

## **Attachment C**

### **Headwaters, Inc. Wetlands Assessment Report**



July 21, 2014

Nancy White Perkins  
Executive Director  
Craftsmen's Guild of Mississippi  
950 Rice Road  
Ridgeland, Mississippi 39157

**RE:   Craftsmen Guild of Mississippi (Guild)  
      Mississippi Crafts Center Walkway Project  
      Madison County, Mississippi  
      Wetlands Assessment**

Dear Ms. Perkins:

As per your request, Headwaters, Inc. has completed an assessment on the above referenced Mississippi Crafts Center Walkway Project property located between the Natchez Trace Parkway and the Guild's Mississippi Crafts Center, Madison County, Mississippi. Headwaters completed a site review and assessment, including a wetlands assessment of the subject property on July 11, 2014.

Our assessment was based upon the project site boundaries as depicted on the site maps provided by your office and by our field assessment of the project site boundaries. The subject property is located within a portion of Sections 27 & 28, Township 7 North, Range 2 East, Madison County, Mississippi, comprising of an approximate 2.60 acre parcel of land located along the National Park Service Natchez Trace Parkway. The project site is also located north of the Guild's MS Crafts Center located along Rice Road. The project site may also be referenced by Global Positioning System (GPS) coordinates N32.424059 - W90.088858

The initial phase of this assessment included the assimilation of all available information related to the property that would help establish a historical perspective of the property, and to highlight the physical attributes of the property and the primary drainage patterns of the property. An integral component of this phase was the review of the 2013 ESRI World Imagery color photography and the U.S.G.S. Madison, Mississippi Quadrangle Map ([Appendix I](#)).

Our initial review of the Madison County, Mississippi Soil Survey revealed that two (2) soil types are present within the subject property. The proposed site is predominately occupied by Oaklimer silt loam soil type. The remaining portions of the site are occupied by a Providence silt loam soil type, 2 to 5 percent slopes, eroded. These soil types are described within the NRCS Custom Soil Resource Report for Madison County, Mississippi included as [Appendix II](#) to this wetland assessment letter.

Based upon our investigations of available aerial photography, U.S.G.S. quadrangle maps, as well as interviews with persons knowledgeable of the subject property, it was confirmed that the proposed site is primarily within mixed hardwood upland habitat with occasional pine mixed in throughout. Access to the proposed project site is provided via the parking area off of the Natchez Trace Parkway and from the MS Crafts Center. Based upon our investigations and assessment of the adjoining properties, it is assumed that a mixed hardwood and pine habitat has previously occupied the site and surrounding areas. The subject property appears to have remained in its natural state with very few site disturbances. As previously described, the majority of the project area is within a mixed hardwood habitat. The Old Natchez Trace Parkway used to travel through the subject property, but no other land uses other than what has been previously mentioned are known for the property.

The field assessment confirmed that the subject property is located within an upland habitat comprised of a mixed hardwood habitat with occasional pine species mixed in throughout. The primary vegetative components within the upland habitat consisted of water oak (*Quercus nigra*), post oak (*Quercus stellata*), southern red oak (*Quercus falcata*), winged elm (*Ulmus alata*), sweet gum (*Liquidambar styraciflua*), Eastern red cedar (*Juniperus virginiana*), loblolly pine (*Pinus taeda*), Eastern redbud (*Cercis canadensis*), red maple (*Acer rubrum*), Chinese privet (*Ligustrum sinense*), black cherry (*Prunus serotina*), poison ivy (*Toxicodendron radicans*), muscadine vine (*Vitis rotundifolia*), *Smilax* spp., *Carex* spp., southern dewberry (*Rubus trivialis*), poison oak (*Toxicodendron quercifolia*), among others. The soil matrix colors throughout the non-wetland, upland area ranged from a 4/4 (dark yellowish brown), 5/4 (yellowish brown) to a 6/3 (pale brown) on the 10YR Munsell Soil color chart with a limited observed occurrence of soil mottling. Based upon our assessment of the project site location and review of the project limits, all activities are expected to remain within the confines of the forested upland habitat.

Given the nature of the project, systematic transect lines were not employed in the field delineation methodology. Rather, wetland data points were established to verify the potential presence of the suspected jurisdictional wetland areas or “other waters of the United States,” and to confirm the presence of the primary upland habitat. A mapping system was employed to delineate any wetland habitats/boundaries and “other waters of the United States” that may be present within the project area.

