United States Department of Agriculture

Natural Resources Conservation Service

In cooperation with the Mississippi State College of Agricultural and Environmental Sciences, Agricultural Experiment Station

Soil Survey of Leake County, Mississippi

How To Use This Soil Survey

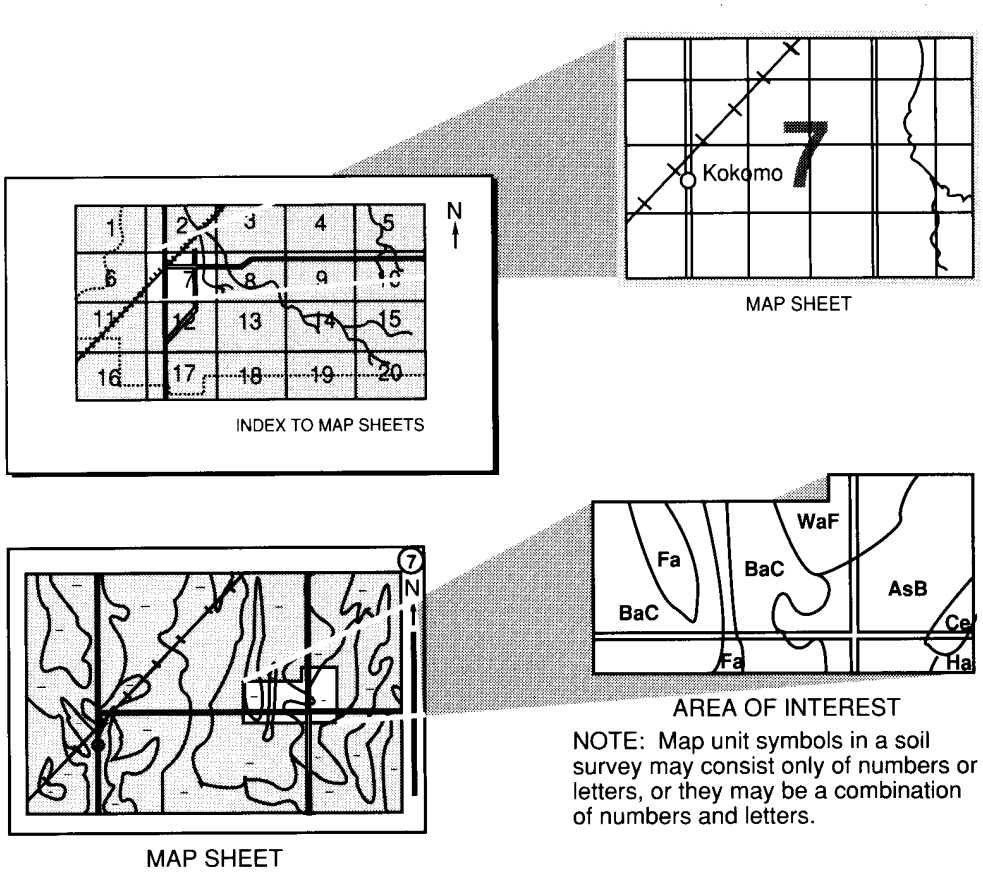
Detailed Soil Maps

The detailed soil maps can be useful in planning the use and management of small areas.

To find information about your area of interest, locate that area on the **Index to Map Sheets**. Note the number of the map sheet and turn to that sheet.

Locate your area of interest on the map sheet. Note the map unit symbols that are in that area. Turn to the **Contents**, which lists the map units by symbol and name and shows the page where each map unit is described.

The **Contents** shows which table has data on a specific land use for each detailed soil map unit. Also see the **Contents** for sections of this publication that may address your specific needs.



NOTE: Map unit symbols in a soil survey may consist only of numbers or letters, or they may be a combination of numbers and letters.

National Cooperative Soil Survey

This soil survey is a publication 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 agencies. The Natural Resources Conservation Service (formerly the Soil Conservation Service) has leadership for the Federal part of the National Cooperative Soil Survey. This survey was made cooperatively by the Natural Resources Conservation Service and the Mississippi State College of Agricultural and Environmental Sciences, Agricultural Experiment Station. The survey is part of the technical assistance furnished to the Leake County Soil and Water Conservation District.

Major fieldwork for this soil survey was completed in 2003. Soil names and descriptions were approved in 2008. Unless otherwise indicated, statements in this publication refer to conditions in the survey area in 2002. The most current official data are available at http://websoilsurvey.nrcs.usda.gov/app/.

Soil maps in this survey may be copied without permission. Enlargement of these maps, however, could cause misunderstanding of the detail of mapping. If enlarged, maps do not show the small areas of contrasting soils that could have been shown at a larger scale.

Nondiscrimination Statement

Citation

The correct citation for this survey is:

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Cover Caption

The Pearl River in Leake County. The water-control structure shown here once regulated the water levels in an area of Jena-Kirkville-Kinston complex, undulating, frequently flooded. The construction of the Ross Barnett Reservoir and Dam, located farther downstream, eliminated the need for this smaller structure.

Additional information about the Nation's natural resources is available online from the Natural Resources Conservation Service at http://www.nrcs.usda.gov.

Contents

Issued April 2009

Foreword

This soil survey contains information that affects land use planning in this survey area. It contains predictions of soil behavior for selected land uses. The survey also highlights soil limitations, improvements needed to overcome the limitations, and the impact of selected land uses on the environment.

This soil survey is designed for many different users. Farmers, ranchers, foresters, and agronomists can use it to evaluate the potential of the soil and the management needed for maximum food and fiber production. Planners, community officials, engineers, developers, builders, and home buyers can use the survey to plan land use, select sites for construction, and identify special practices needed to ensure proper performance. Conservationists, teachers, students, and specialists in recreation, wildlife management, waste disposal, and pollution control can use the survey to help them understand, protect, and enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. The information in this report is intended to identify soil properties that are used in making various land use or land treatment decisions. Statements made in this report are 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://soils.usda.gov/sqi/) 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://soils.usda.gov/contact/state_offices/).

Great differences in soil properties can occur in short distances. Some soils are seasonally wet or subject to flooding. Some are shallow to bedrock. 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.

These and many other soil properties that affect land use are described in this soil survey. The location of each map unit is shown on the detailed soil maps. Each soil in the survey area is described. Information on specific uses is given for each soil. Help in using this publication and additional information are available at the local office of the Natural Resources Conservation Service or the Cooperative Extension Service.

Homer L. Wilkes
State Conservationist
Natural Resources Conservation Service

Soil Survey of
Leake County, Mississippi

By Paul R. Brass, Natural Resources Conservation Service

Fieldwork by Paul R. Brass, Willie L. Green, and Grant Martin

United States Department of Agriculture,
Natural Resources Conservation Service,
in cooperation with
the Mississippi State College of Agricultural and Environmental Sciences, Agricultural Experiment Station

LEAKE COUNTY is near the geographic center of Mississippi (fig. 1). The county is an exact square, containing 16 townships. It is 576 square miles: 24 miles from east to west and 24 miles from north to south. It is bordered by Madison County to the west, Attala County to the north, Neshoba County to the east, and Scott County to the south.

General Nature of the County

In this section, the history, geology, water resources, and climate of the survey area are described.

History

Leake County was established December 23, 1833. It was 1 of 16 counties created from the final cession of the Choctaw Indians under the treaty of Dancing Rabbit in 1830. It was named in honor of Governor Walter Leake, who was a member of the constitutional convention of 1817, a United States senator, and twice governor of the state. The limits of the county were defined in the original act as follows: “Beginning at the northeast corner of Scott County, and running from thence north with the line between ranges 9 and 10 east, to the line between townships 12 and 13; from thence west, with the line between townships 12 and 13, to the line between ranges 5 and 6 east; from thence south with said line between ranges 5 and 6 east, to the line between townships 8 and 9; and from thence east to the place of beginning.”

The Jackson and Eastern railroad provides a railroad connection from Meridian in Lauderdale County to Walnut Grove in Leake County. Additional transportation opportunities are afforded by the Pearl River, which runs through the county from the northeast to the southwest and is navigable to Edinburg along the eastern border.

The region is drained by the Pearl River and its numerous tributaries, the Yokahockany River, and Yellow, Young Warrior, and Standing Pine creeks. The general surface of the region is undulating and hilly. A large section, however, is composed of level bottom lands and swamp lands.

There are no large towns in the county. Carthage, near the center of the county and about 2 miles north of the Pearl River, is the county seat and has a population of 635.

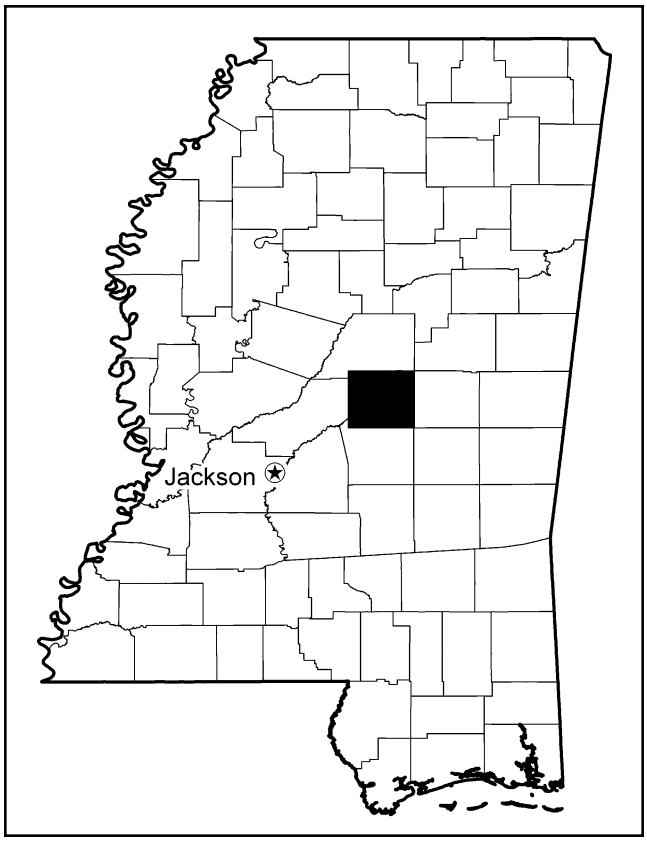

Figure 1.—Location of Leake County in Mississippi.

Some of the other important settlements are Walnut Grove, Edinburg, Standing Pine, and Goodhope. As early as 1837, the county possessed a population of over 1,600. The population of the county has varied by no more than 5,000 for the past 40 years and has by no means continuously increased. The population was 5,533 in 1850; 9,324 in 1860; 8,496 in 1870; 18,146 in 1880; peaked at 18,298 in 1910; and was 16,673 in 1920.

In 1919, the value of the farm property in Leake County was $6,598,000 and the value of crops of all kinds was $8,157,000. Of the farming areas in the county, 28,765 acres was cotton fields, which produced nearly 6,900 bales. The livestock in the county was valued at $1,268,000.

Geology

By Trent Snellings, Geologist, Natural Resources Conservation Service

The following preliminary evaluation of the geology of Leake County was prepared October 29, 2007.

Mississippi is entirely within the Gulf Coastal Plain physiographic province of North America. The state is subdivided into 12 physiographic units. Leake County is almost entirely within the North Central Hills physiographic unit. A very small area in the southwestern part of the county extends into the Jackson Prairie region.

The terrain of the North Central Hills unit includes extensive cuts into hills and valleys by stream erosion and is at many places deeply dissected and rough. In Leake County, the terrain developed chiefly on the sands and clays of the Claiborne Group (Eocene). Generally, the clays erode to almost flat or low, rolling, hilly surfaces, and

the sands support moderate- to high-relief hills and ridges. The hills are rounded to conical in shape, and slopes are moderate to steep. The valleys are commonly wide, and the larger streams have developed flood plains.

The small portion of the county that extends into the Jackson Prairie region has topography that displays scattered rolling hills and some ridges and valleys. The geology of the region is characteristic of the clays and marls of the Jackson and Vicksburg Groups.

Leake County is within the Pearl River drainage basin. The Pearl River runs through the center of the county with a generally southwest drainage pattern. Its major tributaries include the Yockanookany River, Tuscolameta Creek, and Lobutcha Creek.

Five geologic units of Eocene age within the Claiborne Group crop out in the county. From oldest to youngest, the units are the Tallahatta Formation, the Zilpha Formation, the Kosciusko Formation, the Cook Mountain Formation, and the Cockfield Formation.

The Tallahatta Formation is predominately sand and locally glauconitic. It also contains some claystone. This formation crops out in the extreme northeastern part of the county, near tributaries of the Pearl River.

The Zilpha Formation is composed of dark gray, light gray, and mottled clay and clay shale. It is silty to very plastic, is glauconitic at the base, and grades to nonglauconitic towards the top. Locally, selenite crystals are abundant and form prolifically on exposure. Near the top of the formation, a zone of dark gray to black clay contains plant impressions. This formation crops out in the northeastern part of the county around tributaries of the Pearl River.

The Kosciusko Formation is composed of sand with lesser components of silts and clay shales. The sands vary from fine to medium and from massive to cross-bedded. Outcrops of the sands are predominately reddish brown. The color is apparently due to oxidation by weathering; the unweathered material is much lighter in color. The clay shales are light gray to dark gray, micaceous, and silty. This formation crops out in a large belt in a northwest to southeast orientation.

The Cook Mountain Formation is composed of marine deposits of highly calcareous and fossiliferous, sandy and clayey marl. Because of its high content of clay, this formation is not considered an aquifer. This formation crops out in a small belt, extending northwest to southeast, generally 20 miles west of Carthage.

The Cockfield Formation is chiefly a massive, medium-grained sand formation containing lenses and thin beds of micaceous silts and clays. Lignite beds are scattered but abundant. Although it is capable of moderate yields of water, this formation is not considered a significant aquifer. This formation crops out in the eastern half and southwest quarter of the county.

Water Resources

Most of the water supply in Leake County comes from wells that are over 100 feet deep. The wells vary in depth from as little as 75 feet to as much as 1,258 feet (Lang and Boswell, 1960). They were drilled into the Tallahatta, Minor Wilcox, Sparta Sand, and Meridian-Upper Wilcox aquifers.

Climate

Prepared by the Natural Resources Conservation Service National Water and Climate Center, Portland, Oregon.

The climate tables were created using data from the climate station at Carthage, Mississippi. Thunderstorm days, relative humidity, percent sunshine, and wind information were estimated using data from the first order station at Jackson, Mississippi.

Table 1 gives data on temperature and precipitation for the survey area as recorded at Carthage in the period 1971 to 2000. Table 2 shows probable dates of the first

freeze in fall and the last freeze in spring. Table 3 provides data on the length of the growing season.

In winter, the average temperature is 45.9 degrees F and the average daily minimum temperature is 34.1 degrees. The lowest temperature on record, which occurred at Carthage on January 12, 1962, is -5 degrees. In summer, the average temperature is 79.3 degrees and the average daily maximum temperature is 91.0 degrees. The highest temperature, which occurred at Carthage on August 30, 2000, is 106 degrees.

Growing degree days are shown in table 1. They are equivalent to “heat units.” During the month, growing degree days accumulate by the amount that the average temperature each day exceeds a base temperature (50 degrees F). The normal monthly accumulation is used to schedule single or successive plantings of a crop between the last freeze in spring and the first freeze in fall.

The average annual total precipitation is about 57.32 inches. Of this, about 29.55 inches, or 52 percent, usually falls in April through October. The growing season for most crops falls within this period. The heaviest 1-day rainfall during the period of record was 6.50 inches at Carthage on April 13, 1979. Thunderstorms occur on about 67 days each year and are most common in July.

The average seasonal snowfall is 0.7 inch. The greatest snow depth at any one time during the period of record was 4 inches recorded on January 31, 1977. In most years, there are no days that have at least 1 inch of snow on the ground. The heaviest 1-day snowfall on record was 4.5 inches recorded on January 14, 1982.

The average relative humidity in mid-afternoon is about 58 percent. Humidity is higher at night, and the average at dawn is about 91 percent. The sun shines 67 percent of the time possible in summer and 50 percent in winter. The prevailing wind is from the south. Average wind speed is highest, 7.8 miles per hour, in March.

How This Survey Was Made

This survey was made to provide information about the soils and miscellaneous areas in the survey area. The information includes a description of the soils and miscellaneous areas and their location and a discussion of their suitability, limitations, and management for specified 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 dug many holes to study the soil profile, which 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. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

The soils and miscellaneous areas in the survey area are 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.

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.

Detailed Soil Map Units

The map units delineated on the detailed soil maps in this survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions in this section, along with the maps, can be used to determine the suitability and potential of a unit for specific uses. They also can be used to plan the management needed for those uses.

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. The contrasting components are mentioned in the map unit descriptions. 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 the principal hazards and limitations to be considered in planning for specific uses.

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, Ruston fine sandy loam, 5 to 8 percent slopes, eroded, is a phase of the Ruston series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes 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. Smithdale-Sweatman complex, 5 to 15 percent slopes, eroded, 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. Rosebloom and Arkabutla soils, frequently flooded, is an undifferentiated group in this survey area.

This survey includes *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. The Pits part of Pits-Udorthents complex, 5 to 15 percent slopes, eroded, is an example.

Table 4 gives the acreage and proportionate extent of each map unit. Other tables give properties of the soils and the limitations, capabilities, and potentials for many uses. The Glossary defines many of the terms used in describing the soils or miscellaneous areas.

Bb—Bibb fine sandy loam, frequently flooded

Setting

Landscape: Coastal Plain
Landform: Flood plains
Shape of areas: Irregular to linear
Size of areas: 5 to 285 acres

Composition

Bibb and similar soils: 90 percent
Dissimilar soils: 10 percent

Typical Profile

Surface layer:
0 to 5 inches—dark grayish brown fine sandy loam

Substratum:
5 to 17 inches—light brownish gray sandy loam that has strong brown mottles
17 to 36 inches—light brownish gray sandy loam that has yellowish brown mottles
36 to 52 inches—light brownish gray sandy loam that has strong brown mottles
52 to 83 inches—light gray loamy sand

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Poorly drained
Permeability: Moderate
Available water capacity: Moderate
Seasonal high water table: At a depth of 1/2 to 1 1/2 feet from December through April
Shrink-swell potential: Low
Flooding: Frequent

Reaction: Very strongly acid or strongly acid
Parent material: Stratified sandy and loamy alluvium
Depth to bedrock: More than 80 inches

Minor Components

Dissimilar soils:
- Poorly drained Urbo soils in positions similar to those of the Bibb soil

Similar soils:
- Poorly drained Kinston soils in depressions on the flood plains

Land Use

Dominant uses: Forestland
Other uses: Pasture and wildlife habitat

Cropland
Suitability: Unsuited
Management concerns: Flooding and wetness
Management measures and considerations:
- This map unit is severely limited for crop production. A site that has better suited soils should be selected.

Pasture and hayland
Suitability: Suited to pasture; poorly suited to hayland
Management concerns: Flooding and wetness
Management measures and considerations:
- Harvesting hay crops as soon as possible reduces the risk of damage from the flooding.
- Restricting grazing to dry periods minimizes surface compaction.

Forestland
Suitability: Suited
Management concerns: Equipment limitations, seedling mortality, windthrow, and plant competition
Management measures and considerations:
- Harvesting timber during the summer reduces the risk of damage from the flooding.
- Planting seedlings on raised beds helps to establish the seedlings and increases the seedling survival rate.
- Site preparation practices, such as chopping, prescribed burning, and applying herbicides, help to control plant competition.

Wildlife habitat
Potential to support habitat for: Openland wildlife—fair; forestland wildlife—fair; wetland wildlife—good
Management concerns: None
Management measures and considerations:
- The existing habitat should be maintained.

Dwellings without basements
Suitability: Unsuited
Management concerns: Flooding and wetness
Management measures and considerations:
- This map unit is very limited as a site for dwellings. A site that has better suited soils should be selected.

Septic tank absorption fields
Suitability: Unsuited
Management concerns: Flooding and wetness

Management measures and considerations:
- This map unit is very limited as a site for septic tank absorption fields. A site that has better suited soils should be selected.
- The local Health Department can be contacted for additional guidance.

Local roads and streets
Suitability: Unsuited
Management concerns: Flooding and wetness
Management measures and considerations:
- This map unit is very limited as a site for roads and streets. A site that has better suited soils should be selected.

Lawns and landscaping
Suitability: Unsuited
Management concerns: Flooding and wetness
Management measures and considerations:
- This map unit is somewhat limited as a site for lawns and landscaping. A site that has better suited soils should be selected.

Interpretive Groups

Land capability classification: 5w
Forestland ordination symbol: 11W

BdA—Bude silt loam, 0 to 2 percent slopes

Setting

Landscape: Coastal Plain
Landform: Stream terraces
Landform position: Nearly level, slightly convex slopes
Shape of areas: Oblong
Size of areas: 5 to 300 acres

Composition

Bude and similar soils: 90 percent
Dissimilar soils: 10 percent

Typical Profile

Surface layer:
0 to 6 inches—brown silt loam

Subsoil:
6 to 13 inches—dark yellowish brown silt loam that has yellowish brown mottles
13 to 20 inches—yellowish brown silt loam that has light brownish gray and dark yellowish brown mottles
20 to 34 inches—gray silty clay loam that has light brownish gray, grayish brown, and strong brown mottles
34 to 47 inches—light brownish gray silty clay loam that has strong brown and yellowish brown mottles
47 to 63 inches—gray fine sandy loam that has light brownish gray mottles
63 to 80 inches—gray fine sandy loam that has light brownish gray and dark yellowish brown mottles

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Somewhat poorly drained

Permeability: Slow
Available water capacity: Moderate
Seasonal high water table: Perched, at a depth of 1/2 to 1 1/2 feet from January through April
Shrink-swell potential: Low
Flooding: Rare
Content of organic matter in the surface layer: Moderate

Minor Components

Dissimilar soils:
- Somewhat poorly drained Arkabutla soils on narrow flood plains

Similar soils:
- Scattered areas of somewhat poorly drained soils that have less clay in the subsoil than the Bude soil

Land Use

Dominant uses: Pasture, hayland, and forestland
Other uses: Cropland

Cropland
Suitability: Well suited
Commonly grown crops: Corn, cotton, soybeans, and grain sorghum
Management concerns: Wetness
Management measures and considerations:
- Delaying spring planting minimizes the clodding and rutting that occurs if equipment is used when the soil is wet.
- Open ditches and diversions improve productivity.
- Applying lime and fertilizer on the basis of soil testing increases the availability of nutrients to plants and maximizes productivity.

Pasture and hayland
Suitability: Well suited (fig. 2)

Figure 2.—Hay production in an area of Bude silt loam, 0 to 2 percent slopes. Hayland is common in areas of nearly level soils.

Commonly grown crops: Common bermudagrass and bahiagrass
Management concerns: Wetness
Management measures and considerations:
- Proper stocking rates and restricted grazing during wet periods minimize compaction and help to keep the pasture in good condition.
- Harvesting hay as soon as possible reduces the risk of damage from the flooding.
- Applying lime and fertilizer on the basis of soil testing increases the availability of nutrients to plants and maximizes productivity during the establishment, maintenance, or renovation of hayland and pasture.

Forestland
Suitability: Well suited
Productivity class: Very high for loblolly pine
Management concerns: Equipment limitations, windthrow, and plant competition
Management measures and considerations:
- Restricting the use of standard wheeled and tracked equipment to dry periods helps to prevent rutting and compaction.
- Windthrow can be minimized by planting at close intervals.
- Site preparation practices, such as chopping, prescribed burning, and applying herbicides, help to control plant competition.

Wildlife habitat
Potential to support habitat for: Openland wildlife—good; forestland wildlife—good; wetland wildlife—fair
Management concerns: None
Management measures and considerations:
- Openland wildlife habitat can be improved by leaving undisturbed areas of vegetation around cropland and pasture. These areas provide wildlife with food and a place to rest.
- Forestland wildlife habitat can be improved by planting appropriate vegetation, maintaining the existing plant cover, or promoting the natural establishment of desirable plants. Prescribed burning every 3 years, rotated among several small tracts of land, can increase the amount of palatable browse for deer and the number of seed-producing plants for quail and turkey.

Dwellings without basements
Suitability: Poorly suited
Management concerns: Wetness
Management measures and considerations:
- Constructing dwellings on raised, well-compacted fill material on the highest part of the landscape and using artificial drainage reduce the risk of damage from wetness.

Septic tank absorption fields
Suitability: Poorly suited
Management concerns: Wetness and restricted permeability
Management measures and considerations:
- Using suitable fill material to raise the filter field a sufficient distance above the seasonal high water table improves system performance.
- Increasing the size of septic tank absorption fields improves the performance of the system, and installing distribution lines during dry periods minimizes smearing and sealing of trench walls.
- The local Health Department can be contacted for additional guidance.

Local roads and streets
Suitability: Poorly suited
Management concerns: Wetness

Management measures and considerations:
- Well-compacted fill material can be used as a base to elevate roads above the expected level of flooding and to help overcome the wetness.
- Designing roads to safely remove surface runoff improves soil performance.

Lawns and landscaping
Suitability: Suited
Management concerns: Wetness
Management measures and considerations:
- A surface drainage system may be needed in some areas.
- Lime, fertilizer, mulch, and irrigation help to establish lawns and landscape plants.

Interpretive Groups

Land capability classification: 2w
Forestland ordination symbol: 9W

Gb—Gillsburg silt loam, occasionally flooded

Setting

Landscape: Coastal Plain
Landform: Broad flood plains
Landform position: Low parts of natural levees
Shape of areas: Long and narrow
Size of areas: 25 to 500 acres

Composition

Gillsburg and similar soils: 90 percent
Dissimilar soils: 10 percent

Typical Profile

Surface layer:
0 to 3 inches—brown silt loam that has pale brown and dark yellowish brown mottles

Subsurface layer:
3 to 13 inches—yellowish brown silt loam that has pale brown and dark yellowish brown mottles

Subsoil:
13 to 17 inches—yellowish brown silt loam that has light brownish gray and yellowish brown mottles
17 to 33 inches—light brownish gray silt loam that has yellowish brown mottles
33 to 52 inches—light brownish gray silt loam that has light gray and yellowish brown mottles
52 to 62 inches—gray silty clay loam that has light gray and yellowish brown mottles
62 to 80 inches—yellowish brownish silt loam that has gray and yellowish brown mottles

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Somewhat poorly drained
Permeability: Moderate
Available water capacity: High
Seasonal high water table: At a depth of 1 to 2 1/2 feet from December through April
Shrink-swell potential: Low
Flooding: Occasional

Content of organic matter in the surface layer: Low
Reaction: Very strongly acid or strongly acid

Minor Components

Dissimilar soils:
- Somewhat poorly drained Mantachie soils in the lower positions
- Poorly drained Kinston soils in sloughs and depressional areas

Similar soils:
- Moderately well drained, silty soils on the high parts of natural levees

Land Use

Dominant uses: Forestland and wildlife habitat
Other uses: Cropland and pasture

Cropland
Suitability: Suited
Commonly grown crops: Corn, soybeans, and cotton
Management concerns: Flooding and wetness
Management measures and considerations:
- Although most of the flooding occurs during winter and spring, crop losses can occur during the growing season.
- Well maintained drainageways and ditches help to remove excess water and improve productivity.

Pasture and hayland
Suitability: Suited to pasture; poorly suited to hayland
Commonly grown crops: Common bermudagrass and bahiagrass
Management concerns: Flooding and wetness
Management measures and considerations:
- Although most of the flooding occurs during winter and spring, livestock and hay can be damaged during any time of the year.
- Harvesting hay as soon as possible reduces the risk of damage from the flooding.
- Proper stocking rates and restricted grazing during wet periods minimize compaction and help to keep the pasture in good condition.
- Apply lime and fertilizer on the basis of soil testing increases the availability of nutrients to plants and maximizes productivity.

Forestland
Suitability: Suited
Management concerns: Plant competition, windthrow, and equipment limitations
Management measures and considerations:
- Site preparation practices, such as chopping, prescribed burning, and applying herbicides, help to control plant competition.
- Leaving a buffer zone of trees and shrubs adjacent to streams helps to control siltation and provides shade for the surface of the water, thereby improving aquatic habitat.
- Windthrow can be minimized by planting at close intervals.
- Harvesting timber during the summer or fall reduces the risk of damage from the flooding.

Wildlife habitat
Potential to support habitat for: Openland wildlife—good; forestland wildlife—good; wetland wildlife—fair
Management concerns: None
Management measures and considerations:
- Openland wildlife habitat can be improved by leaving undisturbed areas of vegetation around cropland and pasture. These areas provide wildlife with food and a place to rest.

- Forestland wildlife habitat can be improved by planting appropriate vegetation, maintaining the existing plant cover, or promoting the natural establishment of desirable plants. Prescribed burning every 3 years, rotated among several small tracts of land, can increase the amount of palatable browse for deer and the number of seed-producing plants for quail and turkey.
- Wetland wildlife habitat can be improved by constructing shallow ponds that provide open water areas for waterfowl and furbearers.

Dwellings without basements
Suitability: Unsuited
Management concerns: Flooding
Management measures and considerations:
- This map unit is severely limited as a site for dwellings. A site that has better suited soils should be selected.

Septic tank absorption fields
Suitability: Unsuited
Management concerns: Flooding
Management measures and considerations:
- This map unit is very limited as a site for septic tank absorption fields.
- The local Health Department can be contacted for additional guidance.

Local roads and streets
Suitability: Poorly suited
Management concerns: Flooding and wetness
Management measures and considerations:
- Well-compacted fill material can be used as a base to elevate roads above the expected level of flooding and to help overcome the wetness.

Lawns and landscaping
Suitability: Poorly suited
Management concerns: Flooding
Management measures and considerations:
- This map unit is difficult to manage because of the flooding, which severely limits use during periods of inundation.
- A surface drainage system may be needed in some areas.

Interpretive Groups

Land capability classification: 2w
Forestland ordination symbol: 10W

JkB—Jena-Kirkville-Kinston complex, undulating, frequently flooded

Setting

Landscape: Coastal Plain
Landform: Broad flood plains
Landform position: Jena—convex slopes on natural levees; Kirkville—convex slopes on high and intermediate parts of natural levees; Kinston—sloughs and backswamps
Shape of areas: Long and narrow
Size of areas: 5 to 500 acres

Composition

Jena and similar soils: 35 percent
Kirkville and similar soils: 30 percent

Kinston and similar soils: 25 percent
Dissimilar soils: 10 percent

Typical Profiles

Jena

Surface layer:
0 to 4 inches—brown fine sandy loam

Subsoil:
4 to 10 inches—brown fine sandy loam
10 to 18 inches—brown loam that has yellowish brown mottles
18 to 30 inches—dark yellowish brown loam that has brown mottles
30 to 37 inches—yellowish brown fine sandy loam that has dark yellowish brown mottles

Substratum:
37 to 50 inches—light yellowish brown fine sand that has brownish yellow mottles
50 to 60 inches—brownish yellow fine sand that has light yellowish brown mottles
60 to 80 inches—yellowish brown fine sandy loam that has strong brown and yellowish brown mottles

Kirkville

Surface layer:
0 to 7 inches—dark grayish brown fine sandy loam

Subsurface layer:
7 to 15 inches—dark yellowish brown loam

Subsoil:
15 to 25 inches—dark yellowish brown loam that has pale brown and yellowish brown mottles
25 to 39 inches—yellowish brown loam that has light brownish gray and yellowish brown mottles
39 to 51 inches—gray sandy loam that has yellowish brown mottles
51 to 58 inches—gray loam that has yellowish brown mottles

Substratum:
58 to 69 inches—gray loam that has brownish yellow mottles
69 to 80 inches—gray loam that has strong brown mottles

Kinston

Surface layer:
0 to 4 inches—brown loam

Subsurface layer:
4 to 16 inches—gray loam

Substratum:
16 to 33 inches—light brownish gray clay loam that has strong brown mottles
33 to 46 inches—gray clay loam that has strong brown and yellowish red mottles
46 to 52 inches—gray clay loam that has yellowish red mottles
52 to 80 inches—gray clay loam that has yellowish red mottles

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Jena—well drained; Kirkville—moderately well drained; Kinston—poorly drained
Permeability: Moderate
Available water capacity: Jena—moderate; Kirkville—moderate; Kinston—high

Seasonal high water table: Jena—none within a depth of 6 feet; Kirkville—apparent, at a depth of 1 1/2 to 2 1/2 feet from January through April; Kinston—apparent, at the surface to a depth of 1 foot from January through April
Shrink-swell potential: Low
Flooding: Frequent
Content of organic matter in the surface layer: Low
Reaction: Very strongly acid or strongly acid

Minor Components

Dissimilar soils:
- Somewhat poorly drained Arkabutla soils in the lower positions
- Poorly drained Rosebloom soils in sloughs and depressional areas

Similar soils:
- Excessively drained, sandy soils on the high parts of natural levees adjacent to stream channels

Land Use

Dominant uses: Forestland and wildlife habitat
Other uses: Cropland and pasture

Cropland
Suitability: Poorly suited
Commonly grown crops: Corn and soybeans
Management concerns: Flooding and wetness
Management measures and considerations:
- Although most of the flooding occurs during winter and spring, crop losses can occur during the growing season.
- Well maintained drainageways and ditches help to remove excess water and improve productivity.

Pasture and hayland
Suitability: Suited to pasture; poorly suited to hayland
Commonly grown crops: Common bermudagrass and bahiagrass
Management concerns: Flooding and wetness
Management measures and considerations:
- Although most of the flooding occurs during winter and spring, pasture and hay can be damaged during any time of the year.
- Harvesting hay as soon as possible reduces the risk of damage from the flooding.
- Proper stocking rates and restricted grazing during wet periods minimize compaction and help to keep the pasture in good condition.
- Apply lime and fertilizer on the basis of soil testing increases the availability of nutrients to plants and maximizes productivity.

Forestland
Suitability: Jena—well suited; Kirkville and Kinston—suited
Management concerns: Plant competition and equipment limitations
Management measures and considerations:
- Site preparation practices, such as chopping, prescribed burning, and applying herbicides, help to control plant competition.
- Leaving a buffer zone of trees and shrubs adjacent to streams helps to control siltation and provides shade for the surface of the water, thereby improving aquatic habitat.
- Harvesting timber during the summer or fall reduces the risk of damage from the flooding.

Wildlife habitat
Potential of the Jena soil to support habitat for: Openland wildlife—fair; forestland wildlife—poor; wetland wildlife—poor

Potential of the Kirkville soil to support habitat for: Openland wildlife—fair; forestland wildlife—fair; wetland wildlife—poor
Potential of the Kinston soil to support habitat for: Openland wildlife—fair; forestland wildlife—poor; wetland wildlife—fair
Management concerns: None
Management measures and considerations:
- Openland wildlife habitat can be improved by leaving undisturbed areas of vegetation around cropland and pasture. These areas provide wildlife with food and a place to rest.
- Forestland wildlife habitat can be improved by planting appropriate vegetation, maintaining the existing plant cover, or promoting the natural establishment of desirable plants. Prescribed burning every 3 years, rotated among several small tracts of land, can increase the amount of palatable browse for deer and the number of seed-producing plants for quail and turkey.
- Wetland wildlife habitat can be improved by constructing shallow ponds that provide open water areas for waterfowl and furbearers.

Dwellings without basements
Suitability: Unsuited
Management concerns: Flooding
Management measures and considerations:
- This map unit is severely limited as a site for dwellings. A site that has better suited soils should be selected.

Septic tank absorption fields
Suitability: Unsuited
Management concerns: Flooding
Management measures and considerations:
- This map unit is very limited as a site for septic tank absorption fields.
- The local Health Department can be contacted for additional guidance.

Local roads and streets
Suitability: Poorly suited
Management concerns: Flooding and wetness
Management measures and considerations:
- Well-compacted fill material can be used as a base to elevate roads above the expected level of flooding and to help overcome the wetness.

Lawns and landscaping
Suitability: Poorly suited
Management concerns: Flooding
Management measures and considerations:
- This map unit is difficult to manage because of the flooding, which severely limits use during periods of inundation.
- A surface drainage system may be needed in some areas.

Interpretive Groups

Land capability classification: 6w
Forestland ordination symbol: 11W

Kn—Kinston loam, frequently flooded

Setting

Landscape: Coastal Plain
Landform: Flood plains
Slope: 0 to 1 percent

Shape of areas: Elongated
Size of areas: 5 to 1,000 acres

Composition

Kinston and similar soils: 90 percent
Dissimilar soils: 10 percent

Typical Profile

Surface layer:
0 to 3 inches—dark grayish brown loam

Subsoil:
3 to 38 inches—light brownish gray loam that has yellowish brown mottles
38 to 60 inches—light gray loam that has yellowish brown mottles
60 to 84 inches—gray loam

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Poorly drained
Permeability: Moderate
Available water capacity: High
Seasonal high water table: Apparent, from the surface to a depth 1 foot from November through June
Shrink-swell potential: Low
Flooding: Frequent
Reaction: Very strongly acid or strongly acid
Parent material: Loamy sediments
Depth to bedrock: More than 80 inches

Minor Components

Dissimilar soils:
- Poorly drained Rosebloom soils on adjacent flood plains

Similar soils:
- Poorly drained Bibb soils on flood plains along streams

Land Use

Dominant uses: Forestland
Other uses: Pasture

Cropland
Suitability: Unsuited
Management concerns: Flooding and wetness
Management measures and considerations:
- This map unit is severely limited for crop production. A site that has better suited soils should be selected.

Pasture and hayland
Suitability: Suited to pasture; poorly suited to hayland
Commonly grown crops: Grasses and legumes
Management concerns: Flooding and wetness
Management measures and considerations:
- Harvesting hay crops as soon as possible reduces the risk of damage from the flooding.

Forestland
Suitability: Suited
Management concerns: Equipment limitations and seedling mortality

Management measures and considerations:
- Harvesting timber during the summer reduces the risk of damage from the flooding.
- Planting seedlings on raised beds helps to establish the seedlings and increases the seedling survival rate.

Wildlife habitat
Potential to support habitat for: Openland wildlife—poor; forestland wildlife—poor; wetland wildlife—fair
Management concerns: None
Management measures and considerations:
- The existing habitat should be maintained.

Dwellings without basements
Suitability: Unsuited
Management concerns: Flooding and wetness
Management measures and considerations:
- This map unit is severely limited as a site for dwellings. A site that has better suited soils should be selected.

Septic tank absorption fields
Suitability: Unsuited
Management concerns: Flooding and wetness
Management measures and considerations:
- This map unit is severely limited as a site for septic tank absorption fields.
- The local Health Department can be contacted for additional guidance.

Local roads and streets
Suitability: Unsuited
Management concerns: Wetness, flooding, and low strength
Management measures and considerations:
- This map unit is severely limited as a site for roads and streets. A site that has better suited soils should be selected.

Lawns and landscaping
Suitability: Unsuited
Management concerns: Wetness and flooding
Management measures and considerations:
- This map unit is severely limited as a site for lawns and landscaping. A site that has better suited soils should be selected.

Interpretive Groups

Land capability classification: 6w
Forestland ordination symbol: 9W

KpB—Kipling silt loam, 2 to 5 percent slopes

Setting

Landscape: Blackland Prairie uplands
Landform: Uplands
Landform position: Summits and upper side slopes
Shape of areas: Irregular
Size of areas: 10 to 100 acres

Composition

Kipling and similar soils: 85 percent
Dissimilar soils: 15 percent

Typical Profile

Surface layer:
0 to 6 inches—yellowish brown silt loam

Subsoil:
6 to 14 inches—yellowish brown silty clay that has light brownish gray and red mottles
14 to 32 inches—mottled red, light brownish gray, and yellowish brown clay
32 to 45 inches—light olive brown clay that has red mottles
45 to 58 inches—olive brown and light brownish gray clay
58 to 80 inches—olive yellow clay that has red mottles

Soil Properties and Qualities

Depth class: Deep
Drainage class: Somewhat poorly drained
Permeability: Very slow
Available water capacity: High
Seasonal high water table: Within a depth of 1 1/2 to 3 feet from January through March
Shrink-swell potential: Very high
Flooding: None
Content of organic matter in the surface layer: Low

Minor Components

Dissimilar soils:
- Well drained Smithdale soils in the higher positions on narrow ridges
- Williamsville soils, which are redder than the Kipling soil, on the steeper parts of the slope

Similar soils:
- Scattered areas of soils that have less clay in the subsoil than the Kipling soil

Land Use

Dominant uses: Pasture, hayland, and cropland
Other uses: Forestland

Cropland
Suitability: Suited
Commonly grown crops: Cotton, corn, and soybeans
Management concerns: Erodibility
Management measures and considerations:
- Using a resource management system that includes terraces and diversions, stripcropping, contour tillage, conservation tillage, and crop residue management reduces the hazard of erosion, helps to control surface runoff, and maximizes rainfall infiltration.
- Applying lime and fertilizer on the basis of soil testing increases the availability of nutrients to plants and maximizes productivity.

Pasture and hayland
Suitability: Well suited
Commonly grown crops: Bahiagrass and tall fescue
Management concerns: Erodibility
Management measures and considerations:
- Preventing overgrazing or restricting grazing to periods when the soil is not too wet minimizes compaction and helps to maintain productivity and tilth.
- Preparing seedbeds on the contour or across the slope reduces the hazard of erosion and increases the rate of germination.

Forestland
Suitability: Well suited

Productivity class: Very high for loblolly pine
Management concerns: Equipment limitations, seedling mortality, and plant competition
Management measures and considerations:
- Restricting logging to periods when the soil is not wet minimizes rutting and the damage caused to tree roots by compaction.
- Planting seedlings on raised beds helps to establish the seedlings and increases the seedling survival rate.
- Site preparation practices, such as chopping, prescribed burning, and applying herbicides, help to control plant competition.

Wildlife habitat
Potential to support habitat for: Openland wildlife—good; forestland wildlife—good; wetland wildlife—poor
Management concerns: None
Management measures and considerations:
- Openland wildlife habitat can be improved by leaving undisturbed areas of vegetation around cropland and pasture. These areas provide wildlife with food and a place to rest.
- Forestland wildlife habitat can be improved by planting appropriate vegetation, maintaining the existing plant cover, or promoting the natural establishment of desirable plants. Prescribed burning every 3 years, rotated among several small tracts of land, can increase the amount of palatable browse for deer and the number of seed-producing plants for quail and turkey.

Dwellings without basements
Suitability: Suited
Management concerns: Shrink-swell potential
Management measures and considerations:
- Reinforcing foundations and footings or backfilling with coarse-textured material helps to prevent the damage caused by shrinking and swelling.

Septic tank absorption fields
Suitability: Poorly suited
Management concerns: Restricted permeability
Management measures and considerations:
- Increasing the size of the absorption field improves system performance.
- The local Health Department can be contacted for additional guidance.

Local roads and streets
Suitability: Suited
Management concerns: Low strength
Management measures and considerations:
- Incorporating sand and gravel into the roadbed and compacting the roadbed help to overcome the low strength of the natural soil material.

Lawns and landscaping
Suitability: Well suited
Management concerns: Erodibility
Management measures and considerations:
- Vegetating disturbed areas and using erosion-control structures, such as sediment fences and catch basins, help to keep soil on the site.

Interpretive Groups

Land capability classification: 3e
Forestland ordination symbol: 9C

KpC2—Kipling silt loam, 5 to 8 percent slopes, eroded

Setting

Landscape: Blackland Prairie uplands
Landform: Uplands
Landform position: Gently sloping ridgetops and side slopes
Shape of areas: Irregular
Size of areas: 10 to 100 acres

Composition

Kipling and similar soils: 85 percent
Dissimilar soils: 15 percent

Typical Profile

Surface layer:
0 to 6 inches—yellowish brown silt loam

Subsoil:
6 to 14 inches—yellowish brown silty clay that has light brownish gray and red mottles
14 to 32 inches—mottled red, light brownish gray, and yellowish brown clay
32 to 45 inches—light olive brown clay that has red mottles
45 to 58 inches—olive brown and light brownish gray clay
58 to 80 inches—olive yellow clay that has red mottles

Soil Properties and Qualities

Depth class: Deep
Drainage class: Somewhat poorly drained
Permeability: Very slow
Available water capacity: High
Seasonal high water table: Within a depth of 1 1/2 to 3 feet from January through March
Shrink-swell potential: Very high
Flooding: None
Content of organic matter in the surface layer: Low

Minor Components

Dissimilar soils:
- Well drained Smithdale soils in the higher positions on narrow ridges
- Williamsville soils, which are redder than the Kipling soil, on the steeper parts of the slope

Similar soils:
- Scattered areas of soils that have less clay in the subsoil than the Kipling soil

Land Use

Dominant uses: Pasture, hayland, and cropland
Other uses: Forestland

Cropland
Suitability: Suited
Commonly grown crops: Corn and soybeans
Management concerns: Erodibility
Management measures and considerations:
- Using a resource management system that includes terraces and diversions, stripcropping, contour tillage, conservation tillage, and crop residue management reduces the hazard of erosion, helps to control surface runoff, and maximizes rainfall infiltration.

- Applying lime and fertilizer on the basis of soil testing increases the availability of nutrients to plants and maximizes productivity.

Pasture and hayland
Suitability: Well suited
Commonly grown crops: Bahiagrass and tall fescue
Management concerns: Erodibility
Management measures and considerations:
- Preventing overgrazing or restricting grazing to periods when the soil is not too wet minimizes compaction and helps to maintain productivity and tilth.
- Preparing seedbeds on the contour or across the slope reduces the hazard of erosion and increases the rate of germination.

Forestland
Suitability: Well suited
Productivity class: Very high for loblolly pine
Management concerns: Equipment limitations, seedling mortality, and plant competition
Management measures and considerations:
- Restricting logging to periods when the soil is not wet minimizes rutting and the damage caused to tree roots by compaction.
- Planting seedlings on raised beds helps to establish the seedlings and increases the seedling survival rate.
- Site preparation practices, such as chopping, prescribed burning, and applying herbicides, help to control plant competition.

Wildlife habitat
Potential to support habitat for: Openland wildlife—good; forestland wildlife—good; wetland wildlife—poor
Management concerns: None
Management measures and considerations:
- Openland wildlife habitat can be improved by leaving undisturbed areas of vegetation around cropland and pasture. These areas provide wildlife with food and a place to rest.
- Forestland wildlife habitat can be improved by planting appropriate vegetation, maintaining the existing plant cover, or promoting the natural establishment of desirable plants. Prescribed burning every 3 years, rotated among several small tracts of land, can increase the amount of palatable browse for deer and the number of seed-producing plants for quail and turkey.

Dwellings without basements
Suitability: Suited
Management concerns: Shrink-swell potential
Management measures and considerations:
- Reinforcing foundations and footings or backfilling with coarse-textured material helps to prevent the damage caused by shrinking and swelling.

Septic tank absorption fields
Suitability: Poorly suited
Management concerns: Restricted permeability
Management measures and considerations:
- Increasing the size of the absorption field improves system performance.
- The local Health Department can be contacted for additional guidance.

Local roads and streets
Suitability: Suited
Management concerns: Low strength

Management measures and considerations:
- Incorporating sand and gravel into the roadbed and compacting the roadbed help to overcome the low strength of the natural soil material.

Lawns and landscaping
Suitability: Well suited
Management concerns: Erodibility
Management measures and considerations:
- Vegetating disturbed areas and using erosion-control structures, such as sediment fences and catch basins, help to keep soil on the site.

Interpretive Groups

Land capability classification: 4e
Forestland ordination symbol: 9C

Kr—Kirkville fine sandy loam, occasionally flooded

Setting

Landscape: Coastal Plain
Landform: Narrow flood plains
Landform position: Slightly convex slopes on high and intermediate parts of natural levees
Shape of areas: Long and narrow
Size of areas: 5 to 200 acres

Composition

Kirkville and similar soils: 85 percent
Dissimilar soils: 15 percent

Typical Profile

Surface layer:
0 to 7 inches—dark grayish brown fine sandy loam

Subsurface layer:
7 to 15 inches—dark yellowish brown loam

Subsoil:
15 to 25 inches—dark yellowish brown loam that has pale brown and yellowish brown mottles
25 to 39 inches—yellowish brown loam that has light brownish gray and yellowish brown mottles
39 to 51 inches—gray sandy loam that has yellowish brown mottles
51 to 58 inches—gray loam that has yellowish brown mottles

Substratum:
58 to 69 inches—gray loam that has brownish yellow mottles
69 to 80 inches—gray loam that has strong brown mottles

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Moderately well drained
Permeability: Moderate
Available water capacity: Moderate
Seasonal high water table: Apparent, at a depth of 1 1/2 to 2 1/2 feet from January through April

Shrink-swell potential: Low
Flooding: Occasional
Content of organic matter in the surface layer: Low

Minor Components

Dissimilar soils:
- Poorly drained Kinston soils in low sloughs and depressional areas
- Somewhat poorly drained Mantachie soils in the lower positions
- Well drained Jena soils in the slightly higher, more convex positions

Similar soils:
- Excessively drained, sandy soils on the high parts of natural levees adjacent to stream channels

Land Use

Dominant uses: Forestland and wildlife habitat
Other uses: Pasture, hayland, and cropland

Cropland
Suitability: Suited
Commonly grown crops: Corn, soybeans, and cotton
Management concerns: Flooding and wetness
Management measures and considerations:
- Although most of the flooding occurs during winter and spring, crop losses can occur during the growing season.
- Well maintained drainageways and ditches help to remove excess water and improve productivity.
- Harvesting row crops as soon as possible reduces the risk of damage from the flooding.

Pasture and hayland
Suitability: Suited to pasture; poorly suited to hayland
Commonly grown crops: Common bermudagrass and bahiagrass
Management concerns: Flooding and wetness
Management measures and considerations:
- Although most of the flooding occurs during winter and spring, pasture and hay can be damaged during any time of the year.
- Proper stocking rates and restricted grazing during wet periods minimize compaction and help to keep the pasture in good condition.
- Apply lime and fertilizer on the basis of soil testing increases the availability of nutrients to plants and maximizes productivity.

Forestland
Suitability: Suited
Management concerns: Equipment limitations, seedling mortality, and plant competition
Management measures and considerations:
- Restricting the use of standard wheeled and tracked equipment to dry periods helps to prevent rutting and compaction.
- Harvesting timber during the summer or fall reduces the risk of damage from the flooding.
- Planting seedlings on raised beds helps to establish the seedlings and increases the seedling survival rate.
- Site preparation practices, such as chopping, prescribed burning, and applying herbicides, help to control plant competition.

Wildlife habitat
Potential to support habitat for: Openland wildlife—fair; forestland wildlife—good; wetland wildlife—poor

Management concerns: Flooding
Management measures and considerations:
- Openland wildlife habitat can be improved by leaving undisturbed areas of vegetation around cropland and pasture. These areas provide wildlife with food and a place to rest.
- Forestland wildlife habitat can be improved by planting appropriate vegetation, maintaining the existing plant cover, or promoting the natural establishment of desirable plants. Prescribed burning every 3 years, rotated among several small tracts of land, can increase the amount of palatable browse for deer and the number of seed-producing plants for quail and turkey.
- Wetland wildlife habitat can be improved by constructing shallow ponds that provide open water areas for waterfowl and furbearers.

Dwellings without basements
Suitability: Unsuited
Management concerns: Flooding
Management measures and considerations:
- This map unit is very limited as a site for dwellings. A site that has better suited soils should be selected.

Septic tank absorption fields
Suitability: Unsuited
Management concerns: Flooding and wetness
Management measures and considerations:
- This map unit is severely limited as a site for septic tank absorption fields.
- The local Health Department can be contacted for additional guidance.

Local roads and streets
Suitability: Poorly suited
Management concerns: Flooding and wetness
Management measures and considerations:
- Well-compacted fill material can be used as a base to elevate roads above the expected level of flooding and to help overcome the wetness.
- Designing roads to safely remove surface runoff improves soil performance.

Lawns and landscaping
Suitability: Poorly suited
Management concerns: Flooding and wetness
Management measures and considerations:
- This map unit is difficult to manage because of the flooding, which severely limits use during periods of inundation.
- A surface drainage system may be needed in some areas.

Interpretive Groups

Land capability classification: 2w
Forestland ordination symbol: 10W

Ma—Mantachie fine sandy loam, occasionally flooded

Setting

Landscape: Coastal Plain
Landform: Flood plains
Landform position: Low parts of natural levees
Shape of areas: Long and narrow
Size of areas: 5 to 300 acres

Composition

Mantachie and similar soils: 85 percent
Dissimilar soils: 15 percent

Typical Profile

Surface layer:
0 to 3 inches—brown fine sandy loam

Subsurface layer:
3 to 6 inches—brown loam that has light brownish gray and yellowish brown mottles

Subsoil:
6 to 19 inches—yellowish brown loam that has light brownish gray and light yellowish brown mottles
19 to 33 inches—light brownish gray loam that has dark yellowish brown and yellowish brown mottles
33 to 46 inches—light brownish gray loam that has yellowish brown and light yellowish brown mottles
46 to 61 inches—mottled gray, yellowish brown, and light yellowish brown sandy loam
61 to 80 inches—brown loam that has gray and brownish yellow mottles

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Somewhat poorly drained
Permeability: Moderate
Available water capacity: High
Seasonal high water table: Apparent, at a depth of 1 to 1$^{1}/_{2}$ feet from November through March
Shrink-swell potential: Low
Flooding: Occasional
Content of organic matter in the surface layer: Medium

Minor Components

Dissimilar soils:
- Poorly drained Kinston soils in the lower sloughs and depressional areas
- Well drained Jena and moderately well drained Kirkville soils on the higher parts of natural levees
- Stough soils, which have less clay in the subsoil than the Mantachie soil, on the slightly higher knolls and remnants of terraces

Similar soils:
- Scattered areas of Mantachie soils that have a surface layer of loam or silt loam

Land Use

Dominant uses: Forestland and wildlife habitat
Other uses: Pasture, hayland, and cropland

Cropland
Suitability: Poorly suited
Commonly grown crops: Corn and soybeans
Management concerns: Flooding and wetness
Management measures and considerations:
- Although most of the flooding occurs during winter and spring, crop losses can occur during the growing season.
- Well maintained drainageways and ditches help to remove excess water and improve productivity.
- Harvesting row crops as soon as possible reduces the risk of damage from the flooding.

Pasture and hayland
Suitability: Suited to pasture; poorly suited to hayland
Commonly grown crops: Common bermudagrass and bahiagrass
Management concerns: Flooding and wetness
Management measures and considerations:
- Although most of the flooding occurs during winter and spring, pasture and hay can be damaged during any time of the year.
- Harvesting hay as soon as possible reduces the risk of damage from the flooding.
- Proper stocking rates and restricted grazing during wet periods minimize compaction and help to keep the pasture in good condition.
- Apply lime and fertilizer on the basis of soil testing increases the availability of nutrients to plants and maximizes productivity.

Forestland
Suitability: Suited
Management concerns: Equipment limitations, seedling mortality, and plant competition
Management measures and considerations:
- Restricting the use of standard wheeled and tracked equipment to dry periods helps to prevent rutting and compaction.
- Harvesting timber during the summer or fall reduces the risk of damage from the flooding.
- Planting seedlings on raised beds helps to establish the seedlings and increases the seedling survival rate.
- Site preparation practices, such as chopping, prescribed burning, and applying herbicides, help to control plant competition.
- Leaving a buffer zone of trees and shrubs adjacent to streams helps to control siltation and provides shade for the surface of the water, thereby improving aquatic habitat.

Wildlife habitat
Potential to support habitat for: Openland wildlife—fair; forestland wildlife—good; wetland wildlife—fair
Management concerns: None
Management measures and considerations:
- Openland wildlife habitat can be improved by leaving undisturbed areas of vegetation around cropland and pasture. These areas provide wildlife with food and a place to rest.
- Forestland wildlife habitat can be improved by planting appropriate vegetation, maintaining the existing plant cover, or promoting the natural establishment of desirable plants. Prescribed burning every 3 years, rotated among several small tracts of land, can increase the amount of palatable browse for deer and the number of seed-producing plants for quail and turkey.
- Wetland wildlife habitat can be improved by constructing shallow ponds that provide open water areas for waterfowl and furbearers.

Dwellings without basements
Suitability: Unsuited
Management concerns: Flooding and wetness
Management measures and considerations:
- This map unit is severely limited as a site for dwellings. A site that has better suited soils should be selected.

Septic tank absorption fields
Suitability: Unsuited
Management concerns: Flooding and wetness

Management measures and considerations:
- This map unit is severely limited as a site for septic tank absorption fields.
- The local Health Department can be contacted for additional guidance.

Local roads and streets
Suitability: Poorly suited
Management concerns: Flooding and wetness
Management measures and considerations:
- Well-compacted fill material can be used as a base to elevate roads above the expected level of flooding and to help overcome the wetness.
- Designing roads to safely remove surface runoff improves soil performance.

Lawns and landscaping
Suitability: Not suited
Management concerns: Flooding and wetness
Management measures and considerations:
- This map unit is difficult to manage because of the flooding, which severely limits use during periods of inundation.

Interpretive Groups

Land capability classification: 5w
Forestland ordination symbol: 10W

NeB2—Neshoba fine sandy loam, 2 to 5 percent slopes, eroded

Setting

Landscape: Coastal Plain
Landform: Narrow ridges
Landform position: Summits and upper parts of side slopes
Shape of areas: Irregular
Size of areas: 100 to 400 acres

Composition

Neshoba and similar soils: 80 percent
Dissimilar soils: 20 percent

Typical Profile

Surface layer:
0 to 4 inches—dark grayish brown fine sandy loam

Subsoil:
4 to 25 inches—dark red silty clay
25 to 38 inches—dark red silty clay
38 to 52 inches—red clay loam that has yellowish red mottles
52 to 65 inches—red clay loam
65 to 80 inches—dark red clay loam

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: High
Seasonal high water table: None within a depth of 6 feet
Shrink-swell potential: Moderate

Flooding: None
Content of organic matter in the surface layer: Low

Minor Components

Dissimilar soils:
- Well drained Ruston soils on summits of narrow ridges
- Williamsville soils on the steeper parts of the slope

Similar soils:
- Scattered areas of soils that have less clay in the subsoil than the Neshoba soil

Land Use

Dominant uses: Pasture, hayland, and cropland
Other uses: Forestland

Cropland
Suitability: Suited
Commonly grown crops: Cotton, corn, and soybeans
Management concerns: Erodibility and low fertility
Management measures and considerations:
- Using a resource management system that includes terraces and diversions, stripcropping, contour tillage, conservation tillage, and crop residue management reduces the hazard of erosion, helps to control surface runoff, and maximizes rainfall infiltration.
- Applying lime and fertilizer on the basis of soil testing increases the availability of nutrients to plants and maximizes productivity.

Pasture and hayland
Suitability: Well suited
Commonly grown crops: Common bermudagrass, bahiagrass, and tall fescue
Management concerns: Erodibility
Management measures and considerations:
- Preventing overgrazing or restricting grazing to periods when the soil is not too wet minimizes compaction and helps to maintain productivity and tilth.
- Preparing seedbeds on the contour or across the slope reduces the hazard of erosion and increases the rate of germination.

Forestland
Suitability: Well suited
Productivity class: Very high for loblolly pine
Management concerns: Equipment limitations and windthrow
Management measures and considerations:
- Restricting logging to periods when the soil is not wet minimizes rutting and the damage caused to tree roots by compaction.
- Windthrow can be minimized by planting at close intervals.

Wildlife habitat
Potential to support habitat for: Openland wildlife—good; forestland wildlife—good; wetland wildlife—poor
Management concerns: None
Management measures and considerations:
- Openland wildlife habitat can be improved by leaving undisturbed areas of vegetation around cropland and pasture. These areas provide wildlife with food and a place to rest.
- Forestland wildlife habitat can be improved by planting appropriate vegetation, maintaining the existing plant cover, or promoting the natural establishment of desirable plants. Prescribed burning every 3 years, rotated among several small

tracts of land, can increase the amount of palatable browse for deer and the number of seed-producing plants for quail and turkey.

Dwellings without basements
Suitability: Suited
Management concerns: Shrink-swell potential
Management measures and considerations:
- Reinforcing foundations and footings or backfilling with coarse-textured material helps to prevent the damage caused by shrinking and swelling.

Septic tank absorption fields
Suitability: Poorly suited
Management concerns: Restricted permeability
Management measures and considerations:
- Increasing the size of the absorption field improves system performance.
- The local Health Department can be contacted for additional guidance.

Local roads and streets
Suitability: Suited
Management concerns: Low strength
Management measures and considerations:
- Incorporating sand and gravel into the roadbed and compacting the roadbed help to overcome the low strength of the natural soil material.

Lawns and landscaping
Suitability: Well suited
Management concerns: Erodibility
Management measures and considerations:
- Vegetating disturbed areas and using erosion-control structures, such as sediment fences and catch basins, help to keep soil on the site.

