United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. <http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelprdb1043084>

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United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf

Appendix C: National Wetland Inventory



U.S. Fish and Wildlife Service

National Wetlands Inventory

Qualls Family Property



March 13, 2025

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland

- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

Appendix D: Site Photographs

Site Visit Photo Log

DISCLAIMER: DISREGARD NAMING CONVENTION ON PHOTOS, IT IS OFF

North East Elevation

⌚ 214°SW (T) LAT: 36.175779 LON: -85.464575 ±157ft ▲ 1105ft



Photo 1

UPL-1

Image shows upland soil characteristics.

North East Elevation

⌚ 228°SW (T) LAT: 36.175732 LON: -85.464510 ±144ft ▲ 1105ft



Photo 2

UPL-1

Image shows where soil pit was dug, no hydrology present.

North East Elevation

⌚ 236°SW (T) LAT: 36.176340 LON: -85.463231 ±45ft ▲ 1083ft



WET-1
RaganSmith Associates

Qualls Wetland
25 Feb 2025, 11:44:49

Photo 3

WTL-1

Image shows wetland test pit, very wet soils, saturation, and surface water.

East Elevation

⌚ 249°W (T) LAT: 36.176414 LON: -85.463260 ±9ft ▲ 1094ft



WET-1
RaganSmith Associates

Qualls Wetland
25 Feb 2025, 11:48:37

Photo 4

WTL-1

Image shows surface water visible where test pit was dug. High water table

South West Elevation

43°NE (T) LAT: 36.176316 LON: -85.463219 ±9ft ▲ 1101ft



Photo 5

UPL-2

Upland testpit.



Photo 6

UPL-2

Upland soils

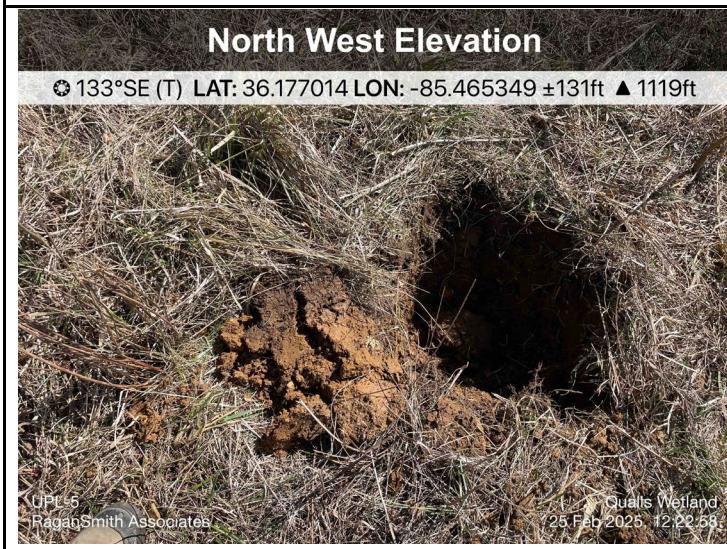


Photo 7

UPL-3

Upland testpit



Photo 8

WTL-2

Image shows wetland soils.

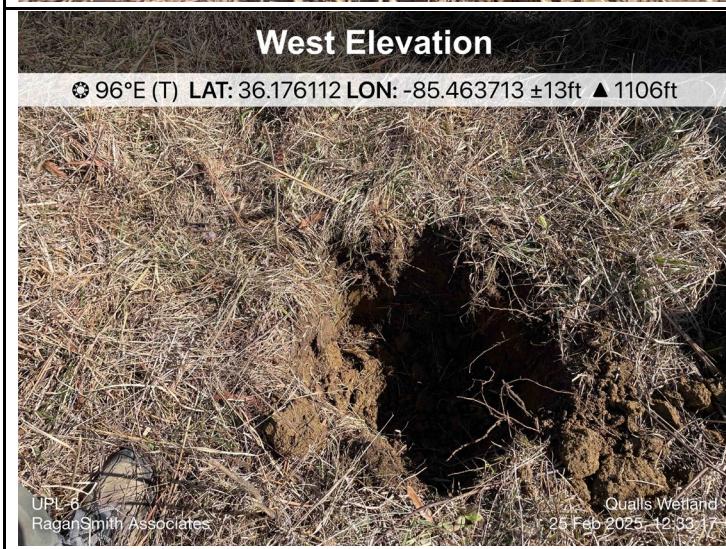


Photo 9

UPL-4

Image shows upland testpit



Photo 10

UPL-4

Image shows upland soils.

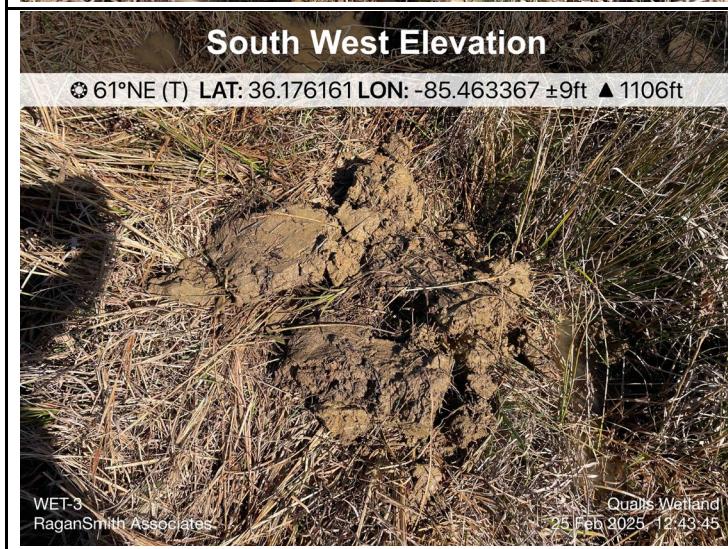


Photo 11

WTL-3

Image shows wetland soils and common rush.

West Elevation

⌚ 111°E (T) LAT: 36.175928 LON: -85.463450 ±55ft ▲ 1118ft



WET-3

RaganSmith Associates

Qualls Wetland

25 Feb 2025, 12:44:29

Photo 12

WTL-3

Image shows wetland testpit filled with water. High water table and surface water present.



Photo 13

Image shows common representative of veg community.