Wetland delineation points were established using a systematic approach based upon spacing between points, observations of vegetative and topographic features, and transitions that were encountered in the field. The delineation points were spaced to insure adequate coverage of each of the predominant habitat types and subtypes present or to confirm the limits of the proposed test site. Wetland delineation points were identified utilizing the GPS and enhanced by gathering compass bearings and distances relative to wetland juxtaposition. These delineation point locations were established on the site map relative to their assigned GPS coordinates. The in-field mapping was justified to the 2013 ESRI World Imagery aerial photograph utilizing accepted photo interpretation methods.

Based upon our field investigations, it was confirmed that the subject property is confined within an upland (non-wetland) habitat. As a result, the field investigations did not reveal the presence of any jurisdictional wetlands and/or “other waters of the United States” within the

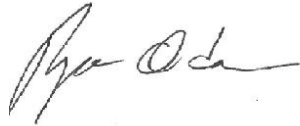
limits of the project site. Given the upland nature of the subject property and that no jurisdictional wetlands and/or "other waters of the United States" were identified within the limits of the project site, a U.S. Army Corps of Engineers (USACE) Section 404 wetlands permit will not be required for the development of this site.

The field investigations did reveal that the adjoining properties to the west remain undeveloped with the potential for jurisdictional habitats. As a result, if the project scope should change, further review and consideration of potential Section 404 wetland permitting should be considered.

The adjoining properties to the west remain undeveloped and are occupied by forested habitats and scrub shrub habitats. Although no wetlands were identified within the project site, the natural topographical relief is expected to carry storm water runoff via overland flow generally to the west towards potentially jurisdictional areas. As a result, it is recommended that proper Best Management Practices (BMP's) be maintained through the life of the project to ensure that there are no adverse effects to these adjacent habitats.

As always, we appreciate the opportunity to be of assistance to you in this matter. If you have any questions or need any additional information, please do not hesitate to contact us.