Interpretive Groups

Land capability classification: 2e
Forestland ordination symbol: 9A

NeC2—Neshoba fine sandy loam, 5 to 8 percent slopes, eroded

Setting

Landscape: Coastal Plain
Landform: Narrow ridges and hillslopes
Landform position: Edges of summits and side slopes
Shape of areas: Irregular
Size of areas: 20 to 400 acres

Composition

Neshoba and similar soils: 90 percent
Dissimilar soils: 10 percent

Typical Profile

Surface layer:
0 to 4 inches—dark grayish brown fine sandy loam

Subsoil:
4 to 25 inches—dark red silty clay
25 to 38 inches—dark red silty clay

38 to 52 inches—red clay loam that has yellowish red mottles
52 to 65 inches—red clay loam
65 to 80 inches—dark red clay loam

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: High
Seasonal high water table: None within a depth of 6 feet
Shrink-swell potential: Moderate
Flooding: None
Content of organic matter in the surface layer: Low

Minor Components

Dissimilar soils:
- Well drained Ruston soils on summits of narrow ridges
- Williamsville soils on the steeper parts of the slope

Similar soils:
- Scattered areas of soils that have less clay in the subsoil than the Neshoba soil

Land Use

Dominant uses: Pasture, hayland, and forestland
Other uses: Cropland

Cropland
Suitability: Suited
Commonly grown crops: Cotton, corn, and soybeans
Management concerns: Erodibility
Management measures and considerations:
- Using a resource management system that includes terraces and diversions, stripcropping, contour tillage, conservation tillage, and crop residue management reduces the hazard of erosion, helps to control surface runoff, and maximizes rainfall infiltration.
- Applying lime and fertilizer on the basis of soil testing increases the availability of nutrients to plants and maximizes productivity.

Pasture and hayland
Suitability: Well suited
Commonly grown crops: Common bermudagrass and bahiagrass
Management concerns: Erodibility
Management measures and considerations:
- Preventing overgrazing or restricting grazing to periods when the soil is not too wet minimizes compaction and helps to maintain productivity and tilth.
- Preparing seedbeds on the contour or across the slope reduces the hazard of erosion and increases the rate of germination.

Forestland
Suitability: Well suited
Productivity class: High for loblolly pine
Management concerns: Equipment limitations, windthrow, and plant competition
Management measures and considerations:
- Restricting logging to periods when the soil is not wet minimizes rutting and the damage caused to tree roots by compaction.
- Windthrow can be minimized by planting at close intervals.

- Site preparation practices, such as chopping, prescribed burning, and applying herbicides, help to control plant competition.

Wildlife habitat
Potential to support habitat for: Openland wildlife—good; forestland wildlife—good; wetland wildlife—poor
Management concerns: None
Management measures and considerations:
- Openland wildlife habitat can be improved by leaving undisturbed areas of vegetation around cropland and pasture. These areas provide wildlife with food and a place to rest.
- Forestland wildlife habitat can be improved by planting appropriate vegetation, maintaining the existing plant cover, or promoting the natural establishment of desirable plants. Prescribed burning every 3 years, rotated among several small tracts of land, can increase the amount of palatable browse for deer and the number of seed-producing plants for quail and turkey.

Dwellings without basements
Suitability: Suited
Management concerns: Shrink-swell potential
Management measures and considerations:
- Reinforcing foundations and footings or backfilling with coarse-textured material helps to prevent the damage caused by shrinking and swelling.

Septic tank absorption fields
Suitability: Poorly suited
Management concerns: Restricted permeability
Management measures and considerations:
- Increasing the size of the absorption field improves system performance.
- The local Health Department can be contacted for additional guidance.

Local roads and streets
Suitability: Suited
Management concerns: Low strength
Management measures and considerations:
- Incorporating sand and gravel into the roadbed and compacting the roadbed help to overcome the low strength of the natural soil material.

Lawns and landscaping
Suitability: Suited
Management concerns: Erodibility
Management measures and considerations:
- Vegetating disturbed areas and using erosion-control structures, such as sediment fences and catch basins, help to keep soil on the site.
- Designing plantings to conform to the natural contour reduces the hazard of erosion and increases the rate of water infiltration.

Interpretive Groups

Land capability classification: 3e
Forestland ordination symbol: 9A

OrB—Ora fine sandy loam, 2 to 5 percent slopes

Setting

Landscape: Coastal Plain
Landform: Upland ridges

Landform position: Narrow summits and shoulder slopes
Shape of areas: Irregular
Size of areas: 5 to 300 acres

Composition

Ora and similar soils: 85 percent
Dissimilar soils: 15 percent

Typical Profile

Surface layer:
0 to 3 inches—brown fine sandy loam

Subsurface layer:
3 to 6 inches—yellowish brown sandy loam and yellowish brown loam

Subsoil:
6 to 13 inches—yellowish red loam that has brownish yellow mottles
13 to 24 inches—yellowish red loam that has yellowish brown mottles
24 to 35 inches—mottled yellowish red, red, and brownish gray sandy clay loam
35 to 57 inches—mottled red, light brownish gray, and light reddish brown sandy clay loam

Substratum:
57 to 80 inches—red sandy loam that has light yellowish red mottles

Soil Properties and Qualities

Depth class: Moderately deep to a root-restricting layer
Drainage class: Moderately well drained
Permeability: Moderately slow
Available water capacity: Low
Seasonal high water table: Perched, at a depth of 2 to 3½ feet from January through April
Shrink-swell potential: Low
Flooding: None
Content of organic matter in the surface layer: Low

Minor Components

Dissimilar soils:
- Well drained Ruston soils, which do not have a fragipan, on the slightly higher knolls
- Clayey Sweatman soils in saddles and on the lower parts of the slope
- Smithdale soils, which do not have a fragipan, on the lower parts of the slope

Similar soils:
- Scattered areas of loamy soils that have a brownish fragipan

Land Use

Dominant uses: Pasture, hayland, and cropland
Other uses: Forestland

Cropland
Suitability: Well suited
Commonly grown crops: Corn, soybeans, and cotton
Management concerns: Erodibility, droughtiness, and root restriction
Management measures and considerations:
- Using a resource management system that includes terraces and diversions, contour tillage, no-till planting, and crop residue management reduces the hazard of erosion, helps to control surface runoff, and maximizes rainfall infiltration.

- Chisel plowing or subsoiling helps to break through plowpans, increasing root penetration and rainfall infiltration.
- Applying lime and fertilizer on the basis of soil testing increases the availability of nutrients to plants and maximizes productivity.

Pasture and hayland
Suitability: Well suited
Commonly grown crops: Bahiagrass and common bermudagrass
Management concerns: Erodibility, wetness, and root restriction
Management measures and considerations:
- Preparing seedbeds on the contour or across the slope reduces the hazard of erosion and increases the rate of germination.
- Proper stocking rates and restricted grazing during wet periods minimize compaction and help to keep the pasture in good condition.
- Chisel plowing or subsoiling when seedbeds are prepared helps to break through plowpans, increasing root penetration and rainfall infiltration.
- Applying lime and fertilizer on the basis of soil testing increases the availability of nutrients to plants and maximizes productivity.

Forestland
Suitability: Well suited
Productivity class: Very high for loblolly pine
Management concerns: Plant competition and windthrow
Management measures and considerations:
- Site preparation practices, such as chopping, prescribed burning, and applying herbicides, help to control plant competition.
- Windthrow can be minimized by planting at close intervals.

Wildlife habitat
Potential to support habitat for: Openland wildlife—good; forestland wildlife—good; wetland wildlife—poor
Management concerns: None
Management measures and considerations:
- Openland wildlife habitat can be improved by leaving undisturbed areas of vegetation around cropland and pasture. These areas provide wildlife with food and a place to rest.
- Forestland wildlife habitat can be improved by planting appropriate vegetation, maintaining the existing plant cover, or promoting the natural establishment of desirable plants. Prescribed burning every 3 years, rotated among several small tracts of land, can increase the amount of palatable browse for deer and the number of seed-producing plants for quail and turkey.

Dwellings without basements
Suitability: Suited
Management concerns: Wetness
Management measures and considerations:
- Constructing dwellings on raised, well-compacted fill material helps to overcome the wetness.
- Installing a subsurface drainage system helps to lower the seasonal high water table.

Septic tank absorption fields
Suitability: Poorly suited
Management concerns: Wetness and restricted permeability
Management measures and considerations:
- Using suitable fill material to raise the filter field a sufficient distance above the seasonal high water table improves system performance.

- Increasing the size of septic tank absorption fields improves the performance of the system, and installing distribution lines during dry periods minimizes smearing and sealing of trench walls.
- The local Health Department can be contacted for additional guidance.

Local roads and streets
Suitability: Suited
Management concerns: Low strength and wetness
Management measures and considerations:
- Incorporating sand and gravel into the roadbed, compacting the roadbed, and designing roads to conform to the natural slope help to overcome the low strength of the natural soil material.
- Constructing roads on raised, well-compacted fill material helps to overcome the wetness.
- Designing roads to safely remove surface runoff improves soil performance.

Lawns and landscaping
Suitability: Suited
Management concerns: Erodibility and root penetration
Management measures and considerations:
- Vegetating disturbed areas and using erosion-control structures, such as sediment fences and catch basins, help to keep soil on the site.
- Lime, fertilizer, mulch, and irrigation help to establish lawns and landscape plants.
- Because of the restricted rooting depth, lawns and landscaping are difficult to establish and maintain, especially if the soil has been significantly disturbed by construction.

Interpretive Groups

Land capability classification: 2e
Forestland ordination symbol: 8W

OrC2—Ora fine sandy loam, 5 to 8 percent slopes, eroded

Setting

Landscape: Coastal Plain
Landform: Upland ridges
Landform position: Side slopes
Shape of areas: Irregular
Size of areas: 5 to 250 acres

Composition

Ora and similar soils: 85 percent
Dissimilar soils: 15 percent

Typical Profile

Surface layer:
0 to 3 inches—brown fine sandy loam

Subsurface layer:
3 to 6 inches—yellowish brown sandy loam and yellowish brown loam

Subsoil:
6 to 13 inches—yellowish red loam that has brownish yellow mottles
13 to 24 inches—yellowish red loam that has yellowish brown mottles
24 to 35 inches—mottled yellowish red, red, and brownish gray sandy clay loam
35 to 57 inches—mottled red, light brownish gray, and light reddish brown sandy clay loam

Substratum:
57 to 80 inches—red sandy loam that has light yellowish red mottles

Soil Properties and Qualities

Depth class: Moderately deep to a root-restricting fragipan
Drainage class: Moderately well drained
Permeability: Moderately slow
Available water capacity: Low
Seasonal high water table: Perched, at a depth of 2 to 3½ feet from January through April
Shrink-swell potential: Low
Flooding: None
Content of organic matter in the surface layer: Low

Minor Components

Dissimilar soils:
- Well drained Ruston soils, which do not have a fragipan, on convex knolls and the upper parts of the slope
- Clayey Sweatman soils in saddles and on the lower parts of the slope
- Smithdale soils, which do not have a fragipan, on the lower parts of the slope

Similar soils:
- Scattered areas of loamy soils that have a brownish fragipan

Land Use

Dominant uses: Pasture, hayland, and forestland
Other uses: Cropland

Cropland
Suitability: Suited
Commonly grown crops: Corn, soybeans, and cotton
Management concerns: Erodibility and root penetration
Management measures and considerations:
- Using a resource management system that includes terraces and diversions, contour tillage, no-till planting, and crop residue management reduces the hazard of erosion, helps to control surface runoff, and maximizes rainfall infiltration.
- Chisel plowing or subsoiling helps to break through plowpans, increasing root penetration and rainfall infiltration.
- Applying lime and fertilizer on the basis of soil testing increases the availability of nutrients to plants and maximizes productivity.

Pasture and hayland
Suitability: Well suited to pasture; suited to hayland
Commonly grown crops: Bahiagrass and common bermudagrass
Management concerns: Erodibility, droughtiness, and root penetration
Management measures and considerations:
- Using a resource management system that includes terraces and diversions, conservation tillage, contour farming, crop residue management, and soil conserving crops in rotation reduces the hazard of erosion, helps to control surface runoff, and maximizes rainfall infiltration.
- Chisel plowing or subsoiling helps to break through plowpans, increasing root penetration and rainfall infiltration.
- Applying lime and fertilizer on the basis of soil testing increases the availability of nutrients to plants and maximizes productivity.

Forestland
Suitability: Well suited
Productivity class: Very high for loblolly pine

Management concerns: Erodibility, windthrow, and plant competition
Management measures and considerations:
- Installing broad-based dips, water bars, and culverts helps to stabilize logging roads, skid trails, and landings.
- Constructing roads, fire lanes, and skid trails on the contour helps to overcome the slope limitation.
- Windthrow can be minimized by planting at close intervals.
- Site preparation practices, such as chopping, prescribed burning, and applying herbicides, help to control plant competition.

Wildlife habitat
Potential to support habitat for: Openland wildlife—good; forestland wildlife—good; wetland wildlife—very poor
Management concerns: None
Management measures and considerations:
- Openland wildlife habitat can be improved by leaving undisturbed areas of vegetation around cropland and pasture. These areas provide wildlife with food and a place to rest.
- Forestland wildlife habitat can be improved by planting appropriate vegetation, maintaining the existing plant cover, or promoting the natural establishment of desirable plants. Prescribed burning every 3 years, rotated among several small tracts of land, can increase the amount of palatable browse for deer and the number of seed-producing plants for quail and turkey.

Dwellings without basements
Suitability: Suited
Management concerns: Wetness and erodibility
Management measures and considerations:
- Installing a subsurface drainage system helps to lower the seasonal high water table.
- Vegetating disturbed areas and using erosion-control structures, such as sediment fences and catch basins, help to keep soil on the site.

Septic tank absorption fields
Suitability: Poorly suited
Management concerns: Wetness and restricted permeability
Management measures and considerations:
- Using suitable fill material to raise the filter field a sufficient distance above the seasonal high water table improves system performance.
- Increasing the size of septic tank absorption fields improves the performance of the system, and installing distribution lines during dry periods minimizes smearing and sealing of trench walls.
- The local Health Department can be contacted for additional guidance.

Local roads and streets
Suitability: Suited
Management concerns: Low strength and wetness
Management measures and considerations:
- Incorporating sand and gravel into the roadbed, compacting the roadbed, and designing roads to conform to the natural slope help to overcome the low strength of the natural soil material.
- Constructing roads on raised, well-compacted fill material helps to overcome the wetness.

Lawns and landscaping
Suitability: Suited
Management concerns: Erodibility and root penetration

Management measures and considerations:
- Vegetating disturbed areas and using erosion-control structures, such as sediment fences and catch basins, help to keep soil on the site.
- Lime, fertilizer, mulch, and irrigation help to establish lawns and landscape plants.
- Because of the restricted rooting depth, lawns and landscaping are difficult to establish and maintain, especially if the soil has been significantly disturbed by construction.

Interpretive Groups

Land capability classification: 3e
Forestland ordination symbol: 8W

Po—Pits-Udorthents complex, 5 to 15 percent slopes, eroded

Setting

Landscape: Coastal Plain
Landform: Ridges, hillslopes, and terraces
Landform position: Variable
Shape of areas: Irregular
Size of areas: 4 to 50 acres

Composition

Pits: 50 percent
Udorthents: 45 percent
Dissimilar soils: 5 percent

This map unit consists of open excavations from which the original soil and underlying material have been removed for use at another location. Typically, the remaining material consists of strata and piles of sand, stone, and mixed earthy materials. Most areas are severely eroded and have many gullies. Vegetation is generally sparse and of low quality.

Soil Properties and Qualities

Depth class: Variable
Drainage class: Variable
Permeability: Variable
Available water capacity: Variable
Seasonal high water table: Variable
Shrink-swell potential: Variable
Flooding: None
Content of organic matter in the surface layer: Variable
Other distinctive properties: Discontinuous layers, streaks, or pockets of variable textures

Minor Components

Dissimilar soils:
- Ruston, Ora, and Sweatman soils at the edges of mapped areas on uplands
- Providence and Savannah soils at the edges of mapped areas on terraces
- Small areas of soils in depressions that are intermittently ponded

Land Use

Dominant uses: Source of sand, gravel, clay, and fill material
Other uses: Unsuited to most other uses

- Extensive reclamation is required to make areas suitable for use as cropland, pasture, hayland, forestland, or homesites or for wildlife habitat.
- Onsite investigation and testing are needed to determine the suitability of areas of this unit for any use.

Interpretive Groups

Land capability classification: 8e
Forestland ordination symbol: None assigned

PrB—Providence silt loam, 2 to 5 percent slopes

Setting

Landscape: Coastal Plain
Landform: Stream terraces and uplands
Landform position: Side slopes and upper parts of shoulder slopes
Shape of areas: Irregular
Size of areas: 5 to 250 acres

Composition

Providence and similar soils: 90 percent
Dissimilar soils: 10 percent

Typical Profile

Surface layer:
0 to 3 inches—brown silt loam

Subsurface layer:
3 to 8 inches—yellowish brown silt loam

Subsoil:
8 to 13 inches—strong brown silt loam
13 to 24 inches—strong brown silty clay loam that has light yellowish brown and yellowish brown mottles
24 to 31 inches—strong brown silt loam that has gray, light yellowish brown, and dark red mottles
31 to 42 inches—mottled strong brown, gray, and red silt loam
42 to 56 inches—strong brown loam that has light brownish gray and red mottles
56 to 68 inches—red sandy clay loam that has light brownish gray and strong brown mottles
68 to 80 inches—red sandy clay loam that has light gray and strong brown mottles

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Moderately well drained
Permeability: Moderately slow
Available water capacity: Moderate
Seasonal high water table: Perched, at a depth of $1^{1}/_{2}$ to 3 feet from January through March
Shrink-swell potential: Low
Flooding: None
Content of organic matter in the surface layer: Low

Minor Components

Dissimilar soils:
- Somewhat poorly drained Mantachie soils on narrow flood plains

- Well drained Ruston and Smithdale soils, which do not have a fragipan, on shoulder slopes and narrow ridges

Similar soils:
- Scattered areas of soils that have a fragipan and that have less clay in the subsoil than the Providence soil
- Scattered areas of soils that have a fragipan and that are reddish in the upper part of the subsoil
- Providence soils that have slopes of less than 2 percent or more than 5 percent

Land Use

Dominant uses: Pasture, hayland, and cropland
Other uses: Forestland

Cropland
Suitability: Well suited
Commonly grown crops: Corn, cotton, soybeans, and grain sorghum
Management concerns: Erodibility, droughtiness, and root restriction
Management measures and considerations:
- Using a resource management system that includes terraces and diversions, contour tillage, no-till planting, and crop residue management reduces the hazard of erosion, helps to control surface runoff, and maximizes rainfall infiltration.
- Chisel plowing or subsoiling helps to break through plowpans, increasing root penetration and rainfall infiltration.
- Applying lime and fertilizer on the basis of soil testing increases the availability of nutrients to plants and maximizes productivity.

Pasture and hayland
Suitability: Well suited
Commonly grown crops: Bahiagrass and common bermudagrass
Management concerns: Erodibility, droughtiness, and root restriction
Management measures and considerations:
- Preventing overgrazing or restricting grazing to periods when the soil is not too wet minimizes compaction and helps to maintain productivity and tilth.
- Chisel plowing or subsoiling when seedbeds are prepared helps to break through hard pans, increasing root penetration and rainfall infiltration.
- Applying lime and fertilizer on the basis of soil testing increases the availability of nutrients to plants and maximizes productivity during the establishment, maintenance, or renovation of hayland and pasture.

Forestland
Suitability: Well suited
Productivity class: Very high for loblolly pine
Management concerns: Windthrow and plant competition
Management measures and considerations:
- Windthrow can be minimized by planting at close intervals.
- Site preparation practices, such as chopping, prescribed burning, and applying herbicides, help to control plant competition.

Wildlife habitat
Potential to support habitat for: Openland wildlife—good; forestland wildlife—good; wetland wildlife—very poor
Management concerns: None
Management measures and considerations:
- Openland wildlife habitat can be improved by leaving undisturbed areas of vegetation around cropland and pasture. These areas provide wildlife with food and a place to rest.

- Forestland wildlife habitat can be improved by planting appropriate vegetation, maintaining the existing plant cover, or promoting the natural establishment of desirable plants. Prescribed burning every 3 years, rotated among several small tracts of land, can increase the amount of palatable browse for deer and the number of seed-producing plants for quail and turkey.

Dwellings without basements
Suitability: Suited
Management concerns: Wetness
Management measures and considerations:
- Constructing dwellings on raised, well-compacted fill material helps to overcome the wetness.
- Installing a subsurface drainage system helps to lower the seasonal high water table.

Septic tank absorption fields
Suitability: Poorly suited
Management concerns: Wetness and restricted permeability
Management measures and considerations:
- Using suitable fill material to raise the filter field a sufficient distance above the seasonal high water table improves system performance.
- Increasing the size of septic tank absorption fields improves the performance of the system, and installing distribution lines during dry periods minimizes smearing and sealing of trench walls.
- The local Health Department can be contacted for additional guidance.

Local roads and streets
Suitability: Suited
Management concerns: Wetness
Management measures and considerations:
- Constructing roads on raised, well-compacted fill material helps to overcome the wetness.
- Incorporating sand and gravel into the roadbed, compacting the roadbed, and designing roads to conform to the natural slope help to overcome the low strength of the natural soil material.

Lawns and landscaping
Suitability: Suited
Management concerns: Wetness
Management measures and considerations:
- Vegetating disturbed areas and using erosion-control structures, such as sediment fences and catch basins, help to keep soil on the site.
- Applying supplemental irrigation and seeding or planting varieties adapted to wet conditions increase the survival rate of grasses and landscaping plants.

Interpretive Groups

Land capability classification: 2e
Forestland ordination symbol: 8W

PrC2—Providence silt loam, 5 to 8 percent slopes, eroded

Setting

Landscape: Coastal Plain
Landform: Stream terraces and uplands
Landform position: Side slopes and shoulder slopes

Shape of areas: Irregular
Size of areas: 10 to 250 acres

Composition

Providence and similar soils: 85 percent
Dissimilar soils: 15 percent

Typical Profile

Surface layer:
0 to 3 inches—brown silt loam

Subsurface layer:
3 to 8 inches—yellowish brown silt loam

Subsoil:
8 to 13 inches—strong brown silt loam
13 to 24 inches—strong brown silty clay loam that has light yellowish brown and yellowish brown mottles
24 to 31 inches—strong brown silt loam that has gray, light yellowish brown, and dark red mottles
31 to 42 inches—mottled strong brown, gray, and red silt loam
42 to 56 inches—strong brown loam that has light brownish gray and red mottles
56 to 68 inches—red sandy clay loam that has light brownish gray and strong brown mottles
68 to 80 inches—red sandy clay loam that has light gray and strong brown mottles

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Moderately well drained
Permeability: Moderately slow
Available water capacity: Moderate
Seasonal high water table: Perched, at a depth of 1$^{1}/_{2}$ to 3 feet from January through March
Shrink-swell potential: Low
Flooding: None
Content of organic matter in the surface layer: Low

Minor Components

Dissimilar soils:
- Well drained Ruston and Smithdale soils, which do not have a fragipan, on side slopes and the upper parts of ridgetops

Similar soils:
- Scattered areas of soils that have a fragipan and that have less clay in the subsoil than the Providence soil
- Scattered areas of soils that have a fragipan and that are reddish in the upper part of the subsoil
- Providence soils that have slopes of less than 5 percent or more than 8 percent

Land Use

Dominant uses: Pasture, hayland, and forestland
Other uses: Cropland

Cropland
Suitability: Suited
Commonly grown crops: Corn, cotton, soybeans, and grain sorghum
Management concerns: Erodibility, droughtiness, and root restriction

Management measures and considerations:

- Using a resource management system that includes terraces and diversions, contour tillage, no-till planting, and crop residue management reduces the hazard of erosion, helps to control surface runoff, and maximizes rainfall infiltration.
- Chisel plowing or subsoiling helps to break through plowpans, increasing root penetration and rainfall infiltration.
- Applying lime and fertilizer on the basis of soil testing increases the availability of nutrients to plants and maximizes productivity.

Pasture and hayland

Suitability: Well suited (fig. 3)
Commonly grown crops: Bahiagrass and common bermudagrass
Management concerns: Erodibility, droughtiness, and root restriction
Management measures and considerations:

- Preventing overgrazing or restricting grazing to periods when the soil is not too wet minimizes compaction and helps to maintain productivity and tilth.
- Chisel plowing or subsoiling when seedbeds are prepared helps to break through hard pans, increasing root penetration and rainfall infiltration.
- Applying lime and fertilizer on the basis of soil testing increases the availability of nutrients to plants and maximizes productivity during the establishment, maintenance, or renovation of hayland and pasture.

Forestland

Suitability: Well suited
Productivity class: Very high for loblolly pine
Management concerns: Erosion, windthrow, and plant competition
Management measures and considerations:

- Installing broad-based dips, water bars, and culverts helps to stabilize logging roads, skid trails, and landings.

Figure 3.—A field in an area of Providence silt loam, 5 to 8 percent slopes, eroded. Properly managed, gently sloping areas can yield high-quality hay forage.

- Windthrow can be minimized by planting at close intervals.
- Site preparation practices, such as chopping, prescribed burning, and applying herbicides, help to control plant competition.

Wildlife habitat
Potential to support habitat for: Openland wildlife—good; forestland wildlife—good; wetland wildlife—very poor
Management concerns: None
Management measures and considerations:
- Openland wildlife habitat can be improved by leaving undisturbed areas of vegetation around cropland and pasture. These areas provide wildlife with food and a place to rest.
- Forestland wildlife habitat can be improved by planting appropriate vegetation, maintaining the existing plant cover, or promoting the natural establishment of desirable plants. Prescribed burning every 3 years, rotated among several small tracts of land, can increase the amount of palatable browse for deer and the number of seed-producing plants for quail and turkey.

Dwellings without basements
Suitability: Suited
Management concerns: Wetness and erodibility
Management measures and considerations:
- Constructing dwellings on raised, well-compacted fill material helps to overcome the wetness.
- Installing a subsurface drainage system helps to lower the seasonal high water table.
- Vegetating disturbed areas and using erosion-control structures, such as sediment fences and catch basins, help to keep soil on the site.

Septic tank absorption fields
Suitability: Poorly suited
Management concerns: Wetness and restricted permeability
Management measures and considerations:
- Using suitable fill material to raise the filter field a sufficient distance above the seasonal high water table improves system performance.
- Increasing the size of septic tank absorption fields improves the performance of the system, and installing distribution lines during dry periods minimizes smearing and sealing of trench walls.
- The local Health Department can be contacted for additional guidance.

Local roads and streets
Suitability: Suited
Management concerns: Wetness
Management measures and considerations:
- Incorporating sand and gravel into the roadbed, compacting the roadbed, and designing roads to conform to the natural slope help to overcome the low strength of the natural soil material.
- Constructing roads on raised, well-compacted fill material helps to overcome the wetness.

Lawns and landscaping
Suitability: Suited
Management concerns: Erodibility and wetness
Management measures and considerations:
- Vegetating disturbed areas and using erosion-control structures, such as sediment fences and catch basins, help to keep soil on the site.
- Applying supplemental irrigation and seeding or planting varieties adapted to wet conditions increase the survival rate of grasses and landscaping plants.

Interpretive Groups

Land capability classification: 3e
Forestland ordination symbol: 8W

Rb—Rosebloom silt loam, ponded

Setting

Landscape: Coastal Plain
Landform: Broad flood plains
Landform position: Depressions and sloughs
Shape of areas: Oblong and rounded
Size of areas: 5 to 160 acres

Composition

Rosebloom and similar soils: 85 percent
Dissimilar soils: 15 percent

Typical Profile

Surface layer:
0 to 7 inches—dark grayish brown silt loam that has brownish yellow mottles

Subsurface layer:
7 to 10 inches—dark grayish brown silt loam that has light brownish gray mottles

Subsoil:
10 to 24 inches—gray silt loam that has gray and brownish yellow mottles
24 to 33 inches—gray silt loam that has brownish yellow mottles
33 to 46 inches—gray silty clay loam that has brownish yellow mottles
46 to 62 inches—gray silty clay loam that has brownish yellow and red mottles
62 to 80 inches—gray silty clay loam that has yellowish brown mottles

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Poorly drained
Permeability: Slow
Available water capacity: High
Seasonal high water table: Apparent, at the surface to a depth of 1 foot from December through June
Shrink-swell potential: Low
Flooding: None
Content of organic matter in the surface layer: Low
Reaction: Very strongly acid or strongly acid

Minor Components

Dissimilar soils:
- Somewhat poorly drained Mantachie soils in linear positions

Similar soils:
- Scattered areas of soils that have slightly more sand or clay in the subsoil than the Rosebloom soil

Land Use

Dominant uses: Forestland and wildlife habitat
Other uses: Pasture

Cropland
Suitability: Unsuited

Management concerns: Ponding, wetness, and flooding
Management measures and considerations:
- This map unit is severely limited for crop production. A site that has better suited soils should be selected.

Pasture and hayland
Suitability: Poorly suited
Management concerns: Ponding, wetness, and flooding
Management measures and considerations:
- Using land shaping or grading to construct outlets for surface water helps to eliminate ponding.
- Well maintained drainageways and ditches help to remove excess water.

Forestland
Suitability: Poorly suited
Management concerns: Equipment limitations, seedling mortality, windthrow, and plant competition
Management measures and considerations:
- Restricting the use of standard wheeled and tracked equipment to dry periods helps to prevent rutting and compaction.
- Using low-pressure ground equipment minimizes rutting and the damage caused to tree roots by compaction.
- Windthrow can be minimized by planting at close intervals.
- Planting seedlings on raised beds helps to establish the seedlings and increases the seedling survival rate.
- Site preparation practices, such as chopping, prescribed burning, and applying herbicides, help to control plant competition.

Wildlife habitat
Potential to support habitat for: Openland wildlife—poor; forestland wildlife—poor; wetland wildlife—good
Management concerns: None
Management measures and considerations:
- Wetland wildlife habitat can be improved by constructing shallow ponds that provide open water areas for waterfowl and furbearers.

Dwellings without basements
Suitability: Unsuited
Management concerns: Ponding, wetness, and flooding
Management measures and considerations:
- This map unit is severely limited as a site for dwellings. A site that has better suited soils should be selected.

Septic tank absorption fields
Suitability: Unsuited
Management concerns: Ponding, wetness, and flooding
Management measures and considerations:
- This map unit is severely limited as a site for septic tank absorption fields. A site that has better suited soils should be selected.

Local roads and streets
Suitability: Poorly suited
Management concerns: Low strength, ponding, and flooding
Management measures and considerations:
- Well-compacted, high-strength fill material used as a road base can elevate roads above the flooding and ponding and help to overcome the low strength of the natural soil material.

Lawns and landscaping
Suitability: Unsuited
Management concerns: Ponding, wetness, and flooding
Management measures and considerations:
- This map unit is severely limited as a site for lawns and landscaping. A site that has better suited soils should be selected.

Interpretive Groups

Land capability classification: 6w
Forestland ordination symbol: 9W

RK—Rosebloom and Arkabutla soils, frequently flooded

Setting

Landscape: Coastal Plain
Landform: Flood plains
Landform position: Rosebloom—sloughs and backswamps; Arkabutla—low parts of natural levees
Shape of areas: Long and narrow
Size of areas: 25 to 500 acres

Composition

Rosebloom and similar soils: 50 percent
Arkabutla and similar soils: 40 percent
Dissimilar soils: 10 percent

Typical Profiles

Rosebloom
Surface layer:
0 to 7 inches—dark grayish brown silt loam that has brownish yellow mottles

Subsurface layer:
7 to 10 inches—dark grayish brown silt loam that has light brownish gray mottles

Subsoil:
10 to 24 inches—gray silt loam that has gray and brownish yellow mottles
24 to 33 inches—gray silt loam that has brownish yellow mottles
33 to 46 inches—gray silty clay loam that has brownish yellow mottles
46 to 62 inches—gray silty clay loam that has brownish yellow and red mottles
62 to 80 inches—gray silty clay that has yellowish brown mottles

Arkabutla
Surface layer:
0 to 7 inches—brown silt loam that has pale brown mottles

Subsoil:
7 to 18 inches—brown silt loam that has light brownish gray and pale brown mottles
18 to 35 inches—light brownish gray silty clay loam that has pale brown and yellowish brown mottles
35 to 53 inches—light brownish gray silty clay loam that has yellowish brown mottles
53 to 60 inches—gray silt loam that has dark yellowish brown mottles
60 to 80 inches—light brownish gray loam that has dark yellowish brown mottles

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Rosebloom—poorly drained; Arkabutla—somewhat poorly drained

Permeability: Moderate
Available water capacity: High
Seasonal high water table: Rosebloom—apparent, at the surface to a depth of 1 foot from December through April; Arkabutla—apparent, at a depth of 1 to 1½ feet from January through April
Shrink-swell potential: Low
Flooding: Frequent
Content of organic matter in the surface layer: Low
Reaction: Very strongly acid or strongly acid

Minor Components

Dissimilar soils:
- Somewhat poorly drained Mantachie soils in the slightly higher positions

Similar soils:
- Moderately well drained, silty soils on the high parts of natural levees adjacent to stream channels

Land Use

Dominant uses: Forestland and wildlife habitat
Other uses: Cropland and pasture

Cropland
Suitability: Poorly suited
Commonly grown crops: Corn and soybeans
Management concerns: Flooding and wetness
Management measures and considerations:
- Although most of the flooding occurs during winter and spring, crop losses can occur during the growing season.
- Well maintained drainageways and ditches help to remove excess water and improve productivity.

Pasture and hayland
Suitability: Suited to pasture; poorly suited to hayland
Commonly grown crops: Common bermudagrass and bahiagrass
Management concerns: Flooding and wetness
Management measures and considerations:
- Although most of the flooding occurs during winter and spring, pasture and hay can be damaged during any time of the year.
- Harvesting hay as soon as possible reduces the risk of damage from the flooding.
- Proper stocking rates and restricted grazing during wet periods minimize compaction and help to keep the pasture in good condition.
- Apply lime and fertilizer on the basis of soil testing increases the availability of nutrients to plants and maximizes productivity.

Forestland
Suitability: Suited
Productivity class: Very high for loblolly pine and hardwoods
Management concerns: Equipment limitations, seedling mortality, windthrow, and plant competition
Management measures and considerations:
- Restricting the use of standard wheeled and tracked equipment to dry periods helps to prevent rutting and compaction.
- Planting seedlings on raised beds helps to establish the seedlings and increases the seedling survival rate.
- Windthrow can be minimized by planting at close intervals.

- Site preparation practices, such as chopping, prescribed burning, and applying herbicides, help to control plant competition.
- Harvesting timber during the summer or fall reduces the risk of damage from the flooding.

Wildlife habitat
Potential of the Rosebloom soil to support habitat for: Openland wildlife—fair; forestland wildlife—fair; wetland wildlife—good
Potential of the Arkabutla soil to support habitat for: Openland wildlife—fair; forestland wildlife—good; wetland wildlife—fair
Management concerns: Flooding and wetness
Management measures and considerations:
- Openland wildlife habitat can be improved by leaving undisturbed areas of vegetation around cropland and pasture. These areas provide wildlife with food and a place to rest.
- Forestland wildlife habitat can be improved by planting appropriate vegetation, maintaining the existing plant cover, or promoting the natural establishment of desirable plants. Prescribed burning every 3 years, rotated among several small tracts of land, can increase the amount of palatable browse for deer and the number of seed-producing plants for quail and turkey.
- Wetland wildlife habitat can be improved by constructing shallow ponds that provide open water areas for waterfowl and furbearers.

Dwellings without basements
Suitability: Unsuited
Management concerns: Flooding
Management measures and considerations:
- This map unit is severely limited as a site for dwellings. A site that has better suited soils should be selected.

Septic tank absorption fields
Suitability: Unsuited
Management concerns: Flooding
Management measures and considerations:
- This map unit is severely limited as a site for septic tank absorption fields.
- The local Health Department can be contacted for additional guidance.

Local roads and streets
Suitability: Poorly suited
Management concerns: Flooding and wetness
Management measures and considerations:
- Well-compacted fill material can be used as a base to elevate roads above the expected level of flooding and to help overcome the wetness.

Lawns and landscaping
Suitability: Poorly suited
Management concerns: Flooding and wetness
Management measures and considerations:
- This map unit is difficult to manage because of the flooding, which severely limits use during periods of inundation.
- A surface drainage system may be needed in some areas.

Interpretive Groups

Land capability classification: 6w
Forestland ordination symbol: Rosebloom—9W; Arkabutla—4W

RuB—Ruston fine sandy loam, 2 to 5 percent slopes

Setting

Landscape: Coastal Plain
Landform: Uplands
Landform position: Ridgetops and upper parts of side slopes
Shape of areas: Irregular
Size of areas: 5 to 200 acres

Composition

Ruston and similar soils: 90 percent
Dissimilar soils: 10 percent

Typical Profile

Surface layer:
0 to 6 inches—dark grayish brown fine sandy loam

Subsurface layer:
6 to 10 inches—pale brown fine sandy loam

Subsoil:
10 to 14 inches—yellowish red sandy clay loam and strong brown loam
14 to 37 inches—red sandy clay loam that has yellowish red mottles
37 to 52 inches—red and light yellowish brown sandy loam
52 to 68 inches—red sandy clay loam that has yellowish brown and pale brown mottles
68 to 80 inches—red sandy clay loam that has brownish yellow mottles

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderate
Available water capacity: High
Seasonal high water table: None within a depth of 6 feet
Shrink-swell potential: Low
Flooding: None
Content of organic matter in the surface layer: Low

Minor Components

Dissimilar soils:
- Moderately well drained Ora and Savannah soils, which have a fragipan, on the lower, flatter parts of the slope
- Clayey Sweatman soils in saddles and on the lower parts of the slope
- Smithdale soils on the steeper parts of the slope

Similar soils:
- Scattered areas of soils that have less clay in the subsoil than the Ruston soil

Land Use

Dominant uses: Pasture, hayland, and cropland
Other uses: Forestland

Cropland
Suitability: Suited
Commonly grown crops: Corn, soybeans, and cotton
Management concerns: Erodibility

Management measures and considerations:
- Using a resource management system that includes terraces and diversions, contour tillage, no-till planting, and crop residue management reduces the hazard of erosion, helps to control surface runoff, and maximizes rainfall infiltration.
- Applying lime and fertilizer on the basis of soil testing increases the availability of nutrients to plants and maximizes productivity.

Pasture and hayland
Suitability: Well suited
Commonly grown crops: Bahiagrass and common bermudagrass
Management concerns: Erodibility
Management measures and considerations:
- Preparing seedbeds on the contour or across the slope reduces the hazard of erosion and increases the rate of germination.
- Applying lime and fertilizer on the basis of soil testing increases the availability of nutrients to plants and maximizes productivity.

Forestland
Suitability: Well suited
Productivity class: Very high for loblolly pine
Management concerns: Plant competition
Management measures and considerations:
- Site preparation practices, such as chopping, prescribed burning, and applying herbicides, help to control plant competition.

Wildlife habitat
Potential to support habitat for: Openland wildlife—good; forestland wildlife—good; wetland wildlife—very poor
Management concerns: None
Management measures and considerations:
- Openland wildlife habitat can be improved by leaving undisturbed areas of vegetation around cropland and pasture. These areas provide wildlife with food and a place to rest.
- Forestland wildlife habitat can be improved by planting appropriate vegetation, maintaining the existing plant cover, or promoting the natural establishment of desirable plants. Prescribed burning every 3 years, rotated among several small tracts of land, can increase the amount of palatable browse for deer and the number of seed-producing plants for quail and turkey.

Dwellings without basements
Suitability: Well suited
Management concerns: No significant limitations affect dwellings.

Septic tank absorption fields
Suitability: Suited
Management concerns: Restricted permeability
Management measures and considerations:
- Increasing the size of septic tank absorption fields improves the performance of the system, and installing distribution lines during dry periods minimizes smearing and sealing of trench walls.
- The local Health Department can be contacted for additional guidance.

Local roads and streets
Suitability: Well suited
Management concerns: No significant limitations affect local roads and streets.

Lawns and landscaping
Suitability: Well suited
Management concerns: No significant limitations affect lawns and landscaping.

Interpretive Groups

Land capability classification: 2e
Forestland ordination symbol: 8A

RuC2—Ruston fine sandy loam, 5 to 8 percent slopes, eroded

Setting

Landscape: Coastal Plain
Landform: Uplands
Landform position: Shoulder slopes and side slopes
Shape of areas: Irregular
Size of areas: 5 to 300 acres

Composition

Ruston and similar soils: 90 percent
Dissimilar soils: 10 percent

Typical Profile

Surface layer:
0 to 6 inches—dark grayish brown fine sandy loam

Subsurface layer:
6 to 10 inches—pale brown fine sandy loam

Subsoil:
10 to 14 inches—yellowish red sandy clay loam and strong brown loam
14 to 37 inches—red sandy clay loam that has yellowish red mottles
37 to 52 inches—red and light yellowish brown sandy loam
52 to 68 inches—red sandy clay loam that has yellowish brown and pale brown mottles
68 to 80 inches—red sandy clay loam that has brownish yellow mottles

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderate
Available water capacity: High
Seasonal high water table: None within a depth of 6 feet
Shrink-swell potential: Low
Flooding: None
Content of organic matter in the surface layer: Low

Minor Components

Dissimilar soils:
- Moderately well drained Ora and Savannah soils, which have a fragipan, on the lower, flatter parts of the slope
- Clayey Sweatman soils in saddles and on the lower parts of the slope
- Smithdale soils on the steeper parts of the slope

Similar soils:
- Scattered areas of soils that have less clay in the subsoil than the Ruston soil

Land Use

Dominant uses: Pasture, hayland, and forestland
Other uses: Cropland

Cropland
Suitability: Suited
Commonly grown crops: Corn, soybeans, and cotton
Management concerns: Erodibility
Management measures and considerations:
- Using a resource management system that includes terraces and diversions, contour tillage, no-till planting, and crop residue management reduces the hazard of erosion, helps to control surface runoff, and maximizes rainfall infiltration.
- Applying lime and fertilizer on the basis of soil testing increases the availability of nutrients to plants and maximizes productivity.

Pasture and hayland
Suitability: Well suited
Commonly grown crops: Bahiagrass and common bermudagrass
Management concerns: Erodibility
Management measures and considerations:
- Preparing seedbeds on the contour or across the slope reduces the hazard of erosion and increases the rate of germination.
- Applying lime and fertilizer on the basis of soil testing increases the availability of nutrients to plants and maximizes productivity.

Forestland
Suitability: Well suited
Productivity class: Very high for loblolly pine
Management concerns: Plant competition
Management measures and considerations:
- Site preparation practices, such as chopping, prescribed burning, and applying herbicides, help to control plant competition.

Wildlife habitat
Potential to support habitat for: Openland wildlife—good; forestland wildlife—good; wetland wildlife—very poor
Management concerns: None
Management measures and considerations:
- Openland wildlife habitat can be improved by leaving undisturbed areas of vegetation around cropland and pasture. These areas provide wildlife with food and a place to rest.
- Forestland wildlife habitat can be improved by planting appropriate vegetation, maintaining the existing plant cover, or promoting the natural establishment of desirable plants. Prescribed burning every 3 years, rotated among several small tracts of land, can increase the amount of palatable browse for deer and the number of seed-producing plants for quail and turkey.

Dwellings without basements
Suitability: Well suited
Management concerns: No significant limitations affect dwellings.

Septic tank absorption fields
Suitability: Suited
Management concerns: Restricted permeability
Management measures and considerations:
- Increasing the size of septic tank absorption fields improves the performance of the system, and installing distribution lines during dry periods minimizes smearing and sealing of trench walls.
- The local Health Department can be contacted for additional guidance.

Local roads and streets
Suitability: Well suited
Management concerns: No significant limitations affect local roads and streets.

Lawns and landscaping
Suitability: Suited
Management concerns: Erodibility
Management measures and considerations:
- Vegetating disturbed areas and using erosion-control structures, such as sediment fences and catch basins, help to keep soil on the site.
- Designing plantings to conform to the natural contour reduces the hazard of erosion and increases the rate of water infiltration.

Interpretive Groups

Land capability classification: 3e
Forestland ordination symbol: 8A

SaB—Savannah fine sandy loam, 2 to 5 percent slopes

Setting

Landscape: Coastal Plain
Landform: Stream terraces and uplands
Landform position: Slightly convex slopes
Shape of areas: Irregular
Size of areas: 5 to 250 acres

Composition

Savannah and similar soils: 90 percent
Dissimilar soils: 10 percent

Typical Profile

Surface layer:
0 to 5 inches—yellowish brown fine sandy loam

Subsurface layer:
5 to 8 inches—light yellowish brown silt loam and loam

Subsoil:
8 to 14 inches—yellowish brown loam that has strong brown mottles
14 to 20 inches—yellowish brown loam that has strong brown and light yellowish brown mottles
20 to 36 inches—yellowish brown loam that has yellowish red and light brownish gray mottles
36 to 45 inches—yellowish brown sandy clay loam that has yellowish red and light brownish gray mottles
45 to 71 inches—mottled light brownish gray, yellowish red, and strong brown sandy clay loam that has gray mottles
71 to 80 inches—strong brown and gray sandy clay loam that has gray and light brownish gray mottles

Soil Properties and Qualities

Depth class: Very deep, but moderately deep to a root-restricting fragipan
Drainage class: Moderately well drained
Permeability: Moderately slow
Available water capacity: Moderate

Seasonal high water table: Perched, at a depth of 1 1/2 to 3 feet from January through March
Shrink-swell potential: Low
Flooding: None
Content of organic matter in the surface layer: Low

Minor Components

Dissimilar soils:
- Somewhat poorly drained Mantachie soils on narrow flood plains
- Well drained Ruston and Smithdale soils, which do not have a fragipan, on shoulder slopes and narrow ridges
- Savannah soils that have slopes of less than 2 percent or more than 5 percent

Similar soils:
- Scattered areas of soils that do not have a fragipan and have less clay in the subsoil than the Savannah soil
- Scattered areas of soils that have a fragipan and are reddish in the upper part of the subsoil

Land Use

Dominant uses: Pasture, hayland, and cropland
Other uses: Forestland

Cropland
Suitability: Well suited
Commonly grown crops: Corn, cotton, soybeans, and grain sorghum
Management concerns: Erodibility and root penetration
Management measures and considerations:
- Using a resource management system that includes terraces and diversions, contour tillage, no-till planting, and crop residue management reduces the hazard of erosion, helps to control surface runoff, and maximizes rainfall infiltration.
- Chisel plowing or subsoiling helps to break through plowpans, increasing root penetration and rainfall infiltration.
- Applying lime and fertilizer on the basis of soil testing increases the availability of nutrients to plants and maximizes productivity.

Pasture and hayland
Suitability: Well suited
Commonly grown crops: Bahiagrass and common bermudagrass
Management concerns: Erodibility, wetness, and root restriction
Management measures and considerations:
- Preventing overgrazing or restricting grazing to periods when the soil is not too wet minimizes compaction and helps to maintain productivity and tilth.
- Chisel plowing or subsoiling when seedbeds are prepared helps to break through hard pans, increasing root penetration and rainfall infiltration.
- Applying lime and fertilizer on the basis of soil testing increases the availability of nutrients to plants and maximizes productivity during the establishment, maintenance, or renovation of hayland and pasture.

Forestland
Suitability: Well suited
Productivity class: Very high for loblolly pine
Management concerns: Equipment limitations, windthrow, seedling mortality, and plant competition
Management measures and considerations:
- Restricting the use of standard wheeled and tracked equipment to dry periods helps to prevent rutting and compaction.

- Windthrow can be minimized by planting at close intervals.
- Planting seedlings on raised beds helps to establish the seedlings and increases the seedling survival rate.
- Site preparation practices, such as chopping, prescribed burning, and applying herbicides, help to control plant competition.

Wildlife habitat
Potential to support habitat for: Openland wildlife—good; forestland wildlife—good; wetland wildlife—very poor
Management concerns: None
Management measures and considerations:
- Openland wildlife habitat can be improved by leaving undisturbed areas of vegetation around cropland and pasture. These areas provide wildlife with food and a place to rest.
- Forestland wildlife habitat can be improved by planting appropriate vegetation, maintaining the existing plant cover, or promoting the natural establishment of desirable plants. Prescribed burning every 3 years, rotated among several small tracts of land, can increase the amount of palatable browse for deer and the number of seed-producing plants for quail and turkey.

Dwellings without basements
Suitability: Suited
Management concerns: Wetness
Management measures and considerations:
- Constructing dwellings on raised, well-compacted fill material helps to overcome the wetness.
- Installing a subsurface drainage system helps to lower the seasonal high water table.

Septic tank absorption fields
Suitability: Poorly suited
Management concerns: Wetness and restricted permeability
Management measures and considerations:
- Using suitable fill material to raise the filter field a sufficient distance above the seasonal high water table improves system performance.
- Increasing the size of septic tank absorption fields improves the performance of the system, and installing distribution lines during dry periods minimizes smearing and sealing of trench walls.
- The local Health Department can be contacted for additional guidance.

Local roads and streets
Suitability: Suited
Management concerns: Wetness
Management measures and considerations:
- Constructing roads on raised, well-compacted fill material helps to overcome the wetness.

Lawns and landscaping
Suitability: Suited
Management concerns: Wet conditions
Management measures and considerations:
- Applying supplemental irrigation and seeding or planting varieties adapted to wet conditions increase the survival rate of grasses and landscaping plants.

Interpretive Groups

Land capability classification: 2e
Forestland ordination symbol: 8W

SaC2—Savannah fine sandy loam, 5 to 8 percent slopes, eroded

Setting

Landscape: Coastal Plain
Landform: Stream terraces and uplands
Landform position: Side slopes and shoulder slopes (fig. 4)
Shape of areas: Irregular
Size of areas: 10 to 150 acres

Composition

Savannah and similar soils: 85 percent
Dissimilar soils: 15 percent

Typical Profile

Surface layer:
0 to 5 inches—yellowish brown fine sandy loam

Subsurface layer:
5 to 8 inches—light yellowish brown silt loam and loam

Subsoil:
8 to 14 inches—yellowish brown loam that has strong brown mottles
14 to 20 inches—yellowish brown loam that has strong brown and light yellowish brown mottles
20 to 36 inches—yellowish brown loam that has yellowish red and light brownish gray mottles
36 to 45 inches—yellowish brown sandy clay loam that has yellowish red and light brownish gray mottles

Figure 4.—A poultry production facility in an area of Savannah fine sandy loam, 5 to 8 percent slopes, eroded. This map unit provides suitable slope, relief, and setting for such operations. Poultry production is a major industry in the county.

45 to 71 inches—mottled light brownish gray, yellowish red, and strong brown sandy clay loam that has gray mottles
71 to 80 inches—strong brown and gray sandy clay loam that has gray and light brownish gray mottles

Soil Properties and Qualities

Depth class: Very deep, but moderately deep to a root-restricting fragipan
Drainage class: Moderately well drained
Permeability: Moderately slow
Available water capacity: Moderate
Seasonal high water table: Perched, at a depth of 1½ to 3 feet from January through March
Shrink-swell potential: Low
Flooding: None
Content of organic matter in the surface layer: Low

Minor Components

Dissimilar soils:
- Well drained Ruston and Smithdale soils, which do not have a fragipan, on narrow ridges and shoulder slopes
- Savannah soils that have slopes of less than 5 percent or more than 8 percent
- Clayey Sweatman soils on the lower parts of the slope

Similar soils:
- Scattered areas of soils that have a fragipan and that are reddish in the upper part of the subsoil

Land Use

Dominant uses: Pasture, hayland, and forestland
Other uses: Cropland

Cropland
Suitability: Suited
Commonly grown crops: Corn, cotton, soybeans, and grain sorghum
Management concerns: Erodibility, wetness, and root restriction
Management measures and considerations:
- Using a resource management system that includes terraces and diversions, conservation tillage, contour farming, crop residue management, and soil conserving crops in rotation reduces the hazard of erosion, helps to control surface runoff, and maximizes rainfall infiltration.
- Chisel plowing or subsoiling helps to break through plowpans, increasing root penetration and rainfall infiltration.
- Applying lime and fertilizer on the basis of soil testing increases the availability of nutrients to plants and maximizes productivity.

Pasture and hayland
Suitability: Well suited
Commonly grown crops: Bahiagrass and common bermudagrass
Management concerns: Erodibility, droughtiness, and root penetration
Management measures and considerations:
- Using a resource management system that includes terraces and diversions, contour tillage, no-till planting, and crop residue management reduces the hazard of erosion, helps to control surface runoff, and maximizes rainfall infiltration.
- Chisel plowing or subsoiling helps to break through plowpans, increasing root penetration and rainfall infiltration.

- Applying lime and fertilizer on the basis of soil testing increases the availability of nutrients to plants and maximizes productivity.

Forestland
Suitability: Well suited
Productivity class: Very high for loblolly pine
Management concerns: Equipment limitations, windthrow, and plant competition
Management measures and considerations:
- Restricting logging to periods when the soil is not wet minimizes rutting and the damage caused to tree roots by compaction.
- Windthrow can be minimized by planting at close intervals.
- Site preparation practices, such as chopping, prescribed burning, and applying herbicides, help to control plant competition.

Wildlife habitat
Potential to support habitat for: Openland wildlife—good; forestland wildlife—good; wetland wildlife—very poor
Management concerns: None
Management measures and considerations:
- Openland wildlife habitat can be improved by leaving undisturbed areas of vegetation around cropland and pasture. These areas provide wildlife with food and a place to rest.
- Forestland wildlife habitat can be improved by planting appropriate vegetation, maintaining the existing plant cover, or promoting the natural establishment of desirable plants. Prescribed burning every 3 years, rotated among several small tracts of land, can increase the amount of palatable browse for deer and the number of seed-producing plants for quail and turkey.

Dwellings without basements
Suitability: Suited
Management concerns: Wetness and erodibility
Management measures and considerations:
- Constructing dwellings on raised, well-compacted fill material helps to overcome the wetness.
- Installing a subsurface drainage system helps to lower the seasonal high water table.
- Vegetating disturbed areas and using erosion-control structures, such as sediment fences and catch basins, help to keep soil on the site.

Septic tank absorption fields
Suitability: Poorly suited
Management concerns: Wetness and restricted permeability
Management measures and considerations:
- Using suitable fill material to raise the filter field a sufficient distance above the seasonal high water table improves system performance.
- Increasing the size of septic tank absorption fields improves the performance of the system, and installing distribution lines during dry periods minimizes smearing and sealing of trench walls.
- The local Health Department can be contacted for additional guidance.

Local roads and streets
Suitability: Suited
Management concerns: Wetness
Management measures and considerations:
- Constructing roads on raised, well-compacted fill material helps to overcome the wetness.

Lawns and landscaping
Suitability: Suited
Management concerns: Erodibility and wetness
Management measures and considerations:
- Vegetating disturbed areas and using erosion-control structures, such as sediment fences and catch basins, help to keep soil on the site.
- Applying supplemental irrigation and seeding or planting varieties adapted to wet conditions increase the survival rate of grasses and landscaping plants.

Interpretive Groups

Land capability classification: 3e
Forestland ordination symbol: 8W

SmD2—Smithdale fine sandy loam, 8 to 15 percent slopes, eroded

Setting

Landscape: Coastal Plain
Landform: Uplands
Landform position: Side slopes and backslopes
Shape of areas: Irregular
Size of areas: 10 to 450 acres

Composition

Smithdale and similar soils: 85 percent
Dissimilar soils: 15 percent

Typical Profile

Surface layer:
0 to 5 inches—brown fine sandy loam

Subsurface layer:
5 to 10 inches—yellowish brown fine sandy loam

Subsoil:
10 to 14 inches—yellowish red sandy clay loam and strong brown loam
14 to 35 inches—red sandy clay loam that has brownish yellow mottles
35 to 64 inches—red sandy loam that has brownish yellow and red mottles
64 to 80 inches—red sandy loam that has brownish yellow mottles

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderate
Seasonal high water table: None within a depth of 6 feet
Shrink-swell potential: Low
Flooding: None
Content of organic matter in the surface layer: Low

Minor Components

Dissimilar soils:
- Moderately well drained Ora and Savannah soils, which have a fragipan, on convex ridgetops
- Clayey Sweatman soils on the lower parts of the slope
- Smithdale soils that have slopes of less than 8 percent or more than 15 percent

Similar soils:
- Scattered areas of reddish or brownish soils that have less clay in the subsoil than the Smithdale soil

Land Use

Dominant uses: Forestland and pasture
Other uses: Cropland

Cropland
Suitability: Poorly suited
Commonly grown crops: Corn and small grains
Management concerns: Erodibility
Management measures and considerations:
- Using a resource management system that includes terraces and diversions, stripcropping, contour tillage, conservation tillage, and crop residue management reduces the hazard of erosion, helps to control surface runoff, and maximizes rainfall infiltration.
- Applying lime and fertilizer on the basis of soil testing increases the availability of nutrients to plants and maximizes productivity.

Pasture and hayland
Suitability: Well suited to pasture; suited to hayland
Commonly grown crops: Common bermudagrass and bahiagrass
Management concerns: Erodibility and equipment use
Management measures and considerations:
- Using rotational grazing and implementing a well planned schedule of clipping and harvesting help to maintain the pasture and increase productivity.
- Fencing livestock away from creeks and streams helps to control erosion of the streambanks and sedimentation of the creeks and streams.
- The slope may limit equipment use in the steeper areas when hay crops are harvested.

Forestland
Suitability: Well suited
Productivity class: Very high for loblolly pine
Management concerns: Erosion, windthrow, and plant competition
Management measures and considerations:
- Installing broad-based dips, water bars, and culverts helps to stabilize logging roads, skid trails, and landings.
- Reseeding disturbed areas with adapted grasses and legumes helps to control erosion and the siltation of streams.
- Constructing roads, fire lanes, and skid trails on the contour helps to overcome the slope limitation.
- Windthrow can be minimized by planting at close intervals.
- Site preparation practices, such as chopping, prescribed burning, and applying herbicides, help to control plant competition.
- Planting seedlings on raised beds helps to establish the seedlings and increases the seedling survival rate.

Wildlife habitat
Potential to support habitat for: Openland wildlife—good; forestland wildlife—good; wetland wildlife—very poor
Management concerns: None
Management measures and considerations:
- Openland wildlife habitat can be improved by leaving undisturbed areas of vegetation around cropland and pasture. These areas provide wildlife with food and a place to rest.

- Forestland wildlife habitat can be improved by planting appropriate vegetation, maintaining the existing plant cover, or promoting the natural establishment of desirable plants. Prescribed burning every 3 years, rotated among several small tracts of land, can increase the amount of palatable browse for deer and the number of seed-producing plants for quail and turkey.

Dwellings without basements
Suitability: Suited
Management concerns: Slope
Management measures and considerations:
- Designing structures to conform to the contour of the natural slope or building in the less sloping areas helps to overcome the slope limitation.
- Land grading or shaping prior to construction minimizes the damage caused by surface flow of water and reduces the hazard of erosion.

Septic tank absorption fields
Suitability: Suited
Management concerns: Slope
Management measures and considerations:
- Installing distribution lines on the contour improves system performance.
- The local Health Department can be contacted for additional guidance.

Local roads and streets
Suitability: Suited
Management concerns: Slope and erosion
Management measures and considerations:
- Designing roads to conform to the contour and providing adequate water-control structures, such as culverts, help to maintain road stability.

Lawns and landscaping
Suitability: Suited
Management concerns: Slope
Management measures and considerations:
- Vegetating disturbed areas and using erosion-control structures, such as sediment fences and catch basins, help to keep soil on the site.
- Designing plantings to conform to the natural contour reduces the hazard of erosion and increases the rate of water infiltration.

Interpretive Groups

Land capability classification: 4e
Forestland ordination symbol: 8A

SmF2—Smithdale fine sandy loam, 15 to 35 percent slopes, eroded

Setting

Landscape: Coastal Plain
Landform: Steep uplands
Landform position: Side slopes
Shape of areas: Irregular
Size of areas: 10 to 450 acres

Composition

Smithdale and similar soils: 85 percent
Dissimilar soils: 15 percent

Typical Profile

Surface layer:
0 to 5 inches—brown fine sandy loam

Subsurface layer:
5 to 10 inches—yellowish brown fine sandy loam

Subsoil:
10 to 14 inches—yellowish red sandy clay loam and strong brown loam
14 to 35 inches—red sandy clay loam that has brownish yellow mottles
35 to 64 inches—red sandy loam that has brownish yellow and red mottles
64 to 80 inches—red sandy loam that has brownish yellow mottles

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderate
Seasonal high water table: None within a depth of 6 feet
Shrink-swell potential: Low
Flooding: None
Content of organic matter in the surface layer: Low

Minor Components

Dissimilar soils:
- Moderately well drained Ruston soils, which are on convex ridgetops
- Clayey Sweatman soils on the lower parts of the slope
- Smithdale soils that have slopes of less than 8 percent or more than 15 percent

Similar soils:
- Scattered areas of reddish or brownish soils that have less clay in the subsoil then the Smithdale soil
- Scattered areas of Smithdale soils that have a surface layer of loamy sand or loamy fine sand

Land Use

Dominant uses: Forestland and wildlife habitat
Other uses: Pasture

Cropland
Suitability: Unsuited
Management concerns: Slope
Management measures and considerations:
- This map unit is severely limited for crop production. A site that has better suited soils should be selected.
- The varying length, steepness, and direction of the slope limit the use of structural measures for erosion control.

Pasture and hayland
Suitability: Poorly suited
Commonly grown crops: Common bermudagrass and bahiagrass
Management concerns: Erodibility and equipment use
Management measures and considerations:
- Preparing seedbeds on the contour or across the slope reduces the hazard of erosion and increases the rate of germination.
- Applying lime, fertilizer, seed, and herbicides by hand increases productivity in the steeper areas.
- This map unit is difficult to manage as pasture or hayland because of the slope.