Photo 14

WTL-4

Image shows wetland point, high water table and surface water.

1545 E Tenth St Cookeville TN

⌚ 307°NW (T) LAT: 36.177287 LON: -85.463678 ±9ft ▲ 1104ft



Upl-7
RaganSmith Associates

Qualls Wetland
25 Feb 2025 13:48:10

Photo 15

UPL-5

Upland testpit.

1545 E Tenth St Cookeville TN

⌚ 335°NW (T) LAT: 36.177378 LON: -85.463358 ±22ft ▲ 1097ft



Wet-5
RaganSmith Associates

Qualls Wetland
25 Feb 2025 13:57:05

Photo 16

WTL-5

Wetland soils.



Photo 17

WTL-5

Wetland testpit.



Photo 18

UPL-6

Upland testpit.



Photo 19

UPL-6

Upland pit.



Photo 20

WTL, testpit 1 for WTL-2

Image shows common rush in wetland 2.

1545 E Tenth St Cookeville TN

40°NE (T) LAT: 36.176133 LON: -85.462111 ±13ft ▲ 1097ft



RaganSmith Associates

Qualls Wetland
25 Feb 2025, 14:22:27

Photo 21

WTL-2

Image shows Hazel Alder which is an obligate wetland species.

1545 E Tenth St Cookeville TN

⌚ 110°E (T) LAT: 36.176153 LON: -85.462044 ±29ft ▲ 1101ft



1545 E Tenth St Cookeville TN

⌚ 224°SW (T) LAT: 36.176200 LON: -85.462309 ±36ft ▲ 1096ft



Photo 22

Image shows WTL-2 testpit, high water table and surface water.

Photo 23

Image shows testpit in WTL-2.



Photo 24

Image shows an upland testpit near WTL-2

1680 Bennie Dr Cookeville TN

40°NE (T) LAT: 36.175265 LON: -85.462902 ±137ft ▲ 1132ft



Qualls Wetland
25 Feb 2025, 14:49:36

Photo 25

Image shows upland soils near WTL-2, to determine line.

1680 Bennie Dr Cookeville TN

● 101°E (T) LAT: 36.175265 LON: -85.462902 ±147ft ▲ 1132ft



UPL
RaganSmith Associates

Qualls Wetland
25 Feb 2025, 14:49:51

Photo 26

Image shows upland test pit is dry.

Appendix E: Wetland Delineation Data Sheets

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: <u>Qualls</u>	City/County: <u>COOKEVILLE</u>	Sampling Date: <u>2/25</u>
Applicant/Owner: <u>Qualls Family</u>	State: <u>TN</u>	Sampling Point: <u>WTL-1</u>
Investigator(s): <u>K. Slezak</u>	Section, Township, Range:	
Landform (hillslope, terrace, etc.):	Local relief (concave, convex, none):	Slope (%):
Subregion (LRR or MLRA): <u>LRR</u>	Lat: _____	Long: _____
Soil Map Unit Name: <u>Sp Pd</u>	Datum: _____	
Are climatic / hydrologic conditions on the site typical for this time of year? Yes <input checked="" type="checkbox"/> No _____ (If no, explain in Remarks.)		
Are Vegetation <input checked="" type="checkbox"/> , Soil <input checked="" type="checkbox"/> , or Hydrology <input checked="" type="checkbox"/> significantly disturbed?	Are "Normal Circumstances" present? Yes _____ No <input checked="" type="checkbox"/> (If needed, explain any answers in Remarks.)	
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic?		

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

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

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 <input checked="" type="checkbox"/> No _____	Depth (inches): _____
Water Table Present?	Yes <input checked="" type="checkbox"/> No _____	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes <input checked="" type="checkbox"/> No _____	Depth (inches): _____

Wetland Hydrology Present? Yes No _____

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

Remarks:

Problems veg.

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

Sampling Point: _____

Tree Stratum (Plot size: _____)		Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:		
1.	_____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)		
2.	_____	_____	_____	_____	Total Number of Dominant Species Across All Strata: _____ (B)		
3.	_____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)		
4.	_____	_____	_____	_____	Prevalence Index worksheet:		
5.	_____	_____	_____	_____	Total % Cover of: _____	Multiply by:	
6.	_____	_____	_____	_____	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 = _____		
Sapling Stratum (Plot size: _____)		50% of total cover: _____		20% of total cover: _____		Hydrophytic Vegetation Indicators:	
1.	_____	_____	_____	_____	_____	1 - Rapid Test for Hydrophytic Vegetation	
2.	_____	_____	_____	_____	_____	2 - Dominance Test is >50%	
3.	_____	_____	_____	_____	_____	3 - Prevalence Index is $\leq 3.0^1$	
4.	_____	_____	_____	_____	_____	4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)	
5.	_____	_____	_____	_____	_____	Problematic Hydrophytic Vegetation ¹ (Explain)	
6.	_____	_____	_____	_____	_____	_____	
						'Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.'	
Shrub Stratum (Plot size: _____)		50% of total cover: _____		20% of total cover: _____		Definitions of Five Vegetation Strata:	
1.	Common rush	_____	_____	_____	FACW	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).	
2.	_____	_____	_____	_____	_____	Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.	
3.	_____	_____	_____	_____	_____	Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.	
4.	_____	_____	_____	_____	_____	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.	
5.	_____	_____	_____	_____	_____	Woody vine – All woody vines, regardless of height.	
6.	_____	_____	_____	_____	_____	_____	
7.	_____	_____	_____	_____	_____	_____	
8.	_____	_____	_____	_____	_____	_____	
9.	_____	_____	_____	_____	_____	_____	
10.	_____	_____	_____	_____	_____	_____	
11.	_____	_____	_____	_____	_____	_____	

Herb Stratum (Plot size: _____)		50% of total cover: _____		20% of total cover: _____		Hydrophytic Vegetation Present?	
1.	_____	_____	_____	_____	_____	Yes _____	No <input checked="" type="checkbox"/>
2.	_____	_____	_____	_____	_____		
3.	_____	_____	_____	_____	_____		
4.	_____	_____	_____	_____	_____		
5.	_____	_____	_____	_____	_____		
Woody Vine Stratum (Plot size: _____)		50% of total cover: _____		20% of total cover: _____		_____	
1.	_____	_____	_____	_____	_____	_____	
2.	_____	_____	_____	_____	_____	_____	
3.	_____	_____	_____	_____	_____	_____	
4.	_____	_____	_____	_____	_____	_____	
5.	_____	_____	_____	_____	_____	_____	