Sincerely,



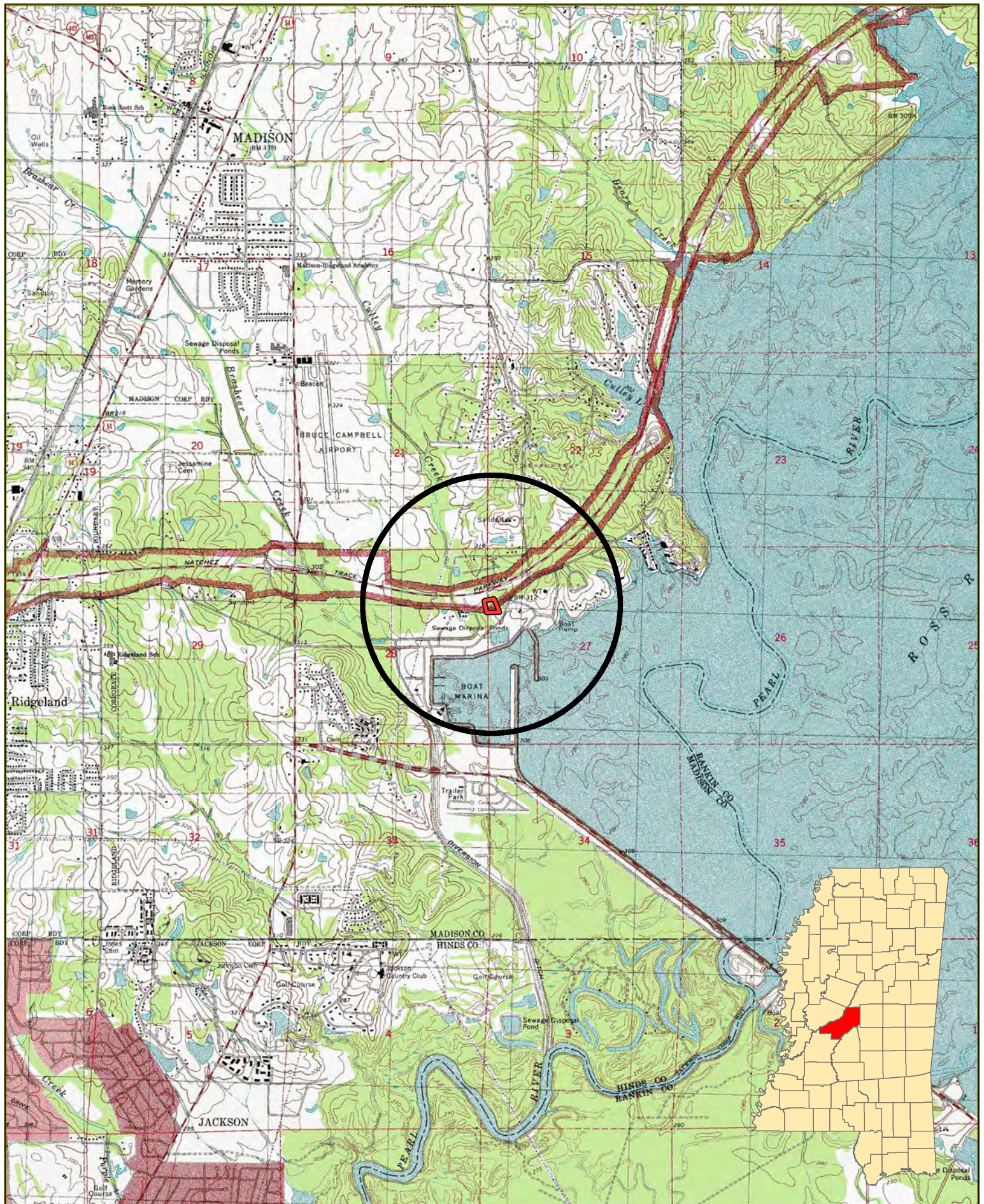
Ryan Odom  
Environmental Specialist

RMO\  
Attachments

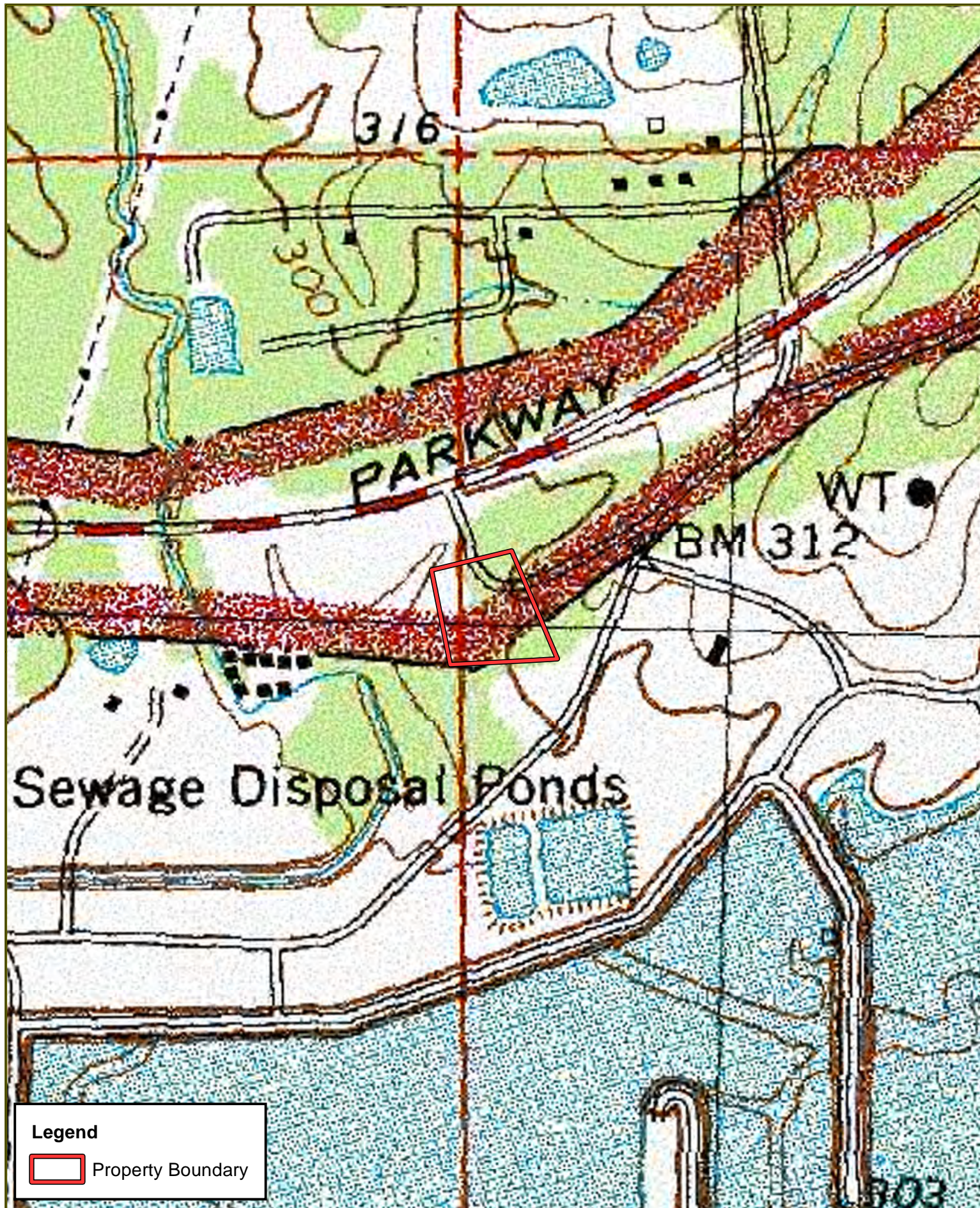
## Appendix I

- General Location Map
- U.S.G.S. Madison, Mississippi Quadrangle
- 2013 ESRI World Imagery Color Photograph