Forestland
Suitability: Well suited
Productivity class: Very high for loblolly pine
Management concerns: Erosion and equipment limitations
Management measures and considerations:
- Installing broad-based dips, water bars, and culverts helps to stabilize logging roads, skid trails, and landings.
- Reseeding disturbed areas with adapted grasses and legumes helps to control erosion and the siltation of streams.
- Restricting logging to periods when the soil is not wet minimizes rutting and the damage caused to tree roots by compaction.
- Constructing roads, fire lanes, and skid trails on the contour helps to overcome the slope limitation.

Wildlife habitat
Potential to support habitat for: Openland wildlife—fair; forestland wildlife—good; wetland wildlife—very poor
Management concerns: None
Management measures and considerations:
- Openland wildlife habitat can be improved by leaving undisturbed areas of vegetation around cropland and pasture. These areas provide wildlife with food and a place to rest.
- Forestland wildlife habitat can be improved by planting appropriate vegetation, maintaining the existing plant cover, or promoting the natural establishment of desirable plants. Prescribed burning every 3 years, rotated among several small tracts of land, can increase the amount of palatable browse for deer and the number of seed-producing plants for quail and turkey.

Dwellings without basements
Suitability: Poorly suited
Management concerns: Slope
Management measures and considerations:
- Designing structures to conform to the contour of the natural slope or building in the less sloping areas helps to overcome the slope limitation.
- Land grading or shaping prior to construction minimizes the damage caused by surface flow of water and reduces the hazard of erosion.

Septic tank absorption fields
Suitability: Poorly suited
Management concerns: Slope
Management measures and considerations:
- Installing distribution lines on the contour improves system performance.
- The local Health Department can be contacted for additional guidance.

Local roads and streets
Suitability: Poorly suited
Management concerns: Slope
Management measures and considerations:
- Designing roads to conform to the contour and providing adequate water-control structures, such as culverts, help to maintain road stability.
- Vegetating cut-and-fill slopes as soon as possible after construction helps to stabilize the soil and reduces the hazard of erosion.

Lawns and landscaping
Suitability: Poorly suited
Management concerns: Erodibility and slope

Management measures and considerations:
- Vegetating disturbed areas and using erosion-control structures, such as sediment fences and catch basins, help to keep soil on the site.
- Designing plantings to conform to the natural contour reduces the hazard of erosion and increases the rate of water infiltration.
- Lime, fertilizer, mulch, and irrigation help to establish lawns and landscape plants.

Interpretive Groups

Land capability classification: 7e
Forestland ordination symbol: 8R

SsD2—Smithdale-Sweatman complex, 5 to 15 percent slopes, eroded

Setting

Landscape: Coastal Plain
Landform: Uplands
Landform position: Side slopes, backslopes, and shoulder slopes
Shape of areas: Irregular
Size of areas: 10 to 500 acres

Composition

Smithdale and similar soils: 65 percent
Sweatman and similar soils: 25 percent
Dissimilar soils: 10 percent

Typical Profiles

Smithdale
Surface layer:
0 to 5 inches—brown fine sandy loam

Subsurface layer:
5 to 10 inches—yellowish brown fine sandy loam

Subsoil:
10 to 14 inches—yellowish red sandy clay loam and strong brown loam
14 to 35 inches—red sandy clay loam that has brownish mottles
35 to 64 inches—yellowish red sandy loam that has brownish yellow and red mottles
64 to 80 inches—red sandy loam that has brownish yellow mottles

Sweatman
Surface layer:
0 to 6 inches—dark grayish brown fine sandy loam

Subsoil:
6 to 20 inches—yellowish red silty clay
20 to 39 inches—yellowish red silty clay that has red mottles
39 to 45 inches—reddish yellow sandy loam that has olive yellow and red mottles

Substratum:
45 to 80 inches—stratified grayish brown and light gray weathered shale that has mottles of red sandy loam

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained

Permeability: Smithdale—moderate; Sweatman—moderately slow
Available water capacity: Smithdale—moderate; Sweatman—high
Seasonal high water table: None within a depth of 6 feet
Shrink-swell potential: Smithdale—low; Sweatman—moderate
Flooding: None
Content of organic matter in the surface layer: Low

Minor Components

Dissimilar soils:
- Smithdale and Sweatman soils that have slopes of less than 8 percent or more than 15 percent

Similar soils:
- Scattered areas of reddish or brownish soils that have less clay in the subsoil then the Smithdale and Sweatman soils
- Scattered areas of Smithdale and Sweatman soils that have a surface layer of loamy sand or loamy fine sand

Land Use

Dominant uses: Forestland and wildlife habitat
Other uses: Pasture and hayland

Cropland
Suitability: Poorly suited
Management concerns: Erodibility
Management measures and considerations:
- Using a resource management system that includes terraces and diversions, stripcropping, contour tillage, conservation tillage, and crop residue management reduces the hazard of erosion, helps to control surface runoff, and maximizes rainfall infiltration.
- Applying lime and fertilizer on the basis of soil testing increases the availability of nutrients to plants and maximizes productivity.

Pasture and hayland
Suitability: Suited
Commonly grown crops: Common bermudagrass and bahiagrass
Management concerns: Erodibility and equipment use
Management measures and considerations:
- Using rotational grazing and implementing a well planned schedule of clipping and harvesting help to maintain the pasture and increase productivity.
- Fencing livestock away from creeks and streams helps to control erosion of the streambanks and sedimentation of the creeks and streams.
- This map unit is difficult to manage as pasture or hayland because of the slope.

Forestland
Suitability: Smithdale—well suited; Sweatman—suited
Productivity class: Very high for loblolly pine
Management concerns: Erosion and equipment limitations
Management measures and considerations:
- Installing broad-based dips, water bars, and culverts helps to stabilize logging roads, skid trails, and landings.
- Constructing roads, fire lanes, and skid trails on the contour helps to overcome the slope limitation.
- Restricting logging to periods when the soil is not wet minimizes rutting and the damage caused to tree roots by compaction.

Wildlife habitat
Potential to support habitat for: Openland wildlife—good; forestland wildlife—good; wetland wildlife—very poor
Management concerns: None
Management measures and considerations:
- Openland wildlife habitat can be improved by leaving undisturbed areas of vegetation around cropland and pasture. These areas provide wildlife with food and a place to rest.
- Forestland wildlife habitat can be improved by planting appropriate vegetation, maintaining the existing plant cover, or promoting the natural establishment of desirable plants. Prescribed burning every 3 years, rotated among several small tracts of land, can increase the amount of palatable browse for deer and the number of seed-producing plants for quail and turkey.

Dwellings without basements
Suitability: Suited
Management concerns: Smithdale—slope; Sweatman—shrink-swell potential and slope
Management measures and considerations:
- Designing structures to conform to the contour of the natural slope or building in the less sloping areas helps to overcome the slope limitation.
- Land grading or shaping prior to construction minimizes the damage caused by surface flow of water and reduces the hazard of erosion.
- Reinforcing foundations and footings or backfilling with coarse-textured material helps to prevent the damage caused by shrinking and swelling.

Septic tank absorption fields
Suitability: Smithdale—suited; Sweatman—poorly suited
Management concerns: Restricted permeability and slope
Management measures and considerations:
- Increasing the size of septic tank absorption fields improves the performance of the system, and installing distribution lines during dry periods minimizes smearing and sealing of trench walls.
- Installing distribution lines on the contour improves system performance.
- The local Health Department can be contacted for additional guidance.

Local roads and streets
Suitability: Suited
Management concerns: Low strength and slope
Management measures and considerations:
- Incorporating sand and gravel into the roadbed and compacting the roadbed help to overcome the low strength of the natural soil material.
- Designing roads to conform to the contour and providing adequate water-control structures, such as culverts, help to maintain road stability.
- Vegetating cut-and-fill slopes as soon as possible after construction helps to stabilize the soil and reduces the hazard of erosion.

Lawns and landscaping
Suitability: Suited
Management concerns: Erodibility and slope
Management measures and considerations:
- Vegetating disturbed areas and using erosion-control structures, such as sediment fences and catch basins, help to keep soil on the site.
- Designing plantings to conform to the natural contour reduces the hazard of erosion and increases the rate of water infiltration.
- Lime, fertilizer, mulch, and irrigation help to establish lawns and landscape plants.

Interpretive Groups

Land capability classification: Smithdale—6e; Sweatman—7e
Forestland ordination symbol: Smithdale—8A; Sweatman—8C

SsF2—Smithdale-Sweatman complex, 15 to 35 percent slopes, eroded

Setting

Landscape: Coastal Plain
Landform: Uplands
Landform position: Shoulders and side slopes
Shape of areas: Irregular
Size of areas: 50 to 500 acres

Composition

Smithdale and similar soils: 60 percent
Sweatman and similar soils: 30 percent
Dissimilar soils: 10 percent

Typical Profiles

Smithdale
Surface layer:
0 to 5 inches—brown fine sandy loam

Subsurface layer:
5 to 10 inches—yellowish brown fine sandy loam

Subsoil:
10 to 14 inches—yellowish red sandy clay loam and strong brown loam
14 to 35 inches—red sandy clay loam that has brownish mottles
35 to 64 inches—yellowish red sandy loam that has brownish yellow and red mottles
64 to 80 inches—red sandy loam that has brownish yellow mottles

Sweatman
Surface layer:
0 to 6 inches—dark grayish brown fine sandy loam

Subsoil:
6 to 20 inches—yellowish red silty clay
20 to 39 inches—yellowish red silty clay that has red mottles
39 to 45 inches—reddish yellow sandy loam that has olive yellow and red mottles

Substratum:
45 to 80 inches—stratified grayish brown and light gray weathered shale that has mottles of red sandy loam

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Permeability: Smithdale—moderate; Sweatman—moderately slow
Available water capacity: Smithdale—moderate; Sweatman—high
Seasonal high water table: None within a depth of 6 feet
Shrink-swell potential: Smithdale—low; Sweatman—moderate
Flooding: None
Content of organic matter in the surface layer: Low

Minor Components

Dissimilar soils:

- Smithdale and Sweatman soils that have slopes of less than 15 percent or more than 35 percent

Similar soils:

- Scattered areas of reddish or brownish soils that have less clay in the subsoil then the Smithdale and Sweatman soils
- Scattered areas of Smithdale and Sweatman soils that have a surface layer of loamy sand or loamy fine sand

Land Use

Dominant uses: Forestland and wildlife habitat
Other uses: Pasture

Cropland
Suitability: Unsuited
Management concerns: Slopes
Management measures and considerations:

- This map unit is severely limited for crop production. A site that has better suited soils should be selected.
- The varying length, steepness, and direction of the slope limit the use of structural measures for erosion control.

Pasture and hayland
Suitability: Poorly suited to pasture; unsuited to hayland
Commonly grown crops: Coastal bermudagrass and bahiagrass
Management concerns: Erodibility and equipment use
Management measures and considerations:

- Preparing seedbeds on the contour or across the slope reduces the hazard of erosion and increases the rate of germination.
- Applying lime, fertilizer, seed, and herbicides by hand increases productivity in the steeper areas.
- This map unit is difficult to manage as pasture because of the slope.

Forestland
Suitability: Smithdale—well suited; Sweatman—suited
Productivity class: Very high for loblolly pine (fig. 5)
Management concerns: Erosion and equipment limitations
Management measures and considerations:

- Installing broad-based dips, water bars, and culverts helps to stabilize logging roads, skid trails, and landings.
- Restricting logging to periods when the soil is not wet minimizes rutting and the damage caused to tree roots by compaction.
- Constructing roads, fire lanes, and skid trails on the contour helps to overcome the slope limitation.

Wildlife habitat
Potential to support habitat for: Openland wildlife—fair; forestland wildlife—good; wetland wildlife—very poor
Management concerns: None
Management measures and considerations:

- Openland wildlife habitat can be improved by leaving undisturbed areas of vegetation around cropland and pasture. These areas provide wildlife with food and a place to rest.
- Forestland wildlife habitat can be improved by planting appropriate vegetation, maintaining the existing plant cover, or promoting the natural establishment of

Figure 5.—An area of Smithdale-Sweatman complex, 15 to 35 percent slopes, eroded, used for timber production.

desirable plants. Prescribed burning every 3 years, rotated among several small tracts of land, can increase the amount of palatable browse for deer and the number of seed-producing plants for quail and turkey.

Dwellings without basements
Suitability: Poorly suited
Management concerns: Slope
Management measures and considerations:
- Designing structures to conform to the contour of the natural slope or building in the less sloping areas helps to overcome the slope limitation.
- Land grading or shaping prior to construction minimizes the damage caused by surface flow of water and reduces the hazard of erosion.

Septic tank absorption fields
Suitability: Poorly suited
Management concerns: Restricted permeability and slope
Management measures and considerations:
- Increasing the size of septic tank absorption fields improves the performance of the system, and installing distribution lines during dry periods minimizes smearing and sealing of trench walls.
- Installing distribution lines on the contour improves system performance.
- The local Health Department can be contacted for additional guidance.

Local roads and streets
Suitability: Poorly suited
Management concerns: Low strength and slope
Management measures and considerations:
- Incorporating sand and gravel into the roadbed and compacting the roadbed help to overcome the low strength of the natural soil material.
- Designing roads to conform to the contour and providing adequate water-control structures, such as culverts, help to maintain road stability.

- Vegetating cut-and-fill slopes as soon as possible after construction helps to stabilize the soil and reduces the hazard of erosion.

Lawns and landscaping
Suitability: Poorly suited
Management concerns: Erodibility and slope
Management measures and considerations:
- Vegetating disturbed areas and using erosion-control structures, such as sediment fences and catch basins, help to keep soil on the site.
- Designing plantings to conform to the natural contour reduces the hazard of erosion and increases the rate of water infiltration.
- Lime, fertilizer, mulch, and irrigation help to establish lawns and landscape plants.

Interpretive Groups

Land capability classification: 7e
Forestland ordination symbol: Smithdale—8R; Sweatman—8C

St—Stough fine sandy loam, rarely flooded

Setting

Landscape: Coastal Plain
Landform: Stream terraces
Landform position: Smooth to slightly concave slopes
Shape of areas: Oblong
Size of areas: 5 to 350 acres

Composition

Stough and similar soils: 90 percent
Dissimilar soils: 10 percent

Typical Profile

Surface layer:
0 to 4 inches—dark grayish brown fine sandy loam

Subsurface layer:
4 to 8 inches—yellowish brown fine sandy loam and loam having grayish brown and pale brown mottles

Subsoil:
8 to 15 inches—yellowish brown fine sandy loam that has light brownish gray and yellowish brown mottles
15 to 26 inches—mottled yellowish brown, light brownish gray, and light yellowish brown sandy loam that has light brownish gray mottles
26 to 38 inches—light brownish gray sandy loam that has gray and yellowish brown mottles
38 to 58 inches—gray sandy clay loam that has light brownish gray, yellowish brown, and strong brown mottles
58 to 80 inches—mottled yellowish brown, light brownish gray, and strong brown sandy clay loam

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Somewhat poorly drained
Permeability: Moderately slow
Available water capacity: Moderate

Seasonal high water table: Perched, at a depth of 1 to 1½ feet from January through April
Shrink-swell potential: Low
Flooding: Rare
Content of organic matter in the surface layer: Low

Minor Components

Dissimilar soils:
- Somewhat poorly drained Mantachie soils on narrow flood plains
- Moderately well drained Providence soils in the slightly higher, more convex positions

Similar soils:
- Scattered areas of somewhat poorly drained soils that have more clay in the subsoil than the Stough soil

Land Use

Dominant uses: Pasture, hayland, and forestland
Other uses: Cropland

Cropland
Suitability: Suited
Commonly grown crops: Corn, cotton, grain sorghum, and soybeans (fig. 6)
Management concerns: Wetness
Management measures and considerations:
- Delaying spring planting minimizes the clodding and rutting that occurs if equipment is used when the soil is wet.
- Open ditches and diversions improve productivity.

Figure 6.—Soybeans in an area of Stough fine sandy loam, 0 to 2 percent slopes, rarely flooded. Soybeans are very productive in such nearly level areas.

- Applying lime and fertilizer on the basis of soil testing increases the availability of nutrients to plants and maximizes productivity.

Pasture and hayland
Suitability: Suited
Commonly grown crops: Common bermudagrass and bahiagrass
Management concerns: Wetness
Management measures and considerations:
- Proper stocking rates and restricted grazing during wet periods minimize compaction and help to keep the pasture in good condition.
- Applying lime and fertilizer on the basis of soil testing increases the availability of nutrients to plants and maximizes productivity during the establishment, maintenance, or renovation of hayland and pasture.

Forestland
Suitability: Well suited
Management concerns: Equipment limitations, windthrow, and plant competition
Management measures and considerations:
- Restricting the use of standard wheeled and tracked equipment to dry periods helps to prevent rutting and compaction.
- Windthrow can be minimized by planting at close intervals.
- Site preparation practices, such as chopping, prescribed burning, and applying herbicides, help to control plant competition.

Wildlife habitat
Potential to support habitat for: Openland wildlife—good; forestland wildlife—good; wetland wildlife—fair
Management concerns: None
Management measures and considerations:
- Openland wildlife habitat can be improved by leaving undisturbed areas of vegetation around cropland and pasture. These areas provide wildlife with food and a place to rest.
- Forestland wildlife habitat can be improved by planting appropriate vegetation, maintaining the existing plant cover, or promoting the natural establishment of desirable plants. Prescribed burning every 3 years, rotated among several small tracts of land, can increase the amount of palatable browse for deer and the number of seed-producing plants for quail and turkey.
- Wetland wildlife habitat can be improved by constructing shallow ponds that provide open water areas for waterfowl and furbearers.

Dwellings without basements
Suitability: Poorly suited
Management concerns: Wetness
Management measures and considerations:
- Constructing dwellings on raised, well-compacted fill material on the highest part of the landscape and using artificial drainage reduce the risk of damage from wetness.

Septic tank absorption fields
Suitability: Poorly suited
Management concerns: Wetness and restricted permeability
Management measures and considerations:
- Using suitable fill material to raise the filter field a sufficient distance above the seasonal high water table improves system performance.
- Increasing the size of septic tank absorption fields improves the performance of the system, and installing distribution lines during dry periods minimizes smearing and sealing of trench walls.
- The local Health Department can be contacted for additional guidance.

Local roads and streets
Suitability: Poorly suited
Management concerns: Wetness
Management measures and considerations:
- Well-compacted fill material can be used as a base to elevate roads above the expected level of flooding and to help overcome the wetness.
- Designing roads to safely remove surface runoff improves soil performance.

Lawns and landscaping
Suitability: Suited
Management concerns: Wetness
Management measures and considerations:
- A surface drainage system may be needed in some areas.
- Lime, fertilizer, mulch, and irrigation help to establish lawns and landscape plants.

Interpretive Groups

Land capability classification: 2w
Forestland ordination symbol: 9W

SwD2—Sweatman fine sandy loam, 5 to 15 percent slopes, eroded

Setting

Landscape: Coastal Plain
Landform: Uplands
Landform position: Narrow summits and side slopes
Shape of areas: Irregular
Size of areas: 10 to 400 acres

Composition

Sweatman and similar soils: 85 percent
Dissimilar soils: 15 percent

Typical Profile

Surface layer:
0 to 6 inches—dark grayish brown fine sandy loam

Subsoil:
6 to 20 inches—yellowish red silty clay
20 to 39 inches—yellowish red silty clay that has red mottles
39 to 45 inches—reddish yellow sandy loam that has olive yellow and red mottles

Substratum:
45 to 80 inches—stratified grayish brown and light gray weathered shale that has mottles of red sandy loam

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderately slow (fig. 7)
Available water capacity: High
Seasonal high water table: None within a depth of 6 feet
Shrink-swell potential: Moderate
Flooding: None
Content of organic matter in the surface layer: Low

Figure 7.— An area of Sweatman fine sandy loam, 5 to 15 percent slopes, eroded, being used as a site for a small pond.

Minor Components

Dissimilar soils:
- Ruston soils on summits of narrow ridges
- Smithdale soils in positions similar to those of the Sweatman soil
- Sweatman soils that have slopes of less than 8 percent or more than 15 percent

Similar soils:
- Scattered areas of moderately well drained, clayey soils that have more clay in the lower part of the subsoil than the Sweatman soil

Land Use

Dominant uses: Forestland and wildlife habitat
Other uses: Pasture and hayland

Cropland
Suitability: Poorly suited
Management concerns: Erodibility
Management measures and considerations:
- Using a resource management system that includes terraces and diversions, stripcropping, contour tillage, conservation tillage, and crop residue management reduces the hazard of erosion, helps to control surface runoff, and maximizes rainfall infiltration.
- Applying lime and fertilizer on the basis of soil testing increases the availability of nutrients to plants and maximizes productivity.

Pasture and hayland
Suitability: Suited
Commonly grown crops: Common bermudagrass and bahiagrass
Management concerns: Erodibility and equipment use
Management measures and considerations:
- Preparing seedbeds on the contour or across the slope reduces the hazard of erosion and increases the rate of germination.
- The slope may limit equipment use in the steeper areas when hay is harvested.

Forestland
Suitability: Well suited
Productivity class: Very high for loblolly pine
Management concerns: Erosion, equipment limitations, and plant competition
Management measures and considerations:
- Installing broad-based dips, water bars, and culverts helps to stabilize logging roads, skid trails, and landings.
- Reseeding disturbed areas with adapted grasses and legumes helps to control erosion and the siltation of streams.
- Constructing roads, fire lanes, and skid trails on the contour helps to overcome the slope limitation.
- Site preparation practices, such as chopping, prescribed burning, and applying herbicides, help to control plant competition.

Wildlife habitat
Potential to support habitat for: Openland wildlife—good; forestland wildlife—good; wetland wildlife—very poor
Management concerns: None
Management measures and considerations:
- Openland wildlife habitat can be improved by leaving undisturbed areas of vegetation around cropland and pasture. These areas provide wildlife with food and a place to rest.
- Forestland wildlife habitat can be improved by planting appropriate vegetation, maintaining the existing plant cover, or promoting the natural establishment of desirable plants. Prescribed burning every 3 years, rotated among several small tracts of land, can increase the amount of palatable browse for deer and the number of seed-producing plants for quail and turkey.

Dwellings without basements
Suitability: Suited
Management concerns: Shrink-swell potential and slope
Management measures and considerations:
- Reinforcing foundations and footings or backfilling with coarse-textured material helps to prevent the damage caused by shrinking and swelling.
- Designing structures to conform to the contour of the natural slope or building in the less sloping areas helps to overcome the slope limitation.

Septic tank absorption fields
Suitability: Poorly suited
Management concerns: Restricted permeability
Management measures and considerations:
- Increasing the size of septic tank absorption fields improves the performance of the system, and installing distribution lines during dry periods minimizes smearing and sealing of trench walls.
- The local Health Department can be contacted for additional guidance.

Local roads and streets
Suitability: Suited
Management concerns: Low strength

Management measures and considerations:
- Incorporating sand and gravel into the roadbed and compacting the roadbed help to overcome the low strength of the natural soil material.
- Designing roads to conform to the contour and providing adequate water-control structures, such as culverts, help to maintain road stability.

Lawns and landscaping
Suitability: Suited
Management concerns: Erodibility and slope
Management measures and considerations:
- Vegetating disturbed areas and using erosion-control structures, such as sediment fences and catch basins, help to keep soil on the site.
- Designing plantings to conform to the natural contour reduces the hazard of erosion and increases the rate of water infiltration.

Interpretive Groups

Land capability classification: 6e
Forestland ordination symbol: 8C

SwF2—Sweatman fine sandy loam, 15 to 35 percent slopes, eroded

Setting

Landscape: Coastal Plain
Landform: Uplands
Landform position: Side slopes, narrow summits, and backslopes
Shape of areas: Irregular
Size of areas: 10 to 500 acres

Composition

Sweatman and similar soils: 85 percent
Dissimilar soils: 15 percent

Typical Profile

Surface layer:
0 to 6 inches—dark grayish brown fine sandy loam

Subsoil:
6 to 20 inches—yellowish red silty clay
20 to 39 inches—yellowish red silty clay that has red mottles
39 to 45 inches—reddish yellow sandy loam that has olive yellow and red mottles

Substratum:
45 to 80 inches—stratified grayish brown and light gray weathered shale that has mottles of red sandy loam

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: High
Seasonal high water table: None within a depth of 6 feet
Shrink-swell potential: Moderate
Flooding: None
Content of organic matter in the surface layer: Low

Minor Components

Dissimilar soils:

- Smithdale soils that are in positions similar to those of the Sweatman soil but have less clay in the subsoil
- Sweatman soils that have slopes of less than 15 percent or more than 35 percent

Similar soils:

- Scattered areas of moderately well drained, clayey soils that have more clay in the lower part of the subsoil than the Sweatman soil

Land Use

Dominant uses: Forestland and wildlife habitat
Other uses: Pasture

Cropland
Suitability: Unsuited
Management concerns: Slopes
Management measures and considerations:

- This map unit is severely limited for crop production. A site that has better suited soils should be selected.
- The varying length, steepness, and direction of the slope limit the use of structural measures for erosion control.

Pasture and hayland
Suitability: Poorly suited to pasture; unsuited to hayland
Commonly grown crops: Common bermudagrass and bahiagrass
Management concerns: Erodibility and equipment use
Management measures and considerations:

- Preparing seedbeds on the contour or across the slope reduces the hazard of erosion and increases the rate of germination.
- Applying lime, fertilizer, seed, and herbicides by hand increases productivity in the steeper areas.
- This map unit is difficult to manage as pasture or hayland because of the slope.

Forestland
Suitability: Suited
Productivity class: Very high for loblolly pine
Management concerns: Erosion and equipment limitations
Management measures and considerations:

- Installing broad-based dips, water bars, and culverts helps to stabilize logging roads, skid trails, and landings.
- Constructing roads, fire lanes, and skid trails on the contour helps to overcome the slope limitation.
- Restricting logging to periods when the soil is not wet minimizes rutting and the damage caused to tree roots by compaction.

Wildlife habitat
Potential to support habitat for: Openland wildlife—fair; forestland wildlife—good; wetland wildlife—very poor
Management concerns: None
Management measures and considerations:

- Openland wildlife habitat can be improved by leaving undisturbed areas of vegetation around cropland and pasture. These areas provide wildlife with food and a place to rest.
- Forestland wildlife habitat can be improved by planting appropriate vegetation, maintaining the existing plant cover, or promoting the natural establishment of desirable plants. Prescribed burning every 3 years, rotated among several small

tracts of land, can increase the amount of palatable browse for deer and the number of seed-producing plants for quail and turkey.
- Wetland wildlife habitat can be improved by constructing shallow ponds that provide open water areas for waterfowl and furbearers.

Dwellings without basements
Suitability: Poorly suited
Management concerns: Slope and shrink-swell potential
Management measures and considerations:
- Designing structures to conform to the contour of the natural slope or building in the less sloping areas helps to overcome the slope limitation.
- Land grading or shaping prior to construction minimizes the damage caused by surface flow of water and reduces the hazard of erosion.
- Reinforcing foundations and footings or backfilling with coarse-textured material helps to prevent the damage caused by shrinking and swelling.

Septic tank absorption fields
Suitability: Poorly suited
Management concerns: Restricted permeability and slope
Management measures and considerations:
- Increasing the size of septic tank absorption fields improves the performance of the system, and installing distribution lines during dry periods minimizes smearing and sealing of trench walls.
- Installing distribution lines on the contour improves system performance.
- The local Health Department can be contacted for additional guidance.

Local roads and streets
Suitability: Poorly suited
Management concerns: Low strength and slope
Management measures and considerations:
- Incorporating sand and gravel into the roadbed and compacting the roadbed help to overcome the low strength of the natural soil material.
- Designing roads to conform to the contour and providing adequate water-control structures, such as culverts, help to maintain road stability.
- Vegetating cut-and-fill slopes as soon as possible after construction helps to stabilize the soil and reduces the hazard of erosion.

Lawns and landscaping
Suitability: Suited
Management concerns: Erodibility and slope
Management measures and considerations:
- Vegetating disturbed areas and using erosion-control structures, such as sediment fences and catch basins, help to keep soil on the site.
- Designing plantings to conform to the natural contour reduces the hazard of erosion and increases the rate of water infiltration.
- Lime, fertilizer, mulch, and irrigation help to establish lawns and landscape plants.

Interpretive Groups

Land capability classification: 7e
Forestland ordination symbol: 8C

Ur—Urbo silty clay loam, occasionally flooded

Setting

Landscape: Coastal Plain
Landform: Flood plains

Shape of areas: Long and irregular
Size of areas: 160 to 2,500

Composition

Urbo and similar soils: 90 percent
Dissimilar soils: 10 percent

Typical Profile

Surface layer:
0 to 2 inches—dark grayish brown silty clay loam that has grayish brown mottles

Subsurface layer:
2 to 8 inches—grayish brown silty clay loam that has light brownish gray mottles

Subsoil:
8 to 18 inches—grayish brown silty clay that has yellowish brown mottles
18 to 30 inches—grayish brown silty clay that has strong brown mottles
30 to 50 inches—grayish brown clay that has strong brown mottles
50 to 80 inches—light gray silty clay that has strong brown mottles

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Some what poorly drained
Permeability: Very slow
Available water capacity: High
Seasonal high water table: At a depth of 1 to 2 feet from January through March
Shrink-swell potential: High
Flooding: Occasional
Content of organic matter in the surface layer: Low

Minor Components

Dissimilar soils:
- Somewhat poorly drained Mantachie soils on flood plains

Similar soils:
- Somewhat poorly drained Arkabutla soils on flood plains

Land Use

Dominant uses: Pasture
Other uses: Cropland

Cropland
Suitability: Suited
Commonly grown crops: Soybeans and corn
Management concerns: Flooding
Management measures and considerations:
- Harvesting row crops as soon as possible reduces the risk of damage from the flooding.

Pasture and hayland
Suitability: Suited
Commonly grown crops: Common bermudagrass and bahiagrass
Management concerns: Flooding
Management measures and considerations:
- Harvesting hay crops as soon as possible reduces the risk of damage from the flooding.

Forestland
Suitability: Suited
Management concerns: Equipment limitations, seedling mortality, windthrow, and plant competition

Management measures and considerations:
- Harvesting timber during the summer reduces the risk of damage from the flooding.
- Planting seedlings on raised beds helps to establish the seedlings and increases the seedling survival rate.
- Restricting the use of standard wheeled and tracked equipment to dry periods helps to prevent rutting and compaction.
- Windthrow can be minimized by planting at close intervals.
- Site preparation practices, such as chopping, prescribed burning, and applying herbicides, help to control plant competition.

Wildlife habitat
Potential to support habitat for: Openland wildlife—fair; forestland wildlife—good; wetland wildlife—good
Management concerns: None
Management measures and considerations:
- The existing habitat should be maintained.

Dwellings without basements
Suitability: Unsuited
Management concerns: Flooding and wetness
Management measures and considerations:
- This map unit is severely limited as a site for dwellings. A site that has better suited soils should be selected.

Septic tank absorption fields
Suitability: Unsuited
Management concerns: Flooding, wetness, and slow percolation
Management measures and considerations:
- This map unit is severely limited as a site for septic tank absorption fields.
- The local Health Department can be contacted for additional guidance.

Local roads and streets
Suitability: Unsuited
Management concerns: Low strength, flooding
Management measures and considerations:
- This map unit is severely limited for local roads and streets. A site that has better suited soils should be selected.

Lawns and landscaping
Suitability: Suited
Management concerns: Wetness and flooding
Management measures and considerations:
- Areas within this map unit may need a surface or subsurface drainage system.

Interpretive Groups

Land capability classification: 3w
Forestland ordination symbol: 10W

WmD2—Williamsville gravelly sandy loam, 5 to 15 percent slopes, eroded

Setting

Landscape: Coastal Plain
Landform: Uplands
Landform position: Narrow ridgetops, shoulders, and side slopes

Shape of areas: Irregular
Size of areas: 150 to 400 acres

Composition

Williamsville and similar soils: 90 percent
Dissimilar soils: 10 percent

Typical Profile

Surface layer:
0 to 2 inches—brown gravelly sandy loam

Subsurface layer:
2 to 5 inches—yellowish red gravelly sandy loam

Subsoil:
5 to 17 inches—red sandy clay
17 to 26 inches—dark red sandy clay
26 to 35 inches—dark red sandy clay loam that has yellowish brown mottles
35 to 47 inches—dark red sandy clay loam that has yellowish brown and olive mottles
47 to 67 inches—dark red sandy loam that has olive mottles
67 to 85 inches—dark red loamy sand

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: High
Seasonal high water table: None within a depth of 6 feet
Shrink-swell potential: Moderate
Flooding: None
Content of organic matter in the surface layer: Low

Minor Components

Dissimilar soils:
- Well drained Neshoba and Ruston soils on summits of narrow ridges
- Smithdale soils in positions similar to those of the Williamsville soil

Similar soils:
- Scattered areas of soils that have more clay in the subsoil than the Williamsville soil

Land Use

Dominant uses: Forestland and wildlife habitat
Other uses: Pasture, hayland, and cropland

Cropland
Suitability: Poorly suited
Management concerns: Erodibility
Management measures and considerations:
- Using a resource management system that includes terraces and diversions, stripcropping, contour tillage, conservation tillage, and crop residue management reduces the hazard of erosion, helps to control surface runoff, and maximizes rainfall infiltration.
- Applying lime and fertilizer on the basis of soil testing increases the availability of nutrients to plants and maximizes productivity.

Pasture and hayland
Suitability: Suited
Commonly grown crops: Common bermudagrass, bahiagrass, and tall fescue

Management concerns: Erodibility and equipment use
Management measures and considerations:
- Using rotational grazing and implementing a well planned schedule of clipping and harvesting help to maintain the pasture and increase productivity.
- Fencing livestock away from creeks and streams helps to control erosion of the streambanks and sedimentation of the creeks and streams.
- The slope may limit equipment use in the steeper areas when hay is harvested.

Forestland
Suitability: Well suited
Productivity class: High for loblolly pine
Management concerns: Erosion and equipment limitations
Management measures and considerations:
- Installing broad-based dips, water bars, and culverts helps to stabilize logging roads, skid trails, and landings.
- Reseeding disturbed areas with adapted grasses and legumes helps to control erosion and the siltation of streams.
- Restricting logging to periods when the soil is not wet minimizes rutting and the damage caused to tree roots by compaction.
- Constructing roads, fire lanes, and skid trails on the contour helps to overcome the slope limitation.

Wildlife habitat
Potential to support habitat for: Openland wildlife—fair; forestland wildlife—good; wetland wildlife—very poor
Management concerns: None
Management measures and considerations:
- Openland wildlife habitat can be improved by leaving undisturbed areas of vegetation around cropland and pasture. These areas provide wildlife with food and a place to rest.
- Forestland wildlife habitat can be improved by planting appropriate vegetation, maintaining the existing plant cover, or promoting the natural establishment of desirable plants. Prescribed burning every 3 years, rotated among several small tracts of land, can increase the amount of palatable browse for deer and the number of seed-producing plants for quail and turkey.

Dwellings without basements
Suitability: Suited
Management concerns: Shrink-swell potential and slope
Management measures and considerations:
- Reinforcing foundations and footings or backfilling with coarse-textured material helps to prevent the damage caused by shrinking and swelling.
- Designing structures to conform to the contour of the natural slope or building in the less sloping areas helps to overcome the slope limitation.

Septic tank absorption fields
Suitability: Poorly suited
Management concerns: Restricted permeability and slope
Management measures and considerations:
- Increasing the size of the absorption field improves system performance.
- The installation of septic system distribution lines in steep areas requires careful planning and placement.

Local roads and streets
Suitability: Suited
Management concerns: Shrink-swell and slope

Management measures and considerations:
- Incorporating sand and gravel into the roadbed and compacting the roadbed help to overcome the low strength of the natural soil material.
- Designing roads to conform to the contour and providing adequate water-control structures, such as culverts, help to maintain road stability and reduce the hazard of erosion.

Lawns and landscaping
Suitability: Suited
Management concerns: Erodibility and slope
Management measures and considerations:
- Vegetating disturbed areas and using erosion-control structures, such as sediment fences and catch basins, help to keep soil on the site.
- Designing plantings to conform to the natural contour reduces the hazard of erosion and increases the rate of water infiltration.

Interpretive Groups

Land capability classification: 6e
Forestland ordination symbol: 9A

WmF2—Williamsville gravelly sandy loam, 15 to 35 percent slopes, eroded

Setting

Landscape: Coastal Plain
Landform: Uplands
Landform position: Shoulders and side slopes
Shape of areas: Irregular
Size of areas: 150 to 1,000 acres

Composition

Williamsville and similar soils: 90 percent
Dissimilar soils: 10 percent

Typical Profile

Surface layer:
0 to 2 inches—brown gravelly sandy loam

Subsurface layer:
2 to 5 inches—yellowish red gravelly sandy loam

Subsoil:
5 to 17 inches—red sandy clay
17 to 26 inches—dark red sandy clay
26 to 35 inches—dark red sandy clay loam that has yellowish brown mottles
35 to 47 inches—dark red sandy clay loam that has yellowish brown and olive mottles
47 to 67 inches—dark red sandy loam that has olive mottles
67 to 85 inches—dark red loamy sand

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: High
Seasonal high water table: None within a depth of 6 feet

Shrink-swell potential: Moderate
Flooding: None
Content of organic matter in the surface layer: Low

Minor Components

Dissimilar soils:
- Well drained Neshoba and Ruston soils on summits of narrow ridges
- Smithdale soils in positions similar to those of the Williamsville soil

Similar soils:
- Scattered areas of soils that have more clay in the subsoil than the Williamsville soil

Land Use

Dominant uses: Forestland and wildlife habitat
Other uses: Pasture

Cropland
Suitability: Unsuited
Management concerns: Slope
Management measures and considerations:
- This map unit is severely limited for crop production. A site that has better suited soils should be selected.
- The varying length, steepness, and direction of the slope limit the use of structural measures for erosion control.

Pasture and hayland
Suitability: Poorly suited to pasture; unsuited to hayland
Commonly grown crops: Common bermudagrass and bahiagrass
Management concerns: Erodibility and equipment use
Management measures and considerations:
- Preparing seedbeds on the contour or across the slope reduces the hazard of erosion and increases the rate of germination.
- Applying lime, fertilizer, seed, and herbicides by hand increases productivity in the steeper areas.
- This map unit is difficult to manage as pasture or hayland because of the slope.

Forestland
Suitability: Well suited
Productivity class: Very high for loblolly pine
Management concerns: Erosion, equipment limitations, and plant competition
Management measures and considerations:
- Installing broad-based dips, water bars, and culverts helps to stabilize logging roads, skid trails, and landings.
- Constructing roads, fire lanes, and skid trails on the contour helps to overcome the slope limitation.
- Site preparation practices, such as chopping, prescribed burning, and applying herbicides, help to control plant competition.

Wildlife habitat
Potential to support habitat for: Openland wildlife—fair; forestland wildlife—good; wetland wildlife—very poor
Management concerns: No major limitations
Management measures and considerations:
- Openland wildlife habitat can be improved by leaving undisturbed areas of vegetation around cropland and pasture. These areas provide wildlife with food and a place to rest.
- Forestland wildlife habitat can be improved by planting appropriate vegetation, maintaining the existing plant cover, or promoting the natural establishment of

desirable plants. Prescribed burning every 3 years, rotated among several small tracts of land, can increase the amount of palatable browse for deer and the number of seed-producing plants for quail and turkey.

Dwellings without basements
Suitability: Poorly suited
Management concerns: Slope
Management measures and considerations:
- Designing structures to conform to the contour of the natural slope or building in the less sloping areas helps to overcome the slope limitation.
- Land grading or shaping prior to construction minimizes the damage caused by surface flow of water and reduces the hazard of erosion.

Septic tank absorption fields
Suitability: Poorly suited
Management concerns: Restricted permeability and slope
Management measures and considerations:
- Increasing the size of septic tank absorption fields improves the performance of the system, and installing distribution lines during dry periods minimizes smearing and sealing of trench walls.
- Installing distribution lines on the contour improves system performance.
- The local Health Department can be contacted for additional guidance.

Local roads and streets
Suitability: Poorly suited
Management concerns: Low strength and slope
Management measures and considerations:
- Incorporating sand and gravel into the roadbed and compacting the roadbed help to overcome the low strength of the natural soil material.
- Designing roads to conform to the contour and providing adequate water-control structures, such as culverts, help to maintain road stability.
- Vegetating cut-and-fill slopes as soon as possible after construction helps to stabilize the soil and reduces the hazard of erosion.

Lawns and landscaping
Suitability: Poorly suited
Management concerns: Erodibility and slope
Management measures and considerations:
- Vegetating disturbed areas and using erosion-control structures, such as sediment fences and catch basins, help to keep soil on the site.
- Designing plantings to conform to the natural contour reduces the hazard of erosion and increases the rate of water infiltration.
- Lime, fertilizer, mulch, and irrigation help to establish lawns and landscape plants.

Interpretive Groups

Land capability classification: 6e
Forestland ordination symbol: 9A

Use and Management of the Soils

This soil survey is an inventory and evaluation of the soils in the survey area. It can be used to adjust land uses to the limitations and potentials of natural resources and the environment. Also, it can help to prevent soil-related failures in land uses.

In preparing a soil survey, soil scientists, conservationists, engineers, and others collect extensive field data about the nature and behavioral characteristics of the soils. They collect data on erosion, droughtiness, flooding, and other factors that affect various soil uses and management. Field experience and collected data on soil properties and performance are used as a basis in predicting soil behavior.

Information in this section can be used to plan the use and management of soils for crops and pasture; as rangeland and forestland; as sites for buildings, sanitary facilities, highways and other transportation systems, and parks and other recreational facilities; for agricultural waste management; and as wildlife habitat. It can be used to identify the potentials and limitations of each soil for specific land uses and to help prevent construction failures caused by unfavorable soil properties.

Planners and others using soil survey information can evaluate the effect of specific land uses on productivity and on the environment in all or part of the survey area. The survey can help planners to maintain or create a land use pattern in harmony with the natural soil.

Contractors can use this survey to locate sources of sand and gravel, roadfill, and topsoil. They can use it to identify areas where bedrock, wetness, or very firm soil layers can cause difficulty in excavation.

Health officials, highway officials, engineers, and others may also find this survey useful. The survey can help them plan the safe disposal of wastes and locate sites for pavements, sidewalks, campgrounds, playgrounds, lawns, and trees and shrubs.

Interpretive Ratings

The interpretive tables in this survey rate the soils in the survey area for various uses. Many of the tables identify the limitations that affect specified uses and indicate the severity of those limitations. The ratings in these tables are both verbal and numerical.

Rating Class Terms

Rating classes are expressed in the tables in terms that indicate the extent to which the soils are limited by all of the soil features that affect a specified use or in terms that indicate the suitability of the soils for the use. Thus, the tables may show limitation classes or suitability classes. Terms for the limitation classes are *not limited, somewhat limited,* and *very limited*. The suitability ratings are expressed as *well suited, moderately suited, poorly suited,* and *unsuited* or as *good, fair,* and *poor*.

Numerical Ratings

Numerical ratings in the tables indicate the relative severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.00 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact

on the use and the point at which the soil feature is not a limitation. The limitations appear in order from the most limiting to the least limiting. Thus, if more than one limitation is identified, the most severe limitation is listed first and the least severe one is listed last.

Crops and Pasture

General management needed for crops and pasture is suggested in this section. The estimated yields of the main crops and pasture plants are listed, the system of land capability classification used by the Natural Resources Conservation Service is explained, and prime farmland is described.

Planners of management systems for individual fields or farms should consider the detailed information given in the description of each soil under the heading “Detailed Soil Map Units.” Specific information can be obtained from the local office of the Natural Resources Conservation Service or the Cooperative Extension Service.

Leake County has approximately 24,550 acres of crops and pasture. All of the soils in the county are naturally acid and most have naturally low fertility. Most of the soils on uplands, terraces, and flood plains in the Gulf Coastal Plain are very strongly acid or strongly acid. Soils on the flood plains are naturally higher in plant nutrients than most of the soils on uplands, which generally have naturally low levels of available phosphorus and potash. On all of the soils, applications of lime and fertilizer should be based on soil testing and the expected level of yields. The Cooperative Extension Service can help in determining the kinds and amounts of fertilizer to apply.

The major row crops grown in the county are corn, cotton, soybeans, and wheat. They are grown on a small scale.

The productivity of a soil is reduced if the surface layer is lost to erosion and material from the subsoil is mixed into the plow layer. The kind of soil, the steepness and length of the slope, and the degree of past erosion determine the types of conservation practices needed in areas of sloping cropland. Conservation practices can include no-till cropping, reduced tillage cropping, terraces, contour farming, and contour strip cropping.

Many of the soils on flood plains in the county need main, lateral, and surface field ditches (with or without overfall pipes or drop pipes) to remove excess surface water (fig. 8). Grade stabilization structures are needed to safely remove surface water from some fields. In many fields on flood plains, diversions are needed to protect the soils from surface runoff from adjoining uplands. Arkabutla, Jena, Kinston, Kirkville, Mantachie, Rosebloom, and Urbo soils are examples of soils on flood plains.

The major forage crops grown in the county are bahiagrass, common bermudagrass, and improved bermudagrass (fig. 9). Legumes, such as white clover, red clover, and crimson clover, are sometimes grown in combination with grasses. Management practices needed for forages and pasture include rotational grazing and the maintenance of a minimum grazing height of 2 to 3 inches. If additional forage is needed, proper applications of lime and fertilizer can increase forage production. The Natural Resources Conservation Service or the Cooperative Extension Service can be contacted for information regarding the selection of the best grass or legume for a particular soil.

Yields per Acre

The average yields per acre that can be expected of the principal crops under a high level of management are shown in table 5. In any given year, yields may be higher or lower than those indicated in the table because of variations in rainfall and other climatic factors. The land capability classification of map units in the survey area also is shown in the table.

Figure 8.—An area of Gillsburg silt loam, occasionally flooded. A permanent cover of grass can be established in such areas if shallow ditches to remove excess water are installed and maintained.

The yields are based mainly on the experience and records of farmers, conservationists, and extension agents. Available yield data from nearby counties and results of field trials and demonstrations also are considered.

The management needed to obtain the indicated yields of the various crops depends on the kind of soil and the crop. Management can include drainage, erosion control, and protection from flooding; the proper planting and seeding rates; suitable high-yielding crop varieties; appropriate and timely tillage; control of weeds, plant diseases, and harmful insects; favorable soil reaction and optimum levels of nitrogen, phosphorus, potassium, and trace elements for each crop; effective use of crop residue, barnyard manure, and green manure crops; and harvesting that ensures the smallest possible loss.

The estimated yields reflect the productive capacity of each soil for each of the principal crops. Yields are likely to increase as new production technology is developed. The productivity of a given soil compared with that of other soils, however, is not likely to change.

Crops other than those shown in table 5 are grown in the survey area, but estimated yields are not listed because the acreage of such crops is small. The local office of the Natural Resources Conservation Service or of the Cooperative Extension Service can provide information about the management and productivity of the soils for those crops.

Land Capability Classification

Land capability classification shows, in a general way, the suitability of soils for most kinds of field crops. Crops that require special management are excluded. The soils are grouped according to their limitations for field crops, the risk of damage if

Figure 9.—An area of Ruston fine sandy loam, 2 to 5 percent slopes. This soil is well suited to hay and other seasonal grass crops.

they are used for crops, and the way they respond to management. The criteria used in grouping the soils do not include major and generally expensive landforming that would change slope, depth, or other characteristics of the soils, nor do they include possible but unlikely major reclamation projects. Capability classification is not a substitute for interpretations designed to show suitability and limitations of groups of soils for rangeland, for forestland, or for engineering purposes (USDA, 1961).

In the capability system, soils are generally grouped at three levels—capability class, subclass, and unit.

Capability classes, the broadest groups, are designated by the numbers 1 through 8. The numbers indicate progressively greater limitations and narrower choices for practical use. The classes are defined as follows:

Class 1 soils have slight limitations that restrict their use.

Class 2 soils have moderate limitations that restrict the choice of plants or that require moderate conservation practices.

Class 3 soils have severe limitations that restrict the choice of plants or that require special conservation practices, or both.

Class 4 soils have very severe limitations that restrict the choice of plants or that require very careful management, or both.

Class 5 soils are subject to little or no erosion but have other limitations, impractical to remove, that restrict their use mainly to pasture, rangeland, forestland, or wildlife habitat.

Class 6 soils have severe limitations that make them generally unsuitable for cultivation and that restrict their use mainly to pasture, rangeland, forestland, or wildlife habitat.

Class 7 soils have very severe limitations that make them unsuitable for cultivation and that restrict their use mainly to grazing, forestland, or wildlife habitat.

Class 8 soils and miscellaneous areas have limitations that preclude commercial plant production and that restrict their use to recreational purposes, wildlife habitat, watershed, or esthetic purposes.

Capability subclasses are soil groups within one class. They are designated by adding a small letter, *e, w, s,* or *c,* to the class numeral, for example, 2e. The letter *e* shows that the main hazard is the risk of erosion unless close-growing plant cover is maintained; *w* shows that water in or on the soil interferes with plant growth or cultivation (in some soils the wetness can be partly corrected by artificial drainage); *s* shows that the soil is limited mainly because it is shallow, droughty, or stony; and *c,* used in only some parts of the United States, shows that the chief limitation is climate that is very cold or very dry.

In class 1 there are no subclasses because the soils of this class have few limitations. Class 5 contains only the subclasses indicated by *w, s,* or *c* because the soils in class 5 are subject to little or no erosion. They have other limitations that restrict their use to pasture, rangeland, forestland, wildlife habitat, or recreation.

Capability units are soil groups within a subclass. The soils in a capability unit are enough alike to be suited to the same crops and pasture plants, to require similar management, and to have similar productivity. Capability units are generally designated by adding an Arabic numeral to the subclass symbol, for example, 2e-4 and 3e-6. These units are not given in all soil surveys.

The acreage of soils in each capability class or subclass is shown in table 4. The capability classification of map units in this survey area is given in the section “Detailed Soil Map Units” and in the yields table.

Prime Farmland

Prime farmland is one of several kinds of important farmland defined by the U.S. Department of Agriculture. It is of major importance in meeting the Nation’s short- and long-range needs for food and fiber. Because the supply of high-quality farmland is limited, the U.S. Department of Agriculture recognizes that responsible levels of government, as well as individuals, should encourage and facilitate the wise use of our Nation’s prime farmland.

Prime farmland, as defined by the U.S. Department of Agriculture, is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is available for these uses. It could be cultivated land, pastureland, forestland, or other land, but it is not urban or built-up land or water areas. The soil qualities, growing season, and moisture supply are those needed for the soil to economically produce sustained high yields of crops when proper management, including water management, and acceptable farming methods are applied. In general, prime farmland has an adequate and dependable supply of moisture from precipitation or irrigation, a favorable temperature and growing season, acceptable acidity or alkalinity, an acceptable salt and sodium content, and few or no rocks. It is permeable to water and air. It is not excessively erodible or saturated with water for long periods, and it either is not frequently flooded during the growing season or is protected from flooding. Slope ranges mainly from 0 to 6 percent. More detailed information about the criteria for prime farmland is available at the local office of the Natural Resources Conservation Service.

A recent trend in land use in some parts of the survey area has been the loss of some prime farmland to industrial and urban uses. The loss of prime farmland to other uses puts pressure on marginal lands, which generally are more erodible, droughty, and less productive and cannot be easily cultivated.

The map units in the survey area that are considered prime farmland are listed in table 6. This list does not constitute a recommendation for a particular land use. On some soils included in the list, measures that overcome a hazard or limitation, such as flooding, wetness, and droughtiness, are needed. Onsite evaluation is needed to

determine whether or not the hazard or limitation has been overcome by corrective measures. The extent of each listed map unit is shown in table 4. The location is shown on the detailed soil maps. The soil qualities that affect use and management are described under the heading “Detailed Soil Map Units.”

Prime farmland is scattered throughout the county, but most areas are in the southern part. The crops grown on the prime farmland are mainly corn and soybeans (fig. 10).

Some soils that have a seasonal high water table and all soils that are frequently flooded during the growing season qualify as prime farmland only in areas where these limitations have been overcome by drainage measures or flood control. The need for these measures is indicated in table 6. Onsite evaluation is needed to determine whether or not these limitations have been overcome by corrective measures.

In some areas, land that does not meet the criteria for prime farmland is considered to be *farmland of statewide importance* for the production of food, feed, fiber, forage, and oilseed crops. The criteria for defining and delineating farmland of statewide importance are determined by the appropriate State agencies. Generally, this land includes areas of soils that nearly meet the requirements for prime farmland and that economically produce high yields of crops when treated and managed according to acceptable farming methods. Some areas may produce as high a yield as prime farmland if conditions are favorable. Farmland of statewide importance may include tracts of land that have been designated for agriculture by State law.

Forestland Management and Productivity

Table 7 can be used by woodland owners or forest managers in planning the use of soils for wood crops. Only those soils suitable for wood crops are listed. The table lists the ordination symbol for each soil. Soils assigned the same ordination symbol require the same general management and have about the same potential productivity.

Figure 10.—An area of a nearly level Bude soil, which is well suited to row crops.

The first part of the *ordination symbol*, a number, indicates the potential productivity of the soils for an indicator tree species. The number indicates the volume, in cubic meters per hectare per year, which the indicator species can produce in a pure stand under natural conditions. The number 1 indicates low potential productivity; 2 or 3, moderate; 4 or 5, moderately high; 6 to 8, high; 9 to 11, very high; and 12 to 39, extremely high. The second part of the symbol, a letter, indicates the major kind of soil limitation. The letter *R* indicates steep slopes; *X*, stoniness or rockiness; *W*, excess water in or on the soil; *T*, toxic substances in the soil; *D*, restricted rooting depth; *C*, clay in the upper part of the soil; *S*, sandy texture; *F*, a high content of rock fragments in the soil; *L*, low strength; and *N*, snowpack. The letter *A* indicates that limitations or restrictions are insignificant. If a soil has more than one limitation, the priority is as follows: R, X, W, T, D, C, S, F, L, and N.

In the table, *slight, moderate,* and *severe* indicate the degree of the major soil limitations to be considered in management.

Erosion hazard is the probability that damage will occur as a result of site preparation and cutting where the soil is exposed along roads, skid trails, and fire lanes and in log-handling areas. Forests that have been burned or overgrazed are also subject to erosion. Ratings of the erosion hazard are based on the percent of the slope. A rating of *slight* indicates that no particular prevention measures are needed under ordinary conditions. A rating of *moderate* indicates that erosion-control measures are needed in certain silvicultural activities. A rating of *severe* indicates that special precautions are needed to control erosion in most silvicultural activities.

Equipment limitation reflects the characteristics and conditions of the soil that restrict use of the equipment generally needed in woodland management or harvesting. The chief characteristics and conditions considered in the ratings are slope, stones on the surface, rock outcrops, soil wetness, and texture of the surface layer. A rating of *slight* indicates that under normal conditions the kind of equipment and season of use are not significantly restricted by soil factors. Soil wetness can restrict equipment use, but the wet period does not exceed 1 month. A rating of *moderate* indicates that equipment use is moderately restricted because of one or more soil factors. If the soil is wet, the wetness restricts equipment use for a period of 1 to 3 months. A rating of *severe* indicates that equipment use is severely restricted either as to the kind of equipment that can be used or the season of use. If the soil is wet, the wetness restricts equipment use for more than 3 months.

Seedling mortality refers to the death of naturally occurring or planted tree seedlings, as influenced by the kinds of soil, soil wetness, or topographic conditions. The factors used in rating the soils for seedling mortality are texture of the surface layer, depth to a seasonal high water table and the length of the period when the water table is high, rock fragments in the surface layer, effective rooting depth, and slope aspect. A rating of *slight* indicates that seedling mortality is not likely to be a problem under normal conditions. Expected mortality is less than 25 percent. A rating of *moderate* indicates that some problems from seedling mortality can be expected. Extra precautions are advisable. Expected mortality is 25 to 50 percent. A rating of *severe* indicates that seedling mortality is a serious problem. Extra precautions are important. Replanting may be necessary. Expected mortality is more than 50 percent.

Windthrow hazard is the likelihood that trees will be uprooted by the wind because the soil is not deep enough for adequate root anchorage. The main restrictions that affect rooting are a seasonal high water table and the depth to bedrock, a fragipan, or other limiting layers. A rating of *slight* indicates that under normal conditions no trees are blown down by the wind. Strong winds may damage trees, but they do not uproot them. A rating of *moderate* indicates that some trees can be blown down during periods when the soil is wet and winds are moderate or strong. A rating of *severe* indicates that many trees can be blown down during these periods.

Plant competition ratings indicate the degree to which undesirable species are expected to invade and grow when openings are made in the tree canopy. The main factors that affect plant competition are depth to the water table and the available water capacity. A rating of *slight* indicates that competition from undesirable plants is not likely to prevent natural regeneration or suppress the more desirable species. Planted seedlings can become established without undue competition. A rating of *moderate* indicates that competition may delay the establishment of desirable species. Competition may hamper stand development, but it will not prevent the eventual development of fully stocked stands. A rating of *severe* indicates that competition can be expected to prevent regeneration unless precautionary measures are applied.

The *potential productivity* of merchantable or *common trees* on a soil is expressed as a *site index* and as a *volume* number. The site index is the average height, in feet, that dominant and codominant trees of a given species attain in a specified number of years. The site index applies to fully stocked, even-aged, unmanaged stands. Commonly grown trees are those that woodland managers generally favor in intermediate or improvement cuttings. They are selected on the basis of growth rate, quality, value, and marketability.

The *volume*, a number, is the yield likely to be produced by the most important trees. This number, expressed as cubic feet per acre per year, indicates the amount of fiber produced in a fully stocked, even-aged, unmanaged stand.

The first species listed under *common trees* for a soil is the indicator species for that soil. It generally is the most common species on the soil and is the one that determines the ordination class.

Trees to manage are those that are suitable for commercial wood production.

Recreation

The soils of the survey area are rated in tables 8a and 8b according to limitations that affect their suitability for recreation. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect the recreational uses. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the tables indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

The ratings in the tables are based on restrictive soil features, such as wetness, slope, and texture of the surface layer. Susceptibility to flooding is considered. Not considered in the ratings, but important in evaluating a site, are the location and accessibility of the area, the size and shape of the area and its scenic quality, vegetation, access to water, potential water impoundment sites, and access to public sewer lines. The capacity of the soil to absorb septic tank effluent and the ability of the soil to support vegetation also are important. Soils that are subject to flooding are limited for recreational uses by the duration and intensity of flooding and the season when flooding occurs. In planning recreational facilities, onsite assessment of the height, duration, intensity, and frequency of flooding is essential.

Tables 8a and 8b can be supplemented by other information in this survey, for example, interpretations for building site development, construction materials, sanitary facilities, and water management.

Table 8a

Camp areas require site preparation, such as shaping and leveling the tent and parking areas, stabilizing roads and intensively used areas, and installing sanitary facilities and utility lines. Camp areas are subject to heavy foot traffic and some vehicular traffic. The ratings are based on the soil properties that affect the ease of developing camp areas and the performance of the areas after development. Slope or a cemented pan are the main concerns affecting the development of camp areas. The soil properties that affect the performance of the areas after development are those that influence trafficability and promote the growth of vegetation, especially in heavily used areas. For good trafficability, the surface of camp areas should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties that influence trafficability are texture of the surface layer, depth to a water table, ponding, flooding and permeability. The soil properties that affect the growth of plants are depth to bedrock or a cemented pan, permeability, and toxic substances in the soil.

Picnic areas are subject to heavy foot traffic. Most vehicular traffic is confined to access roads and parking areas. The ratings are based on the soil properties that affect the ease of developing picnic areas and that influence trafficability and the growth of vegetation after development. Slope and stoniness are the main concerns affecting the development of picnic areas. For good trafficability, the surface of picnic areas should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties that influence trafficability are texture of the surface layer, depth to a water table, ponding, flooding, permeability, and large stones. The soil properties that affect the growth of plants are a cemented pan, permeability, and toxic substances in the soil.

Playgrounds require soils that are nearly level, are free of stones, and can withstand intensive foot traffic. The ratings are based on the soil properties that affect the ease of developing playgrounds and that influence trafficability and the growth of vegetation after development. Slope and stoniness are the main concerns affecting the development of playgrounds. For good trafficability, the surface of the playgrounds should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties that influence trafficability are texture of the surface layer, depth to a water table, ponding, flooding and permeability. The soil properties that affect the growth of plants are a cemented pan, permeability, and toxic substances in the soil.

Table 8b

Paths and trails for hiking and horseback riding should require little or no slope modification through cutting and filling. The ratings are based on the soil properties that affect trafficability and erodibility. These properties are depth to a water table, ponding, flooding, slope, and texture of the surface layer.

Off-road motorcycle trails require little or no site preparation. They are not covered with surfacing material or vegetation. Considerable compaction of the soil material is likely. The ratings are based on the soil properties that influence erodibility, trafficability, dustiness, and the ease of revegetation. These properties are slope, depth to a water table, ponding, flooding, and texture of the surface layer.