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

SOIL

Sampling Point: WTL-1

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. Hydric Soil Indicators:

²Location: 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 Soils³:

- 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)

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

Restrictive Layer (if observed):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site:	<u>Qualls</u>	City/County:	<u>Cookville</u>	Sampling Date:	<u>2/25</u>
Applicant/Owner:	<u>Qualls farm</u>	State:	<u>TN</u>	Sampling Point:	<u>Wet 82</u>
Investigator(s):	<u>K. S. Sezak</u>	Section, Township, Range:			
Landform (hillslope, terrace, etc.):	<u>flat</u>	Local relief (concave, convex, none):			
Subregion (LRR or MLRA):	<u>CR2</u>	Lat:	Long:	Slope (%):	
Soil Map Unit Name:	<u>Pd</u>				Datum:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> (If no, explain in Remarks.)					
Are Vegetation <input checked="" type="checkbox"/> , Soil <input checked="" type="checkbox"/> , or Hydrology <input checked="" type="checkbox"/> significantly disturbed?			Are "Normal Circumstances" present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> (If needed, explain any answers in Remarks.)		
Are Vegetation <input type="checkbox"/> , Soil <input type="checkbox"/> , or Hydrology <input type="checkbox"/> naturally problematic?					

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

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Hydric Soil Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>					
Remarks: <u>Problematic wetland atypical veg due to agriculture</u>					

HYDROLOGY

Wetland Hydrology Indicators:					
Primary Indicators (minimum of one is required; check all that apply)					
<input checked="" type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Surface Soil Cracks (B6)			
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)			
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Drainage Patterns (B10)			
<input checked="" type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Moss Trim Lines (B16)			
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Dry-Season Water Table (C2)			
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Crayfish Burrows (C8)			
<input checked="" type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)			
<input checked="" type="checkbox"/> Iron Deposits (B5)		<input type="checkbox"/> Stunted or Stressed Plants (D1)			
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		<input type="checkbox"/> Geomorphic Position (D2)			
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Shallow Aquitard (D3)			
<input type="checkbox"/> Aquatic Fauna (B13)		<input type="checkbox"/> Microtopographic Relief (D4)			
		<input type="checkbox"/> FAC-Neutral Test (D5)			
Secondary Indicators (minimum of two required)					
<input type="checkbox"/> Surface Water Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): _____					
<input type="checkbox"/> Water Table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): _____					
<input type="checkbox"/> Saturation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): _____					
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>					

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

Remarks:

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

Sampling Point: _____

Tree Stratum (Plot size: _____)		Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:		
1.	_____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)		
2.	_____	_____	_____	_____	Total Number of Dominant Species Across All Strata: _____ (B)		
3.	_____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)		
4.	_____	_____	_____	_____	Prevalence Index worksheet:		
5.	_____	_____	_____	_____	Total % Cover of: _____	Multiply by:	
6.	_____	_____	_____	_____	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 = _____		
Sapling Stratum (Plot size: _____)		50% of total cover: _____		20% of total cover: _____		Hydrophytic Vegetation Indicators:	
1.	_____	_____	_____	_____	1 - Rapid Test for Hydrophytic Vegetation		
2.	_____	_____	_____	_____	2 - Dominance Test is >50%		
3.	_____	_____	_____	_____	3 - Prevalence Index is $\leq 3.0^1$		
4.	_____	_____	_____	_____	4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)		
5.	_____	_____	_____	_____	Problematic Hydrophytic Vegetation ¹ (Explain)		
6.	_____	_____	_____	_____	1 Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.		
Shrub Stratum (Plot size: _____)		50% of total cover: _____		20% of total cover: _____		Definitions of Five Vegetation Strata:	
1.	COMMON RUSH	90%	YES	FACW	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).		
2.	_____	_____	_____	_____	Sapling – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.		
3.	_____	_____	_____	_____	Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.		
4.	_____	_____	_____	_____	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.		
5.	_____	_____	_____	_____	Woody vine – All woody vines, regardless of height.		
6.	_____	_____	_____	_____			
7.	_____	_____	_____	_____			
8.	_____	_____	_____	_____			
9.	_____	_____	_____	_____			
10.	_____	_____	_____	_____			
11.	_____	_____	_____	_____			
Herb Stratum (Plot size: _____)		50% of total cover: _____		20% of total cover: _____			
1.	_____	_____	_____	_____			
2.	_____	_____	_____	_____			
3.	_____	_____	_____	_____			
4.	_____	_____	_____	_____			
5.	_____	_____	_____	_____			
6.	_____	_____	_____	_____			
7.	_____	_____	_____	_____			
8.	_____	_____	_____	_____			
9.	_____	_____	_____	_____			
10.	_____	_____	_____	_____			
11.	_____	_____	_____	_____			
Woody Vine Stratum (Plot size: _____)		50% of total cover: _____		20% of total cover: _____		Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
1.	_____	_____	_____	_____			
2.	_____	_____	_____	_____			
3.	_____	_____	_____	_____			
4.	_____	_____	_____	_____			
5.	_____	_____	_____	_____			
Remarks: (Include photo numbers here or on a separate sheet.)							