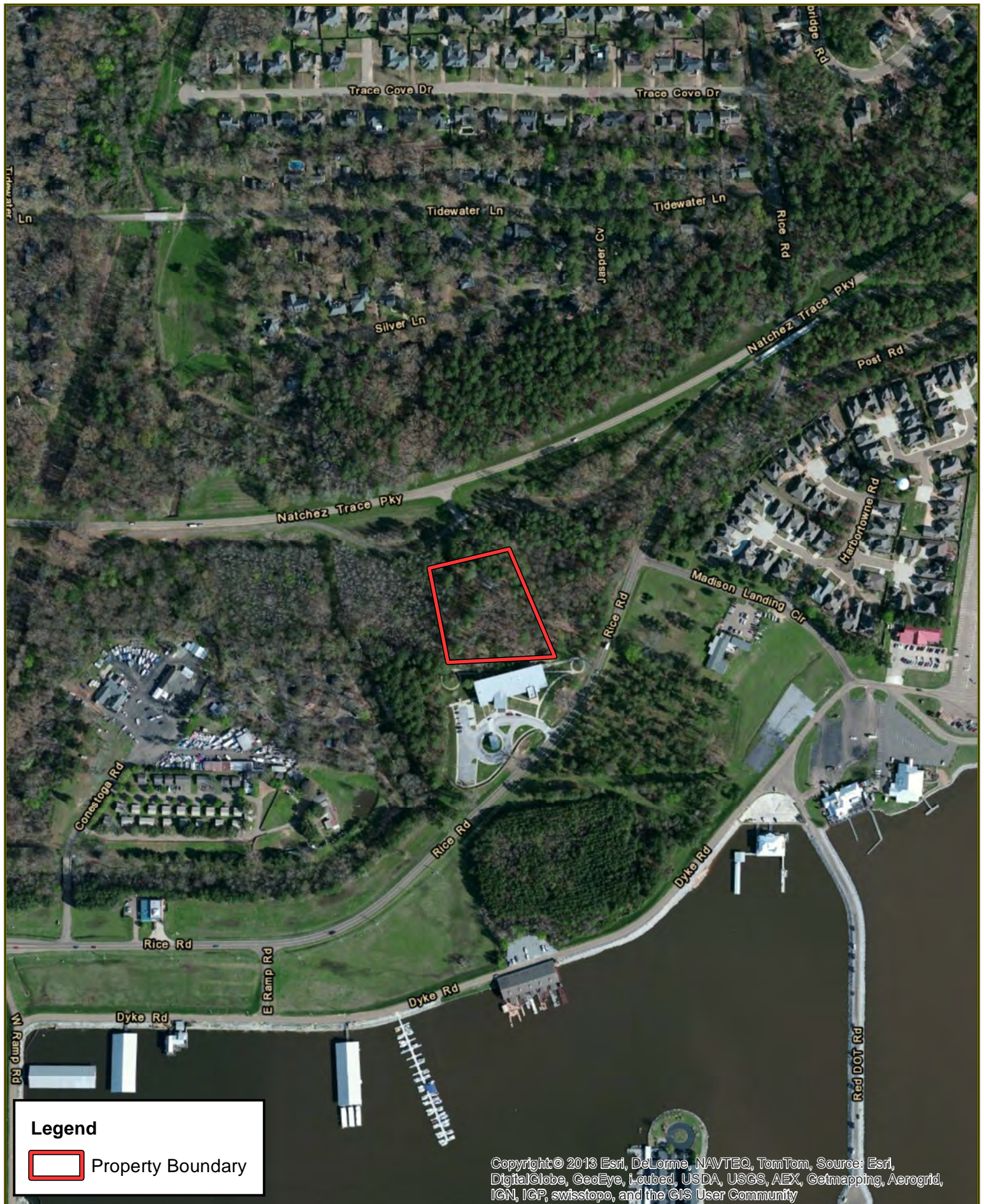












**Legend**



Property Boundary

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## Appendix II

- Custom Soil Resource Report for Rankin County, Mississippi





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 **Madison County, Mississippi**