Golf fairways are subject to heavy foot traffic and some light vehicular traffic. Cutting or filling may be required. Irrigation is not considered in the ratings. The ratings are based on the soil properties that affect plant growth and trafficability after vegetation is established. The properties that affect plant growth are reaction; depth to a water

table; ponding; depth to bedrock or a cemented pan; the available water capacity in the upper 40 inches; the content of salts, sodium, or calcium carbonate; and sulfidic materials. The properties that affect trafficability are flooding, depth to a water table, ponding, slope, and the amount of sand, clay, or organic matter in the surface layer. The suitability of the soil for traps, tees, roughs, and greens is not considered in the ratings.

Wildlife Habitat

Soils affect the kind and amount of vegetation that is available to wildlife as food and cover. They also affect the construction of water impoundments. The kind and abundance of wildlife depend largely on the amount and distribution of food, cover, and water. Wildlife habitat can be created or improved by planting appropriate vegetation, by maintaining the existing plant cover, or by promoting the natural establishment of desirable plants.

In table 9, the soils in the survey area are rated according to their potential for providing habitat for various kinds of wildlife. This information can be used in planning parks, wildlife refuges, nature study areas, and other developments for wildlife; in selecting soils that are suitable for establishing, improving, or maintaining specific elements of wildlife habitat; and in determining the intensity of management needed for each element of the habitat.

The potential of the soil is rated good, fair, poor, or very poor. A rating of *good* indicates that the element or kind of habitat is easily established, improved, or maintained. Few or no limitations affect management, and satisfactory results can be expected. A rating of *fair* indicates that the element or kind of habitat can be established, improved, or maintained in most places. Moderately intensive management is required for satisfactory results. A rating of *poor* indicates that limitations are severe for the designated element or kind of habitat. Habitat can be created, improved, or maintained in most places, but management is difficult and must be intensive. A rating of *very poor* indicates that restrictions for the element or kind of habitat are very severe and that unsatisfactory results can be expected. Creating, improving, or maintaining habitat is impractical or impossible.

The elements of wildlife habitat are described in the following paragraphs.

Grain and seed crops are domestic grains and seed-producing herbaceous plants. Soil properties and features that affect the growth of grain and seed crops are depth of the root zone, texture of the surface layer, available water capacity, wetness, slope, surface stoniness, and flooding. Soil temperature and soil moisture also are considerations. Examples of grain and seed crops are corn, wheat, and oats.

Grasses and legumes are domestic perennial grasses and herbaceous legumes. Soil properties and features that affect the growth of grasses and legumes are depth of the root zone, texture of the surface layer, available water capacity, wetness, surface stoniness, flooding, and slope. Soil temperature and soil moisture also are considerations. Examples of grasses and legumes are fescue, lovegrass, bromegrass, and clover.

Wild herbaceous plants are native or naturally established grasses and forbs, including weeds. Soil properties and features that affect the growth of these plants are depth of the root zone, texture of the surface layer, available water capacity, wetness, and flooding. Soil temperature and soil moisture also are considerations. Examples of wild herbaceous plants are bluestem, goldenrod, beggarweed, and wheatgrass.

Hardwood trees and woody understory produce nuts or other fruit, buds, catkins, twigs, bark, and foliage. Soil properties and features that affect the growth of hardwood trees and shrubs are depth of the root zone, available water capacity, and wetness. Examples of these plants are oak, poplar, cherry, sweetgum, apple, hawthorn, dogwood, hickory, blackberry, and blueberry.

Coniferous plants furnish browse and seeds. Soil properties and features that affect the growth of coniferous trees, shrubs, and ground cover are depth of the root zone, available water capacity, and wetness. Examples of coniferous plants are pine and cedar.

Wetland plants are annual and perennial wild herbaceous plants that grow on moist or wet sites. Submerged or floating aquatic plants are excluded. Soil properties and features affecting wetland plants are texture of the surface layer, wetness, reaction, salinity, slope, and surface stoniness. Examples of wetland plants are smartweed, lizard's tail, rushes, and sedges.

Shallow water areas have an average depth of less than 5 feet. Some are naturally wet areas. Others are created by dams, levees, or other water-control structures. Soil properties and features affecting shallow water areas are depth to bedrock, wetness, slope, and permeability. Examples of shallow water areas are marshes, waterfowl feeding areas, and ponds.

The habitat for various kinds of wildlife is described in the following paragraphs.

Habitat for openland wildlife consists of cropland, pasture, meadows, and areas that are overgrown with grasses, herbs, shrubs, and vines. These areas produce grain and seed crops, grasses and legumes, and wild herbaceous plants. Wildlife attracted to these areas include bobwhite quail, field sparrow, cottontail, and red fox.

Habitat for forestland wildlife consists of areas of deciduous and/or coniferous plants and associated grasses, legumes, and wild herbaceous plants. Wildlife attracted to these areas include wild turkey, thrushes, woodpeckers, squirrels, gray fox, raccoon, deer, and bear.

Habitat for wetland wildlife consists of open, marshy or swampy shallow water areas. Some of the wildlife attracted to such areas are ducks, geese, herons, muskrat, mink, and beaver.

Hydric Soils

In this section, hydric soils are defined and described and the hydric soils in the survey area are listed.

The three essential characteristics of wetlands are hydrophytic vegetation, hydric soils, and wetland hydrology (Cowardin and others, 1979; U.S. Army Corps of Engineers, 1987; National Research Council, 1995; Tiner, 1985). Criteria for each of the characteristics must be met for areas to be identified as wetlands. Undrained hydric soils that have natural vegetation should support a dominant population of ecological wetland plant species. Hydric soils that have been converted to other uses should be capable of being restored to wetlands.

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, 1995). 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, 1995). These criteria are used to identify a phase of a soil series that normally is associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (Soil Survey Staff, 1999), "Keys to Soil Taxonomy" (Soil Survey Staff, 2006), and the "Soil Survey Manual" (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period 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 in this survey area are specified in “Field Indicators of Hydric Soils in the United States” (Hurt and others, 2004).

Hydric soils are identified by examining and describing the soil to a depth of about 20 inches. This depth may be greater if determination of an appropriate indicator so requires. It is always recommended that soils be excavated and described to the depth necessary for an understanding of the redoximorphic processes. Then, using the completed soil descriptions, soil scientists can compare the soil features required by each indicator and specify which indicators have been matched with the conditions observed in the soil. The soil can be identified as a hydric soil if at least one of the approved indicators is present.

The following map units meet the definition of hydric soils and, in addition, have at least one of the hydric soil indicators. This list can help in planning land uses; however, onsite investigation is recommended to determine the hydric soils on a specific site (National Research Council, 1995; Hurt and others, 2004).

Bb Bibb fine sandy loam, frequently flooded
JkB Jena-Kirkville-Kinston complex, undulating, frequently flooded
Kn Kinston loam, frequently flooded
Rb Rosebloom silt loam, ponded
RK Rosebloom and Arkabutla soils, frequently flooded

Map units that are made up of hydric soils may have small areas, or inclusions, of nonhydric soils in the higher positions on the landform, and map units made up of nonhydric soils may have inclusions of hydric soils in the lower positions on the landform.

The following map units, in general, do not meet the definition of hydric soils because they do not have one of the hydric soil indicators. A portion of these map units, however, may include hydric soils. Onsite investigation is recommended to determine whether hydric soils occur and the location of the included hydric soils.

Gb Gillsburg silt loam, occasionally flooded
St Stough fine sandy loam, rarely flooded
Ur Urbo silty clay loam, occasionally flooded

Engineering

This section provides information for planning land uses related to urban development and to water management. Soils are rated for various uses, and the most limiting features are identified. Ratings are given for building site development, sanitary facilities, construction materials, and water management. The ratings are based on observed performance of the soils and on the data in the tables described under the heading “Soil Properties.”

Information in this section is intended for land use planning, for evaluating land use alternatives, and for planning site investigations prior to design and construction. The information, however, has limitations. For example, estimates and other data generally apply only to that part of the soil between the surface and a depth of 5 to 7 feet. Because of the map scale, small areas of different soils may be included within the mapped areas of a specific soil.

The information is not site specific and does not eliminate the need for onsite investigation of the soils or for testing and analysis by personnel experienced in the design and construction of engineering works.

Government ordinances and regulations that restrict certain land uses or impose specific design criteria were not considered in preparing the information in this section. Local ordinances and regulations should be considered in planning, in site selection, and in design.

Soil properties, site features, and observed performance were considered in determining the ratings in this section. During the fieldwork for this soil survey, determinations were made about particle-size distribution, liquid limit, plasticity index, soil reaction, soil wetness, depth to a water table, ponding, slope, likelihood of flooding, natural soil structure aggregation, and soil density. Data were collected about kinds of clay minerals, mineralogy of the sand and silt fractions, and the kinds of adsorbed cations. Estimates were made for erodibility, permeability, corrosivity, shrink-swell potential, available water capacity, and other behavioral characteristics affecting engineering uses.

This information can be used to evaluate the potential of areas for residential, commercial, industrial, and recreational uses; make preliminary estimates of construction conditions; evaluate alternative routes for roads, streets, highways, pipelines, and underground cables; evaluate alternative sites for sanitary landfills, septic tank absorption fields, and sewage lagoons; plan detailed onsite investigations of soils and geology; locate potential sources of gravel, sand, earthfill, and topsoil; plan drainage systems, irrigation systems, ponds, terraces, and other structures for soil and water conservation; and predict performance of proposed small structures and pavements by comparing the performance of existing similar structures on the same or similar soils.

The information in the tables, along with the soil maps, the soil descriptions, and other data provided in this survey, can be used to make additional interpretations.

Some of the terms used in this soil survey have a special meaning in soil science and are defined in the Glossary.

Building Site Development

Soil properties influence the development of building sites, including the selection of the site, the design of the structure, construction, performance after construction, and maintenance. Tables 10a and 10b show the degree and kind of soil limitations that affect dwellings with and without basements, small commercial buildings, local roads and streets, shallow excavations, and lawns and landscaping.

The ratings in the tables are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect building site development. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the tables indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

Table 10a

Dwellings are single-family houses of three stories or less. For dwellings without basements, the foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of 2 feet or at the depth of maximum frost penetration, whichever is deeper. For dwellings with basements, the foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of about 7 feet. The ratings for dwellings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the

properties that affect excavation and construction costs. The properties that affect the load-supporting capacity include depth to a water table, ponding, flooding, subsidence, linear extensibility (shrink-swell potential), and compressibility. Compressibility is inferred from the Unified classification. The properties that affect the ease and amount of excavation include depth to a water table, ponding, flooding, slope, and the amount and size of rock fragments.

Small commercial buildings are structures that are less than three stories high and do not have basements. The foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of 2 feet or at the depth of maximum frost penetration, whichever is deeper. The ratings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs. The properties that affect the load-supporting capacity include depth to a water table, ponding, flooding, subsidence, linear extensibility (shrink-swell potential), and compressibility (which is inferred from the Unified classification). The properties that affect the ease and amount of excavation include flooding, depth to a water table, ponding, slope, and the amount and size of rock fragments.

Table 10b

Local roads and streets have an all-weather surface and carry automobile and light truck traffic all year. They have a subgrade of cut or fill soil material; a base of gravel, crushed rock, or soil material stabilized by lime or cement; and a surface of flexible material (asphalt), rigid material (concrete), or gravel with a binder. The ratings are based on the soil properties that affect the ease of excavation and grading and the traffic-supporting capacity. The properties that affect the ease of excavation and grading are depth to a water table, ponding, flooding, and slope. The properties that affect the traffic-supporting capacity are soil strength (as inferred from the AASHTO group index number), subsidence, linear extensibility (shrink-swell potential), the potential for frost action, depth to a water table, and ponding.

Shallow excavations are trenches or holes dug to a maximum depth of 5 or 6 feet for graves, utility lines, open ditches, or other purposes. The ratings are based on the soil properties that influence the ease of digging and the resistance to sloughing. Depth to the seasonal high water table, flooding, and ponding may restrict the period when excavations can be made. Slope influences the ease of using machinery. Soil texture, depth to the water table, and linear extensibility (shrink-swell potential) influence the resistance to sloughing.

Lawns and landscaping require soils on which turf and ornamental trees and shrubs can be established and maintained. Irrigation is not considered in the ratings. The ratings are based on the soil properties that affect plant growth and trafficability after vegetation is established. The properties that affect plant growth are reaction; depth to a water table; ponding; the available water capacity in the upper 40 inches; the content of salts, sodium, or calcium carbonate; and sulfidic materials. The properties that affect trafficability are flooding, depth to a water table, ponding, and slope.

Sanitary Facilities

Tables 11a and 11b show the degree and kind of soil limitations that affect septic tank absorption fields, sewage lagoons, sanitary landfills, and daily cover for landfill. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect these uses. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation.

Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the tables indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

Table 11a

Septic tank absorption fields are areas in which effluent from a septic tank is distributed into the soil through subsurface tiles or perforated pipe. Only that part of the soil between depths of 24 and 60 inches is evaluated. The ratings are based on the soil properties that affect absorption of the effluent, construction and maintenance of the system, and public health. Permeability, depth to a water table, ponding, depth to a cemented pan, and flooding affect absorption of the effluent. Excessive slope may cause lateral seepage and surfacing of the effluent in downslope areas.

Some soils are underlain by loose sand and gravel at a depth of less than 4 feet below the distribution lines. In these soils, the absorption field may not adequately filter the effluent, particularly when the system is new. As a result, the ground water may become contaminated.

Sewage lagoons are shallow ponds constructed to hold sewage while aerobic bacteria decompose the solid and liquid wastes. Lagoons should have a nearly level floor surrounded by cut slopes or embankments of compacted soil. Nearly impervious soil material for the lagoon floor and sides is required to minimize seepage and contamination of ground water. Considered in the ratings are slope, permeability, depth to a water table, and ponding.

Soil permeability is a critical property affecting the suitability for sewage lagoons. Most porous soils eventually become sealed when they are used as sites for sewage lagoons. Until sealing occurs, however, the hazard of pollution is severe. Soils that have a permeability rate of more than 2 inches per hour are too porous for the proper functioning of sewage lagoons. In these soils, seepage of the effluent can result in contamination of the ground water. Ground-water contamination is also a hazard within a depth of 40 inches, if the water table is high enough to raise the level of sewage in the lagoon, or if floodwater overtops the lagoon.

A high content of organic matter is detrimental to proper functioning of the lagoon because it inhibits aerobic activity. Slope can cause construction problems, and large stones can hinder compaction of the lagoon floor. If the lagoon is to be uniformly deep throughout, the slope must be gentle enough and the soil material must be thick enough to make land smoothing practical.

Table 11b

A *trench sanitary landfill* is an area where solid waste is placed in successive layers in an excavated trench. The waste is spread, compacted, and covered daily with a thin layer of soil excavated at the site. When the trench is full, a final cover of soil material at least 2 feet thick is placed over the landfill. The ratings in the table are based on the soil properties that affect the risk of pollution, the ease of excavation, trafficability, and revegetation. These properties include permeability, depth to a water table, ponding, slope, flooding, and texture. Unless otherwise stated, the ratings apply only to that part of the soil within a depth of about 6 feet. For deeper trenches, onsite investigation may be needed.

Highly permeable strata directly below the proposed trench bottom can affect the ease of excavation and the hazard of ground-water pollution. Slope affects

construction of the trenches and the movement of surface water around the landfill. It also affects the construction and performance of roads in areas of the landfill.

Soil texture and consistence affect the ease with which the trench is dug and the ease with which the soil can be used as daily or final cover. They determine the workability of the soil when dry and when wet. Soils that are plastic and sticky when wet are difficult to excavate, grade, or compact and are difficult to place as a uniformly thick cover over a layer of refuse.

The soil material used as the final cover for a trench landfill should be suitable for plants. It should not have excess sodium or salts and should not be too acid. The surface layer generally has the best workability, the highest content of organic matter, and the best potential for plants. Material from the surface layer should be stockpiled for use as the final cover.

In an *area sanitary landfill*, solid waste is placed in successive layers on the surface of the soil. The waste is spread, compacted, and covered daily with a thin layer of soil from a source away from the site. A final cover of soil material at least 2 feet thick is placed over the completed landfill. The ratings in the table are based on the soil properties that affect trafficability and the risk of pollution. These properties include flooding, permeability, depth to a water table, ponding, and slope.

Flooding is a serious problem because it can result in pollution in areas downstream from the landfill. If permeability is too rapid or the water table is close to the surface, the leachate can contaminate the water supply. Slope is a consideration because of the extra grading required to maintain roads in the steeper areas of the landfill. Also, leachate may flow along the surface of the soils in the steeper areas and cause difficult seepage problems.

Daily cover for landfill is the soil material that is used to cover compacted solid waste in an area sanitary landfill. The soil material is obtained offsite, transported to the landfill, and spread over the waste. The ratings in the table also apply to the final cover for a landfill. They are based on the soil properties that affect workability, the ease of digging, and the ease of moving and spreading the material over the refuse daily during wet and dry periods. These properties include soil texture, depth to a water table, ponding and slope.

Loamy or silty soils that are free of large stones and excess gravel are the best cover for a landfill. Clayey soils may be sticky and difficult to spread; sandy soils are subject to wind erosion.

Slope affects the ease of excavation and of moving the cover material. Also, it can influence runoff, erosion, and reclamation of the borrow area.

After soil material has been removed, the soil material remaining in the borrow area must be thick enough to permit revegetation. The soil material used as the final cover for a landfill should be suitable for plants. It should not have excess sodium, salts, or lime and should not be too acid.

Construction Materials

Tables 12a and 12b give information about the soils as potential sources of gravel, sand, reclamation material, roadfill, and topsoil. Normal compaction, minor processing, and other standard construction practices are assumed.

Gravel and *sand* are natural aggregates suitable for commercial use with a minimum of processing. They are used in many kinds of construction. Specifications for each use vary widely. In table 12a, only the likelihood of finding material in suitable quantity is evaluated. The suitability of the material for specific purposes is not evaluated, nor are factors that affect excavation of the material. The properties used to evaluate the soil as a source of gravel or sand are gradation of grain sizes (as indicated by the Unified classification of the soil; ASTM, 2001), the thickness of suitable material, and the content of rock fragments. If the bottom layer of the soil contains gravel or sand, the soil is considered a likely source regardless of thickness.

The assumption is that the gravel or sand layer below the depth of observation exceeds the minimum thickness.

The soils are rated *good, fair,* or *poor* as potential sources of gravel and sand. A rating of *good* or *fair* means that the source material is likely to be in or below the soil. The bottom layer and the thickest layer of the soils are assigned numerical ratings. These ratings indicate the likelihood that the layer is a source of gravel or sand. The number 0.00 indicates that the layer is a poor source. The number 1.00 indicates that the layer is a good source. A number between 0.00 and 1.00 indicates the degree to which the layer is a likely source.

The soils are rated *good, fair,* or *poor* as potential sources of reclamation material, roadfill, and topsoil. The features that limit the soils as sources of these materials are specified in the table. The numerical ratings given after the specified features indicate the degree to which the features limit the soils as sources of reclamation material, roadfill, or topsoil. The lower the number, the greater the limitation.

Reclamation material is used in areas that have been drastically disturbed by surface mining or similar activities. When these areas are reclaimed, layers of soil material or unconsolidated geological material, or both, are replaced in a vertical sequence. The reconstructed soil favors plant growth. The ratings in the table do not apply to quarries and other mined areas that require an offsite source of reconstruction material. The ratings are based on the soil properties that affect erosion and stability of the surface and the productive potential of the reconstructed soil. These properties include the content of sodium, salts, and calcium carbonate; reaction; available water capacity; erodibility; and texture.

Roadfill is soil material that is excavated in one place and used in road embankments in another place. In this table, the soils are rated as a source of roadfill for low embankments, generally less than 6 feet high and less exacting in design than higher embankments.

The ratings are for the whole soil, from the surface to a depth of about 5 feet. It is assumed that soil layers will be mixed when the soil material is excavated and spread.

The ratings are based on the amount of suitable material and on soil properties that affect the ease of excavation and the performance of the material after it is in place. The thickness of the suitable material is a major consideration. The ease of excavation is affected by large stones, depth to a water table, and slope. How well the soil performs in place after it has been compacted and drained is determined by its strength (as inferred from the AASHTO classification of the soil) and linear extensibility (shrink-swell potential).

Topsoil is used to cover an area so that vegetation can be established and maintained. The upper 40 inches of a soil is evaluated for use as topsoil. Also evaluated is the reclamation potential of the borrow area. The ratings are based on the soil properties that affect plant growth; the ease of excavating, loading, and spreading the material; and reclamation of the borrow area. Toxic substances, soil reaction, and the properties that are inferred from soil texture, such as available water capacity and fertility, affect plant growth. The ease of excavating, loading, and spreading is affected by slope, depth to a water table, soil texture, and thickness of suitable material. Reclamation of the borrow area is affected by slope and depth to a water table.

The surface layer of most soils is generally preferred for topsoil because of its organic matter content. Organic matter greatly increases the absorption and retention of moisture and nutrients for plant growth.

Water Management

Tables 13a and 13b give information on the soil properties and site features that affect water management. The degree and kind of soil limitations are given for pond reservoir areas, drainage, irrigation, terraces and diversions, and grassed waterways.

Table 13a

Pond reservoir areas hold water behind a dam or embankment. Soils best suited to this use have low seepage potential in the upper 60 inches. The seepage potential is determined by the permeability of the soil and the depth to fractured bedrock or other permeable material. Excessive slope can affect the storage capacity of the reservoir area.

Drainage is the removal of excess surface and subsurface water from the soil. How easily and effectively the soil is drained depends on the depth to bedrock, a cemented pan, or other layers that affect the rate of water movement; permeability; depth to a high water table or depth of standing water if the soil is subject to ponding; slope; susceptibility to flooding; subsidence of organic layers; and the potential for frost action. Excavating and grading and the stability of ditchbanks are affected by depth to bedrock or a cemented pan, large stones, slope, and the hazard of cutbanks caving. The productivity of the soil after drainage is adversely affected by extreme acidity or by toxic substances, such as salts, sodium, and sulfur, in the root zone. Availability of drainage outlets is not considered in the ratings.

Irrigation is the controlled application of water to supplement rainfall and support plant growth. The design and management of an irrigation system are affected by depth to the water table, the need for drainage, flooding, available water capacity, intake rate, permeability, erosion hazard, and slope. The construction of a system is affected by large stones and depth to bedrock or a cemented pan. The performance of a system is affected by the depth of the root zone, the amount of salts or sodium, and soil reaction.

Table 13b

Terraces and diversions are embankments or a combination of channels and ridges constructed across a slope to control erosion and conserve moisture by intercepting runoff. Slope, wetness, large stones, and depth to bedrock or a cemented pan affect the construction of terraces and diversions. A restricted rooting depth, a severe hazard of wind erosion or water erosion, an excessively coarse texture, and restricted permeability adversely affect maintenance.

Grassed waterways are natural or constructed channels, generally broad and shallow, that conduct surface water to outlets at a nonerosive velocity. Large stones, wetness, slope, and depth to bedrock or a cemented pan affect the construction of grassed waterways. A hazard of wind erosion; low available water capacity; restricted rooting depth; toxic substances, such as salts and sodium; and restricted permeability adversely affect the growth and maintenance of the grass after construction.

Catastrophic Mortality

Tables 14a and 14b show the degree and kind of limitations that affect the disposal of poultry and large animal carcasses by the pit or trench method. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect these uses. *Not limited* or *well suited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected of a properly designed and installed system. *Somewhat limited* or *moderately suited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* or *very poorly suited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

The numerical ratings in table 14a indicate the severity of the individual limitations. The ratings are shown in decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

The tables rate the soils as sites for disposing of dead animals by placing the carcasses in successive layers in an excavated pit or trench. The soils are evaluated from the surface to a depth of 79 inches. Onsite investigation to a greater depth is needed before final acceptance of a site. The ratings in the tables are based on the soil properties that affect attenuation of suspended, soil solution, gaseous decomposition products, and microorganisms; construction and maintenance of the site; and public health. Improper site selection, design, or installation may cause contamination of ground water, seepage, and contamination of stream systems from surface drainage or floodwater.

The soil properties that influence the risk of pollution, the ease of excavation, trafficability, and revegetation are the major considerations. Pollution is a hazard on soils that are subject to flooding or have a water table within the depth of excavation. These soils cannot be easily excavated. Soils that have high saturated hydraulic conductivity (Ksat) or are shallow to bedrock, a cemented pan, or stones and boulders are limited because these features interfere with the installation, performance, and maintenance of the system. Slope affects road construction, performance of the roads, and the control of surface water around the trench. Also, it can cause difficulty in construction where the trench or pit bottom must be kept level and oriented to follow the contour of the land.

The ease with which the trench or pit is dug and with which a soil can be used as daily and final cover is based largely on soil texture and consistence, which affect workability both when the soil is dry and when it is wet. Soils that are plastic and sticky when wet are difficult to excavate, grade, or compact and difficult to place as a uniformly thick cover over a layer of carcasses. The uppermost part of the final cover should be soil material that favors the growth of plants. It should not contain excess sodium or salts and should not be too acid. In comparison with other horizons, the surface layer in most soils has the best workability and the highest content of organic matter. Thus, it may be desirable to stockpile the surface layer for use in the final blanketing of the fill.

Soil Properties

Data relating to soil properties are collected during the course of the soil survey.

Soil properties are ascertained by field examination of the soils and by laboratory index testing of some benchmark soils. Established standard procedures are followed. During the survey, many shallow borings are made and examined to identify and classify the soils and to delineate them on the soil maps. Samples are taken from some typical profiles and tested in the laboratory to determine particle-size distribution, plasticity, and compaction characteristics.

Estimates of soil properties are based on field examinations, on laboratory tests of samples from the survey area, and on laboratory tests of samples of similar soils in nearby areas. Tests verify field observations, verify properties that cannot be estimated accurately by field observation, and help to characterize key soils.

The estimates of soil properties are shown in tables. They include engineering properties, physical and chemical properties, and pertinent water features.

Engineering Soil Properties

Table 15 gives the engineering classifications and the range of properties for the layers of each soil in the survey area.

Depth to the upper and lower boundaries of each layer is indicated.

Texture is given in the standard terms used by the U.S. Department of Agriculture. These terms are defined according to percentages of sand, silt, and clay in the fraction of the soil that is less than 2 millimeters in diameter. “Loam,” for example, is soil that is 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand. If the content of particles coarser than sand is 15 percent or more, an appropriate modifier is added, for example, “gravelly.” Textural terms are defined in the Glossary.

Classification of the soils is determined according to the Unified soil classification system (ASTM, 2001) and the system adopted by the American Association of State Highway and Transportation Officials (AASHTO, 2004).

The Unified system classifies soils according to properties that affect their use as construction material. Soils are classified according to particle-size distribution of the fraction less than 3 inches in diameter and according to plasticity index, liquid limit, and organic matter content. Sandy and gravelly soils are identified as GW, GP, GM, GC, SW, SP, SM, and SC; silty and clayey soils as ML, CL, OL, MH, CH, and OH; and highly organic soils as PT. Soils exhibiting engineering properties of two groups can have a dual classification, for example, CL-ML.

The AASHTO system classifies soils according to those properties that affect roadway construction and maintenance. In this system, the fraction of a mineral soil that is less than 3 inches in diameter is classified in one of seven groups from A-1 through A-7 on the basis of particle-size distribution, liquid limit, and plasticity index. Soils in group A-1 are coarse grained and low in content of fines (silt and clay). At the other extreme, soils in group A-7 are fine grained. Highly organic soils are classified in group A-8 on the basis of visual inspection.

If laboratory data are available, the A-1, A-2, and A-7 groups are further classified as A-1-a, A-1-b, A-2-4, A-2-5, A-2-6, A-2-7, A-7-5, or A-7-6. As an additional refinement,

the suitability of a soil as subgrade material can be indicated by a group index number. Group index numbers range from 0 for the best subgrade material to 20 or higher for the poorest.

Rock fragments larger than 10 inches in diameter and 3 to 10 inches in diameter are indicated as a percentage of the total soil on a dry-weight basis. The percentages are estimates determined mainly by converting volume percentage in the field to weight percentage.

Percentage (of soil particles) passing designated sieves is the percentage of the soil fraction less than 3 inches in diameter based on an ovendry weight. The sieves, numbers 4, 10, 40, and 200 (USA Standard Series), have openings of 4.76, 2.00, 0.420, and 0.074 millimeters, respectively. Estimates are based on laboratory tests of soils sampled in the survey area and in nearby areas and on estimates made in the field.

Liquid limit and *plasticity index* (Atterberg limits) indicate the plasticity characteristics of a soil. The estimates are based on test data from the survey area or from nearby areas and on field examination.

Physical Soil Properties

Table 16 shows estimates of some physical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

Depth to the upper and lower boundaries of each layer is indicated.

Particle size is the effective diameter of a soil particle as measured by sedimentation, sieving, or micrometric methods. Particle sizes are expressed as classes with specific effective diameter class limits. The broad classes are sand, silt, and clay, ranging from the larger to the smaller.

Clay as a soil separate consists of mineral soil particles that are less than 0.002 millimeter in diameter. In table 16, the estimated clay content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of sand, silt, and clay affects the physical behavior of a soil. Particle size is important for engineering and agronomic interpretations, for determination of soil hydrologic qualities, and for soil classification.

The amount and kind of clay affect the fertility and physical condition of the soil and the ability of the soil to adsorb cations and to retain moisture. They influence shrink-swell potential, permeability, plasticity, the ease of soil dispersion, and other soil properties. The amount and kind of clay in a soil also affect tillage and earthmoving operations.

Moist bulk density is the weight of soil (ovendry) per unit volume. Volume is measured when the soil is at field moisture capacity, that is, the moisture content at $^{1}/_{3}$- or $^{1}/_{10}$-bar (33 kPa or 10 kPa) moisture tension. Weight is determined after the soil is dried at 105 degrees C. In the table, the estimated moist bulk density of each soil horizon is expressed in grams per cubic centimeter of soil material that is less than 2 millimeters in diameter. Bulk density data are used to compute shrink-swell potential, available water capacity, total pore space, and other soil properties. The moist bulk density of a soil indicates the pore space available for water and roots. Depending on soil texture, a bulk density of more than 1.4 can restrict water storage and root penetration. Moist bulk density is influenced by texture, kind of clay, content of organic matter, and soil structure.

Saturated hydraulic conductivity (Ksat) refers to the ease with which pores in a saturated soil transmit water. The estimates in the table are expressed in terms of in micrometers per second. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Saturated hydraulic conductivity (Ksat) is considered in the design of soil drainage systems and septic tank absorption fields.

Available water capacity refers to the quantity of water that the soil is capable of storing for use by plants. The capacity for water storage is given in inches of water per inch of soil for each soil layer. The capacity varies, depending on soil properties that affect retention of water. The most important properties are the content of organic matter, soil texture, bulk density, and soil structure. Available water capacity is an important factor in the choice of plants or crops to be grown and in the design and management of irrigation systems. Available water capacity is not an estimate of the quantity of water actually available to plants at any given time.

Linear extensibility refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. It is an expression of the volume change between the water content of the clod at 1/3- or 1/10-bar tension (33 kPa or 10 kPa tension) and oven dryness. The volume change is reported in the table as percent change for the whole soil. Volume change is influenced by the amount and type of clay minerals in the soil.

Linear extensibility is used to determine the shrink-swell potential of soils. The shrink-swell potential is *low* if the soil has a linear extensibility of less than 3 percent; *moderate* if 3 to 6 percent; *high* if 6 to 9 percent; and *very high* if more than 9 percent. If the linear extensibility is more than 3, shrinking and swelling can cause damage to buildings, roads, and other structures and to plant roots. Special design commonly is needed.

Organic matter is the plant and animal residue in the soil at various stages of decomposition. In table 16, the estimated content of organic matter is expressed as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of organic matter in a soil can be maintained by returning crop residue to the soil. Organic matter has a positive effect on available water capacity, water infiltration, soil organism activity, and tilth. It is a source of nitrogen and other nutrients for crops and soil organisms.

Erosion factors are shown in table 16 as the K factor (Kw and Kf) and the T factor. Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of several factors used in the Universal Soil Loss Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter and on soil structure and permeability. Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

Erosion factor Kw indicates the erodibility of the whole soil. The estimates are modified by the presence of rock fragments.

Erosion factor Kf indicates the erodibility of the fine-earth fraction, or the material less than 2 millimeters in size.

Erosion factor T is an estimate of the maximum average annual rate of soil erosion by wind or water that can occur without affecting crop productivity over a sustained period. The rate is in tons per acre per year.

Wind erodibility groups are made up of soils that have similar properties affecting their susceptibility to wind erosion in cultivated areas. The soils assigned to group 1 are the most susceptible to wind erosion, and those assigned to group 8 are the least susceptible. The groups are described in the “National Soil Survey Handbook,” which is available in local offices of the Natural Resources Conservation Service or on the Internet.

Wind erodibility index is a numerical value indicating the susceptibility of soil to wind erosion, or the tons per acre per year that can be expected to be lost to wind erosion. There is a close correlation between wind erosion and the texture of the surface layer, the size and durability of surface clods, rock fragments, organic matter, and a calcareous reaction. Soil moisture and frozen soil layers also influence wind erosion.

Chemical Soil Properties

Table 17 shows estimates of some chemical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

Depth to the upper and lower boundaries of each layer is indicated.

Cation-exchange capacity is the total amount of extractable bases that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. Soils having a low cation-exchange capacity hold fewer cations and may require more frequent applications of fertilizer than soils having a high cation-exchange capacity. The ability to retain cations reduces the hazard of ground-water pollution.

Effective cation-exchange capacity refers to the sum of extractable bases plus aluminum expressed in terms of milliequivalents per 100 grams of soil. It is determined for soils that have pH of less than 5.5.

Soil reaction is a measure of acidity or alkalinity. The pH of each soil horizon is based on many field tests. For many soils, values have been verified by laboratory analyses. Soil reaction is important in selecting crops and other plants, in evaluating soil amendments for fertility and stabilization, and in determining the risk of corrosion.

Water Features

Table 18 gives estimates of various water features. The estimates are used in land use planning that involves engineering considerations.

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The four hydrologic soil groups are:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas.

Surface runoff refers to the loss of water from an area by flow over the land surface. Surface runoff classes are based on slope, climate, and vegetative cover. It is assumed that the surface of the soil is bare and that the retention of surface water resulting from irregularities in the ground surface is minimal. The classes are negligible, very low, low, medium, high, and very high.

The *months* in the table indicate the portion of the year in which the feature is most likely to be a concern.

Water table refers to a saturated zone in the soil. Table 18 indicates, by month, depth to the top *(upper limit)* and base *(lower limit)* of the saturated zone in most years. Estimates of the upper and lower limits are based mainly on observations of the water table at selected sites and on evidence of a saturated zone, namely grayish colors or mottles (redoximorphic features) in the soil. A saturated zone that lasts for less than a month is not considered a water table.

Ponding is standing water in a closed depression. Unless a drainage system is installed, the water is removed only by percolation, transpiration, or evaporation. Table 18 indicates *surface water depth* and the *duration* and *frequency* of ponding. Duration is expressed as *very brief* if less than 2 days, *brief* if 2 to 7 days, *long* if 7 to 30 days, and *very long* if more than 30 days. Frequency is expressed as none, rare, occasional, and frequent. *None* means that ponding is not probable; *rare* that it is unlikely but possible under unusual weather conditions (the chance of ponding is nearly 0 percent to 5 percent in any year); *occasional* that it occurs, on the average, once or less in 2 years (the chance of ponding is 5 to 50 percent in any year); and *frequent* that it occurs, on the average, more than once in 2 years (the chance of ponding is more than 50 percent in any year).

Flooding is the temporary inundation of an area caused by overflowing streams, by runoff from adjacent slopes, or by tides. Water standing for short periods after rainfall or snowmelt is not considered flooding, and water standing in swamps and marshes is considered ponding rather than flooding.

Duration and *frequency* are estimated. Duration is expressed as *extremely brief* if 0.1 hour to 4 hours, *very brief* if 4 hours to 2 days, *brief* if 2 to 7 days, *long* if 7 to 30 days, and *very long* if more than 30 days. Frequency is expressed as none, very rare, rare, occasional, frequent, and very frequent. *None* means that flooding is not probable; *very rare* that it is very unlikely but possible under extremely unusual weather conditions (the chance of flooding is less than 1 percent in any year); *rare* that it is unlikely but possible under unusual weather conditions (the chance of flooding is 1 to 5 percent in any year); *occasional* that it occurs infrequently under normal weather conditions (the chance of flooding is 5 to 50 percent in any year); *frequent* that it is likely to occur often under normal weather conditions (the chance of flooding is more than 50 percent in any year but is less than 50 percent in all months in any year); and *very frequent* that it is likely to occur very often under normal weather conditions (the chance of flooding is more than 50 percent in all months of any year).

The information is based on evidence in the soil profile, namely thin strata of gravel, sand, silt, or clay deposited by floodwater; irregular decrease in organic matter content with increasing depth; and little or no horizon development.

Also considered are local information about the extent and levels of flooding and the relation of each soil on the landscape to historic floods. Information on the extent of flooding based on soil data is less specific than that provided by detailed engineering surveys that delineate flood-prone areas at specific flood frequency levels.

Classification of the Soils

The system of soil classification used by the National Cooperative Soil Survey has six categories (Soil Survey Staff, 1999 and 2006). Beginning with the broadest, these categories are the order, suborder, great group, subgroup, family, and series. Classification is based on soil properties observed in the field or inferred from those observations or from laboratory measurements. Table 19 shows the classification of the soils in the survey area. The categories are defined in the following paragraphs.

ORDER. Twelve soil orders are recognized. The differences among orders reflect the dominant soil-forming processes and the degree of soil formation. Each order is identified by a word ending in *sol*. An example is Ultisol.

SUBORDER. Each order is divided into suborders primarily on the basis of properties that influence soil genesis and are important to plant growth or properties that reflect the most important variables within the orders. The last syllable in the name of a suborder indicates the order. An example is Udult (*Ud*, meaning humid, plus *ult*, from Ultisol).

GREAT GROUP. Each suborder is divided into great groups on the basis of close similarities in kind, arrangement, and degree of development of pedogenic horizons; soil moisture and temperature regimes; type of saturation; and base status. Each great group is identified by the name of a suborder and by a prefix that indicates a property of the soil. An example is Hapludults (*Hapl*, meaning minimal horizonation, plus *udult*, the suborder of the Ultisols that has a udic moisture regime).

SUBGROUP. Each great group has a typic subgroup. Other subgroups are intergrades or extragrades. The typic subgroup is the central concept of the great group; it is not necessarily the most extensive. Intergrades are transitions to other orders, suborders, or great groups. Extragrades have some properties that are not representative of the great group but do not indicate transitions to any other taxonomic class. Each subgroup is identified by one or more adjectives preceding the name of the great group. The adjective *Typic* identifies the subgroup that typifies the great group. An example is Typic Hapludults.

FAMILY. Families are established within a subgroup on the basis of physical and chemical properties and other characteristics that affect management. Generally, the properties are those of horizons below plow depth where there is much biological activity. Among the properties and characteristics considered are particle-size class, mineralogy class, cation-exchange activity class, soil temperature regime, soil depth, and reaction class. A family name consists of the name of a subgroup preceded by terms that indicate soil properties. An example is fine-loamy, siliceous, subactive, thermic Typic Hapludults.

SERIES. The series consists of soils within a family that have horizons similar in color, texture, structure, reaction, consistence, mineral and chemical composition, and arrangement in the profile. An example is the Smithdale series.

Soil Series and Their Morphology

In this section, each soil series recognized in the survey area is described. Characteristics of the soil and the material in which it formed are identified for each

series. A pedon, a small three-dimensional area of soil, that is typical of the series in the survey area is described. The detailed description of each soil horizon follows standards in the “Soil Survey Manual” (Soil Survey Division Staff, 1993). Many of the technical terms used in the descriptions are defined in “Soil Taxonomy” (Soil Survey Staff, 1999) and in “Keys to Soil Taxonomy” (Soil Survey Staff, 2006). Unless otherwise indicated, colors in the descriptions are for moist soil. Following the pedon description is the range of important characteristics of the soils in the series.

In some instances, the typical pedon for a series is located outside Leake County. The selection of a typical pedon is based on the range of characteristics of the series as it occurs throughout a particular major land resource area. The Ora series, for example, is common in MLRA 133A (Southern Coastal Plain), which extends from Virginia to Louisiana. The typical pedon for the Ora series is in Pike County, Mississippi. The soil properties of this pedon are representative of the Ora soils as they occur throughout MLRA 133A.

Arkabutla Series

Depth class: Very deep
Drainage class: Somewhat poorly drained
Permeability: Moderate
Parent material: Silty alluvium
Landscape: Coastal Plain
Landform: Flood plains
Landform position: Low parts of natural levees
Commonly associated soils: Bude, Gillsburg, and Rosebloom soils
Slope: 0 to 2 percent
Taxonomic classification: Fine-silty, mixed, active, acid, thermic Fluventic Endoaquepts

Typical Pedon

Arkabutla silt loam, in an area of Rosebloom and Arkabutla soils, frequently flooded; about 2.5 miles northeast of Thomastown; 700 feet south and 1,800 feet east of the northwest corner of sec. 24, T. 12 N., R. 6 E.; USGS Joseph topographic quadrangle; lat. 32 degrees 53 minutes 4 seconds N. and long. 89 degrees 38 minutes 18 seconds W.

Ap—0 to 7 inches; brown (10YR 4/3) silt loam; weak fine granular structure; friable; many fine and medium roots; few fine and medium distinct pale brown (10YR 6/3) iron depletions within the matrix; strongly acid; clear wavy boundary.

Bw—7 to 18 inches; brown (10YR 4/3) silt loam; weak medium subangular blocky structure; friable; common fine and medium roots; common fine faint light brownish gray (10YR 6/2) and common medium distinct pale brown (10YR 6/3) iron depletions within the matrix; strongly acid; gradual wavy boundary.

Bg1—18 to 35 inches; light brownish gray (10YR 6/2) silty clay loam; weak medium subangular blocky structure; firm; common fine and medium concretions of iron and manganese oxides; common medium distinct pale brown (10YR 6/3) iron depletions within the matrix; yellowish brown (10YR 5/4) masses of iron accumulation within the matrix; very strongly acid; gradual wavy boundary.

Bg2—35 to 53 inches; light brownish gray (10YR 6/2) silty clay loam; weak medium subangular blocky structure; firm; common fine and medium concretions of iron and manganese oxides; common medium distinct yellowish brown (10YR 5/6) masses of iron accumulation within the matrix; very strongly acid; gradual wavy boundary.

Bg3—53 to 60 inches; gray (10YR 6/1) silt loam; weak medium subangular blocky structure; friable; many fine and medium concretions of iron and manganese

oxides; common medium distinct dark yellowish brown (10YR 4/4) masses of iron accumulation within the matrix; very strongly acid; gradual wavy boundary.

Bg4—60 to 80 inches; light brownish gray (10YR 6/2) loam; weak medium subangular blocky structure; friable; many fine and medium concretions of iron and manganese oxides; common medium distinct dark yellowish brown (10YR 4/4) masses of iron accumulation within the matrix; very strongly acid.

Range in Characteristics

Thickness of the solum: More than 60 inches

Reaction: Very strongly acid or strongly acid, except the surface layer in areas where lime has been applied

A or Ap horizon:

Color—hue of 10YR, value of 3 to 5, and chroma of 2 to 4

Texture—silt loam or loam

Bw horizon:

Color—hue of 10YR, value of 4 or 5, and chroma of 3 to 6; or no dominant matrix color and multicolored in shades of yellow, gray, and brown

Texture—silt loam, loam, or silty clay loam

Redoximorphic features—few to many iron depletions in shades of gray and masses of iron accumulation in shades of brown, yellow, and red

Bg horizon:

Color—hue of 10YR or 2.5Y, value of 4 to 6, and chroma of 2 or less

Texture—silt loam, loam, or silty clay loam

Redoximorphic features—few to many iron depletions in shades of gray and masses of iron accumulation in shades of brown, yellow, and red

Bibb Series

Depth class: Very deep

Drainage class: Poorly drained

Permeability: Moderate

Parent material: Stratified loamy and sandy alluvium

Landscape: Coastal Plain

Landform: Flood plains

Landform position: Flat and concave positions in backswamps

Commonly associated soils: Jena, Kinston, Kirkville, Mantachie, and Stough soils

Slope: 0 to 1 percent

Taxonomic classification: Coarse-loamy, siliceous, active, acid, thermic Typic Fluvaquents

Typical Pedon

Bibb fine sandy loam, frequently flooded; about 4.5 miles northeast of the intersection State Highways 25 and 19, south 1.5 miles, along Jofusko Creek; USGS Plattsburg topographic quadrangle; lat. 32 degrees 13 minutes 42 seconds N. and long. 89 degrees 14 minutes 34 seconds W.

Ap—0 to 5 inches; dark grayish brown (10YR 4/2) fine sandy loam; weak fine granular structure; friable; many fine and medium roots; strongly acid; clear wavy boundary.

Cg1—5 to 17 inches; light brownish gray (10YR 6/2) sandy loam; massive; friable; many fine and medium roots; common medium distinct strong brown (7.5YR 5/8) masses of iron accumulation; very strongly acid; clear wavy boundary.

Cg2—17 to 36 inches; light brownish gray (10YR 6/2) sandy loam; massive; friable; common fine distinct yellowish brown (10YR 5/6) masses of iron accumulation; common fine roots; very strongly acid; clear wavy boundary.
Cg3—36 to 52 inches; light brownish gray (10YR 6/2) sandy loam; massive; friable; common medium distinct strong brown (7.5YR 5/6) masses of iron accumulation; very strongly acid; clear wavy boundary.
Cg4—52 to 83 inches; light gray (10YR 7/2) loamy sand; massive; very friable; common strata of sandy loam; common thin strata with partially decomposed materials; very strongly acid.

Range in Characteristics

Thickness of the solum: More than 60 inches
Reaction: Extremely acid to strongly acid throughout

A horizon:
Color—hue of 10YR, value of 2 to 5, and chroma of 1 to 3
Texture—fine sandy loam, sandy loam, or silt loam

Cg horizon:
Color—hue of 10YR or 2.5Y, value of 3 to 7, and chroma of 1 or 2
Texture—dominantly sandy loam, fine sandy loam, or loam; thin strata of sand, loamy sand, silt loam, or loamy fine sand in some pedons
Redoximorphic features (where present)—few or common masses of iron accumulation in shades of brown and yellow

Bude Series

Depth class: Moderately deep
Drainage class: Somewhat poorly drained
Permeability: Slow
Parent material: Silty alluvium
Landscape: Coastal Plain
Landform: Stream terraces
Landform position: Slightly convex slopes on nearly level surfaces
Commonly associated soils: Arkabutla, Gillsburg, and Rosebloom soils
Slope: 0 to 2 percent
Taxonomic classification: Fine-silty, mixed, active, thermic Aquic Fragiudalfs

Typical Pedon

Bude silt loam, 0 to 2 percent slopes; about 3.5 miles northeast of Thomastown on Mississippi Highway 43; about 800 feet south of the northeast corner of sec. 12, T. 12 N., R. 6 E.; USGS Joseph topographic quadrangle; lat. 32 degrees 54 minutes 41 seconds N. and long. 89 degrees 37 minutes 50 seconds W.

Ap—0 to 6 inches; brown (10YR 4/3) silt loam; weak fine granular structure; friable; many fine and medium roots; strongly acid; clear wavy boundary.
Bw1—6 to 13 inches; dark yellowish brown (10YR 4/6) silt loam; weak medium subangular blocky structure; friable; many fine, medium, and coarse roots; common fine and medium concretions of iron and manganese oxides; few faint clay films on faces of peds; few medium faint dark yellowish brown (10YR 4/4) masses of iron accumulation within the matrix; strongly acid; gradual wavy boundary.
Bw2—13 to 20 inches; yellowish brown (10YR 5/6) silt loam; weak medium subangular blocky structure; friable; many fine and medium roots; few fine and medium concretions of iron and manganese oxides; common faint clay films on

faces of peds; few fine distinct light brownish gray (10YR 6/2) iron depletions within the matrix; common medium faint dark yellowish brown (10YR 4/4) masses of iron accumulation within the matrix; very strongly acid; clear wavy boundary.

Btx—20 to 34 inches; gray (10YR 6/1) silty clay loam; moderate coarse prismatic structure parting to weak medium subangular blocky; firm; brittle and compact in about 65 percent of the matrix; common fine and medium roots between prisms; many fine vesicular pores; common faint clay films on faces of peds; common fine and medium concretions of iron and manganese oxides; thin seams of light brownish gray (10YR 6/2) silt loam iron depletions between prisms; common fine and medium distinct grayish brown (2.5Y 5/2) iron depletions within the matrix; few fine and medium distinct strong brown (7.5YR 5/8) masses of iron accumulation within the matrix; very strongly acid; gradual wavy boundary.

Btxg—34 to 47 inches; light brownish gray (2.5Y 6/2) silty clay loam containing noticeable sand; weak very coarse prismatic structure parting to weak fine and medium subangular blocky; firm; brittle and compact in about 65 percent of the matrix; many fine vesicular pores; common faint clay films on faces of peds; common fine and medium concretions of iron and manganese oxides; thin seams of light brownish gray (10YR 6/2) silt loam iron depletions between prisms; common fine and medium prominent strong brown (7.5YR 5/8) and yellowish brown (10YR 5/6) masses of iron accumulation within the matrix; very strongly acid; gradual wavy boundary.

2B´tx1—47 to 63 inches; gray (10YR 6/1) fine sandy loam; weak very coarse prismatic structure; friable; brittle and compact in about 40 percent of the matrix; common fine vesicular pores; few faint clay films on faces of peds; common fine and medium concretions of iron and manganese oxides; common fine distinct light brownish gray (10YR 6/2) iron depletions within the matrix; very strongly acid; gradual wavy boundary.

2B´tx2—63 to 80 inches; gray (10YR 6/1) fine sandy loam; weak very coarse prismatic structure parting to weak medium subangular blocky; friable; brittle and compact in about 40 percent of the matrix; common fine vesicular pores; few faint clay films on faces of peds; common fine and medium concretions of iron and manganese oxides; common fine distinct light brownish gray (10YR 6/2) iron depletions within the matrix; few fine and medium dark yellowish brown (10YR 4/4) masses of iron accumulation within the matrix; very strongly acid.

Range in Characteristics

Thickness of the solum: More than 60 inches

Reaction: Very strongly acid to medium acid, except the surface layer in areas where lime has been applied

Ap horizon:

Color—hue of 10YR, value of 4 or 5, and chroma of 2 to 4

Texture—silt loam

Bw horizon:

Color—hue of 10YR, value of 4 to 6, and chroma of 4 to 8; or hue of 7.5YR, value of 5, and chroma of 6

Texture—silt loam or silty clay loam

Bt horizon (where present):

Color—hue of 10YR, value of 4 to 6, and chroma of 4 to 8

Texture—silt loam or silty clay loam

Redoximorphic features—common or many iron depletions in shades of gray and masses of iron accumulation in shades of yellow and brown

Btx horizon:
Color—hue of 10YR or 2.5Y, value of 4 to 6, and chroma of 1 or 2; or no dominant matrix color and multicolored in shades of brown, yellow, gray, or red
Texture—silt loam or silty clay loam
Redoximorphic features—common or many iron depletions in shades of gray and masses of iron accumulation in shades of brown, yellow, and red

Btxg horizon (where present):
Color—hue of 10YR or 2.5Y, value of 5 or 6, and chroma of 1 or 2; or no dominant matrix color and multicolored in shades of brown, yellow, gray, or red
Texture—silt loam or silty clay loam
Redoximorphic features—common or many iron depletions in shades of gray and masses of iron accumulation in shades of brown, yellow, and red

2Bt horizon:
Color—hue of 10YR, 2.5Y, or 5Y, value of 5 or 6, and chroma of 1 or 2; or no dominant matrix color and multicolored in shades of brown, yellow, gray, or red
Texture—silt loam, silty clay loam, clay loam, loam, or fine sandy loam
Redoximorphic features—common or many iron depletions in shades of gray and masses of iron accumulation in shades of brown, yellow, and red

Gillsburg Series

Depth class: Very deep
Drainage class: Somewhat poorly drained
Permeability: Moderate
Parent material: Silty alluvium
Landscape: Coastal Plain
Landform: Flood plains
Landform position: Slightly convex positions in backswamps
Commonly associated soils: Arkabutla, Bude, and Rosebloom soils
Slope: 0 to 1 percent
Taxonomic classification: Coarse-silty, mixed, active, acid, thermic Aeric Fluvaquents

Typical Pedon

Gillsburg silt loam, occasionally flooded; about 0.3 miles southwest of the Ofahoma baseball field; 1,600 feet south and 2,300 feet west of the northeast corner of sec. 19, T. 10 N., R. 6 E.; USGS Ofahoma topographic quadrangle; lat. 32 degrees 42 minutes 17 seconds N. and long. 89 degrees 43 minutes 7 seconds W.

Ap—0 to 13 inches; brown (10YR 5/3) silt loam; weak fine granular structure; friable; many fine and medium roots; few fine and medium distinct pale brown (10YR 6/3) iron depletions within the matrix; dark yellowish brown (10YR 4/4) masses of iron accumulation within the matrix; very strongly acid; gradual wavy boundary.

Bw—13 to 17 inches; yellowish brown (10YR 5/4) silt loam; weak medium subangular blocky structure; friable; common fine and medium roots; common fine and medium distinct light brownish gray (10YR 6/2) iron depletions within the matrix; common medium faint yellowish brown (10YR 5/8) masses of iron accumulation within the matrix; strongly acid; gradual wavy boundary.

Bg—17 to 33 inches; light brownish gray (10YR 6/2) silt loam; weak medium subangular blocky structure; friable; common fine and medium roots; common fine and medium concretions of iron and manganese oxides; common medium distinct yellowish brown (10YR 5/6) masses of iron accumulation within the matrix; very strongly acid; gradual wavy boundary.

Exb—33 to 52 inches; light brownish gray (10YR 6/2) silt loam; weak coarse prismatic structure parting to weak medium subangular blocky; friable; common fine and

medium concretions of iron and manganese oxides; brittle and compact in about 30 percent of the matrix; common fine and medium roots between prisms; common medium distinct thin seams of light gray (10YR 7/2) silt loam iron depletions between prisms; common medium distinct yellowish brown (10YR 5/6) masses of iron accumulation within the matrix; very strongly acid; gradual wavy boundary.

Btgxb—52 to 62 inches; gray (10YR 6/1) silty clay loam; weak coarse prismatic structure parting to weak medium subangular blocky; firm; many fine and medium concretions of iron and manganese oxides; brittle and compact in about 30 percent of the matrix; common medium distinct thin seams of light gray (10YR 7/2) silt loam iron depletions between prisms; common medium distinct yellowish brown (10YR 5/8) masses of iron accumulation within the matrix; very strongly acid; gradual wavy boundary.

Btxb—62 to 80 inches; yellowish brown (10YR 5/6) silt loam; weak coarse prismatic structure parting to weak medium subangular blocky; friable; many fine and medium concretions of iron and manganese oxides; brittle and compact in about 30 percent of the matrix; few medium distinct thin seams of gray (10YR 6/1) silt loam iron depletions between prisms; common medium distinct yellowish brown (10YR 5/8) masses of iron accumulation within the matrix; very strongly acid.

Range in Characteristics

Thickness of the solum: More than 60 inches

Reaction: Very strongly acid or strongly acid in the upper part of the solum, except the surface layer in areas where lime has been applied

Ap horizon:

Color—hue of 10YR, value of 3 to 5, and chroma of 2 or 3
Texture—silt loam

Bw horizon:

Color—hue of 10YR, value of 4 or 5, and chroma of 3 or 4; or no dominant matrix color and multicolored in shades of yellow, gray, and brown
Texture—silt loam, loam, or silty clay loam
Redoximorphic features—iron depletions in shades of gray and masses of iron accumulation in shades of brown, yellow, and red

Bg horizon:

Color—hue of 10YR or 2.5Y, value of 4 to 6, and chroma of 2 or less; mottles in shades of brown
Texture—silt loam, loam, or silty clay loam
Redoximorphic features—iron depletions in shades of gray and masses of iron accumulation in shades of brown, yellow, and red

Exb horizon:

Color—hue of 10YR, value of 5 to 7, and chroma of 1 to 6; or no dominant matrix color and multicolored in shades of yellow, gray, and brown
Texture—silt loam, loam, or silty clay loam
Redoximorphic features—iron depletions in shades of gray and masses of iron accumulation in shades of brown, yellow, and red

Btgxb horizon:

Color—hue of 10YR to 5Y, value of 5 to 7, and chroma of 2 or less; mottles in shades of brown
Texture—silt loam, loam, or silty clay loam
Redoximorphic features—iron depletions in shades of gray and masses of iron accumulation in shades of brown, yellow, and red

Btxb horizon:
Color—hue of 10YR, value of 4 or 5, and chroma of 3 to 6; or no dominant matrix color and multicolored in shades of yellow, gray, and brown
Texture—silt loam, loam, or silty clay loam
Redoximorphic features—iron depletions in shades of gray and masses of iron accumulation in shades of brown, yellow, and red

Jena Series

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderate
Parent material: Loamy alluvial sediments
Landscape: Coastal Plain
Landform: Flood plains
Landform position: Convex slopes on the high and intermediate parts of natural levees
Commonly associated soils: Bibb, Kirkville, Mantachie, and Stough soils
Slope: 0 to 2 percent
Taxonomic classification: Coarse-loamy, siliceous, active, thermic Fluventic Dystrudepts

Typical Pedon

Jena fine sandy loam, in an area of Jena-Kirkville-Kinston complex, undulating, frequently flooded; about 0.2 miles west of Edinburg; 780 feet south and 260 feet west of the northeast corner of sec. 23, T. 11 N., R. 9 E.; USGS Edinburg topographic quadrangle; lat. 32 degrees 47 minutes 44 seconds N. and long. 89 degrees 20 minutes 9 seconds W.

Ap—0 to 4 inches; brown (10YR 4/3) fine sandy loam; weak medium granular structure; very friable; many fine and medium roots; very strongly acid; clear smooth boundary.
Bw1—4 to 10 inches; brown (10YR 4/3) fine sandy loam; weak coarse subangular structure; very friable; common fine and medium roots; common fine soft masses of manganese oxides; very strongly acid; clear smooth boundary.
Bw2—10 to 18 inches; brown (10YR 4/3) loam; weak coarse subangular structure; very friable; common fine and medium roots; common medium distinct yellowish brown (10YR 5/4) masses of iron accumulation; very strongly acid; clear smooth boundary.
Bw3—18 to 30 inches; dark yellowish brown (10YR 4/4) loam; weak coarse subangular blocky structure; friable; few fine roots; common medium faint brown (10YR 5/3) stains; very strongly acid; clear smooth boundary.
Bw4—30 to 37 inches; yellowish brown (10YR 5/6) fine sandy loam; weak coarse subangular blocky structure; very friable; few fine distinct dark yellowish brown (10YR 4/4) masses of iron accumulation; very strongly acid; clear smooth boundary.
C1—37 to 50 inches; light yellowish brown (10YR 6/4) fine sand; massive; loose; common fine distinct brownish yellow (10YR 6/6) masses of iron accumulation; very strongly acid; clear smooth boundary.
C2—50 to 60 inches; brownish yellow (10YR 6/6) fine sand with common streaks of clean sand grains; loose; common fine faint light yellowish brown (10YR 6/4) masses of iron accumulation; very strongly acid; clear smooth boundary.
C3—60 to 80 inches; yellowish brown (10YR 5/6) fine sandy loam; massive; very friable; few fine distinct strong brown (7.5YR 4/6) and common medium distinct light yellowish brown (10YR 6/4) masses of iron accumulation; very strongly acid.

Range in Characteristics

Thickness of the solum: 30 to 65 inches
Reaction: Very strongly acid to moderately acid in the A horizon and very strongly acid or strongly acid in the Bw and C horizons

A or Ap horizon:
Color—hue of 10YR, value of 4 or 5, and chroma of 2 to 4
Texture—fine sandy loam or silt loam

Bw horizon:
Color—hue of 10YR or 7.5YR, value of 4 to 7, and chroma of 3 to 6
Texture—silt loam, fine sandy loam, or loam
Redoximorphic features—few to many masses of iron accumulation in shades of brown and yellow

C horizon:
Color—hue of 10YR or 7.5YR, value of 4 to 6, and chroma of 3 to 6; or no dominant matrix color and multicolored in shades of yellow, gray, and brown
Texture—fine sandy loam or fine sand
Redoximorphic features—few to many masses of iron accumulation in shades of brown and yellow

Kinston Series

Depth class: Very deep
Drainage class: Poorly drained
Permeability: Moderate
Parent material: Alluvium
Landscape: Coastal Plain
Landform: Flood plains
Landform position: Flat and concave positions in backswamps
Commonly associated soils: Bibb, Jena, Kirkville, Mantachie, and Stough soils
Slope: 0 to 2 percent
Taxonomic classification: Fine-loamy, siliceous, semiactive, acid, thermic Fluvaquentic Endoaquepts

Typical Pedon

Kinston loam, frequently flooded; about 4.0 miles southwest of Twin City; 700 feet south and 150 feet west of the northeast corner of sec. 18, T. 9 N., R. 7 E.; USGS Carthage topographic quadrangle; lat. 32 degrees 38 minutes 3 seconds N. and long. 89 degrees 31 minutes 25 seconds W.