SOIL

Sampling Point: WET SP

Proto 21

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Qualls City/County: _____ Sampling Date: 2/25 NET
 Applicant/Owner: K. SUZAK QUALLS Fam State: _____ Sampling Point: WTL-2
 Investigator(s): K. SUZAK Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____
 Subregion (LRR or MLRA): LRR Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Pd NWI classification: _____
 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 Vegetation , Soil , or Hydrology naturally problematic?
 Are "Normal Circumstances" present? Yes 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 <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
Remarks:			

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 <input type="checkbox"/> No <input type="checkbox"/> Depth (inches): _____
Water Table Present?	Yes <input type="checkbox"/> No <input type="checkbox"/> Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes <input type="checkbox"/> No <input type="checkbox"/> Depth (inches): _____

Wetland Hydrology Present? Yes 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: _____

<u>Tree Stratum</u> (Plot size: _____) 1. <u>HAZEL elder</u> <u>5</u> <u>0</u> 2. 3. 4. 5. 6. _____ = Total Cover 50% of total cover: _____ 20% of total cover: _____				Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A) Total Number of Dominant Species Across All Strata: _____ (B) Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)		
<u>Sapling Stratum</u> (Plot size: _____) 1. 2. 3. 4. 5. 6. _____ = Total Cover 50% of total cover: _____ 20% of total cover: _____				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 = _____		
<u>Shrub Stratum</u> (Plot size: _____) 1. <u>common rush</u> <u>95</u> <u>1</u> 2. 3. 4. 5. 6. _____ = Total Cover 50% of total cover: _____ 20% of total cover: _____				Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50% 3 - Prevalence Index is $\leq 3.0^1$ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation ¹ (Explain)		
<u>Herb Stratum</u> (Plot size: _____) 1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. _____ = Total Cover 50% of total cover: _____ 20% of total cover: _____				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.		
<u>Woody Vine Stratum</u> (Plot size: _____) 1. 2. 3. 4. 5. _____ = Total Cover 50% of total cover: _____ 20% of total cover: _____				Definitions of Five Vegetation Strata: Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 2 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.		
Remarks: (Include photo numbers here or on a separate sheet.)				Hydrophytic Vegetation Present? Yes _____ No _____		

SOIL

Sampling Point: W100

Photo 21

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: <u>Qualls</u>	City/County: <u>Cooperville 1</u>	Sampling Date: <u>2/25</u>
Applicant/Owner: <u>Qualls family</u>	State: <u>TN</u>	Sampling Point: <u>WTL-103</u>
Investigator(s): <u>K. S. Orak</u>	Section, Township, Range:	
Landform (hillslope, terrace, etc.):	Local relief (concave, convex, none):	Slope (%):
Subregion (LRR or MLRA):	Lat:	Long:
Soil Map Unit Name: <u>Pd</u>	Datum: <u>NA</u>	
Are climatic / hydrologic conditions on the site typical for this time of year? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> (If no, explain in Remarks.)		
Are Vegetation <input checked="" type="checkbox"/> , Soil <input checked="" type="checkbox"/> , or Hydrology <input checked="" type="checkbox"/> significantly disturbed?	Are "Normal Circumstances" present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> (If needed, explain any answers in Remarks.)	
Are Vegetation <input type="checkbox"/> , Soil <input type="checkbox"/> , or Hydrology <input type="checkbox"/> naturally problematic?		

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

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

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 <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): <u>9inch</u>
Water Table Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Depth (inches): <u>3</u>
Saturation Present? (includes capillary fringe)	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Depth (inches): <u>3</u>

Wetland Hydrology Present? Yes 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: _____

Tree Stratum (Plot size: _____)		Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1.	_____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)	
2.	_____	_____	_____	_____	Total Number of Dominant Species Across All Strata: _____ (B)	
3.	_____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)	
4.	_____	_____	_____	_____		
5.	_____	_____	_____	_____		
6.	_____	_____	_____	_____		
_____ = Total Cover						
50% of total cover: _____ 20% of total cover: _____						
Sapling Stratum (Plot size: _____)				Prevalence Index worksheet:		
1.	_____	_____	_____	Total % Cover of: _____	Multiply by:	
2.	_____	_____	_____	OBL species	_____ x 1 = _____	
3.	_____	_____	_____	FACW species	_____ x 2 = _____	
4.	_____	_____	_____	FAC species	_____ x 3 = _____	
5.	_____	_____	_____	FACU species	_____ x 4 = _____	
6.	_____	_____	_____	UPL species	_____ x 5 = _____	
_____ = Total Cover					Column Totals: _____ (A) _____ (B)	
50% of total cover: _____ 20% of total cover: _____					Prevalence Index = B/A = _____	
Shrub Stratum (Plot size: _____)				Hydrophytic Vegetation Indicators:		
1.	_____	_____	_____	1 - Rapid Test for Hydrophytic Vegetation		
2.	_____	_____	_____	2 - Dominance Test is >50%		
3.	_____	_____	_____	3 - Prevalence Index is $\leq 3.0^1$		
4.	_____	_____	_____	4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)		
5.	_____	_____	_____	Problematic Hydrophytic Vegetation ¹ (Explain)		
6.	_____	_____	_____			
_____ = Total Cover						
50% of total cover: _____ 20% of total cover: _____						
Herb Stratum (Plot size: _____)				Definitions of Five Vegetation Strata:		
1.	_____	_____	_____	Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 2 in (7.6 cm) or larger in diameter at breast height (DBH).		
2.	_____	_____	_____			
3.	_____	_____	_____			
4.	_____	_____	_____			
5.	_____	_____	_____			
6.	_____	_____	_____			
7.	_____	_____	_____			
8.	_____	_____	_____			
9.	_____	_____	_____			
10.	_____	_____	_____			
11.	_____	_____	_____			
_____ = Total Cover						
50% of total cover: _____ 20% of total cover: _____						
Woody Vine Stratum (Plot size: _____)				Hydrophytic Vegetation Present?		
1.	_____	_____	_____	Yes _____ No _____		
2.	_____	_____	_____			
3.	_____	_____	_____			
4.	_____	_____	_____			
5.	_____	_____	_____			
_____ = Total Cover						
50% of total cover: _____ 20% of total cover: _____						
Remarks: (Include photo numbers here or on a separate sheet.)						problematic

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: <u>Qualls WTL</u>	City/County: <u>Cookeville</u>	Sampling Date: <u>2/25</u>
Applicant/Owner: <u>Guidels Farm</u>	State: <u>TN</u>	Sampling Point: <u>WTL-4 TP</u>
Investigator(s): <u>K.S. (ez) at</u>	Section, Township, Range:	
Landform (hillslope, terrace, etc.):	Local relief (concave, convex, none):	Slope (%):
Subregion (LRR or MLRA): <u>LRR</u>	Lat: _____	Long: _____
Soil Map Unit Name: <u>pd</u>	Datum: _____	
Are climatic / hydrologic conditions on the site typical for this time of year? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> (If no, explain in Remarks.)		
Are Vegetation <input checked="" type="checkbox"/> , Soil <input checked="" type="checkbox"/> , or Hydrology <input type="checkbox"/> significantly disturbed?	Are "Normal Circumstances" present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> (If needed, explain any answers in Remarks.)	
Are Vegetation <input type="checkbox"/> , Soil <input type="checkbox"/> , or Hydrology <input type="checkbox"/> naturally problematic?		