**Craftsmen's Guild of Mississippi**



July 15, 2014



# Preface

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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 (<http://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](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

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

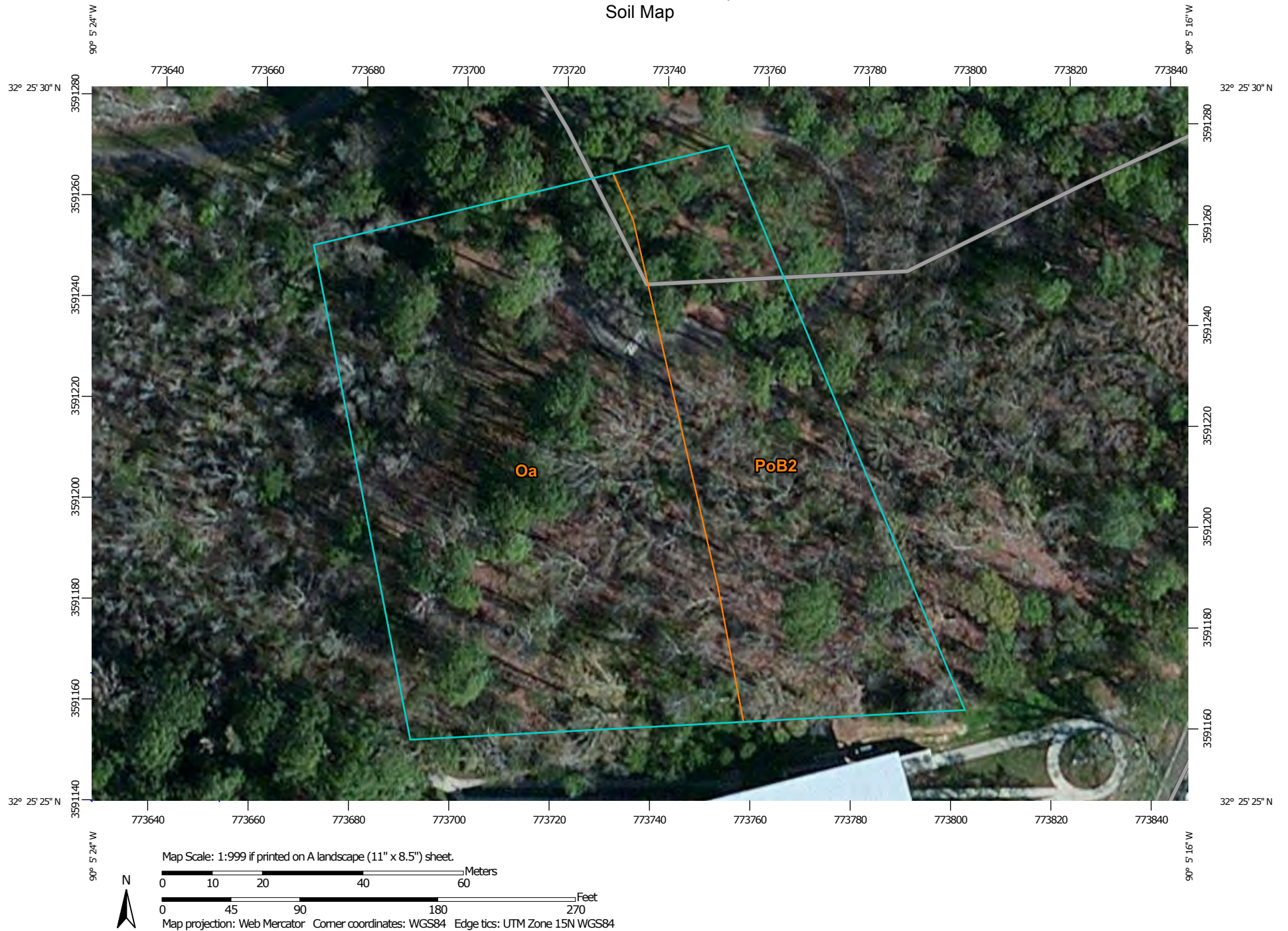


# Soil Map

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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






# Custom Soil Resource Report

## 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 1:20,000.

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: <http://websoilsurvey.nrcs.usda.gov>  
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: Madison County, Mississippi  
Survey Area Data: Version 8, Dec 24, 2013

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

Date(s) aerial images were photographed: May 4, 2010—Oct 2, 2011

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

## Map Unit Legend

Madison County, Mississippi (MS089)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Oa	Oaklimeter silt loam	1.7	64.9%
PoB2	Providence silt loam, 2 to 5 percent slopes, eroded	0.9	35.1%
<b>Totals for Area of Interest</b>		<b>2.6</b>	<b>100.0%</b>

## Map Unit Descriptions

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.