A—0 to 4 inches; brown (10YR 4/3) loam; weak fine granular structure; friable; many fine and medium roots; strongly acid; clear wavy boundary.
Ag—4 to 16 inches; gray (10YR 5/1) loam; weak medium granular structure; friable; many fine and medium roots; strongly acid; clear wavy boundary.
Cg1—16 to 33 inches; light brownish gray (10YR 6/2) clay loam; massive in place parting to weak medium subangular blocky structure; firm; common fine and medium roots; common medium distinct strong brown (7.5YR 5/8) masses of iron accumulation; very strongly acid; gradual wavy boundary.
Cg2—33 to 46 inches; gray (10YR 6/1) clay loam; massive; firm; few fine concretions of iron and manganese oxides; common medium distinct strong brown (7.5YR 5/8) and yellowish red (5YR 5/8) masses of iron accumulation; very strongly acid; gradual wavy boundary.
Cg3—46 to 52 inches; gray (10YR 6/1) clay loam; massive; firm; many fine and medium concretions of iron and manganese oxides; common medium distinct

yellowish red (5YR 4/6) masses of iron accumulation within the matrix; very strongly acid; gradual wavy boundary.

Cg4—52 to 80 inches; gray (10YR 5/1) clay loam; massive; firm; common fine and medium concretions of iron and manganese oxides; many medium distinct yellowish red (5YR 4/6) masses of iron accumulation within the matrix; very strongly acid.

Range in Characteristics

Thickness of the solum: More than 60 inches
Reaction: Strongly acid or very strongly acid, except where lime has been applied

A or Ap horizon:
Color—hue of 10YR, value of 3 to 5, and chroma of 1 to 3
Texture—loam or silt loam

Ag horizon (where present):
Color—hue of 10YR, value of 2 to 5, and chroma of 1; or neutral in hue and value of 3 to 5
Texture—sandy loam, loam, or silt loam

Cg horizon:
Color—hue of 10YR to 5Y, value of 3 to 7, and chroma of 1 or 2
Texture—fine sandy loam, sandy loam, loam, silt loam, clay loam, or sandy clay loam in the upper part; sand, gravelly sand, loamy sand, loamy fine sand, sandy loam, fine sandy loam, loam, or clay loam in the lower part
Redoximorphic features—masses of iron accumulation in shades of brown, yellow, and red

Kipling Series

Depth class: Deep
Drainage class: Somewhat poorly drained
Permeability: Very slow
Parent material: Clayey sediments
Landscape: Blackland Prairie uplands
Landform: Broad flats
Landform position: Summits, shoulder slopes, and side slopes
Commonly associated soils: Savannah, Smithdale, and Sweatman soils
Slope: 2 to 8 percent
Taxonomic classification: Fine, smectitic, thermic Vertic Paleudalfs

Typical Pedon

Kipling silt loam, 2 to 5 percent slopes; in Scott County, Mississippi; 3.3 miles north of Morton; 520 feet south and 260 feet west of the northeast corner of sec. 1, T. 7 N., R. 5 E.; USGS Forkville topographic quadrangle; lat. 32 degrees 24 minutes 1 second N. and long. 89 degrees 44 minutes 15 seconds W.

Ap—0 to 6 inches; yellowish brown (10YR 5/4) silt loam; weak fine granular structure; friable; many fine and very fine roots; strongly acid; abrupt smooth boundary.

Bt—6 to 14 inches; yellowish brown (10YR 5/6) silty clay; weak coarse prismatic structure parting to strong fine and medium subangular blocky; firm, sticky and plastic; common fine and very fine roots; common faint clay films on face of peds; common medium distinct light brownish gray (10YR 6/2) iron depletions; many medium prominent red (2.5YR 4/6) masses of iron accumulation; very strongly acid; clear wavy boundary.

Btss1—14 to 32 inches; mottled 35 percent red (2.5YR 4/6), 35 percent light brownish gray (10YR 6/2), and 30 percent yellowish brown (10YR 5/6) clay; weak coarse

prismatic structure parting to moderate fine and medium subangular and angular blocky; firm, very sticky and very plastic; common fine and very fine roots; common large intersecting slickensides that have distinct polished and grooved surfaces; areas of red and yellowish brown are masses of iron accumulation; areas of light brownish gray are iron depletions; very strongly acid; clear wavy boundary.

Btss2—32 to 45 inches; clay, light olive brown (2.5Y 5/6) interior, light brownish gray (10YR 6/2) exterior; strong very coarse prismatic structure parting to moderate medium angular and subangular blocky; firm, very sticky and very plastic; few fine and very fine roots; common large intersecting slickensides that have distinct polished and grooved surfaces; areas of light brownish gray are iron depletions; few medium prominent red (2.5YR 4/6) masses of iron accumulation; very strongly acid; gradual wavy boundary.

Bkss1—45 to 58 inches; clay, olive brown (2.5Y 4/4) interior, light brownish gray (2.5Y 6/2) exterior; large wedge-shaped aggregates parting to strong fine and medium angular blocky structure; very firm, very sticky and very plastic; few fine roots; common large intersecting slickensides that have distinct polished and grooved surfaces; few nodules and soft masses of calcium carbonate; areas of light brownish gray are iron depletions; slightly acid; gradual wavy boundary.

Bkss2—58 to 80 inches; clay, olive yellow (2.5Y 6/6) interior, light brownish gray (2.5Y 6/2) exterior; large wedge-shaped aggregates parting to strong fine and medium angular blocky structure; very firm, very sticky and very plastic; few fine roots; common large intersecting slickensides that have distinct polished and grooved surfaces; many fine and medium nodules and soft masses of calcium carbonate; few fine prominent red (2.5YR 4/6) masses of iron accumulation; areas of light brownish gray are iron depletions; slightly alkaline.

Range in Characteristics

Thickness of the solum: More than 60 inches

Other distinctive characteristics: The Bt horizon is irregularly underlain by calcareous clay and partially weathered chalk at a depth of 36 to more than 80 inches. The calcium-magnesium ratio is more than 1.0.

Ap horizon:

Color—hue of 10YR, value of 3 to 5, and chroma of 1 to 4

Texture—silt loam or loam

Bt horizon:

Color—hue of 10YR or 2.5Y, value of 4 or 5, and chroma of 3 to 6; or no dominant matrix color and multicolored in shades of yellow, red, gray, and brown

Texture—silty clay or clay

Redoximorphic features—common or many iron depletions in shades of gray and masses of iron accumulation in shades of yellow, red, and brown

Btg or Btssg horizon (where present):

Color—hue of 10YR or 2.5Y, value of 5 or 6, and chroma of 1 or 2; or no dominant matrix color and multicolored in shades of gray, red, olive, and brown

Texture—silty clay or clay

Redoximorphic features—masses of iron accumulation in shades of yellow, red, and brown

Btss horizon:

Color—hue of 10YR or 2.5Y, value of 4 to 6, and chroma of 3 to 6; or no dominant matrix color and multicolored in shades of yellow, red, gray, and brown

Texture—silty clay or clay

Redoximorphic features—iron depletions in shades of gray and masses of iron accumulation in shades of yellow, red, and brown

Bkss horizon:

Color—hue of 10YR or 2.5Y, value of 5 or 6, and chroma of 3 to 6; or no dominant matrix color and multicolored in shades of yellow, red, gray, and brown

Texture—silty clay or clay

Redoximorphic features—iron depletions in shades of gray and iron accumulation in shades of yellow, red, and brown; few to many soft masses and/or nodules of calcium carbonate

Kirkville Series

Depth class: Deep
Drainage class: Moderately well drained
Permeability: Moderate
Parent material: Loamy alluvium
Landscape: Coastal Plain
Landform: Flood plains
Landform position: Convex slopes on natural levees
Commonly associated soils: Bibb, Jena, Kinston, Mantachie, and Stough soils
Slope: 0 to 2 percent
Taxonomic classification: Coarse-loamy, siliceous, active, thermic Fluvaquentic Dystrudepts

Typical Pedon

Kirkville fine sandy loam, occasionally flooded; about 1.1 miles east of Freeny; 2,100 feet north and 2,000 feet west of the southeast corner of sec. 15, T. 10 N., R. 8 E.; USGS McAfee topographic quadrangle; lat. 32 degrees 42 minutes 45 seconds N. and long. 89 degrees 27 minutes 41 seconds W.

Ap1—0 to 7 inches; dark grayish brown (10YR 4/2) fine sandy loam; weak fine granular structure; very friable; many fine and medium roots; strongly acid; clear wavy boundary.

Ap2—7 to 15 inches; dark yellowish brown (10YR 4/4) loam; weak medium granular structure; very friable; many fine and medium roots; strongly acid; clear wavy boundary.

Bw1—15 to 25 inches; dark yellowish brown (10YR 4/6) loam; weak coarse subangular blocky structure; friable; many fine and medium roots; common fine and medium concretions of iron and manganese oxides; few fine faint pale brown (10YR 6/3) iron depletions within the matrix; common medium distinct yellowish brown (10YR 5/8) masses of iron accumulation within the matrix; very strongly acid; gradual wavy boundary.

Bw2—25 to 39 inches; yellowish brown (10YR 5/4) loam; weak coarse subangular blocky structure; friable; common fine roots; many fine and medium concretions of iron and manganese oxides; few fine and medium faint light brownish gray (10YR 6/2) iron depletions within the matrix; common medium distinct yellowish brown (10YR 5/8) masses of iron accumulation within the matrix; very strongly acid; gradual wavy boundary.

Bg1—39 to 51 inches; gray (10YR 6/1) sandy loam; weak coarse subangular blocky structure; very friable; common fine roots; many fine and medium concretions of iron and manganese oxides; common medium distinct yellowish brown (10YR 5/8) masses of iron accumulation within the matrix; very strongly acid; gradual wavy boundary.

Bg2—51 to 58 inches; gray (10YR 6/1) loam; weak coarse subangular blocky structure; very friable; few fine roots; common fine and medium concretions of iron and manganese oxides; many medium distinct yellowish brown (10YR 5/6) masses of iron accumulation within the matrix; very strongly acid; gradual wavy boundary.

Cg1—58 to 69 inches; gray (10YR 6/1) loam; massive; very friable; common fine and medium distinct brownish yellow (10YR 6/6) masses of iron accumulation within the matrix; very strongly acid; gradual wavy boundary.
Cg2—69 to 80 inches; gray (10YR 6/1) loam; massive; very friable; common fine and medium distinct strong brown (7.5YR 5/8) masses of iron accumulation within the matrix; very strongly acid.

Range in Characteristics

Thickness of the solum: More than 60 inches
Reaction: Very strongly acid or strongly acid throughout, except the surface layer in areas where lime has been applied

Ap horizon:
Color—hue of 10YR, value of 4 or 5, and chroma of 2 to 4
Texture—fine sandy loam or loam

Bw horizon:
Color—hue of 10YR or 2.5Y, value of 4 or 5, and chroma of 3 to 6, or no dominant matrix color and multicolored in shades of brown, yellow, and gray; mottles with chroma of 2 or less in some pedons
Texture—sandy loam, loam, or fine sandy loam
Redoximorphic features—iron depletions in shades of gray and masses of iron accumulation in shades of brown and yellow

Bg horizon:
Color—hue of 10YR or 2.5Y, value of 5 or 6, and chroma of 2 or less
Texture—sandy loam, loam, or fine sandy loam
Redoximorphic features—masses of iron accumulation in shades of brown and yellow

Cg horizon:
Color—hue of 10YR or 2.5Y, value of 5 or 6, and chroma of 2 or less
Texture—sandy loam, loam, or fine sandy loam
Redoximorphic features—masses of iron accumulation in shades of brown, yellow, and red

Mantachie Series

Depth class: Very deep
Drainage class: Somewhat poorly drained
Permeability: Moderate
Parent material: Loamy alluvium
Landscape: Coastal Plain
Landform: Flood plains
Landform position: Low parts of natural levees
Commonly associated soils: Bibb, Jena, Kinston, Kirkville, and Stough soils
Slope: 0 to 1 percent
Taxonomic classification: Fine-loamy, siliceous, active, acid, thermic Fluventic Endoaquepts

Typical Pedon

Mantachie fine sandy loam, occasionally flooded; about 2.3 miles east of Twin City; 1,000 feet south and 1,300 feet west of the northeast corner of sec. 33, T. 10 N., R. 8 E.; USGS McAfee topographic quadrangle; lat. 32 degrees 40 minutes 38 seconds N. and long. 89 degrees 28 minutes 30 seconds W.

Ap1—0 to 3 inches; brown (10YR 4/3) fine sandy loam; weak fine granular structure; friable; many fine and medium roots; strongly acid; abrupt smooth boundary.

Ap2—3 to 6 inches; brown (10YR 4/3) loam; weak medium subangular blocky structure; friable; common fine and medium roots; common fine faint light brownish gray (10YR 6/2) iron depletions; common medium distinct yellowish brown (10YR 5/4) masses of iron accumulation within the matrix; strongly acid; clear smooth boundary.

Bw—6 to 19 inches; yellowish brown (10YR 5/4) loam; coarse medium subangular blocky structure; friable; common fine and medium roots; many fine faint light brownish gray (10YR 6/2) iron depletions; common medium distinct light yellowish brown (10YR 6/4) masses of iron accumulation within the matrix; common fine and medium concretions of iron and manganese oxides; strongly acid; clear irregular boundary.

Bg1—19 to 33 inches; light brownish gray (10YR 6/2) loam; weak medium subangular blocky structure; friable; common medium distinct dark yellowish brown (10YR 4/4) and yellowish brown (10YR 5/6) masses of iron accumulation within the matrix; common fine and medium concretions of iron and manganese oxides; very strongly acid; gradual wavy boundary.

Bg2—33 to 46 inches; light brownish gray (10YR 6/2) loam; weak medium subangular blocky structure; friable; common fine and medium concretions of iron and manganese oxides; common medium distinct yellowish brown (10YR 5/8) and few fine distinct light yellowish brown (10YR 6/4) masses of iron accumulation within the matrix; very strongly acid; gradual wavy boundary.

Bg3—46 to 61 inches; 40 percent gray (10YR 6/1), 30 percent yellowish brown (10YR 5/4), and 30 percent light yellowish brown (10YR 6/4) sandy loam; weak medium subangular blocky structure; friable; many fine and medium concretions of iron and manganese oxides; common medium distinct strong brown (7.5YR 5/8) masses of iron accumulation within the matrix; very strongly acid; gradual wavy boundary.

2Bt—61 to 80 inches; brown (7.5YR 5/8) loam; weak very coarse prismatic structure; friable; common distinct clay films on faces of peds; many fine and medium concretions of iron and manganese oxides; few distinct gray (10YR 6/1) iron depletions in seams between prisms; common medium distinct brownish yellow (10YR 6/6) masses of iron accumulation within the matrix; very strongly acid.

Range in Characteristics

Thickness of the solum: More than 60 inches

Reaction: Very strongly acid or strongly acid throughout, except the surface layer in areas where lime has been applied

A or Ap horizon:

Color—hue of 10YR, value of 4 or 5, and chroma of 2 to 4; or hue of 2.5Y, value of 4, and chroma of 2

Texture—fine sandy loam or loam

Bw horizon:

Color—hue of 10YR or 2.5Y, value of 4 or 5, and chroma of 3 to 8; or no dominant matrix color and multicolored in shades of yellow, gray, and brown

Texture—loam, sandy clay loam, or clay loam

Redoximorphic features—few to many iron depletions in shades of gray and masses of iron accumulation in shades of brown, yellow, and red

Bg horizon:

Color—hue of 10YR or 2.5Y, value of 5 to 7, and chroma of 2 or less; mottles in shades of brown and yellow

Texture—loam or sandy loam

Redoximorphic features—few to many iron depletions in shades of gray and masses of iron accumulation in shades of brown, yellow, and red

2Bt horizon (where present):
Color—hue of 10YR, 7.5YR, or 2.5Y, value of 5 or 6, and chroma of 1 or 2; or no dominant matrix color and multicolored in shades of brown, yellow, gray, or red
Texture—loam, sandy clay loam, or clay loam
Redoximorphic features—common or many iron depletions in shades of gray and masses of iron accumulation in shades of brown, yellow, and red

Neshoba Series

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderately slow
Parent material: Glauconitic marine sediments
Landscape: Coastal Plain
Landform: Uplands
Landform position: Shoulder slopes, side slopes, and backslopes
Commonly associated soils: Ora, Ruston, Smithdale, and Williamsville soils
Slope: 2 to 8 percent
Taxonomic classification: Fine, mixed, semiactive, thermic Rhodic Paleudults

Typical Pedon

Neshoba fine sandy loam, 5 to 8 percent slopes, eroded; about 4.5 miles east of Marydell; 2,000 feet north and 2,700 feet east of the southwest corner of sec. 13, T. 12 N., R. 9 E.; USGS Four Corners topographic quadrangle; lat. 32 degrees 52 minutes 49 seconds N. and long. 89 degrees 21 minutes 9 seconds W.

Ap—0 to 4 inches; dark grayish brown (10YR 4/2) fine sandy loam; weak fine granular structure; friable; many fine and medium roots; strongly acid; abrupt smooth boundary.
Bt1—4 to 25 inches; dark red (2.5YR 3/6) silty clay; moderate medium subangular blocky structure; firm, slightly sticky and slightly plastic; many fine and medium roots; continuous clay films on faces of peds; strongly acid; clear wavy boundary.
Bt2—25 to 38 inches; dark red (2.5YR 3/6) silty clay; moderate medium prismatic structure parting to moderate fine and medium angular blocky; firm, sticky and plastic; many fine and medium roots; continuous clay films on faces of peds; common pockets of green sand; very strongly acid; gradual wavy boundary.
Bt3—38 to 52 inches; red (2.5YR 4/6) clay loam; moderate medium prismatic structure parting to moderate fine and medium angular blocky; firm, sticky and plastic; continuous clay films on faces of peds; common coarse prominent yellowish red (5YR 5/8) masses of iron accumulation within the matrix; about 35 percent, by volume, fine to coarse ironstone fragments and stones; about 20 percent, by volume, pockets of green sand; strongly acid; clear wavy boundary.
Bt4—52 to 65 inches; red (2.5YR 4/6) clay loam; moderate medium prismatic structure parting to moderate fine and medium angular blocky; firm, sticky and plastic; continuous clay films on faces of peds; about 50 percent, by volume, medium to coarse ironstone fragments and stones; about 35 percent, by volume, pockets of green sand; strongly acid; clear wavy boundary.
BC—65 to 80 inches; dark red (2.5YR 3/6) clay loam; strong medium prismatic structure parting to weak medium angular; firm, sticky and plastic; continuous clay films on faces of peds; about 50 percent, by volume, fine to coarse ironstone fragments and stones; about 35 percent, by volume, pockets of green sand; strongly acid.

Range in Characteristics

Thickness of the solum: More than 60 inches
Reaction: Very strongly acid or strongly acid, except the surface layer in areas where lime has been applied

Ap horizon:
Color—hue of 10YR, 7.5YR, or 5YR, value of 4 or 5, and chroma of 2 to 6
Texture—fine sandy loam or loam

Bt horizon:
Color—hue of 5YR, 2.5YR, or 10R, value of 3 or 4, and chroma of 4 to 6
Texture—silty clay loam, clay loam, silty clay, or clay
Redoximorphic features—iron accumulation in shades of brown; 0 to 15 percent ironstone fragments in the upper part of the Bt horizon and from 0 to 50 percent in the lower part; partially weathered, soft to hard, green sand and glauconitic materials in some pedons

BC horizon:
Color—hue of 10R, 2.5YR, or 5YR, value of 3, and chroma of 4 to 6
Texture—silty clay loam, clay loam, or sandy clay

Ora Series

Depth class: Very deep
Drainage class: Moderately well drained
Permeability: Moderately slow
Parent material: Loamy marine deposits
Landscape: Coastal Plain
Landform: Uplands
Landform position: Ridgetops and side slopes
Commonly associated soils: Neshoba, Ruston, Smithdale, Sweatman, and Williamsville soils
Slope: 2 to 8 percent
Taxonomic classification: Fine-loamy, siliceous, semiactive, thermic Typic Fragiudults

Typical Pedon

Ora fine sandy loam, 5 to 8 percent slopes, eroded; 1.0 mile west of Estes Mill; 2,000 feet north and 500 feet east of the southwest corner of sec. 4, T. 9 N., R. 8 E.; USGS McAfee topographic quadrangle; lat. 32 degrees 39 minutes 29 seconds N. and long. 89 degrees 29 minutes 11 seconds W.

Ap—0 to 3 inches; brown (10YR 4/3) fine sandy loam; weak fine granular structure; very friable; many fine roots; strongly acid; abrupt smooth boundary.
EB—3 to 6 inches; 70 percent yellowish brown (10YR 5/4) sandy loam (E); weak fine granular structure; very friable; 30 percent yellowish brown (10YR 5/8) loam (B); weak fine subangular blocky structure; many fine roots; very strongly acid; clear smooth boundary.
Bt1—6 to 13 inches; yellowish red (5YR 5/8) loam; moderate medium subangular blocky structure; friable; common fine roots; common fine pores; few faint clay films on faces of peds; few fine distinct brownish yellow (10YR 6/6) masses of iron accumulation within the matrix; very strongly acid; clear wavy boundary.
Bt2—13 to 24 inches; yellowish red (5YR 5/8) loam; moderate medium subangular blocky structure; friable; few fine roots; common fine pores; few faint clay films on faces of peds; common fine distinct light yellowish brown (10YR 6/4) iron depletions within the matrix; few fine faint yellowish red (5YR 4/6) masses of iron accumulation within the matrix; very strongly acid; gradual wavy boundary.

Btx1—24 to 35 inches; mottled 40 percent reddish yellow (7.5YR 6/6), 40 percent red (2.5YR 4/8), and 20 percent light brownish gray (10YR 6/2) sandy clay loam; moderate very coarse prismatic structure parting to weak coarse subangular blocky; very firm; dense and brittle in about 65 percent of the volume; many fine vesicular pores; common faint clay films on faces of peds; few fine and medium concretions of iron and manganese oxides; thin seams of gray (10YR 6/1) silt loam iron depletions between prisms; very strongly acid; gradual wavy boundary.

Btx2—35 to 46 inches; mottled 40 percent red (2.5YR 4/8), 40 percent light brownish gray (10YR 6/2), and 20 percent light brown (7.5YR 6/4) sandy clay loam; moderate very coarse prismatic structure parting to weak coarse subangular blocky; very firm; dense and brittle in about 65 percent of volume; many fine vesicular pores; common distinct clay films on faces of peds; few fine and medium concretions of iron and manganese oxides; thin seams of gray (10YR 6/1) silt loam iron depletions between prisms; very strongly acid; gradual wavy boundary.

Btx3—46 to 57 inches; red (2.5YR 4/8) sandy clay loam; moderate very coarse prismatic structure parting to coarse medium subangular blocky; firm; dense and brittle in about 65 percent of volume; few fine pores; common distinct clay films on faces of peds; few distinct light brownish gray (10YR 6/2) iron depletions in seams between prisms; many medium distinct light reddish brown (5YR 6/4) iron depletions within the matrix; few fine and medium concretions of iron and manganese oxides; very strongly acid; gradual wavy boundary.

C—57 to 80 inches; red (2.5YR 4/8) sandy loam; structureless; friable; common distinct light yellowish red (5YR 5/8) masses of iron accumulation within the matrix; light brown (7.5YR 6/4) iron depletions within the matrix; very strongly acid.

Range in Characteristics

Thickness of the solum: 50 to more than 80 inches
Reaction: Very strongly acid or strongly acid, except where lime has been applied
Depth to fragipan: 14 to 35 inches

Ap horizon:
- Color—hue of 10YR, value of 3 to 5, and chroma of 2 to 4
- Texture—fine sandy loam or sandy loam

EB horizon (where present):
- Color—(E) hue of 10YR, value of 5 or 6, and chroma of 2 to 4; (B) hue of 10YR or 7.5YR, value of 5 or 6, and chroma of 4 to 8
- Texture—sandy loam, fine sandy loam, silt loam, or loam

Bt horizon:
- Color—hue of 5YR or 2.5YR, value of 4 or 5, and chroma of 4 to 8
- Texture—loam, sandy clay loam, or clay loam
- Redoximorphic features—few to many masses of iron accumulation in shades of brown, yellow, and red

Btx horizon:
- Color—commonly no dominant matrix color and multicolored in shades of brown, yellow, gray, and red; or red to yellowish red matrix with mottles in shades of yellow, gray, and red
- Texture—loam, sandy clay loam, or sandy loam
- Redoximorphic features—few to many iron depletions in shades of gray and masses of iron accumulation in shades of brown, yellow, and red

C horizon (where present):
- Color—commonly no dominant matrix color and multicolored in shades of brown, yellow, gray, and red; or red to yellowish red matrix with mottles in shades of yellow, gray, and red

Texture—loam, sandy clay loam, or sandy loam
Redoximorphic features—few to many iron depletions in shades of gray and masses of iron accumulation in shades of brown, yellow, and red

Providence Series

Depth class: Very deep
Drainage class: Moderately well drained
Permeability: Moderately slow
Parent material: Silty sediments overlying sandy and loamy sediments
Landscape: Coastal Plain
Landform: Uplands and stream terraces
Landform position: Ridgetops, side slopes, and shoulder slopes
Commonly associated soils: Savannah, Smithdale, Sweatman, and Ruston soils
Slope: 2 to 8 percent
Taxonomic classification: Fine-silty, mixed, active, thermic Oxyaquic Fragiudalfs

Typical Pedon

Providence silt loam, 2 to 5 percent slopes; about 2.0 miles west of Saint Ann; 2,800 feet south and 300 feet east of the northwest corner of sec. 28, T. 11 N., R. 6 E.; USGS Thomastown topographic quadrangle; lat. 32 degrees 46 minutes 34 seconds N. and long. 89 degrees 41 minutes 54 seconds W.

Ap—0 to 3 inches; brown (10YR 4/3) silt loam; weak fine granular structure; friable; many fine and medium roots; very strongly acid; clear smooth boundary.
E—3 to 8 inches; yellowish brown (10YR 5/4) silt loam; weak fine granular structure; friable; many fine and medium roots; strongly acid; clear smooth boundary.
Bt1—8 to 13 inches; strong brown (7.5YR 5/6) silt loam; moderate medium subangular structure; friable; many fine and medium roots; few distinct clay films on faces of peds; few fine and medium soft masses of iron and manganese oxides; very strongly acid; clear wavy boundary.
Bt2—13 to 24 inches; strong brown (7.5YR 5/6) silty clay loam; moderate medium subangular blocky structure; friable; many fine and medium roots; common distinct clay films on faces of peds; few fine and medium soft masses of iron and manganese oxides; common fine and medium distinct light yellowish brown (10YR 6/4) iron depletions within the matrix; common fine and medium distinct yellowish brown (10YR 5/8) masses of iron accumulation within the matrix; very strongly acid; clear wavy boundary.
Btx1—24 to 31 inches; strong brown (7.5YR 5/6) silt loam; weak very coarse prismatic structure parting to moderate fine and medium subangular blocky; very firm; brittle and compact in about 65 percent of the matrix; few fine roots between prisms; many vesicular pores; few faint clay films on faces of peds; common medium distinct thin seams of gray (10YR 6/1) iron depletions between prisms; many medium distinct yellowish brown (10YR 5/8) and dark red (2.5YR 3/6) masses of iron accumulation within the matrix; very strongly acid; gradual wavy boundary.
Btx2—31 to 42 inches; 40 percent strong brown (7.5YR 5/6), 30 percent gray (10YR 6/1), and 30 percent red (2.5YR 4/6) silt loam in a variegated pattern and containing noticeable sand; weak very coarse prismatic structure parting to moderate fine and medium subangular blocky; very firm; brittle and compact in about 65 percent of the matrix; few fine roots between prisms; many vesicular pores; few faint clay films on faces of peds; thin seams of light brownish gray (10YR 6/2) iron depletions between prisms; few medium distinct light yellowish brown (10YR 6/4) iron depletions within the matrix; very strongly acid; gradual wavy boundary.

2Btx1—42 to 56 inches; strong brown (7.5YR 5/8) loam; weak very coarse prismatic structure parting to moderate medium subangular blocky; very firm; brittle and compact in about 65 percent of the matrix; many vesicular pores; few distinct clay films on faces of peds; common medium distinct thin seams of light brownish gray (10YR 6/2) iron depletions between the prisms; common fine and medium distinct red (2.5YR 4/8) masses of iron accumulation within the matrix; common fine and medium concretions of iron and manganese oxides; very strongly acid; gradual wavy boundary.

2Btx2—56 to 68 inches; red (2.5YR 4/8) sandy clay loam; weak very coarse prismatic structure parting to moderate medium subangular blocky; very firm; brittle and compact in about 65 percent of the matrix; many vesicular pores; few distinct clay films on faces of peds; few medium thin seams of light brownish gray (10YR 6/2) iron depletions between the prisms; common fine and medium distinct strong brown (7.5YR 5/6) masses of iron accumulation within the matrix; very strongly acid; gradual wavy boundary.

2Bt—68 to 80 inches; red (2.5YR 4/8) sandy clay loam; weak coarse prismatic structure parting to weak coarse subangular blocky; friable; common distinct clay films on faces of peds; common medium distinct pockets of light gray (10YR 7/1) iron depletions within the matrix; common medium distinct strong brown (7.5YR 5/6) masses of iron accumulation within the matrix; very strongly acid.

Range in Characteristics

Thickness of the solum: More than 60 inches
Reaction: Very strongly acid to moderately acid, except where lime has been applied
Depth to fragipan: 18 to 38 inches

Ap horizon:
- Color—hue of 10YR, value of 3 to 5, and chroma of 2 to 6
- Texture—silt loam

E horizon:
- Color—hue of 10YR, value of 4 to 6, and chroma of 2 to 4
- Texture—silt loam

Bt horizon:
- Color—hue of 5YR or 7.5YR, value of 4 or 5, and chroma of 4 to 8
- Texture—silt loam or silty clay loam
- Redoximorphic features (where present)—few or common iron depletions in shades of gray and iron accumulation in shades of brown and red

Btx and 2Btx horizons:
- Color—hue of 2.5YR to 10YR, value of 4 or 5, and chroma of 6 to 8; or variegated in shades of brown, gray, yellow, and red
- Texture—silt loam or silty clay loam in the upper part; silt loam, silty clay loam, loam, sandy clay loam, sandy loam, or clay loam in the lower part
- Redoximorphic features (where present)—few or common iron depletions in shades of gray and iron accumulation in shades of brown, yellow, and red in a variegated pattern

2Bt horizon:
- Color—hue of 2.5YR to 7.5YR, value of 4 to 6, and chroma of 4 to 8; or no dominant matrix color and multicolored in shades of brown, yellow, gray, and red
- Texture—loam, sandy clay loam, or sandy loam
- Redoximorphic features—few to many iron depletions in shades of gray and masses of iron accumulations in shades of brown, yellow, and red

Rosebloom Series

Depth class: Deep
Drainage class: Poorly drained
Permeability: Moderate
Parent material: Silty alluvium
Landscape: Coastal Plain
Landform: Flood plains
Landform position: Flat and concave positions in backswamps
Commonly associated soils: Arkabutla, Bude, and Gillsburg soils
Slope: 0 to 1 percent
Taxonomic classification: Fine-silty, mixed, active, acid, thermic Fluvaquentic Endoaquepts

Typical Pedon

Rosebloom silt loam, in an area of Rosebloom and Arkabutla soils, frequently flooded; about 3.4 miles west of Carthage; 2,500 feet south and 200 feet west of the northeast corner of sec. 20, T. 10 N., R. 7 E.; USGS Carthage topographic quadrangle; lat. 32 degrees 42 minutes 6 seconds N. and long. 89 degrees 35 minutes 29 seconds W.

Ap1—0 to 7 inches; dark grayish brown (10YR 4/2) silt loam; weak fine granular structure; friable; many fine and medium roots; few fine and medium distinct brownish yellow (10YR 6/6) masses of iron accumulation within the matrix; strongly acid; abrupt smooth boundary.
Ap2—7 to 10 inches; dark grayish brown (10YR 4/2) silt loam; weak fine granular structure; friable; many fine and medium roots; few fine and medium faint light brownish gray (10YR 6/2) iron depletions within the matrix; strongly acid; abrupt smooth boundary.
Bg1—10 to 24 inches; gray (10YR 5/1) silt loam; weak medium subangular blocky structure; friable; common fine and medium roots; common fine faint gray (10YR 6/1) iron depletions within the matrix; common medium distinct brownish yellow (10YR 6/6) masses of iron accumulation within the matrix; very strongly acid; gradual wavy boundary.
Bg2—24 to 33 inches; gray (10YR 6/1) silt loam; weak medium subangular blocky structure; firm; common medium distinct brownish yellow (10YR 6/6) masses of iron accumulation within the matrix; very strongly acid; gradual wavy boundary.
Bg3—33 to 46 inches; gray (10YR 6/1) silty clay loam; weak medium subangular blocky structure; firm; common fine and medium concretions of iron and manganese oxides; common medium distinct brownish yellow (10YR 6/6) masses of iron accumulation within the matrix; very strongly acid; gradual wavy boundary.
Bg4—46 to 62 inches; gray (10YR 5/1) silty clay loam; weak medium subangular blocky structure; firm; many fine and medium concretions of iron and manganese oxides; common medium distinct brownish yellow (10YR 6/8) and few medium prominent red (2.5YR 4/8) masses of iron accumulation within the matrix; very strongly acid; gradual wavy boundary.
Bg5—62 to 70 inches; gray (10YR 6/1) silty clay loam; weak medium subangular blocky structure; firm; many fine and medium concretions of iron and manganese oxides; many medium distinct yellowish brown (10YR 5/6) masses of iron accumulation within the matrix; very strongly acid; gradual wavy boundary.
Bg6—70 to 80 inches; gray (10YR 6/1) silty clay loam; weak medium subangular blocky structure; firm; common fine and medium concretions of iron and manganese oxides; common medium distinct yellowish brown (10YR 5/8) masses of iron accumulation within the matrix; very strongly acid.

Range in Characteristics

Thickness of the solum: More than 60 inches
Reaction: Strongly acid or very strongly acid, except the surface layer in areas where lime has been applied

Ap horizon:
Color—hue of 10YR, value of 4 to 6, and chroma of 1 to 3
Texture—silt loam

Bg horizon:
Color—hue of 10YR or 2.5Y, value of 6 or 7, and chroma of 2 or less, or value of 4 or 5 and chroma of 1; few to many brown and black manganese concretions in the lower part of the subsoil
Texture—silt loam or silty clay loam
Redoximorphic features—iron depletions in shades of gray and masses of iron accumulation in shades of brown, yellow, and red

Ruston Series

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderate
Parent material: Loamy marine sediments
Landscape: Coastal Plain
Landform: Uplands
Landform position: Summits, shoulder slopes, and side slopes
Commonly associated soils: Ora, Providence, Savannah, and Smithdale soils
Slope: 2 to 8 percent
Taxonomic classification: Fine-loamy, siliceous, semiactive, thermic Typic Paleudults

Typical Pedon

Ruston fine sandy loam, 5 to 8 percent slopes, eroded; about 0.4 miles north of the Carthage city limits; 600 feet north and 500 feet east of the southwest corner of sec. 32, T. 11 N., R. 8 E.; USGS Conway topographic quadrangle; lat. 32 degrees 45 minutes 46 seconds N. and long. 89 degrees 30 minutes 26 seconds W.

Ap1—0 to 3 inches; dark grayish brown (10YR 4/2) fine sandy loam; weak fine granular structure; very friable; many fine and medium roots; strongly acid; clear wavy boundary.
Ap2—3 to 6 inches; yellowish brown (10YR 5/4) fine sandy loam; weak fine granular structure; very friable; many fine and medium roots; strongly acid; clear wavy boundary.
E—6 to 10 inches; pale brown (10YR 6/3) fine sandy loam; weak medium subangular blocky structure; very friable; many fine and medium roots; very strongly acid; clear wavy boundary.
B/E—10 to 14 inches; 65 percent yellowish red (5YR 4/6) sandy clay loam (B); weak fine subangular blocky structure; friable; 35 percent brown (7.5YR 5/4) loam (E); weak fine granular structure; very friable; many fine roots; very strongly acid; clear smooth boundary.
Bt1—14 to 19 inches; red (2.5YR 4/6) sandy clay loam; moderate medium subangular blocky structure; friable; many fine and medium roots; common distinct clay films on faces of peds; very strongly acid; gradual wavy boundary.
Bt2—19 to 37 inches; red (2.5YR 4/6) sandy clay loam; moderate medium subangular blocky structure; friable; common fine roots; common distinct clay films on faces of peds; sand grains coated and bridged with clay; common medium distinct

yellowish red (5YR 4/6) masses of iron accumulation; very strongly acid; gradual wavy boundary.

Bt/E—37 to 52 inches; 80 percent red (2.5YR 4/6) and 20 percent light yellowish brown (10YR 6/4) sandy loam; weak coarse prismatic structure parting to weak medium subangular blocky; friable; few fine roots; many fine vesicular pores; few faint clay films on faces of peds; very strongly acid; gradual wavy boundary.

B´t1—52 to 68 inches; red (2.5YR 4/6) sandy clay loam; weak very coarse prismatic structure parting to moderate medium subangular blocky; friable; few fine vesicular pores; common distinct clay films on faces of peds; common medium distinct yellowish brown (10YR 5/6) and few faint patches and streaks of pale brown (10YR 6/3) sand masses; very strongly acid; gradual wavy boundary.

B´t2—68 to 80 inches; red (2.5YR 4/6) sandy clay loam; weak very coarse prismatic structure parting to moderate medium subangular blocky; friable; few fine vesicular pores; common thin discontinuous faint clay films on faces of peds; few thin patches and streaks of brownish yellow (10YR 6/8) sand; few chert pebbles; very strongly acid.

Range in Characteristics

Thickness of the solum: More than 60 inches

Reaction: Very strongly acid to slightly acid in the A and E horizons and very strongly acid to moderately acid in the Bt and B´t horizons

A or Ap horizon:
- Color—hue of 7.5YR or 10YR, value of 3 or 4, and chroma of 2 to 4
- Texture—fine sandy loam or sandy loam

E horizon and E part of B/E horizon (where present):
- Color—hue of 10YR, value of 5 or 6, and chroma of 3 or 4
- Texture—fine sandy loam, sandy loam, or loamy sand

Bt horizon and B part of B/E horizon:
- Color—hue of 2.5YR or 5YR, value of 4 or 5, and chroma of 6 to 8
- Texture—sandy loam, sandy clay loam, or clay loam
- Redoximorphic features (where present)—few or common masses of iron accumulation in shades of red and brown in the lower part

B´t horizon:
- Color—hue of 2.5YR or 5YR, value of 4 to 6, and chroma of 6 to 8; or multicolored in shades of brown, red, or yellow
- Texture—sandy loam, sandy clay loam, or clay loam
- Redoximorphic features—few to many masses of iron accumulation in shades of red, brown, yellow, or gray

Savannah Series

Depth class: Very deep
Drainage class: Moderately well drained
Permeability: Moderately slow
Parent material: Loamy marine sediments
Landscape: Coastal Plain
Landform: Stream terraces and uplands
Landform position: Slightly convex slopes
Commonly associated soils: Providence, Ruston, and Stough soils
Slope: 2 to 8 percent
Taxonomic classification: Fine-loamy, siliceous, semiactive, thermic Typic Fragiudults

Typical Pedon

Savannah fine sandy loam, 2 to 5 percent slopes; in Scott County, Mississippi; 4.0 miles west of Morton; 275 feet south and 260 feet east of the northwest corner of sec. 32, T. 6 N., R. 6 E.; USGS Morton topographic quadrangle; lat. 32 degrees 19 minutes 10 seconds N. and long. 89 degrees 43 minutes 18 seconds W.

Ap—0 to 5 inches; yellowish brown (10YR 5/4) fine sandy loam; weak fine granular structure; very friable; many fine roots; strongly acid; abrupt smooth boundary.

E/B—5 to 8 inches; 70 percent light yellowish brown (10YR 6/4) silt loam (E); weak fine granular structure; very friable; 30 percent yellowish brown (10YR 5/8) loam (B); weak fine subangular blocky structure; many fine roots; strongly acid; clear smooth boundary.

Bt—8 to 14 inches; yellowish brown (10YR 5/8) loam; moderate medium subangular blocky structure; friable; few fine roots; common fine pores; few faint clay films on faces of peds; few fine distinct strong brown (7.5YR 5/6) masses of iron accumulation within the matrix; very strongly acid; clear wavy boundary.

Btx1—14 to 20 inches; yellowish brown (10YR 5/6) loam; moderate very coarse prismatic structure parting to weak coarse subangular blocky; very firm; brittle and compact in about 65 percent of the volume; many fine vesicular pores; common faint clay films on faces of peds; many coarse distinct light yellowish brown (10YR 6/4) iron depletions on faces of peds; many coarse distinct strong brown (7.5YR 5/6) masses of iron accumulation within the matrix; very strongly acid; gradual wavy boundary.

Btx2—20 to 36 inches; yellowish brown (10YR 5/6) loam; moderate very coarse prismatic structure parting to weak coarse subangular blocky; very firm; brittle and compact in about 65 percent of volume; many fine vesicular pores; common distinct clay films on faces of peds; few fine distinct light brownish gray (10YR 6/2) clay depletions in seams between prisms; many coarse prominent yellowish red (5YR 5/8) masses of iron accumulation within the matrix; very strongly acid; gradual wavy boundary.

Btx3—36 to 45 inches; yellowish brown (10YR 5/6) sandy clay loam; moderate very coarse prismatic structure parting to coarse medium subangular blocky; firm; brittle and compact in about 65 percent of volume; few fine pores; common distinct clay films on faces of peds; few distinct light brownish gray (10YR 6/2) clay depletions in seams between prisms; many coarse distinct yellowish red (5YR 5/8) masses of iron accumulation within the matrix; very strongly acid; gradual wavy boundary.

Btx4—45 to 71 inches; 40 percent light brownish gray (10YR 6/2), 35 percent yellowish red (5YR 5/6), and 25 percent strong brown (7.5YR 5/6) sandy clay loam in a variegated pattern; weak very coarse prismatic structure parting to moderate coarse subangular blocky; firm; brittle and compact in about 60 percent of volume; few distinct clay films on faces of peds; few distinct gray (10YR 6/1) clay depletions in seams between prisms; very strongly acid; gradual wavy boundary.

B´t—71 to 80 inches; 70 percent strong brown (7.5YR 5/6) and 30 percent gray (10YR 6/1) sandy clay loam in a variegated pattern; moderate medium subangular blocky structure; firm; common distinct clay films on faces of peds; common fine distinct light brownish gray (10YR 6/2) iron depletions within the matrix; very strongly acid.

Range in Characteristics

Thickness of the solum: 50 to more than 80 inches
Reaction: Very strongly acid or strongly acid, except where lime has been applied
Depth to fragipan: 14 to 35 inches

Ap horizon:

Color—hue of 10YR, value of 3 to 5, and chroma of 2 to 4
Texture—fine sandy loam or silt loam

E/B horizon (where present):
Color—(E) hue of 10YR, value of 5 or 6, and chroma of 2 to 4; (B) hue of 10YR or 7.5YR, value of 5 or 6, and chroma of 4 to 8
Texture—silt loam or loam

Bt horizon:
Color—hue of 10YR or 7.5YR, value of 5 or 6, and chroma of 4 to 8
Texture—loam, sandy clay loam, or clay loam
Redoximorphic features (where present)—few or common masses of iron accumulation in shades of brown and yellow

Btx horizon:
Color—hue of 10YR or 7.5YR, value of 5 or 6, and chroma of 4 to 8; or no dominant matrix color and multicolored in shades of brown, yellow, gray, and red
Texture—loam, sandy clay loam, or clay loam
Redoximorphic features—common or many iron or clay depletions in shades of gray or brown and masses of iron accumulation in shades of brown, yellow, and red

B´t horizon (where present):
Color—commonly no dominant matrix color and multicolored in shades of brown and gray; or hue of 10YR or 7.5YR, value of 5 or 6, and chroma of 4 to 8
Texture—loam, sandy clay loam, or clay loam
Redoximorphic features—common or many iron depletions in shades gray and masses of iron accumulation in shades of brown, yellow, and red

Smithdale Series

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderate
Parent material: Loamy sediments
Landscape: Coastal Plain
Landform: Uplands
Landform position: Side slopes and backslopes
Commonly associated soils: Ora, Providence, Ruston, and Sweatman soils
Slope: 8 to 35 percent
Taxonomic classification: Fine-loamy, siliceous, subactive, thermic Typic Hapludults

Typical Pedon

Smithdale fine sandy loam, 8 to 15 percent slopes, eroded; about 2.5 miles east of the intersection of Mississippi State Highways 35 and 25; about 500 feet south and 1,800 feet west of the northeast corner of sec. 19, T. 11 N., R. 8 E.; USGS Conway topographic quadrangle; lat. 32 degrees 47 minutes 40 seconds N. and long. 89 degrees 30 minutes 57 seconds W.

A—0 to 5 inches; brown (10YR 4/3) fine sandy loam; weak fine granular structure; very friable; many fine and medium roots; very strongly acid; clear wavy boundary.
E—5 to 10 inches; yellowish brown (10YR 5/4) fine sandy loam; weak fine granular structure; very friable; many fine and medium roots; very strongly acid; clear smooth boundary.
B/E—10 to 14 inches; 70 percent yellowish red (5YR 4/6) sandy clay loam (B); weak fine subangular blocky structure; friable; 30 percent strong brown (7.5YR 5/6) loam (E); weak fine granular structure; very friable; many fine roots; very strongly acid; clear smooth boundary.

Bt1—14 to 26 inches; red (2.5YR 4/6) sandy clay loam; moderate medium subangular blocky structure; friable; many fine and medium roots; common distinct clay films on faces of peds; few fine distinct brownish yellow (10YR 6/6) masses of iron accumulation within the matrix; very strongly acid; gradual wavy boundary.
Bt2—26 to 35 inches; red (2.5YR 4/6) sandy clay loam; moderate medium subangular blocky structure; friable; common medium distinct brownish yellow (10YR 6/8) masses of iron accumulation within the matrix; very strongly acid; gradual wavy boundary.
Bt3—35 to 64 inches; red (2.5YR 4/6) sandy loam; weak medium subangular blocky structure; friable; few distinct clay films on faces of peds; about 10 percent, by volume, ironstone cobbles; common medium distinct brownish yellow (10YR 6/8) and red (2.5YR 5/8) masses of iron accumulation; very strongly acid; gradual wavy boundary.
Bt4—64 to 80 inches; red (2.5YR 4/6) sandy loam; weak medium subangular blocky structure; friable; few faint clay films on faces of peds; many medium distinct brownish yellow (10YR 6/8) masses of iron accumulation within the matrix; very strongly acid.

Range in Characteristics

Thickness of the solum: More than 60 inches
Reaction: Very strongly acid or strongly acid, except where lime has been applied

A or Ap horizon:
Color—hue of 10YR or 7.5YR, value of 3 or 4, and chroma of 1 to 3
Texture—fine sandy loam or sandy loam

E horizon:
Color—hue of 10YR, value of 5 or 6, and chroma of 2 to 4
Texture—fine sandy loam or sandy loam

B/E horizon (where present):
Color—(B) hue of 5YR to 10YR, value of 4 or 5, and chroma of 4 to 8; (E) hue of 2.5YR to 7.5YR, value of 5 or 6, and chroma of 4 to 8
Texture—sandy loam, fine sandy loam, sandy clay loam, or loam

Bt horizon:
Color—hue of 5YR or 2.5YR, value of 4 or 5, and chroma of 6 to 8
Content of ironstone pebbles and cobbles—0 to 10 percent, by volume
Texture—sandy loam, sandy clay loam, or clay loam
Redoximorphic features—few or common masses of iron accumulation in shades of brown, yellow, and red

Stough Series

Depth class: Very deep
Drainage class: Somewhat poorly drained
Permeability: Moderately slow
Parent material: Loamy marine sediments
Landscape: Coastal Plain
Landform: Stream terraces and uplands
Landform position: Nearly level summits
Commonly associated soils: Bibb, Jena, Kinston, Mantachie, and Savannah soils
Slope: 0 to 2 percent
Taxonomic classification: Coarse-loamy, siliceous, semiactive, thermic Fragiaquic Paleudults

Typical Pedon

Stough fine sandy loam, rarely flooded; about 5.5 miles south of Twin City on State Highway 487; about 300 feet north and 600 feet west of the southeast corner of sec. 13, T. 13 N., R. 9 E.; USGS Lena topographic quadrangle; lat. 32 degrees 37 minutes 16 seconds N. and long. 89 degrees 36 minutes 30 seconds W.

Ap—0 to 4 inches; dark grayish brown (10YR 4/2) fine sandy loam; weak fine granular structure; friable; common fine and medium roots; strongly acid; abrupt smooth boundary.

E/B—4 to 8 inches; 70 percent yellowish brown (10YR 5/4) fine sandy loam (E); weak fine granular structure; very friable; 30 percent yellowish brown (10YR 5/6) loam (B); weak fine subangular blocky structure; many fine roots; common fine distinct grayish brown (2.5Y 5/2) iron depletions on faces of peds; many medium distinct pale brown (10YR 6/3) masses of iron accumulation within the matrix; few fine and medium soft masses of iron and manganese oxides; strongly acid; gradual wavy boundary.

Bt—8 to 15 inches; yellowish brown (10YR 5/6) fine sandy loam; weak medium subangular blocky structure; friable; few fine roots; few distinct clay films on faces of peds; common medium distinct light brownish gray (10YR 6/2) iron depletions on faces of peds; few medium distinct yellowish brown (10YR 5 /8) masses of iron accumulation within the matrix; few fine soft masses of iron and manganese oxides; strongly acid; gradual wavy boundary.

Btx—15 to 26 inches; 35 percent yellowish brown (10YR 5/6), 35 percent light brownish gray (10YR 6/2), and 30 percent light yellowish brown (10YR 6/4) sandy loam; weak medium prismatic structure parting to moderate medium subangular blocky; friable; brittle and compact in about 30 percent of the matrix; few fine roots; common distinct clay films on faces of peds; thin seams of light brownish gray (10YR 6/2) fine sandy loam iron depletions between prisms; common fine and medium soft masses of iron and manganese oxides; very strongly acid; gradual wavy boundary.

Btxg1—26 to 38 inches; light brownish gray (2.5Y 6/2) sandy loam; weak medium prismatic structure parting to moderate medium subangular blocky; friable; brittle and compact in about 30 percent of the matrix; common distinct clay films on faces of peds; thin seams of gray (10YR 6/1) fine sandy loam iron depletions between prisms; common fine and medium distinct yellowish brown (10YR 5/8) masses of iron accumulation within the matrix; few fine and medium concretions of iron and manganese oxides; very strongly acid; gradual wavy boundary.

Btxg2—38 to 58 inches; gray (10YR 6/1) sandy clay loam; weak medium prismatic structure parting to moderate medium subangular blocky; firm; brittle and compact in about 30 percent of the matrix; common distinct clay films on faces of peds; thin seams of light brownish gray (10YR 6/2) fine sandy loam iron depletions between prisms; common fine and medium distinct yellowish brown (10YR 5/4) and prominent strong brown (7.5YR 5/6) masses of iron accumulation within the matrix; few fine and medium concretions of iron and manganese oxides; very strongly acid; gradual wavy boundary.

Btxg3—58 to 80 inches; 35 percent yellowish brown (10YR 5/4), 35 percent light brownish gray (10YR 6/2), and 30 percent strong brown (7.5YR 5/8) sandy clay loam; weak coarse prismatic structure; firm; common distinct clay films on faces of peds; common fine and medium concretions of iron and manganese oxides; very strongly acid.

Range in Characteristics

Thickness of the solum: More than 60 inches

Reaction: Very strongly acid or strongly acid throughout, except the surface layer in areas where lime has been applied

Ap horizon:
Color—hue of 10YR or 2.5Y, value of 3 or 4, and chroma of 1 or 2
Texture—fine sandy loam or sandy loam

E/B horizon (where present):
Color—(E) hue of 10YR, value of 5 or 6, and chroma of 4 to 6; (B) hue of 10YR or 2.5Y, value of 5 or 6, and chroma of 4 to 8; or no dominant matrix color and multicolored in shades of brown, yellow, or gray
Texture—sandy loam, fine sandy loam, silt loam, or loam

Bt horizon:
Color—hue of 10YR or 2.5Y, value of 4 to 6, and chroma of 4 to 6
Texture—fine sandy loam, loam, or sandy loam
Redoximorphic features—few or common iron depletions in shades of gray and masses of iron accumulation in shades of brown, yellow, and red

Btx horizon:
Color—hue of 10YR or 2.5Y, value of 4 to 6, and chroma of 4 to 6; or no dominant matrix color and multicolored in shades of brown, yellow, gray, or red
Texture—fine sandy loam, loam, or sandy loam
Redoximorphic features—common or many iron depletions in shades of gray and masses of iron accumulation in shades of brown, yellow, and red

Btxg horizon (where present):
Color—hue of 10YR or 2.5Y, value of 5 or 6, and chroma of 1 or 2; or no dominant matrix color and multicolored in shades of brown, yellow, gray, or red
Texture—fine sandy loam, loam, sandy loam, or sandy clay loam
Redoximorphic features—common or many iron depletions in shades of gray and masses of iron accumulation in shades of brown, yellow, and red

Sweatman Series

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderately slow
Parent material: Marine sediments consisting of thinly bedded, clayey shales and sandy and loamy material
Landscape: Coastal Plain
Landform: Uplands
Landform position: Narrow ridgetops, shoulders, and side slopes
Commonly associated soils: Ora, Providence, Ruston, and Smithdale soils
Slope: 5 to 35 percent
Taxonomic classification: Fine, mixed, semiactive, thermic Typic Hapludults

Typical Pedon

Sweatman fine sandy loam, 5 to 15 percent slopes, eroded; about 5.3 miles west of Carthage; 2,300 feet south and 300 feet east of the northwest corner of sec. 29, T. 11 N., R. 7 E.; USGS Conway topographic quadrangle; lat. 32 degrees 46 minutes 37 seconds N. and long. 89 degrees 36 minutes 27 seconds W.

Ap—0 to 6 inches; dark grayish brown (10YR 4/2) fine sandy loam; weak fine granular structure; friable; many fine and medium roots; strongly acid; abrupt smooth boundary.
Bt1—6 to 20 inches; yellowish red (5YR 4/6) silty clay; moderate medium subangular and angular blocky structure; firm, sticky and plastic; many fine and medium roots; common distinct clay films on faces of peds; strongly acid; clear smooth boundary.

Bt2—20 to 26 inches; yellowish red (5YR 5/8) silty clay; moderate medium subangular and angular blocky structure; firm, sticky and plastic; few fine and medium roots; thin continuous clay films on faces of peds; many medium prominent red (2.5YR 4/6) masses of iron accumulation within the matrix; strongly acid; gradual smooth boundary.

Bt3—26 to 39 inches; yellowish red (5YR 5/8) silty clay; moderate medium subangular and angular blocky structure; firm, sticky and plastic; few fine roots; thin continuous clay films on faces of peds; many fine and medium prominent red (2.5YR 4/6) masses of iron accumulation within the matrix; common fine distinct light brownish gray (2.5Y 6/2) fragments of shale; common flakes of mica; very strongly acid; gradual wavy boundary.

BC—39 to 45 inches; reddish yellow (7.5YR 6/8) sandy loam; massive; firm; olive yellow (2.5Y 6/6) and gray (10YR 6/1) stratified layers of weathered shale; red (2.5YR 4/6) fine sandy loam masses of iron accumulation within the prisms; common flakes of mica; very strongly acid; gradual wavy boundary.

C—45 to 80 inches; stratified layers of grayish brown (2.5Y 5/2) and light gray (10YR 7/2) weathered shale; massive; firm; red (2.5YR 4/6) fine sandy loam masses of iron accumulation within the prisms; common flakes of mica; very strongly acid.

Range in Characteristics

Thickness of the solum: Commonly 20 to 40 inches but ranges to 48 inches

Reaction: Very strongly acid or strongly acid throughout, except the surface layer in areas where lime has been applied

Ap horizon:

Color—hue of 10YR or 7.5YR, value of 3 to 5, and chroma of 2 to 4

Texture—fine sandy loam or loam

Bt horizon:

Color—hue of 5YR or 2.5YR, value of 4 or 5, and chroma of 6 to 8

Texture—silty clay loam, silty clay, or clay

Redoximorphic features—masses of iron accumulation in shades of brown, yellow, and red; few to many soft fragments of gray, clayey shale in the lower part

BC horizon (where present):

Color—hue of 2.5YR to 7.5YR, value of 4 or 5, and chroma of 6 to 8; or no dominant matrix color and multicolored in shades of brown, yellow, or red

Texture—sandy loam, silty clay loam, silty clay, clay loam, or clay; 5 to 25 percent, by volume, fragments of weathered, grayish shale that is rich in mica

Redoximorphic features—few or common masses of iron accumulation in shades of brown, yellow, and red

C horizon:

Color—commonly no dominant matrix color with multicolored strata in shades of brown, yellow, gray, and red

Texture—stratified fine sandy loam, sandy loam, sandy clay loam, or loam; 5 to 50 percent, by volume, fragments of weathered, grayish shale that is rich in mica

Redoximorphic features—common or many masses of iron accumulation in shades of brown, yellow, and red

Urbo Series

Depth class: Very deep

Drainage class: Somewhat poorly drained

Permeability: Very slow

Parent material: Clayey alluvium

Landscape: Coastal Plain and Blackland Prairie
Landform: Flood plains
Commonly associated soils: Bibb, Arkabutla, and Mantachie soils
Slope: 0 to 2 percent
Taxonomic classification: Fine, mixed, active, acid, thermic Vertic Epiaquepts

Typical Pedon

Urbo silt clay loam, occasionally flooded; about 0.3 miles south of the Oktibbeha County line, 0.7 miles east of State Highway 25, and 15 feet north of the paved road; USGS Bradley topographic quadrangle; lat. 33 degrees 16 minutes 55 seconds N. and long. 88 degrees 52 minutes 47 seconds W.

A1—0 to 2 inches; dark grayish brown (10YR 4/2) silty clay loam; few fine faint grayish brown (10YR 5/2) iron depletions; weak fine granular structure; friable; common fine and medium roots; very strongly acid; abrupt smooth boundary.

A2—2 to 8 inches; grayish brown (10YR 5/2) silty clay loam; weak fine and medium subangular structure; friable; common fine pores; common fine and medium roots; common fine distinct light brownish gray (10YR 6/2) iron depletions; very strongly acid; clear wavy boundary.

Bg1—8 to 18 inches; grayish brown (10YR 5/2) silty clay; weak moderate prismatic structure parting to moderate fine and medium subangular blocky; firm, sticky and plastic; few fine roots; few fine and medium black concretions; few fine distinct yellowish brown (10YR 5/8) masses of iron accumulation; very strongly acid; clear smooth boundary.

Bg2—18 to 30 inches; grayish brown (2.5Y 5/2) silty clay; weak medium prismatic structure parting to fine and medium subangular blocky; firm, sticky and plastic; few fine roots; common medium distinct strong brown (7.5YR 5/6) masses of iron accumulation; few fine black and brown concretions; few stress surfaces on faces on peds; very strongly acid; clear wavy boundary.

Bg3—30 to 50 inches; grayish brown (2.5Y 5/2) clay; moderate medium prismatic structure parting to moderate fine and medium subangular blocky; firm, very sticky and very plastic; few fine roots; common medium distinct strong brown (7.5YR 5/6) masses of iron accumulation; few stress surfaces on faces on peds; few fine and medium black concretions; very strongly acid; gradual wavy boundary.

Bg4—50 to 80 inches; light gray (10YR 7/1) silty clay; moderate medium prismatic structure parting to moderate fine and medium angular blocky; firm, very sticky and very plastic; few fine roots; few stress surfaces on faces of peds; common fine and medium black and brown concretions; common medium distinct strong brown (7.5YR 5/6) masses of iron accumulation; very strongly acid.

Range in Characteristics

Thickness of the solum: More than 60 inches
Reaction: Very strongly acid or strongly acid

A horizon:
- Color—hue of 10YR or 2.5Y, value of 4 or 5, and chroma of 2 or 3
- Texture—silt loam, silty clay loam, silty clay, or clay loam
- Redoximorphic features—few or common iron depletions in shades of brown and gray

Bg horizon:
- Color—hue of 10YR, value of 4 to 7, and chroma of 1 to 4; or hue of 2.5Y, value of 4 or 5, and chroma of 2 to 4
- Mottles, where present—few to many in shades of gray, brown, and yellow
- Texture—silt clay loam, silty clay, clay loam, or clay

Redoximorphic features—few or common iron depletions in shades of gray and iron accumulation in shades of brown; few or common black and brown concretions

Williamsville Series

Depth class: Deep
Drainage class: Well drained
Permeability: Moderately slow
Parent material: Clayey marine sediments
Landscape: Coastal Plain
Landform: Steep uplands
Landform position: Steep and strongly sloping ridges and hillslopes
Commonly associated soils: Neshoba, Ora, Ruston, and Smithdale soils
Slope: 5 to 35 percent
Taxonomic classification: Fine, mixed, active, thermic Typic Hapludults

Typical Pedon

Williamsville gravelly sandy loam, 15 to 35 percent slopes, eroded; about 2.8 miles east of Marydell; 320 feet north and 760 feet west of the southeast corner of sec. 11, T. 12 N., R. 9 E.; USGS Four Corners topographic quadrangle; lat. 32 degrees 54 minutes 15 seconds N. and long. 89 degrees 20 minutes 16 seconds W.