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

Hydrophytic Vegetation Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/>		
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/>		
Remarks: <i>Atypical problematic wetland area. Veg heavily altered</i>			

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 <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): _____
Water Table Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes <input type="checkbox"/> No <input type="checkbox"/> Depth (inches): _____

Wetland Hydrology Present? Yes 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: _____

<u>Tree Stratum</u> (Plot size: _____) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ 6. _____ _____ = Total Cover	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A) Total Number of Dominant Species Across All Strata: _____ (B) Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (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 $\leq 3.0^1$ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation ¹ (Explain)	
					Definitions of Five Vegetation Strata: Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 2 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.		
Some common rush						
				Hydrophytic Vegetation Present?	Yes _____ No _____	
Remarks: (Include photo numbers here or on a separate sheet.)						

SOIL

Sampling Point: NTL4TP

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Qualls WTL City/County: Cookville Sampling Date: 2/25
Applicant/Owner: Qualls Family State: TN Sampling Point: WTL-5TP
Investigator(s): K. Slezak Section, Township, Range: _____
Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____
Subregion (LRR or MLRA): LRR Lat: _____ Long: _____ Datum: _____
Soil Map Unit Name: Pd NWI classification: NA
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 Vegetation , Soil , or Hydrology naturally problematic?
Are "Normal Circumstances" present? Yes 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 <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland?
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Remarks:			

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)		
<input checked="" type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Moss Trim Lines (B16)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Iron Deposits (B5)		<input type="checkbox"/> Stunted or Stressed Plants (D1)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Aquatic Fauna (B13)		<input type="checkbox"/> Microtopographic Relief (D4)
		<input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations:		
Surface Water Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/> Depth (inches): _____
Water Table Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/> Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/> Depth (inches): _____
Describe Recorded Data:		
	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	

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

Remarks:

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

Sampling Point: _____

Tree Stratum (Plot size: _____)		Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:		
1.	_____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)		
2.	_____	_____	_____	_____	Total Number of Dominant Species Across All Strata: _____ (B)		
3.	_____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)		
4.	_____	_____	_____	_____	Prevalence Index worksheet:		
5.	_____	_____	_____	_____	Total % Cover of: _____	Multiply by:	
6.	_____	_____	_____	_____	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 = _____		
Sapling Stratum (Plot size: _____)		50% of total cover: _____		20% of total cover: _____		Hydrophytic Vegetation Indicators:	
1.	_____	_____	_____	_____	1 - Rapid Test for Hydrophytic Vegetation		
2.	_____	_____	_____	_____	2 - Dominance Test is >50%		
3.	_____	_____	_____	_____	3 - Prevalence Index is $\leq 3.0^1$		
4.	_____	_____	_____	_____	4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)		
5.	_____	_____	_____	_____	Problematic Hydrophytic Vegetation ¹ (Explain)		
6.	_____	_____	_____	_____	1 ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.		
Shrub Stratum (Plot size: _____)		50% of total cover: _____		20% of total cover: _____		Definitions of Five Vegetation Strata:	
1.	_____	_____	_____	_____	Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 2 in (7.6 cm) or larger in diameter at breast height (DBH).		
2.	_____	_____	_____	_____	Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.		
3.	_____	_____	_____	_____	Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.		
4.	_____	_____	_____	_____	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.		
5.	_____	_____	_____	_____	Woody vine – All woody vines, regardless of height.		
6.	_____	_____	_____	_____	problematic vlg		
7.	_____	_____	_____	_____			
8.	_____	_____	_____	_____			
9.	_____	_____	_____	_____			
10.	_____	_____	_____	_____			
11.	_____	_____	_____	_____			
					Hydrophytic Vegetation Present? Yes _____ No _____		
Woody Vine Stratum (Plot size: _____)		50% of total cover: _____		20% of total cover: _____			
1.	_____	_____	_____	_____			
2.	_____	_____	_____	_____			
3.	_____	_____	_____	_____			
4.	_____	_____	_____	_____			
5.	_____	_____	_____	_____			
Remarks: (Include photo numbers here or on a separate sheet.)							

SOIL

Sampling Point: WTL 5TP

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. Hydric Soil Indicators:

²Location: 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 Soils³.

- 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)

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

Restrictive Layer (if observed):

Type: _____

Hydric Soil Present? Yes No

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Qualls WTL City/County: Cookeville Sampling Date: 2/25
 Applicant/Owner: Qualls State: TN Sampling Point: UPL 01
 Investigator(s): K. Slizak Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____
 Subregion (LRR or MLRA): LRR Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Pd NWI classification: _____
 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 Vegetation , Soil , or Hydrology naturally problematic?
 Are "Normal Circumstances" present? Yes 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 <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland?
Hydric Soil Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Remarks:			

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
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"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Moss Trim Lines (B16)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Iron Deposits (B5)		<input type="checkbox"/> Stunted or Stressed Plants (D1)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Aquatic Fauna (B13)		<input type="checkbox"/> Microtopographic Relief (D4)
		<input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations:		
Surface Water Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____
Water Table Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