## Custom Soil Resource Report

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.

## Madison County, Mississippi

### Oa—Oaklimeter silt loam

#### Map Unit Setting

*Elevation:* 10 to 50 feet

*Mean annual precipitation:* 60 to 75 inches

*Mean annual air temperature:* 64 to 70 degrees F

*Frost-free period:* 270 to 335 days

#### Map Unit Composition

*Oaklimeter and similar soils:* 90 percent

*Minor components:* 5 percent

#### Description of Oaklimeter

##### Setting

*Landform:* Flood plains

*Landform position (three-dimensional):* Tread

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Parent material:* Silty alluvium deposits

##### Typical profile

*H1 - 0 to 15 inches:* silt loam

*H2 - 15 to 71 inches:* very fine sandy loam

*H3 - 71 to 163 inches:* silt loam

##### Properties and qualities

*Slope:* 0 to 2 percent

*Depth to restrictive feature:* More than 80 inches

*Natural drainage class:* Moderately 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:* About 18 to 30 inches

*Frequency of flooding:* Occasional

*Frequency of ponding:* None

*Available water storage in profile:* High (about 11.9 inches)

##### Interpretive groups

*Farmland classification:* Prime farmland if protected from flooding or not frequently flooded during the growing season

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 2w

*Hydrologic Soil Group:* C

#### Minor Components

##### Unnamed hydric soils (134de)

*Percent of map unit:* 5 percent

*Landform:* Depressions

*Landform position (three-dimensional):* Dip

*Down-slope shape:* Concave

*Across-slope shape:* Concave



## **PoB2—Providence silt loam, 2 to 5 percent slopes, eroded**

### **Map Unit Setting**

*Mean annual precipitation:* 60 to 75 inches

*Mean annual air temperature:* 64 to 70 degrees F

*Frost-free period:* 270 to 335 days

### **Map Unit Composition**

*Providence and similar soils:* 90 percent

### **Description of Providence**

#### **Setting**

*Landform position (two-dimensional):* Shoulder

*Landform position (three-dimensional):* Side slope

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Parent material:* Silty loess over sandy marine deposits

#### **Typical profile**

*H1 - 0 to 13 inches:* silt loam

*H2 - 13 to 59 inches:* silty clay loam

*H3 - 59 to 112 inches:* silt loam

*H4 - 112 to 178 inches:* clay loam

#### **Properties and qualities**

*Slope:* 2 to 5 percent

*Depth to restrictive feature:* 18 to 38 inches to fragipan

*Natural drainage class:* Moderately well drained

*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high (0.20 to 0.60 in/hr)

*Depth to water table:* About 12 to 24 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Available water storage in profile:* Low (about 4.9 inches)

#### **Interpretive groups**

*Farmland classification:* All areas are prime farmland

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 2e

*Hydrologic Soil Group:* C/D

# **Soil Information for All Uses**

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## **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**

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.

## Custom Soil Resource Report

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.