A1—0 to 2 inches; brown (7.5YR 4/3) gravelly sandy loam; weak coarse subangular structure; very friable; about 25 percent, by volume, fine and medium ironstone pebbles; many fine roots; strongly acid; clear smooth boundary.
A2—2 to 5 inches; yellowish red (5YR 5/6) gravelly sandy loam; weak coarse subangular structure; very friable; about 25 percent, by volume, fine and medium ironstone pebbles; many fine roots; strongly acid; gradual wavy boundary.
Bt1—5 to 17 inches; red (2.5YR 4/6) sandy clay; moderate medium subangular blocky structure; firm; common fine and medium roots; common faint continuous clay films on faces of peds; sand grains coated and bridged with clay and oxides; strongly acid; gradual wavy boundary.
Bt2—17 to 26 inches; dark red (2.5YR 3/6) sandy clay; moderate fine and medium angular and subangular blocky structure; firm; few fine roots; many faint continuous clay films on faces of peds; very strongly acid; gradual wavy boundary.
Bt3—26 to 35 inches; dark red (2.5YR 3/6) sandy clay loam; weak coarse subangular blocky structure; friable; common distinct clay films on faces of peds; common medium distinct yellowish brown (10YR 5/8) masses of iron accumulation; sand grains coated and bridged with clay and oxides; few fine roots; about 25 percent, by volume, fine to coarse ironstone fragments and stones; very strongly acid; gradual wavy boundary.
Bt4—35 to 47 inches; dark red (2.5YR 3/6) sandy clay loam; weak coarse subangular blocky structure; friable; common distinct clay films on faces of peds; common medium distinct yellowish brown (10YR 5/8) masses of iron accumulation; few fine roots; about 20 percent, by volume, pockets of olive (5Y 5/3) green sand; very strongly acid; gradual wavy boundary.
BC—47 to 67 inches; dark red (2.5YR 3/6) sandy loam; weak very coarse subangular blocky structure; friable; few clay films on faces of peds; about 10 percent, by volume, pockets of olive (5Y 5/3) green sand; very strongly acid; gradual wavy boundary.
C—67 to 85 inches; dark red (2.5YR 3/6) loamy sand; weak fine granular structure; friable; few pockets of uncoated sand grains; very strongly acid.

Range in Characteristics

Thickness of the solum: More than 60 inches

Reaction: Very strongly acid or strongly acid, except the surface layer in areas where lime has been applied

A horizon:
Color—hue of 5YR, value of 4 or 5, and chroma of 4 to 6; hue of 7.5YR, value of 4 or 5, and chroma of 2 to 4; or hue of 10YR, value of 4 or 5, and chroma of 2 or 3
Texture—gravelly sandy loam or sandy loam

Bt horizon:
Color—hue of 5YR or 2.5YR, value of 3 to 5, and chroma of 4 to 6
Texture—sandy clay loam, clay loam, or sandy clay in the upper part
Redoximorphic features—common or many ironstone fragments; few or common pockets of green sand

BC horizon (where present):
Color—hue of 5YR or 2.5YR, value of 3 to 5, and chroma of 4 to 6
Texture—loam, sandy clay loam, sandy loam, or loamy sand
Redoximorphic features—common or many ironstone fragments; few or common pockets of greensand

C horizon (where present):
Color—hue of 5YR or 2.5YR, value of 3 to 5, and chroma of 4 to 6
Texture—loam, sandy loam, or loamy sand
Redoximorphic features—common or many ironstone fragments; few or common pockets of green sand

Formation of the Soils

This section describes the major factors and processes that have affected the formation and morphology of the soils of Leake County. The processes of horizon differentiation are also described.

Factors of Soil Formation

Soil is a natural, three-dimensional body at the earth's surface. It is capable of supporting plants and has properties resulting from the integrated effect of climate and living matter acting on earthly parent material, as conditioned by relief, over periods of time.

Soils are formed through the interaction of five major factors: climate, plant and animal life, parent material, relief, and time. The relative influence of each factor varies from place to place. In some places, one factor dominates the formation of a soil and determines most of its properties.

Local variations in the soils of Leake County are caused mainly by differences in parent material, relief, and time and by human influence. In a few areas of the county, the influence of human activities on the soils has been great. For example, bulldozers and other earthmoving equipment have been used to alter and modify the soils.

Climate

Leake County has a moist, temperate climate that is characteristic of the southeastern United States. Summers are hot, and winters are cool and fairly short.

The generally moist climate has caused strong weathering of the soils. Almost all of the soils are acid. Weathering and leaching have left the natural level of plant nutrients low in most of the soils.

Plant and Animal Life

All living organisms, including vegetation, bacteria, fungi, and animals, have important effects on soil formation. Vegetation generally supplies organic matter, which decomposes and gives a darker color to the surface horizons. Bacteria and fungi decompose vegetation and return nutrients to the soil. Many of the organic reactions and processes involving bacteria and fungi release materials that affect the soil-forming processes. Burrowing animals, earthworms, ants, cicada, and other insects mix soils. They affect soil structure, making the soils more open and porous to the movement of air and water.

Human activities affect a wide range of soil properties. Some activities, such as tillage, affect soil structure. Some activities make the soils more porous. Other activities, such as foot traffic and vehicle traffic, compact the soils. Intensive use and disturbance have caused accelerated erosion of some soils. Commonly, erosion results in increased deposition on flood plains and in depressional areas. Some human activities, such as applying limestone and fertilizer, have altered the soils chemically, making the soils more productive for most plants. Humans have also introduced plants

and animals into areas where they would otherwise not be found. These plants and animals eventually affect the soil.

Parent Material

Parent material is the material in which soils form. It influences the mineral and chemical composition of the soil and, to a large extent, the rate at which soil formation occurs.

Leake County is entirely in the North Central Hills physiographic subdivision of Mississippi and forms part of the Gulf Coastal Plain physiographic province. The soils in the uplands formed in residual Coastal Plain sediments from the Cook Mountain, Cockfield, Hatchetigbee, Kosciusko, Tallahatta, Zilpha, and Winona Formations. The Cook Mountain Formation is predominantly chocolate-colored clay with glauconitic sand. The Cockfield Formation is chiefly sand containing lenses of silt and silty sand. The Hatchetigbee Formation is a heterogeneous body made up of alterations and successions of clay, silt, sand, and lignite. The Kosciusko Formation is a heterogeneous body made up chiefly of sand, silt, clay shale, and clay. The Tallahatta Formation, which is made up of the Neshoba and Meridian Sands, is chiefly sand containing lenses of clay, silt, and clay shale. The Zilpha and Winona Formations consist of Zilpha clay.

The soils on the low terraces and flood plains formed in alluvium, which consists of recent materials that washed down from the uplands. The alluvium includes cut-terrace forms on hillsides, which are remnants of an older alluvial plain, and collections of sand, silt, clay, and rock fragments that underlie the flood plains or first bottom associated with the major streams.

Relief

Relief, or the shape of the landscape, influences soil formation. It controls surface drainage and affects the percolation of water through the soil. Relief commonly affects the depth of the soil, the plant and animal life on and in the soil, and some of the soil forming processes. Steeper soils are more subject to erosion because of concentrated, rapid runoff. Soils in depressional areas are usually wet; soils on higher, convex surfaces are better drained. Differences in topography cause free water to leave well drained soils and to accumulate in poorly drained soils.

The relief in Leake County ranges from nearly level to steep. Slopes range from 0 to 35 percent.

Time

A long period of time is required for soil formation. Variations in the age of the soil account for most of differences in soil formation that are not attributed to the other factors of soil formation. Soils along streams are the youngest soils in the county. Older soils have a greater degree of horizon differentiation than younger soils. The older soils on the uplands are the oldest soils in the county. Most of the soils that formed on the smoother parts of the uplands and on the older stream terraces have a well defined soil profile. These soils have a B horizon that has an accumulation of silicate clay.

Processes of Horizon Differentiation

Several processes were involved in the formation of horizons in the soils of Leake County. These processes are the accumulation of organic matter, the leaching of calcium carbonates and bases, the reduction and transfer of iron, and the formation and translocation of silicate clay minerals. In most soils, more than one of these processes have been active.

The accumulation of organic matter in the upper part of the profile results in the formation of an A horizon. In Leake County, the content of organic matter in the soils is low.

Carbonates and bases have been leached from nearly all of the soils. The leaching has contributed to the development of horizons. Soil scientists generally agree that leaching of bases from the upper horizons of a soil commonly precedes the translocation of silicate clay minerals. Most of the soils in the county are moderately to strongly leached.

The reduction and transfer of iron—a process called gleying—is evident in the poorly drained soils of the county. Kinston and Rosebloom soils are examples. Gleying is indicated by the gray color of the horizons below the surface layer. Segregation of iron is indicated in some horizons by reddish brown mottles and concretions.

In some soils, the translocation of clay minerals has contributed to horizon development. Smithdale and Sweatman soils are examples. In such soils, an eluviated E horizon is above the B horizon. This E horizon contains less clay than the B horizon and generally is lighter in color. The B horizon commonly has accumulations of clay or clay films in pores and on ped surfaces. These soils were probably leached of carbonates and soluble salts to a considerable extent before the translocation of silicate clays occurred.

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Glossary

Aeration, soil. The exchange of air in soil with air from the atmosphere. The air in a well aerated soil is similar to that in the atmosphere; the air in a poorly aerated soil is considerably higher in carbon dioxide and lower in oxygen.

Aggregate, soil. Many fine particles held in a single mass or cluster. Natural soil aggregates, such as granules, blocks, or prisms, are called peds. Clods are aggregates produced by tillage or logging.

Alluvium. Material, such as sand, silt, or clay, deposited on land by streams.

Alpha,alpha-dipyridyl. A dye that when dissolved in 1N ammonium acetate is used to detect the presence of reduced iron (Fe II) in the soil. A positive reaction indicates a type of redoximorphic feature.

Animal unit month (AUM). The amount of forage required by one mature cow of approximately 1,000 pounds weight, with or without a calf, for 1 month.

Aquic conditions. Current soil wetness characterized by saturation, reduction, and redoximorphic features.

Argillic horizon. A subsoil horizon characterized by an accumulation of illuvial clay.

Aspect. The direction in which a slope faces.

Association, soil. A group of soils or miscellaneous areas geographically associated in a characteristic repeating pattern and defined and delineated as a single map unit.

Available water capacity (available moisture capacity). The capacity of soils to hold water available for use by most plants. It is commonly defined as the difference between the amount of soil water at field moisture capacity and the amount at wilting point. It is commonly expressed as inches of water per inch of soil. The capacity, in inches, in a 60-inch profile or to a limiting layer is expressed as:

Very low	0 to 3
Low	3 to 6
Moderate	6 to 9
High	9 to 12
Very high	more than 12

Backslope. The position that forms the steepest and generally linear, middle portion of a hillslope. In profile, backslopes are commonly bounded by a convex shoulder above and a concave footslope below.

Base saturation. The degree to which material having cation-exchange properties is saturated with exchangeable bases (sum of Ca, Mg, Na, and K), expressed as a percentage of the total cation-exchange capacity.

Bedding planes. Fine strata, less than 5 millimeters thick, in unconsolidated alluvial, eolian, lacustrine, or marine sediment.

Bedding system. A drainage system made by plowing, grading, or otherwise shaping the surface of a flat field. It consists of a series of low ridges separated by shallow, parallel dead furrows.

Bedrock. The solid rock that underlies the soil and other unconsolidated material or that is exposed at the surface.

Bottom land. The normal flood plain of a stream, subject to flooding.

Capillary water. Water held as a film around soil particles and in tiny spaces between particles. Surface tension is the adhesive force that holds capillary water in the soil.

Cation. An ion carrying a positive charge of electricity. The common soil cations are calcium, potassium, magnesium, sodium, and hydrogen.

Cation-exchange capacity. The total amount of exchangeable cations that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. The term, as applied to soils, is synonymous with base-exchange capacity but is more precise in meaning.

Chemical treatment. Control of unwanted vegetation through the use of chemicals.

Chiseling. Tillage with an implement having one or more soil-penetrating points that shatter or loosen hard, compacted layers to a depth below normal plow depth.

Clay. As a soil separate, the mineral soil particles less than 0.002 millimeter in diameter. As a soil textural class, soil material that is 40 percent or more clay, less than 45 percent sand, and less than 40 percent silt.

Clay depletions. Low-chroma zones having a low content of iron, manganese, and clay because of the chemical reduction of iron and manganese and the removal of iron, manganese, and clay. A type of redoximorphic depletion.

Clay film. A thin coating of oriented clay on the surface of a soil aggregate or lining pores or root channels. Synonyms: clay coating, clay skin.

Claypan. A slowly permeable soil horizon that contains much more clay than the horizons above it. A claypan is commonly hard when dry and plastic or stiff when wet.

Coarse textured soil. Sand or loamy sand.

Complex slope. Irregular or variable slope. Planning or establishing terraces, diversions, and other water-control structures on a complex slope is difficult.

Complex, soil. A map unit of two or more kinds of soil or miscellaneous areas in such an intricate pattern or so small in area that it is not practical to map them separately at the selected scale of mapping. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas.

Concretions. Cemented bodies with crude internal symmetry organized around a point, a line, or a plane. They typically take the form of concentric layers visible to the naked eye. Calcium carbonate, iron oxide, and manganese oxide are common compounds making up concretions. If formed in place, concretions of iron oxide or manganese oxide are generally considered a type of redoximorphic concentration.

Conservation cropping system. Growing crops in combination with needed cultural and management practices. In a good conservation cropping system, the soil-improving crops and practices more than offset the effects of the soil-depleting crops and practices. Cropping systems are needed on all tilled soils. Soil-improving practices in a conservation cropping system include the use of rotations that contain grasses and legumes and the return of crop residue to the soil. Other practices include the use of green manure crops of grasses and legumes, proper tillage, adequate fertilization, and weed and pest control.

Conservation tillage. A tillage system that does not invert the soil and that leaves a protective amount of crop residue on the surface throughout the year.

Consistence, soil. Refers to the degree of cohesion and adhesion of soil material and its resistance to deformation when ruptured. Consistence includes resistance of soil material to rupture and to penetration; plasticity, toughness, and stickiness of puddled soil material; and the manner in which the soil material behaves when subject to compression. Terms describing consistence are defined in the “Soil Survey Manual.”

Contour stripcropping. Growing crops in strips that follow the contour. Strips of grass or close-growing crops are alternated with strips of clean-tilled crops or summer fallow.

Control section. The part of the soil on which classification is based. The thickness varies among different kinds of soil, but for many it is that part of the soil profile between depths of 10 inches and 40 or 80 inches.

Corrosion. Soil-induced electrochemical or chemical action that dissolves or weakens concrete or uncoated steel.

Cover crop. A close-growing crop grown primarily to improve and protect the soil between periods of regular crop production, or a crop grown between trees and vines in orchards and vineyards.

Cropping system. Growing crops according to a planned system of rotation and management practices.

Crop residue management. Returning crop residue to the soil, which helps to maintain soil structure, organic matter content, and fertility and helps to control erosion.

Culmination of the mean annual increment (CMAI). The average annual increase per acre in the volume of a stand. Computed by dividing the total volume of the stand by its age. As the stand increases in age, the mean annual increment continues to increase until mortality begins to reduce the rate of increase. The point where the stand reaches its maximum annual rate of growth is called the culmination of the mean annual increment.

Cutbanks cave (in tables). The walls of excavations tend to cave in or slough.

Deferred grazing. Postponing grazing or resting grazing land for a prescribed period.

Depth, soil. Generally, the thickness of the soil over bedrock. Very deep soils are more than 60 inches deep over bedrock; deep soils, 40 to 60 inches; moderately deep, 20 to 40 inches; shallow, 10 to 20 inches; and very shallow, less than 10 inches.

Diversion (or diversion terrace). A ridge of earth, generally a terrace, built to protect downslope areas by diverting runoff from its natural course.

Drainage class (natural). Refers to the frequency and duration of wet periods under conditions similar to those under which the soil formed. Alterations of the water regime by human activities, either through drainage or irrigation, are not a consideration unless they have significantly changed the morphology of the soil. Seven classes of natural soil drainage are recognized—*excessively drained, somewhat excessively drained, well drained, moderately well drained, somewhat poorly drained, poorly drained,* and *very poorly drained*. These classes are defined in the “Soil Survey Manual.”

Drainage, surface. Runoff, or surface flow of water, from an area.

Ecological site. An area where climate, soil, and relief are sufficiently uniform to produce a distinct natural plant community. An ecological site is the product of all the environmental factors responsible for its development. It is typified by an association of species that differ from those on other ecological sites in kind and/or proportion of species or in total production.

Eluviation. The movement of material in true solution or colloidal suspension from one place to another within the soil. Soil horizons that have lost material through eluviation are eluvial; those that have received material are illuvial.

Erosion. The wearing away of the land surface by water, wind, ice, or other geologic agents and by such processes as gravitational creep.

Erosion (geologic). Erosion caused by geologic processes acting over long geologic periods and resulting in the wearing away of mountains and the building up of such landscape features as flood plains and coastal plains. Synonym: natural erosion.

Erosion (accelerated). Erosion much more rapid than geologic erosion, mainly as a result of human or animal activities or of a catastrophe in nature, such as a fire, that exposes the surface.

Fallow. Cropland left idle in order to restore productivity through accumulation of moisture. Summer fallow is common in regions of limited rainfall where cereal grain is grown. The soil is tilled for at least one growing season for weed control and decomposition of plant residue.

Fertility, soil. The quality that enables a soil to provide plant nutrients, in adequate amounts and in proper balance, for the growth of specified plants when light, moisture, temperature, tilth, and other growth factors are favorable.

Fibric soil material (peat). The least decomposed of all organic soil material. Peat contains a large amount of well preserved fiber that is readily identifiable according to botanical origin. Peat has the lowest bulk density and the highest water content at saturation of all organic soil material.

Field moisture capacity. The moisture content of a soil, expressed as a percentage of the ovendry weight, after the gravitational, or free, water has drained away; the field moisture content 2 or 3 days after a soaking rain; also called *normal field capacity, normal moisture capacity,* or *capillary capacity*.

Fill slope. A sloping surface consisting of excavated soil material from a road cut. It commonly is on the downhill side of the road.

Fine textured soil. Sandy clay, silty clay, or clay.

Firebreak. Area cleared of flammable material to stop or help control creeping or running fires. It also serves as a line from which to work and to facilitate the movement of firefighters and equipment. Designated roads also serve as firebreaks.

First bottom. The normal flood plain of a stream, subject to frequent or occasional flooding.

Fluvial. Of or pertaining to rivers; produced by river action, as a fluvial plain.

Footslope. The position that forms the inner, gently inclined surface at the base of a hillslope. In profile, footslopes are commonly concave. A footslope is a transition zone between upslope sites of erosion and transport (shoulders and backslopes) and downslope sites of deposition (toeslopes).

Forb. Any herbaceous plant not a grass or a sedge.

Forest cover. All trees and other woody plants (underbrush) covering the ground in a forest.

Forest type. A stand of trees similar in composition and development because of given physical and biological factors by which it may be differentiated from other stands.

Fragipan. A loamy, brittle subsurface horizon low in porosity and content of organic matter and low or moderate in clay but high in silt or very fine sand. A fragipan appears cemented and restricts roots. When dry, it is hard or very hard and has a higher bulk density than the horizon or horizons above. When moist, it tends to rupture suddenly under pressure rather than to deform slowly.

Genesis, soil. The mode of origin of the soil. Refers especially to the processes or soil-forming factors responsible for the formation of the solum, or true soil, from the unconsolidated parent material.

Gleyed soil. Soil that formed under poor drainage, resulting in the reduction of iron and other elements in the profile and in gray colors.

Graded stripcropping. Growing crops in strips that grade toward a protected waterway.

Grassed waterway. A natural or constructed waterway, typically broad and shallow, seeded to grass as protection against erosion. Conducts surface water away from cropland.

Gravel. Rounded or angular fragments of rock as much as 3 inches (2 millimeters to 7.6 centimeters) in diameter. An individual piece is a pebble.

Gravelly soil material. Material that has 15 to 35 percent, by volume, rounded or angular rock fragments, not prominently flattened, as much as 3 inches (7.6 centimeters) in diameter.

Green manure crop (agronomy). A soil-improving crop grown to be plowed under in an early stage of maturity or soon after maturity.

Ground water. Water filling all the unblocked pores of the material below the water table.

Gully. A miniature valley with steep sides cut by running water and through which water ordinarily runs only after rainfall. The distinction between a gully and a rill is one of depth. A gully generally is an obstacle to farm machinery and is too deep to be obliterated by ordinary tillage; a rill is of lesser depth and can be smoothed over by ordinary tillage.

Head slope. A geomorphic component of hills consisting of a laterally concave area of a hillside, especially at the head of a drainageway. The overland waterflow is converging.

High-residue crops. Such crops as small grain and corn used for grain. If properly managed, residue from these crops can be used to control erosion until the next crop in the rotation is established. These crops return large amounts of organic matter to the soil.

Hill. A natural elevation of the land surface, rising as much as 1,000 feet above surrounding lowlands, commonly of limited summit area and having a well defined outline; hillsides generally have slopes of more than 15 percent. The distinction between a hill and a mountain is arbitrary and is dependent on local usage.

Horizon, soil. A layer of soil, approximately parallel to the surface, having distinct characteristics produced by soil-forming processes. In the identification of soil horizons, an uppercase letter represents the major horizons. Numbers or lowercase letters that follow represent subdivisions of the major horizons. An explanation of the subdivisions is given in the “Soil Survey Manual.” The major horizons of mineral soil are as follows:

O horizon.—An organic layer of fresh and decaying plant residue.

A horizon.—The mineral horizon at or near the surface in which an accumulation of humified organic matter is mixed with the mineral material. Also, a plowed surface horizon, most of which was originally part of a B horizon.

E horizon.—The mineral horizon in which the main feature is loss of silicate clay, iron, aluminum, or some combination of these.

B horizon.—The mineral horizon below an A horizon. The B horizon is in part a layer of transition from the overlying A to the underlying C horizon. The B horizon also has distinctive characteristics, such as (1) accumulation of clay, sesquioxides, humus, or a combination of these; (2) prismatic or blocky structure; (3) redder or browner colors than those in the A horizon; or (4) a combination of these.

C horizon.—The mineral horizon or layer, excluding indurated bedrock, that is little affected by soil-forming processes and does not have the properties typical of the overlying soil material. The material of a C horizon may be either like or unlike that in which the solum formed. If the material is known to differ from that in the solum, an Arabic numeral, commonly a 2, precedes the letter C.

Cr horizon.—Soft, consolidated bedrock beneath the soil.

R layer.—Consolidated bedrock beneath the soil. The bedrock commonly underlies a C horizon, but it can be directly below an A or a B horizon.

Humus. The well decomposed, more or less stable part of the organic matter in mineral soils.

Hydrologic soil groups. Refers to soils grouped according to their runoff potential. The soil properties that influence this potential are those that affect the minimum rate of water infiltration on a bare soil during periods after prolonged wetting when the soil is not frozen. These properties are depth to a seasonal high water table, the infiltration rate and permeability after prolonged wetting, and depth to a very slowly permeable layer. The slope and the kind of plant cover are not considered but are separate factors in predicting runoff.

Illuviation. The movement of soil material from one horizon to another in the soil profile. Generally, material is removed from an upper horizon and deposited in a lower horizon.

Impervious soil. A soil through which water, air, or roots penetrate slowly or not at all. No soil is absolutely impervious to air and water all the time.

Infiltration. The downward entry of water into the immediate surface of soil or other material, as contrasted with percolation, which is movement of water through soil layers or material.

Infiltration capacity. The maximum rate at which water can infiltrate into a soil under a given set of conditions.

Infiltration rate. The rate at which water penetrates the surface of the soil at any given instant, usually expressed in inches per hour. The rate can be limited by the infiltration capacity of the soil or the rate at which water is applied at the surface.

Intake rate. The average rate of water entering the soil under irrigation. Most soils have a fast initial rate; the rate decreases with application time. Therefore, intake rate for design purposes is not a constant but is a variable depending on the net irrigation application. The rate of water intake, in inches per hour, is expressed as follows:

Less than 0.2	very low
0.2 to 0.4	low
0.4 to 0.75	moderately low
0.75 to 1.25	moderate
1.25 to 1.75	moderately high
1.75 to 2.5	high
More than 2.5	very high

Iron depletions. Low-chroma zones having a low content of iron and manganese oxide because of chemical reduction and removal, but having a clay content similar to that of the adjacent matrix. A type of redoximorphic depletion.

Irrigation. Application of water to soils to assist in production of crops. Methods of irrigation are:

Border.—Water is applied at the upper end of a strip in which the lateral flow of water is controlled by small earth ridges called border dikes, or borders.

Controlled flooding.—Water is released at intervals from closely spaced field ditches and distributed uniformly over the field.

Corrugation.—Water is applied to small, closely spaced furrows or ditches in fields of close-growing crops or in orchards so that it flows in only one direction.

Drip (or trickle).—Water is applied slowly and under low pressure to the surface of the soil or into the soil through such applicators as emitters, porous tubing, or perforated pipe.

Furrow.—Water is applied in small ditches made by cultivation implements. Furrows are used for tree and row crops.

Sprinkler.—Water is sprayed over the soil surface through pipes or nozzles from a pressure system.

Wild flooding.—Water, released at high points, is allowed to flow onto an area without controlled distribution.

Knoll. A small, low, rounded hill rising above adjacent landforms.

Ksat. Saturated hydraulic conductivity. (See Permeability.)

Lacustrine deposit. Material deposited in lake water and exposed when the water level is lowered or the elevation of the land is raised.

Leaching. The removal of soluble material from soil or other material by percolating water.

Linear extensibility. Refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. Linear extensibility is used to determine the shrink-swell potential of soils. It is an expression of the volume change between the water content of the clod at $^1/_3$- or $^1/_{10}$-bar tension (33 kPa or 10 kPa tension) and oven dryness. Volume change is influenced by the amount and type of clay minerals in the soil. The volume change is the percent change for the whole soil. If it is expressed as a fraction, the resulting value is COLE, coefficient of linear extensibility.

Liquid limit. The moisture content at which the soil passes from a plastic to a liquid state.

Loam. Soil material that is 7 to 27 percent clay particles, 28 to 50 percent silt particles, and less than 52 percent sand particles.

Low-residue crops. Such crops as corn used for silage, peas, beans, and potatoes. Residue from these crops is not adequate to control erosion until the next crop in the rotation is established. These crops return little organic matter to the soil.

Low strength. The soil is not strong enough to support loads.

Marl. An earthy, unconsolidated deposit consisting chiefly of calcium carbonate mixed with clay in approximately equal amounts.

Masses. Concentrations of substances in the soil matrix that do not have a clearly defined boundary with the surrounding soil material and cannot be removed as a discrete unit. Common compounds making up masses are calcium carbonate, gypsum or other soluble salts, iron oxide, and manganese oxide. Masses consisting of iron oxide or manganese oxide generally are considered a type of redoximorphic concentration.

Mechanical treatment. Use of mechanical equipment for seeding, brush management, and other management practices.

Medium textured soil. Very fine sandy loam, loam, silt loam, or silt.

Mineral soil. Soil that is mainly mineral material and low in organic material. Its bulk density is more than that of organic soil.

Minimum tillage. Only the tillage essential to crop production and prevention of soil damage.

Miscellaneous area. An area that has little or no natural soil and supports little or no vegetation.

Moderately coarse textured soil. Coarse sandy loam, sandy loam, or fine sandy loam.

Moderately fine textured soil. Clay loam, sandy clay loam, or silty clay loam.

Morphology, soil. The physical makeup of the soil, including the texture, structure, porosity, consistence, color, and other physical, mineral, and biological properties of the various horizons, and the thickness and arrangement of those horizons in the soil profile.

Mottling, soil. Irregular spots of different colors that vary in number and size. Descriptive terms are as follows: abundance—*few, common,* and *many;* size—*fine, medium,* and *coarse;* and contrast—*faint, distinct,* and *prominent*. The size measurements are of the diameter along the greatest dimension. *Fine* indicates less than 5 millimeters (about 0.2 inch); *medium,* from 5 to 15 millimeters (about 0.2 to 0.6 inch); and *coarse,* more than 15 millimeters (about 0.6 inch).

Muck. Dark, finely divided, well decomposed organic soil material. (See Sapric soil material.)

Munsell notation. A designation of color by degrees of three simple variables—hue, value, and chroma. For example, a notation of 10YR 6/4 is a color with hue of 10YR, value of 6, and chroma of 4.

Neutral soil. A soil having a pH value of 6.6 to 7.3. (See Reaction, soil.)

Nodules. Cemented bodies lacking visible internal structure. Calcium carbonate, iron oxide, and manganese oxide are common compounds making up nodules. If formed in place, nodules of iron oxide or manganese oxide are considered types of redoximorphic concentrations.

Nose slope. A geomorphic component of hills consisting of the projecting end (laterally convex area) of a hillside. The overland waterflow is predominantly divergent.

Nutrient, plant. Any element taken in by a plant essential to its growth. Plant nutrients are mainly nitrogen, phosphorus, potassium, calcium, magnesium, sulfur, iron, manganese, copper, boron, and zinc obtained from the soil and carbon, hydrogen, and oxygen obtained from the air and water.

Organic matter. Plant and animal residue in the soil in various stages of decomposition. The content of organic matter in the surface layer is described as follows:

Very low	less than 0.5 percent
Low	0.5 to 1.0 percent
Moderately low	1.0 to 2.0 percent
Moderate	2.0 to 4.0 percent
High	4.0 to 8.0 percent
Very high	more than 8.0 percent

Pan. A compact, dense layer in a soil that impedes the movement of water and the growth of roots. For example, *hardpan, fragipan, claypan, plowpan,* and *traffic pan*.

Parent material. The unconsolidated organic and mineral material in which soil forms.

Peat. Unconsolidated material, largely undecomposed organic matter, that has accumulated under excess moisture. (See Fibric soil material.)

Ped. An individual natural soil aggregate, such as a granule, a prism, or a block.

Pedon. The smallest volume that can be called “a soil.” A pedon is three dimensional and large enough to permit study of all horizons. Its area ranges from about 10 to 100 square feet (1 square meter to 10 square meters), depending on the variability of the soil.

Percolation. The movement of water through the soil.

Permeability. The quality of the soil that enables water or air to move downward through the profile. The rate at which a saturated soil transmits water is accepted as a measure of this quality. In soil physics, the rate is referred to as “saturated hydraulic conductivity,” which is defined in the “Soil Survey Manual.” In line with conventional usage in the engineering profession and with traditional usage in published soil surveys, this rate of flow continues to be expressed as “permeability.” Terms describing permeability, measured in inches per hour, are as follows:

Impermeable	less than 0.0015
Very slow	0.0015 to 0.06
Slow	0.06 to 0.2
Moderately slow	0.2 to 0.6
Moderate	0.6 inch to 2.0
Moderately rapid	2.0 to 6.0
Rapid	6.0 to 20
Very rapid	more than 20

Phase, soil. A subdivision of a soil series based on features that affect its use and management, such as slope, stoniness, and flooding.

pH value. A numerical designation of acidity and alkalinity in soil. (See Reaction, soil.)

Plasticity index. The numerical difference between the liquid limit and the plastic limit; the range of moisture content within which the soil remains plastic.

Plastic limit. The moisture content at which a soil changes from semisolid to plastic.

Plowpan. A compacted layer formed in the soil directly below the plowed layer.

Ponding. Standing water on soils in closed depressions. Unless the soils are artificially drained, the water can be removed only by percolation or evapotranspiration.

Poorly graded. Refers to a coarse grained soil or soil material consisting mainly of particles of nearly the same size. Because there is little difference in size of the particles, density can be increased only slightly by compaction.

Potential rooting depth (effective rooting depth). Depth to which roots could penetrate if the content of moisture in the soil were adequate. The soil has no properties restricting the penetration of roots to this depth.

Prescribed burning. Deliberately burning an area for specific management purposes, under the appropriate conditions of weather and soil moisture and at the proper time of day.

Productivity, soil. The capability of a soil for producing a specified plant or sequence of plants under specific management.

Profile, soil. A vertical section of the soil extending through all its horizons and into the parent material.

Proper grazing use. Grazing at an intensity that maintains enough cover to protect the soil and maintain or improve the quantity and quality of the desirable vegetation. This practice increases the vigor and reproduction capacity of the key plants and promotes the accumulation of litter and mulch necessary to conserve soil and water.

Reaction, soil. A measure of acidity or alkalinity of a soil, expressed in pH values. A soil that tests to pH 7.0 is described as precisely neutral in reaction because it is neither acid nor alkaline. The degrees of acidity or alkalinity, expressed as pH values, are:

Ultra acid	less than 3.5
Extremely acid	3.5 to 4.4
Very strongly acid	4.5 to 5.0
Strongly acid	5.1 to 5.5
Moderately acid	5.6 to 6.0
Slightly acid	6.1 to 6.5
Neutral	6.6 to 7.3
Slightly alkaline	7.4 to 7.8
Moderately alkaline	7.9 to 8.4
Strongly alkaline	8.5 to 9.0
Very strongly alkaline	9.1 and higher

Redoximorphic concentrations. Nodules, concretions, soft masses, pore linings, and other features resulting from the accumulation of iron or manganese oxide. An indication of chemical reduction and oxidation resulting from saturation.

Redoximorphic depletions. Low-chroma zones from which iron and manganese oxide or a combination of iron and manganese oxide and clay has been removed. These zones are indications of the chemical reduction of iron resulting from saturation.

Redoximorphic features. Redoximorphic concentrations, redoximorphic depletions, reduced matrices, a positive reaction to alpha,alpha-dipyridyl, and other features indicating the chemical reduction and oxidation of iron and manganese compounds resulting from saturation.

Reduced matrix. A soil matrix that has low chroma in situ because of chemically reduced iron (Fe II). The chemical reduction results from nearly continuous wetness. The matrix undergoes a change in hue or chroma within 30 minutes after exposure to air as the iron is oxidized (Fe III). A type of redoximorphic feature.

Relief. The elevations or inequalities of a land surface, considered collectively.

Residuum (residual soil material). Unconsolidated, weathered or partly weathered mineral material that accumulated as consolidated rock disintegrated in place.

Rill. A steep-sided channel resulting from accelerated erosion. A rill generally is a few inches deep and not wide enough to be an obstacle to farm machinery.

Road cut. A sloping surface produced by mechanical means during road construction. It is commonly on the uphill side of the road.

Rock fragments. Rock or mineral fragments having a diameter of 2 millimeters or more; for example, pebbles, cobbles, stones, and boulders.

Root zone. The part of the soil that can be penetrated by plant roots.

Runoff. The precipitation discharged into stream channels from an area. The water that flows off the surface of the land without sinking into the soil is called surface runoff. Water that enters the soil before reaching surface streams is called ground-water runoff or seepage flow from ground water.

Sand. As a soil separate, individual rock or mineral fragments from 0.05 millimeter to 2.0 millimeters in diameter. Most sand grains consist of quartz. As a soil textural class, a soil that is 85 percent or more sand and not more than 10 percent clay.

Sandstone. Sedimentary rock containing dominantly sand-sized particles.

Sapric soil material (muck). The most highly decomposed of all organic soil material. Muck has the least amount of plant fiber, the highest bulk density, and the lowest water content at saturation of all organic soil material.

Saturation. Wetness characterized by zero or positive pressure of the soil water. Under conditions of saturation, the water will flow from the soil matrix into an unlined auger hole.

Second bottom. The first terrace above the normal flood plain (or first bottom) of a river.

Sedimentary rock. Rock made up of particles deposited from suspension in water. The chief kinds of sedimentary rock are conglomerate, formed from gravel; sandstone, formed from sand; shale, formed from clay; and limestone, formed from soft masses of calcium carbonate. There are many intermediate types. Some wind-deposited sand is consolidated into sandstone.

Series, soil. A group of soils that have profiles that are almost alike, except for differences in texture of the surface layer. All the soils of a series have horizons that are similar in composition, thickness, and arrangement.

Shale. Sedimentary rock formed by the hardening of a clay deposit.

Sheet erosion. The removal of a fairly uniform layer of soil material from the land surface by the action of rainfall and surface runoff.

Shoulder. The position that forms the uppermost inclined surface near the top of a hillslope. It is a transition from backslope to summit. The surface is dominantly convex in profile and erosional in origin.

Shrink-swell (in tables). The shrinking of soil when dry and the swelling when wet. Shrinking and swelling can damage roads, dams, building foundations, and other structures. It can also damage plant roots.

Side slope. A geomorphic component of hills consisting of a laterally planar area of a hillside. The overland waterflow is predominantly parallel.

Silt. As a soil separate, individual mineral particles that range in diameter from the upper limit of clay (0.002 millimeter) to the lower limit of very fine sand (0.05 millimeter). As a soil textural class, soil that is 80 percent or more silt and less than 12 percent clay.

Similar soils. Soils that share limits of diagnostic criteria, behave and perform in a similar manner, and have similar conservation needs or management requirements for the major land uses in the survey area.

Site index. A designation of the quality of a forest site based on the height of the dominant stand at an arbitrarily chosen age. For example, if the average height attained by dominant and codominant trees in a fully stocked stand at the age of 50 years is 75 feet, the site index is 75.

Slickensides. Polished and grooved surfaces produced by one mass sliding past another. In soils, slickensides may occur at the bases of slip surfaces on the steeper slopes; on faces of blocks, prisms, and columns; and in swelling clayey soils, where there is marked change in moisture content.

Slope. The inclination of the land surface from the horizontal. Percentage of slope is the vertical distance divided by horizontal distance, then multiplied by 100. Thus, a slope of 20 percent is a drop of 20 feet in 100 feet of horizontal distance. In this survey, classes for simple slopes are as follows:

Level	0 to 1 percent
Nearly level	0 to 2 percent
Very gently sloping	1 to 3 percent
Gently sloping	2 to 5 percent
Moderately sloping	5 to 8 percent
Strongly sloping	8 to 15 percent
Moderately steep	15 to 25 percent

Classes for complex slopes are as follows:

Nearly level	0 to 2 percent
Gently undulating	0 to 5 percent

Undulating	2 to 8 percent
Rolling	8 to 15 percent
Hilly	15 to 25 percent

Soft bedrock. Bedrock that can be excavated with trenching machines, backhoes, small rippers, and other equipment commonly used in construction.

Soil. A natural, three-dimensional body at the earth's surface. It is capable of supporting plants and has properties resulting from the integrated effect of climate and living matter acting on earthy parent material, as conditioned by relief over periods of time.

Soil separates. Mineral particles less than 2 millimeters in equivalent diameter and ranging between specified size limits. The names and sizes, in millimeters, of separates recognized in the United States are as follows:

Very coarse sand	2.0 to 1.0
Coarse sand	1.0 to 0.5
Medium sand	0.5 to 0.25
Fine sand	0.25 to 0.10
Very fine sand	0.10 to 0.05
Silt	0.05 to 0.002
Clay	less than 0.002

Solum. The upper part of a soil profile, above the C horizon, in which the processes of soil formation are active. The solum in soil consists of the A, E, and B horizons. Generally, the characteristics of the material in these horizons are unlike those of the material below the solum. The living roots and plant and animal activities are largely confined to the solum.

Stones. Rock fragments 10 to 24 inches (25 to 60 centimeters) in diameter if rounded or 15 to 24 inches (38 to 60 centimeters) in length if flat.

Stony. Refers to a soil containing stones in numbers that interfere with or prevent tillage.

Stripcropping. Growing crops in a systematic arrangement of strips or bands that provide vegetative barriers to wind erosion and water erosion.

Structure, soil. The arrangement of primary soil particles into compound particles or aggregates. The principal forms of soil structure are—*platy* (laminated), *prismatic* (vertical axis of aggregates longer than horizontal), *columnar* (prisms with rounded tops), *blocky* (angular or subangular), and *granular*. *Structureless* soils are either *single grained* (each grain by itself, as in dune sand) or *massive* (the particles adhering without any regular cleavage, as in many hardpans).

Subsoil. Technically, the B horizon; roughly, the part of the solum below plow depth.

Subsoiling. Tilling a soil below normal plow depth, ordinarily to shatter a hardpan or claypan.

Substratum. The part of the soil below the solum.

Subsurface layer. Any surface soil horizon (A, E, AB, or EB) below the surface layer.

Summer fallow. The tillage of uncropped land during the summer to control weeds and allow storage of moisture in the soil for the growth of a later crop. A practice common in semiarid regions, where annual precipitation is not enough to produce a crop every year. Summer fallow is frequently practiced before planting winter grain.

Summit. The topographically highest position of a hillslope. It has a nearly level (planar or only slightly convex) surface.

Surface layer. The soil ordinarily moved in tillage, or its equivalent in uncultivated soil, ranging in depth from 4 to 10 inches (10 to 25 centimeters). Frequently designated as the "plow layer," or the "Ap horizon."

Surface soil. The A, E, AB, and EB horizons, considered collectively. It includes all subdivisions of these horizons.

Terrace. An embankment, or ridge, constructed across sloping soils on the contour or at a slight angle to the contour. The terrace intercepts surface runoff so that water

soaks into the soil or flows slowly to a prepared outlet. A terrace in a field generally is built so that the field can be farmed. A terrace intended mainly for drainage has a deep channel that is maintained in permanent sod.

Terrace (geologic). An old alluvial plain, ordinarily flat or undulating, bordering a river, a lake, or the sea.

Texture, soil. The relative proportions of sand, silt, and clay particles in a mass of soil. The basic textural classes, in order of increasing proportion of fine particles, are *sand, loamy sand, sandy loam, loam, silt loam, silt, sandy clay loam, clay loam, silty clay loam, sandy clay, silty clay,* and *clay*. The sand, loamy sand, and sandy loam classes may be further divided by specifying “coarse,” “fine,” or “very fine.”

Tilth, soil. The physical condition of the soil as related to tillage, seedbed preparation, seedling emergence, and root penetration.

Toeslope. The position that forms the gently inclined surface at the base of a hillslope. Toeslopes in profile are commonly gentle and linear and are constructional surfaces forming the lower part of a hillslope continuum that grades to valley or closed-depression floors.

Topsoil. The upper part of the soil, which is the most favorable material for plant growth. It is ordinarily rich in organic matter and is used to topdress roadbanks, lawns, and land affected by mining.

Trace elements. Chemical elements, for example, zinc, cobalt, manganese, copper, and iron, in soils in extremely small amounts. They are essential to plant growth.

Upland. Land at a higher elevation, in general, than the alluvial plain or stream terrace; land above the lowlands along streams.

Variegation. Refers to patterns of contrasting colors assumed to be inherited from the parent material rather than to be the result of poor drainage.

Water bars. Smooth, shallow ditches or depressional areas that are excavated at an angle across a sloping road. They are used to reduce the downward velocity of water and divert it off and away from the road surface. Water bars can easily be driven over if constructed properly.

Weathering. All physical and chemical changes produced in rocks or other deposits at or near the earth’s surface by atmospheric agents. These changes result in disintegration and decomposition of the material.

Well graded. Refers to soil material consisting of coarse grained particles that are well distributed over a wide range in size or diameter. Such soil normally can be easily increased in density and bearing properties by compaction. Contrasts with poorly graded soil.

Wilting point (or permanent wilting point). The moisture content of soil, on an ovendry basis, at which a plant (specifically a sunflower) wilts so much that it does not recover when placed in a humid, dark chamber.

Windthrow. The uprooting and tipping over of trees by the wind.

Tables

Table 1.--Temperature and Precipitation

[Recorded in the period 1971-2000 at Carthage, Mississippi]

Month	Temperature						Precipitation				
				2 years in 10 will have--				2 years in 10 will have--			
	Average daily maximum	Average daily minimum	Average	Maximum temp. higher than--	Minimum temp. lower than--	Average number of growing degree days*	Average	Less than--	More than--	Average number of days with 0.10 inch or more	Average snowfall
	°F	*°F*	*°F*	*°F*	*°F*	*Units*	*In*	*In*	*In*		*In*
January-----	55.0	32.4	43.7	77	10	62	5.96	3.26	8.43	8	0.6
February----	60.1	35.3	47.7	82	14	95	4.96	2.69	6.84	6	0.0
March-------	68.4	42.8	55.6	86	21	231	6.13	3.76	8.21	7	0.0
April-------	75.5	49.2	62.3	89	30	377	5.83	2.78	8.34	6	0.0
May---------	82.4	58.3	70.4	93	41	631	5.39	2.45	8.11	7	0.0
June--------	89.0	65.6	77.3	97	50	820	3.44	1.86	5.02	5	0.0
July--------	92.1	69.4	80.7	100	59	953	4.44	2.37	6.52	7	0.0
August------	91.8	68.2	80.0	100	57	930	3.61	2.27	4.72	5	0.0
September---	87.0	62.1	74.5	98	42	736	3.48	1.58	5.26	4	0.0
October-----	77.3	49.0	63.1	91	30	412	3.36	1.11	5.39	4	0.0
November----	66.8	40.9	53.9	85	22	187	5.28	2.87	7.50	6	0.0
December----	57.9	34.6	46.2	79	12	86	5.44	3.11	7.44	7	0.0
Yearly:											
Average---	75.3	50.6	63.0	---	---	---	---	---	---	---	---
Extreme---	106	0	---	101	6	---	---	---	---	---	---
Total-----	---	---	---	---	---	5,520	57.32	47.87	65.58	72	0.7

*** A growing degree day is a unit of heat available for plant growth. It can be calculated by adding the maximum and minimum daily temperatures, dividing the sum by 2, and subtracting the temperature below which growth is minimal for the principal crops in the area (50 degrees F).**

Table 2.--Freeze Dates in Spring and Fall

[Recorded in the period 1971-2000 at Carthage, Mississippi]

Probability	Temperature		
	24 °F or lower	28 °F or lower	32 °F or lower
Last freezing temperature in spring:			
1 year in 10 later than--	Mar. 11	Mar. 25	Apr. 13
2 years in 10 later than--	Mar. 4	Mar. 19	Apr. 7
5 years in 10 later than--	Feb. 20	Mar. 8	Mar. 28
First freezing temperature in fall:			
1 year in 10 earlier than--	Nov. 12	Oct. 28	Oct. 15
2 years in 10 earlier than--	Nov. 19	Nov. 3	Oct. 21
5 years in 10 earlier than--	Dec. 3	Nov. 16	Nov. 2

Table 3.--Growing Season

[Recorded in the period 1971-2000 at Carthage, Mississippi]

Probability	Daily minimum temperature during growing season		
	Higher than 24 °F	Higher than 28 °F	Higher than 32 °F
	Days	*Days*	*Days*
9 years in 10	261	222	195
8 years in 10	270	232	203
5 years in 10	286	251	218
2 years in 10	303	270	233
1 year in 10	312	280	241

Table 4.--Acreage and Proportionate Extent of the Soils

Map symbol	Map unit name	Acres	Percent
Bb	Bibb fine sandy loam, frequently flooded	1,230	0.3
BdA	Bude silt loam, 0 to 2 percent slopes	6,984	1.9
Gb	Gillsburg silt loam, occasionally flooded	7,912	2.1
JkB	Jena-Kirkville-Kinston complex, undulating, frequently flooded	20,244	5.4
Kn	Kinston loam, frequently flooded	4,503	1.2
KpB	Kipling silt loam, 2 to 5 percent slopes	387	0.1
KpC2	Kipling silt loam, 5 to 8 percent slopes, eroded	2,395	0.6
Kr	Kirkville fine sandy loam, occasionally flooded	2,487	0.7
Ma	Mantachie fine sandy loam, occasionally flooded	27,697	7.4
NeB2	Neshoba fine sandy loam, 2 to 5 percent slopes, eroded	116	*
NeC2	Neshoba fine sandy loam, 5 to 8 percent slopes, eroded	1,389	0.4
OrB	Ora fine sandy loam, 2 to 5 percent slopes	5,972	1.6
OrC2	Ora fine sandy loam, 5 to 8 percent slopes, eroded	33,574	9.0
Po	Pits-Udorthents complex, 5 to 15 percent slopes, eroded	37	*
PrB	Providence silt loam, 2 to 5 percent slopes	12,131	3.2
PrC2	Providence silt loam, 5 to 8 percent slopes, eroded	26,433	7.1
Rb	Rosebloom silt loam, ponded	1,739	0.5
RK	Rosebloom and Arkabutla soils, frequently flooded	63,852	17.1
RuB	Ruston fine sandy loam, 2 to 5 percent slopes	220	*
RuC2	Ruston fine sandy loam, 5 to 8 percent slopes, eroded	3,376	0.9
SaB	Savannah fine sandy loam, 2 to 5 percent slopes	6,664	1.8
SaC2	Savannah fine sandy loam, 5 to 8 percent slopes, eroded	521	0.1
SmD2	Smithdale fine sandy loam, 8 to 15 percent slopes, eroded	36,657	9.8
SmF2	Smithdale fine sandy loam, 15 to 35 percent slopes, eroded	53,455	14.3
SsD2	Smithdale-Sweatman complex, 5 to 15 percent slopes, eroded	7,893	2.1
SsF2	Smithdale-Sweatman complex, 15 to 35 percent slopes, eroded	21,583	5.8
St	Stough fine sandy loam, rarely flooded	6,855	1.8
SwD2	Sweatman fine sandy loam, 5 to 15 percent slopes, eroded	5,530	1.5
SwF2	Sweatman fine sandy loam, 15 to 35 percent slopes, eroded	576	0.2
Ur	Urbo silty clay loam, occasionally flooded	2,300	0.6
W	Water	3,278	0.9
WmD2	Williamsville gravelly sandy loam, 5 to 15 percent slopes, eroded	1,668	0.4
WmF2	Williamsville gravelly sandy loam, 15 to 35 percent slopes, eroded	4,742	1.3
	Total	374,400	100.0

* Less than 0.1 percent.

Table 5.--Land Capability Classification and Yields Per Acre

[Yields are those that can be expected under a high level of management. They are for nonirrigated areas. Absence of a yield indicates that the soil is not suited to the crop or the crop generally is not grown on the soil]

Map symbol and soil name	Land capability	Bahiagrass	Common bermudagrass	Corn	Cotton lint	Soybeans
		AUM	*AUM*	*Bu*	*Lbs*	*Bu*
Bb:		---	---	110	---	35
Bibb	5w					
BdA:		7	9.5	80	600	25
Bude	2w					
Gb:		10	7	100	750	40
Gillsburg	2w					
JkB:		10	8	95	700	40
Jena	6w					
Kirkville	6w					
Kinston	6w					
Kn:		---	---	---	---	---
Kinston	6w					
KpB:		7	5	---	550	25
Kipling	3e					
KpC2:		6.5	5	---	500	20
Kipling	4e					
Kr:		10	8	95	700	40
Kirkville	2w					
Ma:		8	6.5	---	---	---
Mantachie	5w					
NeB2:		10	9	75	650	35
Neshoba	2e					
NeC2:		9.5	8	70	600	30
Neshoba	3e					
OrB:		9	8.5	80	700	35
Ora	2e					
OrC2:		8.5	8	70	600	30
Ora	3e					
Po:		---	---	---	---	---
Pits-Udorthents	8e					
PrB:		8.5	9.5	80	700	35
Providence	2e					
PrC2:		8	9	70	650	30
Providence	3e					
Rb:		---	---	---	---	---
Rosebloom	6w					
RK:		---	---	---	---	---
Rosebloom	6w					
Arkabutla	6w					

Table 5.--Land Capability Classification and Yields Per Acre--Continued

Map symbol and soil name	Land capability	Bahiagrass	Common bermudagrass	Corn	Cotton lint	Soybeans
		AUM	*AUM*	*Bu*	*Lbs*	*Bu*
RuB:		9.5	5.5	65	600	25
Ruston	2e					
RuC2:		9.5	5.5	65	600	25
Ruston	3e					
SaB:		9	8.5	75	650	35
Savannah	2e					
SaC2:		9	8	70	600	30
Savannah	3e					
SmD2:		8	5	45	350	20
Smithdale	4e					
SmF2:		---	---	---	---	---
Smithdale	7e					
SsD2:		8	4.5	---	---	---
Smithdale	6e					
Sweatman	7e					
SsF2:		---	---	---	---	---
Smithdale	7e					
Sweatman	7e					
St:		8	8	80	725	25
Stough	2w					
SwD2:		5.5	3.5	---	---	---
Sweatman	6e					
SwF2:		4	3.5	---	---	---
Sweatman	7e					
Ur:		11	12	95	700	35
Urbo	3w					
W:						
Water.						
WmD2:		5	4	---	---	---
Williamsville	6e					
WmF2:		5	4	---	---	---
Williamsville	6e					

Table 6.--Prime Farmland and Other Important Farmland

[Only the soils considered prime or important farmland are listed. Urban or built-up areas of the soils listed are not considered prime or important farmland. If a soil is prime or important farmland only under certain conditions, the conditions are specified]

Map symbol	Map unit name	Farmland Classification
BdA	Bude silt loam, 0 to 2 percent slopes	All areas are prime farmland
Gb	Gillsburg silt loam, occasionally flooded	Prime farmland where drained and either protected from flooding or not frequently flooded during the growing season
KpB	Kipling silt loam, 2 to 5 percent slopes	All areas are prime farmland
KpC2	Kipling silt loam, 5 to 8 percent slopes, eroded	Farmland of statewide importance
Kr	Kirkville fine sandy loam, occasionally flooded	Prime farmland where protected from flooding or not frequently flooded during the growing season
Ma	Mantachie fine sandy loam, occasionally flooded	Prime farmland where drained and either protected from flooding or not frequently flooded during the growing season
NeB2	Neshoba fine sandy loam, 2 to 5 percent slopes, eroded	All areas are prime farmland
NeC2	Neshoba fine sandy loam, 5 to 8 percent slopes, eroded	Farmland of statewide importance
OrB	Ora fine sandy loam, 2 to 5 percent slopes	All areas are prime farmland
OrC2	Ora fine sandy loam, 5 to 8 percent slopes, eroded	Farmland of statewide importance
PrB	Providence silt loam, 2 to 5 percent slopes	All areas are prime farmland
PrC2	Providence silt loam, 5 to 8 percent slopes, eroded	Farmland of statewide importance
RuB	Ruston fine sandy loam, 2 to 5 percent slopes	All areas are prime farmland
RuC2	Ruston fine sandy loam, 5 to 8 percent slopes, eroded	Farmland of statewide importance
SaB	Savannah fine sandy loam, 2 to 5 percent slopes	All areas are prime farmland
SaC2	Savannah fine sandy loam, 5 to 8 percent slopes, eroded	Farmland of statewide importance
SmD2	Smithdale fine sandy loam, 8 to 15 percent slopes, eroded	Farmland of statewide importance
St	Stough fine sandy loam, rarely flooded	Farmland of statewide importance
Ur	Urbo silty clay loam, occasionally flooded	Prime farmland where drained and either protected from flooding or not frequently flooded during the growing season

Table 7.--Forestland Management and Productivity

Map symbol and soil name	Ordination symbol	Management concerns: Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
									Cu ft/ac	
Bb:										
Bibb	11W	Slight	Severe	Severe	Moderate	Severe	Atlantic white cedar	---	---	Eastern cottonwood, loblolly pine, sweetgum, yellow poplar
							Blackgum	---	---	
							Loblolly pine	100	157	
							Sweetgum	90	100	
							Water oak	90	86	
							Yellow poplar	---	---	
BdA:										
Bude	9W	Slight	Moderate	Slight	Slight	Severe	Cherrybark oak	90	114	Cherrybark oak, loblolly pine, Shumard's oak, sweetgum, yellow poplar
							Loblolly pine	90	129	
							Sweetgum	90	100	
Gb:										
Gillsburg	10W	Slight	Moderate	Moderate	Moderate	Severe	American sycamore	105	143	American sycamore, eastern cottonwood, loblolly pine, sweetgum, yellow poplar
							Cherrybark oak	100	143	
							Eastern cottonwood	100	129	
							Green ash	90	57	
							Loblolly pine	90	129	
							Nuttall oak	110	100	
							Sweetgum	90	100	
							Water oak	100	100	
							Yellow poplar	105	114	
JkB:										
Jena	11W	Slight	Severe	Moderate	Slight	Moderate	Loblolly pine	100	157	American sycamore, eastern cottonwood, green ash, loblolly pine, slash pine
							Slash pine	---	---	
							Sweetgum	90	100	
							Water oak	80	72	
Kirkville	11W	---	---	---	---	---	Cherrybark oak	100	143	Cherrybark oak, eastern cottonwood, loblolly pine, sweetgum, yellow poplar
							Loblolly pine	95	143	
							Sweetgum	100	143	
							Water oak	100	100	

Table 7.--Forestland Management and Productivity--Continued

Map symbol and soil name	Ordination symbol	Management concerns					Potential productivity			Trees to manage
		Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Common trees	Site index	Volume of wood fiber	
									Cu ft/ac	
JkB:										
Kinston	11W	---	---	---	---	---	Cherrybark oak	95	57	American sycamore, cherrybark oak, eastern cottonwood, green ash, loblolly pine, slash pine, sweetgum, yellow poplar
							Eastern cottonwood	100	---	
							Loblolly pine	100	129	
							Sweetgum	95	114	
							White oak	90	57	
Kn:										
Kinston	9W	Slight	Severe	Severe	---	---	Cherrybark oak	95	57	American sycamore, cherrybark oak, eastern cottonwood, green ash, loblolly pine, slash pine, sweetgum, yellow poplar
							Eastern cottonwood	100	---	
							Loblolly pine	100	129	
							Sweetgum	95	114	
							White oak	90	57	
KpB:										
Kipling	9C	Slight	Moderate	Moderate	Slight	Moderate	Cherrybark oak	90	114	Cherrybark oak, loblolly pine, Shumard's oak, sweetgum
							Loblolly pine	90	129	
							Shumard's oak	85	72	
							Sweetgum	90	100	
							Water oak	80	72	
							White oak	80	57	
KpC2:										
Kipling	9C	Slight	Moderate	Moderate	Slight	Moderate	Cherrybark oak	90	114	Cherrybark oak, loblolly pine, Shumard's oak, sweetgum
							Loblolly pine	90	129	
							Shumard's oak	85	72	
							Sweetgum	90	100	
							Water oak	80	72	
							White oak	80	57	
Kr:										
Kirkville	10W	Slight	Moderate	Moderate	Slight	Moderate	Cherrybark oak	100	143	Cherrybark oak, eastern cottonwood, loblolly pine, sweetgum, yellow poplar
							Loblolly pine	95	143	
							Sweetgum	100	143	
							Water oak	100	100	

Table 7.--Forestland Management and Productivity--Continued

Map symbol and soil name	Ordination symbol	Management concerns					Potential productivity			Trees to manage
		Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Common trees	Site index	Volume of wood fiber	
									Cu ft/ac	
Ma:										
Mantachie	10W	Slight	Severe	Severe	Slight	Severe	Cherrybark oak	100	143	Cherrybark oak, eastern cottonwood, green ash, loblolly pine, sweetgum, yellow poplar
							Eastern cottonwood	90	100	
							Green ash	80	57	
							Loblolly pine	100	143	
							Sweetgum	95	114	
							Yellow poplar	95	100	
NeB2:										
Neshoba	9A	Slight	Slight	Slight	Slight	Slight	Loblolly pine	90	129	Loblolly pine
							Shortleaf pine	80	129	
NeC2:										
Neshoba	9A	Slight	Slight	Slight	Slight	Slight	Loblolly pine	90	129	Loblolly pine
							Shortleaf pine	80	129	
OrB:										
Ora	8W	Slight	Slight	Slight	Moderate	Moderate	Loblolly pine	83	114	Loblolly pine, slash pine
							Shortleaf pine	69	114	
							Sweetgum	80	86	
OrC2:										
Ora	8W	Slight	Slight	Slight	Moderate	Moderate	Loblolly pine	83	114	Loblolly pine, slash pine
							Shortleaf pine	69	114	
							Sweetgum	80	86	
Po:										
Pits-Udorthents.										
PrB:										
Providence	8W	Slight	Slight	Slight	Moderate	Moderate	Loblolly pine	84	114	Loblolly pine, Shumard's oak, sweetgum, yellow poplar
							Shortleaf pine	64	100	
							Sweetgum	90	100	
PrC2:										
Providence	8W	Moderate	Slight	Slight	Moderate	Moderate	Loblolly pine	84	114	Loblolly pine, Shumard's oak, sweetgum, yellow poplar
							Shortleaf pine	64	100	
							Sweetgum	90	100	