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

Sampling Point: VPL 4

Tree Stratum (Plot size: _____)		Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1.	_____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)	
2.	_____	_____	_____	_____	Total Number of Dominant Species Across All Strata: _____ (B)	
3.	_____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)	
4.	_____	_____	_____	_____		
5.	_____	_____	_____	_____		
6.	_____	_____	_____	_____		
_____ = Total Cover						
50% of total cover: _____ 20% of total cover: _____						
Sapling Stratum (Plot size: _____)				Prevalence Index worksheet:		
1.	_____	_____	_____	Total % Cover of: _____	Multiply by:	
2.	_____	_____	_____	OBL species	_____ x 1 = _____	
3.	_____	_____	_____	FACW species	_____ x 2 = _____	
4.	_____	_____	_____	FAC species	_____ x 3 = _____	
5.	_____	_____	_____	FACU species	_____ x 4 = _____	
6.	_____	_____	_____	UPL species	_____ x 5 = _____	
_____ = Total Cover					Column Totals: (A) _____ (B) _____	
50% of total cover: _____ 20% of total cover: _____					Prevalence Index = B/A = _____	
Shrub Stratum (Plot size: _____)				Hydrophytic Vegetation Indicators:		
1.	<i>CORNU S SERICEA</i>	5%	_____	1 - Rapid Test for Hydrophytic Vegetation		
2.	_____	_____	_____	2 - Dominance Test is >50%		
3.	_____	_____	_____	3 - Prevalence Index is $\leq 3.0^1$		
4.	_____	_____	_____	4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)		
5.	_____	_____	_____	Problematic Hydrophytic Vegetation ¹ (Explain)		
6.	_____	_____	_____			
_____ = Total Cover						
50% of total cover: _____ 20% of total cover: _____						
Herb Stratum (Plot size: _____)						
1.	<i>Panicum SCOPARIUM</i>	15	No	1. Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.		
2.	<i>Arimorpha parviflora</i>	50	Yes			
3.	<i>Andropogon virginicus</i>	25	Yes			
4.	<i>JUNCUS EFFUSUS</i>	190	No			
5.	_____	_____	_____			
6.	_____	_____	_____			
7.	_____	_____	_____			
8.	_____	_____	_____			
9.	_____	_____	_____			
10.	_____	_____	_____			
11.	_____	_____	_____			
_____ = Total Cover						
50% of total cover: _____ 20% of total cover: _____						
Woody Vine Stratum (Plot size: _____)						
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.)						
Hydrophytic Vegetation Present?		Yes _____		No <input checked="" type="checkbox"/>		

SOIL.

Sampling Point:

VPL¹

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

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.
Hydric Soil Indicators:

²Location: 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 Soils³.

- 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)

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

Restrictive Layer (if observed):

Type: _____

Remarks:

Hydric Soil Present? Yes No

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Quaas WTL City/County: Cookeville Sampling Date: _____
Applicant/Owner: Quaas Family State: TN Sampling Point: VPL-002
Investigator(s): K. Slezaik Section, Township, Range: _____
Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____
Subregion (LRR or MLRA): LRR Lat: _____ Long: _____ Datum: _____
Soil Map Unit Name: Pd NWI classification: NA
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 Vegetation , Soil , or Hydrology naturally problematic?
Are "Normal Circumstances" present? Yes 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 <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland?
Hydric Soil Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Remarks:			

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
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"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Moss Trim Lines (B16)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Iron Deposits (B5)		<input type="checkbox"/> Stunted or Stressed Plants (D1)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Aquatic Fauna (B13)		<input type="checkbox"/> Microtopographic Relief (D4)
		<input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations:		
Surface Water Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____
Water Table Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: disturbed, problematic veg.		

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

Sampling Point: _____

Tree Stratum (Plot size: _____)		Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1.	_____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)	
2.	_____	_____	_____	_____	Total Number of Dominant Species Across All Strata: _____ (B)	
3.	_____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)	
4.	_____	_____	_____	_____		
5.	_____	_____	_____	_____		
6.	_____	_____	_____	_____		
_____ = Total Cover						
50% of total cover: _____ 20% of total cover: _____						
Sapling Stratum (Plot size: _____)				Prevalence Index worksheet:		
1.	_____	_____	_____	Total % Cover of:	Multiply by:	
2.	_____	_____	_____	OBL species	_____ x 1 = _____	
3.	_____	_____	_____	FACW species	_____ x 2 = _____	
4.	_____	_____	_____	FAC species	_____ x 3 = _____	
5.	_____	_____	_____	FACU species	_____ x 4 = _____	
6.	_____	_____	_____	UPL species	_____ x 5 = _____	
_____ = Total Cover					Column Totals: _____ (A) _____ (B)	
50% of total cover: _____ 20% of total cover: _____					Prevalence Index = B/A = _____	
Shrub Stratum (Plot size: _____)				Hydrophytic Vegetation Indicators:		
1.	_____	_____	_____	1 - Rapid Test for Hydrophytic Vegetation		
2.	_____	_____	_____	2 - Dominance Test is >50%		
3.	_____	_____	_____	3 - Prevalence Index is $\leq 3.0^1$		
4.	_____	_____	_____	4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)		
5.	_____	_____	_____	Problematic Hydrophytic Vegetation ¹ (Explain)		
6.	_____	_____	_____			
_____ = Total Cover						
50% of total cover: _____ 20% of total cover: _____						
Herb Stratum (Plot size: _____)						
1.	_____	_____	_____	1 Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.		
2.	_____	_____	_____			
3.	_____	_____	_____			
4.	_____	_____	_____			
5.	_____	_____	_____			
6.	_____	_____	_____			
7.	_____	_____	_____			
8.	_____	_____	_____			
9.	_____	_____	_____			
10.	_____	_____	_____			
11.	_____	_____	_____			
_____ = Total Cover						
50% of total cover: _____ 20% of total cover: _____						
Woody Vine Stratum (Plot size: _____)						
1.	_____	_____	_____	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).		
2.	_____	_____	_____			
3.	_____	_____	_____	Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.		
4.	_____	_____	_____			
5.	_____	_____	_____	Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.		
_____ = Total Cover						
50% of total cover: _____ 20% of total cover: _____						
Remarks: (Include photo numbers here or on a separate sheet.)				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.		
				<i>problematic Veg</i>		
				Hydrophytic Vegetation Present?	Yes _____ No _____	

SOIL

Sampling Point: UPL 02

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.
Hydric Soil Indicators:

²Location: 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 Soils³:

- 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)

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

Restrictive Layer (if observed):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes No

large rocks in soil

Red clay present.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Qualls WTL City/County: COOKVILLE Sampling Date: 2/25
 Applicant/Owner: Qualls Fam State: TN Sampling Point: UPL 113
 Investigator(s): K. Slezak Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____
 Subregion (LRR or MLRA): LRR Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Po NWI classification: _____
 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 Vegetation , Soil , or Hydrology naturally problematic?
 Are "Normal Circumstances" present? Yes 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 <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland?
Hydric Soil Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Wetland Hydrology Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Remarks:		