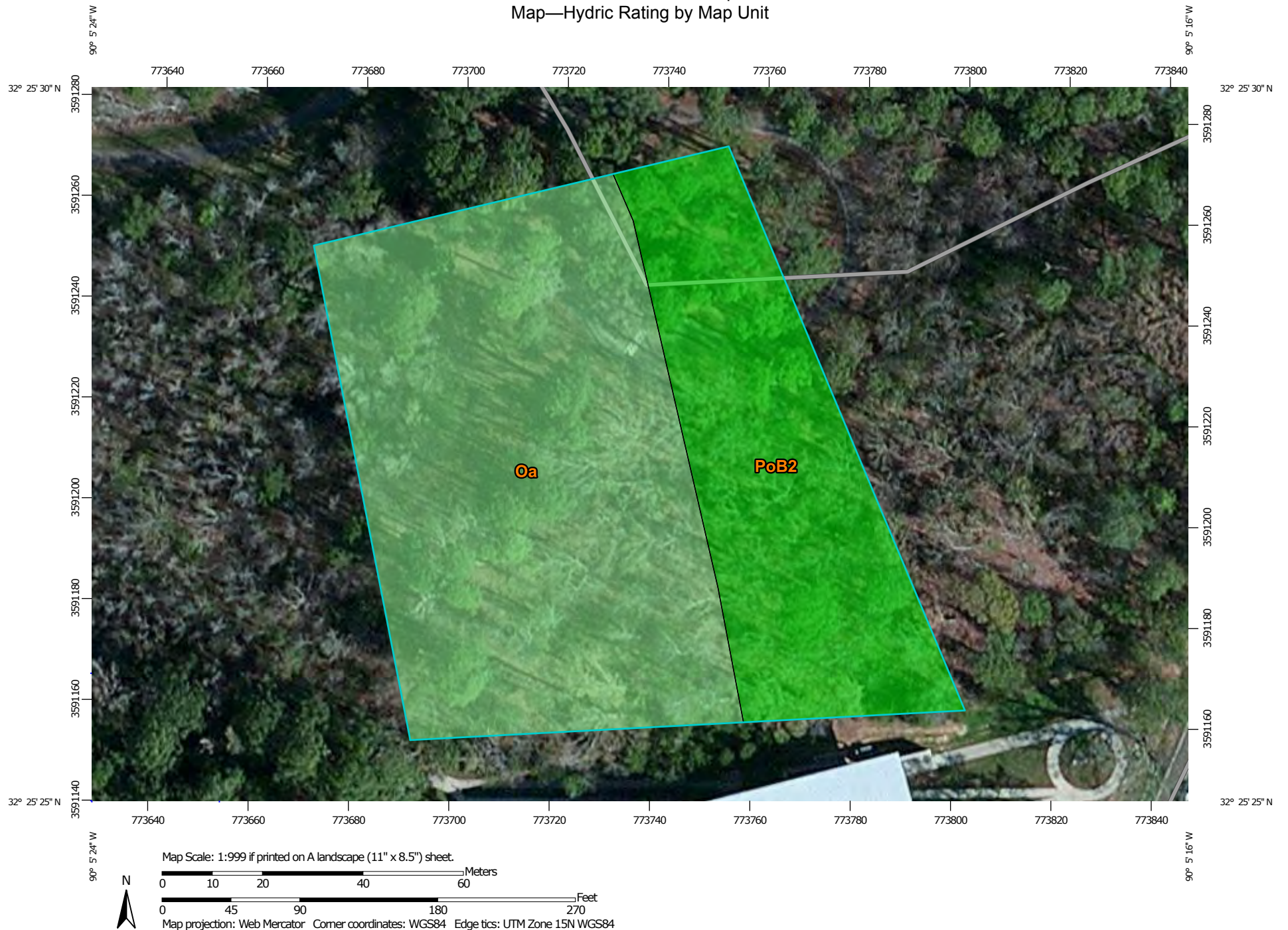
Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18.

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













## MAP LEGEND

### Area of Interest (AOI)


 Area of Interest (AOI)

### Soils






#### Soil Rating Polygons

- |   |                                    |   |                                    |
|---|------------------------------------|---|------------------------------------|
|  | Hydric (100%)                      |  | Predominantly Hydric (66 to 99%)   |
|  | Predominantly Hydric (66 to 99%)   |  | Partially hydric (33 to 65%)       |
|  | Partially hydric (33 to 65%)       |  | Predominantly nonhydric (1 to 32%) |
|  | Predominantly nonhydric (1 to 32%) |  | Nonhydric (0%)                     |
|  | Not rated or not available         |  | Not rated or not available         |


#### Water Features

 Streams and Canals







#### Transportation

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


#### Background

 Aerial Photography

#### Soil Rating Lines

-  Hydric (100%)
-  Predominantly Hydric (66 to 99%)
-  Partially hydric (33 to 65%)
-  Predominantly nonhydric (1 to 32%)
-  Nonhydric (0%)
-  Not rated or not available

#### Soil Rating Points

-  Hydric (100%)

## MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

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: <http://websoilsurvey.nrcs.usda.gov>  
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: Madison County, Mississippi  
Survey Area Data: Version 8, Dec 24, 2013

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

Date(s) aerial images were photographed: May 4, 2010—Oct 2, 2011

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

**Table—Hydric Rating by Map Unit**

Hydric Rating by Map Unit— Summary by Map Unit — Madison County, Mississippi (MS089)				
Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
Oa	Oaklimeter silt loam	5	1.7	64.9%
PoB2	Providence silt loam, 2 to 5 percent slopes, eroded	0	0.9	35.1%
<b>Totals for Area of Interest</b>			<b>2.6</b>	<b>100.0%</b>

**Rating Options—Hydric Rating by Map Unit**

*Aggregation Method:* Percent Present

Aggregation is the process by which a set of component attribute values is reduced to a single value that represents the map unit as a whole.

A map unit is typically composed of one or more "components". A component is either some type of soil or some nonsoil entity, e.g., rock outcrop. For the attribute being aggregated, the first step of the aggregation process is to derive one attribute value for each of a map unit's components. From this set of component attributes, the next step of the aggregation process derives a single value that represents the map unit as a whole. Once a single value for each map unit is derived, a thematic map for soil map units can be rendered. Aggregation must be done because, on any soil map, map units are delineated but components are not.