Table 7.--Forestland Management and Productivity--Continued

Map symbol and soil name	Ordination symbol	Management concerns					Potential productivity			Trees to manage
		Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Common trees	Site index	Volume of wood fiber	
									Cu ft/ac	
Rb:										
Rosebloom	9W	Slight	Severe	Moderate	Moderate	Severe	American sycamore	80	86	Cherrybark oak, eastern cottonwood, green ash, loblolly pine, Nuttall oak, sweetgum, water oak, willow oak
							Cherrybark oak	95	129	
							Eastern cottonwood	100	129	
							Green ash	95	57	
							Nuttall oak	95	---	
							Sweetgum	95	114	
							Water oak	95	86	
							Willow oak	90	86	
RK:										
Rosebloom	9W	Slight	Severe	Moderate	Moderate	Severe	American sycamore	80	86	Cherrybark oak, eastern cottonwood, green ash, loblolly pine, Nuttall oak, sweetgum, water oak, willow oak
							Cherrybark oak	95	129	
							Eastern cottonwood	100	129	
							Green ash	95	57	
							Nuttall oak	95	---	
							Sweetgum	95	114	
							Water oak	95	86	
							Willow oak	90	86	
Arkabutla	4W	Slight	Severe	Moderate	Slight	Moderate	Cherrybark oak	105	57	American sycamore, cherrybark oak, eastern cottonwood, green ash, loblolly pine, sweetgum
							Eastern cottonwood	110	---	
							Green ash	95	57	
							Loblolly pine	100	129	
							Nuttall oak	110	---	
							Sweetgum	100	143	
							Water oak	100	---	
RuB:										
Ruston	8A	Slight	Slight	Slight	Slight	Slight	Hickory	---	---	Loblolly pine
							Loblolly pine	84	114	
							post oak	---	---	
							Shortleaf pine	75	114	
							Southern red oak	---	---	
							Sweetgum	---	---	
RuC2:										
Ruston	8A	Slight	Slight	Slight	Slight	Slight	Hickory	---	---	Loblolly pine
							Loblolly pine	84	114	
							post oak	---	---	
							Shortleaf pine	75	114	
							Southern red oak	---	---	
							Sweetgum	---	---	

Table 7.--Forestland Management and Productivity--Continued

Map symbol and soil name	Ordination symbol	Management concerns					Potential productivity			Trees to manage
		Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Common trees	Site index	Volume of wood fiber	
									Cu ft/ac	
SaB:										
Savannah	8W	Slight	Moderate	Slight	Moderate	Moderate	Loblolly pine	81	114	Loblolly pine, slash pine
							Shortleaf pine	76	114	
							Southern red oak	75	57	
SaC2:										
Savannah	8W	Slight	Moderate	Slight	Moderate	Moderate	Loblolly pine	81	114	Loblolly pine, slash pine
							Shortleaf pine	76	114	
							Southern red oak	75	57	
SmD2:										
Smithdale	8A	Slight	Slight	Slight	Slight	Slight	Loblolly pine	80	114	Loblolly pine
							Shortleaf pine	69	114	
SmF2:										
Smithdale	8R	Moderate	Moderate	Slight	Slight	Slight	Loblolly pine	80	114	Loblolly pine
							Shortleaf pine	69	114	
SsD2:										
Smithdale	8A	Slight	Slight	Slight	Slight	Slight	Loblolly pine	80	114	Loblolly pine
							Shortleaf pine	69	114	
Sweatman	8C	Slight	Moderate	Slight	Slight	Slight	Loblolly pine	83	114	Loblolly pine, shortleaf pine
							Shortleaf pine	73	114	
SsF2:										
Smithdale	8R	Moderate	Moderate	Slight	Slight	Slight	Loblolly pine	80	114	Loblolly pine
							Shortleaf pine	69	114	
Sweatman	8C	Moderate	Moderate	Slight	Slight	Slight	Loblolly pine	83	114	Loblolly pine, shortleaf pine
							Shortleaf pine	73	114	
St:										
Stough	9W	Slight	Moderate	Slight	Moderate	Severe	Cherrybark oak	85	100	Loblolly pine, slash pine, sweetgum
							Loblolly pine	90	129	
							Slash pine	86	157	
							Sweetgum	85	86	
							Water oak	80	72	
SwD2:										
Sweatman	8C	Slight	Moderate	Slight	Slight	Slight	Loblolly pine	83	114	Loblolly pine, shortleaf pine
							Shortleaf pine	73	114	

Table 7.--Forestland Management and Productivity--Continued

Map symbol and soil name	Ordination symbol	Management concerns					Potential productivity			Trees to manage
		Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Common trees	Site index	Volume of wood fiber	
									Cu ft/ac	
SwF2:										
Sweatman	8C	Moderate	Moderate	Slight	Slight	Slight	Loblolly pine	83	114	Loblolly pine, shortleaf pine
							Shortleaf pine	73	114	
Ur:										
Urbo	10W	Slight	Moderate	Moderate	Moderate	Moderate	Cherrybark oak	99	143	American sycamore, eastern cottonwood, loblolly pine, sweetgum, yellow poplar
							Eastern cottonwood	108	157	
							Green ash	93	57	
							Sweetgum	98	129	
W:										
Water.										
WmD2:										
Williamsville	9A	Slight	Moderate	Slight	Slight	Slight	Loblolly pine	88	129	Loblolly pine
							Shortleaf pine	80	129	
WmF2:										
Williamsville	9A	Slight	Moderate	Slight	Slight	Slight	Loblolly pine	88	129	Loblolly pine
							Shortleaf pine	80	129	

Table 8a.--Recreation (Part 1)

[The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table]

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Bb:							
Bibb	90	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	0.99	Depth to saturated zone	1.00
		Flooding	1.00	Flooding	0.40	Flooding	1.00
BdA:							
Bude	95	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Flooding	1.00	Slow water movement	0.96	Slow water movement	0.96
		Slow water movement	0.96				
Gb:							
Gillsburg	90	Very limited		Somewhat limited		Somewhat limited	
		Flooding	1.00	Depth to saturated zone	0.75	Depth to saturated zone	0.98
		Depth to saturated zone	0.98			Flooding	0.60
JkB:							
Jena	50	Very limited		Somewhat limited		Very limited	
		Flooding	1.00	Flooding	0.40	Flooding	1.00
Kirkville	30	Very limited		Somewhat limited		Very limited	
		Flooding	1.00	Flooding	0.40	Flooding	1.00
		Depth to saturated zone	0.39	Depth to saturated zone	0.19	Depth to saturated zone	0.39
Kinston	20	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Flooding	1.00	Flooding	0.40	Flooding	1.00
Kn:							
Kinston	90	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Flooding	1.00	Flooding	0.40	Flooding	1.00
KpB:							
Kipling	90	Somewhat limited		Somewhat limited		Somewhat limited	
		Slow water movement	0.96	Slow water movement	0.96	Slow water movement	0.96
		Depth to saturated zone	0.07	Depth to saturated zone	0.03	Slope	0.50
						Depth to saturated zone	0.07
KpC2:							
Kipling	90	Somewhat limited		Somewhat limited		Very limited	
		Slow water movement	0.96	Slow water movement	0.96	Slope	1.00
		Depth to saturated zone	0.07	Depth to saturated zone	0.03	Slow water movement	0.96
						Depth to saturated zone	0.07

Table 8a.--Recreation (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Kr:							
Kirkville	90	Very limited		Somewhat limited		Somewhat limited	
		Flooding	1.00	Depth to saturated zone	0.19	Flooding	0.60
		Depth to saturated zone	0.39			Depth to saturated zone	0.39
Ma:							
Mantachie	90	Very limited		Somewhat limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	0.94	Depth to saturated zone	1.00
		Flooding	1.00			Flooding	0.60
NeB2:							
Neshoba	90	Somewhat limited		Somewhat limited		Somewhat limited	
		Slow water movement	0.21	Slow water movement	0.21	Slope	0.50
						Slow water movement	0.21
NeC2:							
Neshoba	90	Somewhat limited		Somewhat limited		Very limited	
		Slow water movement	0.21	Slow water movement	0.21	Slope	1.00
						Slow water movement	0.21
OrB:							
Ora	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Slow water movement	0.21	Slow water movement	0.21	Slope	0.50
						Slow water movement	0.21
OrC2:							
Ora	100	Somewhat limited		Somewhat limited		Very limited	
		Slow water movement	0.21	Slow water movement	0.21	Slope	1.00
						Slow water movement	0.21
Po:							
Pits-Udorthents	95	Not rated		Not rated		Not rated	
PrB:							
Providence	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Slow water movement	0.21	Slow water movement	0.21	Slope	0.50
		Depth to saturated zone	0.07	Depth to saturated zone	0.03	Slow water movement	0.21
						Depth to saturated zone	0.07
PrC2:							
Providence	85	Somewhat limited		Somewhat limited		Very limited	
		Slow water movement	0.21	Slow water movement	0.21	Slope	1.00
		Depth to saturated zone	0.07	Depth to saturated zone	0.03	Slow water movement	0.21
						Depth to saturated zone	0.07
Rb:							
Rosebloom	90	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Ponding	1.00	Ponding	1.00	Ponding	1.00

Table 8a.--Recreation (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
RK:							
Rosebloom	60	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Flooding	1.00	Flooding	0.40	Flooding	1.00
Arkabutla	33	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Flooding	1.00	Flooding	0.40	Flooding	1.00
RuB:							
Ruston	85	Not limited		Not limited		Somewhat limited	
						Slope	0.50
RuC2:							
Ruston	100	Not limited		Not limited		Very limited	
						Slope	1.00
SaB:							
Savannah	90	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.07	Depth to saturated zone	0.03	Slope	0.50
						Depth to saturated zone	0.07
SaC2:							
Savannah	90	Somewhat limited		Somewhat limited		Very limited	
		Depth to saturated zone	0.07	Depth to saturated zone	0.03	Slope	1.00
						Depth to saturated zone	0.07
SmD2:							
Smithdale	90	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.16	Slope	0.16	Slope	1.00
SmF2:							
Smithdale	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
SsD2:							
Smithdale	50	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.84	Slope	0.84	Slope	1.00
Sweatman	50	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.84	Slope	0.84	Slope	1.00
		Slow water movement	0.21	Slow water movement	0.21	Slow water movement	0.21
SsF2:							
Smithdale	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
Sweatman	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Slow water movement	0.21	Slow water movement	0.21	Slow water movement	0.21

Table 8a.--Recreation (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
St:							
Stough	90	Very limited		Somewhat limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	0.94	Depth to saturated zone	1.00
		Flooding	1.00	Slow water movement	0.21	Flooding	0.60
		Slow water movement	0.21			Slow water movement	0.21
SwD2:							
Sweatman	85	Somewhat limited		Somewhat limited		Very limited	
		Slow water movement	0.21	Slow water movement	0.21	Slope	1.00
		Slope	0.16	Slope	0.16	Slow water movement	0.21
SwF2:							
Sweatman	90	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Slow water movement	0.21	Slow water movement	0.21	Slow water movement	0.21
Ur:							
Urbo	90	Very limited		Very limited		Very limited	
		Flooding	1.00	Slow water movement	1.00	Slow water movement	1.00
		Slow water movement	1.00	Depth to saturated zone	0.75	Depth to saturated zone	0.98
		Depth to saturated zone	0.98			Flooding	0.60
W:							
Water	100	Not rated		Not rated		Not rated	
WmD2:							
Williamsville	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.84	Slope	0.84	Slope	1.00
		Slow water movement	0.21	Slow water movement	0.21	Gravel content	1.00
		Gravel content	0.01	Gravel content	0.01	Slow water movement	0.21
WmF2:							
Williamsville	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Slow water movement	0.21	Slow water movement	0.21	Gravel content	1.00
		Gravel content	0.01	Gravel content	0.01	Slow water movement	0.21

Table 8b.--Recreation (Part 2)

[The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table]

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Bb:							
Bibb	90	Somewhat limited		Somewhat limited		Very limited	
		Depth to saturated zone	0.99	Depth to saturated zone	0.99	Flooding	1.00
		Flooding	0.40	Flooding	0.40	Depth to saturated zone	0.99
BdA:							
Bude	95	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
Gb:							
Gillsburg	90	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75
						Flooding	0.60
JkB:							
Jena	50	Somewhat limited		Somewhat limited		Very limited	
		Flooding	0.40	Flooding	0.40	Flooding	1.00
Kirkville	30	Somewhat limited		Somewhat limited		Very limited	
		Flooding	0.40	Flooding	0.40	Flooding	1.00
						Depth to saturated zone	0.19
Kinston	20	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Flooding	1.00
		Flooding	0.40	Flooding	0.40	Depth to saturated zone	1.00
Kn:							
Kinston	90	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Flooding	1.00
		Flooding	0.40	Flooding	0.40	Depth to saturated zone	1.00
KpB:							
Kipling	90	Not limited		Not limited		Somewhat limited	
						Depth to saturated zone	0.03
KpC2:							
Kipling	90	Not limited		Not limited		Somewhat limited	
						Depth to saturated zone	0.03
Kr:							
Kirkville	90	Not limited		Not limited		Somewhat limited	
						Flooding	0.60
						Depth to saturated zone	0.19

Table 8b.--Recreation (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Ma:							
Mantachie	90	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.86	Depth to saturated zone	0.86	Depth to saturated zone	0.94
						Flooding	0.60
NeB2:							
Neshoba	90	Not limited		Not limited		Not limited	
NeC2:							
Neshoba	90	Not limited		Not limited		Not limited	
OrB:							
Ora	85	Not limited		Not limited		Not limited	
OrC2:							
Ora	100	Not limited		Not limited		Not limited	
Po:							
Pits-Udorthents	95	Not rated		Not rated		Not rated	
PrB:							
Providence	85	Not limited		Not limited		Somewhat limited	
						Depth to saturated zone	0.03
PrC2:							
Providence	85	Not limited		Not limited		Somewhat limited	
						Depth to saturated zone	0.03
Rb:							
Rosebloom	90	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Ponding	1.00	Ponding	1.00	Ponding	1.00
RK:							
Rosebloom	60	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Flooding	1.00
		Flooding	0.40	Flooding	0.40	Depth to saturated zone	1.00
Arkabutla	33	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Flooding	1.00
		Flooding	0.40	Flooding	0.40	Depth to saturated zone	1.00
RuB:							
Ruston	85	Not limited		Not limited		Not limited	
RuC2:							
Ruston	100	Not limited		Not limited		Not limited	
SaB:							
Savannah	90	Not limited		Not limited		Somewhat limited	
						Depth to saturated zone	0.03

Table 8b.--Recreation (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
SaC2:							
Savannah	90	Not limited		Not limited		Somewhat limited	
						Depth to saturated zone	0.03
SmD2:							
Smithdale	90	Not limited		Not limited		Somewhat limited	
						Slope	0.16
SmF2:							
Smithdale	85	Very limited		Not limited		Very limited	
		Slope	1.00			Slope	1.00
SsD2:							
Smithdale	50	Not limited		Not limited		Somewhat limited	
						Slope	0.84
Sweatman	50	Not limited		Not limited		Somewhat limited	
						Slope	0.84
SsF2:							
Smithdale	50	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Slope	0.14	Slope	1.00
Sweatman	50	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Slope	0.01	Slope	1.00
St:							
Stough	90	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.86	Depth to saturated zone	0.86	Depth to saturated zone	0.94
						Flooding	0.60
SwD2:							
Sweatman	85	Not limited		Not limited		Somewhat limited	
						Slope	0.16
SwF2:							
Sweatman	90	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Slope	0.01	Slope	1.00
Ur:							
Urbo	90	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75
						Flooding	0.60
W:							
Water	100	Not rated		Not rated		Not rated	
WmD2:							
Williamsville	85	Not limited		Not limited		Somewhat limited	
						Slope	0.84
						Gravel content	0.01
WmF2:							
Williamsville	85	Very limited		Not limited		Very limited	
		Slope	1.00			Slope	1.00
						Gravel content	0.01

Table 9.--Wildlife Habitat

[See text for definitions of terms used in this table. Absence of an entry indicates that no rating is applicable]

Map symbol and soil name	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Openland wildlife	Forest-land wildlife	Wetland wildlife
Bb:										
Bibb	Poor	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good
BdA:										
Bude	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
Gb:										
Gillsburg	Fair	Good	Good	Good	---	Fair	Fair	Good	Good	Fair
JkB:										
Jena	Poor	Fair	Fair	Good	Good	Poor	Poor	Fair	Good	Poor
Kirkville	Good	Good	Good	Good	---	Poor	Poor	Good	Good	Poor
Kinston	Very poor	Poor	Poor	Poor	Poor	Good	Fair	Poor	Poor	Fair
Kn:										
Kinston	Very poor	Poor	Poor	Poor	Poor	Good	Fair	Poor	Poor	Fair
KpB:										
Kipling	Fair	Good	Good	Good	---	Poor	Fair	Good	Good	Poor
KpC2:										
Kipling	Fair	Good	Good	Good	---	Very poor	Very poor	Good	Good	Very poor
Kr:										
Kirkville	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor
Ma:										
Mantachie	Poor	Fair	Fair	Good	---	Fair	Fair	Fair	Good	Fair
NeB2:										
Neshoba	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
NeC2:										
Neshoba	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor

Table 9.--Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herba-ceous plants	Hardwood trees	Conif-erous plants	Wetland plants	Shallow water areas	Openland wildlife	Forest-land wildlife	Wetland wildlife
OrB:										
Ora	Good	Good	Good	Good	---	Poor	Poor	Good	Good	Poor
OrC2:										
Ora	Fair	Good	Good	Good	---	Very poor	Very poor	Good	Good	Very poor
Po:										
Pits-Udorthents.										
PrB:										
Providence	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
PrC2:										
Providence	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
Rb:										
Rosebloom	Poor	Fair	Fair	Fair	---	Good	Good	Fair	Fair	Good
RK:										
Rosebloom	Poor	Fair	Fair	Fair	---	Good	Good	Fair	Fair	Good
Arkabutla	Poor	Fair	Fair	Good	Good	Fair	Fair	Fair	Good	Fair
RuB:										
Ruston	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
RuC2:										
Ruston	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
SaB:										
Savannah	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
SaC2:										
Savannah	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
SmD2:										
Smithdale	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor

Table 9.--Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Openland wildlife	Forestland wildlife	Wetland wildlife
SmF2:										
Smithdale	Very poor	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
SsD2:										
Smithdale	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
Sweatman	Fair	Good	Good	Good	---	Poor	Very poor	Good	Good	Very poor
SsF2:										
Smithdale	Very poor	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
Sweatman	Very poor	Fair	Good	Good	---	Very poor	Very poor	Fair	Good	Very poor
St:										
Stough	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
SwD2:										
Sweatman	Fair	Good	Good	Good	---	Poor	Very poor	Good	Good	Very poor
SwF2:										
Sweatman	Very poor	Fair	Good	Good	---	Very poor	Very poor	Fair	Good	Very poor
Ur:										
Urbo	Fair	Good	Fair	Good	---	Good	Good	Fair	Good	Good
W:										
Water.										
WmD2:										
Williamsville	Poor	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
WmF2:										
Williamsville	Poor	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor

Table 10a.--Building Site Development (Part 1)

[The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table]

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Bb:							
Bibb	90	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
BdA:							
Bude	95	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
Gb:							
Gillsburg	90	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	0.98	Depth to saturated zone	1.00	Depth to saturated zone	0.98
JkB:							
Jena	50	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
Kirkville	30	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	0.39	Depth to saturated zone	1.00	Depth to saturated zone	0.39
Kinston	20	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
Kn:							
Kinston	90	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
KpB:							
Kipling	90	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Depth to saturated zone	1.00	Shrink-swell	1.00
		Depth to saturated zone	0.07	Shrink-swell	1.00	Depth to saturated zone	0.07
KpC2:							
Kipling	90	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Depth to saturated zone	1.00	Shrink-swell	1.00
		Depth to saturated zone	0.07	Shrink-swell	1.00	Slope	0.88
						Depth to saturated zone	0.07

Table 10a.--Building Site Development (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Kr:							
Kirkville	90	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	0.39	Depth to saturated zone	1.00	Depth to saturated zone	0.39
Ma:							
Mantachie	90	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
NeB2:							
Neshoba	90	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
NeC2:							
Neshoba	90	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Slope	0.88
						Shrink-swell	0.50
OrB:							
Ora	85	Not limited		Somewhat limited		Not limited	
				Depth to saturated zone	0.99		
OrC2:							
Ora	100	Not limited		Somewhat limited		Somewhat limited	
				Depth to saturated zone	0.99	Slope	0.88
Po:							
Pits-Udorthents	95	Not rated		Not rated		Not rated	
PrB:							
Providence	85	Somewhat limited		Very limited		Somewhat limited	
		Depth to saturated zone	0.07	Depth to saturated zone	1.00	Depth to saturated zone	0.07
PrC2:							
Providence	85	Somewhat limited		Very limited		Somewhat limited	
		Depth to saturated zone	0.07	Depth to saturated zone	1.00	Slope	0.88
						Depth to saturated zone	0.07
Rb:							
Rosebloom	90	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Ponding	1.00	Ponding	1.00	Ponding	1.00
RK:							
Rosebloom	60	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
Arkabutla	33	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00

Table 10a.--Building Site Development (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
RuB:							
Ruston	85	Not limited		Not limited		Not limited	
RuC2:							
Ruston	100	Not limited		Not limited		Somewhat limited	
						Slope	0.88
SaB:							
Savannah	90	Somewhat limited		Very limited		Somewhat limited	
		Depth to saturated zone	0.07	Depth to saturated zone	1.00	Depth to saturated zone	0.07
SaC2:							
Savannah	90	Somewhat limited		Very limited		Somewhat limited	
		Depth to saturated zone	0.07	Depth to saturated zone	1.00	Slope	0.88
						Depth to saturated zone	0.07
SmD2:							
Smithdale	90	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.16	Slope	0.16	Slope	1.00
SmF2:							
Smithdale	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
SsD2:							
Smithdale	50	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.84	Slope	0.84	Slope	1.00
Sweatman	50	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.84	Slope	0.84	Slope	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
SsF2:							
Smithdale	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
Sweatman	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
St:							
Stough	90	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
SwD2:							
Sweatman	85	Somewhat limited		Somewhat limited		Very limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Slope	1.00
		Slope	0.16	Slope	0.16	Shrink-swell	0.50
SwF2:							
Sweatman	90	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50

Table 10a.--Building Site Development (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Ur:							
Urbo	90	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	0.98	Depth to saturated zone	1.00	Depth to saturated zone	0.98
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
W:							
Water	100	Not rated		Not rated		Not rated	
WmD2:							
Williamsville	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.84	Slope	0.84	Slope	1.00
		Shrink-swell	0.50			Shrink-swell	0.50
WmF2:							
Williamsville	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	0.50			Shrink-swell	0.50

Table 10b.--Building Site Development (Part 2)

[The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table]

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Bb:							
Bibb	90	Very limited		Very limited		Very limited	
		Flooding	1.00	Depth to saturated zone	1.00	Flooding	1.00
		Depth to saturated zone	0.99	Flooding	0.80	Depth to saturated zone	0.99
				Cutbanks cave	0.10		
BdA:							
Bude	95	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Shrink-swell	0.50	Cutbanks cave	0.10		
		Flooding	0.40				
Gb:							
Gillsburg	90	Very limited		Very limited		Somewhat limited	
		Flooding	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
		Depth to saturated zone	0.75	Flooding	0.60	Flooding	0.60
				Cutbanks cave	0.10		
JkB:							
Jena	50	Very limited		Somewhat limited		Very limited	
		Flooding	1.00	Flooding	0.80	Flooding	1.00
				Cutbanks cave	0.10		
Kirkville	30	Very limited		Very limited		Very limited	
		Flooding	1.00	Depth to saturated zone	1.00	Flooding	1.00
		Depth to saturated zone	0.19	Flooding	0.80	Depth to saturated zone	0.19
				Cutbanks cave	0.10		
Kinston	20	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Flooding	1.00
		Flooding	1.00	Flooding	0.80	Depth to saturated zone	1.00
				Cutbanks cave	0.10		
Kn:							
Kinston	90	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Flooding	1.00
		Flooding	1.00	Flooding	0.80	Depth to saturated zone	1.00
				Cutbanks cave	0.10		
KpB:							
Kipling	90	Very limited		Very limited		Somewhat limited	
		Shrink-swell	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.03
		Depth to saturated zone	0.03	Too clayey	0.50		
				Cutbanks cave	0.10		

Table 10b.--Building Site Development (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
KpC2:							
Kipling	90	Very limited		Very limited		Somewhat limited	
		Shrink-swell	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.03
		Depth to saturated zone	0.03	Too clayey	0.50		
				Cutbanks cave	0.10		
Kr:							
Kirkville	90	Very limited		Very limited		Somewhat limited	
		Flooding	1.00	Depth to saturated zone	1.00	Flooding	0.60
		Depth to saturated zone	0.19	Flooding	0.60	Depth to saturated zone	0.19
				Cutbanks cave	0.10		
Ma:							
Mantachie	90	Very limited		Very limited		Somewhat limited	
		Flooding	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.94
		Depth to saturated zone	0.94	Flooding	0.60	Flooding	0.60
				Cutbanks cave	0.10		
NeB2:							
Neshoba	90	Somewhat limited		Somewhat limited		Not limited	
		Shrink-swell	0.50	Too clayey	0.12		
				Cutbanks cave	0.10		
NeC2:							
Neshoba	90	Somewhat limited		Somewhat limited		Not limited	
		Shrink-swell	0.50	Too clayey	0.12		
				Cutbanks cave	0.10		
OrB:							
Ora	85	Not limited		Somewhat limited		Not limited	
				Depth to saturated zone	0.99		
				Cutbanks cave	0.10		
OrC2:							
Ora	100	Not limited		Somewhat limited		Not limited	
				Depth to saturated zone	0.99		
				Cutbanks cave	0.10		
Po:							
Pits-Udorthents	95	Not rated		Not rated		Not rated	
PrB:							
Providence	85	Somewhat limited		Very limited		Somewhat limited	
		Depth to saturated zone	0.03	Depth to saturated zone	1.00	Depth to saturated zone	0.03
				Cutbanks cave	0.10		
PrC2:							
Providence	85	Somewhat limited		Very limited		Somewhat limited	
		Depth to saturated zone	0.03	Depth to saturated zone	1.00	Depth to saturated zone	0.03
				Cutbanks cave	0.10		

Table 10b.--Building Site Development (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Rb:							
Rosebloom	90	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Ponding	1.00	Ponding	1.00	Ponding	1.00
				Cutbanks cave	0.10		
RK:							
Rosebloom	60	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Flooding	1.00
		Flooding	1.00	Flooding	0.80	Depth to saturated zone	1.00
				Cutbanks cave	0.10		
Arkabutla	33	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Flooding	1.00
		Flooding	1.00	Flooding	0.80	Depth to saturated zone	1.00
				Cutbanks cave	0.10		
RuB:							
Ruston	85	Not limited		Somewhat limited		Not limited	
				Cutbanks cave	0.10		
RuC2:							
Ruston	100	Not limited		Somewhat limited		Not limited	
				Cutbanks cave	0.10		
SaB:							
Savannah	90	Somewhat limited		Very limited		Somewhat limited	
		Depth to saturated zone	0.03	Depth to saturated zone	1.00	Depth to saturated zone	0.03
				Cutbanks cave	0.10		
SaC2:							
Savannah	90	Somewhat limited		Very limited		Somewhat limited	
		Depth to saturated zone	0.03	Depth to saturated zone	1.00	Depth to saturated zone	0.03
				Cutbanks cave	0.10		
SmD2:							
Smithdale	90	Somewhat limited		Somewhat limited		Somewhat limited	
		Slope	0.16	Slope	0.16	Slope	0.16
				Cutbanks cave	0.10		
SmF2:							
Smithdale	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
				Cutbanks cave	0.10		
SsD2:							
Smithdale	50	Somewhat limited		Somewhat limited		Somewhat limited	
		Slope	0.84	Slope	0.84	Slope	0.84
				Cutbanks cave	0.10		
Sweatman	50	Somewhat limited		Somewhat limited		Somewhat limited	
		Slope	0.84	Slope	0.84	Slope	0.84
		Shrink-swell	0.50	Too clayey	0.12		

Table 10b.--Building Site Development (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
SsF2:							
Smithdale	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
				Cutbanks cave	0.10		
Sweatman	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	0.50	Too clayey	0.12		
St:							
Stough	90	Very limited		Very limited		Somewhat limited	
		Flooding	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.94
		Depth to saturated zone	0.94	Flooding	0.60	Flooding	0.60
				Cutbanks cave	0.10		
SwD2:							
Sweatman	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Slope	0.16	Slope	0.16
		Slope	0.16	Too clayey	0.12		
SwF2:							
Sweatman	90	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	0.50	Too clayey	0.12		
Ur:							
Urbo	90	Very limited		Very limited		Somewhat limited	
		Flooding	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
		Depth to saturated zone	0.75	Flooding	0.60	Flooding	0.60
		Shrink-swell	0.50	Too clayey	0.12		
				Cutbanks cave	0.10		
W:							
Water	100	Not rated		Not rated		Not rated	
WmD2:							
Williamsville	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Slope	0.84	Slope	0.84	Slope	0.84
		Shrink-swell	0.50	Too clayey	0.12	Gravel content	0.01
				Cutbanks cave	0.10		
WmF2:							
Williamsville	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	0.50	Too clayey	0.12	Gravel content	0.01
				Cutbanks cave	0.10		

Table 11a.--Sanitary Facilities (Part 1)

[The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table]

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
Bb:					
Bibb	90	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Slow water movement	0.46	Seepage	0.53
BdA:					
Bude	95	Very limited		Very limited	
		Slow water movement	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Seepage	0.53
		Flooding	0.40	Flooding	0.40
Gb:					
Gillsburg	90	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Slow water movement	0.78	Seepage	0.53
JkB:					
Jena	50	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Seepage, bottom layer	1.00	Seepage	1.00
		Slow water movement	0.46		
Kirkville	30	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Slow water movement	0.46	Seepage	0.53
Kinston	20	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Slow water movement	0.46	Seepage	0.53
Kn:					
Kinston	90	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Slow water movement	0.46	Seepage	0.53

Table 11a.--Sanitary Facilities (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
KpB:					
Kipling	90	Very limited		Somewhat limited	
		Slow water movement	1.00	Depth to saturated zone	0.44
		Depth to saturated zone	1.00	Slope	0.32
KpC2:					
Kipling	90	Very limited		Very limited	
		Slow water movement	1.00	Slope	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	0.44
Kr:					
Kirkville	90	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Slow water movement	0.46	Seepage	0.53
Ma:					
Mantachie	90	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Slow water movement	0.46	Seepage	0.53
NeB2:					
Neshoba	90	Very limited		Somewhat limited	
		Slow water movement	1.00	Seepage	0.53
				Slope	0.32
NeC2:					
Neshoba	90	Very limited		Very limited	
		Slow water movement	1.00	Slope	1.00
				Seepage	0.53
OrB:					
Ora	85	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Slow water movement	1.00	Seepage	0.53
				Slope	0.32
OrC2:					
Ora	100	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Slow water movement	1.00	Slope	1.00
				Seepage	0.53
Po:					
Pits-Udorthents	95	Not rated		Not rated	

Table 11a.--Sanitary Facilities (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
PrB:					
Providence	85	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Slow water movement	1.00	Seepage	0.53
				Slope	0.32
PrC2:					
Providence	85	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Slow water movement	1.00	Slope	1.00
				Seepage	0.53
Rb:					
Rosebloom	90	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Ponding	1.00	Ponding	1.00
		Slow water movement	0.46	Seepage	0.53
RK:					
Rosebloom	60	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Slow water movement	0.46	Seepage	0.53
Arkabutla	33	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Slow water movement	0.46	Seepage	0.53
RuB:					
Ruston	85	Somewhat limited		Somewhat limited	
		Slow water movement	0.46	Seepage	0.53
				Slope	0.32
RuC2:					
Ruston	100	Somewhat limited		Very limited	
		Slow water movement	0.46	Slope	1.00
				Seepage	0.53
SaB:					
Savannah	90	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Slow water movement	1.00	Seepage	0.53
				Slope	0.32
SaC2:					
Savannah	90	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Slow water movement	1.00	Slope	1.00
				Seepage	0.53

Table 11a.--Sanitary Facilities (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
SmD2:					
Smithdale	90	Very limited		Very limited	
		Seepage, bottom layer	1.00	Slope	1.00
		Slow water movement	0.46	Seepage	1.00
		Slope	0.16		
SmF2:					
Smithdale	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Seepage, bottom layer	1.00	Seepage	1.00
		Slow water movement	0.46		
SsD2:					
Smithdale	50	Very limited		Very limited	
		Seepage, bottom layer	1.00	Slope	1.00
		Slope	0.84	Seepage	1.00
		Slow water movement	0.46		
Sweatman	50	Very limited		Very limited	
		Slow water movement	1.00	Slope	1.00
		Slope	0.84		
SsF2:					
Smithdale	50	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Seepage, bottom layer	1.00	Seepage	1.00
		Slow water movement	0.46		
Sweatman	50	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Slow water movement	1.00		
St:					
Stough	90	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Slow water movement	1.00		
SwD2:					
Sweatman	85	Very limited		Very limited	
		Slow water movement	1.00	Slope	1.00
		Slope	0.16		
SwF2:					
Sweatman	90	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Slow water movement	1.00		

Table 11a.--Sanitary Facilities (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
Ur:					
Urbo	90	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Slow water movement	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00		
W:					
Water	100	Not rated		Not rated	
WmD2:					
Williamsville	85	Very limited		Very limited	
		Seepage, bottom layer	1.00	Slope	1.00
		Slow water movement	1.00	Seepage	1.00
		Slope	0.84		
WmF2:					
Williamsville	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Seepage, bottom layer	1.00	Seepage	1.00
		Slow water movement	1.00		

Table 11b.--Sanitary Facilities (Part 2)

[The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table]

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Bb:							
Bibb	90	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00		
BdA:							
Bude	95	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Too clayey	0.50	Flooding	0.40	Too clayey	0.50
		Flooding	0.40				
Gb:							
Gillsburg	90	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Depth to saturated zone	0.99
		Depth to saturated zone	1.00	Depth to saturated zone	1.00		
JkB:							
Jena	50	Very limited		Very limited		Somewhat limited	
		Flooding	1.00	Flooding	1.00	Seepage	0.52
		Seepage, bottom layer	1.00	Seepage	1.00		
Kirkville	30	Very limited		Very limited		Somewhat limited	
		Flooding	1.00	Flooding	1.00	Depth to saturated zone	0.86
		Depth to saturated zone	1.00	Depth to saturated zone	1.00		
Kinston	20	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Depth to saturated zone		Too clayey	0.50
		Too clayey	0.50				
Kn:							
Kinston	90	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00		
KpB:							
Kipling	90	Very limited		Somewhat limited		Very limited	
		Too clayey	1.00	Depth to saturated zone	0.44	Too clayey	1.00
		Depth to saturated zone	0.95			Hard to compact	1.00
						Depth to saturated zone	0.68
KpC2:							
Kipling	90	Very limited		Somewhat limited		Very limited	
		Too clayey	1.00	Depth to saturated zone	0.44	Too clayey	1.00
		Depth to saturated zone	0.95			Hard to compact	1.00
						Depth to saturated zone	0.68

Table 11b.--Sanitary Facilities (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Kr:							
Kirkville	90	Very limited		Very limited		Somewhat limited	
		Flooding	1.00	Flooding	1.00	Depth to saturated zone	0.86
		Depth to saturated zone	1.00	Depth to saturated zone	1.00		
Ma:							
Mantachie	90	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00		
NeB2:							
Neshoba	90	Somewhat limited		Not limited		Very limited	
		Too clayey	0.50			Too clayey	1.00
						Hard to compact	1.00
NeC2:							
Neshoba	90	Somewhat limited		Not limited		Very limited	
		Too clayey	0.50			Too clayey	1.00
						Hard to compact	1.00
OrB:							
Ora	85	Very limited		Very limited		Somewhat limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.32
OrC2:							
Ora	100	Very limited		Very limited		Somewhat limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.24
Po:							
Pits-Udorthents	95	Not rated		Somewhat limited		Not rated	
				Slope	0.16		
PrB:							
Providence	85	Very limited		Very limited		Somewhat limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.68
PrC2:							
Providence	85	Very limited		Very limited		Somewhat limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.68
Rb:							
Rosebloom	90	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Ponding	1.00	Ponding	1.00	Ponding	1.00
		Too clayey	0.50			Too clayey	0.50
RK:							
Rosebloom	60	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too clayey	0.50
		Too clayey	0.50				

Table 11b.--Sanitary Facilities (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
RK:							
Arkabutla	33	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too clayey	0.50
		Too clayey	0.50				
RuB:							
Ruston	85	Not limited		Not limited		Not limited	
RuC2:							
Ruston	100	Not limited		Not limited		Not limited	
SaB:							
Savannah	90	Very limited		Very limited		Somewhat limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.68
SaC2:							
Savannah	90	Very limited		Very limited		Somewhat limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.68
SmD2:							
Smithdale	90	Very limited		Very limited		Somewhat limited	
		Seepage, bottom layer	1.00	Seepage	1.00	Seepage	0.52
		Slope	0.16	Slope	0.16	Slope	0.16
SmF2:							
Smithdale	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Seepage, bottom layer	1.00	Seepage	1.00	Seepage	0.52
SsD2:							
Smithdale	50	Very limited		Very limited		Somewhat limited	
		Seepage, bottom layer	1.00	Seepage	1.00	Slope	0.84
		Slope	0.84	Slope	0.84	Seepage	0.52
Sweatman	50	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.84	Slope	0.84	Too clayey	1.00
						Hard to compact	1.00
						Slope	0.84
SsF2:							
Smithdale	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Seepage, bottom layer	1.00	Seepage	1.00	Seepage	0.52
Sweatman	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Too clayey	1.00
						Hard to compact	1.00
St:							
Stough	90	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00		

Table 11b.--Sanitary Facilities (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
SwD2:							
Sweatman	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.16	Slope	0.16	Too clayey	1.00
						Hard to compact	1.00
						Slope	0.16
SwF2:							
Sweatman	90	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Too clayey	1.00
Ur:							
Urbo	90	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Too clayey	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Hard to compact	1.00
		Too clayey	1.00			Depth to saturated zone	0.99
W:							
Water	100	Not rated		Not rated		Not rated	
WmD2:							
Williamsville	85	Very limited		Somewhat limited		Somewhat limited	
		Seepage, bottom layer	1.00	Slope	0.84	Slope	0.84
		Slope	0.84			Seepage	0.52
WmF2:							
Williamsville	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Seepage, bottom layer	1.00			Seepage	0.52

Table 12a.--Construction Materials (Part 1)

[The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The ratings given for the thickest layer are for the thickest layer above and excluding the bottom layer. The numbers in the value columns range from 0.00 to 0.99. The greater the value, the greater the likelihood that the bottom layer or thickest layer of the soil is a source of sand or gravel. See text for further explanation of ratings in this table]

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
Bb:					
Bibb	90	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.03
BdA:					
Bude	95	Poor		Poor	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.00
Gb:					
Gillsburg	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
JkB:					
Jena	50	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.02
Kirkville	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Kinston	20	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Kn:					
Kinston	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
KpB:					
Kipling	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
KpC2:					
Kipling	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Kr:					
Kirkville	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Ma:					
Mantachie	90	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.01

Table 12a.--Construction Materials (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
NeB2:					
Neshoba	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
NeC2:					
Neshoba	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
OrB:					
Ora	85	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.04
OrC2:					
Ora	100	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.04
Po:					
Pits-Udorthents	95	Not rated		Not rated	
PrB:					
Providence	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
PrC2:					
Providence	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Rb:					
Rosebloom	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
RK:					
Rosebloom	60	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Arkabutla	33	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
RuB:					
Ruston	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
RuC2:					
Ruston	100	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
SaB:					
Savannah	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

Table 12a.--Construction Materials (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
SaC2:					
Savannah	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
SmD2:					
Smithdale	90	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.03
SmF2:					
Smithdale	85	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.03
SsD2:					
Smithdale	50	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.03
Sweatman	50	Poor		Poor	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.00
SsF2:					
Smithdale	50	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.03
Sweatman	50	Poor		Poor	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.00
St:					
Stough	90	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.04
SwD2:					
Sweatman	85	Poor		Poor	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.00
SwF2:					
Sweatman	90	Poor		Poor	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.00
Ur:					
Urbo	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
W:					
Water	100	Not rated		Not rated	

Table 12a.--Construction Materials (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
WmD2:					
Williamsville-------	85	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.03
WmF2:					
Williamsville-------	85	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.03

Table 12b.--Construction Materials (Part 2)

[The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.00 to 0.99. The smaller the value, the greater the limitation. See text for further explanation of ratings in this table]

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Bb:							
Bibb	90	Fair		Poor		Poor	
		Too acid	0.50	Wetness depth	0.00	Wetness depth	0.00
		Organic matter content low	0.88			Too acid	0.59
		Water erosion	0.99			Rock fragments	0.59
BdA:							
Bude	95	Fair		Poor		Poor	
		Organic matter content low	0.08	Wetness depth	0.00	Wetness depth	0.00
		Too acid	0.54	Shrink-swell	0.96	Too acid	0.98
		Water erosion	0.68				
Gb:							
Gillsburg	90	Fair		Fair		Fair	
		Organic matter content low	0.18	Wetness depth	0.14	Wetness depth	0.14
		Too acid	0.32			Too acid	0.88
		Water erosion	0.68				
JkB:							
Jena	50	Fair		Good		Fair	
		Organic matter content low	0.12			Too acid	0.88
		Too acid	0.50				
		Water erosion	0.99				
Kirkville	30	Fair		Fair		Fair	
		Organic matter content low	0.12	Wetness depth	0.53	Wetness depth	0.53
		Too acid	0.50			Too acid	0.88
Kinston	20	Fair		Poor		Poor	
		Too acid	0.50	Wetness depth	0.00	Wetness depth	0.00
		Organic matter content low	0.50			Too clayey	0.60
		Too clayey	0.92			Too acid	0.88
		Water erosion	0.99				
Kn:							
Kinston	90	Fair		Poor		Poor	
		Organic matter content low	0.32	Wetness depth	0.00	Wetness depth	0.00
		Too acid	0.50			Too acid	0.98
		Water erosion	0.99				
KpB:							
Kipling	90	Poor		Poor		Poor	
		Too clayey	0.00	Shrink-swell	0.00	Too clayey	0.00
		Organic matter content low	0.05	Wetness depth	0.76	Wetness depth	0.76
		Too acid	0.20				

Table 12b.--Construction Materials (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
KpC2:							
Kipling	90	Poor		Poor		Poor	
		Too clayey	0.00	Shrink-swell	0.00	Too clayey	0.00
		Organic matter content low	0.05	Wetness depth	0.76	Wetness depth	0.76
		Too acid	0.20				
Kr:							
Kirkville	90	Fair		Fair		Fair	
		Organic matter content low	0.12	Wetness depth	0.53	Wetness depth	0.53
		Too acid	0.50			Too acid	0.88
Ma:							
Mantachie	90	Fair		Fair		Fair	
		Too acid	0.50	Wetness depth	0.04	Wetness depth	0.04
		Organic matter content low	0.50			Too acid	0.88
NeB2:							
Neshoba	90	Poor		Fair		Poor	
		Too clayey	0.00	Shrink-swell	0.87	Too clayey	0.00
		Organic matter content low	0.12			Too acid	0.88
		Too acid	0.50			Rock fragments	0.95
NeC2:							
Neshoba	90	Poor		Fair		Poor	
		Too clayey	0.00	Shrink-swell	0.87	Too clayey	0.00
		Organic matter content low	0.12			Too acid	0.88
		Too acid	0.50			Rock fragments	0.95
OrB:							
Ora	85	Fair		Fair		Fair	
		Organic matter content low	0.08	Wetness depth	0.95	Too acid	0.59
		Too acid	0.12			Wetness depth	0.95
		Water erosion	0.99				
OrC2:							
Ora	100	Fair		Fair		Fair	
		Organic matter content low	0.08	Wetness depth	0.98	Too acid	0.59
		Too acid	0.12			Wetness depth	0.98
		Water erosion	0.99				
Po:							
Pits-Udorthents	95	Not rated		Not rated		Not rated	
PrB:							
Providence	85	Fair		Fair		Fair	
		Organic matter content low	0.05	Wetness depth	0.76	Wetness depth	0.76
		Too acid	0.54			Too acid	0.98
		Water erosion	0.68				

Table 12b.--Construction Materials (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
PrC2:							
Providence	85	Fair		Fair		Fair	
		Organic matter content low	0.05	Wetness depth	0.76	Wetness depth	0.76
		Too acid	0.54			Too acid	0.98
		Water erosion	0.68				
Rb:							
Rosebloom	90	Fair		Poor		Poor	
		Too acid	0.50	Wetness depth	0.00	Wetness depth	0.00
		Organic matter content low	0.68			Too acid	0.88
		Water erosion	0.90				
RK:							
Rosebloom	60	Fair		Poor		Poor	
		Organic matter content low	0.18	Wetness depth	0.00	Wetness depth	0.00
		Too acid	0.50			Too acid	0.88
		Water erosion	0.90				
Arkabutla	33	Fair		Poor		Poor	
		Organic matter content low	0.32	Wetness depth	0.00	Wetness depth	0.00
		Too acid	0.50			Too acid	0.88
		Water erosion	0.90				
RuB:							
Ruston	85	Fair		Good		Fair	
		Organic matter content low	0.12			Too acid	0.98
		Too acid	0.54				
RuC2:							
Ruston	100	Fair		Good		Fair	
		Organic matter content low	0.12			Too acid	0.98
		Too acid	0.54				
SaB:							
Savannah	90	Fair		Fair		Fair	
		Organic matter content low	0.02	Wetness depth	0.76	Too acid	0.59
		Too acid	0.50			Wetness depth	0.76
		Water erosion	0.99				
SaC2:							
Savannah	90	Fair		Fair		Fair	
		Organic matter content low	0.02	Wetness depth	0.76	Too acid	0.59
		Too acid	0.50			Wetness depth	0.76
		Water erosion	0.99				
SmD2:							
Smithdale	90	Fair		Good		Fair	
		Organic matter content low	0.18			Slope	0.84
		Too acid	0.50			Too acid	0.88

Table 12b.--Construction Materials (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
SmF2:							
Smithdale	85	Fair		Poor		Poor	
		Organic matter content low	0.18	Slope	0.00	Slope	0.00
		Too acid	0.50			Too acid	0.88
SsD2:							
Smithdale	50	Fair		Good		Fair	
		Organic matter content low	0.18			Slope	0.16
		Too acid	0.50			Too acid	0.88
Sweatman	50	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Organic matter content low	0.12	Shrink-swell	0.87	Slope	0.16
		Too acid	0.50			Too acid	0.88
SsF2:							
Smithdale	50	Fair		Poor		Poor	
		Organic matter content low	0.18	Slope	0.00	Slope	0.00
		Too acid	0.50			Too acid	0.88
Sweatman	50	Poor		Poor		Poor	
		Too clayey	0.00	Slope	0.00	Slope	0.00
		Organic matter content low	0.12	Low strength	0.00	Too clayey	0.00
		Too acid	0.50	Shrink-swell	0.87	Too acid	0.88
St:							
Stough	90	Fair		Fair		Fair	
		Organic matter content low	0.08	Wetness depth	0.04	Wetness depth	0.04
		Too acid	0.50			Too acid	0.88
		Water erosion	0.99				
SwD2:							
Sweatman	85	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Organic matter content low	0.12	Shrink-swell	0.87	Slope	0.84
		Too acid	0.50			Too acid	0.88
SwF2:							
Sweatman	90	Poor		Poor		Poor	
		Too clayey	0.00	Slope	0.00	Slope	0.00
		Organic matter content low	0.12	Low strength	0.00	Too clayey	0.00
		Too acid	0.50	Shrink-swell	0.87	Too acid	0.88
Ur:							
Urbo	90	Poor		Fair		Poor	
		Too clayey	0.00	Wetness depth	0.14	Too clayey	0.00
		Organic matter content low	0.12	Shrink-swell	0.87	Wetness depth	0.14
		Too acid	0.50			Too acid	0.88
		Water erosion	0.68				

Table 12b.--Construction Materials (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
W:							
Water	100	Not rated		Not rated		Not rated	
WmD2:							
Williamsville	85	Poor		Good		Poor	
		Too clayey	0.00			Too clayey	0.00
		Organic matter content low	0.02			Slope	0.16
		Too acid	0.32			Too acid	0.88
						Rock fragments	0.98
WmF2:							
Williamsville	85	Poor		Poor		Poor	
		Too clayey	0.00	Slope	0.00	Slope	0.00
		Organic matter content low	0.02			Too clayey	0.00
		Too acid	0.32			Too acid	0.88
						Rock fragments	0.98

Table 13a.--Water Management (Part 1)

[The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.00 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table]

Map symbol and soil name	Pond reservoir areas		Drainage		Irrigation	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Bb:						
Bibb	Moderately limited		Limited		Limited	
	Seepage	0.53	Flooding	0.90	Flooding	0.90
BdA:						
Bude	Moderately limited		Moderately limited		Moderately limited	
	Seepage	0.53	Percs slowly	0.40	Erodes easily	0.60
					Percs slowly	0.40
Gb:						
Gillsburg	Moderately limited		Moderately limited		Moderately limited	
	Seepage	0.53	Flooding	0.60	Flooding	0.60
					Erodes easily	0.60
JkB:						
Jena	Very limited		Limited		Limited	
	Seepage	1.00	Cutbanks cave	0.90	Flooding	0.90
			Flooding	0.90	Erodes easily	0.60
Kirkville	Moderately limited		Limited		Limited	
	Seepage	0.53	Cutbanks cave	0.90	Flooding	0.90
			Flooding	0.90		
Kinston	Moderately limited		Limited		Limited	
	Seepage	0.53	Flooding	0.90	Flooding	0.90
					Erodes easily	0.60
Kn:						
Kinston	Moderately limited		Limited		Limited	
	Seepage	0.53	Flooding	0.90	Flooding	0.90
					Erodes easily	0.60
KpB:						
Kipling	Slightly limited		Moderately limited		Moderately limited	
	Slope	0.10	Percs slowly	0.40	Percs slowly	0.40
			Slope	0.40	Slope	0.40
KpC2:						
Kipling	Moderately limited		Very limited		Very limited	
	Slope	0.45	Slope	1.00	Slope	1.00
			Percs slowly	0.40	Percs slowly	0.40
Kr:						
Kirkville	Moderately limited		Limited		Moderately limited	
	Seepage	0.53	Cutbanks cave	0.90	Flooding	0.60
			Flooding	0.60		
Ma:						
Mantachie	Moderately limited		Moderately limited		Moderately limited	
	Seepage	0.53	Flooding	0.60	Flooding	0.60
NeB2:						
Neshoba	Moderately limited		Moderately limited		Moderately limited	
	Seepage	0.53	Slope	0.40	Slope	0.40
	Slope	0.10	Percs slowly	0.15	Percs slowly	0.15

Table 13a.--Water Management (Part 1)--Continued

Map symbol and soil name	Pond reservoir areas		Drainage		Irrigation	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
NeC2:						
Neshoba	Moderately limited		Very limited		Very limited	
	Seepage	0.53	Slope	1.00	Slope	1.00
	Slope	0.45	Percs slowly	0.15	Percs slowly	0.15
OrB:						
Ora	Moderately limited		Moderately limited		Moderately limited	
	Seepage	0.53	Slope	0.40	Slope	0.40
	Slope	0.10	Percs slowly	0.15	Percs slowly	0.15
OrC2:						
Ora	Moderately limited		Very limited		Very limited	
	Seepage	0.53	Slope	1.00	Slope	1.00
	Slope	0.45	Percs slowly	0.15	Percs slowly	0.15
Po:						
Pits-Udorthents	Not rated		Not rated		Not rated	
PrB:						
Providence	Moderately limited		Moderately limited		Moderately limited	
	Seepage	0.53	Slope	0.40	Erodes easily	0.60
	Slope	0.10	Percs slowly	0.15	Slope	0.40
					Percs slowly	0.15
PrC2:						
Providence	Moderately limited		Very limited		Very limited	
	Seepage	0.53	Slope	1.00	Slope	1.00
	Slope	0.45	Percs slowly	0.15	Erodes easily	0.60
					Percs slowly	0.15
Rb:						
Rosebloom	Moderately limited		Very limited		Very limited	
	Seepage	0.53	Ponded (wetness)	1.00	Ponded (wetness)	1.00
					Erodes easily	0.60
RK:						
Rosebloom	Moderately limited		Limited		Limited	
	Seepage	0.53	Flooding	0.90	Flooding	0.90
					Erodes easily	0.60
Arkabutla	Moderately limited		Limited		Limited	
	Seepage	0.53	Flooding	0.90	Flooding	0.90
					Erodes easily	0.60
RuB:						
Ruston	Moderately limited		Limited		Moderately limited	
	Seepage	0.53	Cutbanks cave	0.90	Slope	0.40
	Slope	0.10	Slope	0.40		
RuC2:						
Ruston	Moderately limited		Very limited		Very limited	
	Seepage	0.53	Slope	1.00	Slope	1.00
	Slope	0.45	Cutbanks cave	0.90		
SaB:						
Savannah	Moderately limited		Moderately limited		Moderately limited	
	Seepage	0.53	Slope	0.40	Erodes easily	0.60
	Slope	0.10			Slope	0.40

Table 13a.--Water Management (Part 1)--Continued

Map symbol and soil name	Pond reservoir areas		Drainage		Irrigation	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
SaC2:						
Savannah	Moderately limited		Very limited		Very limited	
	Seepage	0.53	Slope	1.00	Slope	1.00
	Slope	0.45			Erodes easily	0.60
SmD2:						
Smithdale	Very limited		Very limited		Very limited	
	Seepage	1.00	Slope	1.00	Slope	1.00
	Slope	0.80				
SmF2:						
Smithdale	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Seepage	1.00				
SsD2:						
Smithdale	Very limited		Very limited		Very limited	
	Seepage	1.00	Slope	1.00	Slope	1.00
	Slope	1.00				
Sweatman	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
			Percs slowly	0.15	Percs slowly	0.15
SsF2:						
Smithdale	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Seepage	1.00				
Sweatman	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
			Percs slowly	0.15	Percs slowly	0.15
St:						
Stough	Not limited		Moderately limited		Moderately limited	
			Flooding	0.60	Flooding	0.60
			Percs slowly	0.15	Percs slowly	0.15
SwD2:						
Sweatman	Limited		Very limited		Very limited	
	Slope	0.80	Slope	1.00	Slope	1.00
			Percs slowly	0.15	Percs slowly	0.15
SwF2:						
Sweatman	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
			Percs slowly	0.15	Percs slowly	0.15
Ur:						
Urbo	Not limited		Very limited		Very limited	
			Flooding	0.60	Flooding	0.60
					Erodes easily	0.60
W:						
Water	Not rated		Not rated		Not rated	

Table 13a.--Water Management (Part 1)--Continued

Map symbol and soil name	Pond reservoir areas		Drainage		Irrigation	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
WmD2:						
Williamsville--	Very limited		Very limited		Very limited	
	Seepage	1.00	Slope	1.00	Slope	1.00
	Slope	1.00	Cutbanks cave	0.90	Percs slowly	0.15
			Percs slowly	0.15		
WmF2:						
Williamsville--	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Seepage	1.00	Cutbanks cave	0.90	Percs slowly	0.15
			Percs slowly	0.15		

Table 13b.--Water Management (Part 2)

[The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.00 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table]

Map symbol and soil name	Terraces and diversions		Grassed waterways	
	Rating class and limiting features	Value	Rating class and limiting features	Value
Bb:				
Bibb	Limited		Limited	
	Wetness	0.99	Wetness	0.99
BdA:				
Bude	Very limited		Very limited	
	Wetness	1.00	Wetness	1.00
	Erodes easily	0.60	Rooting depth	0.80
			Erodes easily	0.60
Gb:				
Gillsburg	Moderately limited		Moderately limited	
	Erodes easily	0.60	Erodes easily	0.60
	Wetness	0.60	Wetness	0.60
JkB:				
Jena	Moderately limited		Moderately limited	
	Erodes easily	0.60	Erodes easily	0.60
Kirkville	Moderately limited		Moderately limited	
	Wetness	0.44	Wetness	0.44
Kinston	Very limited		Very limited	
	Wetness	1.00	Wetness	1.00
	Erodes easily	0.60	Erodes easily	0.60
Kn:				
Kinston	Very limited		Very limited	
	Wetness	1.00	Wetness	1.00
	Erodes easily	0.60	Erodes easily	0.60
KpB:				
Kipling	Moderately limited		Moderately limited	
	Wetness	0.36	Wetness	0.36
	Slope	0.10	Slope	0.10
KpC2:				
Kipling	Moderately limited		Moderately limited	
	Slope	0.45	Slope	0.45
	Wetness	0.36	Wetness	0.36
Kr:				
Kirkville	Moderately limited		Moderately limited	
	Wetness	0.44	Wetness	0.44
Ma:				
Mantachie	Limited		Limited	
	Wetness	0.81	Wetness	0.81
NeB2:				
Neshoba	Slightly limited		Slightly limited	
	Slope	0.10	Slope	0.10

Table 13b.--Water Management (Part 2)--Continued

Map symbol and soil name	Terraces and diversions		Grassed waterways	
	Rating class and limiting features	Value	Rating class and limiting features	Value
NeC2:				
Neshoba	Moderately limited		Moderately limited	
	Slope	0.45	Slope	0.45
OrB:				
Ora	Slightly limited		Limited	
	Wetness	0.19	Rooting depth	0.80
	Slope	0.10	Wetness	0.19
			Slope	0.10
OrC2:				
Ora	Moderately limited		Limited	
	Slope	0.45	Rooting depth	0.80
	Wetness	0.13	Slope	0.45
			Wetness	0.13
Po:				
Pits-Udorthents	Not rated		Not rated	
PrB:				
Providence	Moderately limited		Limited	
	Erodes easily	0.60	Rooting depth	0.80
	Wetness	0.36	Erodes easily	0.60
	Slope	0.10	Wetness	0.36
PrC2:				
Providence	Moderately limited		Limited	
	Erodes easily	0.60	Rooting depth	0.80
	Slope	0.45	Erodes easily	0.60
	Wetness	0.36	Slope	0.45
Rb:				
Rosebloom	Very limited		Very limited	
	Ponded (wetness)	1.00	Wetness	1.00
	Wetness	1.00	Erodes easily	0.60
	Erodes easily	0.60		
RK:				
Rosebloom	Very limited		Very limited	
	Wetness	1.00	Wetness	1.00
	Erodes easily	0.60	Erodes easily	0.60
Arkabutla	Very limited		Very limited	
	Wetness	1.00	Wetness	1.00
	Erodes easily	0.60	Erodes easily	0.60
RuB:				
Ruston	Slightly limited		Slightly limited	
	Slope	0.10	Slope	0.10
RuC2:				
Ruston	Moderately limited		Moderately limited	
	Slope	0.45	Slope	0.45
SaB:				
Savannah	Moderately limited		Limited	
	Erodes easily	0.60	Rooting depth	0.80
	Wetness	0.36	Erodes easily	0.60
	Slope	0.10	Wetness	0.36

Table 13b.--Water Management (Part 2)--Continued

Map symbol and soil name	Terraces and diversions		Grassed waterways	
	Rating class and limiting features	Value	Rating class and limiting features	Value
SaC2:				
Savannah	Moderately limited		Limited	
	Erodes easily	0.60	Rooting depth	0.80
	Slope	0.45	Erodes easily	0.60
	Wetness	0.36	Slope	0.45
SmD2:				
Smithdale	Limited		Limited	
	Slope	0.80	Slope	0.80
SmF2:				
Smithdale	Very limited		Very limited	
	Slope	1.00	Slope	1.00
SsD2:				
Smithdale	Very limited		Very limited	
	Slope	1.00	Slope	1.00
Sweatman	Very limited		Very limited	
	Slope	1.00	Slope	1.00
SsF2:				
Smithdale	Very limited		Very limited	
	Slope	1.00	Slope	1.00
Sweatman	Very limited		Very limited	
	Slope	1.00	Slope	1.00
St:				
Stough	Limited		Limited	
	Wetness	0.81	Wetness	0.81
SwD2:				
Sweatman	Limited		Limited	
	Slope	0.80	Slope	0.80
SwF2:				
Sweatman	Very limited		Very limited	
	Slope	1.00	Slope	1.00
Ur:				
Urbo	Moderately limited		Moderately limited	
	Erodes easily	0.60	Erodes easily	0.60
	Wetness	0.60	Wetness	0.60
W:				
Water	Not rated		Not rated	
WmD2:				
Williamsville	Very limited		Very limited	
	Slope	1.00	Slope	1.00
WmF2:				
Williamsville	Very limited		Very limited	
	Slope	1.00	Slope	1.00

Table 14a.--Catastrophic Mortality, Large Animal Disposal

[The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table]

Map symbol and soil name	Pct. of map unit	Animal disposal pit		Animal disposal trench	
		Rating class and limiting features	Value	Rating class and limiting features	Value
Bb:					
Bibb	90	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Wetness	1.00	Wetness	1.00
		Water gathering	0.17	Water gathering	0.17
BdA:					
Bude	95	Very limited		Very limited	
		Wetness	1.00	Wetness	1.00
		Flooding	0.40	Flooding	0.40
		Water gathering	0.17	Water gathering	0.17
Gb:					
Gillsburg	90	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Wetness	1.00	Wetness	1.00
		Water gathering	0.17	Water gathering	0.17
JkB:					
Jena	50	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Seepage	0.52	Seepage	0.52
		Water gathering	0.17	Water gathering	0.17
Kirkville	30	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Wetness	1.00	Wetness	1.00
		Water gathering	0.17	Water gathering	0.17
Kinston	20	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Wetness	1.00	Wetness	1.00
		Water gathering	0.17	Water gathering	0.17
Kn:					
Kinston	90	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Wetness	1.00	Wetness	1.00
		Water gathering	0.17	Water gathering	0.17
KpB:					
Kipling	90	Somewhat limited		Somewhat limited	
		Wetness	0.99	Wetness	0.99
		Clay content	0.50	Clay content	0.50
		Cutbanks cave	0.50	Cutbanks cave	0.50
KpC2:					
Kipling	90	Somewhat limited		Somewhat limited	
		Wetness	0.99	Wetness	0.99
		Clay content	0.50	Clay content	0.50
		Cutbanks cave	0.50	Cutbanks cave	0.50