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 <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____
Water Table Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____

Wetland Hydrology Present? Yes 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: _____

Tree Stratum (Plot size: _____)		Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:		
1.	_____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)		
2.	_____	_____	_____	_____	Total Number of Dominant Species Across All Strata: _____ (B)		
3.	_____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)		
4.	_____	_____	_____	_____	Prevalence Index worksheet:		
5.	_____	_____	_____	_____	Total % Cover of: _____	Multiply by:	
6.	_____	_____	_____	_____	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 = _____		
Sapling Stratum (Plot size: _____)		50% of total cover: _____		20% of total cover: _____		Hydrophytic Vegetation Indicators:	
1.	_____	_____	_____	_____	1 - Rapid Test for Hydrophytic Vegetation		
2.	_____	_____	_____	_____	2 - Dominance Test is >50%		
3.	_____	_____	_____	_____	3 - Prevalence Index is $\leq 3.0^1$		
4.	_____	_____	_____	_____	4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)		
5.	_____	_____	_____	_____	Problematic Hydrophytic Vegetation ¹ (Explain)		
6.	_____	_____	_____	_____	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.		
Shrub Stratum (Plot size: _____)		50% of total cover: _____		20% of total cover: _____		Definitions of Five Vegetation Strata:	
1.	_____	_____	_____	_____	Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 2 in (7.6 cm) or larger in diameter at breast height (DBH).		
2.	_____	_____	_____	_____	Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.		
3.	_____	_____	_____	_____	Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.		
4.	_____	_____	_____	_____	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.		
5.	_____	_____	_____	_____	Woody vine – All woody vines, regardless of height.		
6.	_____	_____	_____	_____			
7.	_____	_____	_____	_____			
8.	_____	_____	_____	_____			
9.	_____	_____	_____	_____			
10.	_____	_____	_____	_____			
11.	_____	_____	_____	_____			
					Total Cover		
Herb Stratum (Plot size: _____)		50% of total cover: _____		20% of total cover: _____			
1.	_____	_____	_____	_____			
2.	_____	_____	_____	_____			
3.	_____	_____	_____	_____			
4.	_____	_____	_____	_____			
5.	_____	_____	_____	_____			
6.	_____	_____	_____	_____			
7.	_____	_____	_____	_____			
8.	_____	_____	_____	_____			
9.	_____	_____	_____	_____			
10.	_____	_____	_____	_____			
11.	_____	_____	_____	_____			
					Total Cover		
Woody Vine Stratum (Plot size: _____)		50% of total cover: _____		20% of total cover: _____		Hydrophytic Vegetation Present?	
1.	_____	_____	_____	_____	Yes _____		
2.	_____	_____	_____	_____	No _____		
3.	_____	_____	_____	_____			
4.	_____	_____	_____	_____			
5.	_____	_____	_____	_____			
Remarks: (Include photo numbers here or on a separate sheet.)							

SOIL

Sampling Point: UPL ~~11~~ 3

Restrictive Layer (if observed):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

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

Indicators for Pore Lining

Indicators for Problematic Hydric Soils³:

- 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)

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

Depth (inches)	Matrix		Redox Features					Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	
0-12	4/6	10YR	100					100m

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sample

Hydric Soil Indicators:

²Location: PL=Pore Lining, M=Matrix

- 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 Soils³:

- 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)

Resiniferous Layer (if observed):

Hydric Soil Present? Yes

Type: _____
Depth (inches): _____

Remarks:

Soil Present? Yes No

US Army Corps of Engineers

Eastern Mountains and Piedmont – Version 2.0

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: <u>Qua's WTC</u>	City/County: <u>COOKEVILLE</u>	Sampling Date: <u>2/25</u>
Applicant/Owner: <u>K. Sleath</u>	State: <u>TN</u>	Sampling Point: <u>UPL #4</u>
Investigator(s): <u> </u>	Section, Township, Range: <u> </u>	
Landform (hillslope, terrace, etc.): <u> </u>	Local relief (concave, convex, none): <u> </u>	Slope (%): <u> </u>
Subregion (LRR or MLRA): <u>LRR</u>	Lat: <u> </u>	Long: <u> </u>
Soil Map Unit Name: <u>Pd</u>	Datum: <u> </u>	
Are climatic / hydrologic conditions on the site typical for this time of year? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> (If no, explain in Remarks.)		
Are Vegetation <input checked="" type="checkbox"/> , Soil <input checked="" type="checkbox"/> , or Hydrology <input checked="" type="checkbox"/> significantly disturbed? Are "Normal Circumstances" present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> (If needed, explain any answers in Remarks.)		
Are Vegetation <input type="checkbox"/> , Soil <input type="checkbox"/> , or Hydrology <input type="checkbox"/> naturally problematic?		

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

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

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 <input type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u> </u>	
Water Table Present?	Yes <input type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u> </u>	
Saturation Present? (includes capillary fringe)	Yes <input type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u> </u>	

Wetland Hydrology Present? Yes 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: _____