For each of a map unit's components, a corresponding percent composition is recorded. A percent composition of 60 indicates that the corresponding component typically makes up approximately 60% of the map unit. Percent composition is a critical factor in some, but not all, aggregation methods.

The aggregation method "Percent Present" returns the cumulative percent composition of all components of a map unit for which a certain condition is true. For example, attribute "Hydric Rating by Map Unit" returns the cumulative percent composition of all components of a map unit where the corresponding hydric rating is "Yes". Conditions may be simple or complex. At runtime, the user may be able to specify all, some or none of the conditions in question.

*Component Percent Cutoff:* None Specified

Components whose percent composition is below the cutoff value will not be considered. If no cutoff value is specified, all components in the database will be considered. The data for some contrasting soils of minor extent may not be in the database, and therefore are not considered.

*Tie-break Rule:* Lower

The tie-break rule indicates which value should be selected from a set of multiple candidate values, or which value should be selected in the event of a percent composition tie.



# References

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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](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](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](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](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](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](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624)

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## Appendix III

- Site Photos



# Craftsmen's Guild of Mississippi

Madison County, Mississippi

July 11, 2014

PHOTOGRAPH #1



View depicting the entrance to the subject property from the Natchez Trace Parkway. Photo taken is looking north.

PHOTOGRAPH #2



View of a concrete sidewalk that was observed along the outer limits of the subject property. It is proposed to extend this walkway south to connect with the Mississippi Crafts Center located along Rice Road. Photo taken is looking southwest.

# Craftsmen's Guild of Mississippi

Madison County, Mississippi

July 11, 2014

PHOTOGRAPH #3



View depicting an existing gravel walkway that meanders through the subject property providing access for tourists stopping in the picnic area off the Natchez Trace Parkway.

PHOTOGRAPH #4



View looking south depicting an unimproved pedestrian trail that is being utilized as a thorough fare between the MS Crafts Center and the Natchez Trace Parkway.



# Craftsmen's Guild of Mississippi

Madison County, Mississippi  
July 11, 2014

PHOTOGRAPH #5



View of the typical upland forested habitat located within the natural topographic draw within the central portion of the subject property. Photo taken is looking east.

PHOTOGRAPH #6

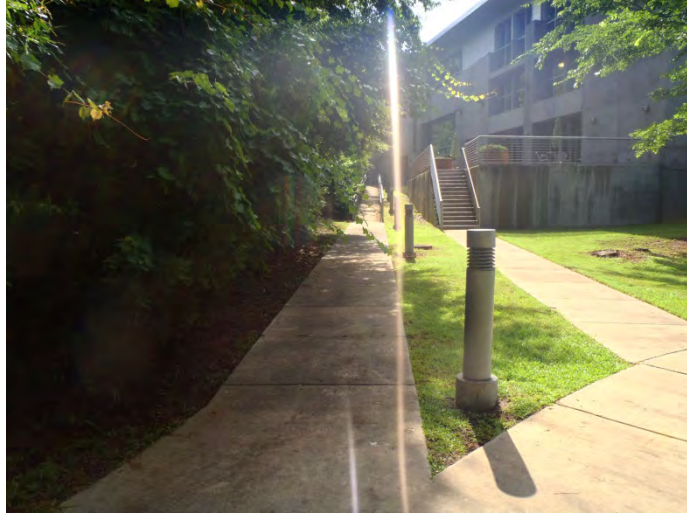


View depicting the mixed pine/hardwood habitat conditions that were observed within the southern portions of the project site. Photo taken is looking east.

# Craftsmen's Guild of Mississippi

Madison County, Mississippi  
July 11, 2014

PHOTOGRAPH #7



View looking east along the south property boundary, which borders the existing walkway associated with the MS Crafts Center.

PHOTOGRAPH #8



View depicting the upland conditions located within the western portion of the subject property. This area is within an existing corridor with limited over-story tree species.



# Craftsmen's Guild of Mississippi

Madison County, Mississippi  
July 11, 2014

PHOTOGRAPH #9



View looking east depicting the upland habitat within the northwest corner of the subject property. The forested habitat abuts an area maintained by the Natchez Trace Parkway maintenance crews.

PHOTOGRAPH #10



View looking west depicting the typical upland forested habitat conditions observed within the eastern portions of the site. Storm water would be expected to flow generally to the west via overland sheet flow within the natural topographic draw that was observed within the subject property.