Table 14a.--Catastrophic Mortality, Large Animal Disposal--Continued

Map symbol and soil name	Pct. of map unit	Animal disposal pit		Animal disposal trench	
		Rating class and limiting features	Value	Rating class and limiting features	Value
Kr:					
Kirkville	90	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Wetness	1.00	Wetness	1.00
		Water gathering	0.17	Water gathering	0.17
Ma:					
Mantachie	90	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Wetness	1.00	Wetness	1.00
		Water gathering	0.17	Water gathering	0.17
NeB2:					
Neshoba	90	Somewhat limited		Somewhat limited	
		Water gathering	0.17	Water gathering	0.17
NeC2:					
Neshoba	90	Somewhat limited		Somewhat limited	
		Water gathering	0.17	Water gathering	0.17
		Slope	0.16		
OrB:					
Ora	85	Very limited		Very limited	
		Wetness	1.00	Wetness	1.00
		Water gathering	0.17	Water gathering	0.17
OrC2:					
Ora	100	Very limited		Very limited	
		Wetness	1.00	Wetness	1.00
		Water gathering	0.17	Water gathering	0.17
		Slope	0.16		
Po:					
Pits-Udorthents	95	Not rated		Not rated	
PrB:					
Providence	85	Very limited		Very limited	
		Wetness	1.00	Wetness	1.00
		Water gathering	0.17	Water gathering	0.17
PrC2:					
Providence	85	Very limited		Very limited	
		Wetness	1.00	Wetness	1.00
		Water gathering	0.17	Water gathering	0.17
		Slope	0.16		
Rb:					
Rosebloom	90	Very limited		Very limited	
		Wetness	1.00	Wetness	1.00
		Ponding	1.00	Ponding	1.00
		Water gathering	0.17	Water gathering	0.17
RK:					
Rosebloom	60	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Wetness	1.00	Wetness	1.00
		Water gathering	0.17	Water gathering	0.17
Arkabutla	33	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Wetness	1.00	Wetness	1.00
		Water gathering	0.17	Water gathering	0.17

Table 14a.--Catastrophic Mortality, Large Animal Disposal--Continued

Map symbol and soil name	Pct. of map unit	Animal disposal pit		Animal disposal trench	
		Rating class and limiting features	Value	Rating class and limiting features	Value
RuB:					
Ruston	85	Somewhat limited		Somewhat limited	
		Water gathering	0.17	Water gathering	0.17
RuC2:					
Ruston	100	Somewhat limited		Somewhat limited	
		Water gathering	0.17	Water gathering	0.17
		Slope	0.16		
SaB:					
Savannah	90	Very limited		Very limited	
		Wetness	1.00	Wetness	1.00
		Water gathering	0.17	Water gathering	0.17
SaC2:					
Savannah	90	Very limited		Very limited	
		Wetness	1.00	Wetness	1.00
		Water gathering	0.17	Water gathering	0.17
		Slope	0.16		
SmD2:					
Smithdale	90	Somewhat limited		Somewhat limited	
		Slope	0.84	Seepage	0.52
		Seepage	0.52	Water gathering	0.17
		Water gathering	0.17	Slope	0.16
SmF2:					
Smithdale	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Seepage	0.52	Seepage	0.52
		Water gathering	0.17	Water gathering	0.17
SsD2:					
Smithdale	50	Very limited		Somewhat limited	
		Slope	1.00	Slope	0.84
		Seepage	0.52	Seepage	0.52
		Water gathering	0.17	Water gathering	0.17
Sweatman	50	Very limited		Somewhat limited	
		Slope	1.00	Slope	0.84
		Water gathering	0.17	Water gathering	0.17
SsF2:					
Smithdale	50	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Seepage	0.52	Seepage	0.52
		Water gathering	0.17	Water gathering	0.17
Sweatman	50	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Water gathering	0.17	Water gathering	0.17
St:					
Stough	90	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Wetness	1.00	Wetness	1.00
		Water gathering	0.17	Water gathering	0.17

Table 14a.--Catastrophic Mortality, Large Animal Disposal--Continued

Map symbol and soil name	Pct. of map unit	Animal disposal pit		Animal disposal trench	
		Rating class and limiting features	Value	Rating class and limiting features	Value
SwD2:					
Sweatman	85	Somewhat limited		Somewhat limited	
		Slope	0.84	Water gathering	0.17
		Water gathering	0.17	Slope	0.16
SwF2:					
Sweatman	90	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Water gathering	0.17	Water gathering	0.17
Ur:					
Urbo	90	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Wetness	1.00	Wetness	1.00
		Clay content	0.50	Clay content	0.50
W:					
Water	100	Not rated		Not rated	
WmD2:					
Williamsville	85	Very limited		Somewhat limited	
		Slope	1.00	Slope	0.84
		Seepage	0.52	Seepage	0.52
		Water gathering	0.17	Water gathering	0.17
WmF2:					
Williamsville	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Seepage	0.52	Seepage	0.52
		Water gathering	0.17	Water gathering	0.17

Table 14b.--Catastrophic Mortality, Poultry Disposal

[The information in this table is based on interpretations developed by the MLRA Regional Office at Little Rock, Arkansas. The information in this report indicates the dominant soil condition but does not eliminate the need for onsite investigation]

Map symbol and soil name	Poultry disposal
Bb:	
Bibb	Very poorly suited (limitations are difficult to overcome) High water table (winter-early spring) Flooding (common) Seepage (possible)
BdA:	
Bude	Very poorly suited (limitations are difficult to overcome) High water table, perched: < 1.0 ft. (winter-early spring) Flooding (rare)
Gb:	
Gillsburg	Very poorly suited (limitations are difficult to overcome) High water table (winter-early spring) Flooding (common) Seepage (possible)
JkB:	
Jena	Very poorly suited (limitations are difficult to overcome) Flooding (common) Seepage (possible)
Kirkville	Very poorly suited (limitations are difficult to overcome) Flooding (common) High water table (winter-early spring) Seepage (possible)
Kinston	Very poorly suited (limitations are difficult to overcome) High water table (winter-early spring) Flooding (common) Seepage (possible)
Kn:	
Kinston	Very poorly suited (limitations are difficult to overcome) High water table (winter-early spring) Flooding (common) Seepage (possible)
KpB:	
Kipling	Moderately suited (limitations need to be considered) High water table, perched (winter-early spring)
KpC2:	
Kipling	Moderately suited (limitations need to be considered) High water table, perched (winter-early spring)
Kr:	
Kirkville	Very poorly suited (limitations are difficult to overcome) Flooding (common) High water table (winter-early spring) Seepage (possible)
Ma:	
Mantachie	Very poorly suited (limitations are difficult to overcome) High water table (winter-early spring) Flooding (common) Seepage (possible)

Table 14b.--Catastrophic Mortality, Poultry Disposal--Continued

Map symbol and soil name	Poultry disposal
NeB2:	
Neshoba	Suited (limitations need to be considered) Seepage (possible)
NeC2:	
Neshoba	Suited (limitations need to be considered) Seepage (possible)
OrB:	
Ora	Poorly suited (limitations need to be overcome) High water table (winter-early spring) Seepage (possible) High water table, perched (winter-early spring)
OrC2:	
Ora	Poorly suited (limitations need to be overcome) High water table (winter-early spring) Seepage (possible) High water table, perched (winter-early spring)
Po:	
Pits-Udorthents	Not rated
PrB:	
Providence	Poorly suited (limitations need to be overcome) High water table (winter-early spring) Seepage (possible)
PrC2:	
Providence	Poorly suited (limitations need to be overcome) High water table (winter-early spring) Seepage (possible)
Rb:	
Rosebloom	Very poorly suited (limitations are difficult to overcome) High water table, perched: < 1.0 ft. (winter-early spring) High water table (winter-early spring) Ponded (wetness)
RK:	
Rosebloom	Very poorly suited (limitations are difficult to overcome) High water table, perched: < 1.0 ft. (winter-early spring) High water table (winter-early spring) Flooding (common)
Arkabutla	Very poorly suited (limitations are difficult to overcome) High water table, perched: < 1.0 ft. (winter-early spring) High water table (winter-early spring) Flooding (common)
RuB:	
Ruston	Suited (limitations need to be considered) Seepage (possible)
RuC2:	
Ruston	Suited (limitations need to be considered) Seepage (possible)
SaB:	
Savannah	Poorly suited (limitations need to be overcome) High water table (winter-early spring) Seepage (possible)

Table 14b.--Catastrophic Mortality, Poultry Disposal--Continued

Map symbol and soil name	Poultry disposal
SaC2:	
Savannah	Poorly suited (limitations need to be overcome) High water table (winter-early spring) Seepage (possible)
SmD2:	
Smithdale	Moderately suited (limitations need to be considered) Seepage (possible) Slope
SmF2:	
Smithdale	Poorly suited (limitations need to be overcome) Slope Seepage (possible)
SsD2:	
Smithdale	Moderately suited (limitations need to be considered) Slope Seepage (possible)
Sweatman	Moderately suited (limitations need to be considered) Slope
SsF2:	
Smithdale	Poorly suited (limitations need to be overcome) Slope Seepage (possible)
Sweatman	Poorly suited (limitations need to be overcome) Slope
St:	
Stough	Very poorly suited (limitations are difficult to overcome) Flooding (common) High water table, perched (winter-early spring)
SwD2:	
Sweatman	Suited (limitations need to be considered) Slope
SwF2:	
Sweatman	Poorly suited (limitations need to be overcome) Slope
Ur:	
Urbo	Very poorly suited (limitations are difficult to overcome) High water table (winter-early spring) Flooding (common)
W:	
Water	Not rated
WmD2:	
Williamsville	Moderately suited (limitations need to be considered) Slope Seepage (possible)
WmF2:	
Williamsville	Poorly suited (limitations need to be overcome) Slope Seepage (possible)

Table 15.--Engineering Soil Properties

[Absence of an entry indicates that the data were not estimated]

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid Limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
Bb:												
Bibb	0-5	Fine sandy loam	CL-ML, ML, SC-SM, SM	A-2, A-4	0	0-4	95-100	86-100	71-99	29-50	0-35	NP-12
	5-83	Sandy loam, fine sandy loam, loam, silt loam	SM, SC-SM, CL-ML, ML	A-2, A-4	0	0-9	81-100	55-100	38-86	18-48	0-31	NP-12
BdA:												
Bude	0-20	Silt loam	CL	A-6	0	0	100	100	91-100	84-100	21-41	6-19
	20-47	Silt loam, silty clay loam	CL	A-6, A-7	0	0	100	100	77-100	73-100	22-48	6-27
	47-80	Silt loam, clay loam, silty clay loam, fine sandy loam	CH, CL	A-6, A-7	0	0	100	100	84-100	32-56	20-43	4-23
Gb:												
Gillsburg	0-4	Silt loam	CL, CL-ML	A-4	0	0	100	100	100	95-100	20-28	5-10
	4-52	Silt, silt loam	CL, CL-ML	A-4	0	0	100	100	100	95-100	20-28	5-10
	52-80	Silt loam, loam, silty clay loam	CL-ML, CL	A-4, A-6	0	0	100	100	100	90-100	20-33	5-16
JkB:												
Jena	0-10	Fine sandy loam	CL-ML, CL	A-4	0	0	100	100	86-100	37-52	17-35	2-13
	10-30	Fine sandy loam, very fine sandy loam, loam	CL-ML, CL, SC-SM	A-2-4, A-4	0	0	100	100	84-92	58-66	21-31	6-12
	30-80	Fine sandy loam, sandy loam, loamy fine sand, fine sand	SM	A-2-4, A-4	0	0	100	100	85-100	31-46	16-32	2-13

Table 15.--Engineering Soil Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid Limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
JkB:												
Kirkville-------	0-7	Fine sandy loam	CL-ML, ML, SC-SM, SM	A-2, A-4	0	0	100	100	86-99	37-50	17-33	2-12
	7-80	Loam, sandy loam, fine sandy loam, loamy sand	CL-ML, ML, SC-SM, SM	A-2, A-4	0	0	100	100	84-100	58-76	20-30	6-12
Kinston---------	0-16	Loam	CL, CL-ML, ML	A-4, A-6	0	0	100	98-100	85-100	50-97	20-47	2-18
	16-80	Loam, clay loam, sandy clay loam	CL	A-4, A-6, A-7	0	0	100	94-100	73-97	54-77	27-47	12-27
Kn:												
Kinston---------	0-21	Loam	CL-ML, CL, ML	A-4, A-6	0	0	100	98-100	75-99	51-74	20-47	2-18
	21-60	Loam, clay loam, sandy clay loam	CL	A-4, A-6, A-7	0	0	100	94-100	77-99	57-77	27-45	12-25
KpB:												
Kipling---------	0-4	Silt loam	CL, CL-ML, ML	A-4	0	0	100	100	88-100	74-87	26-42	10-20
	4-43	Silty clay, clay, silty clay loam	CL, CH	A-6, A-7	0	0	100	100	87-100	84-100	46-69	26-44
	43-64	Clay, silty clay	CL, CH	A-7	0	0	100	100	82-100	71-91	51-78	29-46
KpC2:												
Kipling---------	0-4	Silt loam	CL-ML, ML, CL	A-4	0	0	100	100	88-100	74-87	26-42	10-20
	4-43	Silty clay, clay, silty clay loam	CL, CH	A-6, A-7	0	0	100	100	87-100	84-100	46-69	26-44
	43-64	Clay, silty clay	CH, CL	A-7	0	0	100	100	82-100	71-91	51-78	29-46
Kr:												
Kirkville-------	0-7	Fine sandy loam	SM, SC-SM, ML, CL-ML	A-2, A-4	0	0	100	100	86-99	37-50	17-33	2-12
	7-80	Loam, sandy loam, fine sandy loam, loamy sand	SM, CL-ML, ML, SC-SM	A-2, A-4	0	0	100	100	84-100	58-76	20-38	6-19

Table 15.--Engineering Soil Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid Limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
Ma:												
Mantachie-------	0-6	Fine sandy loam	SC-SM, ML, CL-ML, SM	A-4	0	0-5	95-100	85-100	74-99	29-46	21-37	4-13
	6-80	Loam, clay loam, sandy clay loam	CL, CL-ML, SC, SC-SM	A-4, A-6	0	0-5	95-100	85-100	70-98	51-76	27-44	12-24
NeB2:												
Neshoba---------	0-4	Fine sandy loam	SM, ML	A-4	0	0	100	100	89-97	36-44	21-31	6-12
	4-38	Silty clay, silty clay loam, clay loam, clay	CL, CH	A-6, A-7	0	0	95-100	78-100	69-100	66-100	43-63	25-40
	38-80	Clay loam, sandy clay, silty clay, clay	CL, CH	A-7	0	0	95-100	69-100	58-100	45-97	37-67	19-44
NeC2:												
Neshoba---------	0-4	Fine sandy loam	ML, SM	A-4	0	0	100	100	89-97	36-44	21-31	6-12
	4-38	Silty clay, silty clay loam, clay loam, clay	CL, CH	A-6, A-7	0	0	95-100	78-100	69-100	66-100	43-63	25-40
	38-80	Clay loam, sandy clay, silty clay, clay	CL, CH	A-7	0	0	95-100	69-100	58-100	45-97	37-67	19-44
OrB:												
Ora----------	0-7	Fine sandy loam	SC-SM, CL-ML, SM, ML	A-2, A-4	0	0	100	95-100	84-97	37-47	15-30	NP-5
	7-28	Clay loam, sandy clay loam, loam	CL	A-4, A-6, A-7	0	0	100	95-100	79-98	60-78	27-43	12-23
	28-56	Sandy clay loam, loam, sandy loam	CL	A-4, A-6, A-7	0	0	100	96-100	76-94	41-57	27-42	12-23
	56-80	Sandy clay loam, loam, sandy loam	CL	A-6, A-7	0	0	100	95-100	65-93	29-55	20-44	6-25

Table 15.--Engineering Soil Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid Limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
OrC2:												
Ora----------	0-7	Fine sandy loam	SM, ML, CL-ML, SC-SM	A-2, A-4	0	0	100	95-100	84-97	37-47	15-30	NP-5
	7-28	Clay loam, sandy clay loam, loam	CL	A-4, A-6, A-7	0	0	100	95-100	79-98	60-78	27-43	12-23
	28-56	Sandy clay loam, loam, sandy loam	CL	A-4, A-6, A-7	0	0	100	96-100	76-94	41-57	27-42	12-23
	56-80	Sandy clay loam, loam, sandy loam	CL	A-6, A-7	0	0	100	95-100	65-93	29-55	20-44	6-25
Po:												
Pits-Udorthents.												
PrB:												
Providence------	0-13	Silt loam	CL, CL-ML, ML	A-4	0	0	100	100	100	85-100	17-30	2-7
	13-24	Silty clay loam, silt loam	CL	A-6, A-7	0	0	100	100	84-100	80-100	27-47	12-27
	24-42	Silt loam, silty clay loam	CL	A-6	0	0	100	100	90-100	70-90	29-40	13-21
	42-56	Loam, clay loam, sandy clay loam	CL, SC	A-4, A-6	0	0	100	95-100	70-95	40-80	22-39	7-21
	56-80	Sandy loam, sandy clay loam, loam	SC, SM, ML, CL	A-2, A-4	0	0	100	95-100	80-100	53-79	20-42	6-23
PrC2:												
Providence------	0-13	Silt loam	CL, ML, CL-ML	A-4	0	0	100	100	100	85-100	17-30	2-7
	13-24	Silty clay loam, silt loam	CL	A-6, A-7	0	0	100	100	84-100	80-100	27-47	12-27
	24-42	Silt loam, silty clay loam	CL	A-6	0	0	100	100	90-100	70-90	29-40	13-21
	42-56	Loam, clay loam, sandy clay loam	CL, SC	A-4, A-6	0	0	100	95-100	70-95	40-80	22-39	7-21
	56-80	Sandy loam, sandy clay loam, loam	SC, CL, ML, SM	A-2, A-4	0	0	100	95-100	80-100	53-79	20-42	6-23

Table 15.--Engineering Soil Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid Limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
Rb:												
Rosebloom-------	0-8	Silt loam	CL	A-4, A-6	0	0	100	100	96-100	89-96	29-41	12-17
	8-48	Silt loam, silty clay loam	CL	A-4, A-6	0	0	100	100	91-100	86-100	29-45	13-25
RK:												
Rosebloom-------	0-8	Silt loam	CL	A-4, A-6	0	0	100	100	90-100	80-95	28-40	9-20
	8-48	Silt loam, silty clay loam	CL	A-4, A-6	0	0	100	100	90-100	85-100	28-40	9-20
Arkabutla-------	0-18	Silt loam	CL-ML, CL	A-4, A-6	0	0	100	100	89-100	81-100	18-41	2-17
	18-55	Silty clay loam, loam, silt loam	CL	A-6, A-7	0	0	100	100	91-100	87-100	29-45	13-25
RuB:												
Ruston----------	0-11	Fine sandy loam	CL-ML, ML, SM	A-2-4, A-4	0	0	100	85-100	71-100	32-56	0-37	NP-13
	11-42	Sandy clay loam, loam, clay loam	CL, SC	A-6, A-7-6	0	0	100	86-100	67-95	36-59	27-44	12-25
	42-52	Fine sandy loam, sandy loam, loamy sand	SM, SC-SM, ML, CL-ML	A-2-4, A-4	0	0	100	85-100	62-82	30-45	20-32	6-13
	52-80	Sandy clay loam, loam, clay loam	SC, CL	A-6, A-7-6	0	0	100	86-100	64-98	33-62	24-47	9-27
RuC2:												
Ruston----------	0-11	Fine sandy loam	SM, CL-ML, ML	A-2-4, A-4	0	0	100	85-100	71-100	32-56	0-37	NP-13
	11-42	Sandy clay loam, loam, clay loam	SC, CL	A-6, A-7-6	0	0	100	86-100	67-95	36-59	27-44	12-25
	42-52	Fine sandy loam, sandy loam, loamy sand	SM, SC-SM, ML, CL-ML	A-2-4, A-4	0	0	100	85-100	62-82	30-45	20-32	6-13
	52-80	Sandy clay loam, loam, clay loam	SC, CL	A-6, A-7-6	0	0	100	86-100	64-98	33-62	24-47	9-27

Table 15.--Engineering Soil Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid Limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
SaB:												
Savannah--------	0-8	Silt loam	CL-ML, ML	A-4	0	0	100	90-100	76-100	59-83	0-37	NP-13
	8-36	Sandy clay loam, clay loam, loam	SC, CL-ML, CL	A-4, A-6	0	0	98-100	89-100	74-97	54-75	27-42	12-22
	36-80	Loam, clay loam, sandy clay loam	CL, CL-ML, SC	A-2, A-4, A-6, A-7	0	0	96-100	87-100	69-94	37-57	27-41	12-22
SaC2:												
Savannah--------	0-8	Silt loam	CL-ML, ML	A-4	0	0	100	90-100	76-100	59-83	0-37	NP-13
	8-36	Sandy clay loam, clay loam, loam	CL, SC, CL-ML	A-4, A-6	0	0	98-100	89-100	74-97	54-75	27-42	12-22
	36-80	Loam, clay loam, sandy clay loam	SC, CL-ML, CL	A-2, A-4, A-6, A-7	0	0	96-100	87-100	69-94	37-57	27-41	12-22
SmD2:												
Smithdale-------	0-10	Fine sandy loam	SM, SC-SM	A-2, A-4	0	0	100	85-100	72-98	33-52	0-31	NP-10
	10-35	Clay loam, sandy clay loam, loam	SC, CL-ML, CL, SC-SM	A-4, A-6	0	0	100	85-100	67-94	36-57	28-43	12-23
	35-80	Loam, sandy loam	CL, ML, SC, SM	A-4	0	0	100	85-100	59-85	27-47	22-38	7-19
SmF2:												
Smithdale-------	0-10	Fine sandy loam	SC-SM, SM	A-2, A-4	0	0	100	85-100	72-98	33-52	0-31	NP-10
	10-35	Clay loam, sandy clay loam, loam	SC-SM, CL, CL-ML, SC	A-4, A-6	0	0	100	85-100	67-94	36-57	28-43	12-23
	35-80	Loam, sandy loam	SC, SM, ML, CL	A-4	0	0	100	85-100	59-85	27-47	22-38	7-19
SsD2:												
Smithdale-------	0-10	Fine sandy loam	SM, SC-SM	A-2, A-4	0	0	100	85-100	72-98	33-52	0-31	NP-10
	10-35	Clay loam, sandy clay loam, loam	CL, CL-ML, SC, SC-SM	A-4, A-6	0	0	100	85-100	67-94	36-57	28-43	12-23
	35-80	Loam, sandy loam	SM, SC, CL, ML	A-4	0	0	100	85-100	59-85	27-47	22-38	7-19

Table 15.--Engineering Soil Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid Limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
SsD2:												
Sweatman--------	0-6	Fine sandy loam	CL-ML, CL, ML	A-4	0	0	100	100	85-100	35-50	17-35	2-13
	6-39	Clay, silty clay, silty clay loam	MH	A-7	0	0	95-100	90-100	80-100	76-100	44-63	25-40
	39-80	Stratified weathered bedrock to fine sandy loam	MH, ML	A-7	0	0	95-100	73-100	63-96	27-47	18-28	2-10
SsF2:												
Smithdale-------	0-10	Fine sandy loam	SM, SC-SM	A-2, A-4	0	0	100	85-100	72-98	33-52	0-31	NP-10
	10-35	Clay loam, sandy clay loam, loam	SC, SC-SM, CL-ML, CL	A-4, A-6	0	0	100	85-100	67-94	36-57	28-43	12-23
	35-80	Loam, sandy loam	CL, ML, SC, SM	A-4	0	0	100	85-100	59-85	27-47	22-38	7-19
Sweatman--------	0-6	Fine sandy loam	ML, CL-ML, CL	A-4	0	0	100	100	85-100	35-50	17-35	2-13
	6-39	Clay, silty clay, silty clay loam	MH	A-7	0	0	95-100	90-100	80-100	76-100	44-63	25-40
	39-80	Stratified weathered bedrock to fine sandy loam	MH, ML	A-7	0	0	95-100	73-100	63-96	27-47	18-28	2-10
St:												
Stough----------	0-8	Fine sandy loam	CL-ML, ML, SC-SM, SM	A-4	0	0	100	100	87-97	41-51	18-35	2-10
	8-38	Loam, fine sandy loam, sandy loam	CL-ML, ML, CL	A-4	0	0	100	100	72-82	34-44	19-30	4-12
	38-80	Sandy loam, sandy clay loam, loam	CL, SC	A-4, A-6	0	0	100	100	68-93	30-55	16-37	2-19

Table 15.--Engineering Soil Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid Limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
SwD2:												
Sweatman--------	0-6	Fine sandy loam	ML, CL-ML, CL	A-4	0	0	100	100	85-100	35-50	17-35	2-13
	6-39	Clay, silty clay, silty clay loam	MH	A-7	0	0	95-100	90-100	80-100	76-100	44-63	25-40
	39-80	Stratified weathered bedrock to fine sandy loam	MH, ML	A-7	0	0	95-100	73-100	63-96	27-47	18-28	2-10
SwF2:												
Sweatman--------	0-6	Fine sandy loam	ML, CL-ML, CL	A-4	0	0	100	100	85-100	35-50	17-35	2-13
	6-39	Clay, silty clay, silty clay loam	MH	A-7	0	0	95-100	90-100	80-100	76-100	44-63	25-40
	39-80	Stratified weathered bedrock to fine sandy loam	MH, ML	A-7	0	0	95-100	73-100	63-96	27-47	18-28	2-10
Ur:												
Urbo------------	0-10	Silty clay loam	CL	A-6	0	0	100	100	83-100	72-95	24-49	7-24
	10-61	Silty clay, clay loam, silty clay loam	CH, CL	A-7	0	0	100	100	89-100	85-100	43-63	25-40
W:												
Water.												
WmD2:												
Williamsville---	0-5	Gravelly sandy loam	SC-SM, SC, ML, CL-ML	A-4	0	0	74-100	58-100	42-81	20-43	21-33	6-12
	5-26	Clay, sandy clay, clay loam	CL, CH	A-6, A-7	0	0	98-100	81-100	61-95	38-67	43-63	25-40
	26-47	Sandy clay loam, loam, sandy loam	CL, SC	A-4, A-6	0	0	98-100	80-100	59-92	29-55	22-40	7-21
	47-85	Loamy sand, sandy loam	SM	A-2, A-4	0	0	98-100	80-100	58-82	28-45	16-27	2-10

Table 15.--Engineering Soil Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid Limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
WmF2:												
Williamsville---	0-5	Gravelly sandy loam	SC-SM, SC, ML, CL-ML	A-4	0	0	74-100	58-100	42-81	20-43	21-33	6-12
	5-26	Clay, sandy clay, clay loam	CH, CL	A-6, A-7	0	0	98-100	81-100	61-95	38-67	43-63	25-40
	26-47	Sandy clay loam, loam, sandy loam	CL, SC	A-4, A-6	0	0	98-100	80-100	59-92	29-55	22-40	7-21
	47-85	Loamy sand, sandy loam	SM	A-2, A-4	0	0	98-100	80-100	58-82	28-45	16-27	2-10

Table 16.--Physical Soil Properties

[Entries under "Erosion factors--T" apply to the entire profile. Entries under "Wind erodibility group" and "Wind erodibility index" apply only to the surface layer. Absence of an entry indicates that data were not estimated]

Map symbol and soil name	Depth	Clay	Moist bulk density	Saturated hydraulic conductivity (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind Erodibility group	Wind Erodibility index
								Kw	Kf	T		
	In	*Pct*	*g/cc*	*µm/sec*	*In/in*	*Pct*	*Pct*					
Bb:												
Bibb	0-5	2-18	1.50-1.70	4.23-14.11	0.12-0.18	0.0-2.9	1.0-3.0	.20	.20	5	3	86
	5-83	2-18	1.45-1.75	4.23-14.11	0.10-0.20	0.0-2.9	0.5-1.0	.37	.37			
BdA:												
Bude	0-20	10-27	1.40-1.60	4.23-14.11	0.21-0.24	0.0-2.9	0.5-2.0	.49	.49	4	5	48
	20-47	10-38	1.40-1.65	0.42-1.41	0.14-0.23	3.0-5.9	0.1-0.4	.43	.43			
	47-80	8-32	1.40-1.65	0.42-1.41	0.11-0.23	3.0-5.9	0.1-0.2	.37	.37			
Gb:												
Gillsburg	0-4	6-18	1.35-1.65	4.23-14.11	0.15-0.25	0.0-2.9	0.5-3.0	.49	.49	5	5	48
	4-52	10-18	1.35-1.65	4.23-14.11	0.15-0.25	0.0-2.9	0.1-0.5	.49	.49			
	52-80	10-35	1.40-1.70	0.42-14.11	0.14-0.23	0.0-2.9	0.1-0.2	.43	.43			
JkB:												
Jena	0-10	5-20	1.30-1.70	4.23-14.11	0.12-0.20	0.0-2.9	0.5-2.0	.37	.37	5	5	48
	10-30	10-18	1.30-1.70	4.23-14.11	0.10-0.20	0.0-2.9	0.5-1.0	.28	.28			
	30-80	5-20	1.35-1.65	14.11-42.34	0.08-0.14	0.0-2.9	0.0-0.5	.24	.24			
Kirkville	0-7	5-18	1.30-1.50	4.23-14.11	0.15-0.15	0.0-2.9	0.5-2.0	.28	.28	5	5	48
	7-80	10-28	1.35-1.55	4.23-14.11	0.10-0.15	0.0-2.9	0.1-0.5	.28	.28			
Kinston	0-16	5-27	1.30-1.50	4.23-14.11	0.14-0.20	0.0-2.9	2.0-5.0	.37	.37	5	5	48
	16-80	18-38	1.30-1.50	4.23-14.11	0.14-0.18	0.0-2.9	0.1-0.8	.32	.32			
Kn:												
Kinston	0-21	5-27	1.30-1.50	4.23-14.11	0.14-0.20	0.0-2.9	2.0-5.0	.37	.37	5	5	48
	21-60	18-35	1.30-1.50	4.23-14.11	0.14-0.18	0.0-2.9	0.1-0.7	.32	.32			
KpB:												
Kipling	0-4	16-29	1.30-1.48	0.42-1.41	0.20-0.22	0.0-2.9	0.5-2.0	.32	.32	5	5	48
	4-43	36-60	1.37-1.41	0.42-1.41	0.20-0.22	6.0-8.9	0.1-0.3	.32	.32			
	43-64	40-60	1.57-1.60	0.00-0.42	0.18-0.20	9.0-25.0	0.1-0.2	.32	.32			
KpC2:												
Kipling	0-4	16-29	1.30-1.48	0.42-1.41	0.20-0.22	0.0-2.9	0.5-2.0	.32	.32	5	5	48
	4-43	36-60	1.37-1.41	0.42-1.41	0.20-0.22	6.0-8.9	0.1-0.3	.32	.32			
	43-64	40-60	1.57-1.60	0.00-0.42	0.18-0.20	9.0-25.0	0.1-0.2	.32	.32			

Table 16.--Physical Soil Properties--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Saturated hydraulic conductivity (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind Erodibility group	Wind Erodibility index
								Kw	Kf	T		
	In	*Pct*	*g/cc*	*µm/sec*	*In/in*	*Pct*	*Pct*					
Kr:												
Kirkville------	0-7	5-18	1.30-1.50	4.23-14.11	0.15-0.15	0.0-2.9	0.5-2.0	.28	.28	5	5	48
	7-80	10-28	1.35-1.55	4.23-14.11	0.10-0.15	0.0-2.9	0.1-0.5	.28	.28			
Ma:												
Mantachie------	0-6	8-20	1.50-1.60	4.23-14.11	0.16-0.20	0.0-2.9	1.0-3.0	.28	.28	5	5	48
	6-80	18-34	1.50-1.60	4.23-14.11	0.14-0.20	0.0-2.9	0.1-0.8	.28	.28			
NeB2:												
Neshoba--------	0-4	10-18	1.40-1.55	4.23-14.11	0.12-0.18	0.0-2.9	0.5-1.0	.32	.32	5	3	86
	4-38	35-55	1.40-1.60	4.23-14.11	0.16-0.20	3.0-5.9	0.1-0.4	.24	.28			
	38-80	27-60	1.40-1.60	1.41-4.23	0.15-0.18	3.0-5.9	0.1-0.2	.24	.28			
NeC2:												
Neshoba--------	0-4	10-18	1.40-1.55	4.23-14.11	0.12-0.18	0.0-2.9	0.5-1.0	.32	.32	5	3	86
	4-38	35-55	1.40-1.60	4.23-14.11	0.16-0.20	3.0-5.9	0.1-0.4	.24	.28			
	38-80	27-60	1.40-1.60	1.41-4.23	0.15-0.18	3.0-5.9	0.1-0.2	.24	.28			
OrB:												
Ora------------	0-7	10-18	1.45-1.55	14.11-42.34	0.10-0.13	0.0-2.9	1.0-3.0	.28	.28	3	3	86
	7-28	18-33	1.45-1.60	4.23-14.11	0.12-0.18	0.0-2.9	0.1-0.5	.37	.37			
	28-56	18-33	1.70-1.80	1.41-4.23	0.05-0.10	0.0-2.9	0.1-0.4	.32	.32			
	56-80	10-35	1.65-1.75	4.23-14.11	0.10-0.15	0.0-2.9	0.1-0.2	.37	.37			
OrC2:												
Ora------------	0-7	10-18	1.45-1.55	14.11-42.34	0.10-0.13	0.0-2.9	1.0-3.0	.28	.28	3	3	86
	7-28	18-33	1.45-1.60	4.23-14.11	0.12-0.18	0.0-2.9	0.1-0.5	.37	.37			
	28-56	18-33	1.70-1.80	1.41-4.23	0.05-0.10	0.0-2.9	0.1-0.4	.32	.32			
	56-80	10-35	1.65-1.75	4.23-14.11	0.10-0.15	0.0-2.9	0.1-0.2	.37	.37			
Po:												
Pits-												
Udorthents.												
PrB:												
Providence-----	0-13	5-12	1.30-1.40	4.23-14.11	0.20-0.22	0.0-2.9	0.5-3.0	.49	.49	3	5	48
	13-24	18-38	1.40-1.50	4.23-14.11	0.20-0.22	0.0-2.9	0.1-0.5	.43	.43			
	24-42	20-30	1.40-1.60	1.41-4.23	0.08-0.10	0.0-2.9	0.1-0.3	.32	.32			
	42-56	12-30	1.40-1.60	1.41-4.23	0.08-0.10	0.0-2.9	0.1-0.2	.32	.32			
	56-80	10-33	1.40-1.60	4.23-14.11	0.10-0.15	0.0-2.9	0.1-0.2	.32	.32			

Table 16.--Physical Soil Properties--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Saturated hydraulic conductivity (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind Erodibility group	Wind Erodibility index
								Kw	Kf	T		
	In	*Pct*	*g/cc*	*µm/sec*	*In/in*	*Pct*	*Pct*					
PrC2:												
Providence-----	0-13	5-12	1.30-1.40	4.23-14.11	0.20-0.22	0.0-2.9	0.5-3.0	.49	.49	3	5	48
	13-24	18-38	1.40-1.50	4.23-14.11	0.20-0.22	0.0-2.9	0.1-0.5	.43	.43			
	24-42	20-30	1.40-1.60	1.41-4.23	0.08-0.10	0.0-2.9	0.1-0.3	.32	.32			
	42-56	12-30	1.40-1.60	1.41-4.23	0.08-0.10	0.0-2.9	0.1-0.2	.32	.32			
	56-80	10-33	1.40-1.60	4.23-14.11	0.10-0.15	0.0-2.9	0.1-0.2	.32	.32			
Rb:												
Rosebloom------	0-8	18-25	1.40-1.55	4.23-14.11	0.20-0.22	0.0-2.9	1.0-3.0	.43	.43	5	5	48
	8-48	20-35	1.40-1.55	4.23-14.11	0.20-0.22	0.0-2.9	0.1-0.9	.37	.37			
RK:												
Rosebloom------	0-8	18-25	1.40-1.55	4.23-14.11	0.20-0.22	0.0-2.9	1.0-3.0	.43	.43	5	5	48
	8-48	20-35	1.40-1.55	4.23-14.11	0.20-0.22	0.0-2.9	0.1-0.8	.37	.37			
Arkabutla------	0-18	5-25	1.40-1.50	4.23-14.11	0.20-0.22	0.0-2.9	1.0-3.0	.43	.43	5	5	48
	18-55	20-35	1.45-1.55	4.23-14.11	0.18-0.21	0.0-2.9	0.1-0.8	.32	.32			
RuB:												
Ruston---------	0-11	2-20	1.30-1.70	4.23-14.11	0.09-0.16	0.0-2.9	0.5-3.0	.28	.28	5	3	86
	11-42	18-35	1.40-1.70	4.23-14.11	0.12-0.17	0.0-2.9	0.0-0.5	.28	.28			
	42-52	10-20	1.30-1.70	4.23-14.11	0.12-0.15	0.0-2.9	0.0-0.5	.28	.32			
	52-80	15-38	1.40-1.70	4.23-14.11	0.12-0.17	0.0-2.9	0.0-0.5	.28	.28			
RuC2:												
Ruston---------	0-11	2-20	1.30-1.70	4.23-14.11	0.09-0.16	0.0-2.9	0.5-3.0	.28	.28	5	3	86
	11-42	18-35	1.40-1.70	4.23-14.11	0.12-0.17	0.0-2.9	0.0-0.5	.28	.28			
	42-52	10-20	1.30-1.70	4.23-14.11	0.12-0.15	0.0-2.9	0.0-0.5	.28	.32			
	52-80	15-38	1.40-1.70	4.23-14.11	0.12-0.17	0.0-2.9	0.0-0.5	.28	.28			
SaB:												
Savannah-------	0-8	3-20	1.40-1.60	4.23-14.11	0.15-0.24	0.0-2.9	0.5-3.0	.37	.37	3	5	48
	8-36	18-32	1.45-1.65	4.23-14.11	0.11-0.17	0.0-2.9	0.1-0.4	.28	.28			
	36-80	18-32	1.60-1.80	1.41-4.23	0.05-0.10	0.0-2.9	0.1-0.2	.24	.24			
SaC2:												
Savannah-------	0-8	3-20	1.40-1.60	4.23-14.11	0.15-0.24	0.0-2.9	0.5-3.0	.37	.37	3	5	48
	8-36	18-32	1.45-1.65	4.23-14.11	0.11-0.17	0.0-2.9	0.1-0.4	.28	.28			
	36-80	18-32	1.60-1.80	1.41-4.23	0.05-0.10	0.0-2.9	0.1-0.2	.24	.24			
SmD2:												
Smithdale------	0-10	2-15	1.40-1.50	14.11-42.34	0.14-0.16	0.0-2.9	0.5-2.0	.28	.28	5	3	86
	10-35	18-33	1.40-1.55	4.23-14.11	0.15-0.17	0.0-2.9	0.2-0.8	.24	.24			
	35-80	12-27	1.40-1.55	14.11-42.34	0.14-0.16	0.0-2.9	0.1-0.5	.28	.28			

Table 16.--Physical Soil Properties--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Saturated hydraulic conductivity (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind Erodibility group	Wind Erodibility index
								Kw	Kf	T		
	In	*Pct*	*g/cc*	*µm/sec*	*In/in*	*Pct*	*Pct*					
SmF2:												
Smithdale------	0-10	2-15	1.40-1.50	14.11-42.34	0.14-0.16	0.0-2.9	0.5-2.0	.28	.28	5	3	86
	10-35	18-33	1.40-1.55	4.23-14.11	0.15-0.17	0.0-2.9	0.2-0.8	.24	.24			
	35-80	12-27	1.40-1.55	14.11-42.34	0.14-0.16	0.0-2.9	0.1-0.5	.28	.28			
SsD2:												
Smithdale------	0-10	2-15	1.40-1.50	14.11-42.34	0.14-0.16	0.0-2.9	0.5-2.0	.28	.28	5	3	86
	10-35	18-33	1.40-1.55	4.23-14.11	0.15-0.17	0.0-2.9	0.2-0.8	.24	.24			
	35-80	12-27	1.40-1.55	14.11-42.34	0.14-0.16	0.0-2.9	0.1-0.5	.28	.28			
SsD2:												
Sweatman-------	0-6	5-20	1.40-1.60	4.23-14.11	0.20-0.22	0.0-2.9	0.5-2.0	.28	.28	3	3	86
	6-39	35-55	1.40-1.50	1.41-4.23	0.16-0.20	3.0-5.9	0.2-0.5	.28	.28			
	39-80	5-15	1.40-1.55	1.41-4.23	0.10-0.18	3.0-5.9	0.1-0.2	.28	.28			
SsF2:												
Smithdale------	0-10	2-15	1.40-1.50	14.11-42.34	0.14-0.16	0.0-2.9	0.5-2.0	.28	.28	5	3	86
	10-35	18-33	1.40-1.55	4.23-14.11	0.15-0.17	0.0-2.9	0.2-0.8	.24	.24			
	35-80	12-27	1.40-1.55	14.11-42.34	0.14-0.16	0.0-2.9	0.1-0.5	.28	.28			
Sweatman-------	0-6	5-20	1.40-1.60	4.23-14.11	0.20-0.22	0.0-2.9	0.5-2.0	.28	.28	3	3	86
	6-39	35-55	1.40-1.50	1.41-4.23	0.16-0.20	3.0-5.9	0.2-0.5	.28	.28			
	39-80	5-15	1.40-1.55	1.41-4.23	0.10-0.18	3.0-5.9	0.1-0.2	.28	.28			
St:												
Stough---------	0-8	5-15	1.40-1.55	4.23-14.11	0.12-0.18	0.0-2.9	1.0-4.0	.28	.28	3	3	86
	8-38	8-18	1.45-1.50	1.41-4.23	0.07-0.11	0.0-2.9	0.1-0.5	.37	.37			
	38-80	5-30	1.55-1.65	1.41-4.23	0.07-0.11	0.0-2.9	0.1-0.4	.37	.37			
SwD2:												
Sweatman-------	0-6	5-20	1.40-1.60	4.23-14.11	0.20-0.22	0.0-2.9	0.5-2.0	.28	.28	3	3	86
	6-39	35-55	1.40-1.50	1.41-4.23	0.16-0.20	3.0-5.9	0.2-0.5	.28	.28			
	39-80	5-15	1.40-1.55	1.41-4.23	0.10-0.18	3.0-5.9	0.1-0.2	.28	.28			
SwF2:												
Sweatman-------	0-6	5-20	1.40-1.60	4.23-14.11	0.20-0.22	0.0-2.9	0.5-2.0	.28	.28	3	3	86
	6-39	35-55	1.40-1.50	1.41-4.23	0.16-0.20	3.0-5.9	0.2-0.5	.28	.28			
	39-80	5-15	1.40-1.55	1.41-4.23	0.10-0.18	3.0-5.9	0.1-0.2	.28	.28			
Ur:												
Urbo-----------	0-10	12-35	1.40-1.50	0.42-1.41	0.19-0.21	0.0-2.9	1.0-3.0	.49	.49	5	7	86
	10-61	35-55	1.45-1.55	0.00-0.42	0.18-0.20	3.0-5.9	0.1-0.5	.28	.28			

Table 16.--Physical Soil Properties--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Saturated hydraulic conductivity (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind Erodibility group	Wind Erodibility index
								Kw	Kf	T		
	In	*Pct*	*g/cc*	*µm/sec*	*In/in*	*Pct*	*Pct*					
W:												
Water.												
WmD2:												
Williamsville--	0-5	10-18	1.40-1.55	4.23-14.11	0.12-0.17	0.0-2.9	0.5-2.0	.15	.20	5	3	86
	5-26	35-55	1.40-1.60	1.41-4.23	0.14-0.20	3.0-5.9	0.1-0.5	.24	.28			
	26-47	12-30	1.40-1.50	4.23-14.11	0.14-0.18	0.0-2.9	0.1-0.4	.24	.28			
	47-85	5-15	1.40-1.50	14.11-42.34	0.06-0.12	0.0-2.9	0.1-0.2	.24	.24			
WmF2:												
Williamsville--	0-5	10-18	1.40-1.55	4.23-14.11	0.12-0.17	0.0-2.9	0.5-2.0	.15	.20	5	3	86
	5-26	35-55	1.40-1.60	1.41-4.23	0.14-0.20	3.0-5.9	0.1-0.5	.24	.28			
	26-47	12-30	1.40-1.50	4.23-14.11	0.14-0.18	0.0-2.9	0.1-0.4	.24	.28			
	47-85	5-15	1.40-1.50	14.11-42.34	0.06-0.12	0.0-2.9	0.1-0.2	.24	.24			

Table 17.--Chemical Soil Properties

[Absence of an entry indicates that data were not estimated]

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction
	In	*meq/100 g*	*meq/100 g*	*pH*
Bb:				
Bibb	0-5	---	0.4-5.3	3.6-5.5
	5-83	---	0.4-5.7	3.6-5.5
BdA:				
Bude	0-20	---	2.5-9.1	4.5-6.0
	20-47	---	3.0-16	4.5-6.0
	47-80	---	2.5-14	4.5-6.0
Gb:				
Gillsburg	0-4	---	1.9-9.4	4.5-5.5
	4-52	---	1.6-4.7	4.5-5.5
	52-80	---	1.2-5.7	4.5-5.5
JkB:				
Jena	0-10	---	1.1-6.4	4.5-6.0
	10-30	---	2.7-5.7	4.5-5.5
	30-80	---	1.3-9.5	4.5-5.5
Kirkville	0-7	---	1.1-5.7	4.5-5.5
	7-80	---	---	4.5-5.5
Kinston	0-16	---	0.8-4.9	4.5-6.0
	16-80	---	3.4-8.6	4.5-5.5
Kn:				
Kinston	0-21	---	0.8-4.9	4.5-6.0
	21-60	---	3.4-7.9	4.5-5.5
KpB:				
Kipling	0-4	---	---	3.6-6.0
	4-43	19-31	---	3.6-8.4
	43-64	21-31	---	5.1-8.4
KpC2:				
Kipling	0-4	---	---	3.6-6.0
	4-43	19-31	---	3.6-8.4
	43-64	21-31	---	5.1-8.4
Kr:				
Kirkville	0-7	---	1.1-5.7	4.5-5.5
	7-80	---	---	4.5-5.5
Ma:				
Mantachie	0-6	---	1.8-5.9	4.5-5.5
	6-80	---	5.4-15	4.5-5.5
NeB2:				
Neshoba	0-4	---	---	4.5-6.5
	4-38	---	---	4.5-5.5
	38-80	---	---	4.5-5.5
NeC2:				
Neshoba	0-4	---	---	4.5-6.5
	4-38	---	---	4.5-5.5
	38-80	---	---	4.5-5.5

Table 17.--Chemical Soil Properties--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction
	In	*meq/100 g*	*meq/100 g*	*pH*
OrB:				
Ora	0-7	---	1.7-3.3	3.6-5.5
	7-28	---	3.5-7.5	3.6-5.5
	28-56	---	3.5-7.5	3.6-5.5
	56-80	---	2.0-7.9	3.6-5.5
OrC2:				
Ora	0-7	---	1.7-3.3	3.6-5.5
	7-28	---	3.5-7.5	3.6-5.5
	28-56	---	3.5-7.5	3.6-5.5
	56-80	---	2.0-7.9	3.6-5.5
Po:				
Pits-Udorthents.				
PrB:				
Providence	0-13	---	1.1-3.6	4.5-6.0
	13-24	---	5.7-18	4.5-6.0
	24-42	---	6.8-13	4.5-6.0
	42-56	---	4.0-13	4.5-6.0
	56-80	---	3.2-15	4.5-6.0
PrC2:				
Providence	0-13	---	1.1-3.6	4.5-6.0
	13-24	---	5.7-18	4.5-6.0
	24-42	---	6.8-13	4.5-6.0
	42-56	---	4.0-13	4.5-6.0
	56-80	---	3.2-15	4.5-6.0
Rb:				
Rosebloom	0-8	---	6.1-12	4.5-5.5
	8-48	---	2.1-10	4.5-5.5
RK:				
Rosebloom	0-8	---	6.1-12	4.5-5.5
	8-48	---	2.1-9.7	4.5-5.5
Arkabutla	0-18	---	2.1-12	4.5-5.5
	18-55	---	2.1-9.7	4.5-5.5
RuB:				
Ruston	0-11	0.8-7.4	---	4.5-6.5
	11-42	---	3.5-8.4	4.5-6.0
	42-52	---	1.9-4.7	4.5-6.0
	52-80	---	2.9-9.2	4.5-6.0
RuC2:				
Ruston	0-11	0.8-7.4	---	4.5-6.5
	11-42	---	3.5-8.4	4.5-6.0
	42-52	---	1.9-4.7	4.5-6.0
	52-80	---	2.9-9.2	4.5-6.0
SaB:				
Savannah	0-8	---	0.5-3.9	3.6-5.5
	8-36	---	3.5-7.2	3.6-5.5
	36-80	---	3.6-7.2	3.6-5.5

Table 17.--Chemical Soil Properties--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction
	In	*meq/100 g*	*meq/100 g*	*pH*
SaC2:				
Savannah------	0-8	---	0.5-3.9	3.6-5.5
	8-36	---	3.5-7.2	3.6-5.5
	36-80	---	3.6-7.2	3.6-5.5
SmD2:				
Smithdale-----	0-10	---	---	4.5-5.5
	10-35	---	---	4.5-5.5
	35-80	---	---	4.5-5.5
SmF2:				
Smithdale-----	0-10	---	---	4.5-5.5
	10-35	---	---	4.5-5.5
	35-80	---	---	4.5-5.5
SsD2:				
Smithdale-----	0-10	---	---	4.5-5.5
	10-35	---	---	4.5-5.5
	35-80	---	---	4.5-5.5
Sweatman------	0-6	---	---	4.5-5.5
	6-39	---	---	4.5-5.5
	39-80	---	1.0-3.3	4.5-5.5
SsF2:				
Smithdale-----	0-10	---	---	4.5-5.5
	10-35	---	---	4.5-5.5
	35-80	---	---	4.5-5.5
Sweatman------	0-6	---	---	4.5-5.5
	6-39	---	---	4.5-5.5
	39-80	---	1.0-3.3	4.5-5.5
St:				
Stough--------	0-8	---	0.8-2.7	4.5-5.5
	8-38	---	1.5-3.9	4.5-5.5
	38-80	---	0.9-6.7	4.5-5.5
SwD2:				
Sweatman------	0-6	---	---	4.5-5.5
	6-39	---	---	4.5-5.5
	39-80	---	1.0-3.3	4.5-5.5
SwF2:				
Sweatman------	0-6	---	---	4.5-5.5
	6-39	---	---	4.5-5.5
	39-80	---	1.0-3.3	4.5-5.5
Ur:				
Urbo----------	0-10	---	3.3-12	4.5-5.5
	10-61	---	2.5-9.1	4.5-5.5
W:				
Water.				
WmD2:				
Williamsville-	0-5	---	1.7-3.5	4.5-5.5
	5-26	---	6.9-13	4.5-5.5
	26-47	---	2.3-6.7	4.5-5.5
	47-85	---	1.0-3.3	4.5-5.5

Table 17.--Chemical Soil Properties--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction
	In	*meq/100 g*	*meq/100 g*	*pH*
WmF2:				
Williamsville-	0-5	---	1.7-3.5	4.5-5.5
	5-26	---	6.9-13	4.5-5.5
	26-47	---	2.3-6.7	4.5-5.5
	47-85	---	1.0-3.3	4.5-5.5

Table 18.--Water Features

[Depths of layers are in feet. See text for definitions of terms used in this table. Estimates of the frequency of ponding and flooding apply to the whole year rather than to individual months. Absence of an entry indicates that the feature is not a concern or that data were not estimated]

Map symbol and soil name	Hydrologic Group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	*Ft*	*Ft*				
Bb:										
Bibb	**D**	**Very high**								
			Jan-Apr	**0.5-1.5**	**0.5-1.5**	---	---	**None**	**Brief**	**Frequent**
			May-Nov	---	---	---	---	**None**	---	**None**
			December	**0.5-1.5**	**0.5-1.5**	---	---	**None**	**Brief**	**Frequent**
BdA:										
Bude	**C**	**Very high**								
			Jan-Apr	**0.5-1.2**	**0.8-1.5**	---	---	**None**	---	**Rare**
			May-Dec	---	---	---	---	**None**	---	**None**
Gb:										
Gillsburg	**D**	**High**								
			Jan-Apr	**1.0-2.0**	**1.5-2.5**	---	---	**None**	**Long**	**Occasional**
			May-Nov	---	---	---	---	**None**	---	**None**
			December	**1.0-2.0**	**1.5-2.5**	---	---	**None**	**Long**	**Occasional**
JkB:										
Jena	**B**	**Low**								
			Jan-Apr	---	---	---	---	**None**	**Brief**	**Frequent**
			May-Dec	---	---	---	---	**None**	---	**None**
Kirkville	**C**	**Low**								
			Jan-Apr	**1.5-2.5**	**1.5-2.5**	---	---	**None**	**Long**	**Frequent**
			May-Dec	---	---	---	---	**None**	---	**None**
Kinston	**B/D**	**Very high**								
			Jan-Jun	**0.0-1.0**	**0.0-1.0**	---	---	**None**	**Long**	**Frequent**
			Jul-Oct	---	---	---	---	**None**	---	**None**
			Nov-Dec	**0.0-1.0**	**0.0-1.0**	---	---	**None**	**Long**	**Frequent**
Kn:										
Kinston	**B/D**	**Very high**								
			Jan-Jun	**0.0-1.0**	**0.0-1.0**	---	---	**None**	**Long**	**Frequent**
			Jul-Oct	---	---	---	---	**None**	---	**None**
			Nov-Dec	**0.0-1.0**	**0.0-1.0**	---	---	**None**	**Long**	**Frequent**
KpB:										
Kipling	**D**	**Medium**								
			Jan-Mar	**1.5-3.0**	**1.5-3.0**	---	---	**None**	---	**None**
			Apr-Dec	---	---	---	---	**None**	---	**None**

Table 18.--Water Features--Continued

Map symbol and soil name	Hydrologic Group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	*Ft*	*Ft*				
KpC2:										
Kipling	D	High								
			Jan-Mar	1.5-3.0	1.5-3.0	---	---	None	---	None
			Apr-Dec	---	---	---	---	None	---	None
Kr:										
Kirkville	C	Low								
			Jan-Apr	1.5-2.5	1.5-2.5	---	---	None	Long	Occasional
			May-Dec	---	---	---	---	None	---	None
Ma:										
Mantachie	C	Very high								
			Jan-Mar	1.0-1.5	1.0-1.5	---	---	None	Brief	Occasional
			Apr-Oct	---	---	---	---	None	---	None
			November	1.0-1.5	1.0-1.5	---	---	None	---	None
			December	1.0-1.5	1.0-1.5	---	---	None	Brief	Occasional
NeB2:										
Neshoba	C	Low								
			Jan-Dec	---	---	---	---	None	---	None
NeC2:										
Neshoba	C	Medium								
			Jan-Dec	---	---	---	---	None	---	None
OrB:										
Ora	C	Low								
			January	2.1-3.5	2.1-3.5	---	---	None	---	None
			Feb-Apr	2.0-3.5	2.0-3.5	---	---	None	---	None
			May-Dec	---	---	---	---	None	---	None
OrC2:										
Ora	C	Medium								
			Jan-Apr	2.0-3.5	2.0-3.5	---	---	None	---	None
			May-Dec	---	---	---	---	None	---	None
Po:										
Pits-Udorthents	---	---								
			Jan-Dec	---	---	---	---	None	---	None
PrB:										
Providence	C	Low								
			Jan-Mar	1.5-3.0	1.5-3.0	---	---	None	---	None
			Apr-Dec	---	---	---	---	None	---	None

Table 18.--Water Features--Continued

Map symbol and soil name	Hydro-Logic Group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	*Ft*	*Ft*				
PrC2:										
Providence	C	Medium								
			Jan-Mar	1.5-3.0	1.5-3.0	---	---	None	---	None
			Apr-Dec	---	---	---	---	None	---	None
Rb:										
Rosebloom	D	Very high								
			Jan-Mar	0.0	0.0-1.0	0.0-0.0	Very long	Frequent	---	---
			Apr-Jun	0.0-1.0	0.0-1.0	0.0-0.0	Very long	Frequent	---	---
			Jul-Nov	---	---	---	---	None	---	None
			December	0.0-1.0	0.0-1.0	0.0-0.0	Very long	Frequent	---	---
RK:										
Rosebloom	D	Very high								
			Jan-Mar	0.0	0.0-1.0	---	---	None	Long	Frequent
			April	0.0-1.0	0.0-1.0	---	---	None	Long	Frequent
			May-Nov	---	---	---	---	None	---	None
			December	0.0-1.0	0.0-1.0	---	---	None	Long	Frequent
Arkabutla	C	Very high								
			January	0.0	1.0-1.5	---	---	None	Long	Frequent
			Feb-Apr	0.0-1.0	1.0-1.5	---	---	None	Long	Frequent
			May-Dec	---	---	---	---	None	---	None
RuB:										
Ruston	B	Low								
			Jan-Dec	---	---	---	---	None	---	None
RuC2:										
Ruston	B	Medium								
			Jan-Dec	---	---	---	---	None	---	None
SaB:										
Savannah	C	Low								
			Jan-Mar	1.5-3.0	1.5-3.0	---	---	None	---	None
			Apr-Dec	---	---	---	---	None	---	None
SaC2:										
Savannah	C	Medium								
			Jan-Mar	1.5-3.0	1.5-3.0	---	---	None	---	None
			Apr-Dec	---	---	---	---	None	---	None
SmD2:										
Smithdale	B	Medium								
			Jan-Dec	---	---	---	---	None	---	None

Table 18.--Water Features--Continued

Map symbol and soil name	Hydrologic Group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	*Ft*	*Ft*				
SmF2:										
Smithdale	B	High								
			Jan-Dec	---	---	---	---	None	---	None
SsD2:										
Smithdale	B	Medium								
			Jan-Dec	---	---	---	---	None	---	None
Sweatman	C	Medium								
			Jan-Dec	---	---	---	---	None	---	None
SsF2:										
Smithdale	B	High								
			Jan-Dec	---	---	---	---	None	---	None
Sweatman	C	High								
			Jan-Dec	---	---	---	---	None	---	None
St:										
Stough	C	Very high								
			Jan-Apr	1.0-1.5	1.0-1.5	---	---	None	Very brief	Rare
			May-Nov	---	---	---	---	None	---	None
			December	---	---	---	---	None	Very brief	Occasional
SwD2:										
Sweatman	C	Medium								
			Jan-Dec	---	---	---	---	None	---	None
SwF2:										
Sweatman	C	High								
			Jan-Dec	---	---	---	---	None	---	None
Ur:										
Urbo	D	High								
			Jan-Mar	1.0-2.0	1.0-2.0	---	---	None	Long	Occasional
			Apr-Dec	---	---	---	---	None	---	None
W:										
Water.										
WmD2:										
Williamsville	C	Medium								
			Jan-Dec	---	---	---	---	None	---	None

Table 18.--Water Features--Continued

Map symbol and soil name	Hydrologic Group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	*Ft*	*Ft*				
WmF2: Williamsville	C	High	Jan-Dec	---	---	---	---	None	---	None

Table 19.--Taxonomic Classification of the Soils

Soil name	Family or higher taxonomic class
Arkabutla	Fine-silty, mixed, active, acid, thermic Fluventic Endoaquepts
Bibb	Coarse-loamy, siliceous, active, acid, thermic Typic Fluvaquents
Bude	Fine-silty, mixed, active, thermic Aquic Fragiudalfs
Gillsburg	Coarse-silty, mixed, active, acid, thermic Aeric Fluvaquents
Jena	Coarse-loamy, siliceous, active, thermic Fluventic Dystrudepts
Kinston	Fine-loamy, siliceous, semiactive, acid, thermic Fluvaquentic Endoaquepts
Kipling	Fine, smectitic, thermic Vertic Paleudalfs
Kirkville	Coarse-loamy, siliceous, active, thermic Fluvaquentic Dystrudepts
Mantachie	Fine-loamy, siliceous, active, acid, thermic Fluventic Endoaquepts
Neshoba	Fine, mixed, semiactive, thermic Rhodic Paleudults
Ora	Fine-loamy, siliceous, semiactive, thermic Typic Fragiudults
Providence	Fine-silty, mixed, active, thermic Oxyaquic Fragiudalfs
Rosebloom	Fine-silty, mixed, active, acid, thermic Fluvaquentic Endoaquepts
Ruston	Fine-loamy, siliceous, semiactive, thermic Typic Paleudults
Savannah	Fine-loamy, siliceous, semiactive, thermic Typic Fragiudults
Smithdale	Fine-loamy, siliceous, subactive, thermic Typic Hapludults
Stough	Coarse-loamy, siliceous, semiactive, thermic Fragiaquic Paleudults
Sweatman	Fine, mixed, semiactive, thermic Typic Hapludults
Urbo	Fine, mixed, active, acid, thermic Vertic Epiaquepts
Williamsville	Fine, mixed, active, thermic Typic Hapludults

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