Tree Stratum (Plot size: _____)		Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:			
1.	_____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)			
2.	_____	_____	_____	_____	Total Number of Dominant Species Across All Strata: _____ (B)			
3.	_____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)			
4.	_____	_____	_____	_____	Prevalence Index worksheet:			
5.	_____	_____	_____	_____	Total % Cover of: _____	Multiply by:		
6.	_____	_____	_____	_____	_____	_____		
= Total Cover					OBL species	_____ x 1 = _____		
50% of total cover: _____ 20% of total cover: _____					FACW species	_____ x 2 = _____		
Sapling Stratum (Plot size: _____)							FAC species	_____ x 3 = _____
1.	_____	_____	_____	_____	FACU species	_____ x 4 = _____		
2.	_____	_____	_____	_____	UPL species	_____ x 5 = _____		
3.	_____	_____	_____	_____	Column Totals: _____ (A)	_____ (B)		
4.	_____	_____	_____	_____	Prevalence Index = B/A = _____			
5.	_____	_____	_____	_____	Hydrophytic Vegetation Indicators:			
6.	_____	_____	_____	_____	1 - Rapid Test for Hydrophytic Vegetation			
= Total Cover					2 - Dominance Test is >50%			
50% of total cover: _____ 20% of total cover: _____					3 - Prevalence Index is $\leq 3.0^1$			
Shrub Stratum (Plot size: _____)							4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)	
1.	_____	_____	_____	_____	Problematic Hydrophytic Vegetation ¹ (Explain)			
2.	_____	_____	_____	_____				
3.	_____	_____	_____	_____				
4.	_____	_____	_____	_____				
5.	_____	_____	_____	_____				
6.	_____	_____	_____	_____				
= Total Cover					'Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.'			
50% of total cover: _____ 20% of total cover: _____					Definitions of Five Vegetation Strata:			
Herb Stratum (Plot size: _____)							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).	
1.	_____	_____	_____	_____	_____	_____		
2.	_____	_____	_____	_____	_____	_____		
3.	_____	_____	_____	_____	_____	_____		
4.	_____	_____	_____	_____	_____	_____		
5.	_____	_____	_____	_____	_____	_____		
6.	_____	_____	_____	_____	_____	_____		
7.	_____	_____	_____	_____	_____	_____		
8.	_____	_____	_____	_____	_____	_____		
9.	_____	_____	_____	_____	_____	_____		
10.	_____	_____	_____	_____	_____	_____		
11.	_____	_____	_____	_____	_____	_____		
= Total Cover					Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.			
50% of total cover: _____ 20% of total cover: _____					Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.			
Woody Vine Stratum (Plot size: _____)							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.	
1.	_____	_____	_____	_____	_____	_____		
2.	_____	_____	_____	_____	_____	_____		
3.	_____	_____	_____	_____	_____	_____		
4.	_____	_____	_____	_____	_____	_____		
5.	_____	_____	_____	_____	_____	_____		
= Total Cover					Woody vine – All woody vines, regardless of height.			
50% of total cover: _____ 20% of total cover: _____								
Remarks: (Include photo numbers here or on a separate sheet.)							Hydrophytic Vegetation Present? Yes _____ No _____	

SOIL

Sampling Point: UPL 114

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

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. Hydric Soil Indicators:

²Location: 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 Soils³:

- 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)

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

Restrictive Layer (if observed):

Type: _____

Hydric Soil Present? Yes No

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

photo
25/26

Project/Site: Qualls City/County: Cookville Sampling Date: 0PL N
 Applicant/Owner: Qualls Family State: TN Sampling Point: _____
 Investigator(s): K.Slezak Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____
 Subregion (LRR or MLRA): LRR Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Pol / WAC2 NWI classification: _____
 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 Vegetation , Soil , or Hydrology naturally problematic?
 Are "Normal Circumstances" present? Yes 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 <input type="checkbox"/> No <input checked="" type="checkbox"/>	Hydric Soil Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Wetland Hydrology Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks:							

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 <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____
Water Table Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____

Wetland Hydrology Present? Yes No

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

Remarks:

upland point used for WTL-12.

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

Sampling Point: UPL

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)	
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: _____ (B)	
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)	
4. _____	_____	_____	_____	Prevalence Index worksheet:	
5. _____	_____	_____	_____	Total % Cover of: _____	Multiply by:
6. _____	_____	_____	_____	_____ x 1 = _____	
= Total Cover				OBL species _____ x 2 = _____	
50% of total cover: _____ 20% of total cover: _____				FAC species _____ x 3 = _____	
= Total Cover				FACU species _____ x 4 = _____	
50% of total cover: _____ 20% of total cover: _____				UPL species _____ x 5 = _____	
= Total Cover				Column Totals: _____ (A) _____ (B)	
50% of total cover: _____ 20% of total cover: _____				Prevalence Index = B/A = _____	
= Total Cover				Hydrophytic Vegetation Indicators:	
50% of total cover: _____ 20% of total cover: _____				<ul style="list-style-type: none"> 1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50% 3 - Prevalence Index is $\leq 3.0^1$ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation¹ (Explain) 	
= Total Cover				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
50% of total cover: _____ 20% of total cover: _____				Definitions of Five Vegetation Strata:	
= Total Cover				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).	
50% of total cover: _____ 20% of total cover: _____				Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in (7.6 cm) DBH.	
= Total Cover				Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.	
50% of total cover: _____ 20% of total cover: _____				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.	
= Total Cover				Woody vine – All woody vines, regardless of height.	
50% of total cover: _____ 20% of total cover: _____				<i>problematic</i>	
= Total Cover				Hydrophytic Vegetation Present?	
50% of total cover: _____ 20% of total cover: _____				Yes _____ No _____	
Remarks: (Include photo numbers here or on a separate sheet.)					

SOIL

Sampling Point: UPLN

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

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. Hydric Soil Indicators:

²Location: 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 Soils³.

- 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)

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

Restrictive Layer (if observed):

Type: _____

Hydric Soil Present? Yes No

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Qualls City/County: Cookville Sampling Date: 5/15
 Applicant/Owner: Qualls Family State: TN Sampling Point: _____
 Investigator(s): K. Slezak Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____
 Subregion (LRR or MLRA): LER Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Pd1/WAC2 NWI classification: NA
 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 <u>/</u>	Is the Sampled Area within a Wetland?	Yes _____ No <u>/</u>
Hydric Soil Present?	Yes _____ No <u>/</u>		
Wetland Hydrology Present?	Yes _____ No <u>/</u>		
Remarks:			

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 <u>/</u>	Depth (inches): _____
Water Table Present?	Yes _____ No <u>/</u>	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____ No <u>/</u>	Depth (inches): _____

Wetland Hydrology Present? Yes _____ 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: _____

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.	_____	_____	_____
2.	_____	_____	_____
3.	_____	_____	_____
4.	_____	_____	_____
5.	_____	_____	_____
6.	_____	_____	_____
7.	_____	_____	_____
8.	_____	_____	_____
9.	_____	_____	_____
10.	_____	_____	_____
11.	_____	_____	_____

_____ = Total Cover

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

Woody Vine Stratum (Plot size: _____)

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: _____ (A)

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

Percent of Dominant Species
That Are OBL, FACW, or FAC: _____ (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 $\leq 3.0^1$

4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation¹ (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.

NA

Hydrophytic
Vegetation
Present?

Yes _____ No _____

